



City of Franklin

109 3rd Ave S
Franklin, TN 37064
(615)791-3217

Meeting Agenda

Work Session

Tuesday, February 14, 2017

5:00 PM

Board Room

Call to Order

Citizen Comments

WORKSESSION DISCUSSION ITEMS

1. [17-0144](#) Black History Month Presentation
2. [17-0102](#) Consideration of Event Permit for WillPower 5K on April 8, 2017 in Downtown Franklin. (02/14/17 WS)

Sponsors: Deb Faulkner
Attachments: [WillPower 5K 2017 REVISED App](#)
3. [17-0103](#) Consideration of Event Permit for the Heritage Ball sponsored by the Heritage Foundation on September 16, 2017 at Eastern Flank Battlefield Park. (02/14/17 WS)

Sponsors: Lisa Clayton
Attachments: [Heritage Ball 2017 REVISED App](#)
4. [17-0071](#) Consideration of Liquor License Renewal for West Main Street Liquors, (Mr. Jose Arredondo, Managing Agent) 1326 West Main Street, Franklin, TN 37064. (02/14/17 WS)

Sponsors: Lanaii Benne
Attachments: [2017 CERT Arredondo, Jose 02-2017.pdf](#)
5. [17-0072](#) Consideration of Liquor License Renewal for Case Select Wines and Liquors, (Mr. Thomas Michael Klaritch, Managing Agent) 3046 Columbia Avenue, Franklin, TN 37064. (02/14/17 WS)

Sponsors: Lanaii Benne
Attachments: [2017 CERT Klaritch 02-2017.pdf](#)
6. [17-0108](#) Consideration of New Liquor License for HolBev, LLC, dba Holiday Cigars & Spirits, (Alpesh Patel, Managing Agent) 108 N. Royal Oaks Blvd, Franklin, TN 37067. (02/14/17 WS)

Sponsors: Lanaii Benne
Attachments: [2017 Certificate Alpesh Patel.pdf](#)

7. [17-0056](#) Results of the 2016 Citizens Survey

Sponsors: Eric Stuckey, Kristine Brock and Michael Walters Young

Attachments: [Franklin Citizens Survey Presentation](#)
[NCS Next User Guide](#)
[The NCS Dashboard-Franklin FINAL 2016](#)
[The NCS Community Livability Report-Franklin FINAL 2016](#)
[The NCS Demographic Crosstabs-Franklin, TN FINAL 2016](#)
[The NCS Supplemental Web Results-Franklin FINAL 2016](#)
[The NCS Open End Report-Franklin FINAL 2016](#)
[The NCS Technical Appendices-Franklin, TN FINAL 2016](#)

Legislative History

1/24/17 Work Session referred to the Work Session

8. [17-0015](#) Consideration of Ordinance 2016-52, To Be Entitled: “An Ordinance To Amend Chapter 3 Of The Zoning Ordinance Of The City Of Franklin, Tennessee, To Amend The Use Table And Regulations Pertaining To Self-Storage Facilities Uses.”; (01/26/17 FMPC 9-0; 02/14/17 1ST BOMA Reading 6-0, 03/14/17 2nd BOMA Reading 7-0) THIRD AND FINAL READING

Sponsors: Ald. Ann Petersen, Emily Hunter, Amy Diaz-Barriga and Josh King

Attachments: [Ordinance 2016-52 Self Storage.Law Approved.pdf](#)

Legislative History

1/26/17 Franklin Municipal Planning recommended favorably to the Board of
Commission Alderman and to the Work Session

9. [17-0048](#) Consideration of Ordinance 2016-51, To Be Entitled: “An Ordinance To Rezone 23.61 Acres From General Commercial (GC) District To Specific Development Variety (SD-X 14.61/350,000/200) District For The Property Located North Of East McEwen Drive And East Of Carothers Parkway, (Apex Village PUD Subdivision).” (01/27/17 FMPC; 02/14/17 1ST BOMA Reading 6-0; 03/14/17 2nd BOMA Reading 7-0) THIRD AND FINAL READING

Sponsors: Ald. Ann Petersen, Emily Hunter, Amy Diaz-Barriga and Josh King

Attachments: [Ordinance 2016-51 Apex Village PUD _with map.Law Approved 2.pdf](#)
[Apex Village Rezoning 01.05.17.pdf](#)

Legislative History

1/26/17 Franklin Municipal Planning recommended favorably to the Board of
Commission Alderman and to the Work Session

10. [17-0049](#) PUBLIC HEARING: Consideration of Resolution 2016-88 To Be Entitled: "A Resolution Approving A Development Plan For Apex Village PUD Subdivision With 2 Modifications Of Development Standards (MOS 1-Attached Residential Length; MOS2- Parkland Dedication), For The Property Located North Of East McEwen Drive And East Of Carothers Parkway." (01/26/17 FMPC 9-0, 02/14/17 WS)
- Sponsors:** Ald. Ann Petersen, Emily Hunter, Amy Diaz-Barriga and Josh King
- Attachments:** [MAP ApexVillage_DP.pdf](#)
[RESOLUTION 2016-88 APEXVillage PUD Subdivision_with MapLaw Approved](#)
[APEXVillage DevPlan Conditions of Approval 03](#)
[OVERVIEW Apex Village Dev Plan 01.05.17.pdf](#)
[ARCH Apex Village Dev Plan 01.05.17-3.pdf](#)
[APEXVILLAGE_Impact Study \(11.18.16\) - 10765.pdf](#)
[FULLSET Apex Village Dev Plan 01.05.17.pdf](#)
[APEXMOS_Parkland.pdf](#)
[Connectivity Apex Village Dev Plan 01.05.17-2.pdf](#)
- Legislative History**
- | | | |
|---------|--|--|
| 1/26/17 | Franklin Municipal Planning Commission | recommended favorably to the Board of Alderman and |
|---------|--|--|
11. [17-0053](#) Consideration of Ordinance 2016-53, To Be Entitled: "An Ordinance To Amend Chapter 3 Of The Zoning Ordinance Of The City Of Franklin, Tennessee, To Amend The Regulations For Commercial Uses For Bed And Breakfast Establishments In Order To The Increase The Maximum Number Of Permitted Guests From Six To Eight, And Increase The Maximum Number Of Sleeping Rooms Available For Transient Occupancy From Three To Four."; (01/26/17 FMPC 9-0; 02/14/17 1ST BOMA Reading 6-0; 03/14/17 2nd BOMA Reading 7-0) THIRD AND FINAL READING
- Sponsors:** Ald. Ann Petersen, Emily Hunter, Amy Diaz-Barriga and James Svoboda
- Attachments:** [Ord 2016-53 Amend Bed and Breakfast Regulations Law Approved](#)
- Legislative History**
- | | | |
|---------|--|--|
| 1/26/17 | Franklin Municipal Planning Commission | recommended favorably to the Board of Alderman and to the Work Session |
|---------|--|--|
12. [17-0146](#) *Consideration of a Funding Agreement for Knoll Top Lane at Columbia State Community College, COF Contract 2017-0010. (02/14/17 WS)
- Sponsors:** Eric Stuckey and Vernon Gerth
- Attachments:** [2017-0010 Knoll Top Lane CSCC AgreementLaw Approved 2-5-17](#)

13. [17-0104](#) *Consideration of Development Agreement for Mallory Green Development on the Corner of Mallory Lane and Spring Creek Drive (COF 2016-0335) with 3665 Mallory JV LLC (02/14/17 WS)
- Sponsors:** Paul Holzen
- Attachments:** [COF 2016 - 0335 Mallory Green Development Agreement - LawApproved](#)
14. [17-0122](#) *Consideration of Final Payment to Southeast Contractors, Inc. in the amount of \$30,186.25 for the construction of the City of Franklin Fire Station No.8 Westhaven. (COF 2014-0032). (02/14/17 WS)
- Sponsors:** Eric Stuckey and Brad Wilson
- Attachments:** [AIA G703 COF FIRE STATION NO 8 #18 - signed 12-19-16.pdf](#)
[Change Order #6.pdf](#)
15. [17-0105](#) *Consideration of request to Deny Sanitary Sewer Availability to 509 Franklin Road (02/14/17 WS)
- Sponsors:** Paul Holzen
- Attachments:** [Sewer Availability Form - 509 Franklin Rd Franklin TN - Letitia & Russ Baldwin](#)
[509 Franklin Rd - Map](#)
16. [17-0106](#) *Consideration of Resolution 2017-06 Awarding the Construction Contract (COF Contract No. 2014-0259) for the Hunters Bend Elementary Safe Routes to School Project (TDOT PIN 118151.00) to Jarrett Builders, Inc. in the Amount of \$321,000.00 (02/14/17 WS)
- Sponsors:** Engineering
- Attachments:** [Res 2017-06 Hunters Bend Safe Routes to School Project Law Approved.pdf](#)
[HuntersBendSRTS_CONST_ApparentBidResults.pdf](#)
[HuntersBendSRTS_CONST_TabulatedBidResults_FINAL.pdf](#)
[HuntersBendSRTS_CONST_RecommendationLetter_SIGNED.pdf](#)
17. [17-0142](#) *Consideration of Resolution 2017-10, A Resolution of Support For Sustainable Funding For Transportation. (02/14/17 WS)
- Sponsors:** Eric Stuckey
- Attachments:** [Resolution 2017-10 - Sustainable Transportation](#)

18. [17-0067](#) PUBLIC HEARING: Consideration of Ordinance 2017-02, "An Ordinance to Amend Various Sections of Chapter 4 of Title 16 and Chapter 16 of Appendix A of the Franklin Municipal Code Concerning Road Impact Fees. (1-24-17, 2-14-17 WS, 3-28-17 WS, 04/11/17 BOMA 1st Reading 7-1) SECOND AND FINAL READING

Sponsors: Eric Stuckey, Vernon Gerth and Paul Holzen

Attachments: [Franklin_Roadfee_Draft Report Jan 2016](#)
 [18 Impact Fees - Sample.pdf](#)
 [2016 MTP - Roadway Classification](#)
 [2016 - RIF - Current Calculation - Proposed Collector Road Calcs](#)
 [Ord 2017-02 Road Impact Fee 2017 with Exhibits A and B Law Approved](#)

Legislative History

1/24/17 Work Session referred to the Work Session

Other Business

Adjournment

Anyone requesting accommodations due to disabilities should contact ADA coordinator at 791-3277.

CITY OF FRANKLIN
EVENT PERMIT APPLICATION

*Application is Due 90 Days Prior to Scheduled Event.
Please read application carefully and fully complete each section.
A non-refundable application fee of \$100 is due at time of filing.*

Note: Filing this application does not guarantee that your request will be granted.

Please check
all that apply:



street closure

☐ parade

☐ other special event

☐ beer served (*separate permit required*)

Please supply the following information. For additional space, use separate sheets of paper and attach to the application.

1) Location requested (if Temporary Street Closure only, list major roads to be closed):

☐ Aspen Grove Park

☐ Liberty Park

☐ Eastern Flank Battlefield Park

☐ Fieldstone Farms

☐ Pinkerton Park

☐ Jim Warren Park

☐ Harlinsdale Farm

Other: Downtown, Public Square

2) Name/purpose of event: 5th Annual WillPower 5K race

3) Date or dates of event: April 8, ~~2016~~ 2017

4) Time of Event: 7:30 am start time

5) Time of Street Closure (if applicable): Square at 5am; course 7:20 - 8:30 am

Set-Up Date/Time: 4/8/17 5am

Tear-down Date/Time: 4/9/17 9:30 am

*Note: Two (2) hours will be added before set-up time and two hours (2) will be added after tear-down to allow time for clean-up. Event is responsible for payment of Franklin Police Officers during this time. Read Additional Requirements section for more information.

6) Name of Applicant and Organization Requesting Permit:

Steve NeSmith, WillPower Events LLC

a) Address: 123 Sturbridge Drive, Franklin TN 37064

b) Phone: 615-440-2468 **c) Cell:** same **d) Fax:** _____

e) E-mail address: willpower5K@gmail.com

7) Person in charge on day of event: Steve NeSmith

Cell: 615-440-2468 **E-mail address:** willpower5K@gmail.com



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8) Name and Cell Number of at least two others available on day of event:

Name: Brian NeSmith Cell: 407-719-6491 E-mail address: brian@racetimesports.com

Name: Jim Cumbee Cell: 615-390-9966 E-mail address: jimcumbee@gmail.com

9) DETAILED description of event (use additional sheets):

This event is a repeat of last year's race. We expect 700-800 folks. 5K race goes through downtown area. One race only, no additional "Kids dashes". Event raises awareness for pediatric stroke and HHT.

disease

10) **ENCLOSE A DETAILED MAP** of event site, detailing any temporary or permanent structures, street closures, parking, etc. If applicable, list the location, blocks, streets, and/or intersections in which such event will occur. **For large-scale events, map should be obtained from the City's GIS division.**

11) An estimated number of participants and an estimated number of attendees expected to attend during the course of the event:

We expect 600-700 runners + 100 attendees = 800 total event attendees

12) **Please attach a list** containing the names, addresses, and phone numbers of the Chairperson of the organization and all other persons involved in the management or control of organization and/or committee.

13) Is your organization based in Williamson County? Circle Yes or No
(if no, please state where: _____)

14) Is your organization authorized to do business in Tennessee? Circle Yes or No

15) Is your organization a tax-exempt organization as described by the Internal Revenue Code Section 501(c)(3) or a not-for-profit organization? Circle Yes or No. If yes, please attach copy of IRS tax exemption letter providing proof of status.

16) Will you charge an admission/participation fee (including vendors)? If yes, please specify how much per person/vendor. Will charge runners a race entry fee of \$30 each

17) Will any charity, gratuity, or offers be solicited or accepted during the event? Circle Yes or No.

18) Is this event a fundraiser? Circle Yes or No. If yes, what organization will be benefactor of event? What percentage of funds will they receive? 100% of net proceeds go to the charities HHT Foundation International and Ridgecrest Camps.

19) Will parking in the area of the event need to be restricted or prohibited? Circle Yes or No.



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- 20) Will any sound amplification equipment be used during the event? Circle Yes or No. If no, please skip to Question #22.
- 21) For what purpose will sound amplification be used (i.e. announcements, entertainment, etc.)?
Amplification will be used for music and announcements - in the public square only.
- 22) What type of sound amplification will be provided (DJ, Band, etc.)? Please list all that apply.
SpringTree Media will provide stage and sound, again.
- 23) During what time period is sound amplification requested? 7am - 9:30 am.
- 24) If for entertainment, give details of entertainment being provided (i.e. number of musicians, type of music, amp wattage, etc.). Will mostly be pre-recorded music. A 3-man bluegrass band will play for 20 minutes on stage.
- 25) Will any stages, amusement attractions, or amusement rides, including inflatables, be erected for the event? Circle Yes or No. If yes, Applicant must give specific details as to the location and type of games/activities, i.e. inflatables, Horseshoes, relay races, etc. along with the name of the company providing the stages and/or activities. Applicant must also include a copy of that company's insurance certificate indicating coverage and listing the City of Franklin as additional insured. ***For stages, tents, inflatables, etc. constructed on site prior to the event, that date must be included on Certificate of Insurance provided to the City of Franklin. Stages MUST be removed from site at end of event. ***Rented inflatables/interactives that are set-up and manned by applicant must be included specifically in applicant's Certificate of Insurance.
- 26) What, if any, vendors will be present at event? (i.e medical related, shirts, arts, etc.) Please provide detailed list. Use additional sheets. No vendors, just 4-5 sponsor booths.
- 27) Will food, beverages, or merchandise be sold or given away? Circle Yes or No. If yes, clean-up is required. Please provide name of clean-up provider, contact, and phone number of person on-site during event. See Question #28. Our volunteers will clean up the water bottles, bananas & donuts given out at the event to runners. Steve NeSmith 615-440-2468
- 28) Events under 200 participants require a \$250 refundable security deposit at the time of approval. For events over 200, a \$1000 security deposit is required upon approval. If clean-up is not done properly, the organization requesting the permit will be fined (See Attachment A). Applicant's event coordinator or representative and a City of Franklin representative will conduct a Pre-Event meeting prior to event date for Pre-Event Check List Site Review. *At the end of the event, a Post-Event Check List shall be completed by the Applicant's event coordinator, or representative, and a City of Franklin representative to re-assess the site for trash and damage, and to secure with caution tape and signage (provided by event group) any tents left for removal.* Damage deposit will be refunded after a satisfactory Post Event Check List has been completed and signed off on by both the City of Franklin and organization requesting event.

- 29) *NOTE: Events that include deep frying cooking oil operations are required to have a grease pit on-site and contract with a grease waste hauler to handle the grease waste and removal of the grease pit. A copy of this agreement shall be filed along with this application. The primary event sponsor is required to remove all cooking grease from the site immediately after the event. Illegal dumping of cooking grease will be prosecuted. *Please read Additional Requirements section of this application for more information.*
- 30) Will you require a temporary water tap? Circle Yes or No. If yes, please list exact locations:

- 31) Will alcohol, beer, and/or wine be given away or sold? Circle Yes or No. If yes, a permit from the relevant board is required. *Please read Additional Requirements section of this application for more information.*
- 32) Will your event include tents or other temporary structures, propane use, or open flames? Circle yes or no. Events using tents of size 20 x 10 or larger require permitting from Franklin Fire Department. Safety measures must be provided on all tents, especially those set-up prior to the actual event. Tents should be taken down the date the event has ended. *Please read Additional Requirements section of this application for more information.*
- 33) Attach Good Neighbor Letter and Mailing List used. *Please read Additional Requirements section of this application for more information.*

TITLE VI OF THE 1964 CIVIL RIGHTS ACT

"No person in the United States shall, on the ground of race, color, or national origin be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving federal financial assistance."

The City of Franklin does not discriminate based on race, color or national origin in federal or state sponsored programs, pursuant to Title VI of the Civil Rights Acts of 1964 (42 U.S.C. 2000d). For more information or to file a complaint against the City of Franklin under Title VI of the 1964 Civil Rights Act, contact the Title VI Coordinator:

Risk Manager
City of Franklin
109 Third Avenue South
Franklin, Tennessee 37064
615.791.3277

The City of Franklin is committed to providing reasonable access and accommodations upon request for people with disabilities. Please call the Risk Management Department at (615)791-3277 for specific requests.



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PLEASE READ ATTACHMENTS BEFORE SIGNING APPLICATION.

- 1) I/We agree to abide by all ordinances and regulations of the City of Franklin and all conditions placed upon the event by the City Administrator and the Board of Mayor and Aldermen.
- 2) I/We do swear or affirm that all of the information given in this application is true and complete.
- 3) I/We do hereby agree to assume the defense of and indemnify and save harmless the City, its aldermen, boards, commissions, officers, employees and agents, from all suits, actions, damages or claims to which the City may be subjected of any kind or nature whatsoever resulting from, caused by, arising out of or as a consequence of such event and the activities permitted in connection there with, and to submit a certificate of insurance prior to the event in an amount acceptable to the City Administrator.
- 4) I/We agree to provide a copy of this signed Event Application to any vendors, planners, and related parties associated with the event to ensure they are familiar with the guidelines set forth herein.
- 5) I/We understand that I/we assume the responsibility of the actions of any vendors, planners, and related parties for this event.
- 6) I/We understand that granting of Special Event Permit does not imply granting of other permit that is separately required.
- 7) The application for an event permit shall be filed not less than 90 days nor more than 364 days prior to the scheduled date of such event. Suggested filing is at least 180 days prior to scheduled event. Events should not be advertised or promoted until an event permit has been obtained from the City. Failure to file in a timely manner may result in denial of a permit.
- 8) The City reserves the right to require one or more City of Franklin police officers or other emergency personnel be present at any and all events that occur within the city limits. Please budget for this request at a rate of \$30 per hour at a minimum of two (2) hours.

BY: Steve Nibbelk President, WillPower Events LLC Date: 11/5/16
(Signature and title – must be officer of organization)

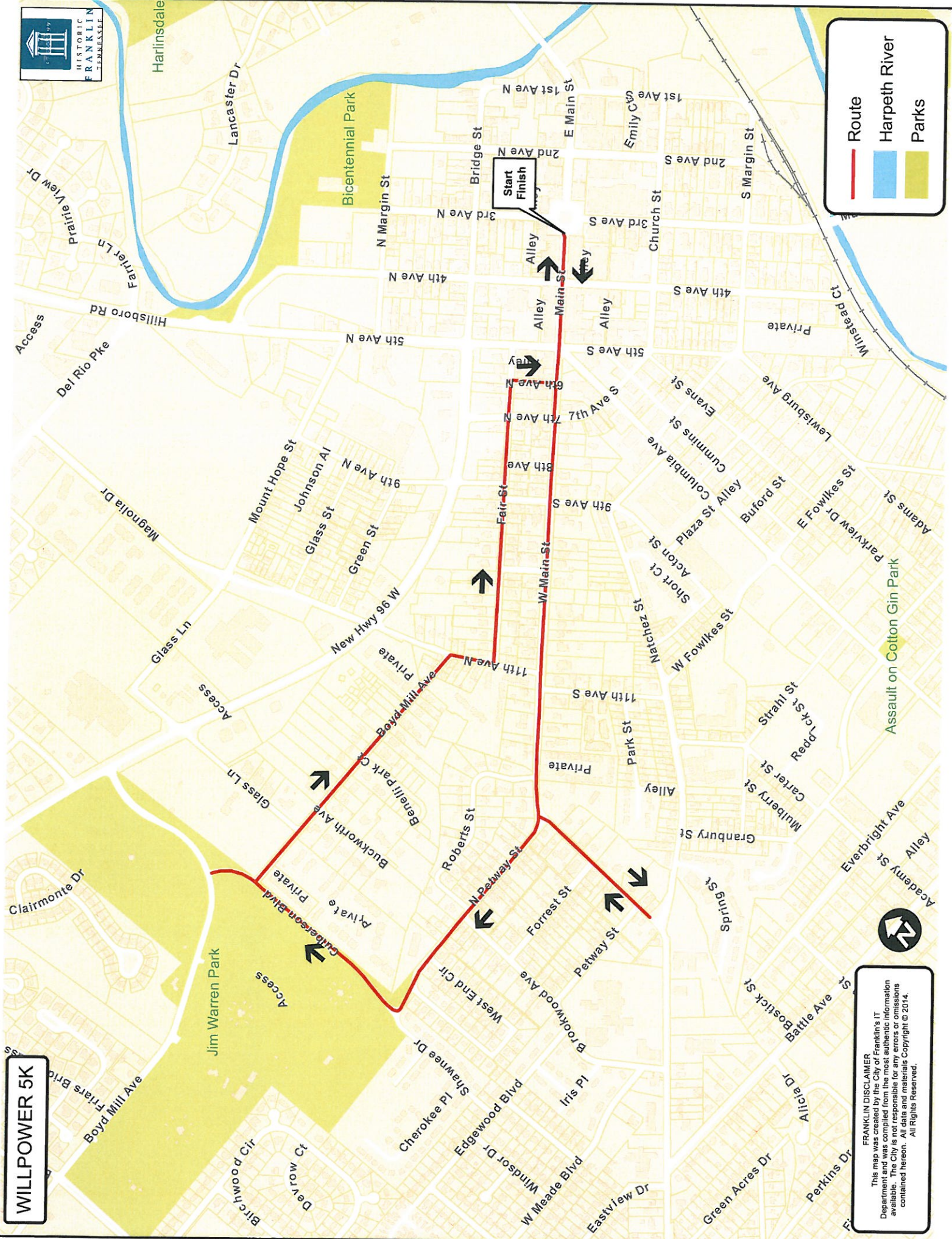
Approved by the Board of Mayor and Aldermen on _____, 20__.

Dr. Ken Moore, Mayor

Eric S. Stuckey, City Administrator

If you have questions concerning your request, please call 615-550-6606.

*
* **Return application to:** *
* City Administrator's Office *
* City Hall *
* 109 Third Ave South *
* Franklin, TN 37065 *
* 615-791-3217 *
* 615-790-0469 (FAX) *
*



Harpeth River

Parks

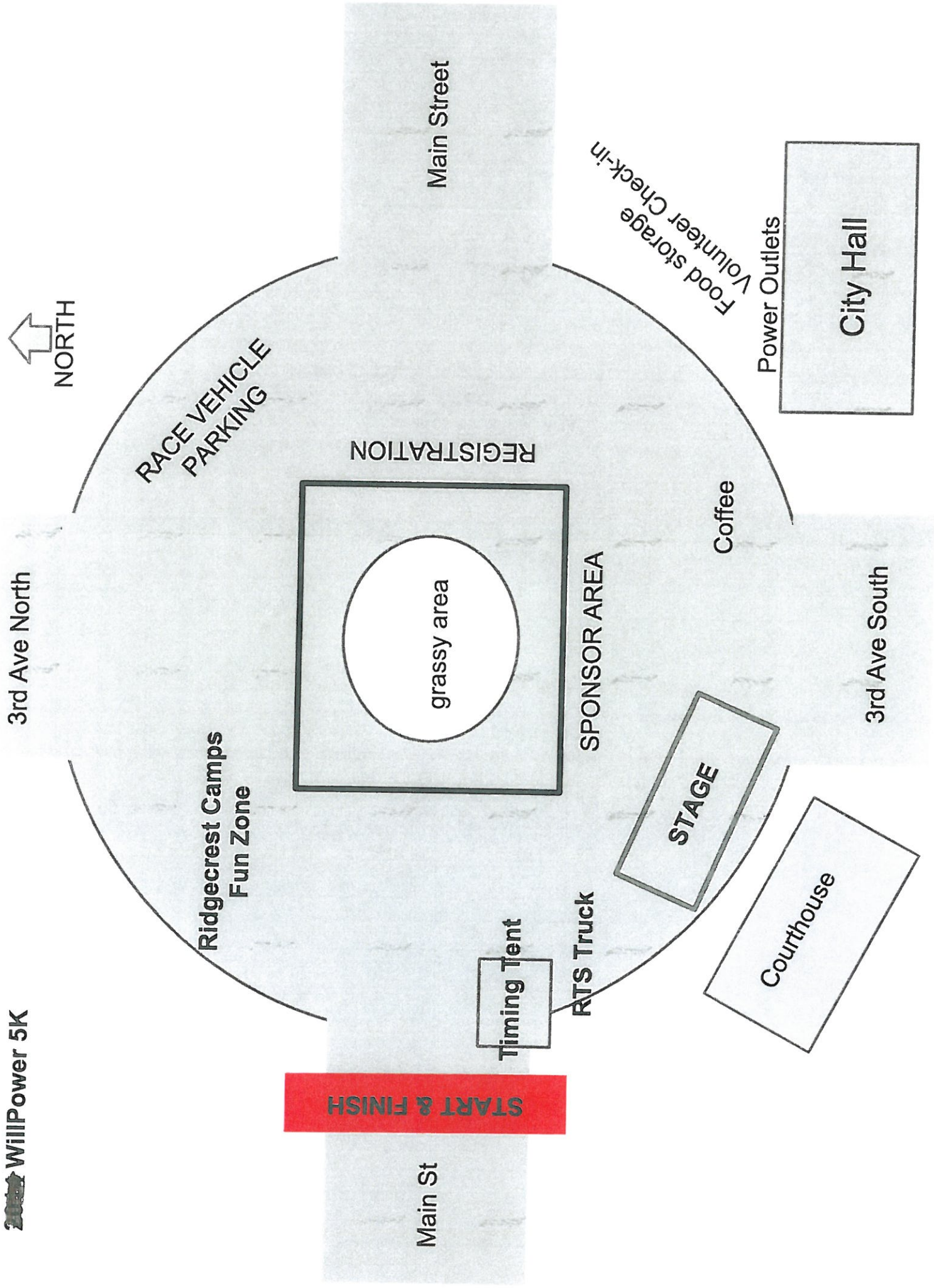
Route

Start Finish

Willpower 5K

FRANKLIN DISCLAIMER
This map was created by the City of Franklin's IT Department and was compiled from the most authentic information available. The City is not responsible for any errors or omissions contained herein.
All data and materials Copyright © 2014.
All Rights Reserved.

[illegible]



WILLPOWER 5K



FRANKLIN DISCLAIMER
This map was created by the City of Franklin's IT Department and was compiled from the most authentic information available. The City is not responsible for any errors or omissions contained hereon. All data and materials Copyright © 2017. All Rights Reserved.

-  Route
 Harpeth River
 Parks

Permit No: _____

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EVENT PERMIT APPLICATION

*Application is Due 90 Days Prior to Scheduled Event.
Please read application carefully and fully complete each section.
A non-refundable application fee of \$100 is due at time of filing.*

Note: Filing this application does not guarantee that your request will be granted.

Please check
all that apply:☐ street closure☐ parade☒ other special event☒ beer served (*separate permit required*)

Please supply the following information. For additional space, use separate sheets of paper and attach to the application.

1) Location requested (if Temporary Street Closure only, list major roads to be closed):

____ Aspen Grove Park

____ Liberty Park

☒ Eastern Flank Battlefield Park

____ Fieldstone Farms

____ Pinkerton Park

____ Jim Warren Park

____ Harlinsdale Farm

Other: _____

2) Name/purpose of event: The Heritage Ball3) Date or dates of event: Saturday, September 16, 20174) Time of Event: 6:00PM - Midnight5) Time of Street Closure (if applicable): N/A

Set-Up Date/Time: _____

Tear-down Date/Time: _____

*Note: Two (2) hours will be added before set-up time and two hours (2) will be added after tear-down to allow time for clean-up. Event is responsible for payment of Franklin Police Officers during this time. Read Additional Requirements section for more information.

6) Name of Applicant and Organization Requesting Permit:

Lynne McAlister @ The Heritage Foundation of Franklin; Williamson County

a) Address: 112 Bridge Street, Franklin TN 37064b) Phone: 615-591-8500 c) Cell: 919.449.4232 d) Fax: _____e) E-mail address: L.McAlister@HistoricFranklin.com7) Person in charge on day of event: Lynne McAlister

Cell: 919.449.4232 E-mail address: L.McAlister@HistoricFranklin.com



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TENNESSEE

- 8) Name and Cell Number of at least two others available on day of event:

Name: Linda Childs Cell: 615.678.2171 E-mail address: LChilds@HistoricFranklin.com

Name: Wendy Dunavant Cell: 615.715.7313 E-mail address: WDunavant@HistoricFranklin.com
Terry O'Connor

- 9) DETAILED description of event (use additional sheets):

Please see attached "Detailed Description"

- 10) **ENCLOSE A DETAILED MAP** of event site, detailing any temporary or permanent structures, street closures, parking, etc. If applicable, list the location, blocks, streets, and/or intersections in which such event will occur. **For large-scale events, map should be obtained from the City's GIS division.** Please see attached.

- 11) An estimated number of participants and an estimated number of attendees expected to attend during the course of the event:

700 guests, 30 catering staff, 70 servers, 25 volunteers
App. Total 825 people

- 12) **Please attach a list** containing the names, addresses, and phone numbers of the Chairperson of the organization and all other persons involved in the management or control of organization and/or committee.

- 13) Is your organization based in Williamson County? Circle Yes or No
(if no, please state where: _____)

- 14) Is your organization authorized to do business in Tennessee? Circle Yes or No

- 15) Is your organization a tax-exempt organization as described by the Internal Revenue Code Section 501(c)(3) or a not-for-profit organization? Circle Yes or No. If yes, please attach copy of IRS tax exemption letter providing proof of status.

- 16) Will you charge an admission/participation fee (including vendors)? If yes, please specify how much per person/vendor. Yes. Guests will pay \$375⁰⁰ / person.

- 17) Will any charity, gratuity, or offers be solicited or accepted during the event? Circle Yes or No.

- 18) Is this event a fundraiser? Circle Yes or No. If yes, what organization will be benefactor of event? What percentage of funds will they receive? The Heritage Foundation of Franklin and Williamson County; all funds after expenses.

- 19) Will parking in the area of the event need to be restricted or prohibited? Circle Yes or No.



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- 20) Will any sound amplification equipment be used during the event? Circle Yes or No. If no, please skip to Question #22.
- 21) For what purpose will sound amplification be used (i.e. announcements, entertainment, etc.)?
Announcements. Awards. Dance Music
- 22) What type of sound amplification will be provided (DJ, Band, etc.)? Please list all that apply.
Band, microphones with speakers
- 23) During what time period is sound amplification requested? 6:00 PM - 12:00 Midnight
- 24) If for entertainment, give details of entertainment being provided (i.e. number of musicians, type of music, amp wattage, etc.). The band has not been chosen, however, for the last two years it was a 10 piece band. Last year a D80 Amplifier was used. It will be similar in 2017.
- 25) Will any stages, amusement attractions, or amusement rides, including inflatables, be erected for the event? Circle Yes or No. If yes, Applicant must give specific details as to the location and type of games/activities, i.e. inflatables, Horseshoes, relay races, etc. along with the name of the company providing the stages and/or activities. Applicant must also include a copy of that company's insurance certificate indicating coverage and listing the City of Franklin as additional insured. ***For stages, tents, inflatables, etc. constructed on site prior to the event, that date must be included on Certificate of Insurance provided to the City of Franklin. Stages MUST be removed from site at end of event. ***Rented inflatables/interactives that are set-up and manned by applicant must be included specifically in applicant's Certificate of Insurance.
- 26) What, if any, vendors will be present at event? (i.e medical related, shirts, arts, etc.) Please provide detailed list. Use additional sheets. NO
- 27) Will food, beverages, or merchandise be sold or given away? Circle Yes or No. If yes, clean-up is required. Please provide name of clean-up provider, contact, and phone number of person on-site during event. See Question #28. Dinner is served at the event. Caterers (Hbd) will provide initial clean-up on the evening of the event. Volunteers and staff follow-up the following morning. Lynne McMaster 919.449.4232.
- 28) Events under 200 participants require a \$250 refundable security deposit at the time of approval. For events over 200, a \$1000 security deposit is required upon approval. If clean-up is not done properly, the organization requesting the permit will be fined (See Attachment A). Applicant's event coordinator or representative and a City of Franklin representative will conduct a Pre-Event meeting prior to event date for Pre-Event Check List Site Review. At the end of the event, a Post-Event Check List shall be completed by the Applicant's event coordinator, or representative, and a City of Franklin representative to re-assess the site for trash and damage, and to secure with caution tape and signage (provided by event group) any tents left for removal. Damage deposit will be refunded after a satisfactory Post Event Check List has been completed and signed off on by both the City of Franklin and organization requesting event.

- 29) ***NOTE:** Events that include deep frying cooking oil operations are required to have a grease pit on-site and contract with a grease waste hauler to handle the grease waste and removal of the grease pit. A copy of this agreement shall be filed along with this application. The primary event sponsor is required to remove all cooking grease from the site immediately after the event. Illegal dumping of cooking grease will be prosecuted. *Please read Additional Requirements section of this application for more information.*
- 30) Will you require a temporary water tap? Circle Yes or No. If yes, please list exact locations:

- 31) Will alcohol, beer, and/or wine be given away or sold? Circle Yes or No. If yes, a permit from the relevant board is required. *Please read Additional Requirements section of this application for more information.*
- 32) Will your event include tents or other temporary structures, propane use, or open flames? Circle yes or no. Events using tents of size 20 x 10 or larger require permitting from Franklin Fire Department. Safety measures must be provided on all tents, especially those set-up prior to the actual event. Tents should be taken down the date the event has ended. *Please read Additional Requirements section of this application for more information.*
- 33) Attach Good Neighbor Letter and Mailing List used. *Please read Additional Requirements section of this application for more information.*

TITLE VI OF THE 1964 CIVIL RIGHTS ACT

"No person in the United States shall, on the ground of race, color, or national origin be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving federal financial assistance."

The City of Franklin does not discriminate based on race, color or national origin in federal or state sponsored programs, pursuant to Title VI of the Civil Rights Acts of 1964 (42 U.S.C. 2000d). For more information or to file a complaint against the City of Franklin under Title VI of the 1964 Civil Rights Act, contact the Title VI Coordinator:

Risk Manager
City of Franklin
109 Third Avenue South
Franklin, Tennessee 37064
615.791.3277

The City of Franklin is committed to providing reasonable access and accommodations upon request for people with disabilities. Please call the Risk Management Department at (615)791-3277 for specific requests.



HISTORIC
FRANKLIN
TENNESSEE

**PLEASE READ ATTACHMENTS BEFORE SIGNING
APPLICATION.**

- 1) I/We agree to abide by all ordinances and regulations of the City of Franklin and all conditions placed upon the event by the City Administrator and the Board of Mayor and Aldermen.
- 2) I/We do swear or affirm that all of the information given in this application is true and complete.
- 3) I/We do hereby agree to assume the defense of and indemnify and save harmless the City, its aldermen, boards, commissions, officers, employees and agents, from all suits, actions, damages or claims to which the City may be subjected of any kind or nature whatsoever resulting from, caused by, arising out of or as a consequence of such event and the activities permitted in connection there with, and to submit a certificate of insurance prior to the event in an amount acceptable to the City Administrator.
- 4) I/We agree to provide a copy of this signed Event Application to any vendors, planners, and related parties associated with the event to ensure they are familiar with the guidelines set forth herein.
- 5) I/We understand that I/we assume the responsibility of the actions of any vendors, planners, and related parties for this event.
- 6) I/We understand that granting of Special Event Permit does not imply granting of other permit that is separately required.
- 7) The application for an event permit shall be filed not less than 90 days nor more than 364 days prior to the scheduled date of such event. Suggested filing is at least 180 days prior to scheduled event. Events should not be advertised or promoted until an event permit has been obtained from the City. Failure to file in a timely manner may result in denial of a permit.
- 8) The City reserves the right to require one or more City of Franklin police officers or other emergency personnel be present at any and all events that occur within the city limits. Please budget for this request at a rate of \$30 per hour at a minimum of two (2) hours.

BY: [Signature] Exec. Director Date: 11/29/16
(Signature and title – must be officer of organization)

Approved by the Board of Mayor and Aldermen on _____, 20__.

Dr. Ken Moore, Mayor

Eric S. Stuckey, City Administrator

If you have questions concerning your request, please call 615-550-6606.

★
★ **Return application to:** ★
★ City Administrator's Office ★
★ City Hall ★
★ 109 Third Ave South ★
★ Franklin, TN 37065 ★
★ 615-791-3217 ★
★ 615-790-0469 (FAX) ★
★
★

Detailed Description

The Heritage Ball is the primary fundraiser for the Heritage Foundation of Franklin and Williamson County. This will be the 44th Annual Heritage Ball.

The event is held under very large (100' x 140' and 60' x 100') tents.

The evening begins at 6:00PM with cocktails. A sit-down dinner is served at 7:45PM. There is a recognition and awards program followed by dancing with live music until 12:00AM.

If history is an indication, there will be about 700 guests, 30 from the catering staff, 70 servers, 25 volunteers and 7 very weary Heritage Foundation members of staff.

Question #9 Detailed Description

The Heritage Ball is the primary fundraiser for the Heritage Foundation of Franklin and Williamson County. This will be the 44th Annual Heritage Ball.

The event is held under very large (100' x 140' and 60' x 100') tents.

The evening begins at 6:00PM with cocktails. A sit-down dinner is served at 7:45PM. There is a recognition and awards program followed by dancing with live music until 12:00AM.

If history is an indication, there will be about 700 guests plus 30 from the catering staff, 70 servers, 25 volunteers and 7 very weary Heritage Foundation members of staff.

Question #10 - Map

Heritage Ball 2016



Question #12

- I. The Chairperson is not known at this time. They will be chosen by the end of January 2017.
- II. Staff that will be involved:
 - A. Lynne McAlister, 723 Fair Street, Franklin TN 37064 ◇ 615-591-8500 ext. 112
 - B. Linda Childs, 525 Brixham Park Drive, Franklin TN 37069 ◇ 615-591-8500 ext. 116
 - C. Kristy Williams, 4910 Maymanor Circle, Nashville TN 37205 ◇ 615-591-8500 ext. 118
- III. Heritage Foundation Board Members involved with the ball
 - A. Julian Bibb, 918 Fair Street, Franklin TN 37064 ◇ 615-791-9181
 - B. David Garrett, 4329 Columbia Pike, Franklin TN 37064 ◇ 615-244-4270

Question # 15 - IRS tax exemption

N0003101

6161728150615



TENNESSEE DEPARTMENT OF REVENUE

SALES AND USE TAX CERTIFICATE OF EXEMPTION

HERITAGE FOUNDATION OF FRANKLIN & W
PO BOX 723
FRANKLIN TN 37065-0723

Effective Date: July 1, 2015
Exemption Number: 100091394
Expiration Date: June 30, 2019
209 E MAIN ST
FRANKLIN TN 37064-2517

The Tennessee Department of Revenue has issued a tax-exemption number for the educational, religious, historical, or charitable non-profit organization or institution named above. State law (Tenn. Code Ann. § 67-6-322) gives the Department the authority to allow this organization to make tax-exempt purchases of goods and services that it will use, consume or give away. This authorization for exemption does not extend to sales tax that the organization must collect or pay on its regular sales of goods or taxable services.

This authorization for exemption is limited to sales made directly to the above named organization. This certificate may not be used for sales made to individuals paying with personal checks or personal debit or credit cards, even if the individual is a representative or employee of the above named organization, and he or she will be reimbursed for the purchase. Sellers must refuse to accept the certificate when the sale is made to someone other than the above named organization.

The organization must furnish its suppliers of goods and services with a copy of this certificate. The lower portion of the certificate must be properly completed. The organization must retain the original certificate for copy purposes. The supplier will maintain a file copy as evidence of the exempt sale to the organization. Later purchases made before the expiration date do not require the submission of additional copies.

The organization must notify the Department immediately if it ceases to exist or if its location or mailing address changes.

Richard H. Roberts
Commissioner of Revenue

To Be Completed by the Organization

TO: Supplier's Name _____

Address _____

City _____ State _____ Zip _____

I, _____, as an authorized representative of the organization named above, affirm that the purchases made under this authority will be used and consumed by the organization or will be given away.

Under penalty of perjury, I affirm this to be a true and correct statement.

Print Name of Organization _____

Print Name of Purchaser _____

Signature of Purchaser _____ Date _____

Internal Revenue Service

Department of the Treasury

P. O. Box 2508
Cincinnati, OH 45201

Date: March 19, 2001

Person to Contact:
Richard Owens 31-00913
Customer Service Representative
Toll Free Telephone Number:
8:00 a.m. to 9:30 p.m. EST
877-829-5500
Fax Number:
513-263-3756
Federal Identification Number:
23-7042596

Heritage Foundation of Franklin and Williamson
County Tennessee
% Mary Shearer Pearce
PO Box 723
Franklin, TN 37065

Dear Sir or Madam:

This letter is in response to your request for a copy of your organization's determination letter. This letter will take the place of the copy you requested.

Our records indicate that a determination letter issued in April 1970, granted your organization exemption from federal income tax under section 501(c)(3) of the Internal Revenue Code. That letter is still in effect.

Based on information subsequently submitted, we classified your organization as one that is not a private foundation within the meaning of section 509(a) of the Code because it is an organization described in section 509(a)(2).

This classification was based on the assumption that your organization's operations would continue as stated in the application. If your organization's sources of support, or its character, method of operations, or purposes have changed, please let us know so we can consider the effect of the change on the exempt status and foundation status of your organization.

Your organization is required to file Form 990, Return of Organization Exempt from Income Tax, only if its gross receipts each year are normally more than \$25,000. If a return is required, it must be filed by the 15th day of the fifth month after the end of the organization's annual accounting period. The law imposes a penalty of \$20 a day, up to a maximum of \$10,000, when a return is filed late, unless there is reasonable cause for the delay.

All exempt organizations (unless specifically excluded) are liable for taxes under the Federal Insurance Contributions Act (social security taxes) on remuneration of \$100 or more paid to each employee during a calendar year. Your organization is not liable for the tax imposed under the Federal Unemployment Tax Act (FUTA).

Organizations that are not private foundations are not subject to the excise taxes under Chapter 42 of the Code. However, these organizations are not automatically exempt from other federal excise taxes.

Donors may deduct contributions to your organization as provided in section 170 of the Code. Bequests, legacies, devises, transfers, or gifts to your organization or for its use are deductible for federal estate and gift tax purposes if they meet the applicable provisions of sections 2055, 2106, and 2522 of the Code.

Heritage Foundation of Franklin and Williamson County Tennessee
23-7042596

Your organization is not required to file federal income tax returns unless it is subject to the tax on unrelated business income under section 511 of the Code. If your organization is subject to this tax, it must file an income tax return on the Form 990-T, Exempt Organization Business Income Tax Return. In this letter, we are not determining whether any of your organization's present or proposed activities are unrelated trade or business as defined in section 513 of the Code.

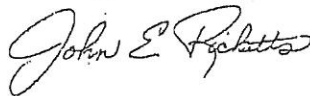
The law requires you to make your organization's annual return available for public inspection without charge for three years after the due date of the return. If your organization had a copy of its application for recognition of exemption on July 15, 1987, it is also required to make available for public inspection a copy of the exemption application, any supporting documents and the exemption letter to any individual who requests such documents in person or in writing. You can charge only a reasonable fee for reproduction and actual postage costs for the copied materials. The law does not require you to provide copies of public inspection documents that are widely available, such as by posting them on the Internet (World Wide Web). You may be liable for a penalty of \$20 a day for each day you do not make these documents available for public inspection (up to a maximum of \$10,000 in the case of an annual return).

Because this letter could help resolve any questions about your organization's exempt status and foundation status, you should keep it with the organization's permanent records.

If you have any questions, please call us at the telephone number shown in the heading of this letter.

This letter affirms your organization's exempt status.

Sincerely,

A handwritten signature in cursive script, reading "John E. Ricketts".

John E. Ricketts, Director, TE/GE
Customer Account Services

25 Question - Certificate of Insurance



CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY)

2/22/2016

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

IMPORTANT: If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

PRODUCER Full Service Insurance Agency, Inc 903 Murfreesboro Rd. Franklin TN 37064		CONTACT NAME: Damara Puckett PHONE (A/C, No. Ext): (615) 790-0990 FAX (A/C, No): (615) 791-4641 E-MAIL ADDRESS: dpuckett@fullserviceins.com	
INSURED Heritage Foundation Of Franklin & Williamson County Po Box 723 Franklin TN 37065-0723		INSURER(S) AFFORDING COVERAGE INSURER A: Cincinnati Insurance Company NAIC # 10677 INSURER B: Cincinnati Indemnity Co. 23280 INSURER C: INSURER D: INSURER E: INSURER F:	

COVERAGES**CERTIFICATE NUMBER:** CL1621903003**REVISION NUMBER:**

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSR LTR	TYPE OF INSURANCE	ADDL INSD	SUBR WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS
A	☒ COMMERCIAL GENERAL LIABILITY ☐ CLAIMS-MADE ☒ OCCUR GEN'L AGGREGATE LIMIT APPLIES PER: ☒ POLICY ☐ PROJECT ☐ LOC OTHER:	X		EPP 0299515	1/1/2016	1/1/2017	EACH OCCURRENCE \$ 1,000,000 DAMAGE TO RENTED PREMISES (Ea occurrence) \$ 100,000 MED EXP (Any one person) \$ 5,000 PERSONAL & ADV INJURY \$ 1,000,000 GENERAL AGGREGATE \$ 2,000,000 PRODUCTS - COMP/OP AGG \$ 2,000,000 Liquor Liability \$ 1,000,000
	☐ AUTOMOBILE LIABILITY ☐ ANY AUTO ☐ ALL OWNED AUTOS ☐ HIRED AUTOS ☐ SCHEDULED AUTOS ☐ NON-OWNED AUTOS						COMBINED SINGLE LIMIT (Ea accident) \$ BODILY INJURY (Per person) \$ BODILY INJURY (Per accident) \$ PROPERTY DAMAGE (Per accident) \$ \$
A	☒ UMBRELLA LIAB ☒ EXCESS LIAB ☐ CLAIMS-MADE DED ☒ RETENTION \$ 0			EPP 0299515	1/1/2016	1/1/2017	EACH OCCURRENCE \$ 5,000,000 AGGREGATE \$ 5,000,000 \$
	☐ WORKERS COMPENSATION AND EMPLOYERS' LIABILITY ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? (Mandatory in NH) If yes, describe under DESCRIPTION OF OPERATIONS below						PER STATUTE ☒ OTH-ER ☐ E.L. EACH ACCIDENT \$ 100,000 E.L. DISEASE - EA EMPLOYEE \$ 100,000 E.L. DISEASE - POLICY LIMIT \$ 500,000
A	LEASE/RENTED EQUIPMENT			EPP 0299515	1/1/2016	1/1/2017	LIMIT \$256,998.25

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (ACORD 101, Additional Remarks Schedule, may be attached if more space is required)

Certificate Holder is additional insured as respects general liability for:

Event- Heritage Ball held in September
at Eastern Flank Battle Field
1368 Eastern Flank Circle
Franklin, TN 37064

CERTIFICATE HOLDER**CANCELLATION**

CITY OF FRANKLIN
P O BOX 305
FRANKLIN, TN 37065-0305

SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.

AUTHORIZED REPRESENTATIVE

Paul Pratt, Jr./JL

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Question #33

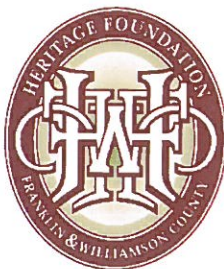
Good Neighbor Letter

Each year Monique McCullough provides a list of addresses.

In 2016 the good neighbor letter was distributed to the residents of:

- Carriage Park
- Heath Place
- Polk Place

Question # 33 (continued)



September ??, 2017

Dear Neighbors of Carnton Plantation,

This letter is coming to you and your neighbors because of the proximity of your home to the Eastern Flank Battlefield and thereby The 44th Annual Heritage Ball which will be Saturday, September 16th.

Many of you are very familiar with the Heritage Foundation, and are members because you understand the positive impact of the Heritage Foundation in the community. Thank you.

For those of you unacquainted with the Heritage Foundation, the mission of the Foundation is to preserve and protect Downtown Franklin and Williamson County's countryside within the context of economic growth. This organization began 50 years ago, after the Corn House, a 19th Century home on the corner of 5th Avenue and Bridge Street was razed to build a gas station. Immediately after, a group of determined and frustrated citizens met to organize and Franklin's future was forever changed.

This year, as the Heritage Foundation celebrates 50 years, we look back on many of the accomplishments including acquiring the designation of National Historic Registration for the original 16 blocks, street scape for Main Street, conservation of hundreds of acres of countryside, saving and revitalizing the Franklin Theatre and the Old, Old Jail plus bringing hundreds of thousands of people to Main Street Festival, Pumpkinfest, Dickens of a Christmas and the monthly Art Scene.

September 16th will see the 44rd Annual Heritage Ball on the Eastern Flank Battlefield. The event will begin at 6:00 pm and conclude at midnight. The gala plays a major role in supporting The Heritage Foundation's mission of preservation as well underwrite the costs of working year round to make Franklin and Williamson County the special place that it is.

So, I'd like to invite you to attend the longest running black tie affair in Williamson County. If you have not received an invitation, please call 615-591-8500 or email me at lmcalister@historicfranklin.com and I'll gladly send you one. If that's not your cup of tea, then I'd beg your patience, as music will be played until midnight at this once-a-year event.

Thank you again for your understanding and forbearance.

Sincerely,

Lynne

Lynne McAlister
Event Director

Eric Stuckey, City Administrator,
Franklin City Hall, 109 3rd Ave S #103,
Franklin, TN 37064

615.791.3217

HERITAGE BALL



Cigar Porch

Generator

AV

30x80 Cook

Break Down

20x50 Restrooms

Ice Box

Drinks

60x200 Cocktail Tent

100x140 Dinner Tent

20x20

Valet Parking

Carnton Ln

Eastern Flank Cir

FRANKLIN DISCLAIMER
This map was created by the City of Franklin's IT Department and was compiled from the most authentic information available. The City is not responsible for any errors or omissions contained hereon. All data and materials Copyright © 2017. All Rights Reserved.

● Hydrants
□ Tents/Areas



HISTORIC
FRANKLIN
TENNESSEE

RETAILER'S CERTIFICATE

Pursuant to T.C.A. §57-3-208, the City of Franklin hereby certifies the following facts concerning application in the name of West Main Street Liquors, owned by the managing agent, Jose Arredondo, who has made application for a retailer's license to handle alcoholic beverages at 1326 West Main, Franklin, TN 37064, which is within the corporate limits of the City of Franklin, Williamson County, Tennessee:

1. The owner(s) who are to be in actual charge of the business have not been convicted of any violation of the laws against possession, sale, manufacture, or transportation of beer or other alcoholic beverages, or of any felony, or of any crime involving moral turpitude, within the past ten (10) years immediately preceding the date of application, and will not violate any of the provisions of Tennessee Code Annotated, Title 57, Chapter 3;
2. The applicant(s) has secured a location for the business which complies with all restrictions of local law, ordinances, or resolutions, duly adopted by the local authorities as to location.
3. The applicant (by and through one or more of its owners) meets all residency requirements established by local authority under Franklin Municipal Code Section 2-108A.
4. The applicant has complied with local laws, ordinances, and resolutions duly adopted by the local authority regulating the number of retail licenses to be issued within the jurisdiction.

This, the 28th Day of February, 2017.

Dr. Ken Moore
Mayor



HISTORIC
FRANKLIN
TENNESSEE

**RETAILER'S CERTIFICATE
(RENEWAL)**

Pursuant to T.C.A. §57-3-208, the City of Franklin hereby certifies the following facts concerning Thomas Michael Klaritch, who has made application for a retailer's license to handle alcoholic beverages at, Case Selects Wines and Liquors, LLC, 3046 Columbia Avenue, Franklin, Tennessee 37064, which is within the corporate limits of the City of Franklin, Williamson County, Tennessee:

1. The applicant or applicants who are to be in actual charge of the business have not been convicted of a felony within a ten year period immediately preceding the date of application, and will not violate any of the provisions of Tennessee Code Annotated, Title 57, Chapter 3.
2. The applicant(s) has secured a location for the business which complies with all restrictions of local law, ordinance, or resolution, duly adopted by the local authorities as to location.
3. The applicant(s) meets all residency requirements established by local authority under Franklin Municipal Code Section 2-108A.
4. The applicant(s) has complied with local laws, ordinances, and resolutions duly adopted by the local authority regulating the number of retail licenses to be issued within the jurisdiction.

This the 28th day of February, 2017.

CITY OF FRANKLIN, TENNESSEE

Dr. Ken Moore
MAYOR



HISTORIC
FRANKLIN
TENNESSEE

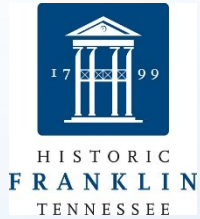
RETAILER'S CERTIFICATE

Pursuant to T.C.A. §57-3-208, the City of Franklin hereby certifies the following facts concerning applicant HolBev, LLC d/b/a Holiday Cigars & Spirits (Alpesh Patel), who has made application for a retailer's license to handle alcoholic beverages at 108 N. Royal Oaks Boulevard, which is within the corporate limits of the City of Franklin, Williamson County, Tennessee:

1. The owner who is to be in actual charge of the business has not been convicted of any violation of the laws against possession, sale, manufacture, or transportation of beer or other alcoholic beverages, or of any felony, or of any crime involving moral turpitude, within the past ten (10) years immediately preceding the date of application, and will not violate any of the provisions of Tennessee Code Annotated, Title 57, Chapter 3;
2. The applicant(s) has secured a location for the business which complies with all restrictions of local law, ordinances, or resolutions, duly adopted by the local authorities as to location.
3. The applicant (by and through one or more of its owners) meets all residency requirements established by local authority under Franklin Municipal Code Section 2-108A.
4. The applicant has complied with local laws, ordinances, and resolutions duly adopted by the local authority regulating the number of retail licenses to be issued within the jurisdiction.

This the 28th Day of February, 2017.

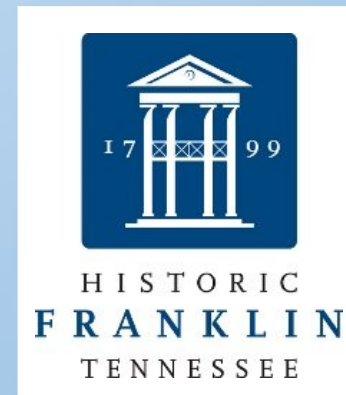
Dr. Ken Moore, Mayor



City of Franklin, Tennessee **Citizen Survey**

2016 Franklin Citizen Survey Results

THE NCSTM
The National Citizen SurveyTM



January 24, 2017



City of Franklin, Tennessee **Citizen Survey**

Outline

- Survey Methodology
- Survey Results
- Survey Comparables
 - *FranklinForward* Questions
 - 2012 ACS Survey
 - National & Custom Benchmarks
- Next Steps



City of Franklin, Tennessee **Citizen Survey**

Survey Methodology

There are seven (7) Report Documents

- NCS Next User Guide
- Dashboard Summary of Findings
- Community Livability Report
- Demographic Subgroup Comparisons
- Supplemental Web Results
- Report of Open-ended Questions
- Technical Appendices

All reports and this presentation are available on our website: <http://www.franklintn.gov/government/finance-administration/the-national-citizen-survey>



City of Franklin, Tennessee **Citizen Survey**

Survey Methodology

- The survey was conducted in two ways – a scientifically valid survey of selected residents and an open web-based survey.
- The scientifically valid survey consisted of 3,000 selected households received three mailings, one week apart, beginning on September 16, 2016.
 - First mailing was a pre-notification postcard announcing the survey.
 - Second mailing contained a letter from the Mayor and City Manager inviting the household to participate, a questionnaire and a postage-paid return envelope.
 - Third and final mailing contained a reminder letter, another survey and a postage-paid return envelope.
- Completed surveys were collected over the following seven weeks.



City of Franklin, Tennessee **Citizen Survey**

Survey Methodology

- About 4% of the 3,000 surveys mailed were returned because the housing unit was vacant or the postal service was unable to deliver the survey as addressed. Of the remaining 2,879 households that received the survey, 1,060 completed the survey, providing an *overall response rate of 37%*. Of the 1,060 completed surveys, 128 were completed online. The national average for survey response rate is around 26%.
- In addition, we also opened the survey up online October 21-November 4. This was open to all individuals City-wide. 324 surveys were received.
- All results shown herein are based on the formal, scientifically valid survey.



City of Franklin, Tennessee **Citizen Survey**

Survey Methodology

- The National Citizen Survey is designed to measure our community's "livability." NCS defines livability as "the sum of the factors that add up to a community's quality of life."
- Staff at NRC examined the extensive research that has been done about community livability and many of the models that have been developed to describe the components of livable communities.
- Eight facets of community livability were distilled from our synthesis of this research: Safety, Mobility, the Natural Environment, the Built Environment, the Economy, Recreation and Wellness, Education and Enrichment and Community Engagement.

City of Franklin, Tennessee

Citizen Survey

Survey Methodology

The Eight Facets of Livable Communities





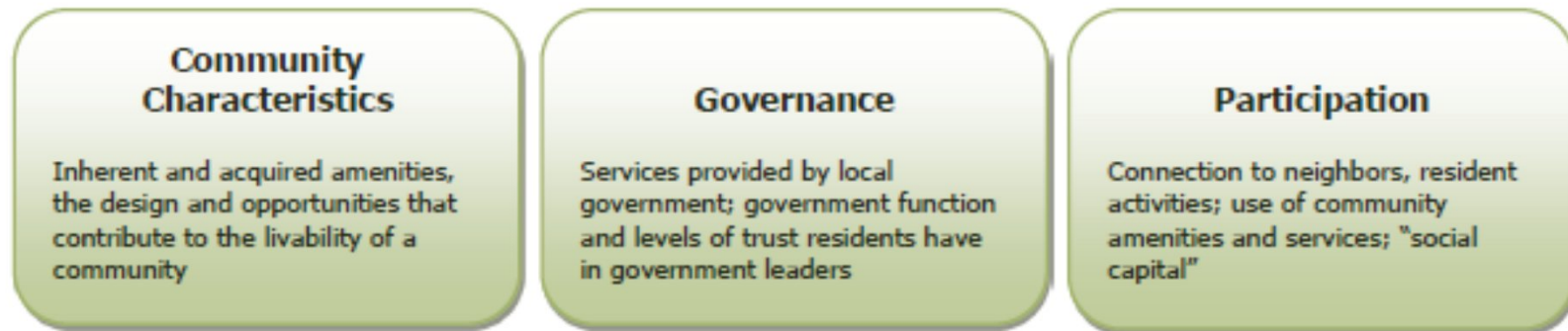
City of Franklin, Tennessee

Citizen Survey

Survey Methodology

- The NCS questionnaire includes individual items that act as indicators of community quality within each of the eight facets – and, split in a different way, they form three “pillars” of community quality: Community Characteristics, Governance and Participation.

The Three Pillars of Livable Communities



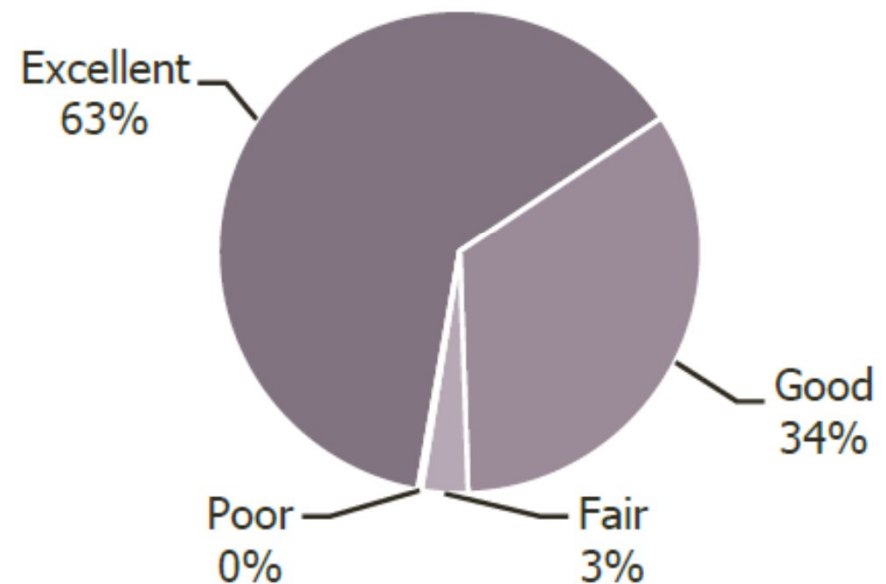


City of Franklin, Tennessee Citizen Survey

Survey Results

- Almost all residents rated the quality of life in Franklin as *excellent or good – 97% combined*
- Rating is higher than quality of life ratings seen in other communities (see Appendix B).
- In fact, compared to national benchmarks (and over 500 other cities participate in this survey), *Franklin ranks 8th in the nation for quality of life.*

Overall Quality of Life





City of Franklin, Tennessee Citizen Survey

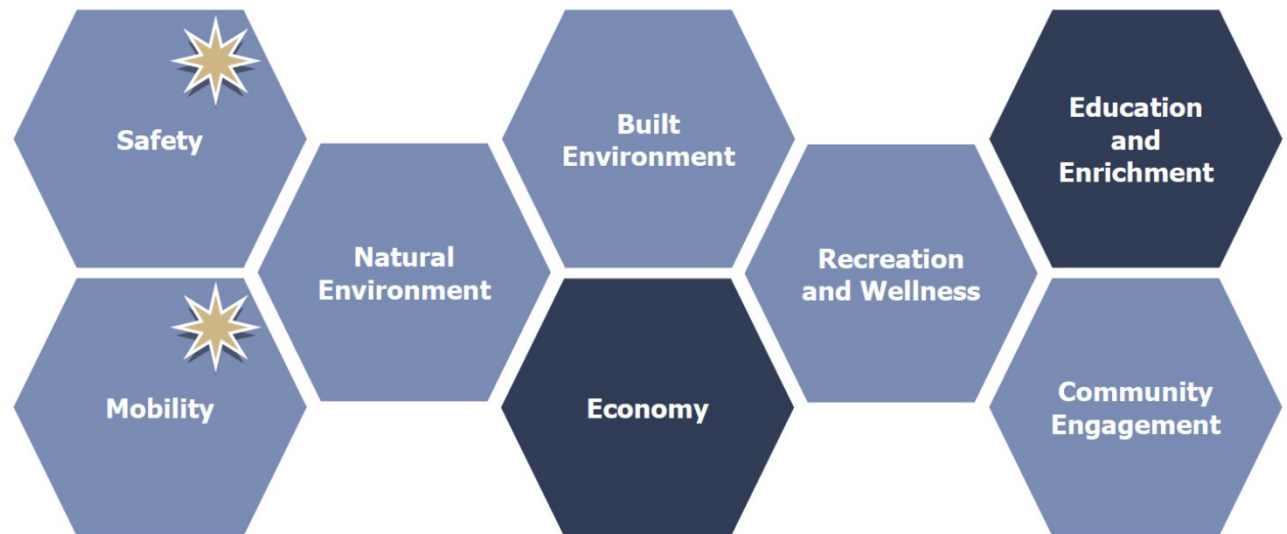
Survey Results

- To the right are the eight facets of community. The City performed similar or above national benchmarks in every one of the eight facets.
- Residents identified Safety and Mobility as priorities for the Franklin community in the coming two years (as denoted by stars)

Legend

- Higher than national benchmark
- Similar to national benchmark
- Lower than national benchmark

- ★ Most important



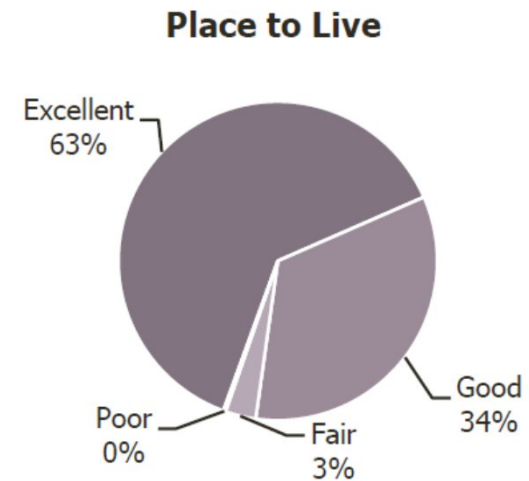


City of Franklin, Tennessee

Citizen Survey

Survey Results

- Community Characteristics, the first pillar, indicates that **97% of residents rate Franklin as Excellent/Good as a Place to Live.**
- Ratings are higher than quality of life ratings seen in other communities (see Appendix B).
- In fact, compared to national benchmarks (and over 500 other cities participate in this survey), **Franklin ranks 13th in the nation for a place to live and 3rd in the nation for overall image and reputation.**



Percent rating positively (e.g., excellent/good)

Comparison to national benchmark

■ Higher ■ Similar ■ Lower



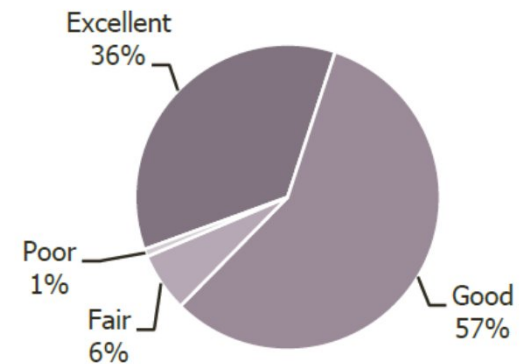


City of Franklin, Tennessee Citizen Survey

Survey Results

- Governance, the second pillar, indicates that **93% of residents rate the overall quality of City Services as Excellent/Good.**
- Services provided by the City were rated by citizens as mostly higher than comparative benchmarks.
- **Franklin ranks 8th in the nation for Overall Confidence in City Government** compared to other cities/jurisdictions.

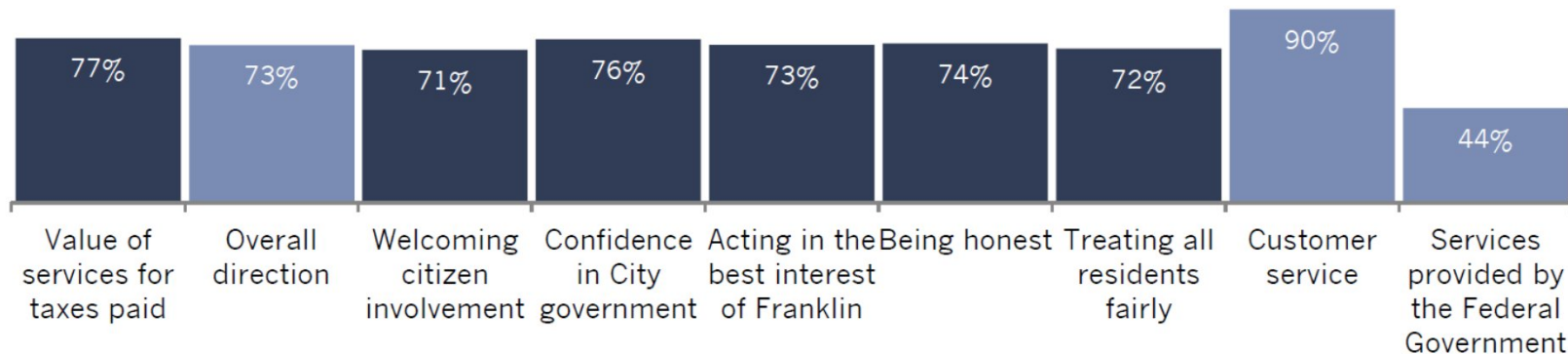
Overall Quality of City Services



Percent rating positively (e.g., excellent/good)

Comparison to national benchmark

■ Higher ■ Similar ■ Lower

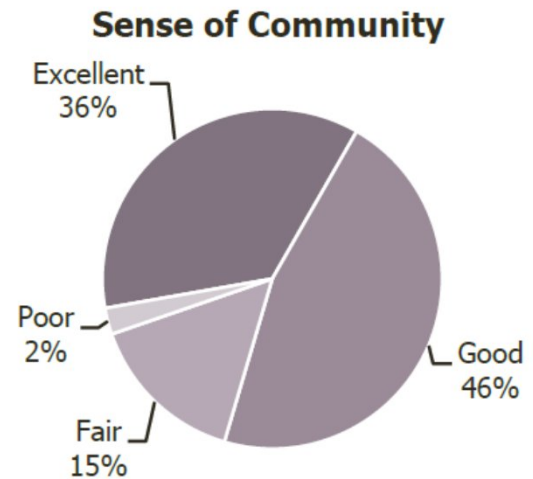




City of Franklin, Tennessee Citizen Survey

Survey Results

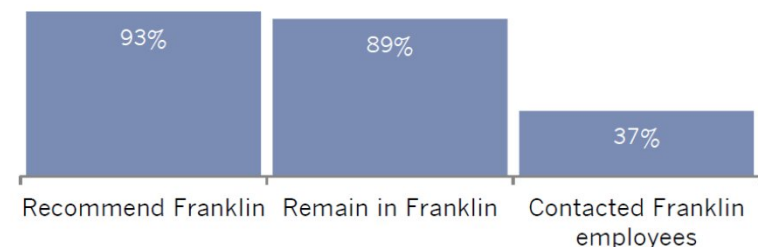
- Participation, the third pillar, indicates that *82% of citizens feel the Sense of Community is either Excellent/Good*.
- This is higher than national and comparative benchmarks.
- Within the Participation pillar, over 30 activities and behaviors were measured, including:
 - 87% of residents indicated they had not reported a crime and 95% had not been the victim of a crime.
 - Less than 1 in 10 said they had used public transportation & 4 in 10 residents reported they had walked or biked instead of driving.
 - 7 in 10 residents indicated they had participated in each aspect of Natural Environment and Built Environment.
 - 2/3 said they had attended a City-sponsored event or participated in religious or spiritual activities, both levels were higher than the benchmark comparison.



Percent rating positively
(e.g., very/somewhat likely,
yes)

Comparison to national
benchmark

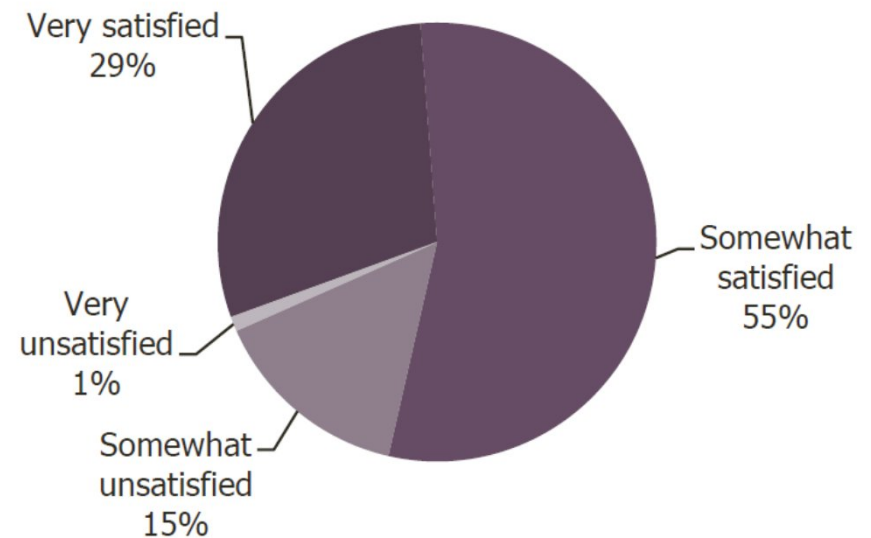
■ Higher ■ Similar ■ Lower



City of Franklin, Tennessee Citizen Survey

Survey Results

- The City asked several unique questions. The first was: Please rate your level of satisfaction with the City of Franklin's management of growth.
- *84% rated their satisfaction of the City's management of growth as either Very or Somewhat Satisfied.*
- The goal set forth in FranklinForward was to have 80% or better of citizens reporting satisfaction with the managed growth of the community.
- Although this is a positive response, it is clearly on citizens minds: 22% used their response to the open-ended question to mention Growth/Crowding – the most frequent written response.





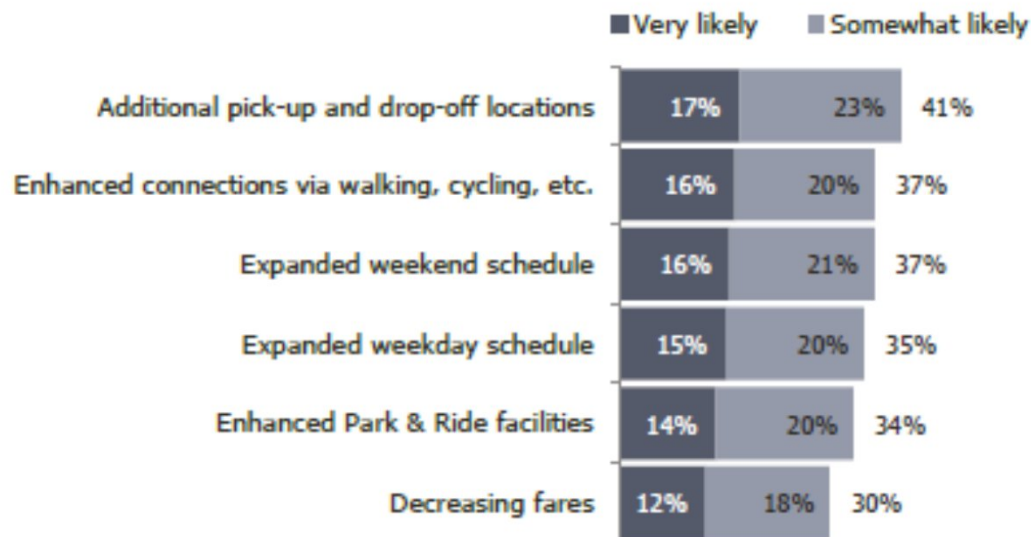
City of Franklin, Tennessee Citizen Survey

Survey Results

- The second non-standard question asked was to determine the level of interest in expansion of mass transit usage.

Figure 5: Mass Transit Usage

Presently the City of Franklin and Williamson County subsidize a limited mass transit route from Spring Hill through the City to Nashville. How likely, if at all, would you be to use this transit route if the following improvements were made?





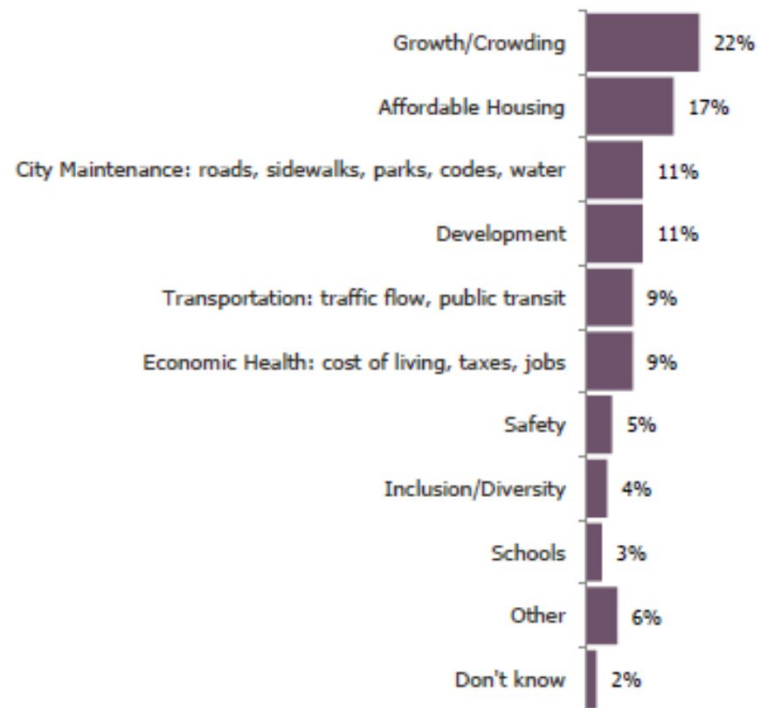
City of Franklin, Tennessee Citizen Survey

Survey Results

- The final question asked was the open-ended question. Residents were asked to state what the most important challenge facing Franklin was today, aside from issues of transportation.
- Growth, Affordable Housing, Development and maintenance of the City were the leading responses.
- Transportation issues were still the fifth most frequent concern.

Figure 6: Most Important Challenge Facing Franklin

Aside from transportation (traffic) related issues, what is the most important challenge or problem facing Franklin today?





City of Franklin, Tennessee **Citizen Survey**

Survey Comparables – 2012 vs. 2016

The last Citizens Survey was conducted in 2012 by Myers Research & Strategic Services and American Strategies Incorporated for Franklin Tomorrow. Some questions were similar between the two surveys:

Are things in the City of Franklin moving in the right direction?
2012 – 82% Right Direction 2016 – 73% Overall Direction



How would you describe the overall Quality of Life in the City?
2012 – 94% Excellent/Good *2016 – 97% Excellent/Good*



How would you rate the job being done by the City Government?
2012 – 83% Excellent/Good *2016 – 89% Excellent/Good*





City of Franklin, Tennessee **Citizen Survey**

Survey Comparables – 2012 vs. 2016

Percent of Franklin residents rating the following issues Excellent:

	2012 Meyers/ACS Survey	2016 NCS Survey
Neighborliness	20%	27%
Economic Opportunity/Jobs	8%	19%
Shopping	8%	50%



City of Franklin, Tennessee Citizen Survey

Survey Comparables – 2012 vs. 2016

Percent of Franklin residents rating the following issues Poor:

	2012 Meyers/ACS Survey	2016 NCS Survey
Cost of Living	15%	20%
Affordable Housing	11%	35%
Transportation/Traffic	16%	29%
Level of Diversity	8%	9%

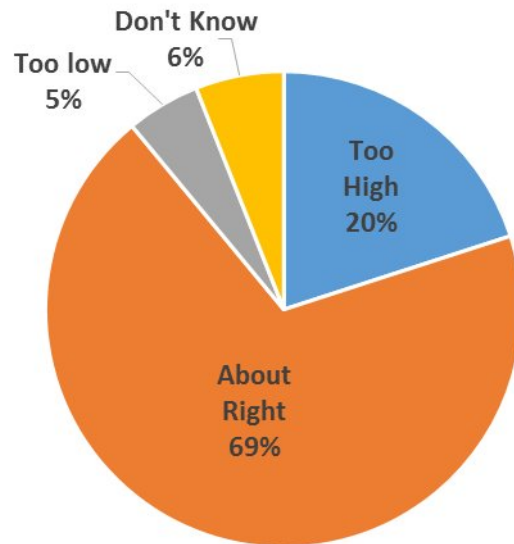


City of Franklin, Tennessee Citizen Survey

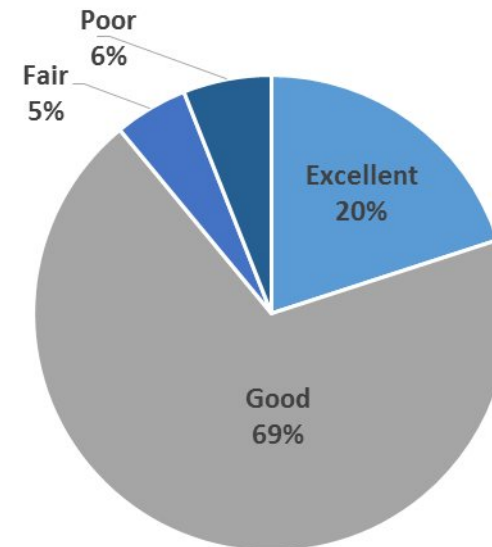
Survey Comparables – 2012 vs. 2016

Taxes: The two surveys asked two different questions regarding taxes. For comparative purposes, both questions and answers are provided below:

2012: “For the services you receive, would you say that property taxes in Franklin are too high, about right, too low?”



2016: “Please rate the following categories of Franklin government performance: The value of services or for the taxes paid to Franklin”



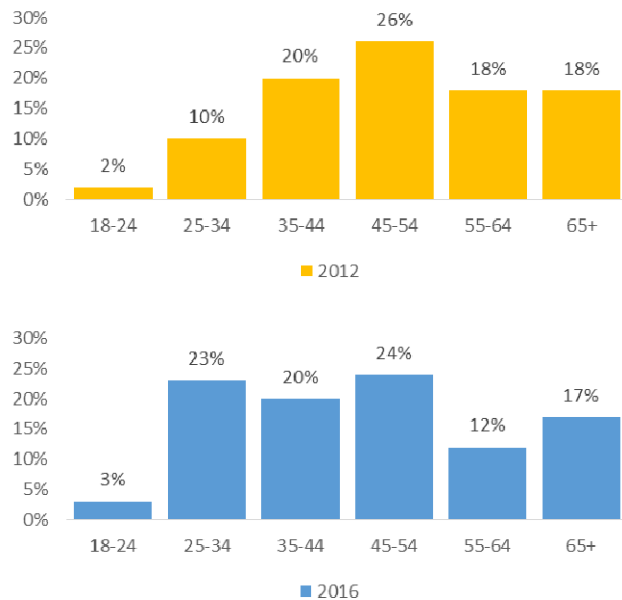


City of Franklin, Tennessee Citizen Survey

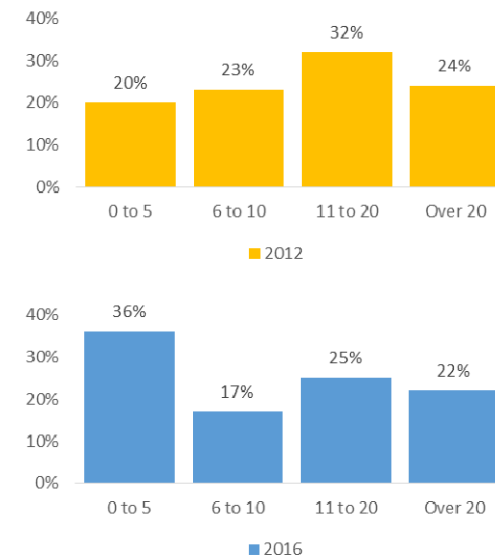
Survey Comparables – 2012 vs. 2016

Demographics: 2016 Survey respondents skewed younger with more renters and less longevity living within Franklin compared to 2012.

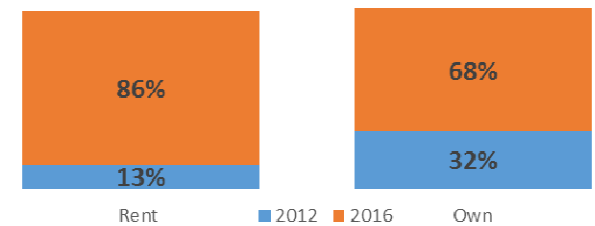
Age



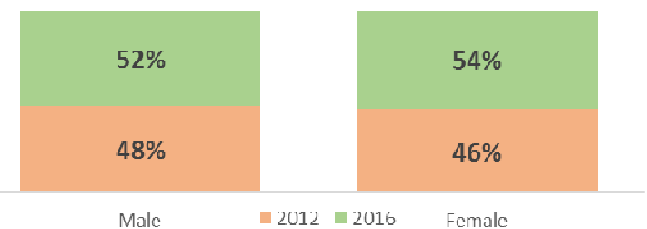
Years Lived in Franklin



Rent vs. Own



Gender





City of Franklin, Tennessee **Citizen Survey**

Survey Comparables

NRC's database of comparative resident opinion is comprised of resident perspectives gathered in surveys from over 500 communities whose residents evaluated the same kinds of topics on The National Citizen Survey™. The comparison evaluations are from the most recent survey completed in each community; most communities conduct surveys every year or in alternating years. The communities in the database represent a wide geographic and population range. The City of Franklin chose to have comparisons made to the entire database and a subset of similar jurisdictions from the database (populations between 50,000 and 80,000).

Benchmark Database Characteristics	
Region	Percent
New England	3%
Middle Atlantic	5%
East North Central	15%
West North Central	13%
South Atlantic	22%
East South Central	3%
West South Central	7%
Mountain	16%
Pacific	16%
Population	Percent
Less than 10,000	10%
10,000 to 24,999	22%
25,000 to 49,999	23%
50,000 to 99,999	22%
100,000 or more	23%



City of Franklin, Tennessee **Citizen Survey**

Survey Comparables:

Notable National Benchmark Comparisons Rankings:

The City of Franklin was much higher than other cities in:

Category	National Rank
Overall image or reputation of Franklin	3 rd
Overall economic health of Franklin	2 nd
Vibrant downtown/commercial area	2 nd
Shopping opportunities	9 th
Employment opportunities	1 st
Franklin as a place to work	16 th
Economic Development	1 st

The City of Franklin was much lower than other cities in:

Category	National Rank
Used bus, rail, subway or other public transportation instead of driving	129 th



City of Franklin, Tennessee **Citizen Survey**

Survey Comparables:

Notable 50,000-80,000 Comparisons Rankings:

Ranked 1st: when compared to Mid-Sized Cities in the following criterion:

- Overall image or reputation of Franklin
- Franklin as a place to retire
- Overall economic health of Franklin
- Vibrant downtown/commercial area
- Employment opportunities
- Franklin as a place to work
- Opportunities to participate in religious or spiritual events and activities
- Opportunities to participate in social events and activities
- City government being honest
- City-sponsored special events



City of Franklin, Tennessee **Citizen Survey**

Next Steps

- Will schedule meetings with Leadership Team members and disseminate detailed information from the survey out to departments for use in their daily operations.
- Will update website with all materials
- Will integrate findings into the City's Open Performance Website
- Will also integrate findings into budget submissions to BOMA during Winter/Spring 2017 for the FY 2018 budget.
- Encourage BOMA members to review the detailed reports, and take citizen survey findings into account when allocating resources during the FY 2018 Budget process.
- Plan to engage Franklin residents again with another survey in two years.



Guide to Understanding and Using Your Reports

2015



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Purpose of the User Guide

As a participant in The National Citizen Survey™ (The NCS™), you are among an elite group of communities that conduct resident surveys. Communities often use the results of The NCS to:

- **Envision** Make strategic plans and set goals
- **Engage** Partner with residents, other governments, private sector and community-based organizations
- **Earmark** Alter budgets, personnel or services
- **Educate** Communicate and reach out to residents to inform, educate and advocate
- **Enact** Create, alter and remove policies to promote community strengths
- **Evaluate** Track strengths and problems, dig more deeply and evaluate progress

The purpose of this User Guide is to provide you with an overview of the various products you have received related to your survey results, and to describe how to dive in and understand the data that are provided in these products.

Your community, including the elected officials and government staff, should dig into data relevant to their missions, discuss the findings and create action plans. Residents expect their leaders to act on the survey results they receive. By acting on survey results, community leaders build credibility with residents. This credibility leads to heightened public trust which, in turn, makes it more likely that residents will support expenditures and resource allocations recommended by their councils, commissions or staff. Proper expenditure of resources leads to better communities.

The NCS Background

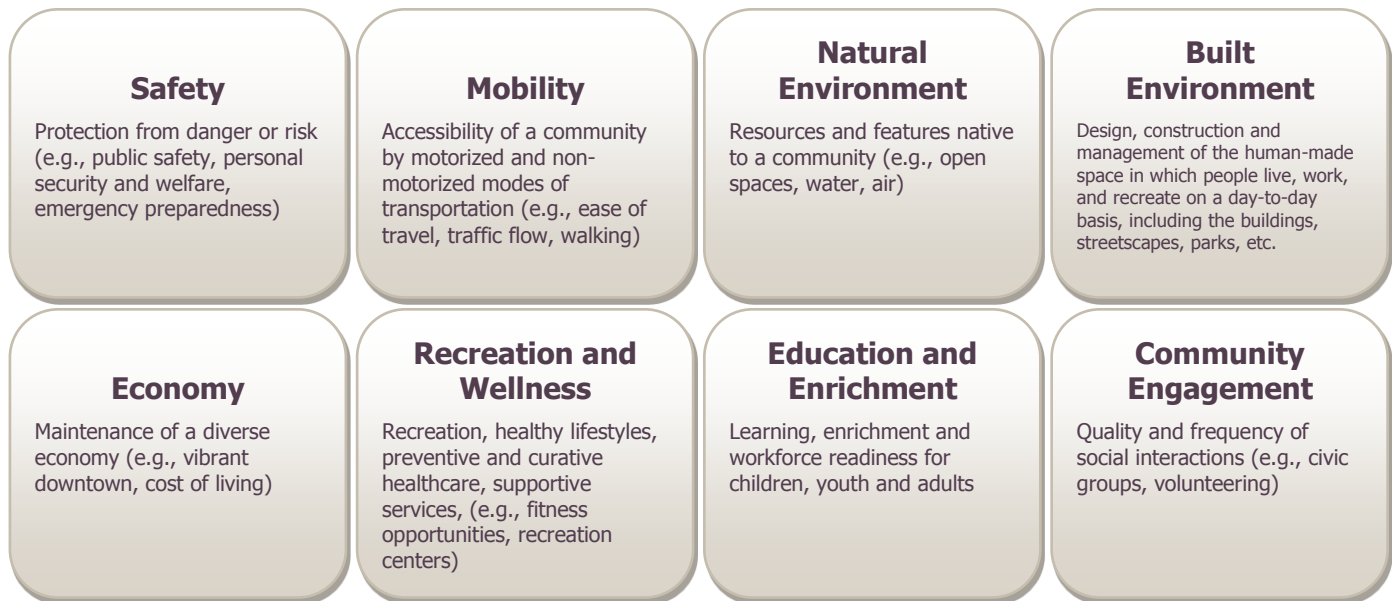
National Research Center, Inc. (NRC) developed The NCS as a low-cost, comprehensive, statistically valid survey solution for local governments eager to find out what their residents think about their communities. The NCS is not just a survey; it is a service that encompasses the entire survey research process - scheduling, questionnaire development, sample selection, data collection, analysis and reporting. In partnership with the International City/County Management Association (ICMA), The NCS has been administered hundreds of times in numerous U.S. cities, counties, towns, villages and boroughs.

The NCS assesses aspects of community life, local government service quality and resident participation in community activities. The results, based on resident perceptions, describe the areas where community members themselves believe things are going well and shed light on the areas that could benefit from improvement.

What Does The NCS Measure?

Broadly, The NCS measures your community's "livability." A great many definitions have been made for community livability,¹ including one from the Partners for Livable Communities, calling it "the sum of the factors that add up to a community's quality of life."² Staff at NRC examined the extensive research that has been done about community livability and many of the models that have been developed to describe the components of livable communities.³ Eight facets of community livability were distilled from our synthesis of this research: Safety, Mobility, the Natural Environment, the Built Environment, the Economy, Recreation and Wellness, Education and Enrichment and Community Engagement. The NCS questionnaire includes individual items that act as indicators of community quality within each of the eight facets – and, split in a different way, they form three "pillars" of community quality: Community Characteristics, Governance and Participation.

The Eight Facets of Livable Communities



The Three Pillars of Livable Communities



¹ Many examples are shown at http://www.camsys.com/kb_experts_livability.htm

² Source: Partners for Livable Communities, <http://www.livable.org/about-us/what-is-livability>

³ See, for example: http://livable.nonprofitsoapbox.com/storage/documents/board_resources/BOT_Meetings/2010/4ExecCommNov5/Grand_Alliance_doc_for_EC.pdf; http://www.sustainable.org/images/stories/pdf/Placemaking_v1.pdf; http://www.who.int/ageing/publications/Global_age_friendly_cities_Guide_English.pdf

Other sectors that influence community quality include the businesses, non-profit agencies, fraternal or service organizations (e.g., Kiwanis, Rotary, Lions and more) and other community groups (such as homeowners or neighborhood associations, etc.) as well as other nearby local governments or other levels of government. They are important target audiences for receiving and acting on The NCS results.

Because much of what The NCS measures is quality – quality of community life, services and connection – it is common for community leaders to conclude that their locale must excel in every facet of livability. While leaders may feel compelled to strive to be equally strong in all areas of community life, such a strategy is rarely feasible or even desirable. Different communities have different strengths and identities. These strengths and definitions of the community should be noted by all those reviewing the results. Less desirable ratings for some indicators should not automatically be seen as negative for a community, but instead a reflection of the community's resources and priorities which wisely may be spent on areas that matter more. Not all indicators that show less achievement are a call to action, just as not all indicators that are strong should become a gateway to complacency. Those viewing The NCS results, and in particular those charged with creating plans based on the results, should consider their community's essence and priorities, and should choose to make improvements or maintain excellence in areas that support the identity they desire. Meeting your definition of success in the areas deemed most important is the ultimate goal – and one that The NCS helps measure – even if all levels of success are not equal.

Using Your Reports

Report Documents

Instead of a single, heavy document that can be difficult to navigate and share, The NCS results are reported in multiple formats and lengths, each with varying levels of detail to ensure that your different stakeholder groups get the right information to meet their needs. The Basic Service of The NCS includes each of the following documents:

- Community Livability Report
- Dashboard Summary of Findings
- Technical Appendices
- Trends over Time (if you have administered The NCS before)

Depending on the additional services you chose as part of your research project, you may also receive additional reports, such as:

- Demographic Subgroup Comparisons
- Geographic Subgroup Comparisons
- Report of Open-ended Questions
- Presentation slideshow (shown at in-person presentation of results and provided to you for your own uses)

This User Guide describes these reports, how to interpret the data and how to dig deeper to ensure everyone – you, government staff leadership, line staff, elected officials, residents, business owners and community organizations – get the most out of The NCS results.

Report Types

When assembled together, these reports build on and reinforce each other, while separately, they provide the flexibility for targeted reporting to specific audiences.

Community Livability Report • This report is the most universal and summarizes all the results and key findings. The Community Livability Report is brief, attractive and accessible, making it a central public document.

Dashboard Summary of Findings • This report offers a simplified (“rolled up”) quantitative view of the data, as well as comparison details for each question (the relationship to the benchmark and over time, if this is not the first iteration of the survey).

Technical Appendices • The appendices include the details about survey methods, individual response options selected for each question – with and without the “don’t know” option – and detailed benchmark results. This document speaks to the credibility of data and the most granular detail of results.

Trends over Time • This report reveals how resident perspectives and behaviors have changed across two or more administrations of The NCS. The report offers a high level view of how rankings have changed as well as relative position to the benchmark including all administrations of The NCS.

Guide to Understanding and Using Your Reports • The Guide to Understanding and Using Your Reports (this document) is written simply so that the survey sponsors receive guidance about how to understand all aspects of the reports, and also so that sponsors can explain to others how the reports are organized and what they mean.

Presentation • An in-person presentation by NRC's independent researchers will offer an engaging overview of the findings – revealing important patterns without getting lost in the detail – at a Council meeting (either formal or work session). The PowerPoint slideshow can be reused for other audiences, including civic clubs, business and non-profit organizations and the press. Presentation by the unbiased survey research team offers the neutrality that is hard to garner when staff themselves present survey findings.

Subgroup Comparisons • Both demographic and geographic comparison options are available. Such information can be especially useful as programs are considered for different parts of a community or outreach is planned to educate different community groups.

Open-ended Questions • Residents' own words add flavor to the survey results and a quantitative grouping of similarly themed comments gives a sense of common ideas.

Report Dissemination

Distributing the results and communicating the key findings engages audiences.

Audiences and Stakeholders

Residents • Make the reports available to the public via your website. Share the results at a public meeting, being sure to advertise the event. A full presentation of the results (either by NRC or your own staff) with discussion of results among elected officials highlights the transparency of findings. If independence of the findings is particularly important in your community, working with NRC to make the presentation of results will be particularly effective.

Department Managers and Line Staff • Managers and staff will examine ratings most closely aligned to their work. Make a plan to disseminate results to line staff (e.g., through a series of small group meetings). Staff should be encouraged to identify specific areas where action is suggested – including further research as well as service enhancements or partnerships outside of the organization. These suggestions could be sent to the department heads who will meet to discuss action options with the chief administrative officer.

Elected officials • Elected officials benefit most from advance distribution of survey reports prior to public presentation and discussion. Ask elected officials to read the survey documents and funnel questions to staff who then can get assistance with answers from NRC professionals, when needed. Staff should develop an approach to action that can be presented to council. This way staff will be prepared when the inevitable council question is asked of the manager, "What do you plan to do with these results so that they don't just sit on a shelf?"

Non-profits and Businesses • While local governments sponsor The NCS, it is not just for staff and elected officials. It is a document to engage the entire community. Many of the findings of the survey will be relevant to the non-profit and business sectors and many community improvements will rest on the shoulders of these sectors as much as on government. Convene a meeting of business and non-profit leaders to release results and begin a discussion of actions to improve resident attitudes and behaviors. This could be a town hall-style meeting or a special invitation lunch with elected officials.

Press/Media • Getting in front of your results means controlling how and when results are shared with the press. Whether your relationship with the local news media is cooperative or contentious, you should declare your intentions for the results even before the survey is conducted – then reinforce those intentions once you have the results. Let the press know that there are no bad results and that your community conducts The NCS because it intends to learn and improve like the best businesses. Certainly social media outlets also permit you to express your intentions for results and to interpret the findings for any of your followers. (And do not forget to link subsequent decisions to what you learned from the survey.)

Choosing a Report Audience

You can follow or adapt to your needs NRC’s recommendations for sharing The NCS reports with different stakeholder groups in your community. There is no reason to withhold any report from any individual or stakeholder group, but if targeting the right information to the right audience is seen to be of value, we believe that these distinctions among audiences will make the first pass at distributing results most effective.

Sharing The NCS Reports with Different Sectors

Report	Residents	Elected officials	Department managers and line staff	Non-profits and businesses	Press/Media
Community Livability Report	●	●	●	●	●
Dashboard Summary of Findings			●		
Technical Appendices			●		
Trends over Time	●	●	●	○	●
Presentation of key findings	●	●	●		●
Subgroup comparisons (demographic and/or geographic)		○	●	○	
Open-ended Question Responses		○	○	○	
Guide to Understanding and Using Your Reports			●		

●=Recommended

○=Optional

These stakeholder groups may wish to “drill down” into the results most meaningful or pertinent to their missions. Those wishing to drill down should review the questionnaire first and decide which survey items are relevant to their mission – choosing from not only specific municipality-provided services, but also those “community outcomes” that they wish to impact. The Dashboard Summary of Findings and Community Livability Report provide an overview, while the Technical Appendices provide the detailed survey responses and benchmark results. The Trends over Time can show how stakeholders’ efforts have impacted the community over the years. Demographic and Geographic Subgroup Comparisons reports can help to point out on whom and where impacts have been felt to lesser and greater degrees.

Community Livability Report

Using the model of the eight facets of community livability within the three pillars of community, The NCS Community Livability report is divided into seven sections:

- About
- Quality of Life
- Community Characteristics
- Governance
- Participation
- Special Topics
- Conclusions

About • This section provides background on The NCS and community livability with brief descriptions of the survey methods.

Quality of Life • This section of the report highlights areas of community strength and challenge, as well as identifying community characteristics most important to your residents' assessments of their quality of life. A summary of benchmark comparisons is presented by the eight community livability facets helping communities to focus on areas that may provide “bigger bang for your buck.”

Community Characteristics • This section of the report describes residents' ratings of the characteristics that make a community livable, attractive and a place where people want to be.

Governance • This section of the report evaluates how well the local government delivers services and meets the needs and expectations of its residents.

Participation • This section of the report looks at how connected residents are to the community and each other.

Special Topics • This section includes the custom or special questions you may have included on your survey.

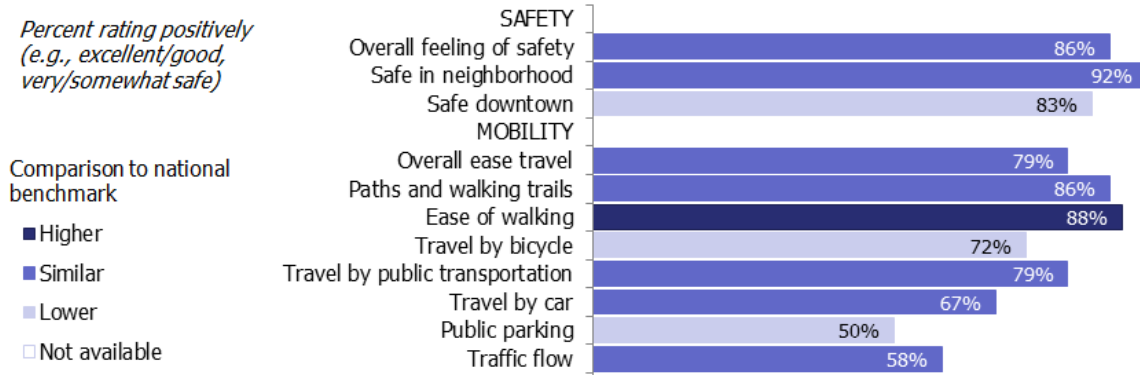
Conclusions • Your report ends with a summary of key findings.

For the most part, the “percent positive” is reported in the report's charts. The percent positive is the combination of the top two most positive response options (i.e., “excellent” and “good,” “very safe” and “somewhat safe”). For question that ask about behavior (e.g., asked on a yes/no scale or frequency scale like “never,” “rarely,” “sometimes,” “usually,” or “always”) we show a combination of responses that reflects at least some behavior (e.g., percent “yes” or “always” and “usually”).

On many of the questions in the survey, respondents could answer “don't know,” but these “don't know” responses have been excluded from the analyses shown in the report. In other words, the tables and charts display the responses from respondents who had an opinion about a specific item. Appendix A of the Technical Appendices provides the complete set of survey frequencies, with and without “don't know” responses. The User Guide section, *Understanding Survey Research* (starting on page 17) describes how and why we remove the “don't know” responses from our analyses.

Most of the charts in your Community Livability report have been color-coded to indicate how your results compare to national benchmarks, with individual survey items grouped within the eight facets of Community Livability. At a glance, you can see how your results compare to not only each other, but to

national benchmark communities, as well. Detailed benchmark results are provided in Appendix B of the Technical Appendices and include such additional information as your rank among the comparison communities. If you chose to have custom benchmark comparisons made, the results appear in this appendix as well.



Dashboard Summary of Findings

The Dashboard Summary of Findings summarizes resident ratings across the eight facets and three pillars of a livable community. The Dashboard Summary chart displays your overall performance in each facet based on each survey item's comparison to the benchmark. When most ratings were higher than the benchmark, the color is dark purple; when most ratings were lower than the benchmark, the color is the lightest purple. A mix of ratings (higher and lower than the benchmark) results in a color between the extremes.

	Community Characteristics			Governance			Participation		
	Higher	Similar	Lower	Higher	Similar	Lower	Higher	Similar	Lower
Overall	20	25	7	28	12	6	5	14	14
General	2	5	0	2	1	0	1	1	1
Safety	0	1	2	6	1	0	1	1	0
Mobility	4	2	2	2	4	2	1	1	0
Natural Environment	3	0	0	5	1	0	0	1	2
Built Environment	0	4	1	3	3	1	0	2	0
Economy	2	5	1	0	0	1	1	2	0
Recreation and Wellness	3	4	0	4	0	0	1	2	2
Education and Enrichment	3	2	0	1	0	1	0	1	2
Community Engagement	3	2	1	5	2	1	0	3	7

Legend	
	Higher
	Similar
	Lower

The Detailed Dashboard displays for each item on the survey, its comparison to the benchmark and the percent positive for the current year, and if applicable, how the current year's rating compares to the previous year's rating (higher, similar or lower). Examination of how areas are trending over time and how they compare to the benchmark can be helpful in identifying the areas that merit more attention.

	Community Characteristics	Trend	Benchmark	Percent positive	Governance	Trend	Benchmark	Percent positive	Participation	Trend	Benchmark	Percent positive
General	Overall appearance	↓	↑	74%	Customer service	↔	↑	81%	Sense of community	↔	↔	78%
	Overall quality of life	↓	↔	82%	Services provided by ABC	↔	↑	79%	Recommend ABC	↓	↔	75%
	Place to retire	↔	↔	65%	Services provided by the Federal Government	↑	↔	45%	Remain in ABC	↔	↑	83%
	Place to raise children	↓	↔	77%					Contacted ABC employees	↑	↓	51%
	Place to live	↓	↔	84%								
	Neighborhood	↓	↔	78%								
	Overall image	↔	↑ ↑	87%								
Safety	Overall feeling of safety	*	*	89%	Police	↔	↑ ↑	82%	Was NOT the victim of a crime	↔	↑	89%
	Safe in neighborhood	↓	↔	92%	Crime prevention	↔	↑	70%	Did NOT report a crime to police	*	*	82%
	Safe downtown/commercial area	↔	↔	87%	Fire	↔	↑ ↑	94%	Stocked supplies for an emergency	*	*	42%
					Fire prevention	↔	↑	80%				
					Ambulance/EMS	↔	↑	91%				
					Emergency preparedness	↑	↑ ↑	66%				
					Animal control	↓	↔	62%				
Mobility	Overall ease of travel	↔	↔	75%	Traffic enforcement	↔	↔	66%	Walked or biked instead of driving	*	*	35%
	Traffic flow	↔	↔	49%	Street repair	↓	↓↓	43%	Carpooled instead of driving alone	*	*	42%
	Travel by car	↔	↑ ↑	64%	Street cleaning	↔	↑ ↑	66%	Used public transportation instead of driving	*	*	19%
	Travel by bicycle	↓	↑	55%	Street lighting	↔	↔	60%				
	Ease of walking	↓	↑ ↑	66%	Snow removal	↓	↓	60%				
	Travel by public transportation	↑	↓ ↓	45%	Sidewalk maintenance	↔	↔	55%				
	Paths and walking trails	↓	↑ ↑	62%	Traffic signal timing	↔	↔	52%				
					Bus or transit services	↔	↑ ↑	60%				

Legend

↑↑ Much higher ↑ Higher ↔ Similar ↓ Lower ↓↓ Much lower * Not available

Technical Appendices

Appendix A: Complete Survey Responses

The first appendix in this document shows the responses to each question on the survey in two ways. Included first are the responses excluding any “don’t know” responses and second are the responses including the “don’t know” responses. We show both the percent of respondents giving a particular response followed by the number of respondents (denoted with “N=”). Every table in the appendix is numbered, to ease its reference in additional documentation or reports you may develop. The complete question wording that was used on the survey is also displayed in every table. This permits readers to review the results in their entirety without having to cross-reference the survey instrument.

High “don’t know” (typically 20% or greater) responses can suggest a need for additional communication or outreach in the community, especially if the high “don’t know” responses are related to underused services.

Responses excluding don't know

Table 1: Question 1

Please rate each of the following aspects of quality of life in ABC:	Excellent		Good		Fair		Poor		Total	
ABC as a place to live	47%	N=162	36%	N=125	12%	N=42	4%	N=15	100%	N=344
Your neighborhood as a place to live	45%	N=152	39%	N=132	12%	N=42	3%	N=11	100%	N=337
ABC as a place to raise children	54%	N=152	24%	N=69	18%	N=50	4%	N=12	100%	N=283
ABC as a place to work	34%	N=98	36%	N=102	22%	N=62	8%	N=23	100%	N=285
ABC as a place to visit	72%	N=214	22%	N=66	2%	N=5	4%	N=12	100%	N=297
ABC as a place to retire	40%	N=97	30%	N=72	18%	N=44	13%	N=31	100%	N=244
The overall quality of life in ABC	55%	N=187	35%	N=117	5%	N=18	4%	N=15	100%	N=337

Responses including don't know

Table 30: Question 1

Please rate each of the following aspects of quality of life in ABC:	Excellent		Good		Fair		Poor		Don't know		Total	
ABC as a place to live	47%	N=162	36%	N=125	12%	N=42	4%	N=15	1%	N=4	100%	N=348
Your neighborhood as a place to live	45%	N=152	39%	N=132	12%	N=42	3%	N=11	1%	N=3	100%	N=340
ABC as a place to raise children	46%	N=152	21%	N=69	15%	N=50	4%	N=12	13%	N=44	100%	N=327
ABC as a place to work	29%	N=98	30%	N=102	18%	N=62	7%	N=23	15%	N=52	100%	N=337
ABC as a place to visit	71%	N=214	22%	N=66	2%	N=5	4%	N=12	2%	N=5	100%	N=302
ABC as a place to retire	31%	N=97	23%	N=72	14%	N=44	10%	N=31	21%	N=64	100%	N=308
The overall quality of life in ABC	54%	N=187	34%	N=117	5%	N=18	4%	N=15	2%	N=7	100%	N=344

For some questions, respondents are permitted to select more than one response. When some respondents are counted in multiple categories, the total will likely exceed 100%. In these cases, those multiple response questions will have the appropriate notation below the table.

Table 55: Question D14

What is your race? (Mark one or more races to indicate what race(s) you consider yourself to be.)	Percent	Number
American Indian or Alaskan Native	4%	N=15
Asian, Asian Indian or Pacific Islander	6%	N=20
Black or African American	10%	N=35
White	86%	N=298
Other	15%	N=52

Total may exceed 100% as respondents could select more than one option.

Appendix B: Benchmark Comparisons

What Benchmarks Are

Benchmarks are comparison data that provide context for your ratings. In Appendix B, your detailed benchmark results are displayed in a table of five columns. The first column is the survey item for which the comparisons have been provided. The second column is your community's percent positive. The third column is the rank assigned to your rating among communities where a similar question was asked. The fourth column is the number of communities that asked a similar question. The fifth and final column shows how your rating compares to the other communities in the benchmarking database. In that final column, your results are noted as being "higher" than the benchmark, "lower" than the benchmark or "similar" to the benchmark, meaning that the average rating given by residents of your community is statistically similar to or different (greater or lesser) than the benchmark. More extreme differences are noted as "much higher" or "much lower."

National Benchmark Comparisons

Table 1: Community Characteristics General

	Percent positive	Rank	Number of communities in comparison	Comparison to benchmark
The overall quality of life in ABC	83%	98	286	Similar
Overall image or reputation of ABC	84%	67	315	Much higher
ABC as a place to live	78%	118	255	Similar
Your neighborhood as a place to live	89%	80	374	Higher
ABC as a place to raise children	75%	135	325	Lower
ABC as a place to retire	72%	129	298	Much lower
Overall appearance of ABC	70%	168	354	Similar

We also provide a list of the communities included in your comparison with their population according to the U.S. Census Bureau. The communities in the national database represent a wide geographic and population range; many communities find a custom comparison that targets specific geographies or populations to be useful.

Communities included in national comparisons

The communities included in ABC's comparisons are listed on the following pages along with their population according to the 2010 Census.

Abilene city, KS.....	6,844	Cambridge city, MA.....	105,162
Adams County, CO.....	441,603	Cape Coral city, FL.....	154,305
Airway Heights city, WA.....	6,114	Cape Girardeau city, MO.....	37,941
Albany city, GA.....	77,434	Cartersville city, GA.....	19,731
Albany city, OR.....	50,158	Carver County, MN.....	91,042
Albemarle County, VA.....	98,970	Cary town, NC.....	135,234
Albert Lea city, MN.....	18,016	Casa Grande city, AZ.....	48,571
Altoona city, IA.....	14,541	Casper city, WY.....	55,316
Ambridge borough, PA.....	7,050	Castle Pines North city, CO.....	10,360
Ames city, IA.....	58,965	Castle Rock town, CO.....	48,231
Andover CDP, MA.....	8,762	Cedar Falls city, IA.....	39,260
Ankeny city, IA.....	45,582	Cedar Rapids city, IA.....	126,326

What Benchmarks Are Not

Benchmarks do not tell you what you need to fix. In this way, benchmarks are not like blood tests that carry a range, often narrow, within which you are considered to be healthy and outside of which you could be sick. A local score that is lower than scores typically seen in other places may indicate nothing more than community sentiment that resonates. For example, a suburb located near a large metropolitan center may not be seen to have as strong an economy as other places. This residential suburb's commercial areas are not seen to be as vibrant as other places, may have a higher cost of living, fewer jobs and may have ceded downtown activities to a nearby metro area that has much higher density and more entertainment opportunities. A lower benchmark rating for "economy" simply offers specifics to the community identity which residents and leaders may feel no need to ameliorate. Instead

this hypothetical community may want to focus its resources on sustaining or strengthening its image as a safe place with many recreation opportunities and ease of travel by car and light rail.

How to Use Benchmarks

Many of the charts and tables in The NCS reports have been color-coded to indicate how your results compare to national benchmarks.

Benchmark comparisons often are used for performance measurement. Communities use the comparative information to help interpret their own citizen survey results, to create or revise community plans, to evaluate the success of policy or budget decisions and to measure local government performance. Taking the pulse of the community has little meaning without knowing what pulse rate is too high and what is too low. When surveys of service satisfaction turn up “good” citizen evaluations, jurisdictions need to know how others rate their services to understand if “good” is good enough. Furthermore, in the absence of national or peer community comparisons, a jurisdiction is left with comparing its fire protection rating to its street maintenance rating. That comparison is unfair. Streets always lose to fire. More important and harder questions need to be asked; for example, how do residents’ ratings of fire service compare to opinions about fire service in other communities?

A police department that provides the fastest and most efficient service – one that closes most of its cases, solves most of its crimes and keeps the crime rate low – still has a problem to fix if the perception of residents in the community it intends to protect is not so strong. The benchmark data can help that police department – or any department – to understand how well citizens think it is doing. Without the comparative data, it would be like bowling in a tournament without knowing what the other teams are scoring. NRC recommends that citizen opinion be used in conjunction with other sources of data about budget, personnel and politics to help managers know how to respond to comparative results.

NRC’s database of comparative resident opinion is comprised of resident perspectives gathered in surveys from over 500 communities whose residents evaluated the same kinds of topics on The NCS. The comparison evaluations are from the most recent survey completed in each community; most communities conduct surveys every year or in alternating years. NRC adds the latest results quickly upon survey completion, keeping the benchmark data fresh and relevant. The Basic Service includes national benchmark comparisons. If you chose a custom benchmarks comparison as an additional service to the basic NCS, these comparison will appear in this appendix, as well.

Jurisdictions in the benchmark database are distributed geographically across the country and range from small to large in population size. Data come from tens of thousands of individual evaluations of community quality, service delivery and engagement. Despite the differences in jurisdiction characteristics, all are in the business of facilitating a high quality of life for residents, typically by providing local government services to residents. Though individual jurisdiction circumstances, resources and practices vary, the objective virtually everywhere is to help create and sustain highly livable communities.

Where Benchmarks Come From

NRC has been leading the strategic use of surveys for local governments since 1991, when the principals of the company wrote the first edition of what became the classic text on citizen surveying. In *Citizen Surveys: how to do them, how to use them, what they mean*, published by ICMA, not only were the principles for quality survey methods articulated, but both the idea of benchmark data for citizen opinion and the method for gathering benchmark data were pioneered. The argument for benchmarks was called “In Search of Standards.” “What has been missing from a local government’s analysis of its survey results is the context that school administrators can supply when they tell parents how an 80 percent score on the social studies test compares to test results from other school systems...”

Surveys in the benchmarks are conducted with typically no fewer than 400 residents in each jurisdiction, opinions are intended to represent over 30 million Americans. NRC innovated a method for quantitatively integrating the results of surveys that are conducted by NRC with those that others have conducted. The integration methods have been thoroughly described not only in the *Citizen Surveys* book, but also in *Public Administration Review* and the *Journal of Policy Analysis and Management*. Scholars who specialize in the analysis of citizen surveys regularly have relied on this work.⁴ The method described in those publications is refined regularly and statistically tested on a growing number of citizen surveys in NRC's proprietary databases. NRC's work on calculating national benchmarks for resident opinions about service delivery and quality of life won the Samuel C. May award for research excellence from the Western Governmental Research Association.

⁴ See, for example: Kelly, J. & Swindell, D. (2002). Service quality variation across urban space: First steps towards a model of citizen satisfaction. *Journal of Urban Affairs*, 24, 271-288 and Van Ryzin, G., Muzzio, D., Immerwahr, S., Gulick, L. & Martinez, E. (2004). Drivers and consequences of citizen satisfaction: An application of the American Customer Satisfaction Index Model to New York City, *Public Administration Review*, 64, 331- 341.

Trends over Time Report

If you have conducted The NCS before, you will automatically receive the Trends over Time report. In this report we show your percent positive ratings by year, how your most current results compare to your previous year's results and how you have compared to the national benchmark for each survey year.

The Trends over Time Report provides insight on the aspects of your community that may be improving or perhaps starting to decline. While trends for your national benchmark comparisons are provided for reference, the benchmark is constantly changing as communities conduct newer surveys or new communities conduct surveys and resident perspectives change. Overall, your trends represent, perhaps, the most powerful benchmark you have – a comparison of you to yourself in prior years. These trends can be a window into the impact of new policies, capital projects or programs in your community.

Table 1: Community Quality Overall

	Percent rating positively (e.g., excellent/good)			2013 compared to 2011	Comparison to benchmark		
	2009	2011	2013		2009	2011	2013
Overall quality of life	68%	74%	79%	Similar	Much lower	Similar	Similar
Overall image	76%	80%	78%	Similar	Similar	Higher	Similar
Place to live	72%	71%	82%	Higher	Similar	Similar	Much higher
Neighborhood	79%	84%	91%	Similar	Higher	Higher	Higher
Place to raise children	65%	69%	78%	Similar	Lower	Much higher	Higher
Place to retire	NA	NA	60%	NA	NA	NA	Much lower
Overall appearance	88%	87%	90%	Similar	Similar	Similar	Similar

Demographic and Geographic Subgroup Comparison Reports

An additional service many participants in The NCS choose is comparison of results by respondent characteristics. In the Demographic Subgroup Comparison Report, each survey question is cross-classified by responses from different demographic groups in your community. We typically show five demographic groupings (housing unit type, housing tenure, age, gender and race/ethnicity) so that you can see if results differ depending on the demographic category of respondent. The Geographic Subgroup Comparison Report is another optional service that compares survey responses by subgroups, in this case, based on respondents' location (e.g., district, neighborhood, ward, etc.). In order to create a report of geographic comparisons, the geographic subareas will need to be determined well before the survey mailing.

In these subgroup comparison reports, we show the percent positive rating and shade “statistically significant” differences grey. The shading is based on analysis of variance and chi-square tests of statistical significance where a “p-value” of 0.05 or less indicates that there is less than a 5% probability that differences observed among subgroups are due to chance; or in other words, a greater than 95% probability that there are differences that exist in the subgroups being compared.

Table 1: Community Characteristics General

Percent rating positively (e.g., excellent/good)	Housing unit type		Housing tenure		Age			Gender		Race/Ethnicity		Overall
	Detached	Attached	Rent	Own	18-34	35-54	55+	Female	Male	White alone, not Hispanic	Hispanic and/or other race	
The overall quality of life in ABC	58%	55%	53%	58%	55%	56%	59%	60%	54%	43%	56%	57%
Overall image or reputation of ABC	62%	55%	56%	59%	59%	56%	60%	56%	61%	58%	55%	58%
ABC as a place to live	68%	67%	64%	69%	64%	69%	69%	68%	68%	68%	67%	68%
Your neighborhood as a place to live	50%	49%	46%	51%	53%	49%	47%	50%	49%	49%	47%	50%
ABC as a place to raise children	63%	62%	62%	63%	62%	62%	65%	64%	62%	62%	55%	63%
ABC as a place to retire	60%	59%	57%	60%	60%	58%	61%	60%	58%	60%	60%	60%
Overall appearance of ABC	55%	50%	43%	56%	50%	52%	57%	52%	53%	52%	57%	53%

Table 1: Community Characteristics General

Percent rating positively (e.g., excellent/good)	District 1	District 2	District 3	District 4	Overall
The overall quality of life in ABC	53%	59%	58%	59%	57%
Overall image or reputation of ABC	50%	61%	60%	60%	58%
ABC as a place to live	60%	72%	72%	74%	68%
Your neighborhood as a place to live	45%	58%	50%	48%	50%
ABC as a place to raise children	57%	66%	65%	67%	63%
ABC as a place to retire	55%	65%	60%	65%	60%
Overall appearance of ABC	50%	52%	53%	59%	53%

Demographic subgroup comparisons can help with creating targeted communication and service campaigns to address the concerns of each group.

Geographic subgroup comparisons can help demonstrate the sense of equity felt across the community since residents in some parts of every community tend to feel better than do those in other areas about the services they receive or the livability of their neighborhood. Results from geographic subgroup comparisons will permit targeting of services, capital improvements and programs so that residents in all areas can feel that they are receiving their fair share of resources.

Open-ended Question Responses

The NCS standard questions are close-ended. A closed-ended question is one where a set of response options is listed as fixed choices on the survey and those taking the survey respond to each option listed. Open-ended questions have no answer choices from which respondents select their response. Instead, respondents must “create” their own answers and state them in their own words. The inclusion of an open-ended question is available as an additional service for The NCS that results in a separate Report of Open-ended Questions.

On the survey, respondents write, in their own words, their answer to the posed open-ended questions. In this report, the verbatim responses are categorized by topic area using qualitative coding techniques. Often, an “other” category is used for responses falling outside these coded categories. In general, a code is assigned when the number of related responses reaches a critical mass.

We will provide a table showing the frequency of each code to give a general overview of the responses.

Table 1: Question 13

What one thing do you like most about living in ABC?	2013
Location	38%
My neighborhood	16%
Quality of life in general	10%
Parks and open space	14%
Rural character	8%
Small town feel	7%
Other	7%
Total	100%

We also provide every verbatim response with its assigned code. This type of report gives you and others a chance to “hear” the voice of respondents in their own words.

Verbatim Responses

The following pages contain the respondents’ verbatim responses as written on the survey and have not been edited for spelling or grammar. Responses have been organized by coded topic areas.

What one thing do you like most about living in ABC?

Location

- Access to everything
- Actual location
- Close to city
- Close to metro
- Close to my office
- Close to town
- Close to work
- Close to work and everything is handy
- Convenience
- Convenience
- Convenience
- Everything is handy and close
- I like living south of the river
- It's convenient to everything meaning shopping and the airport
- Location
- Location
- Proximity to downtown

My neighborhood

- Appearance of the neighborhoods
- Friendly people next door
- Good neighborhood
- Great neighborhood
- I love my neighborhood!
- Just happy with the neighborhood I live in
- Lots of kids in the neighborhood
- Neighbors
- My neighborhood

Understanding Survey Research

Survey Sampling

We systematically select households from a geocoded United States Postal Service (USPS) address list to ensure that only households located within the boundaries of a community are surveyed. Systematic sampling is a procedure whereby a complete list of all eligible addresses is culled, selecting every Nth one (a number that changes depending on the size of the population and the sample size to be selected) until the appropriate number of addresses is sampled. Not only does NRC scientifically and randomly sample households to participate in The NCS, but we also select, without bias, the household member to participate. This methodology helps ensure that the attitudes expressed by our respondent sample closely approximate the attitudes of all adult residents living in the community. Without controlling who in the household participates, it is likely that results would be biased towards those who are more sedentary and those without jobs (who may have different opinions about some services).

The Basic Service of The NCS includes mailing to randomly selected households. Though response rates across the US have dipped in recent years, the response rate for most administrations of The NCS ranges between 20% and 40%, which yields between 300 and 480 completed surveys.

Margin of Error and Confidence Intervals

It is customary to describe the precision of estimates made from surveys by a “level of confidence” and accompanying “confidence interval” (or margin of error). A traditional level of confidence, and the one used for The NCS, is 95%. The 95% confidence interval can be any size and quantifies the sampling error or imprecision of the survey results because *some* residents’ opinions are used to estimate *all* residents’ opinions. The relationship between sample size and precision of estimates or margin of error (at the 95% confidence level) is shown in the adjacent table. With a typical sample size for The NCS, this means an estimated margin of error at the 95% confidence level of plus or minus four to six percentage points.

Number of completed surveys	Margin of error
100	±9.8%
300	±5.7%
400	±4.9%
500	±4.4%
750	±3.6%

A 95% confidence interval indicates that for every 100 random samples of the same number of residents, 95 of the confidence intervals created will include the “true” population response. This theory is applied in practice to mean that the “true” perspective of the target population lies within the confidence interval created for a single survey. For example, if 75% of residents rate a service as “excellent” or “good,” then the 4% margin of error (for the 95% confidence interval) indicates that the range of likely responses for the entire community is between 71% and 79%. This source of uncertainty is called sampling error. In addition to sampling error, other sources of error may affect any survey, including the non-response of residents with opinions different from survey responders. Though standardized on The NCS, on other surveys, differences in question wording, order, translation and data entry, as examples, can lead to somewhat varying results.

For subgroups of responses, the margin of error increases because the sample size for the subgroup is smaller. For subgroups of approximately 100 respondents, the margin of error is plus or minus 10 percentage points.

Non-response Bias

Knowing that residents in single family dwellings are more likely to respond to a mail survey, NRC oversamples residents of multi-family dwellings to ensure their proper representation in the sample data. Rather than giving all residents an equal chance of receiving the survey, this is systematic, stratified sampling, which gives each resident of the community a known chance of receiving the survey (and apartment dwellers, for example, a greater chance than single family home dwellers).

Weighting

The first step in preparing the data for analysis is to weight the data to reflect the demographic profile of the residents of the community being surveyed. Weighting is the approach used by quality survey consultancies to ensure that the demographic characteristics of the sample mirror the overall population. It is an important method to adjust for potential non-response bias. NRC uses a special software program of mathematical algorithms to calculate the appropriate weights. Several different weighting “schemes” may be tested to ensure the best fit for the data.

“Don’t know” Responses

Generally, a small portion of respondents select “don’t know” for most survey items and inevitably some items have a larger “don’t know” percentage. Comparing responses to a set of items on the same scale can be misleading when the “don’t know” responses have been included. If two items have disparate “don’t know” percentages (2% versus 17%, for example), any apparent similarities or differences across the remaining response options may disappear once the “don’t know” responses are removed. Such an example is shown below.

When comparing the community as a place to live to the community as a place to work, it would appear that 76% of respondents rated the community as a place to live as “excellent” or “good” compared to just 63% for the community as a place to work. However, the community as a place to work has a much higher proportion of respondents answering “don’t know” (17% compared to 2%).

	Place to live		Place to work	
	Number	Percent	Number	Percent
Excellent	48	25%	38	20%
Good	97	51%	81	43%
Fair	23	12%	22	12%
Poor	19	10%	17	9%
Don’t know	3	2%	32	17%
Total	190	100%	190	100%

If we remove the three “don’t know” responses from the community as a place to live and the 32 “don’t know” responses from the community as a place to work, the two items are actually much more similar in their evaluations: 78% “excellent” or “good” place to live compared to 75% “excellent” or “good” place to work.

	Place to live		Place to work	
	Number	Percent	Number	Percent
Excellent	48	26%	38	24%
Good	97	52%	81	51%
Fair	23	12%	22	14%
Poor	19	10%	17	11%
Total	187	100%	158	100%

Response Scale

The scale on which respondents are asked to record their opinions about service and community quality is “excellent,” “good,” “fair” or “poor” (EGFP). This scale has important advantages over other scale possibilities (very good to very bad; very satisfied to very dissatisfied; strongly agree to strongly disagree, as examples). EGFP is used by the plurality of communities conducting citizen surveys across the U.S. The advantage of familiarity was one that NRC did not want to dismiss when crafting The NCS questionnaire, because elected officials, staff and residents already are acquainted with opinion surveys measured this way. EGFP also has the advantage of offering three positive options, rather than only two, over which a resident can offer an opinion. While symmetrical scales often are the right choice in other measurement tasks, NRC has found that ratings of almost every local government service in almost every community tend, on average, to be positive (that is, above the scale midpoint). Therefore, to permit finer distinctions among positively rated services, EGFP offers three options across which to spread those ratings. With questions worded for EGFP, responses are more neutral because they require no positive statement of service quality to judge (as agree-disagree scales require) and, finally, EGFP intends to measure absolute quality of service delivery or community quality (unlike satisfaction scales which ignore residents’ perceptions of quality in favor of their report on the acceptability of the level of service offered).

THE NCSTM

The National Citizen SurveyTM

Franklin, TN

Dashboard Summary of Findings

FINAL
2016



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Summary

The National Citizen Survey™ (The NCS™) is a collaborative effort between National Research Center, Inc. (NRC) and the International City/County Management Association (ICMA). The survey and its administration are standardized to assure high quality research methods and directly comparable results across The NCS communities. The NCS captures residents' opinions within the three pillars of a community (Community Characteristics, Governance and Participation) across eight central facets of community (Safety, Mobility, Natural Environment, Built Environment, Economy, Recreation and Wellness, Education and Enrichment and Community Engagement). This report summarizes Franklin's performance in the eight facets of community livability with the "General" rating as a summary of results from the overarching questions not shown within any of the eight facets. The "Overall" represents the community pillar in its entirety (the eight facets and general).

By summarizing resident ratings across the eight facets and three pillars of a livable community, a picture of Franklin's community livability emerges. Below, the color of each community facet summarizes how residents rated each of the pillars that support it – Community Characteristics, Governance and Participation. When most ratings were higher than the benchmark, the color is the darkest shade; when most ratings were lower than the benchmark, the color is the lightest shade. A mix of ratings (higher and lower than the benchmark) results in a color between the extremes.

Overall, Franklin had strong ratings that were mostly similar to or higher than comparison communities. Within Community Characteristics, general ratings and the facets of Economy, Recreation and Wellness, Education and Enrichment and Community Engagement were rated higher than the benchmark. Governance also had strong ratings that were higher than the benchmark within Mobility, Economy, Recreation and Wellness, Education and Enrichment and Community Engagement. Ratings for Built Environment and Education and Enrichment within the pillar of Participation tended to receive high ratings, while ratings for Mobility tended to receive lower ratings than the national benchmark. This information can be helpful in identifying areas that merit more attention.

Figure 1: Dashboard Summary

	Community Characteristics			Governance			Participation		
	Higher	Similar	Lower	Higher	Similar	Lower	Higher	Similar	Lower
Overall	29	18	5	20	26	0	5	29	2
General	7	0	0	1	2	0	0	3	0
Safety	1	2	0	3	4	0	1	2	0
Mobility	0	4	4	4	4	0	0	1	2
Natural Environment	1	2	0	0	6	0	0	3	0
Built Environment	2	2	1	2	5	0	1	1	0
Economy	7	1	0	1	0	0	0	3	0
Recreation and Wellness	4	3	0	2	2	0	0	5	0
Education and Enrichment	4	2	0	1	1	0	2	1	0
Community Engagement	3	2	0	6	2	0	1	10	0

Legend	
	Higher
	Similar
	Lower

The National Citizen Survey™

Figure 2: Detailed Dashboard

	Community Characteristics	Benchmark	Percent positive	Governance	Benchmark	Percent positive	Participation	Benchmark	Percent positive
General	Overall appearance	↑	95%	Customer service	↔	90%	Recommend Franklin	↔	93%
	Overall quality of life	↑	97%	Services provided by Franklin	↑	93%	Remain in Franklin	↔	89%
	Place to retire	↑	86%	Services provided by the Federal Government	↔	44%	Contacted Franklin employees	↔	37%
	Place to raise children	↑	97%						
	Place to live	↑	97%						
	Neighborhood	↑	93%						
	Overall image	↑↑	97%						
Safety	Overall feeling of safety	↑	97%	Police	↑	96%	Was NOT the victim of a crime	↔	95%
	Safe in neighborhood	↔	98%	Crime prevention	↑	92%	Did NOT report a crime	↑	87%
	Safe downtown/commercial area	↔	97%	Fire	↔	99%	Stocked supplies for an emergency	↔	27%
				Fire prevention	↑	91%			
				Ambulance/EMS	↔	98%			
				Emergency preparedness	↔	77%			
				Animal control	↔	79%			
Mobility	Traffic flow	↓	26%	Traffic enforcement	↔	77%	Carpooled instead of driving alone	↔	45%
	Travel by car	↓	48%	Street repair	↑	62%	Walked or biked instead of driving	↓	45%
	Travel by bicycle	↓	36%	Street cleaning	↑	81%	Used public transportation instead of driving	↓↓	6%
	Ease of walking	↔	58%	Street lighting	↑	74%			
	Travel by public transportation	↓	23%	Snow removal	↔	57%			
	Overall ease of travel	↔	59%	Sidewalk maintenance	↑	71%			
	Public parking	↔	53%	Traffic signal timing	↔	51%			
Natural Environment	Paths and walking trails	↔	59%	Bus or transit services	↔	42%			
	Overall natural environment	↔	88%	Garbage collection	↔	91%	Recycled at home	↔	76%
	Air quality	↔	87%	Recycling	↔	76%	Conserved water	↔	74%
	Cleanliness	↑	94%	Yard waste pick-up	↔	86%	Made home more energy efficient	↔	70%
				Drinking water	↔	73%			
				Open space	↔	70%			
				Natural areas preservation	↔	67%			
Built Environment	New development in Franklin	↑	78%	Sewer services	↔	88%	NOT experiencing housing cost stress	↔	73%
	Affordable quality housing	↓	28%	Storm drainage	↑	80%	Did NOT observe a code violation	↑	69%
	Housing options	↔	48%	Power utility	↔	88%			
	Overall built environment	↔	77%	Utility billing	↔	80%			
	Public places	↑	88%	Land use, planning and zoning	↔	59%			
				Code enforcement	↑	73%			
				Cable television	↔	54%			

Legend

↑↑ Much higher ↑ Higher ↔ Similar ↓ Lower ↓↓ Much lower * Not available

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	Community Characteristics	Benchmark	Percent positive	Governance	Benchmark	Percent positive	Participation	Benchmark	Percent positive
Economy	Overall economic health	↑↑	94%	Economic development	↑↑	82%	Economy will have positive impact on income	↔	35%
	Shopping opportunities	↑↑	93%				Purchased goods or services in Franklin	↔	98%
	Employment opportunities	↑↑	76%				Work in Franklin	↔	50%
	Place to visit	↑↑	92%						
	Cost of living	↔	41%						
	Vibrant downtown/commercial area	↑↑	89%						
	Place to work	↑↑	90%						
Recreation and Wellness	Business and services	↑	88%						
	Fitness opportunities	↔	77%	City parks	↔	91%	In very good to excellent health	↔	75%
	Recreational opportunities	↔	77%	Recreation centers	↑	84%	Used Franklin recreation centers	↔	63%
	Health care	↑	77%	Recreation programs	↔	85%	Visited a City park	↔	89%
	Food	↔	77%	Health services	↑	88%	Ate 5 portions of fruits and vegetables	↔	88%
	Mental health care	↑	68%				Participated in moderate or vigorous physical activity	↔	89%
	Health and wellness	↑	84%						
Education and Enrichment	Preventive health services	↑	81%						
	K-12 education	↑	92%	Public libraries	↔	93%	Used Franklin public libraries	↔	58%
	Cultural/arts/music activities	↑	79%	Special events	↑	87%	Participated in religious or spiritual activities	↑	65%
	Child care/preschool	↔	60%				Attended a City-sponsored event	↑	70%
	Religious or spiritual events and activities	↑	90%						
	Adult education	↔	65%						
	Overall education and enrichment	↑	87%						
Community Engagement	Opportunities to participate in community matters	↔	76%	Public information	↔	79%	Sense of community	↑	82%
	Opportunities to volunteer	↑	86%	Overall direction	↔	73%	Voted in local elections	↔	83%
	Openness and acceptance	↔	62%	Value of services for taxes paid	↑	77%	Talked to or visited with neighbors	↔	93%
	Social events and activities	↑	86%	Welcoming citizen involvement	↑	71%	Attended a local public meeting	↔	23%
	Neighborliness	↑	76%	Confidence in City government	↑	76%	Watched a local public meeting	↔	23%
				Acting in the best interest of Franklin	↑	73%	Volunteered	↔	48%
				Being honest	↑	74%	Participated in a club	↔	27%
				Treating all residents fairly	↑	72%	Campaigned for an issue, cause or candidate	↔	20%
							Contacted Franklin elected officials	↔	17%
							Read or watched local news	↔	85%
							Done a favor for a neighbor	↔	85%

Legend

↑↑ Much higher ↑ Higher ↔ Similar ↓ Lower ↓↓ Much lower * Not available

THE NCSTM

The National Citizen SurveyTM

Franklin, TN

Community Livability Report

FINAL
2016



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The National Citizen Survey™
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The NCS™ is presented by NRC in collaboration with ICMA.

NRC is a charter member of the AAPOR Transparency Initiative, providing clear disclosure of our sound and ethical survey research practices.

About

The National Citizen Survey™ (The NCS) report is about the “livability” of Franklin. The phrase “livable community” is used here to evoke a place that is not simply habitable, but that is desirable. It is not only where people do live, but where they want to live.

Great communities are partnerships of the government, private sector, community-based organizations and residents, all geographically connected. The NCS captures residents’ opinions within the three pillars of a community (Community Characteristics, Governance and Participation) across eight central facets of community (Safety, Mobility, Natural Environment, Built Environment, Economy, Recreation and Wellness, Education and Enrichment and Community Engagement).

The Community Livability Report provides the opinions of a representative sample of 1,060 residents of the City of Franklin. The margin of error around any reported percentage is 3% for the entire sample. The full description of methods used to garner these opinions can be found in the *Technical Appendices* provided under separate cover.

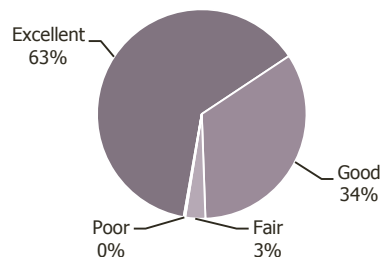


Quality of Life in Franklin

Almost all residents rated the quality of life in Franklin as excellent or good. This rating is higher than quality of life ratings seen in other communities (see Appendix B of the *Technical Appendices* provided under separate cover).

Shown below are the eight facets of community. The color of each community facet summarizes how residents rated it across the three sections of the survey that represent the pillars of a community – Community Characteristics, Governance and Participation. When most ratings across the three pillars were higher than the benchmark, the color for that facet is the darkest shade; when most ratings were lower than the benchmark, the color is the lightest shade. A mix of ratings (higher and lower than the benchmark) results in a color between the extremes.

Overall Quality of Life



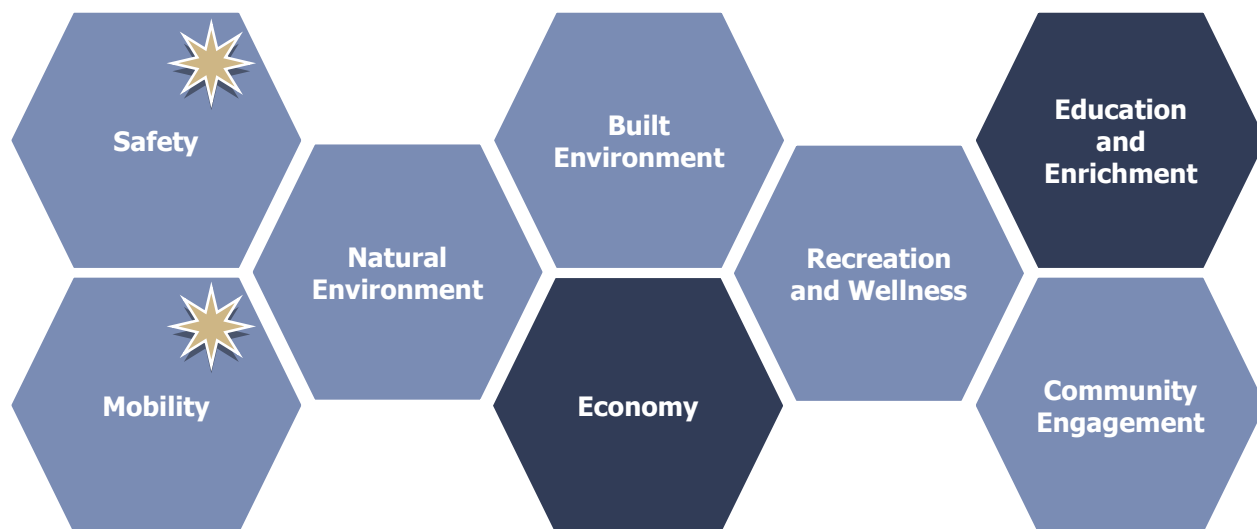
In addition to a summary of ratings, the image below includes one or more stars to indicate which community facets were the most important focus areas for the community. Residents identified Safety and Mobility as priorities for the Franklin community in the coming two years. It is noteworthy that Franklin residents gave favorable ratings to each facet of community, particularly to Economy and Education and Enrichment. Ratings for Safety, Mobility, Natural Environment, Built Environment, Recreation and Wellness and Community Engagement were positive and similar to other communities. This overview of the key aspects of community quality provides a quick summary of where residents see exceptionally strong performance and where performance offers the greatest opportunity for improvement. Linking quality to importance offers community members and leaders a view into the characteristics of the community that matter most and that seem to be working best.

Details that support these findings are contained in the remainder of this Livability Report, starting with the ratings for Community Characteristics, Governance and Participation and ending with results for Franklin's unique questions.

Legend

- Higher than national benchmark
- Similar to national benchmark
- Lower than national benchmark

- ★ Most important



Community Characteristics

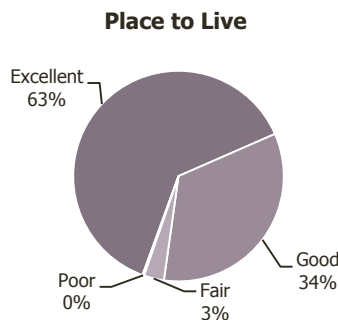
What makes a community livable, attractive and a place where people want to be?

Overall quality of community life represents the natural ambience, services and amenities that make for an attractive community. How residents rate their overall quality of life is an indicator of the overall health of a community. In the case of Franklin, 97% rated the City as an excellent or good place to live. Respondents' ratings of Franklin as a place to live were higher than ratings in other communities across the nation.

In addition to rating the City as a place to live, respondents rated several aspects of community quality including Franklin as a place to raise children and to retire, their neighborhood as a place to live, the overall image or reputation of Franklin and its overall appearance. About 9 in 10 respondents or more gave positive ratings to the overall appearance and overall image of Franklin, their neighborhood as a place to live and Franklin as a place to raise children. These ratings were higher than the national benchmark, along with the rating for Franklin as a place to retire (86% excellent or good).

Delving deeper into Community Characteristics, survey respondents rated over 40 features of the community within the eight facets of Community Livability. Almost all residents rated their overall feeling of safety in Franklin positively, and many of these ratings were higher than the national benchmarks. Similarly, almost all residents rated their feelings of safety in their neighborhood and in the downtown/commercial area positively. Within the facet of Mobility, residents were most pleased with Franklin's overall ease of travel, availability of paths and walking trails, ease of walking in Franklin and public parking, with about half of residents giving the aforementioned aspects positive ratings that were similar to the national benchmark. Residents were the least pleased with travel by bicycle, travel by public transportation, travel by car and traffic flow, and these ratings were lower than seen elsewhere. At least 9 in 10 residents rated the cleanliness of Franklin positively with ratings higher than the national benchmark. Ratings for Built Environment varied, with ratings ranging from 29% for availability of affordable quality housing to 88% for public places where people want to spend time; the rating for affordable quality housing was lower than the national benchmark while the rating for public places was higher. Within Economy, residents rated 7 of the 8 aspects higher than the national benchmark with 94% of respondents rating Franklin's overall economic health as excellent or good. Residents also rated aspects of Franklin's Recreation and Wellness characteristics and opportunities highly, with two-thirds of respondents giving a positive rating to health and wellness opportunities, mental health care services, preventive health services, and

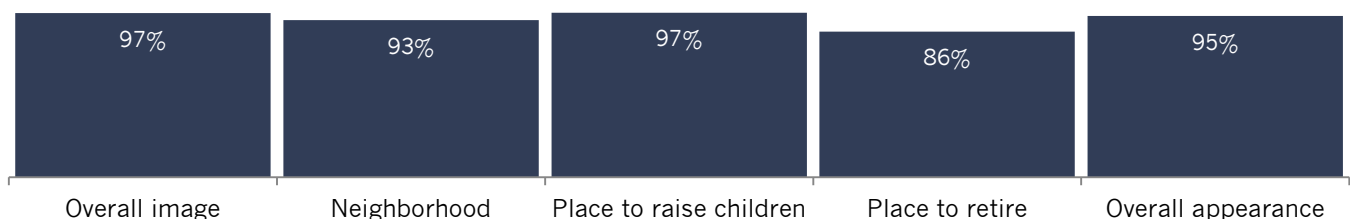
availability of affordable quality health care; each of these were rated higher than the national benchmark. Ratings within Education and Enrichment were strong with at least three-quarters of residents positively rating overall opportunities for education and enrichment, opportunities to participate in religious or spiritual events or activities, and opportunities to attend cultural/arts/music activities higher than seen in other communities across the nation. Residents rated 3 of the 5 Community Engagement measures higher than in comparison communities, including opportunities to participate in social events and activities, neighborliness of residents in Franklin and opportunities to volunteer.



Percent rating positively (e.g., excellent/good)

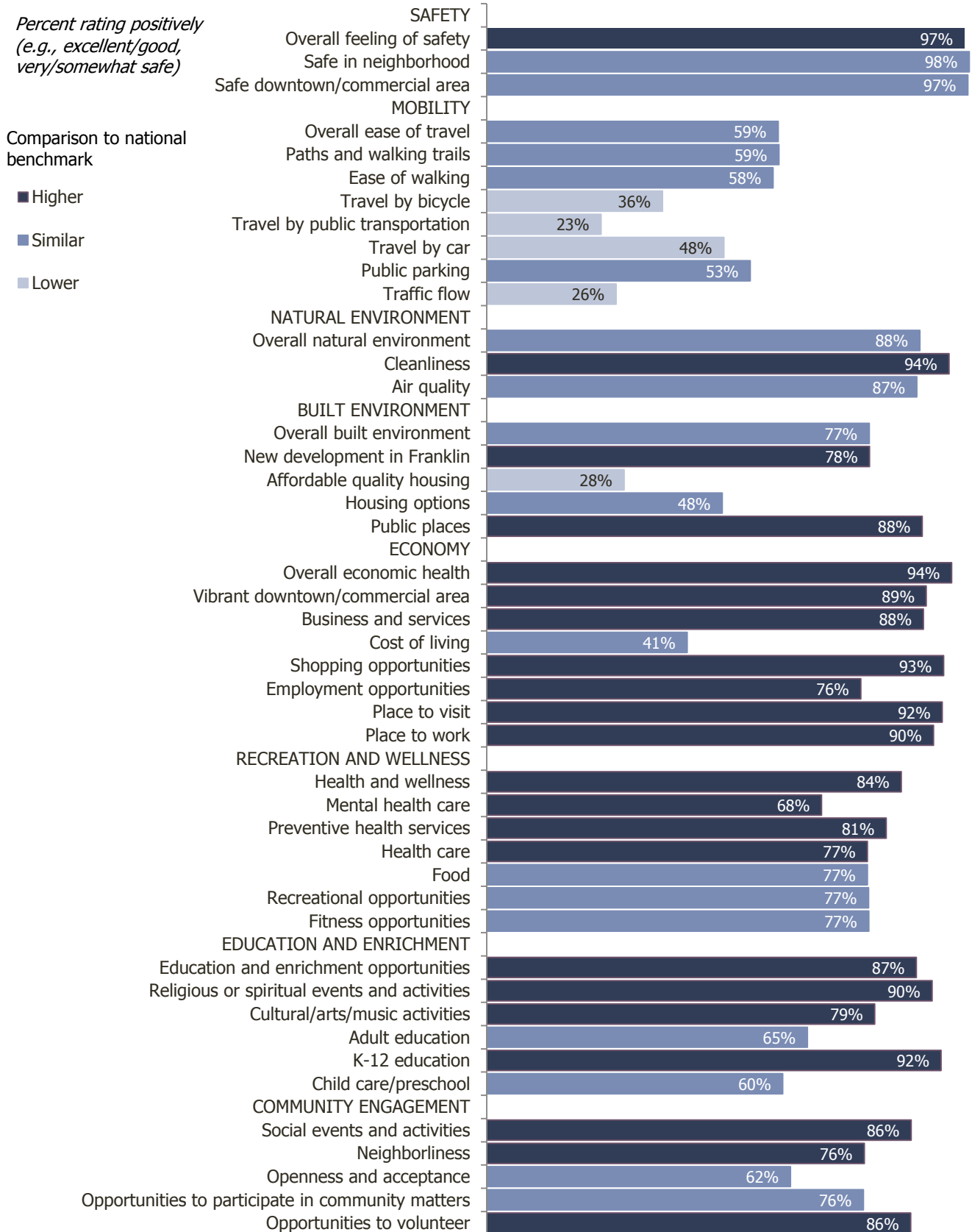
Comparison to national benchmark

■ Higher ■ Similar ■ Lower



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Figure 1: Aspects of Community Characteristics



Governance

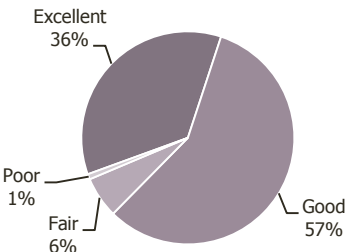
How well does the government of Franklin meet the needs and expectations of its residents?

The overall quality of the services provided by Franklin as well as the manner in which these services are provided are a key component of how residents rate their quality of life. Almost all residents rated the overall quality of services provided by Franklin as excellent or good, a rating that was higher than the national benchmark. About 4 in 10 positively rated the services provided by the Federal Government, which was similar to the benchmark.

Survey respondents also rated various aspects of Franklin's leadership and governance. About 7 in 10 residents gave high ratings to the value of services for taxes paid, the job Franklin government does at welcoming citizen involvement, overall confidence in City government, the government acting in the best interest of Franklin, being honest and treating all residents fairly; each of these ratings were higher than ratings seen in comparison communities. Even more (90%) rated the customer service of Franklin employees highly, a rating similar to the national benchmark.

Respondents evaluated over 30 individual services and amenities available in Franklin. Most services and amenities were rated positively by at least half of respondents and all were similar to or higher than the national benchmark comparisons. Respondents rated police services and Franklin's crime prevention and fire prevention efforts higher than the national benchmarks within the facet of Safety, and ratings for the remaining four Safety services were similar to the national comparisons. Ratings within Mobility were strong, with at least two-thirds of residents positively rating street repair, street cleaning, street lighting, and sidewalk maintenance; all of these ratings were higher than the national benchmark. Within Built Environment, ratings were favorable with about 7 in 10 or more residents rating each of the six services positively. Residents were pleased with economic development in Franklin; 82% of respondents rated this aspect of Economy positively, which was higher than the national benchmark. Around 4 in 5 residents rated recreation services, health services and City-sponsored special events as excellent or good and higher than seen elsewhere.

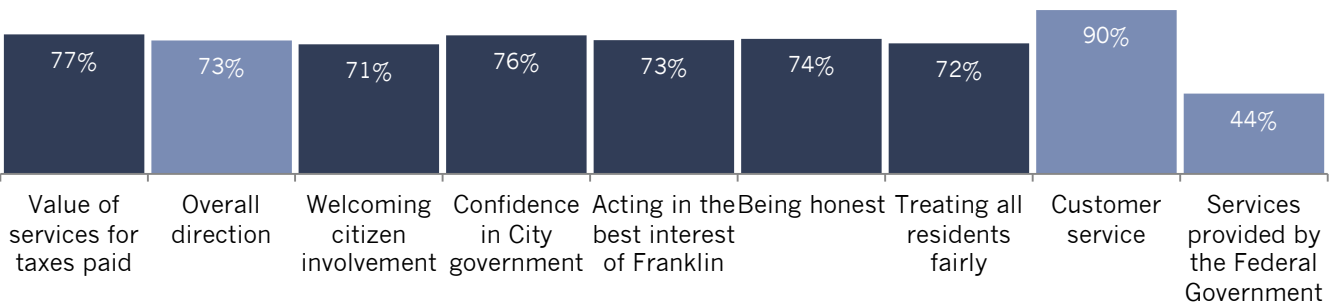
Overall Quality of City Services



Percent rating positively (e.g., excellent/good)

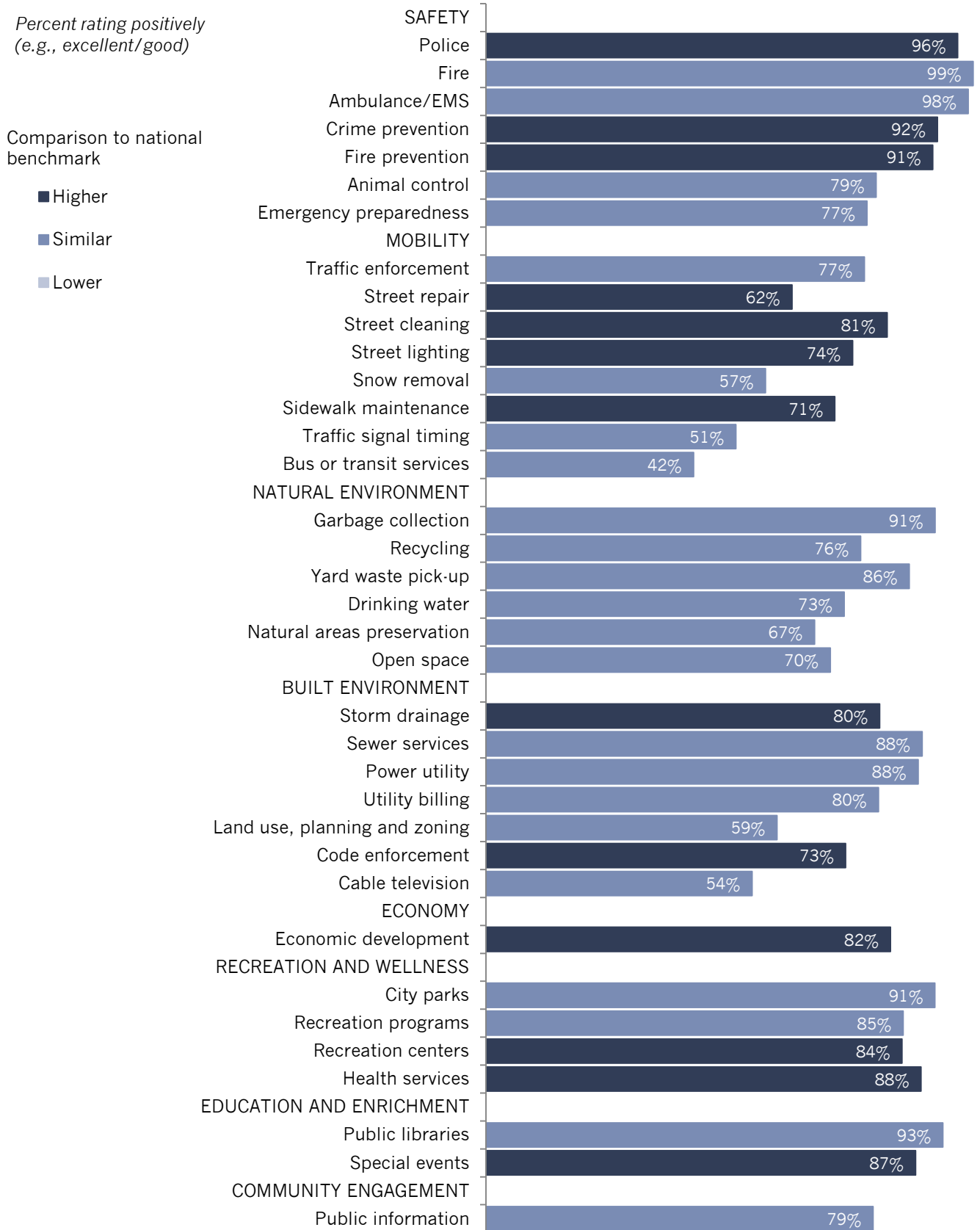
Comparison to national benchmark

■ Higher ■ Similar ■ Lower



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Figure 2: Aspects of Governance

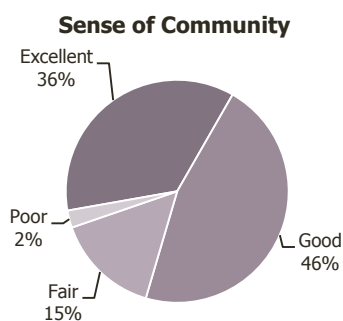


Participation

Are the residents of Franklin connected to the community and each other?

An engaged community harnesses its most valuable resource, its residents. The connections and trust among residents, government, businesses and other organizations help to create a sense of community, a shared sense of membership, belonging and history. The overall sense of community in Franklin received positive ratings from 82% of residents, a rating that was higher than seen in other communities in the U.S. Nearly all residents would recommend living in Franklin (93%) and about 9 in 10 residents reported they were somewhat or very likely to remain in the City. These ratings were similar to the national benchmark.

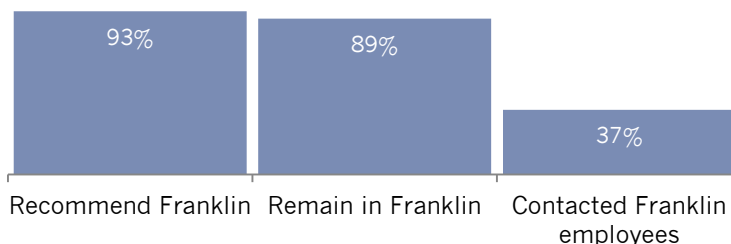
The survey included over 30 activities and behaviors for which respondents indicated how often they participated in or performed each, if at all. Within the facet of Safety, about 87% of residents indicated they had not reported a crime (a level higher than the national benchmark) and 95% had not been the victim of a crime. Less than 1 in 10 residents reported they had used public transportation instead of driving and about 4 in 10 residents reported they had walked or biked instead of driving. Both of these participation levels were lower than seen elsewhere in the nation. About 7 in 10 residents indicated they had participated in each aspect of Natural Environment and Built Environment. Within Economy, almost all residents reported purchasing good or services in Franklin, about one-third reported feeling that the economy will have a positive impact on their income, and about half of residents reported working in Franklin; all of these rates of participation were similar to the national benchmark. About two-thirds of residents said they had attended a City-sponsored event or participated in religious or spiritual activities, and both of these levels were higher than the benchmark comparison. Within Recreation and Wellness and Community Engagement, all Participation rates were similar to comparison communities.



Percent rating positively
(e.g., very/somewhat likely,
yes)

Comparison to national
benchmark

■ Higher ■ Similar ■ Lower



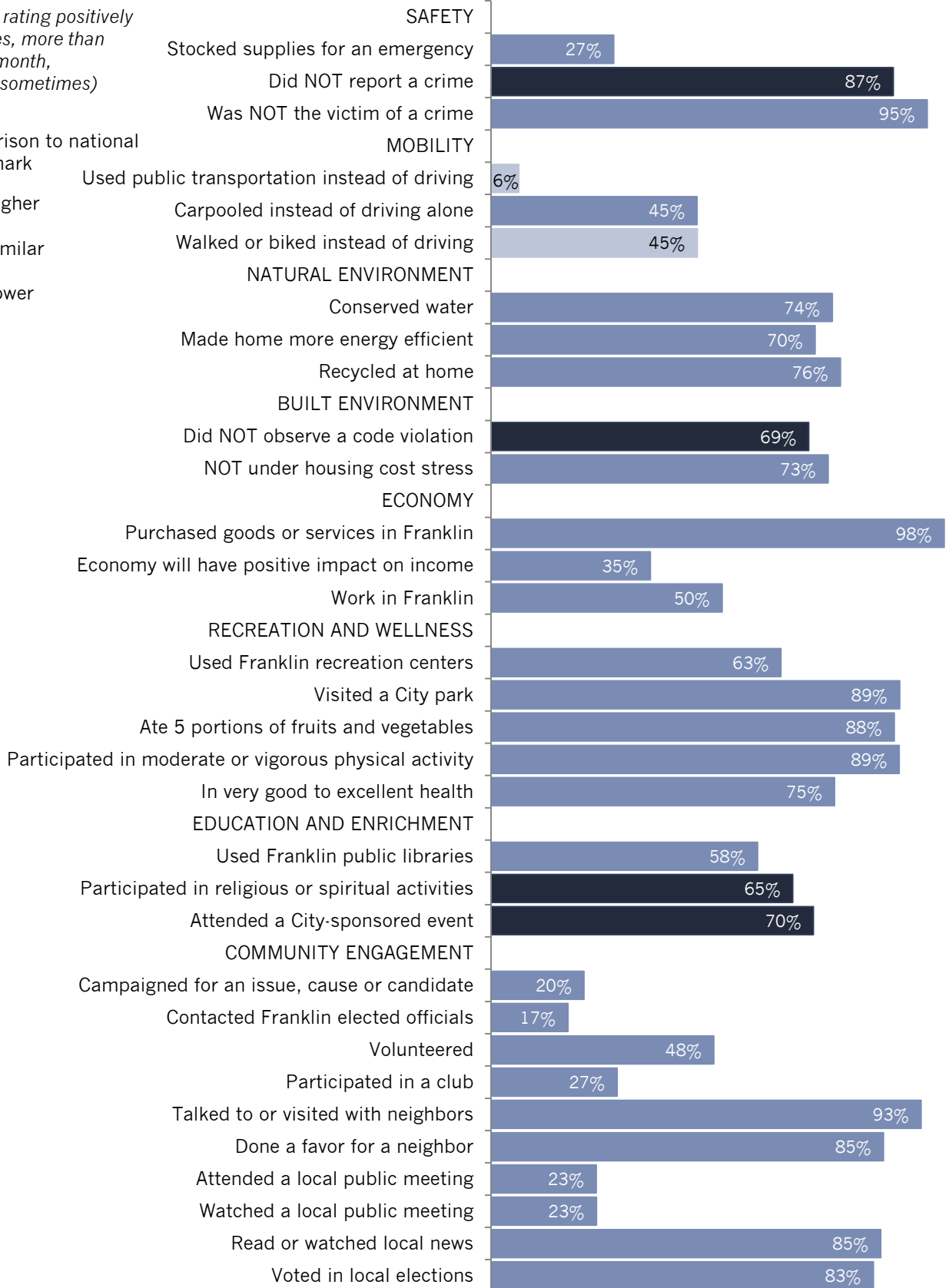
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Figure 3: Aspects of Participation

Percent rating positively
(e.g., yes, more than
once a month,
always/sometimes)

Comparison to national
benchmark

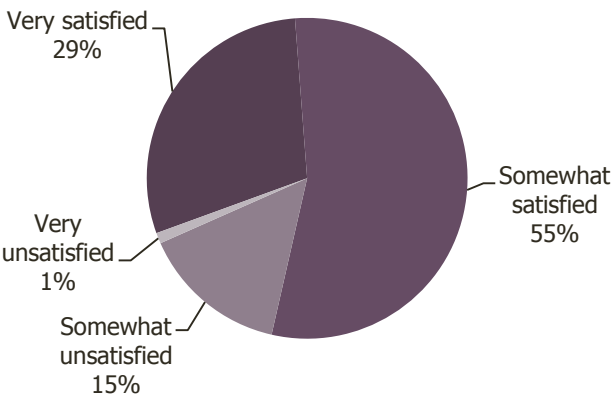
- Higher
- Similar
- Lower



Special Topics

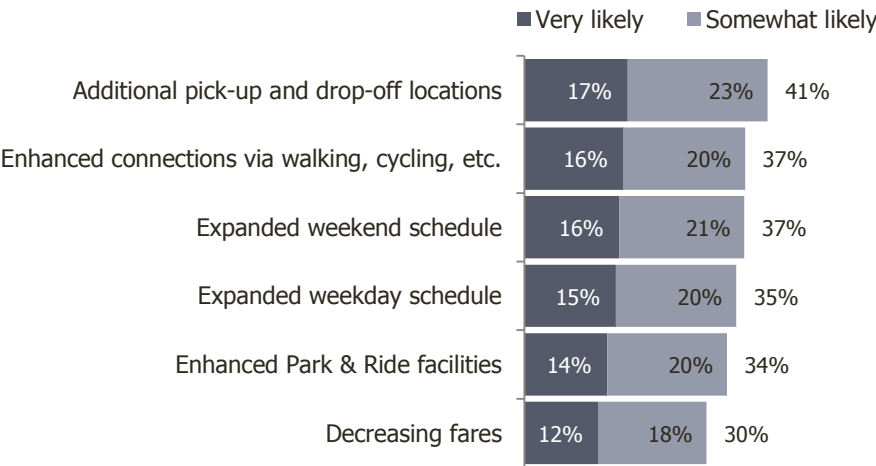
The City of Franklin included several questions of special interest on The NCS. When asked to rate their levels of satisfaction with the City’s management of growth, about 8 in 10 residents were at least somewhat satisfied. Less than 1 in 5 residents were somewhat or very unsatisfied with the management of growth in Franklin.

