

AGENDA

FLOWER MOUND PLANNING AND ZONING COMMISSION REGULAR MEETING

04/11/2022

FLOWER MOUND TOWN HALL, 2121 CROSS TIMBERS ROAD
FLOWER MOUND, TEXAS

6:30 P.M.

.....
AN AGENDA INFORMATION PACKET IS AVAILABLE ONLINE AT www.flower-mound.com/AgendaCenter
.....

Please silence or turn off all electronic devices.

Meeting participants may be asked to wait in the lobby until their name is called.

Comments regarding any agenda item can be sent to the Commission by emailing pz@flower-mound.com.

A. CALL MEETING TO ORDER

B. INVOCATION

C. PLEDGE OF ALLEGIANCE TO THE AMERICAN FLAG

D. PUBLIC COMMENT

To speak to the Planning & Zoning Commission during public comment, please fill out a green comment form, which is located in the lobby of Town Hall.

- Speakers are limited to 3 minutes; a tone will sound at 30 seconds left and when time has expired, and times may be adjusted by the Chair.
- Additional time limits will be provided to members of the public that need to address the Commission through a translator.
- Please state your name and address when speaking.

The purpose of this item is to allow the public an opportunity to address the Commission regarding any item on this agenda that is not a "Public Hearing." Issues regarding daily operational or administrative matters should first be dealt with by calling Town Hall at 972-874-6000 during business hours.

E. FUTURE AGENDA ITEMS

The purpose of this item is to allow the Chair and members of the Commission an opportunity to bring forward items they wish to discuss at a future meeting, with the understanding a consensus of the Commission is needed in order for that item to be placed on a future agenda and in accordance with the Town Council Agenda Setting Policy (Ord. 65-15).

F. DIRECTOR'S REPORT

1. Benchmark Cities: Development Applications/Community Engagement

G. CONSENT ITEMS

This part of the agenda consists of non-controversial or "housekeeping" items required by law. Items may be removed from Consent by any Commissioner by making such request prior to a motion and vote.

1. Minutes of March 28, 2022: Consider approval of the minutes of the March 28, 2022, Planning and Zoning Commission Regular Session.

2. RP21-0011 – Bolo Point Lot 1R: Consider a request for a Replat (RP21-0011 – Bolo Point Lot 1R) to create a residential lot. The property is generally located west of Long Lane and south of Bolo Lane.
3. RP22-0004 – Red Rock Addition Lot 1R, Block A: Consider a request for a Replat (RP22-0004 – Red Rock Addition Lot 1R, Block A) to amend a previously approved plat to create one residential lot. The property is generally located south of Ranch Road and west of Red Rock Lane.

H. REGULAR ITEMS

This part of the agenda consists of discretionary items either relating to zoning or a requested variation from the Town's development standards. If a public hearing is required, it will be noted in the item caption on the agenda. Typically, the Planning & Zoning Commission will make a recommendation to Town Council on these types of projects.

4. ZPD21-0014 – Cross Timbers Business Park PD-188: Public Hearing to consider an ordinance amending the zoning (ZPD21-0014 – Cross Timbers Business Park) from Interim Holding (IH) and Agricultural District (A) to Planned Development District No.188 (PD-188) with Campus Industrial and Industrial District-2 uses including a Comprehensive Sign Package, an exception to Section 82-302, Compatibility buffer, of the Code of Ordinances and with certain other waivers, exceptions and modifications to the Code of Ordinances. The property is generally located north of Cross Timbers Road and west of U.S. Highway 377.
5. ZPD21-0017 – Cummings Ranch PD-190: Public Hearing to consider an ordinance amending the zoning (ZPD21-0017 – Cummings Ranch) from Agricultural District (A) to Planned Development District No. 190 (PD-190) for a cluster development with certain modifications, waivers and exceptions to the Code of Ordinances. The property is generally located north of Cross Timbers Road and east of Red Rock Lane.

Pursuant to Section 551.071 of the Texas Government Code, the Planning and Zoning Commission reserves the right to consult in closed session with its attorney and to receive legal advice regarding any item listed on this agenda.

I. ADJOURNMENT – REGULAR SESSION

i. WORK SESSION

- a. Presentation and discussion on MPA21-0010 - Trails and Bikeways Master Plan.

I do hereby certify that the Notice of Meeting was posted on the bulletin board in Town Hall for the Town of Flower Mound, Texas, in a place convenient and readily accessible to the general public at all times and said Notice was also posted on the Town's website in accordance with GC Section 551.056 on the following date and time: April 7, 2022, at 5:00 p.m., at least 72 hours prior to the scheduled time of said meeting.

LauriAnn Cash, Executive Assistant

The Flower Mound Town Hall and Jody Smith Hall are wheelchair accessible. Requests for accommodations or interpretive services must be made at least 48 hours prior to this meeting by contacting Planning Services at 972-874-6350.



PLANNING AND ZONING COMMISSION

AGENDA ITEM NO: 1

CONSENT ITEM

DATE: April 11, 2022

FROM: LauriAnn Cash, Development Services Executive Assistant

ITEM: Consider approval of the minutes of the March 28, 2022, Planning and Zoning Commission Regular Session.

I. BACKGROUND INFORMATION

The Planning and Zoning Commission held a regular meeting on March 28, 2022.

II. ATTACHMENTS

1. Draft Minutes

THE FLOWER MOUND PLANNING & ZONING COMMISSION MEETING HELD ON THE 28TH DAY OF MARCH 2022, IN THE FLOWER MOUND TOWN HALL, LOCATED AT 2121 CROSS TIMBERS ROAD IN THE TOWN OF FLOWER MOUND, COUNTY OF DENTON, TEXAS AT 6:55 PM

The Planning & Zoning Commission met in a regular session with the following members present:

Brad Ruthrauff	Commissioner, Place 1
Robbie Cox	Commissioner, Place 2
Janvier Werner	Commissioner, Place 3
James Naylor	Commissioner, Place 4
Greg Wilson	Commissioner, Place 5
Donald Gilmore	Commissioner, Place 6
Kathryn Wells	Commissioner, Place 7
Jason Hobbs	Commissioner, Place 8
Brady Kilpper	Commissioner, Place 9

Constituting a quorum with the following members absent:

None

(Places 8 and 9 of the Commission do not vote on items unless they sit in place of one of the regular members, Places 1-7.)

And the following members of Town staff present:

Alicia Kreh	Town Attorney
Lexin Murphy	Director of Planning Services
Bob Pegg	Assistant Director of Engineering
Poornima Kashyap	Principal Planner
Claire Barnes	Planner
John Chapman	Planner
LauriAnn Cash	Executive Assistant

A. CALL REGULAR SESSION TO ORDER: 6:55 P.M.

B. PUBLIC COMMENT

Names listed below don't necessarily reflect the order in which each person spoke.

Speaker Names & Address	Subject
Jeff York, 4901 Bridle Bit With donated time from: Jackie Saxon, 5113 High Ridge Trail Anthony Daliso, 11395 Misty Ridge Drive Denise Daliso, 11395 Misty Ridge Drive Katherine Davison, 11405 Winecup Road Beth Richardson, 4056 Bordeaux Circle Timothy Russell, 1112 Daylily Drive Mary Vincent, 3933 Bordeaux Circle	CTCDD & Cross Timbers Business Park
Fred Vincent, 3933 Bordeaux Circle	CTCDD & Cross Timbers Business Park

Patsy Mizeur, 1821 Castle Court	Cross Timbers Business Park
Kendra Stephenson, 4801 Steinbeck Circle With time donated from: Brad Cooper, 3819 Maple Avenue Caleb Bardin, 3819 Maple Avenue Sam Williams, 3819 Maple Avenue	Cross Timbers Business Park
Stacey Leonard, 11500 Antler Ridge Way	Opposition to Warehouses
JP Parnell, 5901 Southern Hills Drive	Opposition to Warehouses
Rena Hardeman, 8132 Florance Road	Opposition to Warehouses
Christa Call, 10612 Smoky Oak Trail	Opposition to Warehouses
Austin Cartledge, 11601 Slumber Falls	Opposition to Warehouses
Eric Jensen, 6209 Savannah Oak Trail	Opposition to Warehouses
Carolyn Glover, 6209 Savannah Oak Trail	Opposition to Warehouses
John Leonard, 11500 Antler Ridge Way With donated time from: Haylie Leonard, 11500 Antler Ridge Way Paula Cuva, 11409 Antler Ridge Way Stacey Leonard, 11500 Antler Ridge Way	Opposition to Warehouses
Bob Van Hoef, 6605 Roughleaf Ridge Rd	Opposition to Warehouses
Debra Van Hoef, 6605 Roughleaf Ridge Rd	Opposition to Warehouses
Victor Worley, 11612 Little Elm Creek	Opposition to Warehouses
Jerry Brown, 11324 Bull Head Lane	Opposition to Warehouses
Stacie Bambauer, 6928 Basket Flower	Opposition to Warehouses
Robert Haug, 4904 Long Pond	Opposition to Warehouses
Deborah Dallas, 105 Big Sky Circle With donated time from: Dana Anderson, 3509 Northdale Drive	Opposition to Warehouses
Chris Drew, 5209 Ravine Ridge Court	Opposition to Warehouses
Michelle Jobe, 11358 Misty Ridge Dr With donated time from: John Jobe, 11358 Misty Ridge Dr	Opposition to Warehouses
Ashley Lopez, 7101 Broomsedge Dr	Opposition to Warehouses
Mark Flores, 6312 Crossvine Trail	Opposition to Warehouses
Claudia Villasana-Munoz, 11604 Slumber Falls	Opposition to Warehouses
Alex Pisciotta, 3716 Watermill Way	Opposition to Warehouses
David Pluss, 11459 Misty Ridge Drive	Opposition to Warehouses
Andrew Hering, 1016 Lamp Post Lane	Opposition to Warehouses
Joshua Bostick, 11383 Misty Ridge Dr	Opposition to Warehouses
Candice Pettit, 11359 Gable Circle	Opposition to Warehouses
Melanie Bostick, 11383 Misty Ridge Dr	Opposition to Warehouses
Beckett Klemetsen, 6925 Basket Flower Rd	Opposition to Warehouses
Dan Klemetsen, 6925 Basket Flower Rd	Opposition to Warehouses
Tom Clark, 8704 Baltusrol Dr With time donated from: Cindy Clark, 8704 Baltusrol Dr Lauren Goodman, 7017 Broomsedge Erika Klemetsen, 6925 Basket Flower Rd	Opposition to Warehouses
Chris Withrow, 11490 Misty Ridge	Opposition to Warehouses

Indicated "Do Not Wish To Speak"

Christine Taylor, 6909 Broomsedge Dr	Opposition to Warehouses
Shawnette Gauer, 6921 Broomsedge Dr	Opposition to Warehouses
Patricia Collins, 4301 Mistflower Way	Opposition to Warehouses

Terri Shukri, 3620 Water Mill Way	Opposition to Warehouses
Sonny Gann, 11616 Cedar Grove	Opposition to Warehouses
Frances Goyette, 6325 Willow Ridge Trl	Opposition to Warehouses
Mary & Ciro Panico, 11617 Cedar Grove	Opposition to Warehouses
Sharilyn & Eddie Wilken, 11620 Cedar Grove	Opposition to Warehouses
Annette Summerlin, 11309 Bull Head Lane	Opposition to Warehouses
Alicia Lansbury, 11401 Winecup Rd	Opposition to Warehouses
James Saxon, 5113 High Ridge Trail	Opposition to Warehouses
Sandra Ogden, 11212 Bull Head Lane	Opposition to Warehouses
Roger Summerlin, 11309 Bull Head Lane	Opposition to Warehouses
Aaron Young, 10920 Falling Leaf Trail	Opposition to Warehouses
Dennis Byington, 6605 Elderberry Way	Opposition to Warehouses
Pati Gann, 11616 Cedar Grove	Opposition to Warehouses
Holly McKinney, 4709 Valley Peak Cove	Opposition to Warehouses
Debra Harkness, 11305 Bull Head Lane	Opposition to Warehouses
Kip Harkness, 11305 Bull Head Lane	Opposition to Warehouses
Barbara Catrett, 10816 Pedernales Falls	Opposition to Warehouses
Linda Hooper, 4609 Largo Drive	Opposition to Warehouses
Diane Campbell, 6936 Basket Flower Rd	Opposition to Warehouses
Carlos Caban, 11304 Bull Head Ln	Opposition to Warehouses
Dane McWilliams, 4212 Mistflower Way	Opposition to Warehouses
Alison Flener, 6617 Roughleaf Ridge Rd	Opposition to Warehouses
Katrina Stauffer, 7000 Hickory Falls Dr	Opposition to Warehouses
Kristin Anderson, 1428 Westview Ln	Opposition to Warehouses
Sharon Longman, 7012 Antelope Dr	Opposition to Warehouses
Michael Longman, 7012 Antelope Dr	Opposition to Warehouses
Rod Aldridge, 6201 Whiskerbrush	Opposition to Warehouses
Mia Aldridge, 6201 Wisherbrush Rd	Opposition to Warehouses
Greg Burnham, 11613 Rust Falls Rd	Opposition to Warehouses
Cheryl Baxa, 11613 Rust Falls Rd	Opposition to Warehouses
Jodi Sealy, 6408 Prairie Brush Trail	Opposition to Warehouses
Tracy Sealy, 6408 Prairie Brush Trail	Opposition to Warehouses
Shane Anderson, 1428 Westview Lane	Opposition to Warehouses
Vong Miphouvieng, 11600 Bull Creek Dr	Opposition to Warehouses
Todd Bayuk, 10845 Pedernales Falls	Opposition to Warehouses
Luke Strensrud, 5232 Ravine Ridge Ct	Opposition to Warehouses
Lou Goyette, 6325 Willow Ridge Trl	Opposition to Warehouses
Carolyn Strensrud, 5232 Ravine Ridge Ct	Opposition to Warehouses
Ron Hall, 11367 Bull Head Ln	Opposition to Warehouses
Valerie Hall, 11367 Bull Head Lane	Opposition to Warehouses
Laura Brown, 11324 Bull Head Lane	Opposition to Warehouses
Samantha Hart, 1524 Rustic Timbers	Opposition to Warehouses
Scott Howell, 6555 Dolan Falls Dr	Opposition to Warehouses
Laurie Allain, 6953 Broomsedge Dr	Opposition to Warehouses
Matt Slaton, 2001 Winthrop Hill Rd	Opposition to Warehouses
Zach Stauffer, 7000 Hickory Falls Dr	Opposition to Warehouses
Viral Patel, 1158 Berrydale Dr	Opposition to Warehouses
Pooja Keskar, 11462 Misty Ridge Rd	Opposition to Warehouses
Michele Carlson, 11325 Bull Head Ln	Opposition to Warehouses
Rob Carlson, 11325 Bull Head Ln	Opposition to Warehouses
Sumanth Mallya, 11462 Misty Ridge Dr	Opposition to Warehouses
Paul Roncal, 3509 Misty Meadow Ln	Opposition to Warehouses
Nancy Heck, 5200 Ravine Ridge Ct	Opposition to Warehouses
Vicki Warner, 3529 Misty Meadow	Opposition to Warehouses

Matt Schwalm, 1108 Berrydale Dr	Opposition to Warehouses
Dawn Schwalm, 1108 Berrydale Dr	Opposition to Warehouses
Stacie Campbell, 6345 Crossvine Trl	Opposition to Warehouses
Rob Campbell, 6345 Crossvine Trl	Opposition to Warehouses
Ron Heck, 5200 Ravine Ridge Rd	Opposition to Warehouses
Stephen Gauer, 6921 Broomsedge Dr	Opposition to Warehouses
Ken Schrage, 3325 Meridian Dr	Opposition to Warehouses
Debbie Worley, 11612 Little Elm Creek	Opposition to Warehouses
Divya Patel, 1158 Berrydale Dr	Opposition to Warehouses
Cheryl Moore, 1900 Tennyson	Opposition to Warehouses
Tracey Villalon-Arriaga, 10913 Smoky Oak	Opposition to Warehouses
Lori Villalon-Arriaga, 10913 Smoky Oak	Opposition to Warehouses
Mitzi Rodriguez, 11304 Misty Ridge Dr	Opposition to Warehouses
Alycia Emerson, 4204 Greenthread Way	Opposition to Warehouses
Dave Emerson, 4204 Greenthread Way	Opposition to Warehouses
Tayton Morgan, 6409 Whiskerbrush Rd	Opposition to Warehouses
Meagan Anderson, 4507 Summerhill Court	Opposition to Warehouses
Jamie Brady, 801 Swift Creek Rd	Opposition to Warehouses
Angela Hammond, 1709 Twistleaf	Opposition to Warehouses
Ruth Angel, 11300 Dusty Trail Ct	Opposition to Warehouses
Amber Olivo, 4204 Alyssum Ln	Opposition to Warehouses
Daniel Olivo, 4204 Alyssum Ln	Opposition to Warehouses
Daniella Oropeza, 7101 Antelope Dr	Opposition to Warehouses
Paula Cuva, 11409 Antler Ridge Way	Opposition to Warehouses
Maribel Balderas, 1420 Westborough Dr	Opposition to Warehouses
Carlos Balderas, 1420 Westborough Dr	Opposition to Warehouses
Kristen Anderson, 2841 Edinburg Ln	Opposition to Warehouses
Celeste Parnell, 5901 Southern Hills Dr	Opposition to Warehouses
Craig Morrow, 4508 Tour 18 Dr	Opposition to Warehouses
Elizabeth Barber, 4508 Tour 18 Dr	Opposition to Warehouses
Karla Summers, 3812 Driftwood Ln	Opposition to Warehouses
Scott Summers, 3812 Driftwood Lane	Opposition to Warehouses
Jackie & Bob Giangiulio, 6312 Cedar Sage	Opposition to Warehouses
Sai Prasad Mukala, 7117 Antelope Dr	Opposition to Warehouses
Joseph Mistretta, 1009 Daylily Dr	Opposition to Warehouses
Jon Stricklan, 1701 River Birth Dr	Opposition to Warehouses
Patricia Truitt, 1701 River Birch Dr	Opposition to Warehouses
James Caldwell, 11363 Gable Circle	Opposition to Warehouses
Nicholas Reynolds, 1205 8 th Street	Opposition to Warehouses
Richard Lange, 4201 Cozy Pine	Opposition to Warehouses
Linda Lange, 4201 Cozy Pine	Opposition to Warehouses
Donna Perrin, 1509 Twistleaf Rd	Opposition to Warehouses
Maggie Mistretta, 1009 Daylily Dr	Opposition to Warehouses
Danielle Barfield, 11382 Misty Ridge Dr	Opposition to Warehouses
Caleb Barfield, 11382 Misty Ridge Dr	Opposition to Warehouses
Cherie Hart, 11625 Slumber Falls Dr	Opposition to Warehouses
Keith Hart, 11625 Slumber Falls Dr	Opposition to Warehouses
Amy Bruza, 1005 Coralberry	Opposition to Warehouses
Zachary Leonard, 1005 Coralberry Dr	Opposition to Warehouses
Hunter Leonard, 11500 Antler Ridge Way	Opposition to Warehouses
Justin Williford, 4201 Mistflower Way	Opposition to Warehouses
Sadhana Rajesh, 5008 High Ridge Trail	Opposition to Warehouses
Rajesh Natarajan, 5008 High Ridge Trail	Opposition to Warehouses
Alyssa Francis, 8109 Firestone Dr	Opposition to Warehouses

Troy Francis, 8109 Firestone Drive	Opposition to Warehouses
Ricardo Chiu, 10851 Smoky Oak Trl	Opposition to Warehouses
Ronak Kothari, 1524 Wolfberry Ln	Opposition to Warehouses
Amanda Rodriguez, 11478 Misty Ridge Dr	Opposition to Warehouses
Mireya Ortiz Rodriguez, 11478 Misty Ridge	Opposition to Warehouses
Nicki Gazlay, 1101 Upland Drive	Opposition to Warehouses
James Gazlay, 1101 Uplands Dr	Opposition to Warehouses
Glade & Katherine Oliverson, 6366 Prairie Brush	Opposition to Warehouses
Cinthia Gallegos, 3509 Misty Meadow Ln	Opposition to Warehouses
Rahul Reddy Thummala, 6108 Alyssum Ln	Opposition to Warehouses
Karlie Leonard, 11500 Antler Ridge Way	Opposition to Warehouses
Kenzie (Age 9) Canyon Falls	Opposition to Warehouses
Maria Leticia Herrera, 1212 Daylily Dr	Opposition to Warehouses
Ana Katina Yamamoto, 3713 Birch Wood Ct	Opposition to Warehouses
Kammie (Age 6) Canyon Falls	Opposition to Warehouses
Vishnu Vardhan-Lingala, 1505 Twistleaf Rd	Opposition to Warehouses
Bala Vunnam, 1520 Twistleaf Rd	Opposition to Warehouses
Kim Pisciotta, 3716 Water Mill Way	Opposition to Warehouses
Larry Mathis, 6336 Savannah Oak Tr	Opposition to Warehouses
Greg Anderson, 3509 Northdale Ln	Opposition to Warehouses
Heidi Schultz-Berns, 6612 Dolan Falls	Opposition to Warehouses
Rick Berns, 6612 Dolan Falls	Opposition to Warehouses
Laura Forster, 6421 Dolan Falls Dr	Opposition to Warehouses

The Planning & Zoning Commission recessed at 9:20 p.m. and reconvened at 9:30 p.m.

C. FUTURE AGENDA ITEMS

None

D. DIRECTOR'S REPORT

1. Web Resources

E. CONSENT ITEMS

1. Minutes of February 28, 2022: Consider approval of the minutes of the February 28, 2022, Planning and Zoning Commission Regular Session.
2. RP21-0009 – Flower Mound Woods Lots 3R1 & 4R1, Block D: Consider a request for a Replat (RP21-0009 – Flower Mound Woods Lots 3R1 & 4R1, Block D) to enlarge two existing single-family residential lots. The property is generally located north and west of Nan Lane and Alberta Lane.
3. RC21-0004 – Windhaven Senior Living: Consider a request for a Record Plat (RC21-0004 – Windhaven Senior Living) to create one non-residential lot. The property is located south of Cross Timbers Road and west of Auburn Drive.

Commission Deliberation

Commissioner Naylor moved to approve Consent Items 1, 2, and 3. Commissioner Wilson seconded the motion.

VOTE ON THE MOTION

AYES: Werner, Naylor, Wilson, Gilmore, Cox, Wells

NAYS: None

The motion to approve passed by a vote of 6 to 0.