Figure 4: Growth Management
Please rate your level of satisfaction with the City of Franklin’s management of growth:



The second special topics question asked residents how likely they would be to use the mass transit route from Spring Hill through the City of Nashville if certain improvements were made. Around 4 in 10 residents were at least somewhat likely to use the transit route if additional pick-up and drop-off locations were made available. About 3 in 10 residents said they were very likely or somewhat likely to use the transit route if the remaining improvements were made including enhanced connections, an expanded weekend and weekday schedule, enhanced Park & Ride facilities or a decrease in fares.

Figure 5: Mass Transit Usage
Presently the City of Franklin and Williamson County subsidize a limited mass transit route from Spring Hill through the City to Nashville. How likely, if at all, would you be to use this transit route if the following improvements were made?

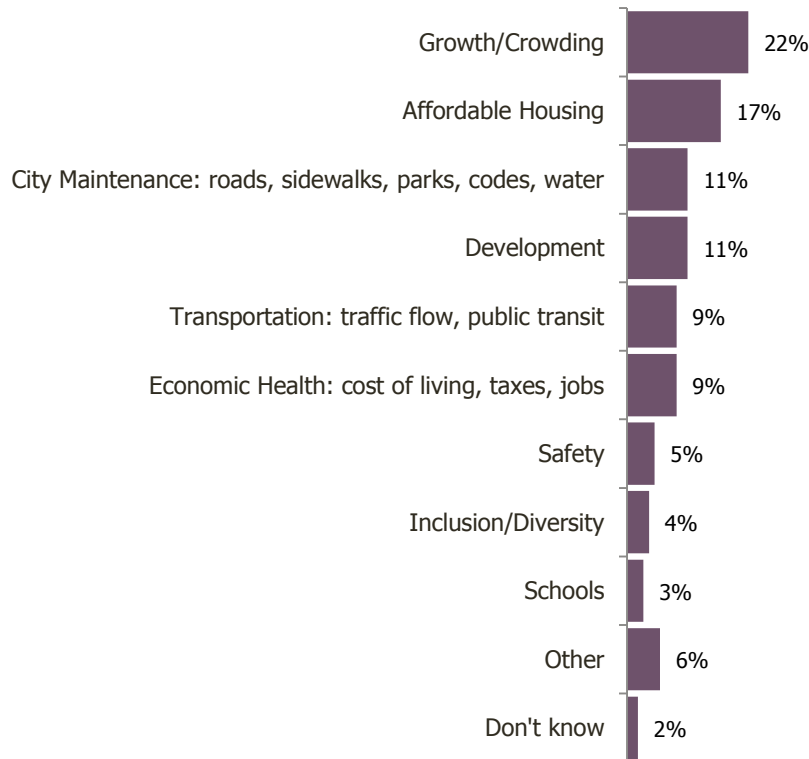


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Survey recipients were also asked to write in their own words what they thought was the most important challenge or problem facing Franklin. About 22% indicated that growth and crowding was the most important challenge facing Franklin and 17% reported that affordable housing was the most important challenge. About 1 in 10 indicated that city maintenance and development were also problems challenging the City.

Figure 6: Most Important Challenge Facing Franklin

Aside from transportation (traffic) related issues, what is the most important challenge or problem facing Franklin today?



Conclusions

Residents of Franklin enjoy a high quality of life.

Almost all residents rated their overall quality of life as excellent or good. About 9 in 10 residents would be very or somewhat likely to recommend Franklin as a place to live to someone who asks or planned to remain in Franklin for the next five years. Franklin as a place to raise children and Franklin neighborhoods as a place to live, as well as the City's overall image and appearance, received high ratings by at least 9 in 10 residents. Most of the aspects that aid in community livability were rated positively and were at least similar to the national comparisons.

Residents feel safe in Franklin and believe safety should be a priority for the City.

Franklin residents indicated that Safety is a priority for the next two years and also gave strong, favorable ratings to Safety. The overall feeling of safety was rated positively by almost all participants and almost all residents cited feeling safe in Franklin's downtown or commercial area and in their neighborhoods. Over 9 in 10 residents also gave favorable ratings to police services, fire, ambulance/EMS, crime prevention and fire prevention efforts. Around 4 in 5 residents had not reported a crime while 9 in 10 residents had not been the victim of a crime.

Mobility ratings are strong, but there are still opportunities for improvement.

Mobility was identified as an important feature of the community for residents in the future. Overall, most measures for Mobility tended to be positively rated by at least a majority of residents. Franklin performed exceptionally well in evaluations for street repair services, street cleaning, street lighting and sidewalk maintenance with all of these aspects being scored as excellent or good by at least 3 in 5 residents; further, each of these received higher ratings than those given in other communities across the nation. Potential areas for improvement were the aspects of traffic flow and ease of travel by car, by public transportation and by bicycle. Finally, within the pillar of Participation the proportion of residents reporting that they walked or biked instead of driving or used public transportation instead of driving was lower than the national comparisons.

THE NCS™

The National Citizen Survey™

Franklin, TN

Comparisons by Demographic Subgroups

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Summary

The National Citizen Survey™ (The NCS™) is a collaborative effort between National Research Center, Inc. (NRC) and the International City/County Management Association (ICMA). The survey and its administration are standardized to assure high quality research methods and directly comparable results across The NCS communities. This report discusses differences in opinion of survey respondents by age, sex, race/ethnicity, housing tenure (rent or own) and housing unit type (detached or attached).

Responses in the following tables show only the proportion of respondents giving a certain answer; for example, the percent of respondents who rated the quality of life as “excellent” or “good,” or the percent of respondents who attended a public meeting more than once a month. ANOVA and chi-square tests of significance were applied to these comparisons of survey questions. A “p-value” of 0.05 or less indicates that there is less than a 5% probability that differences observed between subgroups are due to chance; or in other words, a greater than 95% probability that the differences observed are “real.” Where differences were statistically significant, they have been shaded grey.

The margin of error for this report is generally no greater than plus or minus three percentage points around any given percent reported for the entire sample (1,060 completed surveys). For subgroups of responses, the margin of error increases because the sample size for the subgroup is smaller. For subgroups of approximately 100 respondents, the margin of error is plus or minus 10 percentage points.

Notable differences between demographic subgroups included the following:

- Within the pillar of Community Characteristics, respondents who identified as White alone tended to rate general aspects higher than those who were Hispanic and/or another race. Renters or residents living in attached housing were less likely to positively rate aspects of Built Environment such as variety of housing options, availability of affordable quality housing and overall quality of new development in Franklin.
- Ratings for aspects of Governance varied among demographic groups. Younger respondents were more likely to positively rate overall confidence in the Franklin government and the Franklin government treating all residents fairly compared to their counterparts. Residents who were 55 and older tended to give lower ratings to aspects related to Mobility, with the exception of bus or transit services, where older residents rated this aspect higher. Residents who owned their home or lived in detached housing were more likely to favorably rate garbage collection, recycling and yard waste pick-up services.
- Within the pillar of Participation, residents who identified as Hispanic and/or another race were less likely than their counterparts to recommend living in Franklin to someone who asks or that they planned to remain in Franklin for the next five years. Residents older than age 34 tended to be more likely to report they recycled at home or made efforts to conserve water.
- Residents between the ages of 18-34 reported higher levels of satisfaction with the City of Franklin’s management of growth compared to their older counterparts. Female survey participants tended to indicate they would be more likely to use the mass transit route if any of the proposed improvements were made than male residents.

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Table 1: Community Characteristics - General

Percent rating positively (e.g., excellent/good)	Age			Sex		Race/ethnicity		Rent or own		Detached or attached		Overall
	18-34	35-54	55+	Female	Male	White alone, not Hispanic	Hispanic and/or other race	Rent	Own	Detached	Attached	
The overall quality of life in Franklin	97%	97%	96%	97%	97%	98%	92%	97%	96%	96%	98%	97%
Overall image or reputation of Franklin	99%	96%	96%	97%	97%	98%	93%	97%	97%	96%	98%	97%
Franklin as a place to live	96%	98%	97%	98%	96%	98%	93%	96%	97%	97%	97%	97%
Your neighborhood as a place to live	90%	93%	94%	91%	94%	94%	86%	86%	96%	96%	86%	93%
Franklin as a place to raise children	98%	97%	96%	96%	98%	98%	95%	95%	98%	97%	96%	97%
Franklin as a place to retire	93%	85%	83%	85%	87%	85%	90%	83%	87%	84%	90%	86%
Overall appearance of Franklin	99%	95%	92%	96%	94%	97%	90%	96%	95%	94%	97%	95%

Table 2: Community Characteristics - Safety

Percent rating positively (e.g., excellent/good, very/somewhat safe)	Age			Sex		Race/ethnicity		Rent or own		Detached or attached		Overall
	18-34	35-54	55+	Female	Male	White alone, not Hispanic	Hispanic and/or other race	Rent	Own	Detached	Attached	
Overall feeling of safety in Franklin	99%	98%	95%	97%	98%	97%	97%	97%	97%	97%	97%	97%
In your neighborhood during the day	99%	97%	98%	98%	97%	98%	96%	96%	98%	98%	97%	98%
In Franklin's downtown/commercial area during the day	98%	98%	97%	98%	97%	99%	94%	96%	98%	98%	96%	97%

Table 3: Community Characteristics - Mobility

Percent rating positively (e.g., excellent/good, very/somewhat safe)	Age			Sex		Race/ethnicity		Rent or own		Detached or attached		Overall
	18-34	35-54	55+	Female	Male	White alone, not Hispanic	Hispanic and/or other race	Rent	Own	Detached	Attached	
Overall ease of getting to the places you usually have to visit	64%	56%	59%	60%	59%	58%	67%	61%	58%	58%	61%	59%
Traffic flow on major streets	32%	23%	25%	26%	27%	25%	35%	26%	26%	27%	25%	26%
Ease of public parking	67%	49%	48%	52%	56%	53%	59%	50%	55%	54%	52%	53%
Ease of travel by car in Franklin	66%	43%	40%	51%	45%	46%	63%	52%	47%	46%	51%	48%
Ease of travel by public transportation in Franklin	12%	26%	31%	25%	23%	23%	29%	23%	24%	23%	23%	23%
Ease of travel by bicycle in Franklin	34%	36%	37%	40%	32%	36%	36%	38%	34%	33%	39%	36%
Ease of walking in Franklin	58%	57%	62%	57%	61%	58%	63%	54%	60%	59%	56%	58%
Availability of paths and walking trails	59%	59%	62%	61%	58%	60%	60%	57%	61%	59%	60%	59%

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Table 4: Community Characteristics - Natural Environment

Percent rating positively (e.g., excellent/good, very/somewhat safe)	Age			Sex		Race/ethnicity		Rent or own		Detached or attached		Overall
	18-34	35-54	55+	Female	Male	White alone, not Hispanic	Hispanic and/or other race	Rent	Own	Detached	Attached	
Quality of overall natural environment in Franklin	89%	87%	89%	90%	87%	88%	90%	88%	88%	86%	92%	88%
Air quality	93%	86%	84%	86%	90%	88%	89%	91%	86%	86%	91%	87%
Cleanliness of Franklin	99%	94%	89%	94%	94%	95%	92%	93%	94%	92%	96%	94%

Table 5: Community Characteristics - Built Environment

Percent rating positively (e.g., excellent/good, very/somewhat safe)	Age			Sex		Race/ethnicity		Rent or own		Detached or attached		Overall
	18-34	35-54	55+	Female	Male	White alone, not Hispanic	Hispanic and/or other race	Rent	Own	Detached	Attached	
Overall "built environment" of Franklin (including overall design, buildings, parks and transportation systems)	78%	77%	78%	81%	74%	78%	76%	77%	78%	76%	79%	77%
Public places where people want to spend time	91%	88%	88%	90%	87%	89%	87%	86%	90%	87%	91%	88%
Variety of housing options	47%	45%	53%	45%	51%	48%	50%	35%	54%	51%	42%	48%
Availability of affordable quality housing	28%	27%	28%	25%	30%	28%	29%	17%	33%	32%	19%	28%
Overall quality of new development in Franklin	76%	81%	75%	80%	76%	81%	64%	73%	80%	80%	73%	78%

Table 6: Community Characteristics - Economy

Percent rating positively (e.g., excellent/good, very/somewhat safe)	Age			Sex		Race/ethnicity		Rent or own		Detached or attached		Overall
	18-34	35-54	55+	Female	Male	White alone, not Hispanic	Hispanic and/or other race	Rent	Own	Detached	Attached	
Overall economic health of Franklin	96%	95%	94%	93%	97%	96%	89%	94%	95%	94%	96%	94%
Franklin as a place to work	92%	91%	88%	92%	90%	91%	89%	89%	91%	90%	92%	90%
Franklin as a place to visit	89%	94%	93%	95%	89%	95%	84%	92%	92%	92%	93%	92%
Employment opportunities	70%	81%	73%	71%	82%	78%	68%	69%	79%	78%	71%	76%
Shopping opportunities	91%	96%	92%	92%	95%	94%	93%	90%	94%	94%	92%	93%
Cost of living in Franklin	35%	40%	46%	41%	41%	43%	30%	28%	47%	44%	33%	41%
Overall quality of business and service establishments in Franklin	91%	88%	87%	89%	89%	91%	80%	87%	89%	88%	89%	88%
Vibrant downtown/commercial area	88%	91%	88%	90%	88%	93%	75%	89%	89%	90%	88%	89%

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Table 7: Community Characteristics - Recreation and Wellness

Percent rating positively (e.g., excellent/good, very/somewhat safe)	Age			Sex		Race/ethnicity		Rent or own		Detached or attached		Overall
	18-34	35-54	55+	Female	Male	White alone, not Hispanic	Hispanic and/or other race	Rent	Own	Detached	Attached	
Health and wellness opportunities in Franklin	77%	84%	92%	87%	83%	87%	76%	79%	87%	86%	82%	84%
Fitness opportunities (including exercise classes and paths or trails, etc.)	81%	76%	79%	78%	78%	79%	77%	78%	78%	77%	80%	77%
Recreational opportunities	77%	77%	81%	79%	77%	79%	76%	77%	78%	77%	79%	77%
Availability of affordable quality food	77%	75%	81%	78%	77%	79%	73%	69%	81%	79%	74%	77%
Availability of affordable quality health care	76%	75%	82%	79%	76%	80%	69%	73%	79%	79%	74%	77%
Availability of preventive health services	84%	78%	84%	81%	82%	84%	73%	77%	83%	82%	79%	81%
Availability of affordable quality mental health care	71%	68%	69%	67%	71%	69%	68%	65%	69%	68%	67%	68%

Table 8: Community Characteristics - Education and Enrichment

Percent rating positively (e.g., excellent/good, very/somewhat safe)	Age			Sex		Race/ethnicity		Rent or own		Detached or attached		Overall
	18-34	35-54	55+	Female	Male	White alone, not Hispanic	Hispanic and/or other race	Rent	Own	Detached	Attached	
Overall opportunities for education and enrichment	85%	87%	89%	89%	86%	89%	84%	86%	88%	87%	88%	87%
Availability of affordable quality child care/preschool K-12 education	48%	63%	65%	55%	67%	61%	60%	48%	64%	60%	60%	60%
Adult educational opportunities	94%	93%	91%	92%	93%	92%	95%	89%	93%	93%	92%	92%
Opportunities to attend cultural/arts/music activities	58%	68%	68%	66%	65%	63%	73%	62%	66%	65%	65%	65%
Opportunities to participate in religious or spiritual events and activities	76%	81%	80%	78%	81%	83%	65%	74%	81%	80%	77%	79%
	86%	92%	92%	90%	91%	94%	77%	84%	94%	94%	84%	90%

Table 9: Community Characteristics - Community Engagement

Percent rating positively (e.g., excellent/good, very/somewhat safe)	Age			Sex		Race/ethnicity		Rent or own		Detached or attached		Overall
	18-34	35-54	55+	Female	Male	White alone, not Hispanic	Hispanic and/or other race	Rent	Own	Detached	Attached	
Opportunities to participate in social events and activities	88%	88%	83%	85%	88%	88%	81%	83%	88%	88%	83%	86%
Opportunities to volunteer	79%	90%	87%	84%	90%	88%	82%	79%	90%	89%	81%	86%
Opportunities to participate in community matters	67%	79%	79%	77%	76%	78%	70%	66%	81%	78%	72%	76%
Openness and acceptance of the community toward people of diverse backgrounds	58%	61%	67%	59%	66%	66%	42%	54%	65%	66%	53%	62%
Neighborliness of residents in Franklin	76%	76%	78%	76%	77%	79%	67%	67%	81%	80%	69%	76%

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Table 10: Governance - General

Percent rating positively (e.g., excellent/good)	Age			Sex		Race/ethnicity		Rent or own		Detached or attached		Overall
	18-34	35-54	55+	Female	Male	White alone, not Hispanic	Hispanic and/or other race	Rent	Own	Detached	Attached	
The City of Franklin	94%	93%	92%	93%	94%	94%	91%	95%	92%	92%	95%	93%
The value of services for the taxes paid to Franklin	77%	76%	79%	76%	79%	78%	78%	72%	79%	78%	75%	77%
The overall direction that Franklin is taking	79%	71%	73%	74%	73%	75%	68%	72%	74%	72%	75%	73%
The job Franklin government does at welcoming citizen involvement	72%	71%	70%	74%	69%	71%	76%	64%	74%	72%	69%	71%
Overall confidence in Franklin government	85%	75%	71%	78%	75%	78%	70%	76%	76%	75%	77%	76%
Generally acting in the best interest of the community	79%	74%	70%	73%	75%	76%	66%	70%	75%	74%	73%	73%
Being honest	79%	75%	71%	76%	74%	76%	71%	74%	75%	74%	77%	74%
Treating all residents fairly	80%	71%	67%	71%	74%	74%	66%	70%	73%	72%	71%	72%
Overall customer service by Franklin employees (police, receptionists, planners, etc.)	92%	88%	91%	92%	88%	90%	92%	88%	91%	89%	91%	90%
The Federal Government	43%	45%	44%	52%	36%	42%	57%	46%	43%	43%	46%	44%

Table 11: Governance - Safety

Percent rating positively (e.g., excellent/good)	Age			Sex		Race/ethnicity		Rent or own		Detached or attached		Overall
	18-34	35-54	55+	Female	Male	White alone, not Hispanic	Hispanic and/or other race	Rent	Own	Detached	Attached	
Police/Sheriff services	96%	96%	95%	96%	96%	97%	93%	96%	96%	96%	96%	96%
Fire services	100%	99%	98%	99%	99%	99%	98%	98%	99%	99%	99%	99%
Ambulance or emergency medical services	98%	98%	98%	99%	97%	98%	99%	97%	98%	98%	97%	98%
Crime prevention	95%	91%	91%	91%	93%	94%	85%	94%	91%	91%	93%	92%
Fire prevention and education	88%	92%	92%	93%	89%	92%	87%	92%	90%	90%	92%	91%
Animal control	82%	82%	75%	79%	82%	82%	75%	74%	82%	81%	78%	79%
Emergency preparedness (services that prepare the community for natural disasters or other emergency situations)	74%	82%	73%	76%	79%	79%	70%	76%	78%	76%	80%	77%

Table 12: Governance - Mobility

Percent rating positively (e.g., excellent/good)	Age			Sex		Race/ethnicity		Rent or own		Detached or attached		Overall
	18-34	35-54	55+	Female	Male	White alone, not Hispanic	Hispanic and/or other race	Rent	Own	Detached	Attached	
Traffic enforcement	79%	77%	76%	80%	74%	80%	68%	80%	76%	76%	80%	77%
Street repair	69%	63%	58%	62%	64%	65%	54%	60%	64%	63%	61%	62%
Street cleaning	90%	80%	78%	81%	82%	82%	83%	84%	81%	81%	84%	81%
Street lighting	78%	73%	74%	75%	74%	76%	71%	73%	75%	73%	77%	74%

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Percent rating positively (e.g., excellent/good)	Age			Sex		Race/ethnicity		Rent or own		Detached or attached		Overall
	18-34	35-54	55+	Female	Male	White alone, not Hispanic	Hispanic and/or other race	Rent	Own	Detached	Attached	
Snow removal	58%	58%	55%	61%	53%	57%	58%	54%	58%	57%	56%	57%
Sidewalk maintenance	78%	71%	64%	73%	69%	72%	71%	73%	70%	70%	73%	71%
Traffic signal timing	54%	52%	49%	55%	49%	50%	61%	50%	53%	53%	49%	51%
Bus or transit services	26%	46%	52%	42%	43%	43%	42%	37%	45%	45%	36%	42%

Table 13: Governance - Natural Environment

Percent rating positively (e.g., excellent/good)	Age			Sex		Race/ethnicity		Rent or own		Detached or attached		Overall
	18-34	35-54	55+	Female	Male	White alone, not Hispanic	Hispanic and/or other race	Rent	Own	Detached	Attached	
Garbage collection	91%	91%	93%	91%	92%	92%	91%	85%	94%	93%	86%	91%
Recycling	64%	78%	84%	75%	78%	76%	77%	53%	85%	84%	57%	76%
Yard waste pick-up	80%	89%	87%	85%	87%	86%	86%	70%	91%	91%	71%	86%
Drinking water	74%	72%	73%	71%	75%	73%	73%	70%	74%	73%	70%	73%
Preservation of natural areas such as open space, farmlands and greenbelts	66%	66%	69%	67%	67%	69%	59%	65%	67%	66%	68%	67%
Franklin open space	70%	71%	69%	68%	73%	72%	63%	68%	71%	69%	71%	70%

Table 14: Governance - Built Environment

Percent rating positively (e.g., excellent/good)	Age			Sex		Race/ethnicity		Rent or own		Detached or attached		Overall
	18-34	35-54	55+	Female	Male	White alone, not Hispanic	Hispanic and/or other race	Rent	Own	Detached	Attached	
Storm drainage	83%	79%	80%	77%	83%	81%	77%	74%	83%	81%	78%	80%
Sewer services	93%	88%	88%	88%	91%	89%	89%	89%	89%	89%	88%	88%
Power (electric and/or gas) utility	84%	87%	93%	87%	89%	89%	83%	83%	90%	89%	85%	88%
Utility billing	72%	82%	85%	79%	82%	80%	79%	74%	83%	81%	77%	80%
Land use, planning and zoning	60%	61%	57%	61%	59%	61%	54%	62%	58%	59%	60%	59%
Code enforcement (weeds, abandoned buildings, etc.)	76%	74%	71%	73%	74%	74%	74%	76%	72%	72%	75%	73%
Cable television	64%	48%	56%	53%	56%	55%	53%	51%	55%	54%	54%	54%

Table 15: Governance - Economy

Percent rating positively (e.g., excellent/good)	Age			Sex		Race/ethnicity		Rent or own		Detached or attached		Overall
	18-34	35-54	55+	Female	Male	White alone, not Hispanic	Hispanic and/or other race	Rent	Own	Detached	Attached	
Economic development	80%	85%	79%	82%	83%	82%	85%	80%	83%	82%	84%	82%

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Table 16: Governance - Recreation and Wellness

Percent rating positively (e.g., excellent/good)	Age			Sex		Race/ethnicity		Rent or own		Detached or attached		Overall
	18-34	35-54	55+	Female	Male	White alone, not Hispanic	Hispanic and/or other race	Rent	Own	Detached	Attached	
City parks	91%	92%	91%	94%	88%	92%	89%	90%	92%	90%	93%	91%
Recreation programs or classes	86%	85%	85%	86%	84%	86%	82%	80%	87%	87%	81%	85%
Recreation centers or facilities	86%	85%	84%	86%	84%	86%	83%	83%	86%	85%	85%	84%
Health services	89%	89%	89%	88%	90%	91%	84%	86%	90%	89%	87%	88%

Table 17: Governance - Education and Enrichment

Percent rating positively (e.g., excellent/good)	Age			Sex		Race/ethnicity		Rent or own		Detached or attached		Overall
	18-34	35-54	55+	Female	Male	White alone, not Hispanic	Hispanic and/or other race	Rent	Own	Detached	Attached	
Public library services	97%	92%	91%	94%	92%	93%	93%	92%	93%	93%	92%	93%
City-sponsored special events	89%	86%	87%	90%	85%	90%	79%	88%	87%	87%	87%	87%

Table 18: Governance - Community Engagement

Percent rating positively (e.g., excellent/good)	Age			Sex		Race/ethnicity		Rent or own		Detached or attached		Overall
	18-34	35-54	55+	Female	Male	White alone, not Hispanic	Hispanic and/or other race	Rent	Own	Detached	Attached	
Public information services	78%	80%	76%	81%	75%	79%	80%	72%	81%	81%	73%	79%

Table 19: Participation General

Percent rating positively (e.g., always/sometimes, more than once a month, yes)	Age			Sex		Race/ethnicity		Rent or own		Detached or attached		Overall
	18-34	35-54	55+	Female	Male	White alone, not Hispanic	Hispanic and/or other race	Rent	Own	Detached	Attached	
Sense of community	76%	84%	86%	86%	79%	83%	82%	75%	86%	84%	78%	82%
Recommend living in Franklin to someone who asks	90%	94%	95%	95%	92%	95%	87%	89%	95%	94%	92%	93%
Remain in Franklin for the next five years	84%	91%	91%	87%	91%	90%	84%	82%	92%	91%	85%	89%
Contacted the City of Franklin (in-person, phone, email or web) for help or information	30%	39%	40%	34%	40%	37%	36%	31%	40%	41%	28%	37%

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Table 20: Participation - Safety

Percent rating positively (e.g., always/sometimes, more than once a month, yes)	Age			Sex		Race/ethnicity		Rent or own		Detached or attached		Overall
	18-34	35-54	55+	Female	Male	White alone, not Hispanic	Hispanic and/or other race	Rent	Own	Detached	Attached	
Was NOT the victim of a crime	97%	93%	95%	96%	92%	96%	90%	97%	94%	94%	96%	95%
Did NOT report a crime	86%	87%	90%	89%	87%	88%	85%	87%	88%	86%	89%	87%
Stocked supplies in preparation for an emergency	28%	26%	26%	25%	27%	25%	35%	32%	24%	25%	31%	27%

Table 21: Participation - Mobility

Percent rating positively (e.g., always/sometimes, more than once a month, yes)	Age			Sex		Race/ethnicity		Rent or own		Detached or attached		Overall
	18-34	35-54	55+	Female	Male	White alone, not Hispanic	Hispanic and/or other race	Rent	Own	Detached	Attached	
Walked or biked instead of driving	56%	45%	35%	45%	45%	45%	48%	50%	43%	43%	49%	45%
Carpooled with other adults or children instead of driving alone	57%	51%	25%	48%	42%	42%	58%	49%	43%	46%	44%	45%
Used bus, rail, subway or other public transportation instead of driving	6%	5%	8%	6%	6%	5%	10%	8%	5%	6%	6%	6%

Table 22: Participation - Natural Environment

Percent rating positively (e.g., always/sometimes, more than once a month, yes)	Age			Sex		Race/ethnicity		Rent or own		Detached or attached		Overall
	18-34	35-54	55+	Female	Male	White alone, not Hispanic	Hispanic and/or other race	Rent	Own	Detached	Attached	
Recycle at home	60%	81%	82%	73%	78%	76%	72%	57%	85%	85%	57%	76%
Made efforts to make your home more energy efficient	65%	72%	71%	68%	72%	69%	75%	63%	73%	73%	63%	70%
Made efforts to conserve water	68%	74%	79%	75%	73%	73%	80%	75%	73%	75%	72%	74%

Table 23: Participation - Built Environment

Percent rating positively (e.g., always/sometimes, more than once a month, yes)	Age			Sex		Race/ethnicity		Rent or own		Detached or attached		Overall
	18-34	35-54	55+	Female	Male	White alone, not Hispanic	Hispanic and/or other race	Rent	Own	Detached	Attached	
NOT under housing cost stress	75%	75%	69%	70%	77%	77%	57%	65%	78%	77%	67%	73%
Did NOT observe a code violation	71%	70%	65%	71%	67%	69%	72%	73%	67%	67%	74%	69%

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Table 24: Participation - Economy

Percent rating positively (e.g., always/sometimes, more than once a month, yes)	Age			Sex		Race/ethnicity		Rent or own		Detached or attached		Overall
	18-34	35-54	55+	Female	Male	White alone, not Hispanic	Hispanic and/or other race	Rent	Own	Detached	Attached	
Purchase goods or services from a business located in Franklin	99%	99%	97%	99%	98%	99%	96%	98%	99%	99%	97%	98%
Economy will have positive impact on income	39%	35%	30%	32%	38%	34%	40%	29%	37%	37%	29%	35%
Work in Franklin	53%	59%	34%	48%	53%	49%	54%	57%	47%	49%	52%	50%

Table 25: Participation - Recreation and Wellness

Percent rating positively (e.g., always/sometimes, more than once a month, yes)	Age			Sex		Race/ethnicity		Rent or own		Detached or attached		Overall
	18-34	35-54	55+	Female	Male	White alone, not Hispanic	Hispanic and/or other race	Rent	Own	Detached	Attached	
Used Franklin recreation centers or their services	67%	70%	49%	61%	66%	61%	74%	66%	62%	65%	60%	63%
Visited a neighborhood park or City park	95%	94%	76%	88%	89%	88%	92%	89%	88%	90%	86%	89%
Eat at least 5 portions of fruits and vegetables a day	82%	91%	87%	90%	85%	88%	85%	84%	89%	90%	83%	88%
Participate in moderate or vigorous physical activity	91%	91%	82%	87%	90%	89%	87%	84%	91%	91%	84%	89%
Reported being in "very good" or "excellent" health	86%	74%	65%	76%	73%	76%	67%	72%	76%	77%	70%	75%

Table 26: Participation - Education and Enrichment

Percent rating positively (e.g., always/sometimes, more than once a month, yes)	Age			Sex		Race/ethnicity		Rent or own		Detached or attached		Overall
	18-34	35-54	55+	Female	Male	White alone, not Hispanic	Hispanic and/or other race	Rent	Own	Detached	Attached	
Used Franklin public libraries or their services	54%	64%	52%	61%	55%	55%	71%	54%	60%	62%	50%	58%
Participated in religious or spiritual activities in Franklin	64%	67%	65%	63%	68%	64%	71%	62%	67%	68%	60%	65%
Attended a City-sponsored event	75%	75%	58%	69%	71%	70%	70%	69%	71%	74%	63%	70%

Table 27: Participation - Community Engagement

Percent rating positively (e.g., always/sometimes, more than once a month, yes)	Age			Sex		Race/ethnicity		Rent or own		Detached or attached		Overall
	18-34	35-54	55+	Female	Male	White alone, not Hispanic	Hispanic and/or other race	Rent	Own	Detached	Attached	
Campaigned or advocated for an issue, cause or candidate	14%	20%	25%	17%	23%	21%	19%	16%	22%	23%	15%	20%
Contacted Franklin elected officials (in-person, phone, email or web) to express your opinion	13%	16%	21%	12%	21%	17%	15%	12%	19%	18%	13%	17%
Volunteered your time to some group/activity in Franklin	46%	55%	41%	46%	52%	47%	58%	49%	49%	52%	43%	48%
Participated in a club	14%	33%	29%	26%	28%	27%	26%	19%	31%	33%	16%	27%
Talked to or visited with your immediate neighbors	90%	95%	94%	94%	92%	94%	89%	86%	96%	96%	87%	93%

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Percent rating positively (e.g., always/sometimes, more than once a month, yes)	Age			Sex		Race/ethnicity		Rent or own		Detached or attached		Overall
	18-34	35-54	55+	Female	Male	White alone, not Hispanic	Hispanic and/or other race	Rent	Own	Detached	Attached	
Done a favor for a neighbor	75%	88%	89%	83%	88%	85%	84%	72%	91%	90%	74%	85%
Attended a local public meeting	17%	23%	27%	20%	26%	23%	24%	10%	29%	27%	14%	23%
Watched (online or on television) a local public meeting	19%	22%	29%	21%	25%	20%	38%	20%	24%	25%	20%	23%
Read or watch local news (via television, paper, computer, etc.)	74%	86%	92%	85%	84%	84%	91%	76%	89%	87%	80%	85%
Vote in local elections	71%	85%	90%	81%	85%	85%	76%	74%	87%	87%	74%	83%

Table 28: Community Focus Areas

Percent rating positively (e.g., essential/very important)	Age			Sex		Race/ethnicity		Rent or own		Detached or attached		Overall
	18-34	35-54	55+	Female	Male	White alone, not Hispanic	Hispanic and/or other race	Rent	Own	Detached	Attached	
Overall feeling of safety in Franklin	84%	91%	95%	92%	89%	90%	93%	88%	91%	91%	89%	91%
Overall ease of getting to the places you usually have to visit	93%	94%	94%	94%	94%	94%	94%	91%	95%	95%	91%	94%
Quality of overall natural environment in Franklin	88%	88%	83%	90%	83%	85%	93%	86%	87%	87%	85%	87%
Overall "built environment" of Franklin (including overall design, buildings, parks and transportation systems)	82%	82%	86%	84%	83%	85%	77%	80%	84%	84%	82%	83%
Health and wellness opportunities in Franklin	71%	72%	85%	79%	71%	75%	79%	76%	75%	74%	77%	75%
Overall opportunities for education and enrichment	76%	76%	83%	82%	74%	77%	87%	74%	80%	79%	77%	78%
Overall economic health of Franklin	85%	89%	93%	91%	88%	90%	87%	85%	91%	90%	87%	89%
Sense of community	79%	83%	83%	82%	83%	81%	86%	83%	82%	82%	82%	82%

Table 29: Growth Management

	Age			Sex		Race/ethnicity		Rent or own		Detached or attached		Overall
	18-34	35-54	55+	Female	Male	White alone, not Hispanic	Hispanic and/or other race	Rent	Own	Detached	Attached	
Please rate your level of satisfaction with the City of Franklin's management of growth	90%	82%	83%	83%	85%	84%	85%	86%	83%	83%	86%	84%

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Table 30: Mass Transit Usage

Presently the City of Franklin and Williamson County subsidize a limited mass transit route from Spring Hill through the city to Nashville. How likely, if at all, would you be to use this transit route if the following improvements were made? (Percent rating as "Very likely" or "Somewhat likely").	Age			Sex		Race/ethnicity		Rent or own		Detached or attached		Overall
	18-34	35-54	55+	Female	Male	White alone, not Hispanic	Hispanic and/or other race	Rent	Own	Detached	Attached	
Expanded weekday schedule	46%	39%	30%	44%	32%	35%	57%	49%	33%	33%	49%	38%
Additional pick-up and drop-off locations	51%	46%	33%	51%	36%	39%	66%	57%	37%	36%	57%	44%
Decreasing fares	39%	35%	28%	42%	26%	30%	51%	44%	29%	29%	44%	34%
Enhanced Park & Ride facilities	47%	43%	32%	47%	34%	36%	63%	52%	36%	35%	53%	41%
Enhanced connections via walking, cycling, etc.	52%	47%	34%	51%	38%	41%	58%	55%	40%	39%	56%	45%
Expanded weekend schedule	54%	47%	32%	54%	34%	41%	65%	61%	37%	37%	60%	45%

THE NCSTM

The National Citizen SurveyTM

Franklin, TN

Supplemental Online Survey Results

FINAL
2016



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The NCS™ is presented by NRC in collaboration with ICMA.

NRC is a charter member of the AAPOR Transparency Initiative, providing clear disclosure of our sound and ethical survey research practices.

About this Report

As part of its participation in The National Citizen Survey™, the City of Franklin conducted a mailed survey of 3,000 residents. Surveys were mailed to randomly selected households in September 2016 and data were collected through November 2016. Two weeks before the official data collection period was over and the data was reported (see the report, *The National Citizen Survey: Community Livability Report, Franklin, TN, 2016*), the City made available a web-based survey to its residents through a link on the City's website. Visitors to the site were able to complete the survey throughout October and November 2016 and 324 surveys were received.

This report contains the results of this administration of the web-based survey and have not been weighted to current population estimates of Franklin.

Complete Survey Responses

The following pages contain a complete set of responses to each question on the survey, excluding the “don’t know” responses. The percent of respondents giving a particular response is shown followed by the number of respondents (denoted with “N=”).

Responses excluding “don’t know”

Table 1: Question 1

Please rate each of the following aspects of quality of life in Franklin:	Excellent		Good		Fair		Poor		Total	
Franklin as a place to live	72%	N=231	25%	N=79	3%	N=11	0%	N=1	100%	N=322
Your neighborhood as a place to live	59%	N=190	32%	N=102	8%	N=27	0%	N=1	100%	N=320
Franklin as a place to raise children	73%	N=230	23%	N=73	4%	N=11	0%	N=0	100%	N=314
Franklin as a place to work	55%	N=154	36%	N=102	6%	N=18	3%	N=8	100%	N=282
Franklin as a place to visit	66%	N=210	31%	N=97	3%	N=11	0%	N=0	100%	N=318
Franklin as a place to retire	49%	N=139	32%	N=91	14%	N=39	5%	N=13	100%	N=282
The overall quality of life in Franklin	61%	N=196	33%	N=105	7%	N=21	0%	N=1	100%	N=323

Table 2: Question 2

Please rate each of the following characteristics as they relate to Franklin as a whole:	Excellent		Good		Fair		Poor		Total	
Overall feeling of safety in Franklin	57%	N=177	39%	N=121	4%	N=14	0%	N=1	100%	N=313
Overall ease of getting to the places you usually have to visit	12%	N=36	34%	N=107	34%	N=105	21%	N=64	100%	N=312
Quality of overall natural environment in Franklin	37%	N=114	43%	N=133	17%	N=54	3%	N=8	100%	N=309
Overall "built environment" of Franklin (including overall design, buildings, parks and transportation systems)	20%	N=62	48%	N=150	24%	N=73	8%	N=25	100%	N=310
Health and wellness opportunities in Franklin	40%	N=122	42%	N=127	15%	N=46	3%	N=8	100%	N=303
Overall opportunities for education and enrichment	52%	N=158	37%	N=112	10%	N=29	2%	N=6	100%	N=305
Overall economic health of Franklin	61%	N=182	34%	N=103	4%	N=12	1%	N=2	100%	N=299
Sense of community	43%	N=135	40%	N=126	13%	N=41	4%	N=11	100%	N=313
Overall image or reputation of Franklin	70%	N=219	27%	N=84	3%	N=9	0%	N=1	100%	N=313

Table 3: Question 3

Please indicate how likely or unlikely you are to do each of the following:	Very likely		Somewhat likely		Somewhat unlikely		Very unlikely		Total	
Recommend living in Franklin to someone who asks	72%	N=214	21%	N=63	5%	N=16	2%	N=6	100%	N=299
Remain in Franklin for the next five years	74%	N=223	16%	N=49	5%	N=15	4%	N=13	100%	N=300

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Table 4: Question 4

Please rate how safe or unsafe you feel:	Very safe		Somewhat safe		Neither safe nor unsafe		Somewhat unsafe		Very unsafe		Total	
In your neighborhood during the day	85%	N=264	13%	N=39	2%	N=5	1%	N=2	0%	N=0	100%	N=310
In Franklin's downtown/commercial area during the day	85%	N=264	13%	N=41	1%	N=4	1%	N=2	0%	N=0	100%	N=311

Table 5: Question 5

Please rate each of the following characteristics as they relate to Franklin as a whole:	Excellent		Good		Fair		Poor		Total	
Traffic flow on major streets	1%	N=4	25%	N=75	36%	N=110	37%	N=113	100%	N=302
Ease of public parking	10%	N=29	41%	N=125	32%	N=97	17%	N=52	100%	N=303
Ease of travel by car in Franklin	6%	N=19	33%	N=99	35%	N=105	26%	N=79	100%	N=302
Ease of travel by public transportation in Franklin	4%	N=6	16%	N=25	18%	N=28	63%	N=101	100%	N=160
Ease of travel by bicycle in Franklin	6%	N=11	23%	N=43	32%	N=59	39%	N=71	100%	N=184
Ease of walking in Franklin	15%	N=43	39%	N=114	31%	N=91	16%	N=47	100%	N=295
Availability of paths and walking trails	14%	N=40	42%	N=122	30%	N=88	14%	N=41	100%	N=291
Air quality	34%	N=101	55%	N=162	10%	N=30	1%	N=3	100%	N=296
Cleanliness of Franklin	48%	N=146	46%	N=138	6%	N=18	0%	N=1	100%	N=303
Overall appearance of Franklin	57%	N=171	39%	N=119	3%	N=10	1%	N=2	100%	N=302
Public places where people want to spend time	45%	N=136	44%	N=134	10%	N=31	1%	N=2	100%	N=303
Variety of housing options	12%	N=34	31%	N=90	32%	N=93	26%	N=75	100%	N=292
Availability of affordable quality housing	7%	N=20	16%	N=45	31%	N=86	46%	N=130	100%	N=281
Fitness opportunities (including exercise classes and paths or trails, etc.)	34%	N=101	45%	N=136	15%	N=46	5%	N=16	100%	N=299
Recreational opportunities	33%	N=100	48%	N=145	17%	N=52	1%	N=4	100%	N=301
Availability of affordable quality food	34%	N=104	46%	N=140	17%	N=50	3%	N=9	100%	N=303
Availability of affordable quality health care	38%	N=109	44%	N=126	15%	N=44	3%	N=9	100%	N=288
Availability of preventive health services	42%	N=116	44%	N=121	12%	N=33	2%	N=5	100%	N=275
Availability of affordable quality mental health care	28%	N=48	36%	N=63	25%	N=44	11%	N=19	100%	N=174

Table 6: Question 6

Please rate each of the following characteristics as they relate to Franklin as a whole:	Excellent		Good		Fair		Poor		Total	
Availability of affordable quality child care/preschool	25%	N=40	41%	N=67	28%	N=45	7%	N=11	100%	N=163
K-12 education	61%	N=152	33%	N=83	5%	N=13	1%	N=2	100%	N=250
Adult educational opportunities	26%	N=50	48%	N=93	19%	N=37	6%	N=12	100%	N=192
Opportunities to attend cultural/arts/music activities	39%	N=115	46%	N=134	14%	N=40	1%	N=4	100%	N=293
Opportunities to participate in religious or spiritual events and activities	65%	N=175	30%	N=82	4%	N=12	0%	N=1	100%	N=270
Employment opportunities	32%	N=80	52%	N=130	13%	N=33	3%	N=7	100%	N=250
Shopping opportunities	64%	N=192	33%	N=98	3%	N=9	0%	N=0	100%	N=299
Cost of living in Franklin	6%	N=19	41%	N=123	38%	N=113	14%	N=43	100%	N=298
Overall quality of business and service establishments in Franklin	41%	N=121	53%	N=157	6%	N=18	1%	N=2	100%	N=298

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Please rate each of the following characteristics as they relate to Franklin as a whole:	Excellent		Good		Fair		Poor		Total	
Vibrant downtown/commercial area	61%	N=182	34%	N=101	5%	N=15	0%	N=1	100%	N=299
Overall quality of new development in Franklin	29%	N=84	48%	N=138	15%	N=42	8%	N=22	100%	N=286
Opportunities to participate in social events and activities	45%	N=132	44%	N=130	10%	N=29	1%	N=2	100%	N=293
Opportunities to volunteer	48%	N=129	43%	N=115	7%	N=19	1%	N=3	100%	N=266
Opportunities to participate in community matters	41%	N=108	48%	N=126	9%	N=24	3%	N=7	100%	N=265
Openness and acceptance of the community toward people of diverse backgrounds	24%	N=64	41%	N=112	23%	N=62	12%	N=33	100%	N=271
Neighborliness of residents in Franklin	35%	N=104	47%	N=139	16%	N=48	2%	N=7	100%	N=298

Table 7: Question 7

Please indicate whether or not you have done each of the following in the last 12 months.	No		Yes		Total	
Made efforts to conserve water	30%	N=87	70%	N=206	100%	N=293
Made efforts to make your home more energy efficient	31%	N=90	69%	N=200	100%	N=290
Observed a code violation or other hazard in Franklin	66%	N=192	34%	N=100	100%	N=292
Household member was a victim of a crime in Franklin	94%	N=275	6%	N=18	100%	N=293
Reported a crime to the police in Franklin	85%	N=248	15%	N=44	100%	N=292
Stocked supplies in preparation for an emergency	74%	N=216	26%	N=75	100%	N=291
Campaigned or advocated for an issue, cause or candidate	65%	N=190	35%	N=101	100%	N=291
Contacted the City of Franklin (in-person, phone, email or web) for help or information	49%	N=142	51%	N=150	100%	N=292
Contacted Franklin elected officials (in-person, phone, email or web) to express your opinion	62%	N=181	38%	N=111	100%	N=292

Table 8: Question 8

In the last 12 months, about how many times, if at all, have you or other household members done each of the following in Franklin?	2 times a week or more		2-4 times a month		Once a month or less		Not at all		Total	
Used Franklin recreation centers or their services	16%	N=47	13%	N=38	32%	N=91	39%	N=111	100%	N=287
Visited a neighborhood park or City park	17%	N=50	31%	N=88	44%	N=126	8%	N=23	100%	N=287
Used Franklin public libraries or their services	7%	N=20	21%	N=60	37%	N=107	35%	N=99	100%	N=286
Participated in religious or spiritual activities in Franklin	23%	N=68	34%	N=99	15%	N=43	28%	N=80	100%	N=290
Attended a City-sponsored event	5%	N=13	12%	N=34	70%	N=203	13%	N=38	100%	N=288
Used bus, rail, subway or other public transportation instead of driving	1%	N=2	1%	N=2	4%	N=11	95%	N=274	100%	N=289
Carpooled with other adults or children instead of driving alone	9%	N=27	15%	N=42	21%	N=61	55%	N=157	100%	N=287
Walked or biked instead of driving	10%	N=28	16%	N=45	24%	N=70	51%	N=146	100%	N=289
Volunteered your time to some group/activity in Franklin	12%	N=35	24%	N=69	31%	N=91	33%	N=94	100%	N=289
Participated in a club	7%	N=21	16%	N=45	19%	N=54	58%	N=163	100%	N=283
Talked to or visited with your immediate neighbors	47%	N=136	34%	N=99	16%	N=47	3%	N=8	100%	N=290
Done a favor for a neighbor	21%	N=61	29%	N=85	38%	N=111	11%	N=32	100%	N=289

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Table 9: Question 9

Thinking about local public meetings (of local elected officials like City Council or County Commissioners, advisory boards, town halls, HOA, neighborhood watch, etc.), in the last 12 months, about how many times, if at all, have you or other household members attended or watched a local public meeting?	2 times a week or more		2-4 times a month		Once a month or less		Not at all		Total	
Attended a local public meeting	2%	N=6	7%	N=20	32%	N=90	58%	N=162	100%	N=278
Watched (online or on television) a local public meeting	3%	N=9	6%	N=16	28%	N=79	64%	N=182	100%	N=286

Table 10: Question 10

Please rate the quality of each of the following services in Franklin:	Excellent		Good		Fair		Poor		Total	
Police/Sheriff services	69%	N=176	26%	N=67	4%	N=11	0%	N=0	100%	N=254
Fire services	74%	N=175	25%	N=58	1%	N=3	0%	N=0	100%	N=236
Ambulance or emergency medical services	71%	N=154	26%	N=56	2%	N=5	1%	N=2	100%	N=217
Crime prevention	53%	N=120	41%	N=93	6%	N=13	0%	N=1	100%	N=227
Fire prevention and education	56%	N=115	39%	N=79	4%	N=8	1%	N=3	100%	N=205
Traffic enforcement	30%	N=76	45%	N=113	17%	N=43	8%	N=21	100%	N=253
Street repair	23%	N=62	43%	N=114	26%	N=71	8%	N=21	100%	N=268
Street cleaning	39%	N=101	45%	N=117	15%	N=38	2%	N=6	100%	N=262
Street lighting	26%	N=74	49%	N=138	22%	N=61	3%	N=7	100%	N=280
Snow removal	20%	N=48	43%	N=102	23%	N=55	14%	N=33	100%	N=238
Sidewalk maintenance	24%	N=59	48%	N=120	23%	N=56	5%	N=13	100%	N=248
Traffic signal timing	12%	N=32	38%	N=107	31%	N=87	19%	N=52	100%	N=278
Bus or transit services	13%	N=17	26%	N=33	27%	N=34	34%	N=43	100%	N=127
Garbage collection	59%	N=149	32%	N=82	8%	N=20	1%	N=3	100%	N=254
Recycling	51%	N=129	31%	N=80	9%	N=24	9%	N=22	100%	N=255
Yard waste pick-up	57%	N=129	36%	N=80	6%	N=13	1%	N=3	100%	N=225
Storm drainage	34%	N=82	52%	N=124	13%	N=30	2%	N=4	100%	N=240
Drinking water	33%	N=91	42%	N=115	15%	N=41	10%	N=26	100%	N=273
Sewer services	41%	N=106	47%	N=121	10%	N=25	2%	N=5	100%	N=257
Power (electric and/or gas) utility	43%	N=120	47%	N=130	8%	N=21	2%	N=5	100%	N=276
Utility billing	37%	N=102	47%	N=130	13%	N=36	3%	N=7	100%	N=275
City parks	51%	N=138	42%	N=114	7%	N=20	0%	N=1	100%	N=273
Recreation programs or classes	42%	N=84	46%	N=91	10%	N=20	3%	N=5	100%	N=200
Recreation centers or facilities	40%	N=88	47%	N=103	12%	N=26	2%	N=4	100%	N=221
Land use, planning and zoning	14%	N=35	42%	N=104	26%	N=66	18%	N=45	100%	N=250
Code enforcement (weeds, abandoned buildings, etc.)	23%	N=50	50%	N=110	16%	N=36	11%	N=24	100%	N=220
Animal control	29%	N=61	53%	N=113	15%	N=33	3%	N=6	100%	N=213
Economic development	39%	N=95	44%	N=106	12%	N=30	5%	N=12	100%	N=243
Health services	43%	N=99	47%	N=108	8%	N=19	1%	N=2	100%	N=228
Public library services	49%	N=112	44%	N=100	6%	N=13	1%	N=3	100%	N=228

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Please rate the quality of each of the following services in Franklin:	Excellent		Good		Fair		Poor		Total	
Public information services	33%	N=70	53%	N=111	12%	N=25	2%	N=4	100%	N=210
Cable television	19%	N=45	34%	N=78	34%	N=78	13%	N=30	100%	N=231
Emergency preparedness (services that prepare the community for natural disasters or other emergency situations)	32%	N=59	50%	N=92	14%	N=25	4%	N=8	100%	N=184
Preservation of natural areas such as open space, farmlands and greenbelts	28%	N=72	39%	N=100	19%	N=50	14%	N=37	100%	N=259
Franklin open space	26%	N=69	37%	N=98	26%	N=68	11%	N=30	100%	N=265
City-sponsored special events	48%	N=123	44%	N=114	6%	N=16	2%	N=5	100%	N=258
Overall customer service by Franklin employees (police, receptionists, planners, etc.)	51%	N=129	40%	N=103	7%	N=19	2%	N=4	100%	N=255

Table 11: Question 11

Overall, how would you rate the quality of the services provided by each of the following?	Excellent		Good		Fair		Poor		Total	
The City of Franklin	48%	N=132	43%	N=117	7%	N=20	2%	N=6	100%	N=275
The Federal Government	5%	N=12	31%	N=80	40%	N=102	24%	N=62	100%	N=256

Table 12: Question 12

Please rate the following categories of Franklin government performance:	Excellent		Good		Fair		Poor		Total	
The value of services for the taxes paid to Franklin	31%	N=80	52%	N=133	14%	N=36	3%	N=7	100%	N=256
The overall direction that Franklin is taking	20%	N=53	44%	N=118	21%	N=55	15%	N=40	100%	N=266
The job Franklin government does at welcoming citizen involvement	28%	N=67	46%	N=110	18%	N=42	8%	N=18	100%	N=237
Overall confidence in Franklin government	26%	N=68	46%	N=122	19%	N=51	9%	N=24	100%	N=265
Generally acting in the best interest of the community	26%	N=67	44%	N=114	18%	N=48	12%	N=32	100%	N=261
Being honest	32%	N=74	44%	N=102	15%	N=35	10%	N=23	100%	N=234
Treating all residents fairly	29%	N=69	41%	N=97	19%	N=46	11%	N=26	100%	N=238

Table 13: Question 13

Please rate how important, if at all, you think it is for the Franklin community to focus on each of the following in the coming two years:	Essential		Very important		Somewhat important		Not at all important		Total	
Overall feeling of safety in Franklin	65%	N=178	27%	N=75	7%	N=18	1%	N=2	100%	N=273
Overall ease of getting to the places you usually have to visit	62%	N=169	35%	N=96	2%	N=6	0%	N=1	100%	N=272
Quality of overall natural environment in Franklin	43%	N=116	45%	N=121	11%	N=31	1%	N=3	100%	N=271
Overall "built environment" of Franklin (including overall design, buildings, parks and transportation systems)	47%	N=129	43%	N=116	8%	N=23	1%	N=4	100%	N=272
Health and wellness opportunities in Franklin	27%	N=73	48%	N=130	21%	N=56	4%	N=12	100%	N=271
Overall opportunities for education and enrichment	41%	N=112	39%	N=105	17%	N=47	3%	N=8	100%	N=272
Overall economic health of Franklin	55%	N=149	40%	N=109	5%	N=15	0%	N=0	100%	N=273
Sense of community	45%	N=122	41%	N=113	13%	N=36	1%	N=2	100%	N=273

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Table 14: Question 14

Please rate your level of satisfaction with the City of Franklin's management of growth:	Percent	Number
Very satisfied	18%	N=48
Somewhat satisfied	47%	N=125
Somewhat unsatisfied	19%	N=51
Very unsatisfied	16%	N=42
Total	100%	N=266

Table 15: Question 15

Presently the City of Franklin and Williamson County subsidize a limited mass transit route from Spring Hill through the city to Nashville. How likely, if at all, would you be to use this transit route if the following improvements were made?	Very likely		Somewhat likely		Somewhat unlikely		Very unlikely		Total	
Expanded weekday schedule	13%	N=29	27%	N=63	7%	N=17	53%	N=123	100%	N=232
Additional pick-up and drop-off locations	15%	N=34	29%	N=68	10%	N=24	46%	N=106	100%	N=232
Decreasing fares	12%	N=26	24%	N=51	9%	N=18	55%	N=115	100%	N=210
Enhanced Park & Ride facilities	16%	N=36	29%	N=66	9%	N=21	46%	N=103	100%	N=226
Enhanced connections via walking, cycling, etc.	25%	N=57	23%	N=52	7%	N=16	45%	N=104	100%	N=229
Expanded weekend schedule	18%	N=40	25%	N=57	10%	N=23	47%	N=105	100%	N=225

Table 16: Question D1

How often, if at all, do you do each of the following, considering all of the times you could?	Never		Rarely		Sometimes		Usually		Always		Total	
Recycle at home	4%	N=12	6%	N=17	13%	N=36	17%	N=45	60%	N=162	100%	N=272
Purchase goods or services from a business located in Franklin	0%	N=0	1%	N=2	13%	N=36	55%	N=150	31%	N=83	100%	N=271
Eat at least 5 portions of fruits and vegetables a day	1%	N=2	10%	N=26	37%	N=101	38%	N=102	15%	N=40	100%	N=271
Participate in moderate or vigorous physical activity	1%	N=4	9%	N=24	32%	N=87	36%	N=96	22%	N=58	100%	N=269
Read or watch local news (via television, paper, computer, etc.)	2%	N=6	7%	N=20	14%	N=38	35%	N=94	42%	N=114	100%	N=272
Vote in local elections	3%	N=9	3%	N=8	7%	N=18	22%	N=61	65%	N=176	100%	N=272

Table 17: Question D2

Would you say that in general your health is:	Percent	Number
Excellent	31%	N=83
Very good	46%	N=125
Good	22%	N=61
Fair	1%	N=3
Poor	0%	N=0
Total	100%	N=272

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Table 18: Question D3

What impact, if any, do you think the economy will have on your family income in the next 6 months? Do you think the impact will be:	Percent	Number
Very positive	8%	N=23
Somewhat positive	32%	N=86
Neutral	46%	N=125
Somewhat negative	12%	N=33
Very negative	1%	N=4
Total	100%	N=271

Table 19: Question D4

What is your employment status?	Percent	Number
Working full time for pay	69%	N=189
Working part time for pay	8%	N=22
Unemployed, looking for paid work	1%	N=4
Unemployed, not looking for paid work	7%	N=20
Fully retired	14%	N=37
Total	100%	N=272

Table 20: Question D5

Do you work inside the boundaries of Franklin?	Percent	Number
Yes, outside the home	44%	N=119
Yes, from home	17%	N=47
No	39%	N=107
Total	100%	N=273

Table 21: Question D6

How many years have you lived in Franklin?	Percent	Number
Less than 2 years	8%	N=21
2 to 5 years	20%	N=55
6 to 10 years	16%	N=45
11 to 20 years	29%	N=79
More than 20 years	27%	N=73
Total	100%	N=273

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Table 22: Question D7

Which best describes the building you live in?	Percent	Number
One family house detached from any other houses	85%	N=230
Building with two or more homes (duplex, townhome, apartment or condominium)	15%	N=41
Mobile home	0%	N=1
Other	0%	N=0
Total	100%	N=272

Table 23: Question D8

Is this house, apartment or mobile home...	Percent	Number
Rented	14%	N=37
Owned	86%	N=236
Total	100%	N=273

Table 24: Question D9

About how much is your monthly housing cost for the place you live (including rent, mortgage payment, property tax, property insurance and homeowners' association (HOA) fees)?	Percent	Number
Less than \$300 per month	3%	N=8
\$300 to \$599 per month	6%	N=16
\$600 to \$999 per month	7%	N=18
\$1,000 to \$1,499 per month	22%	N=58
\$1,500 to \$2,499 per month	43%	N=116
\$2,500 or more per month	19%	N=51
Total	100%	N=267

Table 25: Question D10

Do any children 17 or under live in your household?	Percent	Number
No	52%	N=142
Yes	48%	N=131
Total	100%	N=273

Table 26: Question D11

Are you or any other members of your household aged 65 or older?	Percent	Number
No	79%	N=216
Yes	21%	N=57
Total	100%	N=273

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Table 27: Question D12

How much do you anticipate your household's total income before taxes will be for the current year? (Please include in your total income money from all sources for all persons living in your household.)	Percent	Number
Less than \$25,000	2%	N=5
\$25,000 to \$49,999	4%	N=9
\$50,000 to \$99,999	27%	N=68
\$100,000 to \$149,999	25%	N=64
\$150,000 or more	43%	N=109
Total	100%	N=255

Table 28: Question D13

Are you Spanish, Hispanic or Latino?	Percent	Number
No, not Spanish, Hispanic or Latino	99%	N=265
Yes, I consider myself to be Spanish, Hispanic or Latino	1%	N=4
Total	100%	N=269

Table 29: Question D14

What is your race? (Mark one or more races to indicate what race(s) you consider yourself to be.)	Percent	Number
American Indian or Alaskan Native	1%	N=3
Asian, Asian Indian or Pacific Islander	1%	N=3
Black or African American	1%	N=2
White	98%	N=262
Other	1%	N=2

Table 30: Question D15

In which category is your age?	Percent	Number
18 to 24 years	1%	N=2
25 to 34 years	9%	N=25
35 to 44 years	24%	N=65
45 to 54 years	30%	N=81
55 to 64 years	20%	N=54
65 to 74 years	12%	N=32
75 years or older	4%	N=11
Total	100%	N=270

Table 31: Question D16

What is your sex?	Percent	Number
Female	60%	N=161
Male	40%	N=108
Total	100%	N=269

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Table 33: Question D17

Do you consider a cell phone or landline your primary telephone number?	Percent	Number
Cell	78%	N=210
Land line	6%	N=17
Both	16%	N=43
Total	100%	N=270

Responses including “don’t know”

The following pages contain a complete set of responses to each question on the survey, including the “don’t know” responses. The percent of respondents giving a particular response is shown followed by the number of respondents (denoted with “N=“).

Table 33: Question 1

Please rate each of the following aspects of quality of life in Franklin:	Excellent		Good		Fair		Poor		Don't know		Total	
Franklin as a place to live	72%	N=231	25%	N=79	3%	N=11	0%	N=1	0%	N=0	100%	N=322
Your neighborhood as a place to live	59%	N=190	32%	N=102	8%	N=27	0%	N=1	0%	N=1	100%	N=321
Franklin as a place to raise children	71%	N=230	23%	N=73	3%	N=11	0%	N=0	3%	N=9	100%	N=323
Franklin as a place to work	48%	N=154	32%	N=102	6%	N=18	2%	N=8	12%	N=40	100%	N=322
Franklin as a place to visit	65%	N=210	30%	N=97	3%	N=11	0%	N=0	1%	N=4	100%	N=322
Franklin as a place to retire	43%	N=139	28%	N=91	12%	N=39	4%	N=13	13%	N=41	100%	N=323
The overall quality of life in Franklin	61%	N=196	33%	N=105	7%	N=21	0%	N=1	0%	N=0	100%	N=323

Table 34: Question 2

Please rate each of the following characteristics as they relate to Franklin as a whole:	Excellent		Good		Fair		Poor		Don't know		Total	
Overall feeling of safety in Franklin	57%	N=177	39%	N=121	4%	N=14	0%	N=1	0%	N=0	100%	N=313
Overall ease of getting to the places you usually have to visit	12%	N=36	34%	N=107	34%	N=105	21%	N=64	0%	N=0	100%	N=312
Quality of overall natural environment in Franklin	37%	N=114	43%	N=133	17%	N=54	3%	N=8	1%	N=2	100%	N=311
Overall "built environment" of Franklin (including overall design, buildings, parks and transportation systems)	20%	N=62	48%	N=150	24%	N=73	8%	N=25	0%	N=0	100%	N=310
Health and wellness opportunities in Franklin	39%	N=122	41%	N=127	15%	N=46	3%	N=8	3%	N=10	100%	N=313
Overall opportunities for education and enrichment	50%	N=158	36%	N=112	9%	N=29	2%	N=6	3%	N=8	100%	N=313
Overall economic health of Franklin	59%	N=182	33%	N=103	4%	N=12	1%	N=2	4%	N=11	100%	N=310
Sense of community	43%	N=135	40%	N=126	13%	N=41	4%	N=11	0%	N=0	100%	N=313
Overall image or reputation of Franklin	70%	N=219	27%	N=84	3%	N=9	0%	N=1	0%	N=0	100%	N=313

Table 35: Question 3

Please indicate how likely or unlikely you are to do each of the following:	Very likely		Somewhat likely		Somewhat unlikely		Very unlikely		Don't know		Total	
Recommend living in Franklin to someone who asks	71%	N=214	21%	N=63	5%	N=16	2%	N=6	0%	N=1	100%	N=300
Remain in Franklin for the next five years	73%	N=223	16%	N=49	5%	N=15	4%	N=13	2%	N=5	100%	N=305

Table 36: Question 4

Please rate how safe or unsafe you feel:	Very safe		Somewhat safe		Neither safe nor unsafe		Somewhat unsafe		Very unsafe		Don't know		Total	
In your neighborhood during the day	85%	N=264	13%	N=39	2%	N=5	1%	N=2	0%	N=0	0%	N=0	100%	N=310
In Franklin's downtown/commercial area during the day	85%	N=264	13%	N=41	1%	N=4	1%	N=2	0%	N=0	0%	N=0	100%	N=311

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Table 37: Question 5

Please rate each of the following characteristics as they relate to Franklin as a whole:	Excellent		Good		Fair		Poor		Don't know		Total	
Traffic flow on major streets	1%	N=4	25%	N=75	36%	N=110	37%	N=113	0%	N=0	100%	N=302
Ease of public parking	10%	N=29	41%	N=125	32%	N=97	17%	N=52	0%	N=0	100%	N=303
Ease of travel by car in Franklin	6%	N=19	33%	N=99	35%	N=105	26%	N=79	0%	N=0	100%	N=302
Ease of travel by public transportation in Franklin	2%	N=6	8%	N=25	9%	N=28	33%	N=101	47%	N=144	100%	N=304
Ease of travel by bicycle in Franklin	4%	N=11	14%	N=43	19%	N=59	23%	N=71	40%	N=121	100%	N=305
Ease of walking in Franklin	14%	N=43	38%	N=114	30%	N=91	15%	N=47	3%	N=9	100%	N=304
Availability of paths and walking trails	13%	N=40	40%	N=122	29%	N=88	14%	N=41	4%	N=12	100%	N=303
Air quality	33%	N=101	53%	N=162	10%	N=30	1%	N=3	3%	N=8	100%	N=304
Cleanliness of Franklin	48%	N=146	46%	N=138	6%	N=18	0%	N=1	0%	N=0	100%	N=303
Overall appearance of Franklin	57%	N=171	39%	N=119	3%	N=10	1%	N=2	0%	N=0	100%	N=302
Public places where people want to spend time	45%	N=136	44%	N=134	10%	N=31	1%	N=2	1%	N=2	100%	N=305
Variety of housing options	11%	N=34	30%	N=90	31%	N=93	25%	N=75	3%	N=9	100%	N=301
Availability of affordable quality housing	7%	N=20	15%	N=45	28%	N=86	43%	N=130	7%	N=22	100%	N=303
Fitness opportunities (including exercise classes and paths or trails, etc.)	33%	N=101	45%	N=136	15%	N=46	5%	N=16	2%	N=6	100%	N=305
Recreational opportunities	33%	N=100	48%	N=145	17%	N=52	1%	N=4	1%	N=4	100%	N=305
Availability of affordable quality food	34%	N=104	46%	N=140	16%	N=50	3%	N=9	1%	N=2	100%	N=305
Availability of affordable quality health care	36%	N=109	41%	N=126	14%	N=44	3%	N=9	5%	N=16	100%	N=304
Availability of preventive health services	38%	N=116	40%	N=121	11%	N=33	2%	N=5	9%	N=28	100%	N=303
Availability of affordable quality mental health care	16%	N=48	21%	N=63	14%	N=44	6%	N=19	43%	N=131	100%	N=305

Table 38: Question 6

Please rate each of the following characteristics as they relate to Franklin as a whole:	Excellent		Good		Fair		Poor		Don't know		Total	
Availability of affordable quality child care/preschool	14%	N=40	23%	N=67	15%	N=45	4%	N=11	45%	N=133	100%	N=296
K-12 education	51%	N=152	28%	N=83	4%	N=13	1%	N=2	16%	N=48	100%	N=298
Adult educational opportunities	17%	N=50	32%	N=93	13%	N=37	4%	N=12	35%	N=103	100%	N=295
Opportunities to attend cultural/arts/music activities	39%	N=115	45%	N=134	13%	N=40	1%	N=4	2%	N=5	100%	N=298
Opportunities to participate in religious or spiritual events and activities	59%	N=175	28%	N=82	4%	N=12	0%	N=1	9%	N=28	100%	N=298
Employment opportunities	27%	N=80	44%	N=130	11%	N=33	2%	N=7	16%	N=48	100%	N=298
Shopping opportunities	64%	N=192	33%	N=98	3%	N=9	0%	N=0	0%	N=0	100%	N=299
Cost of living in Franklin	6%	N=19	41%	N=123	38%	N=113	14%	N=43	0%	N=0	100%	N=298
Overall quality of business and service establishments in Franklin	41%	N=121	53%	N=157	6%	N=18	1%	N=2	0%	N=0	100%	N=298
Vibrant downtown/commercial area	61%	N=182	34%	N=101	5%	N=15	0%	N=1	0%	N=0	100%	N=299
Overall quality of new development in Franklin	28%	N=84	47%	N=138	14%	N=42	7%	N=22	3%	N=9	100%	N=295
Opportunities to participate in social events and activities	44%	N=132	44%	N=130	10%	N=29	1%	N=2	1%	N=4	100%	N=297

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Please rate each of the following characteristics as they relate to Franklin as a whole:	Excellent		Good		Fair		Poor		Don't know		Total	
Opportunities to volunteer	43%	N=129	39%	N=115	6%	N=19	1%	N=3	11%	N=32	100%	N=298
Opportunities to participate in community matters	36%	N=108	42%	N=126	8%	N=24	2%	N=7	11%	N=33	100%	N=298
Openness and acceptance of the community toward people of diverse backgrounds	21%	N=64	37%	N=112	21%	N=62	11%	N=33	9%	N=28	100%	N=299
Neighborliness of residents in Franklin	35%	N=104	46%	N=139	16%	N=48	2%	N=7	0%	N=1	100%	N=299

Table 39: Question 7

Please indicate whether or not you have done each of the following in the last 12 months.	No		Yes		Total	
Made efforts to conserve water	30%	N=87	70%	N=206	100%	N=293
Made efforts to make your home more energy efficient	31%	N=90	69%	N=200	100%	N=290
Observed a code violation or other hazard in Franklin	66%	N=192	34%	N=100	100%	N=292
Household member was a victim of a crime in Franklin	94%	N=275	6%	N=18	100%	N=293
Reported a crime to the police in Franklin	85%	N=248	15%	N=44	100%	N=292
Stocked supplies in preparation for an emergency	74%	N=216	26%	N=75	100%	N=291
Campaigned or advocated for an issue, cause or candidate	65%	N=190	35%	N=101	100%	N=291
Contacted the City of Franklin (in-person, phone, email or web) for help or information	49%	N=142	51%	N=150	100%	N=292
Contacted Franklin elected officials (in-person, phone, email or web) to express your opinion	62%	N=181	38%	N=111	100%	N=292

Table 40: Question 8

In the last 12 months, about how many times, if at all, have you or other household members done each of the following in Franklin?	2 times a week or more		2-4 times a month		Once a month or less		Not at all		Total	
Used Franklin recreation centers or their services	16%	N=47	13%	N=38	32%	N=91	39%	N=111	100%	N=287
Visited a neighborhood park or City park	17%	N=50	31%	N=88	44%	N=126	8%	N=23	100%	N=287
Used Franklin public libraries or their services	7%	N=20	21%	N=60	37%	N=107	35%	N=99	100%	N=286
Participated in religious or spiritual activities in Franklin	23%	N=68	34%	N=99	15%	N=43	28%	N=80	100%	N=290
Attended a City-sponsored event	5%	N=13	12%	N=34	70%	N=203	13%	N=38	100%	N=288
Used bus, rail, subway or other public transportation instead of driving	1%	N=2	1%	N=2	4%	N=11	95%	N=274	100%	N=289
Carpooled with other adults or children instead of driving alone	9%	N=27	15%	N=42	21%	N=61	55%	N=157	100%	N=287
Walked or biked instead of driving	10%	N=28	16%	N=45	24%	N=70	51%	N=146	100%	N=289
Volunteered your time to some group/activity in Franklin	12%	N=35	24%	N=69	31%	N=91	33%	N=94	100%	N=289
Participated in a club	7%	N=21	16%	N=45	19%	N=54	58%	N=163	100%	N=283
Talked to or visited with your immediate neighbors	47%	N=136	34%	N=99	16%	N=47	3%	N=8	100%	N=290
Done a favor for a neighbor	21%	N=61	29%	N=85	38%	N=111	11%	N=32	100%	N=289

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Table 41: Question 9

Thinking about local public meetings (of local elected officials like City Council or County Commissioners, advisory boards, town halls, HOA, neighborhood watch, etc.), in the last 12 months, about how many times, if at all, have you or other household members attended or watched a local public meeting?	2 times a week or more		2-4 times a month		Once a month or less		Not at all		Total	
Attended a local public meeting	2%	N=6	7%	N=20	32%	N=90	58%	N=162	100%	N=278
Watched (online or on television) a local public meeting	3%	N=9	6%	N=16	28%	N=79	64%	N=182	100%	N=286

Table 42: Question 10

Please rate the quality of each of the following services in Franklin:	Excellent		Good		Fair		Poor		Don't know		Total	
Police/Sheriff services	63%	N=176	24%	N=67	4%	N=11	0%	N=0	9%	N=25	100%	N=279
Fire services	63%	N=175	21%	N=58	1%	N=3	0%	N=0	15%	N=43	100%	N=279
Ambulance or emergency medical services	55%	N=154	20%	N=56	2%	N=5	1%	N=2	23%	N=64	100%	N=281
Crime prevention	43%	N=120	34%	N=93	5%	N=13	0%	N=1	18%	N=50	100%	N=277
Fire prevention and education	41%	N=115	28%	N=79	3%	N=8	1%	N=3	27%	N=74	100%	N=279
Traffic enforcement	27%	N=76	40%	N=113	15%	N=43	8%	N=21	10%	N=27	100%	N=280
Street repair	22%	N=62	41%	N=114	25%	N=71	8%	N=21	4%	N=12	100%	N=280
Street cleaning	36%	N=101	42%	N=117	14%	N=38	2%	N=6	6%	N=16	100%	N=278
Street lighting	26%	N=74	49%	N=138	22%	N=61	2%	N=7	0%	N=1	100%	N=281
Snow removal	17%	N=48	36%	N=102	20%	N=55	12%	N=33	15%	N=43	100%	N=281
Sidewalk maintenance	21%	N=59	43%	N=120	20%	N=56	5%	N=13	11%	N=30	100%	N=278
Traffic signal timing	11%	N=32	38%	N=107	31%	N=87	18%	N=52	1%	N=4	100%	N=282
Bus or transit services	6%	N=17	12%	N=33	12%	N=34	15%	N=43	54%	N=152	100%	N=279
Garbage collection	53%	N=149	29%	N=82	7%	N=20	1%	N=3	10%	N=27	100%	N=281
Recycling	46%	N=129	28%	N=80	9%	N=24	8%	N=22	10%	N=27	100%	N=282
Yard waste pick-up	46%	N=129	29%	N=80	5%	N=13	1%	N=3	19%	N=54	100%	N=279
Storm drainage	29%	N=82	44%	N=124	11%	N=30	1%	N=4	15%	N=41	100%	N=281
Drinking water	32%	N=91	41%	N=115	15%	N=41	9%	N=26	3%	N=8	100%	N=281
Sewer services	38%	N=106	43%	N=121	9%	N=25	2%	N=5	8%	N=22	100%	N=279
Power (electric and/or gas) utility	43%	N=120	46%	N=130	8%	N=21	2%	N=5	1%	N=4	100%	N=280
Utility billing	36%	N=102	46%	N=130	13%	N=36	2%	N=7	2%	N=6	100%	N=281
City parks	49%	N=138	41%	N=114	7%	N=20	0%	N=1	2%	N=6	100%	N=279
Recreation programs or classes	30%	N=84	33%	N=91	7%	N=20	2%	N=5	28%	N=79	100%	N=279
Recreation centers or facilities	32%	N=88	37%	N=103	9%	N=26	1%	N=4	21%	N=58	100%	N=279
Land use, planning and zoning	13%	N=35	37%	N=104	24%	N=66	16%	N=45	10%	N=28	100%	N=278
Code enforcement (weeds, abandoned buildings, etc.)	18%	N=50	39%	N=110	13%	N=36	9%	N=24	22%	N=61	100%	N=281
Animal control	22%	N=61	40%	N=113	12%	N=33	2%	N=6	24%	N=68	100%	N=281
Economic development	34%	N=95	38%	N=106	11%	N=30	4%	N=12	13%	N=36	100%	N=279
Health services	36%	N=99	39%	N=108	7%	N=19	1%	N=2	18%	N=50	100%	N=278
Public library services	40%	N=112	36%	N=100	5%	N=13	1%	N=3	19%	N=52	100%	N=280

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Please rate the quality of each of the following services in Franklin:	Excellent		Good		Fair		Poor		Don't know		Total	
Public information services	25%	N=70	40%	N=111	9%	N=25	1%	N=4	25%	N=70	100%	N=280
Cable television	16%	N=45	28%	N=78	28%	N=78	11%	N=30	17%	N=48	100%	N=279
Emergency preparedness (services that prepare the community for natural disasters or other emergency situations)	21%	N=59	33%	N=92	9%	N=25	3%	N=8	34%	N=95	100%	N=279
Preservation of natural areas such as open space, farmlands and greenbelts	26%	N=72	36%	N=100	18%	N=50	13%	N=37	8%	N=21	100%	N=280
Franklin open space	25%	N=69	35%	N=98	24%	N=68	11%	N=30	6%	N=16	100%	N=281
City-sponsored special events	44%	N=123	41%	N=114	6%	N=16	2%	N=5	8%	N=22	100%	N=280
Overall customer service by Franklin employees (police, receptionists, planners, etc.)	46%	N=129	37%	N=103	7%	N=19	1%	N=4	9%	N=26	100%	N=281

Table 44: Question 11

Overall, how would you rate the quality of the services provided by each of the following?	Excellent		Good		Fair		Poor		Don't know		Total	
The City of Franklin	47%	N=132	42%	N=117	7%	N=20	2%	N=6	1%	N=4	100%	N=279
The Federal Government	4%	N=12	28%	N=80	36%	N=102	22%	N=62	9%	N=25	100%	N=281

Table 44: Question 12

Please rate the following categories of Franklin government performance:	Excellent		Good		Fair		Poor		Don't know		Total	
The value of services for the taxes paid to Franklin	29%	N=80	49%	N=133	13%	N=36	3%	N=7	6%	N=16	100%	N=272
The overall direction that Franklin is taking	19%	N=53	43%	N=118	20%	N=55	15%	N=40	2%	N=6	100%	N=272
The job Franklin government does at welcoming citizen involvement	25%	N=67	40%	N=110	15%	N=42	7%	N=18	13%	N=36	100%	N=273
Overall confidence in Franklin government	25%	N=68	45%	N=122	19%	N=51	9%	N=24	3%	N=8	100%	N=273
Generally acting in the best interest of the community	25%	N=67	42%	N=114	18%	N=48	12%	N=32	4%	N=12	100%	N=273
Being honest	27%	N=74	37%	N=102	13%	N=35	8%	N=23	14%	N=39	100%	N=273
Treating all residents fairly	26%	N=69	36%	N=97	17%	N=46	10%	N=26	12%	N=31	100%	N=269

Table 45: Question 13

Please rate how important, if at all, you think it is for the Franklin community to focus on each of the following in the coming two years:	Essential		Very important		Somewhat important		Not at all important		Total	
Overall feeling of safety in Franklin	65%	N=178	27%	N=75	7%	N=18	1%	N=2	100%	N=273
Overall ease of getting to the places you usually have to visit	62%	N=169	35%	N=96	2%	N=6	0%	N=1	100%	N=272
Quality of overall natural environment in Franklin	43%	N=116	45%	N=121	11%	N=31	1%	N=3	100%	N=271
Overall "built environment" of Franklin (including overall design, buildings, parks and transportation systems)	47%	N=129	43%	N=116	8%	N=23	1%	N=4	100%	N=272
Health and wellness opportunities in Franklin	27%	N=73	48%	N=130	21%	N=56	4%	N=12	100%	N=271
Overall opportunities for education and enrichment	41%	N=112	39%	N=105	17%	N=47	3%	N=8	100%	N=272
Overall economic health of Franklin	55%	N=149	40%	N=109	5%	N=15	0%	N=0	100%	N=273

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Please rate how important, if at all, you think it is for the Franklin community to focus on each of the following in the coming two years:	Essential		Very important		Somewhat important		Not at all important		Total	
Sense of community	45%	N=122	41%	N=113	13%	N=36	1%	N=2	100%	N=273

Table 465: Question 14

Please rate your level of satisfaction with the City of Franklin's management of growth:	Percent	Number
Very satisfied	18%	N=48
Somewhat satisfied	46%	N=125
Somewhat unsatisfied	19%	N=51
Very unsatisfied	15%	N=42
Don't know	3%	N=7
Total	100%	N=273

Table 47: Question 15

Presently the City of Franklin and Williamson County subsidize a limited mass transit route from Spring Hill through the city to Nashville. How likely, if at all, would you be to use this transit route if the following improvements were made?	Very likely		Somewhat likely		Somewhat unlikely		Very unlikely		Don't know		Total	
Expanded weekday schedule	11%	N=29	23%	N=63	6%	N=17	45%	N=123	15%	N=40	100%	N=272
Additional pick-up and drop-off locations	13%	N=34	25%	N=68	9%	N=24	40%	N=106	13%	N=35	100%	N=267
Decreasing fares	10%	N=26	19%	N=51	7%	N=18	43%	N=115	22%	N=58	100%	N=268
Enhanced Park & Ride facilities	13%	N=36	25%	N=66	8%	N=21	38%	N=103	16%	N=42	100%	N=268
Enhanced connections via walking, cycling, etc.	21%	N=57	19%	N=52	6%	N=16	39%	N=104	14%	N=38	100%	N=267
Expanded weekend schedule	15%	N=40	21%	N=57	9%	N=23	39%	N=105	16%	N=42	100%	N=267

Table 48: Question D1

How often, if at all, do you do each of the following, considering all of the times you could?	Never		Rarely		Sometimes		Usually		Always		Total	
Recycle at home	4%	N=12	6%	N=17	13%	N=36	17%	N=45	60%	N=162	100%	N=272
Purchase goods or services from a business located in Franklin	0%	N=0	1%	N=2	13%	N=36	55%	N=150	31%	N=83	100%	N=271
Eat at least 5 portions of fruits and vegetables a day	1%	N=2	10%	N=26	37%	N=101	38%	N=102	15%	N=40	100%	N=271
Participate in moderate or vigorous physical activity	1%	N=4	9%	N=24	32%	N=87	36%	N=96	22%	N=58	100%	N=269
Read or watch local news (via television, paper, computer, etc.)	2%	N=6	7%	N=20	14%	N=38	35%	N=94	42%	N=114	100%	N=272
Vote in local elections	3%	N=9	3%	N=8	7%	N=18	22%	N=61	65%	N=176	100%	N=272

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Table 49: Question D2

Would you say that in general your health is:	Percent	Number
Excellent	31%	N=83
Very good	46%	N=125
Good	22%	N=61
Fair	1%	N=3
Poor	0%	N=0
Total	100%	N=272

Table 50: Question D3

What impact, if any, do you think the economy will have on your family income in the next 6 months? Do you think the impact will be:	Percent	Number
Very positive	8%	N=23
Somewhat positive	32%	N=86
Neutral	46%	N=125
Somewhat negative	12%	N=33
Very negative	1%	N=4
Total	100%	N=271

Table 51: Question D4

What is your employment status?	Percent	Number
Working full time for pay	69%	N=189
Working part time for pay	8%	N=22
Unemployed, looking for paid work	1%	N=4
Unemployed, not looking for paid work	7%	N=20
Fully retired	14%	N=37
Total	100%	N=272

Table 52: Question D5

Do you work inside the boundaries of Franklin?	Percent	Number
Yes, outside the home	44%	N=119
Yes, from home	17%	N=47
No	39%	N=107
Total	100%	N=273

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Table 53: Question D6

How many years have you lived in Franklin?	Percent	Number
Less than 2 years	8%	N=21
2 to 5 years	20%	N=55
6 to 10 years	16%	N=45
11 to 20 years	29%	N=79
More than 20 years	27%	N=73
Total	100%	N=273

Table 54: Question D7

Which best describes the building you live in?	Percent	Number
One family house detached from any other houses	85%	N=230
Building with two or more homes (duplex, townhome, apartment or condominium)	15%	N=41
Mobile home	0%	N=1
Other	0%	N=0
Total	100%	N=272

Table 55: Question D8

Is this house, apartment or mobile home...	Percent	Number
Rented	14%	N=37
Owned	86%	N=236
Total	100%	N=273

Table 56: Question D9

About how much is your monthly housing cost for the place you live (including rent, mortgage payment, property tax, property insurance and homeowners' association (HOA) fees)?	Percent	Number
Less than \$300 per month	3%	N=8
\$300 to \$599 per month	6%	N=16
\$600 to \$999 per month	7%	N=18
\$1,000 to \$1,499 per month	22%	N=58
\$1,500 to \$2,499 per month	43%	N=116
\$2,500 or more per month	19%	N=51
Total	100%	N=267

Table 57: Question D10

Do any children 17 or under live in your household?	Percent	Number
No	52%	N=142
Yes	48%	N=131
Total	100%	N=273

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Table 58: Question D11

Are you or any other members of your household aged 65 or older?	Percent	Number
No	79%	N=216
Yes	21%	N=57
Total	100%	N=273

Table 59: Question D12

How much do you anticipate your household's total income before taxes will be for the current year? (Please include in your total income money from all sources for all persons living in your household.)	Percent	Number
Less than \$25,000	2%	N=5
\$25,000 to \$49,999	4%	N=9
\$50,000 to \$99,999	27%	N=68
\$100,000 to \$149,999	25%	N=64
\$150,000 or more	43%	N=109
Total	100%	N=255

Table 60: Question D13

Are you Spanish, Hispanic or Latino?	Percent	Number
No, not Spanish, Hispanic or Latino	99%	N=265
Yes, I consider myself to be Spanish, Hispanic or Latino	1%	N=4
Total	100%	N=269

Table 61: Question D14

What is your race? (Mark one or more races to indicate what race(s) you consider yourself to be.)	Percent	Number
American Indian or Alaskan Native	1%	N=3
Asian, Asian Indian or Pacific Islander	1%	N=3
Black or African American	1%	N=2
White	98%	N=262
Other	1%	N=2

Total may exceed 100% as respondents could select more than one option.

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Table 62: Question D15

In which category is your age?	Percent	Number
18 to 24 years	1%	N=2
25 to 34 years	9%	N=25
35 to 44 years	24%	N=65
45 to 54 years	30%	N=81
55 to 64 years	20%	N=54
65 to 74 years	12%	N=32
75 years or older	4%	N=11
Total	100%	N=270

Table 63: Question D16

What is your sex?	Percent	Number
Female	60%	N=161
Male	40%	N=108
Total	100%	N=269

Table 64: Question D17

Do you consider a cell phone or landline your primary telephone number?	Percent	Number
Cell	78%	N=210
Land line	6%	N=17
Both	16%	N=43
Total	100%	N=270

Verbatim Responses to Open Ended Question

The following pages contain the respondents' verbatim responses as entered in the web survey and have not been edited for spelling or grammar. Responses have been organized by coded alphabetical order.

Aside from transportation (traffic) related issues, what is the most important challenge or problem facing Franklin today?

- Affordable / workforce / retirement (single level) housing.
- Affordable housing
- Affordable Housing
- Affordable housing
- Affordable housing
- Affordable housing
- Affordable housing and slowing down the huge subdivisions everywhere
- Affordable housing for Wmsn. Co. employees.
- Affordable housing so employees can live in the town they work in.
- Affordable housing.
- Affordable housing.
- Affordable housing. My husband and I are both college educated, working full time and struggle to afford housing options in Franklin.
- Affordable housing. road conditions, lighting & sidewalks (or lack of) in some of the older downtown neighborhoods.
- Affordable housing. There is so much building and so much interest in living and being in Franklin. But the new projects seem to be ignoring the needs and pocketbooks of those in the lower income brackets. I believe this is called gentrification, not a word I want associated with this wonderful town!
- Affordable housing/apartments for the lower income people who work at the restaurants, stores, that the residents love to frequent so much. Ex: I pay 700 for a one bedroom apartment for me and 2 kids. They are usually over 800. A 2-bed is nearly double that. I'd have to go to Columbia to even dream of affording a house, but I'd spend the housing cost difference in gas to get here every day, so I'm stuck until I find a rich guy, I guess. Sad to say, but true as my chosen field (animal care) will never make me rich. Since I do work full-time and contribute to the community it irks me that we'll be stuck in Meadowview forever. A well-run city needs the "little people" behind the scenes, not just the couples buying 400k houses. Seriously, can non-married City of Franklin cops or teachers even afford to live here? I'm not sure how to fix it..maybe offer Grant/ subsidy to a developer willing to build low-income houses or apartments and make sure it's connected for ease of transportation. I would get rid of my car tomorrow if transit were more comprehensive or walking was safer (Columbia Ave past Downs, hwy 96 from Pinkerton to 65). Thank you!
- Affordable, quality housing
- Affordable/Workforce housing and diversity of housing options is the single biggest problem and challenge for Franklin. Franklin is slowly becoming an exclusive wealthy community and this will only get worse if changes are not put in place. Otherwise, I love this place.
- Air quality.
- Allowing dense public construction.
- Aside from traffic... :) Simultaneously managing accelerated residential/commercial growth and maintaining the strong sense of community and small town charm for which Franklin is famous.
- Attainable housing
- Balancing growth with keeping the charm and small town feel of Franklin.
- Being more welcoming to diversity. Supporting teachers.
- Being overbuilt, also the city has become very lax on architectural design in some instances. Litter and dumping on the streets is out of control. Franklin has become very dirty. Less about preserving battlefields and more cleaning up.

- Building on every available space in the city - which is not only not needed but then makes traffic worse; especially since we have sooooo many two lane roads & a ridiculous amount of traffic signals that back things up. Stop approving new developments until traffic issues are addressed!
- Building too many apartments
- Building too many subdivisions without preserving natural flora and fauna. I have lived and worked in Franklin for 9 years and it makes me sad to see every piece of free land over developed. Schools are not diverse- especially non FSSD schools
- City is building roads in directions that is going to cause future problems and not addressing existing congestion. There needs to be a solution for Mack Hatcher near Royal Oaks and Mack Hatcher and Lewisburg Pike. This comment pertains to land use pressures the City is creating for itself. The City needs an infill strategy (that is investments closer into the city - off SR 96, Liberty, Mather, Hillsborough Rd, Columbia Pike). Lastly, City needs to work with school systems. FSSD is going to become a problem for the city in terms of creating infill. FSSD has 2 schools that are greater than 50% free and reduced lunch. It is going to be hard to sell Franklin as a great place to live when folks pull back the statistics and see what is underneath. Need to address this issue.
- City officials appear to be much more interested in their relationships with developers than with Franklin citizens. Additionally the plans made to bring in a hotel to the historic downtown district with living spaces will ruin the character and charm of the city. The addition of a large sidewalk on new 96 was a complete waste of money and area neighborhood plantings were not returned to original state. Development of area around Del Rio has not been planned appropriately and beauty of land around that area is being ruined by poor development and greedy developers. This city is run by a Mayor that has little understanding of good economic and development practices.
- Completing Mac Hatcher
- Congestion - fast growth is great, but seems like the city can't accommodate accordingly
- Congestion with increased families moving in
- Connecting sidewalks, widening roads so it is easy for people to walk or bike. WE need more outdoor space. More trails along the river which I know the city is talking about. We could really use some good hiking/biking trails nearby also. I feel like Franklin is really behind on this issue. It is also difficult to get out of our subdivision (founders pointe) need a light or another entrance. The new sidewalk added is nice, but doesn't connect to much, so it not extremely useful.
- Connecting the trails to all parks, dog parks at all parks, more historic preservation of buildings in DT Franklin railroad freight depot, cleaning up brown space near Harpeth, river walk along DT of Harpeth, make owners of vacant unused buildings do something within zoning with the space and not just leave vacant, more trash pick up down town, not allow the run down buildings and businesses to not upkeep their properties, create more community space of unused areas. paved walkways to factory & Harlinsdale farm from DT mainstreet square. More holiday city involvement. Thank you for all you do! Mayor Moore for President!
- Continued building and expansion of subdivisions/apartments/town homes with no thought about traffic and infrastructure. Only two lane roads everywhere. Continued adding of unneeded traffic signals that slow traffic down.
- Control of growth until infrastructure catches up.
- Control over development
- Controlling growth
- Cost of living and maintaining the level of K-12 Education the county offers
- Creating a sense of community within our neighborhoods for those families relocating to Franklin.
- Crowded schools
- Diversity
- Fast growth taking away what is valuable and attractive about Franklin.
- Financing all needed projects
- Getting rid of old or abandoned buildings. Updating old buildings that are ugly.
- Growing to fast with high density
- Growing/allowing giant developments and losing the small town feel that has made Franklin so desirable.
- Growth
- Growth &. Infrastructure to accommodate the growth
- Growth and affordable housing

- Growth and funding of new schools
- Growth and housing costs
- Growth and the decreasing availability of affordable family housing.
- Growth infrastructure
- Growth of city going too fast and losing charm and sense of safety in the city.
- Growth! Too many people period! Stop with the mass developments and especially the mixed used developments; you are killing this city and its charm.
- Growth. They are building tooo many houses that are too close together and really decreasing the beauty of our area. I am so saddened by all the new neighborhoods pooping up especially without the roads to support them. The tall buildings in Cool Springs re disappointing too. I think growth is good but I think its too much at once without thinking of the consequences and preserving the wonderful way of life in Franklin.
- Ha - funny how you anticipate traffic is the important challenge most citizens will point to. The challenge is around how we develop the land around us. It is nice that Franklin can be a live/work/play community. If traffic is kept at bay, it's a nice eality. Please get development that builds outlets that citizens want to see. We have some opportunities to increase good restaurants in the city. Also, there are quite a few new developments (Ralston Row, for example) that cram residences into a smallarea. This is not keeping the character of the town - and it is increasing density into areas that do not have appropriate infrastructure. These high density developments are not helping keep Franklin an easily livable community.
- Housing prices
- I believe there is too much emphasis or acceptance on expensive housing / neighborhoods by out of town builders vs community development. Average wages, even those offered by the city for example, are creating a work force issue as young and new workers hat tend to provide services cannot afford to buy a home in Franklin.
- I don't enjoy downtown like I used to. Too crowded, no where to eat. And I am embarrassed many times by how dirty the downtown looks. We need Beautification! More planters, seating, and if those ugly, dirty trash cans need emptying more than once a da, it should happen! Perhaps replacing them more often too! Also, more trash cans available at the city parks and what walking trails we do have.
- I don't want it to become how Nashville is becoming. Too many people- not enough space. That's what makes Franklin special. I also don't want to build on all the beautiful land Franklin has with tons of houses on top of each other with no yards etc.
- I live in Buckingham and Mack Hatcher is right behind me. Since the highway has been expanded, the grass is never cut behind my house. My feeling is that it is too steep to mow. But, having thick grass and weeds behind my house is not in any way appealing It is an eyesore and there should have been plans to tend to it in the plan.
- I think traffic is the biggest issue we face.
- I think we could use more police in our neighborhoods
- Illegal aliens and ESL students in FSSD schools bringing the quality of education down.
- Inflation of housing Lack of green eco friendly buildings & material Lack of preserving green spaces Frustrating having free public Park like Harlinsdale Farm become overdeveloped & closed for private events Improper planning for urban sprawl & developmnt Allowing dense population developments without thinking of environmental impact Need to preserve Historic Downtown Replacing beautiful landscapes & scenic hills that makes Franklin unique with ugly & large hotels & businesses
- Infrastructure / roads are not keeping pace with growth. We NEED the full west expansion of mack hatcher now - not years from now.
- Infrastructure to support growth and affordable housing
- Intelligent control of growth in the area.
- It is disheartening to see so much of the beautiful open spaces being made into commercial buildings and large residential communities. Our city is growing at such a rapid pace that our current infrastructure cannot adequately accommodate the increased iflux of residents, employees, and visitors. New schools are being built, but as a parent of children who are in FSSD, it feels as if there is a vast disparity between these new, state of the art buildings and the schools that were built decades ago. Thedated technology (often with computers that do not work) and the lack of any renovations to improve the quality of the facilities for both the staff and students is frustrating. If the city is unable to adequately and fairly provide for all schools, thereis a problem that needs to be addressed.
- Just traffic

- Just traffic
- Keep small town feel. Remove fluoride from water.
- Keep the streets PAVED!
- Keeping expenses low, Previous BOMA spent EXTREMELY too much outside of normal city services. Current BOMA has been way more fiscally responsible. The city should be more involved in youth sports leagues as leadership is not held accountable by anyone whatsoever. Many Franklin families take their children to leagues outside of the city as a result.
- Keeping green space and beautification with balancing places to live and work. Will need to build Franklin up NOT OUT. We don't want to lose the parts that make us so special.
- Keeping it more like a "small town" feel despite the influx of people... this has a little to do with traffic, but actually more to do with a sense of community and keeping farm space visible, etc.
- Keeping the area from being overbuilt and losing the rural charm of the area.
- Keeping the downtown historic district as it is. Large new hotels and buildings that do not reflect an historic look and feel could eventually ruin the charm of our downtown. That is what drew us to Franklin and the reason so many tourists come here. Traffic and parking downtown are already difficult. Please don't congest it anymore. Keep growth and new construction out of the historic district. Keep that "best Main Street" appeal.
- Lack of a connected trails, greenway and sidewalk network
- Lack of a high school for FSSD, kids 2 miles away from FHS are bussed 30 minutes or more to Centennial or Independence. If FSSD can have elementary and middle schools, they need their own high school, or two.
- Lack of Diversity and affordable housing
- Lack of hotel, B&B or rental space for tourist and guest.
- Leap-frog growth. Development should be focused around the Central Franklin and Cool Springs. New development should pay it's own way.
- Let's be smart about growth. Without the infrastructure to support it, growth for growth's sake is not good.
- Lol just traffic folks
- Mac Hatcher expansion. Getting from hwy 96W to Franklin Rd North is becoming more difficult every day. We need to be proactive and not reactive to traffic delays on Bridge St.
- Mainly infrastructure.
- Maintaining good quality, affordable housing so others can enter the community, without sacrificing safety. And ensuring employers remain open to hiring those with disabilities or who use assistive devices (including service dogs).
- Maintaining it's lovely "small town" community in the expansion process as well as affordable housing.
- Maintaining the interfaith of the community throughout growth.
- Maintaining the local feel of the community. As new residents move here, they bring with them their ideas of where they have been before. There is a danger of Franklin losing it's own identity, especially when the newer residents run for office and begin making decisions about our city.
- Making our community more bikeable and walkable.
- Making sure that all gateway streets into city are a part of the city... no use for car repair places on Columbia, Hillsboro, etc... areas. Do not let buildings become unoccupied for long periods of time
- Making sure that Franklin stays progressive, ahead of the curve with the other communities surrounding Nashville.
- Managing and continuing growth without a loss of service efficiency, environment, current culture and ability to utilize existing and new offerings in various areas.
- Managing corporate and residential growth. It is critical that the economic development initiatives are thoughtful and intentional with a key objective being not losing the community feel and avoiding overcrowding while retaining open space. Road and other infrastructure just can't support this pace of growth for another five years. We risk losing the things that we love about Franklin and what drew us here.
- managing explosive growth/ and, clearly secondary is a distinct need to upgrade cable 3 both sound and camera for broadcasting public meetings - cable 3 is presently inadequate and reflects badly on an otherwise dynamic city
- Managing growth
- Managing growth .
- Managing growth...we want to continue our economic growth, but also be able to retain our quality of life.
- Managing growth; limiting massive development projects

- Mass developments, row houses that maximize builder profit and shrink yards and resident needs, more apartments that encourage transient populations and often damage schools and communities
- Meaningful advance land use zoning and tools that encourage and direct economically diverse, inclusionary and mixed-use development to the proper locations and preserves our agricultural and natural vistas before random development consumes everything.
- Meeting educational needs of children. FSSD is doing well, but challenges continue to increase.
- More housing options for middle class in one families
- more housing options like affordable, work force, and seniors being able to down size in Franklin.
- Need Mack Hatcher completed
- Need more cycling specific solutions
- Need More Sidewalks
- Need to create and connect walking and bike trails to the river, along the river, through neighborhoods, connecting to Brentwood's trails.
- Need to reign in the excessive building of unused of ice space and get control of housing.
- New construction before roads are built/widened to handle the traffic.
- No affordable housing!
- Not having an over 55 community such as Del Webb for those of us, of which there are many, that want to stay in Franklin but no longer want big homes and would like a sense of activities and assessability at an affordable cost places like Brookdale, Heritage and some other places are not what we need, A place for active adults is needed. These communities are a plus to an area, They do not add to the traffic or degenerate an area. I don't want to move to Mt Juliet or Spring Hill were the one we turn down is building. We made a mistake these are beautiful kept up communities with more rules than you can imagine. Another area is affordable housing for employees in many areas of our infrastructure so they can live near where they work.
- Not much affordable housing here, needs more housing for seniors that they can afford
- Not sure about 'most important,' but City workers who waste the City's time and money ie: Parks' Dept. and Street Dept. employees who should be more closely supervised. Know of specific cases where employees sleep during work hours instead of working and play card games instead of working. Seems like a tremendous waste of tax dollars.
- Our home would be perfect if we had sidewalks to get downtown, to the Factory, etc... We need a walkable city! That would relieve traffic, parking and contribute to resident wellness.
- Over building of housing, neighborhoods, and office buildings. Too many people here looking to make a 'buck' and step on others to get it. It's the old adage of the few with money stepping on the population's neck. We don't need 2 boutique hotels on Franklin Rd. 2 blocks from the square. 500 hundred rooms plus the cars for the people who live or rent there. 500 boutique rooms! And all of those extra cars on a road that can't be widened. There's isn't any space for more lanes on Franklin Rd. At least Hillsboro Rd. is being widened. Why not put those 2 boutique hotels with 500 rooms on Hillsboro Rd. The city and mayor just don't care about 'real' people who live in the Franklin Rd./ Liberty Pike area. Well, it comes down to the fact that traffic is the major problem. And then there's affordable housing.....
- Over development of land (extreme), and without the support/approval of residents and with no regard to infrastructure road improvements or traffic congestion.
- Over population and catering to land developers. With every new Development, you reduce the quality of life for the existing population.
- overall growth of city and being prepared for that growth.
- Overbuilding and allowing plots of land to have apartments, corporations and subdivisions built. It's too much. Miss the small town feel. Please stop the building and overcrowding of this charming town.
- Overbuilding, where is the plan....to support all this overbuilding????
- Overbuilding. Columbia Ave. is a nightmare to drive, and yet there is more high density building going on. I'm also very worried about the huge building planned for Main St. More parking problems (which are already terrible) and so much more more traffics That's very concerning to me. We are losing the wonderful quality that is Franklin to developers' control.
- Overcrowded schools, lack of having planned for massive growth that has taken place.
- Overcrowding of schools and rapid growth
- Overdevelopment
- Overdevelopment of Ward 1 with extremely high density projects.

- Overdevelopment. Stop building so much.
- Over-expansion of housing.
- Overgrowth
- Overgrowth of population
- Overpopulated schools
- Parking downtown for elderly who can't walk very far is terrible. The lots near restaurants are always full of employee cars and others can't get in. Housing that is truly affordable for people who make low wages at many jobs is non-existent. Even those making \$50,000 can't afford a home here. There needs to be more good restaurants on the west side of town not just the fast food kind.
- Parking. Clearly not a focus based on survey.
- Police officers need to enforce the traffic laws. I have personally witnessed police officers ignore violators.
- Population density.
- Population growth driving requirements for services and just too many people.
- Preserving green space and limiting retail - making sure the downtown is rent friendly for small businesses
- Properly managing the aesthetic look of Franklin and a Williamson County as more people come to live here.
- Providing the required infrastructure to handle the growth demands.
- Rampant, unchecked development. NO development unless developers ensure access to schools, road expansion and maintenance, and community approval. I have little confidence in our elected officials to control growth. I have little confidence in local government to make long term plans to finance education growth and development or traffic issues. Property taxes are going to have to go up, and I support a tax increase to drastically slow further development, fund school expansion and address traffic issues. don't think local or state government has the courage or ability to address hard issues.
- Rapid Growth!
- Revitalize areas that are run down
- Rising cost of housing - lack of affordable single family homes
- Rising crime. Too much energy spent on a government solution concerning affordable housing. Need to protect the stability, character and economic cohesiveness of existing neighborhoods!
- Safety for cyclists and pedestrians
- School zoning every two or three years. Need scores up rezoned.
- SIDE WALKS FROM FACTORY TO DOWNTOWN! Yes all caps.. It makes no sense to have them being built every place but DOWNTOWN! UGHHHHHHHHH
- Sidewalk connectivity
- Sidewalk connectivity would do so much to tie Franklin's urban core and suburbs together.
- Speaking as an avid road biker, the biking lanes on Hillsboro Road especially in the Legends Ridge/Grassland area can be downright dangerous. Many times when grass is mowed along the side of the road in both directions, no attempt is made to blow off grass and remove debris such as brush, gravel and even an occasional tire or large piece of trash. The only option is to get into the lane of traffic and that could be disastrous. I've called the state several times but often nothing happens or it takes weeks for it to be resolved.
- Stewardship of natural resources
- Stop the flow of progressive liberals moving to Franklin because they destroyed their last home and bring their same destructive ideals here
- Subdivisions being built.
- The affordable housing issue. We could (are?) easily turn into all the 'bad' things about Brentwood (overpriced houses; snobbery).
- The amount of development is taking away the small town feel and the beautiful hills are being blocked by tall buildings. I moved to Franklin because of the small town feel to it 8 years ago and it's quickly lost that feel.
- The downtown sidewalks are filthy. The rubbish bins need attention. Small pieces of garbage are on the sidewalks every morning, especially around the Sweet CeCe's. Better walk-ability means not only more sidewalks/bike routes (ideally streetscaped to look like Hatcher on all major arteries) would help with transportation but also safety. Also, the fact that glass is not picked up for recycling is embarrassing.
- The Franklin City and Williamson County Codes Departments are too powerful and overreaching.
- The gentrification of Franklin that pushes lower-income residents, many of whom have lived here their entire lives, further into rural Williamson or neighboring counties. The City of Franklin shows NO real commitment to affordable housing and diversity as evidenced by the lack of action to make things better - a great example

being The Hill Project, which could have made Franklin appear to be forward-thinking and proactive in helping lower-income residents, but which instead showcased the cronyism and god-old-boy mentality that is at the root of local politics. As the wealthiest county in Tennessee, Williamson County should be an example of progress yet sadly, is not. The City of Franklin policies are also a reflection of this lack of balance in caring for our citizens in need of a hand.

- The Harpeth River
- The infrastructure compared to the amount of growth is lacking greatly. Traffic will drive my family from this area. All the good in this city is being overwhelmed by the amount of growth, no affordable housing, and traffic. The meaning of affordable housing is not based in reality in this city and that is very disconcerting.
- The kids dealing drugs out of the house on Bel Aire Drive that our neighborhood constantly requests assistance on that police seem to think is a joke.
- The rapid growth. I'm attempting to purchase a home and even for an upper middle class salary, it is astounding how quickly the homes are being sold.
- The roads.
- The undercurrent of anti-government and special interest groups who want to paint the picture that all government is bad or evil, and that teachers and public employees are lazy and spoiled, and that no spending for the public good is proper are a danger to our way of life, and the city must continue to educate and engage the public to understand how government really works. Ignorant people are susceptible to lies and anger. The County and City must be willing to make some investments in the long term and be willing to issue bonds or create revenue for schools and infrastructure. Taxing only new homebuyers for schools is a cowardly way to address a need that affects all people, for example. Everybody must participate. We need some workforce housing or we are going to turn into Brentwood, a homogenous blob with little pride and character.
- There is TOO MUCH development. The government needs to STOP allowing folks to over grow this area. The infrastructure can't handle it. STOP.IT.NOW!!!
- They should provide a safe walking sidewalk between the factory and downtown.
- This survey was too long.
- Too much building. High cost of housing.
- Too much development and taking too much open space and turning it into more traffic gridlock. Why in the world is Mack Hatcher Extension not completed? Why are we developing more areas without the infrastructure to handle it? The City needs finish the beautification project of all the historic downtown streets. West Main needs curbs and underground utilities like some of the other streets.
- Too much development! Stop building houses and large neighborhoods to preserve the small town charm and natural beauty of our city.
- Too much growth
- Too much growth ,jobs coming in but pay is too little for cost of rent and housing
- Too much growth without infrastructure improvements in place. Focus on growth without improving quality of life for those that already live here. Cheap, cookie-cutter housing in new communities. City leaders beholden to developers.
- Too much growth. We don't need a hotel downtown.
- Too much open space is being developed, it's becoming too crowded. Would like to see more resources go to the Williamson County Rec center and the Public Library as those are services that we utilize greatly. Would love to have a walking path into town from Polk Place neighborhood, many of our neighbors make that dangerous bike ride - we can't with kids. Would love a better parking plan for downtown festivals... we have missed a few due to traffic going into town and lack of parking. Since we are such a large homeschooling community, it would be nice if the rec center had expanded opportunities for these kids. For instance, a daytime gym class. Or a homeschool theatre group - theatre is very popular with the homeschool crowd. Thanks!
- Traffic too heavy more payment options for utilities. Police and fire excellent!!
- Traffic
- Traffic congestion - Over-building of temporary housing, i.e. apartments
- Traffic flow
- Traffic flow. We need to have the roads support the growth of the community.
- Traffic is seemingly worsening all the time. It seems as if our roads are saturated all day long. We've noticed after 14 years of living here that our roads cannot handle the amount of traffic. And our traffic lights, especially protected turn arrows, don't last long enough. Thus traffic backs up horribly.

- Traffic is the biggest issue facing Williamson and Davidson Counties today. = 2 words LIGHT RAIL
- Traffic management
- Traffic patterns are basically through residential neighborhoods. Planning for ease of reaching destinations has been terribly lacking. Business development is the top priority without any regard for infrastructure to accommodate the growth. The city cannot adequately accommodate the rapid growth. New streets and roads to handle traffic should have been in place first. New hotel and apartment construction will be a nightmare in Franklin. It appears mayor and council have given no thought whatsoever with regard to potentially related problems.
- Traffic, major roadways and interstate.
- Traffic, walking and bike access. Along with increasing tax base to maintain streets and land maintenance.
- Type of new housing. Lack of family friendly parks, less civil war parks more bike and running paths along the river and throughout Franklin. Franklin is really behind other cities in the country, especially when you consider how wealthy the city is.
- Unrestricted growth without attention or concern for infrastructure. Where will all the people supposedly moving into Franklin work? We don't have enough places to work that will be able to pay residents of Franklin the Salary they will need to live in this community. It's getting so expensive to live here. The price of homes is out of bounds for most young couples families or seniors who would like to retire in the community that they have lived in all their lives! We need more affordable nice housing in communities where seniors and young people can live together have ease of movement parks walkways sidewalks and access public access to the city and community centers It would be really nice if people who are downsizing could move into a safe vibrant community with both young and old people together unfortunately if you sell your home that you've lived in for 40 years in Franklin you are priced out of the market if you want to downsize and buy a home for less money. Longtime residents of Franklin are being pushed out because Franklin because they cannot downsize affordably. Young families and people who are just starting out in life cannot move into Franklin unless they have a lot of money. Build more roads and upgrade the roads that already exist so that the terrific traffic that is now plaguing downtown Franklin and surrounding areas will be lessened .
- Way to many cars with not enough roads for to handle the traffic
- We have elderly that don't have enough source of income, living in a apartment. At times the city building and remodeling the housing market which at times it's not affordable for all citizens of Franklin
- We just moved here and live behind the Chick-fil-A on Columbia. This new development with the Kroger and target and other businesses is fantastic. I cannot drive due to epilepsy, and so walkability is of tremendous importance to me. However, the stretch from that location to downtown is completely unwalkable. I would love to see sidewalks go down that stretch of the street, so that the growing number of residents in the area can walk to the library, the high school, etc.
- We lack sufficient parks and dedicated green space. Every resident should be able to walk to a nearby park and enjoy being outdoors and active. This should be the way of life for everyone. There are many, many neighborhoods that lack walking access to parks.
- We need a commuter train line from Columbia to Nashville using the CSX rail lines. Elementary school overcrowding.
- Welcoming diversity and having opportunity for people of different ethnic and economic backgrounds to flourish within the community.
- You should REALLY be more great up to the people that work for you. They are the ones that make this city succeed or fail.
- Zero lot lines and too few parks for families to play in. Stop letting developers put people on top of each other!!!

THE NCSTM

The National Citizen SurveyTM

Franklin, TN

Open Ended Responses

FINAL
2016



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The National Citizen Survey™
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The NCS™ is presented by NRC in collaboration with ICMA.

NRC is a charter member of the AAPOR Transparency Initiative, providing clear disclosure of our sound and ethical survey research practices.

Summary

The National Citizen Survey™ (The NCS™) is a collaborative effort between National Research Center, Inc. (NRC) and the International City/County Management Association (ICMA). The survey and its administration are standardized to assure high quality research methods and directly comparable results across The NCS communities. This report includes the verbatim responses to an open ended question included on The NCS 2016 survey for Franklin. Additional reports and the technical appendices are available under separate cover.

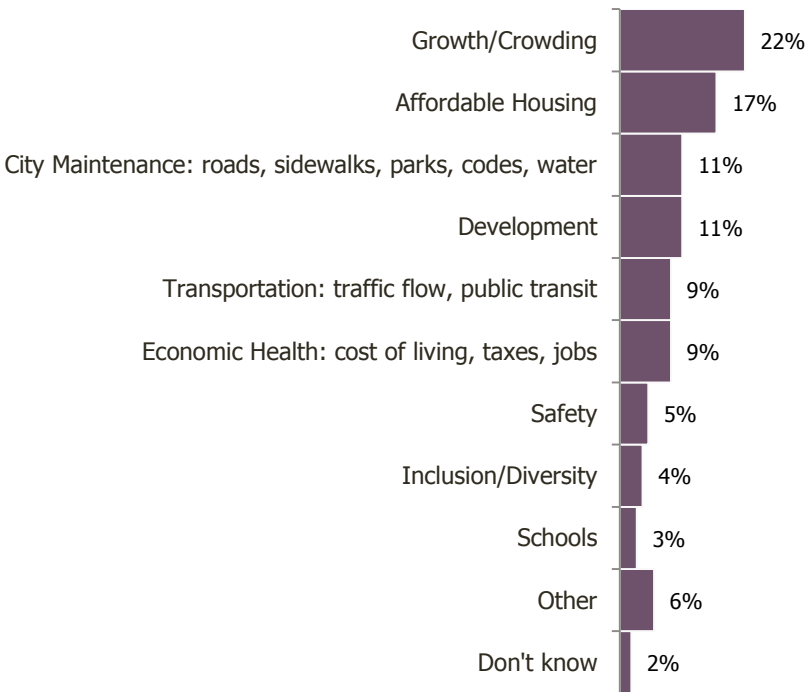
Respondents were asked to record their opinions about challenges facing Franklin in the following question:

- Aside from transportation (traffic) related issues, what is the most important challenge or problem facing Franklin today?

The verbatim responses were categorized by topic area and those topics are reported in the following chart with the percent of responses given in each category. Because some comments from residents covered more than a single topic, those verbatim responses are grouped by the first topic listed in each comment whenever a respondent mentioned more than a single topic.

Results from the open-ended question are best understood by reviewing the frequencies that summarize responses as well as the actual verbatim responses themselves. A total of 1,060 surveys were completed by Franklin residents; of these, 732 respondents wrote in responses for the open-ended question. About 22% indicated that growth and crowding was the most important challenge facing Franklin and 17% reported that affordable housing was the most important challenge. About 1 in 10 indicated that city maintenance and development were also problems challenging the City.

Figure 1: Most Important Challenge Facing Franklin
Aside from transportation (traffic) related issues, what is the most important challenge or problem facing Franklin today?



Verbatim Responses to Open Ended Question

The following pages contain the respondents' verbatim responses as written on the survey and entered in the web survey and have not been edited for spelling or grammar. Responses have been organized by coded topic areas.

Aside from transportation (traffic) related issues, what is the most important challenge or problem facing Franklin today?

Growth/Crowding

- Accommodation of the growth - not just traffic related, but schools, housing, etc., that will not interfere with the current lifestyles that we have grown to love in Franklin.
- Balance growth and preservation while providing additional options for affordable living.
- Balance growth with preserving quality of life and idyllic aesthetics of our community.
- Balancing economic & workforce development against congestion & Real need to raise taxes (property) taxes for 2018.
- Better manage growth.
- Careful growth. Citizens love how our city is growing, but we mustn't lose sight of what made Franklin great/desirable to begin with. (Speaking mainly about changing our community to accommodate "out-of-towners" rather than allowing them to adapt).
- Change in dynamic/culture of the people due to large amount of implants.
- Continued growth.
- Controlled growth & enforced zoning.
- Controlled growth of development. Enforced zoning.
- Controlled growth, green spaces, more parks, access to parks by walking/bicycle, more sidewalks, more trees by mayor/ principal woods.
- Controlling growth & building projects (ex neighborhoods & schools).
- Controlling growth and affordable housing.
- Controlling growth and implementing strong design review.
- Controlling growth, traffic, infrastructure.
- Covering too many green spaces with concrete, which will lead to more flooding.
- Crowded neighborhoods.
- Economic growth, city infrastructure.
- Expansion - we have seen a lot in 36 years.
- Expansion and growth. Keep Franklin small town and quaint!
- Explosive growth.
- Extreme population growth overwhelming services and limited space in downtown areas.
- Finding the balance with the extreme growth without losing the hometown feel that makes Franklin the beautiful place that it is.
- Franklin is growing too fast.
- Growing population.
- Growing so fast may lose sense of community and natural preservation.
- Growing so quickly: Roads are not going to be able to keep up with expanded growth & building.
- Growing to fast for the roads we have.
- Growth - Keeping that small town friendly feel with so many new people.
- Growth - not enough affordable housing. Traffic is getting horrible. Growth is getting to much for the size streets we have 2016 population. But we have streets from the 1970's, so they can't hold all the traffic. It get congested especially Columbia ave & Franklin Rd. I lived here my whole life.
- Growth - overbuilding!! Because I am self-employed from home, I do not need to go into Nashville very often or at regular times. But public transportation is so needed here, because traffic is horrible for a mid-sized city!!
- Growth - too much too quickly.
- Growth - we are busting at the seams.
- Growth & parking & traffic.

- Growth & public education.
- Growth & taxes.
- Growth (and increase of traffic) in population.
- Growth and impact on the "town" feel. We don't want to be a Nashville. Need to keep the hometown, small town feel, yet have attractions, stores, events like Nashville. Love Franklin!! Why is water so expensive here? Liquid gold.
- Growth and keeping up with the housing and roads to accommodate growth.
- Growth and maintaining an affordable balanced budget.
- Growth in areas that roads cannot support. Mack Hatcher is essential to reducing traffic being forced through downtown.
- Growth of population. Influx of immigrants.
- Growth vs no growth management (balance).
- Growth which takes over the beautiful landscape. Taxes are climbing in a bad economy.
- Growth, affordable homes to purchase.
- Growth, and cost of living for new construction.
- Growth.
- Growth.
- Growth.
- Growth.
- Growth.
- Growth/managing growth, planning infrastructure. Affordable senior housing.
- Growth/traffic.
- Growth: protecting the "small town" historic vibe of our city. Housing has become unaffordable; High schools (esp. Centennial) receiving bad reputation & rightly so. No quality restaurants downtown Franklin. Would like to see better options like East Nashville has to offer. Our family & friends have to leave Franklin to eat at a quality restaurant! Would be nice to have options close to home.
- Handling growth esp (traffic).
- High population & overcrowding of schools.
- Housing growth, small town feel with such tremendous growth.
- How the change from a town to a city will affect the atmosphere we enjoy of living in Franklin. Also how to prevent damage when the next Harpeth River flood occurs.
- How to allow reasonable economic growth and still maintain open areas, green space, etc.
- How to manage growth without losing the sense of history and community.
- Infrastructure keeping up with growth. Franklin is only worried about growth not how people get from one place to another.
- It's getting large for us. We are moving by the first of the year back to our home state. But there are lots of people & things we will miss.
- Keep the growth in Franklin under control. Keep Franklin quaint & safe.
- Keeping Franklin the best "small town" in America. This is the cities appeal. If it gets to big & grows to much, it will loose that feeling & greatness that has been the appeal for years. 26 new people come into Williamson daily. That is to many to remain small town.
- Keeping the "small town feel" knowing when to stop adding businesses for growing too big.
- Keeping the "small town" feel almost extraordinary growth.
- Keeping the character and charm of the historic district. Cool Springs is in huge growth & that is encroaching on the downtown area. I am also concerned about green spaces disappearing and this area feeling more like a larger city.
- Keeping the population growth within the city steady while increasing the overall value of living.
- Keeping the small town feel in the midst of huge growth. I hate to see small business owners get run out because they can't afford the increased rent. I want to see Franklin thrive but not at the expense of those who made it great to begin with.
- Keeping the small town feel with the current growth trend.
- Keeping up with pace of growth.
- Large/fast growth - schools/zoning etc.

- Limit growth & maintain green spaces.
- Maintaining growth without overdevelopment.
- Maintaining small town feeling while growing.
- Maintaining that "small town" charm while accommodating a growing population.
- Maintaining the character and quality in the face of rapid growth.
- Maintaining the feel of Franklin as a small town while still accommodating the growth we are facing.
- Maintaining the quality of life as the population doubles.
- Maintaining the small town feel while undergoing growth to such a large town.
- Making sure the fast pace growth is done with the proper zoning density And with good looking buildings and roads. The new Goose creek bypass should look like mckewen with green grass and trees in median. Why dont the overpasses match? Mckewen's looks ood. Also, spend money wisely as low taxes is why we live here
- Manage both private and business growth.
- Manage growth, think of rezoning!
- Manage growth.
- Managed growth, use of open spaces for development: both for commercial & residential.
- Managed growth.
- Management growth
- Managing & planning of the huge growth occurring in Cool Springs area and additional traffic volume.
- Managing growth - keeping the open feeling/ farmlands, etc. while the city grows.
- Managing growth and density, which impact the aforementioned traffic issues.
- Managing growth in a way that maintains the character of the town and a pro-business environment. Need more workforce housing options.
- Managing growth including school overcrowding.
- Managing growth while retaining what people love about the town. Small town feel, open areas, great infrastructure.
- Managing growth without losing "small town" qualities.
- Managing growth, affordable housing.
- Managing growth.
- Managing growth.
- Managing growth.
- Managing growth.
- Managing growth. Continued development without comparable infrastructure upgrades.
- Managing growth/traffic - more walking/cycling, less cars!
- Managing sustainable growth.
- Managing the impact of growth on traffic.
- Managing the influx of people to the community while keeping franklin clean and safe.
- No more apartments or condo developments needed. Too many already. City should stop "in-kind" gift to heritage foundation.
- No plans for growth that are efficient and well developed.
- On-going management of growth, long term plans for handling school growth while maintaining quality.
- Over growth and too expensive for retired to live. We moved here 7 years ago & wanted to retire but we will be moving back to Ca.
- Over population - too much growth.
- Over population of Franklin. Not enough public schools. Cutting down too many trees. Not enough green space in neighborhoods. Wildlife disappearing.
- Over population, shopping options (other than groceries). Internet options and bandwidth.
- Overall management of growth.
- Overcrowding.
- Overcrowding.
- Overgrowth & overpopulation. Removal of landscape to put in buildings. (Don't put tall buildings or hotel in downtown Franklin. Keep the look please).
- Overgrowth, crime.
- Overgrowth.

- Overgrowth. It is a balancing act of economic development without losing our natural farms, fields, etc, that provide the beautiful views.
- Overly crowded.
- Overpopulation! I have lived in Franklin my entire life and have never seen it so crowded and hard to get around on a daily basis.
- Overpopulation; excessive building; small town feel going away; farm land going away.
- Planning for growth
- Population boom. Also, some areas of low class properties bringing the look & feel of Franklin down (i.e. trailer parks), also the slumlords who rent to low class people. Illegals living in the area.
- Population growth and a need more transportation and traffic lights.
- Population growth management.
- Population growth. City has become crowded.
- Population growth. Lower housing costs.
- Rapid growth
- Rapid growth & lack of walkability. Need sidewalks that don't abruptly end on a street in the middle.
- Rapid growth with slow road expansion.
- Rapid growth.
- Rapid growth.
- Rate of growth; property tax increases; escalating cost of living.
- Slowing the density of growth before infrastructure is ready.
- Smart growth & limiting the use of available land to avoid multi-family dwellings.
- So much growth that we lose our beautiful small city feel. Stop HOA from allowing rentals in our neighborhoods. Rentals without the attention, care, upkeep are ruining our great neighborhoods. It should be mandatory for homeowners to include lawn care which includes, landscape maintenance, tree trimming, etc. painting of the homes in a timely manner. Homeowners in McKays Mill are leaving for bigger homes and yet they are not selling but renting. I immediately see the lack of care of the property which is very upsetting.
- Sustaining growth.
- That's it. Thanks. Too much growth-especially on Carothers without an entrance to I-65.
- The amount of people moving to the area but keeping the quiet small town feel.
- The excessive growth is causing the green space to disappear, which is disappointing to those of us who had lived here all our lives (36 years).
- The explosive growth. While growth is necessary, it's essential we maintain our small town feel.
- The growth of people moving in Franklin area, higher cost.
- The growth of so many people keeps moving in Franklin, taking our jobs from us.
- The growth.
- The influx of residents and the lack of resources such as schools - our schools are stellar and we need to keep them that way by making sure we don't bog down our teachers with too many kids, which is already happening.
- The most important challenge facing Franklin today is better management of growth while providing preservation of open spaces, cleaner drinking water, safety of citizens, and affordable housing options.
- The population density is rising but there aren't parks/open space included a PUD plans. As a result, people are becoming more sedentary. Also, the vast majority of developments have no access to groceries/necessities without getting in a car, that is wasteful & increases traffic for very short trips.
- The population growth is so extremely rapid that Franklin area traffic is becoming more congested especially during going to work & getting off work time making traffic problems more of a concern to Franklin residents.
- The rapid growth is killing the things we all love about Franklin. We are shaving too much in too small an area.
- This town has always had a small-town feel; friendliness, welcome, hospitality... but... the more we grow, the more we lose that special, small-town feel. Wonderful town, still today, but very different from the place we fell in love with years ago when we move here. Too much farmland is disappearing to make way for apts, condos, & neighborhoods that only take away from the natural beauty of the land here.
- To much growth.
- Too many residents and businesses without proper roads and controlled traffic - growing to fast.
- Too much growth - not enough community feeling.

- Too much growth in a short period - can infrastructure handle it, are utilities sufficient to handle increase, etc.
- Too much growth too quickly. The streets are clogged no matter where you go. Apts being built everywhere, people moving here in droves! The city is becoming much like many other small cities. The word is out so growth is exploding. We will lose the quaint quiet and lovely ambience of Franklin from years gone by. My fear is that Franklin will no longer be the wonderful place it has always been to live and raise children. We need to slow down the growth and now! before it gets too out of hand and we lose all the charm of living here. And traffic is horrendous!
- Too much growth too quickly - infrastructure needs to accommodate growth. Preservation of the natural environment is crucial. Too much destruction of land/trees lately.
- Too much growth too quickly. Housing is too expensive. Traffic is getting worse. Fearful of losing what brought most families here - a sense of community & safety.
- Too much growth with seemingly unplanned infrastructure to accomodate - roads are over-crowded. Too much construction taking away too much green space. Rising costs of living not keeping place with the rest of the economy. Housing is too expensive and seems to cater to the very wealthy. Too much diversity. My bus stop for school children looks as though I'm living anywhere but in the United States.
- Too much growth without infrastructure to handle it.
- Too much growth!!
- Too much growth, high priced homes, our young people cannot afford to buy a home here, no grocery store in low income areas.
- Too much growth, too many apartments, too many large companies moving in. Its lost its small town appeal.
- Too much growth, traffic in terrible, slow down development.
- Too much growth. I see more & more apartments which means more cars more people. I do not get out after 3 pm unless I have to. Franklin is at its limit. That's way I am moving out in the next 5 yrs. Too crowded.
- Unbridled growth and loss of green space.
- Uncontrolled growth & affordable housing new homes.
- Uncontrolled growth & roads and school systems cannot keep up with influx of children.
- Uncontrolled growth without adequate streets; offsites (storm sewer not ditcher); planning.
- Unfettered growth in housing (single family). This survey is way too long!!!!
- Unfettered growth is a problem. We feel like the developers' interests are put first over residents' interests. As we near retirement, we will likely move due to problems created by the unmanaged growth.
- Uninhibited growth will destroy the city's charm and benefits. Zoning for less density will not earn more tax dollars, but it will also not screw over current residents.
- We are growing too fast; too many apartment buildings; it's becoming too crowded. How are we handling all the sewage? Parents and families are constantly being asked to contribute to school needs. No sense of community because too many strangers.
- We are overcrowded. Need affordable apt for rent.
- We moved here from the S.F Bay Area in CA to escape the chaos of overcrowding and horrible traffic. Since moving to Franklin 6-1/2 years ago, we have seen many of the same 'indicators' that show the same thing will eventually happen here. Multiple housing developments going in without proper planning for roads, highways, and just overall quality of life will end up leaving Franklin like every other overly-crowded city in America. We thought the people in local government here were different and cared more about preserving the history, the charm, and the quality of the small town life than they did high-dollar development, unnecessary growth & money. Please don't prove us wrong. The reason people love Franklin - the reason they want to move here is because they are seeking a better, simpler, less stressful way of life. Please don't sacrifice the things that truly matter.
- We need to take a step back, catch our breath, and use the opportunity to "catch up" on our abilities to provide the necessities (educational facilities, utilities, infrastructure, etc) for the current residents of, and commuting workers to our great city. We seem to be in a constant phase of inviting more and more businesses to the city. I don't want us to become stagnant with absolutely no growth, but we need to apply the brakes sometimes. We're losing the "small town feel" that makes Franklin so attractive and special. As I heard several friends and neighbors say lately, "do we really want to be another Marietta." One thing that especially concerns me is the quality of our water.

Affordable Housing

- 1) Affordable housing. 2) Code enforcement (yard trash - poor upkeep privacy fences).

- 1) Affordable housing. 2) Older downtown people have no grocery. 3) Finish Mack Hatcher.
- 1) Affordable housing. 2) Preservation of old oak trees.
- 1) Diversity housing choices to provide affordable alternatives for senior citizens and more importantly non-management/younger employees. Lower-tier employees need places to live close by the businesses in Franklin need to have a hireable work force in the vicinity to fill lower level jobs. This can't be done by forcing the development community to "take both" developers can't pay top seller for land & fees and the provide affordable housing. The city must take the initiative with its own housing projects or allow areas with denser housing and smaller square footage for the young single or married couple. Any local residents in the vicinity of any such development will turn out to oppose any such development but the city gov't will have to allow it even over strong opposition. It's either this or the city needs to quit talking about affordable housing. 2) Stop nickel and diming on trash pick up. Stop it with the "buck a bag" crap. Give us a bigger trash receptacles or allow a couple of bags on the curb for pick-up.
- 1) One story housing for 50+ people ***. Clean river water/absence of dead trees, storm drains cleared, clean-swept bike lanes, senior programs.
- Adding housing at various price points to maintain/add to the city's diversity
- affordable housing for normal, middle class working families. Franklin has become very expensive to live in!
- Affordability & accessibility of quality housing for people who work in Franklin.
- Affordability of renting/owning a home. Not having elected officials sellout to company demands (ex: Comcast).
- Affordability. Demand has driven up home and rental prices to where it's barely affordable to rent or buy without high household income or two incomes.
- affordable / workforce / retirement housing
- Affordable homes for all people.
- Affordable houses.
- Affordable housing
- Affordable housing - \$300,000 for a starter home is not reasonable if single. Also: Maintain the old look of downtown Franklin. No modern look buildings it's the draw or attraction of that look that I always hear compliments on.
- Affordable housing - (work force housing). Affordable land.
- Affordable housing - our children graduate from college and can not afford to move back to Franklin. Most of our city leaders live on 3rd Ave in million dollar homes. They seem to have no interest in the average Franklin citizen.
- Affordable housing and diversity.
- Affordable housing for active senior citizens. Housing has gotten too expensive to stay here.
- affordable housing for all
- Affordable housing for elderly, lifetime residents of Franklin and the residents of lower economic class that love this city and want to continue to live here. All of the new residential developments are not affordable for many people that have the desire to become homeowners. Habitat homes should not be the only affordable opportunities presented.
- Affordable housing for employees in manufacturing, public health & safety & hospitality to maintain quality service in Franklin & all of Williamson County.
- Affordable housing for low income families.
- Affordable housing for teachers, firemen, police, nurses and other average folks.
- Affordable housing for workers who wish to both live & work here.
- Affordable housing for young professionals.
- Affordable housing in Williamson County/Franklin.
- Affordable housing to promote diversity.
- Affordable housing which has a direct impact on our traffic problem.
- Affordable housing!
- Affordable housing, schools, growth plan for Williamson Co/Franklin.
- Affordable housing.
- Affordable housing.
- Affordable housing.
- Affordable housing.

- Affordable housing.
- Affordable housing.
- Affordable housing.
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- Affordable housing.
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- Affordable housing.
- Affordable housing.
- Affordable housing.
- Affordable housing.
- Affordable housing.
- Affordable housing.
- Affordable housing.
- Affordable housing. Fairness in enforcing historic zoning ordinances.
- Affordable housing. General comment - Sidewalks are inconsistent. Sometimes I can be running on a sidewalk and the sidewalk ends forcing me onto the road. Also, need more bike-friendly options.
- Affordable housing. Keeping crime in check.
- Affordable housing. Nice to see a 55+ community.
- Affordable housing. Young couples cannot buy a home in Franklin and raise their children where they grew up.
- Affordable housing/rentals
- Affordable quality housing & clean affordable water.
- Affordable senior (55+) housing communities.
- Affordable senior housing for retirees.
- Approval of "rented" properties either apt. or single family by the city providing housing to people with no skin in the game. Lower income residence has crippled our schools and trickled up to damage our housing values.
- As property values increase, residents who rent are being pushed out. I'm worried that longtime Franklin residents like my household will be priced out of our community before we have the chance to buy property.
- Building of affordable housing.
- Cost of housing is too high to keep a diverse community. I'm a single mom trying to stay in WC so my three kids can finish school with their friends and community. I'm a registered nurse and make \$55+ per year, but will never be able to buy a home in Franklin.
- Cost of housing.
- Cost of housing. Young families and young singles cannot afford the cost of good quality housing.
- Current administration is too concerned with "new affordable" housing which is not essential and only confounds issues with traffic, street maint., and utilities.
- Decent, affordable housing for upper middle income households - everyone doesn't want to live in a housing project and everyone isn't wealthy enough to live in the exclusive neighborhoods.
- Enough housing which is affordable for pre-retirement age groups. Looking for more developments which focus on that age group. Homes are overpriced for the quality of building and amenities. Limited storage and garage facilities very limiting. Cool Spings does not feel like its a part of Franklin - should be its own town.
- Expensive houses.
- Fair housing, both in condition and price.
- Growth is too fast and roads are unable to keep up with growth. The travel time has greatly increased.
- Home prices - If you sell your home you have to move out of town if you are on a fixed income.
- Housing cost - whether renting or buying - Salary's have not increased to match the huge increase of the housing market. Need: Trains/light rails from Spring Hill to Nashville with stops in Franklin / Cool Springs. -

Look at the rail system in Munich Germany & the surrounding area - it works! I would gladly park my car and ride!

- Housing cost as it relates to the opportunities is lot high and need more supply to meet the demand.
- Housing cost prevents honest, good people from affording to live here.
- Housing cost.
- Housing costs
- Housing costs.
- Housing costs. Public transportation with better shelters/protection from elements.
- Housing development.
- Housing for mid and low income families.
- Housing is too expensive!
- Housing prices have gone to the point that those wanting to move to the area find it very difficult to do. There are too many high/upper priced developments being made as well as the massive over-development along Carothers. It's already a traffic nightmre and it's only going to get increasingly worse. I have 5-6 years left to work and because of the ridiculous congestion, I will very likely leave the area once I retire.
- It is expensive to buy a home and live in Franklin. We live here because of what Franklin location but the cost is much higher than surrounding counties and or cities/towns.
- Lack of affordable housing and multicultural and socio-economic awareness (racial reconciliation).
- Lack of affordable housing for people who want to retire and downsize. All the new housing being built has stairs and has bedrooms upstairs. Not many 1 level homes with reasonable square footage. Del Webb would have been great for Franklin-older adults with income to spend and no kids to built schools for.
- Lack of affordable housing, lack of affordable quality childcare.
- Lack of affordable housing.
- Late of housing prices are a little to high. Also, we have lots of nature, and it's natural environment is being torn down, causing it to lose its home, which is not good for it.
- Lower income housing.
- More condos.
- More senior friendly housing ex patio homes for baby boomers.
- Need affordable 1-level housing for working professionals with families. Also need 1-level houses (not condos) for grandparents moving here to be close to grandchildren. Franklin does not have a beach, ski resort or someplace like Disney World. Why the high cost of housing? I have lived in Dallas, TX, Honolulu, Hawaii & Los Angeles, CA. I am familiar with a higher cost of housing that is justified. This is not. Looks like I will be moving again if decent ranch style 1-level houses don't become available. [?]. I moved here for my daughter's [?].
- Need affordable housing for financially challenged elderly.
- Need more reasonably priced housing so that teachers, police, fire & workers in general, can afford to live here.
- No affordable housing.
- No more multi-family housing. Has too much density and lowers property values.
- Not enough affordable housing for middle income families.
- Not enough affordable housing.
- Over development of housing taking farmland and thoughts up housing such apartment complex.
- Overall expense (mainly housing) to reside in Franklin/ Williamson County.
- Parking, affordable housing, affordable commercial rental rates.
- Price of new residential housing is too high.
- Providing affordable housing in a way that provides for an economically diverse population and still provides the pride of ownership, i.e. houses in a responsible selling price range rather than more [?] options.
- Providing affordable housing options for the lower and middle class. Bike trail that goes around the city and has many entrances to it. Please make the main drag streets wider. Especially when Mallory turns into Royal Oaks. The four lane to two lane is amess. Also when ROB runs into Mack Hatcher. Terrible back up.
- Putting huge housing developments on two lane roads.
- Quality affordable housing for all economic groups, ages, families and individuals.
- Quality economic housing availability. We don't all make \$200,000 a year; As a single educated mother making \$60,000 yr, I don't want to live in the less fortunate areas of town but more cultural areas! The

market is too high here and I will not be able to maintain a quality life here if continues in property value growths. I currently rent, can't afford to own!

- Quality, affordable housing.
- Quality, affordable housing.
- Quit building so much housing & apartments. Infrastructure can't handle it. We will lose part of Franklin's charm with more traffic more congestion & less country feel.
- Rising housing costs (purchase).
- Skyrocketing property prices make purchasing a home in Franklin difficult for many families, including two-income professionals.
- The housing costs are very inflated. It is a nice city but housing is too expensive. We are looking else where (surrounding cities) where school are still good & you don't feel like your being ripped off when purchasing a home. And then we can just visit Franklin. We've been here 3-1/2 years.
- The prices of homes is high in Franklin. It would be nice if builders would occasionally build more affordable (lower cost) housing.
- The rise in cost of housing. We were raised in this city and did not want to leave it. When my husband and I purchased our first home, housing costs were outrageous. We chose to stay here because we love the city, but cost made that decision very difficult.
- Unreasonable housing cost

City Maintenance: roads, sidewalks, parks, codes, water

- 1) Keep the Harpeth River clean. Remove debris under bridges that is unsafe and causes a flooding problem. Remove dead fall on the Harpeth River. 2) Keep bicycle paths clean. 3) Having lived in Franklin for 21 years. I'd like to down size to a one story home. There are very few one story homes for seniors to down size into.
- 2) Connecting greenways/safety on roadways for cyclists/runners. 3) Managing growth & it's impact on traffic.
- Appropriate expansion of water treatment plant. - Appropriate infrastructure (city) growth to meet growing demand.
- Bike lanes.
- City officials make it too difficult to open a business due to irrelevant codes and lack of common sense.
- Codes issues are onerous.
- Columbia Ave. Work on too many streets at the same time.
- Demands on public infrastructure, housing, traffic with growth.
- Developers building expensive cheaply constructed housing, destroying attractive green areas. Multi story high density buildings look like large excessively decorated cardboard boxes with holes cut in them for fancy windows etc. Westhaven subdivision is a nightmarish example. More tacky subdivisions like this are appearing around town.
- Effectively managing the exploding Carouthers/Cool Springs corridor - we don't need to become gridlocked most of the day like Maryland Farms and downtown Brentwood have become!
- Fixing Hillsboro road faster!!!
- For being a part of one of the wealthiest counties, the water quality is horrific!
- Franklin needs sidewalks! e.g Hwy 96 from bypass to Public Square. Also building of smaller homes for singles & elderly. Not subsidized housing but just smaller homes. Not everyone needs or wants 3500 sq.ft homes.
- I think we need two way rd from Franklin to Spring Hill and to build more affordable houses, it is too expensive.
- Improve road conditions.
- Improved walkability - sidewalks & walking trails need to improve, connecting neighborhoods with trails.
- In the G Mo-xie lived here we can't think of anything else but the water quality which is terrible. We turn the faucet on and the chlorine smell suffocates you. We had to buy a water purifier which was a surprise & very expensive expense.
- Infrastructure for new development.
- Infrastructure improvements need to happen in west Franklin.
- Infrastructure not keeping up with massive influx of new residents. Slow down growth! at least until other stings. Roads, etc - catch up! Finish Mack Hatcher! Rec Center (Hillsboro Rd) don't understand why can't

repair pool & keep it repaired. Large hole in floor of indoor pool. Been there several month. Heater always goes out several times each winter. Pool temp. is never consistent.

- Infrastructure not keeping up with the growth. Traffic is horrendous!
- Infrastructure to handle population and development growth (schools, electricity, water/sewer, road capacity and quality).
- It's nearly impossible & dangerous to try to bicycle in the city. If cyclists could use sidewalks & there were more sidewalks, it would be ideal. (McEwen & Carothers especially - it would be so dangerous to try to ride on road). I know many people in our community feel the same way... moved here with bikes & ended up selling then because of the aggressive drivers & lack of safe lanes. Thank you so much.
- Keep city clean. Pick up trash (litter).
- Keeping downtown viable. Walking traffic downtown is good. Must keep it. Appreciate parking garages and free parking spaces on the streets. Traffic problems are being addressed. Just lots of people and who can blame them for wanting to live in our beautiful city!
- Keeping the infrastructure in line with Franklin's growth. Making Franklin more pedestrian friendly (i.e. greenway, bike paths, sidewalks). The city has so much to offer, but can mainly/only be accessed by car. It's a perfect town for bike friendly & walk friendly paths to attract people (and even minimize traffic). To me, this is the main factor stopping Franklin from going from a "good" city to a "great" town.
- Lack of bike lanes and failure to keep current bike lanes free of debris (e.g Hillsboro Road).
- Lack of bike, hiking trails, parks, open space. Need bike lanes!
- Lack of infrastructure on all levels to support massive growth & projected growth in city and county.
- Lack of infrastructure to support overgrowth of communities such as Westhaven. Giving favors to companies like Southern Land at the expense of other citizens. Then, raising taxes by over 30% to pay for problems caused by over development. This is nothing less than crony capitalism.
- Lack of sidewalks in residential areas and linking residential areas to commerce.
- Lack of sidewalks, parking and walkability downtown make reaching businesses on foot difficult. I do not believe the City is properly managing Harlinsdale Park and is allowing uses at the park, like Pilgrimage, that are not in keeping with the location, infrastructure, size and intent of the park. Due to its location in the downtown area, traffic congestion, noise and lack of sidewalks into downtown make large events here particularly disruptive for downtown residents and guests. I believe the current trend towards allowing inappropriate events to take place at this venue is symptomatic of a larger struggle with developing downtown in a way that is supported by the infrastructure and residential nature of the area. A complete lack of attention to key infrastructure needs in downtown (like sidewalks connecting the Factory to downtown, parking and traffic flow) while allowing the promotion of large festivals and activities in downtown Franklin is troubling and not a good indicator of the stewardship of the downtown Franklin area.
- Lack of sidewalks.
- Local water rates are way too expensive.
- Make sidewalks to outlying neighborhoods. Adding unique business and restaurants.
- Many roads have faded lane markers or paint stripes. Hwy 96 near I-65 really needs a new paint job.
- Master plan and infrastructure as the city continues to grow.
- More dog parks.
- More sidewalks in Columbia Ave and other places so walking to areas would be safer.
- More sidewalks needed (walkability poor). Overbuilding is a problem - (allowing 2 houses to be built where 1 house was); building hotel(s) downtown, should be a walking area downtown. Traffic issue again!
- More sidewalks.
- My biggest issue, in living off of Highway 96 between downtown and Mack Hatcher, is sidewalks. The city has done a great job improving downtown. But the lack of sidewalks down Highway 96 (for the 20 years that I lived here) is a safety hazard, particularly with today's high level of traffic. I am amazed that the city worries about people selling the Contributor newspaper from intersections when I watch moms strolling babies down a 12 inch shoulder trying to get into downtown. The other night, I almost hit gentleman dressed in dark clothing, walking down the road. It is rumored that sidewalks are coming, but this is something that the city needs to get moving on. By connecting downtown to the Mack Hatcher sidewalks creates a bike/walking path all the way into Cool Springs. Eddy Lane is also an issue as a number of people now walk that road from 96 down to the new apartments on Liberty/Factory. This area needs to start getting the attention of the city, vs downtown, so that someone is not seriously hurt.
- My main concern is traffic & public safety.

- Need to complete Mack Hatcher on west side & Columbia Avenue traffic!
- Needs to be much more user friendly for walking and biking.
- Objectively I do not know the biggest challenge. All I know are the challenges I face as someone without a car (this doesn't concern traffic specifically). Many roads have no sidewalks. Some roads have crosswalks with no crosslight. Some roads have no crosswalks at all. For instance, Royal Oaks has no sidewalk, making walking to Kroger for shopping difficult. Buses stop too early to be effective after work for much of anything. No bus service on Sunday heavily reduces opportunities for going out that day. The car-focused development makes it difficult for those of us without a car to really get out and do things.
- Our water stinks (literally)!
- Overall cleanliness, I have noticed a lot of trash along roadways, especially on Mack Hatcher. There seems to be a large presence of possible illegals in our county as well.
- Parking, sidewalks, connectivity, trails, use & view of river.
- Parks & bike trails.
- Planning and funding of infrastructure improvements ie. Sewer and water plant capacity
- Poor road conditions. Franklin Rd Hwy 31 from Harlinsdale Farm South through downtown. And Lewisburg Pike in downtown to the Carnton entrance.
- Poor roads.
- Preserve green areas.
- Preserve open space. Safer cycling.
- Providing infrastructure (i.e. schools, roads, etc) to keep up with all the residential & business developments.
- Road construction.
- Road repair - Franklin Rd past Moore's Lane. Timing of traffic signals. Policemen who have more pleasant personalities when roads are turn up & driver can't tell new traffic pattern & policemen stop them. Have used Wm County fire/rescue several times due to my Alzeh. spouse falling. They are the most wonderful & courteous representatives of Wm County - Kudos to them!!
- Roads, transportation.
- Safe bike riding, sidewalks for school children and recreation.
- Side walks are needs especially on 96 & Eddy Lane. Increasing traffic is a concern.
- Street & highway upgrades single & double lane done correctly and not from the hip by idiot engineers.
- Street repair - very poor. Considering the high income & profile of city. This doesn't line-up with Franklin's standard.
- the city needs more sidewalks/trails which would reduce traffic
- The increase of water & the additional services you charge for are outrageous!
- The mayor's and council's approach to raising fee & tax on water use. They have raised costs in name of Fed Govt requirement. While using funds to divert present funds to other projects. Similar to OKC, OK Govt planning post 30 years. This action is my most unsatisfactory point of living in Franklin.
- The need for expanded roadways!
- The water is an issue. We live somewhat close to the water reservoir. Our water smells moldy.
- This is just a small thing but there does not seem to be any parks with trees where you can just walk around or sit and relax.
- To make a bike route or routes and keep up the public space at the love of the neighboring city "Brentwood". For example, in Brentwood, you can go with a bike to many place but not in Franklin. My family & I lived both Brentwood and Franklin and this is what I have found. While Franklin is a more historical city. 1) It lacks bike routes (we live in the city limit just cross Brentwood, and as soon as we cross the road toward Franklin, the bike route disappears); 2) In the winter time, snow is not removed from the public road in the area of Franklin; 3) Franklin do not green space as much as Brentwood; 4) Franklin charges much more utilities (especially water) than Brentwood. But I still love Franklin!!
- Too much residential development (apartments). I'd love to see more parks, trails, & bike paths to allow us to bike into downtown Franklin!
- Traffic in and out of city.
- Traffic infrastructure & pattern - sorry, but had to comment. Lighter restrictions on building apartments. Desperately need over 55 nice planned communities for active seniors.
- Utility infrastructure & residential - single and multi family housing construction.
- Water & sewage.

- We are allotting too much land for housing development. We need to preserve the natural beauty of Franklin so that the value and quality of life in Franklin will continue to grow. The focus should not be on packing in as many houses as possible. Rather we should focus on preserving the beauty and authenticity of our town. This is what has made Franklin such a gem.
- We need to connect neighborhoods via sidewalks. We are growing and don't have the infrastructure to accommodate. Parking downtown is an issue.
- When allowing development of new subdivisions, the roads must be expanded to more lanes as a requirement for new development!
- Widen roads, add right hand turn lanes, ADP roads.

Development

- "Over building of housing in downtown area and retail buildings. Traffic problems already in downtown area".
- A healthy balance between commercial & residential development.
- Allowing rural farmland to be overdeveloped Franklin's rural countryside makes it an enjoyable and unique place to live. If the city continues to allow dense development the small town feel will disappear along with the reason I moved here. Also, Quarry off of Downs Blvd is causing structural issues in the surrounding developments.
- Building too many high-rise buildings/apartments for traffic to handle.
- Construction of new and existing places and roads is constant & too much new construction.
- Construction.
- Deciding on land use! No SF lots 20AC! Stop subdividing. Down number of apartments - or put these out by col. state & Interstate. We don't need more.
- Development: Too much! No concern for the current residents.
- Excess multifamily development.
- Franklin special school district is lowering property values!! -Too many immigrants & low housing districts. - Williamson County schools should look at dismantling FSSD! No reason for city to pay extra FSSD tax when the schools are not up to par with Wil
- Has the planning commission ever denied a building permit? More building = more people = same roads = Franklin sucks!
- High density building with no infrastructure. No one really cares about beautification.
- High density development and concentration of high occupancy Office Bldgs. All contribute to poor road planning.
- High density developments being approved that are creating traffic problems. Majority of people do not live locally.
- How to say no to more development in order to preserve the integrity and character of Franklin. Franklin is losing its charm and natural beauty for more unnecessary retail.
- I feel that there is too much development in this area causing increased housing costs & increasing congestion (traffic, schools, etc). I would like to see less of major residential areas being approved (especially in the Lewisburg/Sullivan farms area & near the target on Columbia Ave). I like the rural feel of Williamson County & I hope it continues to feel that way.
- I feel the alderman, zoning, planning are "over" developing Franklin. Putting buildings & high rise office/retail so fast that infrastructure cannot keep up. The Home Town feel of Franklin is being destroyed. It is extremely difficult to get around during 4-7 pm & 7-9 am. Unfortunately, zoning keeps changing more and more properties from residential & commercial. Very "tiny" signs may be put up. But how can you read & pay attention & traffic!!!! The council & alderman won't [?]....
- Increase in construction.
- Increase in homes and apartments being built taking away from the nature in Franklin. We seem to be cutting down trees and clearing fields at record speeds. This takes away from the beauty of Franklin and takes away the homes of thousands of wild animals
- Keeping the character of Franklin in a new development.
- Lack of green space, too many new developments and not enough comparable watching growth within the city utilities.
- Lack of protected/preserved "green" space. Every square inch is being developed.
- Land preservation. Stopping the "urban sprawl".

- Land use, zoning, preservation of green spaces.
- Limiting rental properties!! Please.
- Looking at the money first and not the town as a whole not every field needs a building on it.
- Losing small town feel.
- Loss of green space as natural environment cleared for commercial development.
- Mass construction of building taking over natural environment.
- Not over-building so that green space is at risk.
- One of the things I like about Franklin is the small town feel of it. With all of the building going on in the area, we're losing that small town feel, not to mention the open spaces that are being eliminated to put up more and more apartment complexes.
- Over building - too much too fast.
- Over building on remaining land. Do we really need all the office parks/apartments/strip malls?
- Over building. Losing the small friendly town appeal!
- Over building/ so many condo & apartments being build. The infrastructure has not being considered.
- Over development at the expense of green space/natural environment.
- Over development of farmland/ open space for subdivisions on top of each other. Preserve open space! I own a horse and appreciate having Harlinsdale. I am concerned that there will be no place to keep horses if growth continues unchecked. e.g. the subdivision on Old Hillsboro Road which is completely out of place.
- Over development. Too many homes too quickly.
- Overbuilding - No green spots left. No parking in downtown Franklin. We need more green space and parks in Cool Springs. No more office space.
- Overbuilding and not listening to resident concerns also safety in cool springs and other shopping areas.
- Overbuilding apartments and neighbors without roads (infrastructure) keeping up.
- Overbuilding commercially & residentially. We are out-growing ourselves and may lose our identity while letting this happen.
- Overbuilding downtown Franklin shouldn't be so crowded. Keep it quaint. Drainage - house flooding in Meadowgreen subdivision & not in flood plane.
- Overbuilding into land. What was pretty with grass, woods, & wildlife, is now. Starting to be nothing but homes, buildings & concrete.
- Over-building of neighborhoods. We love that we have a natural environment, but it is getting more & more developed which is less appealing. I don't see us staying here for retirement.
- Overbuilding without being mindful of traffic flow. Need more walking-biking paths for safe outdoor exercise, connecting homes to Franklin.
- Overbuilding!
- Overbuilding! Re zoning to allow building to over develop. Westhaven is a prime example. When I purchased, my townhouse on Pearl St, it was to be the only townhouse portion of the WH development. Now there are condominium, multi story building, renting and the crime has escalated!
- Overbuilding, we are losing all of our country atmosphere!
- Overbuilding.
- Overbuilding/overgrowth - with 10,000 new school children slated to move into this county over the next five years, the quality of this community will be in jeopardy. * Franklin needs to install street lights along Mack Hatcher. The roads been widened considerably and a sidewalk put in all along the west side of it, but it's dark along there after sunset. People work in the business district along Murfreesboro Rd, and it would be a lot safer for those of us who have to walk to and from work. Please street lights! * The intersection at 5th/Lewisburg Pk. & So. Margin St is in desperate need of a stop light! It is very hard for people traveling east & west on So. Margin to navigate that curve.
- Over-development: We feel the pace of building new homes/ subdivisions & business is too fast & needs to slow down & become more thought-out & deliberate.
- Planned development - road use, save open farmland.
- Preservation of green space and repurposing of old commercial/retail space rather than just replacing with new and allowing old to remain vacant and become an eyesore.
- Preserving green spaces, not overdeveloping - rapid growth.
- Preserving the beauty-natural, green space! That's what makes Franklin such a desirable place to live. Don't overbuild!

- Preserving the land and resources with such aggressive development, by companies and private developers, while growth & progress is essential, a balanced approach would be good.
- Removing all trees for more building. Taking away beauty that brings people here.
- Sometimes I wonder if people in zoning department are thinking of preserving the nature. "Every" open lots seem to becoming new residential developments. Very sad to see.
- Stop building new homes and stop destruction of environment. Stop building 1 million \$ home in the middle of downtown/Franklin. Stop wasting money on street projects with bricks crossings. Stop building hotels, 4 story in the middle of historic town. This is town! [?] all.
- The building on green spaces/ farm land. Economic development must be balanced with what makes Franklin beautiful and charming.
- The most important issue other than traffic, contributes to the traffic problem. New businesses and corporations are opening before schools and the impact of overcrowding are planned with a solution for all parties involved. Especially tax payers!!!
- The pace at completing new development. And, obviously (traffic) is number 1.
- Too much development going on such as high density housing. - Lack of walkability. There are many folks who would like to walk back and fourth from the factory and downtown. Franklin and there are no sidewalks, so it is a dangerous undertaking. - Walkability is a #1 factor for keeping people safe connected and fit!!!
- Too many apartments being built.
- Too many apartments being built. Too much development in historic Franklin - it has lost it's charm & character that drew us to Franklin in the first place. It's becoming the next Atlanta - overpriced and overcrowded! Too much development!
- Too many apartments!
- Too many apt complexes.
- Too many developments destroying the last of the raw land.
- Too many homes - losing the natural beauty which is the reason people want to move here. Going forward lots need to be at least 1/2 acre or more.
- Too many houses & too close together, causes too much congestion in all facts of life including traffic. We are always playing "catch up". They let builders & developers build, then we need schools & facilities & more firefighters & more police.
- Too many new constructions - Good city sponsored events but- too many people converge downtown. Need to make downtown pedestrian area - no traffic.
- Too many office buildings and complexes in the near future will create overcrowding & reduce the natural landscape.
- Too much building new home without infrastructure to handle it. Also more building and schools are being overcrowded.
- Too much commercial growth without infrastructure improvements (especially no Mack Hatcher extension).
- Too much development of housing & business, and the roads have not kept up. Terrible traffic. I have been a resident of Williamson Co since 1979, and although I understand the growth, it is not acceptable to continually build with no thought to the road situation.
- Too much development too quickly. With the rapidly growing area, this puts stress on residents with rezoning of schools every 2-3 years and commuting for work.
- Too much development too quickly. We are quickly losing the things. I moved to Franklin for.
- Too much development.
- Too much new development - over crowding losing small town feel!
- We need to stop building on every green space - too much growth. Where is the fields - wooded areas we used to have. Curtail development of unlimited sub-divisions.
- You need to stop taking small properties & adding homes on them. Follow the HUD guidelines.

Transportation: Traffic Flow, Public Transit

- #1 issue - traffic (as mentioned). #2 Cost of living/extra curricular activities.
- (1) Enforcing traffic regulations. (2) Managing growth so that all areas are treated equitably. (3) Eliminate the feeling of "downtown" vs the rest of us.
- 1) Traffic circulation. 2) Managing growth.
- Approving new builds without regard to impact on traffic!

- Bad dog traffic.
- Better public transportation routes, better public transportation shelters, better pedestrian access (sidewalks).
- Complete Mack Hatcher!
- Cut through drivers from Highway 96 - through 7th ave north - to Columbia Avenue - This street desperately needs a speed bump - It is used for a race way between the stop signs - I have reported it many times. It is our accident waiting to happen. Thanks.
- Education in how to use the public transportation.
- Every problem I can think of relates to transportation. Bike lanes, bike paths, sidewalks, and better ways through and around town. Complete the Mack Hatcher circle and widen Columbia to 4 lanes. Another big problem is a community college with no public transportation access. How does one thin that opening a new community college without having immediate access via public transportation is in any way acceptable? Major dropped ball!!
- Expansion - traffic - too large too quickly.
- Franklin spends entirely too much money on traffic lights. 18 to 24 lights at any intersection is too much!
- Getting around traffic.
- I have only been here for 3 years but it seems that traffic (yes, I read the question!) is key to the development of the entire area. Nashville and its environs are some of the most confusing traffic patterns I have ever seen. It is very difficult to drive here.
- Improving traffic flow while managing overall growth to maintain the "small town" feel that Franklin has - especially downtown Franklin
- Increased traffic.
- Just traffic.
- Just traffic.
- Mass transit without a rail service going from Columbia to Nashville congestion will continue to get worse and more importantly it will limit economic growth in Franklin and region.
- Mass transit.
- McEwen traffic!! I take my life in my hands every morning and evening entering and exiting McEwen Dr to Wilson Pike! You people are way way behind the traffic curve out McEwen way! (Way way way 3 years at least).
- More transportation opportunities for handicapped.
- Most significant - traffic otherwise, love Franklin.
- Need Mack Hatcher Parkway west. Too much high density housing being allowed. Not enough sidewalks. Protect the Harpeth River.
- Not to over-build the city's reasons that tourists, etc come to visit. The quality of life inside Franklin is rapidly declining. Streets are becoming very bad to navigate and, in some areas, even dangerous. Need sidewalks and repair in town; not on the outskirts, i.e. New Hwy 96! Thanks!
- Pls approve and build Mack Hatcher Extension asap!
- Public transportation to Nashville is the main concern for me. other than that Iam ver much happy living in franklin
- Put a red light at my drive way so I can get out in the morning from 8:00 am to 9:00 am Rutherford Country has me block.
- Roads are too crowded. Lanes of traffic need to be increased!
- Sorry, but traffic is it. I guess having schools that are more centrally located to population they serve.
- That is the main issue. Would love to see more sidewalks and bike paths available.
- The above issue is the only major problem Franklin has!!!! So work on it!!! instead of ruling it out. Charge new road improvements to new mega businesses, instead of letting them locate here for free.
- The flow of traffic, too many cars; not enough roads.
- The Mack Hatcher extension.
- The traffic.
- Time the traffic signals. Shorten red lights over 2 min is wrong.
- Traffic - difficult to navigate - especially 96 and Mack Hatcher - Water bill too high.
- Traffic - Franklin is a fabulous place to live I raise a family.
- Traffic - too much subdivisions but no street improvement: ie. Clovercroft Road.
- Traffic - traffic - traffic needs to be controlled! More roads into Franklin (a must).

- Traffic - Traffic - Traffic.
- Traffic - Why after fixing streets, don't they widen them! Traffic is horrible. But I love Franklin.
- Traffic "is" the number one problem.
- Traffic & more Middle School. More grocery stores and farmers markets.
- Traffic & over growth. Killing the intimacy that we've enjoyed about living in Franklin! Too much!
- Traffic & rising taxes.
- Traffic & school zoning. I live in Westhaven & don't want to travel all the way to Thompson Station for High School when Franklin High is 5 min down the road. My tax dollars go to Franklin my child should be able to attend Franklin School.
- Traffic (sorry) the traffic is hitting a peak, it is still flowing but getting congested. Time lights better - no new traffic.
- Traffic and parking.
- Traffic congestion in evenings returning from work to home.
- Traffic congestion through the city is a nightmare!
- Traffic congestion. Preservation of Franklin's open spaces and historical areas and image.
- Traffic control.
- Traffic flow, loss of green space. Over development & lack of planning. Unable to sustain growth.
- Traffic going towards and through downtown Franklin via Franklin Rd and Hillsboro & Columbia Ave has become increasingly congested every year! Roads need to be widened & better lighting is also important for overall safety (walkers, bikers, cars).
- Traffic in certain areas at certain times. (Royal Oaks Blvd South) & Mack Hatcher South Loop.
- Traffic is a huge issue and with all the new apartment buildings and other housing being constantly, this is only going to get worse. Other than that, we love living in Franklin! We would also love to see a separate recycling bin to our normal trash bin so that recycling can be made easier/more convenient. It would encourage others to recycle more as well.
- Traffic is getting worse.
- Traffic is the biggest challenge facing Franklin today.
- Traffic is the biggest issue for Franklin.
- Traffic is the issue.
- Traffic light timing is horrible. Too much traffic during peak travel times.
- traffic on Hillsboro, Columbia Avenue
- Traffic really is about it. I feel like a more connected sideway and greenway system would help open up more opportunities to walk or ride a bike to a business within a couple of miles of home. Right now we have a system of random and disconnected sidewalks and greenways. With some work to connect some of them and then thinking about walking and bike riding as a means of transportation going forward, many more opportunities will open up. This is not the only case, but a great example, you can't safely walk from downtown to the Factory.
- Traffic!
- Traffic!
- Traffic! Overbuilding of surroundings.
- Traffic!!
- Traffic!!!
- Traffic, traffic, traffic.
- Traffic.
- Traffic.
- Traffic.
- Traffic.
- Traffic/ population growth.
- Transportation is a high issue. Southy has to be done. It takes me 20-25 minutes just to reach I65. Unacceptable! What ever happened to the expansion of Mack Hatcher? We need this!!
- Transportation main issue.
- We need a train to take people to work to Nashville. It has become unbearable and makes me want to move to Nashville rather than live in Franklin.

- We used the park & ride to Nashville for 1 year & appreciated it. We commute everyday to Nashville, my husband work there & traffic is frustrating.
- You mean besides traffic? well... traffic, traffic, traffic. After that? crime/safety.