F. REGULAR ITEMS

- 4. Public Hearing to consider an ordinance granting Specific Use Permit No. 474 (SUP21-0008 – River Walk Retail Phase II) to permit a fast food restaurant with a drive through window. The property is generally located south of Promenade Way and east of Long Prairie Road.**

Staff Presentation

Poornima Kashyap, Principal Planner

Applicant Presentation

Michael Beaty, MRW Investors, LLC;

Spoke In Favor:

None

Spoke In Opposition:

Hubert Robichaux, 2541 Gramercy Park Drive
Scott Sanderson, 2604 Gamma Road
Mary Sanderson, 2604 Gamma Road
Bob Blum, 3916 Saturn Street

In Favor, Chose Not To Speak

None

In Opposition, Chose Not To Speak

Marvin & Cindy Yates; 2445 Gramercy Park Drive
Ray & Joanne Garross, 1209 Prairie Creek Court

Commission Deliberation

Commissioner Naylor moved to recommend approval of SUP21-0008 – River Walk Retail Phase II with the following conditions: drive-thru to be open 5:00 AM to 7:00 PM, restaurant to be open 5:00 AM to 9:00 PM, requiring the installation of signage that directs people to turn away from the residential properties as negotiated and agreed to by the Town Staff, and working with the Town Arborist to replace the proposed Vitex tree with a non-invasive species.

There was no second. The motion failed.

Commissioner Gilmore moved to recommend approval of SUP21-0008 – River Walk Retail Phase II with the following conditions: hours of operation for the drive-through window be limited to 5:00 AM to 7:00 PM; hours of operation for the sit-down area of the restaurant be limited to 5:00 AM to 9:00 PM; with the installation of signage stating exit only, one way out; and work with Town Staff to replace the Vitex tree species with native ornamental landscaping. Commissioner Naylor seconded the motion.

VOTE ON THE MOTION

AYES: Wells, Cox, Gilmore, Naylor

NAYS: Wilson, Werner

The motion to recommend approval passed by a vote of 4 to 2.

5. **Public Hearing to consider a request for a Replat (RP22-0002 – Trimble Addition Lot 1 & 2, Block A) to create two residential lots with an exception to the grading criteria, regarding residential lot-to-lot drainage, contained in the Town's Engineering Design Criteria and Construction Standards adopted through Chapter 32 of the Code of Ordinances. The property is generally located east of High Road and south of Arabian Circle.**

Staff Presentation

Claire Barnes, Planner

Applicant Presentation

Marcus Trimble, Specific Space; present for questions, no presentation

Spoke In Favor:

James Schell, 7501 Arabian Circle

Spoke In Opposition:

None

Commission Deliberation

Commissioner Wells moved to recommend approval of RP22-0002 – Trimble Addition Lot 1 & 2, Block A. Commissioner Naylor seconded the motion.

VOTE ON THE MOTION

AYES: Werner, Naylor, Wilson, Gilmore, Cox, Wells

NAYS: None

The motion to recommend approval passed by a vote of 6 to 0.

- 6. Public Hearing to consider an ordinance granting a Specific Use Permit No. 476 (SUP21-0011 – 3800 High Road Accessory Dwelling) to permit an accessory dwelling. The property is generally located east of High Road and south of Arabian Circle.**

Staff Presentation

Claire Barnes, Planner

Applicant Presentation

Marcus Trimble, Specific Space; present for questions, no presentation

Spoke In Favor:

James Schell, 7501 Arabian Circle

Spoke In Opposition:

None

Commission Deliberation

Commissioner Wells moved to recommend approval of SUP21-0011 – 3800 High Road Accessory Dwelling. Commissioner Gilmore seconded the motion.

VOTE ON THE MOTION

AYES: Wells, Cox, Gilmore, Wilson, Naylor, Werner

NAYS: None

The motion to recommend approval passed by a vote of 6 to 0.

- 7. Public Hearing to consider an ordinance granting Specific Use Permit No. 477 (SUP21-0012 – Ivybrook Academy – Prairie Plaza Building 6) to permit a day care center use. The property is generally located north of Cross Timbers Road and west of Long Prairie Road.**

Staff Presentation

Claire Barnes, Planner

Applicant Presentation

Matthew Peterson, DB Constructors

Spoke In Favor:

None

Spoke In Opposition:

None

Commission Deliberation

Vice-Chair Cox moved to recommend approval of SUP21-0012 – Ivybrook Academy – Prairie Plaza Building 6. Commissioner Wells seconded the motion.

VOTE ON THE MOTION

AYES: Werner, Naylor, Wilson, Gilmore, Cox, Wells

NAYS: None

The motion to recommend approval passed by a vote of 6 to 0.

8. **Public Hearing to consider an ordinance for rezoning (ZPD21-0011 – Townlake Phase Five & Six) from Agricultural District (A) to Planned Development District No. 187 for a cluster development with certain modifications and exceptions to the Code of Ordinances. The property is generally located south of Cross Timbers Road and east of Scenic Drive. (*The Planning & Zoning Commission tabled this item by a vote of 6 to 0 at its February 14, 2022, meeting.*)**

Commissioner Gilmore recused himself from the Council Chambers at 11:29 p.m. Prior to the meeting, an Affidavit of Conflict of Interest was signed by Commissioner Gilmore and notarized by Town Staff.

Staff Presentation

Poornima Kashyap, Principal Planner

Applicant Presentation

Mike Boswell, Toll Brothers

Spoke In Favor:

None

Spoke In Opposition:

Caroline Bumgarner, 5150 Kensington Court (card received to speak; left due to time)

Commission Deliberation

Vice-Chair Cox moved to recommend approval of ZPD21-0011 – Townlake Phase Five & Six. Commissioner Naylor seconded the motion.

VOTE ON THE MOTION

AYES: Wells, Cox, Wilson, Naylor, Werner

NAYS: None

RECUSED: Gilmore

The motion to recommend approval passed by a vote of 6 to 0.

Commissioner Gilmore returned to the Council Chambers at 12:18 a.m. on Tuesday, March 29, 2022

G. ADJOURNMENT – REGULAR SESSION: 12:19 A.M. ON TUESDAY, MARCH 29, 2022

i. CALL TO ORDER WORK SESSION: 12:34 A.M. ON TUESDAY, MARCH 29, 2022

- a. Presentation and discussion on the Town's CTCDD Cluster Development Survey
 - Staff Presentation: Lexin Murphy, Director of Planning Services

The work session was closed at 2:34 A.M. on Tuesday, March 29, 2022.

TOWN OF FLOWER MOUND, TEXAS

Lexin Murphy, Director of Planning Services

ATTEST:

LauriAnn Cash, Executive Assistant



PLANNING AND ZONING COMMISSION

AGENDA ITEM NO: 2

CONSENT ITEM

DATE: April 11, 2022

FROM: Claire Barnes, Planner

ITEM: Consider a request for a Replat (RP21-0011 – Bolo Point Lot 1R) to create a residential lot. The property is generally located west of Long Lane and south of Bolo Lane.

I. ITEM SUMMARY

This application has been reviewed by DRC and determined to be ready for consideration by the Planning and Zoning Commission.

This application will require final action by the Planning and Zoning Commission.

II. APPLICATION ANALYSIS

The purpose of this application is to combine a previously established lot with an additional 0.40 tract of land to create an approximately 1.258-acre lot. Lot 1 of the Bolo Point subdivision was originally established in 1957. The property is zoned Single Family District-15.

The plat depicts necessary easements and setbacks. Access is from Long Lane.

III. ATTACHMENTS

A. Background Information

1. Vicinity Map
2. Letter of Intent

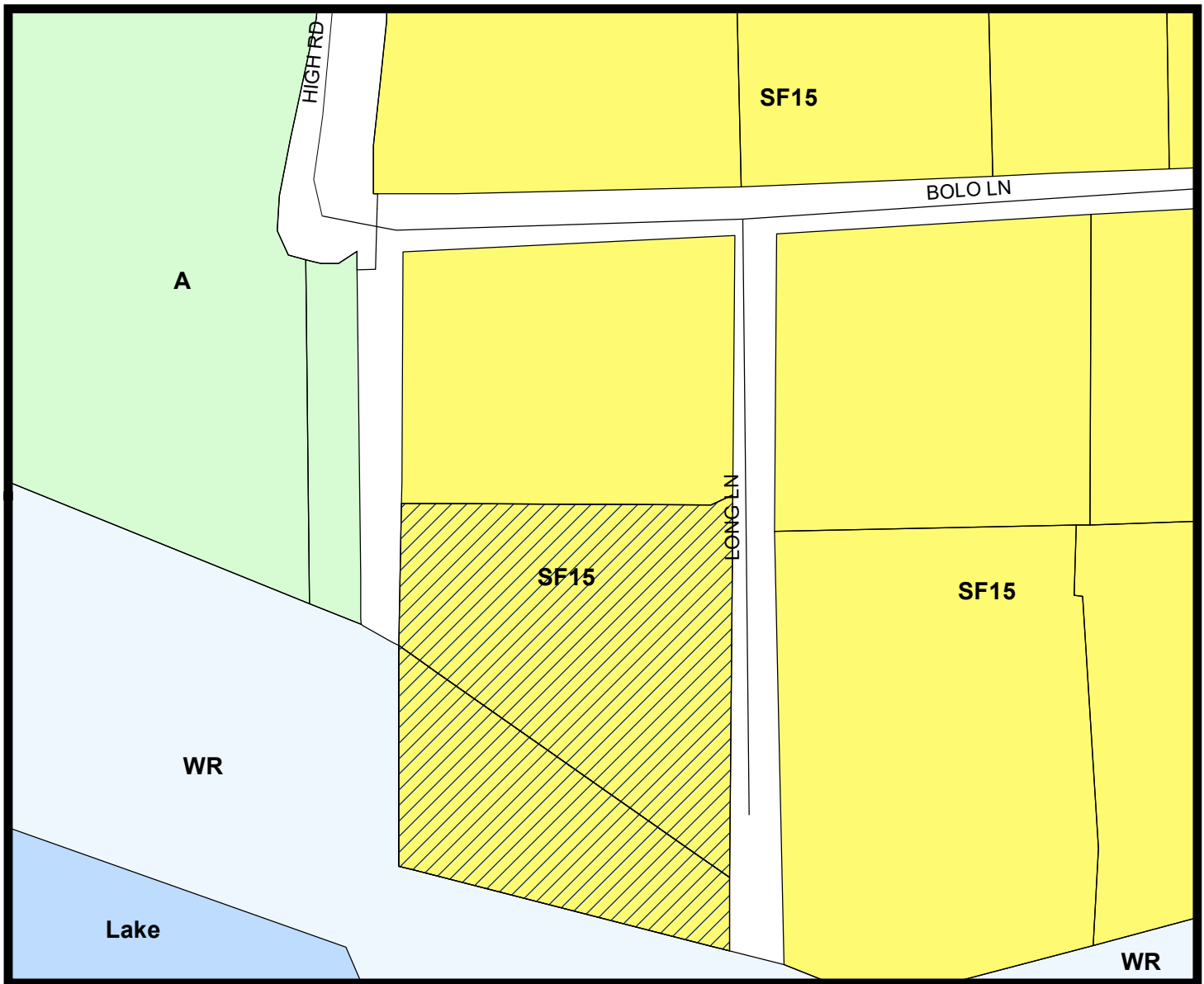
B. Application Details

1. Replat Package

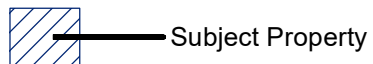


Vicinity Map

Reference Project: RP21-0011

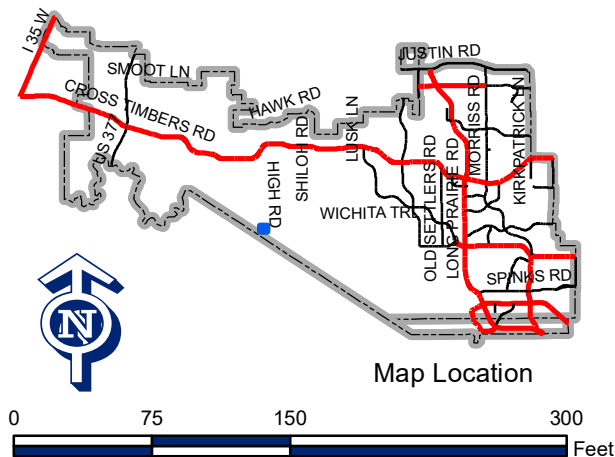


LEGEND



Visit www.fmdevmap.com to learn more about this project.

Visit <https://www.flower-mound.com/notifyme> to sign up for text message and/or email alerts for future projects.





LETTER OF INTENT > **NBL21002**

November 8, 2021

Planning Services
Town of Flower Mound
2121 Cross Timbers Road
Flower Mound, TX 75028

**RE: Replat- Lot 1R, Bolo Point
Letter of Intent
McAdams Job NBL21002**

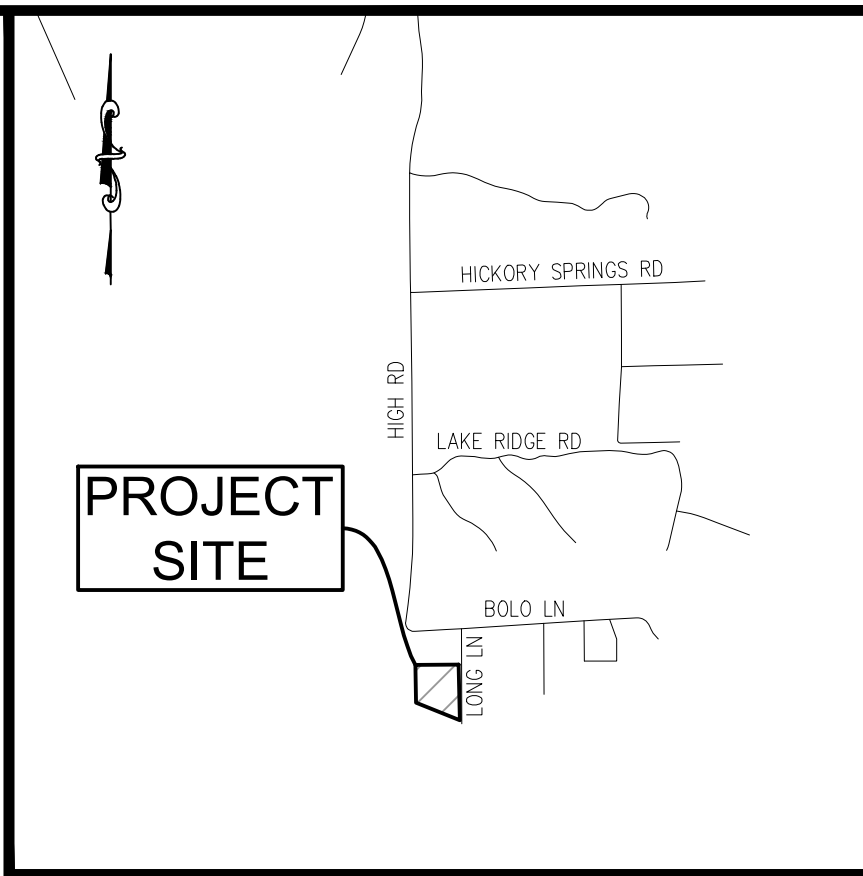
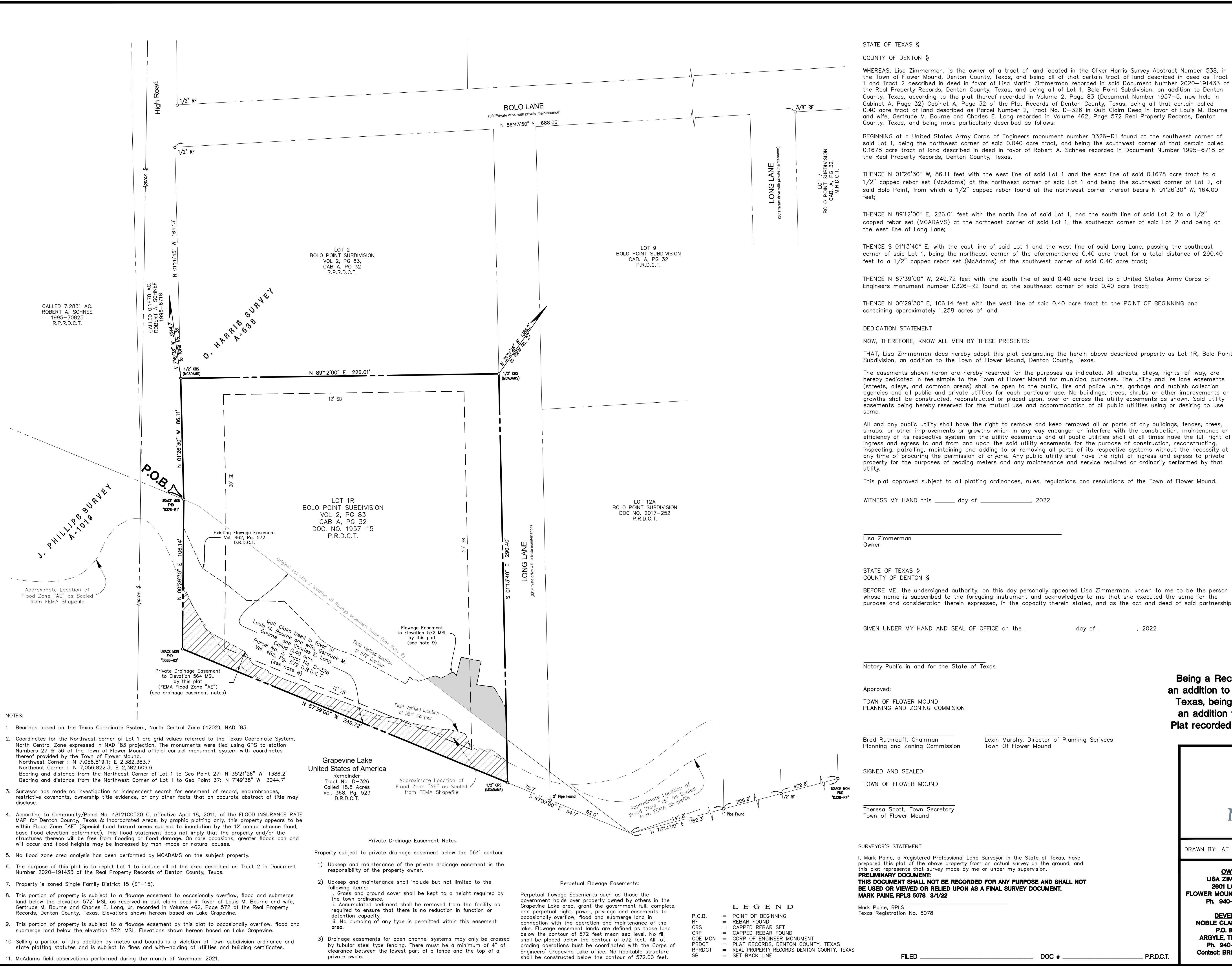
The purpose of this letter of intent is to accompany the application for a Replat of the property located at 2601 Long Lane. The purpose of the replat is to include all the area described as Tract 2 in document number 2020-191433 of the Real Property Records, Denton County, Texas into Lot 1, Bolo Point. Lot 1R, Bolo Point is a 1.258 acre (54,798 sq. ft.) residential Lot that is zoned Residential-15. The development consists of one lot.

If you have any questions or need anything else, please do not hesitate to contact us.

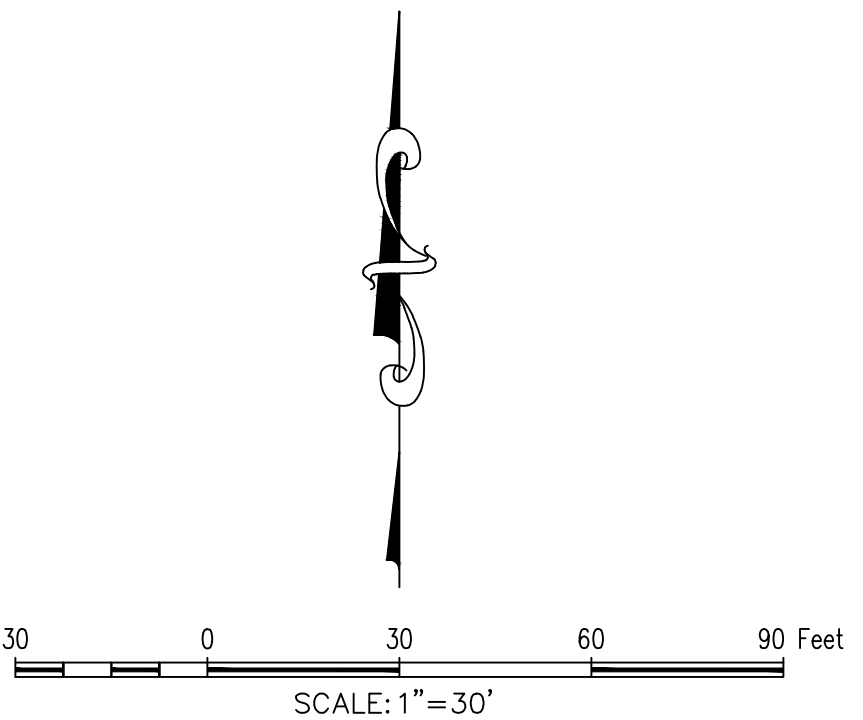
Sincerely,
MCADAMS

Cole Carpenter, RPLS
Project Manager

File: M:\Projects\NBL21002\02-Compendia\Survey\Plan\NBL21002_02S_10PM.dwg
Project: 3/7/2022 1:55 PM, by Dale Cooper, Saved: 3/7/2022 1:55 PM, by computer



Vicinity Map 1"=1000'



STATE OF TEXAS §
COUNTY OF DENTON §
WHEREAS, Lisa Zimmerman, is the owner of a tract of land located in the Oliver Harris Survey Abstract Number 538, in the Town of Flower Mound, Denton County, Texas, and being all of that certain tract of land described in deed as Tract 1 and Tract 2 described in deed in favor of Lisa Martin Zimmerman recorded in said Document Number 2020-191433 of the Real Property Records, Denton County, Texas, and being all of Lot 1, Bolo Point Subdivision, an addition to Denton County, Texas, according to the plat thereof recorded in Volume 2, Page 83 (Document Number 1957-5, now held in Cabinet A, Page 32) Cabinet A, Page 32 of the Plat Records of Denton County, Texas, being all that certain called 0.40 acre tract of land described as Parcel Number 2, Tract No. D-326 in Quit Claim Deed in favor of Louis M. Bourne and wife, Gertrude M. Bourne and Charles E. Long recorded in Volume 462, Page 572 Real Property Records, Denton County, Texas, and being more particularly described as follows:
BEGINNING at a United States Army Corps of Engineers monument number D326-R1 found at the southwest corner of said Lot 1, being the northwest corner of said 0.040 acre tract, and being the southwest corner of that certain called 0.1678 acre tract of land described in deed in favor of Robert A. Schnee recorded in Document Number 1995-6718 of the Real Property Records, Denton County, Texas,

THENCE N 01°26'30" W, 86.11 feet with the west line of said Lot 1 and the east line of said 0.1678 acre tract to a 1/2" capped rebar set (McAdams) at the northwest corner of said Lot 1 and being the southwest corner of Lot 2, of said Bolo Point, from which a 1/2" capped rebar found at the northwest corner thereof bears N 01°26'30" W, 164.00 feet;
THENCE N 89°12'00" E, 226.01 feet with the north line of said Lot 1, and the south line of said Lot 2 to a 1/2" capped rebar set (McAdams) at the northeast corner of said Lot 1, the southeast corner of said Lot 2 and being on the west line of Long Lane;

THENCE S 01°13'40" E, with the east line of said Lot 1 and the west line of said Long Lane, passing the southeast corner of said Lot 1, being the northeast corner of the aforementioned 0.40 acre tract for a total distance of 290.40 feet to a 1/2" capped rebar set (McAdams) at the southwest corner of said 0.40 acre tract;
THENCE N 67°39'00" W, 249.72 feet with the south line of said 0.40 acre tract to a United States Army Corps of Engineers monument number D326-R2 found at the southwest corner of said 0.40 acre tract;
THENCE N 00°29'30" E, 106.14 feet with the west line of said 0.40 acre tract to the POINT OF BEGINNING and containing approximately 1.258 acres of land.

DEDICATION STATEMENT
NOW, THEREFORE, KNOW ALL MEN BY THESE PRESENTS:

THAT, Lisa Zimmerman does hereby adopt this plat designating the herein above described property as Lot 1R, Bolo Point Subdivision, an addition to the Town of Flower Mound, Denton County, Texas.
The easements shown hereon are hereby reserved for the purposes as indicated. All streets, alleys, rights-of-way, are hereby dedicated in fee simple to the Town of Flower Mound for municipal purposes. The utility and ire lane easements (streets, alleys, and common areas) shall be open to the public, fire and police units, garbage and rubbish collection agencies and all public and private utilities for each particular use. No buildings, trees, shrubs or other improvements or growths shall be constructed, reconstructed or placed upon, over or across the utility easements as shown. Said utility easements being hereby reserved for the mutual use and accommodation of all public utilities using or desiring to use same.

All and any public utility shall have the right to remove and keep removed all or parts of any buildings, fences, trees, shrubs, or other improvements or growths which in any way endanger or interfere with the construction, maintenance or efficiency of its respective system on the utility easements and all public utilities shall at all times have the full right of ingress and egress to and from and upon the said utility easements for the purpose of construction, reconstructing, inspecting, patrolling, maintaining and adding to or removing all parts of its respective systems without the necessity of any time of procuring the permission of anyone. Any public utility shall have the right of ingress and egress to private property for the purposes of reading meters and any maintenance and service required or ordinarily performed by that utility.

This plat approved subject to all platting ordinances, rules, regulations and resolutions of the Town of Flower Mound.

WITNESS MY HAND this _____ day of _____, 2022

Lisa Zimmerman
Owner

STATE OF TEXAS §
COUNTY OF DENTON §
BEFORE ME, the undersigned authority, on this day personally appeared Lisa Zimmerman, known to me to be the person whose name is subscribed to the foregoing instrument and acknowledges to me that she executed the same for the purpose and consideration therein expressed, in the capacity therein stated, and as the act and deed of said partnership.

GIVEN UNDER MY HAND AND SEAL OF OFFICE on the _____ day of _____, 2022

Notary Public in and for the State of Texas

Approved:
TOWN OF FLOWER MOUND
PLANNING AND ZONING COMMISSION

Brad Ruthrauff, Chairman
Planning and Zoning Commission
Lexin Murphy, Director of Planning Services
Town Of Flower Mound

SIGNED AND SEALED:
TOWN OF FLOWER MOUND

Theresa Scott, Town Secretary
Town of Flower Mound

SURVEYOR'S STATEMENT
I, Mark Paine, a Registered Professional Land Surveyor in the State of Texas, have prepared this plat of the above property from an actual survey on the ground, and this plat represents that survey made by me or under my supervision.
PRELIMINARY DOCUMENT:
THIS DOCUMENT SHALL NOT BE RECORDED FOR ANY PURPOSE AND SHALL NOT BE USED OR VIEWED OR RELIED UPON AS A FINAL SURVEY DOCUMENT.
MARK PAINE, RPLS 5078 3/1/22

Mark Paine, RPLS
Texas Registration No. 5078

- LEGEND
- P.O.B. = POINT OF BEGINNING
 - RF = REBAR FOUND
 - CRS = CAPPED REBAR SET
 - CRF = CAPPED REBAR FOUND
 - COE MON = CORP OF ENGINEER MONUMENT
 - PRDCT = PLAT RECORDS, DENTON COUNTY, TEXAS
 - RPRDCT = REAL PROPERTY RECORDS DENTON COUNTY, TEXAS
 - SB = SET BACK LINE

FILED _____ DOC # _____ PRDCT.

REPLAT

Being a Record Plat of Lot 1R, Bolo Point Subdivision, an addition to the Town of Flower Mound, Denton County, Texas, being a replat of Lot 1, Bolo Point Subdivision, an addition to Denton County, Texas, according to the Plat recorded in Volume 2, Page 83 of the Plat Records of Denton County, Texas



The John R. McAdams Company, Inc.
111 Hillside Drive
Lewisville, Texas 75057
972.436.9712
201 Country View Drive
Roanoke, Texas 76262
940.240.1012
TBPE: 19762 TBPLS: 10194440
www.mcadamsco.com

DRAWN BY: AT DATE: 11/8/2021 SCALE: 1"=30' JOB. No. NBL21002

OWNER
LISA ZIMMERMAN
2801 LONG LN
FLOWER MOUND, TEXAS 75028
Ph. 940-390-5569

DEVELOPER
NOBLE CLASSIC HOMES
P.O. BOX 507
ARGYLE, TEXAS 75022
Ph. 940-231-5328
Contact: BRETT RATHER



PLANNING AND ZONING COMMISSION
AGENDA ITEM NO: 3
CONSENT ITEM

DATE: April 11, 2022

FROM: Claire Barnes, Planner

ITEM: Consider a request for a Replat (RP22-0004 –Red Rock Addition Lot 1R, Block A) to amend a previously approved plat to create one residential lot. The property is generally located south of Ranch Road and west of Red Rock Lane.

I. ITEM SUMMARY

This application has been reviewed by DRC and determined to be ready for consideration by the Planning and Zoning Commission.

This application will require final action by the Planning and Zoning Commission.

II. APPLICATION ANALYSIS

The purpose of this application is to dedicate additional Right-of-Way and amend setbacks for a previously established lot. The Red Rock Addition (RC19-0003), a one-lot residential subdivision, was approved by the Planning and Zoning Commission on September 23, 2019. After the ROW dedication, the lot size has been reduced to 2.854 acres. The property is zoned Agricultural District.

The plat depicts necessary easements and setbacks. As the lot is considered a key-lot, front setbacks are provided along Ranch Road and Red Rock Lane.

III. ATTACHMENTS

A. Background Information

1. Vicinity Map
2. Letter of Intent

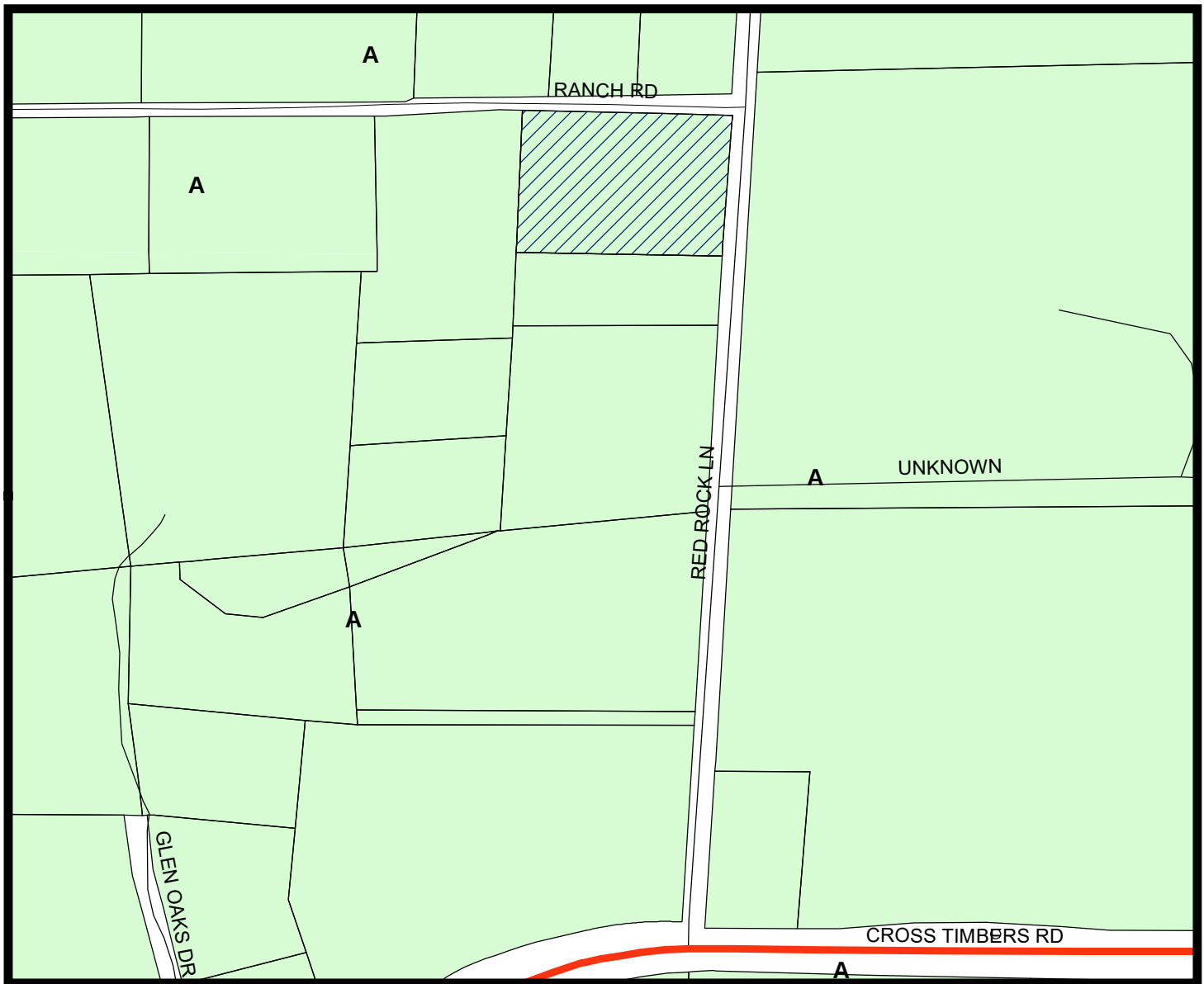
B. Application Details

1. Replat Package



Vicinity Map

Reference Project: RP22-0004



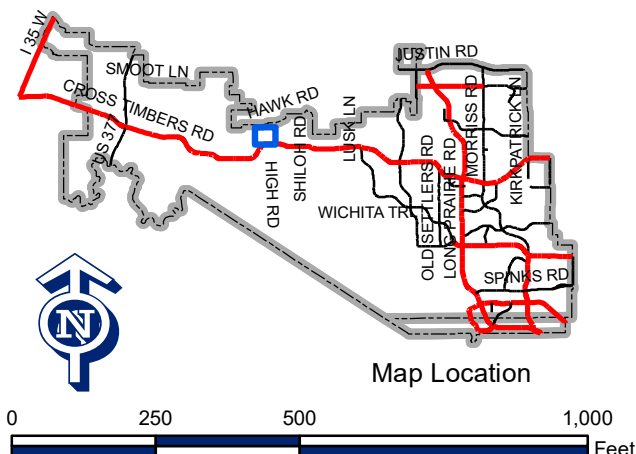
LEGEND

 Agriculture

 Subject Property

Visit www.fmdevmap.com to learn more about this project.

Visit <https://www.flower-mound.com/notifyme> to sign up for text message and/or email alerts for future projects.



Tuesday, February 8, 2022
4591 Red Rock Lane
Town of Flower Mound, Denton County, Texas
Page 1 of 1



Letter of Intent:

To Whom It May Concern:

The approximate location of 4591 Red Rock Lane is located within the Town Limits of Flower Mound in the Red Rock Addition, 2.903 acres being all of Lot 1, Block A. The plat is being amended to reflect a set back on the North side.

The property is currently zoned A and a zoning change is not needed or requested.

At this time, the purpose of this plat is to pull a permit to develop the land.

Please accept this formal request to take this plat submission.

Please feel free to reach out to me, Grayson CeBallos, with any further questions, comments or concerns.

Thank you,

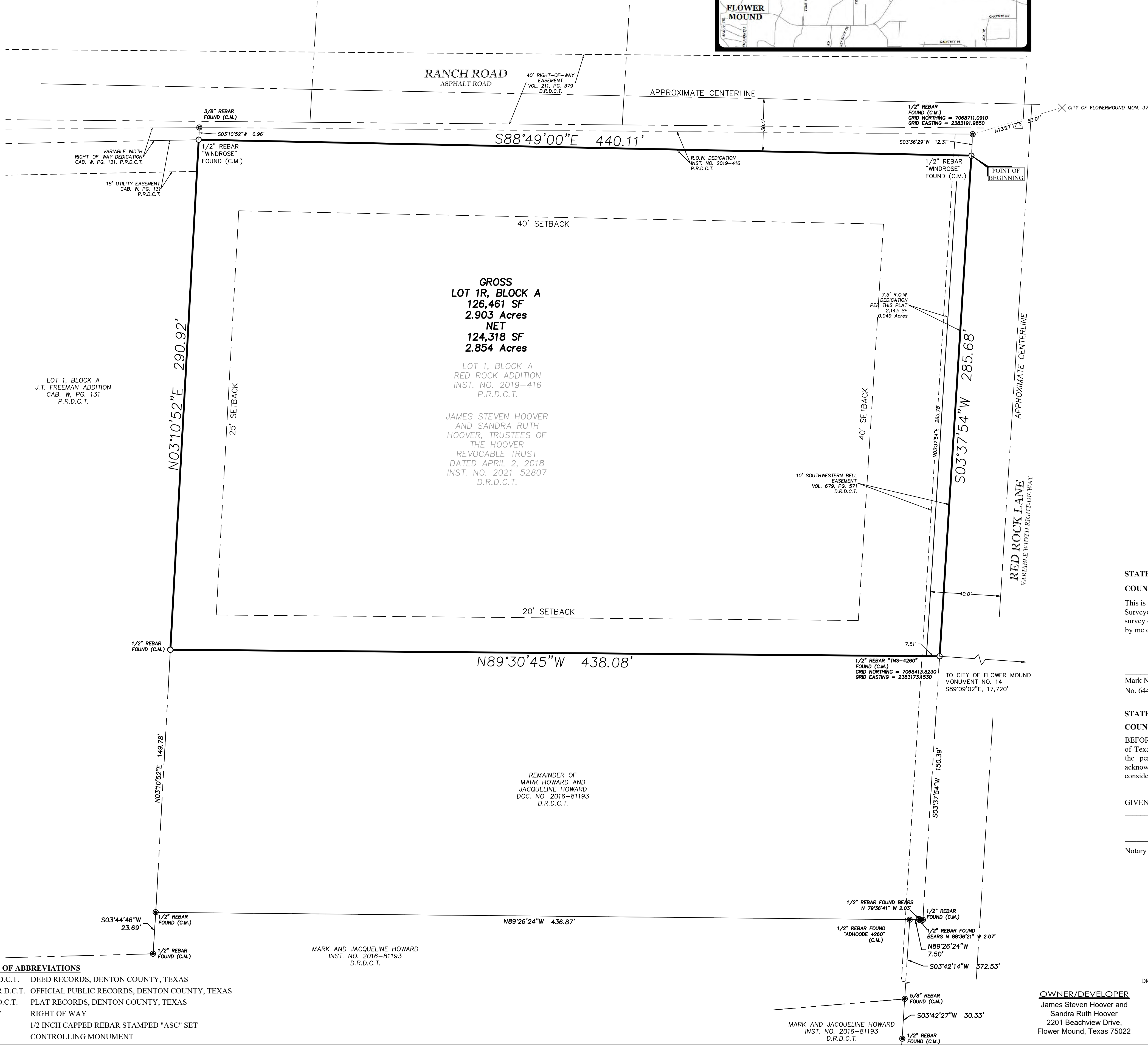
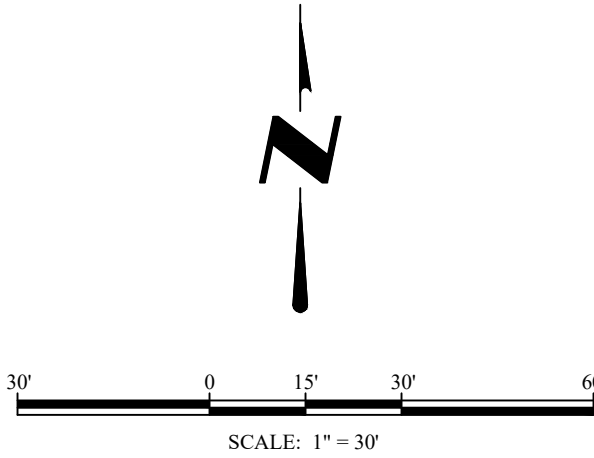
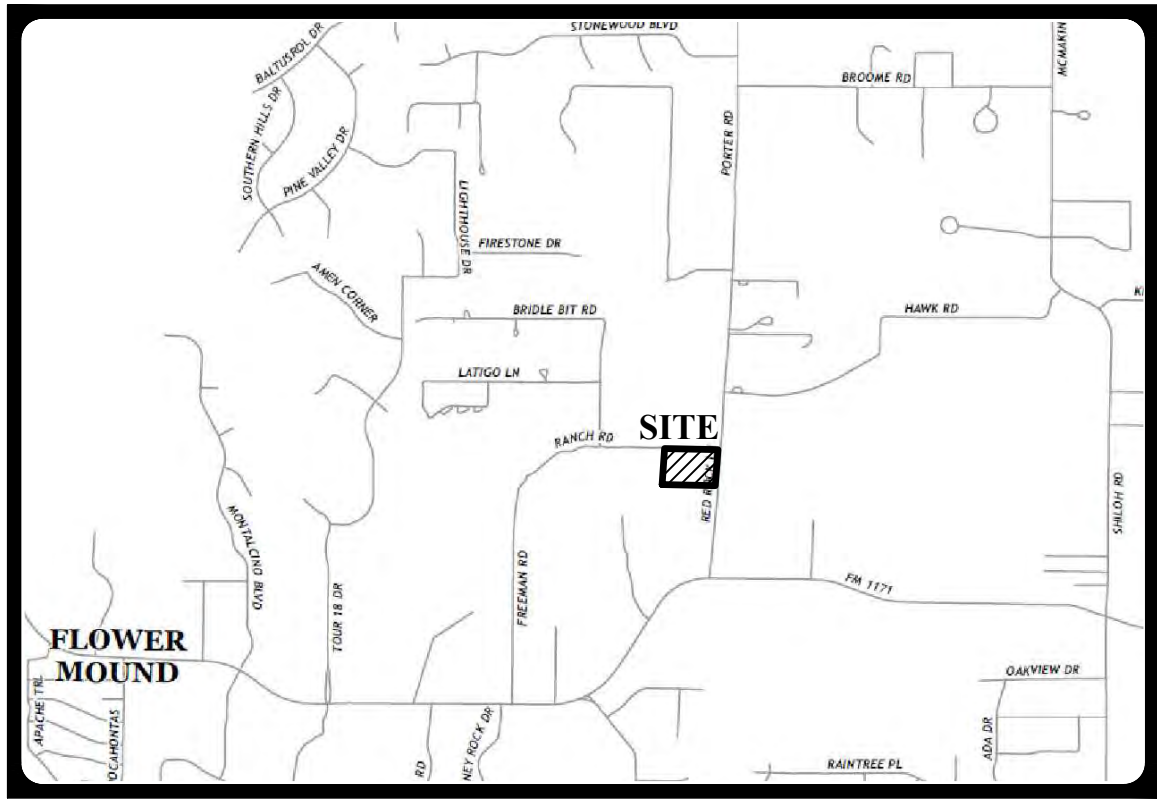
A handwritten signature in blue ink, appearing to read "Grayson CeBallos".

Grayson CeBallos
Project Manager, SIT
Grayson.ceballos@windroseservices.com
Direct - 972-370-5871
Main - 214-217-2544

SURVEYOR'S NOTES:

- Bearings and distances are based on Texas State Plane Coordinate System, Texas North Central Zone 4202 North American Datum of 1983 (NAD 83) (U.S. Foot) with a combined scale factor of 1.000150630.
- This property lies within Zone "X" Unshaded of the Flood Insurance Rate Map for Denton County, Texas and Incorporated Areas, map no. 48121C0520G, dated April 18, 2011, via scaled map location and graphic plotting.
- Notice: Selling a portion of this addition by metes and bounds is a violation of City subdivision ordinance and state platting statutes and is subject to fines and withholding of utilities and building certificates.
- The purpose of this plat is to amend an existing setback line.
- The property is zoned an Agricultural District (A).
- A Tree Survey will be required with the SFD Permit submittal for this subdivision.

VICINITY MAP
NOT TO SCALE



LEGEND OF ABBREVIATIONS

- D.R.D.C.T. DEED RECORDS, DENTON COUNTY, TEXAS
- O.P.R.D.C.T. OFFICIAL PUBLIC RECORDS, DENTON COUNTY, TEXAS
- P.R.D.C.T. PLAT RECORDS, DENTON COUNTY, TEXAS
- ROW RIGHT OF WAY
- IRS 1/2 INCH CAPPED REBAR STAMPED "ASC" SET
- C.M. CONTROLLING MONUMENT

STATE OF TEXAS §
COUNTY OF DENTON §

This is to certify that I, Mark N. Peebles, a Registered Professional Land Surveyor of the State of Texas, have platated the subdivision from an actual survey on the ground, and that this plat correctly represents that survey made by me or under my direction and supervision.

Mark N. Peebles, R.P.L.S.
No. 6443

STATE OF TEXAS §
COUNTY OF DENTON §

BEFORE ME, the undersigned authority, a Notary Public in and for the State of Texas, on this day personally appeared Mark N. Peebles, known to me to be the person whose name is subscribed to the foregoing instrument and acknowledged to me that he executed the same for the purposes and consideration therein expressed.

GIVEN UNDER MY HAND AND SEAL OF OFFICE this _____ day of _____, 20____.

Notary Public in and for the State of Texas



OWNER/DEVELOPER
James Steven Hoover and
Sandra Ruth Hoover
2201 Beachview Drive,
Flower Mound, Texas 75022

Point of Contact:
Grayson CeBallos
972-370-5871
grayson.ceballos@windroseservices.com
Last Revision Date: 04/04/2022

Owners Certificate:

STATE OF TEXAS §
COUNTY OF DENTON §

WHEREAS James Steven Hoover and Sandra Ruth Hoover are the sole owners of a tract of land located in the M.E.P. and P.R.R. Survey, Abstract Number 928, in the Town of Flower Mound, Denton County, Texas, according to the deed recorded in Instrument Number 2021-52807, Deed Records, Denton County, Texas and being more particularly described as follows:

BEING all of Lot 1, Block A of Red Rock Addition, an addition to the Town of Flower Mound, Denton County, Texas, according to the plat recorded in Instrument Number 2019-416 of the Plat Records, Denton County, Texas.