Economic Health: cost of living, taxes, jobs

- (1) water bill is so much higher here than it was in Davidson County, and for some reason we have to pay two bills. I don't understand why either of those are true. (2) Gasoline prices are also very much higher in Franklin and Brentwood than in other areas of middle Tennessee, seems we are being gouged based on location vs. other areas, up to 25 cents more per gallon vs. locations like Old Hickory Blvd at Nolensville Rd for example.
- Affordability!
- Affordability.
- Affordable living.
- Available lower income workforce.
- Continue overhead economic health of Franklin.
- Cost of childcare & home prices.
- Cost of living - home prices - keep climbing making it difficult to afford a home here.
- Cost of living - housing shortage. Preventing crime & drugs! Number of "quality" schools?
- Cost of living and availability of mental health providers.
- Cost of living and housing.
- Cost of living and losing that "small town" feel.
- Cost of living houses are \$400k. It's crazy. I'm a CPA and my husband is finishing up pharmacy school and we can't buy a house. If we can't then a lot of young people can't either.
- Cost of living in this county.
- Cost of living is rising.
- Cost of living is very expensive. Home ownership is almost 0 to none for single person with kids. No affordable housing anywhere.
- Cost of living, commercialization, building too much & taking away green space.
- Cost of living.
- Cost of living.
- Cost of living.
- Cost of living.
- Economic inequality, more affordable health clinics & care for working & poor.
- Efficient management of finances. Safety, management of natural environment.
- Expense of living here in Franklin, very expensive.
- High cost of living.
- Increasing property taxes and the prospect for even higher hikes because of growth and push for "affordable housing." All is not a priority of mine or my family's. Allow market forces to sort housing options - They are efficient, government rarely is.
- Increasing taxes, growth (too fast).
- It's a family friendly community, but many cannot afford to live here including people that grew up in families within Franklin.
- Job Growth
- Jobs
- Jobs and schooling opportunities for the growing community. Students needing to travel far distances to get to their designated areas.
- Keeping city gov't spending under control.
- Keeping the tax rate low!
- Lack of manufacturing jobs.
- Living in Franklin should be affordable to all. Being able too buy these old houses and fix them up should be affordable too working people?
- Local employment opportunities.

- Making Franklin a place where life time residents, to include their children, can afford to be a place where we can afford to live. Franklin/Williamson County has two several districts. There was a time when this served the best interests of both Franklin and Williamson County residents. However, that has long passed and the additional tax burden of the FSSD school tax makes the high cost of living in the FSSD/Franklin area more costly than now necessary. By now combining the two school districts, there would be a good deal of savings on FSSD and county tax payers by consolidations and better utilizing Middle School and Elementary School facilities.
- Managing the cost of growth are existing residents don't have to pay the costs of new residents - The need for impact fees.
- Property tax gap. Tired of paying higher property taxes on my home in subdivision versus a farm or large, more expensive tract in same zip code. The gap is too big and these land owners need to pay more of the value of their land then zoning it agriculture etc. This would generate more income and help provide all these other services with the funding needed to implement.
- Rent prices pushing Mom & Pop stores out.
- Small businesses that gave Franklin it's charm are unable to pay the increasing rent prices. We are getting more typical chains and losing the boutique "homey" nature of Franklin.
- Taxes - Concern with growth. Slow - Bldg too much for tax base & growth of schools. It has got to slow effecting retirement community.
- Taxes & overcrowding.
- The cost of living for people moving into town.
- The cost of living is so high. Rent is ridiculous. And buying a house is pretty expensive as well.
- The cost of living seems to be rising rapidly in Franklin, compared to similar small/medium towns I am familiar with.
- The cost of living/housing. Franklin is known for the citizens being upper middle class and up. Unfortunately, that means that everyone else, especially the people who work here, cannot afford to live here.
- The removal of industrial working class jobs.
- The rising cost of living in Franklin on a fixed income.
- Too much housing dev. - increases not only traffic but burdens the education services. As an educator, I see class sizes much too large 25+ students! Class size should be a max of 20-22.

Safety

- 1. Increased safety risks with growth (crime, traffic and distracted drivers) Other concerns: Our school crossing guards are not all well trained and that program could use a rehaul! Franklin High needs an additional entrance from Mack Hatcher which should include on-street parking for overflow (proposed to Charles Sargeant). Also desire MUCH more Harpeth River access and a riverwalk or similar
- Being alert to any potential terrorist activities.
- Bullying and the availability of prescription medications in our public schools are serious problems.
- Crime due to developing neighborhoods.
- Crime, traffic.
- Crime. Finding the balance between positive growth & heritage.
- Crime. Safety - day and night.
- Drug and gang related issues.
- Drug enforcement and education throughout the community. Drug abuse is much more prevalent than folks believe.
- Drugs - more police, more roads, stop building.
- Emergency preparedness (services that prepare community for emergencies).
- Home and car burglary/traffic issues.
- Increase in crime (drug/robbery).
- Increased crime due to increase population.
- Increasing crime. Controlling growth/matching infrastructure to growth.
- Keeping our town & communities safe!
- Keeping residents safe.
- Keeping us from bad people. Please stop the people from selling papers on the street!

- Maintaining a safe living environment as Franklin grows. Other than that traffic flow is a huge issue "Now" that must be addressed as it will only worsen as Franklin grows at a rapid rate.
- More education for police on domestic abuse issues. Affordable housing, making life easier for those less fortunate, outreach with refugees, be vigilant about planning with traffic & growth, use signage that you post to warn people about traffic for upcoming events for other uses such as a way to get citizens more involved in things that matter. Be vigilant about allowing Islam/Muslim principles invade schools & legislature. Bring god and prayer back into schools & courthouses. Get some judges on the bench who are not 98% of the time pro-dad in civil disputes and divorces. Seriously, it is way beyond ridiculous, many notice it and it is unfair and dishonorable & shameful.
- Most of us don't really know about our problems but it seems we still have home breaking and drugs so those problems are one and the same, I think our young people are doing well under the circumstances.
- Night-time safety of community.
- Presence of Police. I never see police officers unless they're trying to get people for speeding in hidden locations. More restaurants that are less expensive. I also feel like there is a lot of housing, but fun things to do instead of having to go downtown to Nashville.
- Safety & traffic.
- Safety for downtown employees. The parking availability not only for visitors (especially elderly) but for the employees as well, feeling safe getting to their ride or home after working. Also making all ages & economic status feel welcomed. Franklin can be off putting by the higher expense and seems sometimes catered to the older, higher class.
- Safety for residents.
- Safety must be maintained!
- Safety.
- Safety.
- Safety/crime prevention.
- Teenage crime.
- The amount of half raised children wondering the streets, the stop of illegal drugs. Codes going to some houses to enforce codes and looking away at other. Dogs running loose or people walking their dogs and don't pick up after them. In other words, let them poop in people's yard on the street. Loud music when you are trying to sleep at night. Cars squealing their tires late night. The cost of living for the retired people here in Franklin, we all need to pay less taxes, utilities for they constantly going up nobody gets a fair deal cause the cost of living exceeds your retirement income.
- The level of criminality needs to be in check. Overlooking small crimes increases the possibility of more serious crimes.
- The potential for increasing crime.
- To keep maintaining a high quality Police Department, and let citizens know that their cooperation with our police is essential.

Inclusion/Diversity

- Being more open & welcoming to a more diverse population (different religions, cultures, etc).
- Diversity
- Diversity providing opportunities for diverse cultures to come together & learn & grow as a community.
- Ethnic diversity and affordable housing
- Franklin is very cliqueish. As more and more people relocate here from other geographic locations, they expect the city to be more open minded than the typical Franklin old guard super-religious conservative population. There is a lot of intolerance here, for people with different religious beliefs or no religious beliefs, the LGBTQ community, and those of different ethnicities.
- General lack of diversity in population, united/hard to find affordable housing.
- I would say diversity in general and next I would say job opportunities. I moved here from Washington, DC and kept my job as I can work virtually, however, I would not stay in Franklin or Nashville if I had to get a job locally. There are less big businesses here and salary is often \$20k below industry standards which is disappointing. The city is much smaller than I had anticipated and though there is a lot of growth, the majority of the people I know who have moved here recently are employed at larger out of state businesses and work remotely.

- Inclusion of all people, regardless of social, racial & economic class; not just wealthy elite whites.
- Inclusion of diverse cultural and ethnic backgrounds into fabric of community; fostering community unity; increased preservation of historical sites & heritage.
- Keeping Franklin family friendly & not turning it into an adult only area.
- Lack of diversity & discrimination to those that are.
- Making sure people embrace diversity & work together. Not expanding too quickly at once.
- Many residents are extremely racist to myself and my family. I hold a law degree & never expected to be treated as poorly. I know you will probably never read this, but my husband and I moved to Franklin, TN from Virginia after he served 14 years in the Nanny, thinking this area would be a good place to raise our young children. We have been met with nothing but callousness and disregard, and even flat-out racism. We are seriously considering moving so that our children have a better place to grow up in. I do not like the way my children have been treated outside of school and I am hopeful that another job opportunity presents itself so that we may move away from here ASAP.
- Not diverse enough. Houses are over priced!!
- Not enough Blacks with jobs in Franklin! City or County govt. Get rid of the good old boy network.
- Reaching out to new residents. Being near Cool Springs. We feel more detached/ unaware of goings-on downtown and is not always easy to find (improve web outreach/enhance community calendar).
- Sense of community.
- The poor & rich communities learning to love & respect each other.
- We don't have as many kid friendly areas (i.e. Splash Pad) as some of the neighboring communities.
- With the amount of tweens/ teens - need more facilities for hangouts, socializing that is teen oriented and safe.

Schools

- Building enough schools to keep pace with growth. At some point, the huge influx of students each year will begin to negatively effect our ability to educate so many students.
- Combine the special school district with the City & County School System.
- Confusion of having 2 school systems!
- Constant school rezoning. The "busing" that occurred for Centennial. Its has always appeared political and inappropriate. Franklin its has been left "pure". That's a problem, everyone knows it. Centennial's reputations has wrongly suffered for it.
- Education & safety, planning & development.
- Educational opportunities with continued growth.
- Franklin Special School - needs to join county system for improvement.
- Growth of schools.
- Helping school system with growth!
- Increase emphasis on higher education.
- maintaining high quality public education for our children and the infrastructure
- Maintaining public education at A-1 level, develop affordable housing for teachers, police & firemen.
- Management of the growth of schools.
- Only one school system - No need for the FSSD-tax dollars. Need to go to only one system.
- Over crowded schools with poor zoning boundaries.
- Overcrowded schools/the need for more schools; more affordable housing; unchecked development - related to traffic issues.
- Overcrowding in schools is an issue which needs to be addressed quickly.
- Overcrowding in schools, lack of funding for facility improvement in current schools and for building new schools. **My daughter attends a Williamson Cty. High School.
- Planning new schools before the new home developments are built. Perhaps requiring builders to pay some of the costs for the new schools in a tax on development.
- Quality of public schools.
- School board is scary!
- School zoning - The high school zoning does not make sense to me. We live in West Franklin and are zoned for Independence when Franklin High is so much closer. We will consider private schools because of this. Otherwise, Franklin is great!

- Schools.
- Schools.
- Should spend more per child on education so all the 'Invest' campaigns are not required.
- Split zone neighborhoods between FSSD and WCS!! It's not fair when the neighborhoods are unevenly split and only a few kids go to school with you and the rest of neighborhood goes to school some where else! The school boards have told us they don't want to work together to fix this. Please make them do something about this! I know many people who are moving away because of this! And I'm not sure why we still have two school systems! It's a big waste of tax dollars!
- The adequate funding of the Williamson County Schools System is crucial. The schools are not funded to keep pace with growth. Pass a property tax increase!
- We need more schools. Too few schools. Not enough parking in downtown.

Other

- - Snow and ice removal - Terrible!! One week after a snow storm, the shady side of the 5-lane section of Hillsboro Rd in Fieldstone Farms, still had a solid sheet of ice across the entire road. Major intersections should be salted 30 ft out in every direction
- 1) Getting high speed internet service to more rural areas! 2) Maintaining rural feel of area.
- 3 year resident observation - regardless of the trade or service provided in Franklin there is a sense of entitlement combined with charging tax dollar yet delivering a poor quality product/service. To name a few: builder, lawn care, utilities, tv cable, sewer, trash collection..
- Availability of more retail options and restaurants, especially at Hillsboro Road close to five points.
- Barking dogs in neighborhoods!
- Communication. I'm sure there are more opportunities recreation, entertainment, & health happening in the community, but I never hear of them.
- Consistent application to developers in regards to improvements, etc.
- Continued spending of city funds to acquire land for parks and historical site without a public vote.
- emphasis local small businesses in addition to national restaurants/shopping
- Enormous ethnic immigration from the east for work. Cool Springs Mall is nasty now. Looks more like Hickory Hollow because of the customers. Franklin should be careful. Edison, NJ became completely overtaken by a certain ethnic group, pushing everyone else out. It isn't diverse if it's over-run by one group.
- Environment: Homes and buildings here are allowed to burn natural gas lamps 24/7/365. Ridiculous! We don't live in Dickensian England! Due to the desire of the city to keep this area more-or-less historical, the sidewalk situation is very bad here. The city pays little attention to bike and walking paths. There aren't any bike paths and sidewalks situation is really bad. Need greatly expanded trolley system. It covers very little territory. Too much overbuilding of ugly, expensive houses! I think Franklin is determined to sell off every bit of greenspace and surroundings farmland. There is little affordable housing here. Rent is very high! Sometimes the water quality is ghastly, and the city of Franklin needs to figure out what they are doing wrong in their treatment of the water. Some water comes from the Cumberland River, some from the Harpeth. Egyptian Lacquers had a spill here awhile back. I still don't think they have totally resolved the issue. Sometimes there are chemicals in it that shouldn't be there. It's scary!
- HOAs.
- Holding to traditional American moral values.
- I have owned a home here for 8 yrs & don't reside 100% full time as I travel often for work. Part of what drew me to Franklin vs Nashville was small town feel, quieter streets and neighborhoods, less traffic etc... Now with so much growth of business, the beautiful rolling green hills we love so much are becoming populated with unsightly homes & buildings. The traffic on 65 at certain times of the day is at a standstill, I am concerned that although obviously economically speaking this is great for the city & also for out home's real estate value... Too much population & commerce will ruin the quaint, pristine "small town" feel of Franklin. It will likely push a fair amount of us out to the outskirts to other counties, where things are quieter.
- I think that basic city maintenance could be improved. There need to be more lighted walking paths, especially near Jim Warren park. If they aren't playing ball the lights are off and this feels dangerous. I also believe that the city only salting mainroads during ice storms is problematic: If you don't salt the side streets near my home I still can't get up a hill and off to work. This decreases the amount of income in my household and also in our community.

- I think the government over-regulates opportunities for new development. Case in point is Hampton Inn's desire to build a hotel where Datsun's Restaurant used to be. Government's role is to provide freedom, not to constrain innovation.
- I would like to see all utilities put underground eventually including the metal transformer casings that one put in people's yards. It is possible to hide all such electrical infrastructure.
- If chain restaurants continue to come, I'm afraid Franklin will lose its "small town" identity. That being said, I really want Trader Joe's to open out here!!!
- In competing with the hip atmosphere of the Nashville area, adding more of a night scene for younger adults. No clubs, but later hours for existing restaurants and new coming restaurants. Possibly more live music events would be appealing. All in all, my husband and I both love Franklin and the direction it is headed!
- Keeping the community active and engaged and involved. Making these opportunities known and open to all Franklin residents.
- Lack of available intermists taking new patients, & nothing to "welcome" new residents that give info on the area & coupons with discounts, etc. I'd love to see a podcast twice a month explaining what is going on. This is big - I live less than a quarter miles from where that bomb had been placed in a car on Cool Springs. The PD insisted there was nothing "life threatening" going on. 'Excuse me', your PD should be tweeting info. Even if it's on the weekend. #BigDisconnect.
- Maintaining the community's 'heart'. Not forgetting the important of the longtime/'forever' members of this community.
- Maintaining the current quality of life & the small town community feel.
- Management of city staff, bureaucracy (3rd time a charm).
- Meriden Police & use block page.
- Modernizing city web site. Relocating City Hall from Square.
- Need greater percentage of democratic party members and less republicans.
- Next presidential election.
- Older people need closer food sources to downtown, be it groceries or affordable restaurants. Need a grocery in the Liberty Pike area. Also in the Old Hills area. Need more affordable apartments. Really need better traffic flow. Need more sidewalks, especially on 96 E.
- Our children being exposed to too many social media dangers: twitter, snap chat, vine. These devices in our schools and being used by our kids are becoming a serious issue with parents. Safety in the schools is a priority for us.
- Overall unfairness based on location. All areas in Franklin are not equally evaluated & given the attention it needs to prosper.
- Parking for downtown businesses & events.
- Perhaps communicating to its citizens the following: the direction or strategic growth plan the current administration has for the city of Franklin and its timeline, the financial well being of the city and how would the city financially accomplish its growth and development plans
- Preserving natural small town & rural feel & reality of Franklin.
- Prohibit spray of chemicals by airplanes "chemtrails". Reduction & destruction of natural "greenways", riverside natural growth, removal of trees & other natural habitat for animals, birds etc etc.
- Right-wing extremists make up a significant part of county commission. They consistently work against public schools.
- The influx of the Islamic Community!!! My family escaped their horrors in the Middle east.
- The schedule needs to be posted, disseminated, handed out to people. It's very hard to find a schedule.
- The subdivision streets I live in.
- There are very little restaurants in Franklin for the sophisticated palette. Plenty of franchises, but not enough local/ trendy eats for date nights or even with kids. Surprisingly disappointed we like the growth we are seeing an McEwen Carothers area, but am concerned highly with the lack of green space and traffic. 96 has become what looks so rundown. Sprouts and the facelift to that shopping carter was helpful, but it could use a lot of TLC.
- Thermo pollution.
- Too many Hispanics living in low income apartment, poor quality of life on those areas. crime, overcrowded units with Hispanic residents, most of them probably illegals. Sycamore Drive apartments are 99% occupied with Hispanics, non-Hispanics don't want t live near them due reasons mentioned above. More quality

housing for people with moderate income. but don't see that happening in city of Franklin. Because majority of Franklin decision makers etc are all wealthy they don't care and they don't want to evn build such a housing. Williamson county is made of rich, racist, bigot residents like Trump who only look after themselves and improve conditions only in suburbs and subdivisions for people like them. Very obvious. Even this survey is a joke, you can suvey all you want but nothing gets done for poor people. This survey does nothing. Same wealthy people are sure taking care of another wealthy people but poor or moderate income households are not in that equation. Such a shame. Franklin police is racist lke the rest of county.

- Too much republican rep - need new areas.
- Trying to get a septic permit.
- We have enough Civil War sites. Don't think more should be added. We have enough walking trails. Adding new construction which increases traffic is the biggest problem. Columbia Hwy needs to be widened to Spring Hill. Mac Hatcher bypass needs to be completed to make the entire circle.

Don't know

- Big problem.
- Can't be beside this - It is the ultimate problem!
- Do not know. I'm elderly-50 but I am very interested in the city.
- Don't know.
- Don't know.
- Don't know.
- Don't know.
- Don't know.
- Franklin is a very quiet, safe neighborhood, we like to live it here.
- Franklin is doing a good job. I have found friendliness, good sense of belonging & quality of life when I was more active. Now I am limited, but proud to call this home!
- Have no idea!
- Haven't lived here long enough.
- I am a senior and caregiver for a 100 year old mother, so I am not very involved at this time.
- I do not know.
- I only moved here the middle of July 2016 so I don't have much of an opinion yet.
- I'm new in city and soon to know!
- None, other than transportation.
- None. right now.
- Only lived here 16 months. Not really sure of Franklin's challenges.

THE NCSTM

The National Citizen SurveyTM

Franklin, TN

Technical Appendices
FINAL

2016



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Appendix A: Complete Survey Responses

Responses excluding “don’t know”

The following pages contain a complete set of responses to each question on the survey, excluding the “don’t know” responses. The percent of respondents giving a particular response is shown followed by the number of respondents (denoted with “N=”).

Table 1: Question 1

Please rate each of the following aspects of quality of life in Franklin:	Excellent		Good		Fair		Poor		Total	
Franklin as a place to live	73%	N=765	24%	N=255	3%	N=30	0%	N=3	100%	N=1054
Your neighborhood as a place to live	55%	N=573	38%	N=400	7%	N=72	1%	N=6	100%	N=1052
Franklin as a place to raise children	72%	N=703	25%	N=244	2%	N=19	1%	N=11	100%	N=977
Franklin as a place to work	57%	N=504	34%	N=298	8%	N=71	1%	N=13	100%	N=885
Franklin as a place to visit	62%	N=634	31%	N=314	7%	N=73	1%	N=6	100%	N=1026
Franklin as a place to retire	53%	N=472	32%	N=287	11%	N=94	4%	N=32	100%	N=886
The overall quality of life in Franklin	63%	N=659	34%	N=354	3%	N=32	0%	N=3	100%	N=1047

Table 2: Question 2

Please rate each of the following characteristics as they relate to Franklin as a whole:	Excellent		Good		Fair		Poor		Total	
Overall feeling of safety in Franklin	55%	N=574	42%	N=445	3%	N=32	0%	N=1	100%	N=1053
Overall ease of getting to the places you usually have to visit	17%	N=178	42%	N=442	31%	N=325	10%	N=105	100%	N=1050
Quality of overall natural environment in Franklin	37%	N=391	50%	N=527	10%	N=104	2%	N=24	100%	N=1046
Overall “built environment” of Franklin (including overall design, buildings, parks and transportation systems)	25%	N=261	53%	N=552	18%	N=187	5%	N=50	100%	N=1049
Health and wellness opportunities in Franklin	38%	N=383	46%	N=467	15%	N=148	1%	N=14	100%	N=1012
Overall opportunities for education and enrichment	45%	N=434	42%	N=409	12%	N=115	1%	N=11	100%	N=969
Overall economic health of Franklin	51%	N=510	44%	N=438	5%	N=52	1%	N=6	100%	N=1007
Sense of community	36%	N=373	46%	N=478	15%	N=157	2%	N=26	100%	N=1034
Overall image or reputation of Franklin	65%	N=678	31%	N=327	3%	N=29	1%	N=5	100%	N=1039

Table 3: Question 3

Please indicate how likely or unlikely you are to do each of the following:	Very likely		Somewhat likely		Somewhat unlikely		Very unlikely		Total	
Recommend living in Franklin to someone who asks	74%	N=772	19%	N=204	4%	N=44	3%	N=27	100%	N=1047
Remain in Franklin for the next five years	69%	N=709	20%	N=207	6%	N=65	5%	N=48	100%	N=1029

Table 4: Question 4

Please rate how safe or unsafe you feel:	Very safe		Somewhat safe		Neither safe nor unsafe		Somewhat unsafe		Very unsafe		Total	
In your neighborhood during the day	84%	N=886	13%	N=142	2%	N=17	1%	N=6	0%	N=0	100%	N=1051
In Franklin's downtown/commercial area during the day	81%	N=834	17%	N=174	2%	N=19	0%	N=5	0%	N=3	100%	N=1035

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Table 5: Question 5

Please rate each of the following characteristics as they relate to Franklin as a whole:	Excellent		Good		Fair		Poor		Total	
Traffic flow on major streets	1%	N=13	25%	N=263	45%	N=476	29%	N=301	100%	N=1054
Ease of public parking	11%	N=118	42%	N=442	33%	N=345	14%	N=143	100%	N=1048
Ease of travel by car in Franklin	7%	N=68	41%	N=431	39%	N=404	13%	N=137	100%	N=1040
Ease of travel by public transportation in Franklin	5%	N=27	18%	N=95	29%	N=155	47%	N=251	100%	N=529
Ease of travel by bicycle in Franklin	6%	N=39	29%	N=186	34%	N=218	30%	N=189	100%	N=632
Ease of walking in Franklin	17%	N=173	41%	N=400	30%	N=300	12%	N=115	100%	N=987
Availability of paths and walking trails	19%	N=179	41%	N=390	27%	N=264	13%	N=129	100%	N=961
Air quality	28%	N=288	59%	N=596	11%	N=113	2%	N=18	100%	N=1014
Cleanliness of Franklin	44%	N=459	50%	N=527	6%	N=64	0%	N=3	100%	N=1053
Overall appearance of Franklin	52%	N=545	43%	N=455	5%	N=51	0%	N=2	100%	N=1054
Public places where people want to spend time	39%	N=399	50%	N=512	10%	N=106	1%	N=15	100%	N=1033
Variety of housing options	14%	N=135	34%	N=339	33%	N=327	19%	N=192	100%	N=993
Availability of affordable quality housing	7%	N=62	21%	N=203	33%	N=317	39%	N=368	100%	N=950
Fitness opportunities (including exercise classes and paths or trails, etc.)	27%	N=272	50%	N=501	19%	N=190	4%	N=36	100%	N=998
Recreational opportunities	25%	N=256	52%	N=522	19%	N=196	3%	N=32	100%	N=1005
Availability of affordable quality food	32%	N=339	45%	N=468	19%	N=200	4%	N=40	100%	N=1047
Availability of affordable quality health care	34%	N=339	43%	N=427	18%	N=181	5%	N=46	100%	N=993
Availability of preventive health services	36%	N=335	45%	N=423	16%	N=153	3%	N=26	100%	N=936
Availability of affordable quality mental health care	25%	N=128	43%	N=224	24%	N=126	8%	N=41	100%	N=519

Table 6: Question 6

Please rate each of the following characteristics as they relate to Franklin as a whole:	Excellent		Good		Fair		Poor		Total	
Availability of affordable quality child care/preschool	19%	N=94	41%	N=206	28%	N=141	12%	N=60	100%	N=500
K-12 education	54%	N=414	38%	N=293	7%	N=50	1%	N=11	100%	N=768
Adult educational opportunities	19%	N=107	46%	N=256	25%	N=142	10%	N=54	100%	N=559
Opportunities to attend cultural/arts/music activities	35%	N=343	44%	N=425	19%	N=185	2%	N=24	100%	N=977
Opportunities to participate in religious or spiritual events and activities	53%	N=492	37%	N=348	8%	N=78	1%	N=13	100%	N=932
Employment opportunities	23%	N=198	52%	N=442	20%	N=173	4%	N=32	100%	N=845
Shopping opportunities	51%	N=525	42%	N=428	7%	N=67	1%	N=10	100%	N=1030
Cost of living in Franklin	5%	N=53	36%	N=368	39%	N=407	20%	N=207	100%	N=1035
Overall quality of business and service establishments in Franklin	34%	N=349	55%	N=563	11%	N=112	1%	N=7	100%	N=1031
Vibrant downtown/commercial area	52%	N=537	37%	N=379	10%	N=106	1%	N=6	100%	N=1029
Overall quality of new development in Franklin	30%	N=292	48%	N=467	19%	N=185	4%	N=35	100%	N=979
Opportunities to participate in social events and activities	39%	N=385	47%	N=467	12%	N=120	2%	N=19	100%	N=990
Opportunities to volunteer	35%	N=291	51%	N=419	12%	N=103	2%	N=13	100%	N=827
Opportunities to participate in community matters	28%	N=235	48%	N=401	21%	N=173	3%	N=24	100%	N=833
Openness and acceptance of the community toward people of diverse backgrounds	20%	N=184	41%	N=373	28%	N=254	10%	N=95	100%	N=906
Neighborliness of residents in Franklin	28%	N=283	49%	N=497	20%	N=206	3%	N=34	100%	N=1020

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Table 7: Question 7

Please indicate whether or not you have done each of the following in the last 12 months.	No		Yes		Total	
Made efforts to conserve water	26%	N=271	74%	N=775	100%	N=1046
Made efforts to make your home more energy efficient	30%	N=309	70%	N=735	100%	N=1044
Observed a code violation or other hazard in Franklin	69%	N=716	31%	N=322	100%	N=1038
Household member was a victim of a crime in Franklin	95%	N=989	5%	N=55	100%	N=1045
Reported a crime to the police in Franklin	87%	N=913	13%	N=132	100%	N=1045
Stocked supplies in preparation for an emergency	73%	N=766	27%	N=278	100%	N=1044
Campaigned or advocated for an issue, cause or candidate	80%	N=835	20%	N=211	100%	N=1047
Contacted the City of Franklin (in-person, phone, email or web) for help or information	63%	N=660	37%	N=387	100%	N=1046
Contacted Franklin elected officials (in-person, phone, email or web) to express your opinion	83%	N=871	17%	N=175	100%	N=1046

Table 8: Question 8

In the last 12 months, about how many times, if at all, have you or other household members done each of the following in Franklin?	2 times a week or more		2-4 times a month		Once a month or less		Not at all		Total	
Used Franklin recreation centers or their services	15%	N=160	18%	N=188	30%	N=309	37%	N=387	100%	N=1045
Visited a neighborhood park or City park	20%	N=208	32%	N=335	37%	N=386	11%	N=118	100%	N=1048
Used Franklin public libraries or their services	6%	N=58	21%	N=215	32%	N=330	42%	N=438	100%	N=1041
Participated in religious or spiritual activities in Franklin	26%	N=269	26%	N=277	13%	N=141	35%	N=362	100%	N=1048
Attended a City-sponsored event	4%	N=37	10%	N=107	56%	N=584	30%	N=312	100%	N=1039
Used bus, rail, subway or other public transportation instead of driving	1%	N=13	1%	N=10	4%	N=40	94%	N=981	100%	N=1044
Carpooled with other adults or children instead of driving alone	9%	N=96	13%	N=131	23%	N=238	55%	N=573	100%	N=1038
Walked or biked instead of driving	9%	N=96	14%	N=148	21%	N=224	55%	N=576	100%	N=1044
Volunteered your time to some group/activity in Franklin	6%	N=65	16%	N=163	27%	N=276	52%	N=538	100%	N=1042
Participated in a club	5%	N=51	9%	N=92	14%	N=142	73%	N=753	100%	N=1037
Talked to or visited with your immediate neighbors	46%	N=476	31%	N=321	17%	N=177	7%	N=69	100%	N=1044
Done a favor for a neighbor	22%	N=228	28%	N=290	36%	N=373	15%	N=155	100%	N=1045

Table 9: Question 9

Thinking about local public meetings (of local elected officials like City Council or County Commissioners, advisory boards, town halls, HOA, neighborhood watch, etc.), in the last 12 months, about how many times, if at all, have you or other household members attended or watched a local public meeting?	2 times a week or more		2-4 times a month		Once a month or less		Not at all		Total	
Attended a local public meeting	1%	N=6	2%	N=20	20%	N=213	77%	N=804	100%	N=1042
Watched (online or on television) a local public meeting	1%	N=12	4%	N=41	18%	N=187	77%	N=806	100%	N=1046

Table 10: Question 10

Please rate the quality of each of the following services in Franklin:	Excellent		Good		Fair		Poor		Total	
Police/Sheriff services	54%	N=501	41%	N=381	4%	N=35	1%	N=5	100%	N=921
Fire services	64%	N=528	35%	N=292	1%	N=9	0%	N=1	100%	N=830
Ambulance or emergency medical services	60%	N=460	38%	N=293	2%	N=13	0%	N=3	100%	N=770
Crime prevention	43%	N=353	49%	N=397	8%	N=62	1%	N=7	100%	N=818
Fire prevention and education	45%	N=309	46%	N=318	8%	N=56	1%	N=8	100%	N=691
Traffic enforcement	27%	N=254	49%	N=456	16%	N=147	7%	N=68	100%	N=924

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Please rate the quality of each of the following services in Franklin:	Excellent		Good		Fair		Poor		Total	
Street repair	19%	N=185	43%	N=430	29%	N=290	9%	N=85	100%	N=991
Street cleaning	31%	N=307	50%	N=495	16%	N=156	3%	N=27	100%	N=984
Street lighting	27%	N=274	47%	N=484	21%	N=211	5%	N=49	100%	N=1018
Snow removal	17%	N=145	40%	N=340	27%	N=233	16%	N=136	100%	N=854
Sidewalk maintenance	21%	N=196	50%	N=470	24%	N=228	5%	N=47	100%	N=941
Traffic signal timing	12%	N=123	38%	N=386	34%	N=341	15%	N=154	100%	N=1004
Bus or transit services	14%	N=60	28%	N=123	28%	N=121	30%	N=130	100%	N=435
Garbage collection	50%	N=483	42%	N=406	7%	N=69	2%	N=17	100%	N=976
Recycling	39%	N=362	37%	N=342	13%	N=120	11%	N=103	100%	N=926
Yard waste pick-up	44%	N=366	42%	N=349	10%	N=79	5%	N=38	100%	N=832
Storm drainage	27%	N=235	53%	N=469	16%	N=145	4%	N=33	100%	N=881
Drinking water	27%	N=273	46%	N=462	17%	N=172	10%	N=104	100%	N=1010
Sewer services	32%	N=305	56%	N=532	10%	N=95	1%	N=14	100%	N=947
Power (electric and/or gas) utility	36%	N=365	52%	N=529	11%	N=112	1%	N=14	100%	N=1020
Utility billing	29%	N=296	50%	N=513	15%	N=151	5%	N=56	100%	N=1016
City parks	45%	N=444	46%	N=451	8%	N=74	1%	N=14	100%	N=982
Recreation programs or classes	34%	N=231	50%	N=339	13%	N=87	2%	N=16	100%	N=673
Recreation centers or facilities	38%	N=292	47%	N=363	13%	N=103	2%	N=18	100%	N=776
Land use, planning and zoning	16%	N=129	43%	N=338	28%	N=223	13%	N=101	100%	N=790
Code enforcement (weeds, abandoned buildings, etc.)	19%	N=141	54%	N=390	20%	N=149	7%	N=48	100%	N=728
Animal control	26%	N=185	54%	N=386	15%	N=105	6%	N=45	100%	N=721
Economic development	33%	N=281	49%	N=421	15%	N=127	3%	N=26	100%	N=856
Health services	35%	N=311	53%	N=474	10%	N=90	2%	N=14	100%	N=889
Public library services	47%	N=360	46%	N=356	5%	N=42	2%	N=14	100%	N=773
Public information services	27%	N=194	51%	N=362	18%	N=128	3%	N=24	100%	N=708
Cable television	16%	N=141	38%	N=326	28%	N=242	18%	N=156	100%	N=865
Emergency preparedness (services that prepare the community for natural disasters or other emergency situations)	24%	N=158	53%	N=346	19%	N=124	4%	N=24	100%	N=651
Preservation of natural areas such as open space, farmlands and greenbelts	23%	N=213	43%	N=396	21%	N=192	12%	N=113	100%	N=914
Franklin open space	21%	N=196	49%	N=451	21%	N=199	9%	N=80	100%	N=926
City-sponsored special events	39%	N=332	49%	N=417	11%	N=92	2%	N=18	100%	N=860
Overall customer service by Franklin employees (police, receptionists, planners, etc.)	37%	N=338	53%	N=478	8%	N=75	2%	N=16	100%	N=907

Table 11: Question 11

Overall, how would you rate the quality of the services provided by each of the following?	Excellent		Good		Fair		Poor		Total	
The City of Franklin	36%	N=353	57%	N=568	6%	N=62	1%	N=8	100%	N=991
The Federal Government	10%	N=93	34%	N=299	33%	N=297	23%	N=200	100%	N=890

Table 12: Question 12

Please rate the following categories of Franklin government performance:	Excellent		Good		Fair		Poor		Total	
The value of services for the taxes paid to Franklin	23%	N=216	53%	N=497	20%	N=183	4%	N=34	100%	N=929
The overall direction that Franklin is taking	21%	N=201	53%	N=515	22%	N=214	5%	N=47	100%	N=978

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Please rate the following categories of Franklin government performance:	Excellent		Good		Fair		Poor		Total	
The job Franklin government does at welcoming citizen involvement	20%	N=155	51%	N=400	20%	N=158	9%	N=67	100%	N=780
Overall confidence in Franklin government	21%	N=189	56%	N=510	20%	N=180	4%	N=40	100%	N=918
Generally acting in the best interest of the community	23%	N=207	51%	N=464	22%	N=201	5%	N=43	100%	N=915
Being honest	23%	N=186	51%	N=408	21%	N=170	5%	N=37	100%	N=800
Treating all residents fairly	22%	N=181	50%	N=409	22%	N=178	7%	N=56	100%	N=824

Table 13: Question 13

Please rate how important, if at all, you think it is for the Franklin community to focus on each of the following in the coming two years:	Essential		Very important		Somewhat important		Not at all important		Total	
Overall feeling of safety in Franklin	62%	N=655	28%	N=294	8%	N=87	1%	N=12	100%	N=1048
Overall ease of getting to the places you usually have to visit	58%	N=604	36%	N=377	5%	N=57	0%	N=5	100%	N=1043
Quality of overall natural environment in Franklin	41%	N=420	46%	N=479	13%	N=130	1%	N=7	100%	N=1036
Overall "built environment" of Franklin (including overall design, buildings, parks and transportation systems)	39%	N=401	44%	N=461	16%	N=166	1%	N=12	100%	N=1040
Health and wellness opportunities in Franklin	30%	N=313	45%	N=469	21%	N=221	3%	N=36	100%	N=1039
Overall opportunities for education and enrichment	41%	N=429	37%	N=389	19%	N=198	3%	N=27	100%	N=1043
Overall economic health of Franklin	48%	N=502	41%	N=431	9%	N=98	1%	N=13	100%	N=1044
Sense of community	39%	N=402	44%	N=452	16%	N=165	2%	N=18	100%	N=1039

Table 14: Question 14

Please rate your level of satisfaction with the City of Franklin's management of growth:	Percent	Number
Very satisfied	29%	N=290
Somewhat satisfied	55%	N=542
Somewhat unsatisfied	15%	N=146
Very unsatisfied	1%	N=11
Total	100%	N=989

Table 15: Question 15

Presently the City of Franklin and Williamson County subsidize a limited mass transit route from Spring Hill through the city to Nashville. How likely, if at all, would you be to use this transit route if the following improvements were made?	Very likely		Somewhat likely		Somewhat unlikely		Very unlikely		Total	
Expanded weekday schedule	16%	N=155	22%	N=207	9%	N=88	52%	N=497	100%	N=947
Additional pick-up and drop-off locations	18%	N=175	25%	N=240	9%	N=84	47%	N=452	100%	N=951
Decreasing fares	14%	N=124	20%	N=183	13%	N=122	53%	N=480	100%	N=908
Enhanced Park & Ride facilities	17%	N=140	25%	N=206	10%	N=88	48%	N=404	100%	N=838
Enhanced connections via walking, cycling, etc.	20%	N=168	25%	N=210	10%	N=84	45%	N=384	100%	N=846
Expanded weekend schedule	19%	N=161	26%	N=215	8%	N=67	47%	N=393	100%	N=835

Table 16: Question D1

How often, if at all, do you do each of the following, considering all of the times you could?	Never		Rarely		Sometimes		Usually		Always		Total	
Recycle at home	14%	N=145	10%	N=100	12%	N=123	14%	N=145	50%	N=502	100%	N=1015
Purchase goods or services from a business located in Franklin	0%	N=5	1%	N=12	10%	N=102	54%	N=549	34%	N=350	100%	N=1017

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How often, if at all, do you do each of the following, considering all of the times you could?	Never		Rarely		Sometimes		Usually		Always		Total	
Eat at least 5 portions of fruits and vegetables a day	1%	N=13	11%	N=113	38%	N=386	32%	N=325	17%	N=175	100%	N=1011
Participate in moderate or vigorous physical activity	2%	N=23	9%	N=92	30%	N=305	35%	N=359	23%	N=233	100%	N=1012
Read or watch local news (via television, paper, computer, etc.)	4%	N=42	11%	N=114	19%	N=194	32%	N=321	34%	N=344	100%	N=1016
Vote in local elections	8%	N=81	9%	N=92	14%	N=143	25%	N=258	43%	N=441	100%	N=1016

Table 17: Question D2

Would you say that in general your health is:	Percent	Number
Excellent	29%	N=292
Very good	46%	N=468
Good	21%	N=214
Fair	4%	N=40
Poor	1%	N=5
Total	100%	N=1019

Table 18: Question D3

What impact, if any, do you think the economy will have on your family income in the next 6 months? Do you think the impact will be:	Percent	Number
Very positive	7%	N=75
Somewhat positive	27%	N=274
Neutral	50%	N=504
Somewhat negative	14%	N=139
Very negative	2%	N=16
Total	100%	N=1009

Table 19: Question D4

What is your employment status?	Percent	Number
Working full time for pay	73%	N=741
Working part time for pay	7%	N=71
Unemployed, looking for paid work	2%	N=17
Unemployed, not looking for paid work	3%	N=32
Fully retired	16%	N=159
Total	100%	N=1021

Table 20: Question D5

Do you work inside the boundaries of Franklin?	Percent	Number
Yes, outside the home	37%	N=363
Yes, from home	13%	N=133
No	50%	N=492
Total	100%	N=988

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Table 21: Question D6

How many years have you lived in Franklin?	Percent	Number
Less than 2 years	15%	N=156
2 to 5 years	21%	N=212
6 to 10 years	17%	N=178
11 to 20 years	25%	N=251
More than 20 years	22%	N=228
Total	100%	N=1025

Table 22: Question D7

Which best describes the building you live in?	Percent	Number
One family house detached from any other houses	67%	N=679
Building with two or more homes (duplex, townhome, apartment or condominium)	32%	N=326
Mobile home	0%	N=3
Other	1%	N=12
Total	100%	N=1020

Table 23: Question D8

Is this house, apartment or mobile home...	Percent	Number
Rented	32%	N=328
Owned	68%	N=689
Total	100%	N=1017

Table 24: Question D9

About how much is your monthly housing cost for the place you live (including rent, mortgage payment, property tax, property insurance and homeowners' association (HOA) fees)?	Percent	Number
Less than \$300 per month	4%	N=42
\$300 to \$599 per month	7%	N=74
\$600 to \$999 per month	9%	N=88
\$1,000 to \$1,499 per month	26%	N=260
\$1,500 to \$2,499 per month	35%	N=350
\$2,500 or more per month	18%	N=176
Total	100%	N=990

Table 25: Question D10

Do any children 17 or under live in your household?	Percent	Number
No	59%	N=602
Yes	41%	N=414
Total	100%	N=1016

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Table 26: Question D11

Are you or any other members of your household aged 65 or older?	Percent	Number
No	79%	N=799
Yes	21%	N=218
Total	100%	N=1017

Table 27: Question D12

How much do you anticipate your household's total income before taxes will be for the current year? (Please include in your total income money from all sources for all persons living in your household.)	Percent	Number
Less than \$25,000	5%	N=53
\$25,000 to \$49,999	13%	N=126
\$50,000 to \$99,999	32%	N=311
\$100,000 to \$149,999	24%	N=229
\$150,000 or more	26%	N=252
Total	100%	N=972

Table 28: Question D13

Are you Spanish, Hispanic or Latino?	Percent	Number
No, not Spanish, Hispanic or Latino	95%	N=954
Yes, I consider myself to be Spanish, Hispanic or Latino	5%	N=51
Total	100%	N=1004

Table 29: Question D14

What is your race? (Mark one or more races to indicate what race(s) you consider yourself to be.)	Percent	Number
American Indian or Alaskan Native	2%	N=21
Asian, Asian Indian or Pacific Islander	5%	N=48
Black or African American	5%	N=48
White	88%	N=887
Other	4%	N=43

Total may exceed 100% as respondents could select more than one option.

Table 30: Question D15

In which category is your age?	Percent	Number
18 to 24 years	3%	N=34
25 to 34 years	23%	N=231
35 to 44 years	20%	N=205
45 to 54 years	24%	N=245
55 to 64 years	12%	N=124
65 to 74 years	10%	N=102
75 years or older	7%	N=76
Total	100%	N=1018

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Table 31: Question D16

What is your sex?	Percent	Number
Female	54%	N=543
Male	46%	N=468
Total	100%	N=1011

Table 32: Question D17

Do you consider a cell phone or landline your primary telephone number?	Percent	Number
Cell	78%	N=801
Land line	10%	N=100
Both	12%	N=120
Total	100%	N=1020

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Responses including “don’t know”

The following pages contain a complete set of responses to each question on the survey, including the “don’t know” responses. The percent of respondents giving a particular response is shown followed by the number of respondents (denoted with “N=”).

Table 33: Question 1

Please rate each of the following aspects of quality of life in Franklin:	Excellent		Good		Fair		Poor		Don't know		Total	
Franklin as a place to live	73%	N=765	24%	N=255	3%	N=30	0%	N=3	0%	N=1	100%	N=1055
Your neighborhood as a place to live	54%	N=573	38%	N=400	7%	N=72	1%	N=6	0%	N=3	100%	N=1054
Franklin as a place to raise children	67%	N=703	23%	N=244	2%	N=19	1%	N=11	7%	N=70	100%	N=1047
Franklin as a place to work	48%	N=504	28%	N=298	7%	N=71	1%	N=13	15%	N=162	100%	N=1048
Franklin as a place to visit	61%	N=634	30%	N=314	7%	N=73	1%	N=6	2%	N=19	100%	N=1046
Franklin as a place to retire	45%	N=472	27%	N=287	9%	N=94	3%	N=32	15%	N=160	100%	N=1045
The overall quality of life in Franklin	63%	N=659	34%	N=354	3%	N=32	0%	N=3	0%	N=1	100%	N=1048

Table 34: Question 2

Please rate each of the following characteristics as they relate to Franklin as a whole:	Excellent		Good		Fair		Poor		Don't know		Total	
Overall feeling of safety in Franklin	55%	N=574	42%	N=445	3%	N=32	0%	N=1	0%	N=0	100%	N=1053
Overall ease of getting to the places you usually have to visit	17%	N=178	42%	N=442	31%	N=325	10%	N=105	0%	N=4	100%	N=1054
Quality of overall natural environment in Franklin	37%	N=391	50%	N=527	10%	N=104	2%	N=24	0%	N=3	100%	N=1050
Overall "built environment" of Franklin (including overall design, buildings, parks and transportation systems)	25%	N=261	52%	N=552	18%	N=187	5%	N=50	0%	N=4	100%	N=1053
Health and wellness opportunities in Franklin	37%	N=383	45%	N=467	14%	N=148	1%	N=14	3%	N=34	100%	N=1047
Overall opportunities for education and enrichment	41%	N=434	39%	N=409	11%	N=115	1%	N=11	8%	N=79	100%	N=1048
Overall economic health of Franklin	49%	N=510	42%	N=438	5%	N=52	1%	N=6	4%	N=43	100%	N=1050
Sense of community	36%	N=373	46%	N=478	15%	N=157	2%	N=26	1%	N=13	100%	N=1047
Overall image or reputation of Franklin	64%	N=678	31%	N=327	3%	N=29	1%	N=5	1%	N=11	100%	N=1051

Table 35: Question 3

Please indicate how likely or unlikely you are to do each of the following:	Very likely		Somewhat likely		Somewhat unlikely		Very unlikely		Don't know		Total	
Recommend living in Franklin to someone who asks	73%	N=772	19%	N=204	4%	N=44	3%	N=27	1%	N=6	100%	N=1053
Remain in Franklin for the next five years	68%	N=709	20%	N=207	6%	N=65	5%	N=48	2%	N=20	100%	N=1049

Table 36: Question 4

Please rate how safe or unsafe you feel:	Very safe		Somewhat safe		Neither safe nor unsafe		Somewhat unsafe		Very unsafe		Don't know		Total	
In your neighborhood during the day	84%	N=886	13%	N=142	2%	N=17	1%	N=6	0%	N=0	0%	N=4	100%	N=1055
In Franklin's downtown/commercial area during the day	79%	N=834	17%	N=174	2%	N=19	0%	N=5	0%	N=3	2%	N=18	100%	N=1052

Table 37: Question 5

Please rate each of the following characteristics as they relate to Franklin as a whole:	Excellent		Good		Fair		Poor		Don't know		Total	
Traffic flow on major streets	1%	N=13	25%	N=263	45%	N=476	29%	N=301	0%	N=1	100%	N=1054
Ease of public parking	11%	N=118	42%	N=442	33%	N=345	14%	N=143	1%	N=8	100%	N=1055
Ease of travel by car in Franklin	6%	N=68	41%	N=431	38%	N=404	13%	N=137	1%	N=12	100%	N=1053

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Please rate each of the following characteristics as they relate to Franklin as a whole:	Excellent		Good		Fair		Poor		Don't know		Total	
Ease of travel by public transportation in Franklin	3%	N=27	9%	N=95	15%	N=155	24%	N=251	49%	N=507	100%	N=1036
Ease of travel by bicycle in Franklin	4%	N=39	18%	N=186	21%	N=218	18%	N=189	39%	N=405	100%	N=1037
Ease of walking in Franklin	16%	N=173	38%	N=400	29%	N=300	11%	N=115	6%	N=60	100%	N=1047
Availability of paths and walking trails	17%	N=179	37%	N=390	25%	N=264	12%	N=129	9%	N=89	100%	N=1051
Air quality	27%	N=288	57%	N=596	11%	N=113	2%	N=18	4%	N=37	100%	N=1052
Cleanliness of Franklin	44%	N=459	50%	N=527	6%	N=64	0%	N=3	0%	N=3	100%	N=1056
Overall appearance of Franklin	52%	N=545	43%	N=455	5%	N=51	0%	N=2	0%	N=1	100%	N=1055
Public places where people want to spend time	38%	N=399	49%	N=512	10%	N=106	1%	N=15	2%	N=19	100%	N=1052
Variety of housing options	13%	N=135	33%	N=339	31%	N=327	18%	N=192	5%	N=51	100%	N=1044
Availability of affordable quality housing	6%	N=62	19%	N=203	30%	N=317	35%	N=368	9%	N=96	100%	N=1046
Fitness opportunities (including exercise classes and paths or trails, etc.)	26%	N=272	48%	N=501	18%	N=190	3%	N=36	5%	N=49	100%	N=1047
Recreational opportunities	24%	N=256	50%	N=522	19%	N=196	3%	N=32	4%	N=42	100%	N=1047
Availability of affordable quality food	32%	N=339	44%	N=468	19%	N=200	4%	N=40	0%	N=5	100%	N=1053
Availability of affordable quality health care	32%	N=339	40%	N=427	17%	N=181	4%	N=46	6%	N=63	100%	N=1056
Availability of preventive health services	32%	N=335	40%	N=423	15%	N=153	2%	N=26	11%	N=110	100%	N=1047
Availability of affordable quality mental health care	12%	N=128	21%	N=224	12%	N=126	4%	N=41	50%	N=529	100%	N=1049

Table 38: Question 6

Please rate each of the following characteristics as they relate to Franklin as a whole:	Excellent		Good		Fair		Poor		Don't know		Total	
Availability of affordable quality child care/preschool	9%	N=94	20%	N=206	14%	N=141	6%	N=60	52%	N=541	100%	N=1041
K-12 education	40%	N=414	28%	N=293	5%	N=50	1%	N=11	26%	N=274	100%	N=1042
Adult educational opportunities	10%	N=107	25%	N=256	14%	N=142	5%	N=54	46%	N=475	100%	N=1034
Opportunities to attend cultural/arts/music activities	33%	N=343	41%	N=425	18%	N=185	2%	N=24	6%	N=61	100%	N=1038
Opportunities to participate in religious or spiritual events and activities	47%	N=492	33%	N=348	7%	N=78	1%	N=13	11%	N=113	100%	N=1045
Employment opportunities	19%	N=198	43%	N=442	17%	N=173	3%	N=32	18%	N=187	100%	N=1033
Shopping opportunities	50%	N=525	41%	N=428	6%	N=67	1%	N=10	1%	N=15	100%	N=1045
Cost of living in Franklin	5%	N=53	35%	N=368	39%	N=407	20%	N=207	1%	N=7	100%	N=1042
Overall quality of business and service establishments in Franklin	33%	N=349	54%	N=563	11%	N=112	1%	N=7	1%	N=14	100%	N=1045
Vibrant downtown/commercial area	51%	N=537	36%	N=379	10%	N=106	1%	N=6	1%	N=14	100%	N=1043
Overall quality of new development in Franklin	28%	N=292	45%	N=467	18%	N=185	3%	N=35	6%	N=63	100%	N=1041
Opportunities to participate in social events and activities	37%	N=385	45%	N=467	12%	N=120	2%	N=19	5%	N=50	100%	N=1040
Opportunities to volunteer	28%	N=291	40%	N=419	10%	N=103	1%	N=13	21%	N=217	100%	N=1043
Opportunities to participate in community matters	23%	N=235	39%	N=401	17%	N=173	2%	N=24	19%	N=200	100%	N=1033
Openness and acceptance of the community toward people of diverse backgrounds	18%	N=184	36%	N=373	24%	N=254	9%	N=95	12%	N=129	100%	N=1035
Neighborliness of residents in Franklin	27%	N=283	48%	N=497	20%	N=206	3%	N=34	2%	N=21	100%	N=1041

Table 39: Question 7

Please indicate whether or not you have done each of the following in the last 12 months.	No		Yes		Total	
Made efforts to conserve water	26%	N=271	74%	N=775	100%	N=1046
Made efforts to make your home more energy efficient	30%	N=309	70%	N=735	100%	N=1044

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Please indicate whether or not you have done each of the following in the last 12 months.	No		Yes		Total	
Observed a code violation or other hazard in Franklin	69%	N=716	31%	N=322	100%	N=1038
Household member was a victim of a crime in Franklin	95%	N=989	5%	N=55	100%	N=1045
Reported a crime to the police in Franklin	87%	N=913	13%	N=132	100%	N=1045
Stocked supplies in preparation for an emergency	73%	N=766	27%	N=278	100%	N=1044
Campaigned or advocated for an issue, cause or candidate	80%	N=835	20%	N=211	100%	N=1047
Contacted the City of Franklin (in-person, phone, email or web) for help or information	63%	N=660	37%	N=387	100%	N=1046
Contacted Franklin elected officials (in-person, phone, email or web) to express your opinion	83%	N=871	17%	N=175	100%	N=1046

Table 40: Question 8

In the last 12 months, about how many times, if at all, have you or other household members done each of the following in Franklin?	2 times a week or more		2-4 times a month		Once a month or less		Not at all		Total	
Used Franklin recreation centers or their services	15%	N=160	18%	N=188	30%	N=309	37%	N=387	100%	N=1045
Visited a neighborhood park or City park	20%	N=208	32%	N=335	37%	N=386	11%	N=118	100%	N=1048
Used Franklin public libraries or their services	6%	N=58	21%	N=215	32%	N=330	42%	N=438	100%	N=1041
Participated in religious or spiritual activities in Franklin	26%	N=269	26%	N=277	13%	N=141	35%	N=362	100%	N=1048
Attended a City-sponsored event	4%	N=37	10%	N=107	56%	N=584	30%	N=312	100%	N=1039
Used bus, rail, subway or other public transportation instead of driving	1%	N=13	1%	N=10	4%	N=40	94%	N=981	100%	N=1044
Carpooled with other adults or children instead of driving alone	9%	N=96	13%	N=131	23%	N=238	55%	N=573	100%	N=1038
Walked or biked instead of driving	9%	N=96	14%	N=148	21%	N=224	55%	N=576	100%	N=1044
Volunteered your time to some group/activity in Franklin	6%	N=65	16%	N=163	27%	N=276	52%	N=538	100%	N=1042
Participated in a club	5%	N=51	9%	N=92	14%	N=142	73%	N=753	100%	N=1037
Talked to or visited with your immediate neighbors	46%	N=476	31%	N=321	17%	N=177	7%	N=69	100%	N=1044
Done a favor for a neighbor	22%	N=228	28%	N=290	36%	N=373	15%	N=155	100%	N=1045

Table 41: Question 9

Thinking about local public meetings (of local elected officials like City Council or County Commissioners, advisory boards, town halls, HOA, neighborhood watch, etc.), in the last 12 months, about how many times, if at all, have you or other household members attended or watched a local public meeting?	2 times a week or more		2-4 times a month		Once a month or less		Not at all		Total	
Attended a local public meeting	1%	N=6	2%	N=20	20%	N=213	77%	N=804	100%	N=1042
Watched (online or on television) a local public meeting	1%	N=12	4%	N=41	18%	N=187	77%	N=806	100%	N=1046

Table 42: Question 10

Please rate the quality of each of the following services in Franklin:	Excellent		Good		Fair		Poor		Don't know		Total	
Police/Sheriff services	48%	N=501	37%	N=381	3%	N=35	0%	N=5	11%	N=114	100%	N=1035
Fire services	51%	N=528	28%	N=292	1%	N=9	0%	N=1	20%	N=209	100%	N=1039
Ambulance or emergency medical services	44%	N=460	28%	N=293	1%	N=13	0%	N=3	26%	N=269	100%	N=1039
Crime prevention	34%	N=353	38%	N=397	6%	N=62	1%	N=7	21%	N=214	100%	N=1033
Fire prevention and education	30%	N=309	31%	N=318	5%	N=56	1%	N=8	33%	N=341	100%	N=1032
Traffic enforcement	25%	N=254	44%	N=456	14%	N=147	7%	N=68	11%	N=109	100%	N=1033
Street repair	18%	N=185	41%	N=430	28%	N=290	8%	N=85	4%	N=46	100%	N=1037
Street cleaning	30%	N=307	48%	N=495	15%	N=156	3%	N=27	5%	N=52	100%	N=1036
Street lighting	26%	N=274	47%	N=484	20%	N=211	5%	N=49	2%	N=16	100%	N=1035

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Please rate the quality of each of the following services in Franklin:	Excellent		Good		Fair		Poor		Don't know		Total	
Snow removal	14%	N=145	33%	N=340	23%	N=233	13%	N=136	17%	N=176	100%	N=1030
Sidewalk maintenance	19%	N=196	46%	N=470	22%	N=228	5%	N=47	9%	N=89	100%	N=1030
Traffic signal timing	12%	N=123	37%	N=386	33%	N=341	15%	N=154	3%	N=29	100%	N=1033
Bus or transit services	6%	N=60	12%	N=123	12%	N=121	13%	N=130	58%	N=595	100%	N=1030
Garbage collection	47%	N=483	39%	N=406	7%	N=69	2%	N=17	6%	N=59	100%	N=1035
Recycling	35%	N=362	33%	N=342	12%	N=120	10%	N=103	11%	N=111	100%	N=1038
Yard waste pick-up	35%	N=366	34%	N=349	8%	N=79	4%	N=38	20%	N=202	100%	N=1034
Storm drainage	23%	N=235	45%	N=469	14%	N=145	3%	N=33	15%	N=151	100%	N=1032
Drinking water	26%	N=273	45%	N=462	17%	N=172	10%	N=104	2%	N=25	100%	N=1035
Sewer services	29%	N=305	51%	N=532	9%	N=95	1%	N=14	9%	N=90	100%	N=1036
Power (electric and/or gas) utility	35%	N=365	51%	N=529	11%	N=112	1%	N=14	1%	N=12	100%	N=1032
Utility billing	29%	N=296	50%	N=513	15%	N=151	5%	N=56	1%	N=15	100%	N=1030
City parks	43%	N=444	44%	N=451	7%	N=74	1%	N=14	5%	N=49	100%	N=1031
Recreation programs or classes	22%	N=231	33%	N=339	8%	N=87	2%	N=16	34%	N=354	100%	N=1027
Recreation centers or facilities	29%	N=292	36%	N=363	10%	N=103	2%	N=18	24%	N=247	100%	N=1024
Land use, planning and zoning	13%	N=129	33%	N=338	22%	N=223	10%	N=101	23%	N=237	100%	N=1027
Code enforcement (weeds, abandoned buildings, etc.)	14%	N=141	38%	N=390	14%	N=149	5%	N=48	29%	N=301	100%	N=1029
Animal control	18%	N=185	38%	N=386	10%	N=105	4%	N=45	30%	N=307	100%	N=1028
Economic development	27%	N=281	41%	N=421	12%	N=127	3%	N=26	17%	N=170	100%	N=1025
Health services	30%	N=311	46%	N=474	9%	N=90	1%	N=14	14%	N=145	100%	N=1034
Public library services	35%	N=360	34%	N=356	4%	N=42	1%	N=14	25%	N=260	100%	N=1033
Public information services	19%	N=194	35%	N=362	12%	N=128	2%	N=24	31%	N=314	100%	N=1022
Cable television	14%	N=141	32%	N=326	24%	N=242	15%	N=156	15%	N=157	100%	N=1022
Emergency preparedness (services that prepare the community for natural disasters or other emergency situations)	15%	N=158	34%	N=346	12%	N=124	2%	N=24	36%	N=374	100%	N=1025
Preservation of natural areas such as open space, farmlands and greenbelts	21%	N=213	39%	N=396	19%	N=192	11%	N=113	11%	N=113	100%	N=1027
Franklin open space	19%	N=196	44%	N=451	19%	N=199	8%	N=80	10%	N=104	100%	N=1029
City-sponsored special events	33%	N=332	41%	N=417	9%	N=92	2%	N=18	16%	N=162	100%	N=1022
Overall customer service by Franklin employees (police, receptionists, planners, etc.)	33%	N=338	47%	N=478	7%	N=75	2%	N=16	11%	N=112	100%	N=1019

Table 43: Question 11

Overall, how would you rate the quality of the services provided by each of the following?	Excellent		Good		Fair		Poor		Don't know		Total	
The City of Franklin	34%	N=353	55%	N=568	6%	N=62	1%	N=8	4%	N=46	100%	N=1036
The Federal Government	9%	N=93	29%	N=299	29%	N=297	19%	N=200	14%	N=139	100%	N=1029

Table 44: Question 12

Please rate the following categories of Franklin government performance:	Excellent		Good		Fair		Poor		Don't know		Total	
The value of services for the taxes paid to Franklin	21%	N=216	48%	N=497	18%	N=183	3%	N=34	10%	N=104	100%	N=1033
The overall direction that Franklin is taking	19%	N=201	50%	N=515	21%	N=214	5%	N=47	6%	N=58	100%	N=1035
The job Franklin government does at welcoming citizen involvement	15%	N=155	39%	N=400	15%	N=158	7%	N=67	24%	N=251	100%	N=1032
Overall confidence in Franklin government	18%	N=189	49%	N=510	17%	N=180	4%	N=40	11%	N=114	100%	N=1031

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Please rate the following categories of Franklin government performance:	Excellent		Good		Fair		Poor		Don't know		Total	
Generally acting in the best interest of the community	20%	N=207	45%	N=464	19%	N=201	4%	N=43	11%	N=116	100%	N=1031
Being honest	18%	N=186	40%	N=408	16%	N=170	4%	N=37	22%	N=231	100%	N=1032
Treating all residents fairly	18%	N=181	40%	N=409	17%	N=178	5%	N=56	20%	N=207	100%	N=1031

Table 45: Question 13

Please rate how important, if at all, you think it is for the Franklin community to focus on each of the following in the coming two years:	Essential		Very important		Somewhat important		Not at all important		Total	
Overall feeling of safety in Franklin	62%	N=655	28%	N=294	8%	N=87	1%	N=12	100%	N=1048
Overall ease of getting to the places you usually have to visit	58%	N=604	36%	N=377	5%	N=57	0%	N=5	100%	N=1043
Quality of overall natural environment in Franklin	41%	N=420	46%	N=479	13%	N=130	1%	N=7	100%	N=1036
Overall "built environment" of Franklin (including overall design, buildings, parks and transportation systems)	39%	N=401	44%	N=461	16%	N=166	1%	N=12	100%	N=1040
Health and wellness opportunities in Franklin	30%	N=313	45%	N=469	21%	N=221	3%	N=36	100%	N=1039
Overall opportunities for education and enrichment	41%	N=429	37%	N=389	19%	N=198	3%	N=27	100%	N=1043
Overall economic health of Franklin	48%	N=502	41%	N=431	9%	N=98	1%	N=13	100%	N=1044
Sense of community	39%	N=402	44%	N=452	16%	N=165	2%	N=18	100%	N=1039

Table 46: Question 14

Please rate your level of satisfaction with the City of Franklin's management of growth:	Percent	Number
Very satisfied	28%	N=290
Somewhat satisfied	53%	N=542
Somewhat unsatisfied	14%	N=146
Very unsatisfied	1%	N=11
Don't know	3%	N=29
Total	100%	N=1019

Table 47: Question 15

Presently the City of Franklin and Williamson County subsidize a limited mass transit route from Spring Hill through the city to Nashville. How likely, if at all, would you be to use this transit route if the following improvements were made?	Very likely		Somewhat likely		Somewhat unlikely		Very unlikely		Don't know		Total	
Expanded weekday schedule	15%	N=155	20%	N=207	9%	N=88	48%	N=497	8%	N=77	100%	N=1024
Additional pick-up and drop-off locations	17%	N=175	23%	N=240	8%	N=84	44%	N=452	7%	N=72	100%	N=1023
Decreasing fares	12%	N=124	18%	N=183	12%	N=122	48%	N=480	10%	N=100	100%	N=1008
Enhanced Park & Ride facilities	14%	N=140	20%	N=206	9%	N=88	39%	N=404	18%	N=186	100%	N=1024
Enhanced connections via walking, cycling, etc.	16%	N=168	20%	N=210	8%	N=84	37%	N=384	17%	N=179	100%	N=1025
Expanded weekend schedule	16%	N=161	21%	N=215	7%	N=67	38%	N=393	18%	N=187	100%	N=1022

Table 48: Question D1

How often, if at all, do you do each of the following, considering all of the times you could?	Never		Rarely		Sometimes		Usually		Always		Total	
Recycle at home	14%	N=145	10%	N=100	12%	N=123	14%	N=145	50%	N=502	100%	N=1015
Purchase goods or services from a business located in Franklin	0%	N=5	1%	N=12	10%	N=102	54%	N=549	34%	N=350	100%	N=1017
Eat at least 5 portions of fruits and vegetables a day	1%	N=13	11%	N=113	38%	N=386	32%	N=325	17%	N=175	100%	N=1011

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How often, if at all, do you do each of the following, considering all of the times you could?	Never		Rarely		Sometimes		Usually		Always		Total	
Participate in moderate or vigorous physical activity	2%	N=23	9%	N=92	30%	N=305	35%	N=359	23%	N=233	100%	N=1012
Read or watch local news (via television, paper, computer, etc.)	4%	N=42	11%	N=114	19%	N=194	32%	N=321	34%	N=344	100%	N=1016
Vote in local elections	8%	N=81	9%	N=92	14%	N=143	25%	N=258	43%	N=441	100%	N=1016

Table 49: Question D2

Would you say that in general your health is:	Percent	Number
Excellent	29%	N=292
Very good	46%	N=468
Good	21%	N=214
Fair	4%	N=40
Poor	1%	N=5
Total	100%	N=1019

Table 50: Question D3

What impact, if any, do you think the economy will have on your family income in the next 6 months? Do you think the impact will be:	Percent	Number
Very positive	7%	N=75
Somewhat positive	27%	N=274
Neutral	50%	N=504
Somewhat negative	14%	N=139
Very negative	2%	N=16
Total	100%	N=1009

Table 51: Question D4

What is your employment status?	Percent	Number
Working full time for pay	73%	N=741
Working part time for pay	7%	N=71
Unemployed, looking for paid work	2%	N=17
Unemployed, not looking for paid work	3%	N=32
Fully retired	16%	N=159
Total	100%	N=1021

Table 52: Question D5

Do you work inside the boundaries of Franklin?	Percent	Number
Yes, outside the home	37%	N=363
Yes, from home	13%	N=133
No	50%	N=492
Total	100%	N=988

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Table 53: Question D6

How many years have you lived in Franklin?	Percent	Number
Less than 2 years	15%	N=156
2 to 5 years	21%	N=212
6 to 10 years	17%	N=178
11 to 20 years	25%	N=251
More than 20 years	22%	N=228
Total	100%	N=1025

Table 54: Question D7

Which best describes the building you live in?	Percent	Number
One family house detached from any other houses	67%	N=679
Building with two or more homes (duplex, townhome, apartment or condominium)	32%	N=326
Mobile home	0%	N=3
Other	1%	N=12
Total	100%	N=1020

Table 55: Question D8

Is this house, apartment or mobile home...	Percent	Number
Rented	32%	N=328
Owned	68%	N=689
Total	100%	N=1017

Table 56: Question D9

About how much is your monthly housing cost for the place you live (including rent, mortgage payment, property tax, property insurance and homeowners' association (HOA) fees)?	Percent	Number
Less than \$300 per month	4%	N=42
\$300 to \$599 per month	7%	N=74
\$600 to \$999 per month	9%	N=88
\$1,000 to \$1,499 per month	26%	N=260
\$1,500 to \$2,499 per month	35%	N=350
\$2,500 or more per month	18%	N=176
Total	100%	N=990

Table 57: Question D10

Do any children 17 or under live in your household?	Percent	Number
No	59%	N=602
Yes	41%	N=414
Total	100%	N=1016

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Table 58: Question D11

Are you or any other members of your household aged 65 or older?	Percent	Number
No	79%	N=799
Yes	21%	N=218
Total	100%	N=1017

Table 59: Question D12

How much do you anticipate your household's total income before taxes will be for the current year? (Please include in your total income money from all sources for all persons living in your household.)	Percent	Number
Less than \$25,000	5%	N=53
\$25,000 to \$49,999	13%	N=126
\$50,000 to \$99,999	32%	N=311
\$100,000 to \$149,999	24%	N=229
\$150,000 or more	26%	N=252
Total	100%	N=972

Table 60: Question D13

Are you Spanish, Hispanic or Latino?	Percent	Number
No, not Spanish, Hispanic or Latino	95%	N=954
Yes, I consider myself to be Spanish, Hispanic or Latino	5%	N=51
Total	100%	N=1004

Table 61: Question D14

What is your race? (Mark one or more races to indicate what race(s) you consider yourself to be.)	Percent	Number
American Indian or Alaskan Native	2%	N=21
Asian, Asian Indian or Pacific Islander	5%	N=48
Black or African American	5%	N=48
White	88%	N=887
Other	4%	N=43

Total may exceed 100% as respondents could select more than one option.

Table 62: Question D15

In which category is your age?	Percent	Number
18 to 24 years	3%	N=34
25 to 34 years	23%	N=231
35 to 44 years	20%	N=205
45 to 54 years	24%	N=245
55 to 64 years	12%	N=124
65 to 74 years	10%	N=102
75 years or older	7%	N=76
Total	100%	N=1018

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Table 63: Question D16

What is your sex?	Percent	Number
Female	54%	N=543
Male	46%	N=468
Total	100%	N=1011

Table 64: Question D17

Do you consider a cell phone or landline your primary telephone number?	Percent	Number
Cell	78%	N=801
Land line	10%	N=100
Both	12%	N=120
Total	100%	N=1020

Appendix B: Benchmark Comparisons

Comparison Data

NRC's database of comparative resident opinion is comprised of resident perspectives gathered in surveys from over 500 communities whose residents evaluated the same kinds of topics on The National Citizen Survey™. The comparison evaluations are from the most recent survey completed in each community; most communities conduct surveys every year or in alternating years. NRC adds the latest results quickly upon survey completion, keeping the benchmark data fresh and relevant. The communities in the database represent a wide geographic and population range. The City of Franklin chose to have comparisons made to the entire database and a subset of similar jurisdictions from the database (populations between 50,000 and 80,000).

Interpreting the Results

Ratings are compared when there are at least five communities in which a similar question was asked. Where comparisons are available, four columns are provided in the table. The first column is Franklin's "percent positive." The percent positive is the combination of the top two most positive response options (i.e., "excellent" and "good," "very safe" and "somewhat safe," "essential" and "very important," etc.), or, in the case of resident behaviors/participation, the percent positive represents the proportion of respondents indicating "yes" or participating in an activity at least once a month. The second column is the rank assigned to Franklin's rating among communities where a similar question was asked. The third column is the number of communities that asked a similar question. The final column shows the comparison of Franklin's rating to the benchmark.

In that final column, Franklin's results are noted as being "higher" than the benchmark, "lower" than the benchmark or "similar" to the benchmark, meaning that the average rating given by Franklin residents is statistically similar to or different (greater or lesser) than the benchmark. More extreme differences are noted as "much higher" or "much lower."

Benchmark Database Characteristics	
Region	Percent
New England	3%
Middle Atlantic	5%
East North Central	15%
West North Central	13%
South Atlantic	22%
East South Central	3%
West South Central	7%
Mountain	16%
Pacific	16%
Population	Percent
Less than 10,000	10%
10,000 to 24,999	22%
25,000 to 49,999	23%
50,000 to 99,999	22%
100,000 or more	23%

National Benchmark Comparisons

Table 65: Community Characteristics General

	Percent positive	Rank	Number of communities in comparison	Comparison to benchmark
The overall quality of life in Franklin	97%	8	418	Higher
Overall image or reputation of Franklin	97%	3	314	Much higher
Franklin as a place to live	97%	13	358	Higher
Your neighborhood as a place to live	93%	30	281	Higher
Franklin as a place to raise children	97%	8	345	Higher
Franklin as a place to retire	86%	13	324	Higher
Overall appearance of Franklin	95%	16	324	Higher

Table 66: Community Characteristics by Facet

		Percent positive	Rank	Number of communities in comparison	Comparison to benchmark
Safety	Overall feeling of safety in Franklin	97%	30	268	Higher
	In your neighborhood during the day	98%	36	323	Similar
	In Franklin's downtown/commercial area during the day	97%	37	275	Similar
Mobility	Overall ease of getting to the places you usually have to visit	59%	164	189	Similar
	Availability of paths and walking trails	59%	171	281	Similar
	Ease of walking in Franklin	58%	169	262	Similar
	Ease of travel by bicycle in Franklin	36%	222	268	Lower
	Ease of travel by public transportation in Franklin	23%	138	159	Lower
	Ease of travel by car in Franklin	48%	234	273	Lower
	Ease of public parking	53%	89	153	Similar
	Traffic flow on major streets	26%	291	321	Lower
Natural Environment	Quality of overall natural environment in Franklin	88%	67	250	Similar
	Cleanliness of Franklin	94%	32	248	Higher
	Air quality	87%	73	225	Similar
Built Environment	Overall "built environment" of Franklin (including overall design, buildings, parks and transportation systems)	77%	39	178	Similar
	Overall quality of new development in Franklin	78%	13	256	Higher
	Availability of affordable quality housing	28%	227	275	Lower
	Variety of housing options	48%	174	250	Similar
	Public places where people want to spend time	88%	12	171	Higher
	Overall economic health of Franklin	94%	2	183	Much higher
Economy	Vibrant downtown/commercial area	89%	2	167	Much higher
	Overall quality of business and service establishments in Franklin	88%	6	245	Higher
	Cost of living in Franklin	41%	124	179	Similar
	Shopping opportunities	93%	9	267	Much higher
	Employment opportunities	76%	1	284	Much higher
	Franklin as a place to visit	92%	16	193	Much higher
	Franklin as a place to work	90%	1	324	Much higher
	Health and wellness opportunities in Franklin	84%	32	180	Higher
	Availability of affordable quality mental health care	68%	10	154	Higher
	Availability of preventive health services	81%	9	210	Higher
	Availability of affordable quality health care	77%	21	234	Higher
Recreation and Wellness	Availability of affordable quality food	77%	27	211	Similar
	Recreational opportunities	77%	85	276	Similar
	Fitness opportunities (including exercise classes and paths or trails, etc.)	77%	58	172	Similar
Education and	Overall opportunities for education and enrichment	87%	23	180	Higher

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		Percent positive	Rank	Number of communities in comparison	Comparison to benchmark
Enrichment	Opportunities to participate in religious or spiritual events and activities	90%	4	181	Higher
	Opportunities to attend cultural/arts/music activities	79%	26	266	Higher
	Adult educational opportunities	65%	62	161	Similar
	K-12 education	92%	20	240	Higher
	Availability of affordable quality child care/preschool	60%	70	228	Similar
Community Engagement	Opportunities to participate in social events and activities	86%	7	232	Higher
	Neighborliness of Franklin	76%	10	173	Higher
	Openness and acceptance of the community toward people of diverse backgrounds	62%	121	261	Similar
	Opportunities to participate in community matters	76%	20	247	Similar
	Opportunities to volunteer	86%	19	238	Higher

Table 67: Governance General

	Percent positive	Rank	Number of communities in comparison	Comparison to benchmark
Services provided by the City of Franklin	93%	20	404	Higher
Overall customer service by Franklin employees (police, receptionists, planners, etc.)	90%	38	338	Similar
Value of services for the taxes paid to Franklin	77%	12	369	Higher
Overall direction that Franklin is taking	73%	37	290	Similar
Job Franklin government does at welcoming citizen involvement	71%	28	285	Higher
Overall confidence in Franklin government	76%	8	180	Higher
Generally acting in the best interest of the community	73%	13	179	Higher
Being honest	74%	16	172	Higher
Treating all residents fairly	72%	22	177	Higher
Services provided by the Federal Government	44%	63	225	Similar

Table 68: Governance by Facet

		Percent positive	Rank	Number of communities in comparison	Comparison to benchmark
Safety	Police/Sheriff services	96%	13	414	Higher
	Fire services	99%	15	341	Similar
	Ambulance or emergency medical services	98%	26	318	Similar
	Crime prevention	92%	7	322	Higher
	Fire prevention and education	91%	17	257	Higher
	Animal control	79%	28	309	Similar
	Emergency preparedness (services that prepare the community for natural disasters or other emergency situations)	77%	35	255	Similar
Mobility	Traffic enforcement	77%	56	337	Similar
	Street repair	62%	90	381	Higher
	Street cleaning	81%	22	291	Higher
	Street lighting	74%	29	288	Higher
	Snow removal	57%	188	274	Similar
	Sidewalk maintenance	71%	36	297	Higher
	Traffic signal timing	51%	111	232	Similar
Natural Environment	Bus or transit services	42%	150	198	Similar
	Garbage collection	91%	25	324	Similar
	Recycling	76%	204	331	Similar
	Yard waste pick-up	86%	39	245	Similar
	Drinking water	73%	167	309	Similar

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		Percent positive	Rank	Number of communities in comparison	Comparison to benchmark
	Preservation of natural areas such as open space, farmlands and greenbelts	67%	85	235	Similar
	Franklin open space	70%	55	164	Similar
Built Environment	Storm drainage	80%	29	323	Higher
	Sewer services	88%	36	297	Similar
	Power (electric and/or gas) utility	88%	11	150	Similar
	Utility billing	80%	21	162	Similar
	Land use, planning and zoning	59%	69	274	Similar
	Code enforcement (weeds, abandoned buildings, etc.)	73%	28	339	Higher
	Cable television	54%	83	177	Similar
	Economic development	82%	2	258	Much higher
Recreation and Wellness	City parks	91%	54	304	Similar
	Recreation programs or classes	85%	47	312	Similar
	Recreation centers or facilities	84%	39	256	Higher
	Health services	88%	8	183	Higher
Education and Enrichment	City-sponsored special events	87%	12	194	Higher
	Public library services	93%	66	318	Similar
Community Engagement	Public information services	79%	45	260	Similar

Table 69: Participation General

	Percent positive	Rank	Number of communities in comparison	Comparison to benchmark
Sense of community	82%	18	281	Higher
Recommend living in Franklin to someone who asks	93%	71	254	Similar
Remain in Franklin for the next five years	89%	59	246	Similar
Contacted Franklin (in-person, phone, email or web) for help or information	37%	235	279	Similar

Table 70: Participation by Facet

		Percent positive	Rank	Number of communities in comparison	Comparison to benchmark
Safety	Stocked supplies in preparation for an emergency	27%	125	158	Similar
	Did NOT report a crime to the police	87%	19	175	Higher
	Household member was NOT a victim of a crime	95%	18	247	Similar
Mobility	Used bus, rail, subway or other public transportation instead of driving	6%	129	143	Much lower
	Carpooled with other adults or children instead of driving alone	45%	62	166	Similar
	Walked or biked instead of driving	45%	135	171	Lower
Natural Environment	Made efforts to conserve water	74%	145	161	Similar
	Made efforts to make your home more energy efficient	70%	140	162	Similar
	Recycle at home	76%	183	232	Similar
Built Environment	Did NOT observe a code violation or other hazard in Franklin	69%	20	167	Higher
	NOT experiencing housing costs stress	73%	75	228	Similar
Economy	Purchase goods or services from a business located in Franklin	98%	36	169	Similar
	Economy will have positive impact on income	35%	39	230	Similar
	Work inside boundaries of Franklin	50%	55	169	Similar

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		Percent positive	Rank	Number of communities in comparison	Comparison to benchmark
Recreation and Wellness	Used Franklin recreation centers or their services	63%	48	214	Similar
	Visited a neighborhood park or City park	89%	58	245	Similar
	Eat at least 5 portions of fruits and vegetables a day	88%	32	164	Similar
	Participate in moderate or vigorous physical activity	89%	46	168	Similar
	In very good to excellent health	75%	24	167	Similar
Education and Enrichment	Used Franklin public libraries or their services	58%	161	214	Similar
	Participated in religious or spiritual activities in Franklin	65%	17	179	Higher
	Attended City-sponsored event	70%	17	171	Higher
Community Engagement	Campaigned or advocated for an issue, cause or candidate	20%	89	155	Similar
	Contacted Franklin elected officials (in-person, phone, email or web) to express your opinion	17%	84	169	Similar
	Volunteered your time to some group/activity in Franklin	48%	66	236	Similar
	Participated in a club	27%	104	215	Similar
	Talked to or visited with your immediate neighbors	93%	50	167	Similar
	Done a favor for a neighbor	85%	45	161	Similar
	Attended a local public meeting	23%	82	237	Similar
	Watched (online or on television) a local public meeting	23%	111	202	Similar
	Read or watch local news (via television, paper, computer, etc.)	85%	111	170	Similar
	Vote in local elections	83%	93	230	Similar

Communities included in national comparisons

The communities included in Franklin's comparisons are listed on the following pages along with their population according to the 2010 Census.

Airway Heights city, WA 6,114
 Albany city, OR 50,158
 Albemarle County, VA..... 98,970
 Albert Lea city, MN..... 18,016
 Alexandria city, VA139,966
 Algonquin village, IL..... 30,046
 Aliso Viejo city, CA 47,823
 Altoona city, IA 14,541
 American Canyon city, CA..... 19,454
 Ames city, IA 58,965
 Andover CDP, MA..... 8,762
 Ankeny city, IA 45,582
 Ann Arbor city, MI113,934
 Annapolis city, MD 38,394
 Apache Junction city, AZ..... 35,840
 Apple Valley town, CA 69,135
 Arapahoe County, CO572,003
 Arkansas City city, AR..... 366
 Arlington County, VA207,627
 Arvada city, CO106,433
 Asheville city, NC 83,393
 Ashland city, OR 20,078
 Ashland town, MA 16,593
 Ashland town, VA..... 7,225
 Aspen city, CO 6,658
 Athens-Clarke County.....115,452

Auburn city, AL 53,380
 Auburn city, WA..... 70,180
 Augusta CCD, GA134,777
 Aurora city, CO325,078
 Austin city, TX790,390
 Avon town, CO..... 6,447
 Bainbridge Island city, WA..... 23,025
 Baltimore city, MD.....620,961
 Bartonville town, TX..... 1,469
 Battle Creek city, MI 52,347
 Bay City city, MI..... 34,932
 Baytown city, TX..... 71,802
 Bedford city, TX..... 46,979
 Bedford town, MA 13,320
 Bellevue city, WA122,363
 Bellingham city, WA 80,885
 Beltrami County, MN 44,442
 Benbrook city, TX..... 21,234
 Bend city, OR..... 76,639
 Bettendorf city, IA..... 33,217
 Billings city, MT.....104,170
 Blaine city, MN..... 57,186
 Bloomfield Hills city, MI 3,869
 Bloomington city, MN 82,893
 Blue Springs city, MO 52,575
 Boise City city, ID.....205,671

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Boone County, KY	118,811	Corvallis city, OR	54,462
Boulder city, CO	97,385	Creve Coeur city, MO	17,833
Bowling Green city, KY	58,067	Cross Roads town, TX	1,563
Bozeman city, MT	37,280	Dacono city, CO	4,152
Brentwood city, MO	8,055	Dade City city, FL	6,437
Brentwood city, TN	37,060	Dakota County, MN	398,552
Brighton city, CO	33,352	Dallas city, OR	14,583
Brighton city, MI	7,444	Dallas city, TX	1,197,816
Bristol city, TN	26,702	Danville city, KY	16,218
Broken Arrow city, OK	98,850	Dardenne Prairie city, MO	11,494
Brookfield city, WI	37,920	Davenport city, IA	99,685
Brookline CDP, MA	58,732	Davidson town, NC	10,944
Broomfield city, CO	55,889	Decatur city, GA	19,335
Brownsburg town, IN	21,285	Del Mar city, CA	4,161
Burien city, WA	33,313	Delaware city, OH	34,753
Burleson city, TX	36,690	Delray Beach city, FL	60,522
Cabarrus County, NC	178,011	Denison city, TX	22,682
Cambridge city, MA	105,162	Denton city, TX	113,383
Cannon Beach city, OR	1,690	Denver city, CO	600,158
Cañon City city, CO	16,400	Derby city, KS	22,158
Canton city, SD	3,057	Des Moines city, IA	203,433
Cape Coral city, FL	154,305	Des Peres city, MO	8,373
Cape Girardeau city, MO	37,941	Destin city, FL	12,305
Carlisle borough, PA	18,682	Dothan city, AL	65,496
Carlsbad city, CA	105,328	Douglas County, CO	285,465
Carroll city, IA	10,103	Dover city, NH	29,987
Cartersville city, GA	19,731	Dublin city, CA	46,036
Cary town, NC	135,234	Dublin city, OH	41,751
Casper city, WY	55,316	Duluth city, MN	86,265
Castine town, ME	1,366	Duncanville city, TX	38,524
Castle Pines North city, CO	10,360	Durham city, NC	228,330
Castle Rock town, CO	48,231	Durham County, NC	267,587
Cedar Hill city, TX	45,028	Eagan city, MN	64,206
Cedar Rapids city, IA	126,326	Eagle town, CO	6,508
Celina city, TX	6,028	East Baton Rouge Parish, LA	440,171
Centennial city, CO	100,377	East Grand Forks city, MN	8,601
Chambersburg borough, PA	20,268	East Lansing city, MI	48,579
Chandler city, AZ	236,123	Eau Claire city, WI	65,883
Chandler city, TX	2,734	Eden Prairie city, MN	60,797
Chanhassen city, MN	22,952	Edgerton city, KS	1,671
Chapel Hill town, NC	57,233	Edgewater city, CO	5,170
Charles County, MD	146,551	Edina city, MN	47,941
Charlotte city, NC	731,424	Edmond city, OK	81,405
Charlotte County, FL	159,978	Edmonds city, WA	39,709
Charlottesville city, VA	43,475	El Cerrito city, CA	23,549
Chattanooga city, TN	167,674	El Dorado County, CA	181,058
Chesterfield County, VA	316,236	El Paso city, TX	649,121
Chippewa Falls city, WI	13,661	Elk Grove city, CA	153,015
Citrus Heights city, CA	83,301	Elk River city, MN	22,974
Clackamas County, OR	375,992	Elko New Market city, MN	4,110
Clarendon Hills village, IL	8,427	Elmhurst city, IL	44,121
Clayton city, MO	15,939	Encinitas city, CA	59,518
Clearwater city, FL	107,685	Englewood city, CO	30,255
Cleveland Heights city, OH	46,121	Erie town, CO	18,135
Clinton city, SC	8,490	Escambia County, FL	297,619
Clive city, IA	15,447	Estes Park town, CO	5,858
Clovis city, CA	95,631	Fairview town, TX	7,248
College Park city, MD	30,413	Farmersville city, TX	3,301
College Station city, TX	93,857	Farmington Hills city, MI	79,740
Colleyville city, TX	22,807	Fayetteville city, NC	200,564
Collinsville city, IL	25,579	Fishers town, IN	76,794
Columbia city, SC	129,272	Flower Mound town, TX	64,669
Columbia Falls city, MT	4,688	Forest Grove city, OR	21,083
Columbus city, WI	4,991	Fort Collins city, CO	143,986
Commerce City city, CO	45,913	Fort Lauderdale city, FL	165,521
Concord city, CA	122,067	Fort Smith city, AR	86,209
Concord town, MA	17,668	Fort Worth city, TX	741,206
Coon Rapids city, MN	61,476	Fountain Hills town, AZ	22,489
Copperas Cove city, TX	32,032	Franklin city, TN	62,487
Coronado city, CA	18,912	Fredericksburg city, VA	24,286

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Fremont city, CA	214,089	Kansas City city, KS.....	145,786
Friendswood city, TX	35,805	Kansas City city, MO.....	459,787
Fruita city, CO.....	12,646	Keizer city, OR	36,478
Gahanna city, OH.....	33,248	Kenmore city, WA	20,460
Gaithersburg city, MD.....	59,933	Kennedale city, TX	6,763
Galveston city, TX	47,743	Kennett Square borough, PA.....	6,072
Gardner city, KS.....	19,123	Kettering city, OH	56,163
Geneva city, NY	13,261	Key West city, FL	24,649
Georgetown city, TX.....	47,400	King City city, CA	12,874
Germantown city, TN	38,844	King County, WA.....	1,931,249
Gilbert town, AZ.....	208,453	Kirkland city, WA.....	48,787
Gillette city, WY	29,087	Kirkwood city, MO.....	27,540
Glendora city, CA	50,073	Knoxville city, IA	7,313
Glenview village, IL.....	44,692	La Mesa city, CA	57,065
Globe city, AZ	7,532	La Plata town, MD.....	8,753
Golden city, CO.....	18,867	La Porte city, TX	33,800
Golden Valley city, MN.....	20,371	La Vista city, NE.....	15,758
Goodyear city, AZ	65,275	Lafayette city, CO	24,453
Grafton village, WI	11,459	Laguna Beach city, CA.....	22,723
Grand Blanc city, MI	8,276	Laguna Hills city, CA.....	30,344
Grand Island city, NE	48,520	Laguna Niguel city, CA	62,979
Grants Pass city, OR.....	34,533	Lake Forest city, IL.....	19,375
Grass Valley city, CA.....	12,860	Lake Oswego city, OR	36,619
Greenville city, NC.....	84,554	Lake Stevens city, WA	28,069
Greenwich town, CT	61,171	Lake Worth city, FL	34,910
Greenwood Village city, CO.....	13,925	Lake Zurich village, IL	19,631
Greer city, SC	25,515	Lakeville city, MN.....	55,954
Guilford County, NC	488,406	Lakewood city, CO	142,980
Gunnison County, CO	15,324	Lakewood city, WA.....	58,163
Hailey city, ID	7,960	Lane County, OR.....	351,715
Haines Borough, AK	2,508	Lansing city, MI	114,297
Hallandale Beach city, FL.....	37,113	Laramie city, WY.....	30,816
Hamilton city, OH.....	62,477	Larimer County, CO.....	299,630
Hanover County, VA.....	99,863	Las Vegas city, NV	583,756
Harrisburg city, SD	4,089	Lawrence city, KS.....	87,643
Harrisonburg city, VA	48,914	Lee's Summit city, MO.....	91,364
Harrisonville city, MO	10,019	Lehi city, UT	47,407
Hayward city, CA	144,186	Lenexa city, KS	48,190
Henderson city, NV	257,729	Lewis County, NY.....	27,087
Herndon town, VA.....	23,292	Lewiston city, ID.....	31,894
High Point city, NC	104,371	Lewisville city, TX.....	95,290
Highland Park city, IL	29,763	Libertyville village, IL.....	20,315
Highlands Ranch CDP, CO	96,713	Lincoln city, NE	258,379
Holland city, MI.....	33,051	Lindsborg city, KS	3,458
Honolulu County, HI	953,207	Little Chute village, WI	10,449
Hooksett town, NH.....	13,451	Littleton city, CO	41,737
Hopkins city, MN	17,591	Livermore city, CA.....	80,968
Hopkinton town, MA.....	14,925	Lone Tree city, CO	10,218
Hoquiam city, WA	8,726	Long Grove village, IL	8,043
Horry County, SC	269,291	Longmont city, CO	86,270
Hudson city, OH.....	22,262	Longview city, TX.....	80,455
Hudson town, CO.....	2,356	Lonsdale city, MN.....	3,674
Hudsonville city, MI.....	7,116	Los Altos Hills town, CA.....	7,922
Huntersville town, NC.....	46,773	Louisville city, CO.....	18,376
Hurst city, TX.....	37,337	Lynchburg city, VA	75,568
Hutchinson city, MN	14,178	Lynnwood city, WA	35,836
Hutto city, TX	14,698	Macomb County, MI	840,978
Hyattsville city, MD	17,557	Manhattan Beach city, CA.....	35,135
Independence city, MO.....	116,830	Manhattan city, KS.....	52,281
Indian Trail town, NC	33,518	Mankato city, MN	39,309
Indianola city, IA	14,782	Maple Grove city, MN	61,567
Iowa City city, IA	67,862	Marshfield city, WI	19,118
Irving city, TX.....	216,290	Martinez city, CA	35,824
Issaquah city, WA	30,434	Marysville city, WA	60,020
Jackson County, MI.....	160,248	Matthews town, NC.....	27,198
James City County, VA	67,009	McAllen city, TX	129,877
Jefferson County, NY.....	116,229	McDonough city, GA.....	22,084
Johnson City city, TN.....	63,152	McMinnville city, OR	32,187
Johnston city, IA	17,278	Menlo Park city, CA	32,026
Jupiter town, FL.....	55,156	Mercer Island city, WA	22,699

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Meridian charter township, MI	39,688	Parkland city, FL	23,962
Meridian city, ID	75,092	Pasadena city, CA	137,122
Merriam city, KS.....	11,003	Pasco city, WA.....	59,781
Mesa County, CO	146,723	Pasco County, FL	464,697
Miami Beach city, FL	87,779	Pearland city, TX.....	91,252
Miami city, FL	399,457	Peoria city, AZ	154,065
Middleton city, WI	17,442	Peoria city, IL	115,007
Midland city, MI	41,863	Peoria County, IL	186,494
Milford city, DE	9,559	Pflugerville city, TX	46,936
Milton city, GA	32,661	Phoenix city, AZ.....	1,445,632
Minneapolis city, MN	382,578	Pinehurst village, NC	13,124
Mission Viejo city, CA	93,305	Piqua city, OH.....	20,522
Modesto city, CA.....	201,165	Pitkin County, CO.....	17,148
Monterey city, CA.....	27,810	Plano city, TX	259,841
Montgomery County, VA.....	94,392	Platte City city, MO.....	4,691
Monticello city, UT.....	1,972	Plymouth city, MN.....	70,576
Monument town, CO	5,530	Pocatello city, ID	54,255
Mooreville town, NC.....	32,711	Polk County, IA.....	430,640
Morristown city, TN.....	29,137	Pompano Beach city, FL	99,845
Morrisville town, NC	18,576	Port Orange city, FL	56,048
Morro Bay city, CA	10,234	Portland city, OR.....	583,776
Mountain Village town, CO.....	1,320	Post Falls city, ID	27,574
Mountlake Terrace city, WA	19,909	Powell city, OH	11,500
Murphy city, TX.....	17,708	Prince William County, VA.....	402,002
Naperville city, IL	141,853	Prior Lake city, MN.....	22,796
Napoleon city, OH.....	8,749	Pueblo city, CO	106,595
Needham CDP, MA.....	28,886	Purcellville town, VA.....	7,727
New Braunfels city, TX	57,740	Queen Creek town, AZ	26,361
New Brighton city, MN.....	21,456	Radnor township, PA.....	31,531
New Hanover County, NC	202,667	Ramsey city, MN.....	23,668
New Orleans city, LA	343,829	Raymond town, ME.....	4,436
New Smyrna Beach city, FL	22,464	Raymore city, MO	19,206
New Ulm city, MN	13,522	Redmond city, WA	54,144
Newberg city, OR.....	22,068	Rehoboth Beach city, DE	1,327
Newport city, RI.....	24,672	Reno city, NV.....	225,221
Newport News city, VA.....	180,719	Reston CDP, VA	58,404
Newton city, IA	15,254	Richmond city, CA.....	103,701
Noblesville city, IN	51,969	Richmond Heights city, MO.....	8,603
Nogales city, AZ.....	20,837	Rifle city, CO.....	9,172
Norcross city, GA	9,116	Rio Rancho city, NM	87,521
Norfolk city, VA.....	242,803	River Falls city, WI	15,000
North Port city, FL.....	57,357	Riverside city, CA	303,871
North Richland Hills city, TX.....	63,343	Riverside city, MO	2,937
Northglenn city, CO.....	35,789	Roanoke County, VA	92,376
Novato city, CA.....	51,904	Rochester Hills city, MI	70,995
Novi city, MI	55,224	Rock Hill city, SC.....	66,154
O'Fallon city, IL.....	28,281	Rockville city, MD.....	61,209
O'Fallon city, MO.....	79,329	Rogers city, MN	8,597
Oak Park village, IL.....	51,878	Rolla city, MO	19,559
Oakland city, CA	390,724	Roselle village, IL.....	22,763
Oakley city, CA	35,432	Rosemount city, MN	21,874
Ogdensburg city, NY	11,128	Rosenberg city, TX.....	30,618
Oklahoma City city, OK.....	579,999	Roseville city, MN.....	33,660
Olathe city, KS	125,872	Round Rock city, TX.....	99,887
Old Town city, ME.....	7,840	Royal Oak city, MI.....	57,236
Olmsted County, MN	144,248	Saco city, ME.....	18,482
Olympia city, WA	46,478	Sahuarita town, AZ	25,259
Orland Park village, IL	56,767	Salida city, CO	5,236
Oshkosh city, WI.....	66,083	Sammamish city, WA.....	45,780
Oshtemo charter township, MI	21,705	San Anselmo town, CA	12,336
Otsego County, MI	24,164	San Antonio city, TX.....	1,327,407
Oviedo city, FL.....	33,342	San Carlos city, CA.....	28,406
Paducah city, KY	25,024	San Diego city, CA	1,307,402
Palm Beach Gardens city, FL.....	48,452	San Francisco city, CA	805,235
Palm Coast city, FL.....	75,180	San Jose city, CA	945,942
Palo Alto city, CA	64,403	San Juan County, NM.....	130,044
Papillion city, NE.....	18,894	San Marcos city, CA.....	83,781
Paradise Valley town, AZ	12,820	San Marcos city, TX.....	44,894
Park City city, UT	7,558	San Rafael city, CA.....	57,713
Parker town, CO	45,297	Sanford city, FL.....	53,570

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Sangamon County, IL.....	197,465	Thousand Oaks city, CA.....	126,683
Santa Clarita city, CA.....	176,320	Tigard city, OR.....	48,035
Santa Fe County, NM.....	144,170	Tracy city, CA.....	82,922
Santa Monica city, CA.....	89,736	Trinidad CCD, CO.....	12,017
Sarasota County, FL.....	379,448	Tualatin city, OR.....	26,054
Savage city, MN.....	26,911	Tulsa city, OK.....	391,906
Schaumburg village, IL.....	74,227	Twin Falls city, ID.....	44,125
Scott County, MN.....	129,928	Tyler city, TX.....	96,900
Scottsdale city, AZ.....	217,385	Umatilla city, OR.....	6,906
Seaside city, CA.....	33,025	University Park city, TX.....	23,068
Sevierville city, TN.....	14,807	Upper Arlington city, OH.....	33,771
Shawnee city, KS.....	62,209	Urbandale city, IA.....	39,463
Sheboygan city, WI.....	49,288	Vail town, CO.....	5,305
Sherborn town, MA.....	4,119	Vancouver city, WA.....	161,791
Shoreview city, MN.....	25,043	Ventura CCD, CA.....	111,889
Shorewood city, MN.....	7,307	Vernon Hills village, IL.....	25,113
Shorewood village, IL.....	15,615	Vestavia Hills city, AL.....	34,033
Shorewood village, WI.....	13,162	Victoria city, MN.....	7,345
Sierra Vista city, AZ.....	43,888	Vienna town, VA.....	15,687
Sioux Center city, IA.....	7,048	Virginia Beach city, VA.....	437,994
Sioux Falls city, SD.....	153,888	Wake Forest town, NC.....	30,117
Skokie village, IL.....	64,784	Walnut Creek city, CA.....	64,173
Snellville city, GA.....	18,242	Washington County, MN.....	238,136
South Lake Tahoe city, CA.....	21,403	Washington town, NH.....	1,123
Southborough town, MA.....	9,767	Washougal city, WA.....	14,095
Southlake city, TX.....	26,575	Watauga city, TX.....	23,497
Spokane Valley city, WA.....	89,755	Wauwatosa city, WI.....	46,396
Spring Hill city, KS.....	5,437	Waverly city, IA.....	9,874
Springboro city, OH.....	17,409	Weddington town, NC.....	9,459
Springfield city, MO.....	159,498	Wentzville city, MO.....	29,070
Springville city, UT.....	29,466	West Carrollton city, OH.....	13,143
St. Augustine city, FL.....	12,975	West Chester borough, PA.....	18,461
St. Charles city, IL.....	32,974	West Des Moines city, IA.....	56,609
St. Cloud city, FL.....	35,183	Western Springs village, IL.....	12,975
St. Cloud city, MN.....	65,842	Westerville city, OH.....	36,120
St. Joseph city, MO.....	76,780	Westlake town, TX.....	992
St. Louis County, MN.....	200,226	Westminster city, CO.....	106,114
St. Louis Park city, MN.....	45,250	Weston town, MA.....	11,261
Stallings town, NC.....	13,831	White House city, TN.....	10,255
State College borough, PA.....	42,034	Wichita city, KS.....	382,368
Steamboat Springs city, CO.....	12,088	Williamsburg city, VA.....	14,068
Sterling Heights city, MI.....	129,699	Willowbrook village, IL.....	8,540
Sugar Grove village, IL.....	8,997	Wilmington city, NC.....	106,476
Sugar Land city, TX.....	78,817	Wilsonville city, OR.....	19,509
Suisun City city, CA.....	28,111	Winchester city, VA.....	26,203
Summit city, NJ.....	21,457	Windsor town, CO.....	18,644
Summit County, UT.....	36,324	Windsor town, CT.....	29,044
Sunnyvale city, CA.....	140,081	Winnetka village, IL.....	12,187
Surprise city, AZ.....	117,517	Winston-Salem city, NC.....	229,617
Suwanee city, GA.....	15,355	Winter Garden city, FL.....	34,568
Tacoma city, WA.....	198,397	Woodbury city, MN.....	61,961
Takoma Park city, MD.....	16,715	Woodland city, CA.....	55,468
Tamarac city, FL.....	60,427	Wrentham town, MA.....	10,955
Temecula city, CA.....	100,097	Wyandotte County, KS.....	157,505
Tempe city, AZ.....	161,719	Yakima city, WA.....	91,067
Texarkana city, TX.....	36,411	York County, VA.....	65,464
The Woodlands CDP, TX.....	93,847	Yorktown town, IN.....	9,405
Thornton city, CO.....	118,772	Yountville city, CA.....	2,933

Populations between 50,000 and 80,000 Benchmark Comparisons

Table 71: Community Characteristics General

	Percent positive	Rank	Number of communities in comparison	Comparison to benchmark
The overall quality of life in Franklin	97%	2	67	Higher
Overall image or reputation of Franklin	97%	1	53	Much higher
Franklin as a place to live	97%	2	57	Higher
Your neighborhood as a place to live	93%	4	47	Similar
Franklin as a place to raise children	97%	2	57	Higher
Franklin as a place to retire	86%	1	50	Higher
Overall appearance of Franklin	95%	2	52	Higher

Table 72: Community Characteristics by Facet

		Percent positive	Rank	Number of communities in comparison	Comparison to benchmark
Safety	Overall feeling of safety in Franklin	97%	4	43	Higher
	In your neighborhood during the day	98%	4	54	Similar
	In Franklin's downtown/commercial area during the day	97%	3	47	Higher
Mobility	Overall ease of getting to the places you usually have to visit	59%	31	33	Similar
	Availability of paths and walking trails	59%	31	45	Similar
	Ease of walking in Franklin	58%	31	46	Similar
	Ease of travel by bicycle in Franklin	36%	41	45	Lower
	Ease of travel by public transportation in Franklin	23%	24	28	Lower
	Ease of travel by car in Franklin	48%	43	48	Lower
	Ease of public parking	53%	15	26	Similar
	Traffic flow on major streets	26%	56	58	Lower
	Quality of overall natural environment in Franklin	88%	10	42	Similar
Natural Environment	Cleanliness of Franklin	94%	5	41	Higher
	Air quality	87%	10	37	Similar
Built Environment	Overall "built environment" of Franklin (including overall design, buildings, parks and transportation systems)	77%	9	30	Similar
	Overall quality of new development in Franklin	78%	5	44	Higher
	Availability of affordable quality housing	28%	42	45	Lower
	Variety of housing options	48%	36	45	Similar
	Public places where people want to spend time	88%	2	29	Higher
Economy	Overall economic health of Franklin	94%	1	32	Much higher
	Vibrant downtown/commercial area	89%	1	29	Much higher
	Overall quality of business and service establishments in Franklin	88%	3	42	Higher
	Cost of living in Franklin	41%	22	30	Similar
	Shopping opportunities	93%	5	43	Much higher
	Employment opportunities	76%	1	46	Much higher
	Franklin as a place to visit	92%	2	32	Much higher
	Franklin as a place to work	90%	1	57	Much higher
	Health and wellness opportunities in Franklin	84%	9	32	Similar
Recreation and Wellness	Availability of affordable quality mental health care	68%	5	28	Higher
	Availability of preventive health services	81%	2	36	Similar
	Availability of affordable quality health care	77%	6	38	Similar
	Availability of affordable quality food	77%	8	32	Similar
	Recreational opportunities	77%	19	44	Similar
	Fitness opportunities (including exercise classes and paths or trails, etc.)	77%	14	30	Similar

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		Percent positive	Rank	Number of communities in comparison	Comparison to benchmark
Education and Enrichment	Overall opportunities for education and enrichment	87%	5	32	Higher
	Opportunities to participate in religious or spiritual events and activities	90%	1	29	Higher
	Opportunities to attend cultural/arts/music activities	79%	4	43	Higher
	Adult educational opportunities	65%	14	28	Similar
	K-12 education	92%	4	39	Higher
	Availability of affordable quality child care/preschool	60%	13	36	Similar
Community Engagement	Opportunities to participate in social events and activities	86%	1	38	Higher
	Neighborliness of Franklin	76%	2	30	Higher
	Openness and acceptance of the community toward people of diverse backgrounds	62%	25	44	Similar
	Opportunities to participate in community matters	76%	4	40	Similar
	Opportunities to volunteer	86%	4	40	Higher

Table 73: Governance General

	Percent positive	Rank	Number of communities in comparison	Comparison to benchmark
Services provided by the City of Franklin	93%	3	66	Higher
Overall customer service by Franklin employees (police, receptionists, planners, etc.)	90%	10	53	Similar
Value of services for the taxes paid to Franklin	77%	2	60	Higher
Overall direction that Franklin is taking	73%	11	46	Similar
Job Franklin government does at welcoming citizen involvement	71%	5	47	Similar
Overall confidence in Franklin government	76%	2	30	Higher
Generally acting in the best interest of the community	73%	2	29	Higher
Being honest	74%	1	28	Higher
Treating all residents fairly	72%	3	29	Higher
Services provided by the Federal Government	44%	13	39	Similar

Table 74: Governance by Facet

		Percent positive	Rank	Number of communities in comparison	Comparison to benchmark
Safety	Police/Sheriff services	96%	2	62	Higher
	Fire services	99%	3	55	Similar
	Ambulance or emergency medical services	98%	3	49	Similar
	Crime prevention	92%	2	52	Higher
	Fire prevention and education	91%	5	43	Similar
	Animal control	79%	10	48	Similar
	Emergency preparedness (services that prepare the community for natural disasters or other emergency situations)	77%	10	46	Similar
Mobility	Traffic enforcement	77%	13	56	Similar
	Street repair	62%	12	54	Higher
	Street cleaning	81%	2	47	Higher
	Street lighting	74%	8	52	Similar
	Snow removal	57%	29	41	Similar
	Sidewalk maintenance	71%	7	50	Similar
	Traffic signal timing	51%	19	43	Similar
Natural Environment	Bus or transit services	42%	28	35	Similar
	Garbage collection	91%	6	50	Similar
	Recycling	76%	40	54	Similar
	Yard waste pick-up	86%	8	47	Similar

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		Percent positive	Rank	Number of communities in comparison	Comparison to benchmark
	Drinking water	73%	35	50	Similar
	Preservation of natural areas such as open space, farmlands and greenbelts	67%	20	41	Similar
	Franklin open space	70%	11	28	Similar
Built Environment	Storm drainage	80%	6	53	Similar
	Sewer services	88%	12	47	Similar
	Power (electric and/or gas) utility	88%	3	25	Similar
	Utility billing	80%	4	28	Similar
	Land use, planning and zoning	59%	21	44	Similar
	Code enforcement (weeds, abandoned buildings, etc.)	73%	7	53	Higher
	Cable television	54%	16	32	Similar
	Economic development	82%	2	42	Higher
Recreation and Wellness	City parks	91%	14	47	Similar
	Recreation programs or classes	85%	13	48	Similar
	Recreation centers or facilities	84%	11	45	Similar
Education and Enrichment	Health services	88%	3	31	Higher
	City-sponsored special events	87%	1	33	Higher
Community Engagement	Public library services	93%	17	49	Similar
	Public information services	79%	10	42	Similar

Table 75: Participation General

	Percent positive	Rank	Number of communities in comparison	Comparison to benchmark
Sense of community	82%	2	46	Higher
Recommend living in Franklin to someone who asks	93%	15	43	Similar
Remain in Franklin for the next five years	89%	12	42	Similar
Contacted Franklin (in-person, phone, email or web) for help or information	37%	37	47	Similar

Table 76: Participation by Facet

		Percent positive	Rank	Number of communities in comparison	Comparison to benchmark
Safety	Stocked supplies in preparation for an emergency	27%	20	27	Similar
	Did NOT report a crime to the police	87%	3	31	Higher
	Household member was NOT a victim of a crime	95%	2	41	Similar
Mobility	Used bus, rail, subway or other public transportation instead of driving	6%	21	26	Much lower
	Carpooled with other adults or children instead of driving alone	45%	11	28	Similar
	Walked or biked instead of driving	45%	21	29	Similar
Natural Environment	Made efforts to conserve water	74%	25	28	Similar
	Made efforts to make your home more energy efficient	70%	24	28	Similar
	Recycle at home	76%	33	41	Lower
Built Environment	Did NOT observe a code violation or other hazard in Franklin	69%	4	29	Higher
	NOT experiencing housing costs stress	73%	15	40	Similar
Economy	Purchase goods or services from a business located in Franklin	98%	8	29	Similar
	Economy will have positive impact on income	35%	6	39	Similar

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		Percent positive	Rank	Number of communities in comparison	Comparison to benchmark
Recreation and Wellness	Work inside boundaries of Franklin	50%	7	29	Higher
	Used Franklin recreation centers or their services	63%	7	40	Similar
	Visited a neighborhood park or City park	89%	12	44	Similar
	Eat at least 5 portions of fruits and vegetables a day	88%	3	27	Similar
	Participate in moderate or vigorous physical activity	89%	8	29	Similar
	In very good to excellent health	75%	4	28	Similar
Education and Enrichment	Used Franklin public libraries or their services	58%	30	39	Similar
	Participated in religious or spiritual activities in Franklin	65%	3	31	Higher
	Attended City-sponsored event	70%	2	29	Higher
Community Engagement	Campaigned or advocated for an issue, cause or candidate	20%	15	25	Similar
	Contacted Franklin elected officials (in-person, phone, email or web) to express your opinion	17%	11	27	Similar
	Volunteered your time to some group/activity in Franklin	48%	7	41	Higher
	Participated in a club	27%	21	37	Similar
	Talked to or visited with your immediate neighbors	93%	6	28	Similar
	Done a favor for a neighbor	85%	7	27	Similar
	Attended a local public meeting	23%	8	41	Similar
	Watched (online or on television) a local public meeting	23%	18	36	Similar
	Read or watch local news (via television, paper, computer, etc.)	85%	15	29	Similar
	Vote in local elections	83%	17	39	Similar

Communities included in population 50,000 to 80,000 comparisons

The communities included in Franklin's custom comparisons are listed below along with their population according to the 2010 Census.

Albany city, OR.....50,158
Ames city, IA.....58,965
Apple Valley town, CA.....69,135
Auburn city, AL.....53,380
Auburn city, WA70,180
Battle Creek city, MI52,347
Baytown city, TX71,802
Bend city, OR76,639
Blaine city, MN57,186
Blue Springs city, MO.....52,575
Bowling Green city, KY.....58,067
Brookline CDP, MA.....58,732
Broomfield city, CO.....55,889
Casper city, WY55,316
Chapel Hill town, NC.....57,233
Coon Rapids city, MN.....61,476
Corvallis city, OR54,462
Delray Beach city, FL60,522
Dothan city, AL.....65,496
Eagan city, MN64,206
Eau Claire city, WI65,883
Eden Prairie city, MN60,797
Encinitas city, CA.....59,518
Farmington Hills city, MI79,740

Fishers town, IN76,794
Flower Mound town, TX.....64,669
Franklin city, TN.....62,487
Gaithersburg city, MD.....59,933
Glendora city, CA50,073
Goodyear city, AZ65,275
Greenwich town, CT61,171
Hamilton city, OH.....62,477
Iowa City city, IA67,862
James City County, VA67,009
Johnson City city, TN.....63,152
Jupiter town, FL.....55,156
Kettering city, OH56,163
La Mesa city, CA57,065
Laguna Niguel city, CA62,979
Lakeville city, MN55,954
Lakewood city, WA.....58,163
Lynchburg city, VA75,568
Manhattan city, KS52,281
Maple Grove city, MN61,567
Marysville city, WA60,020
Meridian city, ID75,092
New Braunfels city, TX57,740
Noblesville city, IN51,969

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North Port city, FL	57,357
North Richland Hills city, TX	63,343
Novato city, CA	51,904
Novi city, MI	55,224
O'Fallon city, MO	79,329
Oak Park village, IL	51,878
Orland Park village, IL	56,767
Oshkosh city, WI	66,083
Palm Coast city, FL	75,180
Palo Alto city, CA	64,403
Pasco city, WA	59,781
Plymouth city, MN	70,576
Pocatello city, ID	54,255
Port Orange city, FL	56,048
Redmond city, WA	54,144
Reston CDP, VA	58,404
Rochester Hills city, MI	70,995

Rock Hill city, SC	66,154
Rockville city, MD	61,209
Royal Oak city, MI	57,236
San Rafael city, CA	57,713
Sanford city, FL	53,570
Schaumburg village, IL	74,227
Shawnee city, KS	62,209
Skokie village, IL	64,784
St. Cloud city, MN	65,842
St. Joseph city, MO	76,780
Sugar Land city, TX	78,817
Tamarac city, FL	60,427
Walnut Creek city, CA	64,173
West Des Moines city, IA	56,609
Woodbury city, MN	61,961
Woodland city, CA	55,468
York County, VA	65,464

Appendix C: Detailed Survey Methods

The National Citizen Survey (The NCS™), conducted by National Research Center, Inc., was developed to provide communities an accurate, affordable and easy way to assess and interpret resident opinion about important local topics. Standardization of common questions and survey methods provide the rigor to assure valid results, and each community has enough flexibility to construct a customized version of The NCS.

Results offer insight into residents' perspectives about the community as a whole, including local amenities, services, public trust, resident participation and other aspects of the community in order to support budgeting, land use and strategic planning and communication with residents. Resident demographic characteristics permit comparison to the Census as well as comparison of results for different subgroups of residents. The City of Franklin funded this research. Please contact Michael Walters Young of the City of Franklin at michael.waltersyoung@franklintn.gov if you have any questions about the survey.

Survey Validity

The question of survey validity has two parts: 1) how can a community be confident that the results from those who completed the questionnaire are representative of the results that would have been obtained had the survey been administered to the entire population? and 2) how closely do the perspectives recorded on the survey reflect what residents really believe or do?

To answer the first question, the best survey research practices were used for the resources spent to ensure that the results from the survey respondents reflect the opinions of residents in the entire community. These practices include:

- Using a mail-out/mail-back methodology, which typically gets a higher response rate than phone for the same dollars spent. A higher response rate lessens the worry that those who did not respond are different than those who did respond.
- Selecting households at random within the community to receive the survey to ensure that the households selected to receive the survey are representative of the larger community.
- Over-sampling multi-family housing units to improve response from hard-to-reach, lower income or younger apartment dwellers.
- Selecting the respondent within the household using an unbiased sampling procedure; in this case, the "birthday method." The cover letter included an instruction requesting that the respondent in the household be the adult (18 years old or older) who most recently had a birthday, irrespective of year of birth.
- Contacting potential respondents three times to encourage response from people who may have different opinions or habits than those who would respond with only a single prompt.
- Inviting response in a compelling manner (using appropriate letterhead/logos and a signature of a visible leader) to appeal to recipients' sense of civic responsibility.
- Providing a pre-addressed, postage-paid return envelope.
- Offering the survey in Spanish or other language when requested by a given community.
- Weighting the results to reflect the demographics of the population.

The answer to the second question about how closely the perspectives recorded on the survey reflect what residents really believe or do is more complex. Resident responses to surveys are influenced by a variety of factors. For questions about service quality, residents' expectations for service quality play a role as well as the "objective" quality of the service provided, the way the resident perceives the entire community (that is, the context in which the service is provided), the scale on which the resident is asked to record his or her opinion and, of course, the opinion, itself, that a resident holds about the service. Similarly a resident's report of certain behaviors is colored by what he or she believes is the socially desirable response (e.g., reporting tolerant behaviors toward "oppressed groups," likelihood of voting for a tax increase for services to poor people, use of alternative modes of travel to work besides the single occupancy vehicle), his or her memory of the actual behavior (if it is not a question speculating about future actions, like a vote), his or her confidence that he or she can be honest without suffering any negative consequences (thus the need for anonymity) as well as the actual behavior itself.

How closely survey results come to recording the way a person really feels or behaves often is measured by the coincidence of reported behavior with observed current behavior (e.g., driving habits), reported intentions to behave with observed future behavior (e.g., voting choices) or reported opinions about current community quality

with objective characteristics of the community (e.g., feelings of safety correlated with rates of crime). There is a body of scientific literature that has investigated the relationship between reported behaviors and actual behaviors. Well-conducted surveys, by and large, do capture true respondent behaviors or intentions to act with great accuracy. Predictions of voting outcomes tend to be quite accurate using survey research, as do reported behaviors that are not about highly sensitive issues (e.g., family abuse or other illegal or morally sanctioned activities). For self-reports about highly sensitive issues, statistical adjustments can be made to correct for the respondents' tendency to report what they think the "correct" response should be.

Research on the correlation of resident opinion about service quality and "objective" ratings of service quality vary, with some showing stronger relationships than others. NRC's own research has demonstrated that residents who report the lowest ratings of street repair live in communities with objectively worse street conditions than those who report high ratings of street repair (based on road quality, delay in street repair, number of road repair employees). Similarly, the lowest rated fire services appear to be "objectively" worse than the highest rated fire services (expenditures per capita, response time, "professional" status of firefighters, breadth of services and training provided). Resident opinion commonly reflects objective performance data but is an important measure on its own. NRC principals have written, "If you collect trash three times a day but residents think that your trash haul is lousy, you still have a problem."

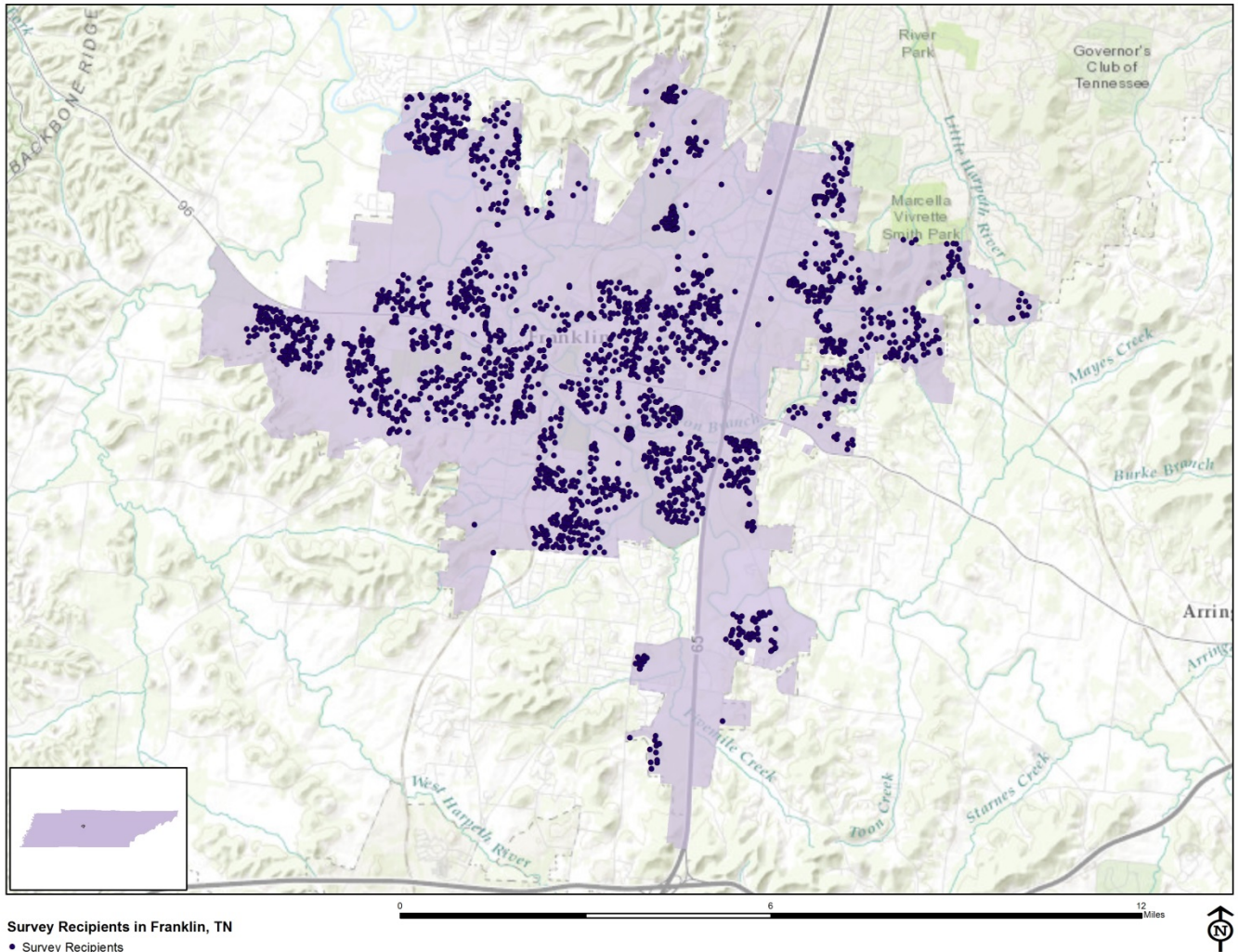
Survey Sampling

"Sampling" refers to the method by which households were chosen to receive the survey. All households within the City of Franklin were eligible to participate in the survey. A list of all households within the zip codes serving Franklin was purchased based on updated listings from the United States Postal Service. Since some of the zip codes that serve the City of Franklin households may also serve addresses that lie outside of the community, the exact geographic location of each housing unit was compared to community boundaries using the most current municipal boundary file (updated on a quarterly basis) and addresses located outside of the City of Franklin boundaries were removed from consideration.

To choose the 3,000 survey recipients, a systematic sampling method was applied to the list of households previously screened for geographic location. Systematic sampling is a procedure whereby a complete list of all possible households is culled, selecting every *Nth* one, giving each eligible household a known probability of selection, until the appropriate number of households is selected. Multi-family housing units were over sampled as residents of this type of housing typically respond at lower rates to surveys than do those in single-family housing units. Figure 1 displays a map of the households selected to receive the survey. In general, because of the random sampling techniques used, the displayed sampling density will closely mirror the overall housing unit density (which may be different from the population density). While the theory of probability assumes no bias in selection, there may be some minor variations in practice (meaning, an area with only 15% of the housing units might be sampled at an actual rate that is slightly above or below that).

An individual within each household was selected using the birthday method. The birthday method selects a person within the household by asking the "person whose birthday has most recently passed" to complete the questionnaire. The underlying assumption in this method is that day of birth has no relationship to the way people respond to surveys. This instruction was contained in the cover letter accompanying the questionnaire.

Figure 1: Location of Survey Recipients



Survey Administration and Response

Selected households received three mailings, one week apart, beginning on September 16, 2016. The first mailing was a prenotification postcard announcing the upcoming survey. The next mailing contained a letter from the Mayor and City Manager inviting the household to participate, a questionnaire and a postage-paid return envelope. The final mailing contained a reminder letter, another survey and a postage-paid return envelope. The second cover letter asked those who had not completed the survey to do so and those who had already done so to refrain from turning in another survey. Completed surveys were collected over the following seven weeks.

About 4% of the 3,000 surveys mailed were returned because the housing unit was vacant or the postal service was unable to deliver the survey as addressed. Of the remaining 2,879 households that received the survey, 1,060 completed the survey, providing an overall response rate of 37%. Of the 1,060 completed surveys, 128 were completed online.

Table 77: Survey Response Rates

	Number mailed	Undeliverable	Eligible	Returned	Response rate
Overall	3,000	121	2,879	1,060	37%

Confidence Intervals

It is customary to describe the precision of estimates made from surveys by a “level of confidence” and accompanying “confidence interval” (or margin of error). A traditional level of confidence, and the one used here,

The National Citizen Survey™

is 95%. The 95% confidence interval can be any size and quantifies the sampling error or imprecision of the survey results because some residents' opinions are relied on to estimate all residents' opinions.¹

The margin of error for the City of Franklin survey is no greater than plus or minus three percentage points around any given percent reported for the entire sample (1,060).

For subgroups of responses, the margin of error increases because the sample size for the subgroup is smaller. For subgroups of approximately 100 respondents, the margin of error is plus or minus 10 percentage points.

Survey Processing (Data Entry)

Upon receipt, completed surveys were assigned a unique identification number. Additionally, each survey was reviewed and "cleaned" as necessary. For example, a question may have asked a respondent to pick two items out of a list of five, but the respondent checked three; in this case, NRC would use protocols to randomly choose two of the three selected items for inclusion in the dataset.

All surveys then were entered twice into an electronic dataset; any discrepancies were resolved in comparison to the original survey form. Range checks as well as other forms of quality control were also performed.

Survey Data Weighting

The demographic characteristics of the survey sample were compared to those found in the 2010 Census and American Community Survey estimates for adults in the City of Franklin. The primary objective of weighting survey data is to make the survey sample reflective of the larger population of the community. The characteristics used for weighting were housing tenure (rent or own), housing type (attached or detached), sex, age, race, and ethnicity. The results of the weighting scheme are presented in the following table.

¹ A 95% confidence interval indicates that for every 100 random samples of this many residents, 95 of the confidence intervals created will include the "true" population response. This theory is applied in practice to mean that the "true" perspective of the target population lies within the confidence interval created for a single survey. For example, if 75% of residents rate a service as "excellent" or "good," then the 4% margin of error (for the 95% confidence interval) indicates that the range of likely responses for the entire community is between 71% and 79%. This source of uncertainty is called sampling error. In addition to sampling error, other sources of error may affect any survey, including the non-response of residents with opinions different from survey responders. Though standardized on The NCS, on other surveys, differences in question wording, order, translation and data entry, as examples, can lead to somewhat varying results.

Table 78: Franklin, TN 2016 Weighting Table

Characteristic	Population Norm	Unweighted Data	Weighted Data
Housing			
Rent home	33%	17%	32%
Own home	67%	83%	68%
Detached unit	66%	74%	67%
Attached unit	34%	26%	33%
Race and Ethnicity			
White	86%	90%	84%
Not white	14%	10%	16%
Not Hispanic	93%	97%	95%
Hispanic	7%	3%	5%
Sex and Age			
Female	53%	57%	54%
Male	47%	43%	46%
18-34 years of age	27%	9%	26%
35-54 years of age	45%	38%	44%
55+ years of age	28%	53%	30%
Females 18-34	14%	6%	14%
Females 35-54	23%	22%	24%
Females 55+	16%	29%	15%
Males 18-34	13%	4%	12%
Males 35-54	22%	16%	20%
Males 55+	12%	24%	14%

Survey Data Analysis and Reporting

The survey dataset was analyzed using the Statistical Package for the Social Sciences (SPSS). For the most part, the percentages presented in the reports represent the “percent positive.” The percent positive is the combination of the top two most positive response options (i.e., “excellent” and “good,” “very safe” and “somewhat safe,” “essential” and “very important,” etc.), or, in the case of resident behaviors/participation, the percent positive represents the proportion of respondents indicating “yes” or participating in an activity at least once a month.

On many of the questions in the survey respondents may answer “don’t know.” The proportion of respondents giving this reply is shown in the full set of responses included in Appendix A. However, these responses have been removed from the analyses presented in the reports. In other words, the tables and graphs display the responses from respondents who had an opinion about a specific item.

Appendix D: Survey Materials

Dear Franklin Resident,

It won't take much of your time to make a big difference!

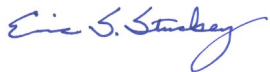
Your household has been randomly selected to participate in a survey about your community. Your survey will arrive in a few days.

Thank you for helping create a better City!

Sincerely,



Ken Moore
Mayor



Eric Stuckey
City Administrator

Dear Franklin Resident,

It won't take much of your time to make a big difference!

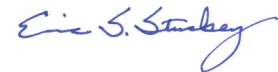
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Ken Moore
Mayor



Eric Stuckey
City Administrator

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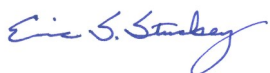
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Sincerely,



Ken Moore
Mayor



Eric Stuckey
City Administrator

Dear Franklin Resident,

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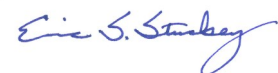
Your household has been randomly selected to participate in a survey about your community. Your survey will arrive in a few days.

Thank you for helping create a better City!

Sincerely,



Ken Moore
Mayor



Eric Stuckey
City Administrator



City of Franklin
109 Third Avenue South
Franklin, TN 37064

Presorted
First Class Mail
US Postage
PAID
Boulder, CO
Permit NO. 94



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Franklin, TN 37064

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First Class Mail
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HISTORIC
FRANKLIN
TENNESSEE

City of Franklin
109 Third Avenue South
Franklin, TN 37064

Presorted
First Class Mail
US Postage
PAID
Boulder, CO
Permit NO.94



HISTORIC
FRANKLIN
TENNESSEE

September 2016

Dear City of Franklin Resident:

Please help us shape the future of Franklin! You have been selected at random to participate in the 2016 Franklin Citizen Survey.

Please take a few minutes to fill out the enclosed survey. Your participation in this survey is very important – especially since your household is one of only a small number of households being surveyed. Your feedback will help Franklin make decisions that affect our City.

A few things to remember:

- **Your responses are completely anonymous.**
- In order to hear from a diverse group of residents, the adult 18 years or older in your household who most recently had a birthday should complete this survey.
- **You may return the survey by mail in the enclosed postage-paid envelope, or you can complete the survey online at:**

www.n-r-c.com/survey/franklin.htm

If you have any questions about the survey please call 615-791-3217.

Thank you for your time and participation!

Sincerely,

A stylized, handwritten signature in blue ink, appearing to be 'Ken Moore'.

Ken Moore
Mayor

A handwritten signature in blue ink, clearly legible as 'Eric S. Stuckey'.

Eric Stuckey
City Administrator

HISTORIC
FRANKLIN
TENNESSEE

October 2016

Dear City of Franklin Resident:

Here's a second chance if you haven't already responded to the 2016 Franklin Citizen Survey! **(If you completed it and sent it back, we thank you for your time and ask you to recycle this survey. Please do not respond twice.)**

Please help us shape the future of Franklin! You have been selected at random to participate in the 2016 Franklin Citizen Survey.

Please take a few minutes to fill out the enclosed survey. Your participation in this survey is very important – especially since your household is one of only a small number of households being surveyed. Your feedback will help Franklin make decisions that affect our City.

A few things to remember:

- **Your responses are completely anonymous.**
- In order to hear from a diverse group of residents, the adult 18 years or older in your household who most recently had a birthday should complete this survey.
- **You may return the survey by mail in the enclosed postage-paid envelope, or you can complete the survey online at:**

www.n-r-c.com/survey/franklin.htm

If you have any questions about the survey please call 615-791-3217.

Thank you for your time and participation!

Sincerely,

Ken Moore
Mayor

Eric Stuckey
City Administrator

The City of Franklin 2016 Citizen Survey

Please complete this questionnaire if you are the adult (age 18 or older) in the household who most recently had a birthday. The adult's year of birth does not matter. Please select the response (by circling the number or checking the box) that most closely represents your opinion for each question. Your responses are anonymous and will be reported in group form only.

1. Please rate each of the following aspects of quality of life in Franklin:

	<i>Excellent</i>	<i>Good</i>	<i>Fair</i>	<i>Poor</i>	<i>Don't know</i>
Franklin as a place to live.....	1	2	3	4	5
Your neighborhood as a place to live.....	1	2	3	4	5
Franklin as a place to raise children.....	1	2	3	4	5
Franklin as a place to work	1	2	3	4	5
Franklin as a place to visit.....	1	2	3	4	5
Franklin as a place to retire.....	1	2	3	4	5
The overall quality of life in Franklin	1	2	3	4	5

2. Please rate each of the following characteristics as they relate to Franklin as a whole:

	<i>Excellent</i>	<i>Good</i>	<i>Fair</i>	<i>Poor</i>	<i>Don't know</i>
Overall feeling of safety in Franklin.....	1	2	3	4	5
Overall ease of getting to the places you usually have to visit.....	1	2	3	4	5
Quality of overall natural environment in Franklin.....	1	2	3	4	5
Overall "built environment" of Franklin (including overall design, buildings, parks and transportation systems)	1	2	3	4	5
Health and wellness opportunities in Franklin.....	1	2	3	4	5
Overall opportunities for education and enrichment.....	1	2	3	4	5
Overall economic health of Franklin	1	2	3	4	5
Sense of community.....	1	2	3	4	5
Overall image or reputation of Franklin.....	1	2	3	4	5

3. Please indicate how likely or unlikely you are to do each of the following:

	<i>Very likely</i>	<i>Somewhat likely</i>	<i>Somewhat unlikely</i>	<i>Very unlikely</i>	<i>Don't know</i>
Recommend living in Franklin to someone who asks	1	2	3	4	5
Remain in Franklin for the next five years.....	1	2	3	4	5

4. Please rate how safe or unsafe you feel:

	<i>Very safe</i>	<i>Somewhat safe</i>	<i>Neither safe nor unsafe</i>	<i>Somewhat unsafe</i>	<i>Very unsafe</i>	<i>Don't know</i>
In your neighborhood during the day.....	1	2	3	4	5	6
In Franklin's downtown/commercial area during the day	1	2	3	4	5	6

5. Please rate each of the following characteristics as they relate to Franklin as a whole:

	<i>Excellent</i>	<i>Good</i>	<i>Fair</i>	<i>Poor</i>	<i>Don't know</i>
Traffic flow on major streets	1	2	3	4	5
Ease of public parking.....	1	2	3	4	5
Ease of travel by car in Franklin	1	2	3	4	5
Ease of travel by public transportation in Franklin.....	1	2	3	4	5
Ease of travel by bicycle in Franklin	1	2	3	4	5
Ease of walking in Franklin.....	1	2	3	4	5
Availability of paths and walking trails	1	2	3	4	5
Air quality	1	2	3	4	5
Cleanliness of Franklin.....	1	2	3	4	5
Overall appearance of Franklin	1	2	3	4	5
Public places where people want to spend time	1	2	3	4	5
Variety of housing options	1	2	3	4	5
Availability of affordable quality housing	1	2	3	4	5
Fitness opportunities (including exercise classes and paths or trails, etc.)	1	2	3	4	5
Recreational opportunities.....	1	2	3	4	5
Availability of affordable quality food.....	1	2	3	4	5
Availability of affordable quality health care	1	2	3	4	5
Availability of preventive health services	1	2	3	4	5
Availability of affordable quality mental health care	1	2	3	4	5

6. Please rate each of the following characteristics as they relate to Franklin as a whole:

	<i>Excellent</i>	<i>Good</i>	<i>Fair</i>	<i>Poor</i>	<i>Don't know</i>
Availability of affordable quality child care/preschool	1	2	3	4	5
K-12 education	1	2	3	4	5
Adult educational opportunities.....	1	2	3	4	5
Opportunities to attend cultural/arts/music activities	1	2	3	4	5
Opportunities to participate in religious or spiritual events and activities	1	2	3	4	5
Employment opportunities	1	2	3	4	5
Shopping opportunities.....	1	2	3	4	5
Cost of living in Franklin	1	2	3	4	5
Overall quality of business and service establishments in Franklin.....	1	2	3	4	5
Vibrant downtown/commercial area	1	2	3	4	5
Overall quality of new development in Franklin	1	2	3	4	5
Opportunities to participate in social events and activities	1	2	3	4	5
Opportunities to volunteer.....	1	2	3	4	5
Opportunities to participate in community matters	1	2	3	4	5
Openness and acceptance of the community toward people of diverse backgrounds	1	2	3	4	5
Neighborliness of residents in Franklin	1	2	3	4	5

7. Please indicate whether or not you have done each of the following in the last 12 months.

	<i>No</i>	<i>Yes</i>
Made efforts to conserve water	1	2
Made efforts to make your home more energy efficient	1	2
Observed a code violation or other hazard in Franklin (weeds, abandoned buildings, etc.).....	1	2
Household member was a victim of a crime in Franklin	1	2
Reported a crime to the police in Franklin	1	2
Stocked supplies in preparation for an emergency	1	2
Campaigned or advocated for an issue, cause or candidate	1	2
Contacted the City of Franklin (in-person, phone, email or web) for help or information	1	2
Contacted Franklin elected officials (in-person, phone, email or web) to express your opinion	1	2

8. In the last 12 months, about how many times, if at all, have you or other household members done each of the following in Franklin?

	<i>2 times a week or more</i>	<i>2-4 times a month</i>	<i>Once a month or less</i>	<i>Not at all</i>
Used Franklin recreation centers or their services	1	2	3	4
Visited a neighborhood park or City park	1	2	3	4
Used Franklin public libraries or their services	1	2	3	4
Participated in religious or spiritual activities in Franklin.....	1	2	3	4
Attended a City-sponsored event	1	2	3	4
Used bus, rail, subway or other public transportation instead of driving.....	1	2	3	4
Carpooled with other adults or children instead of driving alone.....	1	2	3	4
Walked or biked instead of driving	1	2	3	4
Volunteered your time to some group/activity in Franklin	1	2	3	4
Participated in a club	1	2	3	4
Talked to or visited with your immediate neighbors	1	2	3	4
Done a favor for a neighbor.....	1	2	3	4

9. Thinking about local public meetings (of local elected officials like City Council or County Commissioners, advisory boards, town halls, HOA, neighborhood watch, etc.), in the last 12 months, about how many times, if at all, have you or other household members attended or watched a local public meeting?

	<i>2 times a week or more</i>	<i>2-4 times a month</i>	<i>Once a month or less</i>	<i>Not at all</i>
<u>Attended</u> a local public meeting	1	2	3	4
<u>Watched</u> (online or on television) a local public meeting.....	1	2	3	4

The City of Franklin 2016 Citizen Survey

10. Please rate the quality of each of the following services in Franklin:

	<i>Excellent</i>	<i>Good</i>	<i>Fair</i>	<i>Poor</i>	<i>Don't know</i>
Police/Sheriff services	1	2	3	4	5
Fire services.....	1	2	3	4	5
Ambulance or emergency medical services	1	2	3	4	5
Crime prevention.....	1	2	3	4	5
Fire prevention and education.....	1	2	3	4	5
Traffic enforcement	1	2	3	4	5
Street repair	1	2	3	4	5
Street cleaning	1	2	3	4	5
Street lighting.....	1	2	3	4	5
Snow removal	1	2	3	4	5
Sidewalk maintenance	1	2	3	4	5
Traffic signal timing.....	1	2	3	4	5
Bus or transit services.....	1	2	3	4	5
Garbage collection.....	1	2	3	4	5
Recycling	1	2	3	4	5
Yard waste pick-up	1	2	3	4	5
Storm drainage	1	2	3	4	5
Drinking water.....	1	2	3	4	5
Sewer services	1	2	3	4	5
Power (electric and/or gas) utility.....	1	2	3	4	5
Utility billing	1	2	3	4	5
City parks.....	1	2	3	4	5
Recreation programs or classes.....	1	2	3	4	5
Recreation centers or facilities	1	2	3	4	5
Land use, planning and zoning.....	1	2	3	4	5
Code enforcement (weeds, abandoned buildings, etc.)	1	2	3	4	5
Animal control	1	2	3	4	5
Economic development	1	2	3	4	5
Health services	1	2	3	4	5
Public library services	1	2	3	4	5
Public information services	1	2	3	4	5
Cable television.....	1	2	3	4	5
Emergency preparedness (services that prepare the community for natural disasters or other emergency situations).....	1	2	3	4	5
Preservation of natural areas such as open space, farmlands and greenbelts.....	1	2	3	4	5
Franklin open space	1	2	3	4	5
City-sponsored special events	1	2	3	4	5
Overall customer service by Franklin employees (police, receptionists, planners, etc.).....	1	2	3	4	5

11. Overall, how would you rate the quality of the services provided by each of the following?

	<i>Excellent</i>	<i>Good</i>	<i>Fair</i>	<i>Poor</i>	<i>Don't know</i>
The City of Franklin	1	2	3	4	5
The Federal Government	1	2	3	4	5

12. Please rate the following categories of Franklin government performance:

	<i>Excellent</i>	<i>Good</i>	<i>Fair</i>	<i>Poor</i>	<i>Don't know</i>
The value of services for the taxes paid to Franklin.....	1	2	3	4	5
The overall direction that Franklin is taking.....	1	2	3	4	5
The job Franklin government does at welcoming citizen involvement.....	1	2	3	4	5
Overall confidence in Franklin government	1	2	3	4	5
Generally acting in the best interest of the community	1	2	3	4	5
Being honest.....	1	2	3	4	5
Treating all residents fairly	1	2	3	4	5

13. Please rate how important, if at all, you think it is for the Franklin community to focus on each of the following in the coming two years:

	<i>Essential</i>	<i>Very important</i>	<i>Somewhat important</i>	<i>Not at all important</i>
Overall feeling of safety in Franklin	1	2	3	4
Overall ease of getting to the places you usually have to visit	1	2	3	4
Quality of overall natural environment in Franklin.....	1	2	3	4
Overall “built environment” of Franklin (including overall design, buildings, parks and transportation systems)	1	2	3	4
Health and wellness opportunities in Franklin.....	1	2	3	4
Overall opportunities for education and enrichment.....	1	2	3	4
Overall economic health of Franklin	1	2	3	4
Sense of community.....	1	2	3	4

14. Please rate your level of satisfaction with the City of Franklin’s management of growth:

- ☐ Very satisfied
- ☐ Somewhat satisfied
- ☐ Somewhat unsatisfied
- ☐ Very unsatisfied
- ☐ Don’t know

15. Presently the City of Franklin and Williamson County subsidize a limited mass transit route from Spring Hill through the city to Nashville. How likely, if at all, would you be to use this transit route if the following improvements were made?

	<i>Very likely</i>	<i>Somewhat likely</i>	<i>Somewhat unlikely</i>	<i>Very unlikely</i>	<i>Don’t know</i>
Expanded weekday schedule	1	2	3	4	5
Additional pick-up and drop-off locations	1	2	3	4	5
Decreasing fares.....	1	2	3	4	5
Enhanced Park & Ride facilities	1	2	3	4	5
Enhanced connections via walking, cycling, etc.	1	2	3	4	5
Expanded weekend schedule	1	2	3	4	5

16. Aside from transportation (traffic) related issues, what is the most important challenge or problem facing Franklin today?

The City of Franklin 2016 Citizen Survey

Our last questions are about you and your household. Again, all of your responses to this survey are completely anonymous and will be reported in group form only.

D1. How often, if at all, do you do each of the following, considering all of the times you could?

	<i>Never</i>	<i>Rarely</i>	<i>Sometimes</i>	<i>Usually</i>	<i>Always</i>
Recycle at home	1	2	3	4	5
Purchase goods or services from a business located in Franklin	1	2	3	4	5
Eat at least 5 portions of fruits and vegetables a day	1	2	3	4	5
Participate in moderate or vigorous physical activity	1	2	3	4	5
Read or watch local news (via television, paper, computer, etc.)	1	2	3	4	5
Vote in local elections.....	1	2	3	4	5

D2. Would you say that in general your health is:

- ☐ Excellent ☐ Very good ☐ Good ☐ Fair ☐ Poor

D3. What impact, if any, do you think the economy will have on your family income in the next 6 months? Do you think the impact will be:

- ☐ Very positive ☐ Somewhat positive ☐ Neutral ☐ Somewhat negative ☐ Very negative

D4. What is your employment status?

- ☐ Working full time for pay
☐ Working part time for pay
☐ Unemployed, looking for paid work
☐ Unemployed, not looking for paid work
☐ Fully retired

D5. Do you work inside the boundaries of Franklin?

- ☐ Yes, outside the home
☐ Yes, from home
☐ No

D6. How many years have you lived in Franklin?

- ☐ Less than 2 years ☐ 11-20 years
☐ 2-5 years ☐ More than 20 years
☐ 6-10 years

D7. Which best describes the building you live in?

- ☐ One family house detached from any other houses
☐ Building with two or more homes (duplex, townhome, apartment or condominium)
☐ Mobile home
☐ Other

D8. Is this house, apartment or mobile home...

- ☐ Rented
☐ Owned

D9. About how much is your monthly housing cost for the place you live (including rent, mortgage payment, property tax, property insurance and homeowners' association (HOA) fees)?

- ☐ Less than \$300 per month
☐ \$300 to \$599 per month
☐ \$600 to \$999 per month
☐ \$1,000 to \$1,499 per month
☐ \$1,500 to \$2,499 per month
☐ \$2,500 or more per month

D10. Do any children 17 or under live in your household?

- ☐ No ☐ Yes

D11. Are you or any other members of your household aged 65 or older?

- ☐ No ☐ Yes

D12. How much do you anticipate your household's total income before taxes will be for the current year? (Please include in your total income money from all sources for all persons living in your household.)

- ☐ Less than \$25,000
☐ \$25,000 to \$49,999
☐ \$50,000 to \$99,999
☐ \$100,000 to \$149,999
☐ \$150,000 or more

Please respond to both questions D13 and D14:

D13. Are you Spanish, Hispanic or Latino?

- ☐ No, not Spanish, Hispanic or Latino
☐ Yes, I consider myself to be Spanish, Hispanic or Latino

D14. What is your race? (Mark one or more races to indicate what race you consider yourself to be.)

- ☐ American Indian or Alaskan Native
☐ Asian, Asian Indian or Pacific Islander
☐ Black or African American
☐ White
☐ Other

D15. In which category is your age?

- ☐ 18-24 years ☐ 55-64 years
☐ 25-34 years ☐ 65-74 years
☐ 35-44 years ☐ 75 years or older
☐ 45-54 years

D16. What is your sex?

- ☐ Female ☐ Male

D17. Do you consider a cell phone or land line your primary telephone number?

- ☐ Cell ☐ Land line ☐ Both

Thank you for completing this survey. Please return the completed survey in the postage-paid envelope to: National Research Center, Inc., PO Box 549, Belle Mead, NJ 08502

ORDINANCE 2016-52

TO BE ENTITLED: "AN ORDINANCE TO AMEND CHAPTER 3 OF THE ZONING ORDINANCE OF THE CITY OF FRANKLIN, TENNESSEE, TO AMEND THE USE TABLE AND REGULATIONS PERTAINING TO SELF STORAGE FACILITIES USES."

WHEREAS, the City of Franklin, Tennessee, wishes to promote the orderly development and redevelopment of land within the City; and

WHEREAS, the Franklin Zoning Ordinance contains requirements that regulate land uses and establishes development standards to enhance the quality of developments through superior building and site design standards; and

WHEREAS, the Franklin Zoning Ordinance contains specific requirements in Chapter 3, Section 3.2, Subsection 3.2.3, Use Table, Table 3-2: Permitted Uses, and in Subsection 3.2.8(3), Self-Storage Facilities, that regulate the location and appearance of self-storage uses; and

WHEREAS, the Franklin Municipal Planning Commission and the Board of Mayor and Aldermen have reevaluated the regulations pertaining to Self-Storage Facilities and have determined that the existing use and development standards specified in the Franklin Zoning Ordinance should be updated in order to provide the necessary site development standards necessary to ensure that self-storage uses can be appropriately developed with restrictions in certain commercial districts within the City of Franklin; and

WHEREAS, this text amendment is in the best interest of the citizens of Franklin.

NOW, THEREFORE, BE IT ORDAINED BY THE BOARD OF MAYOR AND ALDERMAN OF THE CITY OF FRANKLIN, TENNESSEE, AS FOLLOWS:

SECTION I. That Chapter 3, Section 3.2, Subsection 3.2.3, Table 3-2: Permitted Uses, of the Franklin Zoning Ordinance shall be, and is hereby, amended to delete the following text noted with a ~~strikethrough~~, to add the following text noted in **bold**, and is approved to read as follows:

TABLE 3-2: PERMITTED USES																					
Use Types “P” = Permitted	Base Zoning Districts																	Additional Requirements			
	AG	ER	R-1	R-2	R-3	R-6	SD-R	SD-X	RM-10	RM-15	RM-20	OR	GO	NC	CC	GC	LI		HI	CI	
INDUSTRIAL USES																					
Self-Storage Facilities									P								P	P	P		Sec. 3.2.8 (1) and (4) (3)

SECTION II. That Chapter 3, Section 3.2, Subsection 3.2.8(3) of the Franklin Zoning Ordinance is hereby amended to delete the following text noted with a ~~strike through~~; to add the following text noted in **bold**, and is approved to read as follows:

3.2.8 Regulations for Industrial Uses

(3) Self-Storage Facilities

(a) One on-site apartment, not to exceed 1,500 square feet, shall be permitted for security personnel and shall be attached to, and incorporated into, the self-storage facility.

(b) Outdoor storage facilities shall not be located within required setbacks; ~~however, they shall be completely screened from public rights-of-way. and no storage doors shall front public rights-of-way.~~

~~(c) Self-storage facilities are prohibited from locating within 500 feet of an arterial street right-of-way as shown on the FMTP. However, a self-storage facility may encroach into the 500-foot setback if a buildable lot exists between the proposed self-storage facility and the arterial street or the self-storage facility site is designed as follows:~~

~~(i) — an eight-foot-high masonry screen wall shall be constructed around the portion of the self-storage facility site located within 500 feet of the arterial street right-of-way. The wall shall have columns no farther apart than 50 feet on-center;~~

~~(ii) — Within eight feet of the exterior of the masonry screen wall, canopy trees, a minimum of two inches in caliper, shall be planted every 40 to 50 feet on-center. If overhead utility lines exist, then understory trees, a minimum of 1.5 inches in caliper, shall be used with a spacing that shall be 30 to 40 feet on-center; and~~

~~(iii) — Within eight feet of the exterior of the screen wall, evergreen or deciduous shrubs with a height of at least 30 inches at installation shall be planted no farther than five feet on-center.~~

(c) For GC and SD-X zoned properties, self-storage facilities are prohibited from locating within 500 feet of an arterial or collector street right-of-way as shown on the FMTP unless the structure contains active ground floor uses (civic, institutional, commercial, and/or office) for a minimum of 50% of the gross ground floor area (including the leasing center office).

SECTION III. BE IT FINALLY ORDAINED by the Board of Mayor and Aldermen of the City of Franklin, Tennessee, that this Ordinance shall take effect from and after its passage on third and final reading, the health, safety, and welfare of the citizens requiring it.

ATTEST:

CITY OF FRANKLIN, TENNESSEE:

By: _____

Eric Stuckey
City Administrator

By: _____

Dr. Ken Moore
Mayor

Approved as to form by:

Shauna R. Billingsley
City Attorney

PLANNING COMMISSION RECOMMENDED:

PASSED FIRST READING:

PASSED SECOND READING:

PUBLIC HEARING HELD:

PASSED THIRD READING:

ORDINANCE 2016-51

TO BE ENTITLED, "AN ORDINANCE TO REZONE 23.61 ACRES FROM GENERAL COMMERCIAL (GC) DISTRICT TO SPECIFIC DEVELOPMENT VARIETY (SD-X 14.61/350,000/200) DISTRICT FOR THE PROPERTY LOCATED NORTH OF EAST MCEWEN DRIVE AND EAST OF CAROTHERS PARKWAY, (APEX VILLAGE PUD SUBDIVISION)."

WHEREAS, the City of Franklin, Tennessee, encourages responsible growth and the sensible transition of land uses and densities; and

WHEREAS, the Specific Development Variety (SD-X 14.61/ 350,000/ 200) District provides zoning for land uses compatible with both the Franklin Land Use Plan and surrounding development; and

WHEREAS, the Board of Mayor and Aldermen (BOMA) of the City of Franklin, Tennessee, adopted Resolution 2016-88, approving a Planned Unit Development (PUD) Development Plan as required by the Franklin Zoning Ordinance; and

WHEREAS, the zoning has been reviewed and approved by BOMA after a public hearing and a recommendation by the Franklin Municipal Planning Commission.

NOW THEREFORE BE IT ORDAINED BY THE BOARD OF MAYOR AND ALDERMEN OF THE CITY OF FRANKLIN, TENNESSEE, AS FOLLOWS:

SECTION I. That the following described property shall be, and is hereby, rezoned from its present zoning classification of General Commercial (GC) District to Specific Development Variety (SD-X 14.61/350,000/200) District:

PREMISES CONSIDERED	
Map-Parcel	Acres
062—01417	5.84
062—01418	17.77
Total	23.61

ALL OF THOSE TRACTS OR PARCELS OF LAND, situated in the Eighth Civil District, City of Franklin, Williamson County, Tennessee that include the lands shown on the Final Plat of Resource Centre Section 1 that are bounded on the West with the right or way of Carothers Parkway, on the Northwest by the centerline of Pacific Drive and the lands of Resource Centre Subdivision as recorded (plat book 57 page 130) , on the Northeast by Resource Parkway (plat book 50 page 122), on the East by Lot 1 of lands recorded in Plat book 50 page 122, and on the South by East McEwen Road ROW, and as filed in the Register's Office of Williamson County, Tennessee. (R.O.W.C., TN.) and being more particularly described as follows:

A TRACT OR PARCEL OF LAND, situated in the Eighth Civil District, City of Franklin, Williamson County, Tennessee that is bounded on the West with the right or way of Carothers Parkway, on the North and East by the lands of Lot 1 of Resource Centre Subdivision as recorded (plat book 56 page 97), and on the

South by E. McEwen Drive ROW, and as filed in the Register's Office of Williamson County, Tennessee. (R.O.W.C., TN.); being more particularly described as follows:

Beginning at the point of intersection of the easterly right-of-way line of Carothers Parkway variable in width) and the centerline line of Pacific Drive, variable in width (plat book 56 page 97), and the northwest corner of Lot 2 of Resource Centre – Section 1 (plat book 56 page 97) of which this is a part; thence with the common line of said Lot 2 and the centerline of said Pacific Drive, (passing the southwest corner of Lot 3 of Resource Centre PUD (plat book 57 page 130) at 12.0') , South 65°03'52" East 67.04 feet, along said centerline to a point in a curve to the left having a radius of 145.00 feet and a central angle of 71°58'08"; thence, 182.13 feet along said curve, being subtended by a chord bearing North 87°25'04" East 170.39 feet to a point; thence, North 42°58'00" East 136.34 feet along said line to a point in a curve to the right having a radius of 300.00 feet and a central angle of 38°58'13"; thence, 204.05 feet along said curve, being subtended by a chord bearing North 62°27'06" East 200.14 feet to a point; thence, North 81°56'13" East 92.84 feet along said line to a point at the northerly corner of said Lot 2 and on the westerly right-of-way line of Resource Parkway (Plat Book 50, Page 122, R.O.W.C), 50 feet in width) and a curve to the left having a radius of 350.00 feet and a central angle of 31°45'22"; thence with said Lot 2 and along the right of way line of Resource Parkway, 293.99 feet along said curve, being subtended by a chord bearing South 23°54'23" East 191.51 Feet to a point; thence; South 39°47'04" East 161.79 feet to point; thence; South 39°47'04" East 124.43 feet along said line to a point on a curve to the left having a radius of 388.39 feet and a central angle of 17°43'34"; thence, 120.16 feet along said curve, being subtended by a chord of South 48°38'51" East 119.68 feet to a point; thence, South 57°30'38" East 196.93 feet along said line to a point on a curve to the right having a radius of 44.50 feet and a central angle of 50°36'07"; thence, 39.30 feet along said curve, being subtended by a chord of South 31°42'55" East 38.04 feet to a point on a curve to the left having a radius of 65.00 feet and a central angle of 50°36'07"; thence 57.41 feet along said curve, being subtended by a bearing of South 31°42'55" East 55.56 feet to a point on a curve to the left having a radius of 65.00 feet and a central angle of 50°23'47"; thence, 57.41 feet along said curve, being subtended by a bearing of South 82°12'52" East 55.35 feet to a curve to the right having a radius of 44.50 feet and a central angle of 53°00'53"; thence, 41.18 feet along said curve being subtended by a chord bearing South 80°54'19" East 39.72 feet to a point on a curve to the right having a radius of 335.00 feet and a central angle of 38°20'41"; thence 224.20 feet along said curve being subtended by a chord bearing South 35°13'32" East 220.04 feet to a point on the westerly right-of-way line of Resource Drive and the northwest corner of Lot 1 of Franklin Crest PUD Subdivision (plat book 50 page 122) ; thence, South 10°46'13" West 289.59 along the west line of said Lot 1 to a point on the northerly right-of-way line of East McEwen Drive variable in width) and the southwest corner of said Lot 1, and also being on a curve to the left having a radius of 14,373.46 feet and a central angle of 1°29'57"; thence leaving said Lot 1 and with the north line of East McEwen right of way, 376.07 feet along said curve being subtended by a chord bearing North 76°47'09" West 376.06 feet to a point; thence, South 13°30'14" West 14.08 feet along said line to a point; thence, North 76°29'46" West 16.78 feet along said line to a point; thence, North 76°29'46" West 69.46 feet along said line to a point; thence, North 79°43'43" West 253.17 feet along said line to a point; thence, North 79°43'43" West 74.77 feet along said line to a point; thence, North 82°57'40" West 42.23 feet along said line to a point; thence, North 82°57'40" West 26.67 feet along said line to a point on a curve to the left having a radius of 2,042.50 feet and a central angle of 4°45'11"; thence, 169.44 feet along said curve being subtended by a chord bearing North 85°20'16 West 169.39 feet to a point; thence, North 87°42'51" West 107.62 feet to a point; thence, South 38°35'28" East 3.40 feet to a point on a curve to the left having a radius of 2,078.93 feet and a central angle of 4°36'18"; thence, 169.09 feet along said curve being subtended by a chord bearing North 85°24'49" West 167.04 feet to a point; thence, North 87°42'52" West 102.05 feet along said line to a point on said easterly right-of-way line of Carothers Parkway; thence with said Carothers right of way, North 02°17'15" East 20.92 feet along said

line to a point on a curve to the right having a radius of 25.00 feet and a central angle of 77°55'24"; thence, 34.00 feet along said curve being subtended by a chord bearing North 29°22'11" West 31.44 feet to a point; thence, North 10°32'02" East 202.64 feet along said line to a point; thence, North 46°32'02" West 4.76 feet along said line to a point; thence, North 10°32'02" East 71.86 feet along said line to a point; thence, North 11°06'41" East 62.50 feet along said line; thence, North 11°30'15" East 60.54 feet along said line to a point; thence, North 14°37'54" East 58.30 feet along said line to a point; thence, North 18°12'11" East 58.26 feet along said line to a point on a curve to the right having a radius of 932.00 feet and a central angle of 4°01'25"; thence, 65.45 along said curve being subtended by a chord of North 21°23'46" East 65.44 feet to a point on a curve to the right having radius of 932.00 feet and a central angle of 1°31'47"; thence, 24.88 feet along said curve being subtended by a chord bearing North 24°10'23" East 24.88 feet to a point; thence, North 24°56'16" East 94.71 feet to the point of beginning and containing 23.612 acres more or less.

SECTION II. That the attached Location Map shall serve the purpose of further delimiting the geographical boundaries as described by this Ordinance.

SECTION III. BE IT FINALLY ORDAINED by the Board of Mayor and Aldermen of the City of Franklin, Tennessee, that this Ordinance shall take effect from and after its passage on third and final reading, the health, safety, and welfare of the citizens requiring it.

ATTEST:

CITY OF FRANKLIN, TENNESSEE:

By: _____
Eric Stuckey
City Administrator/Recorder

By: _____
Dr. Ken Moore
Mayor

Approved as to form by:

Shauna R. Billingsley
City Attorney

PLANNING COMMISSION RECOMMENDED:

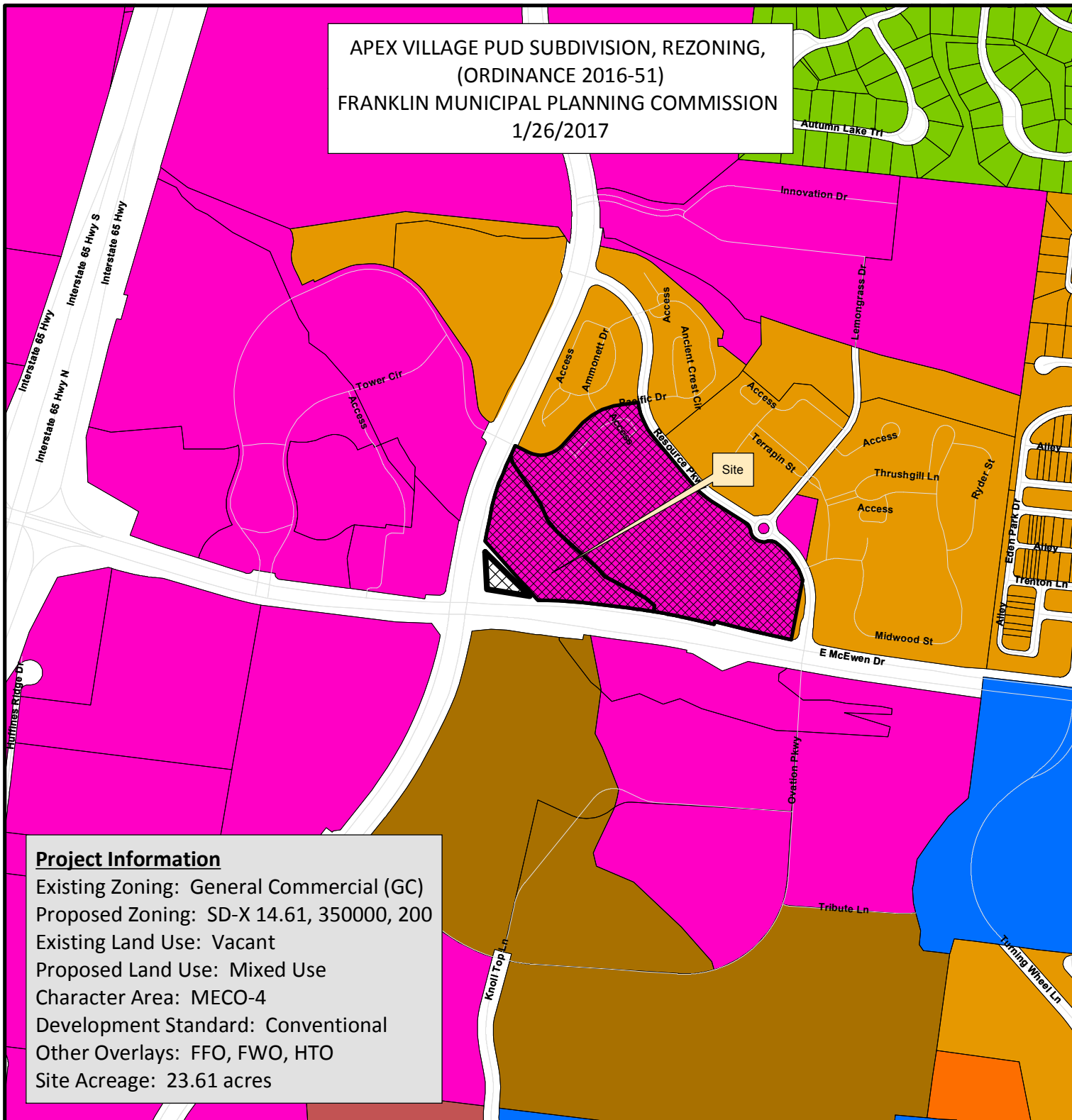
PASSED FIRST READING:

PUBLIC HEARING HELD:

PASSED SECOND READING:

PASSED THIRD READING:

APEX VILLAGE PUD SUBDIVISION, REZONING,
(ORDINANCE 2016-51)
FRANKLIN MUNICIPAL PLANNING COMMISSION
1/26/2017



Project Information

Existing Zoning: General Commercial (GC)
Proposed Zoning: SD-X 14.61, 350000, 200
Existing Land Use: Vacant
Proposed Land Use: Mixed Use
Character Area: MECO-4
Development Standard: Conventional
Other Overlays: FFO, FWO, HTO
Site Acreage: 23.61 acres

- | | |
|--|---------------------------------------|
| Apex Village PUD Subdivision | SD-R Specific Development-Residential |
| AG Agricultural District | SD-X Specific Development-Variety |
| ER Estate Residential | OR Office Residential District |
| R-1 Residential District | GO General Office District |
| R-2 Residential District | CC Central Commercial District |
| R-3 Residential District | NC Neighborhood Commercial District |
| R-6 Residential District | GC General Commercial District |
| RM-10 Attached 10 Residential District | LI Light Industrial District |
| RM-15 Attached 15 Residential District | HI Heavy Industrial District |
| RM-20 Attached 20 Residential District | CI Civic and Institutional District |



0 375 750 1,500
Feet

This map was created by the Franklin Planning Department. It was compiled from the most authentic information available. The City is not responsible for any errors or omissions contained hereon. All data and materials (c) copyright 2017. All rights reserved.