Owners Dedication:

NOW, THEREFORE, KNOW ALL MEN BY THESE PRESENTS

That James Steven Hoover and Sandra Ruth Hoover, Trustees of the Hoover Revocable Trust dated April 2, 2018 do hereby adopt this plat designated herein as Lot 1R, Block A, Red Rock Addition, an addition to the Town of Flower Mound, Denton County, Texas.

The easements shown hereon are hereby reserved for the purposes as indicated. All streets, alleys, rights of way and Lot 1, Block A, are hereby dedicated in fee simple to the Town of Flower Mound for municipal purposes. The utility and fire lane easements (streets, alleys, and common areas) shall be open to the public, fire and police units, garbage and rubbish collection agencies and all public and private utilities for each particular use. No buildings, trees, shrubs or other improvements or growths shall be constructed, reconstructed or placed upon, over or across the utility easements as shown. Said utility easements being hereby reserved for the mutual use and accommodation of all public utilities using or desiring to use same.

All and any public utility shall have the right to remove and keep removed all or parts of any buildings, fences, trees, shrubs, or other improvements or growths which in any way endanger or interfere with the construction, maintenance of efficiency of its respective system on the utility easements and all public utilities shall at all times have the full right of ingress and egress to and from and upon the said utility easements for the purpose of construction, reconstruction, inspecting, patrolling, maintaining and adding to or removing all or parts of its respective systems without the necessity at any time of procuring the permission of anyone. Any public utility shall have the right of ingress and egress to private property for the purposes of reading meters and any maintenance and service required or ordinarily performed by that utility

This plat approved subject to all platting ordinances, rules, regulations and resolutions of the Town of Flower Mound.

WITNESS our hands this the _____ day of _____, 20____.

By: _____
James Steven Hoover Title

By: _____
Sandra Ruth Hoover Title

STATE OF TEXAS §
COUNTY OF _____ §

BEFORE ME, the undersigned authority, a Notary Public in and for the State of Texas, on this day personally appeared James Steven Hoover, known to me to be the person whose name is subscribed to the foregoing instrument and acknowledged to me that she executed the same for the purposes and consideration therein expressed.

GIVEN UNDER MY HAND AND SEAL OF OFFICE this _____ day of _____, 20____.

Notary Public in and for the State of Texas

STATE OF TEXAS §
COUNTY OF _____ §

BEFORE ME, the undersigned authority, a Notary Public in and for the State of Texas, on this day personally appeared Sandra Ruth Hoover, known to me to be the person whose name is subscribed to the foregoing instrument and acknowledged to me that she executed the same for the purposes and consideration therein expressed.

GIVEN UNDER MY HAND AND SEAL OF OFFICE this _____ day of _____, 20____.

Notary Public in and for the State of Texas

APPROVED:

TOWN OF FLOWER MOUND
PLANNING AND ZONING COMMISSION

Brad Ruthrauff, Chairman
Planning and Zoning Commission

Lexin Murphy
Director of Development Services

Date _____, 20____

SIGNED AND SEALED:
TOWN OF FLOWER MOUND

Theresa Scott, Town Secretary
Town of Flower Mound

REPLAT
RED ROCK ADDITION
LOT 1R, BLOCK A
A Record Plat of Lot 1R, Block A,
Red Rock Addition, an addition to the
Town of Flower Mound, Denton County,
Texas, being an replat of
Lot 1, Block A of Red Rock Addition,
an addition to the Town of Flower Mound,
Denton County, Texas, according to the
Plat recorded in Instrument Number 2019-416
of the Plat Records, Denton County, Texas

-- 2022 --

FOR DENTON COUNTY USE ONLY

FOR DENTON COUNTY USE ONLY

FOR DENTON COUNTY USE ONLY



PLANNING AND ZONING COMMISSION

AGENDA ITEM NO: 4

REGULAR ITEM

DATE: April 11, 2022

FROM: Claire Barnes, Planner

ITEM: Public Hearing to consider an ordinance amending the zoning (ZPD21-0014 – Cross Timbers Business Park) from Interim Holding (IH) and Agricultural District (A) to Planned Development District No.188 (PD-188) with Campus Industrial and Industrial District-2 uses including a Comprehensive Sign Package, an exception to Section 82-302, Compatibility buffer, of the Code of Ordinances and with certain other waivers, exceptions and modifications to the Code of Ordinances. The property is generally located north of Cross Timbers Road and west of U.S. Highway 377.

I. ITEM SUMMARY

This application has been reviewed by DRC and determined to be ready for consideration by the Planning and Zoning Commission. There are no outstanding issues.

This application will require final action by the Town Council.

II. APPLICATION ANALYSIS

The purpose of this application is to request approval of a Planned Development District (PD) to provide for an office and warehouse industrial development on a 263-acre unplatted parcel of land. The base zoning districts for the proposed PD will be Campus Industrial District (CI) and Industrial District-2 (I2), which is compatible with the existing Master Plan land use designation of Denton Creek District with Campus Industrial and Commercial/Industrial uses.

As part of the request, the applicant has asked for certain modifications, waivers, and exceptions to the Code of Ordinances. Modifications/waivers/exceptions requested include the following (see Section III below, for detail):

- Additional Height
- Compatibility Buffer
- Comprehensive Sign Package

The conceptual site plan provides for ten one-story primary buildings for a total conceptual building area of 3,270,140 square feet. For conceptual planning purposes, the applicant has provided parking based on warehouse and office uses. Based on the use breakdown provided by the applicant, the required total parking is 1,956. The applicant is proposing 2,337 as shown on the concept plan. Future parking areas are not

included in this calculation. Parking (not including potential future parking), falls within the Town's allowable 20% deviation. Since this project requires over 250 parking spaces, the applicant provided a parking study as required by Sec. 82-73 to show that the site, as designed, would have adequate parking ([Parking Study](#)). If approved, the site will be subject to additional parking review during site plan and certificate of occupancy review. Access is proposed from Cross Timbers Road and via the future extensions of Stonecrest Drive and Denton Creek Boulevard.

The conceptual plans [see Attachment B(1)] provide for a proposed development that complies with the development standards and/or the PD base zoning districts (C1 & I2), as well as required landscaping and buffering.

Nonresidential buildings typically have a 60-foot front building setback. Unless adjacent to residential, nonresidential features no side setback requirements, and the rear setback for non-residential is 15-feet. The applicant is proposing the following:

1. Building setback along Cross Timbers Road will be 110-feet
2. Building setback adjacent to the railroad will be 50-feet

The following landscape buffer increases are proposed:

1. The minimum landscape buffer along Cross Timbers will be 60-feet
2. The minimum landscape buffer along Denton Creek Boulevard will be 40-feet.

A 25-foot buffer is also proposed along the railroad on the eastern side of the property.

The applicant has provided the following conceptual elevations [see Attachment B(1)] for the development, in addition to the proposed architectural requirements in the PD development standards:

1. Building A: all facades provided
2. Building B: indicated to be similar to building A
3. Building C: south (front) façade provided
4. Building D: all facades provided
5. Building E: all facades provided
6. Building F: indicated to be similar to building J
7. Building G: indicated to be similar to building J
8. Building H: indicated to be similar to building E
9. Building J: full facades provided
10. Building K: no facades provided

The proposed conceptual elevations are in compliance with the Urban Design Plan. The PD architectural standards indicate that all building elevations shall be in substantial compliance with the conceptual elevations provided in Attachment B(1). See Section III for the requested modifications.

The Town's Urban Design Plan indicates that service areas, including but not limited to truck docks, should be planned for internal locations within the development. Such service areas should not be visible from Denton Creek Boulevard. the applicant is proposing truck courts along the western side of Denton Creek Boulevard. In order to comply with the Urban Design Plan, the applicant is proposing a combination of berms

and screening walls along Denton Creek Boulevard [Attachment B(1)] to shield truck docks from view.

The applicant is required to comply with Section 2, Area Plans, of the Master Plan which was in effect at the time of their application. It defines Campus Industrial as follows:

Large scale developments such as corporate offices, office parks, Service/repair, light industry, clean assembly and similar uses, in a planned campus settings. Retail and restaurant uses serving the campus industrial uses could be included, if they are planned as integral elements of the developments.

The requested underlying zoning in the PD will be based, in part, on certain uses and standards in the Campus Industrial (CI) district. The Town's Land Development Regulations defines this district as follows:

The CI campus industrial district is designed primarily to accommodate a variety of light industrial developments such as industrial parks, clean manufacturing, office/showrooms and similar uses in a planned campus setting. Retail, restaurant, hotel and similar uses serving the commercial/industrial uses could be appropriate, if they are planned as integral elements of the developments. In addition to the use and area regulations of this section, development in the CI campus industrial district shall be in compliance with all other applicable provisions of this chapter.

The applicant is also prohibiting the following use that is allowed within the CI district subject to Town Council approval of a Specific Use Permit:

- Parking lot, trucks or trailers (transport)

Section 2, Area Plans, of the Master Plan defines Commercial/Industrial as follows:

Large scale developments such as corporate offices, office parks, retail, service/repair, light industry, clean assembly and similar uses. In larger commercial/industrial districts, restaurants are encouraged within walking distance of the commercial/industrial buildings.

The applicant is prohibiting the following use that is allowed within the I2 district:

- Parking lot, trucks or trailers (transport)

The applicant is prohibiting the following use that is allowed within the I2 district subject to Town Council approval of a Specific Use Permit:

- Manufacturing, hazardous/objectionable

The undeveloped 263-acre site possesses frontage along Cross Timbers Road and would be bisected by the future Denton Creek Boulevard as it extends south. Additional frontage along Stonecrest Drive is also proposed. The applicant is proposing two points of access from Cross Timbers Road. The proposed development standards require internal signage that indicates that truck traffic is not permitted to turn north out of the development. Truck traffic is to enter and exit from Cross Timbers Road and may not go

past the northern property line of the development. The accompanying conceptual site plan [Attachment B(1)] details the conceptual layout of the site.

III. MODIFICATIONS/WAIVERS/EXCEPTIONS

A. ADDITIONAL HEIGHT

Section 98-1031 states that additional height above that granted by district regulations may be granted by the Planning and Zoning Commission at the time of site plan approval, and the Planning and Zoning Commission may require that the front, side, and rear yards be increased above the minimum requirements to mitigate the impacts of such increased height.

Campus Industrial zoning has a maximum height of 45-feet while Industrial District-2 has a maximum height of 35-feet. The applicant is requesting that the PD permit the area comprised of buildings C, F, G, H, and J be allowed to have a maximum height of 60-feet. The areas around Building B and K are requested to have a maximum height of 45-feet. The zoning exhibit included in Attachment B(1) shows the location of the height modification. Increased setbacks along Cross Timbers Road are proposed as detailed earlier in Section II of this report.

B. COMPATIBILITY BUFFER

Section 82-302 requires that nonresidential developments provide a 25-foot landscaped buffer and a minimum six-foot masonry/brick wall along the property line if adjacent to a residential property or potential residential property.

A residential neighborhood outside of Town limits is located adjacent to the western side of the development. The applicant is requesting to modify the required buffer to be a minimum 60-feet that may be expanded as shown in the conceptual landscape plans in Attachment B(1). The applicant is also requesting that the required masonry wall be relocated adjacent to the parking as depicted also in the conceptual landscape plans. The applicant is providing the requisite trees for the required 25' landscape buffer, however, due to easements and an intermittent stream, the applicant is requesting that not all trees be provided adjacent to the western property line as would normally be required.

C. COMPREHENSIVE SIGN PACKAGE

Section 86-44 allows for specialized review of signs which may have meritorious design and seek to promote a unique quality for an existing or proposed development, but which require special consideration. Such specialized review shall encompass the number, size, height, color, location, lighting, and/or relation to adjacent property, to promote the public health, safety, and welfare and be consistent with the goals of community character. The permitting of such signs shall not be based on the content of any sign, but is intended to allow for the evaluation of the physical impact of the proposed comprehensive sign package on adjacent properties and to ensure adequate mitigation of potentially unfavorable factors, such

as the number, size, height, color, location, lighting and other potentially unfavorable impacts.

The applicant is proposing an entryway monument for the development. As this sign, as presented, does not comply with current ground sign requirements, the applicant is requesting a Comprehensive Sign Package so that the sign may be incorporated as shown in Attachment B(1). The applicant is proposing a maximum height for the sign of 18 feet and maximum linear dimensions of 14 feet by 4 feet. The proposed entryway monument sign and pavilion can be viewed in Attachment B(1) of this packet. Locations for these features are shown on the concept plan in Attachment B(1) as well.

IV. ENVIRONMENTAL CONSERVATION COMMISSION

On February 1, 2022, the Environmental Conservation Commission (ECC) recommended approval of the removal of one (1) specimen trees on the subject property. The item will be forwarded to the Town Council for consideration at the same time as the subject project. The February 1, 2022, ECC meeting can be viewed here:

<https://flowermoundtx.swagit.com/play/02022022-943>

V. CORRESPONDENCE

The Town Code requires both public notice in a newspaper of general circulation (Denton Record Chronicle) and notification of the property owners within 200 feet of the subject property for all Zoning Amendment requests. Project No. ZPD21-0014 had a total of 24 Property Owner Notifications mailed. At the time this report was written, the Town had received no items of correspondence in support and 68 items of correspondence in opposition to the request (correspondence is calculated by each property/household). All written correspondence was sent directly to the Planning and Zoning Commission according to the public communication process.

VI. ATTACHMENTS

A. Background Information

1. Vicinity Map
2. Letter of Intent

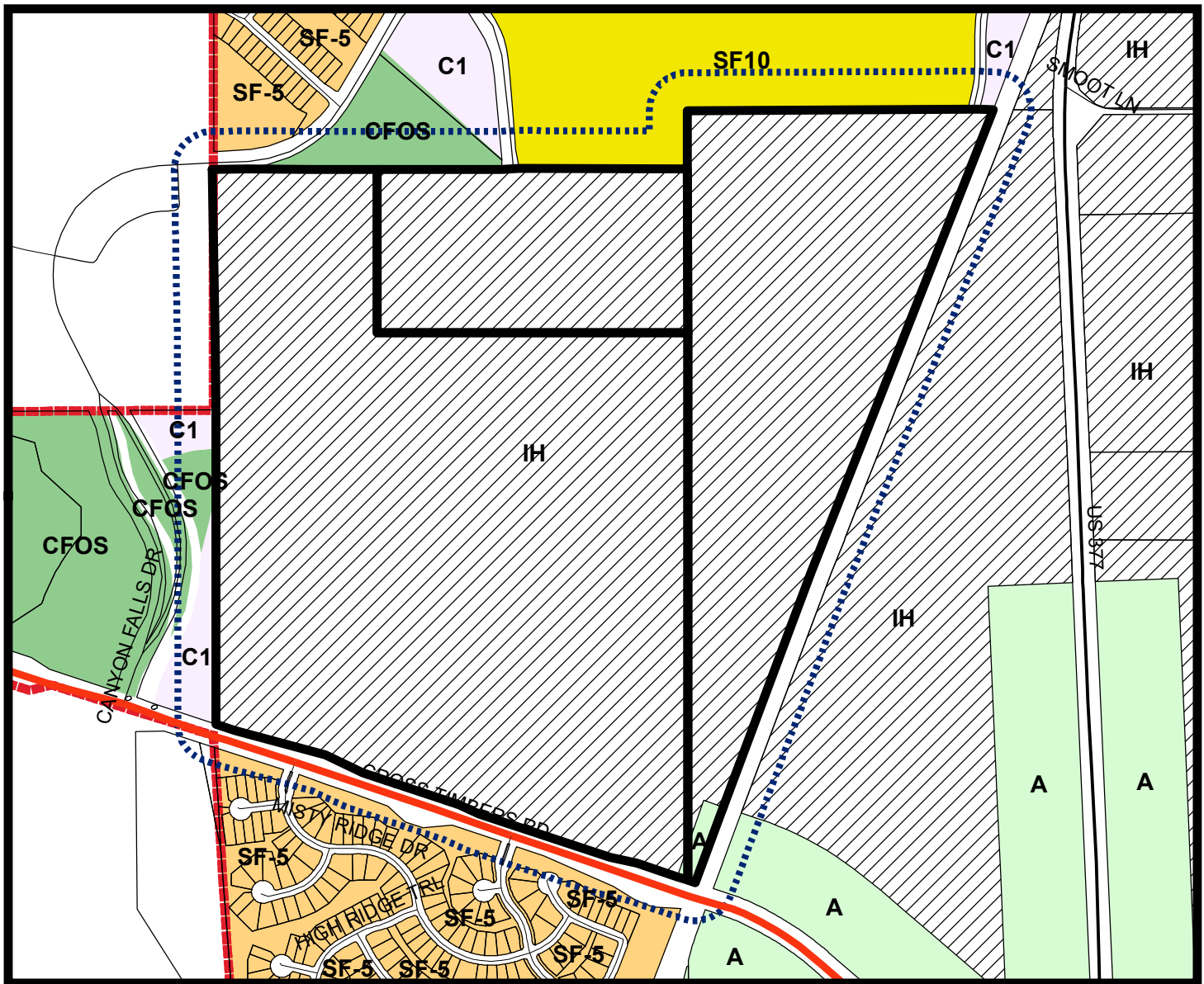
B. Application Details

1. Zoning Planned Development Package
2. Draft Planned Development (PD) Standards

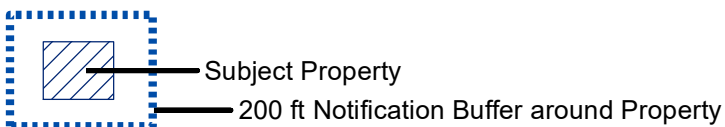


Vicinity Map

Reference Project: ZPD21-0014

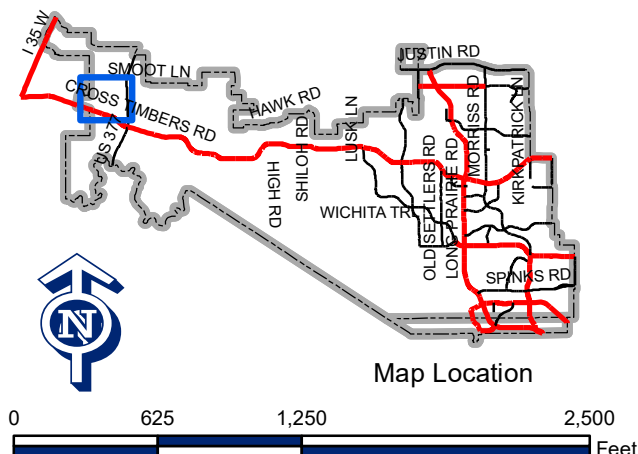


LEGEND



Visit www.fmdevmap.com to learn more about this project.

Visit <https://www.flower-mound.com/notifyme> to sign up for text message and/or email alerts for future projects.



CROW HOLDINGS

INDUSTRIAL

3819 Maple Avenue
Dallas, Texas 75219

Phone: 214-661-8341
Email: wmundinger@chindustrial.com

Claire Barnes
Planner, Town of Flower Mound
2121 Cross Timbers Road
Flower Mound, Texas 75022

Dear Ms. Barnes

Crow Holdings Industrial has submitted an application for a Zoning Planned Development for Cross Timbers Business Park. The application is for approximately 263 acres of land located to the west of Cross Timbers Road (FM 1171) and FM 377. The property is located within the Denton Creek District Area Plan. The property is currently zoned Interim Holding. The property is bordered on the north by Argyle High School; on the west by the Canyon Falls residential subdivision and Canyon Falls Drive; on the east by undeveloped property known as "Furst Ranch" and on the south by Cross Timbers Road (FM 1171) and the Trailwood residential subdivision.

The zoning being requested is Campus Industrial and Industrial District Two and is in accordance with Flower Mound's Master Plan designated future land use for the property. Designated future land uses include Campus Industrial, Commercial/Industrial and Commercial/Industrial or Mixed Density Residential.

The conceptual site plan has been designed to meet the anticipated demand for the Alliance Corridor sub-market which the property is in. Demand in this submarket is predominately for larger footprint buildings that are capable of serving a broad array of tenants. Specifically, significant demand in this sub-market exists for larger buildings with floor plates of 500,000 square feet to 1,000,000 square feet or more. The site plan is balanced by smaller floorplate buildings that also provide needed buffering from the adjacent residential subdivisions, schools, and prominent roadways.

Cross Timbers Business Park, in accordance with the Denton Creek Area Plan, establishes a Class A business park that will accommodate a variety of tenants including light and general industry (general industry is only allowed in the I2 portion of the development), clean assembly, service/repair and other similar uses. Further the proposed development meets the intent of the area plan through the buildings that are designed to attract tenants that require co-location of office and industrial operations.

The property is located at a prominent Flower Mound entryway. Special care was taken in designing Cross Timbers Business Park to honor the importance of the location to the Town of Flower Mound and comply with the Town's entryway design standards. The central focus of the landscaping along Cross Timbers Road is to showcase Flower Mound's dedication to open space and its unique country atmosphere through increased setbacks and enhanced landscaping.

CROW HOLDINGS

INDUSTRIAL

3819 Maple Avenue
Dallas, Texas 75219

Phone: 214-661-8341
Email: wmundinger@chindustrial.com

Additionally, building architecture and entryway features have been designed to build upon the spirit of the architecture of the established residential, municipal, and institutional uses in the area as well as comply with the requirements of Flower Mound's Urban Design Guidelines.

To meet current market requirements, an exception to Flower Mound's maximum height requirements is being requested for portions of the property in the Campus Industrial and I2 areas. We reviewed Flower Mound's ordinances for guidance on height exception mitigation. Section 98-1031(d) specifies increases to front, side and rear yards may be required. With this code section in mind, efforts to lessen the visual impact of the increased height include, building setbacks and landscape buffers on Cross Timbers Rd being increased from 60 feet to 110 feet and from 25 feet to 50 feet, respectively. A modification to increase the required landscape buffer along Denton Creek Boulevard is also being requested. These changes effectively increase the front, side and front yards for the buildings with requested height exceptions.

Other modifications being requested include:

- An increase in the landscape buffer along Denton Creek Boulevard
- Masonry wall placement in the required compatibility buffer to avoid compromising the creek in the northwest corner of the property and encroaching on the existing easements in that area.

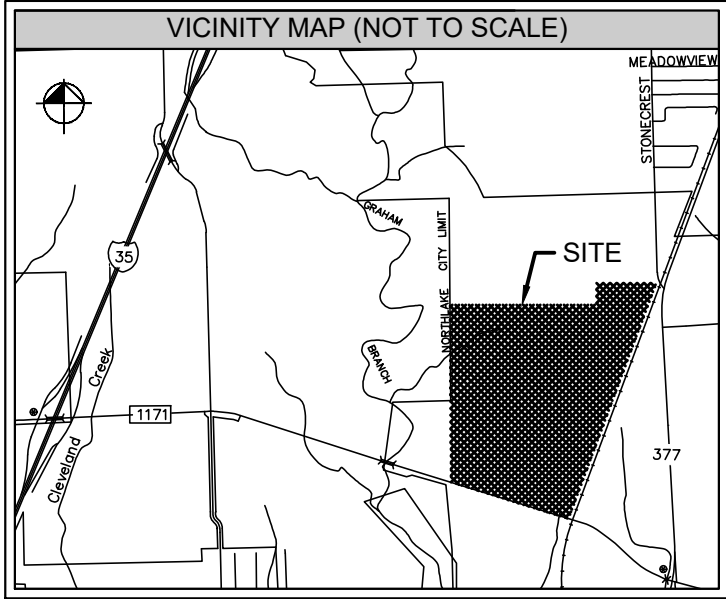
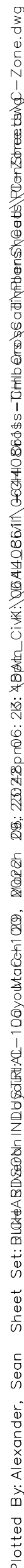
As anticipated by Flower Mound's Master Plan, development of this property will bring significant tax revenue to Flower Mound, Argyle ISD and Denton County. A economic impact study is being prepared to demonstrate the value of Cross Timbers Business Park to the community.

We look forward to working with you on this project. Our team is available to answer any questions you may have.

Sincerely,



Brad Cooper
Vice President of Development
Crow Holdings Industrial



LEGEND	
PROPERTY LINE	
EASEMENT LINE	
PROP. RET. WALL	
PROPOSED PD ZONING (BASE CII/2 ZONING)	
IH ZONING	
SF10 ZONING	
C1 ZONING	
REC ZONING	
SF5 ZONING	
A ZONING	
45° MAX HEIGHT	
PROP. BUILDING	
H1 AREA	

ZONING INFORMATION	
LAND USE PLAN	DENTON CREEK AREA COMMERCIAL/INDUSTRIAL AND CAMPUS INDUSTRIAL
EXISTING ZONING	INTERIM HOLDING (IH), AGRICULTURE (A)
PROPOSED ZONING	CAMPUS INDUSTRIAL (CI)/INDUSTRIAL - 2 (I2)
COUNTY	DENTON COUNTY
URBAN DESIGN PLAN	DENTON CREEK AREA
PARKS AND TRAILS PLAN	FUTURE BIKE LANE AND SHARED LANE WITHIN THE SITE
OPEN SPACE PLAN	SEE LANDSCAPE PLANS
THOROUGHFARE PLAN	FM 1171 (MAJOR ARTERIAL) DENTON CREEK BLVD. (MINOR ARTERIAL) STONECREST DR. (URBAN COLLECTOR)
PHASING	AN INITIAL PHASE SHALL INCLUDE, BUT NOT LIMITED TO, DENTON CREEK BLVD., STONECREST DR., ASSOCIATED INFRASTRUCTURE, AND BUILDINGS AS THE MARKET DICTATES.
WATER PLAN	24" WATER ALONG EAST PROPERTY LINE 12" WATER ALONG FM 1171 12" WATER ALONG STONECREST DR. 12" WATER ALONG DENTON CREEK BLVD. 8" RAW WATER ALONG STONECREST DR. 12" RAW WATER ALONG DENTON CREEK BLVD.
WASTEWATER PLAN	21" GRAVITY MAIN FLOWING SOUTH ADJACENT TO EAST PROPERTY LINE 12" GRAVITY MAIN FLOWING WEST ALONG NORTH PROPERTY LINE
ECONOMIC IMPACT	APPROX. 250 MILLION OVER A 20-YEAR PERIOD

*THIS PLAN IS CONCEPTUAL IN NATURE AND IS INTENDED TO CAPTURE THE GENERAL INTENT OF THE PLANNED DEVELOPMENT.

1ST PLANNED DEVELOPMENT (ZPD) SUBMITTAL	08/30/2021
2ND PLANNED DEVELOPMENT (ZPD) SUBMITTAL	10/12/2021
3RD PLANNED DEVELOPMENT (ZPD) SUBMITTAL	12/06/2021
4TH PLANNED DEVELOPMENT (ZPD) SUBMITTAL	01/28/2022
5TH PLANNED DEVELOPMENT (ZPD) SUBMITTAL	03/08/2022
6TH PLANNED DEVELOPMENT (ZPD) SUBMITTAL	03/25/2022

SURVEYORS CERTIFICATION:

This is to certify that this map is based on a survey completed on September 7, 2021. The field work was completed on August 30, 2021.

<u>J. Andy Dobbs</u>	<u>Date</u>
Registered Professional Land Surveyor No. 6196 Kirmley-Horn and Associates, Inc. 13455 Noli Road Two Galleria Office Tower, Suite 700 Dallas, Texas 75240 Ph. (972) 770-1300 andy.dobbs@kirmley-horn.com	

CROW HOLDINGS INDUSTRIAL
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CONTACT: FINLEY EWING, III
EMAIL: FIN@EWINGAUTOGROUP.COM

Kimley»»Horn

33455 NOEL ROAD TWO GALLERIA OFFICE TOWER SUITE 700
DALLAS, TEXAS 75240
PHONE: 972-770-1300
CONTACT: ALEX RATHBUN, P.E. / ANDY DOBBS, RPLS
TEXAS REGISTERED ENGINEERING FIRM NO. F-928
SURVEY FIRM #: 101155-00
EMAIL: ALEX.RATHBUN@KIMLEY-HORN.COM
EMAIL: ANDY.DOBBS@KIMLEY-HORN.COM

[illegible]

Kimley»Horn

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PHONE: 972-770-1300 FAX: 972-239-3820
WWW.KIMLEY-HORN.COM TX F-928
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KHA PROJECT	064408611	03/25/2022	SCALE AS SHOWN	DESIGNED BY RAR	DRAWN BY SPA	CHECKED BY RAR
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ZONING EXHIBIT

CROSS TIMBERS
BUSINESS PARK
PREPARED FOR
CROW HOLDINGS INDUST

TEXAS
FLOWER MOUND

SHEET NUMBER
C-100

PLANS SUBMITTAL/REVIEW LOG

1ST PLANNED DEVELOPMENT (ZPD) SUBMITTAL	08/30/2021
2ND PLANNED DEVELOPMENT (ZPD) SUBMITTAL	10/12/2021
3RD PLANNED DEVELOPMENT (ZPD) SUBMITTAL	12/06/2021
4TH PLANNED DEVELOPMENT (ZPD) SUBMITTAL	01/28/2022
5TH PLANNED DEVELOPMENT (ZPD) SUBMITTAL	03/08/2022
6TH PLANNED DEVELOPMENT (ZPD) SUBMITTAL	03/25/2022
7TH PLANNED DEVELOPMENT (ZPD) SUBMITTAL	04/05/2022

CONCEPTUAL BUILDING DATA										
	BUILDING A	BUILDING B	BUILDING C	BUILDING D	BUILDING E	BUILDING F	BUILDING G	BUILDING H	BUILDING J	BUILDING K
# OF STORIES	1	1	1	1	1	1	1	1	1	1
PEAK HEIGHT	45'	45'	56'	45'	40'	50'	50'	40'	50'	40'
MEAN HEIGHT	45'	45'	56'	45'	40'	50'	50'	40'	50'	40'
OFFICE USE	8,505 SF	7,938 SF	21,526 SF	10,816 SF	5,824 SF	8,148 SF	7,711 SF	4,200 SF	10,670 SF	6,084 SF
WAREHOUSE USE	161,595 SF	150,822 SF	1,054,794 SF	205,504 SF	110,656 SF	399,252 SF	377,849 SF	79,800 SF	522,850 SF	115,596 SF
TOTAL SF	170,100 SF	158,760 SF	1,076,320 SF	216,320 SF	116,480 SF	407,400 SF	385,560 SF	84,000 SF	533,520 SF	121,680 SF
WAREHOUSE REQUIRED PARKING	81	75	527	103	55	200	189	40	262	58
WAREHOUSE PROVIDED PARKING	97	90	632	123	66	240	226	47	314	69
OFFICE REQUIRED PARKING	34	32	86	43	23	33	31	17	43	24
OFFICE PROVIDED PARKING	40	38	102	51	27	39	37	20	51	28

CONCEPTUAL SITE DATA TABLE		
Physical Address	NEC CROSS TIMBERS RD. (FM 1171) AND CANYON FALLS DR.	
Gross Site Area	263 AC (11,491,576 SF)	
Net Site Area	263 AC (11,491,576 SF)	
Zoning	PD-XXX	
Current Use	INTERIM HOLDING	
CONCEPTUAL LOT COVERAGE DATA		
CONCEPTUAL BUILDING COVERAGE	28.5% (3,270,140 SF)	
CONCEPTUAL IMPERVIOUS AREA	64.6% (7,425,280 SF)	
CONCEPTUAL PERVIOUS AREA	35.4% (4,066,296 SF)	
PARKING SUMMARY	REQUIRED	PROVIDED
CONCEPTUAL SURFACE PARKING		
CONCEPTUAL OFFICE (1/250SF)	366	433
CONCEPTUAL WAREHOUSE (1/2000SF)	1590	1904
TOTAL PARKING	1956	2337 SPACES

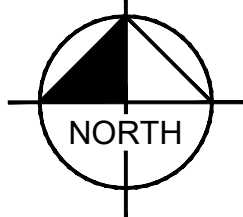
ZONING INFORMATION	
LAND USE PLAN	DENTON CREEK AREA COMMERCIAL/INDUSTRIAL AND CAMPUS INDUSTRIAL
EXISTING ZONING	INTERIM HOLDING (IH), AGRICULTURE (A)
PROPOSED ZONING	CAMPUS INDUSTRIAL (CI)/INDUSTRIAL - 2 (I2)
COUNTY	DENTON COUNTY
URBAN DESIGN PLAN	DENTON CREEK AREA
PARKS AND TRAILS PLAN	FUTURE BIKE LANE AND SHARED LANE WITHIN THE SITE
OPEN SPACE PLAN	SEE LANDSCAPE PLANS
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ECONOMIC IMPACT	APPROX. 250 MILLION OVER A 20-YEAR PERIOD

*THIS PLAN IS CONCEPTUAL IN NATURE AND IS INTENDED TO CAPTURE THE GENERAL INTENT OF THE PLANNED DEVELOPMENT.

NOTES

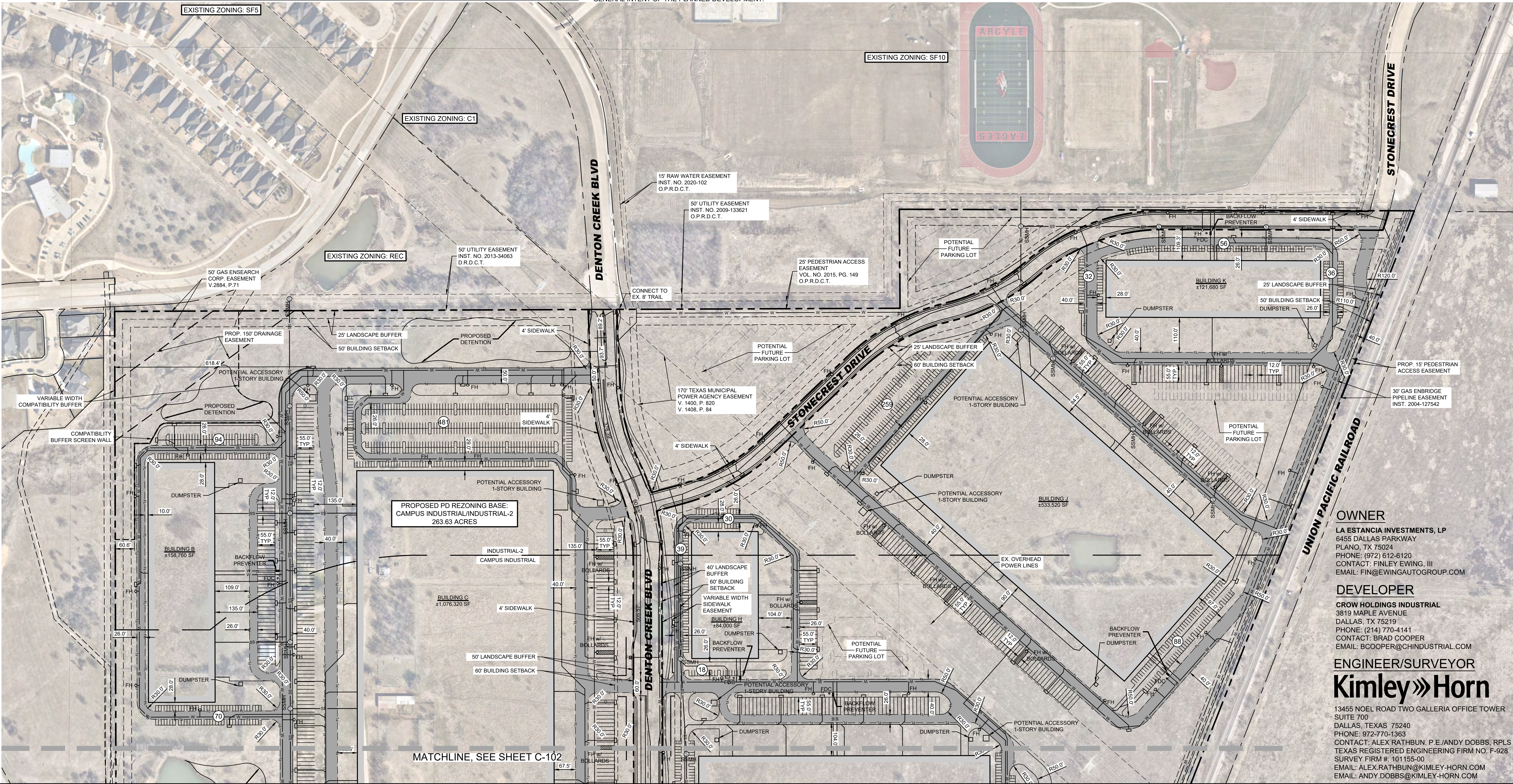
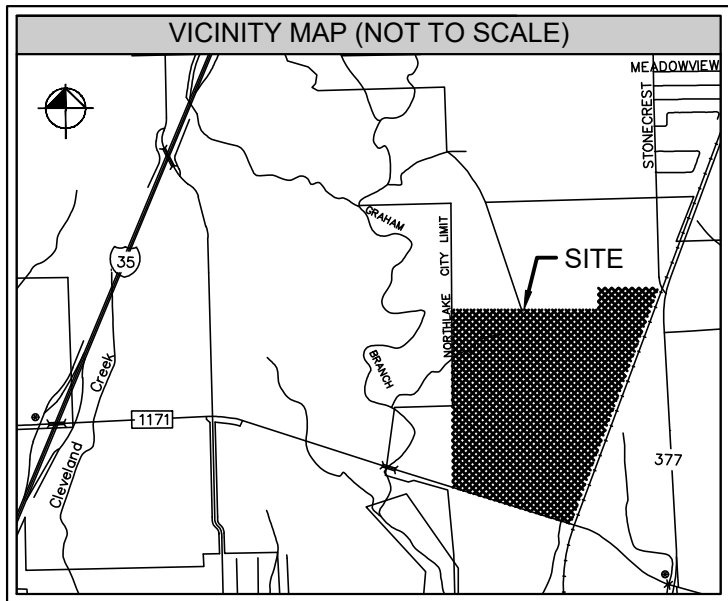
1. THIS DEVELOPMENT IS LOCATED IN DENTON COUNTY.
2. ALL RETAINING/DETAINING WALLS, TURN-DOWN CURBS, TREE RETAINING WALLS SHALL BE CLAD IN A MATERIAL TO COMPLEMENT THE MATERIALS AND COLORS WITHIN THIS DEVELOPMENT.*
3. ALL GROUND-BASED HVAC SHALL BE SCREENED WITH LIVE SCREENING OR A MASONRY ENCLOSURE. ANY MASONRY ENCLOSURE SHALL BE CLAD IN THE SAME MATERIAL AS THE MAIN BUILDING.*
4. ALL ROOF-MOUNTED MECHANICAL UNITS AND/OR EQUIPMENT WILL BE SCREENED FROM VIEW.*
5. DUMPSTER SCREENING WALL SHALL BE CLAD IN A MATERIAL TO MATCH THE MATERIALS ON THE MAIN BUILDING.
6. DUMPSTER SCREENING WALL REQUIRES A SEPARATE BUILDING PERMIT.
7. SIGNS REQUIRED: SEPARATE BUILDING PERMIT. ANY SIGNS DEPICTED ON THE SUBJECT SITE PLAN/ELEVATIONS ARE NOT APPROVED AS PART OF THIS REVIEW AND MUST COMPLY WITH ALL APPLICABLE TOWN REGULATIONS.
8. THE PROPERTY OWNER ACKNOWLEDGES THE APPROVAL OF THIS COMPREHENSIVE SITE PLAN DOES NOT CONSTITUTE APPROVAL OF ANY WAIVERS, EXCEPTIONS, OR VARIANCES THAT MAY BE REQUIRED WITH A SITE PLAN APPLICATION FOR ANY PORTION OF THE SUBJECT PROPERTY.
9. ALL PARKING SPACES WILL BE A MINIMUM OF 9' BY 18'.
10. ALL RADII ARE 3.0' UNLESS STATED OTHERWISE.
11. THIS PLAN IS CONCEPTUAL IN NATURE AND IS INTENDED TO CAPTURE THE GENERAL INTENT OF THE PLANNED DEVELOPMENT.
12. THE PROPOSED PONDS WILL MEET TOWN STANDARDS.
13. THE OWNER TRAIL TO BE LOCATED WITHIN THE 30' EMBANKMENT EASEMENT ALONG THE EAST PROPERTY LINE PER THE TRAILS MASTER PLAN. IF THE TRAIL LOCATION IS NOT FEASIBLE, THE EASEMENT WILL BE ADJUSTED AT THE SITE PLAN.
14. POTENTIAL ACCESSORY BUILDINGS SHALL COMPLY WITH ALL TOWN STANDARDS AND SETBACKS CONTAINED IN THE PLANNED DEVELOPMENT TEXT.

LEGEND	
PROPERTY LINE	
EASEMENT LINE	
PROP. RET. WALL	
PROP. TRUCK CIRCULATION	
PROP. FIRELANE	
PROP. SANITARY MH	
PROP. FIRE HYDRANT	
PROP. FIRE DEPT. CON.	
PROP. BUILDING	



GRAPHIC SCALE IN FEET

0 75 150 300



Kimley»Horn

55 NOEL ROAD, TWO GALLERIA OFFICE TOWER
SUITE 700, DALLAS, TX 75240
PHONE: 972-770-1300 FAX: 972-239-3820
WWW.KIMLEY-HORN.COM TX F-928
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KHA PROJECT
064408611