IMPACT STATEMENT NOTES:
FROM THIS SITE, IT IS APPROXIMATELY 1.5 MILES TO FIRE STATION 6 ON COOL SPRINGS BOULEVARD AND 5 MILES TO THE CITY POLICE DEPARTMENT LOCATED ON COLUMBIA AVENUE.

THE NEAREST PARK AND RECREATIONAL FACILITIES ARE LOCATED APPROXIMATELY 0.5 MILES EAST OF THE DEVELOPMENT ON MCEWEN DRIVE (LIBERTY PARK). CHEEK PARK AND THE WILLIAMSON COUNTY RECREATION CENTER ARE APPROXIMATELY 5 MILES FROM THE PROPOSED DEVELOPMENT.

WATER IS PROVIDED BY MALLORY VALLEY UTILITY DISTRICT VIA EXISTING 10" & 18" MAINS SURROUNDING THE SITE. WATER AVAILABILITY OF APPROXIMATELY 1160 SFUE HAS BEEN CONFIRMED BY MVUD FOR THIS DEVELOPMENT.

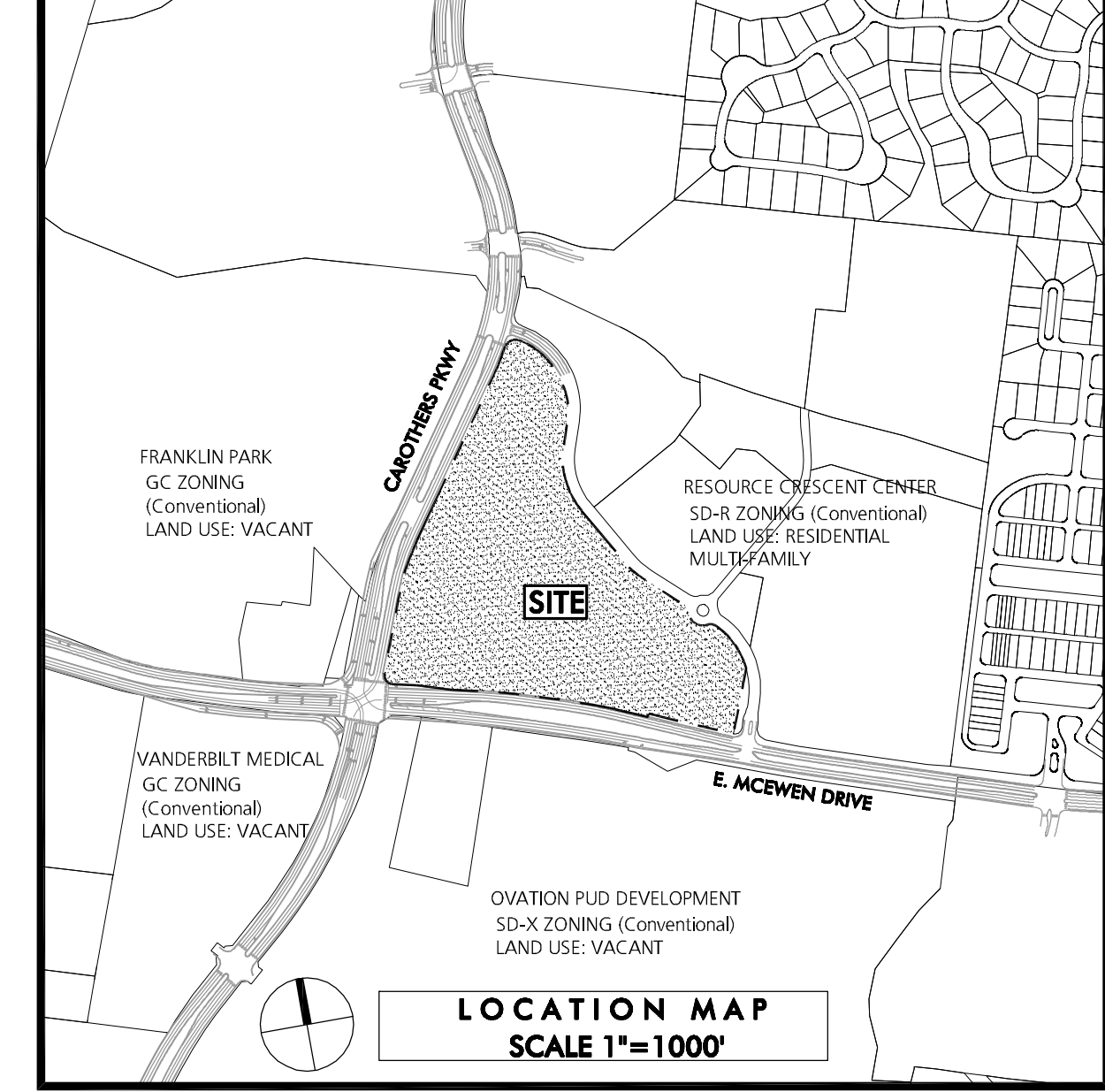
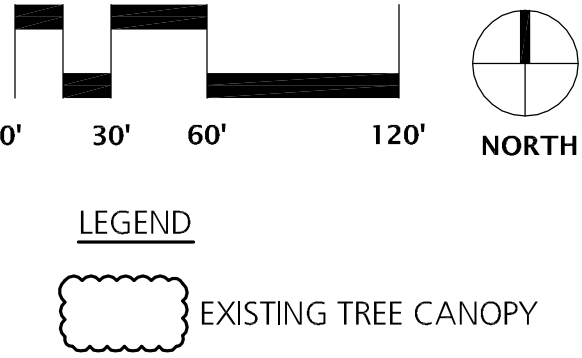
SANITARY SEWER WILL BE PROVIDED BY THE CITY OF FRANKLIN VIA EXISTING SEWER INFRASTRUCTURE ALONG EAST MCEWEN DRIVE AND CAROTHERS PARKWAY. THE CITY OF FRANKLIN HAS APPROVED THE ADDITION OF 780 SFUE FOR THE DEVELOPMENT.

REFUSE COLLECTION FOR THE DEVELOPMENT SHALL BE PROVIDED BY PRIVATE COLLECTION.

ENGINEERING PROVIDED BY:
RYAN MCMASTER
KIMLEY-HORN
214 OCEANSIDE DRIVE
NASHVILLE, TN. 37204
(615) 564-2876
ryan.mcmaster@kimley-horn.com

DEVELOPER:
KHRIS PASCARELLA
CRESCENT LOCKWOOD, LLC
205 POWELL AVENUE
BRENTWOOD, TN 37027
(615) 312-8242
kpascarella@pearlstreetpartners.com

APPLICANT:
JOHN HAAS
EDGE
210 12TH AVE. SOUTH
SUITE 202
NASHVILLE TN, 37203
(615) 250-8154
jhaas@edgela.com



SITE DATA

SITE AREA	+/- 23.61 ACRES
MAP & PARCEL NUMBER	MAP 062, PARCELS 01417 & 01418
ADDRESS	CAROTHERS PARKWAY
EXISTING ZONING/ CHARACTER AREA OVERLAY	GC - MCEWEN AREA 4
RESIDENTIAL DENSITY	14.61 DWU/ACRE
COMMERCIAL SQUARE FOOTAGE	350,000
PROPOSED HOTEL KEYS	200
PROPOSED ZONING	SPECIFIC DEVELOPMENT VARIETY (SD-X) 14.61, 350,000, 200
OTHER APPLICABLE OVERLAYS	FLOODWAY FRINGE OVERLAY (FFO) FLOODWAY OVERLAY DISTRICT (FVO)
DEVELOPMENT STANDARD	CONVENTIONAL
EXISTING LAND USE	VACANT
PROPOSED LAND USE	MIXED-USE
INTENDED USES	ATTACHED RESIDENTIAL OFFICE RETAIL HOTEL RESTAURANT
EXISTING TREE CANOPY	+/- 7.48 ACRES (32% OF SITE)

Legal Description of Crescent Resource Center
Part of Lands Recorded in Plat 56 page 97
In the City of Franklin, Williamson County, TN.

ALL OF THOSE TRACTS OR PARCELS OF LAND, situated in the Eighth Civil District, City of Franklin, Williamson County, Tennessee that include the lands shown on the Final Plat of Resource Centre Section 1 that are bounded on the West with the right or way of Carothers Parkway, on the Northwest by the centerline of Pacific Drive and the lands of Resource Centre Subdivision as recorded (plat book 57 page 130), on the Northeast by Resource Parkway (plat book 50 page 122), on the East by Lot 1 of lands recorded in Plat book 50 page 122, and on the South by East McEwen Road ROW, and as filed in the Register's Office of Williamson County, Tennessee. (R.O.W.C., TN.) and being more particularly described as follows:

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by a chord bearing North 85°24'49" West 167.04 feet to a point; thence, North 87°42'52" West 102.05 feet along said line to a point on said easterly right-of-way line of Carothers Parkway; thence with said Carothers right of way, North 02°17'15" East 20.92 feet along said line to a point on a curve to the right having a radius of 25.00 feet and a central angle of 77°55'24"; thence, 34.00 feet along said curve being subtended by a chord bearing North 29°22'11" West 31.44 feet to a point; thence, North 10°32'02" East 202.64 feet along said line to a point; thence, North 46°32'02" West 4.76 feet along said line to a point; thence, North 10°32'02" East 71.86 feet along said line to a point; thence, North 11°36'41" East 62.50 feet along said line; thence, North 11°36'15" East 60.54 feet along said line to a point; thence, North 14°37'54" East 56.30 feet along said line to a point; thence, North 18°12'11" East 58.26 feet along said line to a point on a curve to the right having a radius of 932.00 feet and a central angle of 4°01'25"; thence, 65.45 along said curve being subtended by a chord of North 21°23'48" East 65.44 feet to a point on a curve to the right having radius of 932.00 feet and a central angle of 1°31'47"; thence, 24.88 feet along said curve being subtended by a chord bearing North 24°10'23" East 24.88 feet to a point; thence, North 24°56'16" East 94.71 feet to the point of beginning and containing 23,612 acres more or less.

Prepared by:
Harrah and Associates
Roger H. Harrah RLS 2039

NOTES:
1. DEVELOPER TO RETAIN ALL MINERAL RIGHTS.
2. NO STRUCTURES CURRENTLY EXIST ON SITE
3. THERE ARE NO HISTORIC STRUCTURES WITHIN 500' OF THE SITE

EDGE
LANDSCAPE ARCHITECTURE URBAN DESIGN

210 Twelfth Avenue South
Suite 202
Nashville, Tennessee 37203
P 615-250-8154 F 615-250-8155

Kimley»Horn

214 Crookside Drive, Nashville, TN 37204
Main: 615.584.2701 | www.kimleyhorn.com
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CONSULTANTS

SEAL



01/05/17

PROJECT TITLE

**APEX VILLAGE
REZONING PLAN
C.O.F. #6304
FRANKLIN, TN**

CLIENT

**CRESCENT
COMMUNITIES
LLC**

PROJECT NO.
Date

COF #6304
12/12/16

Revisions
1. PER CITY COMMENTS 01.05.17

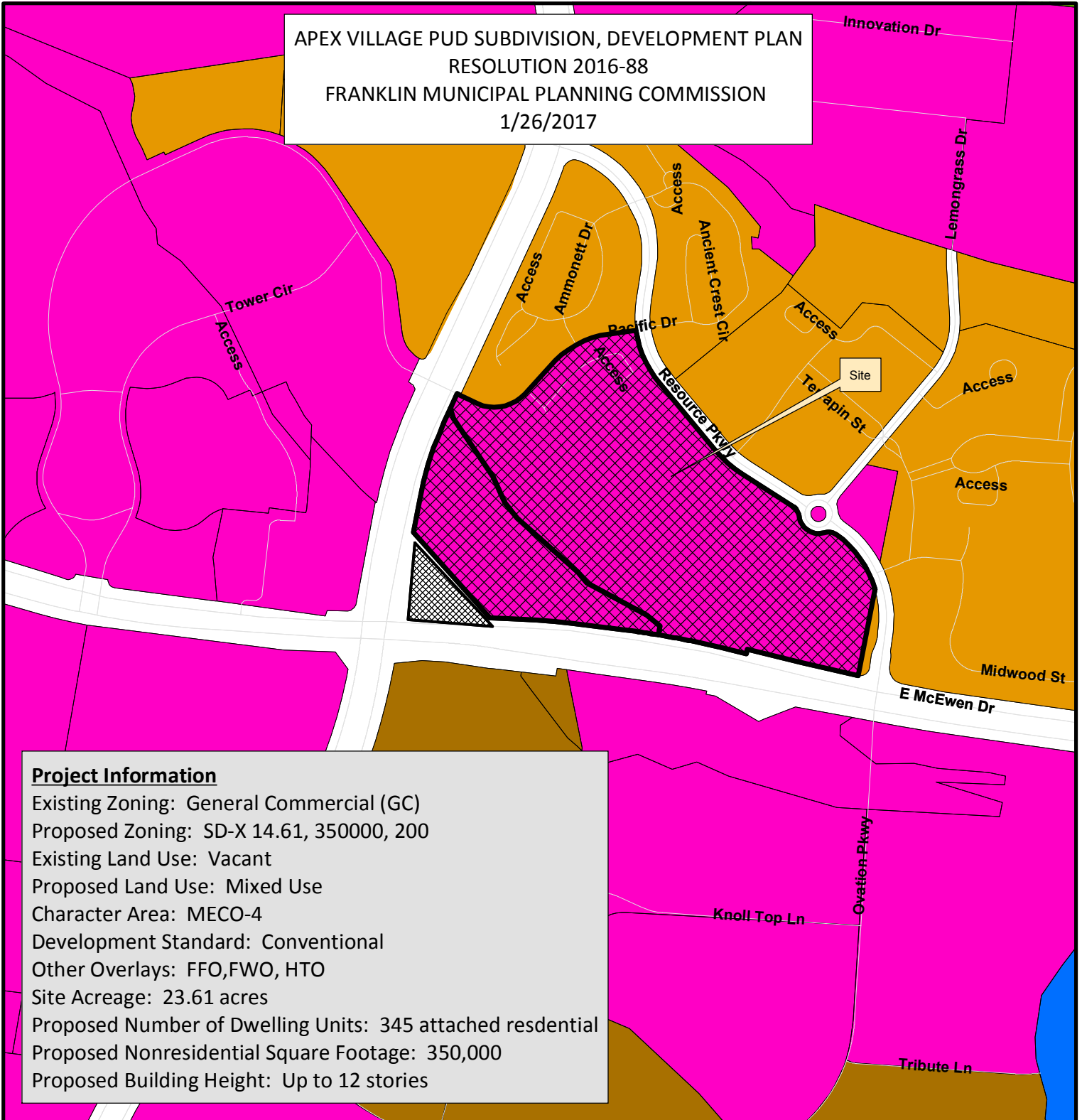
Sheet Title

**REZONING
SHEET**

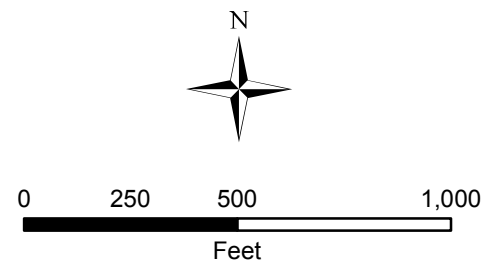
Sheet Number

R 1.0

APEX VILLAGE PUD SUBDIVISION, DEVELOPMENT PLAN
 RESOLUTION 2016-88
 FRANKLIN MUNICIPAL PLANNING COMMISSION
 1/26/2017



- | | |
|--|---------------------------------------|
| APEX Village PUD Subdivision | SD-R Specific Development-Residential |
| AG Agricultural District | SD-X Specific Development-Variety |
| ER Estate Residential | OR Office Residential District |
| R-1 Residential District | GO General Office District |
| R-2 Residential District | CC Central Commercial District |
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| R-6 Residential District | GC General Commercial District |
| RM-10 Attached 10 Residential District | LI Light Industrial District |
| RM-15 Attached 15 Residential District | HI Heavy Industrial District |
| RM-20 Attached 20 Residential District | CI Civic and Institutional District |



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RESOLUTION 2016-88

TO BE ENTITLED: "A RESOLUTION APPROVING A DEVELOPMENT PLAN FOR APEX VILLAGE PUD SUBDIVISION WITH 2 MODIFICATIONS OF DEVELOPMENT STANDARDS (MOS1-ATTACHED RESIDENTIAL LENGTH; MOS2- PARKLAND DEDICATION), FOR THE PROPERTY LOCATED NORTH OF EAST MCEWEN DRIVE AND EAST OF CAROTHERS PARKWAY."

WHEREAS, the Board of Mayor and Aldermen (BOMA) of the City of Franklin, Tennessee, has, or will, approve the zoning for the property as part of Ordinance 2016-51; and

WHEREAS, the Planned Unit Development (PUD) process is a review procedure that is intended to encourage innovative land planning and design and avoid the monotony sometimes associated with large developments by:

- (a) Reducing or eliminating the inflexibility that sometimes results from strict application of zoning standards that were designed primarily for individual lots;
- (b) Allowing greater freedom in selecting the means to provide access, light, open space, and design amenities;
- (c) Encouraging a sensitive design that respects the surrounding established land use character and natural or man-made features of the site including, but not limited to, trees, historic features, streams, hillsides, and floodplains;
- (d) Promoting quality design and environmentally sensitive development by allowing development to take advantage of special site characteristics, locations, and land uses; and
- (e) Allowing deviations from certain zoning standards that would otherwise apply if not contrary to the general spirit and intent of this ordinance; and

WHEREAS, the PUD process requires the approval of a Development Plan that is reviewed and approved by BOMA, after a public hearing and a recommendation by the Franklin Municipal Planning Commission; and

WHEREAS, in accordance with the provisions of the City of Franklin, Tennessee, Zoning Ordinance, and as required by *Tennessee Code Annotated* § 13-4-310, as amended, the approval of the Development Plan by the BOMA will initiate a vesting period during which the development standards adopted by the City and in effect on the date of approval shall remain the standards applicable to the approved Development Plan.

NOW, THEREFORE, BE IT RESOLVED BY THE BOARD OF MAYOR AND ALDERMEN OF THE CITY OF FRANKLIN, TENNESSEE, AS FOLLOWS:

SECTION I. That the legal description of the property included in the Development Plan is as follows:

PREMISES CONSIDERED	
Map-Parcel	Acres
062—01417	5.84
062—01418	17.77
Total	23.61

ALL OF THOSE TRACTS OR PARCELS OF LAND, situated in the Eighth Civil District, City of Franklin, Williamson County, Tennessee that include the lands shown on the Final Plat of Resource Centre Section 1 that are bounded on the West with the right or way of Carothers Parkway, on the Northwest by the centerline of Pacific Drive and the lands of Resource Centre Subdivision as recorded (plat book 57 page 130) , on the Northeast by Resource Parkway (plat book 50 page 122), on the East by Lot 1 of lands recorded in Plat book 50 page 122, and on the South by East McEwen Road ROW, and as filed in the Register's Office of Williamson County, Tennessee. (R.O.W.C., TN.) and being more particularly described as follows:

A TRACT OR PARCEL OF LAND, situated in the Eighth Civil District, City of Franklin, Williamson County, Tennessee that is bounded on the West with the right or way of Carothers Parkway, on the North and East by the lands of Lot 1 of Resource Centre Subdivision as recorded (plat book 56 page 97), and on the South by E. McEwen Drive ROW, and as filed in the Register's Office of Williamson County, Tennessee. (R.O.W.C., TN.); being more particularly described as follows:

Beginning at the point of intersection of the easterly right-of-way line of Carothers Parkway variable in width) and the centerline line of Pacific Drive, variable in width (plat book 56 page 97), and the northwest corner of Lot 2 of Resource Centre – Section 1 (plat book 56 page 97) of which this is a part; thence with the common line of said Lot 2 and the centerline of said Pacific Drive, (passing the southwest corner of Lot 3 of Resource Centre PUD (plat book 57 page 130) at 12.0') , South 65°03'52" East 67.04 feet, along said centerline to a point in a curve to the left having a radius of 145.00 feet and a central angle of 71°58'08"; thence, 182.13 feet along said curve, being subtended by a chord bearing North 87°25'04" East 170.39 feet to a point; thence, North 42°58'00" East 136.34 feet along said line to a point in a curve to the right having a radius of 300.00 feet and a central angle of 38°58'13"; thence, 204.05 feet along said curve, being subtended by a chord bearing North 62°27'06" East 200.14 feet to a point; thence, North 81°56'13" East 92.84 feet along said line to a point at the northerly corner of said Lot 2 and on the westerly right-of-way line of Resource Parkway (Plat Book 50, Page 122, R.O.W.C), 50 feet in width) and a curve to the left having a radius of 350.00 feet and a central angle of 31°45'22"; thence with said Lot 2 and along the right of way line of Resource Parkway, 293.99 feet along said curve, being subtended by a chord bearing South 23°54'23" East 191.51 Feet to a point; thence; South 39°47'04" East 161.79 feet to point; thence; South 39°47'04" East 124.43 feet along said line to a point on a curve to the left having a radius of 388.39 feet and a central angle of 17°43'34"; thence, 120.16 feet along said curve, being subtended by a chord of South 48°38'51" East 119.68 feet to a point; thence, South 57°30'38" East 196.93 feet along said line to a point on a curve to the right having a radius of 44.50 feet and a central angle of 50°36'07"; thence, 39.30 feet along said curve, being subtended by a chord of South 31°42'55" East 38.04 feet to a point on a curve to the left having a radius of 65.00 feet and a central angle of 50°36'07"; thence 57.41 feet along said curve, being subtended by a bearing of South 31°42'55" East 55.56 feet to a point on a curve to the left having a radius of 65.00 feet and a central angle of 50°23'47"; thence, 57.41 feet along said curve, being subtended by a bearing of South 82°12'52" East 55.35 feet to a curve to the right having a radius of 44.50 feet and a central angle of 53°00'53"; thence, 41.18 feet along said curve being subtended by a chord bearing South 80°54'19" East 39.72 feet to a point on a curve to the right having a radius of 335.00 feet and a central angle of 38°20'41"; thence 224.20 feet along said curve being subtended by a chord bearing South 35°13'32" East 220.04 feet to a point on the westerly right-of-way line of Resource Drive and the northwest corner of Lot 1 of Franklin Crest PUD Subdivision (plat book 50 page 122) ; thence, South 10°46'13" West 289.59 along the west line of said Lot 1 to a point on the northerly right-of-way line of East McEwen Drive variable in width) and the southwest corner of said Lot 1, and also being on a curve to the left having a radius of 14,373.46 feet and a central angle of 1°29'57"; thence leaving said Lot 1 and with the north line of East McEwen right of way, 376.07 feet along said curve being subtended by a chord bearing North 76°47'09" West 376.06 feet to a point; thence, South 13°30'14" West 14.08 feet along said line to a

point; thence, North 76°29'46" West 16.78 feet along said line to a point; thence, North 76°29'46" West 69.46 feet along said line to a point; thence, North 79°43'43" West 253.17 feet along said line to a point; thence, North 79°43'43" West 74.77 feet along said line to a point; thence, North 82°57'40" West 42.23 feet along said line to a point; thence, North 82°57'40" West 26.67 feet along said line to a point on a curve to the left having a radius of 2,042.50 feet and a central angle of 4°45'11"; thence, 169.44 feet along said curve being subtended by a chord bearing North 85°20'16 West 169.39 feet to a point; thence, North 87°42'51" West 107.62 feet to a point; thence, South 38°35'28" East 3.40 feet to a point on a curve to the left having a radius of 2,078.93 feet and a central angle of 4°36'18"; thence, 169.09 feet along said curve being subtended by a chord bearing North 85°24'49" West 167.04 feet to a point; thence, North 87°42'52" West 102.05 feet along said line to a point on said easterly right-of-way line of Carothers Parkway; thence with said Carothers right of way, North 02°17'15" East 20.92 feet along said line to a point on a curve to the right having a radius of 25.00 feet and a central angle of 77°55'24"; thence, 34.00 feet along said curve being subtended by a chord bearing North 29°22'11" West 31.44 feet to a point; thence, North 10°32'02" East 202.64 feet along said line to a point; thence, North 46°32'02" West 4.76 feet along said line to a point; thence, North 10°32'02" East 71.86 feet along said line to a point; thence, North 11°06'41" East 62.50 feet along said line; thence, North 11°30'15" East 60.54 feet along said line to a point; thence, North 14°37'54" East 58.30 feet along said line to a point; thence, North 18°12'11" East 58.26 feet along said line to a point on a curve to the right having a radius of 932.00 feet and a central angle of 4°01'25"; thence, 65.45 along said curve being subtended by a chord of North 21°23'46" East 65.44 feet to a point on a curve to the right having radius of 932.00 feet and a central angle of 1°31'47"; thence, 24.88 feet along said curve being subtended by a chord bearing North 24°10'23" East 24.88 feet to a point; thence, North 24°56'16" East 94.71 feet to the point of beginning and containing 23.612 acres more or less.

SECTION II. That the attached Location Map shall serve the purpose of further delimiting the geographical boundaries as described by this Resolution.

SECTION III. That the overall entitlements for the Apex Village PUD Subdivision are as follows:

Entitlements	APEX VILLAGE PUD SUBDIVISION
Base Zone District	Specific Development Variety 14.61, 350000, 200
Character Area Overlay	MECO-4
Other Zoning Overlays	FFO, FWO
Development Standard	Conventional
Number of Dwelling Units	345
Number of Nonresidential Square Footage	300,000 square feet office 50,000 square feet retail
Number of Hotel Rooms	200
Connectivity Index	1.57
Open Space Requirements	1.18 acres
Number of Phases in Development	1

SECTION IV. That the Development Plan, the exhibits accompanying the Development Plan, and all conditions and restrictions placed upon the Development Plan by the Franklin Municipal Planning Commission and this Board shall be made a part of this Resolution as though copied verbatim herein, and that a permanent record of the Development Plan, the exhibits accompanying the Development Plan, and all such conditions and restrictions shall be kept in the Franklin Planning and Sustainability Department.

SECTION V. That the following Modifications of Development Standards (MOS) were requested and acted upon by the Board of Mayor and Aldermen, after review and recommendation by the Franklin Municipal Planning Commission:

MOS 1: Length of Attached Residential Building Approved: _____ Denied: _____	Request to build attached residential building with a maximum of 670 feet Request to <u>approve</u> . <i>Staff recommended <u>approval</u>.</i>
MOS 2: Parkland Dedication Approved: _____ Denied: _____	Construct open space improvements in lieu of payment Request to <u>approve</u> _____. <i>Staff recommended <u>approval</u>.</i>

SECTION VI. That this Resolution shall take effect from and after the passage of Ordinance 2016-51, on third and final reading, the health, safety, and welfare of the citizens requiring it.

Eric S. Stuckey
City Administrator

Dr. Ken Moore
Mayor

Approved as to form by:

Shauna R. Billingsley
City Attorney

PREAPPLICATION CONFERENCE: 10/13/2016

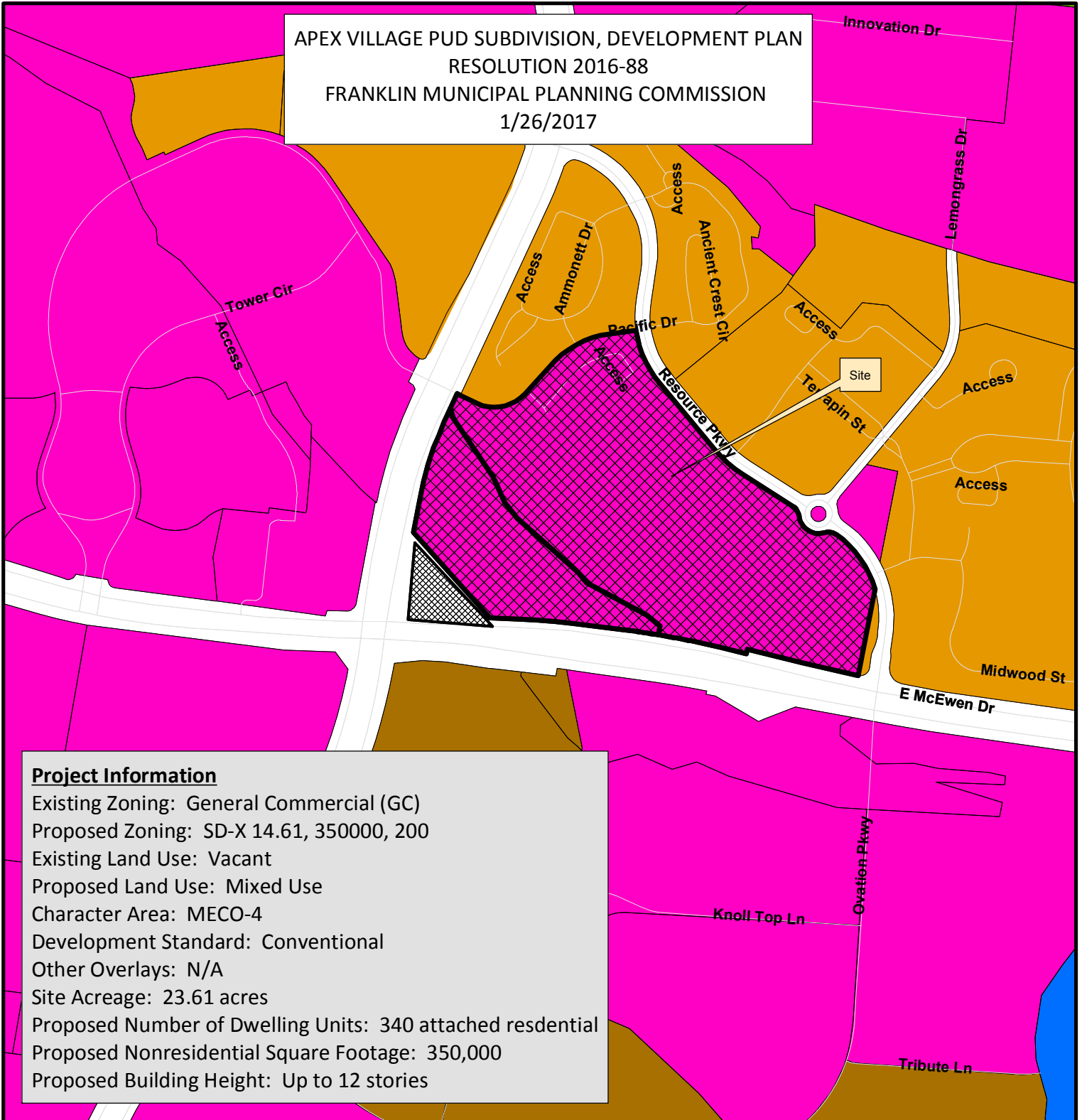
BOMA/FMPC JOINT CONCEPTUAL WORKSHOP: 10/27/2016

NEIGHBORHOOD MEETING: 11/2/2016

PLANNING COMMISSION RECOMMENDED APPROVAL: _____

PUBLIC HEARING AND BOMA APPROVAL: _____

APEX VILLAGE PUD SUBDIVISION, DEVELOPMENT PLAN
 RESOLUTION 2016-88
 FRANKLIN MUNICIPAL PLANNING COMMISSION
 1/26/2017



Project Information

Existing Zoning: General Commercial (GC)
 Proposed Zoning: SD-X 14.61, 350000, 200
 Existing Land Use: Vacant
 Proposed Land Use: Mixed Use
 Character Area: MECO-4
 Development Standard: Conventional
 Other Overlays: N/A
 Site Acreage: 23.61 acres
 Proposed Number of Dwelling Units: 340 attached residential
 Proposed Nonresidential Square Footage: 350,000
 Proposed Building Height: Up to 12 stories

- | | |
|--|---------------------------------------|
| APEX Village PUD Subdivision | SD-R Specific Development-Residential |
| AG Agricultural District | SD-X Specific Development-Variety |
| ER Estate Residential | OR Office Residential District |
| R-1 Residential District | GO General Office District |
| R-2 Residential District | CC Central Commercial District |
| R-3 Residential District | NC Neighborhood Commercial District |
| R-6 Residential District | GC General Commercial District |
| RM-10 Attached 10 Residential District | LI Light Industrial District |
| RM-15 Attached 15 Residential District | HI Heavy Industrial District |
| RM-20 Attached 20 Residential District | CI Civic and Institutional District |



0 250 500 1,000
 Feet

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CONDITIONS OF APPROVAL:

Open Issues: 7 These issues are currently being filtered

Engineering - PUD Plan Checklist

General Issues

1. D. Statement of Impacts

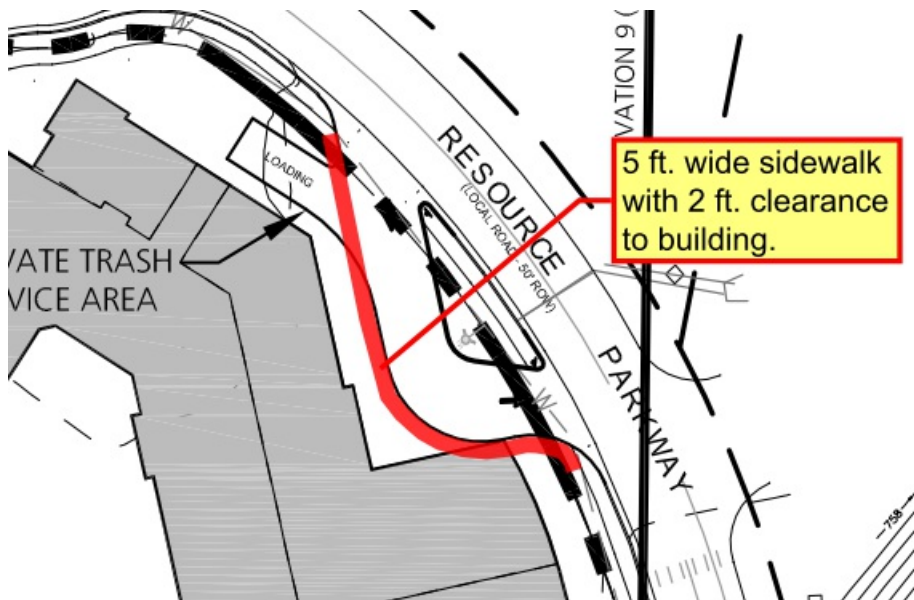
carlb@franklintn.gov The applicant has the option of requesting Roadway Impact Fee offsets for ROW and widening of Carothers Parkway and McEwen Drive along his site frontages. Associated signal modifications at the Carothers/McEwen intersection are also eligible for RIF offsets. No other signals or roadways are eligible for RIF offsets. The RIF offset agreement is to be submitted and approved by the Franklin Board of Mayor and Aldermen (BOMA) prior to the approval of the site plan for this development. The issue of storage and queuing from the roundabout into Deck Q is also to be resolved prior to the approval of the site plan for this development. For these reasons this issue shall remain open as a placeholder for site plan review.

Engineering - Site Plan Checklist

General Issues

2. D. Site Plan

joseph.marlo@franklintn.gov The loading area may be allowed if, in addition to the modifications/adjustments made, the applicant shifts the 5-foot wide sidewalk around to the southwest edge of the area as shown in the sketch below. A minimum 2-foot clearance shall be maintained between the back edge of the sidewalk and the nearest building.



3. ROW Dedication

joseph.marlo@franklintn.gov Applicant shall revise note to state "ROW to be dedicated via final subdivision plat after site plan approval." Applicant shall revise "Future R.O.W. Reservation" to be called out as "R.O.W. Dedication" on plans.

4. D. Site Plan

carlb@franklintn.gov All transportation related designs shall be completed according to MUTCD, AASHTO, and City of Franklin standards.

Parks

General Issues

5. Parkland information

kevinl@franklintn.gov The Parks Department would give approval to the MOS going forward with a few changes to the letter supplied, notes being added to the plat and approved by BOMA.

Changes to the letter. This process is not being waived as it is being “met by the developer to design, construct and maintain all property called out in the exhibit supplied”. Add to the letter: “This land shall always be utilized for this passive/natural park as described in the exhibit” this to shall be placed on the plat for future reference. Place on the plat and include in the letter for reference “The trial system shall never be gated and always open to the general public and in an AAPE(All Access Public Easement).

* The applicant shall add all above language by updating the letter supplied and notes added to plat.
[Edited By Kevin Lindsey]

Planning (Landscape)

General Issues

6. Tree vPreservatio Plan

larry.mizell@franklintn.gov The applicant shall revise the development plan to show and delineate a tree protection zone that meets the size requirements of the Zoning Ordinance. Tree removal and replacement within the tree protection zone shall be limited to the maximum extent possible to meet the intent of the tree protection ordinance.

Trees to be removed within the tree protection zone shall be replaced per the Zoning Ordinance Section 5.2.4(7). For required tree replacement not occurring on-site, tree bank contribution shall apply. The exact amount of the tree removal and tree bank contribution shall be determined with the site plan; however, the planned tree protection zone shall be shown on the development plan.

[Edited By Joshua King]

Zoning

Resource Ctr_Pre App Dev Plan Set 09.23.16.pdf

7. FFO

mollyp@franklintn.gov The applicant shall obtain a floodplain development permit prior to any disturbance of the FFO.

ANTICIPATED IMPACT ON THE STREETS AS SHOWN IN THE MAJOR THOROUGHFARE PLAN

PERCENTAGES OF SITE-GENERATED TRAFFIC VOLUMES ON CITY STREETS			
Street Name	Classification	Entering Traffic	Exiting Traffic
McEwen Drive (west of Carothers Parkway)	Major Arterial	50%	50%
McEwen Drive (between Carothers Parkway and Resource Parkway)	Major Arterial	30%	35%
McEwen Drive (east of Resource Parkway)	Major Arterial	10%	10%
Carothers Parkway (south of McEwen Drive)	Major Arterial	15%	15%
Carothers Parkway (between McEwen Drive and Pacific Drive)	Major Arterial	35%	30%
Carothers Parkway (north of Pacific Drive)	Major Arterial	20%	20%

DAILY SITE-GENERATED TRAFFIC VOLUMES ON CITY STREETS				
Street Name	Classification	Entering Traffic	Exiting Traffic	Total Vehicles Per Day
McEwen Drive (west of Carothers Parkway)	Major Arterial	1,855	1,855	3,710
McEwen Drive (between Carothers Parkway and Resource Parkway)	Major Arterial	1,113	1,298	2,411
McEwen Drive (east of Resource Parkway)	Major Arterial	371	371	742
Carothers Parkway (south of McEwen Drive)	Major Arterial	556	556	1,112
Carothers Parkway (between McEwen Drive and Pacific Drive)	Major Arterial	1,298	1,113	2,411
Carothers Parkway (north of Pacific Drive)	Major Arterial	742	742	1,484

THE FOLLOWING ITEMS OUTLINE RECOMMENDATIONS RELATED TO THE TRAFFIC IMPACT STUDY, PERFORMED BY FISCHBACH TRANSPORTATION, AND ADDITIONAL STAFF RECOMMENDATIONS PER THE THIRD PARTY REVIEW VIA VOLKERT INC. FOR IMPROVEMENTS RELATED TO THIS DEVELOPMENT:

- A TRAFFIC SIGNAL SHOULD BE INSTALLED AT THE INTERSECTION OF E. MCEWEN DRIVE AND RESOURCE PARKWAY; AT THIS TIME, THIS IMPROVEMENT IS REQUIRED PER THE OVATION DEVELOPMENT PLAN
- A TRAFFIC SIGNAL SHOULD BE INSTALLED AT THE INTERSECTION OF CAROTHERS PARKWAY AND RESOURCE PARKWAY
- THE STORAGE BAY ON THE EXISTING, SOUTHBOUND LEFT-HAND TURN LANE FROM CAROTHERS PARKWAY TO PACIFIC DRIVE SHALL BE EXTENDED TO 150'
- FUTURE RIGHT-OF-WAY RESERVATION SHOULD BE PROVIDED ALONG CAROTHERS PARKWAY AND E. MCEWEN DRIVE PER THE HYBRID EXHIBIT OF THE CAROTHERS INTEGRATED GROWTH PLAN. ROW IS TO BE RESERVED AND DEDICATED VIA FINAL SUBDIVISION PLAT AFTER SITE PLAN APPROVAL
- PACIFIC DRIVE SHALL INCLUDE ONE THROUGH LANE IN EACH DIRECTION AND A CONTINUOUS CENTER TURN LANE FROM CAROTHERS PARKWAY TO RESOURCE PARKWAY
- RESOURCE PARKWAY SHALL INCLUDE STORAGE BAYS AND LEFT-HAND TURN LANES INTO THE PROJECT ACCESS LOCATIONS AND TERRAPIN DRIVE INTERSECTION
- THE ACCESS POINTS TO DECK "P" VIA PACIFIC DRIVE AND RESOURCE PARKWAY SHALL PROVIDE ONE ENTRY LANE AND TWO EXIT LANES, STRIPED AS SEPARATE LEFT AND RIGHT TURNS.

SHARED PARKING

ADJUSTED WEEKDAY PEAK PARKING DEMAND (SCENARIO 1)

DAY AND TIME	REQUIRED PARKING SPACES			
	Visitors	Employees/Residents	SUBTOTAL	REDUCED 20% FOR INTERNAL TRIPS
Weekday (2:00 PM in June)	489	1,016	1,505	1,204
Saturday (7:00 PM in June)	481	100	581	465

* This is the total number of parking spaces needed in Parking Garage P. Based on the data provided in Shared Parking, 2nd Edition, which was published by the Urban Land Institute, Parking Garage Q should include 1.65 parking spaces per apartment in Building C.

ADJUSTED WEEKDAY PEAK PARKING DEMAND (SCENARIO 2)

DAY AND TIME	REQUIRED PARKING SPACES			
	Visitors	Employees/Residents	SUBTOTAL	REDUCED 20% FOR INTERNAL TRIPS
Weekday (2:00 PM in June)	499	1,373	1,872	1,498
Saturday (7:00 PM in June)	522	587	1,119	895

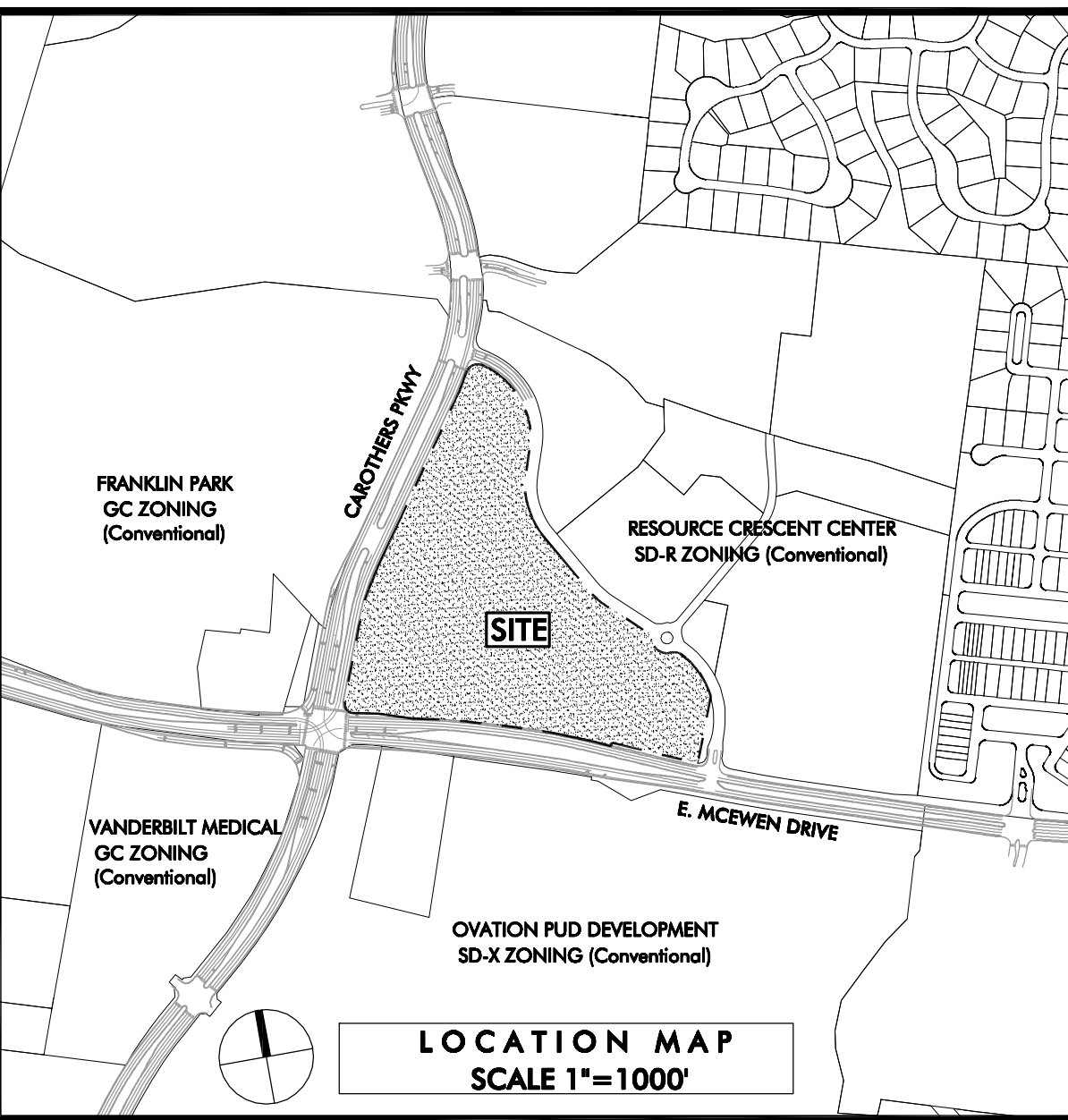
* This is the total number of parking spaces needed in Parking Garages P and Q (combined).

*SEE SHARED PARKING STUDY FOR DETAILS

BUILDING USE MATRIX

BUILDING	DESCRIPTION
A	OFFICE & RESTAURANT
B	HOTEL
C	MULTI-FAMILY & RESTAURANT
D	FLEX COMMERCIAL & OFFICE
E	FLEX COMMERCIAL & OFFICE
F	RESTAURANT
G	RESTAURANT
J	FLEX/TOWNHOUSE
K	FLEX/TOWNHOUSE
L	FLEX/TOWNHOUSE
M	FLEX/TOWNHOUSE
P	GARAGE
Q	GARAGE

FRANKLIN CREST P.U.D.
SUBDIVISION
LOT-3
PLAT BOOK 50,
PAGE 122, R.O.W.C., TN.
C.O.F. PROJECT #1683



SITE DATA

SUBDIVISION/DEVELOPMENT
MAP & PARCEL NUMBER
ADDRESS

APEX VILLAGE
MAP 062, PARCELS 01417 & 01418
CAROTHERS PARKWAY

EXISTING ZONING
CHARACTER AREA
SPECIAL AREA
OTHER APPLICABLE OVERLAYS

GC - GENERAL COMMERCIAL
MCEWEN
4
FLOODWAY FRINGE OVERLAY (FFO)
FLOODWAY OVERLAY DISTRICT (FWO)
CONVENTIONAL

DEVELOPMENT STANDARD

ACREAGE OF SITE
SQUARE FOOTAGE OF SITE

+/- 23.61 ACRES
+/- 1,028,538 SQ. FT.

RESIDENTIAL DENSITY
COMMERCIAL SQUARE FOOTAGE
PROPOSED HOTEL KEYS

14.61 DWU/ACRE
350,000
200

PROPOSED ZONING

SPECIFIC DEVELOPMENT
VARIETY (SD-X) 14.61, 350,000, 200

MINIMUM REQUIRED SETBACK LINES
BUILDING SETBACKS

5 FT.

DEVELOPER:
KHRIS PASCARELLA
CRESCENT COMMUNITIES
205 POWELL AVENUE
BRENTWOOD, TN 37027
(615) 312-8242
kpascarella@pearlstreetpartners.com

APPLICANT:
JOHN HAAS
EDGE
210 12TH AVE. SOUTH - SUITE 202
NASHVILLE, TN 37203
(615) 250-8154
jhaas@edgela.com

BUILDING HEIGHT

12 STORIES MAX.

LANDSCAPE SURFACE RATIO
MIN. LANDSCAPE SURFACE RATIO

0.40
0.20

MINIMUM PARKING REQUIREMENT
PARKING PROVIDED

SEE CHART THIS PAGE
SEE CHART THIS PAGE

EXISTING TREE CANOPY

+/- 7.48 ACRES (32% OF SITE)

MIN. AREA OF EXISTING TREE CANOPY
TO PRESERVE

+/- 1.80 ACRES (24% OF EXISTING CANOPY)

*AREA OF PRESERVED TREE CANOPY

+/- 1.35 ACRES (18% OF EXISTING CANOPY)

(*NOTE: APPLICANT SHALL RESOLVE ANY TREE CANOPY RETENTION ISSUES AT SITE PLAN SUBMITTAL WITH CITY OF FRANKLIN STAFF.)

FORMAL OPEN SPACE -
REQUIRED

+/- 1.18 ACRES (5% OF GROSS
DEVELOPMENT SIZE)

FORMAL OPEN SPACE -
PROVIDED

+/- 1.20 ACRES (5% OF GROSS
DEVELOPMENT SIZE)

INFORMAL OPEN SPACE -
REQUIRED

NONE

INFORMAL OPEN SPACE -
PROVIDED

+/- 10.98 ACRES (47% OF GROSS
DEVELOPMENT SIZE)

*REQUIRED PARKLAND DEDICATION

+/- 5.23 ACRES

*PROVIDED PARKLAND

+/- 5.24 ACRES

*APPLICANT IS REQUESTING A MODIFICATION OF STANDARDS - SEE NOTES THIS PAGE

RESIDENTIAL DENSITY
NET DENSITY (MINUS ROW)
NET DENSITY (MINUS ROW
& OVERLAY CONSTRAINTS)

14.61 DUA
14.90 DUA
18.90 DUA

PROPOSED NUMBER OF RESIDENTIAL UNITS BY USE TYPE
TOWNHOMES
*MULTI-FAMILY UNITS
TOTAL UNITS

15 UNITS
330 UNITS
345 UNITS

*MULTI-FAMILY UNITS WILL BE DIVIDED INTO THE FOLLOWING MIX:
STUDIOS
ONE BEDROOM
TWO BEDROOM
THREE BEDROOM

+/- 4% - 8%
+/- 50% - 54%
+/- 38% - 42%
+/- 2% - 6%

(NOTE THAT THIS IS AN APPROXIMATE UNIT MIX ONLY - ACTUAL UNIT MIX NUMBERS
WILL BE PROVIDED AT SITE PLAN SUBMITTAL)

PROPOSED SQUARE FOOTAGE BY USE TYPE (NONRESIDENTIAL)
OFFICE
COMMERCIAL
HOTEL

+/- 300,000 SF
+/- 50,000 SF
200 KEYS

LEGEND

TREE PROTECTION AREA

EXISTING SPECIMEN TREE

LIMITS OF DISTURBANCE

0' 30' 60' 120' NORTH

ENGINEERING PROVIDED BY:
RYAN MCMASTER
KIMLEY-HORN
214 OCEANSIDE DRIVE
SUITE 202
NASHVILLE, TN 37204
(615) 564-2876
ryan.mcmaster@kimley-horn.com

APPLICANT:
JOHN HAAS
EDGE
210 12TH AVE. SOUTH
SUITE 202
NASHVILLE, TN 37203
(615) 250-8154
jhaas@edgela.com

DEVELOPER:
KHRIS PASCARELLA
CRESCENT COMMUNITIES
205 POWELL AVENUE
BRENTWOOD, TN 37027
(615) 312-8242
kpascarella@pearlstreetpartners.com

CONSULTANTS

SEAL

PROJECT TITLE

CLIENT

PROJECT NO. COF #6305
Date 12/12/16

Revisions
1. PER CITY COMMENTS 01.05.17

Sheet Title

OVERALL
DEVELOPMENT
PLAN

Sheet Number

C 2.0

IMPACT STATEMENT NOTES:
1. FROM THIS SITE, IT IS APPROXIMATELY 1.5 MILES TO FIRE STATION 6 ON COOL SPRINGS
BOULEVARD AND 5 MILES TO THE CITY POLICE DEPARTMENT LOCATED ON COLUMBIA
AVENUE.

2. THE NEAREST PARK AND RECREATIONAL FACILITIES ARE LOCATED APPROXIMATELY 0.5
MILES EAST OF THE DEVELOPMENT ON MCEWEN DRIVE (LIBERTY PARK). CHEEK PARK AND THE
WILLIAMSON COUNTY RECREATION CENTER ARE APPROXIMATELY 5 MILES FROM THE
PROPOSED DEVELOPMENT.

3. THIS DEVELOPMENT WILL RESULT IN AN INCREASE OF 345 MULTI-FAMILY & TOWNHOME
UNITS. BASED ON AN AVERAGE OF 0.10 SCHOOL AGE STUDENTS PER
MULTI-FAMILY/TOWNHOME HOUSEHOLD, THIS WILL INCREASE THE CURRENT STUDENT
SCHOOL POPULATION BY A TOTAL OF ±104 STUDENTS WITHIN THE FOLLOWING CATEGORIES:
KENROSE ELEMENTARY (34 STUDENTS), SUNSET MIDDLE (34 STUDENTS), CENTENNIAL HIGH
(34 STUDENTS).

4. WATER IS PROVIDED BY MALLORY VALLEY UTILITY DISTRICT VIA EXISTING 10" & 18" MAINS
SURROUNDING THE SITE. WATER AVAILABILITY OF APPROXIMATELY 1160 SFUE HAS BEEN
CONFIRMED BY MVUD FOR THIS DEVELOPMENT.

5. SANITARY SEWER WILL BE PROVIDED BY THE CITY OF FRANKLIN VIA EXISTING SEWER
INFRASTRUCTURE ALONG EAST MCEWEN DRIVE AND CAROTHERS PARKWAY. THE CITY OF
FRANKLIN HAS APPROVED THE ADDITION OF 1160 SFUE FOR THE DEVELOPMENT.

6. REFUSE COLLECTION FOR THE DEVELOPMENT SHALL BE PROVIDED BY PRIVATE COLLECTION.

NOTES:

- DEVELOPER TO RETAIN ALL MINERAL RIGHTS.
- NO STRUCTURES CURRENTLY EXIST ON SITE.
- THERE ARE NO HISTORIC STRUCTURES WITHIN 500' OF THE SITE

0.60 ACRE R.O.W. RESERVATION PER THE HYBRID
EXHIBITS WITHIN THE CAROTHERS INTEGRATED
GROWTH PLAN

ROW TO BE RESERVED AND DEDICATED VIA FINAL
SUBDIVISION PLAT AFTER SITE PLAN APPROVAL

SOUTH PRONG
SPENCER CREEK

STREAM BUFFER NOTE:
THERE SHALL BE NO MOVING, CLEARING, GRADING,
CONSTRUCTION, STORAGE, OR DISTURBANCE OF VEGETATION
IN RIPARIAN BUFFERS EXCEPT AS PERMITTED BY THE CITY
ENGINEER, OR HIS DESIGNEE.

TRANSIT STOP

FORMAL
OPEN
SPACE
+/- 1.20
ACRES

TREE
PROTECTION
AREA, TYP.

PRIVATE TRASH
SERVICE AREA

FFO OVERLAY LIMITS

FO OVERLAY LIMITS

FLOODWAY

FWD DISTRICT LIMITS

FWD DISTRICT LIMITS

CAROTHERS PARKWAY

CAROTHERS PARKWAY

CAROTHERS PARKWAY

CAROTHERS PARKWAY

CAROTHERS PARKWAY

CAROTHERS PARKWAY

CAROTHERS PARKWAY



ELEVATION 1 BUILDING F
SCALE: 1" = 20'

BUILDING A

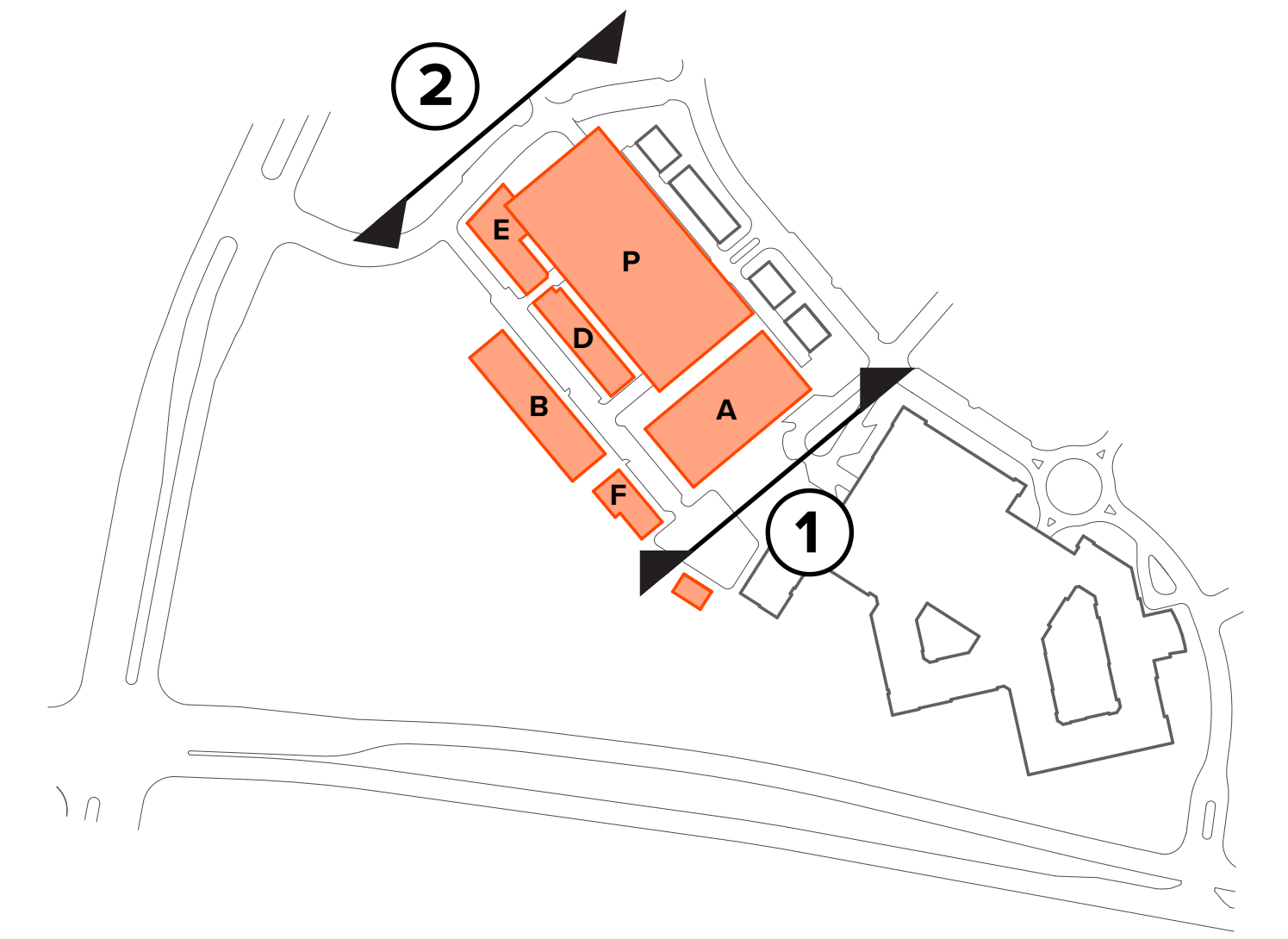


ELEVATION 2
SCALE: 1" = 20'

BUILDING P

BUILDING E

BUILDING B



BUILDING MATERIALS TO INCLUDE:
PRECAST CONCRETE, CONCRETE, NATURAL STONE
CAST STONE, MASONRY (BRICK AND CMU) CEMENTITIOUS PANELS
CURTAIN WALL AND STOREFRONT GLASS, STUCCO/ EIFS, WOOD

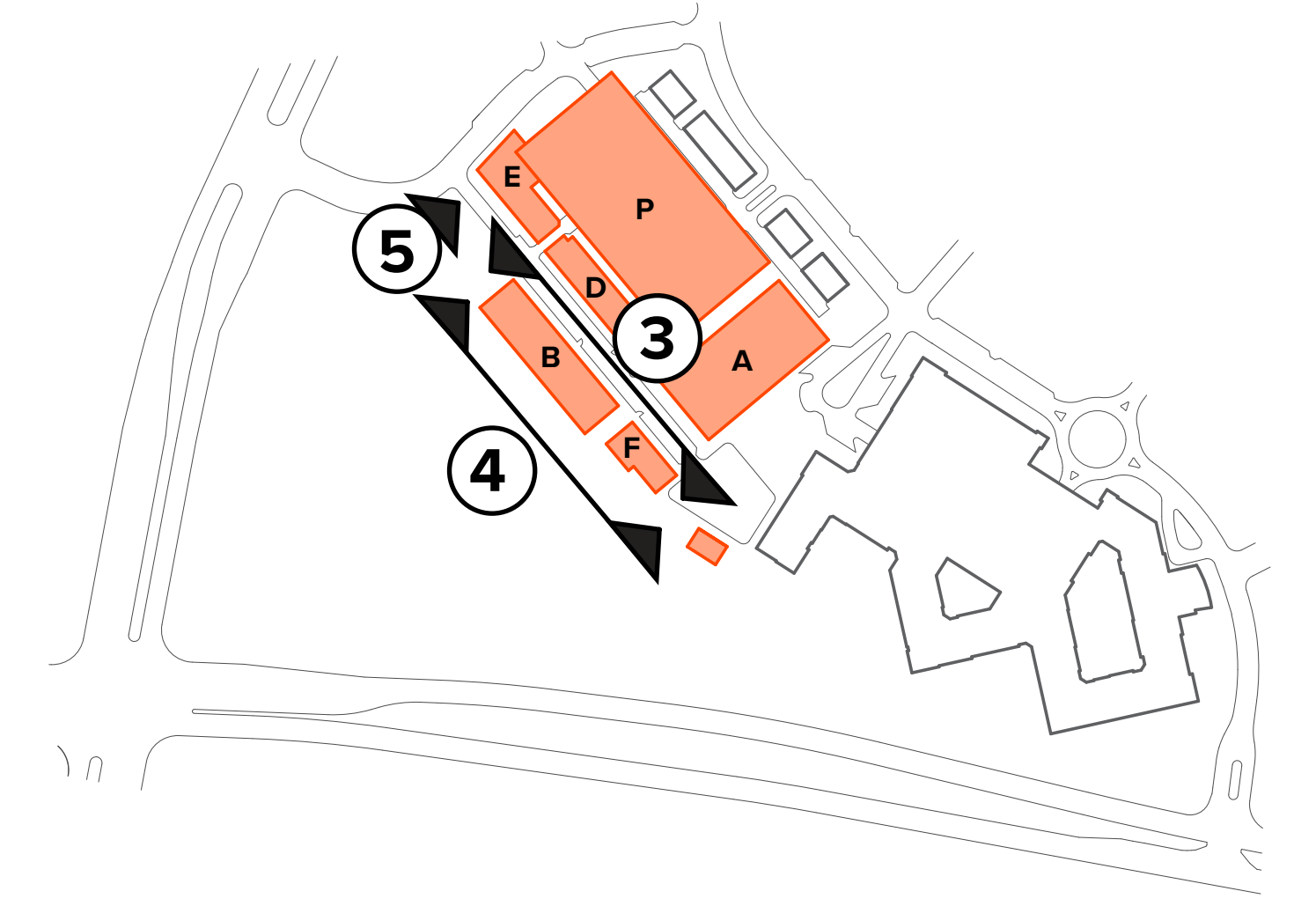
NOTE:
ELEVATIONS DEPICTED ARE SCHEMATIC
REPRESENTATIONS ONLY AND REPRESENT
DESIGN INTENT. DETAILED ELEVATIONS WITH
MATERIAL SELECTIONS SHALL BE SUBMITTED
AT SITE PLAN

OFFICE, RETAIL &
GARAGE ELEVATIONS
A1



ELEVATION 3
SCALE: 1" = 20'

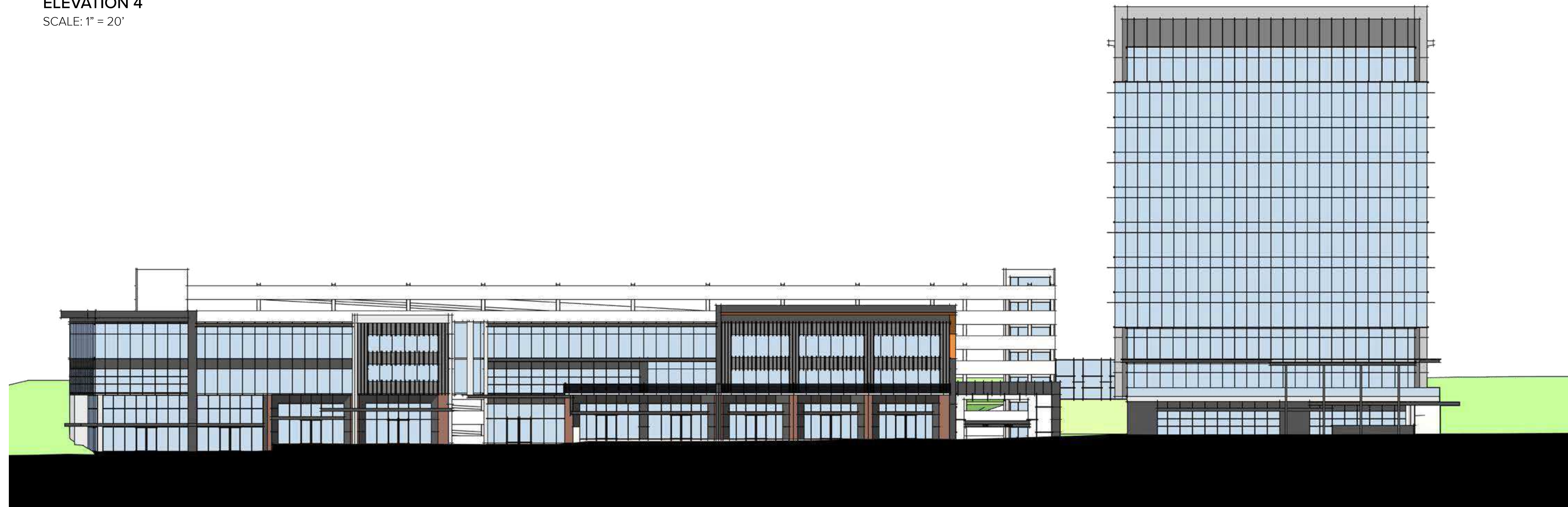
BUILDING B



ELEVATION 4
SCALE: 1" = 20'

BUILDING B

BUILDING F



ELEVATION 5
SCALE: 1" = 20'

BUILDING E

BUILDING D

BUILDING A

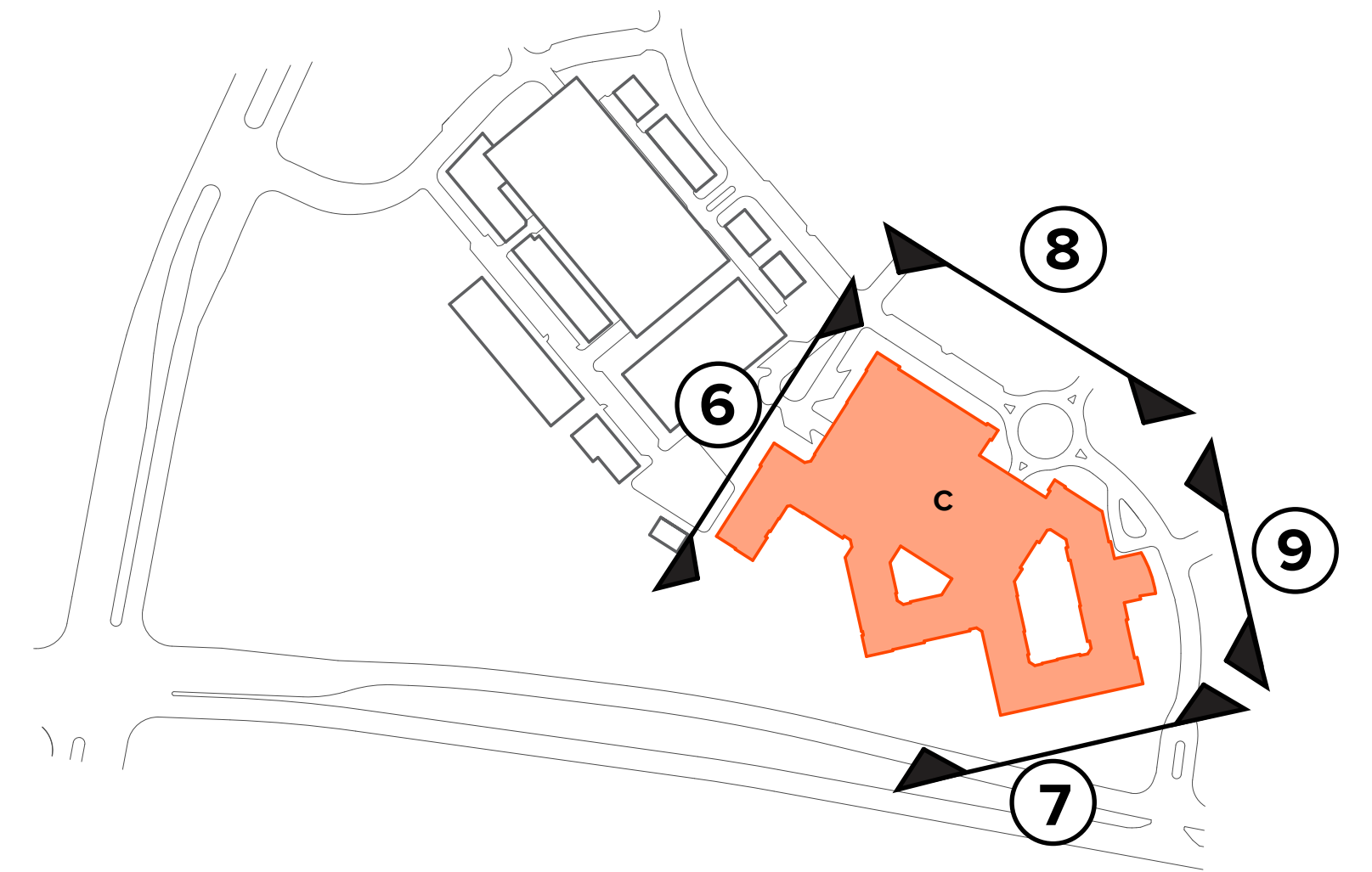
BUILDING MATERIALS TO INCLUDE:
PRECAST CONCRETE, CONCRETE, NATURAL STONE
CAST STONE, MASONRY (BRICK AND CMU) CEMENTITIOUS PANELS
CURTAIN WALL AND STOREFRONT GLASS, STUCCO/ EIFS, WOOD

NOTE:
ELEVATIONS DEPICTED ARE SCHEMATIC
REPRESENTATIONS ONLY AND REPRESENT
DESIGN INTENT. DETAILED ELEVATIONS WITH
MATERIAL SELECTIONS SHALL BE SUBMITTED
AT SITE PLAN

RETAIL, OFFICE &
HOTEL ELEVATIONS
A2



ELEVATION 6
SCALE: 1" = 20'



ELEVATION 7
SCALE: 1" = 20'



ELEVATION 8
SCALE: 1" = 20'



ELEVATION 9
SCALE: 1" = 20'

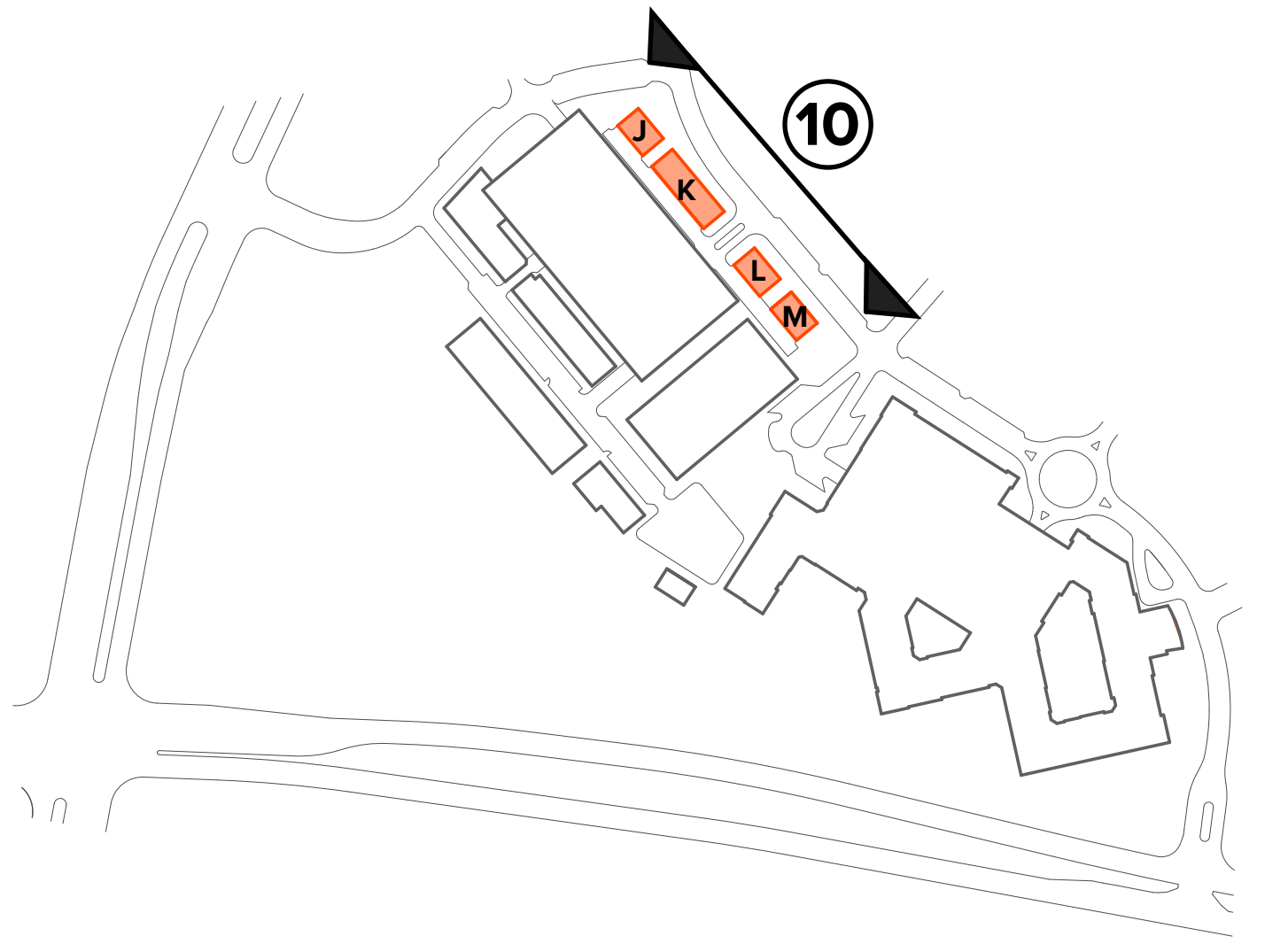
BUILDING MATERIALS TO INCLUDE:
STUCCO, METAL PANEL, CEMENTITIOUS LAP SIDING, CEMENTITIOUS PANELS

NOTE:
ELEVATIONS DEPICTED ARE SCHEMATIC
REPRESENTATIONS ONLY AND REPRESENT
DESIGN INTENT. DETAILED ELEVATIONS WITH
MATERIAL SELECTIONS SHALL BE SUBMITTED
AT SITE PLAN

**MUTI FAMILY
ELEVATIONS
A3**



ELEVATION 10
SCALE: 1" = 20'



BUILDING MATERIALS TO INCLUDE:
STUCCO, METAL PANEL, CEMENTITIOUS LAP SIDING, CEMENTITIOUS PANELS

NOTE:
ELEVATIONS DEPICTED ARE SCHEMATIC
REPRESENTATIONS ONLY AND REPRESENT
DESIGN INTENT. DETAILED ELEVATIONS WITH
MATERIAL SELECTIONS SHALL BE SUBMITTED
AT SITE PLAN

**TOWNHOME
ELEVATIONS
A4**

F i s c h b a c h
Transportation Group, LLC
Traffic Engineering and Planning

Traffic Impact Study

Crescent Resources Centre (Bigby)
Carothers Parkway and E. McEwen Drive
Franklin, TN

Prepared November 2016
For Crescent Communities

FTG, LLC
P.O. Box 682736
Franklin, TN 37068
(615) 771-8022 phone
Gillian@FTGtraffic.com

Traffic Impact Study

Crescent Resources Centre (Bigby) Carothers Parkway and E. McEwen Drive Franklin, Tennessee

Prepared November 2016

PREPARED FOR:

Crescent Communities, LLC
227 W. Trade St, Suite 1000
Charlotte, NC 28202

PREPARED BY:

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FTG Project Number: 10765



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1. INTRODUCTION

This traffic study has been prepared in order to identify the traffic impacts of a mixed-use development that is proposed to be constructed in the northeast quadrant of the intersection of E. McEwen Drive and Carothers Parkway in Franklin, Tennessee. Specifically, the project site is bounded by E. McEwen Drive, Carothers Parkway, Pacific Drive, and Resource Parkway.

For the purposes of this study, existing and background traffic volumes were established, and capacity analyses were conducted for these conditions. Also, trip generation calculations were performed, and the trips which are expected to be generated by the proposed project were distributed to the roadway system and added to the background traffic volumes. The roadways and intersections which provide access to the site were then re-evaluated to determine the traffic impacts of the proposed project. Access needs for the project were evaluated, and the necessary roadway and/or traffic control improvements were identified. This report presents the results of these analyses and the subsequent recommendations.

It is important to note that the scope of this Traffic Impact Study was provided by the City of Franklin Engineering Department and their third-party private consultant, Volkert, Inc. The approved scope is included in in [Appendix A](#).

2. PROJECT DESCRIPTION

The location of the proposed project is shown in [Figure 1](#). As shown, the project site is located in the northeast quadrant of the intersection of E. McEwen Drive and Carothers Parkway in Franklin, Tennessee. Specifically, the project site is bounded by E. McEwen Drive, Carothers Parkway, Pacific Drive, and Resource Parkway.

The current project site plan is shown in [Figure 2](#). As shown, the proposed plan includes the following land uses:

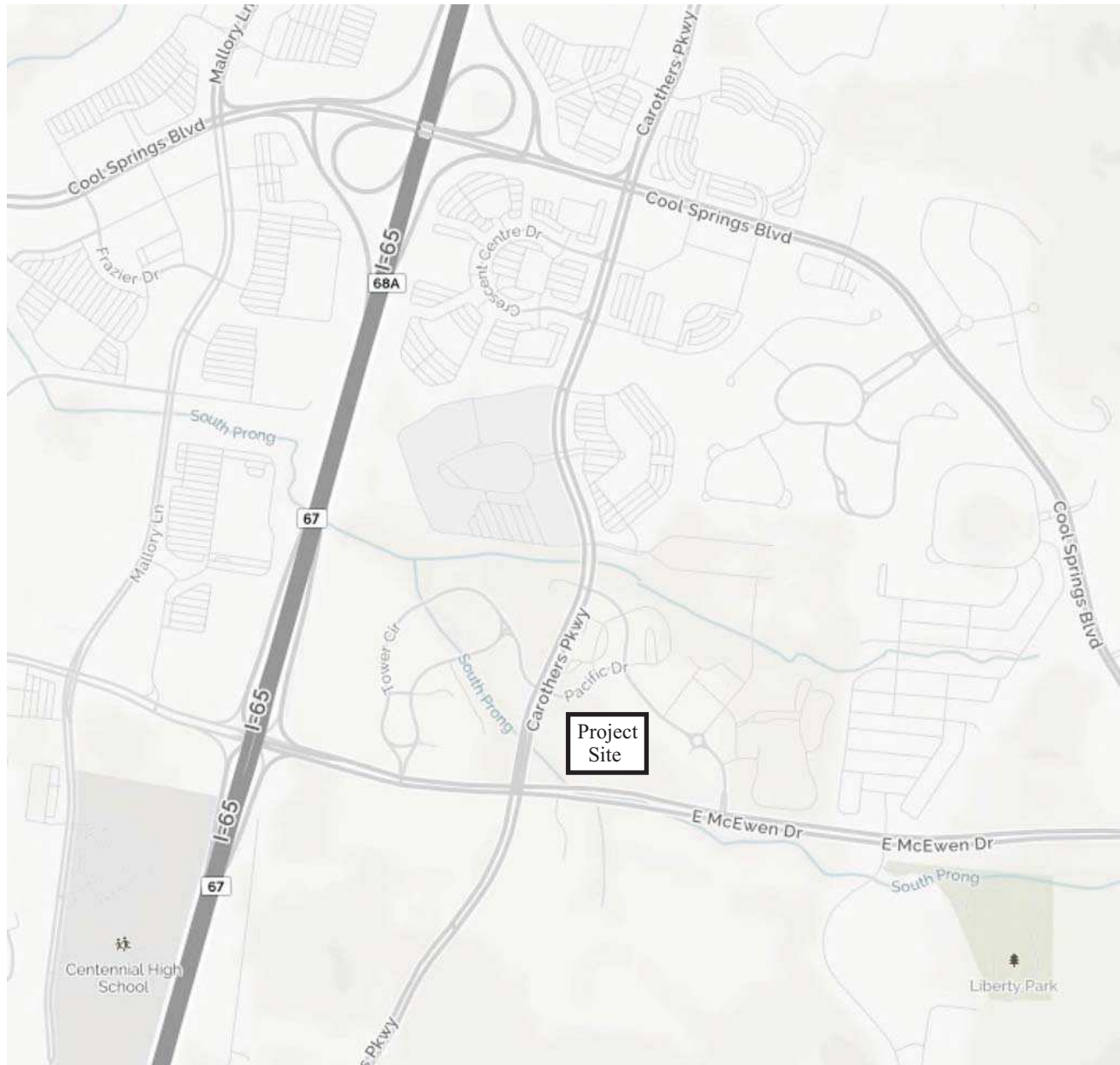
- 325 apartments,
- 15 townhomes,
- 300,000 sq.ft. of office space
- A hotel with 200 rooms
- 50,000 sq.ft. of specialty retail space

Access to the site will be provided by Pacific Drive and Resource Drive, as shown in the site plan.

In large part, economic and market considerations will dictate the pace and timing with which the proposed project is actually completed. The analyses conducted within this study are based on the estimation that the entire project will be completed within six years.

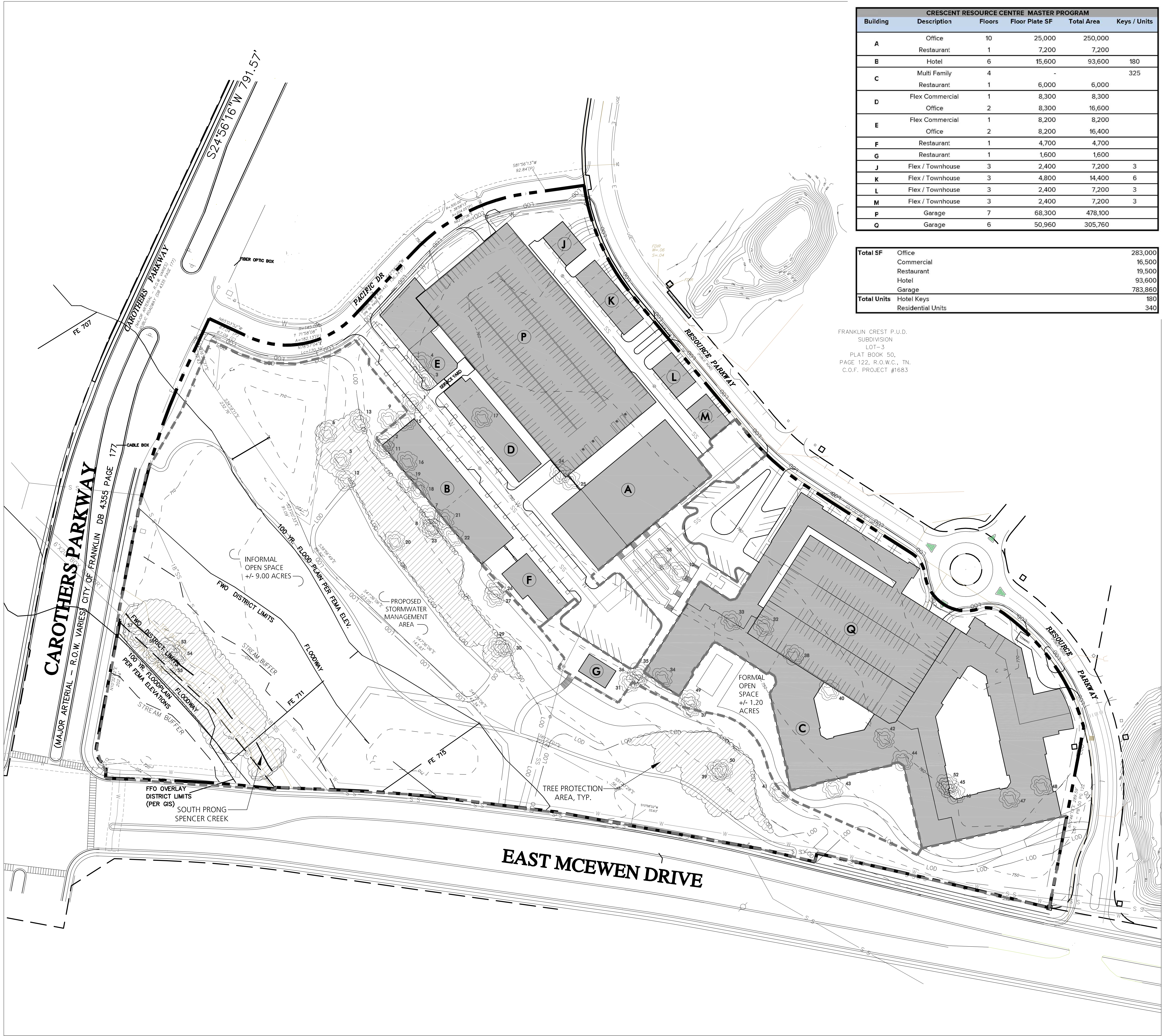
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F i s c h b a c h
Transportation Group, LLC
Traffic Engineering and Planning



No Scale

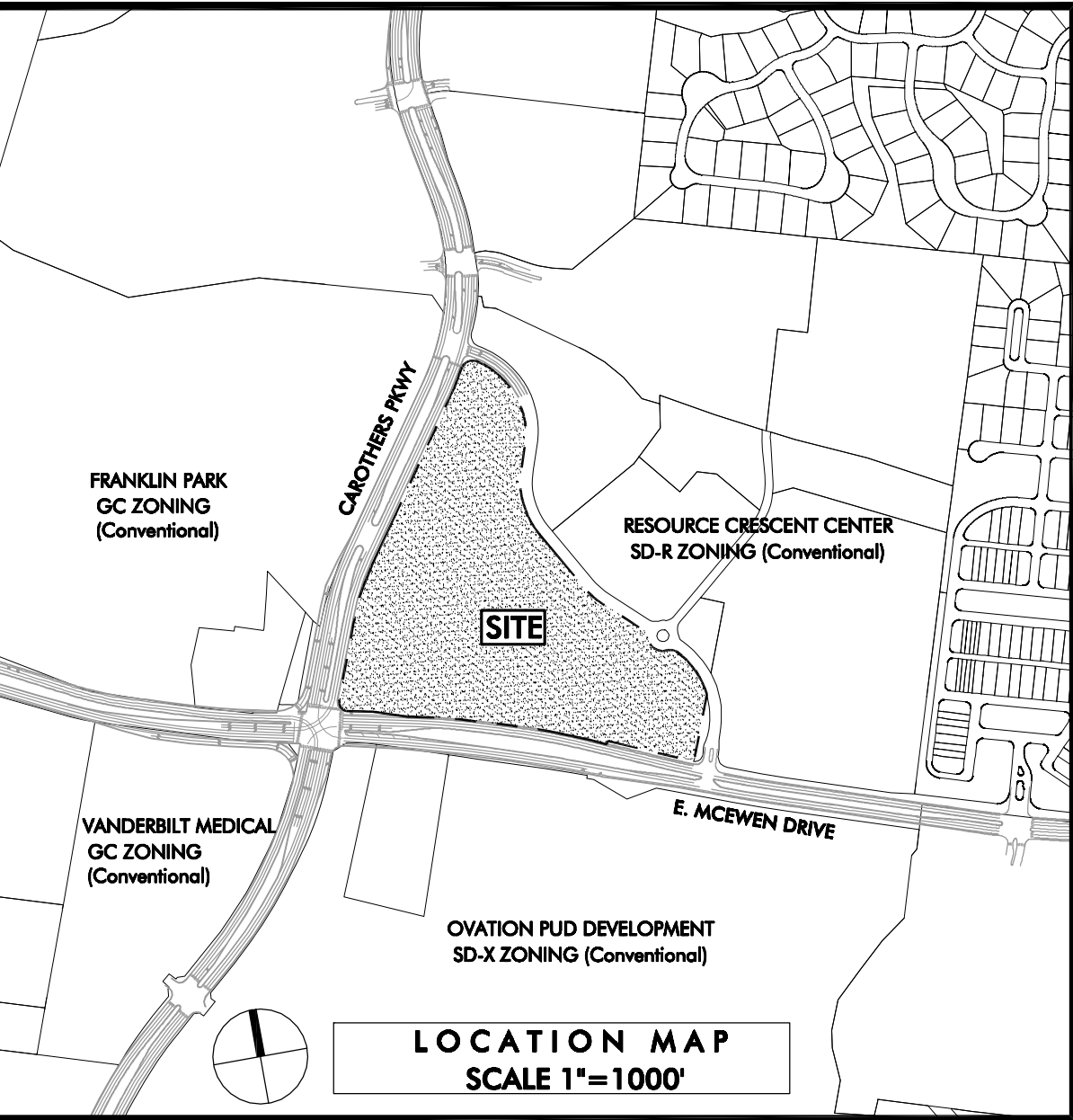
Figure 1.
Location of the Project Site



CRESCENT RESOURCE CENTRE MASTER PROGRAM					
Building	Description	Floors	Floor Plate SF	Total Area	Keys / Units
A	Office	10	25,000	250,000	
	Restaurant	1	7,200	7,200	
B	Hotel	6	15,600	93,600	180
C	Multi Family	4	-	-	325
	Restaurant	1	6,000	6,000	
D	Flex Commercial	1	8,300	8,300	
	Office	2	8,300	16,600	
E	Flex Commercial	1	8,200	8,200	
	Office	2	8,200	16,400	
F	Restaurant	1	4,700	4,700	
G	Restaurant	1	1,600	1,600	
J	Flex / Townhouse	3	2,400	7,200	3
K	Flex / Townhouse	3	4,800	14,400	6
L	Flex / Townhouse	3	2,400	7,200	3
M	Flex / Townhouse	3	2,400	7,200	3
P	Garage	7	68,300	478,100	
Q	Garage	6	50,960	305,760	

Total SF	Office	283,000
	Commercial	16,500
	Restaurant	19,500
	Hotel	93,600
Total Units	Garage	783,860
	Hotel Keys	180
	Residential Units	340

FRANKLIN CREST P.U.D.
SUBDIVISION
LOT-3
PLAT BOOK 50,
PAGE 122, R.O.W.C., TN.
C.O.F. PROJECT #1683



SITE DATA	
SUBDIVISION/DEVELOPMENT	CRESCENT RESOURCE CENTRE
EXISTING ZONING	GC - GENERAL COMMERCIAL
MAP & PARCEL NUMBER	MAP 062, PARCELS 01417 & 01418
ADDRESS	CAROTHERS PARKWAY
PROPOSED ZONING	SD-X
CHARACTER AREA	MC EWEN
SPECIAL AREA	4
OTHER APPLICABLE OVERLAYS	FLOODWAY FRINGE OVERLAY (FFO) FLOODWAY OVERLAY DISTRICT (FWD)
DEVELOPMENT STANDARD	CONVENTIONAL
ACREAGE OF SITE	+/- 23.61 ACRES
EXISTING TREE CANOPY	+/- 7.48 ACRES (32% OF SITE)
MIN. AREA OF EXISTING TREE CANOPY TO PRESERVE	+/- 1.80 ACRES (24% OF EXISTING CANOPY)
AREA OF PRESERVED TREE CANOPY	+/- 1.35 ACRES (18% OF EXISTING CANOPY)

- NOTES:
- DEVELOPER TO RETAIN ALL MINERAL RIGHTS.
 - NO STRUCTURES CURRENTLY EXIST ON SITE
 - THERE ARE NO HISTORIC STRUCTURES WITHIN 500' OF THE SITE

FORMAL OPEN SPACE - REQUIRED	+/- 1.18 ACRES (5% OF GROSS DEVELOPMENT SIZE)
FORMAL OPEN SPACE - PROVIDED	+/- 1.20 ACRES (5% OF GROSS DEVELOPMENT SIZE)
INFORMAL OPEN SPACE - REQUIRED	NONE
INFORMAL OPEN SPACE - PROVIDED	+/- 9.00 ACRES (38% OF GROSS DEVELOPMENT SIZE)

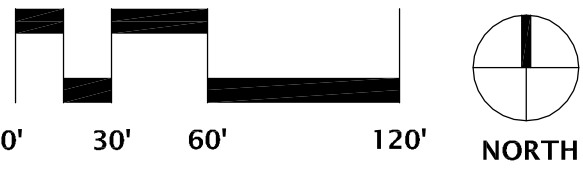
- APPLICANT IS REQUESTING A MODIFICATION OF STANDARDS FOR THE FOLLOWING:
- ITEM 5.2.4 (3) TREE CANOPY RETENTION REQUIREMENT = 24% OF EXISTING TREE CANOPY TO BE RETAINED
 - ITEM 5.3.5 (3)(b) (ii) RESIDENTIAL DEVELOPMENT REQUIREMENT = MAXIMUM LENGTH OF ANY ATTACHED RESIDENTIAL BUILDING SHALL BE 200 FEET.

LEGEND	
	TREE PROTECTION AREA
	EXISTING SPECIMEN TREE
	LIMITS OF DISTURBANCE

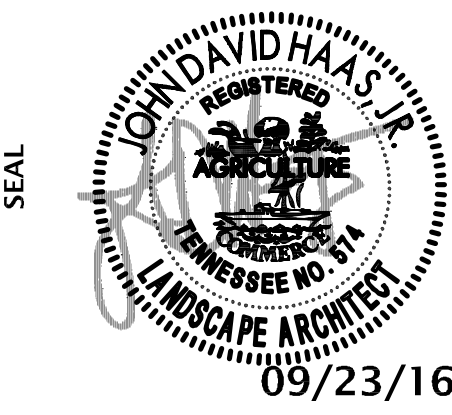
ENGINEERING PROVIDED BY:
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KIMLEY-HORN
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(615) 564-2876
ryan.mcmaster@kimley-horn.com

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jhaas@edgela.com

DEVELOPER:
CHRIS PASCARELLA
CRESCENT COMMUNITIES
205 POWELL AVENUE
BRIGHTWOOD, TN 37027
(615) 312-8242
kpascarella@pearlstreetpartners.com



CONSULTANTS



RESOURCE CENTRE - SECTION 1, LOTS 1 & 2
PUD DEVELOPMENT PLAN
PRE-APPLICATION
C.O.F. #XXXX
FRANKLIN, TN

CRESCENT
COMMUNITIES
LLC

PROJECT NO. 0X-XXX.X
Date 09/23/16
Revisions

Sheet Title

DEVELOPMENT
PLAN

Sheet Number

C 2.0

3. EXISTING TRAFFIC VOLUMES

In order to quantify the impact of the traffic that will be generated by the proposed project, peak hour traffic volumes were counted at the following locations:

1. McEwen Drive and the Ramps for I-65
2. E. McEwen Drive and Tower Circle
3. E. McEwen Drive and Carothers Parkway
4. E. McEwen Drive and Resource Parkway
5. Carothers Parkway and Tower Circle / Pacific Drive
6. Carothers Parkway and Apartments / Resource Parkway

This data was collected during the morning and evening peak hours on typical weekdays when schools were in session. The raw traffic volumes are included in [Appendix B](#). The existing laneage at the intersections within the study area is shown in [Figure 3](#), and the existing peak hour traffic volumes are shown in [Figure 4](#).

Using the existing peak hour traffic volumes shown in [Figure 4](#), capacity analyses were conducted for the intersections counted. Specifically, in order to identify current peak hour levels of operation within the study area, the capacity calculations were performed according to the methods outlined in the [Highway Capacity Manual 2010](#) (HCM2010). These analyses result in the determination of a Level of Service (LOS), which is a measure of evaluation is used to describe how well an intersection or roadway operates. LOS A represents free flow traffic operations, and LOS F suggests that the traffic demand exceeds the available capacity. In an urbanized area, LOS D is typically considered to be the minimum acceptable LOS. [Table 1](#) presents the descriptions of LOS for signalized intersections, and [Table 2](#) presents the descriptions of LOS for unsignalized intersections.

It is important to note that the City of Franklin Engineering Department provided the Synchro software files that were used to identify existing operations at the signalized intersections within the study area. Specifically, the files were updated to include the most-recent traffic volumes.

The results of the capacity analyses for the existing peak hour traffic volumes are shown in [Table 3](#), and [Appendix C](#) includes the capacity analyses worksheets. In particular, the results of the analyses for the signalized intersections within the study area are as follows:

Intersection of McEwen Drive and the Ramps for I-65

This intersection operates acceptably during both peak hours. However, the eastbound, westbound, and northbound left turns operate at LOS E during the AM peak hour.

Intersection of E. McEwen Drive and Tower Circle

This intersection operates acceptably during both peak hours. However, the eastbound left turns operate at LOS E during the AM peak hour.

Intersection of E. McEwen Drive and Carothers Parkway

This intersection operates at LOS F during the AM peak hour and LOS C during the PM peak hour. During the AM peak hour, the eastbound left turns, in particular, operate with significant delays and vehicle queues. During the PM peak hour, the southbound through and right turn volumes are significant, and field observations indicate that these queues affect several intersections upstream on Carothers Parkway.

Intersection of Carothers Parkway and Tower Circle/Pacific Drive

This intersection operates at LOS B during both peak hours., and the vehicle delays and queues are relatively low.

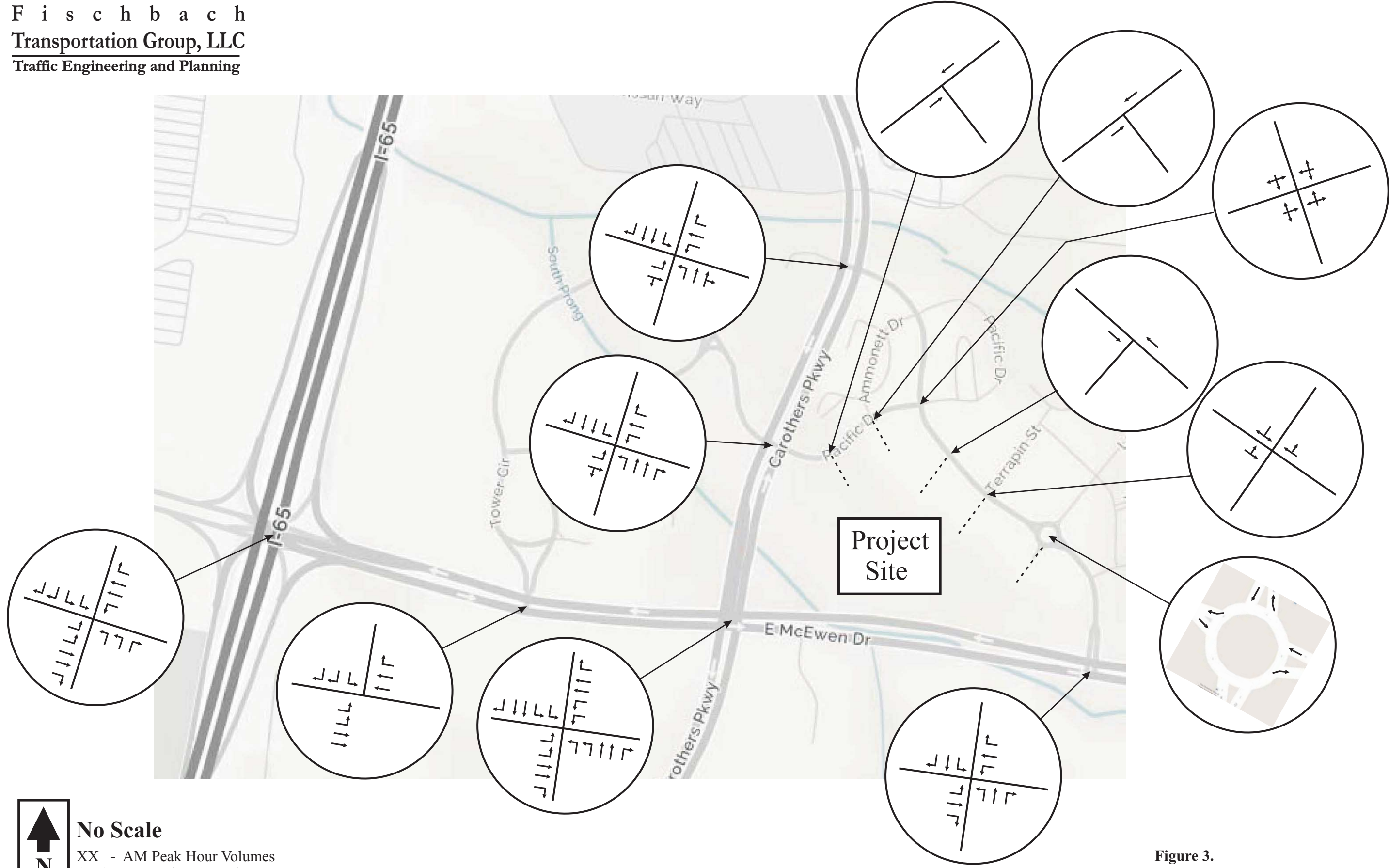


Figure 3.
Existing Laneage within the Study Area

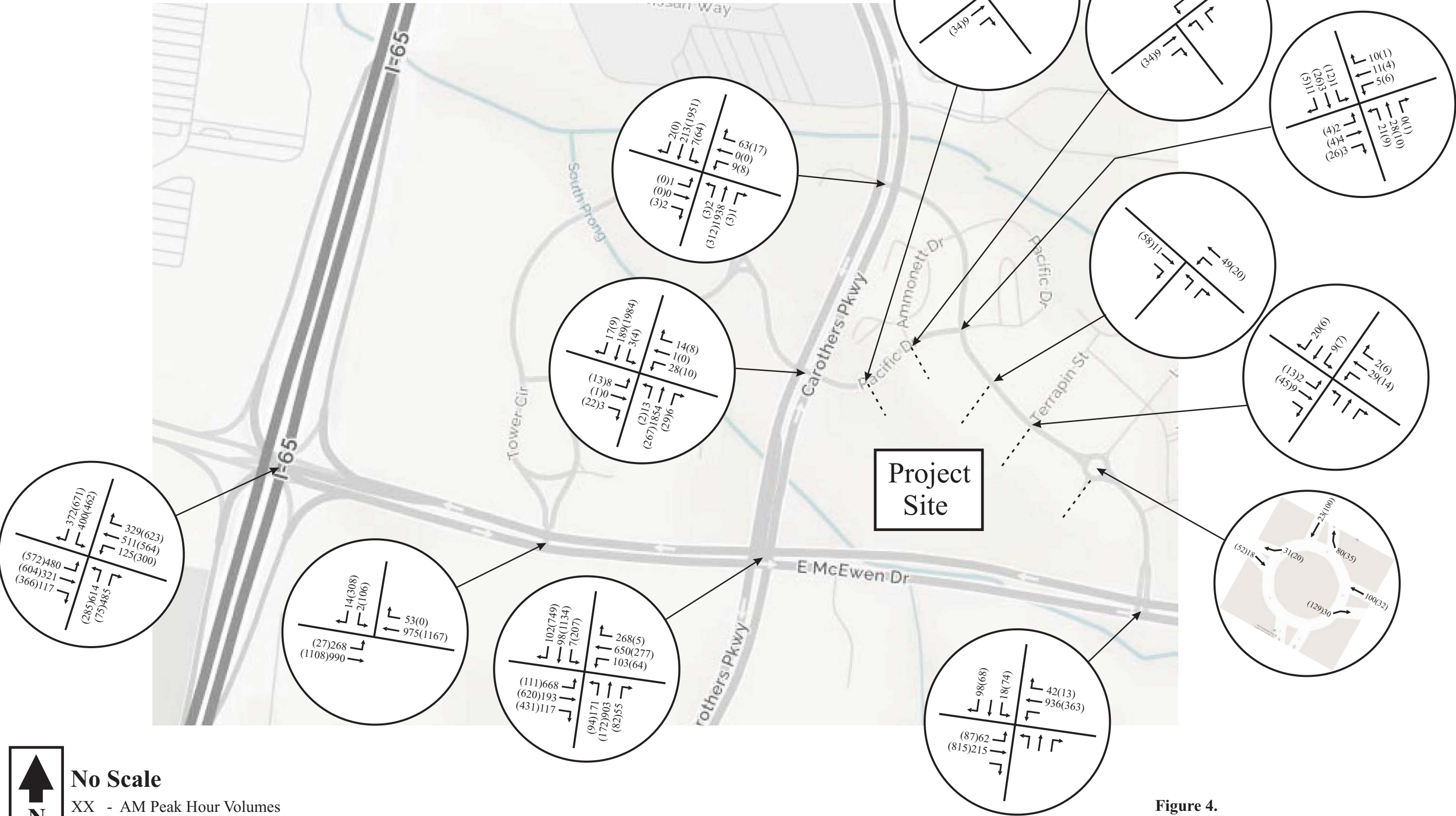


Figure 4.
Existing AM and PM Peak Hour Traffic Volumes

TABLE 1. DESCRIPTIONS OF LOS FOR SIGNALIZED INTERSECTIONS

Level of Service	Description	Average Control Delay per Vehicle (sec)
A	Operations with very low control delay. Progression is extremely favorable, and most vehicles arrive during the green phase. Most vehicles do not stop at all. Short cycle lengths may also contribute to low delay.	≤ 10
B	Operations with stable flows. This generally occurs with good progression, short cycle lengths, or both. More vehicles stop than for LOS A, causing higher levels of average delay.	> 10 and ≤ 20
C	Operations with stable flow. Occurs with fair progression, longer cycle lengths, or both. Individual cycle failures may begin to appear at this level. The number of vehicles stopping is significant, although many still pass through the intersection without stopping.	> 20 and ≤ 35
D	Approaching unstable flow. The influence of congestion becomes more noticeable. Longer delays may result from some combination of unfavorable progression, long cycle lengths, or high v/c ratios. Many vehicles stop.	> 35 and ≤ 55
E	Unstable flow. In many cases, this is considered to be the limit for acceptable delay. These high delays generally indicate poor progression, long cycle lengths, and high v/c ratios.	> 55 and ≤ 80
F	Unacceptable delay. This condition often occurs with oversaturation or with high v/c ratios. Poor progression and long cycle lengths may also cause such delay levels.	> 80

Source: Highway Capacity Manual 2010 (HCM2010)

TABLE 2. DESCRIPTIONS OF LOS FOR UNSIGNALIZED INTERSECTIONS

Level of Service	Description	Average Control Delay (sec/veh)
A	Minimal delay	≤ 10
B	Brief delay	> 10 and ≤ 15
C	Average delay	> 15 and ≤ 25
D	Significant delay	> 25 and ≤ 35
E	Long delay	> 35 and ≤ 50
F	Extreme delay	> 50

Source: Highway Capacity Manual 2010 (HCM 2010)

TABLE 3. EXISTING PEAK HOUR LEVELS OF SERVICE

INTERSECTION	TURNING MOVEMENT	AM PEAK HOUR		PM PEAK HOUR	
		LEVEL OF SERVICE	95 TH %-ILE QUEUE	LEVEL OF SERVICE	95 TH %-ILE QUEUE
McEwen Drive and Ramps for I-65 (signalized)	Overall Intersection	LOS C (35 sec/veh)		LOS C (24 sec/veh)	
E. McEwen Drive and Tower Drive (signalized)	Overall Intersection	LOS B (14 sec/veh)		LOS B (14 sec/veh)	
E. McEwen Drive and Carothers Parkway (signalized)	Overall Intersection	LOS F (96 sec/veh)		LOS C (35 sec/veh)	
E. McEwen Drive and Resource Parkway (unsignalized)	Eastbound Left Turns	LOS B	1 veh	LOS A	1 veh
	Southbound Left Turns	LOS C	1 veh	LOS C	1 veh
	Southbound Right Turns	LOS B	1 veh	LOS A	1 veh
Carothers Parkway and Tower Circle / Pacific Drive (signalized)	Overall Intersection	LOS B (12 sec/veh)		LOS B (14 sec/veh)	
Carothers Parkway and Resource Parkway (unsignalized)	Northbound Left Turns	LOS A	0 veh	LOS C	0 veh
	Southbound Left Turns	LOS C	0 veh	LOS A	1 veh
	Eastbound Left Turns	LOS D	1 veh	LOS F	0 veh
	Eastbound Thrus/Right Turns	LOS A	0 veh	LOS C	0 veh
	Westbound Left Turns	LOS F	1 veh	LOS D	1 veh
	Westbound Thrus	LOS A	0 veh	LOS A	0 veh
	Westbound Right Turns	LOS D	1 veh	LOS A	1 veh
Resource Parkway and Pacific Drive	Northbound Turning Movements	LOS A	1 veh	LOS A	1 veh

(unsignalized)	Southbound Turning Movements	LOS A	1 veh	LOS A	1 veh
	Eastbound Turning Movements	LOS A	1 veh	LOS A	1 veh
	Westbound Turning Movements	LOS A	1 veh	LOS A	1 veh
Resource Parkway and Terrapin Street (unsignalized)	Eastbound Left Turns / Thrus	LOS A	1 veh	LOS A	1 veh
	Southbound Left and Right Turns	LOS A	1 veh	LOS A	1 veh
Resource Parkway and Lemon Grass Drive (traffic circle)	Eastbound Approach	LOS A	1 veh	LOS A	1 veh
	Westbound Approach	LOS A	1 veh	LOS A	1 veh
	Southbound Approach	LOS A	1 veh	LOS A	1 veh

4. PROJECTION OF BACKGROUND TRAFFIC VOLUMES

It is important to note that the following projects have been approved for construction in the immediate vicinity of the project site:

1. Ovation

This project is under construction on the south side of E. McEwen Drive at Resource Parkway. In July 2013, RPM Transportation Consultants, LLC prepared traffic analyses for this project, and the peak hour traffic volumes generated by this project are shown in [Figure 5A](#). Also, it is important to note that a traffic signal will be installed at the intersection of E. McEwen Drive and Resource Parkway in conjunction with the Ovation project.

2. Greenway Center (Phase 2)

This project is planned for construction on the east side of Carothers Parkway and the northern terminus of Lemon Grass Drive. In November 2007, Wilbur Smith Associates prepared traffic analyses for this project, and the peak hour traffic volumes generated by this project are shown in [Figure 5B](#).

3. Franklin Park

This project is planned for construction on the west side of Carothers Parkway at Tower Circle and opposite Resource Parkway. In May 2012, CDM Smith prepared traffic analyses for this project, and the peak hour traffic volumes generated by this project are shown in [Figure 5C](#).

It is important to note that several other projects are under consideration for construction in the vicinity of the project site. Specifically, a mixed-use project called Franklin Summit may be constructed in the southeast quadrant of the intersection on McEwen Drive and the ramps for northbound I-65. However, to date, specific plans for this project have not been prepared, and so trip generation estimates and assignment of peak hour site-generated traffic volumes are not available. Therefore, when the Franklin Summit project progresses, the impacts of that project should be identified based on a specific site plan.

The peak hour traffic volumes shown in [Figures 5A, 5B, and 5C](#) were added to the existing traffic volumes in order to establish the background traffic volumes shown in [Figure 5D](#). Using these background peak hour traffic volumes, capacity analyses were conducted for the intersections within the study area. For these analyses, the following assumptions were made:

- A traffic signal will be installed at the intersection of E. McEwen Drive and Resource Parkway / Ovation.

- A traffic signal will be installed at the intersection of Carothers Parkway and Resource Parkway / apartments.
- All other existing infrastructure will be maintained and no additional improvements will be made.

The results of the capacity analyses for the background peak hour traffic volumes are shown in [Table 5](#), and [Appendix B](#) includes the capacity analyses worksheets. In particular, the results of the analyses for the signalized intersections within the study area are as follows:

Intersection of McEwen Drive and the Ramps for I-65

This intersection is expected to operate at LOS C during the AM peak hour and LOS F during the PM peak hour. During the AM peak hour, all of the left turns are expected to operate poorly. During the PM peak hour, several turning movements are expected to operate poorly, and the westbound right turns are expected to have significant queue lengths.

Intersection of E. McEwen Drive and Tower Circle

This intersection is expected to operate at LOS C during the AM peak hour and LOS F during the PM peak hour. During the AM peak hour, the eastbound and southbound left turns are expected to operate at LOS E. During the PM peak hour, several turning movements are expected to operate poorly, and the westbound throughs are expected to have significant queue lengths.

Intersection of E. McEwen Drive and Carothers Parkway

This intersection is expected to operate at LOS F during both peak hours. During the AM peak hour, all of the left turns, as well as the northbound throughs, are expected to operate poorly. The eastbound left turns, in particular, will have significant delays and vehicle queues. During the PM peak hour, the southbound through and right turn volumes will be significant, and these queues are expected to affect intersections upstream on Carothers Parkway.

Intersection of E. McEwen Drive and Resource Parkway

This intersection is expected to operate at LOS B during both peak hours., and the vehicle delays and queues are expected to remain relatively low.

Intersection of Carothers Parkway and Tower Circle/Pacific Drive

This intersection is expected to operate at LOS C during the AM peak hour and LOS F during the PM peak hour. During the PM peak hour, the eastbound left turns and the southbound throughs are expected to have significant queues, and these queues are expected to affect several intersections upstream on Carothers Parkway.

Intersection of Carothers Parkway and Resource Parkway

This intersection is expected to operate at LOS B during the AM peak hour and LOS C during the PM peak hour. During the AM peak hour, the southbound lefts are expected to operate poorly. During the PM peak hour, the southbound throughs are expected to have significant queues, and these queues are expected to affect intersections upstream on Carothers Parkway.



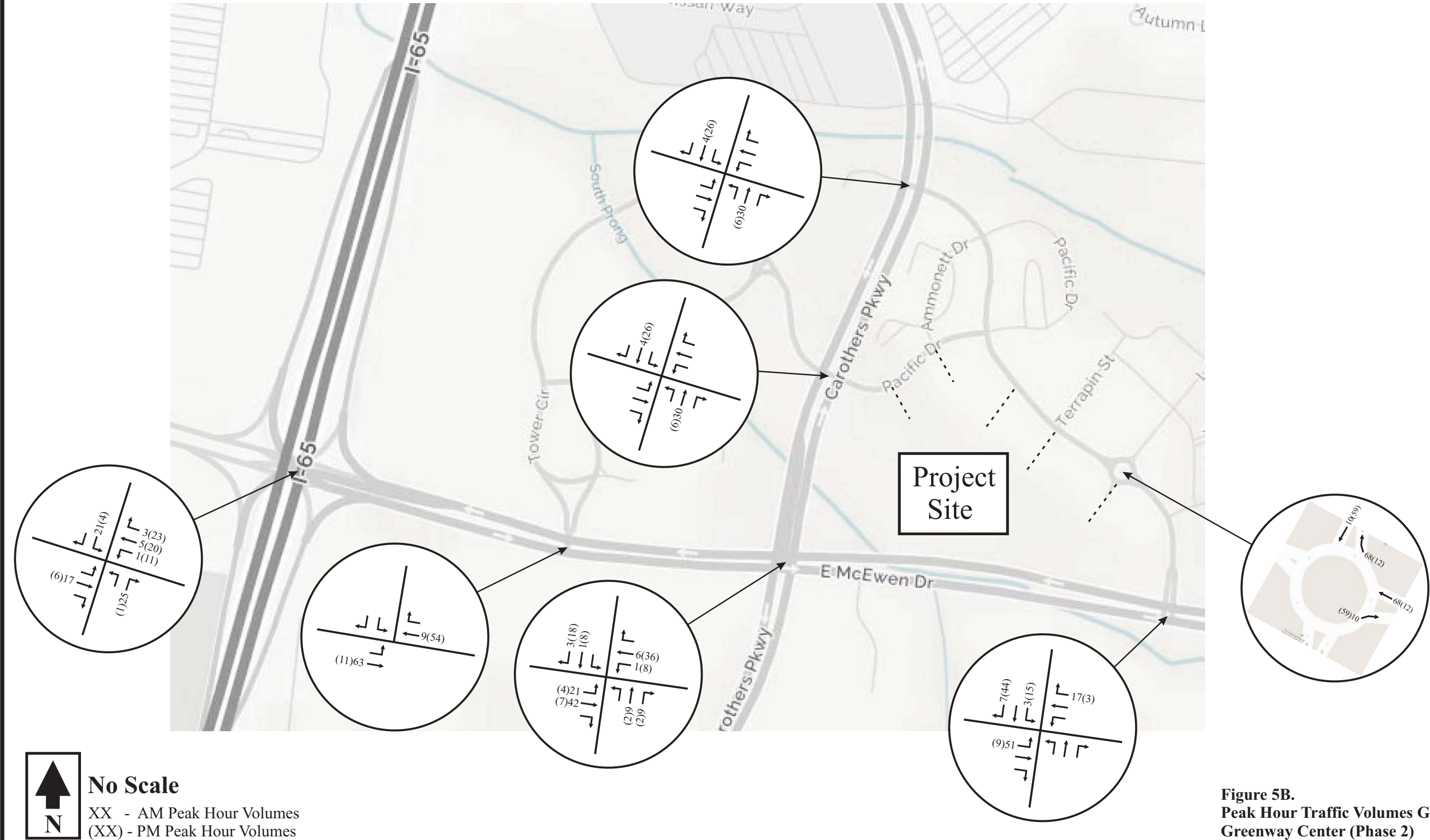


Figure 5B.
Peak Hour Traffic Volumes Generated by
Greenway Center (Phase 2)

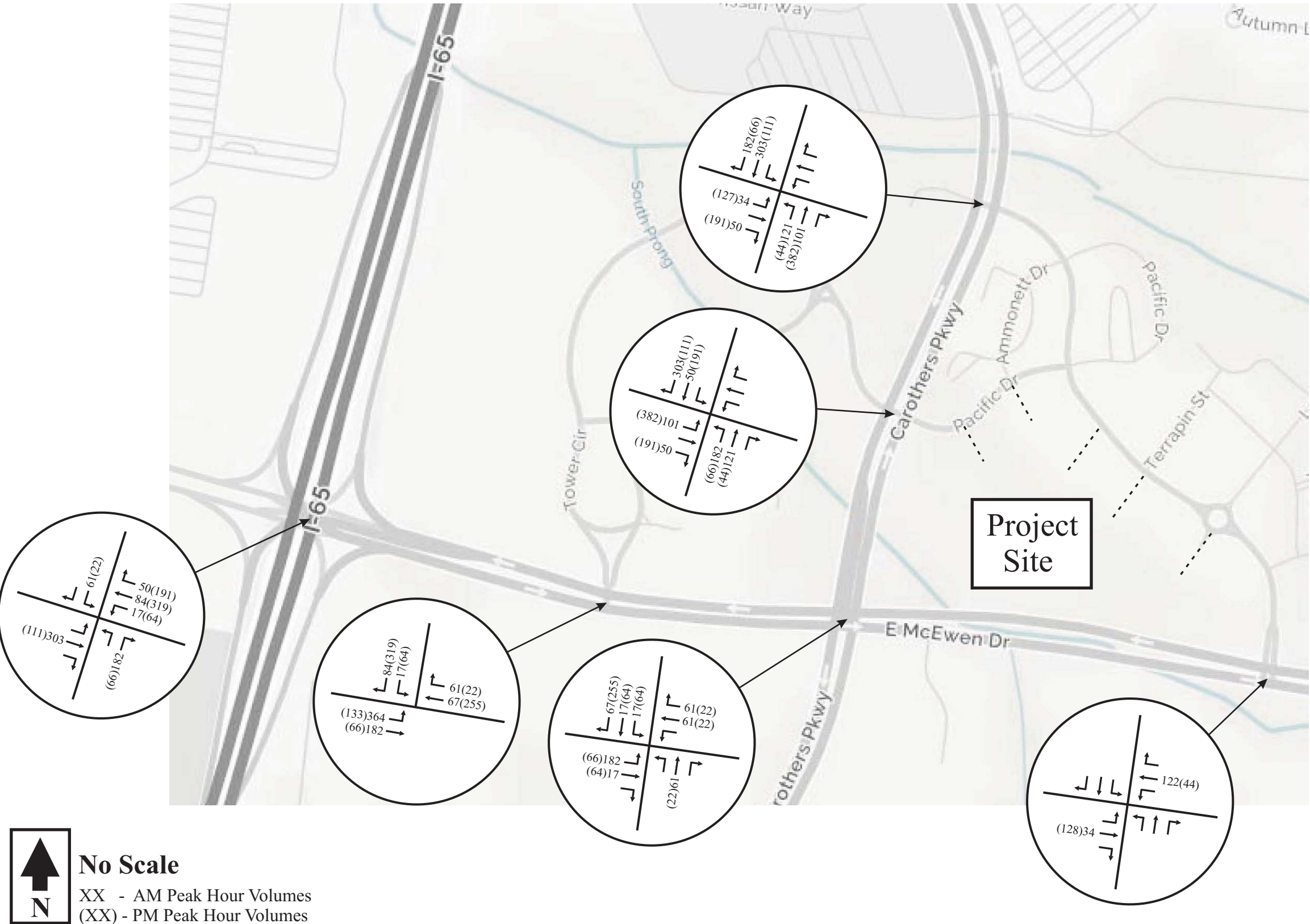


Figure 5C.
Peak Hour Traffic Volumes Generated by
Franklin Park

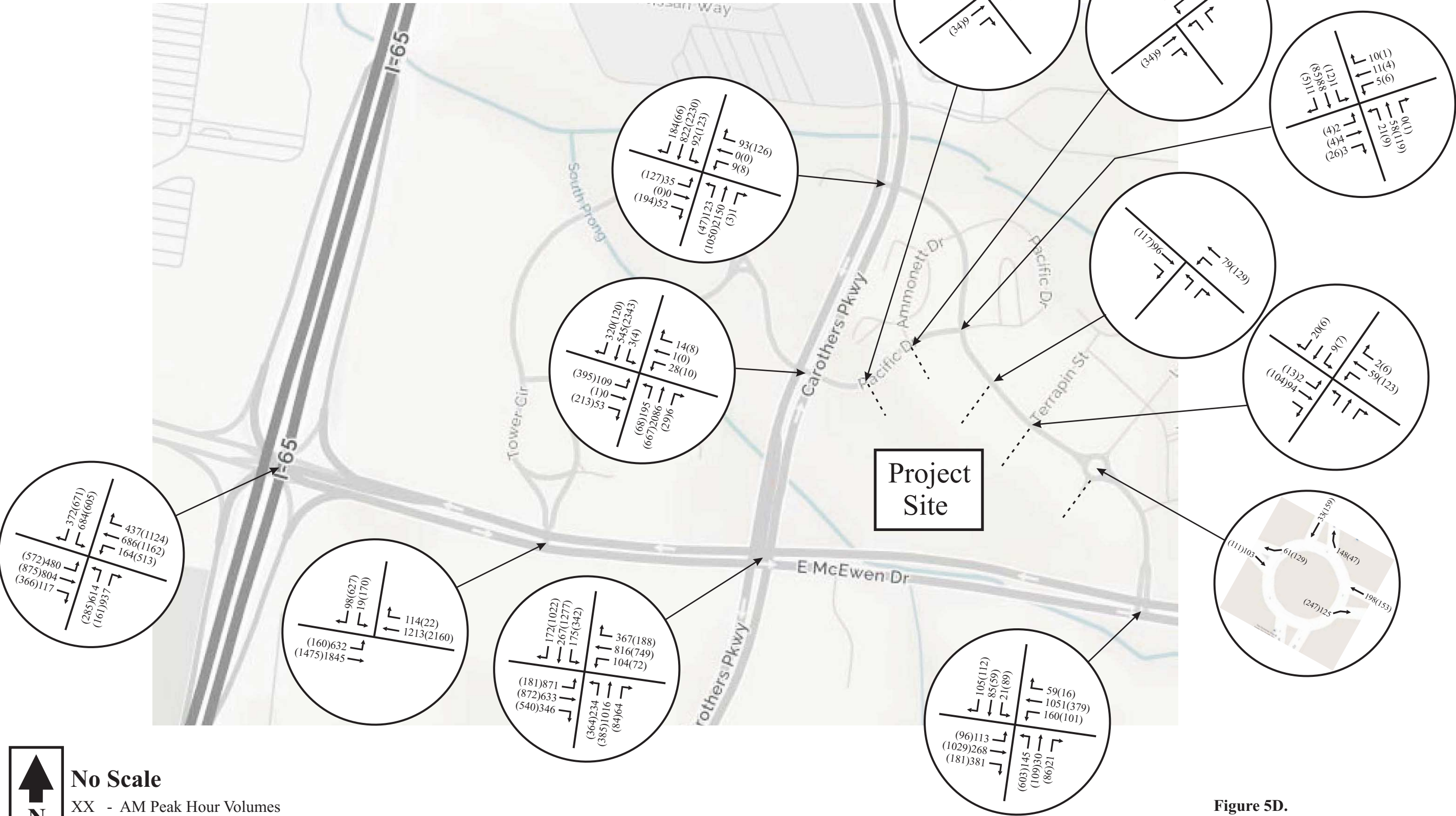


Figure 5D.
Background Peak Hour Traffic Volumes

TABLE 5. BACKGROUND PEAK HOUR LEVELS OF SERVICE

INTERSECTION	TURNING MOVEMENT	AM PEAK HOUR		PM PEAK HOUR	
		LEVEL OF SERVICE	95 TH %-ILE QUEUE	LEVEL OF SERVICE	95 TH %-ILE QUEUE
McEwen Drive and Ramps for I-65 (signalized)	Overall Intersection	LOS C (33 sec/veh)		LOS F (90 sec/veh)	
E. McEwen Drive and Tower Drive (signalized)	Overall Intersection	LOS C (21 sec/veh)		LOS F (160 sec/veh)	
E. McEwen Drive and Carothers Parkway (signalized)	Overall Intersection	LOS F (229 sec/veh)		LOS F (234 sec/veh)	
E. McEwen Drive and Resource Parkway (signalized)	Overall Intersection	LOS B (17 sec/veh)		LOS B (17 sec/veh)	
Carothers Parkway and Tower Circle / Pacific Drive (signalized)	Overall Intersection	LOS C (23 sec/veh)		LOS F (168 sec/veh)	
Carothers Parkway and Resource Parkway (signalized)	Overall Intersection	LOS B (17 sec/veh)		LOS C (28 sec/veh)	
Resource Parkway and Pacific Drive (unsignalized)	Northbound Turning Movements	LOS A	1 veh	LOS A	1 veh
	Southbound Turning Movements	LOS A	1 veh	LOS B	1 veh
	Eastbound Turning Movements	LOS A	1 veh	LOS A	1 veh
	Westbound Turning Movements	LOS A	1 veh	LOS A	1 veh
Resource Parkway and Terrapin Street (unsignalized)	Eastbound Left Turns / Thrus	LOS A	1 veh	LOS A	1 veh
	Southbound Left and Right Turns	LOS A	1 veh	LOS A	1 veh

Resource Parkway and Lemon Grass Drive (traffic circle)	Eastbound Approach	LOS A	1 veh	LOS A	1 veh
	Westbound Approach	LOS A	1 veh	LOS A	1 veh
	Southbound Approach	LOS A	1 veh	LOS A	1 veh

5. IMPACTS OF PROPOSED DEVELOPMENT

5.1 TRIP GENERATION

Trip generation calculations were conducted in order to identify how much traffic will be generated by the proposed project. Trip generation data for daily and peak hour trips were identified from Trip Generation, Ninth Edition, which was published by the Institute of Transportation Engineers (ITE) in 2012. [Table 6](#) presents the daily and peak hour trip generations for proposed project, and these calculations are included in [Appendix D](#).

TABLE 6. TRIP GENERATION FOR THE PROPOSED PROJECT

LAND USE	SIZE	DAILY TRAFFIC	GENERATED TRAFFIC			
			AM PEAK HOUR		PM PEAK HOUR	
			ENTER	EXIT	ENTER	EXIT
Multi-Family (LUC 220)	325 units	2,162	33	133	131	71
Townhomes (LUC 230)	15 homes	124	2	9	9	4
Office (LUC 710)	300,000 sq.ft.	3,026	406	55	70	344
Hotel (LUC 310)	200 rooms	1,784	78	56	69	71
Specialty Retail (LUC 826)	25,000 sq.ft.	2,176	164	178	62	79
TOTAL		9,272	683	431	341	569
TOTAL REDUCED 20% TO ACCOUNT FOR INTERNAL CAPTURE AND TRANSIT USAGE		7,418	546	345	273	455

Studies have shown that, typically, a portion of the trips generated by mixed-use developments are captured, or "pass-by" trips from the adjacent street system. However, for the purposes of this study, it was assumed that none of the peak hour traffic generated by the proposed project will be pass-by traffic.

Also, studies have shown that it is common for a portion of the trips generated by mixed-use developments are internal to the site. For example, a portion of the vehicles generated by one of the residential land uses will shop at one or more of the commercial land uses and/or work in the office space. Therefore, consideration was given to the methodology included in NCHRP Report 684, which is endorsed by the Institute of Transportation Engineers (ITE) for estimating internal capture within mixed-use developments. The worksheets are included in [Appendix D](#), and based on this information, it was assumed that the daily and peak hour traffic volumes can be reduced by 20% to account for internal, shared trips.

5.2 TRIP DISTRIBUTION AND TRAFFIC ASSIGNMENT

For the purposes of this study, it was estimated that the trips generated by the proposed project will access the project site according to the directional distribution shown in [Figure 6](#). It is important to note that these directional distributions were prepared with input and approval from the City of Franklin Engineering Department and their third-party private consultant. The development of these distributions was based on the following factors:

- existing land use characteristics,
- the directions of approach of the existing traffic,
- the access proposed for the project, and
- the locations of population centers in the area.

It is important to note that the distribution shown in [Figure 6](#) has been adjusted since a directional distribution was approved by the City of Franklin Engineering Department. These adjustments were made as the site plan was modified.

The peak hour trip generations and directional distribution were used to add the site-generated trips to the roadway system. [Figure 7](#) includes the peak hour traffic volumes that are expected to be generated by the proposed project.

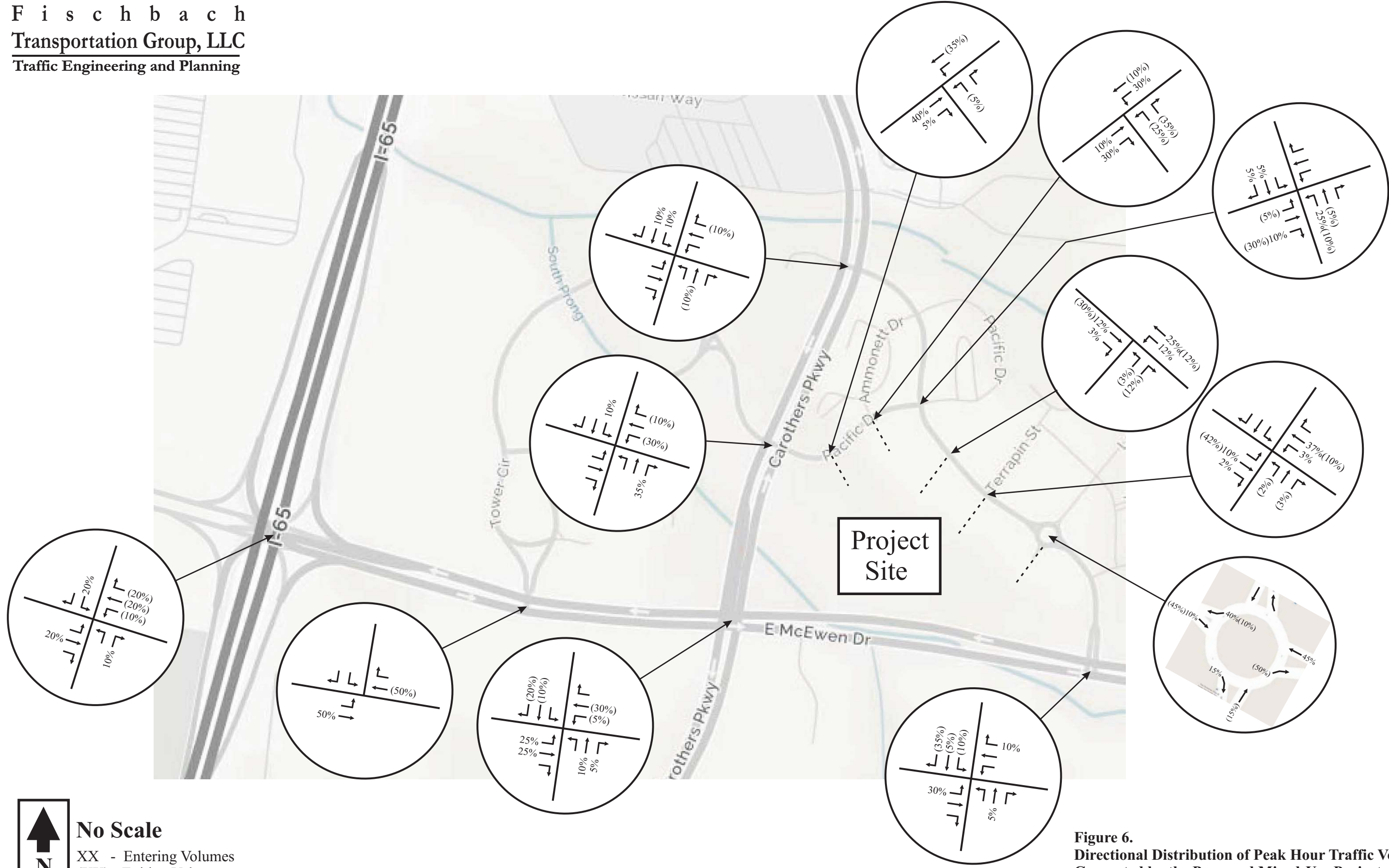


Figure 6.
Directional Distribution of Peak Hour Traffic Volumes
Generated by the Proposed Mixed-Use Project

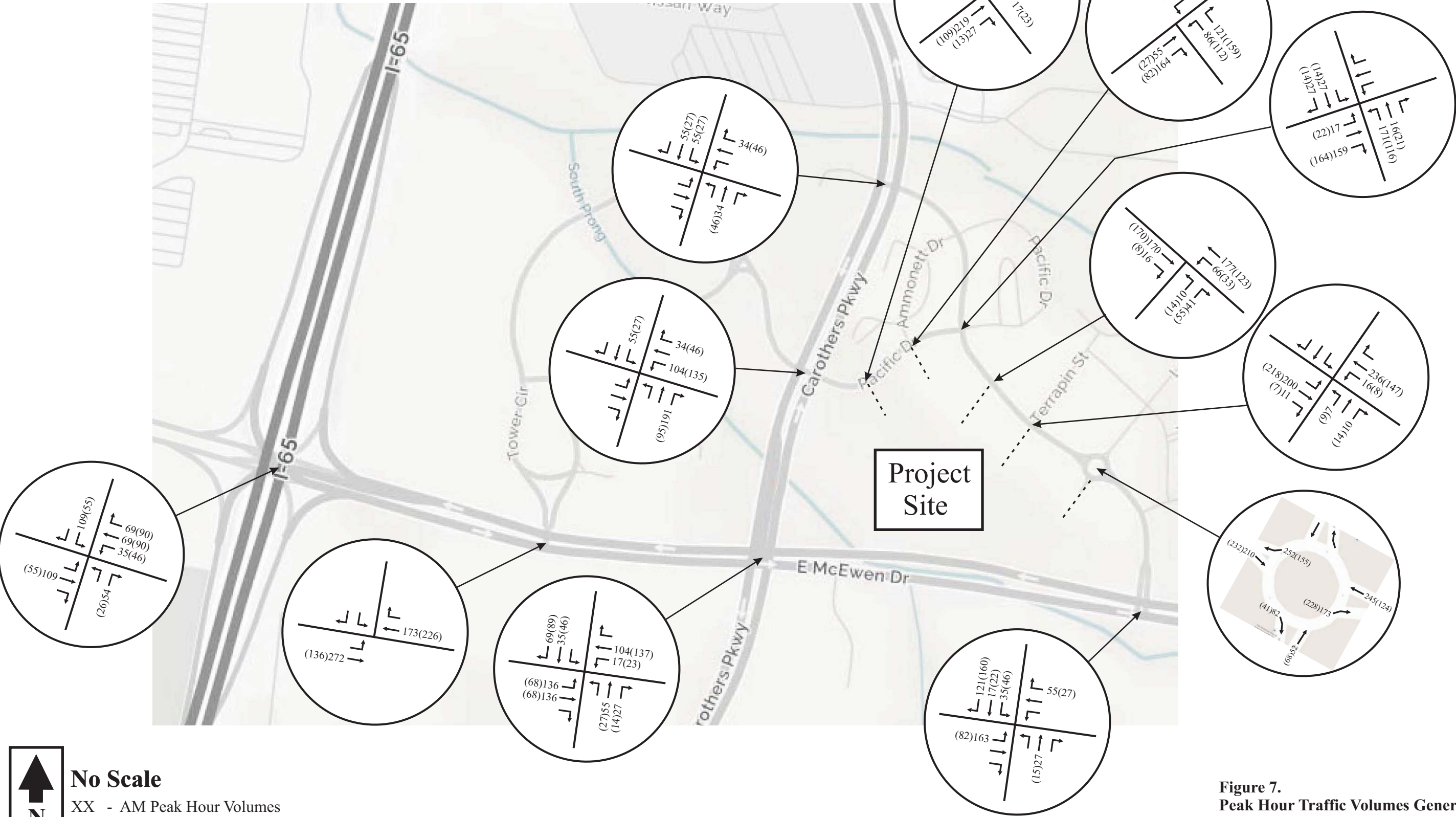


Figure 7.
Peak Hour Traffic Volumes Generated
by the Proposed Mixed-Use Project

5.3 CAPACITY ANALYSES

In order to identify the projected peak hour traffic volumes at the completion of the proposed project, the trips generated by the project were added to the background peak hour traffic volumes. The resulting peak hour volumes are shown in [Figure 8](#).

Using the total projected peak hour traffic volumes, capacity analyses were conducted in order to determine the impact of the project on the roadway system. Specifically, these capacity analyses were used to evaluate the need for roadway and traffic control improvements within the study area. For these analyses, it was assumed that all background laneage and traffic control will be maintained and no additional improvements will be provided.

The results of the capacity analyses for the total projected peak hour traffic volumes are shown in [Table 7](#), and [Appendix C](#) includes the capacity analyses worksheets. In particular, the results of the analyses for the signalized intersections within the study area are as follows:

Intersection of E. McEwen Drive and the Ramps for I-65

This intersection is expected to operate at LOS C during the AM peak hour and LOS F during the PM peak hour. During the AM peak hour, the left turns are expected to operate poorly. During the PM peak hour, several turning movements are expected to operate poorly, and the westbound right turns are expected to have significant queue lengths.

Intersection of E. McEwen Drive and Tower Circle

This intersection is expected to operate at LOS B during the AM peak hour and LOS F during the PM peak hour. During the AM peak hour, the eastbound and southbound left turns are expected to operate at LOS E. During the PM peak hour, several turning movements are expected to operate poorly, and the westbound throughs are expected to have significant queue lengths.

Intersection of E. McEwen Drive and Carothers Parkway

This intersection is expected to operate at LOS F during both peak hours. During the AM peak hour, all of the left turns, as well as the northbound throughs, are expected to operate poorly. The eastbound left turns, in particular, will have significant delays and vehicle queues. During the PM peak hour, the southbound through and right turn volumes will be significant, and these queues are expected to affect intersections upstream on Carothers Parkway.

Intersection of McEwen Drive and Resource Parkway

This intersection is expected to operate at LOS C during both peak hours., and the vehicle delays and queues are expected to remain relatively low.

Intersection of Carothers Parkway and Tower Circle/Pacific Drive

This intersection is expected to operate at LOS D during the AM peak hour and LOS F during the PM peak hour. During the PM peak hour, the eastbound left turns and the southbound

throughs are expected to have significant queues, and these queues are expected to affect several intersections upstream on Carothers Parkway.

Intersection of Carothers Parkway and Resource Parkway

This intersection is expected to operate at LOS D during the AM peak hour and LOS C during the PM peak hour. During the AM peak hour, the southbound lefts are expected to operate poorly. During the PM peak hour, the southbound throughs are expected to have significant queues, and these queues are expected to affect intersections upstream on Carothers Parkway.

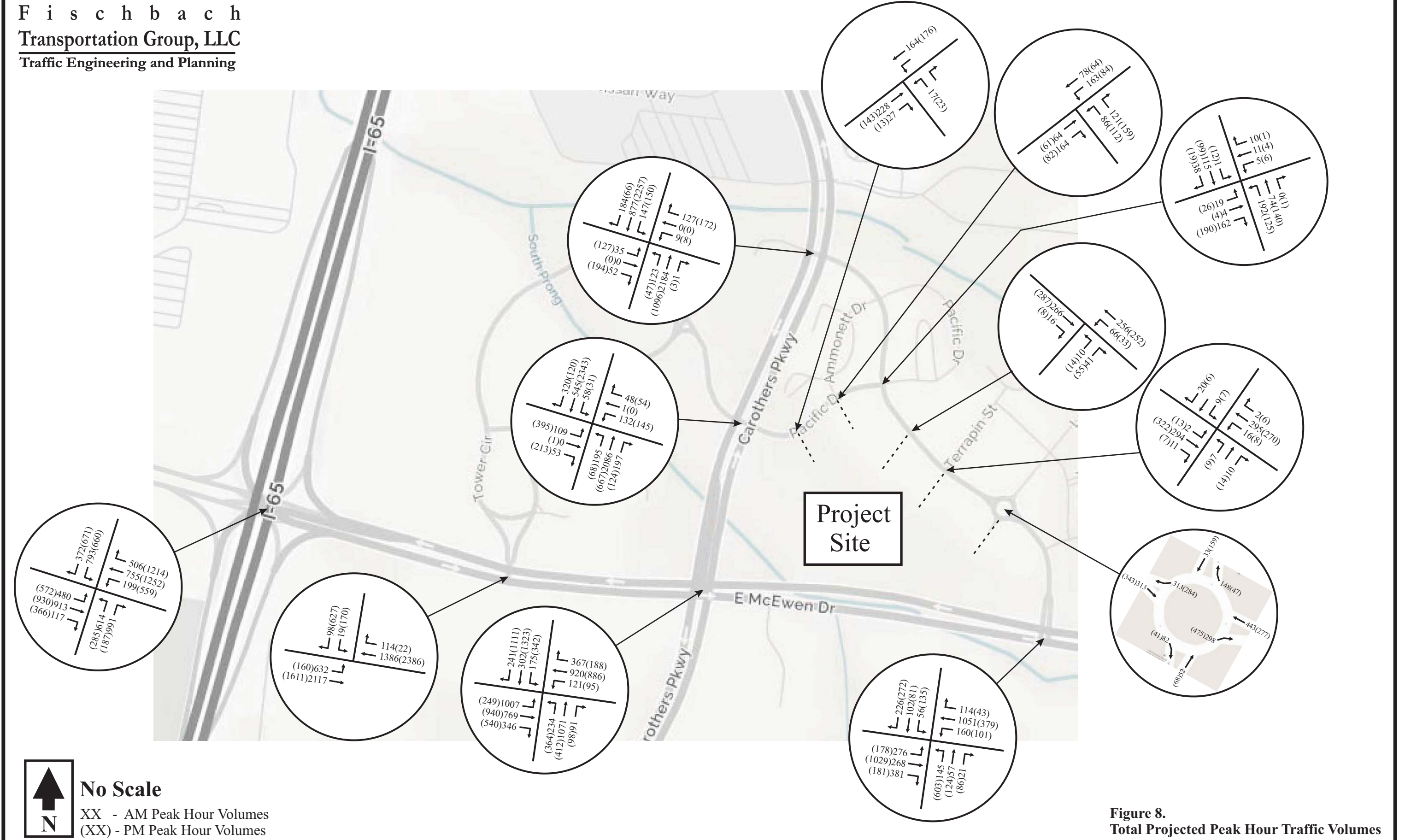


Figure 8.
Total Projected Peak Hour Traffic Volumes

TABLE 7. PROJECTED PEAK HOUR LEVELS OF SERVICE

INTERSECTION	TURNING MOVEMENT	AM PEAK HOUR		PM PEAK HOUR	
		LEVEL OF SERVICE	95 TH %-ILE QUEUE	LEVEL OF SERVICE	95 TH %-ILE QUEUE
McEwen Drive and Ramps for I-65 (signalized)	Overall Intersection	LOS C (35 sec/veh)		LOS F (128 sec/veh)	
E. McEwen Drive and Tower Drive (signalized)	Overall Intersection	LOS C (21 sec/veh)		LOS F (270 sec/veh)	
E. McEwen Drive and Carothers Parkway (signalized)	Overall Intersection	LOS F (317 sec/veh)		LOS F (282 sec/veh)	
E. McEwen Drive and Resource Parkway (signalized)	Overall Intersection	LOS C (26 sec/veh)		LOS C (21 sec/veh)	
Carothers Parkway and Tower Circle / Pacific Drive (signalized)	Overall Intersection	LOS D (55 sec/veh)		LOS F (259 sec/veh)	
Carothers Parkway and Resource Parkway (signalized)	Overall Intersection	LOS D (42 sec/veh)		LOS C (30 sec/veh)	
Resource Parkway and Pacific Drive (unsignalized)	Northbound Turning Movements	LOS A	1 veh	LOS A	1 veh
	Southbound Turning Movements	LOS A	1 veh	LOS A	1 veh
	Eastbound Turning Movements	LOS B	1 veh	LOS B	1 veh
	Westbound Turning Movements	LOS B	1 veh	LOS C	1 veh
Resource Parkway and Terrapin Street / Project Access (unsignalized)	Northbound Turning Movements	LOS A	1 veh	LOS A	1 veh
	Southbound Turning Movements	LOS A	1 veh	LOS A	1 veh
	Eastbound	LOS B	1 veh	LOS B	1 veh

	Turning Movements				
	Westbound Turning Movements	LOS B	1 veh	LOS B	1 veh
Resource Parkway and Lemon Grass Drive (traffic circle)	Eastbound Approach	LOS A	1 veh	LOS A	2 veh
	Westbound Approach	LOS A	2 veh	LOS A	1 veh
	Northbound Approach	LOS A	1 veh	LOS A	1 veh
	Southbound Approach	LOS A	1 veh	LOS A	1 veh
Pacific Drive and the Western Project Drive	Westbound Left Turns/Thrus	LOS A	0 veh	LOS A	0 veh
	Northbound Left and Right Turns	LOS B	1 veh	LOS B	1 veh
Pacific Drive and the Garage Drive	Westbound Left Turns	LOS A	1 veh	LOS A	1 veh
	Northbound Left Turns	LOS C	1 veh	LOS B	1 veh
	Northbound Right Turns	LOS B	1 veh	LOS A	1 veh
Resource Parkway and Northern Project Access	Northbound Left Turns/Thrus	LOS A	1 veh	LOS A	1 veh
	Eastbound Left and Right Turns	LOS B	1 veh	LOS B	1 veh

5.4 CAPACITY ANALYSIS COMPARISON

The results of the capacity analyses for the existing, background, and total projected peak hour traffic volumes are included in [Tables 8 and 9](#) for comparison purposes.

TABLE 8. COMPARISON OF AM PEAK HOUR LEVELS OF SERVICE

INTERSECTION	TURNING MOVEMENT	LEVELS OF SERVICE		
		EXISTING CONDITIONS	BACKGROUND CONDITIONS	TOTAL PROJECTED CONDITIONS
McEwen Drive and the Ramps for I-65	Overall Intersection	LOS C (35 sec/veh)	LOS C (35 sec/veh)	LOS C (35 sec/veh)
E. McEwen Drive and Tower Circle	Overall Intersection	LOS B (14 sec/veh)	LOS C (21 sec/veh)	LOS C (21 sec/veh)
E. McEwen Drive and Carothers Parkway	Overall Intersection	LOS F (96 sec/veh)	LOS F (229 sec/veh)	LOS F (317 sec/veh)
E. McEwen Drive and Resource Parkway	Overall Intersection	(unsignalized)	LOS B (17 sec/veh)	LOS C (26 sec/veh)
Carothers Parkway and Tower Circle / Pacific Drive	Overall Intersection	LOS B (12 sec/veh)	LOS C (23 sec/veh)	LOS D (55 sec/veh)
Carothers Parkway and Resource Parkway	Overall Intersection	(unsignalized)	LOS B (17 sec/veh)	LOS D (42 sec/veh)

TABLE 9. COMPARISON OF PM PEAK HOUR LEVELS OF SERVICE

INTERSECTION	TURNING MOVEMENT	LEVELS OF SERVICE		
		EXISTING CONDITIONS	BACKGROUND CONDITIONS	TOTAL PROJECTED CONDITIONS
McEwen Drive and the Ramps for I-65	Overall Intersection	LOS C (24 sec/veh)	LOS F (90 sec/veh)	LOS F (128 sec/veh)
E. McEwen Drive and Tower Circle	Overall Intersection	LOS B (14 sec/veh)	LOS F (160 sec/veh)	LOS F (270 sec/veh)
E. McEwen Drive and Carothers Parkway	Overall Intersection	LOS C (35 sec/veh)	LOS F (234 sec/veh)	LOS F (282 sec/veh)
E. McEwen Drive and Resource Parkway	Overall Intersection	(unsignalized)	LOS B (17 sec/veh)	LOS C (21 sec/veh)
Carothers Parkway and Tower Circle / Pacific Drive	Overall Intersection	LOS B (14 sec/veh)	LOS F (168 sec/veh)	LOS F (259 sec/veh)
Carothers Parkway and Resource Parkway	Overall Intersection	(unsignalized)	LOS C (28 sec/veh)	LOS C (30 sec/veh)

6. CONCLUSIONS AND RECOMMENDATIONS

It is important to note that the City of Franklin's existing zoning for the proposed project site allows all of the proposed land uses on the project site, with the exception of the apartments. The analyses presented in this study indicate that the following improvements and considerations should be incorporated into the current site plan in order to facilitate safe and efficient traffic operations within the study area:

1. As planned under background conditions with the construction of the Ovation mixed-use project, a traffic signal should be installed at the intersection of E. McEwen Drive and Resource Parkway.
2. As planned under background conditions, a traffic signal should be installed at the intersection of Carothers Parkway and Resource Parkway.
3. Each of the driveways for the structure parking should include one entering lane and two exiting lanes striped as separate left and right turn lanes.
4. Each of the driveways to surface parking should include one entering lane and one exiting lane, striped as a shared left and right turn lane.

It is important to note that the capacity analyses conducted for the purposes of this study indicate that the peak hour traffic volumes that are expected to be generated by the projects that have been approved for construction nearest the proposed project site will exceed the capacity of the existing intersections and roadway segments within the study area. Specifically, the Ovation and Franklin Park projects will add a total of 2,400,000 sq.ft of office space, 357,500 sq.ft. of retail space, a 300-room hotel, and 1,300 apartments to the study area. The traffic volumes generated by these land uses will exceed the capacity of the existing laneage and traffic control within the study area.

In October 2012, Kimley-Horn and Associates, Inc. prepared an Integrated Growth Plan for the City of Franklin to address the anticipated growth in the study area and identify future infrastructure improvements that will be needed to accommodate future traffic volumes. The Integrated Growth Plan assumed that the proposed project site would include 253 apartments and 300,000 sq.ft. of office space. These assumptions account for the majority of the peak hour traffic volumes that will be generated by the current proposal, and it is appropriate to assume that the recommendations included in the Integrated Growth Plan adequately account for the impacts of the proposed plan. Therefore, in conjunction with the proposed project, adequate right-of-way should be dedicated on the east side of Carothers Parkway and the north side of E. McEwen Drive to accommodate the City's future expansion of these facilities. Also, the Road Impact Fees generated by the proposed land uses should be aggregated with those collected by the other approved projects and applied to the future laneage and traffic control needs within the study area.

**APPENDIX A
TRAFFIC IMPACT STUDY SCOPE PROVIDED BY
THE CITY OF FRANKLIN AND VOLKERT, INC.**

City of Franklin
Engineering Department
APPLICATION FORM
REQUEST FOR APPROVED TRANSPORTATION IMPACT ANALYSIS
REPORT

Applicant Name:	Pearl Street Partners, LLC	Applicant Name:	FTG, LLC
Address:	205 Powell Place	Address:	PO Box 682736
	Brentwood, TN 37027		Franklin, TN 37068
Phone #:	(615) 312-8242	Phone #:	(615) 771-8022
e-mail address:	byoeckel@pearlstreetpartners.com	e-mail address:	Gillian@FTGtraffic.com

PROCESS OVERVIEW

A Transportation Impact Analysis shall be prepared by the Applicant's Consultant or the City's Traffic Consultant using the standard format specified by the Institute of Transportation Engineers in accordance with the following:

- (i) The applicant shall submit a completed *Request for Transportation Impact Analysis Application Form* to the Engineering Department.
- (ii) Scope of Services
 - a. Following initial review of the application form, the Engineering Department shall prepare and submit a Scope of Services and schedule to the Applicant. If necessary a meeting will be scheduled to review and discuss the Scope of Services in detail.
 - b. Following approval the applicant will pay the City 90% of the estimated cost of the traffic impact study. At the completion of the study the City shall reimburse the applicant all remaining fees.
- (iii) Transportation impact analyses shall be prepared utilizing traffic data that are consistent with:
 - a. The land use and density data as referenced in the most current edition of Trip Generation, published by the Institute of Transportation Engineers;
 - b. Current city and state traffic counts for surrounding streets;
 - c. Any additional traffic counts performed as a part of preparing the study.

Attachment A

City of Franklin Review Process for Transportation Impact Analysis

Step 1 – Preliminary discussion with Consultant/Developer on project description including site plan.

Step 2 – Scoping of Transportation Impact Analysis between the City of Franklin and Consultant/Developer.

Step 3 – Consultant, Traffic Engineer and Director of Engineering execute a MOU (Fees may apply per COF Ordinance 2015-64.

Step 4 – Consultant/Developer pays review fee and submits Transportation Impact Analysis.

- Step 5 – City of Franklin prepares initial comments on the transportation impact analysis, if necessary.**
Step 6 – Consultant submits corrections/revisions to the transportation impact analysis, if necessary.
Step 7 – City of Franklin prepares initial comments on proposed mitigation measures, if necessary
Step 8 – Consultant submits corrections/revisions on proposed mitigation measures, if necessary and electronic copy of the transportation impact analysis.
Step 9 – City of Franklin issues an assessment letter

Attachment B

Transportation Impact Analysis – Memorandum of Understanding (MOU)

This MOU acknowledges that the transportation impact analysis for the following project will be prepared in accordance with the latest version of City of Franklin Zoning Ordinance.

Project Name: **Village on the Hill (Crescent Resource Centre)**
 Project Address: **Northeast quadrant of Carothers Parkway and McEwen Drive**
 Project Description: **mixed-use (see attached)**

Attach a site map and a trip generation table with a description of the proposed land uses, ITE rates, estimated daily, morning, midday and afternoon peak hour volumes (ins/outs/totals), proposed trip credits, etc.

Project Buildout Year: **2022** Ambient or CMP Growth Rate: **Background traffic to be discussed with the City of Franklin Engineering Department**

Study Intersections:

1. E. McEwen Drive and Tower Circle (signalized)	7. Resource Parkway and Lemon Grass Drive / Project Access (unsignalized)
2. Carothers Parkway and E. McEwen Drive (signalized)	8. E. McEwen Drive and Resource Parkway (unsignalized)
3. Carothers Parkway and Tower Circle / Pacific Drive (signalized)	9. Pacific Drive and project access (unsignalized)
4. Carothers Parkway and Resource Parkway (unsignalized)	10. McEwen Drive & I-65 (signalized & unsignalized)
5. Resource Parkway and Pacific Drive (unsignalized)	11.
6. Resource Parkway and Terrapin Street / Project Access (unsignalized)	12.

Trip Credits: (Exact amount of credit subject to approval by City of Franklin)

	Yes	No
Transit Usage		X
Existing Active Land Use		X
Previous Land Use		X
Internal Trip	X	
Pass-By Trip	X	

Consultant
Name: **FTG, LLC**
Address: **PO Box 682736; Franklin, TN**
Phone No: **(615) 771-8022**
Email: **Gillian@FTGtraffic.com**
Approved By: _____
City of Franklin Traffic Engineer

Developer
Pearl Street Partners, LLC
205 Powell Place; Brentwood, TN
(615) 312-8242
byoeckel@pearlstreetpartners.com

Director of Engineering

Reason for Request: (Planned Unit Development, Site Plan, Rezoning)
Concept Plan

Description of Proposed Project (Address, Map/Parcel Number, etc.) (Attach a conceptual development plans showing all access points and adjacent streets.):
Northeast quadrant of Carothers Parkway and McEwen Drive

Existing Land Use (be specific):
N/A

Proposed Land Use (be specific):
Mixed-use (see attached)

Potential Development Yield (number of residential units; building square footage, projected number of employees, hours of operations):
Mixed-use (see attached)

As applicant, I agree to pay to the City of Franklin 90% of the entire cost of the Transportation Impact Analysis.

Property Owner Signature: _____

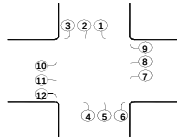
Property Owner Title: _____

Date: _____

The information above shall be submitted to the Engineering Department (109 3rd Ave South; Franklin, TN 37064) to review and provide estimated cost along with a proposed scope of services. All questions should be directed to Carl Baughman, Traffic Engineer III (615-791-3218).

**APPENDIX B
EXISTING TRAFFIC COUNTS**

INTERSECTION TRAFFIC VOLUME COUNTS



LOCATION: McEwen Drive and the Ramps for I-65
 DATE: November 2015
 RECORDER: Burns
 NOTES: signalized

LOCATION	S/B Ramps from SB I-65			N/B Ramps from NB I-65			W/B McEwen Drive			E/B McEwen Drive			Hourly Total	15-min Total
TIME	1	2	3	4	5	6	7	8	9	10	11	12		
6:30-6:45	37		73	63		63	25	61	63	122	27	19	3,012	553
6:45-7:00	45		72	104		50	15	75	91	174	47	28	3,412	701
7:00-7:15	72		103	109		82	25	112	98	124	64	28	3,671	817
7:15-7:30	74		85	148		111	33	133	108	152	59	38	3,754	941
7:30-7:45	91		95	185		136	28	111	82	112	94	19	3,588	953
7:45-8:00	127		88	149		123	23	134	66	121	91	38	3,354	960
8:00-8:15	108		104	132		115	41	133	73	95	77	22	3,156	900
8:15-8:30	90		84	115		90	15	102	60	117	65	37	2,820	775
8:30-8:45	53		85	107		93	30	109	51	99	65	27	2,579	719
8:45-9:00	66		109	130		66	19	101	51	131	60	29	2,338	762
9:00-9:15	35		69	96		43	24	72	37	101	50	37	2,073	564
9:15-9:30	42		82	80		40	20	73	26	90	43	38		534
9:30-9:45	34		88	77		24	11	54	27	78	47	38		478
9:45-10:00	45		90	75		19	12	55	27	99	37	38		497
10:00-10:15														
10:15-10:30														
10:30-10:45	26		88	62		16	14	63	28	84	34	52	2,210	467
10:45-11:00	23		95	83		19	16	77	34	71	49	44	2,501	511
11:00-11:15	31		100	64		16	29	107	33	99	53	44	2,741	576
11:15-11:30	33		110	82		25	27	134	48	73	56	68	2,998	656
11:30-11:45	41		140	71		19	34	176	46	81	83	67	3,143	758
11:45-12:00	31		117	73		28	33	161	36	94	102	76	3,167	751
12:00-12:15	37		139	67		21	44	166	43	112	131	73	3,201	833
12:15-12:30	38		120	70		22	20	123	46	127	139	96		801
12:30-12:45	61		136	60		22	24	110	32	106	134	97		782
12:45-1:00	52		109	61		26	15	97	39	121	163	102		785
1:00-1:15														
1:15-1:30														
1:30-1:45														
1:45-2:00														
2:00-2:15	55		102	48		13	22	60	34	94	67	119	2,622	614
2:15-2:30	32		106	46		12	28	66	34	101	97	103	2,701	625
2:30-2:45	44		93	58		15	43	47	35	94	90	144	2,787	663
2:45-3:00	54		125	42		18	41	67	47	115	89	122	2,878	720
3:00-3:15	47		123	64		9	47	52	69	96	78	108	2,903	693
3:15-3:30	63		120	54		16	30	86	37	112	89	104	3,251	711
3:30-3:45	65		113	63		27	52	73	52	115	89	105	3,440	754
3:45-4:00	50		126	41		25	49	81	70	114	89	100	3,772	745
4:00-4:15	76		125	73		20	92	108	120	153	141	133	4,119	1,041
4:15-4:30	113		141	54		29	54	78	89	105	143	94	4,246	900
4:30-4:45	132		156	66		22	51	122	143	163	132	99	4,522	1,086
4:45-5:00	116		155	77		16	63	132	157	135	153	88	4,521	1,092
5:00-5:15	113		175	71		14	94	133	181	129	161	97	4,420	1,168
5:15-5:30	101		185	71		23	92	177	142	145	158	82	4,094	1,176
5:30-5:45	113		180	68		20	96	139	105	114	162	88	3,623	1,085
5:45-6:00	117		170	55		29	39	99	71	162	173	76		991
6:00-6:15	101		150	50		17	46	105	41	136	107	89		842
6:15-6:30	60		146	43		11	39	67	40	104	83	112		705
TOTAL	2,744		4,872	3,307		1,605	1,555	4,231	2,712	4,770	3,871	3,018		
AM PK HR	400		372	614		485	125	511	329	480	321	117	7:15-8:15	
MID PK HR	188		504	258		91	103	496	160	466	567	368	12:00-1:00	
PM PK HR	462		671	285		75	300	564	623	572	604	366	4:30-5:30	

AM PK PHF	0.79		0.89	0.83		0.89	0.76	0.95	0.76	0.79	0.85	0.77	0.98	I/S PHF (AM)
MID PK PHF	0.77		0.91	0.92		0.88	0.59	0.75	0.87	0.92	0.87	0.90	0.96	I/S PHF (MID)
PM PK PHF	0.88		0.91	0.93		0.82	0.80	0.80	0.86	0.88	0.94	0.92	0.96	I/S PHF (PM)

AM PEAK

LOCATION: Mc Ewen & Tower
 DATE: 5-Apr-16
 TIME OF DAY: AM

ANALYST: HGB

					337																	
					TOTAL																	
					88%			0%			13%											
					SBRT			SB			SBLT											
					14			0			2											
					53			WBRT			5%											
					975			WB			95%								1028		WB ENTER	
					0			WBLT			0%											
2247					TOTAL																	
					21%		EBLT		268													
					79%		EB		990													
					0%		EBRT		0													
					0			0			0											
					EBRT			SB			WBLT											
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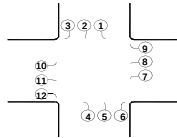
PM PEAK

LOCATION: Mc Ewen & Tower
 DATE: 7-Apr-16
 TIME OF DAY: PM

ANALYST: HGB

										441																		
										TOTAL																		
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										SBRT			SB			SBLT												
										308			0			106												

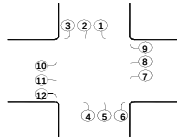
INTERSECTION TRAFFIC VOLUME COUNTS



LOCATION: McEwen Drive and Carothers Parkway
DATE: 20-Oct-15
RECORDER: City of Franklin
NOTES: signalized

LOCATION	S/B Carothers Parkway			N/B Carothers Parkway			W/B McEwen Drive			E/B McEwen Drive			Hourly Total	15-min Total
TIME	1	2	3	4	5	6	7	8	9	10	11	12		
6:30-6:45		20	11	9	100	7	11	104	21	47	17	30	2,240	377
6:45-7:00		20	20	31	147	12	10	130	29	73	25	16	2,669	513
7:00-7:15		18	10	43	156	5	16	175	43	80	27	25	3,084	598
7:15-7:30		17	21	59	226	8	23	191	52	108	31	16	3,312	752
7:30-7:45		23	35	45	239	16	26	161	69	123	42	27	3,335	806
7:45-8:00	2	28	31	47	288	12	27	188	72	162	47	24	3,153	928
8:00-8:15	2	16	17	50	205	13	26	158	64	175	56	44	2,841	826
8:15-8:30	3	31	19	29	171	14	24	143	63	208	48	22	2,461	775
8:30-8:45		29	23	31	133	8	24	135	51	128	33	29	2,093	624
8:45-9:00	3	35	23	32	133	14	16	130	28	130	49	23	1,818	616
9:00-9:15	2	36	20	19	89	11	17	77	19	93	38	25	1,519	446
9:15-9:30	1	40	24	27	77	9	23	62	17	63	45	19	1,405	407
9:30-9:45	2	46	21	15	50	11	14	73	12	39	33	33	1,288	349
9:45-10:00	4	26	15	18	65	7	17	58	7	43	35	22	1,262	317
10:00-10:15	5	41	14	25	59	13	13	53	5	23	47	34	1,307	332
10:15-10:30	4	34	28	16	52	5	13	49	7	19	32	31	1,424	290
10:30-10:45	5	42	32	26	60	12	10	48	6	24	45	13	1,571	323
10:45-11:00	3	40	49	22	66	10	12	66	5	32	36	21	1,772	362
11:00-11:15	9	72	93	27	63	9	16	50	5	29	43	33	1,983	449
11:15-11:30	11	50	109	30	56	9	15	61	4	21	50	21	2,097	437
11:30-11:45	14	65	151	35	60	12	15	53	7	42	49	21	2,157	524
11:45-12:00	20	96	135	25	60	16	13	63	5	53	58	29	2,220	573
12:00-12:15	15	96	127	22	56	12	10	58	18	65	62	22	2,196	563
12:15-12:30	8	85	82	21	71	13	9	53	12	71	61	11	2,118	497
12:30-12:45	8	78	94	29	78	11	8	64	30	99	53	35	2,087	587
12:45-1:00	4	61	67	21	99	8	15	56	19	114	55	30	1,939	549
1:00-1:15	5	70	66	12	67	10	10	45	9	98	62	31	1,770	485
1:15-1:30	3	58	47	10	80	10	20	52	9	81	63	33	1,703	466
1:30-1:45	7	58	48	22	50	17	16	52	9	71	56	33	1,640	439
1:45-2:00	6	62	34	10	52	11	18	50	1	56	43	37	1,622	380
2:00-2:15	9	62	37	25	60	9	7	40	4	44	81	40	1,688	418
2:15-2:30	6	44	39	22	54	13	9	60	6	30	86	34	1,806	403
2:30-2:45	5	54	47	30	47	16	20	58	1	34	82	27	1,970	421
2:45-3:00	7	81	45	30	61	14	15	50	1	28	78	36	2,143	446
3:00-3:15	9	85	69	40	50	19	18	62		31	99	54	2,298	536
3:15-3:30	15	85	62	32	42	18	18	54		97	104	40	2,625	567
3:30-3:45	13	123	86	18	49	18	17	68		64	100	38	2,759	594
3:45-4:00	11	150	73	21	65	18	23	63		19	109	49	3,137	601
4:00-4:15	39	267	206	27	47	33	14	52	3	21	101	53	3,463	863
4:15-4:30	22	202	140	17	32	22	22	48	4	19	114	59	3,683	701
4:30-4:45	52	338	182	22	52	17	8	60	3	23	126	89	3,946	972
4:45-5:00	51	241	165	27	41	12	26	90	1	37	139	97	3,841	927
5:00-5:15	57	297	242	18	40	33	17	71		29	160	119	3,684	1,083
5:15-5:30	47	258	160	27	39	20	13	56	1	22	195	126	3,267	964
5:30-5:45	37	213	139	17	31	12	15	75		23	171	134	2,892	867
5:45-6:00	40	147	110	17	35	17	21	53	1	24	205	100		770
6:00-6:15	38	148	103	11	33	16	14	74	8	19	123	79		666
6:15-6:30	22	117	66	15	34	13	13	72	3	15	148	71		589
TOTAL	626	4,305	3,437	1,224	3,920	645	777	3,764	734	2,949	3,562	2,035		
AM PK HR	7	98	102	171	903	55	103	650	268	668	193	117	7:30-8:30	
MID PK HR	51	355	438	97	265	52	40	238	65	288	234	97	11:45-12:45	
PM PK HR	207	1,134	749	94	172	82	64	277	5	111	620	431	4:30-5:30	
AM PK PHF	0.58	0.79	0.73	0.86	0.78	0.86	0.95	0.86	0.93	0.80	0.86	0.66	0.90	I/S PHF (AM)
MID PK PHF	0.64	0.92	0.81	0.84	0.85	0.81	0.77	0.93	0.54	0.73	0.94	0.69	0.95	I/S PHF (MID)
PM PK PHF	0.91	0.84	0.77	0.87	0.83	0.62	0.62	0.77	0.42	0.75	0.79	0.86	0.91	I/S PHF (PM)

INTERSECTION TRAFFIC VOLUME COUNTS



LOCATION: Carothers Parkway and Tower Circle/Pacific Drive
DATE: 28-Oct-15
RECORDER: City of Franklin
NOTES: signalized

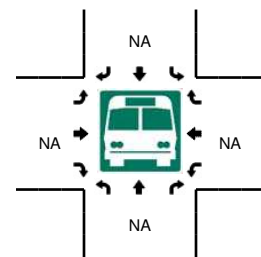
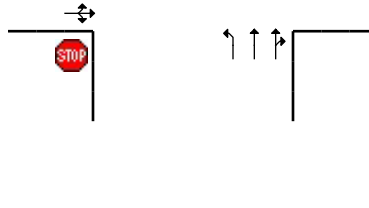
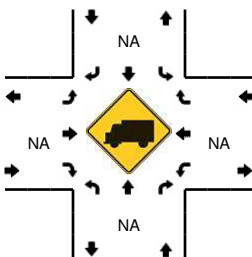
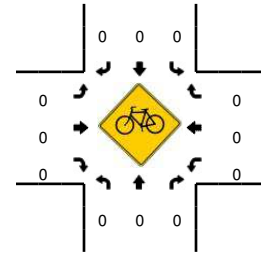
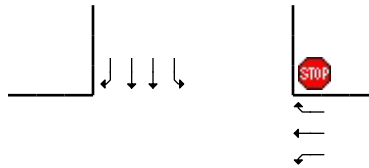
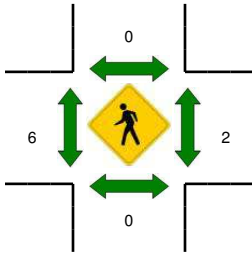
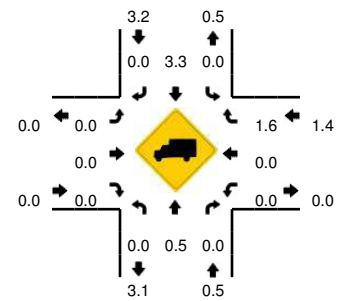
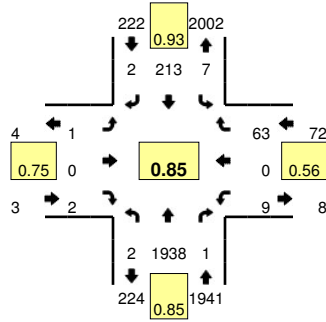
LOCATION	S/B Carothers Parkway			N/B Carothers Parkway			W/B Pacific Drive			E/B Tower Circle			Hourly Total	15-min Total
TIME	1	2	3	4	5	6	7	8	9	10	11	12		
6:30-6:45	0	24	4	4	181	1	4	0	3	0	0	1	1,333	222
6:45-7:00	0	18	4	7	239	0	3	0	2	1	0	3	1,615	277
7:00-7:15	0	35	4	1	318	2	5	1	4	2	1	2	1,963	375
7:15-7:30	1	32	4	4	403	1	9	0	4	1	0	0	2,136	459
7:30-7:45	0	48	3	3	434	3	8	0	3	1	0	1	2,072	504
7:45-8:00	1	55	9	2	544	0	7	1	4	2	0	0	1,908	625
8:00-8:15	1	54	1	4	473	2	4	0	3	4	0	2	1,584	548
8:15-8:30	0	35	8	2	337	3	3	1	2	4	0	0	1,270	395
8:30-8:45	0	38	4	3	283	4	2	0	1	4	0	1	1,071	340
8:45-9:00	1	61	2	1	224	3	3	0	2	2	1	1	898	301
9:00-9:15	0	55	7	8	156	2	1	0	1	4	0	0	753	234
9:15-9:30	0	55	2	2	127	2	2	0	1	5	0	0	696	196
9:30-9:45	1	55	5	1	99	1	1	0	1	3	0	0	666	167
9:45-10:00	2	48	3	1	97	1	1	0	2	0	0	1	642	156
10:00-10:15	0	91	2	1	75	2	1	0	0	0	2	3	699	177
10:15-10:30	0	71	8	1	80	0	2	0	0	3	0	1	827	166
10:30-10:45	0	68	0	1	71	0	0	0	1	2	0	0	959	143
10:45-11:00	0	112	1	1	91	5	0	0	0	1	0	2	1,149	213
11:00-11:15	0	208	1	0	80	1	1	0	4	7	0	3	1,286	305
11:15-11:30	1	184	2	1	94	0	3	0	0	11	0	2	1,371	298
11:30-11:45	0	209	5	2	102	2	0	0	2	8	0	3	1,444	333
11:45-12:00	0	215	5	1	114	4	3	0	1	3	1	3	1,467	350
12:00-12:15	3	193	5	6	168	3	3	0	0	5	0	4	1,444	390
12:15-12:30	0	169	9	3	174	5	2	0	1	3	1	4	1,388	371
12:30-12:45	1	142	7	0	193	3	1	0	1	5	1	2	1,253	356
12:45-1:00	2	127	6	3	177	2	4	0	2	2	0	2	1,137	327
1:00-1:15	1	149	9	3	154	7	3	0	1	5	0	2	1,032	334
1:15-1:30	2	120	3	0	101	1	4	1	2	1	1	0	920	236
1:30-1:45	1	96	2	0	126	3	5	0	4	2	0	1	866	240
1:45-2:00	0	113	1	0	101	0	2	1	0	2	0	2	845	222
2:00-2:15	1	114	4	2	91	3	0	0	1	3	0	3	873	222
2:15-2:30	1	86	1	1	87	2	0	0	0	3	1	0	876	182
2:30-2:45	1	131	1	0	78	3	2	0	1	1	0	1	949	219
2:45-3:00	1	138	2	1	96	2	4	0	1	0	0	5	1,035	250
3:00-3:15	2	149	1	1	68	0	0	0	1	1	0	2	1,108	225
3:15-3:30	0	157	3	1	84	2	0	0	1	2	0	5	1,442	255
3:30-3:45	3	218	3	1	71	0	3	0	1	1	0	4	1,710	305
3:45-4:00	0	249	3	0	56	4	3	0	3	2	0	3	1,976	323
4:00-4:15	5	474	2	1	59	7	5	0	2	1	0	3	2,195	559
4:15-4:30	2	430	1	2	71	5	3	0	3	2	0	4	2,335	523
4:30-4:45	1	474	1	0	77	4	1	0	1	5	0	7	2,342	571
4:45-5:00	1	467	2	0	57	7	1	0	1	2	0	4	2,229	542
5:00-5:15	1	600	3	1	70	8	3	0	0	4	1	8	2,032	699
5:15-5:30	1	443	3	1	63	10	1	0	3	2	0	3	1,644	530
5:30-5:45	3	367	3	1	60	12	2	0	2	5	1	2	1,328	458
5:45-6:00	3	261	1	1	66	4	1	0	1	5	0	2		345
6:00-6:15	0	266	2	0	30	3	0	0	3	6	0	1		311
6:15-6:30	0	144	4	1	47	10	4	0	1	1	0	2		214
TOTAL	44	8,048	166	81	7,047	149	120	5	78	139	11	105		
AM PK HR	3	189	17	13	1,854	6	28	1	14	8	0	3	7:15-8:15	
MID PK HR	4	719	26	10	649	15	9	0	3	16	3	13	11:45-12:45	
PM PK HR	4	1,984	9	2	267	29	6	0	5	13	1	22	4:30-5:30	

AM PK PHF	0.75	0.86	0.47	0.81	0.85	0.50	0.78	0.25	0.88	0.50		0.38	0.85	I/S PHF (AM)
MID PK PHF	0.33	0.84	0.72	0.42	0.84	0.75	0.75		0.75	0.80	0.75	0.81	0.94	I/S PHF (MID)
PM PK PHF	1.00	0.83	0.75	0.50	0.87	0.73	0.50		0.42	0.65	0.25	0.69	0.84	I/S PHF (PM)

LOCATION: Carothers Pkwy -- Resource Pkwy
CITY/STATE: Franklin , TN

QC JOB #: 13867213
DATE: Thu, Aug 11 2016

Peak-Hour: 7:30 AM -- 8:30 AM
Peak 15-Min: 7:45 AM -- 8:00 AM



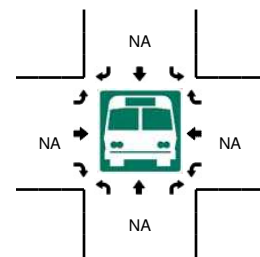
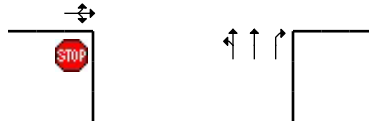
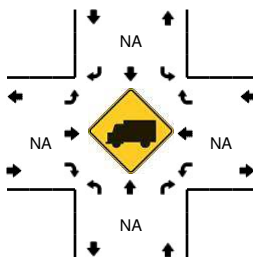
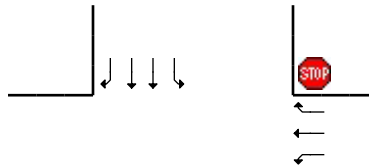
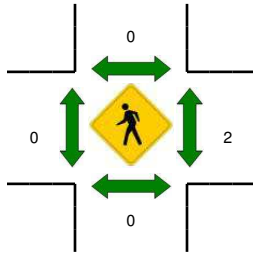
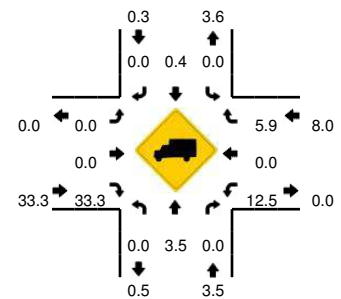
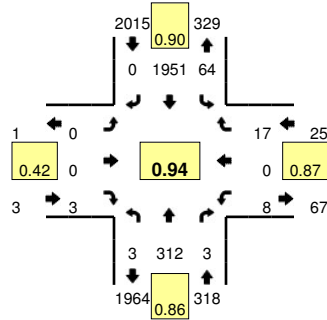
15-Min Count Period Beginning At	Carothers Pkwy (Northbound)				Carothers Pkwy (Southbound)				Resource Pkwy (Eastbound)				Resource Pkwy (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
6:00 AM	1	68	1	0	0	10	0	1	0	0	0	0	1	0	4	0	86	731
6:15 AM	1	104	0	0	1	20	1	0	0	0	0	0	6	0	6	0	139	
6:30 AM	3	154	0	0	0	23	1	1	0	0	0	0	5	0	10	0	197	
6:45 AM	2	235	0	0	0	51	1	0	0	0	1	0	4	0	15	0	309	
7:00 AM	2	268	1	0	2	51	1	0	0	0	1	0	4	0	13	0	343	
7:15 AM	2	392	0	0	1	34	0	0	0	0	0	0	3	0	12	0	444	1293
7:30 AM	2	440	0	0	3	51	1	0	0	0	0	0	4	0	7	0	508	1604
7:45 AM	0	570	0	0	1	49	0	0	1	0	0	0	2	0	33	0	656	1951
8:00 AM	0	510	0	0	2	63	0	0	0	0	1	0	1	0	15	0	592	2200
8:15 AM	0	418	1	0	1	50	1	0	0	0	1	0	2	0	8	0	482	2238
8:30 AM	0	322	1	0	2	64	0	0	0	0	0	0	2	0	14	0	405	2135
8:45 AM	0	279	0	0	2	59	1	0	0	0	1	0	2	0	7	0	351	1830
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
All Vehicles	0	2280	0	0	4	196	0	0	4	0	0	0	8	0	132	0	2624	
Heavy Trucks	0	4	0	0	0	4	0	0	0	0	0	0	0	0	0	0	8	
Pedestrians	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	4	
Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Railroad	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Stopped Buses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	

Comments:

LOCATION: Carothers Pkwy -- Resource Pkwy
CITY/STATE: Franklin , TN

QC JOB #: 13867214
DATE: Thu, Aug 11 2016

Peak-Hour: 4:30 PM -- 5:30 PM
Peak 15-Min: 5:00 PM -- 5:15 PM



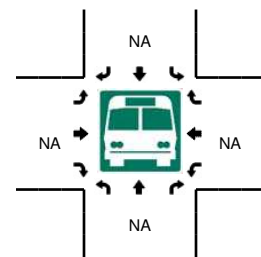
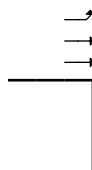
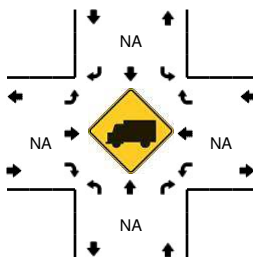
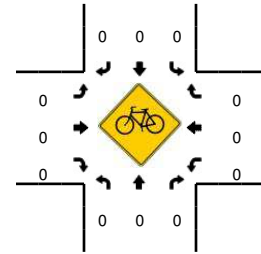
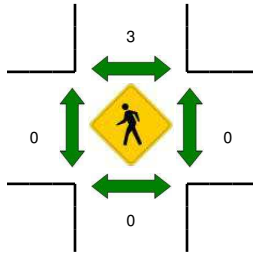
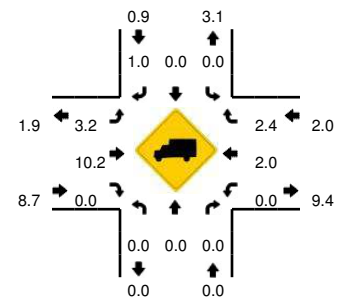
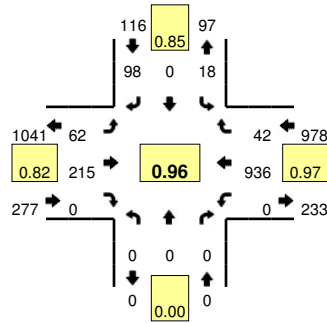
15-Min Count Period Beginning At	Carothers Pkwy (Northbound)				Carothers Pkwy (Southbound)				Resource Pkwy (Eastbound)				Resource Pkwy (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	0	64	1	1	9	437	0	0	1	0	1	0	3	0	5	0	522	
4:15 PM	0	67	3	0	13	401	0	0	0	0	0	0	1	0	3	0	488	
4:30 PM	0	90	1	1	4	512	0	0	0	0	0	0	3	0	4	0	615	
4:45 PM	1	79	0	1	15	406	0	0	0	0	1	0	3	0	3	0	509	2134
5:00 PM	0	63	2	0	23	535	0	0	0	0	2	0	0	0	4	0	629	2241
5:15 PM	0	80	0	0	22	498	0	0	0	0	0	0	2	0	6	0	608	2361
5:30 PM	0	71	0	0	21	403	0	1	0	0	6	0	0	0	6	0	508	2254
5:45 PM	0	65	2	1	14	282	0	0	0	0	1	0	1	0	10	0	376	2121
6:00 PM	0	56	0	0	14	264	0	0	0	0	1	0	1	0	11	0	347	1839
6:15 PM	1	53	3	0	15	164	0	0	0	0	2	0	2	0	13	0	253	1484
6:30 PM	0	51	1	0	11	127	0	0	0	0	0	0	0	0	14	0	204	1180
6:45 PM	0	53	1	0	11	88	0	0	0	0	0	0	0	0	5	0	158	962
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	0	252	8	0	92	2140	0	0	0	0	8	0	0	0	16	0	2516	
Heavy Trucks	0	4	0		0	4	0		0	0	4		0	0	4		16	
Pedestrians	0				0				0				0				0	
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0	
Railroad																		
Stopped Buses																		

Comments:

LOCATION: Resource Pkwy -- E. McEwen Dr
CITY/STATE: Franklin, TN

QC JOB #: 13867219
DATE: Thu, Aug 11 2016

Peak-Hour: 7:30 AM -- 8:30 AM
Peak 15-Min: 7:45 AM -- 8:00 AM



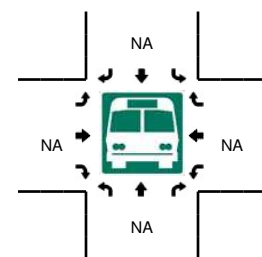
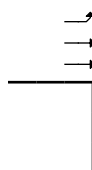
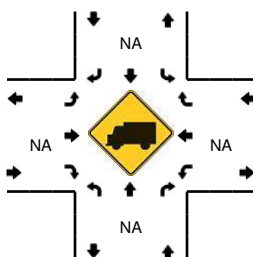
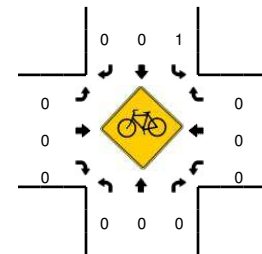
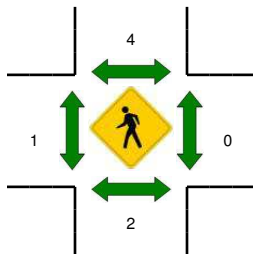
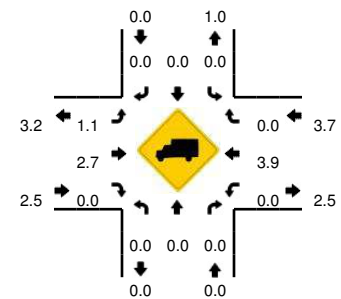
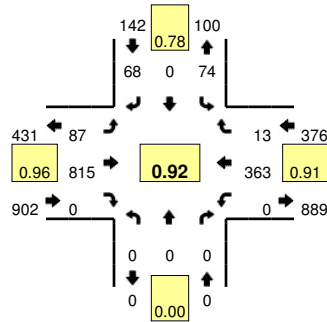
15-Min Count Period Beginning At	Resource Pkwy (Northbound)				Resource Pkwy (Southbound)				E. McEwen Dr (Eastbound)				E. McEwen Dr (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
6:00 AM	0	0	0	0	0	0	10	0	1	17	0	0	0	37	0	0	65	
6:15 AM	0	0	0	0	1	0	18	0	2	32	0	0	0	53	0	0	106	
6:30 AM	0	0	0	0	3	0	20	0	3	43	0	0	0	121	2	0	192	
6:45 AM	0	0	0	0	6	0	21	0	5	53	0	0	0	156	4	0	245	608
7:00 AM	0	0	0	0	3	0	18	0	7	63	0	0	0	200	4	0	295	838
7:15 AM	0	0	0	0	2	0	20	0	20	51	0	0	0	192	9	1	295	1027
7:30 AM	0	0	0	0	3	0	31	0	12	43	0	1	0	233	15	0	338	1173
7:45 AM	0	0	0	0	3	0	20	0	21	63	0	2	0	239	8	0	356	1284
8:00 AM	0	0	0	0	10	0	19	0	11	56	0	2	0	223	8	0	329	1318
8:15 AM	0	0	0	0	2	0	28	0	11	53	0	2	0	241	11	0	348	1371
8:30 AM	0	0	0	0	0	0	13	0	11	49	0	2	0	196	8	0	279	1312
8:45 AM	0	0	0	0	1	0	13	2	14	41	0	1	0	197	5	0	274	1230
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
All Vehicles	0	0	0	0	12	0	80	0	84	252	0	8	0	956	32	0	1424	
Heavy Trucks	0	0	0	0	0	0	0	0	0	28	0	0	0	32	0	0	60	
Pedestrians	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Railroad	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Stopped Buses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	

Comments:

LOCATION: Resource Pkwy -- E. McEwen Dr
CITY/STATE: Franklin, TN

QC JOB #: 13867220
DATE: Thu, Aug 11 2016

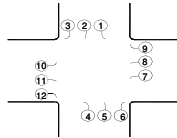
Peak-Hour: 5:00 PM -- 6:00 PM
Peak 15-Min: 5:15 PM -- 5:30 PM



15-Min Count Period Beginning At	Resource Pkwy (Northbound)				Resource Pkwy (Southbound)				E. McEwen Dr (Eastbound)				E. McEwen Dr (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	0	0	0	0	14	0	12	0	30	164	0	0	0	71	6	0	297	
4:15 PM	0	0	0	0	12	0	12	0	13	140	0	1	0	76	3	0	257	
4:30 PM	0	0	0	0	8	0	21	0	24	185	0	0	0	83	5	0	326	
4:45 PM	0	0	0	0	11	0	16	0	24	191	0	0	0	81	0	0	323	1203
5:00 PM	0	0	0	0	24	0	23	0	13	221	0	0	0	80	1	0	362	1268
5:15 PM	0	0	0	0	26	0	23	0	24	208	0	0	0	99	4	0	384	1395
5:30 PM	0	0	0	0	13	0	11	0	22	193	0	0	0	94	3	0	336	1405
5:45 PM	0	0	0	0	11	0	11	0	28	193	0	0	0	90	5	0	338	1420
6:00 PM	0	0	0	0	8	0	13	0	23	161	0	0	0	74	4	0	283	1341
6:15 PM	0	0	0	0	4	0	19	0	15	123	0	0	0	69	3	0	233	1190
6:30 PM	0	0	0	0	3	0	9	0	15	113	0	0	0	72	4	0	216	1070
6:45 PM	0	0	0	0	2	0	9	0	19	107	0	0	0	53	4	0	194	926
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	0	0	0	0	104	0	92	0	96	832	0	0	0	396	16	0	1536	
Heavy Trucks	0	0	0	0	0	0	0	0	0	4	0	0	0	16	0	0	20	
Pedestrians	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	4	
Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Railroad	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Stopped Buses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	

Comments:

INTERSECTION TRAFFIC VOLUME COUNTS



LOCATION: Resource Parkway and Pacific Drive
DATE: 7-Jul-15
RECORDER: City of Franklin
NOTES: unsignalized

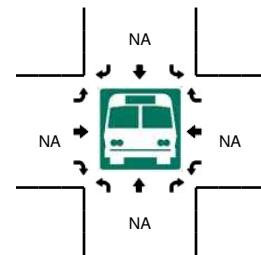
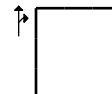
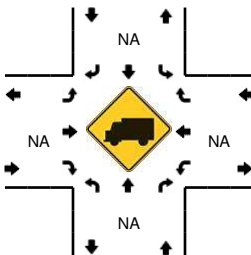
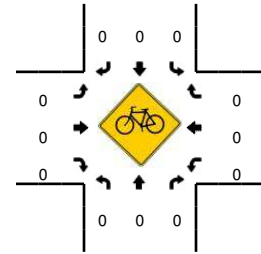
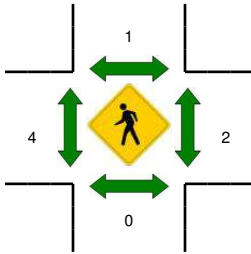
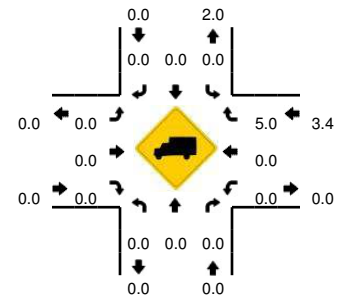
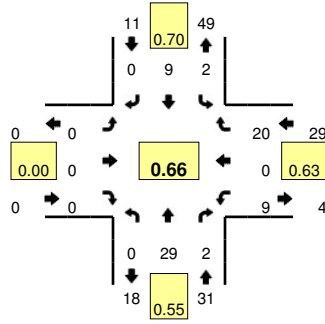
LOCATION	S/B Resource Parkway			N/B Resource Parkway			W/B Pacific Drive			E/B Pacific Drive			Hourly Total	15-min Total
TIME	1	2	3	4	5	6	7	8	9	10	11	12		
6:30-6:45	0	1	0	0	4	0	1	0	2	0	0	0	28	8
6:45-7:00	0	1	0	0	1	0	0	2	0	0	0	0	32	4
7:00-7:15	0	0	0	1	0	0	0	0	1	0	0	0	47	2
7:15-7:30	1	0	1	0	4	1	1	3	2	0	1	0	57	14
7:30-7:45	0	0	0	0	8	0	1	2	1	0	0	0	54	12
7:45-8:00	0	0	0	2	9	0	1	1	5	1	0	0	58	19
8:00-8:15	0	0	2	2	6	0	0	0	0	0	0	2	49	12
8:15-8:30	0	1	0	0	5	0	1	0	3	0	1	0	41	11
8:30-8:45	1	2	1	0	8	0	0	0	2	1	0	1	38	16
8:45-9:00	0	0	5	1	3	0	1	0	0	0	0	0	28	10
9:00-9:15	0	0	0	0	0	0	0	2	1	0	0	1	29	4
9:15-9:30	0	1	0	0	4	0	0	0	2	0	0	1	37	8
9:30-9:45	0	1	1	0	2	0	0	0	0	2	0	0	39	6
9:45-10:00	2	1	0	0	5	0	0	0	2	0	0	1	44	11
10:00-10:15	1	2	2	1	2	0	0	2	1	1	0	0	45	12
10:15-10:30	0	0	2	1	0	0	0	1	2	1	2	1	47	10
10:30-10:45	3	2	2	1	2	0	0	0	1	0	0	0	48	11
10:45-11:00	1	2	0	1	1	0	0	1	3	1	1	1	52	12
11:00-11:15	0	3	1	1	5	0	0	2	0	1	0	1	55	14
11:15-11:30	0	3	1	0	0	2	0	0	2	0	2	1	57	11
11:30-11:45	0	2	0	0	4	0	1	0	4	1	2	1	62	15
11:45-12:00	1	3	1	0	4	1	0	0	0	0	2	3	69	15
12:00-12:15	2	3	0	1	5	0	0	1	2	0	0	2	67	16
12:15-12:30	1	3	1	2	2	0	1	2	0	1	3	0	69	16
12:30-12:45	3	10	1	1	4	0	0	0	0	1	1	1	69	22
12:45-1:00	2	4	1	0	2	0	0	3	0	0	1	0	62	13
1:00-1:15	2	1	0	2	5	0	0	2	4	0	2	0	60	18
1:15-1:30	0	5	0	0	4	0	0	1	2	0	2	2	48	16
1:30-1:45	0	4	0	1	5	0	0	1	3	0	0	1	40	15
1:45-2:00	0	1	0	1	3	0	1	0	0	2	2	1	33	11
2:00-2:15	0	1	0	1	3	0	0	1	0	0	0	0	35	6
2:15-2:30	0	3	0	0	1	1	0	0	0	1	0	2	41	8
2:30-2:45	0	4	1	1	1	0	0	0	1	0	0	0	38	8
2:45-3:00	1	1	2	0	2	1	1	2	0	0	2	1	38	13
3:00-3:15	2	3	0	0	3	0	0	0	1	0	1	2	35	12
3:15-3:30	0	2	1	0	0	0	0	0	0	0	1	1	41	5
3:30-3:45	0	0	0	1	0	0	0	2	1	2	1	1	42	8
3:45-4:00	2	2	1	1	1	1	0	0	0	1	0	1	45	10
4:00-4:15	1	9	2	0	3	0	0	0	0	1	0	2	55	18
4:15-4:30	1	2	0	0	0	0	1	0	0	1	0	1	63	6
4:30-4:45	1	3	0	0	0	1	1	0	0	1	2	2	75	11
4:45-5:00	3	9	0	1	1	0	0	1	1	0	1	3	79	20
5:00-5:15	3	11	2	1	0	1	0	1	0	0	2	5	80	26
5:15-5:30	3	4	0	0	2	0	0	1	1	4	2	1	73	18
5:30-5:45	2	6	2	1	2	0	0	0	0	0	0	2	74	15
5:45-6:00	4	5	1	1	6	0	1	2	0	0	1	0		21
6:00-6:15	1	11	0	2	0	1	0	0	0	1	1	2		19
6:15-6:30	0	5	0	2	2	1	0	1	0	2	3	3		19
TOTAL	44	137	34	31	134	11	13	37	50	27	39	50		
AM PK HR	1	3	3	4	28	0	2	1	10	2	1	3	7:45-8:45	
MID PK HR	7	19	3	4	15	1	1	3	2	2	6	6	11:45-12:45	
PM PK HR	12	26	5	3	10	1	1	4	1	4	5	8	5:00-6:00	

AM PK PHF	0.25	0.38	0.38	0.50	0.78		0.50	0.25	0.50	0.50	0.25	0.38	0.76	I/S PHF (AM)
MID PK PHF	0.88	0.48	0.75	0.50	0.75	0.25	0.25	0.38	0.25	0.50	0.50	0.50	0.78	I/S PHF (MID)
PM PK PHF	0.75	0.59	0.63	0.75	0.42	0.25	0.25	0.50	0.25	0.25	0.63	0.40	0.77	I/S PHF (PM)

LOCATION: Resource Pkwy -- Terrapin St
CITY/STATE: Franklin, TN

QC JOB #: 13867215
DATE: Thu, Aug 11 2016

Peak-Hour: 7:15 AM -- 8:15 AM
Peak 15-Min: 7:45 AM -- 8:00 AM



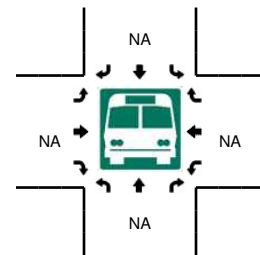
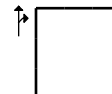
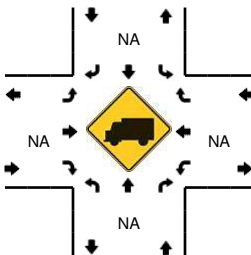
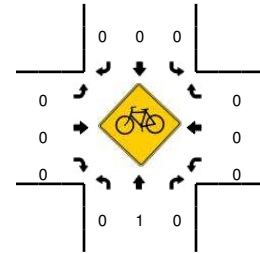
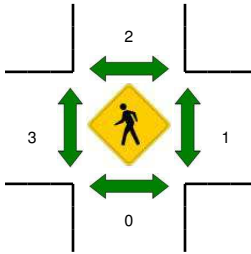
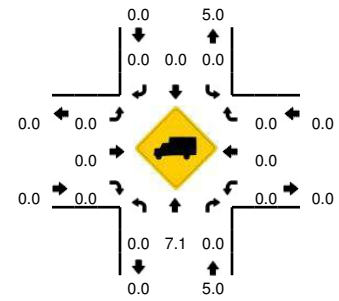
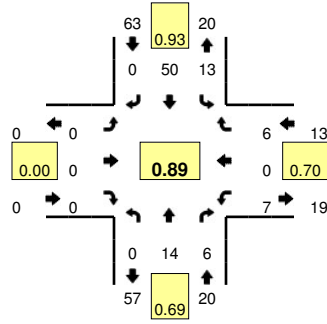
15-Min Count Period Beginning At	Resource Pkwy (Northbound)				Resource Pkwy (Southbound)				Terrapin St (Eastbound)				Terrapin St (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
6:00 AM	0	3	0	0	1	0	0	0	0	0	0	0	1	0	0	0	5	
6:15 AM	0	0	0	0	1	2	0	0	0	0	0	0	2	0	2	0	7	
6:30 AM	0	4	1	0	0	1	0	0	0	0	0	0	1	0	1	0	8	
6:45 AM	0	4	0	0	0	5	0	0	0	0	0	0	3	0	3	0	15	35
7:00 AM	0	5	1	0	0	4	0	0	0	0	0	0	2	0	4	0	16	46
7:15 AM	0	3	1	0	0	0	0	0	0	0	0	0	3	0	4	0	11	50
7:30 AM	0	5	0	0	2	3	0	0	0	0	0	0	2	0	3	0	15	57
7:45 AM	0	14	0	0	0	1	0	0	0	0	0	0	2	0	10	0	27	69
8:00 AM	0	7	1	0	0	5	0	0	0	0	0	0	2	0	3	0	18	71
8:15 AM	0	3	0	0	0	1	0	0	0	0	0	0	3	0	3	0	10	70
8:30 AM	0	6	0	0	0	3	0	0	0	0	0	0	2	0	1	0	12	67
8:45 AM	0	4	0	0	1	3	0	0	0	0	0	0	0	0	0	0	8	48
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
All Vehicles	0	56	0	0	0	4	0	0	0	0	0	0	8	0	40	0	108	
Heavy Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Pedestrians	0	0	0	0	0	0	0	0	0	8	0	0	0	4	0	0	12	
Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Railroad																		
Stopped Buses																		

Comments:

LOCATION: Resource Pkwy -- Terrapin St
CITY/STATE: Franklin, TN

QC JOB #: 13867216
DATE: Thu, Aug 11 2016

Peak-Hour: 4:45 PM -- 5:45 PM
Peak 15-Min: 5:30 PM -- 5:45 PM



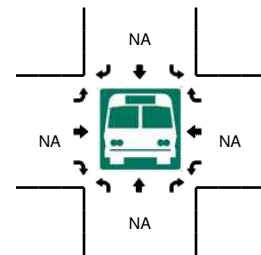
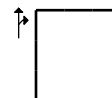
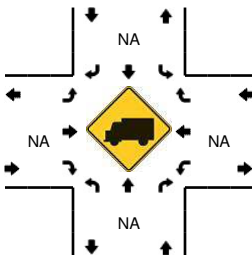
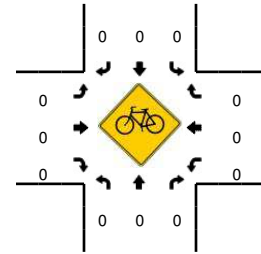
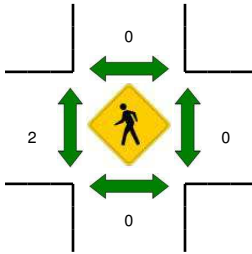
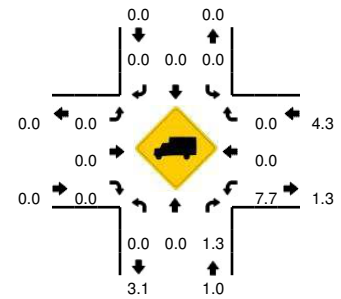
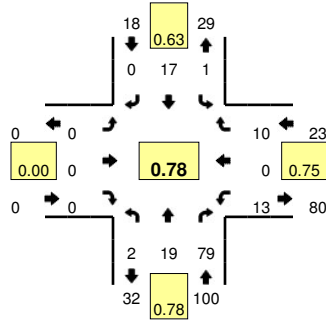
15-Min Count Period Beginning At	Resource Pkwy (Northbound)				Resource Pkwy (Southbound)				Terrapin St (Eastbound)				Terrapin St (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	0	7	2	0	0	7	0	0	0	0	0	0	1	0	2	0	19	
4:15 PM	0	2	2	0	3	8	0	0	0	0	0	0	1	0	0	0	16	
4:30 PM	0	5	0	0	3	5	0	0	0	0	0	0	1	0	3	0	17	
4:45 PM	0	1	2	0	3	11	0	0	0	0	0	0	3	0	2	0	22	74
5:00 PM	0	7	0	0	4	11	0	0	0	0	0	0	2	0	1	0	25	80
5:15 PM	0	2	1	0	2	15	0	0	0	0	0	0	1	0	1	0	22	86
5:30 PM	0	4	3	0	4	13	0	0	0	0	0	0	1	0	2	0	27	96
5:45 PM	0	5	0	0	1	9	0	0	0	0	0	0	0	0	2	0	17	91
6:00 PM	0	5	2	0	1	6	0	0	0	0	0	0	3	0	2	0	19	85
6:15 PM	0	2	2	0	2	6	0	0	0	0	0	0	1	0	2	0	15	78
6:30 PM	0	6	3	0	1	6	0	0	0	0	0	0	1	0	1	0	18	69
6:45 PM	0	1	4	0	2	3	0	1	0	0	0	0	2	0	0	0	13	65
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	0	16	12	0	16	52	0	0	0	0	0	0	4	0	8	0	108	
Heavy Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Pedestrians	0	0	0	0	0	4	0	0	0	8	0	0	0	0	0	0	12	
Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Railroad																		
Stopped Buses																		

Comments:

LOCATION: Resource Pkwy -- Lemon Grass Dr
CITY/STATE: Franklin, TN

QC JOB #: 13867217
DATE: Thu, Aug 11 2016

Peak-Hour: 7:30 AM -- 8:30 AM
Peak 15-Min: 7:45 AM -- 8:00 AM



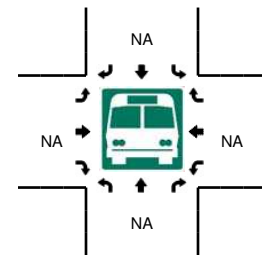
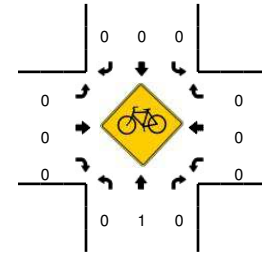
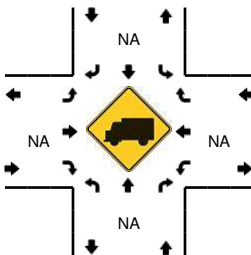
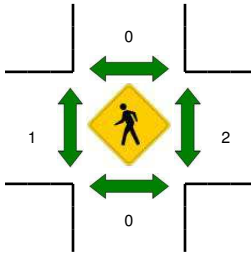
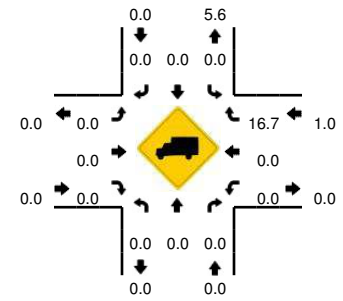
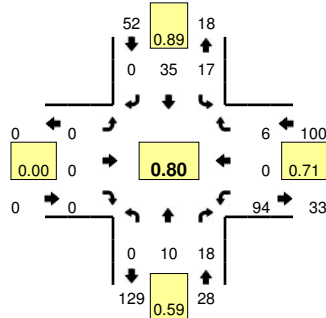
15-Min Count Period Beginning At	Resource Pkwy (Northbound)				Resource Pkwy (Southbound)				Lemon Grass Dr (Eastbound)				Lemon Grass Dr (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
6:00 AM	0	1	1	0	0	1	0	0	0	0	0	0	2	0	2	0	7	
6:15 AM	0	0	0	0	1	3	0	0	0	0	0	0	1	0	0	0	5	
6:30 AM	0	2	2	0	0	2	0	0	0	0	0	0	4	0	3	0	13	
6:45 AM	0	1	3	0	0	8	0	0	0	0	0	0	1	0	2	0	15	40
7:00 AM	0	3	8	0	1	5	0	0	0	0	0	0	2	0	4	0	23	56
7:15 AM	0	3	19	0	0	3	0	0	0	0	0	0	0	0	2	0	27	78
7:30 AM	0	3	20	2	0	2	0	0	0	0	0	0	7	0	1	0	35	100
7:45 AM	0	7	25	0	0	5	0	0	0	0	0	0	1	0	7	0	45	130
8:00 AM	0	5	16	0	1	5	0	0	0	0	0	0	3	0	1	0	31	138
8:15 AM	0	4	18	0	0	5	0	0	0	0	0	0	2	0	1	0	30	141
8:30 AM	0	3	9	0	0	4	0	0	0	0	0	0	2	0	3	0	21	127
8:45 AM	0	3	8	0	2	1	0	1	0	0	0	0	4	0	0	0	19	101
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
All Vehicles	0	28	100	0	0	20	0	0	0	0	0	0	4	0	28	0	180	
Heavy Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Pedestrians	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	4	
Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Railroad																		
Stopped Buses																		

Comments:

LOCATION: Resource Pkwy -- Lemon Grass Dr
CITY/STATE: Franklin, TN

QC JOB #: 13867218
DATE: Thu, Aug 11 2016

Peak-Hour: 4:30 PM -- 5:30 PM
Peak 15-Min: 5:00 PM -- 5:15 PM



15-Min Count Period Beginning At	Resource Pkwy (Northbound)				Resource Pkwy (Southbound)				Lemon Grass Dr (Eastbound)				Lemon Grass Dr (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	0	10	5	2	1	8	0	0	0	0	0	0	12	0	0	0	38	
4:15 PM	0	3	4	0	1	6	0	0	0	0	0	0	12	0	1	0	27	
4:30 PM	0	3	4	0	4	4	0	0	0	0	0	0	20	0	2	0	37	
4:45 PM	0	3	6	0	4	9	0	0	0	0	0	0	17	0	0	0	39	141
5:00 PM	0	1	5	0	3	10	0	2	0	0	0	0	31	0	4	0	56	159
5:15 PM	0	3	3	0	4	12	0	0	0	0	0	0	26	0	0	0	48	180
5:30 PM	0	3	3	0	5	8	0	0	0	0	0	0	6	0	3	0	28	171
5:45 PM	0	5	4	0	4	6	0	0	0	0	0	0	4	0	1	0	24	156
6:00 PM	0	5	4	0	2	7	0	0	0	0	0	0	4	0	3	0	25	125
6:15 PM	0	2	5	0	2	6	0	0	0	0	0	0	1	0	2	0	18	95
6:30 PM	0	6	1	0	1	6	0	0	0	0	0	0	2	0	2	0	18	85
6:45 PM	0	5	5	0	2	3	0	0	0	0	0	0	3	0	1	0	19	80
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	0	4	20	0	12	40	0	8	0	0	0	0	124	0	16	0	224	
Heavy Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	4	
Pedestrians	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Railroad	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Stopped Buses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	

Comments:

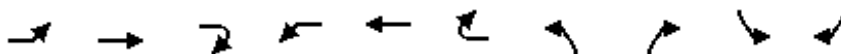
**APPENDIX C
CAPACITY ANALYSES**

EXISTING CONDITIONS

Lanes, Volumes, Timings

1: I65 NB off Ramp /I65 SB off ramp & McEwen/McEwen

11/18/2016

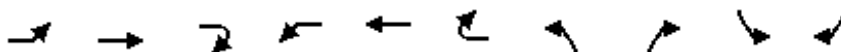


Lane Group	EBL	EBT	EBR2	WBL	WBT	WBR2	NBL	NBR2	SBL	SBR2
Lane Configurations										
Traffic Volume (vph)	480	321	117	125	511	329	614	485	400	372
Future Volume (vph)	480	321	117	125	511	329	614	485	400	372
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	370			495			0		0	
Storage Lanes	2			1			2		2	
Taper Length (ft)	25			25			25		25	
Lane Util. Factor	0.97	0.95	1.00	1.00	0.95	1.00	0.97	1.00	0.97	0.88
Frt			0.850			0.850		0.850		0.850
Flt Protected	0.950			0.950			0.950		0.950	
Satd. Flow (prot)	3433	3539	1583	1770	3539	1583	3433	1583	3433	2787
Flt Permitted	0.950			0.950			0.950		0.950	
Satd. Flow (perm)	3433	3539	1583	1770	3539	1583	3433	1583	3433	2787
Right Turn on Red			Yes			Yes		Yes		Yes
Satd. Flow (RTOR)			182			329		405		165
Link Speed (mph)		30			30					
Link Distance (ft)		826			1211					
Travel Time (s)		18.8			27.5					
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	480	321	117	125	511	329	614	485	400	372
Shared Lane Traffic (%)										
Lane Group Flow (vph)	480	321	117	125	511	329	614	485	400	372
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Right	Left	Right
Median Width(ft)		24			24					
Link Offset(ft)		0			0					
Crosswalk Width(ft)		16			16					
Two way Left Turn Lane										
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15	9	15	9
Number of Detectors	1	2	1	1	2	1	1	1	1	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Right	Left	Right
Leading Detector (ft)	20	100	20	20	100	20	20	20	20	20
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0	0	0	0	0
Detector 1 Size(ft)	20	6	20	20	6	20	20	20	20	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel										
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94					
Detector 2 Size(ft)		6			6					
Detector 2 Type		Cl+Ex			Cl+Ex					
Detector 2 Channel										
Detector 2 Extend (s)		0.0			0.0					
Turn Type	Prot	NA	Free	Prot	NA	Perm	Perm	Free	Perm	Prot
Protected Phases	1	6		5	2					1
Permitted Phases			Free			2	3	Free	7	

Lanes, Volumes, Timings

1: I65 NB off Ramp /I65 SB off ramp & McEwen/McEwen

11/18/2016

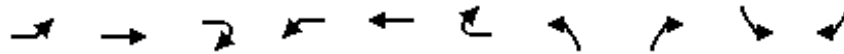


Lane Group	EBL	EBT	EBR2	WBL	WBT	WBR2	NBL	NBR2	SBL	SBR2
Detector Phase	1	6		5	2	2	3		7	1
Switch Phase										
Minimum Initial (s)	8.0	12.0		8.0	12.0	12.0	12.0		12.0	8.0
Minimum Split (s)	15.0	27.0		25.0	27.0	27.0	27.0		27.0	15.0
Total Split (s)	45.0	65.0		31.0	51.0	51.0	54.0		54.0	45.0
Total Split (%)	30.0%	43.3%		20.7%	34.0%	34.0%	36.0%		36.0%	30.0%
Maximum Green (s)	38.0	58.0		24.0	44.0	44.0	47.0		47.0	38.0
Yellow Time (s)	4.0	4.0		4.0	4.0	4.0	4.0		4.0	4.0
All-Red Time (s)	3.0	3.0		3.0	3.0	3.0	3.0		3.0	3.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	7.0	7.0		7.0	7.0	7.0	7.0		7.0	7.0
Lead/Lag	Lead	Lag		Lead	Lag	Lag				Lead
Lead-Lag Optimize?										
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0		3.0	3.0
Recall Mode	None	C-Min		None	C-Min	C-Min	None		None	None
Walk Time (s)		7.0			7.0	7.0	7.0		7.0	
Flash Dont Walk (s)		13.0			13.0	13.0	13.0		13.0	
Pedestrian Calls (#/hr)		5			5	5	5		5	
Act Effect Green (s)	27.1	80.5	150.0	15.9	69.3	69.3	32.6	150.0	32.6	27.1
Actuated g/C Ratio	0.18	0.54	1.00	0.11	0.46	0.46	0.22	1.00	0.22	0.18
v/c Ratio	0.77	0.17	0.07	0.67	0.31	0.36	0.82	0.31	0.54	0.58
Control Delay	59.9	19.0	0.1	73.5	17.7	5.5	66.5	0.5	54.2	33.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	59.9	19.0	0.1	73.5	17.7	5.5	66.5	0.5	54.2	33.8
LOS	E	B	A	E	B	A	E	A	D	C
Approach Delay		38.0			20.8					
Approach LOS		D			C					
90th %ile Green (s)	33.8	67.5		21.7	55.4	55.4	39.8		39.8	33.8
90th %ile Term Code	Gap	Coord		Gap	Coord	Coord	Gap		Hold	Gap
70th %ile Green (s)	29.6	75.4		18.3	64.1	64.1	35.3		35.3	29.6
70th %ile Term Code	Gap	Coord		Gap	Coord	Coord	Gap		Hold	Gap
50th %ile Green (s)	27.2	80.6		15.9	69.3	69.3	32.5		32.5	27.2
50th %ile Term Code	Gap	Coord		Gap	Coord	Coord	Gap		Hold	Gap
30th %ile Green (s)	24.8	85.8		13.5	74.5	74.5	29.7		29.7	24.8
30th %ile Term Code	Gap	Coord		Gap	Coord	Coord	Gap		Hold	Gap
10th %ile Green (s)	20.3	93.4		10.0	83.1	83.1	25.6		25.6	20.3
10th %ile Term Code	Gap	Coord		Gap	Coord	Coord	Gap		Hold	Gap
Stops (vph)	450	175	0	117	192	81	572	0	344	186
Fuel Used(gal)	11	4	1	4	8	4	15	3	9	6
CO Emissions (g/hr)	799	299	53	259	540	274	1055	203	611	409
NOx Emissions (g/hr)	155	58	10	50	105	53	205	40	119	80
VOC Emissions (g/hr)	185	69	12	60	125	64	244	47	142	95
Dilemma Vehicles (#)	0	0	0	0	0	0	0	0	0	0
Queue Length 50th (ft)	237	76	0	97	115	83	298	0	180	105
Queue Length 95th (ft)	323	206	0	224	97	60	397	0	250	189
Internal Link Dist (ft)		746			1131					
Turn Bay Length (ft)	370			495						
Base Capacity (vph)	869	1900	1583	283	1634	908	1075	1583	1075	829
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0

Lanes, Volumes, Timings

1: I65 NB off Ramp /I65 SB off ramp & McEwen/McEwen

11/18/2016



Lane Group	EBL	EBT	EBR2	WBL	WBT	WBR2	NBL	NBR2	SBL	SBR2
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.55	0.17	0.07	0.44	0.31	0.36	0.57	0.31	0.37	0.45

Intersection Summary

Area Type: Other

Cycle Length: 150

Actuated Cycle Length: 150

Offset: 58 (39%), Referenced to phase 2:WBT and 6:EBT, Start of Yellow

Natural Cycle: 80

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.82

Intersection Signal Delay: 34.7

Intersection LOS: C

Intersection Capacity Utilization Err%

ICU Level of Service H

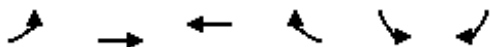
Analysis Period (min) 60

Splits and Phases: 1: I65 NB off Ramp /I65 SB off ramp & McEwen/McEwen

Ø1	Ø2 (R)	Ø3
45 s	51 s	54 s
Ø5	Ø6 (R)	Ø7
31 s	65 s	54 s

Lanes, Volumes, Timings
2: McEwen /McEwen & Tower

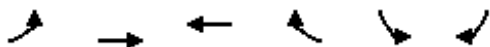
11/18/2016



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↰↰	↱↱	↰↰	↱	↰	↱↱
Traffic Volume (vph)	268	990	975	53	2	14
Future Volume (vph)	268	990	975	53	2	14
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	285			115	445	0
Storage Lanes	2			1	1	2
Taper Length (ft)	25				25	
Lane Util. Factor	0.97	0.95	0.95	1.00	1.00	0.88
Frt				0.850		0.850
Flt Protected	0.950				0.950	
Satd. Flow (prot)	3090	3185	3185	1425	1593	2508
Flt Permitted	0.950				0.950	
Satd. Flow (perm)	3090	3185	3185	1425	1593	2508
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)				26		14
Link Speed (mph)		30	30		30	
Link Distance (ft)		1211	938		511	
Travel Time (s)		27.5	21.3		11.6	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	268	990	975	53	2	14
Shared Lane Traffic (%)						
Lane Group Flow (vph)	268	990	975	53	2	14
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		24	24		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.14	1.14	1.14	1.14	1.14	1.14
Turning Speed (mph)	15			9	15	9
Number of Detectors	1	2	2	1	1	1
Detector Template	Left	Thru	Thru	Right	Left	Right
Leading Detector (ft)	20	100	100	20	20	20
Trailing Detector (ft)	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0
Detector 1 Size(ft)	20	6	6	20	20	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94	94			
Detector 2 Size(ft)		6	6			
Detector 2 Type		Cl+Ex	Cl+Ex			
Detector 2 Channel						
Detector 2 Extend (s)		0.0	0.0			
Turn Type	Prot	NA	NA	Prot	Prot	Prot
Protected Phases	1	6	2	2	8	8
Permitted Phases						

Lanes, Volumes, Timings
2: McEwen /McEwen & Tower

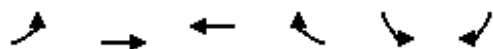
11/18/2016



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Detector Phase	1	6	2	2	8	8
Switch Phase						
Minimum Initial (s)	7.0	20.0	20.0	20.0	8.0	8.0
Minimum Split (s)	13.5	43.5	43.5	43.5	46.5	46.5
Total Split (s)	29.0	103.5	74.5	74.5	46.5	46.5
Total Split (%)	19.3%	69.0%	49.7%	49.7%	31.0%	31.0%
Maximum Green (s)	23.5	98.0	69.0	69.0	41.0	41.0
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	5.5	5.5	5.5	5.5
Lead/Lag	Lead		Lag	Lag		
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	C-Min	C-Min	C-Min	None	None
Walk Time (s)		7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)		18.0	18.0	18.0	34.0	34.0
Pedestrian Calls (#/hr)		3	3	3	3	3
Act Effect Green (s)	18.2	132.0	106.1	106.1	14.6	14.6
Actuated g/C Ratio	0.12	0.88	0.71	0.71	0.10	0.10
v/c Ratio	0.71	0.35	0.43	0.05	0.01	0.05
Control Delay	77.6	3.9	7.8	2.5	51.5	20.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	77.6	3.9	7.8	2.5	51.5	20.6
LOS	E	A	A	A	D	C
Approach Delay		19.6	7.5		24.4	
Approach LOS		B	A		C	
90th %ile Green (s)	23.1	98.0	69.4	69.4	41.0	41.0
90th %ile Term Code	Gap	Coord	Coord	Coord	Ped	Ped
70th %ile Green (s)	20.2	131.0	105.3	105.3	8.0	8.0
70th %ile Term Code	Gap	Coord	Coord	Coord	Min	Min
50th %ile Green (s)	18.3	131.0	107.2	107.2	8.0	8.0
50th %ile Term Code	Gap	Coord	Coord	Coord	Min	Min
30th %ile Green (s)	16.3	144.5	122.7	122.7	0.0	0.0
30th %ile Term Code	Gap	Coord	Coord	Coord	Skip	Skip
10th %ile Green (s)	13.3	144.5	125.7	125.7	0.0	0.0
10th %ile Term Code	Gap	Coord	Coord	Coord	Skip	Skip
Stops (vph)	253	165	386	6	3	5
Fuel Used(gal)	8	11	11	0	0	0
CO Emissions (g/hr)	571	772	756	31	3	10
NOx Emissions (g/hr)	111	150	147	6	1	2
VOC Emissions (g/hr)	132	179	175	7	1	2
Dilemma Vehicles (#)	0	0	0	0	0	0
Queue Length 50th (ft)	131	24	184	2	2	0
Queue Length 95th (ft)	204	374	m90	m1	9	12
Internal Link Dist (ft)		1131	858		431	
Turn Bay Length (ft)	285			115	445	
Base Capacity (vph)	484	2802	2252	1015	435	695
Starvation Cap Reductn	0	0	0	0	0	0

Lanes, Volumes, Timings 2: McEwen /McEwen & Tower

11/18/2016



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.55	0.35	0.43	0.05	0.00	0.02

Intersection Summary

Area Type: CBD

Cycle Length: 150

Actuated Cycle Length: 150

Offset: 54 (36%), Referenced to phase 2:WBT and 6:EBT, Start of Yellow

Natural Cycle: 105

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.71

Intersection Signal Delay: 14.2

Intersection LOS: B

Intersection Capacity Utilization 58.9%

ICU Level of Service B

Analysis Period (min) 60

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: McEwen /McEwen & Tower



Lanes, Volumes, Timings
3: Carothers/Carothers & McEwen

11/18/2016

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	668	193	117	103	650	268	171	903	55	7	98	102
Future Volume (vph)	668	193	117	103	650	268	171	903	55	7	98	102
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	205		205	218		97	300		300	280		310
Storage Lanes	2		1	2		1	2		1	2		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3433	3539	1583	3433	3539	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3433	3539	1583	3433	3539	1583	3433	3539	1583	3433	3539	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			117			105			109			65
Link Speed (mph)		30			30			30			40	
Link Distance (ft)		938			1960			1936			857	
Travel Time (s)		21.3			44.5			44.0			14.6	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	668	193	117	103	650	268	171	903	55	7	98	102
Shared Lane Traffic (%)												
Lane Group Flow (vph)	668	193	117	103	650	268	171	903	55	7	98	102
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			24			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100	20	20	100	20	20	100	20	20	100	20
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Size(ft)	20	6	20	20	6	20	20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	custom	Prot	NA	custom
Protected Phases	1	6	7	5	2	3	7	4	5	3	8	1
Permitted Phases			6			2			8			4

Lanes, Volumes, Timings

3: Carothers/Carothers & McEwen

11/18/2016

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	1	6	7	5	2	3	7	4	5	3	8	1
Switch Phase												
Minimum Initial (s)	6.0	13.0	6.0	4.0	13.0	6.0	6.0	13.0	4.0	6.0	13.0	6.0
Minimum Split (s)	13.0	52.0	12.5	10.0	52.0	13.0	12.5	52.0	10.0	13.0	52.0	13.0
Total Split (s)	32.0	70.2	13.8	14.0	52.2	13.0	13.8	52.8	14.0	13.0	52.0	32.0
Total Split (%)	21.3%	46.8%	9.2%	9.3%	34.8%	8.7%	9.2%	35.2%	9.3%	8.7%	34.7%	21.3%
Maximum Green (s)	26.0	64.2	7.8	8.5	46.2	7.0	7.8	46.8	8.5	7.0	46.0	26.0
Yellow Time (s)	4.0	4.0	4.0	3.5	4.0	4.0	4.0	4.0	3.5	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	5.5	6.0	6.0	6.0	6.0	5.5	6.0	6.0	6.0
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lead
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	Max	C-Max	None	None	C-Max	None	None	None	None	None	None	Max
Walk Time (s)		7.0			7.0			7.0			7.0	
Flash Dont Walk (s)		39.0			39.0			37.0			37.0	
Pedestrian Calls (#/hr)		5			5			5			5	
Act Effect Green (s)	29.5	67.6	81.4	8.5	46.2	58.5	7.8	44.0	57.1	6.3	42.5	79.5
Actuated g/C Ratio	0.20	0.45	0.54	0.06	0.31	0.39	0.05	0.29	0.38	0.04	0.28	0.53
v/c Ratio	0.99	0.12	0.13	0.53	0.60	0.39	0.96	0.87	0.08	0.05	0.10	0.12
Control Delay	113.5	20.8	4.6	79.2	46.8	21.2	170.9	61.2	0.2	77.7	35.2	6.5
Queue Delay	159.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	272.7	20.8	4.6	79.2	46.8	21.2	170.9	61.2	0.2	77.7	35.2	6.5
LOS	F	C	A	E	D	C	F	E	A	E	D	A
Approach Delay		190.9			43.3			74.8			22.5	
Approach LOS		F			D			E			C	
90th %ile Green (s)	26.0	64.2	7.8	8.5	46.2	6.8	7.8	47.0	8.5	6.8	46.0	26.0
90th %ile Term Code	MaxR	Coord	Max	Max	Coord	Gap	Max	Max	Max	Gap	Hold	MaxR
70th %ile Green (s)	26.0	64.2	7.8	8.5	46.2	6.4	7.8	47.4	8.5	6.4	46.0	26.0
70th %ile Term Code	MaxR	Coord	Max	Max	Coord	Gap	Max	Max	Max	Gap	Hold	MaxR
50th %ile Green (s)	27.6	64.4	7.8	9.9	46.2	6.2	7.8	46.0	9.9	6.2	44.4	27.6
50th %ile Term Code	MaxR	Coord	Max	Gap	Coord	Gap	Max	Gap	Gap	Gap	Hold	MaxR
30th %ile Green (s)	31.3	69.3	7.8	8.7	46.2	6.0	7.8	42.5	8.7	6.0	40.7	31.3
30th %ile Term Code	MaxR	Coord	Max	Gap	Coord	Min	Max	Gap	Gap	Min	Hold	MaxR
10th %ile Green (s)	36.5	76.1	7.8	7.1	46.2	6.0	7.8	37.3	7.1	6.0	35.5	36.5
10th %ile Term Code	MaxR	Coord	Max	Gap	Coord	Min	Max	Gap	Gap	Min	Hold	MaxR
Stops (vph)	500	85	17	98	539	117	151	838	0	9	59	22
Fuel Used(gal)	23	3	1	4	19	6	9	30	1	0	2	1
CO Emissions (g/hr)	1613	189	74	264	1335	412	655	2063	58	17	129	66
NOx Emissions (g/hr)	314	37	14	51	260	80	127	401	11	3	25	13
VOC Emissions (g/hr)	374	44	17	61	309	96	152	478	13	4	30	15
Dilemma Vehicles (#)	0	0	0	0	0	0	0	0	0	0	2	0
Queue Length 50th (ft)	~348	43	10	51	284	111	87	434	0	3	38	25
Queue Length 95th (ft)	#622	70	44	94	403	227	#195	#630	4	m14	47	16
Internal Link Dist (ft)		858			1880			1856			777	
Turn Bay Length (ft)	205		205	218		97	300		300	280		310
Base Capacity (vph)	674	1595	913	201	1090	688	178	1108	672	160	1085	869
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0

Lanes, Volumes, Timings

3: Carothers/Carothers & McEwen

11/18/2016

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Spillback Cap Reductn	102	0	0	0	0	3	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.17	0.12	0.13	0.51	0.60	0.39	0.96	0.81	0.08	0.04	0.09	0.12

Intersection Summary

Area Type: Other

Cycle Length: 150

Actuated Cycle Length: 150

Offset: 8 (5%), Referenced to phase 2:WBT and 6:EBT, Start of Yellow

Natural Cycle: 130

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.99

Intersection Signal Delay: 96.0

Intersection LOS: F

Intersection Capacity Utilization 77.0%

ICU Level of Service D

Analysis Period (min) 60

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 3: Carothers/Carothers & McEwen

 Ø1	 Ø2 (R)	 Ø3	 Ø4
32 s	52.2 s	13 s	52.8 s
 Ø5	 Ø6 (R)	 Ø7	 Ø8
14 s	70.2 s	13.8 s	52 s

Lanes, Volumes, Timings

4: Ovation/Resource Parkway & McEwen

11/18/2016

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	62	215	0	0	936	42	0	0	0	18	0	98
Future Volume (vph)	62	215	0	0	936	42	0	0	0	18	0	98
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.994							0.850
Flt Protected	0.950									0.950		
Satd. Flow (prot)	1770	3539	0	0	3518	0	0	0	0	1770	0	1583
Flt Permitted	0.950									0.950		
Satd. Flow (perm)	1770	3539	0	0	3518	0	0	0	0	1770	0	1583
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1960			345			402			456	
Travel Time (s)		44.5			7.8			9.1			10.4	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	62	215	0	0	936	42	0	0	0	18	0	98
Shared Lane Traffic (%)												
Lane Group Flow (vph)	62	215	0	0	978	0	0	0	0	18	0	98
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		36			36			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Free			Free			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	44.0%											
Analysis Period (min)	60											
	ICU Level of Service A											

Lanes, Volumes, Timings
5: Carothers /Carothers & Tower/Pacific

11/18/2016

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	8	0	3	28	1	14	13	1854	6	3	189	17
Future Volume (vph)	8	0	3	28	1	14	13	1854	6	3	189	17
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)	0%			0%			2%			0%		
Storage Length (ft)	84		78	106		77	177		100	85		144
Storage Lanes	2		1	1		1	1		1	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3433	1863	1583	1770	1863	1583	1752	3504	1567	1770	3539	1583
Flt Permitted	0.950			0.950			0.624			0.065		
Satd. Flow (perm)	3433	1863	1583	1770	1863	1583	1151	3504	1567	121	3539	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			676			102			98			98
Link Speed (mph)		30			30			40			30	
Link Distance (ft)		881			890			857			905	
Travel Time (s)		20.0			20.2			14.6			20.6	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	8	0	3	28	1	14	13	1854	6	3	189	17
Shared Lane Traffic (%)												
Lane Group Flow (vph)	8	0	3	28	1	14	13	1854	6	3	189	17
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			24			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.01	1.01	1.01	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100	20	20	100	20	20	100	20	20	100	20
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Size(ft)	20	6	20	20	6	20	20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot		Perm	Prot	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	3	8		7	4		1	6		5	2	

Lanes, Volumes, Timings
5: Carothers /Carothers & Tower/Pacific

11/18/2016

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases			8			4	6		6	2		2
Detector Phase	3	8	8	7	4	4	1	6	6	5	2	2
Switch Phase												
Minimum Initial (s)	6.0	8.0	8.0	6.0	8.0	8.0	6.0	20.0	20.0	6.0	20.0	20.0
Minimum Split (s)	12.5	48.5	48.5	12.5	48.5	48.5	12.0	42.0	42.0	12.0	42.0	42.0
Total Split (s)	12.5	48.5	48.5	12.5	48.5	48.5	12.0	77.0	77.0	12.0	77.0	77.0
Total Split (%)	8.3%	32.3%	32.3%	8.3%	32.3%	32.3%	8.0%	51.3%	51.3%	8.0%	51.3%	51.3%
Maximum Green (s)	7.0	43.0	43.0	7.0	43.0	43.0	6.5	71.0	71.0	6.5	71.0	71.0
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	4.0	4.0	3.5	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	5.5	5.5	5.5	5.5	5.5	6.0	6.0	5.5	6.0	6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None	None	C-Min	C-Min	None	C-Min	C-Min
Walk Time (s)		7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0
Flash Dont Walk (s)		36.0	36.0		36.0	36.0		29.0	29.0		29.0	29.0
Pedestrian Calls (#/hr)		10	10		10	10		10	10		10	10
Act Effect Green (s)	6.1		22.0	6.9	24.6	24.6	116.4	117.0	117.0	115.0	114.5	114.5
Actuated g/C Ratio	0.04		0.15	0.05	0.16	0.16	0.78	0.78	0.78	0.77	0.76	0.76
v/c Ratio	0.06		0.00	0.35	0.00	0.04	0.01	0.68	0.00	0.02	0.07	0.01
Control Delay	69.9		0.0	81.4	38.0	0.2	4.5	10.9	0.0	13.3	12.1	0.0
Queue Delay	0.0		0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0
Total Delay	69.9		0.0	81.4	38.0	0.2	4.5	11.0	0.0	13.3	12.1	0.0
LOS	E		A	F	D	A	A	B	A	B	B	A
Approach Delay					54.0			10.9			11.1	
Approach LOS					D			B			B	
90th %ile Green (s)	6.6	43.0	43.0	7.0	43.4	43.4	6.5	71.5	71.5	6.0	71.0	71.0
90th %ile Term Code	Gap	Ped	Ped	Max	Hold	Hold	Max	Coord	Coord	Min	Coord	Coord
70th %ile Green (s)	0.0	43.0	43.0	7.0	55.5	55.5	6.3	83.0	83.0	0.0	71.2	71.2
70th %ile Term Code	Skip	Ped	Ped	Max	Hold	Hold	Gap	Coord	Coord	Skip	Coord	Coord
50th %ile Green (s)	0.0	0.0	0.0	8.0	8.0	8.0	0.0	130.5	130.5	0.0	130.5	130.5
50th %ile Term Code	Skip	Skip	Skip	Hold	Min	Min	Skip	Coord	Coord	Skip	Coord	Coord
30th %ile Green (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	144.0	144.0	0.0	144.0	144.0
30th %ile Term Code	Skip	Skip	Skip	Skip	Skip	Skip	Skip	Coord	Coord	Skip	Coord	Coord
10th %ile Green (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	144.0	144.0	0.0	144.0	144.0
10th %ile Term Code	Skip	Skip	Skip	Skip	Skip	Skip	Skip	Coord	Coord	Skip	Coord	Coord
Stops (vph)	10		0	28	1	0	1	584	0	2	58	0
Fuel Used(gal)	0		0	1	0	0	0	21	0	0	2	0
CO Emissions (g/hr)	16		1	57	1	7	7	1443	2	3	148	8
NOx Emissions (g/hr)	3		0	11	0	1	1	281	0	1	29	2
VOC Emissions (g/hr)	4		0	13	0	2	2	334	1	1	34	2
Dilemma Vehicles (#)	0		0	0	0	0	0	49	0	0	0	0
Queue Length 50th (ft)	4		0	27	1	0	1	132	0	0	10	0
Queue Length 95th (ft)	15		0	70	6	0	m2	m#1308	m0	7	87	0
Internal Link Dist (ft)		801			810			777			825	
Turn Bay Length (ft)	84		78	106		77	177		100	85		144
Base Capacity (vph)	160		936	84	566	551	919	2733	1244	164	2702	1231

Lanes, Volumes, Timings
5: Carothers /Carothers & Tower/Pacific

11/18/2016

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Starvation Cap Reductn	0		0	0	0	0	0	95	0	0	0	0
Spillback Cap Reductn	0		0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0		0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.05		0.00	0.33	0.00	0.03	0.01	0.70	0.00	0.02	0.07	0.01

Intersection Summary

Area Type: Other

Cycle Length: 150

Actuated Cycle Length: 150

Offset: 120 (80%), Referenced to phase 2:SBTL and 6:NBTL, Start of Yellow

Natural Cycle: 115

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.68

Intersection Signal Delay: 12.0

Intersection LOS: B

Intersection Capacity Utilization 77.1%

ICU Level of Service D

Analysis Period (min) 60

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 5: Carothers /Carothers & Tower/Pacific

 Ø1	 Ø2 (R)	 Ø3	 Ø4
12 s	77 s	12.5 s	48.5 s
 Ø5	 Ø6 (R)	 Ø7	 Ø8
12 s	77 s	12.5 s	48.5 s

Lanes, Volumes, Timings

6: Carothers/Carothers Parkway & Apartments/Resource

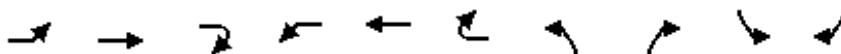
11/18/2016

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	0	2	9	0	63	2	1938	1	7	213	2
Future Volume (vph)	1	0	2	9	0	63	2	1938	1	7	213	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)	0%			0%			2%			0%		
Storage Length (ft)	0		0	0		0	210		128	480		93
Storage Lanes	1		0	1		1	1		0	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	1.00
Frt	0.850			0.850						0.850		
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1583	0	1770	1863	1583	1752	3504	0	1770	3539	1583
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1770	1583	0	1770	1863	1583	1752	3504	0	1770	3539	1583
Link Speed (mph)	30			30			40			40		
Link Distance (ft)	762			773			905			2004		
Travel Time (s)	17.3			17.6			15.4			34.2		
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	1	0	2	9	0	63	2	1938	1	7	213	2
Shared Lane Traffic (%)												
Lane Group Flow (vph)	1	2	0	9	0	63	2	1939	0	7	213	2
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)	12			12			12			12		
Link Offset(ft)	0			0			0			0		
Crosswalk Width(ft)	16			16			16			16		
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.01	1.01	1.01	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control	Stop			Stop			Free			Free		
Intersection Summary												
Area Type:	Other											
Control Type: Unsignalized												
Intersection Capacity Utilization 70.8%												
ICU Level of Service C												
Analysis Period (min) 60												

Lanes, Volumes, Timings

1: I65 NB off Ramp /I65 SB off ramp & McEwen/McEwen

11/18/2016

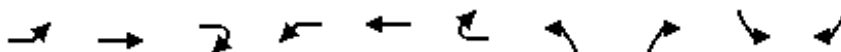


Lane Group	EBL	EBT	EBR2	WBL	WBT	WBR2	NBL	NBR2	SBL	SBR2
Lane Configurations										
Traffic Volume (vph)	572	604	366	300	564	623	285	75	462	671
Future Volume (vph)	572	604	366	300	564	623	285	75	462	671
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	370			495			0		0	
Storage Lanes	2			1			2		2	
Taper Length (ft)	25			25			25		25	
Lane Util. Factor	0.97	0.95	1.00	1.00	0.95	1.00	0.97	1.00	0.97	0.88
Frt			0.850			0.850		0.850		0.850
Flt Protected	0.950			0.950			0.950		0.950	
Satd. Flow (prot)	3433	3539	1583	1770	3539	1583	3433	1583	3433	2787
Flt Permitted	0.950			0.950			0.950		0.950	
Satd. Flow (perm)	3433	3539	1583	1770	3539	1583	3433	1583	3433	2787
Right Turn on Red			Yes			Yes		Yes		Yes
Satd. Flow (RTOR)			366			616		245		284
Link Speed (mph)		30			30					
Link Distance (ft)		826			1211					
Travel Time (s)		18.8			27.5					
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	572	604	366	300	564	623	285	75	462	671
Shared Lane Traffic (%)										
Lane Group Flow (vph)	572	604	366	300	564	623	285	75	462	671
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Right	Left	Right
Median Width(ft)		24			24					
Link Offset(ft)		0			0					
Crosswalk Width(ft)		16			16					
Two way Left Turn Lane										
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15	9	15	9
Number of Detectors	1	2	1	1	2	1	1	1	1	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Right	Left	Right
Leading Detector (ft)	20	100	20	20	100	20	20	20	20	20
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0	0	0	0	0
Detector 1 Size(ft)	20	6	20	20	6	20	20	20	20	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel										
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94					
Detector 2 Size(ft)		6			6					
Detector 2 Type		Cl+Ex			Cl+Ex					
Detector 2 Channel										
Detector 2 Extend (s)		0.0			0.0					
Turn Type	Prot	NA	Free	Prot	NA	Perm	Perm	Free	Perm	Prot
Protected Phases	1	6		5	2					1
Permitted Phases			Free			2	3	Free	7	

Lanes, Volumes, Timings

1: I65 NB off Ramp /I65 SB off ramp & McEwen/McEwen

11/18/2016

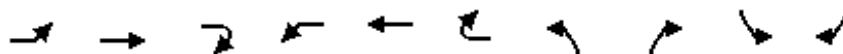


Lane Group	EBL	EBT	EBR2	WBL	WBT	WBR2	NBL	NBR2	SBL	SBR2
Detector Phase	1	6		5	2	2	3		7	1
Switch Phase										
Minimum Initial (s)	8.0	12.0		8.0	12.0	12.0	12.0		12.0	8.0
Minimum Split (s)	15.0	27.0		25.0	27.0	27.0	27.0		27.0	15.0
Total Split (s)	23.0	28.0		25.0	30.0	30.0	27.0		27.0	23.0
Total Split (%)	28.8%	35.0%		31.3%	37.5%	37.5%	33.8%		33.8%	28.8%
Maximum Green (s)	16.0	21.0		18.0	23.0	23.0	20.0		20.0	16.0
Yellow Time (s)	4.0	4.0		4.0	4.0	4.0	4.0		4.0	4.0
All-Red Time (s)	3.0	3.0		3.0	3.0	3.0	3.0		3.0	3.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	7.0	7.0		7.0	7.0	7.0	7.0		7.0	7.0
Lead/Lag	Lead	Lag		Lead	Lag	Lag				Lead
Lead-Lag Optimize?										
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0		3.0	3.0
Recall Mode	None	Min		None	Min	Min	None		None	None
Walk Time (s)		7.0			7.0	7.0	7.0		7.0	
Flash Dont Walk (s)		13.0			13.0	13.0	13.0		13.0	
Pedestrian Calls (#/hr)		5			5	5	5		5	
Act Effect Green (s)	15.5	19.6	72.0	15.9	20.0	20.0	15.4	72.0	15.4	15.5
Actuated g/C Ratio	0.22	0.27	1.00	0.22	0.28	0.28	0.21	1.00	0.21	0.22
v/c Ratio	0.78	0.63	0.23	0.77	0.57	0.70	0.39	0.05	0.63	0.82
Control Delay	37.1	27.2	0.3	43.5	25.3	7.4	26.6	0.1	30.7	26.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	37.1	27.2	0.3	43.5	25.3	7.4	26.6	0.1	30.7	26.6
LOS	D	C	A	D	C	A	C	A	C	C
Approach Delay		24.5			21.5					
Approach LOS		C			C					
90th %ile Green (s)	16.0	21.0		18.0	23.0	23.0	20.0		20.0	16.0
90th %ile Term Code	Max	Max		Max	Max	Max	Ped		Max	Max
70th %ile Green (s)	16.0	21.0		18.0	23.0	23.0	17.1		17.1	16.0
70th %ile Term Code	Max	Max		Max	Max	Max	Hold		Gap	Max
50th %ile Green (s)	16.0	20.8		18.0	22.8	22.8	15.2		15.2	16.0
50th %ile Term Code	Max	Hold		Max	Gap	Gap	Hold		Gap	Max
30th %ile Green (s)	16.0	19.9		14.9	18.8	18.8	13.0		13.0	16.0
30th %ile Term Code	Max	Hold		Gap	Gap	Gap	Hold		Gap	Max
10th %ile Green (s)	13.0	15.2		11.0	13.2	13.2	12.0		12.0	13.0
10th %ile Term Code	Gap	Hold		Gap	Gap	Gap	Min		Min	Gap
Stops (vph)	495	503	0	258	454	74	228	0	397	348
Fuel Used(gal)	11	10	2	7	11	7	4	0	8	10
CO Emissions (g/hr)	750	700	167	483	751	506	314	31	551	674
NOx Emissions (g/hr)	146	136	32	94	146	98	61	6	107	131
VOC Emissions (g/hr)	174	162	39	112	174	117	73	7	128	156
Dilemma Vehicles (#)	0	0	0	0	0	0	0	0	0	0
Queue Length 50th (ft)	130	128	0	128	113	2	59	0	102	97
Queue Length 95th (ft)	#268	225	0	#308	201	#178	105	0	169	#269
Internal Link Dist (ft)		746			1131					
Turn Bay Length (ft)	370			495						
Base Capacity (vph)	771	1043	1583	447	1143	928	964	1583	964	846
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0

Lanes, Volumes, Timings

1: I65 NB off Ramp /I65 SB off ramp & McEwen/McEwen

11/18/2016



Lane Group	EBL	EBT	EBR2	WBL	WBT	WBR2	NBL	NBR2	SBL	SBR2
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.74	0.58	0.23	0.67	0.49	0.67	0.30	0.05	0.48	0.79

Intersection Summary

Area Type: Other

Cycle Length: 80

Actuated Cycle Length: 72

Natural Cycle: 80

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.82

Intersection Signal Delay: 24.2

Intersection LOS: C

Intersection Capacity Utilization Err%

ICU Level of Service H

Analysis Period (min) 60

90th %ile Actuated Cycle: 80

70th %ile Actuated Cycle: 77.1

50th %ile Actuated Cycle: 75

30th %ile Actuated Cycle: 68.8

10th %ile Actuated Cycle: 59.2

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

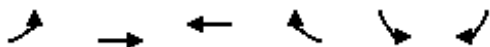
Splits and Phases: 1: I65 NB off Ramp /I65 SB off ramp & McEwen/McEwen

Ø1	Ø2	Ø3
23 s	30 s	27 s
Ø5	Ø6	Ø7
25 s	28 s	27 s

Lanes, Volumes, Timings

2: McEwen /McEwen & Tower

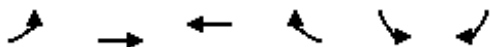
11/18/2016



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↑↑	↑↑	↑↑	↑	↑	↑↑
Traffic Volume (vph)	27	1108	1167	0	106	308
Future Volume (vph)	27	1108	1167	0	106	308
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	285			115	445	0
Storage Lanes	2			1	1	2
Taper Length (ft)	25				25	
Lane Util. Factor	0.97	0.95	0.95	1.00	1.00	0.88
Frt						0.850
Flt Protected	0.950				0.950	
Satd. Flow (prot)	3090	3185	3185	1676	1593	2508
Flt Permitted	0.950				0.950	
Satd. Flow (perm)	3090	3185	3185	1676	1593	2508
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)						308
Link Speed (mph)		30	30		30	
Link Distance (ft)		1211	938		511	
Travel Time (s)		27.5	21.3		11.6	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	27	1108	1167	0	106	308
Shared Lane Traffic (%)						
Lane Group Flow (vph)	27	1108	1167	0	106	308
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		24	24		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.14	1.14	1.14	1.14	1.14	1.14
Turning Speed (mph)	15			9	15	9
Number of Detectors	1	2	2	1	1	1
Detector Template	Left	Thru	Thru	Right	Left	Right
Leading Detector (ft)	20	100	100	20	20	20
Trailing Detector (ft)	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0
Detector 1 Size(ft)	20	6	6	20	20	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94	94			
Detector 2 Size(ft)		6	6			
Detector 2 Type		Cl+Ex	Cl+Ex			
Detector 2 Channel						
Detector 2 Extend (s)		0.0	0.0			
Turn Type	Prot	NA	NA	Prot	Prot	Prot
Protected Phases	1	6	2	2	8	8
Permitted Phases						

Lanes, Volumes, Timings
2: McEwen /McEwen & Tower

11/18/2016

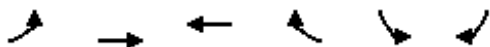


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Detector Phase	1	6	2	2	8	8
Switch Phase						
Minimum Initial (s)	7.0	20.0	20.0	20.0	8.0	8.0
Minimum Split (s)	13.5	43.5	43.5	43.5	46.5	46.5
Total Split (s)	13.5	58.5	45.0	45.0	46.5	46.5
Total Split (%)	12.9%	55.7%	42.9%	42.9%	44.3%	44.3%
Maximum Green (s)	8.0	53.0	39.5	39.5	41.0	41.0
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	5.5	5.5	5.5	5.5
Lead/Lag	Lead		Lag	Lag		
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	Min	Min	Min	None	None
Walk Time (s)		7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)		18.0	18.0	18.0	34.0	34.0
Pedestrian Calls (#/hr)		3	3	3	3	3
Act Effect Green (s)	7.8	39.5	35.6		14.1	14.1
Actuated g/C Ratio	0.12	0.60	0.54		0.21	0.21
v/c Ratio	0.07	0.58	0.68		0.31	0.39
Control Delay	36.6	11.1	17.5		25.8	4.6
Queue Delay	0.0	0.0	0.0		0.0	0.0
Total Delay	36.6	11.1	17.5		25.8	4.6
LOS	D	B	B		C	A
Approach Delay		11.8	17.5		10.0	
Approach LOS		B	B		B	
90th %ile Green (s)	7.6	53.0	39.9	39.9	41.0	41.0
90th %ile Term Code	Gap	Max	Hold	Hold	Ped	Ped
70th %ile Green (s)	7.0	52.0	39.5	39.5	11.7	11.7
70th %ile Term Code	Min	Hold	Max	Max	Gap	Gap
50th %ile Green (s)	0.0	37.6	37.6	37.6	10.1	10.1
50th %ile Term Code	Skip	Hold	Gap	Gap	Gap	Gap
30th %ile Green (s)	0.0	28.2	28.2	28.2	8.0	8.0
30th %ile Term Code	Skip	Hold	Gap	Gap	Min	Min
10th %ile Green (s)	0.0	24.3	24.3	24.3	8.0	8.0
10th %ile Term Code	Skip	Hold	Gap	Gap	Min	Min
Stops (vph)	25	595	711		76	28
Fuel Used(gal)	1	16	17		1	2
CO Emissions (g/hr)	42	1137	1163		98	117
NOx Emissions (g/hr)	8	221	226		19	23
VOC Emissions (g/hr)	10	263	269		23	27
Dilemma Vehicles (#)	0	0	0		0	0
Queue Length 50th (ft)	4	94	101		34	0
Queue Length 95th (ft)	25	436	#657		95	41
Internal Link Dist (ft)		1131	858		431	
Turn Bay Length (ft)	285				445	
Base Capacity (vph)	416	2622	2121		1100	1827
Starvation Cap Reductn	0	0	0		0	0

Lanes, Volumes, Timings

2: McEwen /McEwen & Tower

11/18/2016



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Spillback Cap Reductn	0	0	0		0	0
Storage Cap Reductn	0	0	0		0	0
Reduced v/c Ratio	0.06	0.42	0.55		0.10	0.17

Intersection Summary

Area Type: CBD

Cycle Length: 105

Actuated Cycle Length: 65.8

Natural Cycle: 105

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.68

Intersection Signal Delay: 14.0

Intersection LOS: B

Intersection Capacity Utilization 57.0%

ICU Level of Service B

Analysis Period (min) 60

90th %ile Actuated Cycle: 105

70th %ile Actuated Cycle: 74.7

50th %ile Actuated Cycle: 58.7

30th %ile Actuated Cycle: 47.2

10th %ile Actuated Cycle: 43.3

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 2: McEwen /McEwen & Tower

 Ø1	 Ø2	
13.5 s	45 s	
 Ø6	 Ø8	
58.5 s	46.5 s	

Lanes, Volumes, Timings

3: Carothers/Carothers & McEwen

11/18/2016

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	111	620	431	64	277	5	94	172	82	207	1134	749
Future Volume (vph)	111	620	431	64	277	5	94	172	82	207	1134	749
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	205		205	218		97	300		300	280		310
Storage Lanes	2		1	2		1	2		1	2		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3433	3539	1583	3433	3539	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3433	3539	1583	3433	3539	1583	3433	3539	1583	3433	3539	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			71			71			82			359
Link Speed (mph)		30			30			30			40	
Link Distance (ft)		938			1960			1936			857	
Travel Time (s)		21.3			44.5			44.0			14.6	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	111	620	431	64	277	5	94	172	82	207	1134	749
Shared Lane Traffic (%)												
Lane Group Flow (vph)	111	620	431	64	277	5	94	172	82	207	1134	749
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			24			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100	20	20	100	20	20	100	20	20	100	20
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Size(ft)	20	6	20	20	6	20	20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	custom	Prot	NA	custom
Protected Phases	1	6	7	5	2	3	7	4	5	3	8	1
Permitted Phases			6			2			8			4

Lanes, Volumes, Timings

3: Carothers/Carothers & McEwen

11/18/2016



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	1	6	7	5	2	3	7	4	5	3	8	1
Switch Phase												
Minimum Initial (s)	6.0	13.0	6.0	4.0	13.0	6.0	6.0	13.0	4.0	6.0	13.0	6.0
Minimum Split (s)	13.0	52.0	12.5	10.0	52.0	13.0	12.5	52.0	10.0	13.0	52.0	13.0
Total Split (s)	13.0	54.0	12.6	11.0	52.0	13.0	12.6	52.0	11.0	13.0	52.4	13.0
Total Split (%)	10.0%	41.5%	9.7%	8.5%	40.0%	10.0%	9.7%	40.0%	8.5%	10.0%	40.3%	10.0%
Maximum Green (s)	7.0	48.0	6.6	5.5	46.0	7.0	6.6	46.0	5.5	7.0	46.4	7.0
Yellow Time (s)	4.0	4.0	4.0	3.5	4.0	4.0	4.0	4.0	3.5	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	5.5	6.0	6.0	6.0	6.0	5.5	6.0	6.0	6.0
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lead
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	Max	None	None	None	None	None	None	None	None	None	None	Max
Walk Time (s)		7.0			7.0			7.0			7.0	
Flash Dont Walk (s)		39.0			39.0			37.0			37.0	
Pedestrian Calls (#/hr)		5			5			5			5	
Act Effect Green (s)	7.2	26.9	39.8	5.6	24.9	38.2	6.7	39.1	51.3	7.2	39.5	52.4
Actuated g/C Ratio	0.07	0.26	0.39	0.05	0.24	0.37	0.07	0.38	0.50	0.07	0.38	0.51
v/c Ratio	0.46	0.67	0.66	0.34	0.32	0.01	0.42	0.13	0.10	0.87	0.84	0.76
Control Delay	57.4	37.8	27.1	57.8	32.9	0.0	57.2	22.5	4.4	92.6	36.5	17.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	57.4	37.8	27.1	57.8	32.9	0.0	57.2	22.5	4.4	92.6	36.5	17.3
LOS	E	D	C	E	C	A	E	C	A	F	D	B
Approach Delay		35.7			37.1			27.6			35.2	
Approach LOS		D			D			C			D	
90th %ile Green (s)	7.0	48.0	6.6	5.5	46.0	7.0	6.6	46.0	5.5	7.0	46.4	7.0
90th %ile Term Code	MaxR	Hold	Max	Max	Ped	Max	Max	Hold	Max	Max	Max	MaxR
70th %ile Green (s)	7.0	27.9	6.6	5.5	25.9	7.0	6.6	46.0	5.5	7.0	46.4	7.0
70th %ile Term Code	MaxR	Gap	Max	Max	Hold	Max	Max	Hold	Max	Max	Max	MaxR
50th %ile Green (s)	7.0	24.4	6.6	5.5	22.4	7.0	6.6	39.8	5.5	7.0	40.2	7.0
50th %ile Term Code	MaxR	Gap	Max	Max	Hold	Max	Max	Hold	Max	Max	Gap	MaxR
30th %ile Green (s)	7.0	22.0	6.6	5.5	20.0	7.0	6.6	35.4	5.5	7.0	35.8	7.0
30th %ile Term Code	MaxR	Gap	Max	Max	Hold	Max	Max	Hold	Max	Max	Gap	MaxR
10th %ile Green (s)	7.0	16.8	6.5	5.5	14.8	7.0	6.5	28.4	5.5	7.0	28.9	7.0
10th %ile Term Code	MaxR	Gap	Gap	Max	Hold	Max	Gap	Hold	Max	Max	Gap	MaxR
Stops (vph)	101	520	284	59	210	0	84	105	9	167	950	342
Fuel Used(gal)	3	12	7	2	7	0	3	4	1	7	24	10
CO Emissions (g/hr)	186	851	496	144	507	5	208	277	95	471	1702	724
NOx Emissions (g/hr)	36	166	97	28	99	1	40	54	18	92	331	141
VOC Emissions (g/hr)	43	197	115	33	117	1	48	64	22	109	395	168
Dilemma Vehicles (#)	0	0	0	0	0	0	0	0	0	0	47	0
Queue Length 50th (ft)	36	191	193	20	78	0	30	35	0	68	329	185
Queue Length 95th (ft)	#98	304	383	58	136	0	#81	88	38	#215	#732	#751
Internal Link Dist (ft)		858			1880			1856			777	
Turn Bay Length (ft)	205		205	218		97	300		300	280		310
Base Capacity (vph)	239	1691	656	188	1621	632	225	1621	830	239	1635	982
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0

Lanes, Volumes, Timings

3: Carothers/Carothers & McEwen

11/18/2016

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.46	0.37	0.66	0.34	0.17	0.01	0.42	0.11	0.10	0.87	0.69	0.76

Intersection Summary

Area Type: Other

Cycle Length: 130

Actuated Cycle Length: 102.9

Natural Cycle: 130

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.87

Intersection Signal Delay: 34.8

Intersection LOS: C

Intersection Capacity Utilization 77.2%

ICU Level of Service D

Analysis Period (min) 60

90th %ile Actuated Cycle: 130

70th %ile Actuated Cycle: 109.9

50th %ile Actuated Cycle: 100.2

30th %ile Actuated Cycle: 93.4

10th %ile Actuated Cycle: 81.2

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 3: Carothers/Carothers & McEwen

 Ø1	 Ø2	 Ø3	 Ø4
13 s	52 s	13 s	52 s
 Ø5	 Ø6	 Ø7	 Ø8
11 s	54 s	12.6 s	52.4 s

Lanes, Volumes, Timings
4: Ovation/Resource Parkway & McEwen

11/18/2016

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	87	815	0	0	363	13	0	0	0	74	0	68
Future Volume (vph)	87	815	0	0	363	13	0	0	0	74	0	68
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.995				0.850			
Flt Protected	0.950								0.950			
Satd. Flow (prot)	1770	3539	0	0	3522	0	0	0	0	1770	0	1583
Flt Permitted	0.950								0.950			
Satd. Flow (perm)	1770	3539	0	0	3522	0	0	0	0	1770	0	1583
Link Speed (mph)	30				30				30			
Link Distance (ft)	1960				345				402			
Travel Time (s)	44.5				7.8				9.1			
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	87	815	0	0	363	13	0	0	0	74	0	68
Shared Lane Traffic (%)												
Lane Group Flow (vph)	87	815	0	0	376	0	0	0	0	74	0	68
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)	36				36				12			
Link Offset(ft)	0				0				0			
Crosswalk Width(ft)	16				16				16			
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control	Free				Free				Stop		Stop	
Intersection Summary												
Area Type:	Other											
Control Type: Unsignalized												
Intersection Capacity Utilization 33.3%												
ICU Level of Service A												
Analysis Period (min) 60												

Lanes, Volumes, Timings
5: Carothers /Carothers & Tower/Pacific

11/18/2016

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	13	1	22	10	0	8	2	267	29	4	1984	9
Future Volume (vph)	13	1	22	10	0	8	2	267	29	4	1984	9
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)	0%			0%			2%			0%		
Storage Length (ft)	84		78	106		77	177		100	85		144
Storage Lanes	2		1	1		1	1		1	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3433	1863	1583	1770	1863	1583	1752	3504	1567	1770	3539	1583
Flt Permitted	0.950			0.950			0.080			0.587		
Satd. Flow (perm)	3433	1863	1583	1770	1863	1583	148	3504	1567	1093	3539	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			133			523			128			128
Link Speed (mph)		30			30			40			30	
Link Distance (ft)		881			890			857			905	
Travel Time (s)		20.0			20.2			14.6			20.6	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	13	1	22	10	0	8	2	267	29	4	1984	9
Shared Lane Traffic (%)												
Lane Group Flow (vph)	13	1	22	10	0	8	2	267	29	4	1984	9
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			24			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.01	1.01	1.01	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100	20	20	100	20	20	100	20	20	100	20
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Size(ft)	20	6	20	20	6	20	20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA	Perm	Prot		Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	3	8		7	4		1	6		5	2	

Lanes, Volumes, Timings
5: Carothers /Carothers & Tower/Pacific

11/18/2016

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases			8			4	6		6	2		2
Detector Phase	3	8	8	7	4	4	1	6	6	5	2	2
Switch Phase												
Minimum Initial (s)	6.0	8.0	8.0	6.0	8.0	8.0	6.0	20.0	20.0	6.0	20.0	20.0
Minimum Split (s)	12.5	48.5	48.5	12.5	48.5	48.5	12.0	42.0	42.0	12.0	42.0	42.0
Total Split (s)	12.5	48.5	48.5	12.5	48.5	48.5	12.0	42.0	42.0	12.0	42.0	42.0
Total Split (%)	10.9%	42.2%	42.2%	10.9%	42.2%	42.2%	10.4%	36.5%	36.5%	10.4%	36.5%	36.5%
Maximum Green (s)	7.0	43.0	43.0	7.0	43.0	43.0	6.5	36.0	36.0	6.5	36.0	36.0
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	4.0	4.0	3.5	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	5.5	5.5	5.5	5.5	5.5	6.0	6.0	5.5	6.0	6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None	None	Min	Min	None	Min	Min
Walk Time (s)		7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0
Flash Dont Walk (s)		36.0	36.0		36.0	36.0		29.0	29.0		29.0	29.0
Pedestrian Calls (#/hr)		10	10		10	10		10	10		10	10
Act Effect Green (s)	6.6	12.8	12.8	6.6		12.9	51.0	54.1	54.1	51.0	54.1	54.1
Actuated g/C Ratio	0.10	0.19	0.19	0.10		0.19	0.75	0.79	0.79	0.75	0.79	0.79
v/c Ratio	0.04	0.00	0.05	0.06		0.01	0.01	0.10	0.02	0.00	0.71	0.01
Control Delay	36.8	22.0	0.3	37.6		0.0	12.0	10.1	0.0	11.5	15.3	0.0
Queue Delay	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	36.8	22.0	0.3	37.6		0.0	12.0	10.1	0.0	11.5	15.3	0.0
LOS	D	C	A	D		A	B	B	A	B	B	A
Approach Delay		14.1						9.1			15.2	
Approach LOS		B						A			B	
90th %ile Green (s)	6.7	43.0	43.0	7.0	43.3	43.3	6.0	36.0	36.0	6.1	36.1	36.1
90th %ile Term Code	Gap	Ped	Ped	Max	Hold	Hold	Min	Ped	Ped	Gap	Hold	Hold
70th %ile Green (s)	0.0	8.0	8.0	0.0	8.0	8.0	0.0	36.0	36.0	0.0	36.0	36.0
70th %ile Term Code	Skip	Min	Min	Skip	Hold	Hold	Skip	Hold	Hold	Skip	Max	Max
50th %ile Green (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	51.0	51.0	0.0	51.0	51.0
50th %ile Term Code	Skip	Skip	Skip	Skip	Skip	Skip	Skip	Dwell	Dwell	Skip	Dwell	Dwell
30th %ile Green (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	51.0	51.0	0.0	51.0	51.0
30th %ile Term Code	Skip	Skip	Skip	Skip	Skip	Skip	Skip	Dwell	Dwell	Skip	Dwell	Dwell
10th %ile Green (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	51.0	51.0	0.0	51.0	51.0
10th %ile Term Code	Skip	Skip	Skip	Skip	Skip	Skip	Skip	Dwell	Dwell	Skip	Dwell	Dwell
Stops (vph)	14	2	0	12		0	1	79	0	3	554	0
Fuel Used(gal)	0	0	0	0		0	0	3	0	0	23	0
CO Emissions (g/hr)	18	2	11	15		4	2	201	12	4	1624	4
NOx Emissions (g/hr)	4	0	2	3		1	0	39	2	1	316	1
VOC Emissions (g/hr)	4	0	2	3		1	0	47	3	1	376	1
Dilemma Vehicles (#)	0	0	0	0		0	0	8	0	0	0	0
Queue Length 50th (ft)	2	0	0	3		0	0	0	0	0	0	0
Queue Length 95th (ft)	17	5	0	28		0	6	125	0	9	#1486	0
Internal Link Dist (ft)		801			810			777			825	
Turn Bay Length (ft)	84		78	106		77	177		100	85		144
Base Capacity (vph)	381	1271	1122	196		1247	276	2777	1268	888	2805	1281

Lanes, Volumes, Timings
5: Carothers /Carothers & Tower/Pacific

11/18/2016

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Starvation Cap Reductn	0	0	0	0		0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0		0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0		0	0	0	0	0	0	0
Reduced v/c Ratio	0.03	0.00	0.02	0.05		0.01	0.01	0.10	0.02	0.00	0.71	0.01

Intersection Summary

Area Type: Other

Cycle Length: 115

Actuated Cycle Length: 68.2

Natural Cycle: 115

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.71

Intersection Signal Delay: 14.4

Intersection LOS: B

Intersection Capacity Utilization 80.7%

ICU Level of Service D

Analysis Period (min) 60

90th %ile Actuated Cycle: 114.6

70th %ile Actuated Cycle: 55.5

50th %ile Actuated Cycle: 57

30th %ile Actuated Cycle: 57

10th %ile Actuated Cycle: 57

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 5: Carothers /Carothers & Tower/Pacific

 Ø1	 Ø2	 Ø3	 Ø4
12 s	42 s	12.5 s	48.5 s
 Ø5	 Ø6	 Ø7	 Ø8
12 s	42 s	12.5 s	48.5 s

Lanes, Volumes, Timings

6: Carothers/Carothers Parkway & Apartments/Resource

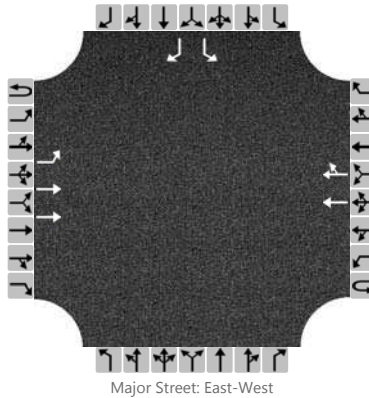
11/18/2016

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	3	8	0	17	3	312	3	64	1951	0
Future Volume (vph)	0	0	3	8	0	17	3	312	3	64	1951	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)	0%			0%			2%			0%		
Storage Length (ft)	0		0	0		0	210		128	480		93
Storage Lanes	1		0	1		1	1		0	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	1.00
Frt	0.850			0.850			0.999					
Flt Protected				0.950				0.950				0.950
Satd. Flow (prot)	1863	1583	0	1770	1863	1583	1752	3500	0	1770	3539	1863
Flt Permitted				0.950				0.950				0.950
Satd. Flow (perm)	1863	1583	0	1770	1863	1583	1752	3500	0	1770	3539	1863
Link Speed (mph)	30			30			40			40		
Link Distance (ft)	762			773			905			2004		
Travel Time (s)	17.3			17.6			15.4			34.2		
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	0	3	8	0	17	3	312	3	64	1951	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	3	0	8	0	17	3	315	0	64	1951	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)	12			12			12			12		
Link Offset(ft)	0			0			0			0		
Crosswalk Width(ft)	16			16			16			16		
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.01	1.01	1.01	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control	Stop			Stop			Free			Free		
Intersection Summary												
Area Type:	Other											
Control Type: Unsignalized												
Intersection Capacity Utilization 67.2%												
ICU Level of Service C												
Analysis Period (min) 60												

HCS 2010 Two-Way Stop Control Summary Report

General Information		Site Information	
Analyst	FTG	Intersection	E. McEwen and Resource
Agency/Co.	FTG	Jurisdiction	Franklin, TN
Date Performed	Nov 2016	East/West Street	E. McEwen Drive
Analysis Year	2016	North/South Street	Resource Drive
Time Analyzed	AM Peak Hour	Peak Hour Factor	0.92
Intersection Orientation	East-West	Analysis Time Period (hrs)	0.25
Project Description	10765		

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	1	2	0	0	0	2	0		0	0	0		1	0	1
Configuration		L	T				T	TR						L		R
Volume (veh/h)		62	215				936	42						18		98
Percent Heavy Vehicles		0												0		0
Proportion Time Blocked																
Right Turn Channelized	No				No				No				No			
Median Type	Left Only															
Median Storage	1															

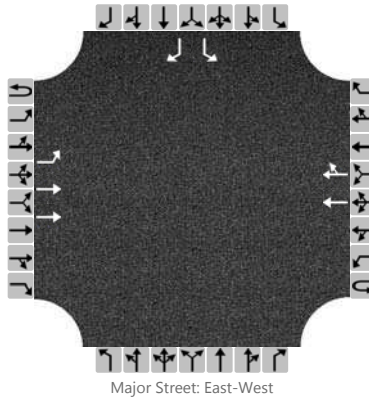
Delay, Queue Length, and Level of Service

Flow Rate (veh/h)		67												20		107
Capacity		663												228		497
v/c Ratio		0.10												0.09		0.22
95% Queue Length		0.3												0.3		0.8
Control Delay (s/veh)		11.0												22.3		14.2
Level of Service (LOS)		B												C		B
Approach Delay (s/veh)	2.5												15.5			
Approach LOS	A												C			

HCS 2010 Two-Way Stop Control Summary Report

General Information		Site Information	
Analyst	FTG	Intersection	E. McEwen and Resource
Agency/Co.	FTG	Jurisdiction	Franklin, TN
Date Performed	Nov 2016	East/West Street	E. McEwen Drive
Analysis Year	2016	North/South Street	Resource Drive
Time Analyzed	PM Peak Hour	Peak Hour Factor	0.92
Intersection Orientation	East-West	Analysis Time Period (hrs)	0.25
Project Description	10765		

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	1	2	0	0	0	2	0		0	0	0		1	0	1
Configuration		L	T				T	TR						L		R
Volume (veh/h)		87	815				363	13						74		68
Percent Heavy Vehicles		0												0		0
Proportion Time Blocked																
Right Turn Channelized	No				No				No				No			
Median Type	Left Only															
Median Storage	1															

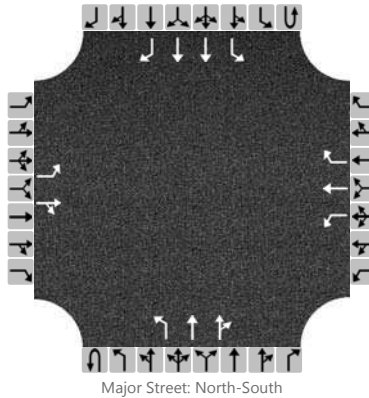
Delay, Queue Length, and Level of Service

Flow Rate (veh/h)		95												80		74
Capacity		1161												310		809
v/c Ratio		0.08												0.26		0.09
95% Queue Length		0.3												1.0		0.3
Control Delay (s/veh)		8.4												20.6		9.9
Level of Service (LOS)		A												C		A
Approach Delay (s/veh)	0.8												15.5			
Approach LOS	A												C			

HCS 2010 Two-Way Stop Control Summary Report

General Information		Site Information	
Analyst	FTG	Intersection	Carothers and Resource
Agency/Co.	FTG	Jurisdiction	Franklin, TN
Date Performed	Nov 2016	East/West Street	Resource Drive
Analysis Year	2016	North/South Street	Carothers Parkway
Time Analyzed	AM Peak Hour	Peak Hour Factor	0.92
Intersection Orientation	North-South	Analysis Time Period (hrs)	0.25
Project Description	10765		

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		1	1	0		1	1	1	0	1	2	0	0	1	2	1
Configuration		L		TR		L	T	R		L	T	TR		L	T	R
Volume (veh/h)		1	0	2		9	0	63		2	1938	1		7	213	2
Percent Heavy Vehicles		0	0	0		0	0	0		0				0		
Proportion Time Blocked																
Right Turn Channelized	No				No				No				No			
Median Type	Left Only															
Median Storage	1															

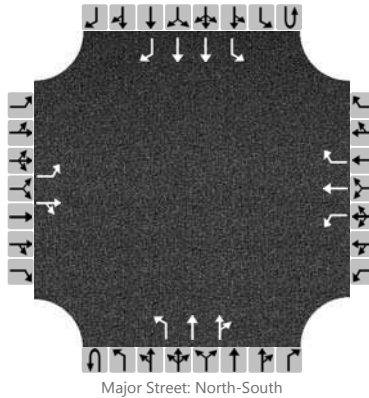
Delay, Queue Length, and Level of Service

Flow Rate (veh/h)		1		2		10		68		2				8		
Capacity		140		921		48	1668	226		1345				264		
v/c Ratio		0.01		0.00		0.21		0.30		0.00				0.03		
95% Queue Length		0.0		0.0		0.7		1.2		0.0				0.1		
Control Delay (s/veh)		31.0		8.9		99.3	7.2	27.7		7.7				19.1		
Level of Service (LOS)		D		A		F	A	D		A				C		
Approach Delay (s/veh)	16.3				36.9				0.0				0.6			
Approach LOS	C				E				A				A			

HCS 2010 Two-Way Stop Control Summary Report

General Information		Site Information	
Analyst	FTG	Intersection	Carothers and Resource
Agency/Co.	FTG	Jurisdiction	Franklin, TN
Date Performed	Nov 2016	East/West Street	Resource Drive
Analysis Year	2016	North/South Street	Carothers Parkway
Time Analyzed	PM Peak Hour	Peak Hour Factor	0.92
Intersection Orientation	North-South	Analysis Time Period (hrs)	0.25
Project Description	10765		

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		1	1	0		1	1	1	0	1	2	0	0	1	2	1
Configuration		L		TR		L	T	R		L	T	TR		L	T	R
Volume (veh/h)		0	0	3		8	0	17		3	312	3		64	1951	0
Percent Heavy Vehicles		0	0	0		0	0	0		0				0		
Proportion Time Blocked																
Right Turn Channelized	No				No				No				No			
Median Type	Left Only															
Median Storage	1															

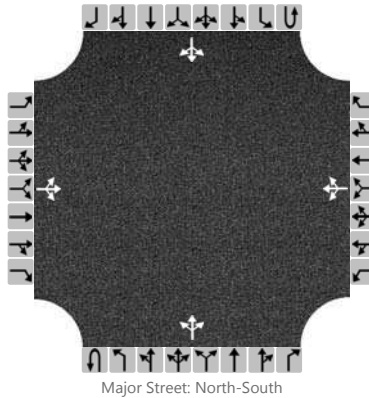
Delay, Queue Length, and Level of Service

Flow Rate (veh/h)				3		9		18		3				70		
Capacity		36		224		151	807	849		261				1228		
v/c Ratio				0.01		0.06		0.02		0.01				0.06		
95% Queue Length				0.0		0.2		0.1		0.0				0.2		
Control Delay (s/veh)		104.5		21.3		30.4	9.5	9.3		19.0				8.1		
Level of Service (LOS)		F		C		D	A	A		C				A		
Approach Delay (s/veh)	21.3				16.3				0.2				0.3			
Approach LOS	C				C				A				A			

HCS 2010 Two-Way Stop Control Summary Report

General Information		Site Information	
Analyst	FTG	Intersection	Resource and Pacific
Agency/Co.	FTG	Jurisdiction	Franklin, TN
Date Performed	Nov	East/West Street	Pacific Drive
Analysis Year	2016	North/South Street	Resource Drive
Time Analyzed	AM Peak Hour	Peak Hour Factor	0.92
Intersection Orientation	North-South	Analysis Time Period (hrs)	0.25
Project Description	10765 (Existing)		

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	1	0		0	1	0	0	0	1	0	0	0	1	0
Configuration			LTR				LTR				LTR				LTR	
Volume (veh/h)		2	4	3		5	11	10		21	28	0		1	3	11
Percent Heavy Vehicles		0	0	0		0	0	0		0				0		
Proportion Time Blocked																
Right Turn Channelized	No				No				No				No			
Median Type	Undivided															
Median Storage																

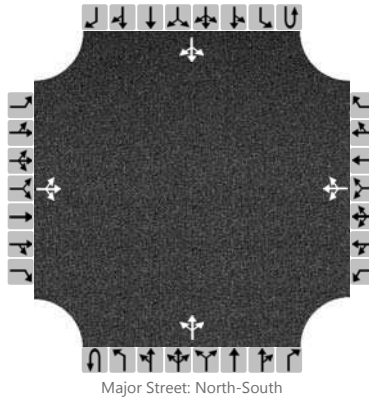
Delay, Queue Length, and Level of Service

Flow Rate (veh/h)			9				28				23				1		
Capacity			888				893				1616				1596		
v/c Ratio			0.01				0.03				0.01				0.00		
95% Queue Length			0.0				0.1				0.0				0.0		
Control Delay (s/veh)			9.1				9.2				7.3				7.3		
Level of Service (LOS)			A				A				A				A		
Approach Delay (s/veh)	9.1			9.2			3.2			0.5							
Approach LOS	A			A			A			A							

HCS 2010 Two-Way Stop Control Summary Report

General Information		Site Information	
Analyst	FTG	Intersection	Resource and Pacific
Agency/Co.	FTG	Jurisdiction	Franklin, TN
Date Performed	Nov	East/West Street	Pacific Drive
Analysis Year	2016	North/South Street	Resource Drive
Time Analyzed	PM Peak Hour	Peak Hour Factor	0.92
Intersection Orientation	North-South	Analysis Time Period (hrs)	0.25
Project Description	10765 (Existing)		

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	1	0		0	1	0	0	0	1	0	0	0	1	0
Configuration			LTR				LTR				LTR				LTR	
Volume (veh/h)		4	4	26		6	4	1		9	10	1		12	26	5
Percent Heavy Vehicles		0	0	0		0	0	0		0				0		
Proportion Time Blocked																
Right Turn Channelized	No				No				No				No			
Median Type	Undivided															
Median Storage																

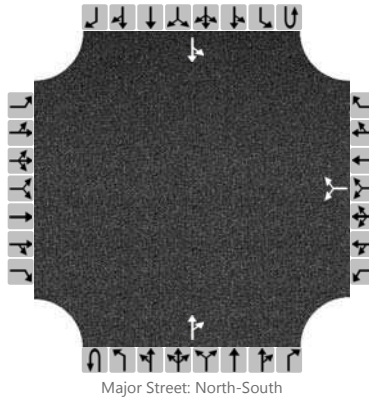
Delay, Queue Length, and Level of Service

Flow Rate (veh/h)			36				12				10				13		
Capacity			994				841				1592				1620		
v/c Ratio			0.04				0.01				0.01				0.01		
95% Queue Length			0.1				0.0				0.0				0.0		
Control Delay (s/veh)			8.8				9.3				7.3				7.2		
Level of Service (LOS)			A				A				A				A		
Approach Delay (s/veh)	8.8			9.3			3.3			2.1							
Approach LOS	A			A			A			A							

HCS 2010 Two-Way Stop Control Summary Report

General Information		Site Information	
Analyst	FTG	Intersection	Resource and Terrapin
Agency/Co.	FTG	Jurisdiction	Franklin, TN
Date Performed	Nov	East/West Street	Terrapin St
Analysis Year	2016	North/South Street	Resource Drive
Time Analyzed	AM Peak Hour	Peak Hour Factor	0.92
Intersection Orientation	North-South	Analysis Time Period (hrs)	0.25
Project Description	10765 (Existing)		

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	0	0		0	0	0	0	0	1	0	0	0	1	0
Configuration							LR					TR		LT		
Volume (veh/h)						9		20			29	2		2	9	
Percent Heavy Vehicles						0		0						0		
Proportion Time Blocked																
Right Turn Channelized	No				No				No				No			
Median Type	Undivided															
Median Storage																

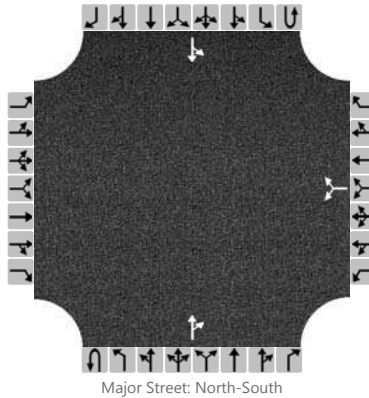
Delay, Queue Length, and Level of Service

Flow Rate (veh/h)							32							12		
Capacity							1017							1591		
v/c Ratio							0.03							0.01		
95% Queue Length							0.1							0.0		
Control Delay (s/veh)							8.7							7.3		
Level of Service (LOS)							A							A		
Approach Delay (s/veh)					8.7								1.2			
Approach LOS					A								A			

HCS 2010 Two-Way Stop Control Summary Report

General Information		Site Information	
Analyst	FTG	Intersection	Resource and Terrapin
Agency/Co.	FTG	Jurisdiction	Franklin, TN
Date Performed	Nov	East/West Street	Terrapin St
Analysis Year	2016	North/South Street	Resource Drive
Time Analyzed	PM Peak Hour	Peak Hour Factor	0.92
Intersection Orientation	North-South	Analysis Time Period (hrs)	0.25
Project Description	10765 (Existing)		

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	0	0		0	0	0	0	0	1	0	0	0	1	0
Configuration							LR					TR		LT		
Volume (veh/h)						7		6			14	6		13	45	
Percent Heavy Vehicles						0		0						0		
Proportion Time Blocked																
Right Turn Channelized	No				No				No				No			
Median Type	Undivided															
Median Storage																

Delay, Queue Length, and Level of Service

Flow Rate (veh/h)							15							63		
Capacity							962							1607		
v/c Ratio							0.02							0.04		
95% Queue Length							0.0							0.0		
Control Delay (s/veh)							8.8							7.3		
Level of Service (LOS)							A							A		
Approach Delay (s/veh)					8.8								1.7			
Approach LOS					A								A			

Phone:
E-Mail:

Fax:

ROUNABOUT ANALYSIS

Analyst: FTG
Agency/Co.: FTG
Date Performed: Nov 2016
Analysis Time Period: AM Peak Hour
Intersection: Resource and Lemon Grass
Jurisdiction: Franklin, TN
Units: U. S. Customary
Analysis Year: 2016 (Existing)
Project ID: 10765
East/West Street: Resource Drive
North/South Street: Lemon Grass Drive

Volume Adjustments and Site Characteristics

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Volume	0	18			20	80				12		11
U-Turn Vol	0			0			0			0		
% Thrus Left Lane												
	Eastbound			Westbound			Northbound			Southbound		
	Left Right BP			Left Right BP			Left Right BP			Left Right BP		
Lane Assn.	LT			TR			LR			LR		
RT Bypass	None			None			None			None		
PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
%HV	0	0	0	0	0	0	0	0	0	0	0	0
NumPeds	0			0			0			0		
U-Turn PHF	1.00			1.00			1.00			1.00		
U-Turn %HV	3			3			3			3		
Flow Rate	0	20	0	0	22	87	0	0	0	13	0	12
No. Lanes	0	1	0	0	1	0	0	0	0	0	0	0
Cnfl. Lanes	1			1			1			1		
Duration, T	0.25 hrs.											

Critical and Follow-Up Headway Adjustment

		Eastbound			Westbound			Northbound			Southbound	
Crit. Hdwy	5.1929	5.1929		5.1929	5.1929		5.1929	5.1929		5.1929	5.1929	
		Northbound			Southbound			Southbound			5.1929	
Crit. Hdwy	5.1929	5.1929		5.1929	5.1929		5.1929	5.1929		5.1929	5.1929	
		Eastbound			Westbound			Westbound			2.6087	
Flup. Hdwy	3.1858	3.1858		2.6087	3.1858		3.1858	3.1858		2.6087	2.6087	
		Northbound			Southbound			Southbound			2.6087	
Flup. Hdwy	3.1858	3.1858		2.6087	3.1858		3.1858	3.1858		2.6087	2.6087	

Flow Computations

	Eastbound		Westbound		Northbound		Southbound	
Circ. Flow	13		0		33		22	
Exit. Flow	33		34		87		0	

Capacity and Level of Service

Eastbound Westbound Northbound Southbound

	Left	Right	BP	Left	Right	BP	Left	Right	BP	Left	Right	BP
Entry Flow		20			109			0			25	
Entry Cap.		1115			1130			0			1106	
Volume (vph)		20			109						25	
Cap. (vph)		1115			1130			0			1106	
v/c Ratio		0.02			0.10						0.02	
Critical Lane		*			*						*	
Lane Delay		3.4			4.0						3.4	
Lane LOS		A			A			F			A	
95 % Queue		0.1			0.3						0.1	
Approach:												
Delay		3.38			4.01						3.44	
LOS		A			A						A	
Intersection Delay		3.83					Intersection LOS	A				

Phone:
E-Mail:

Fax:

ROUNDBOUT ANALYSIS

Analyst: FTG
Agency/Co.: FTG
Date Performed: Nov 2016
Analysis Time Period: PM Peak Hour
Intersection: Resource and Lemon Grass
Jurisdiction: Franklin, TN
Units: U. S. Customary
Analysis Year: 2016 (Existing)
Project ID: 10765
East/West Street: Resource Drive
North/South Street: Lemon Grass Drive

Volume Adjustments and Site Characteristics

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Volume	13	39			10	22				90		10
U-Turn Vol	0			0			0			0		
% Thrus Left Lane												
	Eastbound			Westbound			Northbound			Southbound		
	Left Right BP			Left Right BP			Left Right BP			Left Right BP		
Lane Assn.	LT			TR			LR			LR		
RT Bypass	None			None			None			None		
PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
%HV	0	0	0	0	0	0	0	0	0	0	0	0
NumPeds	0			0			0			0		
U-Turn PHF	1.00			1.00			1.00			1.00		
U-Turn %HV	3			3			3			3		
Flow Rate	14	42	0	0	11	24	0	0	0	98	0	11
No. Lanes	0	1	0	0	1	0	0	0	0	0	0	0
Cnfl. Lanes	1			1			1			1		
Duration, T	0.25 hrs.											

Critical and Follow-Up Headway Adjustment

		Eastbound			Westbound			Northbound			Southbound	
Crit. Hdwy	5.1929	5.1929		5.1929	5.1929		5.1929	5.1929		5.1929	5.1929	
		Northbound			Southbound			Southbound			5.1929	
Crit. Hdwy	5.1929	5.1929		5.1929	5.1929		5.1929	5.1929		5.1929	5.1929	
		Eastbound			Westbound			Westbound			2.6087	
Flup. Hdwy	3.1858	3.1858		2.6087	3.1858		3.1858	3.1858		2.6087	2.6087	
		Northbound			Southbound			Southbound			2.6087	
Flup. Hdwy	3.1858	3.1858		2.6087	3.1858		3.1858	3.1858		2.6087	2.6087	

Flow Computations

	Eastbound		Westbound		Northbound		Southbound	
Circ. Flow	98		14		154		11	
Exit. Flow	140		22		38		0	

Capacity and Level of Service

Eastbound Westbound Northbound Southbound

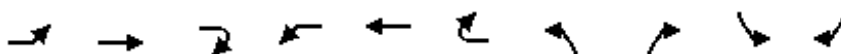
	Left	Right	BP	Left	Right	BP	Left	Right	BP	Left	Right	BP
Entry Flow		57			35			0			109	
Entry Cap.		1025			1114			0			1118	
Volume (vph)		57			35						109	
Cap. (vph)		1025			1114			0			1118	
v/c Ratio		0.06			0.03						0.10	
Critical Lane		*			*						*	
Lane Delay		4.0			3.5						4.1	
Lane LOS		A			A			F			A	
95 % Queue		0.2			0.1						0.3	
Approach:												
Delay		4.00			3.49						4.06	
LOS		A			A						A	
Intersection Delay		3.94					Intersection LOS	A				

BACKGROUND CONDITIONS

Lanes, Volumes, Timings

1: I65 NB off Ramp /I65 SB off ramp & McEwen/McEwen

11/18/2016

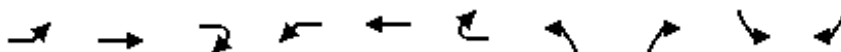


Lane Group	EBL	EBT	EBR2	WBL	WBT	WBR2	NBL	NBR2	SBL	SBR2
Lane Configurations	↔↔	↑↑	↗	↖	↑↑	↗	↔↔	↗	↔↔	↗↗
Traffic Volume (vph)	480	804	117	164	686	437	614	937	684	372
Future Volume (vph)	480	804	117	164	686	437	614	937	684	372
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	370			495			0		0	
Storage Lanes	2			1			2		2	
Taper Length (ft)	25			25			25		25	
Lane Util. Factor	0.97	0.95	1.00	1.00	0.95	1.00	0.97	1.00	0.97	0.88
Frt			0.850			0.850		0.850		0.850
Flt Protected	0.950			0.950			0.950		0.950	
Satd. Flow (prot)	3433	3539	1583	1770	3539	1583	3433	1583	3433	2787
Flt Permitted	0.950			0.950			0.950		0.950	
Satd. Flow (perm)	3433	3539	1583	1770	3539	1583	3433	1583	3433	2787
Right Turn on Red			Yes			Yes		Yes		Yes
Satd. Flow (RTOR)			182			437		287		122
Link Speed (mph)		30			30					
Link Distance (ft)		826			1211					
Travel Time (s)		18.8			27.5					
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	480	804	117	164	686	437	614	937	684	372
Shared Lane Traffic (%)										
Lane Group Flow (vph)	480	804	117	164	686	437	614	937	684	372
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Right	Left	Right
Median Width(ft)		24			24					
Link Offset(ft)		0			0					
Crosswalk Width(ft)		16			16					
Two way Left Turn Lane										
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15	9	15	9
Number of Detectors	1	2	1	1	2	1	1	1	1	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Right	Left	Right
Leading Detector (ft)	20	100	20	20	100	20	20	20	20	20
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0	0	0	0	0
Detector 1 Size(ft)	20	6	20	20	6	20	20	20	20	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel										
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94					
Detector 2 Size(ft)		6			6					
Detector 2 Type		Cl+Ex			Cl+Ex					
Detector 2 Channel										
Detector 2 Extend (s)		0.0			0.0					
Turn Type	Prot	NA	Free	Prot	NA	Perm	Perm	Free	Perm	Prot
Protected Phases	1	6		5	2					1
Permitted Phases			Free			2	3	Free	7	

Lanes, Volumes, Timings

1: I65 NB off Ramp /I65 SB off ramp & McEwen/McEwen

11/18/2016

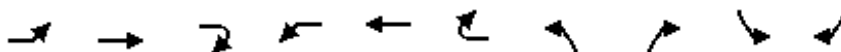


Lane Group	EBL	EBT	EBR2	WBL	WBT	WBR2	NBL	NBR2	SBL	SBR2
Detector Phase	1	6		5	2	2	3		7	1
Switch Phase										
Minimum Initial (s)	8.0	12.0		8.0	12.0	12.0	12.0		12.0	8.0
Minimum Split (s)	15.0	27.0		25.0	27.0	27.0	27.0		27.0	15.0
Total Split (s)	42.0	62.0		34.0	54.0	54.0	54.0		54.0	42.0
Total Split (%)	28.0%	41.3%		22.7%	36.0%	36.0%	36.0%		36.0%	28.0%
Maximum Green (s)	35.0	55.0		27.0	47.0	47.0	47.0		47.0	35.0
Yellow Time (s)	4.0	4.0		4.0	4.0	4.0	4.0		4.0	4.0
All-Red Time (s)	3.0	3.0		3.0	3.0	3.0	3.0		3.0	3.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	7.0	7.0		7.0	7.0	7.0	7.0		7.0	7.0
Lead/Lag	Lead	Lag		Lead	Lag	Lag				Lead
Lead-Lag Optimize?										
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0		3.0	3.0
Recall Mode	None	C-Min		None	C-Min	C-Min	None		None	None
Walk Time (s)		7.0			7.0	7.0	7.0		7.0	
Flash Dont Walk (s)		13.0			13.0	13.0	13.0		13.0	
Pedestrian Calls (#/hr)		5			5	5	5		5	
Act Effect Green (s)	27.0	74.1	150.0	19.2	66.3	66.3	35.7	150.0	35.7	27.0
Actuated g/C Ratio	0.18	0.49	1.00	0.13	0.44	0.44	0.24	1.00	0.24	0.18
v/c Ratio	0.78	0.46	0.07	0.73	0.44	0.46	0.75	0.59	0.84	0.62
Control Delay	67.9	23.2	0.1	106.4	11.0	2.2	59.1	1.6	64.9	41.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	67.9	23.2	0.1	106.4	11.0	2.2	59.1	1.6	64.9	41.7
LOS	E	C	A	F	B	A	E	A	E	D
Approach Delay		36.6			20.2					
Approach LOS		D			C					
90th %ile Green (s)	33.6	60.2		25.8	52.4	52.4	43.0		43.0	33.6
90th %ile Term Code	Gap	Coord		Gap	Coord	Coord	Hold		Gap	Gap
70th %ile Green (s)	29.4	68.0		21.9	60.5	60.5	39.1		39.1	29.4
70th %ile Term Code	Gap	Coord		Gap	Coord	Coord	Hold		Gap	Gap
50th %ile Green (s)	27.1	74.3		19.2	66.4	66.4	35.5		35.5	27.1
50th %ile Term Code	Gap	Coord		Gap	Coord	Coord	Hold		Gap	Gap
30th %ile Green (s)	24.7	80.0		16.4	71.7	71.7	32.6		32.6	24.7
30th %ile Term Code	Gap	Coord		Gap	Coord	Coord	Hold		Gap	Gap
10th %ile Green (s)	20.3	88.2		12.5	80.4	80.4	28.3		28.3	20.3
10th %ile Term Code	Gap	Coord		Gap	Coord	Coord	Hold		Gap	Gap
Stops (vph)	452	468	0	165	220	61	556	0	635	229
Fuel Used(gal)	12	12	1	6	9	5	14	6	17	7
CO Emissions (g/hr)	854	808	53	420	645	325	984	408	1168	467
NOx Emissions (g/hr)	166	157	10	82	126	63	192	79	227	91
VOC Emissions (g/hr)	198	187	12	97	150	75	228	95	271	108
Dilemma Vehicles (#)	0	0	0	0	0	0	0	0	0	0
Queue Length 50th (ft)	235	273	0	170	50	0	290	0	331	130
Queue Length 95th (ft)	342	256	0	m252	100	0	386	0	437	214
Internal Link Dist (ft)		746			1131					
Turn Bay Length (ft)	370			495						
Base Capacity (vph)	801	1749	1583	318	1563	943	1075	1583	1075	743
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0

Lanes, Volumes, Timings

1: I65 NB off Ramp /I65 SB off ramp & McEwen/McEwen

11/18/2016



Lane Group	EBL	EBT	EBR2	WBL	WBT	WBR2	NBL	NBR2	SBL	SBR2
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.60	0.46	0.07	0.52	0.44	0.46	0.57	0.59	0.64	0.50

Intersection Summary

Area Type: Other

Cycle Length: 150

Actuated Cycle Length: 150

Offset: 88 (59%), Referenced to phase 2:WBT and 6:EBT, Start of Yellow

Natural Cycle: 80

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.84

Intersection Signal Delay: 33.0

Intersection LOS: C

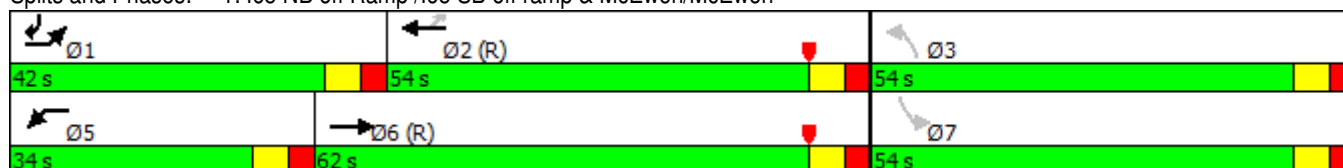
Intersection Capacity Utilization Err%

ICU Level of Service H

Analysis Period (min) 60

m Volume for 95th percentile queue is metered by upstream signal.

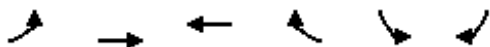
Splits and Phases: 1: I65 NB off Ramp /I65 SB off ramp & McEwen/McEwen



Lanes, Volumes, Timings

2: McEwen /McEwen & Tower

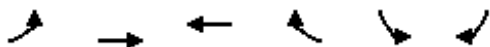
11/18/2016



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↔↔	↑↑	↑↑	↔	↔	↔↔
Traffic Volume (vph)	632	1845	1213	114	19	98
Future Volume (vph)	632	1845	1213	114	19	98
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	285			115	445	0
Storage Lanes	2			1	1	2
Taper Length (ft)	25				25	
Lane Util. Factor	0.97	0.95	0.95	1.00	1.00	0.88
Frt				0.850		0.850
Flt Protected	0.950				0.950	
Satd. Flow (prot)	3090	3185	3185	1425	1593	2508
Flt Permitted	0.950				0.950	
Satd. Flow (perm)	3090	3185	3185	1425	1593	2508
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)				40		98
Link Speed (mph)		30	30		30	
Link Distance (ft)		1211	938		511	
Travel Time (s)		27.5	21.3		11.6	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	632	1845	1213	114	19	98
Shared Lane Traffic (%)						
Lane Group Flow (vph)	632	1845	1213	114	19	98
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		24	24		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.14	1.14	1.14	1.14	1.14	1.14
Turning Speed (mph)	15			9	15	9
Number of Detectors	1	2	2	1	1	1
Detector Template	Left	Thru	Thru	Right	Left	Right
Leading Detector (ft)	20	100	100	20	20	20
Trailing Detector (ft)	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0
Detector 1 Size(ft)	20	6	6	20	20	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94	94			
Detector 2 Size(ft)		6	6			
Detector 2 Type		Cl+Ex	Cl+Ex			
Detector 2 Channel						
Detector 2 Extend (s)		0.0	0.0			
Turn Type	Prot	NA	NA	Prot	Prot	Prot
Protected Phases	1	6	2	2	8	8
Permitted Phases						

Lanes, Volumes, Timings
2: McEwen /McEwen & Tower

11/18/2016

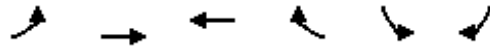


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Detector Phase	1	6	2	2	8	8
Switch Phase						
Minimum Initial (s)	7.0	20.0	20.0	20.0	8.0	8.0
Minimum Split (s)	13.5	43.5	43.5	43.5	46.5	46.5
Total Split (s)	38.0	103.5	65.5	65.5	46.5	46.5
Total Split (%)	25.3%	69.0%	43.7%	43.7%	31.0%	31.0%
Maximum Green (s)	32.5	98.0	60.0	60.0	41.0	41.0
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	5.5	5.5	5.5	5.5
Lead/Lag	Lead		Lag	Lag		
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	C-Min	C-Min	C-Min	None	None
Walk Time (s)		7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)		18.0	18.0	18.0	34.0	34.0
Pedestrian Calls (#/hr)		3	3	3	3	3
Act Effect Green (s)	35.1	124.4	83.8	83.8	14.6	14.6
Actuated g/C Ratio	0.23	0.83	0.56	0.56	0.10	0.10
v/c Ratio	0.88	0.70	0.68	0.14	0.12	0.29
Control Delay	71.8	11.1	10.4	1.8	57.5	10.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	71.8	11.1	10.4	1.8	57.5	10.8
LOS	E	B	B	A	E	B
Approach Delay		26.6	9.6		18.4	
Approach LOS		C	A		B	
90th %ile Green (s)	32.5	98.0	60.0	60.0	41.0	41.0
90th %ile Term Code	Max	Coord	Coord	Coord	Ped	Ped
70th %ile Green (s)	39.4	130.8	85.9	85.9	8.2	8.2
70th %ile Term Code	Gap	Coord	Coord	Coord	Gap	Gap
50th %ile Green (s)	37.6	131.0	87.9	87.9	8.0	8.0
50th %ile Term Code	Gap	Coord	Coord	Coord	Min	Min
30th %ile Green (s)	35.0	131.0	90.5	90.5	8.0	8.0
30th %ile Term Code	Gap	Coord	Coord	Coord	Min	Min
10th %ile Green (s)	30.8	131.0	94.7	94.7	8.0	8.0
10th %ile Term Code	Gap	Coord	Coord	Coord	Min	Min
Stops (vph)	557	627	413	13	18	14
Fuel Used(gal)	18	25	14	1	0	1
CO Emissions (g/hr)	1278	1751	958	66	28	48
NOx Emissions (g/hr)	249	341	186	13	5	9
VOC Emissions (g/hr)	296	406	222	15	6	11
Dilemma Vehicles (#)	0	0	0	0	0	0
Queue Length 50th (ft)	285	106	69	1	18	0
Queue Length 95th (ft)	#521	#1213	m#841	m41	40	33
Internal Link Dist (ft)		1131	858		431	
Turn Bay Length (ft)	285			115	445	
Base Capacity (vph)	729	2640	1779	813	435	756
Starvation Cap Reductn	0	0	0	0	0	0

Lanes, Volumes, Timings

2: McEwen /McEwen & Tower

11/18/2016



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.87	0.70	0.68	0.14	0.04	0.13

Intersection Summary

Area Type: CBD

Cycle Length: 150

Actuated Cycle Length: 150

Offset: 62 (41%), Referenced to phase 2:WBT and 6:EBT, Start of Yellow

Natural Cycle: 105

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.88

Intersection Signal Delay: 20.6

Intersection LOS: C

Intersection Capacity Utilization 77.7%

ICU Level of Service D

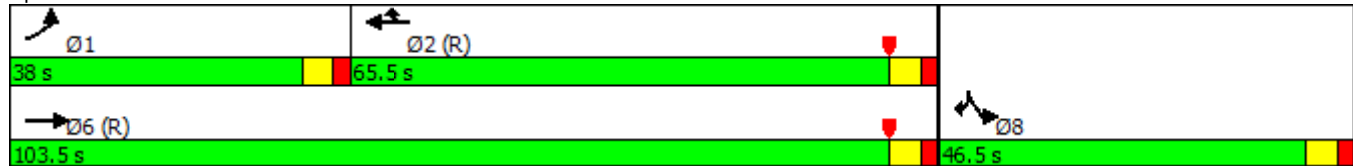
Analysis Period (min) 60

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: McEwen /McEwen & Tower



Lanes, Volumes, Timings

3: Carothers/Carothers & McEwen

11/18/2016

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	871	633	346	104	816	367	234	1016	64	175	267	172
Future Volume (vph)	871	633	346	104	816	367	234	1016	64	175	267	172
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	205		205	218		97	300		300	280		310
Storage Lanes	2		1	2		1	2		1	2		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3433	3539	1583	3433	3539	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3433	3539	1583	3433	3539	1583	3433	3539	1583	3433	3539	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			313			105			109			65
Link Speed (mph)		30			30			30			40	
Link Distance (ft)		938			1960			1936			857	
Travel Time (s)		21.3			44.5			44.0			14.6	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	871	633	346	104	816	367	234	1016	64	175	267	172
Shared Lane Traffic (%)												
Lane Group Flow (vph)	871	633	346	104	816	367	234	1016	64	175	267	172
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			24			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100	20	20	100	20	20	100	20	20	100	20
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Size(ft)	20	6	20	20	6	20	20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	custom	Prot	NA	custom
Protected Phases	1	6	7	5	2	3	7	4	5	3	8	1
Permitted Phases			6			2			8			4

Lanes, Volumes, Timings
3: Carothers/Carothers & McEwen

11/18/2016

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	1	6	7	5	2	3	7	4	5	3	8	1
Switch Phase												
Minimum Initial (s)	6.0	13.0	6.0	4.0	13.0	6.0	6.0	13.0	4.0	6.0	13.0	6.0
Minimum Split (s)	13.0	52.0	12.5	10.0	52.0	13.0	12.5	52.0	10.0	13.0	52.0	13.0
Total Split (s)	30.0	69.0	15.0	14.0	53.0	14.0	15.0	53.0	14.0	14.0	52.0	30.0
Total Split (%)	20.0%	46.0%	10.0%	9.3%	35.3%	9.3%	10.0%	35.3%	9.3%	9.3%	34.7%	20.0%
Maximum Green (s)	24.0	63.0	9.0	8.5	47.0	8.0	9.0	47.0	8.5	8.0	46.0	24.0
Yellow Time (s)	4.0	4.0	4.0	3.5	4.0	4.0	4.0	4.0	3.5	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	5.5	6.0	6.0	6.0	6.0	5.5	6.0	6.0	6.0
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lead
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	Max	C-Max	None	None	C-Max	None	None	None	None	None	None	Max
Walk Time (s)		7.0			7.0			7.0			7.0	
Flash Dont Walk (s)		39.0			39.0			37.0			37.0	
Pedestrian Calls (#/hr)		5			5			5			5	
Act Effect Green (s)	24.7	64.0	79.0	8.2	47.0	61.0	9.0	46.3	59.5	8.0	45.3	77.0
Actuated g/C Ratio	0.16	0.43	0.53	0.05	0.31	0.41	0.06	0.31	0.40	0.05	0.30	0.51
v/c Ratio	1.54	0.42	0.35	0.55	0.74	0.52	1.14	0.93	0.09	0.96	0.25	0.20
Control Delay	1021.7	30.2	7.1	69.0	39.3	22.3	372.2	69.6	0.7	150.5	49.5	16.2
Queue Delay	2.9	0.0	0.0	0.0	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	1024.6	30.2	7.1	69.0	39.3	22.6	372.2	69.6	0.7	150.5	49.5	16.2
LOS	F	C	A	E	D	C	F	E	A	F	D	B
Approach Delay		494.1			37.0			120.1			69.0	
Approach LOS		F			D			F			E	
90th %ile Green (s)	24.0	63.0	9.0	8.5	47.0	8.0	9.0	47.0	8.5	8.0	46.0	24.0
90th %ile Term Code	MaxR	Coord	Max	Max	Coord	Max	Max	Max	Max	Max	Hold	MaxR
70th %ile Green (s)	24.0	63.0	9.0	8.5	47.0	8.0	9.0	47.0	8.5	8.0	46.0	24.0
70th %ile Term Code	MaxR	Coord	Max	Max	Coord	Max	Max	Max	Max	Max	Hold	MaxR
50th %ile Green (s)	24.0	63.0	9.0	8.5	47.0	8.0	9.0	47.0	8.5	8.0	46.0	24.0
50th %ile Term Code	MaxR	Coord	Max	Max	Coord	Max	Max	Max	Max	Max	Hold	MaxR
30th %ile Green (s)	24.0	63.0	9.0	8.5	47.0	8.0	9.0	47.0	8.5	8.0	46.0	24.0
30th %ile Term Code	MaxR	Coord	Max	Max	Coord	Max	Max	Max	Max	Max	Hold	MaxR
10th %ile Green (s)	27.6	67.9	9.0	7.2	47.0	8.0	9.0	43.4	7.2	8.0	42.4	27.6
10th %ile Term Code	MaxR	Coord	Max	Gap	Coord	Max	Max	Gap	Gap	Max	Hold	MaxR
Stops (vph)	815	382	65	101	589	273	206	939	1	156	232	81
Fuel Used(gal)	192	11	3	4	22	9	22	35	1	8	7	2
CO Emissions (g/hr)	13424	743	237	252	1556	614	1566	2440	69	553	456	165
NOx Emissions (g/hr)	2612	145	46	49	303	119	305	475	13	108	89	32
VOC Emissions (g/hr)	3111	172	55	58	361	142	363	566	16	128	106	38
Dilemma Vehicles (#)	0	0	0	0	0	0	0	0	0	0	1	0
Queue Length 50th (ft)	~627	160	45	52	265	152	~137	505	0	91	110	39
Queue Length 95th (ft)	#896	353	m199	m79	419	m233	#265	#767	11	#204	214	186
Internal Link Dist (ft)		858			1880			1856			777	
Turn Bay Length (ft)	205		205	218		97	300		300	280		310
Base Capacity (vph)	565	1509	981	194	1108	706	205	1108	696	183	1085	844
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0

Lanes, Volumes, Timings

3: Carothers/Carothers & McEwen

11/18/2016

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Spillback Cap Reductn	134	0	0	0	0	63	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	2.02	0.42	0.35	0.54	0.74	0.57	1.14	0.92	0.09	0.96	0.25	0.20

Intersection Summary

Area Type: Other

Cycle Length: 150

Actuated Cycle Length: 150

Offset: 8 (5%), Referenced to phase 2:WBT and 6:EBT, Start of Yellow

Natural Cycle: 130

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.54

Intersection Signal Delay: 229.4

Intersection LOS: F

Intersection Capacity Utilization 100.5%

ICU Level of Service G

Analysis Period (min) 60

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 3: Carothers/Carothers & McEwen

 Ø1	 Ø2 (R)	 Ø3	 Ø4
30 s	53 s	14 s	53 s
 Ø5	 Ø6 (R)	 Ø7	 Ø8
14 s	69 s	15 s	52 s

Lanes, Volumes, Timings

4: Ovation/Resource Parkway & McEwen

11/18/2016

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	113	268	381	160	1051	59	145	30	21	21	85	105
Future Volume (vph)	113	268	381	160	1051	59	145	30	21	21	85	105
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	0.95	0.97	1.00	1.00	1.00	1.00	1.00
Fr't			0.850		0.992				0.850		0.917	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3539	1583	1770	3511	0	3433	1863	1583	1770	1708	0
Flt Permitted	0.140			0.563			0.456			0.738		
Satd. Flow (perm)	261	3539	1583	1049	3511	0	1648	1863	1583	1375	1708	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			381		9				73		75	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1960			345			402			456	
Travel Time (s)		44.5			7.8			9.1			10.4	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	113	268	381	160	1051	59	145	30	21	21	85	105
Shared Lane Traffic (%)												
Lane Group Flow (vph)	113	268	381	160	1110	0	145	30	21	21	190	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		36			36			24			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2		1	2	1	1	2	
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru	Right	Left	Thru	
Leading Detector (ft)	20	100	20	20	100		20	100	20	20	100	
Trailing Detector (ft)	0	0	0	0	0		0	0	0	0	0	
Detector 1 Position(ft)	0	0	0	0	0		0	0	0	0	0	
Detector 1 Size(ft)	20	6	20	20	6		20	6	20	20	6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA	pm+ov	pm+pt	NA		pm+pt	NA	pm+ov	pm+pt	NA	
Protected Phases	3	8	1	7	4		1	6	7	5	2	
Permitted Phases	8		8	4			6		6	2		
Detector Phase	3	8	1	7	4		1	6	7	5	2	
Switch Phase												
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	

Lanes, Volumes, Timings
4: Ovation/Resource Parkway & McEwen

11/18/2016

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Split (s)	10.0	20.0	10.0	10.0	20.0		10.0	20.0	10.0	10.0	20.0	
Total Split (s)	10.0	35.0	10.0	10.0	35.0		10.0	20.0	10.0	10.0	20.0	
Total Split (%)	13.3%	46.7%	13.3%	13.3%	46.7%		13.3%	26.7%	13.3%	13.3%	26.7%	
Maximum Green (s)	6.0	31.0	6.0	6.0	31.0		6.0	16.0	6.0	6.0	16.0	
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5		3.5	3.5	3.5	3.5	3.5	
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5		0.5	0.5	0.5	0.5	0.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Lead/Lag	Lead	Lag	Lead	Lead	Lag		Lead	Lag	Lead	Lead	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	C-Max	None	None	C-Max		None	Max	None	None	Max	
Walk Time (s)		5.0			5.0			5.0			5.0	
Flash Dont Walk (s)		11.0			11.0			11.0			11.0	
Pedestrian Calls (#/hr)		10			10			10			10	
Act Effect Green (s)	37.0	31.0	41.0	37.8	33.0		24.4	22.0	32.0	21.8	16.0	
Actuated g/C Ratio	0.49	0.41	0.55	0.50	0.44		0.33	0.29	0.43	0.29	0.21	
v/c Ratio	0.46	0.18	0.37	0.27	0.72		0.21	0.05	0.03	0.05	0.45	
Control Delay	14.4	15.5	9.7	10.0	21.0		17.7	22.4	0.1	16.8	19.4	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Delay	14.4	15.5	9.7	10.0	21.0		17.7	22.4	0.1	16.8	19.4	
LOS	B	B	A	A	C		B	C	A	B	B	
Approach Delay		12.4			19.6			16.5			19.1	
Approach LOS		B			B			B			B	
90th %ile Green (s)	6.0	31.0	6.0	6.0	31.0		6.0	16.0	6.0	6.0	16.0	
90th %ile Term Code	Max	Coord	Max	Max	Coord		Max	MaxR	Max	Max	MaxR	
70th %ile Green (s)	6.0	31.0	6.0	6.0	31.0		6.0	16.0	6.0	6.0	16.0	
70th %ile Term Code	Max	Coord	Max	Max	Coord		Max	MaxR	Max	Max	MaxR	
50th %ile Green (s)	6.0	31.0	6.0	6.0	31.0		6.0	26.0	6.0	0.0	16.0	
50th %ile Term Code	Max	Coord	Max	Max	Coord		Max	MaxR	Max	Skip	MaxR	
30th %ile Green (s)	6.0	31.0	6.0	6.0	31.0		6.0	26.0	6.0	0.0	16.0	
30th %ile Term Code	Max	Coord	Max	Max	Coord		Max	MaxR	Max	Skip	MaxR	
10th %ile Green (s)	0.0	31.0	6.0	6.0	41.0		6.0	26.0	6.0	0.0	16.0	
10th %ile Term Code	Skip	Coord	Max	Max	Coord		Max	MaxR	Max	Skip	MaxR	
Stops (vph)	70	216	209	78	875		97	25	0	17	100	
Fuel Used(gal)	2	6	8	1	13		2	0	0	0	2	
CO Emissions (g/hr)	171	429	540	83	879		106	26	5	17	138	
NOx Emissions (g/hr)	33	83	105	16	171		21	5	1	3	27	
VOC Emissions (g/hr)	40	99	125	19	204		25	6	1	4	32	
Dilemma Vehicles (#)	0	0	0	0	0		0	0	0	0	0	
Queue Length 50th (ft)	39	64	139	34	223		23	9	0	6	45	
Queue Length 95th (ft)	m67	m92	m257	71	#373		47	36	0	23	122	
Internal Link Dist (ft)		1880			265			322			376	
Turn Bay Length (ft)												
Base Capacity (vph)	249	1462	1038	586	1549		679	546	717	434	423	
Starvation Cap Reductn	0	0	0	0	0		0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0		0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0		0	0	0	0	0	
Reduced v/c Ratio	0.45	0.18	0.37	0.27	0.72		0.21	0.05	0.03	0.05	0.45	

Lanes, Volumes, Timings

4: Ovation/Resource Parkway & McEwen

11/18/2016

Intersection Summary

Area Type: Other
 Cycle Length: 75
 Actuated Cycle Length: 75
 Offset: 8 (11%), Referenced to phase 4:WBTL and 8:EBTL, Start of Green
 Natural Cycle: 65
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.72
 Intersection Signal Delay: 17.1 Intersection LOS: B
 Intersection Capacity Utilization 65.6% ICU Level of Service C
 Analysis Period (min) 60
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 4: Ovation/Resource Parkway & McEwen

 Ø1	 Ø2	 Ø3	 Ø4 (R)
10 s	20 s	10 s	35 s
 Ø5	 Ø6	 Ø7	 Ø8 (R)
10 s	20 s	10 s	35 s

Lanes, Volumes, Timings
5: Carothers /Carothers & Tower/Pacific

11/18/2016

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	109	0	53	28	1	14	195	2086	6	3	545	320
Future Volume (vph)	109	0	53	28	1	14	195	2086	6	3	545	320
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)	0%			0%			2%			0%		
Storage Length (ft)	84		78	106		77	177		100	85		144
Storage Lanes	2		1	1		1	1		1	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3433	1863	1583	1770	1863	1583	1752	3504	1567	1770	3539	1583
Flt Permitted	0.950			0.950			0.401			0.043		
Satd. Flow (perm)	3433	1863	1583	1770	1863	1583	739	3504	1567	80	3539	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			316			102			98			320
Link Speed (mph)		30			30			40			30	
Link Distance (ft)		881			890			857			905	
Travel Time (s)		20.0			20.2			14.6			20.6	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	109	0	53	28	1	14	195	2086	6	3	545	320
Shared Lane Traffic (%)												
Lane Group Flow (vph)	109	0	53	28	1	14	195	2086	6	3	545	320
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			24			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.01	1.01	1.01	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100	20	20	100	20	20	100	20	20	100	20
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Size(ft)	20	6	20	20	6	20	20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot		Perm	Prot	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	3	8		7	4		1	6		5	2	

Lanes, Volumes, Timings
5: Carothers /Carothers & Tower/Pacific

11/18/2016

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases			8			4	6		6	2		2
Detector Phase	3	8	8	7	4	4	1	6	6	5	2	2
Switch Phase												
Minimum Initial (s)	6.0	8.0	8.0	6.0	8.0	8.0	6.0	20.0	20.0	6.0	20.0	20.0
Minimum Split (s)	12.5	48.5	48.5	12.5	48.5	48.5	12.0	42.0	42.0	12.0	42.0	42.0
Total Split (s)	12.5	48.5	48.5	12.5	48.5	48.5	16.0	77.0	77.0	12.0	73.0	73.0
Total Split (%)	8.3%	32.3%	32.3%	8.3%	32.3%	32.3%	10.7%	51.3%	51.3%	8.0%	48.7%	48.7%
Maximum Green (s)	7.0	43.0	43.0	7.0	43.0	43.0	10.5	71.0	71.0	6.5	67.0	67.0
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	4.0	4.0	3.5	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	5.5	5.5	5.5	5.5	5.5	6.0	6.0	5.5	6.0	6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None	None	C-Min	C-Min	None	C-Min	C-Min
Walk Time (s)		7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0
Flash Dont Walk (s)		36.0	36.0		36.0	36.0		29.0	29.0		29.0	29.0
Pedestrian Calls (#/hr)		10	10		10	10		10	10		10	10
Act Effect Green (s)	7.4		22.0	6.7	22.0	22.0	109.3	106.7	106.7	101.1	94.6	94.6
Actuated g/C Ratio	0.05		0.15	0.04	0.15	0.15	0.73	0.71	0.71	0.67	0.63	0.63
v/c Ratio	0.64		0.11	0.35	0.00	0.04	0.33	0.84	0.01	0.02	0.24	0.29
Control Delay	88.8		0.4	82.5	41.0	0.3	4.3	16.1	0.0	12.3	11.5	1.3
Queue Delay	0.0		0.0	0.0	0.0	0.0	0.0	10.7	0.0	0.0	0.0	0.0
Total Delay	88.8		0.4	82.5	41.0	0.3	4.3	26.9	0.0	12.3	11.5	1.3
LOS	F		A	F	D	A	A	C	A	B	B	A
Approach Delay					54.7			24.9			7.8	
Approach LOS					D			C			A	
90th %ile Green (s)	7.0	43.0	43.0	7.0	43.0	43.0	10.5	71.5	71.5	6.0	67.0	67.0
90th %ile Term Code	Max	Ped	Ped	Max	Ped	Ped	Max	Coord	Coord	Min	Coord	Coord
70th %ile Green (s)	7.0	43.0	43.0	7.0	43.0	43.0	10.5	83.0	83.0	0.0	67.0	67.0
70th %ile Term Code	Max	Ped	Ped	Max	Ped	Ped	Max	Coord	Coord	Skip	Coord	Coord
50th %ile Green (s)	7.0	8.0	8.0	7.0	8.0	8.0	9.4	118.0	118.0	0.0	103.1	103.1
50th %ile Term Code	Max	Min	Min	Max	Min	Min	Gap	Coord	Coord	Skip	Coord	Coord
30th %ile Green (s)	8.0	8.0	8.0	0.0	0.0	0.0	7.3	130.5	130.5	0.0	117.7	117.7
30th %ile Term Code	Hold	Min	Min	Skip	Skip	Skip	Gap	Coord	Coord	Skip	Coord	Coord
10th %ile Green (s)	8.0	8.0	8.0	0.0	0.0	0.0	6.7	130.5	130.5	0.0	118.3	118.3
10th %ile Term Code	Hold	Hold	Hold	Skip	Skip	Skip	Gap	Coord	Coord	Skip	Coord	Coord
Stops (vph)	103		0	28	2	0	38	891	0	1	139	8
Fuel Used(gal)	3		0	1	0	0	2	28	0	0	6	2
CO Emissions (g/hr)	230		26	57	2	7	117	1938	2	2	412	167
NOx Emissions (g/hr)	45		5	11	0	1	23	377	0	0	80	32
VOC Emissions (g/hr)	53		6	13	0	2	27	449	1	1	95	39
Dilemma Vehicles (#)	0		0	0	0	0	0	24	0	0	0	0
Queue Length 50th (ft)	55		0	27	1	0	9	142	0	1	76	0
Queue Length 95th (ft)	#118		0	70	6	0	m58	m#1216	m0	m3	112	37
Internal Link Dist (ft)		801			810			777			825	
Turn Bay Length (ft)	84		78	106		77	177		100	85		144
Base Capacity (vph)	169		679	82	534	526	609	2492	1143	127	2232	1117

Lanes, Volumes, Timings
5: Carothers /Carothers & Tower/Pacific

11/18/2016

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Starvation Cap Reductn	0		0	0	0	0	0	375	0	0	0	0
Spillback Cap Reductn	0		0	0	0	0	0	182	0	0	0	0
Storage Cap Reductn	0		0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.64		0.08	0.34	0.00	0.03	0.32	0.99	0.01	0.02	0.24	0.29

Intersection Summary

Area Type: Other

Cycle Length: 150

Actuated Cycle Length: 150

Offset: 0 (0%), Referenced to phase 2:SBTL and 6:NBTL, Start of Yellow

Natural Cycle: 115

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.84

Intersection Signal Delay: 22.5

Intersection LOS: C

Intersection Capacity Utilization 86.6%

ICU Level of Service E

Analysis Period (min) 60

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 5: Carothers /Carothers & Tower/Pacific

 Ø1	 Ø2 (R)	 Ø3	 Ø4
16 s	73 s	12.5 s	48.5 s
 Ø5	 Ø6 (R)	 Ø7	 Ø8
12 s	77 s	12.5 s	48.5 s

Lanes, Volumes, Timings

6: Carothers/Carothers Parkway & Apartments/Resource

11/18/2016

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	35	0	52	9	0	93	123	2150	1	92	822	184
Future Volume (vph)	35	0	52	9	0	93	123	2150	1	92	822	184
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		0%			0%			2%			0%	
Storage Length (ft)	0		0	0		0	210		128	480		93
Storage Lanes	1		0	1		1	1		0	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	1.00
Frt		0.850				0.850						0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1583	0	1770	1863	1583	1752	3504	0	1770	3539	1583
Flt Permitted	0.592			0.723			0.297			0.042		
Satd. Flow (perm)	1103	1583	0	1347	1863	1583	548	3504	0	78	3539	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		249				79						104
Link Speed (mph)		30			30			40			40	
Link Distance (ft)		762			773			905			2004	
Travel Time (s)		17.3			17.6			15.4			34.2	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	35	0	52	9	0	93	123	2150	1	92	822	184
Shared Lane Traffic (%)												
Lane Group Flow (vph)	35	52	0	9	0	93	123	2151	0	92	822	184
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.01	1.01	1.01	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2	1	1	2		1	2	1
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	Right
Leading Detector (ft)	20	100		20	100	20	20	100		20	100	20
Trailing Detector (ft)	0	0		0	0	0	0	0		0	0	0
Detector 1 Position(ft)	0	0		0	0	0	0	0		0	0	0
Detector 1 Size(ft)	20	6		20	6	20	20	6		20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA		pm+pt		pm+ov	pm+pt	NA		pm+pt	NA	pm+ov
Protected Phases	3	8		7	4	5	1	6		5	2	3

Lanes, Volumes, Timings

6: Carothers/Carothers Parkway & Apartments/Resource

11/18/2016

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	8			4		4	6			2		2
Detector Phase	3	8		7	4	5	1	6		5	2	3
Switch Phase												
Minimum Initial (s)	5.0	6.0		5.0	6.0	5.0	5.0	15.0		5.0	15.0	5.0
Minimum Split (s)	12.0	48.5		12.0	48.5	11.5	11.5	48.0		11.5	48.0	12.0
Total Split (s)	12.0	48.5		12.0	48.5	11.5	15.2	78.0		11.5	74.3	12.0
Total Split (%)	8.0%	32.3%		8.0%	32.3%	7.7%	10.1%	52.0%		7.7%	49.5%	8.0%
Maximum Green (s)	6.5	43.0		6.5	43.0	6.0	9.7	72.0		6.0	68.3	6.5
Yellow Time (s)	3.5	3.5		3.5	3.5	3.5	3.5	4.0		3.5	4.0	3.5
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5		5.5	5.5	5.5	5.5	6.0		5.5	6.0	5.5
Lead/Lag	Lead	Lag		Lead	Lag	Lead	Lead	Lag		Lead	Lag	Lead
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Recall Mode	None	None		None	None	None	None	C-Max		None	C-Max	None
Walk Time (s)		7.0			7.0			7.0			7.0	
Flash Dont Walk (s)		36.0			36.0			35.0			35.0	
Pedestrian Calls (#/hr)		10			10			10			10	
Act Effect Green (s)	24.7	23.4		23.2		25.9	108.9	100.7		106.5	99.5	111.9
Actuated g/C Ratio	0.16	0.16		0.15		0.17	0.73	0.67		0.71	0.66	0.75
v/c Ratio	0.17	0.11		0.04		0.27	0.27	0.91		0.72	0.35	0.15
Control Delay	44.9	0.5		38.0		11.8	3.0	16.1		61.2	16.5	5.8
Queue Delay	0.0	0.0		0.0		0.0	0.0	0.7		0.0	0.0	0.0
Total Delay	44.9	0.5		38.0		11.8	3.0	16.7		61.2	16.5	5.8
LOS	D	A		D		B	A	B		E	B	A
Approach Delay		18.4						16.0			18.4	
Approach LOS		B						B			B	
90th %ile Green (s)	6.5	43.0		6.5	43.0	6.0	9.7	72.0		6.0	68.3	6.5
90th %ile Term Code	Max	Ped		Max	Ped	Max	Max	Coord		Max	Coord	Max
70th %ile Green (s)	6.5	55.0		0.0	43.0	6.0	9.7	72.0		6.0	68.3	6.5
70th %ile Term Code	Max	Hold		Skip	Ped	Max	Max	Coord		Max	Coord	Max
50th %ile Green (s)	6.5	6.5		0.0	0.0	7.2	6.8	119.3		7.2	119.7	6.5
50th %ile Term Code	Max	Hold		Skip	Skip	Gap	Gap	Coord		Gap	Coord	Max
30th %ile Green (s)	6.5	6.5		0.0	0.0	6.9	6.4	119.6		6.9	120.1	6.5
30th %ile Term Code	Max	Hold		Skip	Skip	Gap	Gap	Coord		Gap	Coord	Max
10th %ile Green (s)	6.0	6.0		0.0	0.0	6.5	6.0	120.5		6.5	121.0	6.0
10th %ile Term Code	Hold	Hold		Skip	Skip	Gap	Gap	Coord		Gap	Coord	Hold
Stops (vph)	27	0		8		18	8	598		37	373	31
Fuel Used(gal)	1	0		0		1	1	26		3	18	3
CO Emissions (g/hr)	47	22		12		62	63	1826		193	1230	211
NOx Emissions (g/hr)	9	4		2		12	12	355		38	239	41
VOC Emissions (g/hr)	11	5		3		14	15	423		45	285	49
Dilemma Vehicles (#)	0	0		0		0	0	17		0	27	0
Queue Length 50th (ft)	34	0		9		13	6	64		24	95	7
Queue Length 95th (ft)	54	0		21		61	m10	#1787		#199	415	96
Internal Link Dist (ft)		682			693			825			1924	
Turn Bay Length (ft)							210			480		93
Base Capacity (vph)	211	652		230		339	483	2351		128	2347	1208

Lanes, Volumes, Timings

6: Carothers/Carothers Parkway & Apartments/Resource

11/18/2016

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Starvation Cap Reductn	0	0		0		0	0	41		0	0	0
Spillback Cap Reductn	0	0		0		0	0	0		0	0	0
Storage Cap Reductn	0	0		0		0	0	0		0	0	0
Reduced v/c Ratio	0.17	0.08		0.04		0.27	0.25	0.93		0.72	0.35	0.15

Intersection Summary

Area Type: Other

Cycle Length: 150

Actuated Cycle Length: 150

Offset: 16 (11%), Referenced to phase 2:SBTL and 6:NBTL, Start of Yellow

Natural Cycle: 120

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.91

Intersection Signal Delay: 16.8

Intersection LOS: B

Intersection Capacity Utilization 87.3%

ICU Level of Service E

Analysis Period (min) 60

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

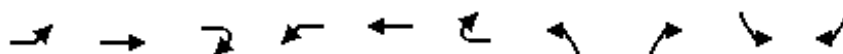
Splits and Phases: 6: Carothers/Carothers Parkway & Apartments/Resource

 Ø1	 Ø2 (R)	 Ø3	 Ø4
15.2 s	74.3 s	12 s	48.5 s
 Ø5	 Ø6 (R)	 Ø7	 Ø8
11.5 s	78 s	12 s	48.5 s

Lanes, Volumes, Timings

1: I65 NB off Ramp /I65 SB off ramp & McEwen/McEwen

11/18/2016

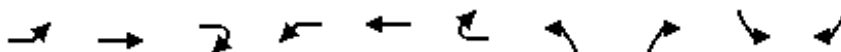


Lane Group	EBL	EBT	EBR2	WBL	WBT	WBR2	NBL	NBR2	SBL	SBR2
Lane Configurations										
Traffic Volume (vph)	572	875	366	513	1162	1124	285	161	605	671
Future Volume (vph)	572	875	366	513	1162	1124	285	161	605	671
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	370			495			0		0	
Storage Lanes	2			1			2		2	
Taper Length (ft)	25			25			25		25	
Lane Util. Factor	0.97	0.95	1.00	1.00	0.95	1.00	0.97	1.00	0.97	0.88
Frt			0.850			0.850		0.850		0.850
Flt Protected	0.950			0.950			0.950		0.950	
Satd. Flow (prot)	3433	3539	1583	1770	3539	1583	3433	1583	3433	2787
Flt Permitted	0.950			0.950			0.950		0.950	
Satd. Flow (perm)	3433	3539	1583	1770	3539	1583	3433	1583	3433	2787
Right Turn on Red			Yes			Yes		Yes		Yes
Satd. Flow (RTOR)			210			523		182		131
Link Speed (mph)		30			30					
Link Distance (ft)		826			1211					
Travel Time (s)		18.8			27.5					
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	572	875	366	513	1162	1124	285	161	605	671
Shared Lane Traffic (%)										
Lane Group Flow (vph)	572	875	366	513	1162	1124	285	161	605	671
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Right	Left	Right
Median Width(ft)		24			24					
Link Offset(ft)		0			0					
Crosswalk Width(ft)		16			16					
Two way Left Turn Lane										
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15	9	15	9
Number of Detectors	1	2	1	1	2	1	1	1	1	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Right	Left	Right
Leading Detector (ft)	20	100	20	20	100	20	20	20	20	20
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0	0	0	0	0
Detector 1 Size(ft)	20	6	20	20	6	20	20	20	20	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel										
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94					
Detector 2 Size(ft)		6			6					
Detector 2 Type		Cl+Ex			Cl+Ex					
Detector 2 Channel										
Detector 2 Extend (s)		0.0			0.0					
Turn Type	Prot	NA	Free	Prot	NA	Perm	Perm	Free	Perm	Prot
Protected Phases	1	6		5	2					1
Permitted Phases			Free			2	3	Free	7	

Lanes, Volumes, Timings

1: I65 NB off Ramp /I65 SB off ramp & McEwen/McEwen

11/18/2016

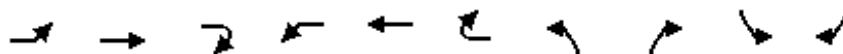


Lane Group	EBL	EBT	EBR2	WBL	WBT	WBR2	NBL	NBR2	SBL	SBR2
Detector Phase	1	6		5	2	2	3		7	1
Switch Phase										
Minimum Initial (s)	8.0	12.0		8.0	12.0	12.0	12.0		12.0	8.0
Minimum Split (s)	15.0	27.0		25.0	27.0	27.0	27.0		27.0	15.0
Total Split (s)	35.0	59.0		59.0	83.0	83.0	32.0		32.0	35.0
Total Split (%)	23.3%	39.3%		39.3%	55.3%	55.3%	21.3%		21.3%	23.3%
Maximum Green (s)	28.0	52.0		52.0	76.0	76.0	25.0		25.0	28.0
Yellow Time (s)	4.0	4.0		4.0	4.0	4.0	4.0		4.0	4.0
All-Red Time (s)	3.0	3.0		3.0	3.0	3.0	3.0		3.0	3.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	7.0	7.0		7.0	7.0	7.0	7.0		7.0	7.0
Lead/Lag	Lead	Lag		Lead	Lag	Lag				Lead
Lead-Lag Optimize?										
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0		3.0	3.0
Recall Mode	None	C-Min		None	C-Min	C-Min	None		None	None
Walk Time (s)		7.0			7.0	7.0	7.0		7.0	
Flash Dont Walk (s)		13.0			13.0	13.0	13.0		13.0	
Pedestrian Calls (#/hr)		5			5	5	5		5	
Act Effect Green (s)	28.0	56.6	150.0	47.4	76.0	76.0	25.0	150.0	25.0	28.0
Actuated g/C Ratio	0.19	0.38	1.00	0.32	0.51	0.51	0.17	1.00	0.17	0.19
v/c Ratio	0.89	0.65	0.23	0.92	0.65	1.06	0.50	0.10	1.06	1.07
Control Delay	79.2	42.2	0.3	45.0	25.2	137.9	60.3	0.1	203.5	208.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	79.2	42.2	0.3	45.0	25.2	137.9	60.3	0.1	203.5	208.6
LOS	E	D	A	D	C	F	E	A	F	F
Approach Delay		45.4			74.1					
Approach LOS		D			E					
90th %ile Green (s)	28.0	52.0		52.0	76.0	76.0	25.0		25.0	28.0
90th %ile Term Code	Max	Coord		Max	Coord	Coord	Hold		Max	Max
70th %ile Green (s)	28.0	52.0		52.0	76.0	76.0	25.0		25.0	28.0
70th %ile Term Code	Max	Coord		Max	Coord	Coord	Hold		Max	Max
50th %ile Green (s)	28.0	54.5		49.5	76.0	76.0	25.0		25.0	28.0
50th %ile Term Code	Max	Coord		Gap	Coord	Coord	Hold		Max	Max
30th %ile Green (s)	28.0	58.9		45.1	76.0	76.0	25.0		25.0	28.0
30th %ile Term Code	Max	Coord		Gap	Coord	Coord	Hold		Max	Max
10th %ile Green (s)	28.0	65.8		38.2	76.0	76.0	25.0		25.0	28.0
10th %ile Term Code	Max	Coord		Gap	Coord	Coord	Hold		Max	Max
Stops (vph)	537	739	0	449	954	868	255	0	552	504
Fuel Used(gal)	16	17	2	12	22	47	7	1	32	35
CO Emissions (g/hr)	1109	1205	167	840	1552	3282	460	67	2222	2472
NOx Emissions (g/hr)	216	234	32	163	302	639	90	13	432	481
VOC Emissions (g/hr)	257	279	39	195	360	761	107	15	515	573
Dilemma Vehicles (#)	0	0	0	0	0	0	0	0	0	0
Queue Length 50th (ft)	286	404	0	429	510	~1055	132	0	~333	~350
Queue Length 95th (ft)	#471	501	0	m384	m474	m#921	204	0	#540	#593
Internal Link Dist (ft)		746			1131					
Turn Bay Length (ft)	370			495						
Base Capacity (vph)	640	1336	1583	613	1793	1060	572	1583	572	626
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0

Lanes, Volumes, Timings

1: I65 NB off Ramp /I65 SB off ramp & McEwen/McEwen

11/18/2016



Lane Group	EBL	EBT	EBR2	WBL	WBT	WBR2	NBL	NBR2	SBL	SBR2
Spillback Cap Reductn	0	0	0	0	6	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.89	0.65	0.23	0.84	0.65	1.06	0.50	0.10	1.06	1.07

Intersection Summary

Area Type: Other

Cycle Length: 150

Actuated Cycle Length: 150

Offset: 22 (15%), Referenced to phase 2:WBT and 6:EBT, Start of Yellow

Natural Cycle: 100

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.07

Intersection Signal Delay: 90.0

Intersection LOS: F

Intersection Capacity Utilization Err%

ICU Level of Service H

Analysis Period (min) 60

~ Volume exceeds capacity, queue is theoretically infinite.