DATE _____

SCALE	AS SHOWN
-------	----------

DESIGNED BY RAR

DRAWN BY SPA

CONCEPTUAL SITE PLAN

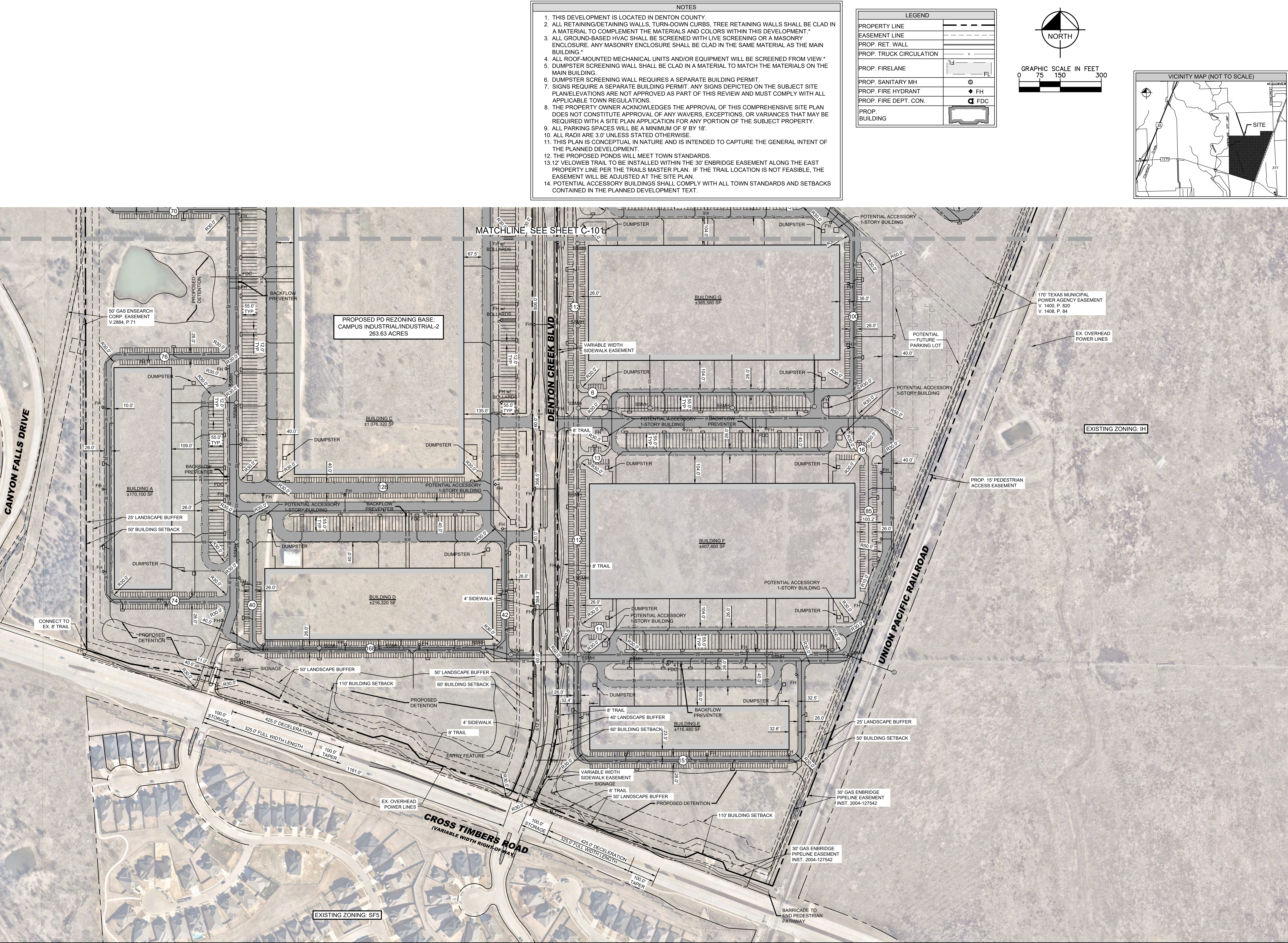
CROSS TIMBERS BUSINESS PARK

PREPARED FOR
CROW HOLDINGS INDUSTRIAL

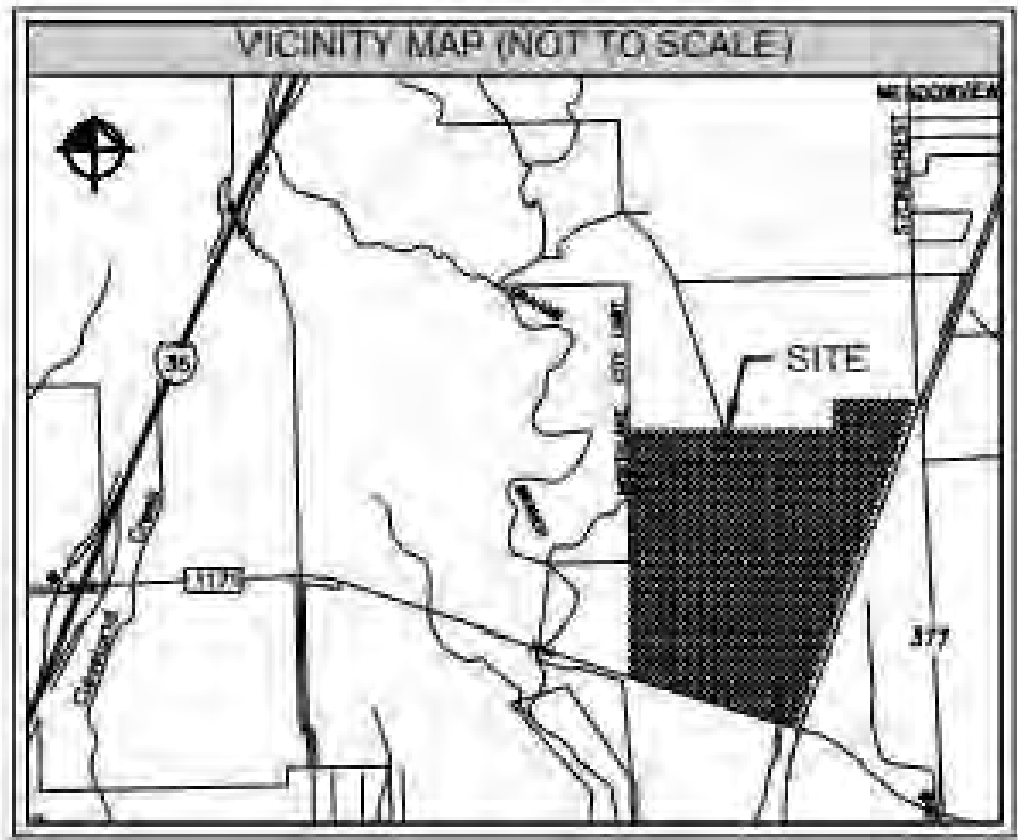
TEXAS

FLOWER MOUND

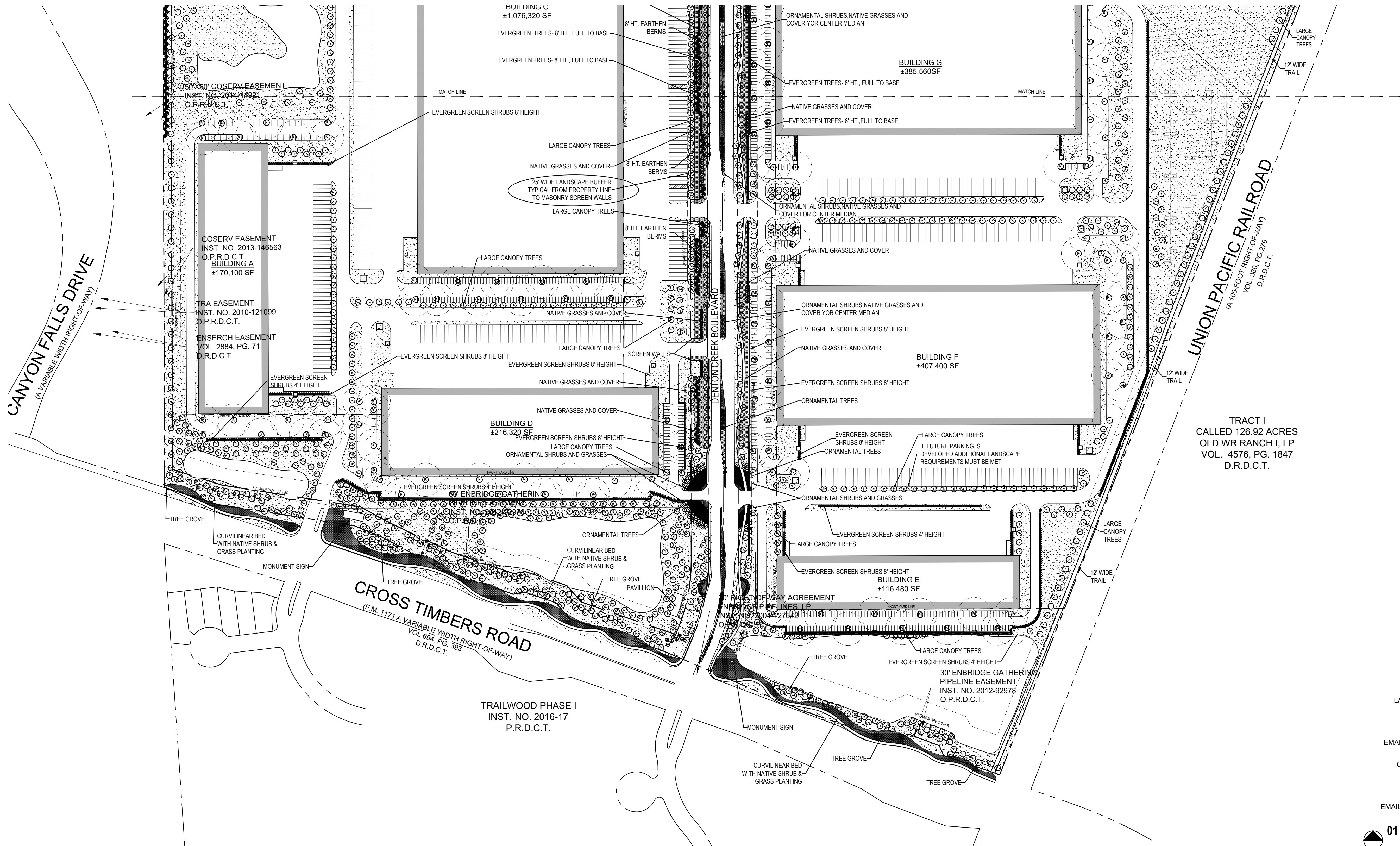
SHEET NUMBER
C-101



SHEET NUMBER		C-102	
CROSS TIMBERS BUSINESS PARK		FLOWER MOUND TEXAS	
PREPARED FOR		CROW HOLDINGS INDUSTRIAL	
CONCEPTUAL SITE PLAN		064408611	
SCALE AS SHOWN		DATE 04/05/2022	
DESIGNED BY RAR		DRAWN BY SPA	
CHECKED BY RAR		064408611	



LANDSCAPE ARCHITECT
STUDIO GREEN SPOT, INC.
1333 W. McDERMOTT DR.
ALLEN, TEXAS 75013
(469) 369-4448
CHRIS@STUDIOGREENSPOT.COM



**CROSS TIMBERS
BUSINESS PARK**
PREPARED FOR
**CROW HOLDINGS INDUSTRIAL
FLOWER MOUND, TEXAS**

ISSUE:
1ST PD (ZPD) SUBMITTAL 08.30.2021
2ND PD (ZPD) SUBMITTAL 10.13.2021
3RD PD (ZPD) SUBMITTAL 12.05.2021
4TH PD (ZPD) SUBMITTAL 01.31.2022
5TH PD (ZPD) SUBMITTAL 03.09.2022
6TH PD (ZPD) SUBMITTAL 04.04.2022

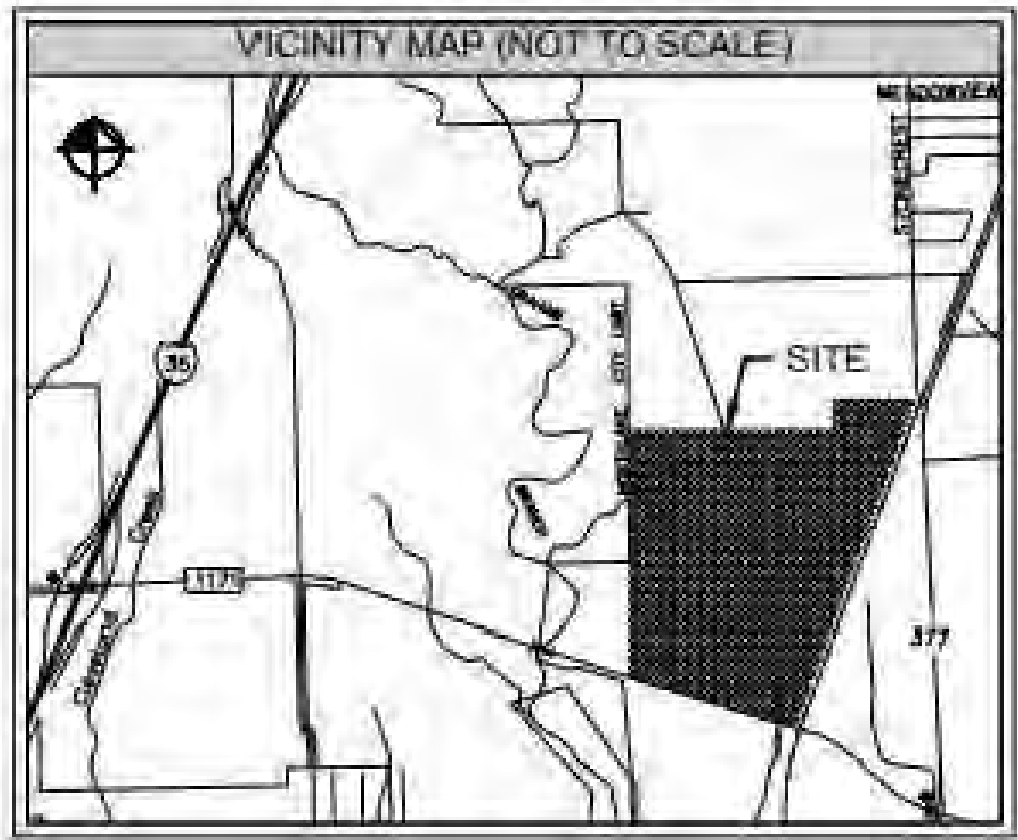
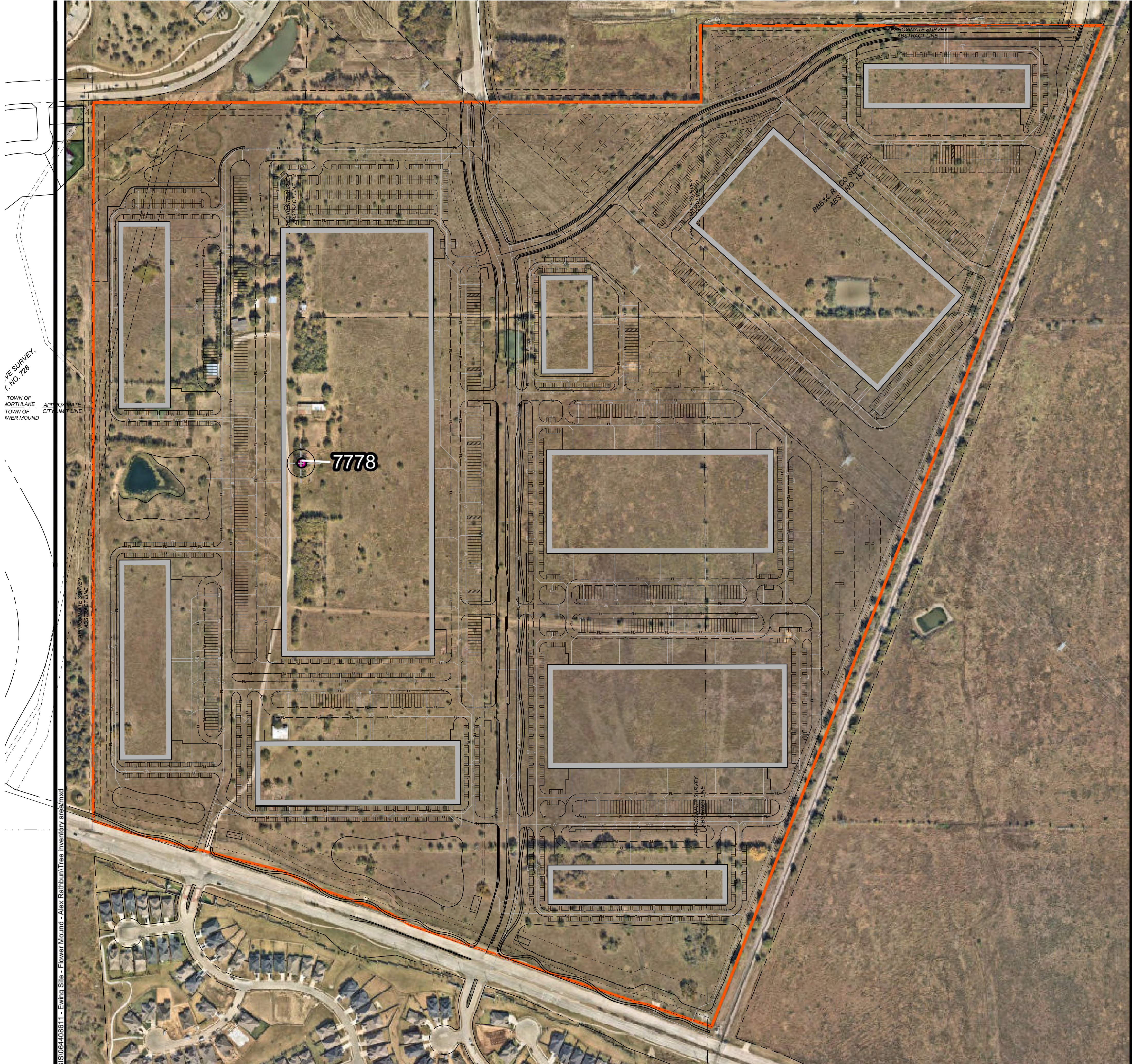
DATE:
04.04.2022

SHEET NAME:
CONCEPT LANDSCAPE PLAN

SHEET NUMBER:

L1.02

01 CONCEPT LANDSCAPE PLAN
SCALE 1"=150'-0"
0 75 150 300



Specimen Tree 7778 - Photo 1

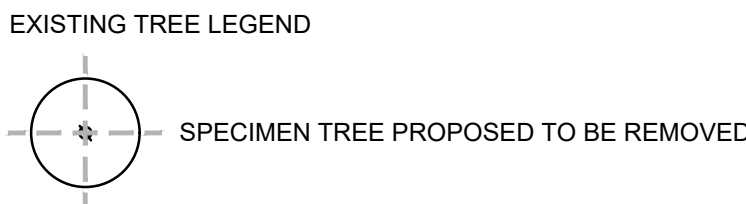


Specimen Tree 7778 - Photo 2



Specimen Tree 7778 - Photo 3

Photos were taken on 07.23.2021

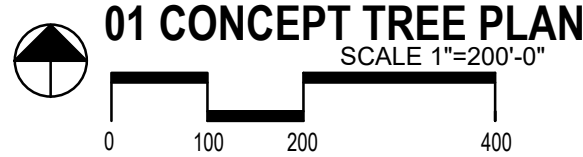


OWNER
LA ESTANCIA INVESTMENTS, LP
6455 DALLAS PARKWAY
PLANO, TEXAS 75024
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CONTACT: FINLEY EWING, III
EMAIL: FIN@EWINGAUTOGROUP.COM

DEVELOPER
CROW HOLDINGS INDUSTRIAL
3819 MAPLE AVENUE
DALLAS, TEXAS 75219
PHONE: (214) 770-4141
CONTACT: BRAD COOPER
EMAIL: BCOOPER@CHINDUSTRIAL.COM

TAG #	DBH	COMMON NAME	SCIENTIFIC NAME	CONDITION	COORDINATES	TREE CANOPY	Status	
7778	29.6	Pecan	Carya illinoensis	Healthy	Single	33.064532, -97.214147 / 33°3'52", -97°12'51"	50' Diameter	Specimen tree proposed to be removed

THERE ARE 10 ADDITIONAL PROTECTED TREES ON SITE.



LANDSCAPE ARCHITECT
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CROSS TIMBERS
BUSINESS PARK
PREPARED FOR
CROW HOLDINGS INDUSTRIAL
FLOWER MOUND, TEXAS

ISSUE:
1ST PD SUBMITTAL 12.15.2021
2ST PD SUBMITTAL 01.25.2022

DATE:
01.25.2022

SHEET NAME:
CONCEPT TREE PLAN

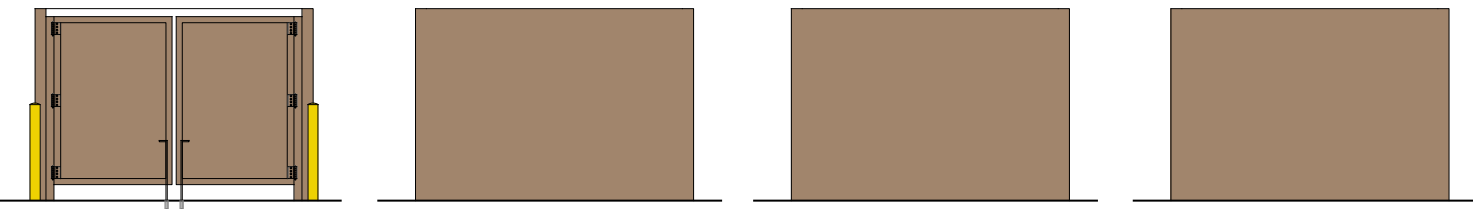
SHEET NUMBER:

L1.00

ELEVATIONS LEGEND

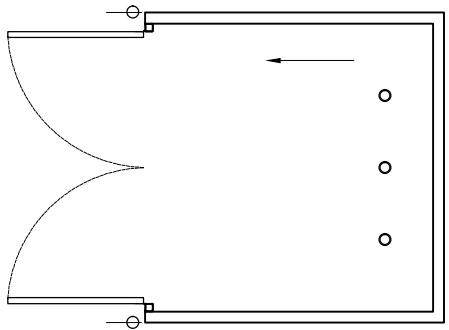
- PT1 - SW6672 "Morning Sun"
- PT2 - SW6113 "Interactive Cream"
- PT3 - SW7522 "Meadowlark"
- Black Painted Steel
- Coronado Country Rubble - Texas Cream
- Glass

		North	South	East	West
1.	Total Facade S.F.	9,271	9,271	38,496	36,370
2.	Facade S.F.	6,412	6,412	32,013	31,278
3.	Doors + Windows S.F.	2,859	2,859	6,483	5,092
4.	Primary Masonry Totals	6,412 - 100%	6,412 - 100%	32,013 - 100%	31,278 - 100%
	Stone S.F.	706 - 11.0%	706 - 11.0%	1,262 - 3.9%	N/A
	Tile Wall S.F.	5,706 - 89.0%	5,706 - 89.0%	30,751 - 96.1%	31,278 - 100%



06 TRASH ENCLOSURE ELEVATIONS

Scale: 1/8" = 1' - 0"

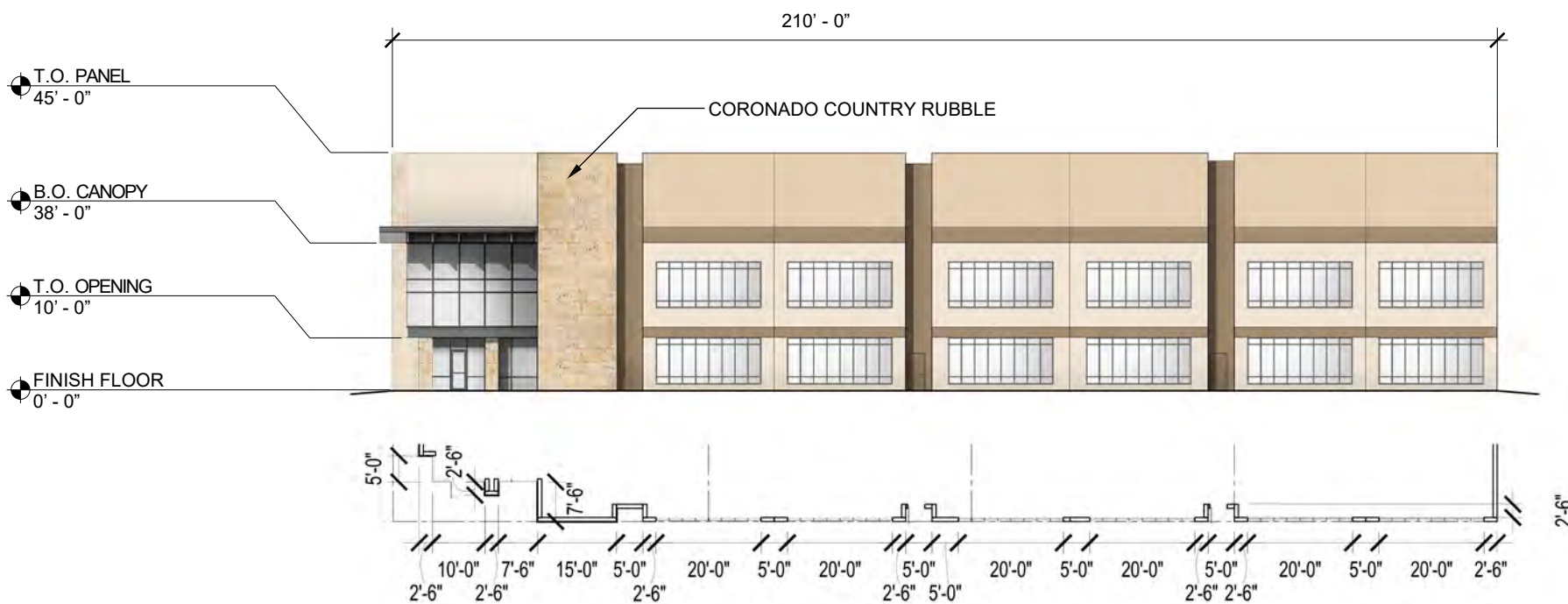


05 TRASH ENCLOSURE PLAN

Scale: 1/8" = 1' - 0"

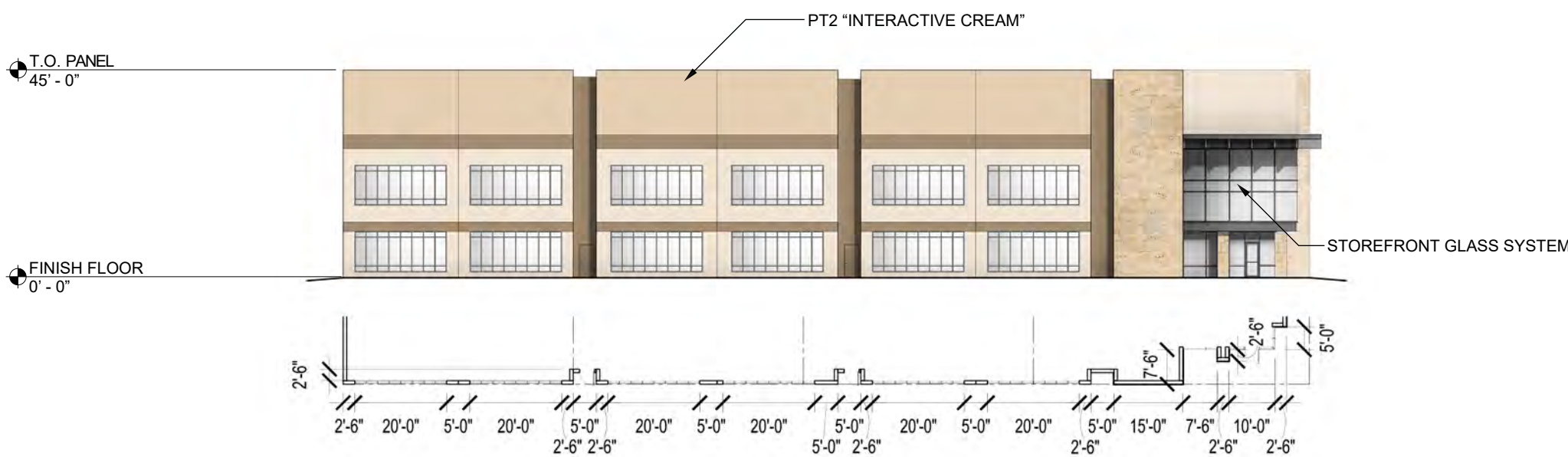
04 EXTERIOR BUILDING ELEVATION - NORTH

Scale: 1/32" = 1' - 0"



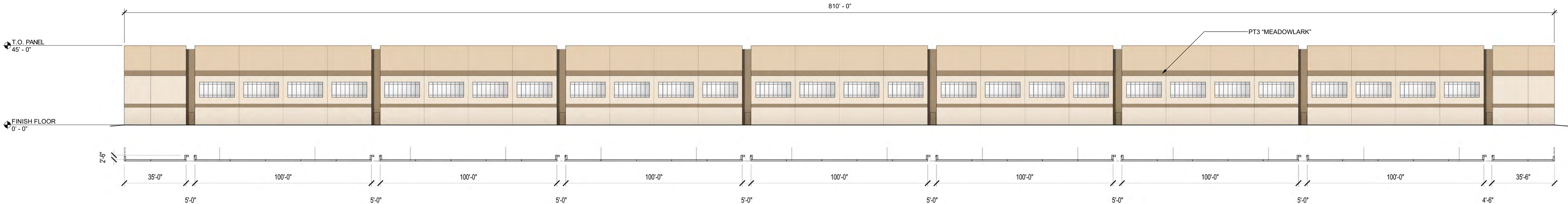
03 EXTERIOR BUILDING ELEVATION - SOUTH

Scale: 1/32" = 1' - 0"



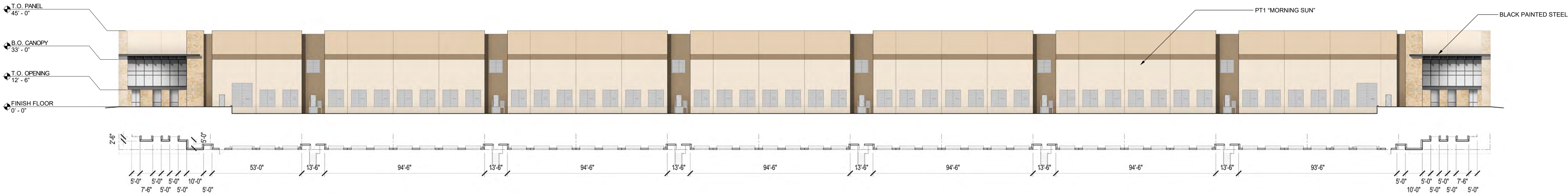
02 EXTERIOR BUILDING ELEVATION - WEST

Scale: 1/32" = 1' - 0"



01 EXTERIOR BUILDING ELEVATION - EAST

Scale: 1/32" = 1' - 0"



AZIMUTH:

architecture

10228 E Northwest Hwy
Box 66
Dallas, Texas 75226
214.261.9060

www.azimutharc.com

CROSS TIMBERS
BUSINESS PARK
BUILDING A & B (SIMILAR)
FLOWER MOUND, TEXAS

2719

1	
2	
3	
4	
5	
6	
7	
8	
9	

SHEET CONTENTS:
CONCEPTUAL
ELEVATIONS

DATE: March 08, 2022

SHEET:

A7.10

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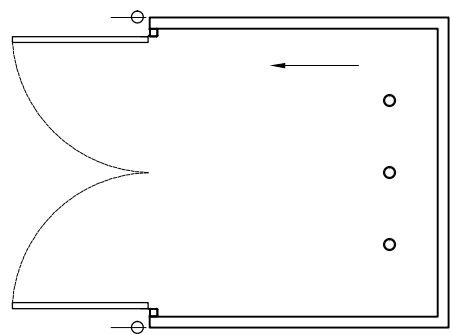
ELEVATIONS LEGEND

- PT1 - SW6672 “Morning Sun”
- PT2 - SW6113 “Interactive Cream”
- PT3 - SW7522 “Meadowlark”
- Black Painted Steel
- Coronado Country Rubble - Texas Cream
- Glass

South		
1.	Total Facade S.F.	34,266
2.	Facade S.F.	25,512
3.	Doors + Windows S.F.	8,754
4.	Primary Masonry Totals	25,512 - 100%
	Stone S.F.	1,757 - 6.9%
	Tile Wall S.F.	23,755 - 93.1%

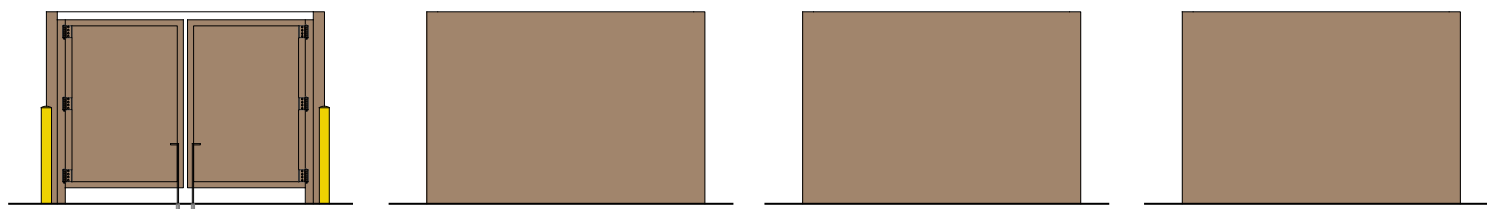
ELEVATION NOTES

1. This Facade Plan is for conceptual purposes only. All building Facade Plans require review and approval by Development Services.
2. All mechanical units shall be screened from public view as required by the Zoning Ordinance.
3. When permitted, exposed utility boxes and conduits shall be painted to match the building.
4. All signage areas and locations are subject to approval by Development Services.
5. An onsite mockup of the building materials to be used on the structure shall be installed and reviewed by the Planning Division. Materials shall not be placed on a structure until a green tag is received by the Planning Division.
6. An approved Facade Plan shall be posted onsite at all times.



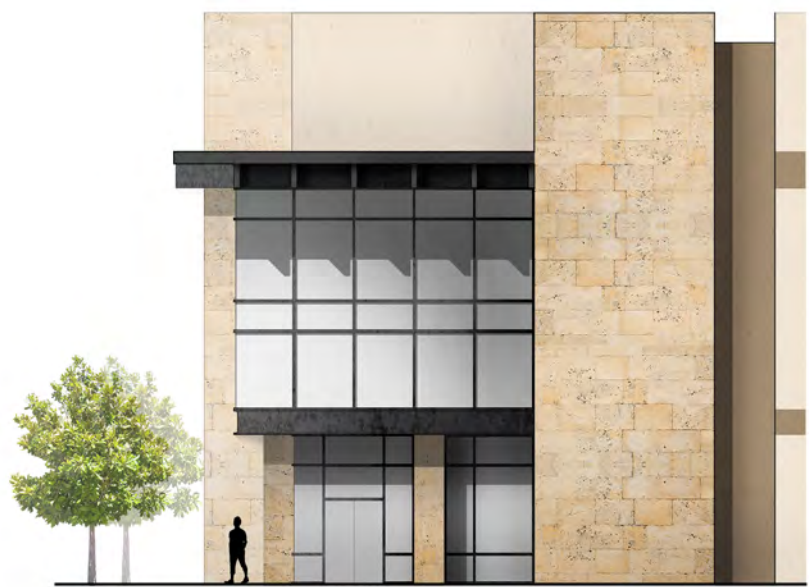
04 TRASH ENCLOSURE PLAN

Scale: 1/8" = 1' - 0"



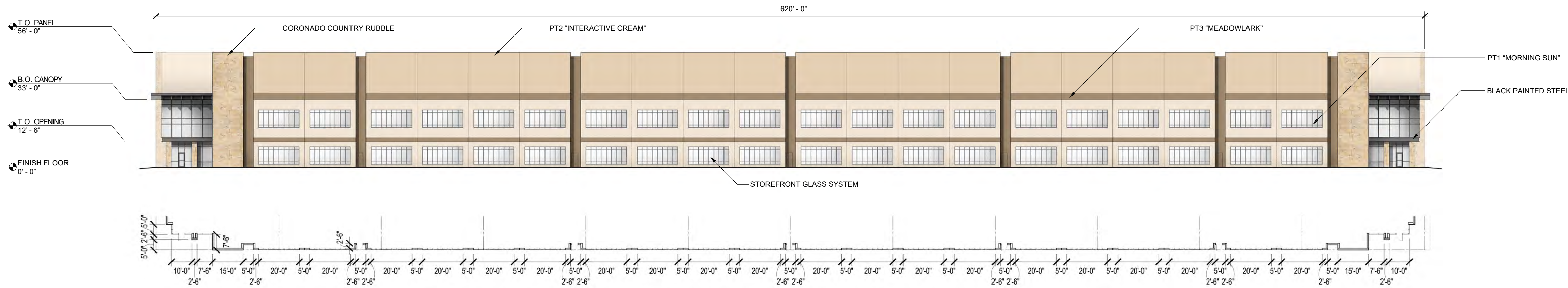
03 TRASH ENCLOSURE ELEVATIONS

Scale: 1/8" = 1' - 0"



02 ENLARGED CORNER ELEVATION

Scale: NTS



01 EXTERIOR BUILDING ELEVATION - SOUTH (FRONT)

Scale: 1/32" = 1' - 0"

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CROSS TIMBERS
BUSINESS PARK
BUILDING C
FLOWER MOUND, TEXAS

2719

JOB # : CLIENT:

REVISIONS:

SEAL:

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SHEET CONTENTS:
CONCEPTUAL
ELEVATIONS

DATE: March 08, 2022

SHEET:

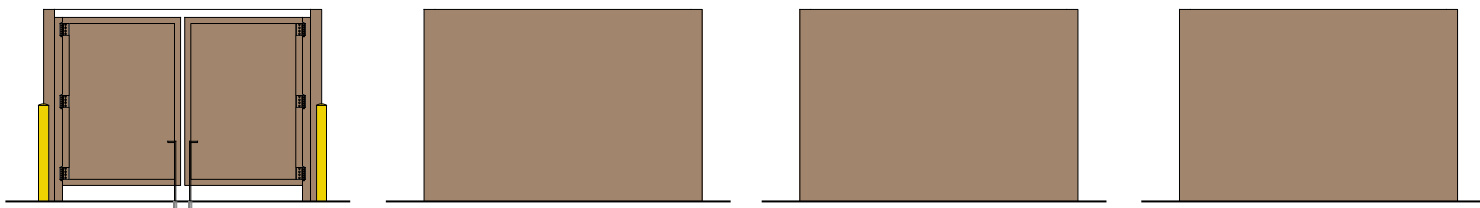
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ELEVATIONS LEGEND

- PT1 - SW6672 “Morning Sun”
- PT2 - SW6113 “Interactive Cream”
- PT3 - SW7522 “Meadowlark”
- Black Painted Steel
- Coronado Country Rubble - Texas Cream
- Glass

		North	South	East	West
1.	Total Facade S.F.	36,120	32,740	10,221	10,221
2.	Facade S.F.	30,621	21,583	7,592	7,592
3.	Doors + Windows S.F.	5,499	11,157	2,629	2,629
4.	Primary Masonry Totals	30,621 - 100%	21,583 - 100%	7,592 - 100%	7,592 - 100%
	Stone S.F.	N/A	2,959 - 13.7%	630 - 8.3%	630 - 8.3%
	Tile Wall S.F.	30,621 - 100%	18,624 - 86.3%	6,962 - 91.7%	6,962 - 91.7%

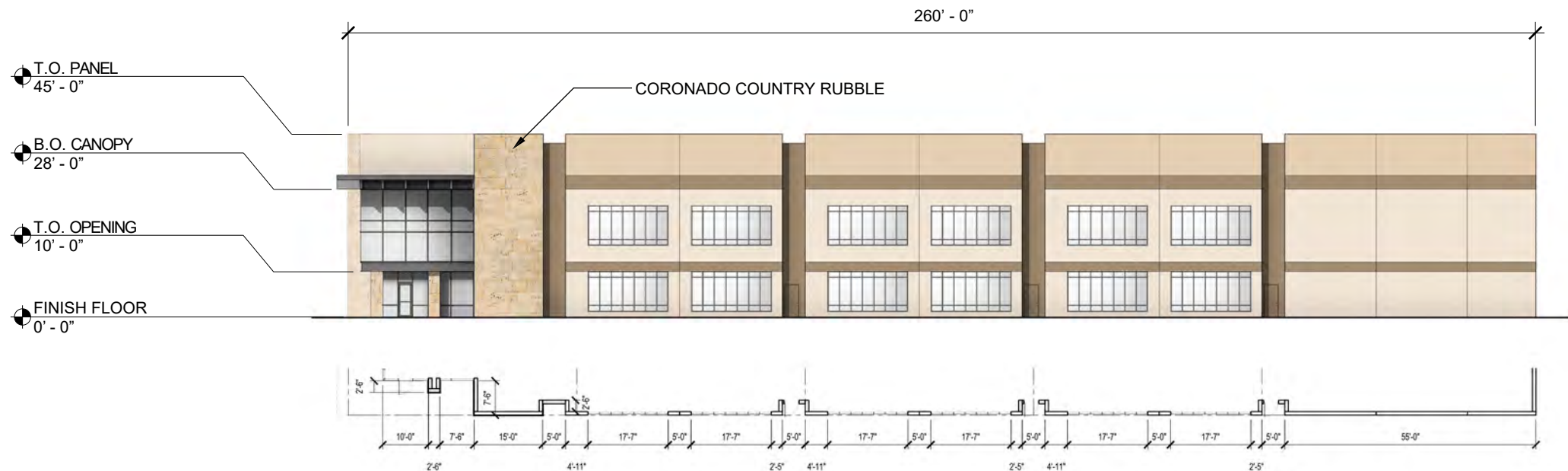


06 TRASH ENCLOSURE ELEVATIONS

Scale: 1/8" = 1' - 0"

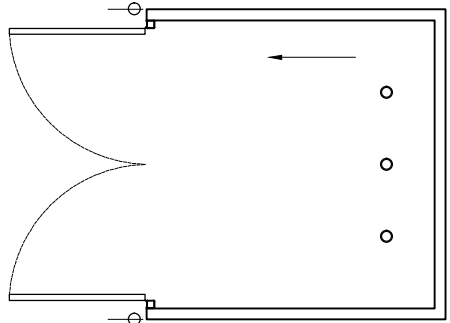
04 EXTERIOR BUILDING ELEVATION - EAST

Scale: 1/32" = 1' - 0"



ELEVATION NOTES

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2. All mechanical units shall be screened from public view as required by the Zoning Ordinance.
3. When permitted, exposed utility boxes and conduits shall be painted to match the building.
4. All signage areas and locations are subject to approval by Development Services.
5. An onsite mockup of the building materials to be used on the structure shall be installed and reviewed by the Planning Division. Materials shall not be placed on a structure until a green tag is received by the Planning Division.
6. An approved Facade Plan shall be posted onsite at all times.

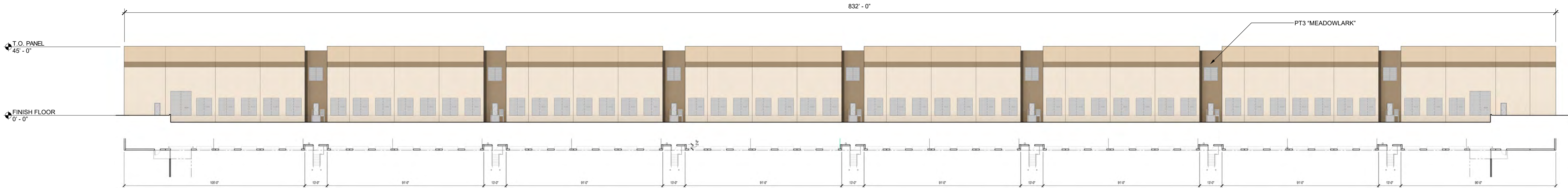
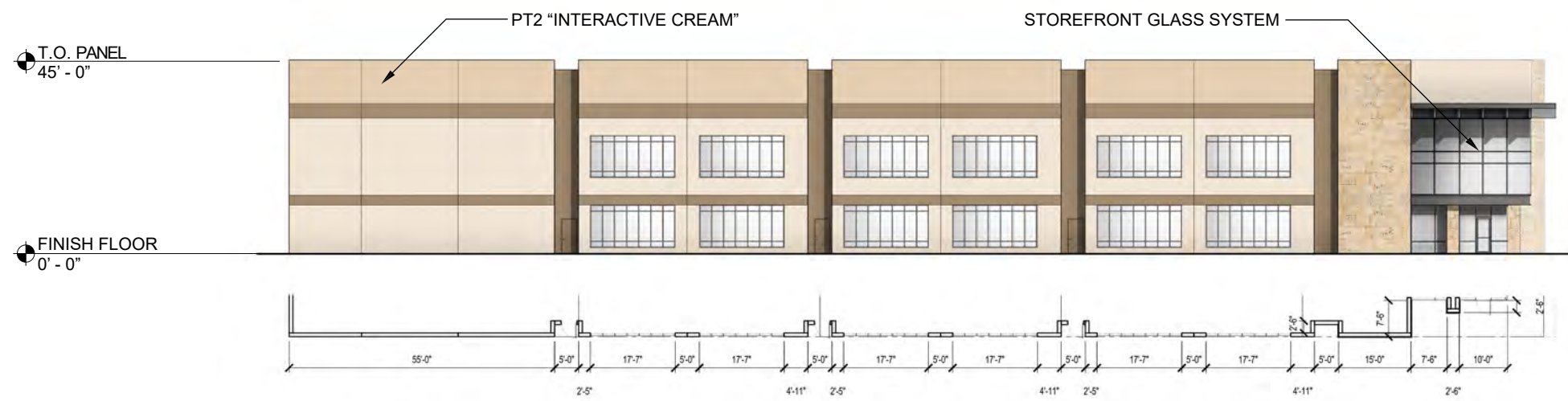


05 TRASH ENCLOSURE PLAN

Scale: 1/8" = 1' - 0"

03 EXTERIOR BUILDING ELEVATION - WEST

Scale: 1/32" = 1' - 0"



02 EXTERIOR BUILDING ELEVATION - NORTH

Scale: 1/32" = 1' - 0"



01 EXTERIOR BUILDING ELEVATION - SOUTH

Scale: 1/32" = 1' - 0"

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SHEET CONTENTS:
CONCEPTUAL
ELEVATIONS

DATE: March 08, 2022

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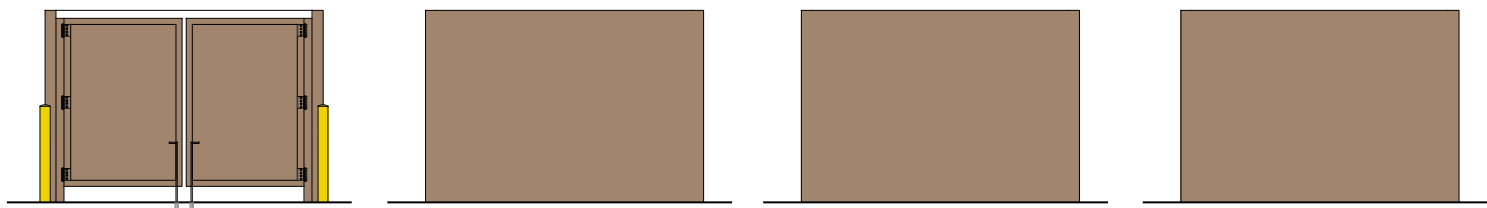
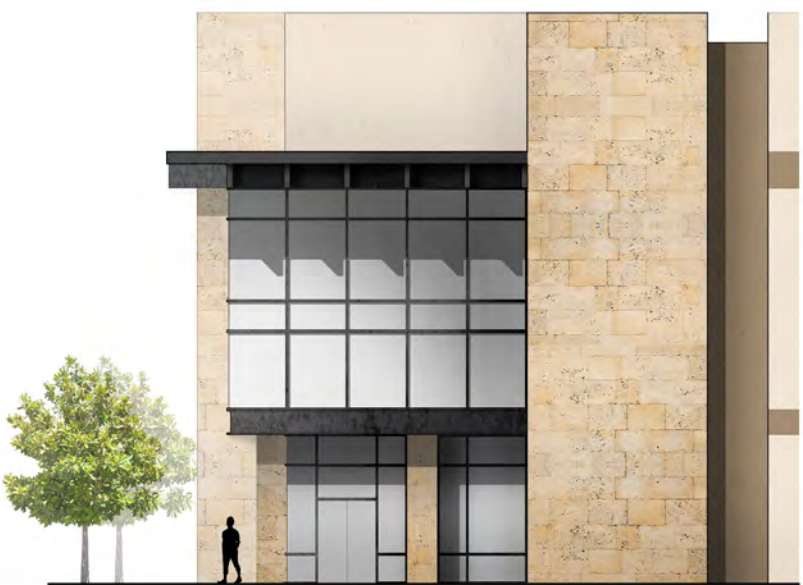
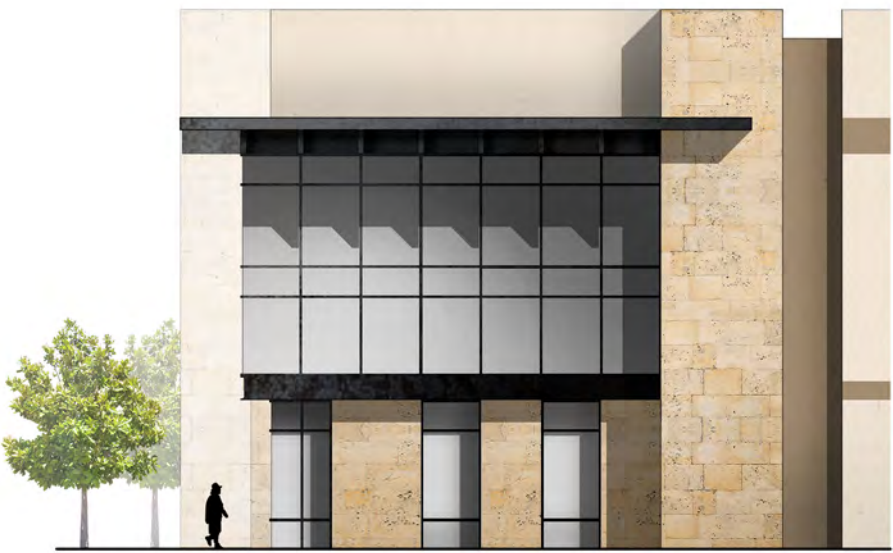
ELEVATIONS LEGEND