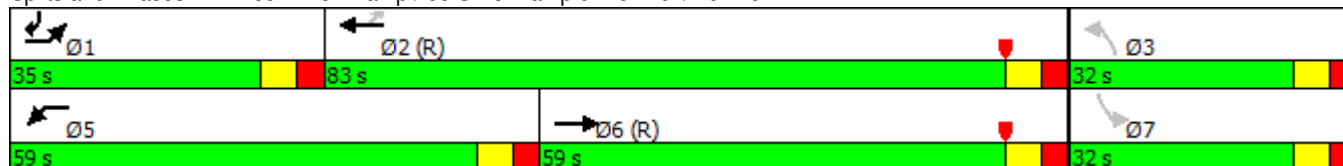
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

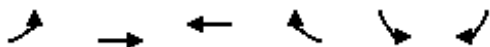
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 1: I65 NB off Ramp /I65 SB off ramp & McEwen/McEwen



Lanes, Volumes, Timings
2: McEwen /McEwen & Tower

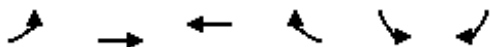
11/18/2016



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↗↗	↑↑	↑↑	↑	↓	↓↓
Traffic Volume (vph)	160	1475	2160	22	170	627
Future Volume (vph)	160	1475	2160	22	170	627
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	285			115	445	0
Storage Lanes	2			1	1	2
Taper Length (ft)	25				25	
Lane Util. Factor	0.97	0.95	0.95	1.00	1.00	0.88
Frt				0.850		0.850
Flt Protected	0.950				0.950	
Satd. Flow (prot)	3090	3185	3185	1425	1593	2508
Flt Permitted	0.950				0.950	
Satd. Flow (perm)	3090	3185	3185	1425	1593	2508
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)				6		175
Link Speed (mph)		30	30		30	
Link Distance (ft)		1211	938		511	
Travel Time (s)		27.5	21.3		11.6	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	160	1475	2160	22	170	627
Shared Lane Traffic (%)						
Lane Group Flow (vph)	160	1475	2160	22	170	627
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		24	24		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.14	1.14	1.14	1.14	1.14	1.14
Turning Speed (mph)	15			9	15	9
Number of Detectors	1	2	2	1	1	1
Detector Template	Left	Thru	Thru	Right	Left	Right
Leading Detector (ft)	20	100	100	20	20	20
Trailing Detector (ft)	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0
Detector 1 Size(ft)	20	6	6	20	20	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94	94			
Detector 2 Size(ft)		6	6			
Detector 2 Type		Cl+Ex	Cl+Ex			
Detector 2 Channel						
Detector 2 Extend (s)		0.0	0.0			
Turn Type	Prot	NA	NA	Prot	Prot	Prot
Protected Phases	1	6	2	2	8	8
Permitted Phases						

Lanes, Volumes, Timings
2: McEwen /McEwen & Tower

11/18/2016



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Detector Phase	1	6	2	2	8	8
Switch Phase						
Minimum Initial (s)	7.0	20.0	20.0	20.0	8.0	8.0
Minimum Split (s)	13.5	43.5	43.5	43.5	46.5	46.5
Total Split (s)	13.5	103.5	90.0	90.0	46.5	46.5
Total Split (%)	9.0%	69.0%	60.0%	60.0%	31.0%	31.0%
Maximum Green (s)	8.0	98.0	84.5	84.5	41.0	41.0
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	5.5	5.5	5.5	5.5
Lead/Lag	Lead		Lag	Lag		
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	C-Min	C-Min	C-Min	None	None
Walk Time (s)		7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)		18.0	18.0	18.0	34.0	34.0
Pedestrian Calls (#/hr)		3	3	3	3	3
Act Effect Green (s)	11.7	105.1	87.9	87.9	33.9	33.9
Actuated g/C Ratio	0.08	0.70	0.59	0.59	0.23	0.23
v/c Ratio	0.67	0.66	1.16	0.03	0.47	0.89
Control Delay	83.5	6.9	309.8	10.4	53.7	59.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.5
Total Delay	83.5	6.9	309.8	10.4	53.7	59.6
LOS	F	A	F	B	D	E
Approach Delay		14.4	306.8		58.3	
Approach LOS		B	F		E	
90th %ile Green (s)	8.0	98.0	84.5	84.5	41.0	41.0
90th %ile Term Code	Max	Coord	Coord	Coord	Max	Max
70th %ile Green (s)	10.1	100.1	84.5	84.5	38.9	38.9
70th %ile Term Code	Max	Coord	Coord	Coord	Gap	Gap
50th %ile Green (s)	13.9	103.9	84.5	84.5	35.1	35.1
50th %ile Term Code	Max	Coord	Coord	Coord	Gap	Gap
30th %ile Green (s)	13.9	108.7	89.3	89.3	30.3	30.3
30th %ile Term Code	Gap	Coord	Coord	Coord	Gap	Gap
10th %ile Green (s)	12.4	114.6	96.7	96.7	24.4	24.4
10th %ile Term Code	Gap	Coord	Coord	Coord	Gap	Gap
Stops (vph)	127	848	1642	14	142	455
Fuel Used(gal)	5	21	161	0	3	13
CO Emissions (g/hr)	345	1445	11261	20	232	878
NOx Emissions (g/hr)	67	281	2191	4	45	171
VOC Emissions (g/hr)	80	335	2610	5	54	203
Dilemma Vehicles (#)	0	0	0	0	0	0
Queue Length 50th (ft)	68	433	~1334	4	144	253
Queue Length 95th (ft)	m#134	m517	m#1156	m4	238	#411
Internal Link Dist (ft)		1131	858		431	
Turn Bay Length (ft)	285			115	445	
Base Capacity (vph)	240	2230	1866	837	435	812
Starvation Cap Reductn	0	0	0	0	0	0

Lanes, Volumes, Timings 2: McEwen /McEwen & Tower

11/18/2016



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Spillback Cap Reductn	0	0	4	0	0	27
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.67	0.66	1.16	0.03	0.39	0.80

Intersection Summary

Area Type: CBD

Cycle Length: 150

Actuated Cycle Length: 150

Offset: 104 (69%), Referenced to phase 2:WBT and 6:EBT, Start of Yellow

Natural Cycle: 105

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.16

Intersection Signal Delay: 160.2

Intersection LOS: F

Intersection Capacity Utilization 99.9%

ICU Level of Service F

Analysis Period (min) 60

~ Volume exceeds capacity, queue is theoretically infinite.

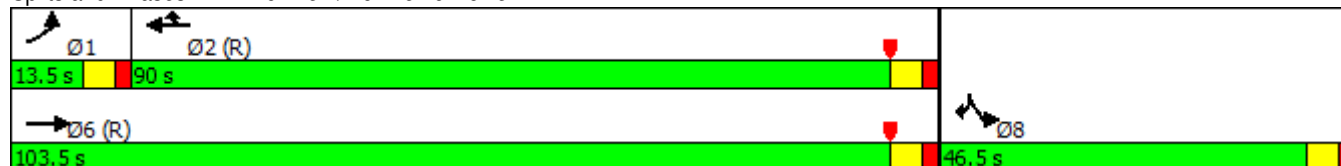
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: McEwen /McEwen & Tower



Lanes, Volumes, Timings

3: Carothers/Carothers & McEwen

11/18/2016

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	181	872	540	72	749	188	364	385	84	342	1277	1022
Future Volume (vph)	181	872	540	72	749	188	364	385	84	342	1277	1022
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	205		205	218		97	300		300	280		310
Storage Lanes	2		1	2		1	2		1	2		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3433	3539	1583	3433	3539	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3433	3539	1583	3433	3539	1583	3433	3539	1583	3433	3539	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			62			105			109			65
Link Speed (mph)		30			30			30			40	
Link Distance (ft)		938			1960			1936			857	
Travel Time (s)		21.3			44.5			44.0			14.6	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	181	872	540	72	749	188	364	385	84	342	1277	1022
Shared Lane Traffic (%)												
Lane Group Flow (vph)	181	872	540	72	749	188	364	385	84	342	1277	1022
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			24			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100	20	20	100	20	20	100	20	20	100	20
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Size(ft)	20	6	20	20	6	20	20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	custom	Prot	NA	custom
Protected Phases	1	6	7	5	2	3	7	4	5	3	8	1
Permitted Phases			6			2			8			4

Lanes, Volumes, Timings
3: Carothers/Carothers & McEwen

11/18/2016

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	1	6	7	5	2	3	7	4	5	3	8	1
Switch Phase												
Minimum Initial (s)	6.0	13.0	6.0	4.0	13.0	6.0	6.0	13.0	4.0	6.0	13.0	6.0
Minimum Split (s)	13.0	52.0	12.5	10.0	52.0	13.0	12.5	52.0	10.0	13.0	52.0	13.0
Total Split (s)	24.0	66.0	19.0	12.0	54.0	20.0	19.0	52.0	12.0	20.0	53.0	24.0
Total Split (%)	16.0%	44.0%	12.7%	8.0%	36.0%	13.3%	12.7%	34.7%	8.0%	13.3%	35.3%	16.0%
Maximum Green (s)	18.0	60.0	13.0	6.5	48.0	14.0	13.0	46.0	6.5	14.0	47.0	18.0
Yellow Time (s)	4.0	4.0	4.0	3.5	4.0	4.0	4.0	4.0	3.5	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	5.5	6.0	6.0	6.0	6.0	5.5	6.0	6.0	6.0
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lead
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	Max	C-Max	None	None	C-Max	None	None	None	None	None	None	Max
Walk Time (s)		7.0			7.0			7.0			7.0	
Flash Dont Walk (s)		39.0			39.0			37.0			37.0	
Pedestrian Calls (#/hr)		5			5			5			5	
Act Effect Green (s)	18.0	60.0	79.0	6.5	48.0	68.0	13.0	46.0	59.5	14.0	47.0	70.0
Actuated g/C Ratio	0.12	0.40	0.53	0.04	0.32	0.45	0.09	0.31	0.40	0.09	0.31	0.47
v/c Ratio	0.44	0.62	0.63	0.49	0.66	0.24	1.23	0.35	0.12	1.07	1.15	1.32
Control Delay	64.4	19.5	19.3	74.5	41.8	13.7	490.9	41.6	2.5	245.2	331.9	621.2
Queue Delay	0.0	0.0	0.0	0.0	10.5	0.0	0.0	0.0	0.0	0.0	0.0	0.7
Total Delay	64.4	19.5	19.3	74.5	52.3	13.7	490.9	41.6	2.5	245.2	331.9	622.0
LOS	E	B	B	E	D	B	F	D	A	F	F	F
Approach Delay		24.5			46.7			234.0			432.9	
Approach LOS		C			D			F			F	
90th %ile Green (s)	18.0	60.0	13.0	6.5	48.0	14.0	13.0	46.0	6.5	14.0	47.0	18.0
90th %ile Term Code	MaxR	Coord	Max	Max	Coord	Max	Max	Hold	Max	Max	Max	MaxR
70th %ile Green (s)	18.0	60.0	13.0	6.5	48.0	14.0	13.0	46.0	6.5	14.0	47.0	18.0
70th %ile Term Code	MaxR	Coord	Max	Max	Coord	Max	Max	Hold	Max	Max	Max	MaxR
50th %ile Green (s)	18.0	60.0	13.0	6.5	48.0	14.0	13.0	46.0	6.5	14.0	47.0	18.0
50th %ile Term Code	MaxR	Coord	Max	Max	Coord	Max	Max	Hold	Max	Max	Max	MaxR
30th %ile Green (s)	18.0	60.0	13.0	6.5	48.0	14.0	13.0	46.0	6.5	14.0	47.0	18.0
30th %ile Term Code	MaxR	Coord	Max	Max	Coord	Max	Max	Hold	Max	Max	Max	MaxR
10th %ile Green (s)	18.0	60.2	13.0	6.3	48.0	14.0	13.0	46.0	6.3	14.0	47.0	18.0
10th %ile Term Code	MaxR	Coord	Max	Gap	Coord	Max	Max	Hold	Gap	Max	Max	MaxR
Stops (vph)	156	558	400	70	564	98	327	293	4	308	1172	891
Fuel Used(gal)	5	13	8	3	21	4	44	11	1	22	105	144
CO Emissions (g/hr)	319	904	579	180	1464	275	3053	747	93	1544	7355	10062
NOx Emissions (g/hr)	62	176	113	35	285	54	594	145	18	300	1431	1958
VOC Emissions (g/hr)	74	209	134	42	339	64	708	173	22	358	1704	2332
Dilemma Vehicles (#)	0	0	0	0	0	0	0	0	0	0	37	0
Queue Length 50th (ft)	74	304	331	37	295	52	~225	154	0	~190	~771	~1259
Queue Length 95th (ft)	m125	370	666	m58	426	m99	#386	230	30	#345	#1078	#1790
Internal Link Dist (ft)		858			1880			1856			777	
Turn Bay Length (ft)	205		205	218		97	300		300	280		310
Base Capacity (vph)	411	1416	863	148	1132	775	297	1085	693	320	1108	773
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0

Lanes, Volumes, Timings

3: Carothers/Carothers & McEwen

11/18/2016

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Spillback Cap Reductn	0	0	0	0	343	0	0	0	0	0	0	73
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.44	0.62	0.63	0.49	0.95	0.24	1.23	0.35	0.12	1.07	1.15	1.46

Intersection Summary

Area Type: Other

Cycle Length: 150

Actuated Cycle Length: 150

Offset: 108 (72%), Referenced to phase 2:WBT and 6:EBT, Start of Yellow

Natural Cycle: 130

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.32

Intersection Signal Delay: 234.4

Intersection LOS: F

Intersection Capacity Utilization 109.4%

ICU Level of Service H

Analysis Period (min) 60

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 3: Carothers/Carothers & McEwen

 Ø1	 Ø2 (R)	 Ø3	 Ø4
24 s	54 s	20 s	52 s
 Ø5	 Ø6 (R)	 Ø7	 Ø8
12 s	66 s	19 s	53 s

Lanes, Volumes, Timings

4: Ovation/Resource Parkway & McEwen

11/18/2016

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	96	1029	181	101	379	16	603	109	86	89	59	112
Future Volume (vph)	96	1029	181	101	379	16	603	109	86	89	59	112
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	0.95	0.97	1.00	1.00	1.00	1.00	1.00
Frt			0.850		0.994				0.850		0.902	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3539	1583	1770	3518	0	3433	1863	1583	1770	1680	0
Flt Permitted	0.481			0.141			0.458			0.687		
Satd. Flow (perm)	896	3539	1583	263	3518	0	1655	1863	1583	1280	1680	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			181		6				86		112	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1960			345			402			456	
Travel Time (s)		44.5			7.8			9.1			10.4	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	96	1029	181	101	379	16	603	109	86	89	59	112
Shared Lane Traffic (%)												
Lane Group Flow (vph)	96	1029	181	101	395	0	603	109	86	89	171	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		36			36			24			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2		1	2	1	1	2	
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru	Right	Left	Thru	
Leading Detector (ft)	20	100	20	20	100		20	100	20	20	100	
Trailing Detector (ft)	0	0	0	0	0		0	0	0	0	0	
Detector 1 Position(ft)	0	0	0	0	0		0	0	0	0	0	
Detector 1 Size(ft)	20	6	20	20	6		20	6	20	20	6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA	pm+ov	pm+pt	NA		pm+pt	NA	pm+ov	pm+pt	NA	
Protected Phases	3	8	1	7	4		1	6	7	5	2	
Permitted Phases	8		8	4			6		6	2		
Detector Phase	3	8	1	7	4		1	6	7	5	2	
Switch Phase												
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	

Lanes, Volumes, Timings
4: Ovation/Resource Parkway & McEwen

11/18/2016

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Split (s)	10.0	20.0	10.0	10.0	20.0		10.0	20.0	10.0	10.0	20.0	
Total Split (s)	10.0	32.0	13.0	10.0	32.0		13.0	23.0	10.0	10.0	20.0	
Total Split (%)	13.3%	42.7%	17.3%	13.3%	42.7%		17.3%	30.7%	13.3%	13.3%	26.7%	
Maximum Green (s)	6.0	28.0	9.0	6.0	28.0		9.0	19.0	6.0	6.0	16.0	
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5		3.5	3.5	3.5	3.5	3.5	
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5		0.5	0.5	0.5	0.5	0.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Lead/Lag	Lead	Lag	Lead	Lead	Lag		Lead	Lag	Lead	Lead	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	C-Max	None	None	C-Max		None	Max	None	None	Max	
Walk Time (s)		5.0			5.0			5.0			5.0	
Flash Dont Walk (s)		11.0			11.0			11.0			11.0	
Pedestrian Calls (#/hr)		10			10			10			10	
Act Effect Green (s)	34.8	30.0	43.0	34.8	30.0		28.2	21.0	30.9	21.9	16.0	
Actuated g/C Ratio	0.46	0.40	0.57	0.46	0.40		0.38	0.28	0.41	0.29	0.21	
v/c Ratio	0.20	0.73	0.18	0.42	0.28		0.72	0.21	0.12	0.22	0.38	
Control Delay	7.0	17.1	1.6	15.5	16.4		23.6	23.4	4.3	16.7	12.9	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Delay	7.0	17.1	1.6	15.5	16.4		23.6	23.4	4.3	16.7	12.9	
LOS	A	B	A	B	B		C	C	A	B	B	
Approach Delay		14.2			16.2			21.5			14.2	
Approach LOS		B			B			C			B	
90th %ile Green (s)	6.0	28.0	9.0	6.0	28.0		9.0	19.0	6.0	6.0	16.0	
90th %ile Term Code	Max	Coord	Max	Max	Coord		Max	MaxR	Max	Max	MaxR	
70th %ile Green (s)	6.0	28.0	9.0	6.0	28.0		9.0	19.0	6.0	6.0	16.0	
70th %ile Term Code	Max	Coord	Max	Max	Coord		Max	MaxR	Max	Max	MaxR	
50th %ile Green (s)	6.0	28.0	9.0	6.0	28.0		9.0	19.0	6.0	6.0	16.0	
50th %ile Term Code	Max	Coord	Max	Max	Coord		Max	MaxR	Max	Max	MaxR	
30th %ile Green (s)	6.0	28.0	9.0	6.0	28.0		9.0	19.0	6.0	6.0	16.0	
30th %ile Term Code	Max	Coord	Max	Max	Coord		Max	MaxR	Max	Max	MaxR	
10th %ile Green (s)	0.0	38.0	9.0	0.0	38.0		9.0	29.0	0.0	0.0	16.0	
10th %ile Term Code	Skip	Coord	Max	Skip	Coord		Max	MaxR	Skip	Skip	MaxR	
Stops (vph)	30	584	27	51	254		438	83	14	61	60	
Fuel Used(gal)	2	23	3	1	4		7	1	0	1	1	
CO Emissions (g/hr)	124	1575	208	61	264		504	92	30	67	97	
NOx Emissions (g/hr)	24	306	40	12	51		98	18	6	13	19	
VOC Emissions (g/hr)	29	365	48	14	61		117	21	7	16	23	
Dilemma Vehicles (#)	0	0	0	0	0		0	0	0	0	0	
Queue Length 50th (ft)	25	296	5	23	65		104	40	0	26	23	
Queue Length 95th (ft)	m42	m376	m16	53	112		#186	90	32	62	89	
Internal Link Dist (ft)		1880			265			322			376	
Turn Bay Length (ft)												
Base Capacity (vph)	485	1415	984	242	1411		835	521	704	414	446	
Starvation Cap Reductn	0	0	0	0	0		0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0		0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0		0	0	0	0	0	
Reduced v/c Ratio	0.20	0.73	0.18	0.42	0.28		0.72	0.21	0.12	0.21	0.38	

Lanes, Volumes, Timings

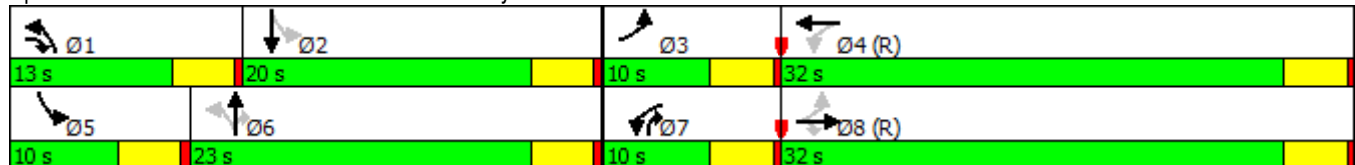
4: Ovation/Resource Parkway & McEwen

11/18/2016

Intersection Summary

Area Type: Other
 Cycle Length: 75
 Actuated Cycle Length: 75
 Offset: 16 (21%), Referenced to phase 4:WBTL and 8:EBTL, Start of Green
 Natural Cycle: 60
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.73
 Intersection Signal Delay: 16.6 Intersection LOS: B
 Intersection Capacity Utilization 74.6% ICU Level of Service D
 Analysis Period (min) 60
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 4: Ovation/Resource Parkway & McEwen



Lanes, Volumes, Timings
5: Carothers /Carothers & Tower/Pacific

11/18/2016

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	395	1	213	10	0	8	68	667	29	4	2343	120
Future Volume (vph)	395	1	213	10	0	8	68	667	29	4	2343	120
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)	0%				0%				2%		0%	
Storage Length (ft)	84		78	106		77	177		100	85		144
Storage Lanes	2		1	1		1	1		1	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3433	1863	1583	1770	1863	1583	1752	3504	1567	1770	3539	1583
Flt Permitted	0.950			0.950			0.046			0.385		
Satd. Flow (perm)	3433	1863	1583	1770	1863	1583	85	3504	1567	717	3539	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			183			204			105			105
Link Speed (mph)		30			30			40			30	
Link Distance (ft)		881			890			857			905	
Travel Time (s)		20.0			20.2			14.6			20.6	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	395	1	213	10	0	8	68	667	29	4	2343	120
Shared Lane Traffic (%)												
Lane Group Flow (vph)	395	1	213	10	0	8	68	667	29	4	2343	120
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			24			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.01	1.01	1.01	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100	20	20	100	20	20	100	20	20	100	20
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Size(ft)	20	6	20	20	6	20	20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA	Perm	Prot		Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	3	8		7	4		1	6		5	2	

Lanes, Volumes, Timings
5: Carothers /Carothers & Tower/Pacific

11/18/2016

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases			8			4	6		6	2		2
Detector Phase	3	8	8	7	4	4	1	6	6	5	2	2
Switch Phase												
Minimum Initial (s)	6.0	8.0	8.0	6.0	8.0	8.0	6.0	20.0	20.0	6.0	20.0	20.0
Minimum Split (s)	12.5	48.5	48.5	12.5	48.5	48.5	12.0	42.0	42.0	12.0	42.0	42.0
Total Split (s)	16.0	52.0	52.0	12.5	48.5	48.5	12.0	63.5	63.5	12.0	63.5	63.5
Total Split (%)	11.4%	37.1%	37.1%	8.9%	34.6%	34.6%	8.6%	45.4%	45.4%	8.6%	45.4%	45.4%
Maximum Green (s)	10.5	46.5	46.5	7.0	43.0	43.0	6.5	57.5	57.5	6.5	57.5	57.5
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	4.0	4.0	3.5	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	5.5	5.5	5.5	5.5	5.5	6.0	6.0	5.5	6.0	6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None	None	C-Min	C-Min	None	C-Min	C-Min
Walk Time (s)		7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0
Flash Dont Walk (s)		36.0	36.0		36.0	36.0		29.0	29.0		29.0	29.0
Pedestrian Calls (#/hr)		10	10		10	10		10	10		10	10
Act Effect Green (s)	10.5	27.4	27.4	6.4		22.0	98.1	96.3	96.3	94.4	89.1	89.1
Actuated g/C Ratio	0.08	0.20	0.20	0.05		0.16	0.70	0.69	0.69	0.67	0.64	0.64
v/c Ratio	1.54	0.00	0.47	0.12		0.02	0.51	0.28	0.03	0.01	1.04	0.11
Control Delay	1027.2	31.0	10.8	67.4		0.1	33.0	14.2	0.0	7.5	97.5	0.6
Queue Delay	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	1027.2	31.0	10.8	67.4		0.1	33.0	14.2	0.0	7.5	97.5	0.6
LOS	F	C	B	E		A	C	B	A	A	F	A
Approach Delay		670.1						15.4			92.6	
Approach LOS		F						B			F	
90th %ile Green (s)	10.5	46.5	46.5	7.0	43.0	43.0	6.5	57.9	57.9	6.1	57.5	57.5
90th %ile Term Code	Max	Hold	Hold	Max	Ped	Ped	Max	Coord	Coord	Gap	Coord	Coord
70th %ile Green (s)	10.5	59.0	59.0	0.0	43.0	43.0	6.5	69.5	69.5	0.0	57.5	57.5
70th %ile Term Code	Max	Hold	Hold	Skip	Ped	Ped	Max	Coord	Coord	Skip	Coord	Coord
50th %ile Green (s)	10.5	10.5	10.5	0.0	0.0	0.0	6.5	118.0	118.0	0.0	106.0	106.0
50th %ile Term Code	Max	Hold	Hold	Skip	Skip	Skip	Gap	Coord	Coord	Skip	Coord	Coord
30th %ile Green (s)	10.5	10.5	10.5	0.0	0.0	0.0	6.0	118.0	118.0	0.0	106.5	106.5
30th %ile Term Code	Max	Hold	Hold	Skip	Skip	Skip	Min	Coord	Coord	Skip	Coord	Coord
10th %ile Green (s)	10.5	10.5	10.5	0.0	0.0	0.0	0.0	118.0	118.0	0.0	118.0	118.0
10th %ile Term Code	Max	Hold	Hold	Skip	Skip	Skip	Skip	Coord	Coord	Skip	Coord	Coord
Stops (vph)	376	1	33	11		0	29	272	0	0	1009	3
Fuel Used(gal)	87	0	2	0		0	1	8	0	0	69	1
CO Emissions (g/hr)	6109	1	148	19		4	79	593	12	2	4796	61
NOx Emissions (g/hr)	1189	0	29	4		1	15	115	2	0	933	12
VOC Emissions (g/hr)	1416	0	34	4		1	18	137	3	1	1112	14
Dilemma Vehicles (#)	0	0	0	0		0	0	24	0	0	0	0
Queue Length 50th (ft)	~259	1	26	9		0	8	47	0	0	79	1
Queue Length 95th (ft)	#421	6	107	32		0	#115	327	0	m1	m#1748	m1
Internal Link Dist (ft)		801			810			777			825	
Turn Bay Length (ft)	84		78	106		77	177		100	85		144
Base Capacity (vph)	257	651	673	88		627	136	2409	1110	534	2252	1045

Lanes, Volumes, Timings
5: Carothers /Carothers & Tower/Pacific

11/18/2016

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Starvation Cap Reductn	0	0	0	0		0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0		0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0		0	0	0	0	0	0	0
Reduced v/c Ratio	1.54	0.00	0.32	0.11		0.01	0.50	0.28	0.03	0.01	1.04	0.11

Intersection Summary

Area Type: Other

Cycle Length: 140

Actuated Cycle Length: 140

Offset: 14 (10%), Referenced to phase 2:SBTL and 6:NBTL, Start of Yellow

Natural Cycle: 115

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.54

Intersection Signal Delay: 168.2

Intersection LOS: F

Intersection Capacity Utilization 97.1%

ICU Level of Service F

Analysis Period (min) 60

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 5: Carothers /Carothers & Tower/Pacific

 Ø1	 Ø2 (R)	 Ø3	 Ø4
12 s	63.5 s	16 s	48.5 s
 Ø5	 Ø6 (R)	 Ø7	 Ø8
12 s	63.5 s	12.5 s	52 s

Lanes, Volumes, Timings

6: Carothers/Carothers Parkway & Apartments/Resource

11/18/2016

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	127	0	194	8	0	126	47	1050	3	123	2230	66
Future Volume (vph)	127	0	194	8	0	126	47	1050	3	123	2230	66
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		0%			0%			2%			0%	
Storage Length (ft)	0		0	0		0	210		128	480		93
Storage Lanes	1		0	1		1	1		0	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	1.00
Frt		0.850				0.850						0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1583	0	1770	1863	1583	1752	3504	0	1770	3539	1583
Flt Permitted	0.590			0.518			0.048			0.199		
Satd. Flow (perm)	1099	1583	0	965	1863	1583	89	3504	0	371	3539	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		194				84						62
Link Speed (mph)		30			30			40			40	
Link Distance (ft)		762			773			905			2004	
Travel Time (s)		17.3			17.6			15.4			34.2	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	127	0	194	8	0	126	47	1050	3	123	2230	66
Shared Lane Traffic (%)												
Lane Group Flow (vph)	127	194	0	8	0	126	47	1053	0	123	2230	66
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.01	1.01	1.01	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2	1	1	2		1	2	1
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	Right
Leading Detector (ft)	20	100		20	100	20	20	100		20	100	20
Trailing Detector (ft)	0	0		0	0	0	0	0		0	0	0
Detector 1 Position(ft)	0	0		0	0	0	0	0		0	0	0
Detector 1 Size(ft)	20	6		20	6	20	20	6		20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA		pm+pt		pm+ov	pm+pt	NA		pm+pt	NA	pm+ov
Protected Phases	3	8		7	4	5	1	6		5	2	3

Lanes, Volumes, Timings

6: Carothers/Carothers Parkway & Apartments/Resource

11/18/2016

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	8			4		4	6			2		2
Detector Phase	3	8		7	4	5	1	6		5	2	3
Switch Phase												
Minimum Initial (s)	5.0	6.0		5.0	6.0	5.0	5.0	15.0		5.0	15.0	5.0
Minimum Split (s)	12.0	48.5		12.0	48.5	11.5	11.5	48.0		11.5	48.0	12.0
Total Split (s)	12.0	48.5		12.0	48.5	18.2	11.5	61.3		18.2	68.0	12.0
Total Split (%)	8.6%	34.6%		8.6%	34.6%	13.0%	8.2%	43.8%		13.0%	48.6%	8.6%
Maximum Green (s)	6.5	43.0		6.5	43.0	12.7	6.0	55.3		12.7	62.0	6.5
Yellow Time (s)	3.5	3.5		3.5	3.5	3.5	3.5	4.0		3.5	4.0	3.5
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5		5.5	5.5	5.5	5.5	6.0		5.5	6.0	5.5
Lead/Lag	Lead	Lag		Lead	Lag	Lead	Lead	Lag		Lead	Lag	Lead
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Recall Mode	None	None		None	None	None	None	C-Max		None	C-Max	None
Walk Time (s)		7.0			7.0			7.0			7.0	
Flash Dont Walk (s)		36.0			36.0			35.0			35.0	
Pedestrian Calls (#/hr)		10			10			10			10	
Act Effect Green (s)	24.8	23.5		23.2		28.5	94.3	88.0		101.6	93.5	107.1
Actuated g/C Ratio	0.18	0.17		0.17		0.20	0.67	0.63		0.73	0.67	0.76
v/c Ratio	0.56	0.45		0.04		0.32	0.36	0.48		0.34	0.94	0.05
Control Delay	55.5	7.9		32.8		14.8	31.7	17.5		12.9	35.5	4.1
Queue Delay	0.0	0.0		0.0		0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	55.5	7.9		32.8		14.8	31.7	17.5		12.9	35.5	4.1
LOS	E	A		C		B	C	B		B	D	A
Approach Delay		26.7						18.1			33.5	
Approach LOS		C						B			C	
90th %ile Green (s)	6.5	43.0		6.5	43.0	12.7	6.0	55.3		12.7	62.0	6.5
90th %ile Term Code	Max	Ped		Max	Ped	Max	Max	Coord		Max	Coord	Max
70th %ile Green (s)	6.5	55.0		0.0	43.0	11.7	6.0	56.3		11.7	62.0	6.5
70th %ile Term Code	Max	Hold		Skip	Ped	Gap	Max	Coord		Gap	Coord	Max
50th %ile Green (s)	6.5	6.5		0.0	0.0	8.6	5.9	107.9		8.6	110.6	6.5
50th %ile Term Code	Max	Hold		Skip	Skip	Gap	Gap	Coord		Gap	Coord	Max
30th %ile Green (s)	6.5	6.5		0.0	0.0	6.4	5.7	110.1		6.4	110.8	6.5
30th %ile Term Code	Max	Hold		Skip	Skip	Gap	Gap	Coord		Gap	Coord	Max
10th %ile Green (s)	6.5	6.5		0.0	0.0	6.0	0.0	110.5		6.0	122.0	6.5
10th %ile Term Code	Max	Hold		Skip	Skip	Gap	Skip	Coord		Gap	Coord	Max
Stops (vph)	95	19		7		32	34	501		41	1128	7
Fuel Used(gal)	3	2		0		1	1	15		2	57	1
CO Emissions (g/hr)	190	110		10		92	65	1058		168	4019	71
NOx Emissions (g/hr)	37	21		2		18	13	206		33	782	14
VOC Emissions (g/hr)	44	25		2		21	15	245		39	931	17
Dilemma Vehicles (#)	0	0		0		0	0	24		0	67	0
Queue Length 50th (ft)	~162	0		7		38	5	268		11	516	0
Queue Length 95th (ft)	139	81		18		76	m57	m286		103	#1830	31
Internal Link Dist (ft)		682			693			825			1924	
Turn Bay Length (ft)							210			480		93
Base Capacity (vph)	225	644		200		427	131	2203		400	2362	1225

Lanes, Volumes, Timings

6: Carothers/Carothers Parkway & Apartments/Resource

11/18/2016

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Starvation Cap Reductn	0	0		0		0	0	0		0	0	0
Spillback Cap Reductn	0	0		0		0	0	0		0	0	0
Storage Cap Reductn	0	0		0		0	0	0		0	0	0
Reduced v/c Ratio	0.56	0.30		0.04		0.30	0.36	0.48		0.31	0.94	0.05

Intersection Summary

Area Type: Other

Cycle Length: 140

Actuated Cycle Length: 140

Offset: 0 (0%), Referenced to phase 2:SBTL and 6:NBTL, Start of Yellow

Natural Cycle: 120

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.94

Intersection Signal Delay: 28.1

Intersection LOS: C

Intersection Capacity Utilization 93.7%

ICU Level of Service F

Analysis Period (min) 60

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

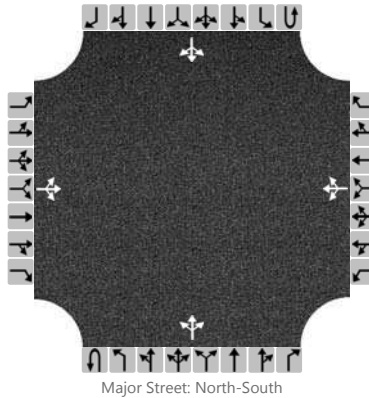
Splits and Phases: 6: Carothers/Carothers Parkway & Apartments/Resource

 Ø1	 Ø2 (R)	 Ø3	 Ø4
11.5 s	68 s	12 s	48.5 s
 Ø5	 Ø6 (R)	 Ø7	 Ø8
18.2 s	61.3 s	12 s	48.5 s

HCS 2010 Two-Way Stop Control Summary Report

General Information		Site Information	
Analyst	FTG	Intersection	Resource and Pacific
Agency/Co.	FTG	Jurisdiction	Franklin, TN
Date Performed	Nov	East/West Street	Pacific Drive
Analysis Year	2016	North/South Street	Resource Drive
Time Analyzed	AM Peak Hour	Peak Hour Factor	0.92
Intersection Orientation	North-South	Analysis Time Period (hrs)	0.25
Project Description	10765 (Background)		

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	1	0		0	1	0	0	0	1	0	0	0	1	0
Configuration			LTR				LTR				LTR				LTR	
Volume (veh/h)		2	4	3		5	11	10		21	58	0		1	88	11
Percent Heavy Vehicles		0	0	0		0	0	0		0				0		
Proportion Time Blocked																
Right Turn Channelized	No				No				No				No			
Median Type	Undivided															
Median Storage																

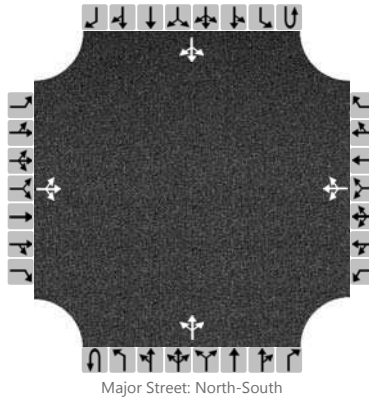
Delay, Queue Length, and Level of Service

Flow Rate (veh/h)			9				28				23				1	
Capacity			759				786				1495				1553	
v/c Ratio			0.01				0.04				0.02				0.00	
95% Queue Length			0.0				0.1				0.0				0.0	
Control Delay (s/veh)			9.8				9.8				7.4				7.3	
Level of Service (LOS)			A				A				A				A	
Approach Delay (s/veh)	9.8				9.8				2.1				0.1			
Approach LOS	A				A				A				A			

HCS 2010 Two-Way Stop Control Summary Report

General Information		Site Information	
Analyst	FTG	Intersection	Resource and Pacific
Agency/Co.	FTG	Jurisdiction	Franklin, TN
Date Performed	Nov	East/West Street	Pacific Drive
Analysis Year	2016	North/South Street	Resource Drive
Time Analyzed	PM Peak Hour	Peak Hour Factor	0.92
Intersection Orientation	North-South	Analysis Time Period (hrs)	0.25
Project Description	10765 (Background)		

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	1	0		0	1	0	0	0	1	0	0	0	1	0
Configuration			LTR				LTR				LTR				LTR	
Volume (veh/h)		4	4	26		6	4	1		9	119	1		12	85	5
Percent Heavy Vehicles		0	0	0		0	0	0		0				0		
Proportion Time Blocked																
Right Turn Channelized	No				No				No				No			
Median Type	Undivided															
Median Storage																

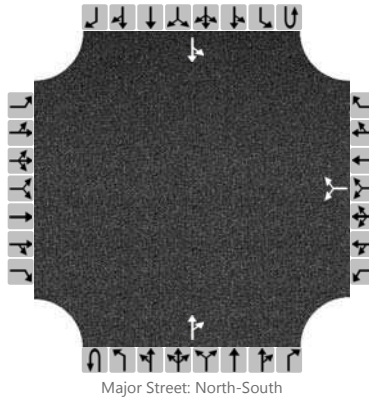
Delay, Queue Length, and Level of Service

Flow Rate (veh/h)			36				12				10				13		
Capacity			873				652				1509				1468		
v/c Ratio			0.04				0.02				0.01				0.01		
95% Queue Length			0.1				0.1				0.0				0.0		
Control Delay (s/veh)			9.3				10.6				7.4				7.5		
Level of Service (LOS)			A				B				A				A		
Approach Delay (s/veh)	9.3			10.6			0.6			0.9							
Approach LOS	A			B			A			A							

HCS 2010 Two-Way Stop Control Summary Report

General Information		Site Information	
Analyst	FTG	Intersection	Resource and Terrapin
Agency/Co.	FTG	Jurisdiction	Franklin, TN
Date Performed	Nov	East/West Street	Terrapin St
Analysis Year	2016	North/South Street	Resource Drive
Time Analyzed	AM Peak Hour	Peak Hour Factor	0.92
Intersection Orientation	North-South	Analysis Time Period (hrs)	0.25
Project Description	10765 (Background)		

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	0	0		0	0	0	0	0	1	0	0	0	1	0
Configuration							LR					TR		LT		
Volume (veh/h)						9		20			59	2		2	94	
Percent Heavy Vehicles						0		0						0		
Proportion Time Blocked																
Right Turn Channelized	No				No				No				No			
Median Type	Undivided															
Median Storage																

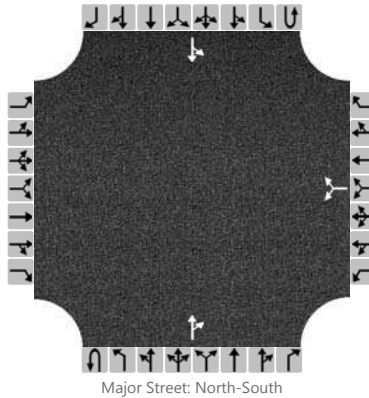
Delay, Queue Length, and Level of Service

Flow Rate (veh/h)						32								104		
Capacity						929								1549		
v/c Ratio						0.03								0.07		
95% Queue Length						0.1								0.0		
Control Delay (s/veh)						9.0								7.3		
Level of Service (LOS)						A								A		
Approach Delay (s/veh)					9.0								0.2			
Approach LOS					A								A			

HCS 2010 Two-Way Stop Control Summary Report

General Information		Site Information	
Analyst	FTG	Intersection	Resource and Terrapin
Agency/Co.	FTG	Jurisdiction	Franklin, TN
Date Performed	Nov	East/West Street	Terrapin St
Analysis Year	2016	North/South Street	Resource Drive
Time Analyzed	PM Peak Hour	Peak Hour Factor	0.92
Intersection Orientation	North-South	Analysis Time Period (hrs)	0.25
Project Description	10765 (Background)		

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	0	0		0	0	0	0	0	1	0	0	0	1	0
Configuration							LR					TR		LT		
Volume (veh/h)						7		6			123	6		13	104	
Percent Heavy Vehicles						0		0						0		
Proportion Time Blocked																
Right Turn Channelized	No				No				No				No			
Median Type	Undivided															
Median Storage																

Delay, Queue Length, and Level of Service

Flow Rate (veh/h)							15							127		
Capacity							768							1455		
v/c Ratio							0.02							0.09		
95% Queue Length							0.1							0.0		
Control Delay (s/veh)							9.8							7.5		
Level of Service (LOS)							A							A		
Approach Delay (s/veh)					9.8								0.9			
Approach LOS					A								A			

Phone:
E-Mail:

Fax:

ROUNABOUT ANALYSIS

Analyst: FTG
Agency/Co.: FTG
Date Performed: Nov 2016
Analysis Time Period: AM Peak Hour
Intersection: Resource and Lemon Grass
Jurisdiction: Franklin, TN
Units: U. S. Customary
Analysis Year: 2016 (Background)
Project ID: 10765
East/West Street: Resource Drive
North/South Street: Lemon Grass Drive

Volume Adjustments and Site Characteristics

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Volume	0	103			50	148				22		11
U-Turn Vol	0			0			0			0		
% Thrus Left Lane												
	Eastbound			Westbound			Northbound			Southbound		
	Left Right BP			Left Right BP			Left Right BP			Left Right BP		
Lane Assn.	LT			TR			LR			LR		
RT Bypass	None			None			None			None		
PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
%HV	0	0	0	0	0	0	0	0	0	0	0	0
NumPeds	0			0			0			0		
U-Turn PHF	0.92			0.92			0.92			0.92		
U-Turn %HV	3			3			3			3		
Flow Rate	0	112	0	0	54	161	0	0	0	24	0	12
No. Lanes	0	1	0	0	1	0	0	0	0	0	0	0
Cnfl. Lanes	1			1			1			1		
Duration, T	0.25 hrs.											

Critical and Follow-Up Headway Adjustment

		Eastbound			Westbound			Northbound			Southbound	
Crit. Hdwy	5.1929	5.1929		5.1929	5.1929		5.1929	5.1929		5.1929	5.1929	
		Northbound			Southbound			Southbound			5.1929	
Crit. Hdwy	5.1929	5.1929		5.1929	5.1929		5.1929	5.1929		5.1929	5.1929	
		Eastbound			Westbound			Westbound			3.1858	
Flup. Hdwy	3.1858	3.1858			3.1858		3.1858	3.1858			3.1858	
		Northbound			Southbound			Southbound			3.1858	
Flup. Hdwy	3.1858	3.1858			3.1858		3.1858	3.1858			3.1858	

Flow Computations

	Eastbound		Westbound		Northbound		Southbound	
Circ. Flow	24		0		136		54	
Exit. Flow	136		66		161		0	

Capacity and Level of Service

Eastbound Westbound Northbound Southbound

	Left	Right	BP	Left	Right	BP	Left	Right	BP	Left	Right	BP
Entry Flow		112			215			25			36	
Entry Cap.		1103			1130			0			1070	
Volume (vph)		112			215						36	
Cap. (vph)		1103			1130			0			1070	
v/c Ratio		0.10			0.19						0.03	
Critical Lane		*			*						*	
Lane Delay		4.1			4.9						3.6	
Lane LOS		A			A			F			A	
95 % Queue		0.3			0.7						0.1	
Approach:												
Delay		4.14			4.88						3.65	
LOS		A			A						A	
Intersection Delay		4.53					Intersection LOS	A				

Phone:
E-Mail:

Fax:

ROUNDBOUT ANALYSIS

Analyst: FTG
Agency/Co.: FTG
Date Performed: Nov 2016
Analysis Time Period: PM Peak Hour
Intersection: Resource and Lemon Grass
Jurisdiction: Franklin, TN
Units: U. S. Customary
Analysis Year: 2016 (Background)
Project ID: 10765
East/West Street: Resource Drive
North/South Street: Lemon Grass Drive

Volume Adjustments and Site Characteristics

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Volume	13	98			119	34				149		10
U-Turn Vol	0			0			0			0		
% Thrus Left Lane												
	Eastbound			Westbound			Northbound			Southbound		
	Left Right BP			Left Right BP			Left Right BP			Left Right BP		
Lane Assn.	LT			TR			LR			LR		
RT Bypass	None			None			None			None		
PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
%HV	0	0	0	0	0	0	0	0	0	0	0	0
NumPeds	0			0			0			0		
U-Turn PHF	0.92			0.92			0.92			0.92		
U-Turn %HV	3			3			3			3		
Flow Rate	14	107	0	0	129	37	0	0	0	162	0	11
No. Lanes	0	1	0	0	1	0	0	0	0	0	0	0
Cnfl. Lanes	1			1			1			1		
Duration, T	0.25	hrs.										

Critical and Follow-Up Headway Adjustment

		Eastbound			Westbound			Northbound			Southbound	
Crit. Hdwy	5.1929	5.1929		5.1929	5.1929		5.1929	5.1929		5.1929	5.1929	
		Northbound			Southbound			Eastbound			Westbound	
Crit. Hdwy	5.1929	5.1929		5.1929	5.1929		5.1929	5.1929		5.1929	5.1929	
		Eastbound			Westbound			Northbound			Southbound	
Flup. Hdwy	3.1858	3.1858		3.1858	3.1858		3.1858	3.1858		3.1858	3.1858	
		Northbound			Southbound			Eastbound			Westbound	
Flup. Hdwy	3.1858	3.1858		3.1858	3.1858		3.1858	3.1858		3.1858	3.1858	

Flow Computations

	Eastbound		Westbound		Northbound		Southbound	
Circ. Flow	162		14		283		129	
Exit. Flow	268		140		51		0	

Capacity and Level of Service

Eastbound Westbound Northbound Southbound

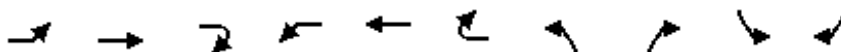
	Left	Right	BP	Left	Right	BP	Left	Right	BP	Left	Right	BP
Entry Flow		121			166			109			173	
Entry Cap.		961			1114			0			993	
Volume (vph)		121			166						173	
Cap. (vph)		961			1114			0			993	
v/c Ratio		0.13			0.15						0.17	
Critical Lane		*			*						*	
Lane Delay		4.9			4.5						5.3	
Lane LOS		A			A			F			A	
95 % Queue		0.4			0.5						0.6	
Approach:												
Delay		4.91			4.54						5.26	
LOS		A			A						A	
Intersection Delay		4.91					Intersection LOS	A				

TOTAL PROJECTED CONDITIONS

Lanes, Volumes, Timings

1: I65 NB off Ramp /I65 SB off ramp & McEwen/McEwen

11/18/2016

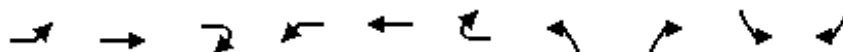


Lane Group	EBL	EBT	EBR2	WBL	WBT	WBR2	NBL	NBR2	SBL	SBR2
Lane Configurations	←←	→→	→	←	→→	→	←←	→	←←	→→
Traffic Volume (vph)	480	913	117	199	755	506	614	991	793	372
Future Volume (vph)	480	913	117	199	755	506	614	991	793	372
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	370			495			0		0	
Storage Lanes	2			1			2		2	
Taper Length (ft)	25			25			25		25	
Lane Util. Factor	0.97	0.95	1.00	1.00	0.95	1.00	0.97	1.00	0.97	0.88
Frt			0.850			0.850		0.850		0.850
Flt Protected	0.950			0.950			0.950		0.950	
Satd. Flow (prot)	3433	3539	1583	1770	3539	1583	3433	1583	3433	2787
Flt Permitted	0.950			0.950			0.950		0.950	
Satd. Flow (perm)	3433	3539	1583	1770	3539	1583	3433	1583	3433	2787
Right Turn on Red			Yes			Yes		Yes		Yes
Satd. Flow (RTOR)			131			506		270		119
Link Speed (mph)		30			30					
Link Distance (ft)		826			1211					
Travel Time (s)		18.8			27.5					
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	480	913	117	199	755	506	614	991	793	372
Shared Lane Traffic (%)										
Lane Group Flow (vph)	480	913	117	199	755	506	614	991	793	372
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Right	Left	Right
Median Width(ft)		24			24					
Link Offset(ft)		0			0					
Crosswalk Width(ft)		16			16					
Two way Left Turn Lane										
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15	9	15	9
Number of Detectors	1	2	1	1	2	1	1	1	1	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Right	Left	Right
Leading Detector (ft)	20	100	20	20	100	20	20	20	20	20
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0	0	0	0	0
Detector 1 Size(ft)	20	6	20	20	6	20	20	20	20	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel										
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94					
Detector 2 Size(ft)		6			6					
Detector 2 Type		Cl+Ex			Cl+Ex					
Detector 2 Channel										
Detector 2 Extend (s)		0.0			0.0					
Turn Type	Prot	NA	Free	Prot	NA	Perm	Perm	Free	Perm	Prot
Protected Phases	1	6		5	2					1
Permitted Phases			Free			2	3	Free	7	

Lanes, Volumes, Timings

1: I65 NB off Ramp /I65 SB off ramp & McEwen/McEwen

11/18/2016

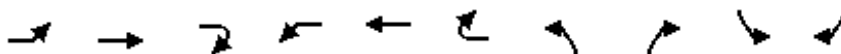


Lane Group	EBL	EBT	EBR2	WBL	WBT	WBR2	NBL	NBR2	SBL	SBR2
Detector Phase	1	6		5	2	2	3		7	1
Switch Phase										
Minimum Initial (s)	8.0	12.0		8.0	12.0	12.0	12.0		12.0	8.0
Minimum Split (s)	15.0	27.0		25.0	27.0	27.0	27.0		27.0	15.0
Total Split (s)	38.0	61.0		35.0	58.0	58.0	54.0		54.0	38.0
Total Split (%)	25.3%	40.7%		23.3%	38.7%	38.7%	36.0%		36.0%	25.3%
Maximum Green (s)	31.0	54.0		28.0	51.0	51.0	47.0		47.0	31.0
Yellow Time (s)	4.0	4.0		4.0	4.0	4.0	4.0		4.0	4.0
All-Red Time (s)	3.0	3.0		3.0	3.0	3.0	3.0		3.0	3.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	7.0	7.0		7.0	7.0	7.0	7.0		7.0	7.0
Lead/Lag	Lead	Lag		Lead	Lag	Lag				Lead
Lead-Lag Optimize?										
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0		3.0	3.0
Recall Mode	None	C-Min		None	C-Min	C-Min	None		None	None
Walk Time (s)		7.0			7.0	7.0	7.0		7.0	
Flash Dont Walk (s)		13.0			13.0	13.0	13.0		13.0	
Pedestrian Calls (#/hr)		5			5	5	5		5	
Act Effect Green (s)	26.4	66.9	150.0	21.8	62.2	62.2	40.4	150.0	40.4	26.4
Actuated g/C Ratio	0.18	0.45	1.00	0.15	0.41	0.41	0.27	1.00	0.27	0.18
v/c Ratio	0.79	0.58	0.07	0.78	0.51	0.53	0.66	0.63	0.86	0.63
Control Delay	70.3	30.0	0.1	95.2	22.3	3.6	52.2	1.9	63.0	43.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	70.3	30.0	0.1	95.2	22.3	3.6	52.2	1.9	63.0	43.1
LOS	E	C	A	F	C	A	D	A	E	D
Approach Delay		40.5			25.7					
Approach LOS		D			C					
90th %ile Green (s)	31.0	54.0		28.0	51.0	51.0	47.0		47.0	31.0
90th %ile Term Code	Max	Coord		Max	Coord	Coord	Hold		Max	Max
70th %ile Green (s)	29.3	60.3		25.0	56.0	56.0	43.7		43.7	29.3
70th %ile Term Code	Gap	Coord		Gap	Coord	Coord	Hold		Gap	Gap
50th %ile Green (s)	27.0	66.1		22.1	61.2	61.2	40.8		40.8	27.0
50th %ile Term Code	Gap	Coord		Gap	Coord	Coord	Hold		Gap	Gap
30th %ile Green (s)	24.6	72.1		19.1	66.6	66.6	37.8		37.8	24.6
30th %ile Term Code	Gap	Coord		Gap	Coord	Coord	Hold		Gap	Gap
10th %ile Green (s)	20.2	81.8		14.6	76.2	76.2	32.6		32.6	20.2
10th %ile Term Code	Gap	Coord		Gap	Coord	Coord	Hold		Gap	Gap
Stops (vph)	457	635	0	201	297	84	531	1	736	234
Fuel Used(gal)	12	15	1	7	12	6	13	6	19	7
CO Emissions (g/hr)	873	1046	53	479	852	392	914	435	1333	477
NOx Emissions (g/hr)	170	204	10	93	166	76	178	85	259	93
VOC Emissions (g/hr)	202	243	12	111	198	91	212	101	309	111
Dilemma Vehicles (#)	0	0	0	0	0	0	0	0	0	0
Queue Length 50th (ft)	235	357	0	206	105	33	276	0	380	131
Queue Length 95th (ft)	344	365	0	m262	m182	m100	370	0	504	221
Internal Link Dist (ft)		746			1131					
Turn Bay Length (ft)	370			495						
Base Capacity (vph)	709	1577	1583	330	1467	952	1075	1583	1075	670
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0

Lanes, Volumes, Timings

1: I65 NB off Ramp /I65 SB off ramp & McEwen/McEwen

11/18/2016



Lane Group	EBL	EBT	EBR2	WBL	WBT	WBR2	NBL	NBR2	SBL	SBR2
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.68	0.58	0.07	0.60	0.51	0.53	0.57	0.63	0.74	0.56

Intersection Summary

Area Type: Other

Cycle Length: 150

Actuated Cycle Length: 150

Offset: 98 (65%), Referenced to phase 2:WBT and 6:EBT, Start of Yellow

Natural Cycle: 80

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.86

Intersection Signal Delay: 34.6

Intersection LOS: C

Intersection Capacity Utilization Err%

ICU Level of Service H

Analysis Period (min) 60

m Volume for 95th percentile queue is metered by upstream signal.

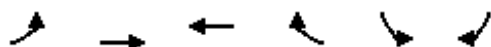
Splits and Phases: 1: I65 NB off Ramp /I65 SB off ramp & McEwen/McEwen

 Ø1	 Ø2 (R)	 Ø3
38 s	58 s	54 s
 Ø5	 Ø6 (R)	 Ø7
35 s	61 s	54 s

Lanes, Volumes, Timings

2: McEwen /McEwen & Tower

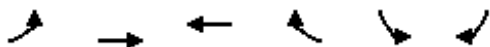
11/18/2016



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	632	2117	1386	114	19	98
Future Volume (vph)	632	2117	1386	114	19	98
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	285			115	445	0
Storage Lanes	2			1	1	2
Taper Length (ft)	25				25	
Lane Util. Factor	0.97	0.95	0.95	1.00	1.00	0.88
Frt				0.850		0.850
Flt Protected	0.950				0.950	
Satd. Flow (prot)	3090	3185	3185	1425	1593	2508
Flt Permitted	0.950				0.950	
Satd. Flow (perm)	3090	3185	3185	1425	1593	2508
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)				36		98
Link Speed (mph)		30	30		30	
Link Distance (ft)		1211	938		511	
Travel Time (s)		27.5	21.3		11.6	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	632	2117	1386	114	19	98
Shared Lane Traffic (%)						
Lane Group Flow (vph)	632	2117	1386	114	19	98
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		24	24		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.14	1.14	1.14	1.14	1.14	1.14
Turning Speed (mph)	15			9	15	9
Number of Detectors	1	2	2	1	1	1
Detector Template	Left	Thru	Thru	Right	Left	Right
Leading Detector (ft)	20	100	100	20	20	20
Trailing Detector (ft)	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0
Detector 1 Size(ft)	20	6	6	20	20	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94	94			
Detector 2 Size(ft)		6	6			
Detector 2 Type		Cl+Ex	Cl+Ex			
Detector 2 Channel						
Detector 2 Extend (s)		0.0	0.0			
Turn Type	Prot	NA	NA	Prot	Prot	Prot
Protected Phases	1	6	2	2	8	8
Permitted Phases						

Lanes, Volumes, Timings
2: McEwen /McEwen & Tower

11/18/2016

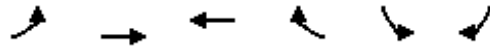


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Detector Phase	1	6	2	2	8	8
Switch Phase						
Minimum Initial (s)	7.0	20.0	20.0	20.0	8.0	8.0
Minimum Split (s)	13.5	43.5	43.5	43.5	46.5	46.5
Total Split (s)	35.0	103.5	68.5	68.5	46.5	46.5
Total Split (%)	23.3%	69.0%	45.7%	45.7%	31.0%	31.0%
Maximum Green (s)	29.5	98.0	63.0	63.0	41.0	41.0
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	5.5	5.5	5.5	5.5
Lead/Lag	Lead		Lag	Lag		
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	C-Min	C-Min	C-Min	None	None
Walk Time (s)		7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)		18.0	18.0	18.0	34.0	34.0
Pedestrian Calls (#/hr)		3	3	3	3	3
Act Effect Green (s)	37.6	124.4	81.3	81.3	14.6	14.6
Actuated g/C Ratio	0.25	0.83	0.54	0.54	0.10	0.10
v/c Ratio	0.82	0.80	0.80	0.14	0.12	0.29
Control Delay	53.6	14.2	13.5	2.2	57.5	10.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	53.6	14.2	13.5	2.2	57.5	10.8
LOS	D	B	B	A	E	B
Approach Delay		23.2	12.6		18.4	
Approach LOS		C	B		B	
90th %ile Green (s)	29.5	98.0	63.0	63.0	41.0	41.0
90th %ile Term Code	Max	Coord	Coord	Coord	Ped	Ped
70th %ile Green (s)	39.9	130.8	85.4	85.4	8.2	8.2
70th %ile Term Code	Gap	Coord	Coord	Coord	Gap	Gap
50th %ile Green (s)	39.3	131.0	86.2	86.2	8.0	8.0
50th %ile Term Code	Gap	Coord	Coord	Coord	Min	Min
30th %ile Green (s)	39.1	131.0	86.4	86.4	8.0	8.0
30th %ile Term Code	Gap	Coord	Coord	Coord	Min	Min
10th %ile Green (s)	40.2	131.0	85.3	85.3	8.0	8.0
10th %ile Term Code	Gap	Coord	Coord	Coord	Min	Min
Stops (vph)	506	1062	489	9	18	14
Fuel Used(gal)	16	32	17	1	0	1
CO Emissions (g/hr)	1095	2234	1163	65	28	48
NOx Emissions (g/hr)	213	435	226	13	5	9
VOC Emissions (g/hr)	254	518	270	15	6	11
Dilemma Vehicles (#)	0	0	0	0	0	0
Queue Length 50th (ft)	259	132	89	0	18	0
Queue Length 95th (ft)	#554	#1536	m#986	m13	40	33
Internal Link Dist (ft)		1131	858		431	
Turn Bay Length (ft)	285			115	445	
Base Capacity (vph)	774	2640	1725	788	435	756
Starvation Cap Reductn	0	0	0	0	0	0

Lanes, Volumes, Timings

2: McEwen /McEwen & Tower

11/18/2016



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.82	0.80	0.80	0.14	0.04	0.13

Intersection Summary

Area Type: CBD

Cycle Length: 150

Actuated Cycle Length: 150

Offset: 86 (57%), Referenced to phase 2:WBT and 6:EBT, Start of Yellow

Natural Cycle: 105

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.82

Intersection Signal Delay: 19.5

Intersection LOS: B

Intersection Capacity Utilization 83.0%

ICU Level of Service E

Analysis Period (min) 60

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: McEwen /McEwen & Tower



Lanes, Volumes, Timings

3: Carothers/Carothers & McEwen

11/18/2016

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1007	769	346	121	920	367	234	1071	91	175	302	241
Future Volume (vph)	1007	769	346	121	920	367	234	1071	91	175	302	241
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	205		205	218		97	300		300	280		310
Storage Lanes	2		1	2		1	2		1	2		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3433	3539	1583	3433	3539	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3433	3539	1583	3433	3539	1583	3433	3539	1583	3433	3539	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			266			105			109			65
Link Speed (mph)		30			30			30			40	
Link Distance (ft)		938			1960			1936			857	
Travel Time (s)		21.3			44.5			44.0			14.6	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	1007	769	346	121	920	367	234	1071	91	175	302	241
Shared Lane Traffic (%)												
Lane Group Flow (vph)	1007	769	346	121	920	367	234	1071	91	175	302	241
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			24			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100	20	20	100	20	20	100	20	20	100	20
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Size(ft)	20	6	20	20	6	20	20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	custom	Prot	NA	custom
Protected Phases	1	6	7	5	2	3	7	4	5	3	8	1
Permitted Phases			6			2			8			4

Lanes, Volumes, Timings

3: Carothers/Carothers & McEwen

11/18/2016

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	1	6	7	5	2	3	7	4	5	3	8	1
Switch Phase												
Minimum Initial (s)	6.0	13.0	6.0	4.0	13.0	6.0	6.0	13.0	4.0	6.0	13.0	6.0
Minimum Split (s)	13.0	52.0	12.5	10.0	52.0	13.0	12.5	52.0	10.0	13.0	52.0	13.0
Total Split (s)	31.0	69.0	14.0	15.0	53.0	14.0	14.0	52.0	15.0	14.0	52.0	31.0
Total Split (%)	20.7%	46.0%	9.3%	10.0%	35.3%	9.3%	9.3%	34.7%	10.0%	9.3%	34.7%	20.7%
Maximum Green (s)	25.0	63.0	8.0	9.5	47.0	8.0	8.0	46.0	9.5	8.0	46.0	25.0
Yellow Time (s)	4.0	4.0	4.0	3.5	4.0	4.0	4.0	4.0	3.5	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	5.5	6.0	6.0	6.0	6.0	5.5	6.0	6.0	6.0
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lead
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	Max	C-Max	None	None	C-Max	None	None	None	None	None	None	Max
Walk Time (s)		7.0			7.0			7.0			7.0	
Flash Dont Walk (s)		39.0			39.0			37.0			37.0	
Pedestrian Calls (#/hr)		5			5			5			5	
Act Effect Green (s)	25.0	63.4	77.4	9.1	47.0	61.0	8.0	46.0	61.1	8.0	46.0	77.0
Actuated g/C Ratio	0.17	0.42	0.52	0.06	0.31	0.41	0.05	0.31	0.41	0.05	0.31	0.51
v/c Ratio	1.76	0.51	0.37	0.58	0.83	0.52	1.28	0.99	0.13	0.96	0.28	0.29
Control Delay	1410.9	32.4	8.4	65.4	41.8	21.5	596.5	95.2	3.3	165.9	40.3	15.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	1410.9	32.4	8.4	65.4	41.8	21.5	596.5	95.2	3.3	165.9	40.3	15.8
LOS	F	C	A	E	D	C	F	F	A	F	D	B
Approach Delay		682.7			38.5			173.2			62.7	
Approach LOS		F			D			F			E	
90th %ile Green (s)	25.0	63.0	8.0	9.5	47.0	8.0	8.0	46.0	9.5	8.0	46.0	25.0
90th %ile Term Code	MaxR	Coord	Max	Max	Coord	Max	Max	Max	Max	Max	Hold	MaxR
70th %ile Green (s)	25.0	63.0	8.0	9.5	47.0	8.0	8.0	46.0	9.5	8.0	46.0	25.0
70th %ile Term Code	MaxR	Coord	Max	Max	Coord	Max	Max	Max	Max	Max	Hold	MaxR
50th %ile Green (s)	25.0	63.0	8.0	9.5	47.0	8.0	8.0	46.0	9.5	8.0	46.0	25.0
50th %ile Term Code	MaxR	Coord	Max	Max	Coord	Max	Max	Max	Max	Max	Hold	MaxR
30th %ile Green (s)	25.0	63.1	8.0	9.4	47.0	8.0	8.0	46.0	9.4	8.0	46.0	25.0
30th %ile Term Code	MaxR	Coord	Max	Gap	Coord	Max	Max	Max	Gap	Max	Hold	MaxR
10th %ile Green (s)	25.0	64.8	8.0	7.7	47.0	8.0	8.0	46.0	7.7	8.0	46.0	25.0
10th %ile Term Code	MaxR	Coord	Max	Gap	Coord	Max	Max	Max	Gap	Max	Hold	MaxR
Stops (vph)	972	477	67	116	701	299	209	981	6	156	224	97
Fuel Used(gal)	302	13	3	4	26	9	33	42	1	8	6	3
CO Emissions (g/hr)	21109	932	244	287	1800	620	2314	2959	103	591	450	219
NOx Emissions (g/hr)	4107	181	47	56	350	121	450	576	20	115	87	43
VOC Emissions (g/hr)	4892	216	57	66	417	144	536	686	24	137	104	51
Dilemma Vehicles (#)	0	0	0	0	0	0	0	0	0	0	8	0
Queue Length 50th (ft)	~753	238	62	61	314	155	~148	550	0	89	118	93
Queue Length 95th (ft)	m#1041	m372	m152	m75	m445	m199	#277	#845	35	#198	181	179
Internal Link Dist (ft)		858			1880			1856			777	
Turn Bay Length (ft)	205		205	218		97	300		300	280		310
Base Capacity (vph)	572	1495	945	217	1108	706	183	1085	713	183	1085	844
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0

Lanes, Volumes, Timings

3: Carothers/Carothers & McEwen

11/18/2016

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.76	0.51	0.37	0.56	0.83	0.52	1.28	0.99	0.13	0.96	0.28	0.29

Intersection Summary

Area Type: Other

Cycle Length: 150

Actuated Cycle Length: 150

Offset: 38 (25%), Referenced to phase 2:WBT and 6:EBT, Start of Yellow

Natural Cycle: 130

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.76

Intersection Signal Delay: 317.1

Intersection LOS: F

Intersection Capacity Utilization 108.8%

ICU Level of Service G

Analysis Period (min) 60

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 3: Carothers/Carothers & McEwen

 Ø1	 Ø2 (R)	 Ø3	 Ø4
31 s	53 s	14 s	52 s
 Ø5	 Ø6 (R)	 Ø7	 Ø8
15 s	69 s	14 s	52 s

Lanes, Volumes, Timings

4: Ovation/Resource Parkway & McEwen

11/18/2016

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	276	268	381	160	1051	114	145	57	21	56	102	226
Future Volume (vph)	276	268	381	160	1051	114	145	57	21	56	102	226
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	0.95	0.97	1.00	1.00	1.00	1.00	1.00
Fr't			0.850		0.985				0.850		0.897	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3539	1583	1770	3486	0	3433	1863	1583	1770	1671	0
Flt Permitted	0.136			0.587			0.248			0.720		
Satd. Flow (perm)	253	3539	1583	1093	3486	0	896	1863	1583	1341	1671	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			381		17				73		135	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1960			345			402			456	
Travel Time (s)		44.5			7.8			9.1			10.4	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	276	268	381	160	1051	114	145	57	21	56	102	226
Shared Lane Traffic (%)												
Lane Group Flow (vph)	276	268	381	160	1165	0	145	57	21	56	328	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		36			36			24			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2		1	2	1	1	2	
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru	Right	Left	Thru	
Leading Detector (ft)	20	100	20	20	100		20	100	20	20	100	
Trailing Detector (ft)	0	0	0	0	0		0	0	0	0	0	
Detector 1 Position(ft)	0	0	0	0	0		0	0	0	0	0	
Detector 1 Size(ft)	20	6	20	20	6		20	6	20	20	6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA	pm+ov	pm+pt	NA		pm+pt	NA	pm+ov	pm+pt	NA	
Protected Phases	3	8	1	7	4		1	6	7	5	2	
Permitted Phases	8		8	4			6		6	2		
Detector Phase	3	8	1	7	4		1	6	7	5	2	
Switch Phase												
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	

Lanes, Volumes, Timings
4: Ovation/Resource Parkway & McEwen

11/18/2016

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Split (s)	10.0	20.0	10.0	10.0	20.0		10.0	20.0	10.0	10.0	20.0	
Total Split (s)	13.0	35.0	10.0	10.0	32.0		10.0	20.0	10.0	10.0	20.0	
Total Split (%)	17.3%	46.7%	13.3%	13.3%	42.7%		13.3%	26.7%	13.3%	13.3%	26.7%	
Maximum Green (s)	9.0	31.0	6.0	6.0	28.0		6.0	16.0	6.0	6.0	16.0	
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5		3.5	3.5	3.5	3.5	3.5	
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5		0.5	0.5	0.5	0.5	0.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Lead/Lag	Lead	Lag	Lead	Lead	Lag		Lead	Lag	Lead	Lead	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	C-Max	None	None	C-Max		None	Max	None	None	Max	
Walk Time (s)		5.0			5.0			5.0			5.0	
Flash Dont Walk (s)		11.0			11.0			11.0			11.0	
Pedestrian Calls (#/hr)		10			10			10			10	
Act Effect Green (s)	40.0	31.0	41.0	34.0	28.0		23.6	20.0	30.0	21.9	16.0	
Actuated g/C Ratio	0.53	0.41	0.55	0.45	0.37		0.31	0.27	0.40	0.29	0.21	
v/c Ratio	0.87	0.18	0.37	0.29	0.89		0.30	0.11	0.03	0.13	0.71	
Control Delay	48.4	12.8	8.3	10.5	33.1		18.6	24.1	0.1	17.6	26.2	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Delay	48.4	12.8	8.3	10.5	33.1		18.6	24.1	0.1	17.6	26.2	
LOS	D	B	A	B	C		B	C	A	B	C	
Approach Delay		21.5			30.3			18.3			24.9	
Approach LOS		C			C			B			C	
90th %ile Green (s)	9.0	31.0	6.0	6.0	28.0		6.0	16.0	6.0	6.0	16.0	
90th %ile Term Code	Max	Coord	Max	Max	Coord		Max	MaxR	Max	Max	MaxR	
70th %ile Green (s)	9.0	31.0	6.0	6.0	28.0		6.0	16.0	6.0	6.0	16.0	
70th %ile Term Code	Max	Coord	Max	Max	Coord		Max	MaxR	Max	Max	MaxR	
50th %ile Green (s)	9.0	31.0	6.0	6.0	28.0		6.0	16.0	6.0	6.0	16.0	
50th %ile Term Code	Max	Coord	Max	Max	Coord		Max	MaxR	Max	Max	MaxR	
30th %ile Green (s)	9.0	31.0	6.0	6.0	28.0		6.0	26.0	6.0	0.0	16.0	
30th %ile Term Code	Max	Coord	Max	Max	Coord		Max	MaxR	Max	Skip	MaxR	
10th %ile Green (s)	9.0	31.0	6.0	6.0	28.0		6.0	26.0	6.0	0.0	16.0	
10th %ile Term Code	Max	Coord	Max	Max	Coord		Max	MaxR	Max	Skip	MaxR	
Stops (vph)	200	197	226	86	994		97	46	0	39	178	
Fuel Used(gal)	8	6	8	1	16		2	1	0	1	4	
CO Emissions (g/hr)	562	411	539	87	1151		108	50	5	43	272	
NOx Emissions (g/hr)	109	80	105	17	224		21	10	1	8	53	
VOC Emissions (g/hr)	130	95	125	20	267		25	12	1	10	63	
Dilemma Vehicles (#)	0	0	0	0	0		0	0	0	0	0	
Queue Length 50th (ft)	116	57	169	34	257		23	22	0	17	81	
Queue Length 95th (ft)	m#290	m70	m243	71	#466		47	57	0	46	#245	
Internal Link Dist (ft)		1880			265			322			376	
Turn Bay Length (ft)												
Base Capacity (vph)	316	1462	1038	549	1312		484	496	676	427	462	
Starvation Cap Reductn	0	0	0	0	0		0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0		0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0		0	0	0	0	0	
Reduced v/c Ratio	0.87	0.18	0.37	0.29	0.89		0.30	0.11	0.03	0.13	0.71	

Lanes, Volumes, Timings

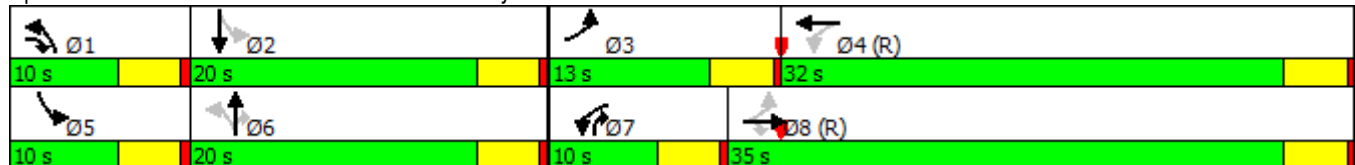
4: Ovation/Resource Parkway & McEwen

11/18/2016

Intersection Summary

Area Type: Other
 Cycle Length: 75
 Actuated Cycle Length: 75
 Offset: 40 (53%), Referenced to phase 4:WBTL and 8:EBTL, Start of Green
 Natural Cycle: 75
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.89
 Intersection Signal Delay: 25.8 Intersection LOS: C
 Intersection Capacity Utilization 84.7% ICU Level of Service E
 Analysis Period (min) 60
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 4: Ovation/Resource Parkway & McEwen



Lanes, Volumes, Timings
5: Carothers /Carothers & Tower/Pacific

11/18/2016

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	109	0	53	132	1	48	195	2086	197	58	545	320
Future Volume (vph)	109	0	53	132	1	48	195	2086	197	58	545	320
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		0%			0%			2%			0%	
Storage Length (ft)	84		78	106		77	177		100	85		144
Storage Lanes	2		1	1		1	1		1	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3433	1863	1583	1770	1863	1583	1752	3504	1567	1770	3539	1583
Flt Permitted	0.950			0.950			0.392			0.051		
Satd. Flow (perm)	3433	1863	1583	1770	1863	1583	723	3504	1567	95	3539	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			252			152			105			314
Link Speed (mph)		30			30			40			30	
Link Distance (ft)		881			890			857			905	
Travel Time (s)		20.0			20.2			14.6			20.6	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	109	0	53	132	1	48	195	2086	197	58	545	320
Shared Lane Traffic (%)												
Lane Group Flow (vph)	109	0	53	132	1	48	195	2086	197	58	545	320
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			24			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.01	1.01	1.01	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100	20	20	100	20	20	100	20	20	100	20
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Size(ft)	20	6	20	20	6	20	20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot		Perm	Prot	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	3	8		7	4		1	6		5	2	

Lanes, Volumes, Timings
5: Carothers /Carothers & Tower/Pacific

11/18/2016

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases			8			4	6		6	2		2
Detector Phase	3	8	8	7	4	4	1	6	6	5	2	2
Switch Phase												
Minimum Initial (s)	6.0	8.0	8.0	6.0	8.0	8.0	6.0	20.0	20.0	6.0	20.0	20.0
Minimum Split (s)	12.5	48.5	48.5	12.5	48.5	48.5	12.0	42.0	42.0	12.0	42.0	42.0
Total Split (s)	12.5	48.5	48.5	14.0	50.0	50.0	18.0	65.5	65.5	12.0	59.5	59.5
Total Split (%)	8.9%	34.6%	34.6%	10.0%	35.7%	35.7%	12.9%	46.8%	46.8%	8.6%	42.5%	42.5%
Maximum Green (s)	7.0	43.0	43.0	8.5	44.5	44.5	12.5	59.5	59.5	6.5	53.5	53.5
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	4.0	4.0	3.5	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	5.5	5.5	5.5	5.5	5.5	6.0	6.0	5.5	6.0	6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None	None	C-Min	C-Min	None	C-Min	C-Min
Walk Time (s)		7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0
Flash Dont Walk (s)		36.0	36.0		36.0	36.0		29.0	29.0		29.0	29.0
Pedestrian Calls (#/hr)		10	10		10	10		10	10		10	10
Act Effect Green (s)	7.3		22.0	8.5	23.2	23.2	94.6	85.6	85.6	86.6	79.7	79.7
Actuated g/C Ratio	0.05		0.16	0.06	0.17	0.17	0.68	0.61	0.61	0.62	0.57	0.57
v/c Ratio	0.61		0.11	1.23	0.00	0.12	0.35	0.97	0.20	0.43	0.27	0.31
Control Delay	80.9		0.5	547.7	35.0	0.6	13.8	49.3	9.8	48.4	21.9	7.5
Queue Delay	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	80.9		0.5	547.7	35.0	0.6	13.8	49.3	9.8	48.4	21.9	7.5
LOS	F		A	F	C	A	B	D	A	D	C	A
Approach Delay					399.8			43.4			18.6	
Approach LOS					F			D			B	
90th %ile Green (s)	7.0	43.0	43.0	8.5	44.5	44.5	12.5	59.5	59.5	6.5	53.5	53.5
90th %ile Term Code	Max	Ped	Ped	Max	Hold	Hold	Max	Coord	Coord	Max	Coord	Coord
70th %ile Green (s)	7.0	43.0	43.0	8.5	44.5	44.5	12.5	59.5	59.5	6.5	53.5	53.5
70th %ile Term Code	Max	Ped	Ped	Max	Hold	Hold	Max	Coord	Coord	Max	Coord	Coord
50th %ile Green (s)	7.0	8.0	8.0	8.5	9.5	9.5	9.6	94.4	94.4	6.6	91.4	91.4
50th %ile Term Code	Max	Min	Min	Max	Hold	Hold	Gap	Coord	Coord	Gap	Coord	Coord
30th %ile Green (s)	7.0	8.0	8.0	8.5	9.5	9.5	8.7	94.8	94.8	6.2	92.3	92.3
30th %ile Term Code	Max	Min	Min	Max	Hold	Hold	Gap	Coord	Coord	Gap	Coord	Coord
10th %ile Green (s)	8.5	0.0	0.0	8.5	0.0	0.0	6.7	120.0	120.0	0.0	107.8	107.8
10th %ile Term Code	Hold	Skip	Skip	Max	Skip	Skip	Gap	Coord	Coord	Skip	Coord	Coord
Stops (vph)	105		0	115	2	0	78	1263	49	38	200	41
Fuel Used(gal)	3		0	16	0	0	2	45	2	1	7	3
CO Emissions (g/hr)	218		26	1137	2	24	171	3180	141	83	516	208
NOx Emissions (g/hr)	42		5	221	0	5	33	619	27	16	100	40
VOC Emissions (g/hr)	51		6	264	0	5	40	737	33	19	120	48
Dilemma Vehicles (#)	0		0	0	0	0	0	63	0	0	0	0
Queue Length 50th (ft)	51		0	~148	1	0	41	746	27	11	74	2
Queue Length 95th (ft)	#107		0	#329	6	0	163	#1713	130	#105	192	142
Internal Link Dist (ft)		801			810			777			825	
Turn Bay Length (ft)	84		78	106		77	177		100	85		144
Base Capacity (vph)	178		660	107	592	606	586	2143	999	136	2014	1036

Lanes, Volumes, Timings
5: Carothers /Carothers & Tower/Pacific

11/18/2016

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Starvation Cap Reductn	0		0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0		0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0		0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.61		0.08	1.23	0.00	0.08	0.33	0.97	0.20	0.43	0.27	0.31

Intersection Summary

Area Type: Other

Cycle Length: 140

Actuated Cycle Length: 140

Offset: 120 (86%), Referenced to phase 2:SBTL and 6:NBTL, Start of Yellow

Natural Cycle: 115

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.23

Intersection Signal Delay: 55.0

Intersection LOS: D

Intersection Capacity Utilization 90.8%

ICU Level of Service E

Analysis Period (min) 60

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 5: Carothers /Carothers & Tower/Pacific

 Ø1	 Ø2 (R)	 Ø3	 Ø4
18 s	59.5 s	12.5 s	50 s
 Ø5	 Ø6 (R)	 Ø7	 Ø8
12 s	65.5 s	14 s	48.5 s

Lanes, Volumes, Timings

6: Carothers/Carothers Parkway & Apartments/Resource

11/18/2016

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	35	0	52	9	0	127	123	2184	1	147	877	184
Future Volume (vph)	35	0	52	9	0	127	123	2184	1	147	877	184
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		0%			0%			2%			0%	
Storage Length (ft)	0		0	0		0	210		128	480		93
Storage Lanes	1		0	1		1	1		0	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	1.00
Frt		0.850				0.850						0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1583	0	1770	1863	1583	1752	3504	0	1770	3539	1583
Flt Permitted	0.592			0.723			0.286			0.047		
Satd. Flow (perm)	1103	1583	0	1347	1863	1583	527	3504	0	88	3539	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		242				92						97
Link Speed (mph)		30			30			40				40
Link Distance (ft)		762			773			905				2004
Travel Time (s)		17.3			17.6			15.4				34.2
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	35	0	52	9	0	127	123	2184	1	147	877	184
Shared Lane Traffic (%)												
Lane Group Flow (vph)	35	52	0	9	0	127	123	2185	0	147	877	184
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12				12
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.01	1.01	1.01	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2	1	1	2		1	2	1
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	Right
Leading Detector (ft)	20	100		20	100	20	20	100		20	100	20
Trailing Detector (ft)	0	0		0	0	0	0	0		0	0	0
Detector 1 Position(ft)	0	0		0	0	0	0	0		0	0	0
Detector 1 Size(ft)	20	6		20	6	20	20	6		20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA		pm+pt		pm+ov	pm+pt	NA		pm+pt	NA	pm+ov
Protected Phases	3	8		7	4	5	1	6		5	2	3

Lanes, Volumes, Timings

6: Carothers/Carothers Parkway & Apartments/Resource

11/18/2016

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	8			4		4	6			2		2
Detector Phase	3	8		7	4	5	1	6		5	2	3
Switch Phase												
Minimum Initial (s)	5.0	6.0		5.0	6.0	5.0	5.0	15.0		5.0	15.0	5.0
Minimum Split (s)	12.0	48.5		12.0	48.5	11.5	11.5	48.0		11.5	48.0	12.0
Total Split (s)	12.0	48.5		12.0	48.5	11.5	15.6	68.0		11.5	63.9	12.0
Total Split (%)	8.6%	34.6%		8.6%	34.6%	8.2%	11.1%	48.6%		8.2%	45.6%	8.6%
Maximum Green (s)	6.5	43.0		6.5	43.0	6.0	10.1	62.0		6.0	57.9	6.5
Yellow Time (s)	3.5	3.5		3.5	3.5	3.5	3.5	4.0		3.5	4.0	3.5
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5		5.5	5.5	5.5	5.5	6.0		5.5	6.0	5.5
Lead/Lag	Lead	Lag		Lead	Lag	Lead	Lead	Lag		Lead	Lag	Lead
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Recall Mode	None	None		None	None	None	None	C-Max		None	C-Max	None
Walk Time (s)		7.0			7.0			7.0			7.0	
Flash Dont Walk (s)		36.0			36.0			35.0			35.0	
Pedestrian Calls (#/hr)		10			10			10			10	
Act Effect Green (s)	24.7	23.4		23.2		30.7	94.3	85.9		99.4	89.3	101.7
Actuated g/C Ratio	0.18	0.17		0.17		0.22	0.67	0.61		0.71	0.64	0.73
v/c Ratio	0.16	0.11		0.04		0.30	0.29	1.02		0.74	0.39	0.16
Control Delay	39.8	0.5		33.3		13.2	3.1	58.0		57.7	18.3	6.7
Queue Delay	0.0	0.0		0.0		0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	39.8	0.5		33.3		13.2	3.1	58.0		57.7	18.3	6.7
LOS	D	A		C		B	A	E		E	B	A
Approach Delay		16.3						55.0			21.3	
Approach LOS		B						E			C	
90th %ile Green (s)	6.5	43.0		6.5	43.0	6.0	10.1	62.0		6.0	57.9	6.5
90th %ile Term Code	Max	Ped		Max	Ped	Max	Max	Coord		Max	Coord	Max
70th %ile Green (s)	6.5	55.0		0.0	43.0	6.0	10.1	62.0		6.0	57.9	6.5
70th %ile Term Code	Max	Hold		Skip	Ped	Max	Max	Coord		Max	Coord	Max
50th %ile Green (s)	6.5	6.5		0.0	0.0	12.5	6.8	104.0		12.5	109.7	6.5
50th %ile Term Code	Max	Hold		Skip	Skip	Gap	Gap	Coord		Gap	Coord	Max
30th %ile Green (s)	6.5	6.5		0.0	0.0	13.6	6.4	102.9		13.6	110.1	6.5
30th %ile Term Code	Max	Hold		Skip	Skip	Gap	Gap	Coord		Gap	Coord	Max
10th %ile Green (s)	6.0	6.0		0.0	0.0	18.5	6.0	98.5		18.5	111.0	6.0
10th %ile Term Code	Hold	Hold		Skip	Skip	Gap	Gap	Coord		Gap	Coord	Hold
Stops (vph)	26	0		8		29	10	558		52	439	36
Fuel Used(gal)	1	0		0		1	1	45		4	20	3
CO Emissions (g/hr)	44	22		11		88	65	3123		296	1363	217
NOx Emissions (g/hr)	9	4		2		17	13	608		58	265	42
VOC Emissions (g/hr)	10	5		3		21	15	724		69	316	50
Dilemma Vehicles (#)	0	0		0		0	0	27		0	31	0
Queue Length 50th (ft)	32	0		8		30	6	66		62	103	8
Queue Length 95th (ft)	48	0		19		78	m9 m#1478			#330	458	104
Internal Link Dist (ft)		682			693			825			1924	
Turn Bay Length (ft)							210			480		93
Base Capacity (vph)	226	676		247		419	451	2149		198	2257	1177

Lanes, Volumes, Timings

6: Carothers/Carothers Parkway & Apartments/Resource

11/18/2016

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Starvation Cap Reductn	0	0		0		0	0	0		0	0	0
Spillback Cap Reductn	0	0		0		0	0	0		0	0	0
Storage Cap Reductn	0	0		0		0	0	0		0	0	0
Reduced v/c Ratio	0.15	0.08		0.04		0.30	0.27	1.02		0.74	0.39	0.16

Intersection Summary

Area Type: Other

Cycle Length: 140

Actuated Cycle Length: 140

Offset: 136 (97%), Referenced to phase 2:SBTL and 6:NBTL, Start of Yellow

Natural Cycle: 120

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.02

Intersection Signal Delay: 41.8

Intersection LOS: D

Intersection Capacity Utilization 91.3%

ICU Level of Service F

Analysis Period (min) 60

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

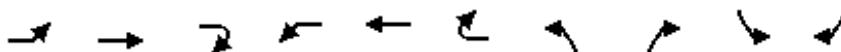
Splits and Phases: 6: Carothers/Carothers Parkway & Apartments/Resource

 Ø1	 Ø2 (R)	 Ø3	 Ø4
15.6 s	63.9 s	12 s	48.5 s
 Ø5	 Ø6 (R)	 Ø7	 Ø8
11.5 s	68 s	12 s	48.5 s

Lanes, Volumes, Timings

1: I65 NB off Ramp /I65 SB off ramp & McEwen/McEwen

11/18/2016

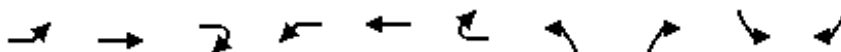


Lane Group	EBL	EBT	EBR2	WBL	WBT	WBR2	NBL	NBR2	SBL	SBR2
Lane Configurations	←←	→→	→	←	→→	→	←←	→	←←	→→
Traffic Volume (vph)	572	930	366	559	1252	1214	285	187	660	671
Future Volume (vph)	572	930	366	559	1252	1214	285	187	660	671
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	370			495			0		0	
Storage Lanes	2			1			2		2	
Taper Length (ft)	25			25			25		25	
Lane Util. Factor	0.97	0.95	1.00	1.00	0.95	1.00	0.97	1.00	0.97	0.88
Frt			0.850			0.850		0.850		0.850
Flt Protected	0.950			0.950			0.950		0.950	
Satd. Flow (prot)	3433	3539	1583	1770	3539	1583	3433	1583	3433	2787
Flt Permitted	0.950			0.950			0.950		0.950	
Satd. Flow (perm)	3433	3539	1583	1770	3539	1583	3433	1583	3433	2787
Right Turn on Red			Yes			Yes		Yes		Yes
Satd. Flow (RTOR)			198			542		187		131
Link Speed (mph)		30			30					
Link Distance (ft)		826			1211					
Travel Time (s)		18.8			27.5					
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	572	930	366	559	1252	1214	285	187	660	671
Shared Lane Traffic (%)										
Lane Group Flow (vph)	572	930	366	559	1252	1214	285	187	660	671
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Right	Left	Right
Median Width(ft)		24			24					
Link Offset(ft)		0			0					
Crosswalk Width(ft)		16			16					
Two way Left Turn Lane										
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15	9	15	9
Number of Detectors	1	2	1	1	2	1	1	1	1	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Right	Left	Right
Leading Detector (ft)	20	100	20	20	100	20	20	20	20	20
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0	0	0	0	0
Detector 1 Size(ft)	20	6	20	20	6	20	20	20	20	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel										
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94					
Detector 2 Size(ft)		6			6					
Detector 2 Type		Cl+Ex			Cl+Ex					
Detector 2 Channel										
Detector 2 Extend (s)		0.0			0.0					
Turn Type	Prot	NA	Free	Prot	NA	Perm	Perm	Free	Perm	Prot
Protected Phases	1	6		5	2					1
Permitted Phases			Free			2	3	Free	7	

Lanes, Volumes, Timings

1: I65 NB off Ramp /I65 SB off ramp & McEwen/McEwen

11/18/2016

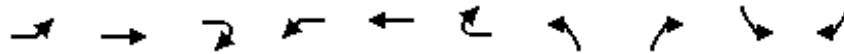


Lane Group	EBL	EBT	EBR2	WBL	WBT	WBR2	NBL	NBR2	SBL	SBR2
Detector Phase	1	6		5	2	2	3		7	1
Switch Phase										
Minimum Initial (s)	8.0	12.0		8.0	12.0	12.0	12.0		12.0	8.0
Minimum Split (s)	15.0	27.0		25.0	27.0	27.0	27.0		27.0	15.0
Total Split (s)	34.0	57.0		60.0	83.0	83.0	33.0		33.0	34.0
Total Split (%)	22.7%	38.0%		40.0%	55.3%	55.3%	22.0%		22.0%	22.7%
Maximum Green (s)	27.0	50.0		53.0	76.0	76.0	26.0		26.0	27.0
Yellow Time (s)	4.0	4.0		4.0	4.0	4.0	4.0		4.0	4.0
All-Red Time (s)	3.0	3.0		3.0	3.0	3.0	3.0		3.0	3.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	7.0	7.0		7.0	7.0	7.0	7.0		7.0	7.0
Lead/Lag	Lead	Lag		Lead	Lag	Lag				Lead
Lead-Lag Optimize?										
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0		3.0	3.0
Recall Mode	None	C-Min		None	C-Min	C-Min	None		None	None
Walk Time (s)		7.0			7.0	7.0	7.0		7.0	
Flash Dont Walk (s)		13.0			13.0	13.0	13.0		13.0	
Pedestrian Calls (#/hr)		5			5	5	5		5	
Act Effect Green (s)	27.0	52.7	150.0	50.3	76.0	76.0	26.0	150.0	26.0	27.0
Actuated g/C Ratio	0.18	0.35	1.00	0.34	0.51	0.51	0.17	1.00	0.17	0.18
v/c Ratio	0.93	0.75	0.23	0.94	0.70	1.14	0.48	0.12	1.11	1.10
Control Delay	87.9	45.8	0.3	42.2	29.7	274.1	59.0	0.1	279.0	255.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	87.9	45.8	0.3	42.2	29.7	274.1	59.0	0.1	279.0	255.5
LOS	F	D	A	D	C	F	E	A	F	F
Approach Delay		49.7			130.1					
Approach LOS		D			F					
90th %ile Green (s)	27.0	50.0		53.0	76.0	76.0	26.0		26.0	27.0
90th %ile Term Code	Max	Coord		Max	Coord	Coord	Hold		Max	Max
70th %ile Green (s)	27.0	50.0		53.0	76.0	76.0	26.0		26.0	27.0
70th %ile Term Code	Max	Coord		Max	Coord	Coord	Hold		Max	Max
50th %ile Green (s)	27.0	50.0		53.0	76.0	76.0	26.0		26.0	27.0
50th %ile Term Code	Max	Coord		Max	Coord	Coord	Hold		Max	Max
30th %ile Green (s)	27.0	53.4		49.6	76.0	76.0	26.0		26.0	27.0
30th %ile Term Code	Max	Coord		Gap	Coord	Coord	Hold		Max	Max
10th %ile Green (s)	27.0	60.2		42.8	76.0	76.0	26.0		26.0	27.0
10th %ile Term Code	Max	Coord		Gap	Coord	Coord	Hold		Max	Max
Stops (vph)	530	805	0	485	1091	933	252	0	602	503
Fuel Used(gal)	17	19	2	13	25	84	6	1	45	42
CO Emissions (g/hr)	1177	1335	167	892	1777	5897	454	77	3134	2919
NOx Emissions (g/hr)	229	260	32	174	346	1147	88	15	610	568
VOC Emissions (g/hr)	273	309	39	207	412	1367	105	18	726	676
Dilemma Vehicles (#)	0	0	0	0	0	0	0	0	0	0
Queue Length 50th (ft)	288	442	0	461	578	~1136	131	0	~378	~359
Queue Length 95th (ft)	#483	541	0	m376	m496	m898	202	0	#595	#603
Internal Link Dist (ft)		746			1131					
Turn Bay Length (ft)	370			495						
Base Capacity (vph)	617	1243	1583	625	1793	1069	595	1583	595	609
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0

Lanes, Volumes, Timings

1: I65 NB off Ramp /I65 SB off ramp & McEwen/McEwen

11/18/2016



Lane Group	EBL	EBT	EBR2	WBL	WBT	WBR2	NBL	NBR2	SBL	SBR2
Spillback Cap Reductn	0	0	0	0	19	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.93	0.75	0.23	0.89	0.71	1.14	0.48	0.12	1.11	1.10

Intersection Summary

Area Type: Other

Cycle Length: 150

Actuated Cycle Length: 150

Offset: 138 (92%), Referenced to phase 2:WBT and 6:EBT, Start of Yellow

Natural Cycle: 100

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.14

Intersection Signal Delay: 128.3

Intersection LOS: F

Intersection Capacity Utilization Err%

ICU Level of Service H

Analysis Period (min) 60

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

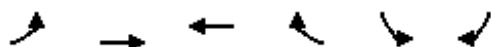
Splits and Phases: 1: I65 NB off Ramp /I65 SB off ramp & McEwen/McEwen

Ø1	Ø2 (R)	Ø3
34 s	83 s	33 s
Ø5	Ø6 (R)	Ø7
60 s	57 s	33 s

Lanes, Volumes, Timings

2: McEwen /McEwen & Tower

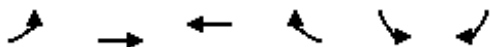
11/18/2016



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↰↰	↑↑	↑↑	↱	↱	↱↱
Traffic Volume (vph)	160	1611	2386	22	170	627
Future Volume (vph)	160	1611	2386	22	170	627
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	285			115	445	0
Storage Lanes	2			1	1	2
Taper Length (ft)	25				25	
Lane Util. Factor	0.97	0.95	0.95	1.00	1.00	0.88
Frt				0.850		0.850
Flt Protected	0.950				0.950	
Satd. Flow (prot)	3090	3185	3185	1425	1593	2508
Flt Permitted	0.950				0.950	
Satd. Flow (perm)	3090	3185	3185	1425	1593	2508
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)				5		171
Link Speed (mph)		30	30		30	
Link Distance (ft)		1211	938		511	
Travel Time (s)		27.5	21.3		11.6	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	160	1611	2386	22	170	627
Shared Lane Traffic (%)						
Lane Group Flow (vph)	160	1611	2386	22	170	627
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		24	24		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.14	1.14	1.14	1.14	1.14	1.14
Turning Speed (mph)	15			9	15	9
Number of Detectors	1	2	2	1	1	1
Detector Template	Left	Thru	Thru	Right	Left	Right
Leading Detector (ft)	20	100	100	20	20	20
Trailing Detector (ft)	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0
Detector 1 Size(ft)	20	6	6	20	20	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94	94			
Detector 2 Size(ft)		6	6			
Detector 2 Type		Cl+Ex	Cl+Ex			
Detector 2 Channel						
Detector 2 Extend (s)		0.0	0.0			
Turn Type	Prot	NA	NA	Prot	Prot	Prot
Protected Phases	1	6	2	2	8	8
Permitted Phases						

Lanes, Volumes, Timings
2: McEwen /McEwen & Tower

11/18/2016

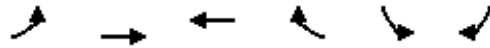


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Detector Phase	1	6	2	2	8	8
Switch Phase						
Minimum Initial (s)	7.0	20.0	20.0	20.0	8.0	8.0
Minimum Split (s)	13.5	43.5	43.5	43.5	46.5	46.5
Total Split (s)	13.5	103.5	90.0	90.0	46.5	46.5
Total Split (%)	9.0%	69.0%	60.0%	60.0%	31.0%	31.0%
Maximum Green (s)	8.0	98.0	84.5	84.5	41.0	41.0
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	5.5	5.5	5.5	5.5
Lead/Lag	Lead		Lag	Lag		
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	C-Min	C-Min	C-Min	None	None
Walk Time (s)		7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)		18.0	18.0	18.0	34.0	34.0
Pedestrian Calls (#/hr)		3	3	3	3	3
Act Effect Green (s)	11.6	104.9	87.8	87.8	34.1	34.1
Actuated g/C Ratio	0.08	0.70	0.59	0.59	0.23	0.23
v/c Ratio	0.67	0.72	1.28	0.03	0.47	0.89
Control Delay	92.8	4.5	534.2	14.0	53.5	59.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	1.1
Total Delay	92.8	4.5	534.2	14.0	53.5	60.6
LOS	F	A	F	B	D	E
Approach Delay		12.5	529.5		59.0	
Approach LOS		B	F		E	
90th %ile Green (s)	8.0	98.0	84.5	84.5	41.0	41.0
90th %ile Term Code	Max	Coord	Coord	Coord	Max	Max
70th %ile Green (s)	9.9	99.9	84.5	84.5	39.1	39.1
70th %ile Term Code	Max	Coord	Coord	Coord	Gap	Gap
50th %ile Green (s)	13.7	103.7	84.5	84.5	35.3	35.3
50th %ile Term Code	Max	Coord	Coord	Coord	Gap	Gap
30th %ile Green (s)	13.9	108.4	89.0	89.0	30.6	30.6
30th %ile Term Code	Gap	Coord	Coord	Coord	Gap	Gap
10th %ile Green (s)	12.4	114.4	96.5	96.5	24.6	24.6
10th %ile Term Code	Gap	Coord	Coord	Coord	Gap	Gap
Stops (vph)	133	514	2002	19	142	458
Fuel Used(gal)	5	20	288	0	3	13
CO Emissions (g/hr)	368	1365	20131	23	232	882
NOx Emissions (g/hr)	72	266	3917	4	45	172
VOC Emissions (g/hr)	85	316	4666	5	54	204
Dilemma Vehicles (#)	0	0	0	0	0	0
Queue Length 50th (ft)	73	37	~1582	4	144	255
Queue Length 95th (ft)	m#114	m73	m#1300	m4	238	#415
Internal Link Dist (ft)		1131	858		431	
Turn Bay Length (ft)	285			115	445	
Base Capacity (vph)	238	2226	1864	835	435	809
Starvation Cap Reductn	0	0	0	0	0	0

Lanes, Volumes, Timings

2: McEwen /McEwen & Tower

11/18/2016



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Spillback Cap Reductn	0	0	4	0	0	50
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.67	0.72	1.28	0.03	0.39	0.83

Intersection Summary

Area Type: CBD

Cycle Length: 150

Actuated Cycle Length: 150

Offset: 66 (44%), Referenced to phase 2:WBT and 6:EBT, Start of Yellow

Natural Cycle: 105

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.28

Intersection Signal Delay: 270.1

Intersection LOS: F

Intersection Capacity Utilization 106.8%

ICU Level of Service G

Analysis Period (min) 60

~ Volume exceeds capacity, queue is theoretically infinite.

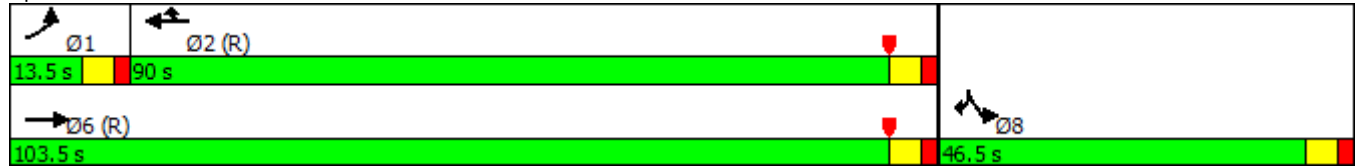
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: McEwen /McEwen & Tower



Lanes, Volumes, Timings

3: Carothers/Carothers & McEwen

11/18/2016

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	249	940	540	95	886	188	364	412	98	342	1323	1111
Future Volume (vph)	249	940	540	95	886	188	364	412	98	342	1323	1111
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	205		205	218		97	300		300	280		310
Storage Lanes	2		1	2		1	2		1	2		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3433	3539	1583	3433	3539	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3433	3539	1583	3433	3539	1583	3433	3539	1583	3433	3539	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			62			105			109			65
Link Speed (mph)		30			30			30			40	
Link Distance (ft)		938			1960			1936			857	
Travel Time (s)		21.3			44.5			44.0			14.6	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	249	940	540	95	886	188	364	412	98	342	1323	1111
Shared Lane Traffic (%)												
Lane Group Flow (vph)	249	940	540	95	886	188	364	412	98	342	1323	1111
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			24			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100	20	20	100	20	20	100	20	20	100	20
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Size(ft)	20	6	20	20	6	20	20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	custom	Prot	NA	custom
Protected Phases	1	6	7	5	2	3	7	4	5	3	8	1
Permitted Phases			6			2			8			4

Lanes, Volumes, Timings

3: Carothers/Carothers & McEwen

11/18/2016

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	1	6	7	5	2	3	7	4	5	3	8	1
Switch Phase												
Minimum Initial (s)	6.0	13.0	6.0	4.0	13.0	6.0	6.0	13.0	4.0	6.0	13.0	6.0
Minimum Split (s)	13.0	52.0	12.5	10.0	52.0	13.0	12.5	52.0	10.0	13.0	52.0	13.0
Total Split (s)	24.0	64.0	18.0	14.0	54.0	20.0	18.0	52.0	14.0	20.0	54.0	24.0
Total Split (%)	16.0%	42.7%	12.0%	9.3%	36.0%	13.3%	12.0%	34.7%	9.3%	13.3%	36.0%	16.0%
Maximum Green (s)	18.0	58.0	12.0	8.5	48.0	14.0	12.0	46.0	8.5	14.0	48.0	18.0
Yellow Time (s)	4.0	4.0	4.0	3.5	4.0	4.0	4.0	4.0	3.5	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	5.5	6.0	6.0	6.0	6.0	5.5	6.0	6.0	6.0
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lead
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	Max	C-Max	None	None	C-Max	None	None	None	None	None	None	Max
Walk Time (s)		7.0			7.0			7.0			7.0	
Flash Dont Walk (s)		39.0			39.0			37.0			37.0	
Pedestrian Calls (#/hr)		5			5			5			5	
Act Effect Green (s)	18.0	58.3	76.3	8.2	48.0	68.0	12.0	46.0	62.2	14.0	48.0	70.0
Actuated g/C Ratio	0.12	0.39	0.51	0.05	0.32	0.45	0.08	0.31	0.41	0.09	0.32	0.47
v/c Ratio	0.61	0.68	0.65	0.51	0.78	0.24	1.33	0.38	0.14	1.07	1.17	1.44
Control Delay	65.9	24.2	21.5	70.1	45.5	11.5	666.8	42.1	3.9	245.2	359.0	825.1
Queue Delay	0.0	0.0	0.0	0.0	4.3	0.0	0.0	0.0	0.0	0.0	0.0	5.2
Total Delay	65.9	24.2	21.5	70.1	49.8	11.5	666.8	42.1	3.9	245.2	359.0	830.3
LOS	E	C	C	E	D	B	F	D	A	F	F	F
Approach Delay		29.3			45.3			298.0			533.6	
Approach LOS		C			D			F			F	
90th %ile Green (s)	18.0	58.0	12.0	8.5	48.0	14.0	12.0	46.0	8.5	14.0	48.0	18.0
90th %ile Term Code	MaxR	Coord	Max	Max	Coord	Max	Max	Hold	Max	Max	Max	MaxR
70th %ile Green (s)	18.0	58.0	12.0	8.5	48.0	14.0	12.0	46.0	8.5	14.0	48.0	18.0
70th %ile Term Code	MaxR	Coord	Max	Max	Coord	Max	Max	Hold	Max	Max	Max	MaxR
50th %ile Green (s)	18.0	58.0	12.0	8.5	48.0	14.0	12.0	46.0	8.5	14.0	48.0	18.0
50th %ile Term Code	MaxR	Coord	Max	Max	Coord	Max	Max	Hold	Max	Max	Max	MaxR
30th %ile Green (s)	18.0	58.1	12.0	8.4	48.0	14.0	12.0	46.0	8.4	14.0	48.0	18.0
30th %ile Term Code	MaxR	Coord	Max	Gap	Coord	Max	Max	Hold	Gap	Max	Max	MaxR
10th %ile Green (s)	18.0	59.6	12.0	6.9	48.0	14.0	12.0	46.0	6.9	14.0	48.0	18.0
10th %ile Term Code	MaxR	Coord	Max	Gap	Coord	Max	Max	Hold	Gap	Max	Max	MaxR
Stops (vph)	225	633	416	90	706	69	330	317	8	308	1214	975
Fuel Used(gal)	6	15	9	3	26	4	57	11	2	22	116	203
CO Emissions (g/hr)	448	1049	602	231	1793	258	3965	804	112	1544	8130	14166
NOx Emissions (g/hr)	87	204	117	45	349	50	772	156	22	300	1582	2756
VOC Emissions (g/hr)	104	243	139	54	415	60	919	186	26	358	1884	3283
Dilemma Vehicles (#)	0	0	0	0	0	0	0	0	0	0	38	0
Queue Length 50th (ft)	109	330	315	46	380	52	~237	166	0	~190	~807	~1442
Queue Length 95th (ft)	m165	460	712	m68	m480	m86	#397	246	41	#345	#1120	#1995
Internal Link Dist (ft)		858			1880			1856			777	
Turn Bay Length (ft)	205		205	218		97	300		300	280		310
Base Capacity (vph)	411	1376	835	194	1132	775	274	1085	723	320	1132	773
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0

Lanes, Volumes, Timings

3: Carothers/Carothers & McEwen

11/18/2016

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Spillback Cap Reductn	0	0	0	0	167	0	0	0	0	0	0	332
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.61	0.68	0.65	0.49	0.92	0.24	1.33	0.38	0.14	1.07	1.17	2.52

Intersection Summary

Area Type: Other

Cycle Length: 150

Actuated Cycle Length: 150

Offset: 78 (52%), Referenced to phase 2:WBT and 6:EBT, Start of Yellow

Natural Cycle: 130

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.44

Intersection Signal Delay: 281.8

Intersection LOS: F

Intersection Capacity Utilization 118.7%

ICU Level of Service H

Analysis Period (min) 60

~ Volume exceeds capacity, queue is theoretically infinite.

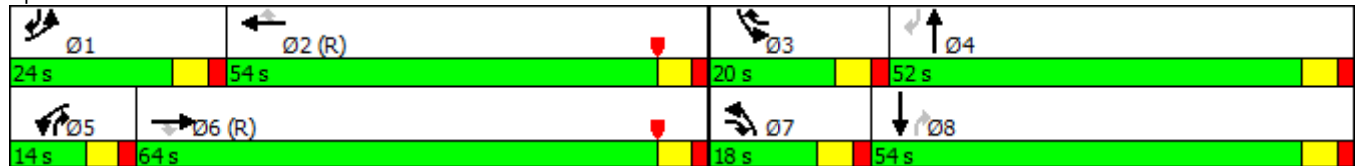
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 3: Carothers/Carothers & McEwen



Lanes, Volumes, Timings

4: Ovation/Resource Parkway & McEwen

11/18/2016

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	178	1029	181	101	379	43	603	124	86	135	81	272
Future Volume (vph)	178	1029	181	101	379	43	603	124	86	135	81	272
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	0.95	0.97	1.00	1.00	1.00	1.00	1.00
Frt			0.850		0.985				0.850		0.884	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3539	1583	1770	3486	0	3433	1863	1583	1770	1647	0
Flt Permitted	0.386			0.171			0.192			0.677		
Satd. Flow (perm)	719	3539	1583	319	3486	0	694	1863	1583	1261	1647	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			181		17				86		205	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1960			345			402			456	
Travel Time (s)		44.5			7.8			9.1			10.4	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	178	1029	181	101	379	43	603	124	86	135	81	272
Shared Lane Traffic (%)												
Lane Group Flow (vph)	178	1029	181	101	422	0	603	124	86	135	353	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		36			36			24			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2		1	2	1	1	2	
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru	Right	Left	Thru	
Leading Detector (ft)	20	100	20	20	100		20	100	20	20	100	
Trailing Detector (ft)	0	0	0	0	0		0	0	0	0	0	
Detector 1 Position(ft)	0	0	0	0	0		0	0	0	0	0	
Detector 1 Size(ft)	20	6	20	20	6		20	6	20	20	6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA	pm+ov	pm+pt	NA		pm+pt	NA	pm+ov	pm+pt	NA	
Protected Phases	3	8	1	7	4		1	6	7	5	2	
Permitted Phases	8		8	4			6		6	2		
Detector Phase	3	8	1	7	4		1	6	7	5	2	
Switch Phase												
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	

Lanes, Volumes, Timings
4: Ovation/Resource Parkway & McEwen

11/18/2016

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Split (s)	10.0	20.0	10.0	10.0	20.0		10.0	20.0	10.0	10.0	20.0	
Total Split (s)	12.0	30.0	15.0	10.0	28.0		15.0	25.0	10.0	10.0	20.0	
Total Split (%)	16.0%	40.0%	20.0%	13.3%	37.3%		20.0%	33.3%	13.3%	13.3%	26.7%	
Maximum Green (s)	8.0	26.0	11.0	6.0	24.0		11.0	21.0	6.0	6.0	16.0	
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5		3.5	3.5	3.5	3.5	3.5	
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5		0.5	0.5	0.5	0.5	0.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Lead/Lag	Lead	Lag	Lead	Lead	Lag		Lead	Lag	Lead	Lead	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	C-Max	None	None	C-Max		None	Max	None	None	Max	
Walk Time (s)		5.0			5.0			5.0			5.0	
Flash Dont Walk (s)		11.0			11.0			11.0			11.0	
Pedestrian Calls (#/hr)		10			10			10			10	
Act Effect Green (s)	34.4	28.0	43.0	30.2	24.2		31.0	23.0	32.9	22.0	16.0	
Actuated g/C Ratio	0.46	0.37	0.57	0.40	0.32		0.41	0.31	0.44	0.29	0.21	
v/c Ratio	0.41	0.78	0.18	0.42	0.37		0.88	0.22	0.12	0.33	0.69	
Control Delay	10.5	20.4	2.1	16.7	19.9		34.9	21.9	4.0	17.4	19.7	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Delay	10.5	20.4	2.1	16.7	19.9		34.9	21.9	4.0	17.4	19.7	
LOS	B	C	A	B	B		C	C	A	B	B	
Approach Delay		16.8			19.3			29.6			19.1	
Approach LOS		B			B			C			B	
90th %ile Green (s)	8.0	26.0	11.0	6.0	24.0		11.0	21.0	6.0	6.0	16.0	
90th %ile Term Code	Max	Coord	Max	Max	Coord		Max	MaxR	Max	Max	MaxR	
70th %ile Green (s)	8.0	26.0	11.0	6.0	24.0		11.0	21.0	6.0	6.0	16.0	
70th %ile Term Code	Max	Coord	Max	Max	Coord		Max	MaxR	Max	Max	MaxR	
50th %ile Green (s)	8.0	26.0	11.0	6.0	24.0		11.0	21.0	6.0	6.0	16.0	
50th %ile Term Code	Max	Coord	Max	Max	Coord		Max	MaxR	Max	Max	MaxR	
30th %ile Green (s)	8.0	26.0	11.0	6.0	24.0		11.0	21.0	6.0	6.0	16.0	
30th %ile Term Code	Max	Coord	Max	Max	Coord		Max	MaxR	Max	Max	MaxR	
10th %ile Green (s)	6.8	36.0	11.0	0.0	25.2		11.0	31.0	0.0	0.0	16.0	
10th %ile Term Code	Gap	Coord	Max	Skip	Coord		Max	MaxR	Skip	Skip	MaxR	
Stops (vph)	80	704	33	57	299		388	93	14	96	146	
Fuel Used(gal)	4	24	3	1	4		8	1	0	1	3	
CO Emissions (g/hr)	248	1670	211	65	315		581	102	29	104	243	
NOx Emissions (g/hr)	48	325	41	13	61		113	20	6	20	47	
VOC Emissions (g/hr)	57	387	49	15	73		135	24	7	24	56	
Dilemma Vehicles (#)	0	0	0	0	0		0	0	0	0	0	
Queue Length 50th (ft)	48	267	21	25	75		99	44	0	39	60	
Queue Length 95th (ft)	m97	m363	m39	57	128		#227	97	30	83	#224	
Internal Link Dist (ft)		1880			265			322			376	
Turn Bay Length (ft)												
Base Capacity (vph)	442	1320	984	244	1138		688	571	744	410	512	
Starvation Cap Reductn	0	0	0	0	0		0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0		0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0		0	0	0	0	0	
Reduced v/c Ratio	0.40	0.78	0.18	0.41	0.37		0.88	0.22	0.12	0.33	0.69	

Lanes, Volumes, Timings

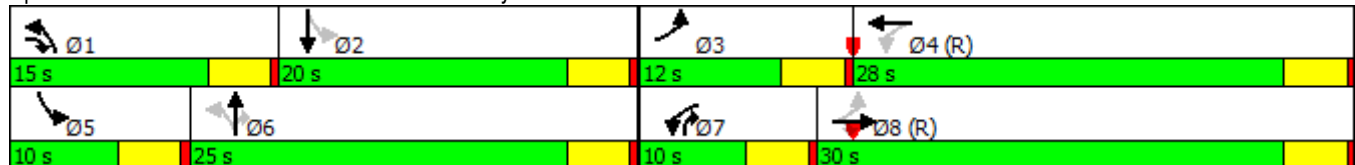
4: Ovation/Resource Parkway & McEwen

11/18/2016

Intersection Summary

Area Type: Other
 Cycle Length: 75
 Actuated Cycle Length: 75
 Offset: 70 (93%), Referenced to phase 4:WBTL and 8:EBTL, Start of Green
 Natural Cycle: 70
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.88
 Intersection Signal Delay: 20.8 Intersection LOS: C
 Intersection Capacity Utilization 85.6% ICU Level of Service E
 Analysis Period (min) 60
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 4: Ovation/Resource Parkway & McEwen



Lanes, Volumes, Timings
5: Carothers /Carothers & Tower/Pacific

11/18/2016

														
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR		
Lane Configurations														
Traffic Volume (vph)	395	1	213	145	0	54	68	667	124	31	2343	120		
Future Volume (vph)	395	1	213	145	0	54	68	667	124	31	2343	120		
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900		
Grade (%)	0%				0%				2%		0%			
Storage Length (ft)	84			78	106			77	177			100	85	144
Storage Lanes	2			1	1			1	1			1	1	1
Taper Length (ft)	25			25			25			25				
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00		
Frt			0.850				0.850				0.850		0.850	
Flt Protected	0.950			0.950			0.950			0.950				
Satd. Flow (prot)	3433	1863	1583	1770	1863	1583	1752	3504	1567	1770	3539	1583		
Flt Permitted	0.950			0.950			0.051			0.361				
Satd. Flow (perm)	3433	1863	1583	1770	1863	1583	94	3504	1567	672	3539	1583		
Right Turn on Red			Yes				Yes		Yes				Yes	
Satd. Flow (RTOR)			109				199		105				105	
Link Speed (mph)			30				30		40				30	
Link Distance (ft)			881				890		857				905	
Travel Time (s)			20.0				20.2		14.6				20.6	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		
Adj. Flow (vph)	395	1	213	145	0	54	68	667	124	31	2343	120		
Shared Lane Traffic (%)														
Lane Group Flow (vph)	395	1	213	145	0	54	68	667	124	31	2343	120		
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No		
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right		
Median Width(ft)			24				24				24			
Link Offset(ft)			0				0				0			
Crosswalk Width(ft)			16				16				16			
Two way Left Turn Lane														
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.01	1.01	1.01	1.00	1.00	1.00		
Turning Speed (mph)	15			9	15			9	15			9		
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1		
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right		
Leading Detector (ft)	20	100	20	20	100	20	20	100	20	20	100	20		
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	0		
Detector 1 Position(ft)	0	0	0	0	0	0	0	0	0	0	0	0		
Detector 1 Size(ft)	20	6	20	20	6	20	20	6	20	20	6	20		
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		
Detector 1 Channel														
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
Detector 2 Position(ft)			94				94				94			
Detector 2 Size(ft)			6				6				6			
Detector 2 Type	Cl+Ex				Cl+Ex				Cl+Ex				Cl+Ex	
Detector 2 Channel														
Detector 2 Extend (s)	0.0				0.0				0.0				0.0	
Turn Type	Prot	NA	Perm	Prot		Perm	pm+pt	NA	Perm	pm+pt	NA	Perm		
Protected Phases	3	8			7	4			1	6			5	2

Lanes, Volumes, Timings
5: Carothers /Carothers & Tower/Pacific

11/18/2016

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases			8			4	6		6	2		2
Detector Phase	3	8	8	7	4	4	1	6	6	5	2	2
Switch Phase												
Minimum Initial (s)	6.0	8.0	8.0	6.0	8.0	8.0	6.0	20.0	20.0	6.0	20.0	20.0
Minimum Split (s)	12.5	48.5	48.5	12.5	48.5	48.5	12.0	42.0	42.0	12.0	42.0	42.0
Total Split (s)	16.0	50.5	50.5	14.0	48.5	48.5	12.0	63.5	63.5	12.0	63.5	63.5
Total Split (%)	11.4%	36.1%	36.1%	10.0%	34.6%	34.6%	8.6%	45.4%	45.4%	8.6%	45.4%	45.4%
Maximum Green (s)	10.5	45.0	45.0	8.5	43.0	43.0	6.5	57.5	57.5	6.5	57.5	57.5
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	4.0	4.0	3.5	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	5.5	5.5	5.5	5.5	5.5	6.0	6.0	5.5	6.0	6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None	None	C-Min	C-Min	None	C-Min	C-Min
Walk Time (s)		7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0
Flash Dont Walk (s)		36.0	36.0		36.0	36.0		29.0	29.0		29.0	29.0
Pedestrian Calls (#/hr)		10	10		10	10		10	10		10	10
Act Effect Green (s)	12.8	25.0	25.0	8.5		23.4	86.9	82.4	82.4	85.4	79.8	79.8
Actuated g/C Ratio	0.09	0.18	0.18	0.06		0.17	0.62	0.59	0.59	0.61	0.57	0.57
v/c Ratio	1.26	0.00	0.57	1.36		0.13	0.50	0.32	0.13	0.07	1.16	0.13
Control Delay	543.9	34.0	28.3	745.1		0.6	33.4	19.4	6.4	2.3	312.1	0.5
Queue Delay	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	543.9	34.0	28.3	745.1		0.6	33.4	19.4	6.4	2.3	312.1	0.5
LOS	F	C	C	F		A	C	B	A	A	F	A
Approach Delay		362.7						18.6			293.2	
Approach LOS		F						B			F	
90th %ile Green (s)	10.5	45.0	45.0	8.5	43.0	43.0	6.5	57.5	57.5	6.5	57.5	57.5
90th %ile Term Code	Max	Hold	Hold	Max	Ped	Ped	Max	Coord	Coord	Max	Coord	Coord
70th %ile Green (s)	10.5	45.0	45.0	8.5	43.0	43.0	6.5	57.5	57.5	6.5	57.5	57.5
70th %ile Term Code	Max	Hold	Hold	Max	Ped	Ped	Max	Coord	Coord	Max	Coord	Coord
50th %ile Green (s)	10.5	15.3	15.3	8.5	13.3	13.3	7.1	87.5	87.5	6.2	86.6	86.6
50th %ile Term Code	Max	Gap	Gap	Max	Hold	Hold	Gap	Coord	Coord	Gap	Coord	Coord
30th %ile Green (s)	10.5	11.6	11.6	8.5	9.6	9.6	6.4	102.9	102.9	0.0	91.0	91.0
30th %ile Term Code	Max	Gap	Gap	Max	Hold	Hold	Gap	Coord	Coord	Skip	Coord	Coord
10th %ile Green (s)	22.0	8.0	8.0	8.5	0.0	0.0	0.0	106.5	106.5	0.0	106.5	106.5
10th %ile Term Code	Hold	Min	Min	Max	Skip	Skip	Skip	Coord	Coord	Skip	Coord	Coord
Stops (vph)	311	2	89	130		0	33	349	18	3	1624	5
Fuel Used(gal)	48	0	3	24		0	1	10	1	0	174	1
CO Emissions (g/hr)	3367	2	223	1658		27	83	695	74	17	12188	62
NOx Emissions (g/hr)	655	0	43	323		5	16	135	14	3	2371	12
VOC Emissions (g/hr)	780	0	52	384		6	19	161	17	4	2825	14
Dilemma Vehicles (#)	0	0	0	0		0	0	24	0	0	0	0
Queue Length 50th (ft)	~259	1	94	~172		0	17	140	6	2	~1243	10
Queue Length 95th (ft)	#421	6	172	#361		0	#108	329	64	m2	m#1721	m1
Internal Link Dist (ft)		801			810			777			825	
Turn Bay Length (ft)	84		78	106		77	177		100	85		144
Base Capacity (vph)	313	598	582	107		624	136	2062	965	461	2017	947

Lanes, Volumes, Timings
5: Carothers /Carothers & Tower/Pacific

11/18/2016

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Starvation Cap Reductn	0	0	0	0		0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0		0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0		0	0	0	0	0	0	0
Reduced v/c Ratio	1.26	0.00	0.37	1.36		0.09	0.50	0.32	0.13	0.07	1.16	0.13

Intersection Summary

Area Type: Other

Cycle Length: 140

Actuated Cycle Length: 140

Offset: 16 (11%), Referenced to phase 2:SBTL and 6:NBTL, Start of Yellow

Natural Cycle: 115

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.36

Intersection Signal Delay: 258.7

Intersection LOS: F

Intersection Capacity Utilization 100.2%

ICU Level of Service G

Analysis Period (min) 60

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 5: Carothers /Carothers & Tower/Pacific

 Ø1	 Ø2 (R)	 Ø3	 Ø4
12 s	63.5 s	16 s	48.5 s
 Ø5	 Ø6 (R)	 Ø7	 Ø8
12 s	63.5 s	14 s	50.5 s

Lanes, Volumes, Timings

6: Carothers/Carothers Parkway & Apartments/Resource

11/18/2016

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	127	0	194	8	0	172	47	1096	3	150	2257	66
Future Volume (vph)	127	0	194	8	0	172	47	1096	3	150	2257	66
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		0%			0%			2%			0%	
Storage Length (ft)	0		0	0		0	210		128	480		93
Storage Lanes	1		0	1		1	1		0	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	1.00
Frt		0.850				0.850						0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1583	0	1770	1863	1583	1752	3504	0	1770	3539	1583
Flt Permitted	0.590			0.518			0.048			0.181		
Satd. Flow (perm)	1099	1583	0	965	1863	1583	89	3504	0	337	3539	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		192				82						62
Link Speed (mph)		30			30			40			40	
Link Distance (ft)		762			773			905			2004	
Travel Time (s)		17.3			17.6			15.4			34.2	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	127	0	194	8	0	172	47	1096	3	150	2257	66
Shared Lane Traffic (%)												
Lane Group Flow (vph)	127	194	0	8	0	172	47	1099	0	150	2257	66
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.01	1.01	1.01	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2	1	1	2		1	2	1
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	Right
Leading Detector (ft)	20	100		20	100	20	20	100		20	100	20
Trailing Detector (ft)	0	0		0	0	0	0	0		0	0	0
Detector 1 Position(ft)	0	0		0	0	0	0	0		0	0	0
Detector 1 Size(ft)	20	6		20	6	20	20	6		20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA		pm+pt		pm+ov	pm+pt	NA		pm+pt	NA	pm+ov
Protected Phases	3	8		7	4	5	1	6		5	2	3

Lanes, Volumes, Timings

6: Carothers/Carothers Parkway & Apartments/Resource

11/18/2016

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	8			4		4	6			2		2
Detector Phase	3	8		7	4	5	1	6		5	2	3
Switch Phase												
Minimum Initial (s)	5.0	6.0		5.0	6.0	5.0	5.0	15.0		5.0	15.0	5.0
Minimum Split (s)	12.0	48.5		12.0	48.5	11.5	11.5	48.0		11.5	48.0	12.0
Total Split (s)	12.0	48.5		12.0	48.5	16.4	11.5	63.1		16.4	68.0	12.0
Total Split (%)	8.6%	34.6%		8.6%	34.6%	11.7%	8.2%	45.1%		11.7%	48.6%	8.6%
Maximum Green (s)	6.5	43.0		6.5	43.0	10.9	6.0	57.1		10.9	62.0	6.5
Yellow Time (s)	3.5	3.5		3.5	3.5	3.5	3.5	4.0		3.5	4.0	3.5
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5		5.5	5.5	5.5	5.5	6.0		5.5	6.0	5.5
Lead/Lag	Lead	Lag		Lead	Lag	Lead	Lead	Lag		Lead	Lag	Lead
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Recall Mode	None	None		None	None	None	None	C-Max		None	C-Max	None
Walk Time (s)		7.0			7.0			7.0			7.0	
Flash Dont Walk (s)		36.0			36.0			35.0			35.0	
Pedestrian Calls (#/hr)		10			10			10			10	
Act Effect Green (s)	24.8	23.5		23.2		29.6	93.2	86.9		102.6	93.5	107.1
Actuated g/C Ratio	0.18	0.17		0.17		0.21	0.67	0.62		0.73	0.67	0.76
v/c Ratio	0.56	0.46		0.04		0.43	0.37	0.51		0.43	0.96	0.05
Control Delay	55.5	8.2		32.8		23.2	33.1	18.5		14.1	38.0	4.1
Queue Delay	0.0	0.0		0.0		0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	55.5	8.2		32.8		23.2	33.1	18.5		14.1	38.0	4.1
LOS	E	A		C		C	C	B		B	D	A
Approach Delay		26.9						19.1			35.6	
Approach LOS		C						B			D	
90th %ile Green (s)	6.5	43.0		6.5	43.0	10.9	6.0	57.1		10.9	62.0	6.5
90th %ile Term Code	Max	Ped		Max	Ped	Max	Max	Coord		Max	Coord	Max
70th %ile Green (s)	6.5	55.0		0.0	43.0	10.9	6.0	57.1		10.9	62.0	6.5
70th %ile Term Code	Max	Hold		Skip	Ped	Max	Max	Coord		Max	Coord	Max
50th %ile Green (s)	6.5	6.5		0.0	0.0	13.1	5.9	103.4		13.1	110.6	6.5
50th %ile Term Code	Max	Hold		Skip	Skip	Gap	Gap	Coord		Gap	Coord	Max
30th %ile Green (s)	6.5	6.5		0.0	0.0	9.8	5.7	106.7		9.8	110.8	6.5
30th %ile Term Code	Max	Hold		Skip	Skip	Gap	Gap	Coord		Gap	Coord	Max
10th %ile Green (s)	6.5	6.5		0.0	0.0	6.4	0.0	110.1		6.4	122.0	6.5
10th %ile Term Code	Max	Hold		Skip	Skip	Gap	Skip	Coord		Gap	Coord	Max
Stops (vph)	95	19		7		68	32	473		50	1146	7
Fuel Used(gal)	3	2		0		2	1	16		3	59	1
CO Emissions (g/hr)	190	111		10		156	64	1085		207	4152	71
NOx Emissions (g/hr)	37	22		2		30	13	211		40	808	14
VOC Emissions (g/hr)	44	26		2		36	15	252		48	962	17
Dilemma Vehicles (#)	0	0		0		0	0	50		0	68	0
Queue Length 50th (ft)	~162	2		7		81	4	292		13	533	0
Queue Length 95th (ft)	139	83		18		121	m64	m367		123	#1858	31
Internal Link Dist (ft)		682			693			825			1924	
Turn Bay Length (ft)							210			480		93
Base Capacity (vph)	225	643		200		411	130	2174		363	2362	1225

Lanes, Volumes, Timings

6: Carothers/Carothers Parkway & Apartments/Resource

11/18/2016

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Starvation Cap Reductn	0	0		0		0	0	0		0	0	0
Spillback Cap Reductn	0	0		0		0	0	0		0	0	0
Storage Cap Reductn	0	0		0		0	0	0		0	0	0
Reduced v/c Ratio	0.56	0.30		0.04		0.42	0.36	0.51		0.41	0.96	0.05

Intersection Summary

Area Type: Other

Cycle Length: 140

Actuated Cycle Length: 140

Offset: 136 (97%), Referenced to phase 2:SBTL and 6:NBTL, Start of Yellow

Natural Cycle: 120

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.96

Intersection Signal Delay: 29.8

Intersection LOS: C

Intersection Capacity Utilization 94.4%

ICU Level of Service F

Analysis Period (min) 60

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

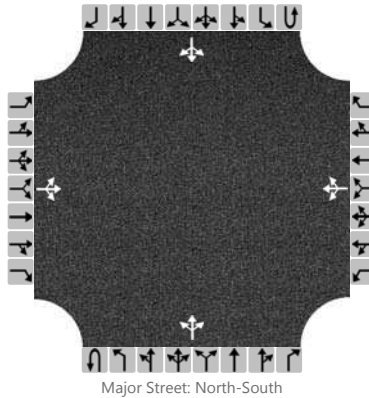
Splits and Phases: 6: Carothers/Carothers Parkway & Apartments/Resource

 Ø1	 Ø2 (R)	 Ø3	 Ø4
11.5 s	68 s	12 s	48.5 s
 Ø5	 Ø6 (R)	 Ø7	 Ø8
16.4 s	63.1 s	12 s	48.5 s

HCS 2010 Two-Way Stop Control Summary Report

General Information		Site Information	
Analyst	FTG	Intersection	Resource and Pacific
Agency/Co.	FTG	Jurisdiction	Franklin, TN
Date Performed	Nov	East/West Street	Pacific Drive
Analysis Year	2016	North/South Street	Resource Drive
Time Analyzed	AM Peak Hour	Peak Hour Factor	0.92
Intersection Orientation	North-South	Analysis Time Period (hrs)	0.25
Project Description	10765 (Total)		

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	1	0		0	1	0	0	0	1	0	0	0	1	0
Configuration			LTR				LTR				LTR				LTR	
Volume (veh/h)		19	4	162		5	11	10		192	74	0		1	115	38
Percent Heavy Vehicles		0	0	0		0	0	0		0				0		
Proportion Time Blocked																
Right Turn Channelized	No				No				No				No			
Median Type	Undivided															
Median Storage																

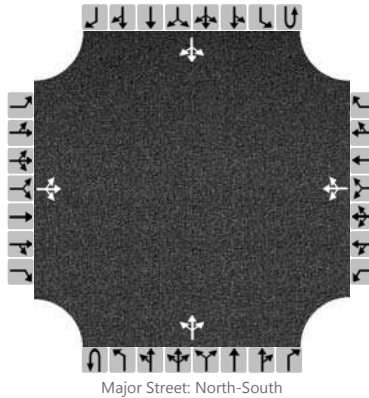
Delay, Queue Length, and Level of Service

Flow Rate (veh/h)			201				28				209				1	
Capacity			741				404				1425				1531	
v/c Ratio			0.27				0.07				0.15				0.00	
95% Queue Length			1.1				0.2				0.5				0.0	
Control Delay (s/veh)			11.7				14.6				8.0				7.4	
Level of Service (LOS)			B				B				A				A	
Approach Delay (s/veh)	11.7				14.6				6.1				0.0			
Approach LOS	B				B				A				A			

HCS 2010 Two-Way Stop Control Summary Report

General Information		Site Information	
Analyst	FTG	Intersection	Resource and Pacific
Agency/Co.	FTG	Jurisdiction	Franklin, TN
Date Performed	Nov	East/West Street	Pacific Drive
Analysis Year	2016	North/South Street	Resource Drive
Time Analyzed	PM Peak Hour	Peak Hour Factor	0.92
Intersection Orientation	North-South	Analysis Time Period (hrs)	0.25
Project Description	10765 (Total)		

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	1	0		0	1	0	0	0	1	0	0	0	1	0
Configuration			LTR				LTR				LTR				LTR	
Volume (veh/h)		26	4	190		6	4	1		125	140	1		12	99	19
Percent Heavy Vehicles		0	0	0		0	0	0		0				0		
Proportion Time Blocked																
Right Turn Channelized	No				No				No				No			
Median Type	Undivided															
Median Storage																

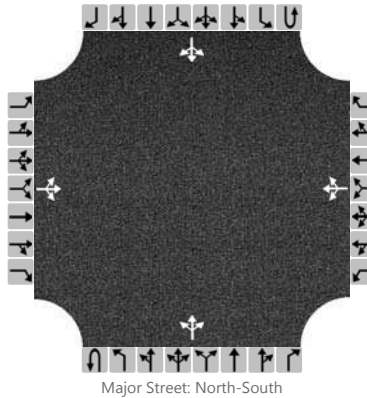
Delay, Queue Length, and Level of Service

Flow Rate (veh/h)			239				12				136				13	
Capacity			792				314				1469				1440	
v/c Ratio			0.30				0.04				0.09				0.01	
95% Queue Length			1.3				0.1				0.3				0.0	
Control Delay (s/veh)			11.5				16.9				7.7				7.5	
Level of Service (LOS)			B				C				A				A	
Approach Delay (s/veh)	11.5				16.9				4.0				0.8			
Approach LOS	B				C				A				A			

HCS 2010 Two-Way Stop Control Summary Report

General Information		Site Information	
Analyst	FTG	Intersection	Resource and Terrapin
Agency/Co.	FTG	Jurisdiction	Franklin, TN
Date Performed	Nov	East/West Street	Terrapin St
Analysis Year	2016	North/South Street	Resource Drive
Time Analyzed	AM Peak Hour	Peak Hour Factor	0.92
Intersection Orientation	North-South	Analysis Time Period (hrs)	0.25
Project Description	10765 (Total)		

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	1	0		0	1	0	0	0	1	0	0	0	1	0
Configuration			LTR				LTR				LTR				LTR	
Volume (veh/h)		7	0	10		9	0	20		16	295	2		2	294	11
Percent Heavy Vehicles		0	0	0		0	0	0		0				0		
Proportion Time Blocked																
Right Turn Channelized	No				No				No				No			
Median Type	Undivided															
Median Storage																

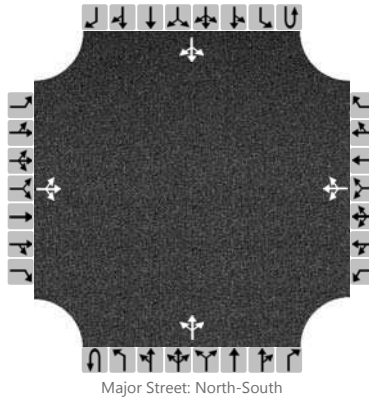
Delay, Queue Length, and Level of Service

Flow Rate (veh/h)			19				32				17				2		
Capacity			492				543				1239				1248		
v/c Ratio			0.04				0.06				0.01				0.00		
95% Queue Length			0.1				0.2				0.0				0.0		
Control Delay (s/veh)			12.6				12.0				7.9				7.9		
Level of Service (LOS)			B				B				A				A		
Approach Delay (s/veh)	12.6			12.0			0.5			0.1							
Approach LOS	B			B			A			A							

HCS 2010 Two-Way Stop Control Summary Report

General Information		Site Information	
Analyst	FTG	Intersection	Resource and Terrapin
Agency/Co.	FTG	Jurisdiction	Franklin, TN
Date Performed	Nov	East/West Street	Terrapin St
Analysis Year	2016	North/South Street	Resource Drive
Time Analyzed	PM Peak Hour	Peak Hour Factor	0.92
Intersection Orientation	North-South	Analysis Time Period (hrs)	0.25
Project Description	10765 (Total)		

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	1	0		0	1	0	0	0	1	0	0	0	1	0
Configuration			LTR				LTR				LTR				LTR	
Volume (veh/h)		9	0	14		7	0	6		8	270	6		13	322	7
Percent Heavy Vehicles		0	0	0		0	0	0		0				0		
Proportion Time Blocked																
Right Turn Channelized	No				No				No				No			
Median Type	Undivided															
Median Storage																

Delay, Queue Length, and Level of Service

Flow Rate (veh/h)			25				15			9				14		
Capacity			496				457			1212				1273		
v/c Ratio			0.05				0.03			0.01				0.01		
95% Queue Length			0.2				0.1			0.0				0.0		
Control Delay (s/veh)			12.6				13.1			8.0				7.9		
Level of Service (LOS)			B				B			A				A		
Approach Delay (s/veh)	12.6			13.1			0.3			0.4						
Approach LOS	B			B			A			A						

Phone:
E-Mail:

Fax:

ROUNABOUT ANALYSIS

Analyst: FTG
Agency/Co.: FTG
Date Performed: Nov 2016
Analysis Time Period: AM Peak Hour
Intersection: Resource and Lemon Grass
Jurisdiction: Franklin, TN
Units: U. S. Customary
Analysis Year: 2016 (Total)
Project ID: 10765
East/West Street: Resource Drive
North/South Street: Lemon Grass Drive

Volume Adjustments and Site Characteristics

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Volume	0	276	37	45	250	148	52	0	0	22	0	11
U-Turn Vol	0			0			0			0		
% Thrus Left Lane												
	Eastbound			Westbound			Northbound			Southbound		
	Left Right BP			Left Right BP			Left Right BP			Left Right BP		
Lane Assn.	LTR			LTR			LTR			LTR		
RT Bypass	None			None			None			None		
PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
%HV	0	0	0	0	0	0	0	0	0	0	0	0
NumPeds	0			0			0			0		
U-Turn PHF	0.92			0.92			0.92			0.92		
U-Turn %HV	3			3			3			3		
Flow Rate	0	300	40	49	272	161	57	0	0	24	0	12
No. Lanes	0	1	0	0	1	0	0	1	0	0	1	0
Cnfl. Lanes	1			1			1			1		
Duration, T	0.25 hrs.											

Critical and Follow-Up Headway Adjustment

		Eastbound			Westbound			Northbound			Southbound	
Crit. Hdwy	5.1929	5.1929		5.1929	5.1929		5.1929	5.1929		5.1929	5.1929	
		Northbound			Southbound			Southbound			5.1929	
Crit. Hdwy	5.1929	5.1929		5.1929	5.1929		5.1929	5.1929		5.1929	5.1929	
		Eastbound			Westbound			Westbound			3.1858	
Flup. Hdwy	3.1858	3.1858			3.1858		3.1858	3.1858			3.1858	
		Northbound			Southbound			Southbound			3.1858	
Flup. Hdwy	3.1858	3.1858			3.1858		3.1858	3.1858			3.1858	

Flow Computations

	Eastbound		Westbound		Northbound		Southbound	
Circ. Flow	73		57		324		378	
Exit. Flow	324		340		161		89	

Capacity and Level of Service

Eastbound Westbound Northbound Southbound

	Left	Right	BP	Left	Right	BP	Left	Right	BP	Left	Right	BP
Entry Flow		340			482			57			36	
Entry Cap.		1051			1068			817			775	
Volume (vph)		340			482			57			36	
Cap. (vph)		1051			1068			817			775	
v/c Ratio		0.32			0.45			0.07			0.05	
Critical Lane		*			*			*			*	
Lane Delay		6.7			8.4			5.1			5.1	
Lane LOS		A			A			A			A	
95 % Queue		1.4			2.4			0.2			0.1	
Approach:												
Delay		6.67			8.37			5.09			5.10	
LOS		A			A			A			A	
Intersection Delay		7.41					Intersection	LOS	A			

Phone:
E-Mail:

Fax:

ROUNDBOUT ANALYSIS

Analyst: FTG
Agency/Co.: FTG
Date Performed: Nov 2016
Analysis Time Period: PM Peak Hour
Intersection: Resource and Lemon Grass
Jurisdiction: Franklin, TN
Units: U. S. Customary
Analysis Year: 2016 (Total)
Project ID: 10765
East/West Street: Resource Drive
North/South Street: Lemon Grass Drive

Volume Adjustments and Site Characteristics

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Volume	13	303	27	14	229	34	45	0	23	149	0	10
U-Turn Vol	0			0			0			0		
% Thrus Left Lane												
	Eastbound			Westbound			Northbound			Southbound		
	Left Right BP			Left Right BP			Left Right BP			Left Right BP		
Lane Assn.	LTR			LTR			LTR			LTR		
RT Bypass	None			None			None			None		
PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
%HV	0	0	0	0	0	0	0	0	0	0	0	0
NumPeds	0			0			0			0		
U-Turn PHF	0.92			0.92			0.92			0.92		
U-Turn %HV	3			3			3			3		
Flow Rate	14	329	29	15	249	37	49	0	25	162	0	11
No. Lanes	0	1	0	0	1	0	0	1	0	0	1	0
Cnfl. Lanes	1			1			1			1		
Duration, T	0.25 hrs.											

Critical and Follow-Up Headway Adjustment

		Eastbound			Westbound			Northbound			Southbound	
Crit. Hdwy	5.1929	5.1929		5.1929	5.1929		5.1929	5.1929		5.1929	5.1929	
		Northbound			Southbound			Southbound			5.1929	
Crit. Hdwy	5.1929	5.1929		5.1929	5.1929		5.1929	5.1929		5.1929	5.1929	
		Eastbound			Westbound			Westbound			3.1858	
Flup. Hdwy	3.1858	3.1858		3.1858	3.1858		3.1858	3.1858		3.1858	3.1858	
		Northbound			Southbound			Southbound			3.1858	
Flup. Hdwy	3.1858	3.1858		3.1858	3.1858		3.1858	3.1858		3.1858	3.1858	

Flow Computations

	Eastbound		Westbound		Northbound		Southbound	
Circ. Flow	177		63		505		313	
Exit. Flow	516		309		51		45	

Capacity and Level of Service

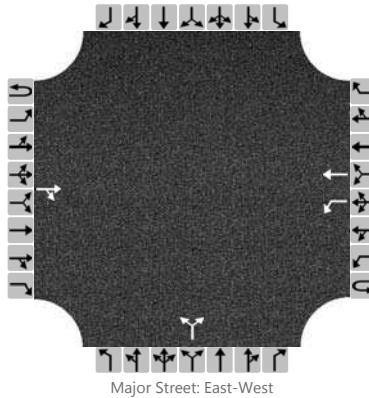
Eastbound Westbound Northbound Southbound

	Left	Right	BP	Left	Right	BP	Left	Right	BP	Left	Right	BP
Entry Flow		373			301			74			173	
Entry Cap.		947			1061			682			826	
Volume (vph)		373			301			74			173	
Cap. (vph)		947			1061			682			826	
v/c Ratio		0.39			0.28			0.11			0.21	
Critical Lane		*			*			*			*	
Lane Delay		8.2			6.1			6.5			6.6	
Lane LOS		A			A			A			A	
95 % Queue		1.9			1.2			0.4			0.8	
Approach:												
Delay		8.22			6.15			6.46			6.56	
LOS		A			A			A			A	
Intersection Delay		7.09					Intersection	LOS	A			

HCS 2010 Two-Way Stop Control Summary Report

General Information		Site Information	
Analyst	FTG	Intersection	Pacific and W. Project
Agency/Co.	FTG	Jurisdiction	Franklin, TN
Date Performed	Nov 2016	East/West Street	Pacific Drive
Analysis Year	2016	North/South Street	Western Project Drive
Time Analyzed	AM Peak Hour	Peak Hour Factor	0.80
Intersection Orientation	East-West	Analysis Time Period (hrs)	0.25
Project Description	10765		

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	1	1	0		0	0	0		0	0	0
Configuration				TR		L	T				LR					
Volume (veh/h)			228	27		0	164			17		0				
Percent Heavy Vehicles						0				0		0				
Proportion Time Blocked																
Right Turn Channelized	No				No				No				No			
Median Type	Undivided															
Median Storage																

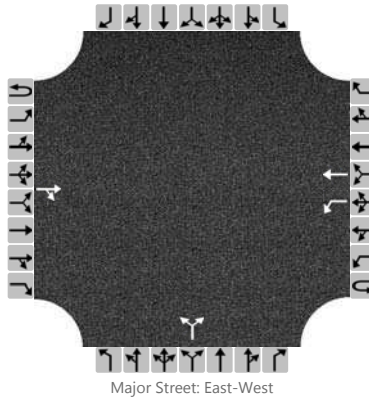
Delay, Queue Length, and Level of Service

Flow Rate (veh/h)											21					
Capacity						1253					529					
v/c Ratio											0.04					
95% Queue Length											0.1					
Control Delay (s/veh)						7.9					12.1					
Level of Service (LOS)						A					B					
Approach Delay (s/veh)									12.1							
Approach LOS									B							

HCS 2010 Two-Way Stop Control Summary Report

General Information		Site Information	
Analyst	FTG	Intersection	Pacific and W. Project
Agency/Co.	FTG	Jurisdiction	Franklin, TN
Date Performed	Nov 2016	East/West Street	Pacific Drive
Analysis Year	2016	North/South Street	Western Project Drive
Time Analyzed	PM Peak Hour	Peak Hour Factor	0.80
Intersection Orientation	East-West	Analysis Time Period (hrs)	0.25
Project Description	10765		

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	1	1	0		0	0	0		0	0	0
Configuration				TR		L	T				LR					
Volume (veh/h)			143	13		0	176			23		0				
Percent Heavy Vehicles						0				0		0				
Proportion Time Blocked																
Right Turn Channelized	No				No				No				No			
Median Type	Undivided															
Median Storage																

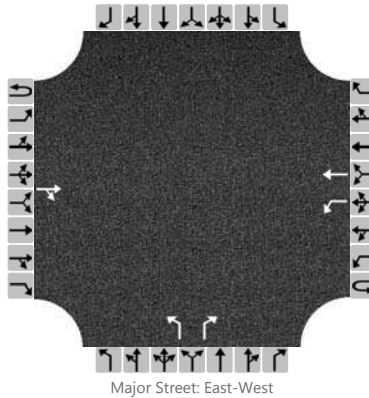
Delay, Queue Length, and Level of Service

Flow Rate (veh/h)											29					
Capacity						1390					604					
v/c Ratio											0.05					
95% Queue Length											0.2					
Control Delay (s/veh)						7.6					11.3					
Level of Service (LOS)						A					B					
Approach Delay (s/veh)									11.3							
Approach LOS									B							

HCS 2010 Two-Way Stop Control Summary Report

General Information		Site Information	
Analyst	FTG	Intersection	Pacific and Garage
Agency/Co.	FTG	Jurisdiction	Franklin, TN
Date Performed	Nov 2016	East/West Street	Pacific Drive
Analysis Year	2016	North/South Street	Garage Access
Time Analyzed	AM Peak Hour	Peak Hour Factor	0.80
Intersection Orientation	East-West	Analysis Time Period (hrs)	0.25
Project Description	10765		

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	1	1	0		1	0	1		0	0	0
Configuration				TR		L	T			L		R				
Volume (veh/h)			64	164		163	78			86		121				
Percent Heavy Vehicles						0				0		0				
Proportion Time Blocked																
Right Turn Channelized	No				No				No				No			
Median Type	Undivided															
Median Storage																

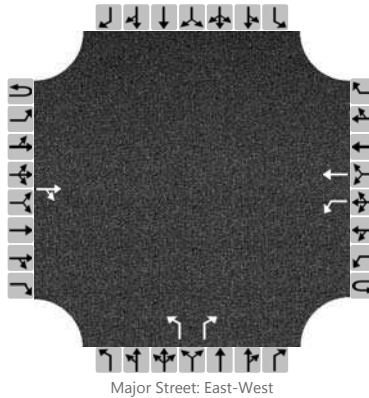
Delay, Queue Length, and Level of Service

Flow Rate (veh/h)						204				108		151				
Capacity						1289				350		866				
v/c Ratio						0.16				0.31		0.17				
95% Queue Length						0.6				1.3		0.6				
Control Delay (s/veh)						8.3				19.8		10.0				
Level of Service (LOS)						A				C		B				
Approach Delay (s/veh)					5.6				14.1							
Approach LOS					A				B							

HCS 2010 Two-Way Stop Control Summary Report

General Information		Site Information	
Analyst	FTG	Intersection	Pacific and Garage
Agency/Co.	FTG	Jurisdiction	Franklin, TN
Date Performed	Nov 2016	East/West Street	Pacific Drive
Analysis Year	2016	North/South Street	Garage Access
Time Analyzed	PM Peak Hour	Peak Hour Factor	0.80
Intersection Orientation	East-West	Analysis Time Period (hrs)	0.25
Project Description	10765		

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	1	1	0		1	0	1		0	0	0
Configuration				TR		L	T			L		R				
Volume (veh/h)			61	82		84	64			112		159				
Percent Heavy Vehicles						0				0		0				
Proportion Time Blocked																
Right Turn Channelized	No				No				No				No			
Median Type	Undivided															
Median Storage																

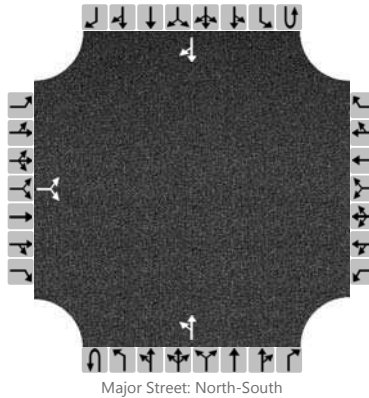
Delay, Queue Length, and Level of Service

Flow Rate (veh/h)						105					140		199			
Capacity						1410					552		929			
v/c Ratio						0.07					0.25		0.21			
95% Queue Length						0.2					1.0		0.8			
Control Delay (s/veh)						7.8					13.7		9.9			
Level of Service (LOS)						A					B		A			
Approach Delay (s/veh)					4.4				11.5							
Approach LOS					A				B							

HCS 2010 Two-Way Stop Control Summary Report

General Information		Site Information	
Analyst	FTG	Intersection	Resource and Project Dwy
Agency/Co.	FTG	Jurisdiction	Franklin, TN
Date Performed	Nov	East/West Street	Project Driveway
Analysis Year	2016	North/South Street	Resource Drive
Time Analyzed	AM Peak Hour	Peak Hour Factor	0.92
Intersection Orientation	North-South	Analysis Time Period (hrs)	0.25
Project Description	10765 (Total)		

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	0	0		0	0	0	0	0	1	0	0	0	1	0
Configuration			LR							LT						TR
Volume (veh/h)		10		41						66	256				266	16
Percent Heavy Vehicles		0		0						0						
Proportion Time Blocked																
Right Turn Channelized	No				No				No				No			
Median Type	Undivided															
Median Storage																

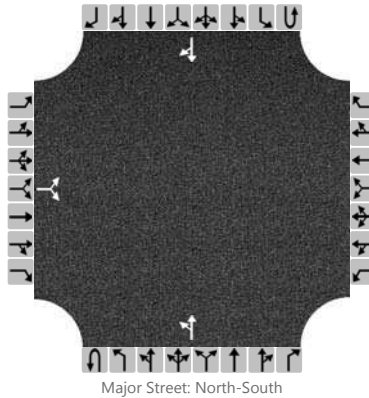
Delay, Queue Length, and Level of Service

Flow Rate (veh/h)			56							350						
Capacity			597							1266						
v/c Ratio			0.09							0.28						
95% Queue Length			0.3							0.2						
Control Delay (s/veh)			11.7							8.0						
Level of Service (LOS)			B							A						
Approach Delay (s/veh)	11.7								2.1							
Approach LOS	B								A							

HCS 2010 Two-Way Stop Control Summary Report

General Information		Site Information	
Analyst	FTG	Intersection	Resource and Project Dwy
Agency/Co.	FTG	Jurisdiction	Franklin, TN
Date Performed	Nov	East/West Street	Project Driveway
Analysis Year	2016	North/South Street	Resource Drive
Time Analyzed	PM Peak Hour	Peak Hour Factor	0.92
Intersection Orientation	North-South	Analysis Time Period (hrs)	0.25
Project Description	10765 (Total)		

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	0	0		0	0	0	0	0	1	0	0	0	1	0
Configuration			LR							LT						TR
Volume (veh/h)		14		55						33	252				287	8
Percent Heavy Vehicles		0		0						0						
Proportion Time Blocked																
Right Turn Channelized	No				No				No				No			
Median Type	Undivided															
Median Storage																

Delay, Queue Length, and Level of Service

Flow Rate (veh/h)			75							310						
Capacity			610							1250						
v/c Ratio			0.12							0.25						
95% Queue Length			0.4							0.1						
Control Delay (s/veh)			11.7							8.0						
Level of Service (LOS)			B							A						
Approach Delay (s/veh)	11.7								1.2							
Approach LOS	B								A							

**APPENDIX D
TRIP GENERATION**

TRIP GENERATION CALCULATIONS – Multi-Family

The following calculations are based on the data compiled for ITE Land Use Code 220.

Average Daily Traffic

$$T = 6.65 (X)$$

$$T = 6.65 (325)$$

$$T = 2,162 \text{ vehicle-trips}$$

$$\text{Enter} = 0.50 (2,162) = 1,081 \text{ vehicles}$$

$$\text{Exit} = 0.50 (2,162) = 1,081 \text{ vehicles}$$

A.M. traffic during peak hour of adjacent street

$$T = 0.51 (X)$$

$$T = 0.51 (325)$$

$$T = 166 \text{ vehicle-trips}$$

$$\text{Enter} = 0.20 (166) = 33 \text{ vehicles}$$

$$\text{Exit} = 0.80 (166) = 133 \text{ vehicles}$$

P.M. traffic during peak hour of adjacent street

$$T = 0.62 (X)$$

$$T = 0.62 (325)$$

$$T = 202 \text{ vehicle-trips}$$

$$\text{Enter} = 0.65 (202) = 131 \text{ vehicles}$$

$$\text{Exit} = 0.35 (202) = 71 \text{ vehicles}$$

TRIP GENERATION - Townhomes

The following calculations are based on the data compiled for ITE Land Use Code 230.

Average Daily Traffic

$$\text{Ln}(T) = 0.87 \text{ Ln}(X) + 2.46$$

$$\text{Ln}(T) = 0.87 \text{ Ln}(15) + 2.46$$

$$T = 124 \text{ vehicles}$$

$$\text{Enter} = 0.50 (124) = 62 \text{ vehicles}$$

$$\text{Exit} = 0.50 (124) = 62 \text{ vehicles}$$

AM traffic during peak hour of adjacent street

$$\text{Ln}(T) = 0.80 \text{ Ln}(X) + 0.26$$

$$\text{Ln}(T) = 0.80 \text{ Ln}(15) + 0.26$$

$$T = 11 \text{ vehicles}$$

$$\text{Enter} = 0.17 (11) = 2 \text{ vehicles}$$

$$\text{Exit} = 0.83 (11) = 9 \text{ vehicles}$$

PM traffic during peak hour of adjacent street

$$\text{Ln}(T) = 0.82 \text{ Ln}(X) + 0.32$$

$$\text{Ln}(T) = 0.82 \text{ Ln}(15) + 0.32$$

$$T = 13 \text{ vehicles}$$

$$\text{Enter} = 0.67 (13) = 9 \text{ vehicles}$$

$$\text{Exit} = 0.33 (13) = 4 \text{ vehicles}$$

TRIP GENERATION CALCULATIONS – Office

The following calculations are based on the data compiled for ITE Land Use Code 710.

Average Daily Traffic

$$\ln(T) = 0.76 \ln(X) + 3.68$$

$$\ln(T) = 0.76 \ln(300.000) + 3.68$$

$$T = 3,026 \text{ vehicle-trips}$$

$$\text{Enter} = 0.50 (3,026) = 1,513 \text{ vehicles}$$

$$\text{Exit} = 0.50 (3,026) = 1,513 \text{ vehicles}$$

A.M. traffic during peak hour of adjacent street

$$\ln(T) = 0.80 \ln(X) + 1.57$$

$$\ln(T) = 0.80 \ln(300.000) + 1.57$$

$$T = 461 \text{ vehicle-trips}$$

$$\text{Enter} = 0.88 (461) = 405 \text{ vehicles}$$

$$\text{Exit} = 0.12 (461) = 55 \text{ vehicles}$$

P.M. traffic during peak hour of adjacent street

$$T = 1.12 (X) + 78.45$$

$$T = 1.12 (300.000) + 78.45$$

$$T = 414 \text{ vehicle-trips}$$

$$\text{Enter} = 0.17 (414) = 70 \text{ vehicles}$$

$$\text{Exit} = 0.83 (414) = 344 \text{ vehicles}$$

TRIP GENERATION CALCULATIONS – Hotel

The following calculations are based on the data compiled for ITE Land Use Code 310.

Average Daily Traffic

$$T = 8.92 (X)$$

$$T = 8.92 (200)$$

$$T = 1,784 \text{ vehicle-trips}$$

$$\text{Enter} = 0.50 (1,784) = 892 \text{ vehicles}$$

$$\text{Exit} = 0.50 (1,784) = 892 \text{ vehicles}$$

AM traffic during peak hour of adjacent street

$$T = 0.67 (X)$$

$$T = 0.67 (200)$$

$$T = 134 \text{ vehicle-trips}$$

$$\text{Enter} = 0.58 (134) = 78 \text{ vehicles}$$

$$\text{Exit} = 0.42 (134) = 56 \text{ vehicles}$$

PM traffic during peak hour of adjacent street

$$T = 0.70 (X)$$

$$T = 0.70 (200)$$

$$T = 140 \text{ vehicle-trips}$$

$$\text{Enter} = 0.49 (140) = 69 \text{ vehicles}$$

$$\text{Exit} = 0.51 (140) = 71 \text{ vehicles}$$

TRIP GENERATION CALCULATIONS – Specialty Retail

The following calculations are based on the data compiled for ITE Land Use Code 826.

Average Daily Traffic

$$T = 42.78 (X) + 37.66$$

$$T = 42.78 (50.000) + 37.66$$

$$T = 2,176 \text{ vehicle-trips}$$

$$\text{Enter} = 0.50 (2,176) = 1,088 \text{ vehicles}$$

$$\text{Exit} = 0.50 (2,176) = 1,088 \text{ vehicles}$$

A.M. traffic during peak hour of adjacent street

$$T = 6.84 (X)$$

$$T = 6.84 (50.000)$$

$$T = 342 \text{ vehicle-trips}$$

$$\text{Enter} = 0.48 (342) = 164 \text{ vehicles}$$

$$\text{Exit} = 0.52 (342) = 178 \text{ vehicles}$$

P.M. traffic during peak hour of adjacent street

$$T = 2.40 (X) + 21.48$$

$$T = 2.40 (50.000) + 21.48$$

$$T = 141 \text{ vehicle-trips}$$

$$\text{Enter} = 0.44 (141) = 62 \text{ vehicles}$$

$$\text{Exit} = 0.56 (141) = 79 \text{ vehicles}$$

NCHRP 684 Internal Trip Capture Estimation Tool					
Project Name:	Crescent Resource Centre			Organization:	FTG
Project Location:	E. McEwen Drive and Carothers Parkway			Performed By:	FTG
Scenario Description:				Date:	19-Sep
Analysis Year:				Checked By:	
Analysis Period:	AM Street Peak Hour			Date:	

Table 1-A: Base Vehicle-Trip Generation Estimates (Single-Use Site Estimate)						
Land Use	Development Data (For Information Only)			Estimated Vehicle-Trips ³		
	ITE LUCs ¹	Quantity	Units	Total	Entering	Exiting
Office	710	283,000		440	387	53
Retail	826	16,500		113	54	59
Restaurant		19,500		428	224	204
Cinema/Entertainment				0		
Residential			340	177	35	142
Hotel			180	121	70	51
All Other Land Uses ²				0		
				1,279	770	509

Table 2-A: Mode Split and Vehicle Occupancy Estimates						
Land Use	Entering Trips			Exiting Trips		
	Veh. Occ. ⁴	% Transit	% Non-Motorized	Veh. Occ. ⁴	% Transit	% Non-Motorized
Office	1.10	2%	0%	1.10	2%	0%
Retail	1.50	2%	0%	1.50	2%	0%
Restaurant	2.00	2%	0%	2.00	2%	0%
Cinema/Entertainment						
Residential	1.10	2%	0%	1.10	2%	0%
Hotel	1.10	2%	0%	1.10	2%	0%
All Other Land Uses ²						

Table 3-A: Average Land Use Interchange Distances (Feet Walking Distance)						
Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office						
Retail						
Restaurant						
Cinema/Entertainment						
Residential						
Hotel						

Table 4-A: Internal Person-Trip Origin-Destination Matrix*						
Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		16	37	0	0	0
Retail	17		12	0	1	0
Restaurant	60	6		0	2	3
Cinema/Entertainment	0	0	0		0	0
Residential	3	2	31	0		0
Hotel	13	3	5	0	0	

Table 5-A: Computations Summary			
	Total	Entering	Exiting
All Person-Trips	1,838	1,071	767
Internal Capture Percentage	23%	20%	28%
External Vehicle-Trips ⁵	954	607	347
External Transit-Trips ⁶	28	17	11
External Non-Motorized Trips ⁶	0	0	0

Table 6-A: Internal Trip Capture Percentages by Land Use		
Land Use	Entering Trips	Exiting Trips
Office	22%	91%
Retail	33%	34%
Restaurant	19%	17%
Cinema/Entertainment	N/A	N/A
Residential	8%	23%
Hotel	4%	38%

¹ Land Use Codes (LUCs) from <i>Trip Generation Manual</i> , published by the Institute of Transportation Engineers.
² Total estimate for all other land uses at mixed-use development site is not subject to internal trip capture computations in this estimator.
³ Enter trips assuming no transit or non-motorized trips (as assumed in ITE <i>Trip Generation Manual</i>).
⁴ Enter vehicle occupancy assumed in Table 1-A vehicle trips. If vehicle occupancy changes for proposed mixed-use project, manual adjustments must be made to Tables 5-A, 9-A (O and D). Enter transit, non-motorized percentages that will result with proposed mixed-use project complete.
⁵ Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-A.
⁶ Person-Trips
*Indicates computation that has been rounded to the nearest whole number.
Estimation Tool Developed by the Texas A&M Transportation Institute - Version 2013.1

Project Name:	Crescent Resource Centre
Analysis Period:	AM Street Peak Hour

Table 7-A: Conversion of Vehicle-Trip Ends to Person-Trip Ends						
Land Use	Table 7-A (D): Entering Trips			Table 7-A (O): Exiting Trips		
	Veh. Occ.	Vehicle-Trips	Person-Trips*	Veh. Occ.	Vehicle-Trips	Person-Trips*
Office	1.10	387	426	1.10	53	58
Retail	1.50	54	81	1.50	59	89
Restaurant	2.00	224	448	2.00	204	408
Cinema/Entertainment	1.00	0	0	1.00	0	0
Residential	1.10	35	39	1.10	142	156
Hotel	1.10	70	77	1.10	51	56

Table 8-A (O): Internal Person-Trip Origin-Destination Matrix (Computed at Origin)						
Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		16	37	0	1	0
Retail	26		12	0	12	0
Restaurant	126	57		0	16	12
Cinema/Entertainment	0	0	0		0	0
Residential	3	2	31	0		0
Hotel	42	8	5	0	0	

Table 8-A (D): Internal Person-Trip Origin-Destination Matrix (Computed at Destination)						
Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		26	103	0	0	0
Retail	17		224	0	1	0
Restaurant	60	6		0	2	3
Cinema/Entertainment	0	0	0		0	0
Residential	13	14	90	0		0
Hotel	13	3	27	0	0	

Table 9-A (D): Internal and External Trips Summary (Entering Trips)						
Destination Land Use	Person-Trip Estimates			External Trips by Mode*		
	Internal	External	Total	Vehicles ¹	Transit ²	Non-Motorized ²
Office	93	333	426	296	7	0
Retail	27	54	81	35	1	0
Restaurant	85	363	448	178	7	0
Cinema/Entertainment	0	0	0	0	0	0
Residential	3	36	39	32	1	0
Hotel	3	74	77	66	1	0
All Other Land Uses ³	0	0	0	0	0	0

Table 9-A (O): Internal and External Trips Summary (Exiting Trips)						
Origin Land Use	Person-Trip Estimates			External Trips by Mode*		
	Internal	External	Total	Vehicles ¹	Transit ²	Non-Motorized ²
Office	53	5	58	5	0	0
Retail	30	59	89	39	1	0
Restaurant	71	337	408	165	7	0
Cinema/Entertainment	0	0	0	0	0	0
Residential	36	120	156	107	2	0
Hotel	21	35	56	31	1	0
All Other Land Uses ³	0	0	0	0	0	0

¹Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-A

²Person-Trips

³Total estimate for all other land uses at mixed-use development site is not subject to internal trip capture computations in this estimator

*Indicates computation that has been rounded to the nearest whole number.

NCHRP 684 Internal Trip Capture Estimation Tool					
Project Name:	Crescent Resource Centre	Organization:	FTG		
Project Location:	E. McEwen Drive and Carothers Parkway	Performed By:	FTG		
Scenario Description:		Date:	4-Oct		
Analysis Year:		Checked By:			
Analysis Period:	PM Street Peak Hour	Date:			

Table 1-P: Base Vehicle-Trip Generation Estimates (Single-Use Site Estimate)						
Land Use	Development Data (For Information Only)			Estimated Vehicle-Trips ³		
	ITE LUCs ¹	Quantity	Units	Total	Entering	Exiting
Office	710	283,000		395	67	328
Retail	826	16,500		61	27	34
Restaurant		19,500		336	185	151
Cinema/Entertainment				0		
Residential			340	215	140	75
Hotel			180	126	62	64
All Other Land Uses ²				0		
				1,133	481	652

Table 2-P: Mode Split and Vehicle Occupancy Estimates						
Land Use	Entering Trips			Exiting Trips		
	Veh. Occ. ⁴	% Transit	% Non-Motorized	Veh. Occ. ⁴	% Transit	% Non-Motorized
Office						
Retail						
Restaurant						
Cinema/Entertainment						
Residential						
Hotel						
All Other Land Uses ²						

Table 3-P: Average Land Use Interchange Distances (Feet Walking Distance)						
Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office						
Retail						
Restaurant						
Cinema/Entertainment						
Residential						
Hotel						

Table 4-P: Internal Person-Trip Origin-Destination Matrix*						
Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		2	4	0	6	0
Retail	1		10	0	9	2
Restaurant	5	14		0	22	11
Cinema/Entertainment	0	0	0		0	0
Residential	3	3	16	0		2
Hotel	0	1	9	0	0	

Table 5-P: Computations Summary			
	Total	Entering	Exiting
All Person-Trips	1,133	481	652
Internal Capture Percentage	21%	25%	18%
External Vehicle-Trips ⁵	893	361	532
External Transit-Trips ⁶	0	0	0
External Non-Motorized Trips ⁶	0	0	0

Table 6-P: Internal Trip Capture Percentages by Land Use		
Land Use	Entering Trips	Exiting Trips
Office	13%	4%
Retail	74%	65%
Restaurant	21%	34%
Cinema/Entertainment	N/A	N/A
Residential	26%	32%
Hotel	24%	16%

¹ Land Use Codes (LUCs) from <i>Trip Generation Manual</i> , published by the Institute of Transportation Engineers.
² Total estimate for all other land uses at mixed-use development site is not subject to internal trip capture computations in this estimator.
³ Enter trips assuming no transit or non-motorized trips (as assumed in ITE <i>Trip Generation Manual</i>).
⁴ Enter vehicle occupancy assumed in Table 1-P vehicle trips. If vehicle occupancy changes for proposed mixed-use project, manual adjustments must be
⁵ Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-P.
⁶ Person-Trips
*Indicates computation that has been rounded to the nearest whole number.
Estimation Tool Developed by the Texas A&M Transportation Institute - Version 2013.1

Project Name:	Crescent Resource Centre
Analysis Period:	PM Street Peak Hour

Table 7-P: Conversion of Vehicle-Trip Ends to Person-Trip Ends						
Land Use	Table 7-P (D): Entering Trips			Table 7-P (O): Exiting Trips		
	Veh. Occ.	Vehicle-Trips	Person-Trips*	Veh. Occ.	Vehicle-Trips	Person-Trips*
Office	1.00	67	67	1.00	328	328
Retail	1.00	27	27	1.00	34	34
Restaurant	1.00	185	185	1.00	151	151
Cinema/Entertainment	1.00	0	0	1.00	0	0
Residential	1.00	140	140	1.00	75	75
Hotel	1.00	62	62	1.00	64	64

Table 8-P (O): Internal Person-Trip Origin-Destination Matrix (Computed at Origin)						
Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		66	13	0	7	0
Retail	1		10	1	9	2
Restaurant	5	62		12	27	11
Cinema/Entertainment	0	0	0		0	0
Residential	3	32	16	0		2
Hotel	0	10	44	0	1	

Table 8-P (D): Internal Person-Trip Origin-Destination Matrix (Computed at Destination)						
Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		2	4	0	6	0
Retail	21		54	0	64	11
Restaurant	20	14		0	22	44
Cinema/Entertainment	4	1	6		6	1
Residential	38	3	26	0		7
Hotel	0	1	9	0	0	

Table 9-P (D): Internal and External Trips Summary (Entering Trips)						
Destination Land Use	Person-Trip Estimates			External Trips by Mode*		
	Internal	External	Total	Vehicles ¹	Transit ²	Non-Motorized ²
Office	9	58	67	58	0	0
Retail	20	7	27	7	0	0
Restaurant	39	146	185	146	0	0
Cinema/Entertainment	0	0	0	0	0	0
Residential	37	103	140	103	0	0
Hotel	15	47	62	47	0	0
All Other Land Uses ³	0	0	0	0	0	0

Table 9-P (O): Internal and External Trips Summary (Exiting Trips)						
Origin Land Use	Person-Trip Estimates			External Trips by Mode*		
	Internal	External	Total	Vehicles ¹	Transit ²	Non-Motorized ²
Office	12	316	328	316	0	0
Retail	22	12	34	12	0	0
Restaurant	52	99	151	99	0	0
Cinema/Entertainment	0	0	0	0	0	0
Residential	24	51	75	51	0	0
Hotel	10	54	64	54	0	0
All Other Land Uses ³	0	0	0	0	0	0

¹Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-P

²Person-Trips

³Total estimate for all other land uses at mixed-use development site is not subject to internal trip capture computations in this estimator

*Indicates computation that has been rounded to the nearest whole number.

DEVELOPMENT PLAN SUBMITTAL

APEX VILLAGE

PUD DEVELOPMENT PLAN

SD-X (SPECIFIC DEVELOPMENT - MIXED USE)

FRANKLIN, TENNESSEE

CITY OF FRANKLIN PROJECT NO. 6305

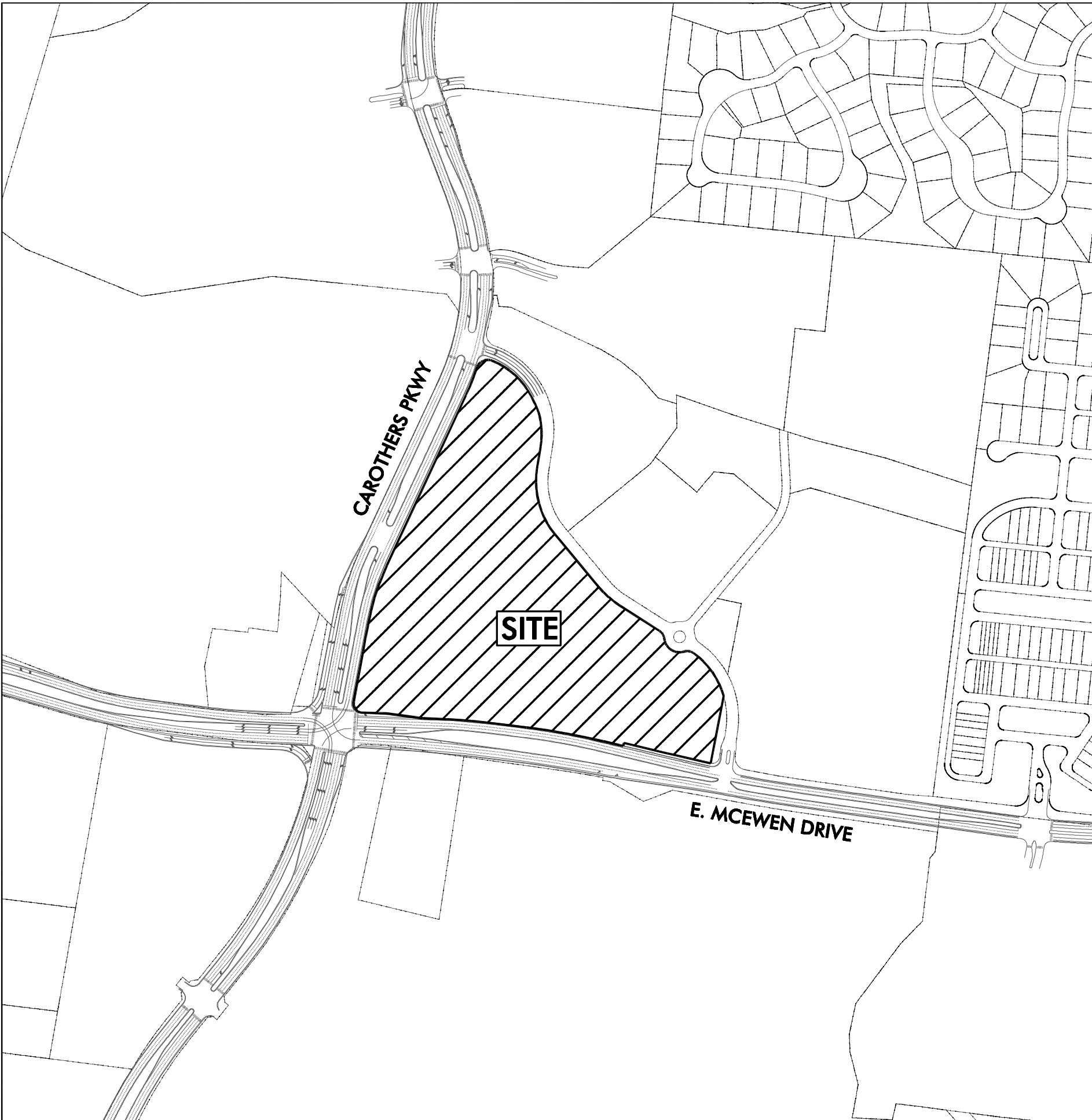
DECEMBER 12, 2016

REV. JANUARY 05, 2017

SITE DATA

SUBDIVISION/DEVELOPMENT:	APEX VILLAGE
CITY OF FRANKLIN PROJECT NUMBER	6305
TAX MAP & PARCELS	MAP 62 - PARCELS 01417 & 01418
ADDRESS	CAROTHERS PARKWAY
CITY	FRANKLIN
COUNTY	WILLIAMSON
STATE	TENNESSEE
CIVIL DISTRICT	8TH
EXISTING ZONING- CHARACTER OVERLAY	GENERAL COMMERCIAL DISTRICT - McEWEN CHARACTER AREA 4
OTHER APPLICABLE OVERLAYS	FLOODWAY FRINGE OVERLAY (FFO) FLOODWAY OVERLAY DISTRICT (FWO)
APPLICABLE DEVELOPMENT STANDARDS	CONVENTIONAL
ACREAGE OF SITE	+/- 23.61 ACRES
RESIDENTIAL DENSITY	14.61
COMMERCIAL SQUARE FOOTAGE	350,000
PROPOSED HOTEL KEYS	200
PROPOSED ZONING	SPECIFIC DEVELOPMENT VARIETY (SD-X) 14.61, 350,000, 200
OWNERS REPRESENTATIVE:	CRESCENT COMMUNITIES, LLC.
ADDRESS:	205 POWELL AVENUE BRENTWOOD, TN. 37027
PHONE NO.:	615.312.8242
CONTACT NAME:	KHRIS PASCARELLA
E-MAIL ADDRESS:	kpascarella@PEARLSTREETPARTNERS.COM
APPLICANT:	EDGE PLANNING, LANDSCAPE ARCHITECTURE & URBAN DESIGN
ADDRESS:	210 12TH AVENUE SOUTH, SUITE 202 - NASHVILLE TN 37203
PHONE NO.:	(615) 250-8154
FAX NO.:	(615) 250-8155
CONTACT:	JOHN HAAS - jhaas@edgela.com
CIVIL ENGINEER:	KIMLEY-HORN
ADDRESS:	214 OCEANSIDE DRIVE - NASHVILLE, TN 37204
PHONE NO.:	(615) 564-2876
CONTACT:	RYAN McMASTER - ryan.mcmaster@kimley-horn.com

- APPLICANT IS REQUESTING THE FOLLOWING:
- SECTION 5.3.5 (3)(b) (ii) RESIDENTIAL DEVELOPMENT REQUIREMENT (DESIGN MODIFICATION)
APPLICANT IS REQUESTING THAT MAXIMUM LENGTH OF ANY ATTACHED RESIDENTIAL BUILDING CAN BE GREATER THAN 200 FEET.
 - SECTION 5.5.4 - DEDICATION OF PUBLIC LAND FOR PARKS AND GREENWAYS/BLEUWAYS (MODIFICATION OF STANDARDS)
APPLICANT IS REQUESTING THAT THE REQUIREMENT FOR PARKLAND DEDICATION BY WAIVED IN LIEU OF A PRIVATELY HELD AND MAINTAINED OPEN SPACE WITH AN ALL ACCESS PUBLIC EASEMENT
 - SECTION 5.10.4 (1) (iii) - CONNECTIVITY INDEX REQUIREMENT (MODIFICATION OF STANDARDS)
APPLICANT IS REQUESTING THAT THE MINIMUM CONNECTIVITY INDEX SCORE OF 1.65 CANNOT BE ACHIEVED DUE TO THE TOPOGRAPHIC CONDITIONS AND NATURAL FEATURES OF THE SITE.



SITE LOCATION MAP

INDEX OF SHEETS

SHEET #	TITLE
C-0.0	COVER SHEET
C-1.0	OVERALL EXISTING CONDITIONS PLAN
C-1.0A	TREE PRESERVATION PLAN
C-2.0	OVERALL DEVELOPMENT PLAN
C-3.0	OVERALL GRADING, DRAINAGE, & UTILITY PLAN
C-4.0	OVERALL ROW & ACCESS PLAN
A-1.0	OFFICE, RETAIL & GARAGE ELEVATIONS
A-2.0	RETAIL, OFFICE & HOTEL ELEVATIONS
A-3.0	MULTI-FAMILY ELEVATIONS
A-4.0	TOWNHOME ELEVATIONS

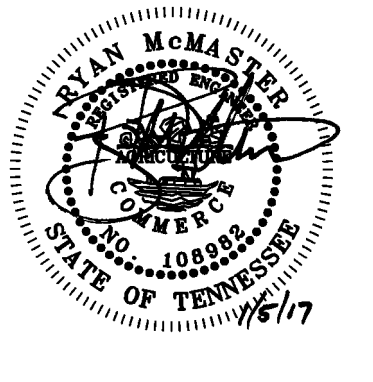
PREPARED FOR:

CRESCENT COMMUNITIES, LLC.

227 W. TRADE STREET, SUITE 1000

CHARLOTTE, NC. 28202

615.312.8242



Kimley»Horn

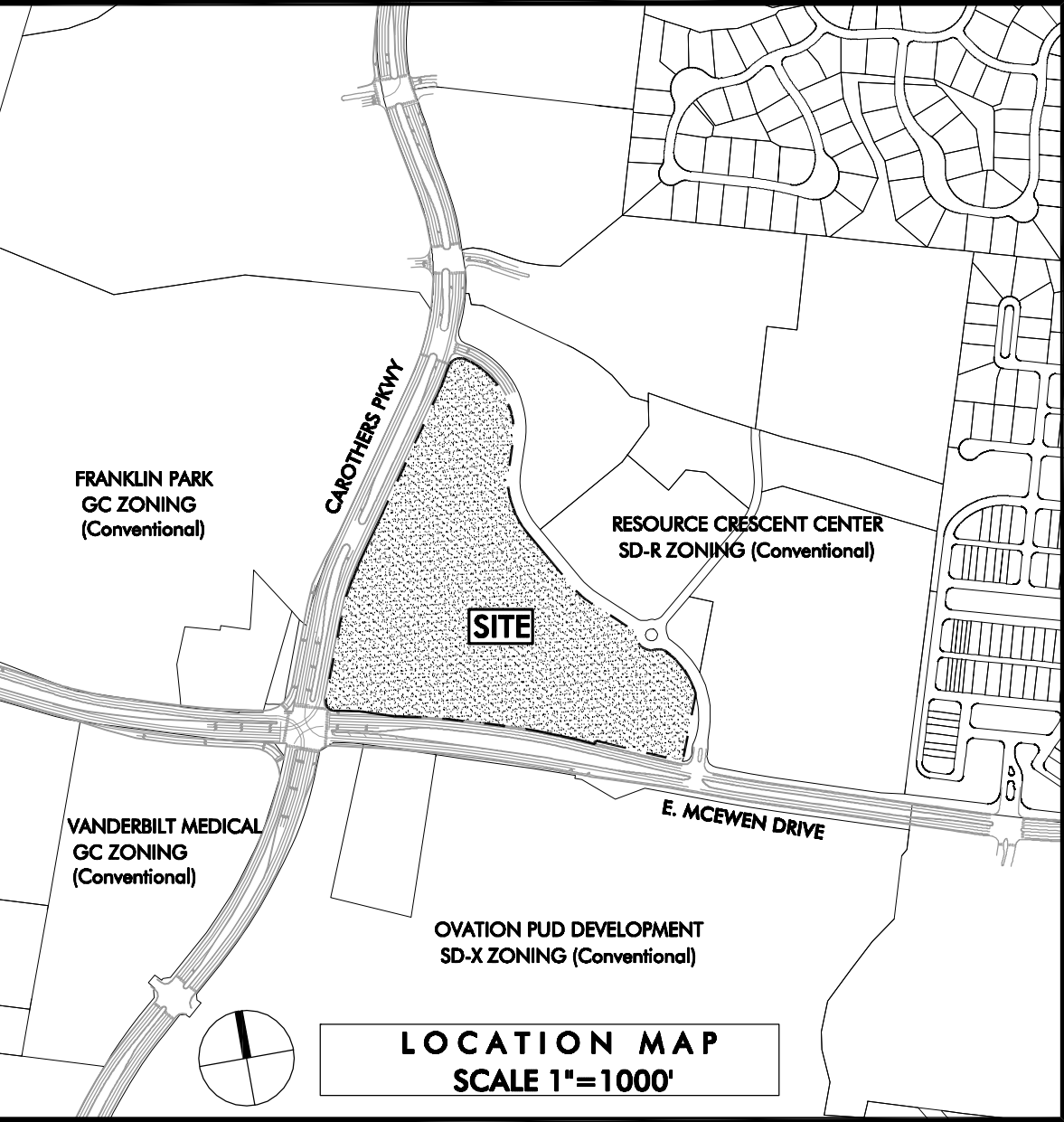
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Main: 615.564.2701 | www.kimley-horn.com
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PREPARED BY:





EXISTING SPECIMEN TREES			
ID#	DIA	TREE	CONDITION
1	24"	BODOCK	POOR
2	24"	OAK	GOOD
3	24"	MAPLE	POOR
4	24"	OAK	FAIR
5	30"	MAPLE	FAIR
6	30"	MAPLE	FAIR
7	24"	BODOCK	POOR
8	24"	BODOCK	FAIR
9	28"	MAPLE	POOR
10	24"	HACK	POOR
11	32"	BODOCK	FAIR
12	24"	HACK	FAIR
13	24"	MAPLE	FAIR
14	N/A	N/A	N/A
15	24"	BODOCK	POOR
16	24"	BODOCK	POOR
17	24"	HACK	POOR
18	24"	BODOCK	POOR
19	30"	BODOCK	FAIR
20	36"	BODOCK	FAIR
21	25"	BODOCK	FAIR
22	28"	BODOCK	FAIR
23	28"	BODOCK	FAIR
24	30"	BODOCK	POOR
25	33"	BODOCK	POOR
26	24"	HACK	GOOD
27	24"	MAPLE	FAIR
28	24"	HACK	POOR
29	24"	HACK	POOR
30	36"	HACK	POOR
31	28"	OAK	GOOD
32	24"	OAK	FAIR
33	24"	OAK	GOOD
34	40"	HACK	GOOD
35	24"	OAK	GOOD
36	29"	OAK	GOOD
37	43"	HACK	GOOD
38	24"	OAK	POOR
39	32"	BODOCK	POOR
40	40"	OAK	GOOD
41	36"	BODOCK	POOR
42	36"	HACK	POOR
43	32"	HACK	GOOD
44	24"	HACK	POOR
45	24"	HACK	FAIR
46	24"	HACK	FAIR
47	28"	BODOCK	POOR
48	24"	OAK	FAIR
49	36"	LOCUST	FAIR
50	24"	HICKORY	FAIR
51	N/A	N/A	N/A
52	24"	LOCUST	POOR
53	24"	HACK	POOR
54	25"	BODOCK	FAIR
55	24"	HACK	FAIR
56	26"	BODOCK	FAIR
57	24"	BODOCK	FAIR



SITE DATA	
SUBDIVISION/DEVELOPMENT	APEX VILLAGE
EXISTING ZONING	GC - GENERAL COMMERCIAL
MAP & PARCEL NUMBER	MAP 062, PARCELS 01417 & 01418
ADDRESS	CAROTHERS PARKWAY
PROPOSED ZONING	SD-X
CHARACTER AREA	MC EWEN
SPECIAL AREA	4
OTHER APPLICABLE OVERLAYS	FLOODWAY FRINGE OVERLAY (FFO) FLOODWAY OVERLAY DISTRICT (FWO)
DEVELOPMENT STANDARD	CONVENTIONAL
(MINERAL RIGHTS FOR THIS PROPERTY ARE HELD BY OWNER OF RECORD.)	
ACREAGE OF SITE	+/- 23.61 ACRES
EXISTING TREE CANOPY	+/- 7.48 ACRES (32% OF SITE)
EXISTING TREE CANOPY TO PRESERVE	+/- 1.80 ACRES (24% OF EXISTING CANOPY)

- NOTES:
- DEVELOPER TO RETAIN ALL MINERAL RIGHTS.
 - NO STRUCTURES CURRENTLY EXIST ON SITE
 - THERE ARE NO HISTORIC STRUCTURES WITHIN 500' OF THE SITE

SITE GRADING AND DRAINAGE CHART	
	DA-SITE
TOTAL AREA	23.61 ACRES
CURVE NUMBER	64.54
DISTURBED AREA	14.24 ACRES
5-YEAR STORM FLOW RATE	18.62 CFS
5-YEAR STORM FLOW RATE	38.08 CFS
10-YEAR STORM FLOW RATE	54.28 CFS
25-YEAR STORM FLOW RATE	75.75 CFS
50-YEAR STORM FLOW RATE	92.23 CFS
100-YEAR STORM FLOW RATE	108.95 CFS

EX. COND. STORMWATER NARRATIVE

EXISTING DRAINAGE PATTERNS ON THIS SITE ARE FROM RESOURCE PARKWAY SOUTH AND WEST TO THE CORNER OF CAROTHERS PARKWAY AND EAST MC EWEN DRIVE. STORMWATER WILL ENTER AN EXISTING 12" 30' CULVERT AND CONTINUE WEST UNDERNEATH CAROTHERS PARKWAY. THE MAJORITY OF THE SITE HAS TYPE B SOILS AND IS BOTH CLEAR AND WOODED IN PLACES.

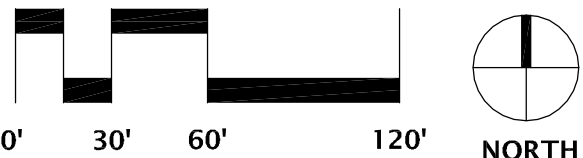
THERE ARE TWO EXISTING DETENTION PONDS ON SITE THAT SERVE ADJACENT SITES WITH EVENTUAL OUTFALLS AT THE ABOVE MENTIONED CULVERT UNDERNEATH CAROTHERS PARKWAY.

- LEGEND
- EXISTING TREE CANOPY
 - EXISTING SLOPES
 - 14% - 19%
 - 20% AND GREATER
 - EXISTING SPECIMEN TREE

ENGINEERING PROVIDED BY:
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DEVELOPER:
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CONSULTANTS

SEAL

PROJECT TITLE

CLIENT

PROJECT NO. COF #6305
Date 12/12/16
Revisions
1. PER CITY COMMENTS 01.05.17

Sheet Title

OVERALL EXISTING CONDITIONS PLAN

Sheet Number

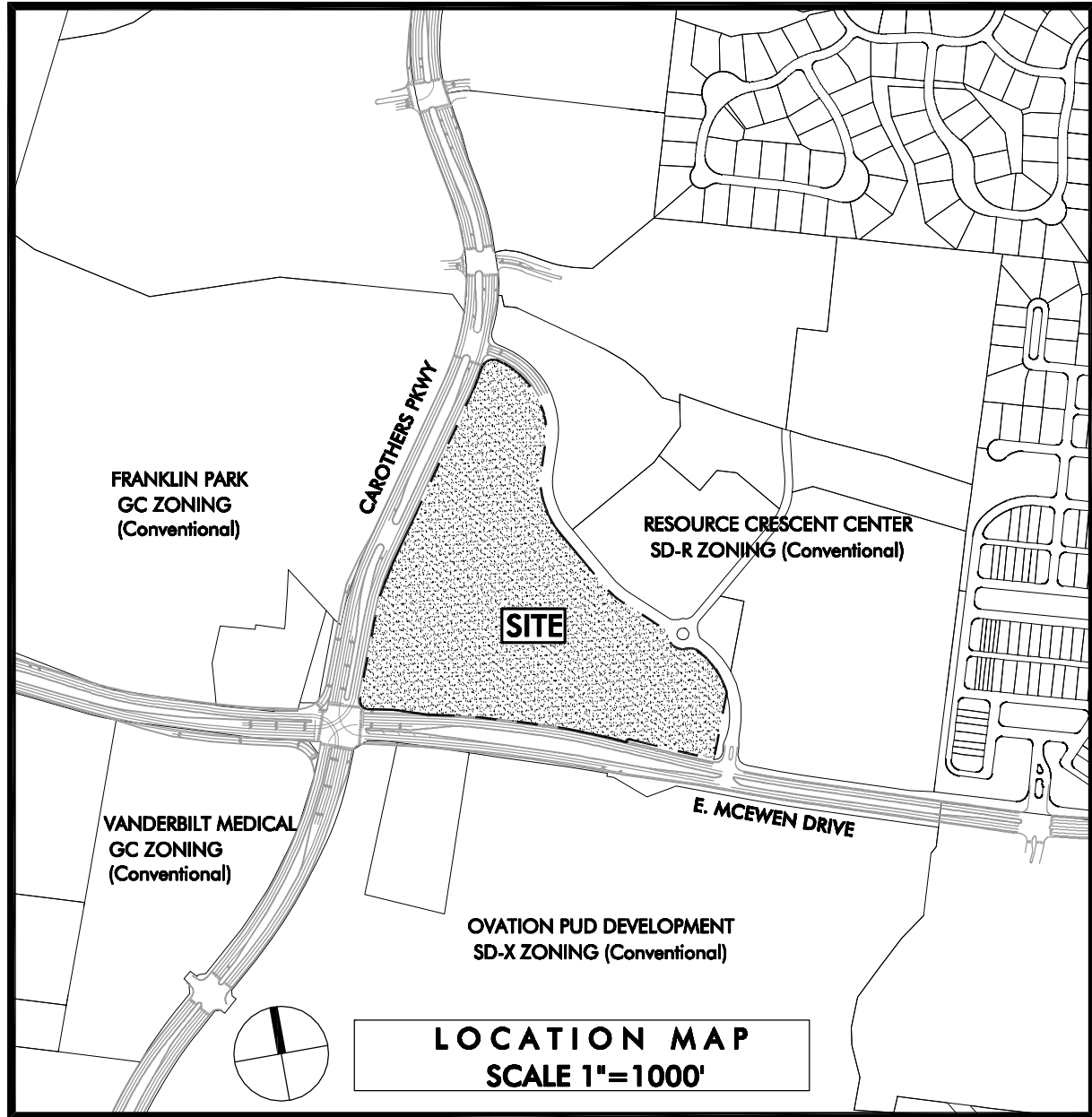
APEX VILLAGE
PUD DEVELOPMENT PLAN
C.O.F. #6305
FRANKLIN, TN

CRESCENT COMMUNITIES LLC

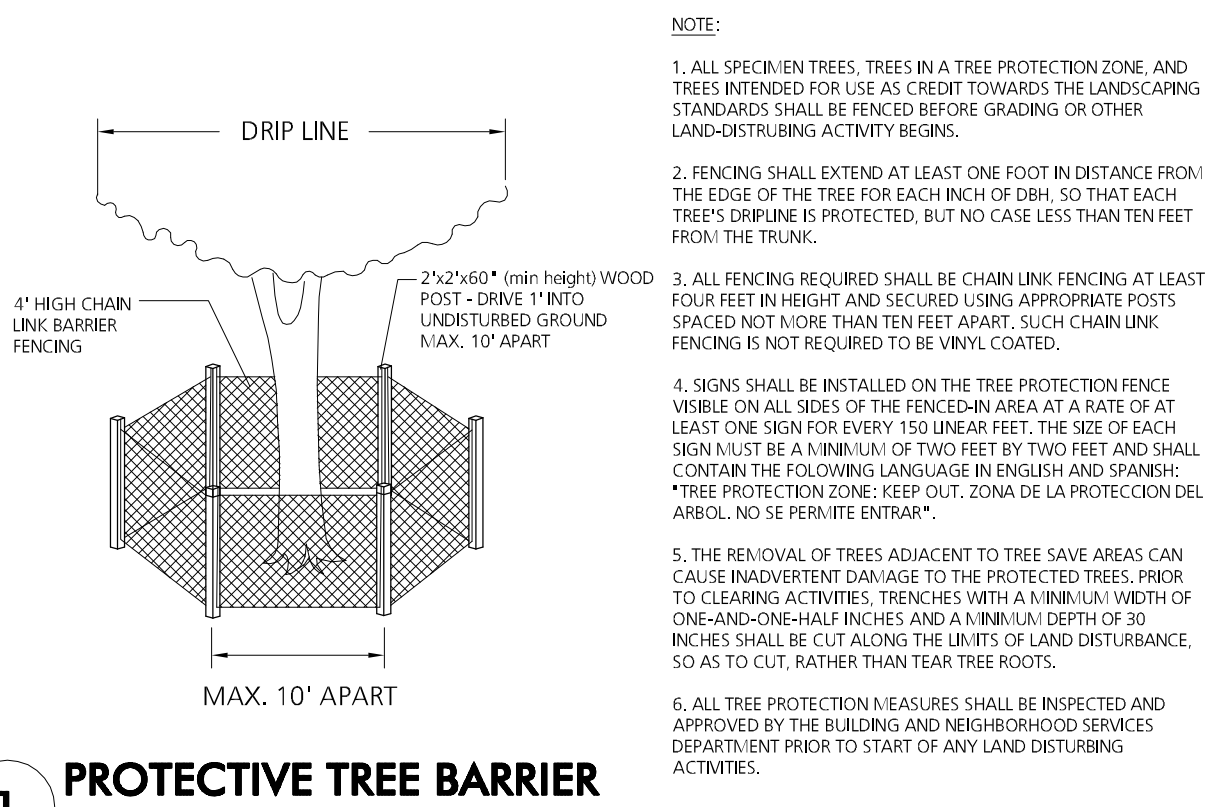
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EXISTING SPECIMEN TREES			
ID#	DIA	TREE	CONDITION
1	24"	BODOCK	POOR
2	24"	OAK	GOOD
3	24"	MAPLE	POOR
4	24"	OAK	FAIR
5	30"	MAPLE	FAIR
6	30"	MAPLE	FAIR
7	24"	BODOCK	POOR
8	24"	BODOCK	FAIR
9	28"	MAPLE	POOR
10	24"	HACK	POOR
11	32"	BODOCK	FAIR
12	24"	HACK	FAIR
13	24"	MAPLE	FAIR
14	N/A	N/A	N/A
15	24"	BODOCK	POOR
16	24"	BODOCK	POOR
17	24"	HACK	POOR
18	24"	BODOCK	POOR
19	30"	BODOCK	FAIR
20	36"	BODOCK	FAIR
21	25"	BODOCK	FAIR
22	28"	BODOCK	FAIR
23	28"	BODOCK	FAIR
24	30"	BODOCK	POOR
25	33"	BODOCK	POOR
26	24"	HACK	GOOD
27	24"	MAPLE	FAIR
28	24"	HACK	POOR
29	24"	HACK	POOR
30	36"	HACK	POOR
31	28"	OAK	GOOD
32	24"	OAK	FAIR
33	24"	OAK	GOOD
34	40"	HACK	GOOD
35	24"	OAK	GOOD
36	29"	OAK	GOOD
37	43"	HACK	GOOD
38	24"	OAK	POOR
39	32"	BODOCK	POOR
40	40"	OAK	GOOD
41	36"	BODOCK	POOR
42	36"	HACK	POOR
43	32"	HACK	GOOD
44	24"	HACK	POOR
45	24"	HACK	FAIR
46	24"	HACK	FAIR
47	28"	BODOCK	POOR
48	24"	OAK	FAIR
49	36"	LOCUST	FAIR
50	24"	HICKORY	FAIR
51	N/A	N/A	N/A
52	24"	LOCUST	POOR
53	24"	HACK	POOR
54	25"	BODOCK	FAIR
55	24"	HACK	FAIR
56	36"	BODOCK	FAIR
57	24"	BODOCK	FAIR



SITE DATA	
SUBDIVISION/DEVELOPMENT	APEX VILLAGE
EXISTING ZONING	GC - GENERAL COMMERCIAL
MAP & PARCEL NUMBER	MAP 062, PARCELS 01417 & 01418
ADDRESS	CAROTHERS PARKWAY
PROPOSED ZONING	SD-X
CHARACTER AREA	MC EWEN
SPECIAL AREA	4
OTHER APPLICABLE OVERLAYS	FLOODWAY FRINGE OVERLAY (FFO) FLOODWAY OVERLAY DISTRICT (FWO)
DEVELOPMENT STANDARD	CONVENTIONAL
(MINERAL RIGHTS FOR THIS PROPERTY ARE HELD BY OWNER OF RECORD.)	
ACREAGE OF SITE	+/- 23.61 ACRES
EXISTING TREE CANOPY	+/- 7.48 ACRES (32% OF SITE)
MIN. AREA OF EXISTING TREE CANOPY TO PRESERVE	+/- 1.80 ACRES (24% OF EXISTING CANOPY)
*AREA OF PRESERVED TREE CANOPY	+/- 1.35 ACRES (18% OF EXISTING CANOPY)
(*NOTE: APPLICANT SHALL RESOLVE ANY TREE CANOPY RETENTION ISSUES AT SITE PLAN SUBMITTAL WITH CITY OF FRANKLIN STAFF.)	



1 PROTECTIVE TREE BARRIER

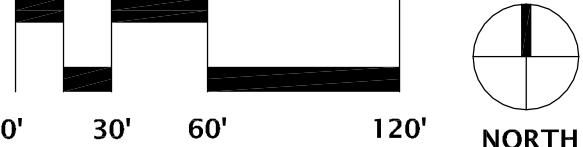
- NOTE:
1. ALL SPECIMEN TREES, TREES IN A TREE PROTECTION ZONE, AND TREES INTENDED FOR USE AS CREDIT TOWARDS THE LANDSCAPING STANDARDS SHALL BE FENCED BEFORE GRADING OR OTHER LAND-DESTRUCTIVE ACTIVITY BEGINS.
 2. FENCING SHALL EXTEND AT LEAST ONE FOOT IN DISTANCE FROM THE EDGE OF THE TREE FOR EACH INCH OF DBH, SO THAT EACH TREE'S SPRING IS PROTECTED, BUT NO CASE LESS THAN TWENTY FEET FROM THE TRUNK.
 3. ALL FENCING REQUIRED SHALL BE CHAIN LINK FENCING AT LEAST FOUR FEET IN HEIGHT AND SECURED USING APPROPRIATE POSTS SPACED NOT MORE THAN TEN FEET APART. SUCH CHAIN LINK FENCING IS NOT REQUIRED TO BE VINYL COATED.
 4. SIGNS SHALL BE INSTALLED ON THE TREE PROTECTION FENCE. WHILE ON ALL SIDES OF THE PROTECTION FENCE, A WHITE PLATE AT LEAST ONE SIGN FOR EVERY 150 LINEAR FEET. THE SIZE OF EACH SIGN SHALL BE A MINIMUM OF TWO FEET BY TWO FEET AND SHALL CONTAIN THE FOLLOWING LANGUAGE IN ENGLISH AND SPANISH: "THE PROTECTION ZONE, KEEP OUT. ZONA DE LA PROTECCION DEL ARBOL, NO SE PERMITE ENTRAR."
 5. THE REMOVAL OF TREES ADJACENT TO TREE SAVE AREAS CAN CAUSE INADEQUATE DAMAGE TO THE PROTECTED TREES WHEN TO CLEARING ACTIVITIES. TRENCHES WITH A MINIMUM WIDTH OF ONE AND ONE HALF INCHES AND A MINIMUM DEPTH OF 30 INCHES SHALL BE CUT ALONG THE LIMITS OF LAND DISTURBANCE, SO AS TO CUT NEARER THAN TREE ROOTS.
 6. ALL TREE PROTECTION MEASURES SHALL BE INSPECTED AND APPROVED BY THE BUILDING AND NEIGHBORHOOD SERVICES DEPARTMENT PRIOR TO START OF ANY LAND-DESTRUCTIVE ACTIVITIES.

LEGEND	
	EXISTING TREE CANOPY
	TREE PRESERVATION AREAS
	EXISTING SPECIMEN TREE
	TREE PROTECTION FENCE

ENGINEERING PROVIDED BY:
RYAN MCMASTER
KIMLEY-HORN
214 OCEANSIDE DRIVE
NASHVILLE, TN, 37204
(615) 564-2876
ryan.mcmaster@kimley-horn.com

APPLICANT:
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DEVELOPER:
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EDGE

PLANNING LANDSCAPE ARCHITECTURE URBAN DESIGN

210 Twelfth Avenue South
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CONSULTANTS

SEAL

JOHN HAAS
REGISTERED
LANDSCAPE ARCHITECT
Tennessee No. 14587
01/05/17

PROJECT TITLE

APEX VILLAGE
PUD DEVELOPMENT PLAN
C.O.F. #6305
FRANKLIN, TN

CLIENT

CRESCENT COMMUNITIES LLC

PROJECT NO.

COF #6305

Date

12/12/16

Revisions

1. PER CITY COMMENTS 01.05.17

Sheet Title

TREE PRESERVATION PLAN

C 1.0a

ANTICIPATED IMPACT ON THE STREETS AS SHOWN IN THE MAJOR THOROUGHFARE PLAN

PERCENTAGES OF SITE-GENERATED TRAFFIC VOLUMES ON CITY STREETS			
Street Name	Classification	Entering Traffic	Exiting Traffic
McEwen Drive (west of Carothers Parkway)	Major Arterial	50%	50%
McEwen Drive (between Carothers Parkway and Resource Parkway)	Major Arterial	30%	35%
McEwen Drive (east of Resource Parkway)	Major Arterial	10%	10%
Carothers Parkway (south of McEwen Drive)	Major Arterial	15%	15%
Carothers Parkway (between McEwen Drive and Pacific Drive)	Major Arterial	35%	30%
Carothers Parkway (north of Pacific Drive)	Major Arterial	20%	20%

DAILY SITE-GENERATED TRAFFIC VOLUMES ON CITY STREETS				
Street Name	Classification	Entering Traffic	Exiting Traffic	Total Vehicles Per Day
McEwen Drive (west of Carothers Parkway)	Major Arterial	1,855	1,855	3,710
McEwen Drive (between Carothers Parkway and Resource Parkway)	Major Arterial	1,113	1,298	2,411
McEwen Drive (east of Resource Parkway)	Major Arterial	371	371	742
Carothers Parkway (south of McEwen Drive)	Major Arterial	556	556	1,112
Carothers Parkway (between McEwen Drive and Pacific Drive)	Major Arterial	1,298	1,113	2,411
Carothers Parkway (north of Pacific Drive)	Major Arterial	742	742	1,484

THE FOLLOWING ITEMS OUTLINE RECOMMENDATIONS RELATED TO THE TRAFFIC IMPACT STUDY, PERFORMED BY FISCHBACH TRANSPORTATION, AND ADDITIONAL STAFF RECOMMENDATIONS PER THE THIRD PARTY REVIEW VIA VOLKERT INC. FOR IMPROVEMENTS RELATED TO THIS DEVELOPMENT:

- A TRAFFIC SIGNAL SHOULD BE INSTALLED AT THE INTERSECTION OF E. MCEWEN DRIVE AND RESOURCE PARKWAY; AT THIS TIME, THIS IMPROVEMENT IS REQUIRED PER THE OVATION DEVELOPMENT PLAN
- A TRAFFIC SIGNAL SHOULD BE INSTALLED AT THE INTERSECTION OF CAROTHERS PARKWAY AND RESOURCE PARKWAY
- THE STORAGE BAY ON THE EXISTING, SOUTHBOUND LEFT-HAND TURN LANE FROM CAROTHERS PARKWAY TO PACIFIC DRIVE SHALL BE EXTENDED TO 150'
- FUTURE RIGHT-OF-WAY RESERVATION SHOULD BE PROVIDED ALONG CAROTHERS PARKWAY AND E. MCEWEN DRIVE PER THE HYBRID EXHIBIT OF THE CAROTHERS INTEGRATED GROWTH PLAN. ROW IS TO BE RESERVED AND DEDICATED VIA FINAL SUBDIVISION PLAT AFTER SITE PLAN APPROVAL
- PACIFIC DRIVE SHALL INCLUDE ONE THROUGH LANE IN EACH DIRECTION AND A CONTINUOUS CENTER TURN LANE FROM CAROTHERS PARKWAY TO RESOURCE PARKWAY
- RESOURCE PARKWAY SHALL INCLUDE STORAGE BAYS AND LEFT-HAND TURN LANES INTO THE PROJECT ACCESS LOCATIONS AND TERRAPIN DRIVE INTERSECTION
- THE ACCESS POINTS TO DECK "P" VIA PACIFIC DRIVE AND RESOURCE PARKWAY SHALL PROVIDE ONE ENTRY LANE AND TWO EXIT LANES, STRIPED AS SEPARATE LEFT AND RIGHT TURNS.

SHARED PARKING

ADJUSTED WEEKDAY PEAK PARKING DEMAND (SCENARIO 1)

DAY AND TIME	REQUIRED PARKING SPACES			
	Visitors	Employees/Residents	SUBTOTAL	REDUCED 20% FOR INTERNAL TRIPS
Weekday (2:00 PM in June)	489	1,016	1,505	1,204
Saturday (7:00 PM in June)	481	100	581	465

* This is the total number of parking spaces needed in Parking Garage P. Based on the data provided in Shared Parking, 2nd Edition, which was published by the Urban Land Institute, Parking Garage Q should include 1.65 parking spaces per apartment in Building C.

ADJUSTED WEEKDAY PEAK PARKING DEMAND (SCENARIO 2)

DAY AND TIME	REQUIRED PARKING SPACES			
	Visitors	Employees/Residents	SUBTOTAL	REDUCED 20% FOR INTERNAL TRIPS
Weekday (2:00 PM in June)	499	1,373	1,872	1,498
Saturday (7:00 PM in June)	522	587	1,119	895

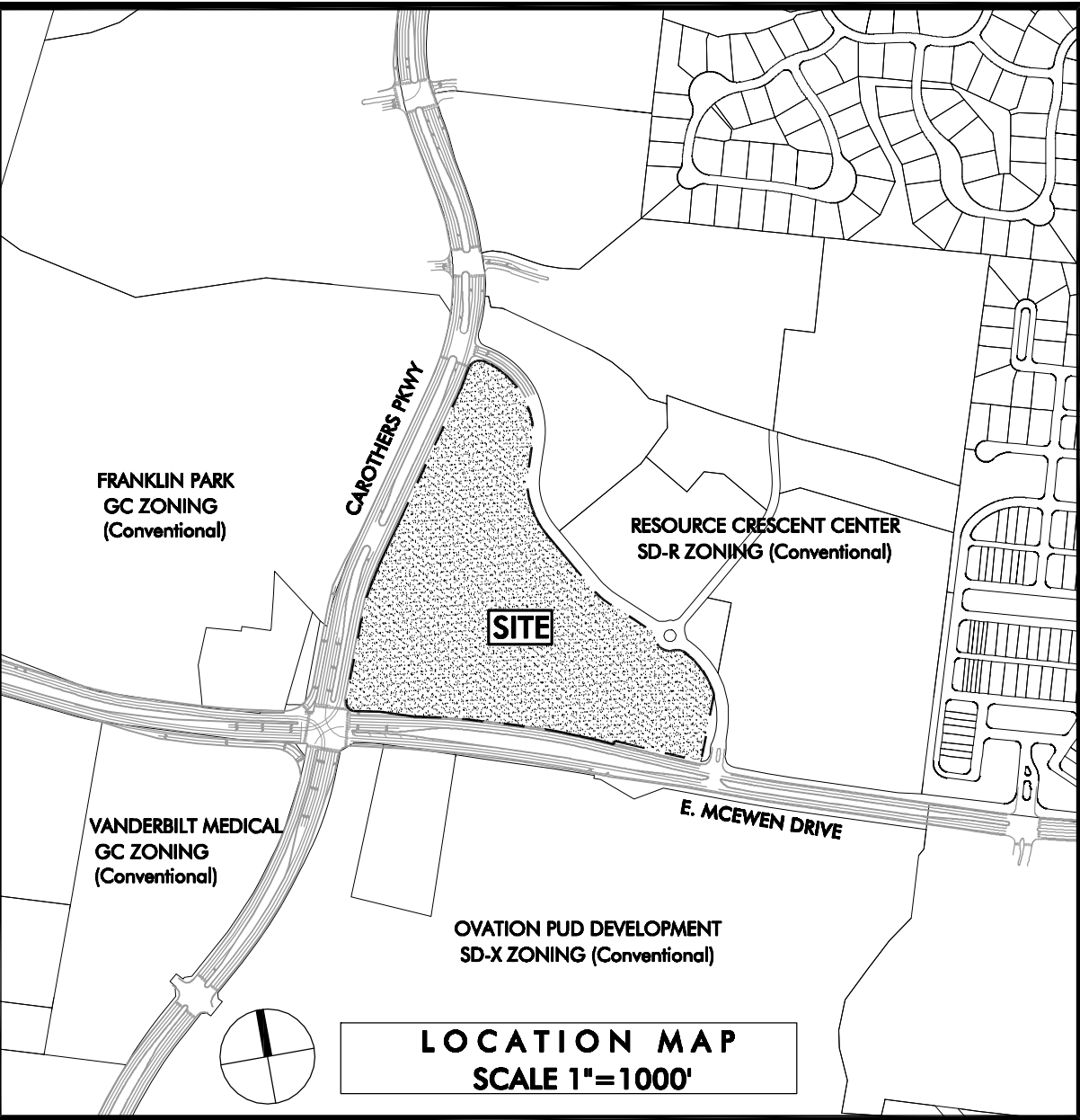
* This is the total number of parking spaces needed in Parking Garages P and Q (combined).

*SEE SHARED PARKING STUDY FOR DETAILS

BUILDING USE MATRIX

BUILDING	DESCRIPTION
A	OFFICE & RESTAURANT
B	HOTEL
C	MULTI-FAMILY & RESTAURANT
D	FLEX COMMERCIAL & OFFICE
E	FLEX COMMERCIAL & OFFICE
F	RESTAURANT
G	RESTAURANT
J	FLEX/TOWNHOUSE
K	FLEX/TOWNHOUSE
L	FLEX/TOWNHOUSE
M	FLEX/TOWNHOUSE
P	GARAGE
Q	GARAGE

FRANKLIN CREST P.U.D.
SUBDIVISION
LOT-3
PLAT BOOK 50,
PAGE 122, R.O.W.C., TN.
C.O.F. PROJECT #1683



SITE DATA

SUBDIVISION/DEVELOPMENT
MAP & PARCEL NUMBER
ADDRESS

APEX VILLAGE
MAP 062, PARCELS 01417 & 01418
CAROTHERS PARKWAY

EXISTING ZONING
CHARACTER AREA
SPECIAL AREA
OTHER APPLICABLE OVERLAYS

GC - GENERAL COMMERCIAL
MCEWEN
4
FLOODWAY FRINGE OVERLAY (FFO)
FLOODWAY OVERLAY DISTRICT (FWO)
CONVENTIONAL

DEVELOPMENT STANDARD

ACREAGE OF SITE
SQUARE FOOTAGE OF SITE

+/- 23.61 ACRES
+/- 1,028,538 SQ. FT.

RESIDENTIAL DENSITY
COMMERCIAL SQUARE FOOTAGE
PROPOSED HOTEL KEYS

14.61 DWU/ACRE
350,000
200

PROPOSED ZONING

SPECIFIC DEVELOPMENT
VARIETY (SD-X) 14.61, 350,000, 200

MINIMUM REQUIRED SETBACK LINES
BUILDING SETBACKS

5 FT.

DEVELOPER:
KHRIS PASCARELLA
CRESCENT COMMUNITIES
205 POWELL AVENUE
BRENTWOOD, TN 37027
(615) 312-8242
kpascarella@pearlstreetpartners.com

APPLICANT:
JOHN HAAS
EDGE
210 12TH AVE. SOUTH - SUITE 202
NASHVILLE, TN 37203
(615) 250-8154
jhaas@edgela.com

BUILDING HEIGHT

12 STORIES MAX.

LANDSCAPE SURFACE RATIO
MIN. LANDSCAPE SURFACE RATIO

0.40
0.20

MINIMUM PARKING REQUIREMENT
PARKING PROVIDED

SEE CHART THIS PAGE
SEE CHART THIS PAGE

EXISTING TREE CANOPY

+/- 7.48 ACRES (32% OF SITE)

MIN. AREA OF EXISTING TREE CANOPY
TO PRESERVE

+/- 1.80 ACRES (24% OF EXISTING CANOPY)

*AREA OF PRESERVED TREE CANOPY

+/- 1.35 ACRES (18% OF EXISTING CANOPY)

(*NOTE: APPLICANT SHALL RESOLVE ANY TREE CANOPY RETENTION ISSUES AT SITE PLAN SUBMITTAL WITH CITY OF FRANKLIN STAFF.)

FORMAL OPEN SPACE -
REQUIRED

+/- 1.18 ACRES (5% OF GROSS
DEVELOPMENT SIZE)

FORMAL OPEN SPACE -
PROVIDED

+/- 1.20 ACRES (5% OF GROSS
DEVELOPMENT SIZE)

INFORMAL OPEN SPACE -
REQUIRED

NONE

INFORMAL OPEN SPACE -
PROVIDED

+/- 10.98 ACRES (47% OF GROSS
DEVELOPMENT SIZE)

*REQUIRED PARKLAND DEDICATION

+/- 5.23 ACRES

*PROVIDED PARKLAND

+/- 5.24 ACRES

*APPLICANT IS REQUESTING A MODIFICATION OF STANDARDS - SEE NOTES THIS PAGE

RESIDENTIAL DENSITY

14.61 DUA

NET DENSITY (MINUS ROW)

14.90 DUA

NET DENSITY (MINUS ROW
& OVERLAY CONSTRAINTS)

18.90 DUA

PROPOSED NUMBER OF RESIDENTIAL UNITS BY USE TYPE
TOWNHOMES

15 UNITS

*MULTI-FAMILY UNITS

330 UNITS

TOTAL UNITS

345 UNITS

*MULTI-FAMILY UNITS WILL BE DIVIDED INTO THE FOLLOWING MIX:

STUDIOS +/- 4% - 8%
ONE BEDROOM +/- 50% - 54%
TWO BEDROOM +/- 38% - 42%
THREE BEDROOM +/- 2% - 6%

(NOTE THAT THIS IS AN APPROXIMATE UNIT MIX ONLY - ACTUAL UNIT MIX NUMBERS WILL BE PROVIDED AT SITE PLAN SUBMITTAL)

PROPOSED SQUARE FOOTAGE BY USE TYPE (NONRESIDENTIAL)
OFFICE

+/- 300,000 SF

COMMERCIAL

+/- 50,000 SF

HOTEL

200 KEYS

LEGEND

TREE PROTECTION AREA

EXISTING SPECIMEN TREE

LIMITS OF DISTURBANCE

0' 30' 60' 120' NORTH

ENGINEERING PROVIDED BY:
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DEVELOPER:
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CONSULTANTS

SEAL

PROJECT TITLE

CLIENT

PROJECT NO. COF #6305
Date 12/12/16

Revisions
1. PER CITY COMMENTS 01.05.17

Sheet Title

OVERALL
DEVELOPMENT
PLAN

Sheet Number

C 2.0

IMPACT STATEMENT NOTES:
1. FROM THIS SITE, IT IS APPROXIMATELY 1.5 MILES TO FIRE STATION 6 ON COOL SPRINGS BOULEVARD AND 5 MILES TO THE CITY POLICE DEPARTMENT LOCATED ON COLUMBIA AVENUE.

2. THE NEAREST PARK AND RECREATIONAL FACILITIES ARE LOCATED APPROXIMATELY 0.5 MILES EAST OF THE DEVELOPMENT ON MCEWEN DRIVE (LIBERTY PARK). CHEEK PARK AND THE WILLIAMSON COUNTY RECREATION CENTER ARE APPROXIMATELY 5 MILES FROM THE PROPOSED DEVELOPMENT.

3. THIS DEVELOPMENT WILL RESULT IN AN INCREASE OF 345 MULTI-FAMILY & TOWNHOME UNITS. BASED ON AN AVERAGE OF 0.10 SCHOOL AGE STUDENTS PER MULTI-FAMILY/TOWNHOME HOUSEHOLD, THIS WILL INCREASE THE CURRENT STUDENT SCHOOL POPULATION BY A TOTAL OF ±104 STUDENTS WITHIN THE FOLLOWING CATEGORIES: KENROSE ELEMENTARY (34 STUDENTS), SUNSET MIDDLE (34 STUDENTS), CENTENNIAL HIGH (34 STUDENTS).

4. WATER IS PROVIDED BY MALLORY VALLEY UTILITY DISTRICT VIA EXISTING 10" & 18" MAINS SURROUNDING THE SITE. WATER AVAILABILITY OF APPROXIMATELY 1160 SFUE HAS BEEN CONFIRMED BY MVUD FOR THIS DEVELOPMENT.

5. SANITARY SEWER WILL BE PROVIDED BY THE CITY OF FRANKLIN VIA EXISTING SEWER INFRASTRUCTURE ALONG EAST MCEWEN DRIVE AND CAROTHERS PARKWAY. THE CITY OF FRANKLIN HAS APPROVED THE ADDITION OF 1160 SFUE FOR THE DEVELOPMENT.

6. REFUSE COLLECTION FOR THE DEVELOPMENT SHALL BE PROVIDED BY PRIVATE COLLECTION.

NOTES:

- DEVELOPER TO RETAIN ALL MINERAL RIGHTS.
- NO STRUCTURES CURRENTLY EXIST ON SITE.
- THERE ARE NO HISTORIC STRUCTURES WITHIN 500' OF THE SITE

0.60 ACRE R.O.W. RESERVATION PER THE HYBRID EXHIBITS WITHIN THE CAROTHERS INTEGRATED GROWTH PLAN

ROW TO BE RESERVED AND DEDICATED VIA FINAL SUBDIVISION PLAT AFTER SITE PLAN APPROVAL

SOUTH PRONG
SPENCER CREEK

STREAM BUFFER NOTE:
THERE SHALL BE NO MOVING, CLEARING, GRADING, CONSTRUCTION, STORAGE, OR DISTURBANCE OF VEGETATION IN RIPARIAN BUFFERS EXCEPT AS PERMITTED BY THE CITY ENGINEER, OR HIS DESIGNEE.

TRANSIT STOP

FORMAL
OPEN
SPACE
+/- 1.20
ACRES

TREE
PROTECTION
AREA, TYP.

PRIVATE TRASH
SERVICE AREA

FFO OVERLAY LIMITS

FO OVERLAY LIMITS

FLOODWAY

FWD DISTRICT LIMITS

FWD DISTRICT LIMITS

CAROTHERS PARKWAY

CAROTHERS PARKWAY

-DETAILS AND LAYOUT OF UTILITIES SHOWN GRAPHICALLY ON THIS PLAN ARE SUBJECT TO CHANGE BETWEEN DEVELOPMENT PLAN AND SITE PLAN SUBMITTALS.

-APPLICANT WILL WORK WITH CITY STAFF ON ALIGNMENT AND DESIGN OF ALL UTILITIES SHOWN ON THIS PLAN TO REACH AN AGREED-UPON SOLUTION FOR SERVING THE SITE.

TOTAL PROPERTY AREA = 23.61 ACRES
DISTURBED AREA = 15.22 ACRES
IMPERVIOUS AREA = 9.89 ACRES

1. ALL PERSONS WHO UNDERTAKE THE CONSTRUCTION OF WATER, SEWER AND RECLAIMED WATER INFRASTRUCTURE SHALL COMPLY WITH THE REQUIREMENTS AND REGULATIONS SET FORTH IN THE "GENERAL REQUIREMENTS & TECHNICAL SPECIFICATIONS, WATER MANAGEMENT DEPARTMENT, CITY OF FRANKLIN, MASSACHUSETTS" AND ANY SUBSEQUENT AMENDMENTS, ADDITIONS, OR ALTERATION "WHAT MAY HEREAFTER BE ADOPTED BY THE CITY OF FRANKLIN, MASSACHUSETTS WATER MANAGEMENT DEPARTMENT."
2. CONTRACTOR SHALL OBTAIN WATER & SEWER INFRASTRUCTURE INSTALLATION PERMIT FROM THE CITY OF FRANKLIN, MASSACHUSETTS WATER MANAGEMENT DEPARTMENT PRIOR TO THE PRECONSTRUCTION SITE MEETING PRIOR TO COMMENCING WITH CONSTRUCTION.
3. CONTRACTOR SHALL OBTAIN AND KEEP ALL OF THE FOLLOWING ITEMS ON THE JOBSITE AT ALL TIMES DURING CONSTRUCTION:
 - a. APPROVED, STAMPED AND SIGNED WATER AND/OR SEWER PLANS
 - b. WATER & SEWER INFRASTRUCTURE INSTALLATION PERMIT, WITH ALL STEPS COMPLETED AND SIGNED OFF BY THE CITY OF FRANKLIN, MASSACHUSETTS
 - c. COPY OF APPROVED AVAILABILITY REQUEST RESPONSE LETTER.
 - d. A COPY OF ALL APPROVED PERMITS
4. ACCEPTANCE OF CITY OF FRANKLIN PUBLIC WATER/INFRASTRUCTURE, SANITARY SEWER AND RECLAIMED WATER INFRASTRUCTURE SHALL BE THE RESPONSIBILITY OF THE CITY OF FRANKLIN, IN FOLLOWING APPROVAL FROM THE CITY OF FRANKLIN INSPECTORS AND ACCEPTANCE BY THE FRANKLIN MUNICIPAL PLANNING COMMISSION. FINANCIAL, INDEMNITY, LIABILITY AND OTHER FINANCIAL GUARANTEES AND SURETIES ARE ESTABLISHED BY THE FRANKLIN MUNICIPAL PLANNING COMMISSION. THE CITY OF FRANKLIN, MASSACHUSETTS WATER MANAGEMENT DEPARTMENT SHALL BE RESPONSIBLE FOR THE CONSTRUCTION OF WATER, SEWER INFRASTRUCTURE AND/OR RECLAIMED WATER INFRASTRUCTURE THE CITY OF FRANKLIN, MASSACHUSETTS WATER MANAGEMENT DEPARTMENT.
5. THE CITY OF FRANKLIN, MASSACHUSETTS PUBLIC RIGHT-OF-WAY SHALL REQUIRE AN APPROVED TRAFFIC CONTROL PLAN WHICH COMPLIES WITH THE MUTCD, NO OFF-SITE EXCAVATION OR UNDERGROUND WORK IN STREET SHALL BE ALLOWED WITHOUT THE CITY OF FRANKLIN TEMPORARY CONSTRUCTION CLOSURE PERMIT OF THE CITY OF FRANKLIN. ANY VIOLATION OF 72-HOUR NOTICE HAS BEEN GIVEN TO THE CITY OF FRANKLIN TRAFFIC OPERATIONS DEPARTMENT SHALL BE CONSIDERED A VIOLATION OF THE CITY OF FRANKLIN, MASSACHUSETTS TRAFFIC CONTROL PLAN.
6. THE CONTRACTOR SHALL BE RESPONSIBLE TO EXISTING UTILITIES DURING CONSTRUCTION SHALL, AT HIS OWN EXPENSE, BE REPLACED OR REPAIRED TO ORIGINAL CONDITION AND QUALITY, AS REQUIRED BY THE OWNER AND REPRESENTATIVE OF THE APPROPRIATE UTILITY COMPANY BY THE CONTRACTOR.

GRADING PERMIT IS REQUIRED FOR ANY PROJECT DISTURBING MORE THAN 10,000 SF. ADDING MORE THAN 5,000 SF OF IMPERVIOUS SURFACE FOR ANY SITE GRADING. ANY GRADING SHALL BE DONE IN ACCORDANCE WITH THE CITY OF FRANKLIN'S GRADING DEPARTMENT. THE DEVELOPER SHALL PROVIDE THE NECESSARY LABOR AND SUPERVISION REQUIRED TO CONDUCT THE FIELD TESTING. THE FIELD TESTING SHALL BE CONDUCTED BY A LICENSED PROFESSIONAL AT NO COST TO THE CITY. TEST REPORTS OF FIELD TESTING IF APPLICABLE SHALL BE SUBMITTED DIRECTLY TO THE STREET DEPARTMENT. DEFECTS DISCLOSED BY TESTS SHALL BE IMMEDIATELY REPAIRED.

A AUTHORIZED REPRESENTATIVE OF THE CITY SHALL MAKE A FINAL INSPECTION OF THE PROJECT. THE CITY SHALL NOT BE RESPONSIBLE FOR THE CONSTRUCTION OF THE PROJECT. RELEASE OF PERFORMANCE BONDS IF REQUIRED, BEFORE THIS FINAL INSPECTION CAN BE MADE. THE ENGINEER RESPONSIBLE FOR THE PROJECT SHALL CERTIFY IN WRITING TO THE CITY THAT THE PROJECT WILL BE IN ACCORDANCE WITH THE CITY OF FRANKLIN'S PLANS AND SPECIFICATIONS.

THE CITY OF FRANKLIN DOES NOT GUARANTEE, BUT NOT LIMITED TO: CURBSETS, DRAINAGE BASINS AND DITCHES AS WELL AS THE ROADWAY SUBGRADE, BASE STONE AND BINDER A SURFACE COURSE SHALL BE INSPECTED, TESTED AND GIVEN APPROVAL AT EACH STAGE OF CONSTRUCTION. THE CITY OF FRANKLIN WILL NOT BE RESPONSIBLE FOR THE CONSTRUCTION INSPECTION SERVICE FOR APPROVAL AND ACCEPTANCE OF STREETS AND DRAINAGE. THE CITY OF FRANKLIN WILL NOT BE RESPONSIBLE FOR THE CONSTRUCTION INSPECTION SERVICE FOR APPROVAL AND ACCEPTANCE OF STREETS AND DRAINAGE.

WITH THE APPROVED PLANS.

THE LOCATION AND COORDINATION FOR THE RELOCATION OF ANY UTILITY IS THE RESPONSIBILITY OF THE CONTRACTOR. TENNESSEE'S ONE-CALL AND THE CITY OF FRANKLIN UTILITY LOCATION SERVICE SHALL BE UTILIZED IN ADDITION TO COORDINATION WITH LOCAL AGENCIES. THE CITY OF FRANKLIN WILL NOT BE RESPONSIBLE FOR THE CONSTRUCTION INSPECTION SERVICE. IT WILL BE RESPONSIBLE FOR COSTS DUE TO DAMAGE CAUSED TO ANY UTILITY LINES.

WATER
WATER IS PROVIDED BY CITY WATER VALLEY UTILITY DISTRICT VIA EXISTING 10" AND 16" MAINS
SURROUNDING THE SITE. WATER AVAILABILITY OF APPROXIMATELY 1160 SFUC FOR THIS DEVELOPMENT.

SANITARY SEWER
SANITARY SEWER WILL BE PROVIDED BY CITY OF FRANKLIN VIA EXISTING SEWER
INFRASTRUCTURE ALONG EAST McEWEN DRIVE AND CARROTHERS PARKWAY. THE CITY OF
FRANKLIN HAS APPROVED THE ADDITION OF 1160 SFUC FOR THE DEVELOPMENT.

RECLAIMED WATER LINE
RECLAIMED WATER INFRASTRUCTURE IS NOT PRESENT OR PROPOSED ON THIS SITE.

STORMWATER
STORMWATER FLOWS WILL BE TREATED FOR WATER QUALITY BY GREEN INFRASTRUCTURE
THROUGHOUT THE SITE AND POST DEVELOPMENT PEAK FLOW DISCHARGES WILL BE
CONTROLLED TO PREVENT DEVELOPMENT PEAK FLOWS BY THE DETENTION POND AND OUTLET
STRUCTURE.

ELECTRICITY
ELECTRICITY WILL BE PROVIDED BY MIDDLE TENNESSEE ELECTRIC MEMBERSHIP CORP.

GAS
NATURAL GAS WILL BE PROVIDED BY ATMOS GAS VIA EXISTING MAINS ALONG EAST McEWEN
DRIVE.

REFUSE COLLECTION
REFUSE COLLECTION FOR THE DEVELOPMENT SHALL BE PROVIDED BY PRIVATE COLLECTION.

BIORETENTION AREA

TREE PRESERVATION AREA

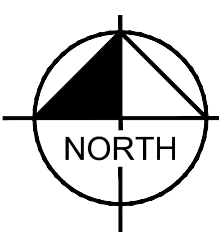
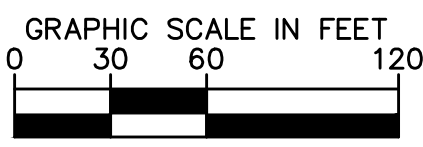
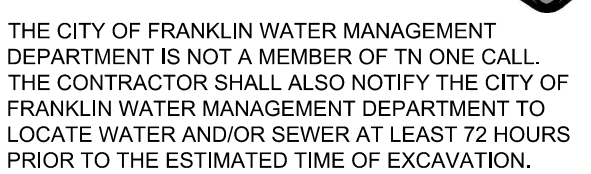
THERE SHALL BE NO MOWING, CLEARING, GRADING, CONSTRUCTION, STORAGE, OR DISTURBANCE OF VEGETATION IN RIPARIAN BUFFERS EXCEPT AS PERMITTED BY THE CITY ENGINEER, OR HIS DESIGNEE.

- TEST HYDRANT LOCATION: CORNER OF PACIFIC DR AND RESOURCE PKWY
- FLOW HYDRANT LOCATION: RESOURCE PARKWAY WEST OF ROUNDABOUT
- STATIC PRESSURE = 124 PSI
- RESIDUAL PRESSURE = 112 PSI
- FLOW @ 20 PSI = 3471
- TOTAL GPM DURING TEST = 1082
- DATE: JULY 31, 2016
- TEST PERFORMED BY ERIC BROOMFIELD AND BEN BUTLER OF HETHCOAT AND DAVIS.

STORMWATER FROM THE SITE WILL BE ROUTED TOWARDS WATER QUALITY FEATURES SPREAD THROUGHOUT THE SITE IN THE FORM OF BIORETENTION AREAS.

RUNOFF THAT EXCEEDS THE 1ST INCH OF RAINFALL WILL BE ROUTED VIA STORMWATER PIPES TO THE DETENTION POND SHOWN ON THE PLAN BELOW. AN OUTLET CONTROL STRUCTURE WILL LIMIT THE PEAK DISCHARGE FLOW RATE OF THE POND TO THE PRE-DEVELOPMENT PEAK DISCHARGE OF THE SITE UP TO THE 100-YEAR DESIGN STORM.

	PROPOSED SANITARY SEWER PIPE
	PROPOSED WATER MAIN
	PROPOSED STORM PIPE
	EXISTING SANITARY SEWER PIPE
	EXISTING WATER MAIN
	EXISTING GAS MAIN
	EXISTING STORM PIPE
	LIMITS OF DISTURBANCE
	TREE PRESERVATION AREA
	FIRE HYDRANT
	UTILITY EASEMENT
	DRAINAGE AREA BOUNDARY



6610

Drawing name: K:\NSH_LDEV\018253064 - Resource Pkwy\4-CADD\3-PlanSheets\Development Plan\C4.0-ROWandAccess-018253064.dwg Layout1 Jan 05, 2017 10:03am by: cj.murrell

THIS SITE IS LOCATED ALONG E McEWEN DRIVE, A PART OF THE CITY OF FRANKLIN MAJOR THOROUGHFARE PROJECT #2. THIS EXISTING ROAD WAS COMPLETED PER THE RECOMMENDATIONS IN THE MAJOR THOROUGHFARE PLAN.

THE FOLLOWING ITEMS OUTLINE RECOMMENDATIONS RELATED TO THE TRAFFIC IMPACT STUDY, PERFORMED BY FISCHBACH TRANSPORTATION, AND ADDITIONAL STAFF COMMENTS TO THE STUDY REPORT. THE FOLLOWING ITEMS ARE THE RECOMMENDED IMPROVEMENTS RELATED TO THIS DEVELOPMENT:

- 1. IMPROVE THE INTERSECTION OF E. MEWEN DRIVE AND RESOURCE PARKWAY. AT THIS TIME, THIS IMPROVEMENT IS REQUIRED PER THE DIVISION DEVELOPMENT PLAN.
- 2. A RIGHT TURN BEYOND THE INTERSECTION OF CAROTHERS PARKWAY AND RESOURCE PARKWAY.
- 3. A LEFT TURN BEYOND THE SOUTHBEND LEFT-HAND TURN LANE FROM CAROTHERS PARKWAY TO PACIFIC DRIVE SHALL BE EXTENDED TO 150 FEET TO PROVIDE ADEQUATE SPACE FOR THE TURN.
- 4. IMPROVE THE INTERSECTION OF E. MEWEN DRIVE PER THE HYBRID EXHIBIT OF THE CAROTHERS INTEGRATED GROWTH PLAN. ROW IS TO BE RESERVED AND DEDICATED VIA FINAL PLANS TO PROVIDE A LEFT TURN LANE FROM CAROTHERS PARKWAY TO RESOURCE PARKWAY.
- 5. RESOURCE PARKWAY SHALL INCLUDE ONE THROUGH LANE IN EACH DIRECTION AND ONE TURN LANE TO ENTER TURN LANE FROM CAROTHERS PARKWAY TO RESOURCE PARKWAY.
- 6. RESOURCE PARKWAY SHALL INCLUDE STORAGE BAYS AND LEFT-HAND TURN LANE IN EACH DIRECTION TO ACCOMMODATE TRUCK TRAFFIC.
- 7. THE ACCESS POINTS TO DECK "P" VIA PACIFIC DRIVE AND RESOURCE PARKWAY SHALL BE ENTERY LANE AND TWO EXIT LANES, STRIPED AS SEPARATE LEFT AND RIGHT TURN.

PRIOR TO BEGINNING ANY CONSTRUCTION, THE DEVELOPER AND/OR CONTRACTOR, SHALL OBTAIN ALL NECESSARY PERMITS AS REQUIRED BY LAW. SUCH PERMITS MAY BE OBTAINED FROM THE CITY OF FRANKLIN, THE TENNESSEE DEPARTMENT OF TRANSPORTATION, WILLIAMSON COUNTY AND OTHER CITY OF FRANKLIN AGENCIES.
 27. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING AN APPROVED TRAFFIC CONTROL PLAN WHICH COMPLIES WITH THE MUTCD. NO OFF-SITE EXCAVATION MAY BE UNDERTAKEN IN ANY STREET, ROAD, ALLEY OR RIGHT-OF-WAY OF ANY CITY OF FRANKLIN, THE TENNESSEE DEPARTMENT OF TRANSPORTATION, WILLIAMSON COUNTY OR ANY OTHER CITY OF FRANKLIN BY ANY ENTITY UNLESS 72-HOUR NOTICE HAS BEEN GIVEN TO THE CITY OF FRANKLIN AND THE CITY OF FRANKLIN HAS BEEN ADVISED OF THE PROJECT AND THE CITY OF FRANKLIN HAS APPROVED TRAFFIC CONTROL PLAN ONSITE DURING CONSTRUCTION.
 28. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS WITH DESIGNATIONS AND REQUIREMENTS WITHIN THE REFERENCED "DOT" STANDARD SPECIFICATIONS SECTIONS, UNLESS OTHERWISE NOTED WITHIN THE "STANDARD SPECIFICATIONS SECTIONS".
 29. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND TECHNICAL STANDARDS.
 30. THE CONTRACTOR REPRESENTATIVE OF THE PROJECT SHALL MAKE A FINAL INSPECTION OF THE PROJECT AFTER COMPLETION TO DETERMINE ACCEPTABILITY OF THE WORK AND FOR THE RELEASE OF PERFORMANCE BONDS IF REQUIRED. BEFORE THIS FINAL INSPECTION, THE CONTRACTOR SHALL MAKE A FINAL INSPECTION OF THE PROJECT AND SHALL CERTIFY IN WRITING TO THE CITY ENGINEER THAT THE WORK HAS BEEN COMPLETED ACCORDING TO THE CITY OF FRANKLIN STANDARD SPECIFICATIONS.
 31. LOCATING AND COORDINATION FOR THE RELOCATION OF EXISTING UTILITIES IS THE RESPONSIBILITY OF THE CONTRACTOR. TENNESSEE'S ONE-CALL AND THE CITY OF FRANKLIN'S ONE-CALL SERVICE SHALL BE USED TO LOCATE EXISTING UTILITIES. COORDINATION WITH LOCAL UTILITY OWNERS, THE CONTRACTOR SHALL AT ALL TIMES MAINTAIN THE NECESSARY CLEARANCE AND PROTECTION OF ALL EXISTING UTILITIES, AS CAUSED TO ANY UTILITIES.
 32. TEMPORARY STROPPING SHALL CONFORM WITH THE FOLLOWING REVISIONS FOR "ROAD AND DRIVEWAY" SECTION, PUBLISHED BY "DOT" THE LATEST EDITION EXCEPT AS HEREIN AMENDED, WHEN APPROVED. TEMPORARY STROPPING SHALL BE THE REQUIREMENT FOR ALL TEMPORARY STROPPING. TEMPORARY STROPPING SHALL BE USED TO PROTECT THE PUBLIC AND THE WORK AREA. TEMPORARY STROPPING SHALL BE USED TO PROTECT THE PUBLIC AND THE WORK AREA AND PERMANENT STROPPING CANNOT BE COMPLETED DUE TO WEATHER AND/OR OTHER REASONS.
 33. THERMOPLASTIC PAVEMENT MARKINGS SHOULD BE USED ON ALL PUBLIC AND PRIVATE CITY STREET PROJECTS. THERMOPLASTIC TRAFFIC STRIPING AND PAVEMENT MARKINGS SHALL BE USED ON ALL CITY STREET PROJECTS.
 34. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND TECHNICAL STANDARDS OF THE TENNESSEE DEPARTMENT OF TRANSPORTATION SPECIFICATIONS AND STANDARDS TO THE CITY OF FRANKLIN TRANSPORTATION & STREET TECHNICAL STANDARDS.

-11 LINKS
-7 NODES
CONNECTIVITY INDEX = 1.57

APPLICANT IS REQUESTING MODIFICATION OF STANDARDS FOR THE FOLLOWING

1. **SECTION 5.10.4 (1) (iii) - CONNECTIVITY INDEX REQUIREMENT**
 APPLICANT IS REQUESTING THAT THE MINIMUM CONNECTIVITY INDEX SCORE OF 1.65 CANNOT BE ACHIEVED DUE TO THE TOPOGRAPHIC CONDITIONS AND NATURAL FEATURES OF THE SITE.

5.975 ACRES±
260,278 SQFT.
PLAT BOOK 57 PAGE 130

- PROPOSED FIRE HYDRANT (TYP.)

LOT-3

5.960 ACRES±
259,609 SQFT.
PLAT BOOK 57 PAGE 130

FRANKLIN CREST P.U.D.
SUBDIVISION
LOT-3
PLAT BOOK 50,
PAGE 122, R.O.W.C., TN.
C.O.F. PROJECT #1683

Franklin T-2 Sutphen

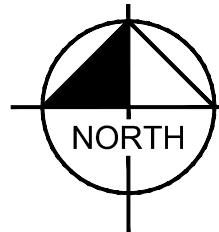
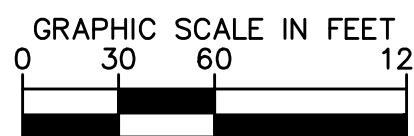
Width : 8.66 feet
Track : 8.00
Lock to Lock Time : 6.0
Steering Angle : 42.0

NOTE: MINIMUM 5 MPH DESIGN SPEED

-AT SITE PLAN SUBMITTAL, GRASS PAVERS WILL BE DELINEATED WHERE THE DESIGN FIRE APPARATUS IS NOT ABLE TO MAKE THE TURNING RADIUS OF THE ACCESSIBLE PATH ALONG THE SOUTHERN EDGE OF BUILDING C.

GRASS PAVERS AS-NEEDED

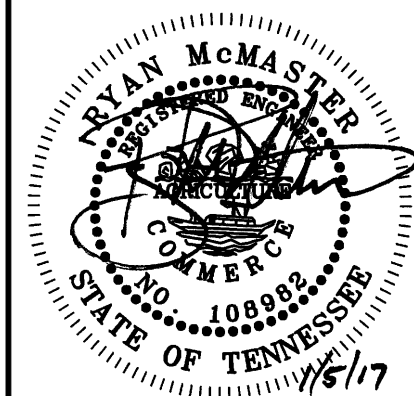
12' MULTI-USE PATH



**210 Twelfth Avenue South
Suite 202
Nashville, Tennessee 37203
P 615-250-8154 F 615-250-8155**

EDGE

APEX VILLAGE
PUD DEVELOPMENT PLAN
FRANKLIN, TENNESSEE

[illegible]

OVERALL ROW
ACCESS PLAN

SHEET NUMBER

C4.0

COF #6305



ELEVATION 1 BUILDING F
SCALE: 1" = 20'

BUILDING A

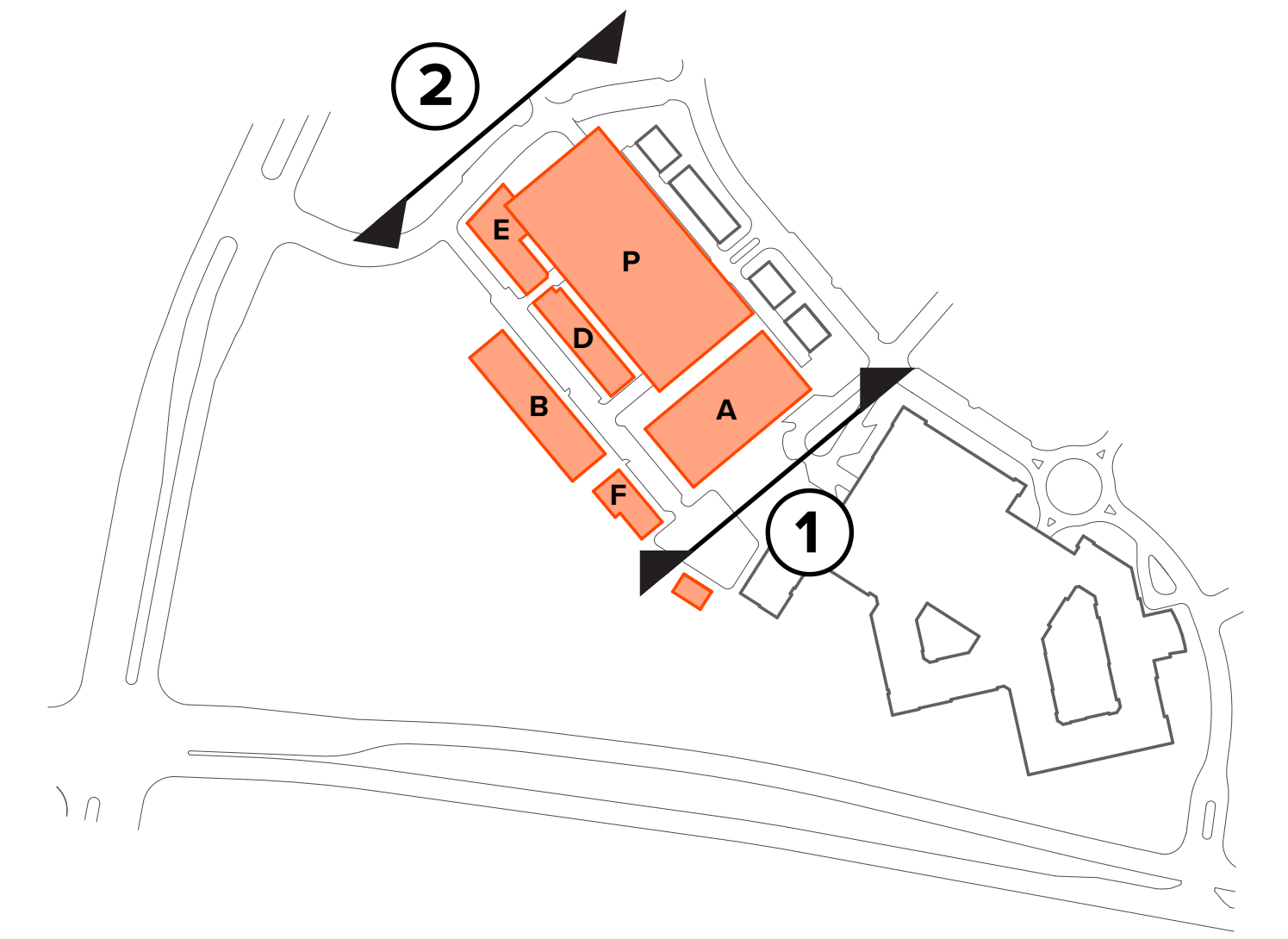


ELEVATION 2
SCALE: 1" = 20'

BUILDING P

BUILDING E

BUILDING B



BUILDING MATERIALS TO INCLUDE:
PRECAST CONCRETE, CONCRETE, NATURAL STONE
CAST STONE, MASONRY (BRICK AND CMU) CEMENTITIOUS PANELS
CURTAIN WALL AND STOREFRONT GLASS, STUCCO/ EIFS, WOOD

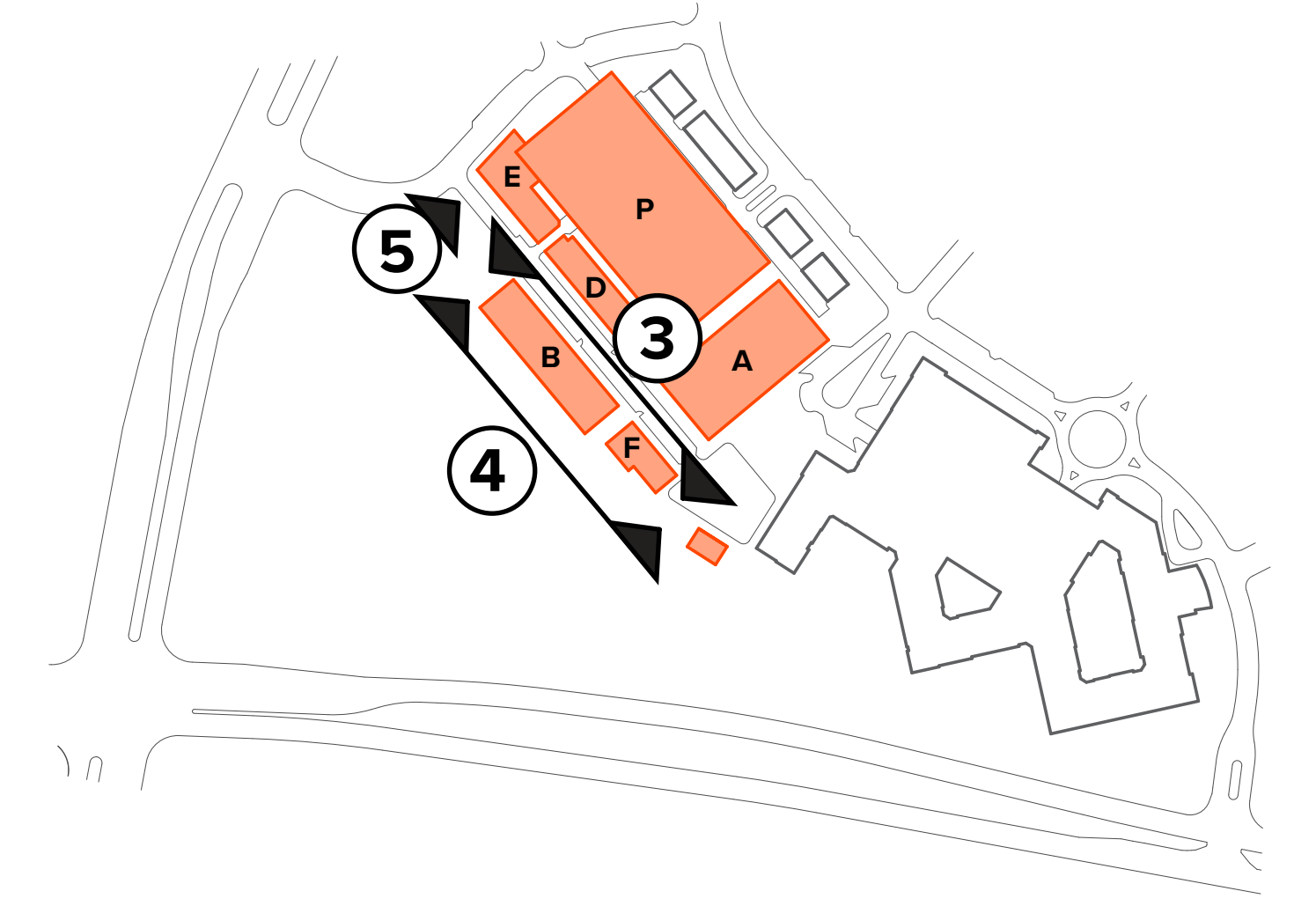
NOTE:
ELEVATIONS DEPICTED ARE SCHEMATIC
REPRESENTATIONS ONLY AND REPRESENT
DESIGN INTENT. DETAILED ELEVATIONS WITH
MATERIAL SELECTIONS SHALL BE SUBMITTED
AT SITE PLAN

OFFICE, RETAIL &
GARAGE ELEVATIONS
A1



ELEVATION 3 BUILDING F
SCALE: 1" = 20'

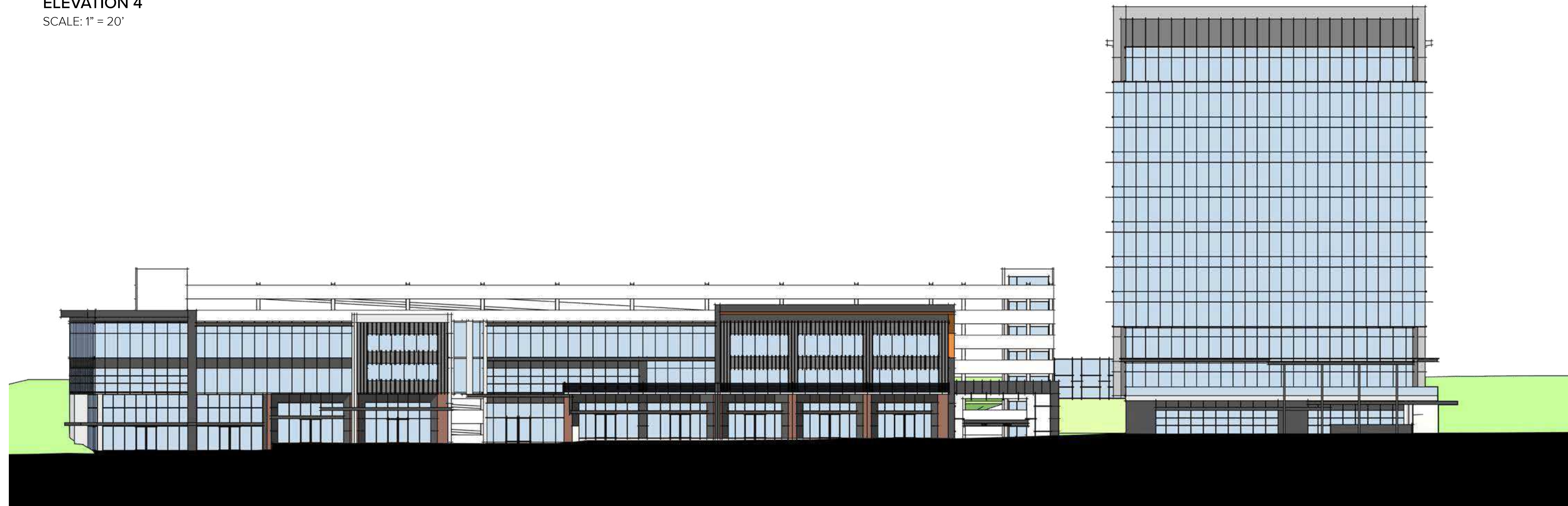
BUILDING B



ELEVATION 4
SCALE: 1" = 20'

BUILDING B

BUILDING F



ELEVATION 5
SCALE: 1" = 20'

BUILDING E

BUILDING D

BUILDING A

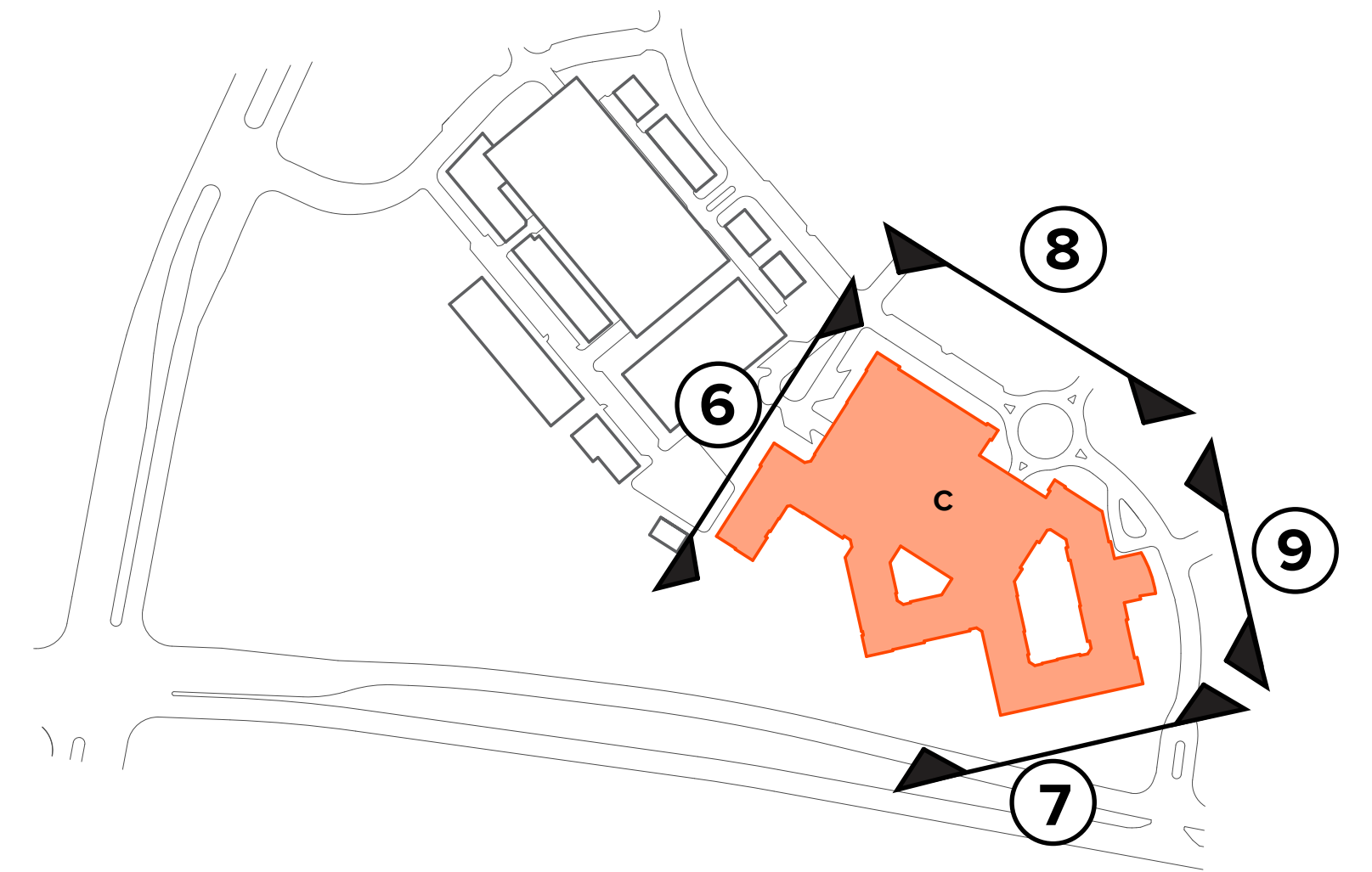
BUILDING MATERIALS TO INCLUDE:
PRECAST CONCRETE, CONCRETE, NATURAL STONE
CAST STONE, MASONRY (BRICK AND CMU) CEMENTITIOUS PANELS
CURTAIN WALL AND STOREFRONT GLASS, STUCCO/ EIFS, WOOD

NOTE:
ELEVATIONS DEPICTED ARE SCHEMATIC
REPRESENTATIONS ONLY AND REPRESENT
DESIGN INTENT. DETAILED ELEVATIONS WITH
MATERIAL SELECTIONS SHALL BE SUBMITTED
AT SITE PLAN

RETAIL, OFFICE &
HOTEL ELEVATIONS
A2



ELEVATION 6
SCALE: 1" = 20'



ELEVATION 7
SCALE: 1" = 20'



ELEVATION 8
SCALE: 1" = 20'



ELEVATION 9
SCALE: 1" = 20'

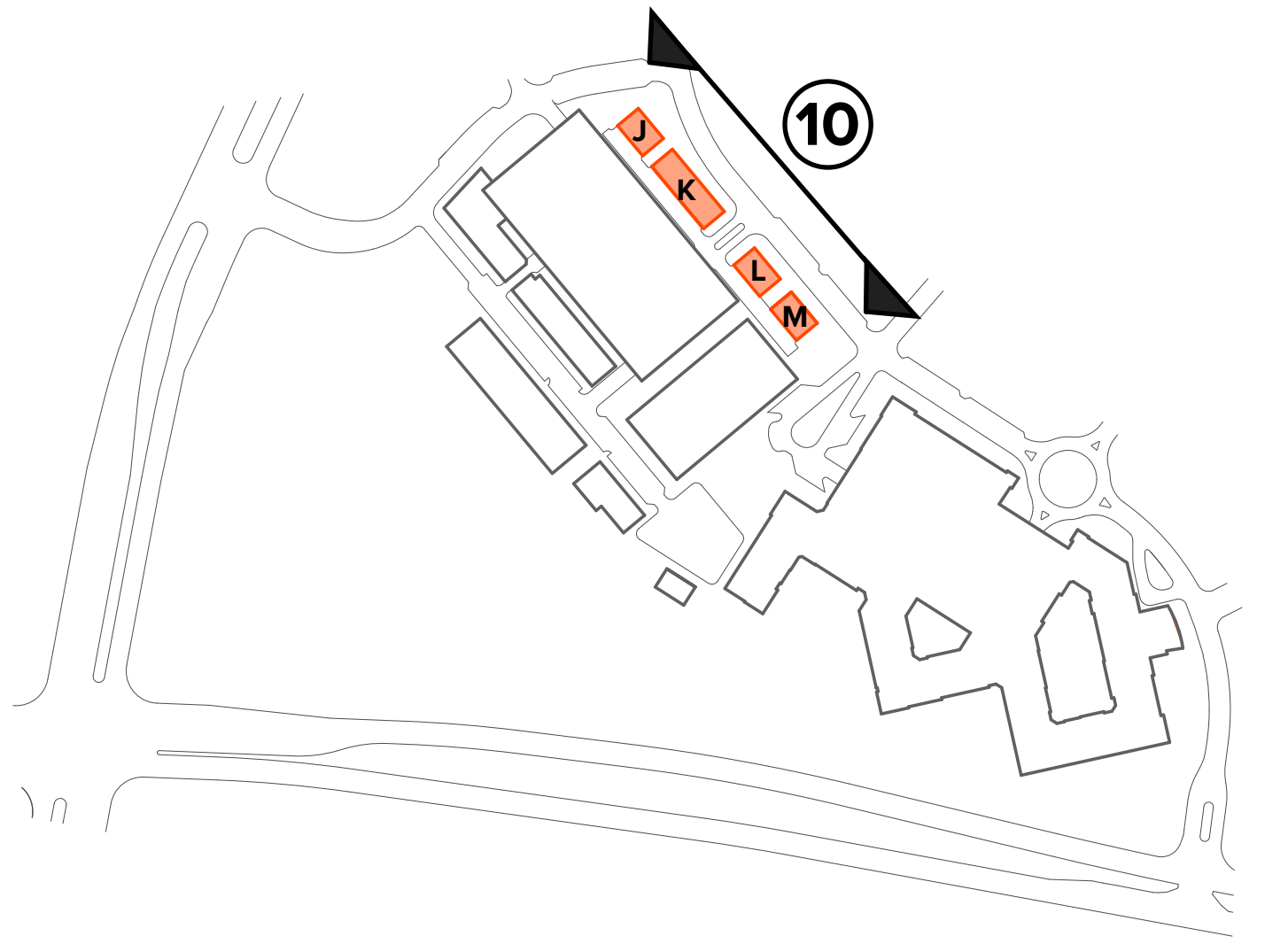
BUILDING MATERIALS TO INCLUDE:
STUCCO, METAL PANEL, CEMENTITIOUS LAP SIDING, CEMENTITIOUS PANELS

NOTE:
ELEVATIONS DEPICTED ARE SCHEMATIC
REPRESENTATIONS ONLY AND REPRESENT
DESIGN INTENT. DETAILED ELEVATIONS WITH
MATERIAL SELECTIONS SHALL BE SUBMITTED
AT SITE PLAN

**MUTI FAMILY
ELEVATIONS
A3**



ELEVATION 10
SCALE: 1" = 20'



BUILDING MATERIALS TO INCLUDE:
STUCCO, METAL PANEL, CEMENTITIOUS LAP SIDING, CEMENTITIOUS PANELS

NOTE:
ELEVATIONS DEPICTED ARE SCHEMATIC
REPRESENTATIONS ONLY AND REPRESENT
DESIGN INTENT. DETAILED ELEVATIONS WITH
MATERIAL SELECTIONS SHALL BE SUBMITTED
AT SITE PLAN

**TOWNHOME
ELEVATIONS
A4**

January 5, 2017

Ms. Emily Hunter
Franklin Planning & Sustainability Department
109 3rd Avenue South
Franklin, TN 37064

RE: Apex Village PUD Subdivision, Development Plan (Modification of Standards – Parkland) – COF #6305

Dear Ms. Hunter:

We are respectfully requesting a Modification of Standards for the City of Franklin Zoning Ordinance in regards to Section 5.5.4 Dedication of Public Land for Parks and Greenways / Blueways. We are requesting that the requirement for Park Land Dedication be waived in lieu of a privately held and maintained open space with an All Access Public Easement. (See attached exhibit) It should be noted that the area of open space meets the Park Land Dedication calculation requirement for the development as indicated on the attached plan.

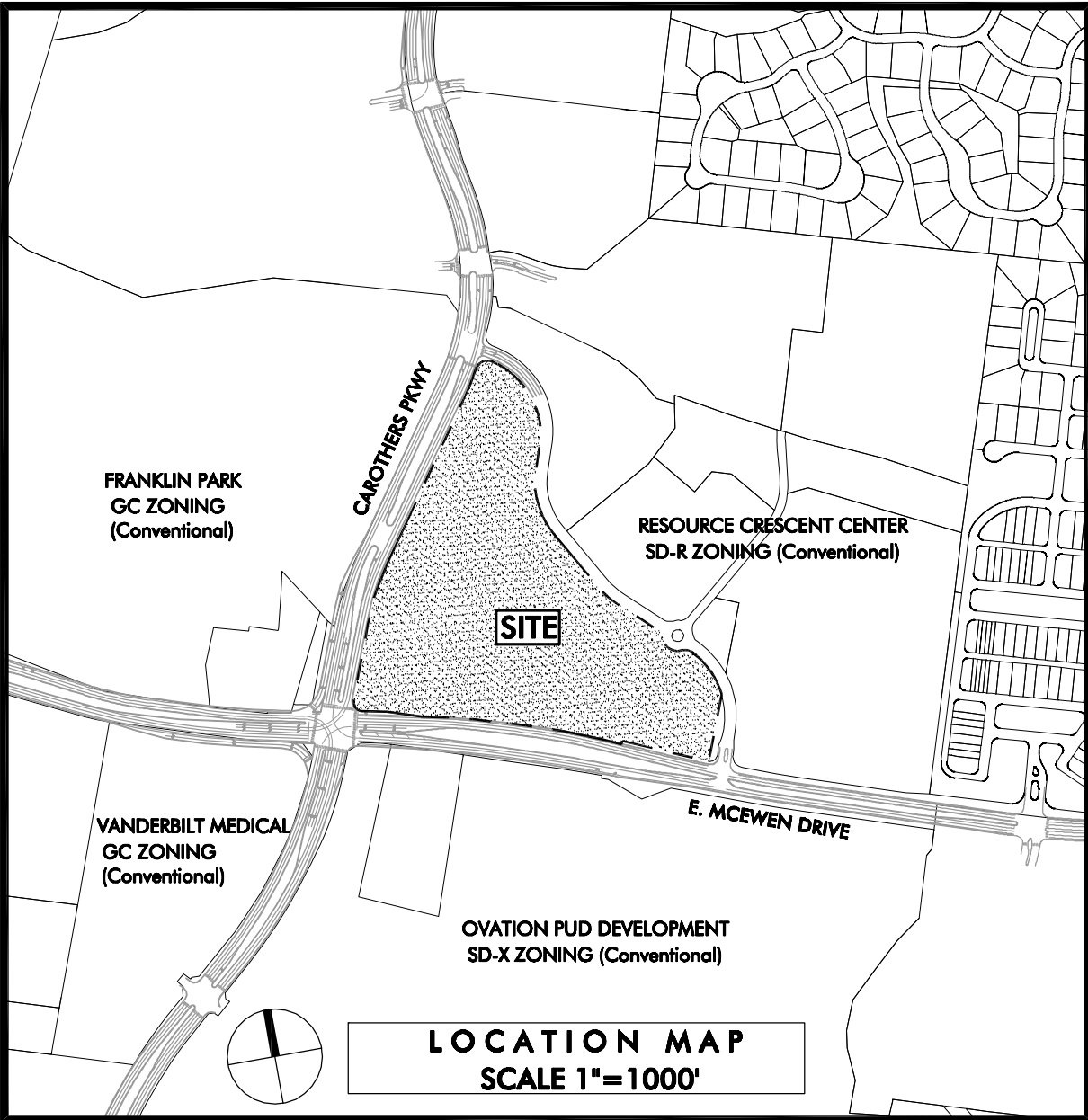
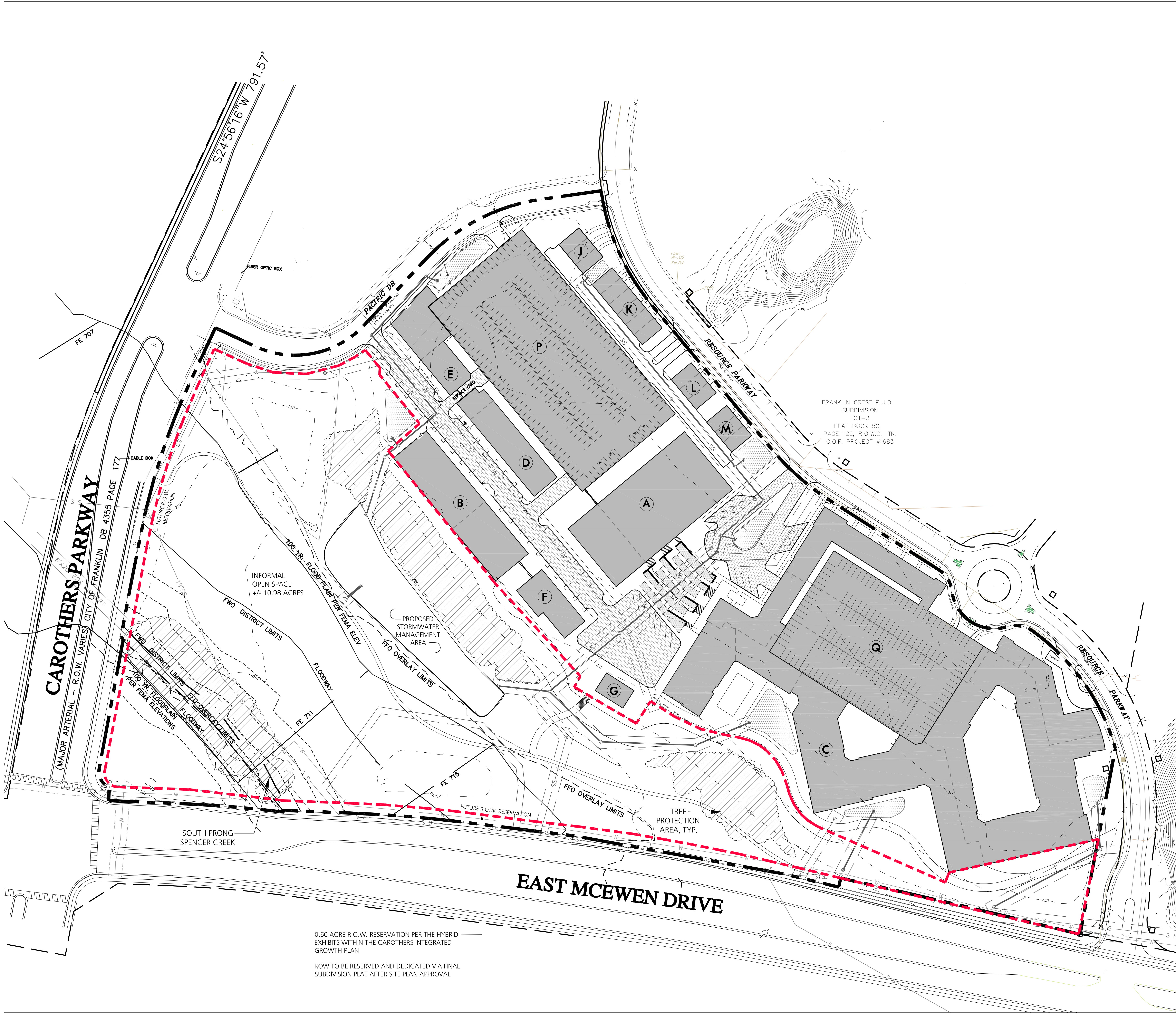
This area will be designated on the plat as subject to an All Access Public Easement and shall cause the recorded declaration of restrictive covenants and easements to include an express, permanent, non-exclusive easement in favor of the public for access to the area and an obligation on the part of the owner's association to maintain the area in a condition suitable for public access and enjoyment.

I thank you for your attention to this matter. If you should have any questions in regards to our request, please do not hesitate to contact me.

Sincerely,

A handwritten signature in black ink, appearing to read 'J. Haas', with a long horizontal line extending to the right.

John D. Haas, ASLA
Principal
EDGE Planning, Landscape Architecture & Urban Design



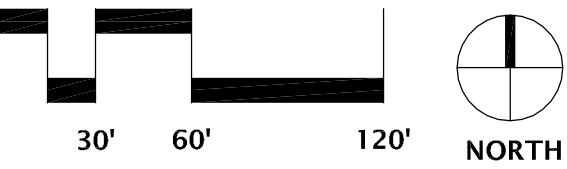
SITE DATA	
SUBDIVISION/DEVELOPMENT MAP & PARCEL NUMBER ADDRESS	APEX VILLAGE MAP 062, PARCELS 01417 & 01418 CAROTHERS PARKWAY
EXISTING ZONING	GC - GENERAL COMMERCIAL
CHARACTER AREA	MC EWEN
SPECIAL AREA	4
OTHER APPLICABLE OVERLAYS	FLOODWAY FRINGE OVERLAY (FFO) FLOODWAY OVERLAY DISTRICT (FWO) CONVENTIONAL
DEVELOPMENT STANDARD	
ACREAGE OF SITE	+/- 23.61 ACRES
SQUARE FOOTAGE OF SITE	+/- 1,028,538 SQ. FT.
RESIDENTIAL DENSITY	14.61 DWU/ACRE
COMMERCIAL SQUARE FOOTAGE	350,000
PROPOSED HOTEL KEYS	200
PROPOSED ZONING	SPECIFIC DEVELOPMENT VARIETY (SD-X) 14.61, 350,000, 200

REQUIRED PARKLAND DEDICATION	+/- 5.23 ACRES
PROVIDED PARKLAND	+/- 5.24 ACRES
RESIDENTIAL DENSITY	14.61 DUA
NET DENSITY (MINUS ROW)	14.90 DUA
NET DENSITY (MINUS ROW & OVERLAY CONSTRAINTS)	18.90 DUA
PROPOSED NUMBER OF RESIDENTIAL UNITS BY USE TYPE	
TOWNHOMES	15 UNITS
*MULTI-FAMILY UNITS	330 UNITS
TOTAL UNITS	345 UNITS

PARKLAND DEDICATION	
REQUIRED PARKLAND	+/- 5.23 AC
PARKLAND AREA SHOWN	+/- 10.98 AC
AREA WITHIN FFO DISTRICT OR SLOPES ABOVE 14%	+/- 8.36 AC
USEABLE PARKLAND	+/- 2.62 AC
(50% OF PARKLAND DEDICATION CAN BE LOCATED WITHIN FFO DISTRICT & SLOPES ABOVE 14%)	
TOTAL PARKLAND DEDICATION	+/- 5.24 AC (2.62 X 2)
*NOTE: IF PARKLAND DEDICATION AREA CANNOT BE MET TO ACCOMMODATE 345 RESIDENTIAL UNITS, THE ADDITIONAL REQUIRED AREA WILL BE PAID "IN-LIEU OF"	

NOTE:
APPLICANT WILL CAUSE THE +/- 10.98 ACRE PARCEL DEPICTED AS "INFORMAL OPEN SPACE" AS "PARKLAND DEDICATION" TO BE DESIGNATED ON THE PLAT AS SUBJECT TO A PUBLIC ACCESS EASEMENT AND SHALL CAUSE THE RECORDED DECLARATION OF RESTRICTIVE COVENANTS AND EASEMENTS TO INCLUDE AN EXPRESS, PERMANENT, NON-EXCLUSIVE EASEMENT IN FAVOR OF THE PUBLIC FOR ACCESS TO THE AREA AND AN OBLIGATION ON THE PART OF THE OWNER'S ASSOCIATION TO MAINTAIN THE AREA IN A CONDITION SUITABLE FOR PUBLIC ACCESS AND ENJOYMENT.

- LEGEND
- INFORMAL OPEN SPACE/ ALL ACCESS PUBLIC EASEMENT AREA
 - TREE PROTECTION AREA
 - LIMITS OF DISTURBANCE



ENGINEERING PROVIDED BY:
RYAN MCMASTER
KIMLEY-HORN
214 OCEANSIDE DRIVE
NASHVILLE, TN, 37204
(615) 564-2876
ryan.mcmaster@kimley-horn.com

APPLICANT:
JOHN HAAS
EDGE
210 12TH AVE. SOUTH
SUITE 202
NASHVILLE TN, 37203
(615) 250-8154
jhaas@edgela.com

DEVELOPER:
KHRIS PASCARELLA
CRESCENT COMMUNITIES
205 POWELL AVENUE
BRENTWOOD, TN 37027
(615) 312-8242
kpascarella@pearlstreetpartners.com

CONSULTANTS



PROJECT TITLE

**APEX VILLAGE
PUD DEVELOPMENT PLAN**
C.O.F. #6305
FRANKLIN, TN

CLIENT

**CRESCENT
COMMUNITIES
LLC**

PROJECT NO. COF #6305
Date 12/12/16
Revisions

1. PER CITY COMMENTS 01.05.17

Sheet Title

**MODIFICATION OF
STANDARDS**

Sheet Number

M1.00

Drawing name: K:\NSH_LDEV\018253064 - Resource Pkwy\4-CADD\3-PlanSheets\Development Plan\C4.0-ROWandAccess-018253064.dwg Layout1 Jan 05, 2017 10:03am by: cj.murrell

THIS SITE IS LOCATED ALONG E McEWEN DRIVE, A PART OF THE CITY OF FRANKLIN MAJOR THOROUGHFARE PROJECT #2. THIS EXISTING ROAD WAS COMPLETED PER THE RECOMMENDATIONS IN THE MAJOR THOROUGHFARE PLAN.

THE FOLLOWING ITEMS OUTLINE RECOMMENDATIONS RELATED TO THE TRAFFIC IMPACT STUDY, PERFORMED BY FISCHBACH TRANSPORTATION, AND ADDITIONAL STAFF COMMENTS. THE FOLLOWING ITEMS ARE THE RECOMMENDED IMPROVEMENTS RELATED TO THIS DEVELOPMENT:

- 1. IMPROVEMENTS TO THE INTERSECTION OF E. MEWEN DRIVE AND RESOURCE PARKWAY: AT THIS TIME, THIS IMPROVEMENT IS REQUIRED PER THE DIVISION DEVELOPMENT PLAN.
- 2. A RIGHT TURN LANE SHOULD BE ADDED AT THE INTERSECTION OF CAROTHERS PARKWAY AND RESOURCE PARKWAY.
- 3. THE RIGHT TURN LANE AT THE SOUTHBEND LEFT-HAND TURN LANE FROM CAROTHERS PARKWAY TO PACIFIC DRIVE SHALL BE EXTENDED TO 150 FEET TO ACCOMMODATE THE TURNING MOVEMENT OF TRAFFIC.
- 4. THE RIGHT TURN LANE AT THE INTERSECTION OF E. MEWEN DRIVE AND E. MEWEN DRIVE PER THE HYBRID EXHIBIT OF THE CAROTHERS INTEGRATED GROWTH PLAN, ROW IS TO BE RESERVED AND DEDICATED VIA FINAL PLANS TO ACCOMMODATE THE TURNING MOVEMENT OF TRAFFIC.
- 5. THE RIGHT TURN LANE AT THE INTERSECTION OF E. MEWEN DRIVE AND PACIFIC DRIVE SHALL INCLUDE ONE THROUGH LANE IN EACH DIRECTION AND ONE TURN LANE TO SERVE THE CENTER TURN LANE FROM CAROTHERS PARKWAY TO RESOURCE PARKWAY.
- 6. RESOURCE PARKWAY SHALL INCLUDE STORAGE BAYS AND LEFT-HAND TURN LINES TO ACCOMMODATE THE TURNING MOVEMENT OF TRAFFIC.
- 7. THE ACCESS POINTS TO DECK "P" VIA PACIFIC DRIVE AND RESOURCE PARKWAY SHALL BE ENTRY LANE AND TWO EXIT LANES, STRIPED AS SEPARATE LEFT AND RIGHT TURN.

3. PRIOR TO BEGINNING ANY CONSTRUCTION, THE DEVELOPER AND/OR CONTRACTOR, SHALL OBTAIN ALL NECESSARY PERMITS AS REQUIRED BY LAW. SUCH PERMITS MAY BE OBTAINED FROM THE CITY OF FRANKLIN, THE TENNESSEE DEPARTMENT OF TRANSPORTATION, WILLIAMSON COUNTY AND OTHER CITY OF FRANKLIN AGENCIES.

4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING AN APPROVED TRAFFIC CONTROL PLAN WHICH COMPLIES WITH THE MUTCD. NO OFF-SITE EXCAVATION MAY BE UNDERTAKEN IN ANY STREET, ROAD, ALLEY OR RIGHT-OF-WAY OF ANY CITY OF FRANKLIN, WILLIAMSON COUNTY OR THE STATE OF TENNESSEE WITHOUT THE APPROVAL OF FRANKLIN BY ANY ENTITY UNLESS 72-HOUR NOTICE HAS BEEN GIVEN TO THE CITY OF FRANKLIN AND THE CITY OF FRANKLIN HAS BEEN ADVISED OF THE PROJECT AND THE APPROVED TRAFFIC CONTROL PLAN ONSITE DURING CONSTRUCTION.

5. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS WITH DESIGNATIONS AND REQUIREMENTS WITHIN THE REFERENCED "DOT" STANDARD SPECIFICATIONS SECTIONS, UNLESS OTHERWISE NOTED WITHIN THE "STANDARD SPECIFICATIONS" AND/OR THE "TENTH EDITION OF THE MUTCD." THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND TECHNICAL STANDARDS.

6. THE CONTRACTOR REPRESENTATIVE OF THE PROJECT SHALL MAKE A FINAL INSPECTION OF THE PROJECT AFTER COMPLETION TO DETERMINE ACCEPTABILITY OF THE WORK AND FOR THE RELEASE OF PROTECTIVE BONDS IF REQUIRED. BEFORE THIS FINAL INSPECTION, THE CONTRACTOR SHALL MAKE A FINAL INSPECTION OF THE PROJECT AND CERTIFY IN WRITING TO THE CITY ENGINEER THAT THE WORK HAS BEEN COMPLETED ACCORDING TO THE PROJECT SPECIFICATIONS AND THE CITY OF FRANKLIN'S REQUIREMENTS.

7. LOCATING AND COORDINATION FOR THE RELOCATION OF EXISTING UTILITIES IS THE RESPONSIBILITY OF THE CONTRACTOR. TENNESSEE'S ONE-CALL AND THE CITY OF FRANKLIN'S ONE-CALL SERVICE ARE REQUIRED FOR ALL UTILITIES. THE CONTRACTOR SHALL COORDINATION WITH LOCAL UTILITY OWNERS. THE CONTRACTOR SHALL AT ALL TIMES MAINTAIN ACCESS TO ALL UTILITIES AND SHALL BE RESPONSIBLE FOR THE PROTECTION OF ALL CAUSED TO ANY UTILITY LINES.

8. TEMPORARY STROPPING SHALL CONFORM WITH THE LATEST EDITION FOR ROAD AND HIGHWAY CONSTRUCTION, PUBLISHED BY TDOT, THE TENSSESEE DEPARTMENT OF TRANSPORTATION. TEMPORARY STROPPING SHALL BE USED FOR ALL RECONSTRUCTION PROJECTS. TEMPORARY STROPPING SHALL BE USED EXCEPT AS HEREIN AMENDED, WHEN APPROVED. TEMPORARY STROPPING SHALL BE USED FOR ALL RECONSTRUCTION PROJECTS. TEMPORARY STROPPING SHALL BE USED FOR ALL RECONSTRUCTION PROJECTS AND PERMANENT STRIPPING CANNOT BE COMPLETED DUE TO WEATHER AND/OR OTHER CONDITIONS.

9. THERMOPLASTIC PAVEMENT MARKINGS SHOULD BE USED ON ALL PUBLIC AND PRIVATE CITY STREET PROJECTS. THERMOPLASTIC TRAFFIC STRIPING AND PAVEMENT MARKINGS SHALL BE USED FOR ALL RECONSTRUCTION PROJECTS. THERMOPLASTIC MARKINGS OF THE TENNESSEE DEPARTMENT OF TRANSPORTATION SPECIFICATIONS SHALL BE USED FOR ALL RECONSTRUCTION PROJECTS. THERMOPLASTIC MARKINGS SHALL BE USED FOR ALL RECONSTRUCTION PROJECTS TO THE CITY OF FRANKLIN TRANSPORTATION & STREET TECHNICAL STANDARDS.

-11 LINKS
-7 NODES
CONNECTIVITY INDEX = 1.57

APPLICANT IS REQUESTING MODIFICATION OF STANDARDS FOR THE FOLLOWING

1. **SECTION 5.10.4 (1) (iii) - CONNECTIVITY INDEX REQUIREMENT**
 APPLICANT IS REQUESTING THAT THE MINIMUM CONNECTIVITY INDEX SCORE OF 1.65 CANNOT BE ACHIEVED DUE TO THE TOPOGRAPHIC CONDITIONS AND NATURAL FEATURES OF THE SITE.

5.975 ACRES±
260,278 SQFT.
PLAT BOOK 57 PAGE 130

— PROPOSED FIRE HYDRANT (TYP.)

LOT-3

5.960 ACRES±
259,609 SQFT.
PLAT BOOK 57 PAGE 130

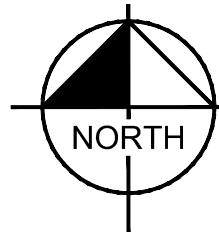
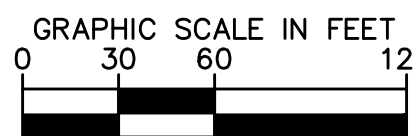
FRANKLIN CREST P.U.D.
SUBDIVISION
LOT-3
PLAT BOOK 50,
PAGE 122, R.O.W.C., TN.
C.O.F. PROJECT #1683

Width : 8.66 feet
Track : 8.00
Lock to Lock Time : 6.0
Steering Angle : 42.0

NOTE: MINIMUM 5 MPH DESIGN SPEED

-AT SITE PLAN SUBMITTAL, GRASS PAVERS WILL BE DELINEATED WHERE THE DESIGN FIRE APPARATUS IS NOT ABLE TO MAKE THE TURNING RADIUS OF THE ACCESSIBLE PATH ALONG THE SOUTHERN EDGE OF BUILDING C.

Diagram illustrating a 12' Multi-Use Path. The path is shown as a horizontal line with arrows at both ends. Above the path, the text "GRASS PAVERS AS-NEEDED" is written, with lines pointing to the ends of the path. Below the path, the text "12' MULTI-USE PATH" is written.

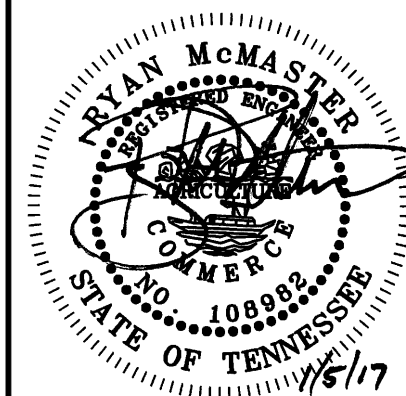


APEX VILLAGE
PUD DEVELOPMENT PLAN
FRANKLIN, TENNESSEE

**210 Twelfth Avenue South
Suite 202
Nashville, Tennessee 37203
P 615-250-8154 F 615-250-8155**

EDGE

Kimley»»Horn

[illegible]OVERALL ROW
ACCESS PLA

SHEET NUMBER

C40

005 46005

ORDINANCE 2016-53

TO BE ENTITLED: "AN ORDINANCE TO AMEND CHAPTER 3 OF THE ZONING ORDINANCE OF THE CITY OF FRANKLIN, TENNESSEE, TO AMEND THE REGULATIONS FOR COMMERCIAL USES FOR BED AND BREAKFAST ESTABLISHMENTS IN ORDER TO THE INCREASE THE MAXIMUM NUMBER OF PERMITTED GUESTS FROM SIX TO EIGHT, AND INCREASE THE MAXIMUM NUMBER OF SLEEPING ROOMS AVAILABLE FOR TRANSIENT OCCUPANCY FROM THREE TO FOUR."

WHEREAS, the City of Franklin, Tennessee, encourages unique, innovative, and sustainable neighborhoods; and

WHEREAS, the City encourages tourism and has become a major destination for tourists; and

WHEREAS, the City of Franklin, Tennessee encourages the development of unique, transient lodging opportunities to enhance the experience of visitors; and

WHEREAS, the City of Franklin, Tennessee encourages entrepreneurs and small business ownership; and

WHEREAS, the City of Franklin wishes to amend the Franklin Zoning Ordinance to revise the maximum number of rooms and occupancy regulations for bed and breakfast establishments to be consistent with the requirements for short-term vacation rentals; and

WHEREAS, this text amendment is in the best interest of the citizens of Franklin.

NOW, THEREFORE, BE IT ORDAINED BY THE BOARD OF MAYOR AND ALDERMEN OF FRANKLIN, TENNESSEE, AS FOLLOWS:

SECTION I. That Chapter 3, Section 3.2, Subsection 3.2.7 (3) (d) of the Franklin Zoning Ordinance is hereby amended to delete the following text noted with a ~~striketrough~~; to add the following text noted in **bold**, and is approved to read as follows:

3.2.7 Regulations for Commercial Uses

(3) Bed and Breakfast

Bed and breakfast uses shall be established in accordance with the following standards, after notification to adjacent property owners within 500 feet pursuant to Subsection 2.3.8, Public Notification, and a neighborhood meeting held pursuant to Subsection 2.4.2(6)(c), Neighborhood Meeting, (regardless of whether the use is proposed as part of a PUD).

- (d) A maximum of ~~four~~ **three** sleeping rooms may be available for transient occupancy by up to ~~eight~~ **six** guests, and in no event shall a sleeping room be occupied by a guest for more than seven consecutive days.

SECTION II. BE IT FINALLY ORDAINED by the Board of Mayor and Aldermen of the City of Franklin, Tennessee that this Ordinance shall take effect from and after its passage on third and final reading, the health, safety, and welfare of the citizens requiring it.

ATTEST:

CITY OF FRANKLIN, TENNESSEE:

BY: _____
Eric S. Stuckey
City Administrator

BY: _____
Dr. Ken Moore
Mayor

Approved as to Form:

Shauna R. Billingsley, City Attorney

PLANNING COMMISSION RECOMMENDED:

PASSED FIRST READING:

PUBLIC HEARING HELD:

PASSED SECOND READING:

PASSED THIRD READING:

**KNOLL TOP LANE FUNDING AGREEMENT
COF CONTRACT NO 2017-0010**

This Agreement is between THE CITY OF FRANKLIN, TENNESSEE, ("City") and Columbia State Community College, and is entered into on this the _____ day of _____, 2017.

WHEREAS, Knoll Top Lane is a proposed public right-of-way adjacent to the new Columbia State Community College Campus and extends from Liberty Pike north to the Ovation Development); and

WHEREAS, the Knoll Top Lane improvements generally include three travel lanes, curb and gutter, drainage improvements, street lighting, landscaping, a five-foot sidewalk along the western side of the road, and a ten-foot multiuse trail along the eastern side of the roadway; and

WHEREAS, the Tennessee Board of Regents; SS Knoll Top, LLC; Columbia State Community College; SouthStar Real Estate Company; and the City desire to partner in the design and construction of Knoll Top Lane; and

WHEREAS, the estimated construction cost of the project is \$1,200,000.00; and

WHEREAS, The Board of Mayor and Aldermen have approved a budget amendment for the City to participate in specific improvements and expenses associated with the ten-foot multiuse trail along the eastern side of the roadway, LED street lights, and the installation of street trees on both sides of Knoll Top Lane between Liberty Pike and the Ovation Development at a total cost not to exceed \$433,000.00 and payable to Columbia State Community College.

NOW THEREFORE, the City and Columbia State Community College, their successors and assigns, do hereby agree as follows:

1. The foregoing recitals are incorporated into this Agreement and made a part thereof.
2. The Tennessee Board of Regents agrees to partner with SS Knoll Top to design, obtain permits, bid, and construct Knoll Top Lane from Liberty Pike to the Ovation Development.
3. The Tennessee Board of Regents agrees to be responsible for the acquisition of all right-of-way and easements and obtaining/complying with all necessary permits to complete the project.
4. The City of Franklin shall be responsible for reviewing and approving the plans and final inspections associated with the project. The City shall not be held liable or responsible for permit compliance associated with the project.
5. Following completion of the project the City shall reimburse Columbia State Community College an amount not to exceed \$433,000.00 for the construction of the ten-foot multiuse trail along the eastern side of the roadway, LED street lights, and the installation of street trees on both sides of Knoll Top Lane between Liberty Pike and the Ovation Development.

The Final cost shall be reduced based on the actual project cost. The City shall reimburse the Columbia State Community College within 45 days of reviewing and approving the invoices.

6. The parties agree that the terms and conditions contained herein shall be binding on and shall inure to their representatives, successors and assigns and that there are no understandings or agreements between them except as contained in this instrument.
7. Applicable Law/Choice of Forum and Venue. This Agreement is made under and will be construed in accordance with the laws of the State of Tennessee without giving effect to that state's choice of law rules. The parties' choice for forum and venue shall be exclusively in the courts of Williamson County, Tennessee.
8. Entire Agreement. This Agreement together with its exhibit(s) constitutes the entire agreement between the parties and may not be modified except as by a written agreement by both parties.

Approved by the Franklin Board of Mayor and Aldermen on _____, 2017.

WITNESS our hands on the dates as indicated.

Columbia State Community College

By: _____

Print Name: _____

Title: _____

Date: _____

STATE OF TENNESSEE)
)
COUNTY OF _____)

Notary Public
My Commission Expires:_____

Approved as to form by:

Shauna R. Billingsley, City Attorney

OWNER: 3665
Mallory JV LLC

TAX MAP: 62
PARCEL: 21.00

This Instrument Was Prepared By:

City of Franklin, Tennessee
P.O. Box 305
Franklin, TN 37065

**DEVELOPMENT AGREEMENT FOR MALLORY GREEN DEVELOPMENT ON THE
CORNER OF MALLORY LANE AND SPRING CREEK DRIVE**

COF CONTRACT NO. 2016-0335

This Development Agreement ("Agreement") is made as of January ____, 2017, by and between 3665 Mallory JV LLC, a Delaware limited liability company ("Owner") and the City of Franklin, Tennessee (the "City of Franklin"), collectively referred to herein as "Parties" or individually, as a "Party".

RECITALS:

Whereas, Owner owns real property within the legal limits of the City of Franklin, Williamson County, Tennessee (the "Property"), which real property is more particularly described on Exhibit A attached hereto and incorporated herein by this reference and is shown on the Plan entitled Ranco Farms Subdivision, Final Plat, Revision 3 (Resubdivision of Lot 2), of record at Instrument No. _____, Register's Office for Williamson County, Tennessee (the "Plat"); and

Whereas, the City of Franklin has approved the construction of an office building on a portion of the Property referred to as Lot 2 on the Plat (the "Approved Office Building"), a hotel on a portion of the Property referred to as Lot 4 on the Plat ("Approved Hotel A"), and a hotel ("Approved Hotel B") on a portion of the Property referred to as Lot 4 on the Plat (which the parties contemplate will be modified to Lot 5 in the future); and

Whereas, Owner may seek approval in the future for the construction of additional improvements on Lot 2 (which Lot 2 may be sub-divided in such an event) (the "Additional Improvements"); and

Whereas, Owner and the City of Franklin desire to agree on certain obligations of the owner of Lot 2 that will be required to be completed in the event that the Additional Improvements are approved and constructed; and

Whereas, Owner and the City of Franklin desire to enter into this Agreement to reflect their agreement related to the foregoing matters.

AGREEMENT:

NOW, THEREFORE, in consideration of the covenants and mutual obligations herein contained and other good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, the Parties intending to be legally bound hereby agree as follows:

1. **Incorporation of Recitals.** The above recitals are incorporated as if restated fully herein.

2. **Jordan Road Connection.** In the event that the City of Franklin grants approval for Additional Improvements, Owner, at its expense, shall be required to complete, unless otherwise waived by the City of Franklin and subject to the ability of Owner to obtain a permit to cross South Prong Spencer Creek, the Creek Improvements. The "Creek Improvements" shall mean the construction of an access road connecting Lot 2 to Jordan Road near the northwest corner of Lot 2, including the crossing of South Prong Spencer Creek, at a precise location to be mutually determined by the City of Franklin and the Owner. The Creek Improvements shall be completed prior to any occupancy permit being issued for the Additional Improvements and shall be completed consistent with all applicable laws and regulations. For purposes of this Agreement, the construction of the Approved Office Building, Approved Hotel A and Approved Hotel B and related improvements on Lot 2, Lot 4, and Lot 5 shall not be deemed to be Additional Improvements. This agreement shall be recorded with the property at the Williamson County Register of Deeds Office.

3. **Force Majeure.** The Parties shall be excused from performing any obligation or undertaking provided in this Agreement, in the event, but only so long as, the performance of any such obligation or undertaking is prevented, delayed or hindered by act of God, fire, earthquake, floods, explosion, actions of the elements, war, invasion, insurrection, riot, mob violence, sabotage, inability to procure or widespread general shortage of labor, equipment, facilities, materials or supplies, failure of transportation, strikes, lockouts, action of labor unions, laws hereafter enacted, orders of governmental or civil or military or naval authorities, government action or inaction where action is required, court orders or any other cause, whether similar or dissimilar to the foregoing, not within the respective control of the applicable Party (other than lack of or inability to procure monies to fulfill its commitments and obligations under this Agreement).

4. **Governing Law; Attorneys' Fees.** The Parties agree that the sole proper venue for the determination of any litigation commenced by either Party on any basis shall be in a court of competent jurisdiction which is located in Williamson County, Tennessee, and the Parties hereby expressly declare that any other venue shall be improper.

5. **Miscellaneous Provisions.**

a. **Notices.** All demands, requests or other notices to be delivered pursuant to this Agreement shall be in writing and shall be (i) personally delivered, (ii) transmitted by postage pre-paid first class certified United States mail, (iii) transmitted by pre-paid, overnight delivery or (iv) transmitted by facsimile transmission. Any notice to be given or document to be delivered under this Agreement shall be effective upon (1) the date of receipt if delivered personally, (2) two (2) business days after the date of posting if transmitted by mail, or (3) the business day after the date of transmission if by overnight delivery. Any Party may designate a different address by notice to the other Parties. Actual delivery of a notice shall occur when the notice is delivered to the address of the Party, and not to any named person. Such addresses are as follows:

Owner:	3665 Mallory JV LLC c/o New York Life Real Estate Investors 51 Madison Avenue New York, NY 10010 Attn: Daniel W. Davitt, Director Email: ddavitt@nylim.com
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with a copy to: New York Life Real Estate Investors
51 Madison Avenue, Suite 906
New York, NY 10010
Attn: Kevin M. Smith, Managing Director
Email: kevin_smith@nylim.com

with a copy to: New York Life Insurance Company
51 Madison Avenue, Suite 1016
New York, NY 10010
Attn: David Chan, Associate General Counsel
Email: david_chan@nylim.com

with copy to: Al. Neyer Company, LLC
Attn: James T. Neyer
302 West 3rd Street, Suite 800
Cincinnati, OH 45202
Phone: (513) 607-1810
FAX: (513) 271-1350
E-Mail: jneyer@neyer.com

with copy to: Mark Carver, Esq.
Sherrard Roe Voigt & Harbison, PLC
150 Third Avenue South, Suite 1100
Nashville, TN 37201
Phone: (615) 742-4558
FAX: (615) 742-4539
E-Mail: mcarver@srvhlaw.com

City of Franklin: City of Franklin
Attn: Mayor Ken Moore
109 3rd Avenue South
Franklin, TN 37064
Phone: (615) 791-3217
FAX: (615) 790-9863
E-Mail: ken.moore@franklintn.gov

b. **Waivers.** Failure of any Party at any time to require performance of any provision of this Agreement shall not subsequently limit the Party's right to enforce the provision. Any waiver of any breach of any provision shall not be a waiver of any succeeding breach of the provision or a waiver of the provision itself or any other provision.

c. **Enforceability of Terms.** If any provision of this Agreement is held invalid or unenforceable, the remainder of this Agreement shall not be affected and shall be enforced to the fullest extent permitted by law.

d. **Entire Agreement.** This Agreement contains the entire agreement between the parties concerning the subject matter of the Agreement and incorporates and supersedes all prior understandings and agreements, both written and oral.

SIGNATURE PAGE OF DEVELOPMENT AGREEMENT.

IN WITNESS WHEREOF, each of the undersigned executed this Agreement as of the day and year first above written.

CITY OF FRANKLIN:

City of Franklin, Tennessee

By: _____
Name: _____
Title: _____

OWNER:

3665 Mallory JV LLC,
a Delaware limited liability company

By: REEP-OFC Mallory TN LLC,
a Delaware limited liability company,
its Managing Member

By: Kevin Smith
Name: KEVIN M SMITH
Title: VICE PRESIDENT

EXHIBIT A

DESCRIPTION OF PROPERTY

Land in Franklin, Williamson County, Tennessee, being more particularly described as follows:

Lot 2 as shown on the Plan entitled Ranco Farms Subdivision, Final Plat, Revision 3 (Resubdivision of Lot 2), of record at Instrument Number _____ in the Register's Office for Williamson County, Tennessee.

Being the same property conveyed to 3665 Mallory JV LLC, a Delaware limited liability company by warranty deed of record at Instrument Number _____ in the Register's Office for Williamson County, Tennessee.

AIA® Document G702™ - 1992

Application and Certificate for Payment

TO OWNER: City of Franklin, Tennessee
109 Third Ave. South
Franklin, Tennessee 37065

PROJECT: COF Fire Station No. 8-Westhaven
200 Front Street
Franklin, Tennessee 37064
Contract # 2014-0032

APPLICATION NO: EIGHTEEN (REVISED)

Distribution to:
OWNER ☒

PERIOD TO: September 23, 2016

ARCHITECT ☒

FROM CONTRACTOR:

Southeast Contractors, Inc.
354 Cool Springs Blvd., Ste 104
Franklin, Tennessee 37067

VIA ARCHITECT: Renaissance Group
9700 Village Circle, Ste 100
Lakeland, Tennessee 38002
Project No. 13026

CONTRACT FOR: COF Fire Station No. 8

CONTRACT DATE: October 07, 2014

CONTRACTOR ☐

FIELD ☐

PROJECT NOS: 2014-0032

OTHER ☐

CONTRACTOR'S APPLICATION FOR PAYMENT

Application is made for payment, as shown below, in connection with the Contract.
Continuation Sheet, AIA Document G703, is attached.

1. ORIGINAL CONTRACT SUM.....\$3,309,526.00
2. Net change by Change Orders.....\$25,298.50
3. CONTRACT SUM TO DATE (Line 1 +/- 2).....\$3,334,824.50
4. TOTAL COMPLETED & STORED TO DATE (Column G on G703).....\$3,334,824.50
5. RETAINAGE:
 - a. 5 % of Completed Work
(Column D + E on G703) \$166,741.23
 - b. % of Stored Material
(Column F on G703) \$0.00
- Total Retainage (Lines 5a + 5b or Total in Column I of G703)..... \$166,741.23
6. TOTAL EARNED LESS RETAINAGE.....\$3,168,083.28
(Line 4 Less Line 5 Total)
7. LESS PREVIOUS CERTIFICATES FOR PAYMENT.....\$3,137,897.03
(Line 6 from prior Certificate)
8. CURRENT PAYMENT DUE.....\$30,186.25
9. BALANCE TO FINISH, INCLUDING RETAINAGE -
(Line 3 less Line 6) \$166,741.23

CHANGE ORDER SUMMARY	ADDITIONS	DEDUCTIONS
Total changes approved in previous months by Owner	\$57,298.00	(\$63,773.50)
Total approved this Month	\$32,789.00	(\$1,015.00)
TOTALS	\$90,087.00	(\$64,788.50)
NET CHANGES by Change Order	\$25,298.50	

CAUTION: You should sign an original AIA Contract Document, on which this text appears in RED. An original assures that changes will not be obscured.

The undersigned Contractor certifies that to the best of the Contractor's knowledge, information and belief the Work covered by this Application for Payment has been completed in accordance with the Contract Documents, that all amounts have been paid by the Contractor for Work for which previous Certificates for Payment were issued and payments received from the Owner, and that current payment shown herein is now due.

CONTRACTOR: Southeast Contractors, Inc.

By: *William Mier*

Date: December 14, 2016

State of: Tennessee

County of: *Williamson*

Subscribed and sworn to before me this

14 day of *December* 2016

Notary Public: *Barbara L. Redmond*

My Commission expires: *Feb 2, 2019*



ARCHITECT'S CERTIFICATE FOR PAYMENT

In accordance with the Contract Documents, based on on-site observations and the data comprising this application, the Architect certifies to the Owner that to the best of the Architect's knowledge, information and belief the Work has progressed as indicated, the quality of the Work is in accordance with the Contract Documents, and the Contractor is entitled to payment of the AMOUNT CERTIFIED.

AMOUNT CERTIFIED.....\$ *30,186.25*

(Attach explanation if amount certified differs from the amount applied. Initial all figures on this Application and on the Continuation Sheet that are changed to conform with the amount certified.)

ARCHITECT:

By: *Michael E. Tey*

Date: *12/19/16*

This Certificate is not negotiable. The AMOUNT CERTIFIED is payable only to the Contractor named herein. Issuance, payment and acceptance of payment are without prejudice to any rights of the Owner or Contractor under this Contract.

City of Franklin-Fire Station No. 8
200 Front Street
Franklin, TN 37064
Owner: City of Franklin, Tennessee

Southeast Contractors, Inc.
354 Cool Springs Blvd #104
Franklin, TN 37067
(P) 615-771-0536
(F) 615-771-0538

AIA Document G703-1992

Continuation Sheet

AIA Document G702, APPLICATION AND CERTIFICATION FOR PAYMENT, containing Contractor's signed certification is attached.

In tabulations below, amounts are stated to the nearest dollar.

Use Column I on Contracts where variable retainage for line items may apply.

APPLICATION NO: EIGHTEEN (REVISED 12.13.16)

APPLICATION DATE: September 23, 2016

PERIOD TO: September 23, 2016

ARCHITECT'S PROJECT NO: CONTRACT #2014-0032

A ITEM NO.	B DESCRIPTION OF WORK	C SCHEDULED VALUE	D WORK COMPLETED		F MATERIALS PRESENTLY STORED (NOT IN D OR E)	G TOTAL COMPLETED AND STORED (D+E+F)	H % (G ÷ C)	I BALANCE TO FINISH (C - G)	J RETAINAGE (IF VARIABLE RATE)
			FROM PREVIOUS APPLICATION (D + E)	THIS PERIOD					
1	GENERAL CONDITIONS	\$301,554.00	\$301,553.00	\$1.00	\$0.00	\$301,554.00	100%	\$0.00	\$15,077.70
2	CONTRACT BOND	\$80,000.00	\$80,000.00	\$0.00	\$0.00	\$80,000.00	100%	\$0.00	\$4,000.00
3	BUILDERS RISK & INSURANCE	\$10,000.00	\$10,000.00	\$0.00	\$0.00	\$10,000.00	100%	\$0.00	\$500.00
4	SITE WORK	\$323,544.00	\$323,544.00	\$0.00	\$0.00	\$323,544.00	100%	\$0.00	\$16,177.20
5	UTILITIES & SPRINKLER LINE	\$118,956.00	\$118,956.00	\$0.00	\$0.00	\$118,956.00	100%	\$0.00	\$5,947.80
6	LANDSCAPE & IRRIGATION	\$27,049.00	\$27,049.00	\$0.00	\$0.00	\$27,049.00	100%	\$0.00	\$1,352.45
7	CONCRETE (BUILDING)	\$178,500.00	\$178,500.00	\$0.00	\$0.00	\$178,500.00	100%	\$0.00	\$8,925.00
8	HEAVY DUTY CONCRETE (SITE)	\$167,245.00	\$167,245.00	\$0.00	\$0.00	\$167,245.00	100%	\$0.00	\$8,362.25
9	MASONRY	\$318,371.00	\$318,371.00	\$0.00	\$0.00	\$318,371.00	100%	\$0.00	\$15,918.55
10	STEEL	\$87,000.00	\$87,000.00	\$0.00	\$0.00	\$87,000.00	100%	\$0.00	\$4,350.00
11	LIGHT GAUGE TRUSSES & DECK	\$194,190.00	\$194,190.00	\$0.00	\$0.00	\$194,190.00	100%	\$0.00	\$9,709.50
12	ROOFING	\$57,904.00	\$57,904.00	\$0.00	\$0.00	\$57,904.00	100%	\$0.00	\$2,895.20
13	DOORS & HARDWARE	\$48,529.00	\$48,529.00	\$0.00	\$0.00	\$48,529.00	100%	\$0.00	\$2,426.45
14	BI-FOLD DOORS & OHD	\$182,020.00	\$182,020.00	\$0.00	\$0.00	\$182,020.00	100%	\$0.00	\$9,101.00
15	SEALANTS & AIR BARRIER	\$35,000.00	\$35,000.00	\$0.00	\$0.00	\$35,000.00	100%	\$0.00	\$1,750.00
16	STOREFRONT GLASS	\$34,856.00	\$34,856.00	\$0.00	\$0.00	\$34,856.00	100%	\$0.00	\$1,742.80
17	ACOUSTICAL CEILINGS	\$12,500.00	\$12,500.00	\$0.00	\$0.00	\$12,500.00	100%	\$0.00	\$625.00
18	PAINTING	\$31,000.00	\$31,000.00	\$0.00	\$0.00	\$31,000.00	100%	\$0.00	\$1,550.00
19	VINYL WALL COVERING	\$7,805.00	\$7,805.00	\$0.00	\$0.00	\$7,805.00	100%	\$0.00	\$390.25
20	EPOXY FLOORING	\$94,959.00	\$94,959.00	\$0.00	\$0.00	\$94,959.00	100%	\$0.00	\$4,747.95
21	EIFS	\$1,600.00	\$1,600.00	\$0.00	\$0.00	\$1,600.00	100%	\$0.00	\$80.00
22	ATHLETIC FLOORING (MEZZANINE)	\$7,706.00	\$7,706.00	\$0.00	\$0.00	\$7,706.00	100%	\$0.00	\$385.30
23	FIBER CEMENT TRIM & COLUMNS	\$13,250.00	\$13,250.00	\$0.00	\$0.00	\$13,250.00	100%	\$0.00	\$662.50
24	MILLWORK	\$53,700.00	\$53,700.00	\$0.00	\$0.00	\$53,700.00	100%	\$0.00	\$2,685.00
25	METAL STUDS & DRYWALL	\$162,500.00	\$162,500.00	\$0.00	\$0.00	\$162,500.00	100%	\$0.00	\$8,125.00
26	TOILET ACCESSORIES	\$7,000.00	\$7,000.00	\$0.00	\$0.00	\$7,000.00	100%	\$0.00	\$350.00
27	SIGNAGE	\$12,200.00	\$12,200.00	\$0.00	\$0.00	\$12,200.00	100%	\$0.00	\$610.00
28	WALK OFF MATS	\$2,352.00	\$2,352.00	\$0.00	\$0.00	\$2,352.00	100%	\$0.00	\$117.60
29	METAL LOCKERS & BENCHES	\$12,845.00	\$12,845.00	\$0.00	\$0.00	\$12,845.00	100%	\$0.00	\$642.25
30	HORIZONTAL BLINDS	\$2,191.00	\$2,191.00	\$0.00	\$0.00	\$2,191.00	100%	\$0.00	\$109.55
31	PLUMBING	\$114,900.00	\$114,900.00	\$0.00	\$0.00	\$114,900.00	100%	\$0.00	\$5,745.00
32	SPRINKLERS	\$42,000.00	\$42,000.00	\$0.00	\$0.00	\$42,000.00	100%	\$0.00	\$2,100.00
33	HVAC	\$298,900.00	\$298,900.00	\$0.00	\$0.00	\$298,900.00	100%	\$0.00	\$14,945.00
34	ELECTRIC	\$267,400.00	\$267,400.00	\$0.00	\$0.00	\$267,400.00	100%	\$0.00	\$13,370.00
35	CHANGE ORDER #01 A-D	(\$84,963.00)	(\$84,963.00)	\$0.00	\$0.00	(\$84,963.00)	100%	\$0.00	(\$4,248.15)
36	CHANGE ORDER #02 A-C	\$6,660.00	\$6,660.00	\$0.00	\$0.00	\$6,660.00	100%	\$0.00	\$333.00
37	CHANGE ORDER #03 B-E	\$14,529.50	\$14,529.50	\$0.00	\$0.00	\$14,529.50	100%	\$0.00	\$726.48
38	CHANGE ORDER #04 A-E	\$43,652.00	\$43,652.00	\$0.00	\$0.00	\$43,652.00	100%	\$0.00	\$2,182.60
39	CHANGE ORDER #05 A-I	\$13,646.00	\$13,646.00	\$0.00	\$0.00	\$13,646.00	100%	\$0.00	\$682.30
40	CHANGE ORDER #06 A-T	\$31,774.00	\$0.00	\$31,774.00	\$0.00	\$31,774.00	100%	\$0.00	\$1,588.70
TOTALS:		\$3,334,824.50	\$3,303,049.50	\$31,775.00	\$0.00	\$3,334,824.50	100%	\$0.00	\$166,741.23

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Request for Construction Change

Change Order No. 06 (Revised 12.13.16 to include Item "T")

City of Franklin
Engineering Office
109 Third Avenue South
Franklin, TN 37064

Contract No. 2014-0032
Project City of Franklin Fire Station No. 8 Westhaven
200 Front Street
Franklin, Tennessee 37064

Whereas, we Southeast Contractors, Inc. entered into an contract with the CITY OF FRANKLIN, on October 27, 2014, for the construction by said Contractor of the above designated contract; and Whereas, certain items of construction encountered are not covered by the original contract, we desire to submit the following additional items of construction to be performed by the Contractor and paid by the City at the prices scheduled therefore below:

Reason for Change Order:

- A. New K-Class Fire Extinguisher per Fire Marshall
- B. EIFS band around storefront doors due to brick recess details
- C. Change mechanical room door to a 4'0 x 7'0 opening and new door & hardware in lieu of 3'0 wide opening for mechanical equipment
- D. Add blackout shades in Meeting Room & Day Room in lieu of PVC blinds
- E. Add a 36" x 36" fire rated access panel in hard ceiling in apparatus bay area and a fire rated plywood walk way
- F. Add cure & seal product to the exterior heavy-duty concrete parking lot to eliminate any further stress cracks
- G. Furnish 2 pitched roof curbs for exhausts located in apparatus bay truss system in lieu of gooseneck exhausts as detailed on M5.1/B3
- H. Change P3 faucet per engineer to countertop mount in lieu of wall mount as shown on drawings
- I. Additional IT rough-in per the Owner's request
- J. Additional electrical requirements not shown on the drawings for the installation of OFOI Plymovent exhaust system
- K. Additional electrical requirements not shown on the drawings for the HD Extractor and Drying Cabinet.
- L. Added cellular dialer system to the Fire Alarm system and added a smoke detector above the FACP per the Owners directive.
- M. Additional electrical requirements for the Bay Lighting Controls from the engineer per the updated drawing E3.1/Detail #2 on 5.31.16
- N. Additional electrical requirements for the Kitchen Exhaust Hood and the furnishing of a 24 hour timeclock in lieu of photocell with contactor.
- O. Add irrigation to 5' grass strip on Front Street side that indicated recieveing sod, but did not have any irrigation shown on irrigation drawings
- P. Furnish material & labor for three (3) breakaway receptacle drops in the apparatus bay ceiling
- Q. Replace 2" caliper tree as noted on L1.1 with a 3" caliper tree
- R. Add air conditioning to the mechanical room per the Owners request. Original drawings indicating the space to be unconditioned

S. Add gutters to the gable roof locations per the Owners request T. Provide credit to the Owner for not installing drywall on backside of mezzanine wall per the wall legend.

Attachments (List documents supporting change):

Change Order Request Breakdown from Contractor dated 9.26.2016

Item No.	Description of Work	Unit	Estimate Quantity	Unit Price	Amount
1	Items A, B, & C				\$3,527.00
2	Items D, E, F, & G				\$11,219.00
3	Items H, I, J, & K				\$4,304.00
4	Items L, M, N, & O				\$6,980.00
5	Items P, Q, R, & S & T				\$5,744.00
TOTAL					\$31,774.00

CHANGE IN CONTRACT PRICE:
Original Contract Price \$3,309,526.00
Net Increase (Decrease) from previous Change Orders No. 0 to 5: (-6,475.50)
Contract Price prior to this Change Order: \$3,303,050.50
Net increase (decrease) of this Change Order: \$31,774.00
Contract Price with all approved Change Orders: \$3,334,824.50

CHANGE IN CONTRACT TIMES:
Original Contract Times: Substantial Completion: _____ Ready for final payment: _____
Net change from previous Change Orders No. 0 to ____ to: Substantial Completion: _____ Ready for final payment: _____
Contract Times prior to this Change Order: Substantial Completion: _____ Ready for final payment: _____
Net increase (decrease) this Change Order: Substantial Completion: _____ Ready for final payment: _____
Contract Times with all approved Change Orders: Substantial Completion: _____ Ready for final payment: _____

Now, Therefore, We, Southeast Contractors, hereby agree to this Supplemental Agreement consisting of the above mentioned items and prices, and agree that this Supplemental Agreement is hereby made a part of the original contract and will be performed by this Contractor in accordance with specifications thereof, and that the original contract remain in full force and effect, except in so far as specifically modified by this supplemental Agreement.

RECOMMENDED FOR APPROVAL BY:

By: Michael E. Terry By: _____ By: _____
Architect CITY Administrator Project/Facilities
Date: 12/19/16 Date: _____ Date: _____

ACCEPTED

By: _____
CONTRACTOR (Authorized Signature)
Date: _____

APPROVED:

By: _____
OWNER (Authorized Signature)
Date: _____



SOUTHEAST CONTRACTORS, INC.

GENERAL CONTRACTORS

COMMERCIAL • RESIDENTIAL • INDUSTRIAL



Licensed, Bonded, & Insured

July 27, 2016

Revised 12.13.16

Renaissance Group
9700 Village Circle, Suite 100
Lakeland, Tennessee 38002
ATTN: Mr. Ron Colin

Re: COF Fire Station No. 8 Westhaven-*Change Order #06 Breakdown*
200 Front St., Franklin, Tennessee 37064
COF Project No. 2014-0032

Mr. Colin-

Please find below a breakdown based on Southeast Contractors, Inc. Change Order #06 request on the above referenced project. If you have any additional questions, please don't hesitate to contact me at the office.

➤ **Change Order #06 A-T:**

A. **Add a new K-Class Fire Extinguisher to Kitchen area per Fire Marshall (Mr. Mobley)-**

a. Furnish & Install K-Class Fire Extinguisher in Kitchen per Fire Marshall Inspection.

i. Total Cost: **\$285.00**

Breakdown:

1. Material: \$265

2. Labor: \$20

B. Add EIFS band around the Red Storefront entry doors at entry tower-

- a. Furnish and install an EIFS band around the Red aluminum storefront doors to cover exposed framing & numerous brick recessed details as shown on the drawings for proper installation of storefront doors.

i. Total Cost: **\$1,694.00**

Breakdown:

- 1. Material: \$340**
- 2. Labor: \$1,175**
- 3. SCI OH&P: \$151**
- 4. SCI Bond Rate (1.7%): \$28**

C. Remove existing Mechanical Room Door (#201) to change from a 3'0 wide door to a 4'0 wide door to accommodate mechanical equipment installation and future removal potential-

- a. Remove existing 3'0 wide Mechanical Room door and replace with a 4'0 wide door to accommodate the mechanical equipment.

i. Total Cost: **\$1,548.00**

Breakdown:

- 1. Material & Taxes: \$1,110 (New 4'0 HM Door, Frame & Hardware)
(*We did not reuse hardware because we took the 3'0 door and made access into the truss attic space in the storage room)**
- 2. Labor: \$275**
- 3. SCI OH&P: \$138**
- 4. SCI Bond Rate (1.7%): \$25**

D. Add Blackout shades at Meeting Room & Day Room per Owner in lieu of PVC Blinds-

- a. Furnish and install 3 additional blackout shades in the Dayroom & Meeting Room locations per the Owner in lieu of PVC blinds.

Total Cost: **\$1,096.00**

Breakdown:

- 1. Material: \$1,177**
- 2. Taxes: \$108**
- 3. Subcontractor OH&P: \$128**
- 4. SCI OH&P: \$141**
- 5. SCI Bond Rate (1.7%): \$18**
- 6. Credit for deletion of three (3) PVC blinds: -\$476**

E. Installation of 36" x 36" Fire-Rated access door for the future removal of the exhaust units in the apparatus bay (EF-2 & EF-3) and for the installation/removal of the Plymovent vehicle exhaust system. Contractor also installed a complete fire rated access walkway platform & ladder in the apparatus bay truss area per Mechanical Codes & Supplementary Drawing SD-042116-A1 per the architect -

- a. Furnish and install a 36" x 36" fire-rated access door for access to the apparatus bay truss area. Contractor also installed a complete fire-rated plywood walkway platform in the apparatus bay truss area per Mechanical Codes & the architect supplementary drawing SD-042116-A1.

i. Total Cost: **\$4,356.00**

Breakdown:

- 1. Material & Taxes: \$1,715.00 (36" x 36" fire-rated access door & fire rated plywood & lumber)**
- 2. Labor: \$1,700 (Frame opening, set access door, cut plywood walkway to size and install and brace ladder with fire-rated lumber 3 guys/20 hours)**
- 3. Sprinkler Contractor: \$480 (Had to relocate 2" pipe that was in middle of opening)**

4. Subcontractor OH&P: \$389
5. SCI Bond Rate (1.7%): \$72

F. Add a Cure & Seal product to the concrete parking lots (East & West sides) to eliminate any further stress cracking-

- a. Furnish and install a cure & seal product to the East & West side concrete parking lots to eliminate any further stress cracking.
 - i. Total Cost: **\$4,166.00**

Breakdown:

1. Material & Labor PaveCoat: \$3,725
2. SCI OH&P: \$372
3. SCI Bond Rate (1.7%): \$69

G. Furnish and install two (2) pitched roof curbs and two (2) vent caps for EF-2 & EF-3 in the apparatus bay per the Owner in lieu of the gooseneck exhaust as detailed on M5.1/B3-

- a. Furnish and installed two (2) pitched roof curbs and two (2) vent caps for EF-2 & EF-3 units in the apparatus bay in lieu of the gooseneck exhausts as originally detailed.
*Contractor already had material onsite for gooseneck installation & could not get any credit for this material.

- i. Total Cost: **\$1,601.00**

Breakdown:

1. Material: \$1,192
2. Taxes: \$110
3. Subcontractor OH&P: \$130
4. SCI OH&P: \$143
5. SCI Bond Rate (1.7%): \$26

H. Change P-3 faucet per engineer to countertop mount in lieu of wall mount faucet-

- a. Change P-3 faucet per engineer from a wall braced/mounted faucet to a countertop mounted kitchen faucet.
 - i. Total Cost: **\$531.00**

Breakdown:

1. Material: \$689
2. Taxes: \$63
3. Subcontractor OH&P: \$90
4. SCI OH&P: \$84
5. SCI Bond Rate (1.7%): \$15
6. Credit for deletion of originally spec'd kitchen faucet: **-\$410**

I. IT-Rough in per Brad's request for low voltage wiring from South side of building to North side of building-

- a. Furnish and install 2" conduit from the dayroom, up to the IT closet and through the apparatus bay trusses to the North Wall for the Owner's use.
 - i. Total Cost: **\$660.00**

Breakdown:

1. Material & Taxes: \$205
2. Labor: \$385 (2 guys/7 hours)
3. Subcontractor OH&P: \$59
4. SCI Bond Rate (1.7%): \$11

J. **Additional electrical requirements for the installation of the OFOI Plymovent system not shown on the electrical drawings-**

- a. Furnish and install conduit, wiring, and disconnect for the OFOI Plymovent vehicle exhaust system as directed by the Owner.

i. Total Cost: **\$1,261.00**

Breakdown:

1. Material & Taxes: \$291
2. Labor: \$735
3. Subcontractor OH&P: \$102
4. SCI OH&P: \$112
5. SCI Bond Rate (1.7%): \$21

K. **Additional electrical requirements for the HD Extractor and Drying Cabinet from the original panel schedule as indicated on E3.3 -**

- a. Original panel schedule on Sheet E3.3 shows the HD Extractor to be a 20AMP single pole circuit; however once the machine was on-site, it was a 20AMP 3 phase circuit.
- b. Original panel schedule on Sheet E3.3 shows the Drying Cabinet to be a 20AMP 3 phase circuit; however once the machine was on-site, it was a 40AMP 3 phase circuit.

i. Total Cost: **\$1,852.00**

Breakdown:

1. Material: \$826
2. Labor: \$680
3. Subcontractor OH&P: \$150
4. SCI OH&P: \$165
5. SCI Bond Rate (1.7%): \$31

L. **Added cellular dialer to the Fire Alarm Panel per the Owner's directive and added a smoke detector above the Fire Alarm Control Panel per Codes-**

- a. Per Owners request, Contractor added a wireless dialer system to the Fire Alarm system.
- b. Per Codes, Contractor added a smoke detector above the Fire Alarm Control Panel.

i. Total Cost: **\$2,835.00**

Breakdown:

1. Material: \$1,710
2. Labor: \$595
3. Subcontractors OH&P: \$230
4. SCI OH&P: \$253
5. SCI Bond Rate (1.7%): \$47

M. **Additional electrical requirements for the Bay Lighting Controls from the engineer per updated drawing E3.1/Detail #2 on 5/31/2016 -**

- a. Original drawings did not indicate the wiring & control schematic for the apparatus bay lights. The engineer provided the electrical contractor an updated E3.1/2 on 5.31.16.

i. Total Cost: **\$1,681.00**

Breakdown:

1. Material: \$577
2. Labor: \$790
3. Subcontractor OH&P: \$136
4. SCI OH&P: \$150
5. SCI Bond Rate (1.7%): \$28

N. **Additional electrical requirements for the Kitchen Exhaust Hood and the installation of a 24HR timeclock in lieu of photocell with lighting contactor-**

- a. Original panel schedule on Sheet E3.3 shows the Kitchen Exhaust as a 20AMP single phase circuit, however, the unit is a 20AMP 3 phase circuit.
- b. Furnish and install a 24HR timeclock in lieu of a photocell with a lighting contactor.
 - i. Total Cost: **\$1,148.00**

Breakdown:

1. Material: \$579
2. Labor: \$355
3. Subcontractor OH&P: \$93
4. SCI OH&P: \$102
5. SCI Bond Rate (1.7%): \$19

O. **Add irrigation to the 5' strip section on Front Street side that indicates having sod (L1.1), but did not show irrigation in this section on IR1.1-**

- a. Furnish additional sprinkler heads & irrigation piping for the 5' grass strip section located on Front Street side.
 - i. Total Cost: **\$1,316.00**

Breakdown:

1. Material: \$205
2. Labor: \$865
3. Subcontractor OH&P: \$107
4. SCI OH&P: \$117
5. SCI Bond Rate (1.7%): \$22

P. **Furnish material & labor for three (3) breakaway receptacle drops in the apparatus bay area-**

- a. Furnish material (not including the Owner supplied material) and labor to install 3 flush mounted ceiling receptacles with breakaway attachments in the apparatus bay area per the Owner's directive.
 - i. Total Cost: **\$761.00**

Breakdown:

1. Material: \$158
2. Labor: \$460
3. Subcontractor OH&P: \$62
4. SCI OH&P: \$68
5. SCI Bond Rate (1.7%): \$13

Q. **Replace 2" caliper tree as noted on L1.1 with a 3" caliper tree-**

- a. Furnish additional sprinkler heads & irrigation piping for the 5' grass strip section located on Front Street side.
 - i. Total Cost: **\$460.00**

Breakdown:

1. Material: \$282
2. Labor: \$75
3. Subcontractor OH&P: \$54
4. SCI OH&P: \$41
5. SCI Bond Rate (1.7%): \$8

R. **Add air conditioning to the 2nd floor mechanical room per the Owner's request. Original drawings did not indicate mechanical room to receive any A/C-**

- a. Furnish & install additional ductwork and supply diffuser to 2nd floor mechanical room per the Owner's directive.

i. Total Cost: **\$1,345.00**

Breakdown:

1. Material: \$419
2. Labor: \$675 (2 guys)
3. Subcontractor OH&P: \$109
4. SCI OH&P: \$120
5. SCI Bond Rate (1.7%): \$22

S. **Add additional gutters to the roof per the Owners request-**

- a. Furnish & install additional gutters to the roofing system per the Owner's request.

i. Total Cost: **\$4,193.00**

Breakdown:

1. Material: \$1,278
2. Labor: \$1,770
3. Equipment (60ft boom lift): \$700
4. SCI OH&P: \$374
5. SCI Bond Rate (1.7%): \$71

T. **Provide credit to the Owner for not installing the drywall on the backside of the mezzanine walls per the wall legend-**

- a. Provide credit to the Owner for not installing roughly 29 sheets of drywall on the backside of the mezzanine wall per the wall legend (hang, tape, & 1 coat).

i. Total Cost: **(~~\$~~-1,015.00) (\$35/board)**

TOTAL COST FOR CHANGE ORDER REQUEST #6A - #6T= **\$31,774.00**

WORDS: *Thirty-One Thousand Seven Hundred Seventy-Four and 00/100's dollars*

Respectfully,

William T. Milburn 9/26 /2016 (Revised 12.13.16)

William T. Milburn
Project Manager
Southeast Contractors, Inc.
(C) 615-405-8940



HISTORIC
FRANKLIN
TENNESSEE

Request for Water and/or Sewer Availability & Associated Costs

Please fill in the following information & return this form with the site plan per directions below. Incomplete forms will result in the request being returned until all of the information is included. Refer to the attached memo for fees and additional information.

Type of Availability Requested:		CHECK ALL THAT APPLY: ☐ Water ☒ Sewer	
Project Name & Subdivision, Section, Lot #		N/A	
Map & Parcel(s) #			
Property Address:		509 Franklin Road, Franklin TN 37069	
City Project # (If Applicable)		N/A	
# of Dwelling Units (If Residential)		Single Family Residential (home with garage apartment)	
Applicant's Name & Company		Letitia and Russ Baldwin	
Applicant's Address		4012 Crestridge Drive, Nashville, TN 37204	
Applicant's Email & Phone #		letitiaruss.baldwin@gmail.com 615-419-4948	
Anticipated Water Meter Size(s) (see chart on pg. 3).		N/A	
Water District:		N/A	
Sewage Flow Calculations: <i>Use the City of Franklin projected flow examples sheet -pg.4</i>			
N/A			
<i>use additional sheets as necessary</i>			
Anticipated sewage flows: <i>Information Required for Sewer Service</i>		N/A	
If County is requiring this request please indicate if you are requesting an approval or denial:		☒ DENY my Request ☐ APPROVE my request <i>*approval or denial is approved by BOMA, indication here is not a guarantee for approval or denial*</i>	

MUST SUBMIT A LOCATION MAP (FOR EX: GOOGLE MAP)

Email Application to: EngineeringMBX@franklintn.gov

For additional information or questions please call: 615-791-3218

Date Submitted: 1-18-17

Tools & Features Demonstration Site



Legend

- Parcels
- Parcel Numbers
- Parcel Acreage
- Subdivision Name
- Lot Numbers
- Group Corner Annotation
- Control Map
- Notes
- Miscellaneous
- Easement
- Exemptions
- Conflicts
- Lines
- Corporate Limits
- BRENTWOOD
- FAIRVIEW
- FRANKLIN
- NOLANSVILLE
- SPRING HILL
- THOMPSONS STATION
- Parks
- Centerlines
- <all other values>
- INTERSTATE
- ACCESS
- LOCAL STREETS

Notes

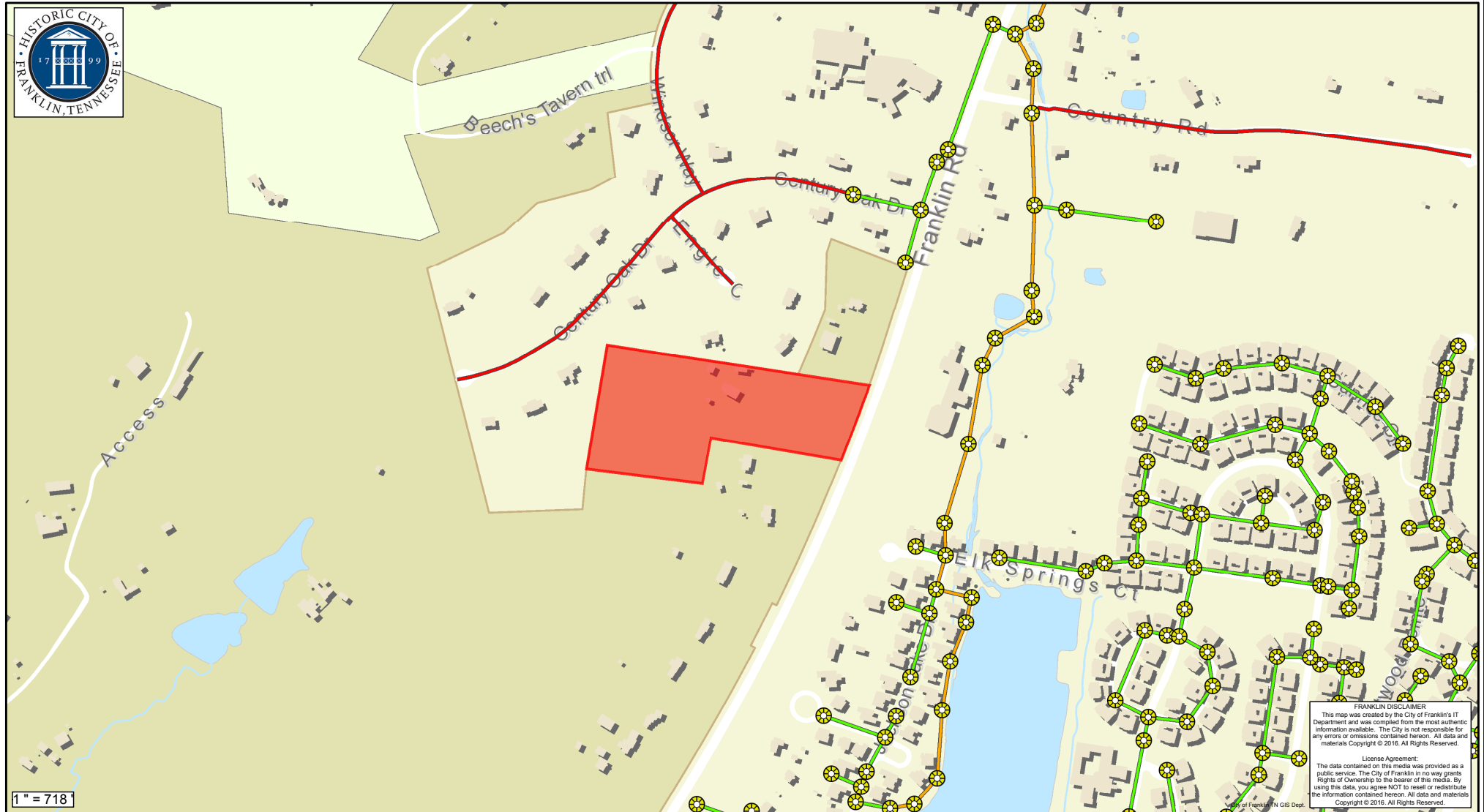
This map is a user generated static output from an Internet mapping site and is for reference only. Data layers that appear on this map may or may not be accurate, current, or otherwise reliable.

THIS MAP IS NOT TO BE USED FOR NAVIGATION

0.1 0 0.03 0.1 Miles

NAD_1983_StatePlane_Tennessee_FIPS_4100_Feet

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- | | | |
|-------------------------------|-------------------------------|-----------------------|
| Sewer Lift Station | Sewer Pressurized Pipe | Abandoned Interceptor |
| Existing | Abandoned Force | Abandoned Collector |
| Proposed | Sewer Force | |
| Manholes | Sewer Gravity Pipe | |
| Flow Monitor | Private | |
| Sewage Treatment Plant | Interceptor | |
| Water Reclamation Facility | Collector | |

RESOLUTION 2017-06

**A RESOLUTION AWARDING THE CONSTRUCTION CONTRACT
(COF CONTRACT NO. 2014-0259) FOR THE HUNTERS BEND ELEMENTARY
SAFE ROUTES TO SCHOOL PROJECT (TDOT PIN 118151.00) TO JARRETT
BUILDERS, INC., IN THE AMOUNT OF \$321,000.00**

WHEREAS, on May 13, 2013, the City of Franklin entered into a Local Agency Project Agreement (COF Contract No. 2013-0022) with the Tennessee Department of Transportation (TDOT) for the Hunters Bend Elementary Safe Routes to School Project (Project); and

WHEREAS, the Local Agency Project Agreement with TDOT provides a total of \$203,184.00 in Federal Safe Routes to School Funding, with \$190,562.00 programmed toward physical construction; and

WHEREAS, on December 12, 2016, sealed bids were received, publicly opened, and read aloud by the Engineering Department for the Project; and

WHEREAS, after thorough review of the submitted bids and contingent upon concurrence by TDOT, City staff recommends award of this construction contract to Jarrett Builders, Inc., in the amount of \$321,000.00.

NOW THEREFORE, BE IT RESOLVED by the Board of Mayor and Aldermen of the City of Franklin, Tennessee, that approval is granted, contingent upon concurrence by TDOT, to award the construction contract (COF Contract No. 2014-0259) to Jarrett Builders, Inc., for the Hunters Bend Elementary Safe Routes to School Project (TDOT PIN 118151.00) in the amount of Three Hundred Twenty-One Thousand and No/100 Dollars (\$321,000.00).

IT IS SO RESOLVED AND DONE on this ____ day of _____, 20__.

ATTEST:

CITY OF FRANKLIN, TENNESSEE:

By: _____

Eric S. Stuckey
City Administrator

By: _____

Dr. Ken Moore
Mayor

Approved as to Form:

By: _____

Shauna R. Billingsley
City Attorney



APPARENT BID RESULTS

PROJECT: Hunters Bend Elementary Safe Routes to School

CONTRACT INFO: COF Contract No. 2014-0259 (TDOT PIN 118151.00)

BID OPENING: Monday, December 12, 2016 at 2:00 PM (CST)

	FIRM NAME	TOTAL BASE BID
1	Jarrett Builders, Inc.	\$ 321,000.00
2	Concrete Structures, Inc.	\$ 323,431.80
3		
4		
5		



17 January 2017

HISTORIC
FRANKLIN
TENNESSEE

Local Programs Development Office
Tennessee Department of Transportation
James K. Polk Building, Suite 600
505 Deaderick Street
Nashville, TN 37243-0341

RE: Recommendation to Award Construction Contract (COF Contract No. 2014-0259) for the Hunters Bend Elementary Safe Routes to School Project (PIN 118151.00) to Jarrett Builders, Inc.

Dear Local Programs,

On Monday, December 12, 2016 at 2:00 PM, the City of Franklin received bid proposals for the construction of the Hunters Bend Elementary Safe Routes to School Project (PIN 118151.00). Promptly at 2:00 PM, the bid proposals were open and read aloud. Three (3) contractors submitted proposals for this project:

- Concrete Structures, Inc.
- Jarrett Builders, Inc.
- Layne Heavy Civil, Inc.

Unfortunately, Layne Heavy Civil, Inc. had not completed the TDOT prequalification process and were not recognized as a prequalified contractor with TDOT as of the bid opening. Therefore, the bid proposal from Layne Heavy Civil, Inc. was returned, unopened to the company's representative, prior to opening of all bid proposals.

The bid results for the remaining TDOT prequalified contractors are as follows:

<u>CONTRACTOR</u>	<u>TOTAL BID PRICE</u>
Jarrett Builders, Inc.	\$ 321,000.00
Concrete Structures, Inc.	\$ 323,431.80

At first glance, the bid prices for this project appear high. However, given the small size of the project, a higher unit cost per item is to be expected. After thorough review of the bid proposals, I recommend awarding the construction contract (COF Contract No. 2014-0259) for the Hunters Bend Elementary Safe Routes to School Project (PIN 118151.00) to Jarrett Builders, Inc. at a total cost of \$321,000.00.

The City of Franklin requests concurrence with this recommendation from the TDOT Local Program Development Office and Construction Division.

Please do not hesitate to contact me with any questions or concerns.



HISTORIC
FRANKLIN
TENNESSEE

Respectfully,

A handwritten signature in blue ink, reading 'Jonathan J. Marston', with a long horizontal flourish extending to the right.

Jonathan J. Marston, P.E.
Assistant Director of Engineering
City of Franklin

RESOLUTION 2017-10

A RESOLUTION OF SUPPORT FOR ENHANCED, SUSTAINABLE FUNDING FOR TRANSPORTATION NEEDS FOR THE STATE OF TENNESSEE AND FOR LOCAL COMMUNITIES

WHEREAS, transportation in its many forms is the backbone for the economic vitality and quality of life for communities across the State of Tennessee; and

WHEREAS, maintaining our vital transportation infrastructure is a critical role shared by federal, state, and local governments; and

WHEREAS, the State of Tennessee has not directly addressed ongoing, sustainable transportation funding since 1989; and

WHEREAS, since that time inflation has decreased the purchasing power of the State of Tennessee's transportation funding by more than 50 percent; and

WHEREAS, the Tennessee Department of Transportation estimates that without additional funding it will take the state 50 years to complete its current list of projects; and

WHEREAS, since 2015, Governor Haslam has been meeting with business leaders, community leaders, and citizens across the state to assess the transportation needs of Tennesseans and as a result has proposed the IMPROVE Act to provide a new sustainable transportation funding approach; and

WHEREAS, the State of Tennessee has an opportunity to show leadership in partnering with communities across the state in meeting critical transportation needs through providing much needed planning and sustainable funding assistance.

NOW THEREFORE, BE IT RESOLVED by the Board of Mayor and Aldermen of the City of Franklin, Tennessee, that:

The Tennessee General Assembly is urged to take immediate action to address the need for enhanced, sustainable transportation funding. Action is urged that supports Governor Haslam's IMPROVE Act and/or other responsible initiatives that provide long-term, sustainable funding for transportation by incorporating the following key components:

1. Identify additional, ongoing State funding for transportation needs that incorporates a mechanism to keep pace with future inflation.
2. Ensure that the Tennessee Department of Transportation continues to have the discretion to select transportation projects working collaboratively with local communities.
3. Allow for a local option for dedicated revenue to fund local transportation and transit initiatives.

IT IS SO RESOLVED AND DONE on this _____ day of _____, 2017.

ATTEST:

CITY OF FRANKLIN, TENNESSEE:

By: _____
Eric S. Stuckey
City Administrator

By: _____
Dr. Ken Moore
Mayor

Approved as to Form

By: _____
Shauna Billingsley, City Attorney



CITY OF FRANKLIN TENNESSEE

2016 REVISIONS TO 2014 ROAD IMPACT FEE STUDY

Prepared by
Duncan Associates

January 2016
Staff Review Draft

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INTRODUCTION AND SUMMARY

Summary of Revisions to 2014 Study

A comprehensive road impact fee update was prepared by this consultant for the City of Franklin in 2014. This report is a slightly revised version of the *Road Impact Fee Update* study that the consultant prepared in March 2014. No changes to data inputs are made, and the methodology is unchanged from the 2014 study. Minor changes are made to accommodate the City's desire to have the option of imposing collector road impact fees only in the west, only in the northwest, or only in the southwest areas of the city. In addition, staff has been having difficulty classifying land uses. The following changes were made to accommodate the City's needs.

Show collector fee. The 2014 road impact fee study calculated two alternatives: (1) a city-wide arterial road fee, and (2) a city-wide road fee that includes the costs of both arterials and collector roads. The 2014 study did not specifically calculate a separate, city-wide collector road fee, although such a fee is implied. The collector fee is simply the difference between the arterial road fee and the fee for all major roads. Consequently, this revised version provides an additional table to show the collector road fee option.

Implement collector service areas. The collector road fees implied in the 2014 study were determined at the city-wide level. Four quadrants were proposed as "benefit districts" that could be used to earmark funds collected in an area to be spent in the same area in the event that the "all major road" option was chosen. However, to charge a fee only in a certain area requires some analysis to ensure that the fees charged reflect the demand and cost characteristics of the area, and that the fees do not exceed the existing level of service in the area. Meeting these requirements qualifies an area to be a "service area," in impact fee terminology. Impact fees determined for a service area may be charged in that area, even if they are not charged in other areas of the city. Consequently, this revised study adds a new "Service Area" chapter to provide the necessary analysis.

Simplify fee administration. City staff report difficulties in classifying proposed land uses into current categories or, alternatively, calculating appropriate fees for such uses. To address this issue, this report adds a final "Administrative Simplification" chapter, and is accompanied by draft ordinance amendments to implement these recommendations, provided separately from this report.

Approach and Findings

The 2014 study revised the road impact fee calculations by incorporating the most current data, including the most recent road improvement costs and the latest version of the *Trip Generation* manual. The inclusion of collector roads in the road impact fee was the major policy option provided in the 2014 update. The inclusion of collector roads would increase the maximum fees by an average of about 91%. It would also require the City to provide credit against the fees for developer's who dedicate right-of-way or construct collectors within their subdivisions. Finally, it would require the restriction of about 40.5% of the fees collected to be earmarked to be spent in the same benefit district in which it was paid.

The revisions to the 2014 study made in this report determine separate collector road fees that could be charged in one or more collector road service areas, corresponding to the 2014 study benefit district boundaries. Based on the analysis provided in this report, the fees would be the same for all of the service areas. Those fees are shown in Table 1.

Table 1. Potential Collector Road Impact Fees

Land Use Type	Unit	Fee/Unit
Single-Family Detached	Dwelling	\$3,340
Multi-Family	Dwelling	\$2,121
Mobile Home Park	Site	\$1,592
Congregate Care Facility	Dwelling	\$743
Hotel/Motel	Room	\$1,750
Retail/Commercial		
Shopping Center/Gen. Retail	1,000 sq. ft.	\$4,394
Restaurant, Quality	1,000 sq. ft.	\$8,186
Restaurant, Fast Food	1,000 sq. ft.	\$11,862
Office/Institutional		
Office, General	1,000 sq. ft.	\$3,170
Hospital	1,000 sq. ft.	\$3,653
Nursing Home	1,000 sq. ft.	\$2,099
Church	1,000 sq. ft.	\$2,218
Elementary/Sec. School	1,000 sq. ft.	\$1,091
Industrial		
Manufacturing	1,000 sq. ft.	\$1,389
Industrial Park	1,000 sq. ft.	\$2,484
Business Park	1,000 sq. ft.	\$4,519
Warehouse	1,000 sq. ft.	\$1,294
Mini-Warehouse	1,000 sq. ft.	\$602

Source: Table 21.

The 2014 update proposed two significant changes to the methodology: design costs were added to construction and ROW costs, and the debt credit was eliminated. Design costs are a necessary component of road improvements, averaging about 6% of total project costs. The debt credit was eliminated in the 2014 update because the City's outstanding road-related debt was for previous arterial street improvements that had created excess capacity for growth, and because road impact fees are being used to retire this debt.

The updated arterial fees are generally somewhat higher than current fees, although there is some variation by land use based on updated travel demand factors (trip generation rates and average trip lengths). The increase is primarily due to increased construction costs and the addition of design costs. If collector roads are added to the city-wide arterial road fee, the resulting fee for all major roads would be significantly higher than the current arterial road fee for all land use categories, as shown in Table 2.

Table 2. Comparison of Current and Updated Fees for Arterials and All Major Roads

Land Use Type	Unit	Current Fee (Arterials)	Arterials Only		All Major Roads	
			Updated Fee	Percent Change	Potential Fee	Percent Change
Single-Family Detached	Dwelling	\$4,227	\$4,911	16%	\$8,251	95%
Multi-Family	Dwelling	\$2,766	\$3,112	13%	\$5,233	89%
Mobile Home Park	Site	\$2,079	\$2,338	12%	\$3,930	89%
Congregate Care Facility	Dwelling	\$943	\$1,093	16%	\$1,836	95%
Hotel/Motel	Room	\$2,350	\$2,567	9%	\$4,317	84%
Retail/Commercial						
Shopping Center/Gen. Retail	1,000 sq. ft.	\$5,996	\$6,484	8%	\$10,878	81%
Restaurant, Quality	1,000 sq. ft.	\$11,104	\$12,069	9%	\$20,255	82%
Restaurant, Fast Food	1,000 sq. ft.	\$16,171	\$17,442	8%	\$29,304	81%
Office/Institutional						
Office, General	1,000 sq. ft.	\$4,045	\$4,632	15%	\$7,802	93%
Hospital	1,000 sq. ft.	\$5,779	\$5,359	-7%	\$9,012	56%
Nursing Home	1,000 sq. ft.	\$2,654	\$3,082	16%	\$5,181	95%
Church	1,000 sq. ft.	\$2,406	\$3,258	35%	\$5,476	128%
Elementary/Sec. School	1,000 sq. ft.	\$1,185	\$1,606	36%	\$2,697	128%
Industrial						
Manufacturing	1,000 sq. ft.	\$1,776	\$2,030	14%	\$3,419	93%
Industrial Park	1,000 sq. ft.	\$3,237	\$3,636	12%	\$6,120	89%
Business Park	1,000 sq. ft.	\$5,934	\$6,613	11%	\$11,132	88%
Warehouse	1,000 sq. ft.	\$1,655	\$1,893	14%	\$3,187	93%
Mini-Warehouse	1,000 sq. ft.	\$809	\$885	9%	\$1,487	84%

Source: Current fees from Table 3; updated and potential fees from Table 20.

Policy Options

Whether to include collector roads in the road impact fee was the major policy option provided in the 2014 update. While adding collectors would result in higher fees, it would also require the City to provide developer credits against the fees for collector right-of-way dedication and construction. In addition, it would require that a significant portion of the fees collected be earmarked to be spent in the same benefit district in which it was paid. The 2014 study recommended against including collectors in a city-wide road impact fee. The study suggested that the City should weigh the potential additional revenue against (a) the fact that much of the potential “revenue” increase would consist of developer credits for collectors that developers would have installed anyway, and (b) determining the amounts of individual developer credits and tracking them would impose significant administrative costs.

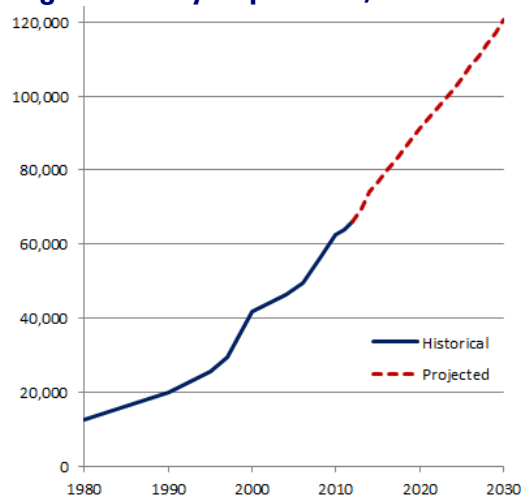
The City has now determined that there may be a benefit to imposing collector road impact fees in certain areas on the western side of the city, where the collector road system is underdeveloped and where developers are less likely to construct improvement. Consequently, the current revisions to the 2014 study add the option of imposing a separate collector road impact fee in one or more service areas, which correspond to the benefit districts proposed in the 2014 study.

BACKGROUND AND LEGAL FRAMEWORK

Growth Context

Impact fees are most appropriate for communities that are experiencing rapid growth. The City of Franklin added over 20,000 new residents in each of the last two decades, and is projected to add about 29,000 more in each of the next two decades, as illustrated in Figure 1.¹ This strong growth will necessitate numerous capacity-expanding improvements to the major roadway system. The City's *Major Thoroughfare Plan* projects that the population of the city and its urban growth area will increase from 74,650 in 2008 to 138,819 by 2035, and recommends 80 road construction and road widening projects, most of which will expand capacity to accommodate the resulting increase in traffic.²

Figure 1. City Population, 1980-2030



Background

Impact fees are charges that are assessed on new development to help pay for the capital facility costs they impose on the community. Unlike other types of developer exactions, impact fees are based on a standard formula and a pre-determined fee schedule. Essentially, impact fees require that each new residential or commercial project pay its pro-rata share of the cost of new infrastructure facilities required to serve that development.

The City of Franklin has assessed road impact fees since 1988. The road impact fee ordinance requires the City to “revise the road impact fee study and the schedule of impact fees at least once every five years.” In addition, when the impact fees were reviewed in 2005, the Board requested subsequent reviews every two to three years. The purpose of this study is to update the City of Franklin’s road impact fee based on the most appropriate methodology and the most current data.

In 1987, the City of Franklin sought and obtained authority from the Tennessee legislature to enact road impact fees. That same year, Duncan Associates was commissioned to prepare an impact fee study to calculate the maximum road impact fees that the City could charge. Ordinance 1037 enacting road impact fees was adopted by the City in June of 1988. The fees were adopted at 60 percent of the maximum fees calculated in the original study.

Duncan Associates prepared five subsequent updates of Franklin’s road impact fees, as described below.

¹City of Franklin, Planning and Sustainability Department, 2012 *Development Report*.

²Wilbur Smith and Associates, *City of Franklin Major Thoroughfare Plan*, adopted September 23, 2010.

2000. Twelve years after the initial adoption, the City updated the road impact fees, based on a study prepared in 2000. The updated fees were adopted in July 2000 with the increase phased in over two years. No significant changes to the methodology were made in this update.

2005. Five years later, the road fees were updated based on a new study. No significant changes to the methodology were made in this update.

2007. Prior to the 2007 update, the road fees were based the cost of arterial roads, excluding I-65 and the Mack Hatcher expressway, and were based on peak hour travel. The 2007 update added Mack Hatcher to the definition of the major road system and based the fees on average daily travel.

2010. Fees calculated in a study by Duncan Associates in 2010 were adopted in 2011, but phased in over two years (25% on July 1, 2011, 65% on July 1, 2012, and 100% of July 1, 2013). The 2010 update provided the options of including right-of-way (ROW) costs and adding collector costs. The City opted to add ROW costs but to continue to exclude collectors.

2014. A study prepared in 2014 continued to include ROW costs, and calculated an option that would add the cost of collector roads. The fee schedules have not been modified based on the 2014 study.

The fees that have been in effect from 2005 to present are summarized in Table 3.

Table 3. History of Road Impact Fees, 2005-2013

Land Use Type	Unit	2005	2007	2011	2012	2013
Single-Family Detached	Dwelling	\$1,617	\$2,191	\$2,700	\$3,514	\$4,227
Multi-Family	Dwelling	\$896	\$1,537	\$1,844	\$2,336	\$2,766
Mobile Home Park	Site	\$1,003	\$1,144	\$1,378	\$1,752	\$2,079
Congregate Care Facility	Dwelling	\$221	\$440	\$566	\$767	\$943
Hotel/Motel	Room	\$649	\$1,126	\$1,432	\$1,922	\$2,350
Retail/Commercial						
Shopping Center/Gen. Retail	1,000 sq. ft.	\$3,508	\$2,681	\$3,510	\$4,836	\$5,996
Restaurant, Quality	1,000 sq. ft.	\$3,773	\$4,964	\$6,499	\$8,955	\$11,104
Restaurant, Fast Food	1,000 sq. ft.	\$5,609	\$7,177	\$9,426	\$13,023	\$16,171
Office/Institutional						
Office, General	1,000 sq. ft.	\$2,716	\$1,891	\$2,430	\$3,291	\$4,045
Hospital	1,000 sq. ft.	\$1,199	\$2,867	\$3,595	\$4,760	\$5,779
Nursing Home	1,000 sq. ft.	\$449	\$996	\$1,411	\$2,074	\$2,654
Church	1,000 sq. ft.	\$754	\$1,127	\$1,447	\$1,958	\$2,406
Elementary/Sec. School	1,000 sq. ft.	\$749	\$543	\$704	\$960	\$1,185
Industrial						
Manufacturing	1,000 sq. ft.	\$1,529	\$830	\$1,067	\$1,445	\$1,776
Industrial Park	1,000 sq. ft.	\$1,497	\$1,513	\$1,944	\$2,634	\$3,237
Business Park	1,000 sq. ft.	\$1,998	\$2,773	\$3,563	\$4,828	\$5,934
Warehouse	1,000 sq. ft.	\$704	\$1,078	\$1,222	\$1,453	\$1,655
Mini-Warehouse	1,000 sq. ft.	\$417	\$388	\$493	\$662	\$809

Notes: Fees effective July 1, 2011 based on 25% of increase from 2007 fees to 2013 fees; fees effective July 1 2012 based on 65% of increase from 2007 fees to 2013 fees; fees effective July 1, 2013 based on Duncan Associates, *Road Impact Fee Update*, November 2010 (which included right-of-way costs).

Legal Framework

Franklin received special authorization to impose a road impact fee from House Bill 1311, which was passed during the 1987 session of the Tennessee legislature. While Franklin’s authorizing act provides a broad grant of authority, impact fees must also comply with constitutional standards that have been developed by the courts to ensure that local governments do not abuse their power to regulate the development of land. The courts have gradually developed guidelines for constitutionally valid impact fees, based on a “rational nexus” that must exist between the regulatory fee or exaction and the activity that is being regulated. The standards set by court cases generally require that an impact fee meet a two-part test:

- 1) The fees must be proportional to the need for new facilities created by the new development; and
- 2) The expenditure of impact fee revenues must provide benefit to the fee-paying development.

Impact fees for various types of developments should be proportional to the impact of each development on the need to construct additional or expanded facilities. The fees do not have to recover the full cost, but if the fees are reduced by a percentage from the full cost, the percentage reduction should apply evenly to all types of developments.

Impact fees were pioneered by local governments long before state legislatures passed explicit enabling acts. The authority to adopt such fees was found in local government’s “police power” to regulate development so as to protect the health, safety and welfare of its citizens. Developers challenged early impact fees, and state court decisions gradually developed a body of case law setting out the standards that should govern impact fees. This section spells out our understanding of the general principles of impact fees and some implications for calculating Franklin’s impact fees.

A fundamental principle of impact fees, rooted in both case law and norms of equity, is that impact fees should not charge new development for a higher level of service than is provided to existing development. While the impact fees could be based on a higher level of service than the one existing at the time of the adoption of the fees, two things are required if this is done. First, another source of funding other than impact fees must be identified and committed to fund the capacity deficiency created by the higher level of service. Second, the impact fees must generally be reduced to ensure that new development does not pay twice for the same level of service, once through impact fees and again through general taxes that are used to remedy the capacity deficiency for existing development. In order to avoid these complications, our general practice is to base the impact fees on the existing level of service.

A corollary principle is that new development should not have to pay twice for the same level of service. As noted above, if impact fees are based on a higher-than-existing level of service, the fees should be reduced by a credit that accounts for the contribution of new development toward remedying the existing deficiencies. A similar situation arises when the existing level of service has not been fully paid for. Outstanding debt on existing facilities that are counted in the existing level of service will be retired, in part, by revenues generated from new development. To avoid requiring new development to pay more than its proportional share, impact fees should be reduced to account for future tax payments that will retire outstanding debt on existing facilities.

In general, credit against impact fees is not required for funding that has historically been used for, or that is committed to be used for growth-related, capacity-expanding improvements. While new development may contribute toward such funding, so does existing development, and both existing and new development benefit from the higher level of service that the additional funding makes possible. However, consistent with past studies and standard impact fee practice, credit is provided in this update for State and Federal funding.

The City's road impact fee ordinance allows developers to receive offsets against their impact fees for right-of-way (ROW) dedication or construction of a thoroughfare shown on the Major Thoroughfare Plan map. Prior to the 2010 update, ROW costs had been excluded from the impact fee calculation, because the City required developers to dedicate a minimum of 60-foot ROW width without credit against the impact fee. The City is now obligated to provide credit for ROW dedication. If collectors are included in the fee, or in areas where a separate collector road fees is charged, developers will also need to receive credit for ROW dedications and improvements for collector road dedications and improvements.

BENEFIT DISTRICTS

The 2014 study proposed benefit districts to acknowledge that including city-wide collector road costs in the existing arterial road impact fee this would include costs for collectors, which serve a more limited area than arterials, thus ensuring a stronger nexus between fee payment and benefit received. The current revisions add a new chapter on ‘Service Areas,’ which follows this chapter and addresses the option of assessing a separate collector road impact fee in selected areas of the city. The remainder of this chapter is unchanged from the original 2014 study.

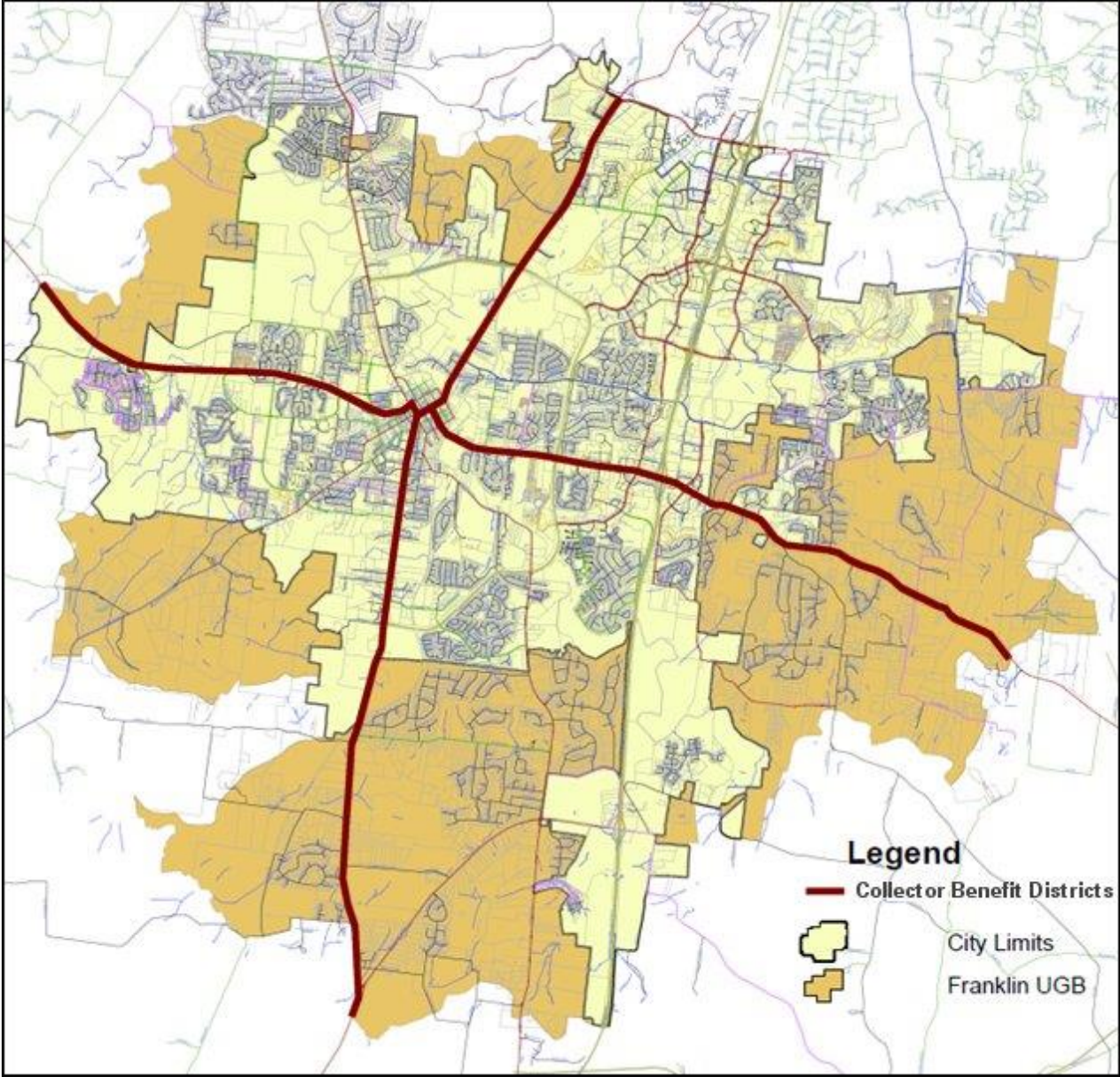
Impact fee case law states that impact fees must be spent so as to provide a reasonable benefit to the fee-paying development. One way of ensuring reasonable benefit is to create multiple benefit districts to ensure that the development fees paid by a development are spent closer to the development than would be the case under a single jurisdiction-wide benefit district. The need for multiple benefit districts increases with the geographic size of the community. On the other hand, the larger the number of benefit districts, the more difficult it is to accumulate sufficient funds in any one district to make any significant improvements. Deciding on the appropriate number and location of benefit districts requires balancing the need to show reasonable benefit to fee payers with the need to maintain sufficient flexibility in impact fee expenditures to address priority improvement needs.

The City’s current impact fee ordinance designates the entire area within the corporate boundaries as a single benefit district. The fact that the City’s road impact fees are currently limited to funding improvements to major thoroughfares strengthens the case for a single benefit district. Major thoroughfares are designed to move traffic from one part of the city to another, and the entire network acts as an integrated system.

In the event that the City decided to expand the road impact fee to cover collector roads, the City should consider dividing its jurisdiction into multiple benefit districts in order to recognize the more localized benefit of collector roads. These benefit districts would earmark the collector portion of the fee to be spent in the same area of the city in which they were collected, while the arterial portion of the fee could still be spent city-wide. While many benefit district configurations are possible, one option would be to divide the city into quadrants defined by US 31 and SR 96, as shown in Figure 2.

If collectors are included, the collector portion would be about 41% of the total fee. This amount could be adopted as a separate fee, with the collector fee earmarked to be spent only on collectors in the same benefit district. Alternatively, a single road fee could be retained, with the collector percentage of the fee paid earmarked to be spent on major road improvements (arterials or collectors) in the benefit district, with the rest of the fee paid put in an account that could be spent anywhere in the city.

Figure 2. City Limits, UGB and Proposed Collector Benefit Districts



SERVICE AREAS

This new chapter has been added to the 2014 study to address the option of imposing a separate collector road impact fee in one or more designated subareas of the city. Assessing a fee in only part of the City's jurisdiction requires some additional analysis beyond that provided in the original 2014 study, and this chapter provides that analysis.

Service Area Structure

The proposed service areas for a separate collector road impact fee are the same as the benefit districts proposed in the 2014 study (see Figure 2 on the previous page). The four potential collector road impact fee service areas would each also be a benefit district. The benefit districts were designed to reflect a reasonable nexus between collector road impacts and benefit from improvements, and are therefore also suited to be service areas for a separate collector road impact fee.

Level of Service Analysis

The consumption-based approach used in this study does not calculate the cost to have all roadways functioning at LOS C, only the cost to replace capacity consumed so that a 1:1 ratio of capacity to demand is maintained system-wide. Dividing the road capacity (vehicle-miles of capacity or VMC) by demand (vehicle-miles of travel or VMT) yields the actual system-wide VMC/VMT ratios for the arterial system, the collector road system for specified service areas, and for the major road system as a whole (arterials plus collectors). As shown in Table 4, the major roadway system provides 1.12 units of capacity for every unit of demand on the arterial system, and 1.23 if collectors are included in the city-wide road fee.

Table 4 has been relocated to this new chapter and expanded from the 2014 study to show levels of service (VMC/VMT ratios) for potential collector road impact fee service areas. This analysis is based on the addition of collector service areas to the major road inventory in Table 22 (see Appendix). Table 4 shows that the actual existing level of service for collector roads in each of the potential service areas is greater than the 1.00 ratio on which the standard consumption-based road fees calculated in this report are based. This analysis demonstrates that the proposed collector road impact fees are not based on a level of service that exceeds the existing level of service in any of the potential collector road impact fee service areas.

Table 4. Existing Roadway Levels of Service

Functional Class	Total VMC	Total VMT	VMC/VMT
Arterials/Expressways	980,344	874,929	1.12
Collectors, NW Area	98,971	84,150	1.18
Collectors, SW Area	110,747	69,710	1.59
Collectors, NE Area	134,932	69,353	1.95
Collectors, SE Area	116,631	32,131	3.63
Total Major Roads	1,441,625	1,170,660	1.23

Source: Estimated total daily VMT from Table 6; actual total daily VMC from Table 22 in the Appendix.

Potential Fee Differences by Service Area

These revisions use the city-wide fee calculation provided in the 2014 study as a reasonable proxy for the cost of new development on the collector road system within each collector road service area. For all of the inputs (costs, revenue credits and travel demand), the city-wide figures appear to be reasonable for each area, and differential data by area are not available, as explained below.

Road costs. At the time of the 2014 study, there were only two recent collector road improvements that could provide recent collector road cost data. Insufficient data are available to determine differences in collector road improvement costs by service area. There is also reason to believe that the city-wide costs are reasonable for all four areas. Construction costs are unlikely to vary significantly by area, and right-of-way costs are highly variable from one project to another, making recent city-wide average costs the best available.

Revenue credits. In the 2014 study, revenue credits were calculated at the city-wide level to account for potential outside funding, most of which derives from state, local and federal motor fuel taxes, some of which will be generated by new development. All of the credit was attributed to the arterial fee, due to the fact that all recent funding had been for arterial improvements. New development in each collector road service area will receive credit for all of their future gas tax payments that will be used for capacity-expanding road improvements via the arterial road impact fee credit. Consequently, a separate calculation of a collector road impact fee revenue credit for individual service areas is not warranted.

Travel demand. National travel demand data by land use type from the Institute of Transportation Engineers (ITE) are used in most road impact fee studies, because more localized data are generally not available. If it is reasonable to rely on national travel demand data at the jurisdiction level, it is also reasonable to rely on national travel demand data for subareas of a jurisdiction.

Summary

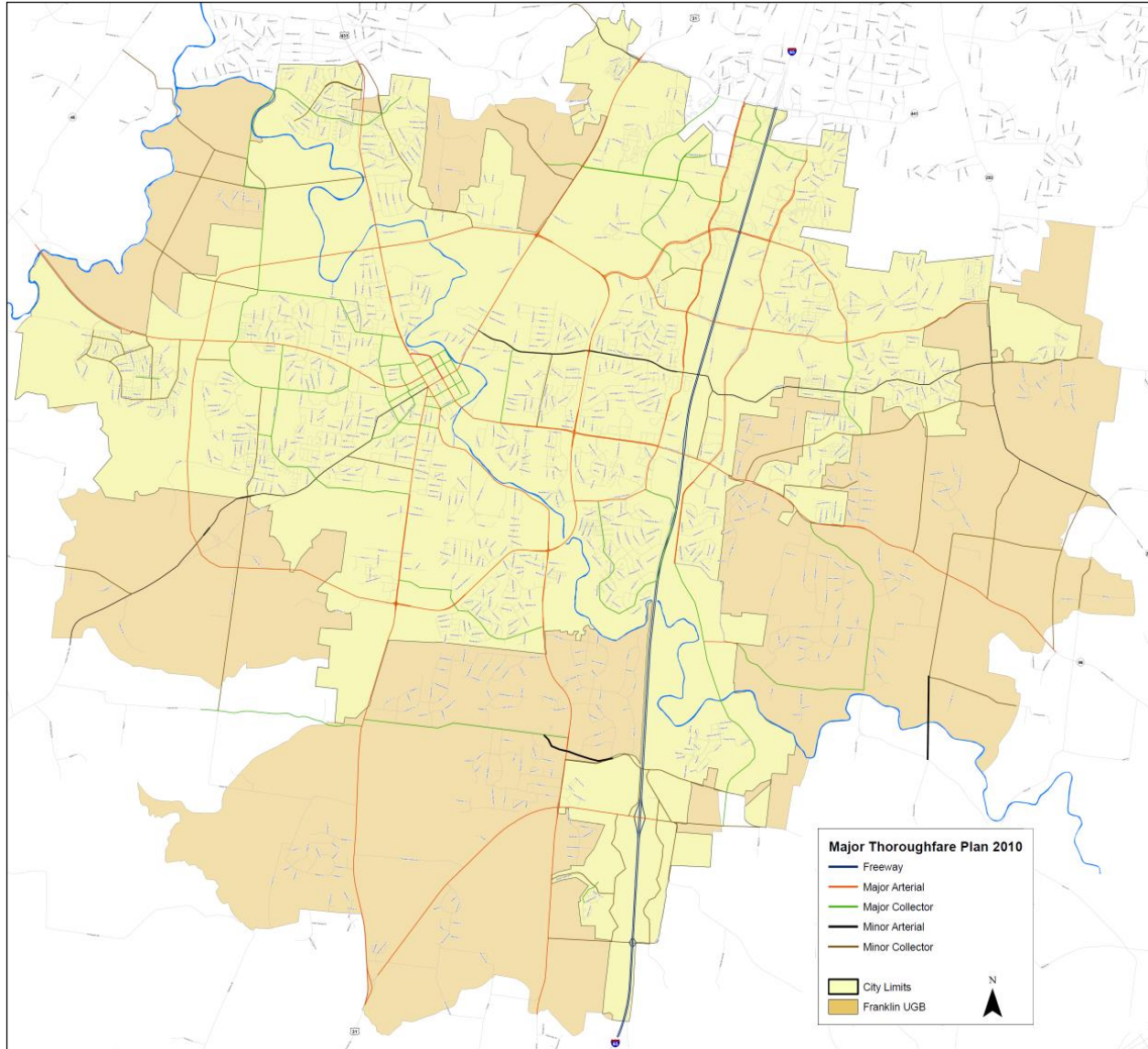
The City can assess collector road impact fees in one or more service areas corresponding to four quadrants of the city defined by US 31 and SR 96. It is reasonable to use city-wide data on road improvement costs, revenue credits and travel demand in the development of collector road impact fees for these subareas of the city.

MAJOR ROADWAY SYSTEM

A road impact fee system should include a clear definition of the major roadway system that is to be funded with the impact fees. In the City's current ordinance, the use of impact fee proceeds is restricted to arterial road improvements, which is defined as "any capital improvement, including but not limited to new roads, additional lanes, widened lanes, intersection improvements, turn lanes, bridges, traffic signals, intelligent transportation system (ITS) improvements, and associated drainage facilities, that expands the capacity of the city's arterial road system." The arterial road system is defined as "all existing and planned arterials, excluding Interstate 65, identified on the city's adopted Major Thoroughfare Plan map." The major roadway system includes State roads as well as City roads. The current ordinance and impact fee excludes major and minor collector roads from the impact fee calculations. As mentioned in the introduction, this study includes the option of expanding the impact fee to include collector roads. Including collector roads in the calculation of the impact fee in this update will allow the City to program future impact fee revenue for planned collector road improvements. If this option is adopted, the City would need to amend the impact fee ordinance to allow for the expenditure of impact fee funds for major and minor collector road improvements by amending the definition of major roadway system.

The major roadway system is thus currently defined as existing and planned arterials identified on the adopted Major Thoroughfare Plan map (see Figure 3) within the city limits. Interstate 65, which primarily serves through traffic rather than local traffic, is excluded from the arterial roadway system to be funded with the road impact fees. The Major Thoroughfare Plan map also identifies the major and minor collector roads that are included in this update. Currently, capacity-expanding improvements include any improvements to arterial roadways, including signalization and intersection improvements, which primarily have the effect of expanding capacity of the arterial roadway system, rather than providing greater access to a particular development or promoting safety.

Figure 3. Major Thoroughfare Plan Map



METHODOLOGY

Key components of the road impact fee methodology described in this chapter include service units, roadway capacity and the overall formula for calculating the fees. Subsequent chapters address the travel demand schedule, cost per service unit and net cost per service unit (revenue credits). The final chapter presents the updated road impact fee schedule.

Service Units

Service units create the link between supply (roadway capacity) and demand (traffic generated by new development). An appropriate service unit basis for road impact fees is vehicle-miles of travel (VMT). Vehicle-miles is a combination of the number of vehicles traveling during a given time period and the distance (in miles) that these vehicles travel.

The two time periods most often used in traffic analysis are the 24-hour day (average daily trips or ADT) and the single hour of the day with the highest traffic volume (peak hour trips or PHT). As in the prior impact fee study, this update utilizes the ADT for calculating the road cost component of the impact fee and ADT for calculating the credit component of the impact fee. While peak hour trip (PHT) generation rates are appropriate for assessing the impact of a new development on the need for road improvements during the evening peak hour, they tend to be more variable than average daily trips depending on size and demographic make-up of a community. Average daily trips is also the best measure for the amount of motor fuel tax that will be generated by new development, which is used to calculate the revenue credit for each land use type. The Tennessee Department of Transportation measures traffic counts on major roads using average daily trips; as a result, utilizing the ADT for both the cost and credit component of the impact fee eliminates the need to convert available traffic counts and projected volumes into PHT. For these reasons, we recommend continuing to use average daily VMT as the service unit for the road impact fee update.

Roadway Capacity

Nationally-accepted transportation levels of service (LOS) categories have been developed by the transportation engineering profession. Six categories, ranging from LOS A to LOS F, generally describe driving conditions in terms of such factors as speed and travel time, freedom to maneuver, traffic interruptions, comfort and convenience, and safety. LOS A represents free flow, while LOS F represents the breakdown of traffic flow, characterized by stop-and-go conditions.

In contrast to LOS, service volume capacity is a quantitative measure, expressed in terms of the rate of flow (vehicles passing a point during a period of time). Service volume capacity represents the maximum rate of flow that can be accommodated by a particular type of roadway while still maintaining a specified LOS. The service volume capacity at LOS E represents the maximum volume that can be accommodated before the flow breaks down into stop-and-go conditions that characterize LOS F, and thus represents the ultimate capacity of the roadway.

As stated in the City's *Major Thoroughfare Plan*, the LOS C is generally considered to be the minimum acceptable LOS for the City of Franklin. This is consistent with the City's road impact fees, which are based on LOS C. The City's 2004 *Major Thoroughfare Plan Update* identifies maximum daily service volumes at LOS C that are appropriate for planning purposes for a wide variety of roadway facilities (see Table 5).

Table 5. Road Capacity by Classification

Functional Classification	No. of Lanes	Vehicles/Day (LOS C)	Capacity/Lane
Collector	2	9,100	4,550
Collector	3	11,300	3,767
Collector	4	14,900	3,725
Collector	5	19,000	3,800
Arterial	2	11,600	5,800
Arterial	3	14,400	4,800
Arterial	4	19,000	4,750
Arterial	5	21,900	4,380
Expressway	2	28,100	14,050
Expressway	4	56,200	14,050
Expressway	6	84,300	14,050

Source: RPM Transportation Consultants, *City of Franklin Major Thoroughfare Plan Update*, August 2004.

Formula

The methodology used in Franklin's current road impact fee system is based on a "consumption-based" approach. The consumption-based model simply charges a new development the cost of replacing the capacity that it consumes on the major roadway system. That is, for every vehicle-mile of travel (VMT) generated by the development, the road impact fee charges the net cost to construct an additional vehicle-mile of capacity (VMC). The consumption-based methodology is maintained in this update, and credits continue to be provided for outstanding road-related debt and outside funding.

Since travel is never evenly distributed throughout a roadway system, actual roadway systems require more than one unit of capacity for every unit of demand in order for the system to function at an acceptable level of service. Suppose for example, that the City completes a major arterial widening project. The completed arterial is likely to have a significant amount of excess capacity for some period of time. If the entire system has just enough capacity to accommodate all of the vehicle-miles of travel, then the excess capacity on this segment must be balanced by another segment being over-capacity. Clearly, roadway systems in the real world need more total aggregate capacity than the total aggregate demand, because the traffic does not always precisely match the available capacity. Consequently, the standard consumption-based model generally underestimates the full cost of accommodating new development at the existing level of service. Nevertheless, it is a conservative, legally-defensible methodology that is simpler to update and provides more flexibility in the expenditure of funds than the alternative improvements-driven approach.

In most rapidly growing communities, some of the roadways will be experiencing an unacceptable level of congestion at any given point in time. However, it is not necessary to address segment-specific existing deficiencies in a consumption-based system, which, unlike an improvements-driven system, is not designed to recover the full costs to maintain the desired LOS on all roadway segments. Instead, it is only designed to maintain a minimum one-to-one overall ratio between system demand and system capacity. As discussed above, virtually all major roadway systems have more capacity (VMC) than demand (VMT) on a system-wide basis. Consequently, under a consumption-based system, the level of service standard is really a system-wide VMC/VMT ratio of 1.00. Since Franklin's major roadway system currently operates at better than this level of service (see Table 4), there are no existing deficiencies on a system-wide basis.

The recommended impact fee formula is presented in Figure 4.

Figure 4. Road Impact Fee Formula

$$\text{Impact Fee} = \text{VMT} \times \text{NET COST/VMT}$$

$$\text{VMT} = \text{TRIPS} \times \% \text{NEW} \times \text{LENGTH} \div 2$$

$$\text{NET COST/VMT} = \text{COST/VMC} \times \text{VMC/VMT} - \text{CREDIT/VMT}$$

Where:

$$\text{TRIPS} = \text{Trip ends during an average weekday}$$

$$2 = \text{Dividing by two avoids double-counting trips for origin and destination}$$

$$\% \text{ NEW} = \text{Percent of trips that are primary trips, as opposed to pass-by or diverted-linked trips}$$

$$\text{LENGTH} = \text{Average length of a trip on the major road system}$$

$$\text{COST/VMC} = \text{Average cost to add a new daily vehicle-mile of capacity}$$

$$\text{VMC/VMT} = \text{System-wide ratio of VMC to VMT on major road system (assumed 1:1)}$$

$$\text{CREDIT/VMT} = \text{Revenue credit per VMT}$$

TRAVEL DEMAND SCHEDULE

The travel demand generated by specific land use types is a product of three factors: 1) trip generation, 2) percent primary trips and 3) trip length. The first two factors are well documented in the professional literature, and the average trip generation characteristics identified in studies of communities around the nation should be reasonably representative of trip generation characteristics in Franklin. In contrast, trip lengths are much more likely to vary between communities, depending on the geographic size and shape of the community and its major roadway system.

Trip Generation

Trip generation rates were based on information published in the most recent edition of the Institute of Transportation Engineers' (ITE) Trip Generation manual. Trip generation rates represent trip ends, or driveway crossings from the site of a land use. Thus, a one-way trip from home to work counts as one trip end for the residence and one trip end for the work place. To avoid over-counting, all trip rates have been divided by two. This places the burden of travel equally between the origin and destination of the trip and eliminates double-charging for any particular trip.

Primary Trip Factor

Trip rates also need to be adjusted by a "primary trip factor" to exclude pass-by and diverted trips. This adjustment is intended to reduce the possibility of over-counting additional travel induced by the new development. Pass-by trips are those trips that are already on a particular route for a different purpose and simply stop at a development on that route. For example, a stop at a convenience store on the way home from the office is a pass-by trip for the convenience store. A pass-by trip does not create an additional burden on the street system and therefore should not be counted in the assessment of impact fees. A diverted-linked trip is similar to a pass-by trip, but a diversion is made from the regular route to make an interim stop. The reduction for pass-by and diverted trips utilized in this study was drawn from the ITE *Trip Generation Handbook* and other published information.

Average Trip Length

The average trip length is the most difficult travel demand factor to determine. In the context of a road impact fee using a consumption-based methodology, the relevant input is the average length of a trip on the major roadway system within the city limits. The starting point is national data for average trip length for specific land uses and trip purposes. However, these national trip lengths are likely to be unrepresentative of travel on the City's major roadway system. An adjustment factor can be derived by dividing the VMT actually observed on the major roadway system by the VMT that would be expected using national average trip lengths and trip generation rates.

The first step in developing the adjustment factor for the local trip length is to estimate the total VMT that would be expected on Franklin's major roadway system based on national travel demand characteristics. Existing land use data for the City were compiled using information from the Franklin Planning Department. Existing land uses are multiplied by trip generation rates, percent primary trips and average trip lengths and summed to estimate total city-wide VMT. As shown in Table 6, existing

land uses within the city limits, using national trip length data, would be expected to generate approximately 2.28 million VMT every day.

Table 6. Expected Vehicle-Miles of Travel

Land Use Type	Unit	Existing Units	Trip Rates	Primary Trips	Daily Trips	Length (miles)	Daily VMT
Single-Family Detached	Dwelling	16,746	4.76	100%	79,711	9.16	730,153
Multi-Family	Dwelling	11,080	3.33	100%	36,896	8.30	306,237
Mobile Home	Dwelling	408	2.50	100%	1,020	8.30	8,466
Gen. Retail/Commercial	1,000 sq. ft.	12,320	21.35	43%	113,104	6.27	709,162
Office/Institutional	1,000 sq. ft.	8,479	5.52	75%	35,103	9.96	349,626
Industrial/Warehouse	1,000 sq. ft.	5,334	3.42	95%	17,330	9.96	172,607
Total					283,164		2,276,251

Source: Existing residential and nonresidential units from City of Franklin, 2012 Development Report, December 2012; daily trip rates and primary trip factors from Table 10; daily trips is product of trip rate and primary trips; national average trip length from Table 9; daily VMT is product of trips and trip length.

The next step in developing the local trip length adjustment factor is to determine actual daily VMT on the City's major roadway system. An inventory of the existing major roadway system was prepared as part of this study (see Table 22 in the Appendix). Roadway segment lengths and recent traffic volumes are used to estimate actual daily VMT. Since counts were not available for all segments, total VMT must be estimated from VMT for segments for which counts are available. As shown in Table 7, the City's major roadway system has an estimated 1.17 million total daily VMT.

Table 7. Actual Existing Vehicle-Miles of Travel

Functional Classification	Road Segments w/Counts			Total	Total
	VMT	Ln-Mi.	Veh./Ln	Ln-Mi.	VMT
Expressway	138,462	17.60	7,867	17.60	138,459
Other Arterial	613,824	121.27	5,062	145.49	736,470
Subtotal, Arterials	752,286				874,929
Collectors, NW Area	36,649	9.76	3,755	22.41	84,150
Collectors, SW Area	34,649	12.10	2,864	24.34	69,710
Collectors, NE Area	24,691	12.10	2,041	33.98	69,353
Collectors, SE Area	1,754	1.44	1,218	26.38	32,131
Subtotal, Collectors	97,743	35.40	2,761	107.11	295,731
Total	850,028				1,170,660

Source: VMT and lane-miles of segments with traffic counts and total lane-miles from Table 22 in the Appendix; vehicles per lane is VMT on segments with counts divided by lane-miles with counts; total VMT is product of vehicles per lane and total lane-miles.

It should be noted that the collector road VMT for the four service areas sum to less than the collector subtotal, which is derived by multiplying average vehicle trips per lane by total lane-miles. This is attributed to the small sample size of recent traffic counts in the southeast area. Using the weighted average vehicles per lane corrects for this under-estimate of VMT for the southeast area.

Comparing the results of the last two tables, it can be seen that expected VMT using existing land use data and national travel demand characteristics significantly over-estimates VMT actually observed on the major roadway system. This result is not surprising, since the VMT estimate does not include travel on local roads, the Interstate or on any roadways outside of the Franklin city limits. Consequently, it is necessary to develop an adjustment factor to account for this variation. The local travel demand adjustment factor is the ratio of actual to expected VMT on the major roadway system. As shown in Table 8, the national average trip length should be multiplied by a local adjustment factor of 0.384 if the major road system continues to be defined as arterials, and 0.514 if collector roads are included in the impact fee. The difference between the two adjustment factors reflects the share of traffic attributable to collector roads.

Table 8. Local Trip Length Adjustment Factors

	Arterials Only	All Major Roads
Actual Daily Vehicle-Miles of Travel (VMT)	874,929	1,170,660
÷ Expected Daily Vehicle-Miles of Travel (VMT)	2,276,251	2,276,251
Local Adjustment Factor	0.384	0.514

Source: Actual VMT from Table 7; expected VMT from Table 6.

The national average trip lengths derived from the U.S. Department of Transportation's 2009 *National Household Travel Survey* for a variety of trip purposes, including home-to-work, doctor/dentist, school/church, shopping, and other personal trips, have been adjusted by the local trip length adjustment factor. Since this study provides an option to include collector roads, the study will include two separate travel demand schedules: one that reflects travel on arterial roads only and one that reflects travel on both arterial and collector roads. The localized trip lengths are shown in Table 9.

Table 9. Average Trip Length by Trip Purpose

Trip Purpose	National Trip Length (miles)	Arterials Only		All Major Roads	
		Local Adjustment Factor	Local Trip Length (miles)	Local Adjustment Factor	Local Trip Length (miles)
To or from work	11.98	0.384	4.60	0.514	6.16
Office/Industrial	9.96	0.384	3.82	0.514	5.12
Medical/Dental	9.61	0.384	3.69	0.514	4.94
Average	9.28	0.384	3.56	0.514	4.77
Single-Family Det.	9.16	0.384	3.52	0.514	4.71
Multi-Family	8.30	0.384	3.19	0.514	4.27
School/Church	8.47	0.384	3.25	0.514	4.35
Family/Personal	6.61	0.384	2.54	0.514	3.40
Shopping	6.27	0.384	2.41	0.514	3.22

Source: National trip lengths from U.S. Department of Transportation, *National Household Travel Survey*, 2009 (office/industrial is 25% work trip length and 75% average trip length); local adjustment factors from Table 8.

Travel Demand Schedule

The result of combining trip generation rates, primary trip factors and average trip lengths is a travel demand table that establishes the vehicle-miles of travel (VMT) during the average weekday generated by various land use types per unit of development. The recommended travel demand schedules associated with both of the road impact fee options are presented in Table 10.

Table 10. Travel Demand by Land Use

Land Use Type	Unit	Daily Trips/ Unit	% Primary Trips	Arterials Only		All Major Roads	
				Trip Length	Daily VMT	Trip Length	Daily VMT
Single-Family Detached	Dwelling	4.76	100%	3.52	16.76	4.71	22.42
Multi-Family	Dwelling	3.33	100%	3.19	10.62	4.27	14.22
Mobile Home Park	Site	2.50	100%	3.19	7.98	4.27	10.68
Congregate Care Facility	Dwelling	1.01	100%	3.69	3.73	4.94	4.99
Hotel/Motel	Room	3.45	100%	2.54	8.76	3.40	11.73
Retail/Commercial							
Shopping Center/Gen. Retail	1,000 sq. ft.	21.35	43%	2.41	22.13	3.22	29.56
Restaurant, Quality	1,000 sq. ft.	44.98	38%	2.41	41.19	3.22	55.04
Restaurant, Fast Food	1,000 sq. ft.	248.06	30%	0.80	59.53	1.07	79.63
Office/Institutional							
Office, General	1,000 sq. ft.	5.52	75%	3.82	15.81	5.12	21.20
Hospital	1,000 sq. ft.	6.61	75%	3.69	18.29	4.94	24.49
Nursing Home	1,000 sq. ft.	3.80	75%	3.69	10.52	4.94	14.08
Church	1,000 sq. ft.	4.56	75%	3.25	11.12	4.35	14.88
Elementary/Sec. School	1,000 sq. ft.	7.02	24%	3.25	5.48	4.35	7.33
Industrial							
Manufacturing	1,000 sq. ft.	1.91	95%	3.82	6.93	5.12	9.29
Industrial Park	1,000 sq. ft.	3.42	95%	3.82	12.41	5.12	16.63
Business Park	1,000 sq. ft.	6.22	95%	3.82	22.57	5.12	30.25
Warehouse	1,000 sq. ft.	1.78	95%	3.82	6.46	5.12	8.66
Mini-Warehouse	1,000 sq. ft.	1.25	95%	2.54	3.02	3.40	4.04

Source: Trips are ½ of average daily trip ends on a weekday from ITE, *Trip Generation*, 9th ed., 2012 (hotel/motel based on average of two; elementary/secondary based on average of elementary, middle and high school); percent of all trips that are primary trips from ITE, *Trip Generation Handbook*, June 2004; primary trip percentage for schools based on Preston Hitchens, "Trip Generation for Day Care Centers," ITE 1990 *Compendium of Technical Papers*, 1990; average trip length from Table 9 (fast food restaurant assumes one-third shopping trip length).

COST PER SERVICE UNIT

The cost per vehicle-mile in this update is based on a set of recent actual major road construction projects that add capacity to the roadway system. Unlike the previous update, the road construction costs include the costs of design. Recent road improvement project costs are summarized in Table 11. These recent projects added lanes and measurable capacity to the roadway system.

Table 11. Road Improvement Costs

Project Name	Improvement	Year	Design/ Construction	ROW	Total Cost
Carothers Pkwy, S Carothers-Ladd Pk	New 2 Lane	2014	\$13,818,227	\$344,000	\$14,162,227
Carothers Pkwy, Liberty Pike-McEwen	New 4 Lane	2009	\$6,628,430	\$4,000,000	\$10,628,430
Mack Hatcher, Hillsboro-SR 96 W	New 4 Lane	2012	\$73,500,000	\$12,500,000	\$86,000,000
McEwen, Carothers-Cool Spgs	New 4 Lane	2012	\$10,172,167	\$1,770,384	\$11,942,551
McEwen, Cool Spgs-Jordan	Widen 3-5 Lns	2009	\$1,444,450	\$237,680	\$1,682,130
McEwen Dr Temporary Connector	New 4 Lane	2013	\$2,263,322	\$361,253	\$2,624,575
S Carothers Parkway	New 4 Lane	2012	\$16,335,000	\$1,942,000	\$18,277,000
Subtotal, Arterial			\$107,826,596	\$19,213,317	\$145,316,913
3rd Ave N, N Margin-5th Ave	New 2 Lane	2014	\$4,856,330	\$186,500	\$5,042,830
Nichol Mill Ln, Seaboard-Mallory	New 2 Lane	2012	\$1,372,742	\$800,975	\$2,173,717
Subtotal, Collectors			\$6,229,072	\$987,475	\$7,216,547
Total, All Major Roads			\$114,055,668	\$20,200,792	\$152,533,460

Source: City of Franklin, Engineering Department.

The average cost to create an additional lane-mile of roadway can be derived by dividing the cost of the recent capacity-expanding road improvement projects by the additional lane-miles created by the improvements. Based on the cost of recent and current arterial and collector road improvements, the average costs per lane-mile are calculated in Table 12.

Table 12. Road Improvement Cost per Lane-Mile

Project Name	Miles	New Lanes	Lane- Miles	Total Cost	Cost per Lane-Mile
Carothers Pkwy, S Carothers-Ladd Pk	2.00	2	4.00	\$14,162,227	\$3,540,557
Carothers Pkwy, Liberty Pike-McEwen	0.74	4	2.96	\$10,628,430	\$3,590,686
Mack Hatcher, Hillsboro-SR 96 W	3.22	4	12.88	\$86,000,000	\$6,677,019
McEwen, Carothers-Cool Spgs	0.97	4	3.88	\$11,942,551	\$3,077,977
McEwen, Cool Spgs-Jordan	0.15	2	0.30	\$1,682,130	\$5,607,100
McEwen Dr Temporary Connector	0.33	4	1.32	\$2,624,575	\$1,988,314
S Carothers Parkway	1.70	4	6.80	\$18,277,000	\$2,687,794
Subtotal, Arterial	7.41		32.14	\$145,316,913	\$4,521,373
3rd Ave N, N Margin-5th Ave	0.26	2	0.52	\$5,042,830	\$9,697,749
Nichol Mill Ln, Seaboard-Mallory	0.37	2	0.74	\$2,173,717	\$2,937,455
Subtotal, Collectors	0.63		1.26	\$7,216,547	\$5,727,418
Total, All Major Roads	8.04		33.40	\$152,533,460	\$4,566,870

Source: Miles and number of lanes from City of Franklin Engineering Department; lane-miles is product of new lanes and miles; total cost from Table 11; cost per lane-mile is cost divided by lane-miles.

The average cost per unit of capacity added to the major roadway system can be determined by dividing the average cost of a new lane-mile by the average daily capacity per lane at LOS C. The average daily capacities per new lane added by the set of recent projects are calculated in Table 13.

Table 13. Average Capacity per Lane

Project Name	Improvement	Miles	New Capacity	New VMC	New Ln-Mi.	Capacity/Lane
Carothers Pkwy, S Carothers-Ladd Pk	New 2 Lane	2.00	9,100	18,200	4.00	4,550
Carothers Pkwy, Liberty Pike-McEwen	New 4 Lane	0.74	19,000	14,060	2.96	4,750
Mack Hatcher, Hillsboro-SR 96 W	New 4 Lane	3.22	56,200	180,964	12.88	14,050
McEwen, Carothers-Cool Spgs	New 4 Lane	0.97	19,000	18,430	3.88	4,750
McEwen, Cool Spgs-Jordan	Widen 3-5 Lns	0.15	7,500	1,125	0.30	3,750
McEwen Dr Temporary Connector	New 4 Lane	0.33	19,000	6,270	1.32	4,750
S Carothers Parkway	New 4 Lane	1.70	19,000	32,300	6.80	4,750
Subtotal, Arterial		9.11		271,349	32.14	8,443
3rd Ave N, N Margin-5th Ave	New 2 Lane	0.26	9,100	2,366	0.52	4,550
Nichol Mill Ln, Seaboard-Mallory	New 2 Lane	0.37	9,100	3,367	0.74	4,550
Subtotal, Collectors		0.63		5,733	1.26	4,550
Total, All Major Roads		9.74		277,082	33.40	8,296

Source: Improvement length and new lane-miles from Table 12; new capacity added derived from Table 5; new VMC is product of miles and new capacity; capacity per lane is new VMC divided by new lane-miles.

The cost per service unit is calculated by dividing the average cost per lane-mile by the average daily capacity added. As shown in Table 14, the arterial cost per service unit is \$536 per VMC. If collectors are included, the major road cost per service unit is \$550 per VMC.

Table 14. Cost per Vehicle-Mile of Capacity

Arterials Only	
Average Cost per Lane-Mile	\$4,521,373
÷ Average Daily Capacity per Lane at LOS C	8,443
Arterial Cost per Vehicle-Mile of Capacity (VMC)	\$536
All Major Roads	
Average Cost per Lane-Mile	\$4,566,870
÷ Average Daily Capacity per Lane at LOS C	8,296
Major Road Cost per Vehicle-Mile of Capacity (VMC)	\$550

Source: Average cost per lane-mile from Table 12; average daily capacity per lane from Table 13.

NET COST PER SERVICE UNIT

As discussed in the Legal Framework chapter, credit is due against impact fees under three situations: (1) there are existing deficiencies, (2) there is outstanding debt on facilities serving existing development, or (3) there are dedicated local revenues or outside funding for the same improvements. These are each addressed below. The resulting revenue credits are deducted from the cost per service unit calculated in the previous chapter in the final section of this chapter to calculate the net cost per service unit.

Existing Deficiencies

From an impact fee perspective, there are no existing deficiencies. The fees are based on a system-wide level of service, defined as a 1-to-1 ratio of system-wide capacity (VMC) to system-wide demand (VMT). There are no existing deficiencies on a system-wide basis as long as the VMC/VMT ratio is greater than 1.00. The actual existing major roadway level of service is a 1.12 VMC/VMT ratio for arterials only, and a 1.59 3.63ratio if collectors are included (see Table 4 above). Because the fees are based on a LOS that is lower than the actual existing LOS, no deficiency credit is warranted.

Outstanding Debt

The City of Franklin currently has seven outstanding debt issues that have been used to fund improvements on the arterial system. As shown in Table 15, the road-related balance for these outstanding debt issues is \$41.3 million.

Table 15. Outstanding Road Debt Issues

Bond Issue	Outstanding Balance	Road-Related	Road-Related Balance
General Obligation Refunding Bonds 2004	\$1,375,000	55.0%	\$756,250
County Club & McEwen Reimbursement 2005	\$2,715,000	45.0%	\$1,221,750
Capital Improvement Bonds 2007	\$20,000,000	43.0%	\$8,600,000
Capital Improvement Bonds 2009A	\$8,060,000	34.6%	\$2,788,760
Capital Improvement Bonds 2009B	\$30,625,000	34.6%	\$10,596,250
Capital Improvement Bonds 2010	\$15,725,000	40.0%	\$6,290,000
Capital Improvement Refunding Bonds 2012	\$21,710,000	51.0%	\$11,072,100
Outstanding Road Debt	\$100,210,000		\$41,325,110

Source: City of Franklin, December 19, 2013.

In cases where outstanding debt is for improvements that are serving existing development, a credit is due for future taxes that new development will generate that will be used to retire that debt. In the case of Franklin's road impact fees, however, no such credit is warranted. As noted above, the road fees are based on a lower level of service. The cost of the excess capacity in the arterial system alone is significantly greater than the amount of the outstanding road-related debt. The replacement value of the excess arterial capacity is \$56.5 million (see Table 16 below), compared to only \$41.3 million in outstanding debt.

From the facts presented above, it is clear that the outstanding road debt is for improvements that have built excess capacity into the system, not improvements that are serving existing development at the level of service on which the impact fees are based. In addition, new development will not be

paying the debt. The City is using road impact fees, not ad valorem taxes or general funds, to retire the road-related debt. For these reasons, no debt credit against the road impact fees is warranted.

Table 16. Replacement Value of Excess Arterial Capacity

Existing Arterial Vehicle-Miles of Capacity (VMC)	980,344
– Existing Arterial Vehicle-Miles of Travel (VMT)	-874,929
Existing Excess Arterial Capacity (VMC)	105,415
x Average Arterial Cost per VMC	\$536
Replacement Cost of Arterial Excess Capacity	\$56,502,440

Source: Arterial VMC and VMT from Table 4; cost per VMC from Table 14.

Outside Funding

The amount of intergovernmental revenue that is applied toward funding capacity-expanding capital improvements in Franklin is based on anticipated funding over a 7-year period covered by the last two adopted regional Transportation Improvement Programs. Only improvements that are both capacity-expanding and on the major road network are eligible for credit. For example, improvements on I-65 do not occur on the major roadway system used in this study. The non-local share of funding includes funds programmed from the portion of State gas tax revenues that the City receives through the State Street Aid program. The improvements and funding are summarized in Table 17 below. The creditable funding over the 7-year period totaled \$116.7 million.

Table 17. Road Improvements and Funding, FY 2011-2017

Project Name	Description	Total Cost	Non-Local Cost	
			Total	Creditable
Columbia South, Downs to SR 397	New Road	\$5,000,000	\$0	\$0
Franklin Greenway	Multi-Use Path	\$1,147,500	\$630,000	\$0
Franklin Traffic Operations	ITS Infrastructure	\$6,000,000	\$4,800,000	\$4,800,000
Goose Creek Bypass at I-65	New Interchange	\$30,000,000	\$30,000,000	\$0
Goose Creek Bypass	New Road	\$2,050,000	\$0	\$0
Hillsboro Rd, Hwy 96-M. Hatcher	New Road	\$25,000,000	\$1,250,000	\$1,250,000
I-65 Widening from SR 96-SR840	Freeway Widening	\$70,000,000	\$70,000,000	\$0
Mack Hatcher NE Widening	Widen Road	\$15,800,000	\$15,800,000	\$15,800,000
Mack Hatcher NW Extension	Extend Existing Road	\$76,500,000	\$76,500,000	\$76,500,000
Mack Hatcher SE Widening	Widen Road	\$15,000,000	\$15,000,000	\$15,000,000
McEwen Drive Phase 3	Widen Existing Road	\$15,000,000	\$0	\$0
McEwen Drive Phase 4	Widen Existing Road	\$17,500,000	\$0	\$0
McEwen Drive Extension	Extend Existing Road	\$12,500,000	\$0	\$0
Lewisburg Pike, SR 397-Donnellson	Widen Existing Road	\$2,800,000	\$0	\$0
Lewisburg Pike, Donnellson-Old Peyton	Widen Existing Road	\$1,000,000	\$0	\$0
Lewisburg Pike, Old Peyton-Goose Ck	Widen to 4 Lane Divided	\$8,010,000	\$0	\$0
Lewisburg Pike, I-65 to 0.3 mi. west	Widen 2-4 lanes	\$1,500,000	\$1,500,000	\$1,500,000
Franklin ITS Infrastructure	ITS infrastructure	\$2,300,000	\$1,840,000	\$1,840,000
Total, FY 2011-2017		\$307,107,500	\$217,320,000	\$116,690,000

Source: Nashville Area Metropolitan Planning Organization, *Transportation Improvement Program*, FY 2011-2014 and FY 2014-2017.

The State and Federal funding credit is shown in Table 15. At the current cost of borrowing, the present value of State and Federal funding revenue that can be anticipated over the next 20 years,

which is the typical long-term debt repayment period, is about \$243 per daily vehicle-mile of travel on the arterial system, and \$182 per VMT when collectors are included.

Table 18. State/Federal Funding Credit

	Arterials Only	All Major Roads
Total Federal/State Capacity Funding, FY 2011-2016	\$116,690,000	\$116,690,000
÷ Years	7	7
Annual Federal/State Capacity Funding	\$16,670,000	\$16,670,000
÷ Daily Vehicle-Miles of Travel (VMT)	874,929	1,170,660
Average Annual Funding per VMT	\$19.05	\$14.24
x Net Present Value Factor (20 Years @ 4.73%)	12.75	12.75
State/Federal Funding Credit per VMT	\$243	\$182

Source: Total Federal/State capacity funding from Table 17; daily VMT from Table 7; present value factor based on 20 years at 4.73% discount rate based on average interest rate on state and local bonds in December 2013 from the Federal Reserve at <http://www.federalreserve.gov/releases/h15/data.htm>.

Net Cost Summary

As shown in Table 19, reducing the cost per service unit associated by the State and Federal funding credit leaves a net cost of \$293 per VMT for the arterial system and \$368 per VMT if collectors are included.

Table 19. Net Cost per Vehicle-Mile of Travel

Average Cost per VMT, Arterials Only	\$536
– State/Federal Funding Credit per VMT	-\$243
Arterial Net Cost per Daily VMT	\$293
Average Cost per VMT, All Major Roads	\$550
– State/Federal Funding Credit per VMT	-\$182
All Major Roads Net Cost per Daily VMT	\$368

Source: Average cost per VMT based on cost per VMC from Table 14; State/Federal funding credit from Table 18.

POTENTIAL FEE SCHEDULES

The net cost per unit of development is the product of daily vehicle-miles of travel generated by a unit of development and the net cost per VMT. The option of including collector roadways in this update results in two potential impact fee schedules. The final two columns in Table 20 present the updated fees for arterials only and for the total major roadway system, including collector roads.

Table 20. Potential Fee Schedules, Arterial and All Major Roads

Land Use Type	Unit	VMT/Unit		Net Cost/VMT		Potential Fee	
		Arterials	Total	Arterials	Total	Arterials	Total
Single-Family Detached	Dwelling	16.76	22.42	\$293	\$368	\$4,911	\$8,251
Multi-Family	Dwelling	10.62	14.22	\$293	\$368	\$3,112	\$5,233
Mobile Home Park	Site	7.98	10.68	\$293	\$368	\$2,338	\$3,930
Congregate Care Facility	Dwelling	3.73	4.99	\$293	\$368	\$1,093	\$1,836
Hotel/Motel	Room	8.76	11.73	\$293	\$368	\$2,567	\$4,317
Retail/Commercial							
Shopping Center/Gen. Retail	1,000 sq. ft.	22.13	29.56	\$293	\$368	\$6,484	\$10,878
Restaurant, Quality	1,000 sq. ft.	41.19	55.04	\$293	\$368	\$12,069	\$20,255
Restaurant, Fast Food	1,000 sq. ft.	59.53	79.63	\$293	\$368	\$17,442	\$29,304
Office/Institutional							
Office, General	1,000 sq. ft.	15.81	21.20	\$293	\$368	\$4,632	\$7,802
Hospital	1,000 sq. ft.	18.29	24.49	\$293	\$368	\$5,359	\$9,012
Nursing Home	1,000 sq. ft.	10.52	14.08	\$293	\$368	\$3,082	\$5,181
Church	1,000 sq. ft.	11.12	14.88	\$293	\$368	\$3,258	\$5,476
Elementary/Sec. School	1,000 sq. ft.	5.48	7.33	\$293	\$368	\$1,606	\$2,697
Industrial							
Manufacturing	1,000 sq. ft.	6.93	9.29	\$293	\$368	\$2,030	\$3,419
Industrial Park	1,000 sq. ft.	12.41	16.63	\$293	\$368	\$3,636	\$6,120
Business Park	1,000 sq. ft.	22.57	30.25	\$293	\$368	\$6,613	\$11,132
Warehouse	1,000 sq. ft.	6.46	8.66	\$293	\$368	\$1,893	\$3,187
Mini-Warehouse	1,000 sq. ft.	3.02	4.04	\$293	\$368	\$885	\$1,487

Source: Daily VMT per unit from Table 10; net cost per VMT from Table 19.

The collector road impact fee is the difference between the fee for all major roads and the fee for arterial roads only. The potential collector road fees are shown in Table 21 on the following page.

Table 21. Potential Fee Schedule, Collector Roads

Land Use Type	Unit	Fee for All Major Roads	Fee for Arterials	Fee for Collectors
Single-Family Detached	Dwelling	\$8,251	\$4,911	\$3,340
Multi-Family	Dwelling	\$5,233	\$3,112	\$2,121
Mobile Home Park	Site	\$3,930	\$2,338	\$1,592
Congregate Care Facility	Dwelling	\$1,836	\$1,093	\$743
Hotel/Motel	Room	\$4,317	\$2,567	\$1,750
Retail/Commercial				
Shopping Center/Gen. Retail	1,000 sq. ft.	\$10,878	\$6,484	\$4,394
Restaurant, Quality	1,000 sq. ft.	\$20,255	\$12,069	\$8,186
Restaurant, Fast Food	1,000 sq. ft.	\$29,304	\$17,442	\$11,862
Office/Institutional				
Office, General	1,000 sq. ft.	\$7,802	\$4,632	\$3,170
Hospital	1,000 sq. ft.	\$9,012	\$5,359	\$3,653
Nursing Home	1,000 sq. ft.	\$5,181	\$3,082	\$2,099
Church	1,000 sq. ft.	\$5,476	\$3,258	\$2,218
Elementary/Sec. School	1,000 sq. ft.	\$2,697	\$1,606	\$1,091
Industrial				
Manufacturing	1,000 sq. ft.	\$3,419	\$2,030	\$1,389
Industrial Park	1,000 sq. ft.	\$6,120	\$3,636	\$2,484
Business Park	1,000 sq. ft.	\$11,132	\$6,613	\$4,519
Warehouse	1,000 sq. ft.	\$3,187	\$1,893	\$1,294
Mini-Warehouse	1,000 sq. ft.	\$1,487	\$885	\$602

Source: Potential fees for all major roads and arterial roads from Table 20; potential collector road fee is the remainder.

ADMINISTRATIVE SIMPLIFICATION

This chapter has been added to the 2014 study to address some difficulties staff has had administering the road impact fee ordinance. The major problem arises from the need to classify proposed uses into land use categories listed in the fee schedule, or to prepare individual fee assessments for proposed uses that are not specifically listed in the fee schedule. This problem can be addressed by adding definitions of the land use categories to the ordinance, and defining them broadly so that virtually any use can be relatively easily classified into only one category.

The categories could be simplified by (1) creating a new “public/institutional” category that would combine the current separate hospital, nursing home, church and elementary/secondary school categories, as well as a host of other such uses; and (2) a new “industrial” category that would combine the current manufacturing, industrial park and business park categories. The fees for the combined categories would be equal to the lowest fee for the current land use categories being combined. The current and proposed land use categories are shown in Figure 5.

Figure 5. Existing and Proposed Fee Schedule Categories

Current Land Use Categories	Proposed Land Use Categories
Single-Family Detached	Single-Family Detached
Multi-Family	Multi-Family
Mobile Home Park	Mobile Home Park
Congregate Care Facility	Congregate Care Facility
Hotel/Motel	Lodging
Shopping Center/Gen. Retail	Retail/Commercial
Restaurant, Quality	
Restaurant, Fast Food	Restaurant, Fast Food
Office, General	Office
Hospital	Public/Institutional
Nursing Home	
Church	
Elementary/Sec. School	
Manufacturing	Industrial
Industrial Park	
Business Park	
Warehouse	Warehouse
Mini-Warehouse	Mini-Warehouse

The following definitions are suggested for the proposed land use categories.

Single-Family Detached. A single dwelling unit located on a lot or parcel of land and unconnected to any other dwelling unit.

Multi-Family. A lot or parcel of land containing more than one dwelling unit.

Mobile Home/RV Park. A lot or parcel of land use designed or used for the rental of spaces for mobile homes or recreational vehicles.

Congregate Care Facility. An independent living development where residents occupy dwelling units and which provides medical services and centralized amenities such as dining, housekeeping, transportation, and organized social/recreation activities.

Lodging. An establishment providing rooms for transient or longer-term occupancy. Typical uses include hotels, motels, bed and breakfast inns, college dormitories, and fraternity and sorority houses.

Retail/Commercial. An establishment, other than a fast food restaurant, engaged in the selling or rental of goods, services or entertainment to the general public. Such uses include, but are not limited to, shopping centers, discount stores, supermarkets, home improvement stores, building, material and lumber stores, garden centers, car dealerships, convenience markets, furniture stores, pharmacies, restaurants, bars, nightclubs, automobile sales and service centers, banks, movie theaters, amusement arcades, bowling alleys, golf courses open to the public, marinas, movie theaters, barber shops, laundromats, funeral homes, vocational or technical schools, dance studios, health clubs, racquet clubs, banquet halls and conference facilities.

Restaurant, Fast Food. An establishment offering prepared meals with a drive-through window or which serves customers in their vehicles

Office. A building not located in a shopping center and exclusively containing establishments providing executive, management, administrative or professional services, and which may include ancillary services for office workers, such as a restaurant, coffee shop, newspaper or candy stand, or child care facilities. Typical uses include real estate, insurance, property management, investment, employment, travel, advertising, secretarial, data processing, telephone answering, telephone marketing, music, radio and television recording and broadcasting studios; professional or consulting services in the fields of law, architecture, design, engineering, accounting and similar professions; interior decorating consulting services; medical and dental offices and clinics, including veterinarian clinics and kennels; and business offices of private companies, utility companies, trade associations, unions and nonprofit organizations.

Public/Institutional. A governmental, quasi-public or institutional use, not located in a shopping center or included in the definition of any other land use. Typical uses include elementary, secondary or higher educational establishments, day care centers, hospitals, mental institutions, nursing homes, assisted living facilities where residents do not occupy dwelling units, fire stations, city halls, courthouses, post offices, jails, libraries, museums, places of religious worship, military bases, airports, bus stations, fraternal lodges, and public recreational facilities.

Industrial. An establishment primarily engaged in the fabrication, assembly or processing of goods. Typical uses include manufacturing plants, light industrial uses, utility works, welding shops, wholesale bakeries, dry cleaning plants, bottling works and research and development centers.

Warehouse. An establishment primarily engaged in the display, storage and sale of goods to other firms for resale, or activities involving significant movement and storage of products or equipment. Typical uses include wholesale distributors, storage warehouses, moving and storage firms, trucking and shipping operations, office/warehouse developments and major mail processing centers.

Mini-Warehouse. A storage facility containing independent, fully enclosed bays that are leased to persons for storage of their household goods or personal property.

APPENDIX

Table 22. Existing Major Roadway Inventory

Roadway	From	To	Area	Lns	Mi.	Total	w/Ct.	ADT	Cap.	VMC	VMT
Mack Hatcher	Hillsboro Rd	Franklin Rd	City	4	1.70	6.80	6.80	17,933	56,200	95,540	30,486
Mack Hatcher	Franklin Rd	Liberty Pike	City	2	1.50	3.00	3.00	21,950	28,100	42,150	32,925
Mack Hatcher	Liberty Pike	Murfreesboro	City	2	0.85	1.70	1.70	13,340	28,100	23,885	11,339
Mack Hatcher	Murfreesboro	Lewisberg Av	City	2	1.30	2.60	2.60	25,057	28,100	36,530	32,574
Mack Hatcher	Lewisberg Av	Columbia Av	City	2	1.75	3.50	3.50	17,793	28,100	49,175	31,138
Subtotal, Expressways					7.10	17.60	17.60			247,280	138,462
3rd Ave North	Main St	5th Ave N	City	2	0.34	0.68	0.68	4,574	11,600	3,944	1,555
3rd Ave South	Main St	S Margin St	City	2	0.24	0.48	0.48	6,142	11,600	2,784	1,474
5th Ave, N	3rd Ave N	Main St	City	4	0.38	1.52	1.52	17,515	19,000	7,220	6,656
5th Ave, S	Main St	S Margin St	City	2	0.24	0.48	0.48	5,752	11,600	2,784	1,380
Carothers Pkwy	S of Moores Ln	Cool Springs	City	4	1.08	4.32	4.32	22,213	19,000	20,520	23,990
Carothers Pkwy	Cool Springs	Murfreesboro	City	4	2.45	9.80	9.80	11,703	19,000	46,550	28,672
Carothers Pw S	Murfreesboro	S Carothers Rd	City	3	1.12	3.36	3.36	6,040	14,400	16,128	6,765
Carters Cr Pike	Downs Blvd	SW City Limit	City	2	0.86	1.72	1.72	6,591	11,600	9,976	5,668
Columbia Ave	Mack Hatcher	Fairground St	City	3	1.25	3.75	3.75	19,090	14,400	18,000	23,863
Columbia Ave	Fairground St	Five Points	City	3	1.00	3.00	3.00	10,542	14,400	14,400	10,542
Columbia Pike	S Boundary	Mack Hatcher	City	2	1.10	2.20	2.20	15,264	11,600	12,760	16,790
Cool Springs	Mack Hatcher	Carothers Pky	City	4	1.93	7.72	7.72	26,217	19,000	36,670	50,599
Cool Springs	Carothers	E McEwen Dr	City	4	1.35	5.40	-	-	19,000	25,650	-
Franklin Rd	E Main St	Mack Hatcher	City	2	1.59	3.18	3.18	16,392	11,600	18,444	26,063
Franklin Rd	Mack Hatcher	Moores Lane	City	2	2.11	4.22	4.22	12,975	11,600	24,476	27,377
Goose Creek By	Lewisburg Pike	I-65	City	4	0.84	3.36	3.36	13,685	19,000	15,960	11,495
Hwy 96 W	W Bndry	11th Ave	City	2	2.72	5.44	5.44	17,541	11,600	31,552	47,712
Hwy 96 W	11th Ave	5th Ave	City	3	0.43	1.29	1.29	18,962	14,400	6,192	8,154
Hillsboro Rd	3rd Ave N	Mack Hatcher	City	3	1.12	3.36	3.36	17,515	14,400	16,128	19,617
Hillsboro Rd	Mack Hatcher	Fieldstone Pw	City	5	1.00	5.00	5.00	16,740	21,900	21,900	16,740
Hillsboro Rd	Fieldstone Pw	N Boundary	City	5	0.93	4.65	4.65	18,710	21,900	20,367	17,400
Lewisburg Ave	S Margin St	Mack Hatcher	City	2	2.10	4.20	4.20	5,165	11,600	24,360	10,847
Lewisburg Pike	Mack Hatcher	Bowman Rd	City	2	1.09	2.18	2.18	9,359	11,600	12,644	10,201
Lewisburg Pike	Old Peytonsville	Goose Cr Byps	City	4	0.55	2.20	-	-	19,000	10,450	-
Liberty Pike	Waverly Pl	Turning Wheel	City	2	1.47	2.94	-	-	11,600	17,052	-
Liberty Pike	Turning Wheel	Carothers Pky	City	2	0.86	1.72	-	-	11,600	9,976	-
Liberty Pike	Carothers Pky	Mallory Lane	City	4	0.51	2.04	-	-	19,000	9,690	-
Liberty Pike	Mallory Lane	Mack Hatcher	City	3	0.95	2.85	2.85	14,238	14,400	13,680	13,526
Liberty Pike	Mack Hatcher	Franklin Rd	City	3	1.15	3.45	3.45	7,528	14,400	16,560	8,657
Main St	1st Ave S	5th Ave	City	2	0.34	0.68	0.68	10,362	11,600	3,944	3,523
W Main St	5th Ave	11th Ave	City	2	0.43	0.86	0.86	7,389	11,600	4,988	3,177
W Main St	11th Ave	Downs Blvd	City	2	1.11	2.22	2.22	7,692	11,600	12,876	8,538
Mallory Lane	Moores Lane	Cool Springs	City	4	1.36	5.44	5.44	24,542	19,000	25,840	33,377
Mallory Lane	Cool Springs	Liberty Pike	City	4	1.50	6.00	6.00	18,279	19,000	28,500	27,419
W McEwen Dr	Cool Springs	I-65	City	4	0.93	3.72	-	-	19,000	17,670	-
E McEwen Dr	I-65	Cool Springs	City	4	1.38	5.52	-	-	19,000	26,220	-
E McEwen Dr	Cool Springs	Wilson Pike	City	2	1.55	3.10	3.10	6,442	11,600	17,980	9,985

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Table 22 Continued

Roadway	From	To	Serv. Area	Lns	Mi.	Lane-Miles		ADT	Cap.	VMC	VMT
						Total	w/Ct.				
Murfreesboro Rd	S Margin St	Mack Hatcher	City	2	1.32	2.64	2.64	17,935	11,600	15,312	23,674
Murfreesboro Rd	Mack Hatcher	I-65	City	5	1.13	5.65	5.65	24,796	21,900	24,747	28,019
Murfreesboro Rd	I-65	E Boundary	City	2	1.87	3.74	3.74	23,343	11,600	21,692	43,651
Peytonsville Rd	I-65	Long Lane	City	4	0.17	0.68	-	-	19,000	3,230	-
N Royal Oaks	Liberty Pike	Hwy 96	City	3	0.81	2.43	2.43	15,077	14,400	11,664	12,212
S Royal Oaks	Hwy 96	Mack Hatcher	City	4	1.18	4.72	4.72	19,435	19,000	22,420	22,933
Wilson Pike	N Boundary	Clovercroft Rd	City	2	0.79	1.58	1.58	1,987	11,600	9,164	1,570
Subtotal, Major and Minor Arterials					48.63	145.49	121.27			733,064	613,824
1st Ave N	Bridge St	E. Main St	NW	2	0.12	0.24	-	-	9,100	1,092	-
1st Ave S	E. Main St	S. Margin St	SE	2	0.24	0.48	0.48	3,000	9,100	2,184	720
2nd Ave N	Main St	N Margin St	NW	2	0.24	0.48	-	-	9,100	2,184	-
2nd Ave S	Main St	S. Margin St	SE	2	0.24	0.48	0.48	2,054	9,100	2,184	493
4th Ave N	3rd Ave N	Main St	NW	2	0.37	0.74	-	-	9,100	3,367	-
4th Ave S	Main St	S. Margin St	SE	2	0.24	0.48	0.48	2,253	9,100	2,184	541
9th Ave N	Mt Hope St	SR 96 W	NW	2	0.22	0.44	0.44	2,207	9,100	2,002	486
9th Ave S	SR 96 W	Columbia Ave	SW	2	0.32	0.64	0.64	2,207	9,100	2,912	706
11th Ave, N	Mount Hope	SR 96 W	NW	2	0.20	0.40	0.40	4,338	9,100	1,820	868
11th Ave, S	SR 96 W	Natchez St	SW	2	0.42	0.84	0.84	4,338	9,100	3,822	1,822
Acadia Ave	Championship	Jewell Ave	SW	2	0.59	1.18	-	-	9,100	5,369	-
Addison Ave	Stonewater Bld	State Blvd	SW	2	0.42	0.84	-	-	9,100	3,822	-
Aspen Grove Dr	Jordan Rd	Seaboard Ln	NE	3	0.54	1.62	-	-	11,300	6,102	-
Bakers Bridge Ave	W Terminus	Traffic Circle	NE	4	1.16	4.64	-	-	14,900	17,284	-
Bakers Bridge Ave	Mallory Ln	Carothers Pkwy	NE	4	0.77	3.08	-	-	14,900	11,473	-
Battle Ave	Columbia Ave	W Main St	SW	2	0.68	1.36	1.36	3,666	9,100	6,188	2,493
Boyd Mill Ave	SR 96 W	SR 96 W	SW	2	1.75	3.50	3.50	4,092	9,100	15,925	7,161
Bridge St.	5th Ave N	1st Ave N	NW	2	0.33	0.66	-	-	9,100	3,003	-
Carlisle Ln	SR 96 W	Del Rio Pike	NW	2	0.62	1.24	-	-	9,100	5,642	-
S Carothers Rd	Carothers Pwy	City Limits	SE	2	0.34	0.68	-	-	9,100	3,094	-
Championship Bvd	Stonewater	Acadia	SW	2	0.80	1.60	-	-	9,100	7,280	-
Chester Stevens Rd	SR 96E	East City Limits	NE	2	0.61	1.22	-	-	9,100	5,551	-
Church St	Columbia Ave	1st Ave N	SE	2	0.42	0.84	-	-	9,100	3,822	-
Clovercroft Rd	E City Limits	Wilson Pike	NE	2	0.89	1.78	1.78	3,218	9,100	8,099	2,864
Clovercroft Rd	City Limits	City Limits	NE	2	1.00	2.00	2.00	3,155	9,100	9,100	3,155
Cotton Ln	Del Rio Pike	N City Limits	NW	2	0.18	0.36	-	-	9,100	1,638	-
Crossroads Blvd	Seaboard Ln	City Limits	NE	3	0.24	0.72	-	-	11,300	2,712	-
Del Rio Pike	5th Ave N	Cotton Ln	NW	2	3.21	6.42	6.42	8,519	9,100	29,211	27,346
Donelson Crk Pwy	Southeast Pkwy	Lewisburg Pike	SE	2	1.24	2.48	-	-	9,100	11,284	-
Downs Blvd	Columbia Ave	SR 96 W	SW	2	2.67	5.34	5.34	8,224	9,100	24,297	21,958
Eddy Lane	Liberty Park	Murfreesboro	NE	2	0.77	1.54	1.54	2,126	9,100	7,007	1,637
Fair St	11th Ave N	9th Ave N	SW	2	0.42	0.84	-	-	9,100	3,822	-
Fieldstone Pwy	Bexley Park Dr	Hillsboro Rd	NW	3	0.53	1.59	-	-	11,300	5,989	-
Fieldstone Pwy	Hillsboro Rd	Lexington Pkwy	NW	4	0.53	2.12	-	-	14,900	7,897	-
Fieldstone Pwy	Lexington Pkwy	Cotton Ln	WN	2	0.42	0.84	-	-	9,100	3,822	-
Forest Xing Blvd	S Royal Oaks	Riverview Dr	SE	4	0.46	1.84	-	-	14,900	6,854	-
E Fowlkes St	Lewisburg Ave	Columbia Ave	SE	2	0.15	0.30	-	-	9,100	1,365	-
W Fowlkes St	Columbia Ave	Natchez St	SW	2	0.21	0.42	0.42	2,424	9,100	1,911	509
Galleria Blvd	Bakers Brdg Av	Moorse Ln	NE	3	0.38	1.14	-	-	11,300	4,294	-
Gen. Patton Dr	City Limits	Mallory Station	NE	3	0.60	1.80	-	-	11,300	6,780	-
Horton Ln	Boyd Mill	Main	SW	2	1.15	2.30	-	-	9,100	10,465	-

Continued on next page

Table 22 Continued

Roadway	From	To	Serv. Area	Lns	Mi.	Lane-Miles		ADT	Cap.	VMC	VMT
						Total	w/Ct.				
Jewell Ave	Cormac St	Townsend Blvd	SE	2	0.53	1.06	-	-	9,100	4,823	-
Jordan Rd	Mallory Ln	Aspen Grove Dr	NE	2	0.31	0.62	-	-	9,100	2,821	-
Long Ln	Peytonsville Rd	City Limits	SE	2	2.07	4.14	-	-	9,100	18,837	-
Lynnwood Way	Franklin Rd	West City Limits	NW	2	0.59	1.18	1.18	9,486	9,100	5,369	5,597
Magnolia Dr	Del Rio Pike	Mt Hope St	NW	2	0.32	0.64	0.64	5,333	9,100	2,912	1,707
Mallory Sta. Rd	Franklin Rd	Mallory Ln	NE	3	1.49	4.47	4.47	10,490	11,300	16,837	15,630
N Margin St.	5th Ave N	2nd Ave N	NW	2	0.26	0.52	-	-	9,100	2,366	-
S Margin St.	Columbia Ave	5th Ave S	SE	2	0.16	0.32	-	-	9,100	1,456	-
S Margin St.	5th Ave S	1st Ave S	SE	2	0.35	0.70	-	-	9,100	3,185	-
Mount Hope St	5th Ave N	11th Ave N	NW	2	0.34	0.68	0.68	1,902	9,100	3,094	647
Natchez St	W Main St	9th Ave S	SW	2	0.57	1.14	-	-	9,100	5,187	-
Oak Meadow Dr	Royal Oaks	Country Wood	SE	3	0.80	2.40	-	-	11,300	9,040	-
Old Peytonsville	Lewisburg Pike	Goose Ck Bypass	SE	2	1.38	2.76	-	-	9,100	12,558	-
Oxford Glenn	E McEwen Dr	Clovercroft Rd	NE	2	1.08	2.16	-	-	9,100	9,828	-
Peytonsville Rd	Long Lane	South City Limits	SE	2	0.80	1.60	-	-	9,100	7,280	-
Ralston Ln	SR 96 E	Liberty Pike	NE	3	0.77	2.31	2.31	1,824	11,300	8,701	1,404
River View Dr	Forest Crossing	Country Wood	SE	2	1.79	3.58	-	-	9,100	16,289	-
Seaboard Ln	Aspen Grove Dr	Bakers Bridge Av	NE	3	1.32	3.96	-	-	11,300	14,916	-
S Springs Dr	Perimeter Dr	Mallory Ln	NE	4	0.23	0.92	-	-	14,900	3,427	-
Southeast Pkwy	Donelson Ck Pw	Columbia Ave	SE	2	0.55	1.10	-	-	9,100	5,005	-
Spencer Crk Rd	Spencer Crk Ps	Mack Hatcher	NW	2	1.93	3.86	-	-	9,100	17,563	-
State Blvd	Championship	Westhaven	SW	2	0.44	0.88	-	-	9,100	4,004	-
Stonewater Blvd	Fleetwood Dr	SR 96 W	SW	2	0.54	1.08	-	-	9,100	4,914	-
Stream Valley Bvd	Lewisburg Pike	Streamside Ln	SE	2	0.57	1.14	-	-	9,100	5,187	-
Townsend Blvd	Cheltenham Av	Jewell Ave	SW	2	0.41	0.82	-	-	9,100	3,731	-
Westhaven Blvd	Acadia Ave	SR 96 W	SW	2	0.67	1.34	-	-	9,100	6,097	-
Willowsprings Dr	Horton Ln	Boyd Mill Ave	SW	2	0.11	0.22	-	-	9,100	1,001	-
Collectors, Northwest District					10.41	22.41	9.76			98,971	36,649
Collectors, Southwest District					12.17	24.34	12.10			110,747	34,649
Collectors, Northeast District					12.16	33.98	12.10			134,932	24,691
Collectors, Southeast District					12.33	26.38	1.44			116,631	1,754
Subtotal, Major and Minor Collectors					47.07	107.11	35.40			461,281	97,743
Total					102.80	270.20	174.27			1,441,625	850,028

Source: City of Franklin Engineering Department, December 19, 2013; average daily traffic counts (ADT) from Tennessee Department of Transportation traffic history (<http://www.tdot.state.tn.us/traffichistory/>); "w/ct." indicates lane-miles for which counts are available; "VMT" is vehicle-miles of travel, which is product of miles and ADT for segments with counts; "VMC" is vehicle-miles of capacity, which is product of daily capacity and ADT.

DEVELOPMENT IMPACT FEES DEFINITIONS

- Water & Sewer Fees
- Road Impact Fee
- Facilities Tax
- Parkland Dedication
- Williamson County Privilege Tax
- Williamson County Education Impact Fee

Water Tap Fees

- Currently based on meter size.
- PROPOSED calculation is based on flow (gallons per day). 350 GPD = 1 Equivalent Residential Unit (ERU).

Sewer Tap Fees

- Currently based on meter size.
- PROPOSED calculation is based on flow (gallons per day). 350 GPD = 1 Equivalent Residential Unit (ERU).

Other Utility Districts serving the Franklin area include:

- Mallory Valley Utility District
- Milcrofton Utility District
- HB & TS Utility District

Road Impact Fee

- Fees that are assessed on new development, and are also applicable to a change in use of a property, in order to assure the provision of adequate arterial road improvements or expansions to serve such new development.
- PROPOSED Fee Schedule includes the addition of collector roads.

Facilities Tax

- A proportionate tax based on the need for additional facilities created by new development and additions that extend beyond the original building envelope.
- Used to fund capital improvements made necessary by new growth including park, police, fire safety and sanitation facilities.
- No changes proposed.

Parkland Dedication

- Payment in Lieu of Dedication of Public Land for Parks and Greenways/ Blueways - Residential or Mixed-use developments shall dedicate land to the city for use as public parks or greenways/ blueways, or, payment may be made in-lieu of the dedication of land.
- PROPOSED Calculation includes both Land Dedication and Park Development or proportionate fees.

Education Facilities Impact Fee

- Purpose is to meet the proportionate demand of new residential development for expansion or additional education facilities.
- Paid directly to Williamson County.
- Full assessment to be implemented September 1, 2017.

Williamson County Privilege Tax

- A tax on residential development to ensure that new development pays a proportional share for the cost of new and expanded public facilities made necessary by such development.
- Paid directly to Williamson County.
- No changes proposed.

Sample Development Fees
Current & Proposed
One Single Family Detached Dwelling

Fee Type	4065 Sq Ft		
	Current Fees	PROPOSED FEES	
Water Tap Fee	3/4" meter size	1 ERU	
System Development Fee (SDF)	\$903		
Access Fee	\$1,186		
<i>Water Tap Fee Subtotal</i>	\$2,089	\$3,477	
Sewer Tap Fee	3/4" meter size	1 ERU	
System Development Fee (SDF)	\$1,444		
Access Fee	\$2,100		
Effluent Disposal Fee	\$450		
<i>Sewer Tap Fee Subtotal</i>	\$3,994	\$5,460	
Road Impact Fee	Current Fees	PROPOSED RIF - Arterial + 50% Collector	
	\$4,911	\$6,581	
Facilities Tax (no change proposed)	\$3,618	\$3,618	
Payment in Lieu of Dedication of Parkland - residential	Current Fees	PROPOSED FEES	
	n/a	\$7,642	
Williamson County Privilege Tax (no change proposed) - residential	\$8,130	\$8,130	
Williamson County Education Impact Fee - at full implementation (9.1.2017) - residential		<i>Inside FSSD</i>	<i>Outside FSSD</i>
	n/a	\$3,745	\$11,210
Total Estimated Fees	\$22,742	\$38,653	\$46,118

Sample Development Fees
Current & Proposed
Single Family Subdivision - 50 Lots

Fee Type	Avg 4065 Sq Ft/ Dwelling		
	Current Fees	PROPOSED FEES	
Water Tap Fee	50 X 3/4" meter size	50 X 1 ERU	
System Development Fee (SDF)	\$45,150.00		
Access Fee	\$59,300		
Water Tap Fee Subtotal	\$104,450	\$173,850	
Sewer Tap Fee	50 X 3/4" meter size	50 X 1 ERU	
System Development Fee (SDF)	\$72,200		
Access Fee	\$105,000		
Effluent Disposal Fee	\$22,500		
Sewer Tap Fee Subtotal	\$199,700	\$273,000	
Road Impact Fee	Current Fees	PROPOSED RIF - Arterial + 50% Collector	
	\$245,550	\$329,050	
Facilities Tax (no change proposed)	\$180,893	\$180,893	
Payment in Lieu of Dedication of Parkland - residential	Current Fees	PROPOSED FEES	
	\$317,286	\$384,100	
Williamson County Privilege Tax (no change)	\$406,500	\$406,500	
Williamson County Education Impact Fee - at full implementation (9.1.2017) - residential		Inside FSSD	Outside FSSD
	n/a	\$187,250	\$560,500
Total Estimated Fees	\$1,454,379	\$1,934,643	\$2,307,893

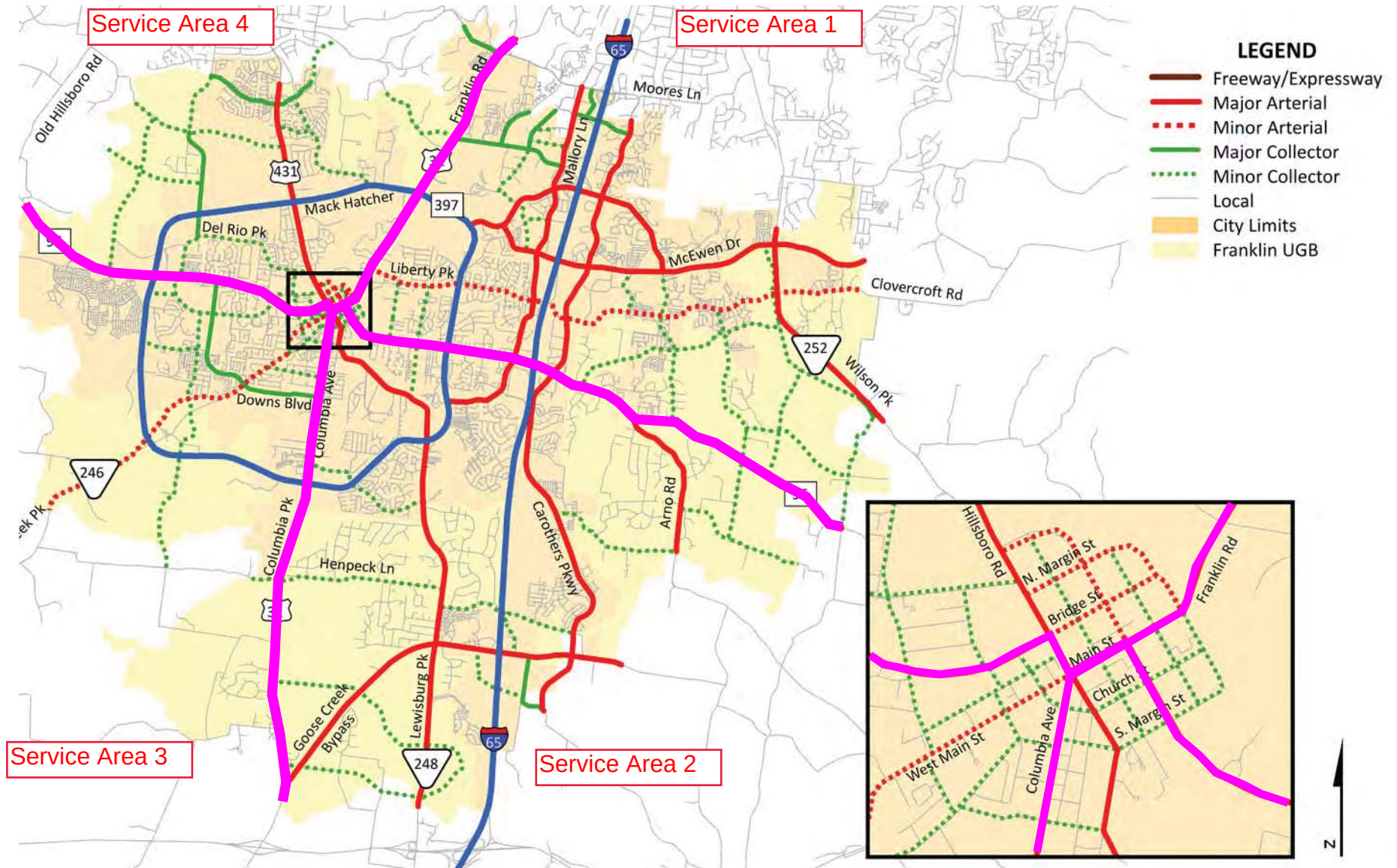
**Sample Development Fees
Current & Proposed
100,000 SF Office Bldg (Shell)**

Fee Type	100,000 SF Office Bldg (Shell)	
	Current Fees	PROPOSED FEES
Water Tap Fee	3" meter size	28.6 ERU's
System Development Fee (SDF)	\$25,284.00	
Access Fee	\$33,222	
Water Tap Fee Subtotal	\$58,506	\$99,442
Sewer Tap Fee	3" meter size	28.6 ERU's
System Development Fee (SDF)	\$40,425	
Access Fee	\$58,800	
Effluent Disposal Fee	\$12,600	
Sewer Tap Fee Subtotal	\$111,825	\$156,156
Road Impact Fee	Current Fees	PROPOSED RIF - Arterial + 50% Collector
	\$463,200	\$621,700
Facilities Tax (no change proposed)	\$118,000	\$118,000
Payment in Lieu of Dedication of Parkland - residential	Current Fees	PROPOSED FEES
	n/a	n/a
Williamson County Privilege Tax (no change proposed) - residential	n/a	n/a
Williamson County Education Impact Fee - at full implementation (9.1.2017) - residential	n/a	n/a
Total Estimated Fees	\$751,531	\$995,298

3 STREETS

MTP Collector Cost Per Quadrant	
Service Area 1	\$144,562,000
Service Area 2	\$61,600,000
Service Area 3	\$108,873,333
Service Area 4	\$91,452,000

FIGURE 3.14: PROPOSED ROADWAY CLASSIFICATION



ROAD IMPACT FEE COMPARISON
Existing and Proposed Fees - Proposed Ordinance 2017-02

QUADRANT 1 - COOL SPRINGS AREA					
			PROPOSED Fees		
2016	Permits		RIF Collected ARTERIAL 2016*	Proposed COLLECTOR Fees**	ALL MAJOR ROADWAYS - ARTERIAL Fees Collected (2016) + Proposed COLLECTOR Fees***
Single Family Detached Dwellings	90	Units	\$409,806	\$150,300	\$560,106
Office	330,736	Sq Ft	\$1,531,970	\$524,217	\$2,056,187
Restaurant (Quality)	19,406	Sq Ft	\$227,831	\$79,429	\$307,260
Retail	134,101	Sq Ft	<u>\$869,515</u>	<u>\$294,620</u>	<u>\$1,164,135</u>
Totals			\$3,039,122	\$1,048,565	\$4,087,687

QUADRANT 2 - BERRY FARMS AREA					
			PROPOSED Fees		
2016	Permits		RIF Collected ARTERIAL 2016*	Proposed COLLECTOR Fees**	ALL MAJOR ROADWAYS - ARTERIAL Fees Collected (2016) + Proposed COLLECTOR Fees***
Single Family Detached Dwellings	416	Units	\$1,966,080	\$694,720	\$2,660,800
Townhomes	59	Units	\$183,608	\$62,599	\$246,207
Multi-Family Dwellings	242	Units	\$743,768	\$256,762	\$1,000,530
Office	22,821	Sq Ft	\$89,421	\$36,171	\$125,592
Mini-Warehouse	79,674	Sq Ft	\$70,511	\$23,982	\$94,493
Manufacturing	57,750	Sq Ft	<u>\$109,321</u>	<u>\$40,079</u>	<u>\$149,400</u>
Totals			\$3,162,709	\$1,114,313	\$4,277,022

QUADRANT 3 - WESTHAVEN AREA					
			PROPOSED Fees		
2016	Permits		RIF Collected ARTERIAL 2016*	Proposed COLLECTOR Fees**	ALL MAJOR ROADWAYS - ARTERIAL Fees Collected (2016) + Proposed COLLECTOR Fees***
Single Family Detached Dwellings	138	Units	\$660,510	\$230,460	\$890,970
Townhomes	47	Units	\$135,308	\$49,867	\$185,175
Multi-Family Dwellings	127	Units	\$395,224	\$134,747	\$529,971
Retail	2,208	Sq Ft	\$14,317	\$4,851	\$19,168
Mini-Warehouse	105,936	Sq Ft	<u>\$93,753</u>	<u>\$31,887</u>	<u>\$125,640</u>
Totals			\$1,299,112	\$451,812	\$1,750,924

QUADRANT 4 - FRANKLIN ROAD AREA					
			PROPOSED Fees		
2016	Permits		RIF Collected ARTERIAL 2016*	Proposed COLLECTOR Fees**	ALL MAJOR ROADWAYS - ARTERIAL Fees Collected (2016) + Proposed COLLECTOR Fees***
Single Family Detached Dwellings	51	Units	\$230,562	\$85,170	\$315,732
Townhomes	14	Units	\$38,724	\$14,854	\$53,578
Office	1,193	Sq Ft	<u>\$5,528</u>	<u>\$1,891</u>	<u>\$7,419</u>
Totals			\$274,814	\$101,915	\$376,729

*Road Impact Fees Collected for 2016 do not include RIF fees for additions, interior finish/ build-outs, or changes-in-use. Current Road Impact Fee Schedule varies based on Date of Site Plan approval (Non-res) or Final Plat approval (Res).

**Collector Impact Fees are calculated at 50% of the increase recommended by the January, 2016 RIF Update Study.

***Proposed Impact Fee Schedule - All Major Roadways = ARTERIAL FEES (no increase) + COLLECTOR FEES (calculated at 50%).

ORDINANCE 2017-02

TO BE ENTITLED: "AN ORDINANCE TO AMEND VARIOUS SECTIONS OF CHAPTER 4 OF TITLE 16 AND CHAPTER 16 OF APPENDIX A OF THE FRANKLIN MUNICIPAL CODE CONCERNING ROAD IMPACT FEES."

WHEREAS, the Board of Mayor and Aldermen desires to set road impact fees to assure the provision of adequate arterial and collector road improvements to serve such new development, by requiring the developer to pay the pro rata share of the costs of new road improvements or expansions reasonably attributable to such new development, based upon recent growth in residential and nonresidential development; arterial and collector road improvements actually constructed; changing levels of service and transportation needs; inflation; revised cost estimates for arterial road improvements; and changes in the availability of other funding sources for arterial and collector road improvement; and

WHEREAS, the Board of Mayor and Aldermen commissioned and received a Road Impact Fee Update Study conducted by Duncan Associates and dated January 2016 that indicates a need to increase the Road Impact Fees in order to recover and fund the City's roadway infrastructure improvements more efficiently; and

WHEREAS, the Board of Mayor and Aldermen desires, due to the high cost of the rights-of-way required for the construction of the public arterial and collector road improvements, to include the cost of rights-of-way in the calculations for the Road Impact Fees and associated eligible reimbursements; and

WHEREAS, the City of Franklin Municipal Charter, art. H, § 1 (38), as amended by Priv. Acts 1987, Ch. 54 and by Priv. Acts 1987, Ch. 117 (HB 1311) confers such power to increase Road Impact Fees.

NOW, THEREFORE, BE IT ORDAINED BY THE BOARD OF MAYOR AND ALDERMEN OF THE CITY OF FRANKLIN, TENNESSEE, AS FOLLOWS:

SECTION I: That Title 16, Chapter 4, of the City of Franklin Municipal Code is hereby amended to delete the following text noted with a ~~strike through~~ and to add the following text noted in **bold**:

Sec. 16-401. - Short title.

This chapter shall be known and may be cited as the Franklin Road Impact Fee Ordinance.

Sec. 16-402. - Purpose.

It is the intent and purpose of this chapter to establish the regulatory procedure for assessing and collecting fees of new development within the City of Franklin in order to assure the provision of adequate arterial **and collector** road improvements to serve such new development, by requiring the developer to pay the pro rata share of the costs of new road improvements or expansions reasonably attributable to such new development.

Sec. 16-403. - Authority.

This chapter is adopted pursuant to the powers conferred by the Franklin Municipal Charter, art. H, § 1(38), as amended by Priv. Acts 1987, ch. 54 and by Priv. Acts 1987, ch. 117 (HB 1311).

Sec. 16-404. - Findings.

(1) Williamson County, a suburban county of metropolitan Nashville, of which the City of Franklin is the county seat, is one of the fastest growing counties in the State of Tennessee.

- (2) The City of Franklin is one of the fastest growing municipalities in the state and is experiencing rapid population and employment growth, in part as a result of the location of regional employment facilities.
- (3) The anticipated population and employment growth in Franklin creates the demand for additional capital improvements for road and transportation facilities, including but not limited to, highways, streets, intersection improvements, turn lanes and signalization.
- (4) The city is responsible for and committed to the provision of such road and transportation improvements at a level of service necessary to support anticipated residential and employment growth.
- (5) The Tennessee Legislature has authorized the City of Franklin to impose a road impact fee on new development.
- (6) The road impact fee herein established is directly proportional to the need for new road and transportation improvements generated by new development and reasonably benefits the developer who pays the fee.

Sec. 16-405. - Definitions.

- (1) *Arterial road improvement* means any capital improvement, including but not limited to, new roads, additional lanes, widened lanes, intersection improvements, turn lanes, bridges, traffic signals, intelligent transportation system (ITS) improvements, street lighting, and associated drainage facilities, that expands the capacity of the city's arterial road system. The cost of water, wastewater, electricity except as required for the street lighting or natural gas utilities located within the road right-of-way, or the cost of relocating such utilities as necessitated by a road improvement, shall not be included in the definition of arterial road improvement cost. Providing greater access to a particular development or promoting safety is not necessarily considered expanding arterial roadway capacity.
- (2) *Arterial road system* means all existing and planned arterials, excluding Interstate 65 identified on the city's adopted major thoroughfare plan map.
- (3) *Building* means any structure built for the support, shelter, or enclosure of persons, chattels, or movable property of any kind, including a mobile home, but excluding buildings used for agricultural purposes.
- (4) *Building permit* means a permit issued by the building official authorizing performance of a specified activity in or on a structure or building.
- (5) *Certificate of occupancy* means a license for occupancy of a building or structure after the building or structure has been inspected to determine that construction has been undertaken in compliance with the building permit application and in conformity with the zoning ordinance and other pertinent ordinances or codes.
- (6) *City* means the City of Franklin, Tennessee.
- (7) ***Collector road improvement* means any capital improvement, including but not limited to, new roads, additional lanes, widened lanes, intersection improvements, turn lanes, bridges, traffic signals, intelligent transportation system (ITS) improvements, street lighting and associated drainage facilities, that expands the capacity of the city's collector road system. The cost of water, wastewater, electricity except as required for the street lighting or natural gas utilities located within the road right-of-way, or the cost of relocating such utilities as necessitated by a road improvement, shall not be included in the definition of collector road improvement cost. Providing greater access**

to a particular development or promoting safety is not necessarily considered expanding collector roadway capacity.

(8) *Collector road system* means all existing and planned collector road systems.

(79) *Credits* means the present value of future payments made by new developments toward the costs of existing or future road improvements.

(810) *Developer* means any individual, firm, co-partnership, joint venture, association, corporation, estate, trust, business trust, receiver, syndicate, or other group, combination or entity responsible for a new development or a new development project.

(911) *Development* means new construction, building, reconstruction, erection, extension, betterment or improvement of land providing a building or structure or the addition to any building or structure, or any part thereof, which provides, adds to or increases the floor area of a residential or nonresidential use.

(1012) *Development project* means an interrelated set of developments, approved by the city pursuant to a subdivision plat, planned development or other development plan.

(1113) *Dwelling unit* means a room, or rooms connected together constituting a separate, independent housekeeping establishment for owner occupancy, rental or lease on a daily, weekly, monthly, or longer basis; physically separated from any other room(s) or dwelling units which may be in the same structure; and containing independent cooking and sleeping facilities.

(1214) *Floor area* means the total of the gross horizontal area of all floors, including usable basements and cellars, below the roof and within the outer surface of the main walls of principal or accessory buildings or the centerlines of a party wall separating such buildings or portions thereof, or within lines drawn parallel to and two feet within the roof line of any building or portions thereof without walls, but excluding in the case of nonresidential facilities: arcades, porticoes and similar open areas which are accessible to the general public, and which are not designed or used as sales, display, storage, service or production areas.

(1315) *Intelligent transportation system (ITS)* means a combination of computer technologies (traffic operations center (TOC and signal systems), communication technologies (fiber optic and wifi) and infrastructure (CCTV, DMS, RWIS and count stations), which allow the city to manage and operate the city's transportation system more efficiently and safely.

(1416) *Nonresidential* means the development of any property for any use other than residential use, except as may be exempted by this chapter.

(1517) "Nonresidential accessory structure" means an enclosed storage shed which lacks heating and plumbing facilities and is used primarily for the storage of equipment, tools, heavy machinery and so forth, which are not for sale, retail or wholesale, to the general public; or an open perimeter shelter which may be open on one or more sides, which lacks heating and plumbing facilities and which may be used for the storage of materials available for sale, retail or wholesale, to the general public.

(1618) *Nonsite-related improvements* means land dedications or provisions of arterial **and collector** road improvements that are not for the exclusive use or benefit of a new development and which are not site-related improvements. Nonsite-related improvements may be located wholly within a development project.

(17) *Offset* ~~means a reduction in impact fees designed to fairly reflect the value of nonsite-related arterial road improvements provided by a developer pursuant to the city's land use regulations or requirements.~~

~~(1819)~~ *Residential* means the development of any property for a dwelling unit or units.

~~(1920)~~ *Road impact fee administrator* means the city employee or employees designated by the city administrator to administer this chapter.

~~(2021)~~ *Service area* means the entire area within the corporate boundaries of the City of Franklin in which the impact fee is applied.

~~(2122)~~ *Shopping area* means an integrated group of commercial establishments planned, developed, owned and/or managed as a unit. A shopping area consists primarily of retail establishments, but may also contain some nonretail facilities, such as restaurants, medical or general offices. Fast food restaurants that are not physically attached to any other buildings but are located within a shopping area will be treated as separate uses.

~~(2223)~~ *Site-related improvements* means land dedications or provision of road improvements which are for the exclusive or primary use or benefit of a new development and/or which are for the exclusive or primary purpose of safe and adequate provision of road facilities to serve the new development. Turn lane construction and traffic signalization on the arterial **or collector** road system whose main benefit is to serve a particular development or to provide ingress and egress to a particular development shall be considered a site-related improvement.

Sec. 16-406. - Reserved.

Sec. 16-407. - Applicability.

This chapter applies to all new development, additions to existing structures, and change of uses which increase the intensity of use within the corporate limits of the city, unless such development is expressly exempted or differentiated.

Sec. 16-408. - Impact fee as condition of development approval.

No building permit nor certificate of occupancy for new development in the city shall be issued unless and until the road impact fee herein established has been paid in full by the developer.

Sec. 16-409. - Establishment of service area.

(1) There is hereby established a single service area for arterial road improvements in the city, which shall consist of all area within the corporate boundaries of the city. The service area boundaries may be amended from time to time, or new service areas may be defined following notice and a public hearing.

(2) There is hereby established four service areas, Exhibit B, attached here to and incorporated by reference herein, for collector road improvement in the city as described below:

- a. **Service Area 1 – Area North of Murfreesboro Rd / 3rd Ave South and East of East Main Street / Franklin Road and within the corporate boundaries of the city.**
- b. **Service Area 2 – Area South of Murfreesboro Rd / 3rd Ave South and East of Columbia Ave / Columbia Pike and Main Street and within the corporate boundaries of the city.**
- c. **Service Area 3 – Area South of New Hwy 96W and West of 5th Ave South and Columbia Ave / Columbia Pike and within the corporate boundaries of the city.**
- d. **Service Area 4 – Area North of New Hwy 96W, 5th Ave North, Main Street and West of East Main Street and Franklin Road and within the corporate boundaries of the city.**

Sec. 16-410. - Impact fee schedule.

(1) Every developer shall pay a road impact fee, computed by service area and by proposed land uses, according to new fee schedule, Exhibit A, attached hereto and incorporated by reference herein,

except those paying a fee by an individual assessment of road impacts provided for in section 16-411 or otherwise exempted by this chapter. The reference in the schedules to square feet refers to floor area as defined herein.

- (2) The road impact fee administrator shall be responsible for calculating the appropriate fee for all building permit applications. If the type of development activity for which a building permit is applied is not specified on the fee schedule, the road impact fee administrator shall use the fee applicable to the most nearly comparable type of land use on the fee schedule. The road impact fee administrator shall be guided in the selection of a comparable type by the Institute of Transportation Engineers' Trip Generation Manual (latest edition), studies or reports done by the United States Department of Transportation or the state department of transportation, articles or reports appearing in the ITE Journal or other, similar sources. If the road impact fee administrator determines that there is no comparable type of land use on the fee schedule or that the fee schedule understates the cost to mitigate the road impacts of the development due to the nature, timing or location of the proposed development, the road impact fee administrator shall cause to be prepared an individual assessment pursuant to section 16-411.
- (3) If a building permit is requested for a building with mixed uses, then the fee shall be determined by apportioning the total space within the building according to the space devoted to each principal use. A shopping area shall be considered a principal use and shall be assessed at the general retail rate.
- (4) An application for a building permit to create an addition to an existing structure or to build another structure on the same site with an existing structure shall be subject to the payment of an impact fee, provided that only the new residential units or nonresidential square footage to be added to the existing structure or site shall be subject to the fee. Remodeling activity that does not increase the number of residential units or the amount of nonresidential square footage shall not require payment of an impact fee.
- (5) When a change or expansion of a land use or the redevelopment, replacement or modification of an existing building or structure requires the issuance of a permit the road impact fee shall be based upon the net increase in the impact fee for the new use as compared to the previous use. No impact fee credits or refunds will be granted if a net decrease results. The previous use or structure shall be the most recent use of the site within the nine years prior to the application for the building permit, provided that the applicant can provide records to confirm the previous building size and land use.
- (6) If the road impact fee has been calculated and paid based on error or misrepresentation, it shall be recalculated and the difference refunded to the original fee payer or collected by the city, whichever is applicable. If road impact fees are owed, no permits of any type may be issued for the building structure in question, or for any other portion of a development of which the building or structure in question is a part, until impact fees are paid. The road impact fee administrator may bring any action permitted by law or equity to collect unpaid fees.
- (7) Residential development projects consisting of single-family or townhouse dwelling units whose final plat have been approved prior to the effective date of Ordinance No. ~~2014-09~~ **2017-02** shall be entitled to pay the fee in effect at the time of final plat approval, for so long as the final plat is valid.
- (8) Nonresidential development projects and residential development projects consisting solely of apartments or condominiums whose site plans have been approved prior to the effective date of Ordinance No. ~~2014-09~~ **2017-02** shall be entitled to pay the fee in effect at the time of site plan approval, for so long as the site plan is valid and provided all of the buildings and structures associated with the site plan have been issued a valid building permit within three years from the date of the building permit issued for the first building or structure within the site plan.

- (9) Nonresidential development projects and residential development projects consisting solely of apartments or condominiums whose site plans have been submitted prior to July 1, ~~2014~~ **2017**, and approved prior to October 1, ~~2014~~ **2017**, shall be entitled to pay the fee in effect at the time of submission of the site plan so long as all application and plan review fees have been paid to the city and provided all of the buildings associated with the site plan have been issued a valid building permit within three years from the date of the building permit issued for the first building within the site plan. All development projects whose site plans have been submitted after July 1, ~~2014~~**2017**, shall pay fees in accordance with this chapter.

Note— References made to Exhibits A ~~and B~~ fee schedules may be found in app. A, ch. 16, road impact fees.

Sec. 16-411. - Individual assessment of road impacts.

- (1) The road impact fee for a proposed new development shall be calculated by the use of an individual assessment of road impacts if:
 - (a) The type of new development is not of the type or reasonable equivalent thereof listed on the fee schedules attached as Exhibits A ~~and B~~; or
 - (b) The road impact fee administrator determines that the nature, timing or location of the proposed development makes it likely to generate impacts costing substantially more to mitigate than the costs attributable to the development in the fee schedule; or
 - (c) The developer chooses to have the amount of the fee determined by such method.
- (2) The developer shall be responsible for preparation of the individual assessment of road impacts if the developer chooses to conduct such analysis. The road impact fee administrator shall be responsible for preparation of the individual assessment if the type of new development being proposed is not of the type listed on the fee schedule, or the nature, timing or location of the proposed new development makes it likely that arterial **or collector** road improvements will be necessary to serve the development, the cost of which exceed the costs attributable to the development in the fee schedule.
- (3) The person preparing the individual assessment of road impacts shall be a qualified professional, and shall be approved by the road impact fee administrator on the basis of professional training and experience.
- (4) The individual assessment of road impacts shall compute the impact fee per residential unit or, in the case of nonresidential development, the impact fee per 1,000 square feet of floor area, using the following formula:

IMPACT FEE	=	$\text{VMT} \times \text{COST/VMT} - \text{VMT} \times \text{CREDIT/VMT}$
VMT	=	$\text{DAILY TRIPS} \times \% \text{ NEW} \times \text{LENGTH}/2$
COST/VMT	=	$\text{COST/VMC} \times \text{VMC/VMT}$
CREDIT/VMT	=	Revenue credit per VMT
Where:		
DAILY TRIPS	=	Trip ends during average weekday

%NEW	=	Percent of trips that are primary, as opposed to Pass-by or diverted-link trips
LENGTH	=	Average length of a trip on the major road system
2	=	Dividing by two avoids double-counting trips for origin and destination
COST/VMC	=	Average cost to add a new daily vehicle-mile of capacity
VMC/VMT	=	System-wide ratio of vehicle-miles of capacity to vehicle-miles of travel on major road system (assumed 1:1)

- (5) The determination of the appropriate impact fee for the development, based on the above formula, the information provided by the applicant and any other information determined to be relevant by the road impact fee administrator, shall be made by the road impact fee administrator.
- (6) The applicant may appeal the decision of the road impact fee administrator on the individual assessment to the board of mayor and aldermen pursuant to section 16-423, Appeals.

Note— References made to Exhibits A and B fee schedules may be found in app. A, ch. 16, road impact fees.

Sec. 16-412. - Collection of impact fees.

- (1) The road impact fee for a proposed new development shall be computed in conjunction with the application for a building permit, and shall be collected prior to or simultaneous with the issuance of the building permit, unless otherwise provided herein.
- (2) Payment of all fees due shall be in cash or by check or money order. The building and neighborhood services department shall transmit to the office of the city recorder all fees collected and a copy of all related fee transaction documents for recordation. The office of the city recorder shall be responsible for depositing all collected fees in the appropriate trust fund accounts.
- (3) A monthly summary of all fee collection transactions, by service area and type of use, shall be prepared by the building and neighborhood services department and transmitted to the offices of the city administrator and the road impact fee administrator.
- (4) In its sole discretion, the city administrator may permit a developer, upon application for a building permit, to defer payment of the road impact fee due for a proposed new development until time for issuance of a certificate of occupancy, provided that the developer provides security for the full amount of the road impact fee due in a form acceptable to the city and agrees to pay interest at an appropriate rate on the amount of the fees.

Sec. 16-413. - Establishment of account.

- (1) The city shall establish a separate, interest-bearing account for each service area into which each impact fee collected within designated service area shall be deposited.
- (2) Interest earned on the account into which the impact fees are deposited shall be considered funds of the account and shall be used solely for the purposes specified for the funds of such account.
- (3) The office of the city recorder shall maintain and keep financial records for each such account. Each account shall show the source and disbursement of all revenues which shall account for all monies received. The records of the account into which impact fees are deposited shall be open for public

inspection and copying during ordinary business hours in the office of the city recorder. The city may establish a fee for copying services.

Sec. 16-414. - Use of proceeds of impact fee accounts.

- (1) The **Arterial** impact fees collected pursuant to this chapter may be used to finance arterial road improvements. Impact fees may also be used to pay the principal sum and interest and other finance costs on bonds, notes or other obligations issued by or on behalf of the city to finance such arterial road improvements.
- (2) **The Collector impact fees collected pursuant to this chapter may be used to finance collector road improvements. Impact fees may also be used to pay the principal sum and interest and other finance costs on bonds, notes or other obligations issued by or on behalf of the city to finance such collector road improvements.**
- (23) Impact fees collected pursuant to this chapter may be used to pay the fees actually paid or contracted to be paid to qualified professionals preparing or updating impact fee studies and ordinances.
- (34) Impact fees collected pursuant to this chapter shall not be used to pay for any of the following expenses:
 - (a) Construction, acquisition or expansion of public facilities or assets other than arterial **and collector** road improvements;
 - (b) Repair, operation, or maintenance of existing or new road improvements;
 - (c) Upgrading or replacing existing roadway facilities to serve existing development;
 - (d) Administrative and operating costs of the city.
- (45) The **finance department** ~~road impact fee administrator~~ shall have the responsibility for tracking the expenditure of road impact fee revenues by service area.

Sec. 16-415. - Refunds.

Any road impact fee or portion thereof collected pursuant to this chapter which has not been expended within eight years from the date of payment, shall, upon application, be refunded to the record owner of the property for which the impact fee was paid or, if the impact fee was paid by another governmental entity, to such governmental entity, together with interest calculated from the date of collection to the date of refund. All funds collected shall be deemed to be expended in the same order in which they were collected; that is, the funds collected first shall be expended first. Refunds shall be made only upon written application, which shall be filed with the road impact fee administrator within 30 days of the expiration of the refund period. Refunds shall be made to the record owner of the property for which the impact fee was paid.

(1976 Code, § 12-415; Ord. No. 2000-24, 7- -2000; Ord. No. 2011-07, § I, 4-26-2011, eff. 7-1-2011)

Sec. 16-416. - Updates of fees.

- (1) The city shall revise the road impact fee study and the schedule of impact fees at least once every five years, and may do so more frequently, based upon growth in residential and nonresidential development; arterial **and collector** road improvements actually constructed; changing levels of service or transportation needs; inflation; revised cost estimates for arterial **and collector** road improvements; changes in the availability of other funding sources for arterial **and collector** road improvement projects; and such other factors as may be relevant.
- (2) The city shall adopt the revised fee schedule by ordinance, following notice and public hearing.

(1976 Code, § 12-416; Ord. No. 2000-24, 7- -2000; Ord. No. 2011-07, § I, 4-26-2011, eff. 7-1-2011)

Sec. 16-417. - ~~Offsets.~~ **Reimbursement of Impact Fees.**

- (1) The city shall make no ~~offsets~~ **reimbursement** against impact fees due for a development except pursuant to this chapter. In order to obtain consideration of an ~~offset reimbursement~~, an authorized agent of the development seeking such ~~offset reimbursement~~ shall submit a request for consideration to enter into an ~~offset reimbursement~~ agreement prior to or in conjunction with the initial submittal of the development plan or, when no development plan is required, a site plan to the city.
- (2) If the city, pursuant to duly adopted ordinance standards, requires the dedication of right-of-way or construction of all or a portion of non-site related arterial **or collector** road improvements, or monetary contributions toward such construction, it shall ~~offset reimburse~~ the reasonable costs of such dedication, construction or monetary contributions against road impact fees due for the development.
- (3) The following types of costs may be allowed for purposes of ~~offsetting~~ **reimbursing** the amount of road impact fees due: Land cost for right-of-way, the costs of labor, equipment, supplies and material used to construct the road facilities, and engineering and design costs. Fiscal costs, including interest on money borrowed to finance the construction, and costs for utility relocations are specifically excluded.
- (4) The ~~offset reimbursement~~ value of rights-of-way shall be based on the appraised fair market value of the land at the date of application for the development approval for which the condition of dedication was imposed. The appraisal shall be prepared by a professional real estate appraiser who is a member of the member appraisal institute (MAI) or who is a member of senior residential appraisers (SRA). The road impact fee administrator retains the right to independently determine the amount of ~~offset reimbursement~~ to be approved by securing other property appraisals.
- (5) The ~~offset reimbursement~~ value of arterial **or collector** roadway improvements to be used for the initial ~~offset~~ agreement shall be based on an estimate of the eligible costs of the arterial **or collector** roadway improvements and shall be used for the application of ~~offsets and/or~~ reimbursements until the arterial **and/or collector** roadway improvements have been constructed and accepted by the city. Upon acceptance of the arterial **or collector** roadway improvements by the city, the developer shall submit the following information to the road impact fee administrator for review and approval: invoices and contracts associated with the arterial **or collector** roadway improvements, copies of checks to show proof of payment and notarized release of lien. After approval of the constructed costs of the arterial **or collector** roadway improvements, the initial ~~offset reimbursement~~ agreement shall be amended to reflect the actual eligible road impact fee ~~offset~~ due the development project.
- (6) ~~Offsets Reimbursement~~ shall be computed and subtracted from impact fees ~~due collected prior to the issuance of any building permit for~~ **from** the development, or, in the case of a development project, pursuant to an agreement with the city executed pursuant to section 16-418.
- (7) In no event may the city apply an ~~offset reimbursement~~ which is greater than the applicable impact fees ~~due collected~~ from the development project.
- ~~(8) For a development project, a developer may execute an agreement with the city pursuant to section 16-418, which allocates the offsets among developments within the same development project. Unless a different method of allocating offsets is agreed upon by the city and developer and incorporated into an agreement pursuant to section 16-418, the following procedure shall be used for allocating the offsets to individual developments within a development project:~~
 - a. ~~The city shall apply the offset against the impact fee that would otherwise be due for the first application for a building permit within the project. If the offsets for the development project exceed the road impact fee collected for the development, the city shall apply the balance of the offsets to~~

~~the next application for a building permit within the project. This procedure shall continue until there are no more offsets to be applied within the project. The road impact fee administrator shall maintain records of the offsets balance for each development project for which offsets are due; or~~

- ~~b. The developer may provide to the road impact fee administrator a letter of assignment for any portion of an eligible road impact fee offset for his development project to another developer within his development project prior to such assignment being granted to a successor(s) in interest. Should a successor(s) in interest pay a road impact fee prior to the road impact fee administrator receiving from the developer a letter of assignment, there shall be no reimbursement of the paid road impact fee to the intended successor(s) in interest.~~
- ~~(9) A developer seeking offsets against road impact fees in accordance with an approved offset agreement shall submit an application to the building and neighborhood services department prior to or in conjunction with an application for a building permit. The application shall describe the improvements and their associated costs and shall provide information demonstrating the eligibility of such improvements for offsets.~~
- ~~(10) The building and neighborhood services department shall forward the completed application to the road impact fee administrator. The road impact fee administrator shall review the application and, with the recommendation of the city engineer, shall determine which improvement costs are eligible for offsets and the value attributed to such improvement costs within ten working days of accepting a completed application for offsets. An applicant may appeal the decision of the road impact fee administrator pursuant to section 16-423.~~
- ~~(11) All offset agreements between the city and any developer shall be for the impact fee applicable at the time the agreement was entered.~~

Sec. 16-418. - Contract for construction of improvements.

- (1) A developer may elect to dedicate, construct or finance an arterial **or collector** road improvement, and to ~~offset~~ **obtain reimbursement for** the costs of such dedication, construction or monetary contributions as may be required by the city, by entering into an agreement with the city prior to **the initial submittal of the development plan or, when no development plan is required, a site plan to the city or preliminary plat** ~~the issuance of any building permit~~ for the development or development project. The agreement shall be on a form approved by the city and shall identify the estimated cost of the arterial **or collector** road improvement, the schedule for initiation and completion of the improvement, a requirement that the improvement be designed and completed to city standards and such other terms and conditions as deemed necessary by the city. The city engineer shall determine the **estimated** amount of the **reimbursement** to be given against impact fees due **paid by** ~~for~~ the development or development project. Such ~~offsets~~ **reimbursement, together with any provisions relating to the allocation of offsets among developments within the development project,** shall be incorporated in the agreement.
- (2) In the event that the city elects to reimburse a developer for the dedication **and,** ~~construction or financing~~ of an arterial **or collector** road improvement or portion thereof in excess of the amount of road impact fees that would otherwise be due from the development or development project from the proceeds of road impact fees collected from other new developments, the terms of reimbursement shall be incorporated in the agreement required by subsection (1).

(1976 Code, § 12-418; Ord. No. 2000-24, 7- -2000; Ord. No. 2011-07, § I, 4-26-2011, eff. 7-1-2011)

Sec. 16-419. - Use of other financial mechanisms.

- (1) The city may finance arterial **or collector** road improvements through the issuance of bonds, through the formation of assessment districts, or through any other authorized mechanism, in such manner and subject to such limitations as may be provided by law, in addition to the use of impact fees.
- (2) Except as herein otherwise provided, the collection of a road impact fee shall be additional and supplemental to, and not in substitution of, any other tax, fee, charge or assessment which is imposed on and due against the property under the authority granted by private or public acts of the State of Tennessee.

Sec. 16-420. - Impact fee as additional and supplemental regulation.

The road impact fee established by this chapter is additional and supplemental to, and not in substitution of, any other requirements imposed by the city on the development of land or the issuance of building permits or certificates of occupancy. Such fee is intended to be consistent with and to further the policies of the city's long range plan, the capital improvements plan, the zoning ordinance, subdivision regulations and other city policies, ordinances and resolutions by which the city seeks to ensure the provision of public facilities in conjunction with the development of land.

Sec. 16-421. - Exemptions from chapter.

- (1) The provisions of this chapter shall not apply to construction by the federal or state government or any political subdivision thereof which has the power to assess taxes on real or personal property; provided, however, that this chapter shall apply to any nontaxing public or quasi-public entity and to all not-for-profit entities.
- (2) Nonresidential accessory structures shall be exempt from payment of the road impact fee.

Sec. 16-422. - Relief procedures.

- (1) The Franklin Board of Mayor and Aldermen may grant a variance or waiver from requirement of this chapter, upon written request by a developer or owner of property subject to this chapter. The request shall present the grounds for the waiver or variance and shall be presented to the building and neighborhood services department, which shall forward it to the road impact fee administrator. The road impact fee administrator shall schedule a public hearing before the board of mayor and aldermen to consider the request. The board of mayor and aldermen shall grant the waiver or variance only upon finding that a strict application of such requirement would result in confiscation of the property taking into consideration all uses that are permitted by right or conditionally under existing development regulations. If the board of mayor and aldermen makes the requisite findings, they shall reduce the impact fee due by only that amount necessary to enable the property owner to make a reasonable return on the investment in the property.
- (2) If the Franklin Board of Mayor and Aldermen grants a variance or waiver to the amount of the impact fee due for a new development under this section, it shall cause to be appropriated from other city funds the amount of the reduction in the impact fee to the account for the service area in which the property is located. The road impact fee administrator shall keep a record of all waivers and variances granted pursuant to this section by service area. Prior to the commencement of the next ensuing fiscal year, the board of mayor and aldermen shall appropriate an amount equal to the sum of all waivers and variances granted within the service area, and shall cause said amount to be transferred to the impact fee account for the service area, which shall thereafter be considered funds of the amount. Said funds shall be appropriated from any source other than from the proceeds of impact fees in accordance with the laws of the state.

Sec. 16-423. - Appeal.

The developer or owner of property for which an impact fee is owed may appeal the road impact fee administrator's decision on an independent assessment of road impacts or the computation of an ~~an offset~~

reimbursement pursuant to section 16-417 by filing a petition with the Franklin Board of Mayor and Aldermen.

SECTION II: That Title 16, Appendix A, of the City of Franklin Municipal Code is hereby amended to delete the “Road Impact Fees” and “Implementation of Fee Schedule” table and shall be replaced with the tables included as Exhibit A.

SECTION III: BE IT FINALLY ORDAINED BY THE BOARD OF MAYOR AND ALDERMEN OF THE CITY OF FRANKLIN, Tennessee, that this Ordinance shall take effect on July 1, 2017, after its passage on second and final reading, the health, safety, and welfare of the citizens requiring it.

ATTEST:

CITY OF FRANKLIN, TENNESSEE:

BY: _____
ERIC S. STUCKEY
City Recorder/Administrator

BY: _____
DR. KEN MOORE
Mayor

Approved as to Form:

By: _____
Shauna R. Billingsley
City Attorney

PASSED FIRST READING

PUBLIC HEARING

PASSED SECOND READING

Road Impact Fee
New Fee Schedule ^{1, 2}

Land Use Type	Unit	Daily VMT		Cost/VMT		Cost/Unit		Credit/VMT		Credit/Unit		100% Calculated Impact Fee		
		Arterials	All Major Roadways	Arterials	All Major Roadways	Arterials	All Major Roadways	Arterials	All Major Roadways	Arterials	All Major Roadways	Arterials	Collector	All Major Roadways
Single-Family Detached	Dwelling	16.76	22.42	\$536	\$550	\$8,983	\$12,331	\$243	\$182	\$4,073	\$4,080	\$4,911	\$3,340	\$8,251
Multi-Family	Dwelling	10.62	14.22	\$536	\$550	\$5,692	\$7,821	\$243	\$182	\$2,581	\$2,588	\$3,112	\$2,121	\$5,233
Mobile Home Park	Dwelling	7.98	10.68	\$536	\$550	\$4,277	\$5,874	\$243	\$182	\$1,939	\$1,944	\$2,338	\$1,592	\$3,930
Congregate Care Facility	Dwelling	3.73	4.99	\$536	\$550	\$1,999	\$2,745	\$243	\$182	\$906	\$908	\$1,093	\$743	\$1,836
Hotel/Motel	Room	8.76	11.73	\$536	\$550	\$4,695	\$6,452	\$243	\$182	\$2,129	\$2,135	\$2,567	\$1,750	\$4,317
Retail/Commercial														
Shopping Center / General Retail	1,000 sq. ft.	22.13	29.56	\$536	\$550	\$11,862	\$16,258	\$243	\$182	\$5,378	\$5,380	\$6,484	\$4,394	\$10,878
Restaurant, Quality	1,000 sq. ft.	41.19	55.04	\$536	\$550	\$22,078	\$30,272	\$243	\$182	\$10,009	\$10,017	\$12,069	\$8,186	\$20,255
Restaurant, Fast Food	1,000 sq. ft.	59.53	79.63	\$536	\$550	\$31,908	\$43,797	\$243	\$182	\$14,466	\$14,493	\$17,442	\$11,862	\$29,304
Office/Institutional														
Office	1,000 sq. ft.	15.81	21.2	\$536	\$550	\$8,474	\$11,660	\$243	\$182	\$3,842	\$3,858	\$4,632	\$3,169	\$7,802
Hospital	1,000 sq. ft.	18.29	24.49	\$536	\$550	\$9,803	\$13,470	\$243	\$182	\$4,444	\$4,457	\$5,359	\$3,653	\$9,012
Nursing Home	1,000 sq. ft.	10.52	14.08	\$536	\$550	\$5,639	\$7,744	\$243	\$182	\$2,556	\$2,563	\$3,082	\$2,099	\$5,181
Church	1,000 sq. ft.	11.12	14.88	\$536	\$550	\$5,960	\$8,184	\$243	\$182	\$2,702	\$2,708	\$3,258	\$2,218	\$5,476
Elementary/Sec. School	1,000 sq. ft.	5.48	7.33	\$536	\$550	\$2,937	\$4,032	\$243	\$182	\$1,332	\$1,334	\$1,606	\$1,092	\$2,697
Industrial														
Manufacturing	1,000 sq. ft.	6.93	9.29	\$536	\$550	\$3,714	\$5,110	\$243	\$182	\$1,684	\$1,691	\$2,030	\$1,388	\$3,419
Industrial Park	1,000 sq. ft.	12.41	16.63	\$536	\$550	\$6,652	\$9,147	\$243	\$182	\$3,016	\$3,027	\$3,636	\$2,484	\$6,120
Business Park	1,000 sq. ft.	22.57	30.25	\$536	\$550	\$12,098	\$16,638	\$243	\$182	\$5,485	\$5,506	\$6,613	\$4,519	\$11,132
Warehouse	1,000 sq. ft.	6.46	8.66	\$536	\$550	\$3,463	\$4,763	\$243	\$182	\$1,570	\$1,576	\$1,893	\$1,294	\$3,187
Mini-warehouse	1,000 sq. ft.	3.02	4.04	\$536	\$550	\$1,619	\$2,222	\$243	\$182	\$734	\$735	\$885	\$602	\$1,487

1 The arterial and collector impact fees effective July 1, 2017, are the impact fees needed as indicated in the January 2016 Road Impact Fee Update Study.

Implementation of Fee Schedule

Land Use Type	Unit	Impact Fee (Arterial Only)				
		Current Fee (app. 2007)	Effective ¹ 1- Jul-11	Effective ² 1-Jul-12	Effective ³ 1-Jul-13	Effective ⁴ 1-Sept-14
Single-Family Detached	Dwelling	\$2,191	\$2,700	\$3,514	\$4,227	\$4,911
Multi-Family	Dwelling	\$1,537	\$1,844	\$2,336	\$2,766	\$3,112
Mobile Home Park	Dwelling	\$1,144	\$1,378	\$1,752	\$2,079	\$2,338
Congregate Care Facility	Dwelling	\$440.00	\$566	\$767	\$943	\$1,093
Hotel/Motel	Room	\$1,126	\$1,432	\$1,922	\$2,350	\$2,567
Retail/Commercial						
Shopping Center / General Retail	1,000 sq. ft.	\$2,681	\$3,510	\$4,836	\$5,996	\$6,484
Restaurant, Quality	1,000 sq. ft.	\$4,964	\$6,499	\$8,955	\$11,104	\$12,069
Restaurant, Fast Food	1,000 sq. ft.	\$7,177	\$9,426	\$13,023	\$16,171	\$17,442
Office/Institutional						
Office	1,000 sq. ft.	\$1,891	\$2,430	\$3,291	\$4,045	\$4,632
Hospital	1,000 sq. ft.	\$2,867	\$3,595	\$4,760	\$5,779	\$5,359
Nursing Home	1,000 sq. ft.	\$996	\$1,411	\$2,074	\$2,654	\$3,082
Church	1,000 sq. ft.	\$1,127	\$1,447	\$1,958	\$2,406	\$3,258
Elementary/Sec. School	1,000 sq. ft.	\$543	\$704	\$960	\$1,185	\$1,606
Industrial						
Manufacturing	1,000 sq. ft.	\$830	\$1,067	\$1,445	\$1,776	\$2,030
Industrial Park	1,000 sq. ft.	\$1,513	\$1,944	\$2,634	\$3,237	\$3,636
Business Park	1,000 sq. ft.	\$2,773	\$3,563	\$4,828	\$5,934	\$6,613
Warehouse	1,000 sq. ft.	\$1,078	\$1,220	\$1,453	\$1,655	\$1,893
Mini-warehouse	1,000 sq. ft.	\$388	\$493	\$662	\$809	\$885

1 The arterial only impact fees effective July 1, 2011, are calculated at 25 percent of the increase for fees from the current fee schedule to that as indicated being needed by the November 2010 Road Impact Fee Update Study.

2 The arterial only impact fees effective July 1, 2012, are calculated at 65 percent of the increase for fees from the current fee schedule to that as indicated being needed by the November 2010 Road Impact Fee Update Study.

3 The arterial only impact fees effective July 1, 2013, are the arterial only impact fees needed as indicated in the November 2010 Road Impact Fee Update Study.

4 The arterial only impact fees effective September 1, 2014, are the arterial only impact fees needed as indicated in the March 2014 Road Impact Fee Update Study.