- PT1 - SW6672 "Morning Sun"
- PT2 - SW6113 "Interactive Cream"
- PT3 - SW7522 "Meadowlark"
- Black Painted Steel
- Coronado Country Rubble - Texas Cream
- Glass

		North	South	East	West
1.	Total Facade S.F.	24,223	24,223	48,807	48,807
2.	Facade S.F.	21,969	21,969	40,967	40,967
3.	Doors + Windows S.F.	2,254	2,254	7,840	7,840
4.	Primary Masonry Totals	21,969 - 100%	21,969 - 100%	40,967 - 100%	40,967 - 100%
	Stone S.F.	1,490 - 6.8%	1,490 - 6.8%	1,346 - 3.3%	1,346 - 3.3%
	Tib Wall S.F.	20,479 - 93.2%	20,479 - 93.2%	39,621 - 96.7%	39,621 - 96.7%

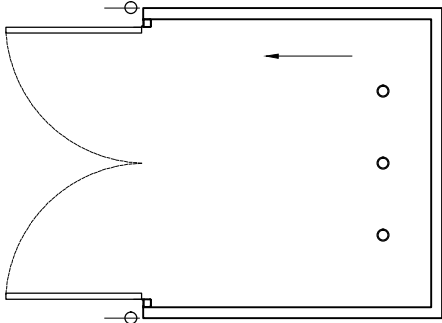
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06 TRASH ENCLOSURE ELEVATIONS

Scale: 1/8" = 1' - 0"

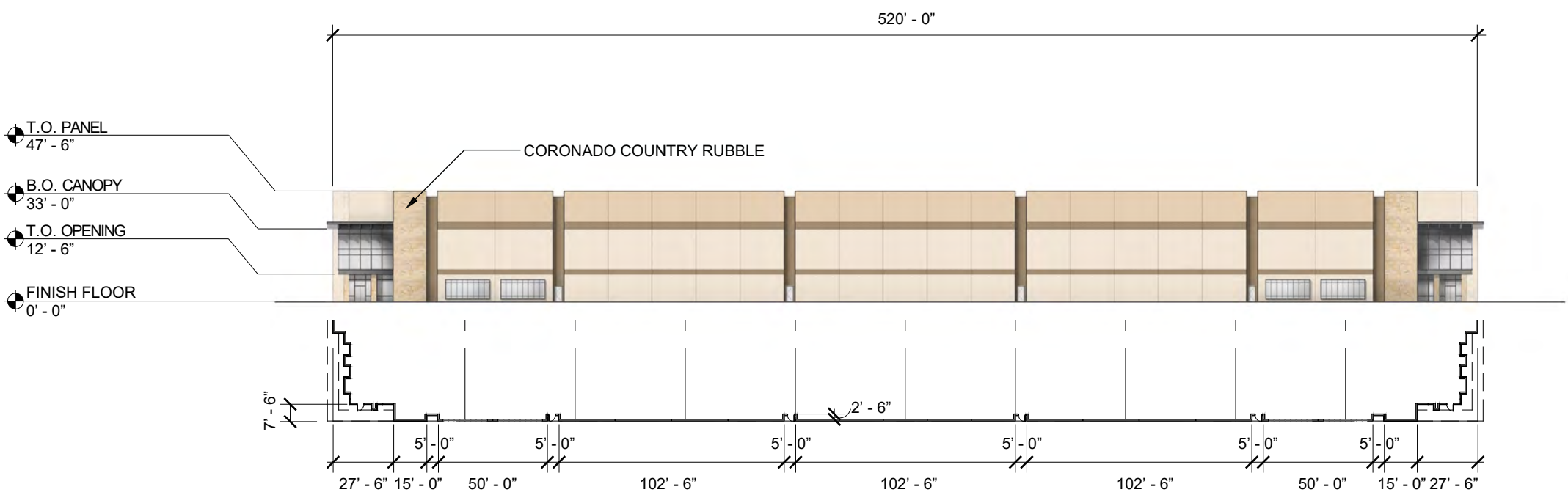


05 TRASH ENCLOSURE PLAN

Scale: 1/8" = 1' - 0"

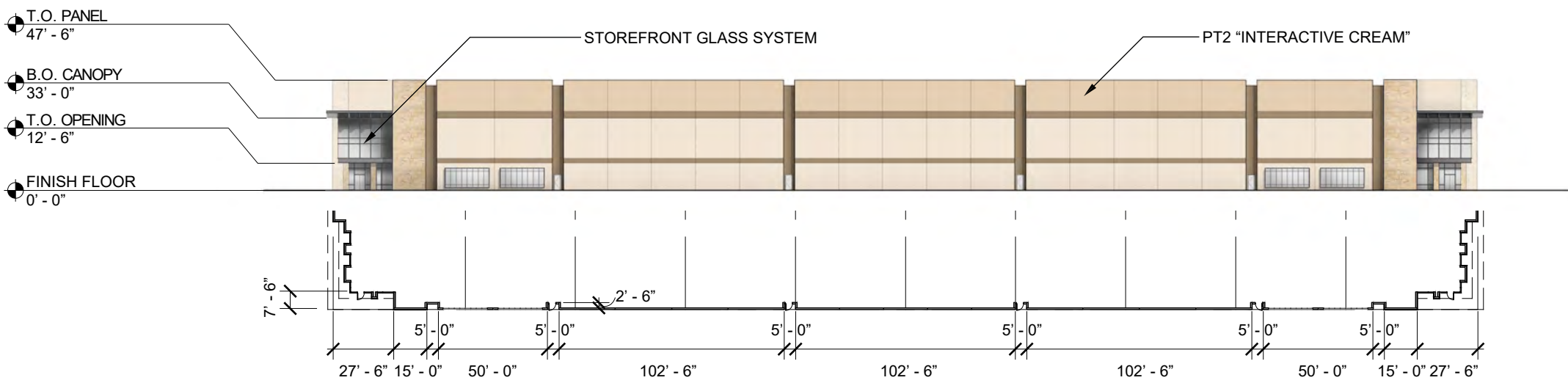
04 EXTERIOR BUILDING ELEVATION - NORTH

Scale: 1" = 64'-0"



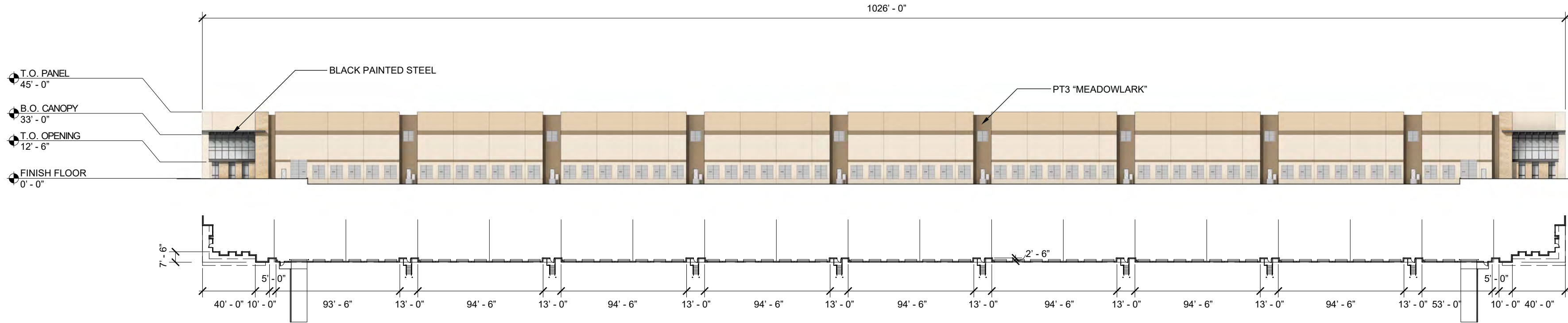
03 EXTERIOR BUILDING ELEVATION - SOUTH

Scale: 1" = 64'-0"



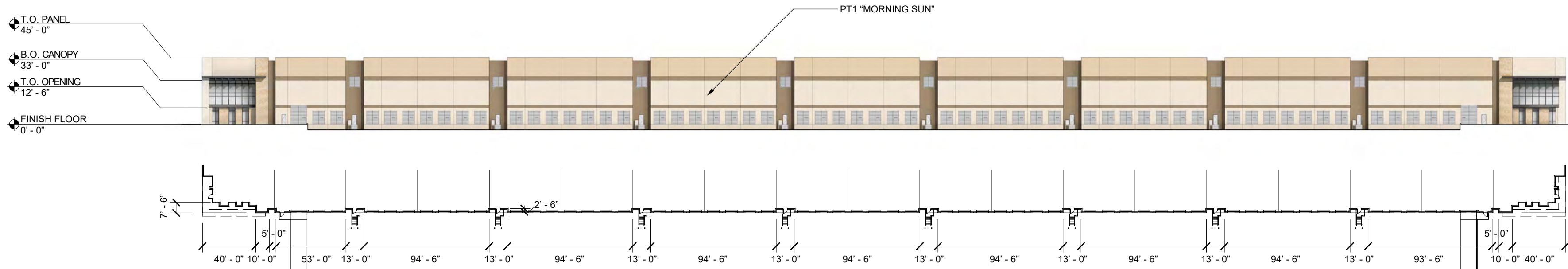
02 EXTERIOR BUILDING ELEVATION - WEST

Scale: 1" = 64'-0"



01 EXTERIOR BUILDING ELEVATION - EAST

Scale: 1" = 64'-0"



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JOB # : CLIENT:

REVISIONS:

SEAL:

SHEET CONTENTS:
CONCEPTUAL
ELEVATIONS

DATE: March 08, 2022

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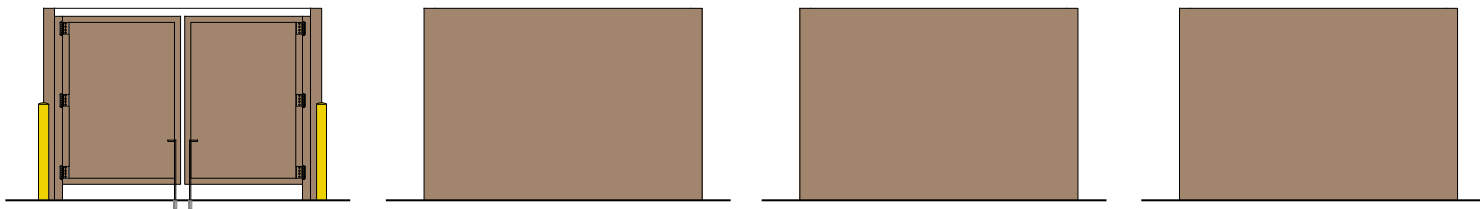
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ELEVATIONS LEGEND

- PT1 - SW6672 “Morning Sun”
- PT2 - SW6113 “Interactive Cream”
- PT3 - SW7522 “Meadowlark”
- Black Painted Steel
- Coronado Country Rubble - Texas Cream
- Glass

		North	South	East	West
1.	Total Facade S.F.	31,618	28,603	6,246	6,246
2.	Facade S.F.	26,837	18,821	4,920	4,920
3.	Doors + Windows S.F.	4,781	9,782	1,326	1,326
4.	Primary Masonry Totals	26,837 - 100%	18,821 - 100%	4,920 - 100%	4,920 - 100%
	Stone S.F.	N/A	2,939 - 15.6%	630 - 12.8%	630 - 12.8%
	Til Wall S.F.	26,837 - 100%	15,882 - 84.4%	4,290 - 87.2%	4,290 - 87.2%

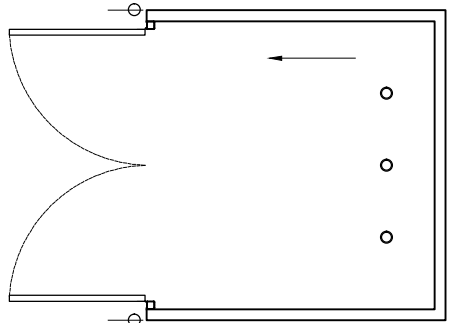


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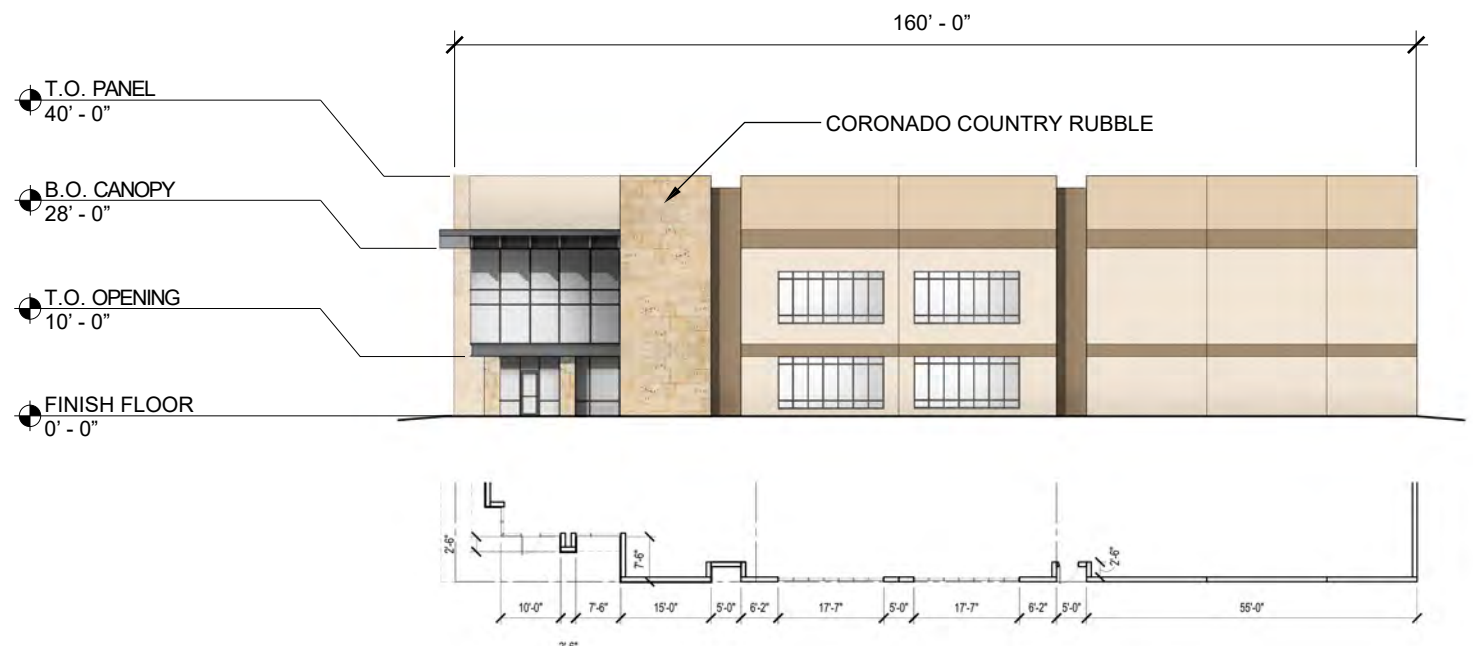


05 TRASH ENCLOSURE PLAN

Scale: 1/8" = 1' - 0"

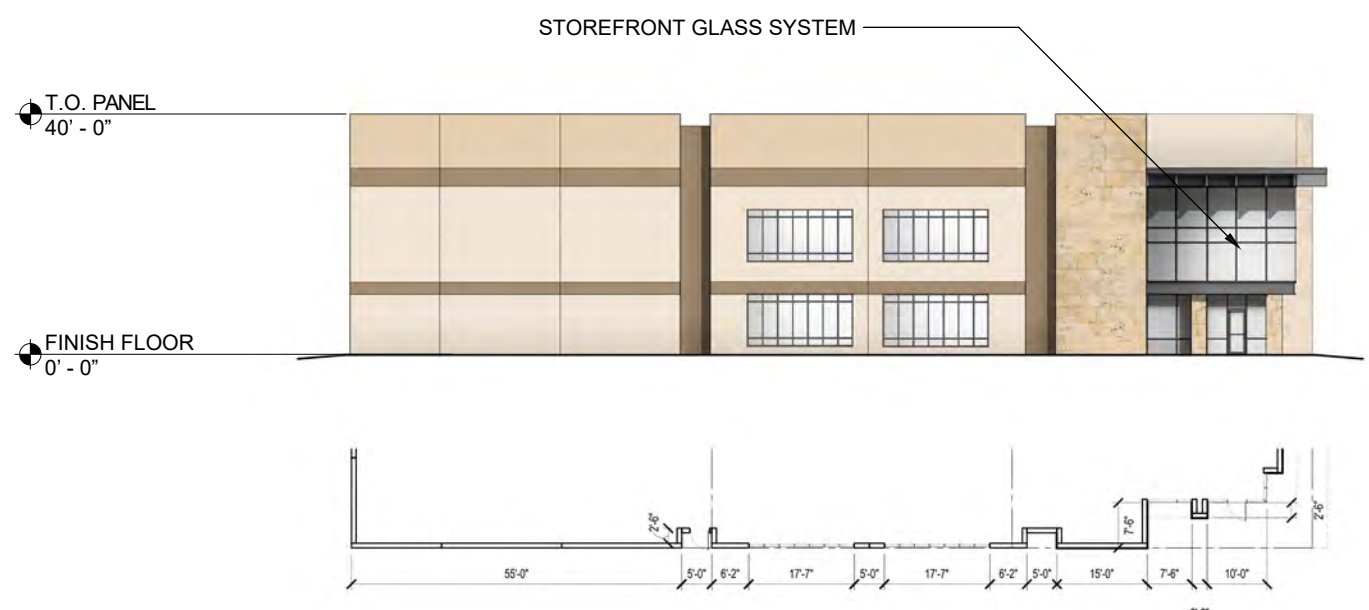
04 EXTERIOR BUILDING ELEVATION - EAST

Scale: 1/32" = 1' - 0"



03 EXTERIOR BUILDING ELEVATION - WEST

Scale: 1/32" = 1' - 0"



02 EXTERIOR BUILDING ELEVATION - NORTH

Scale: 1/32" = 1' - 0"



01 EXTERIOR BUILDING ELEVATION - SOUTH

Scale: 1/32" = 1' - 0"



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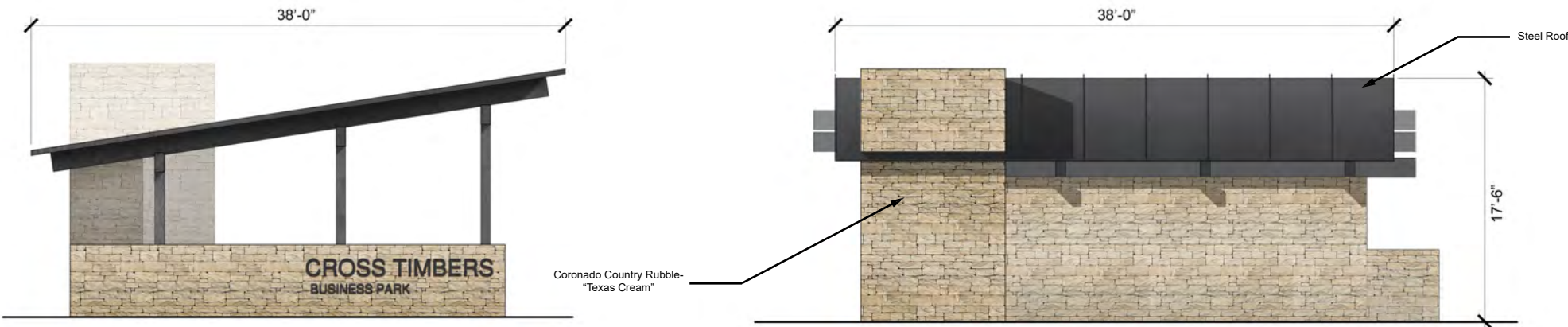
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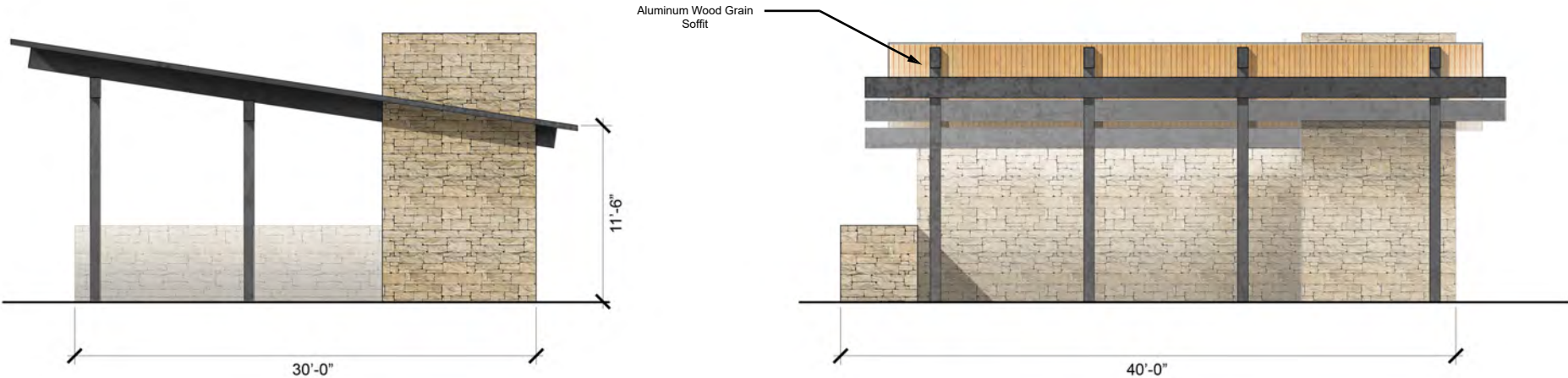


ENTRY PAVILION ELEVATION - SOUTH

Scale: NTS

ENTRY PAVILION ELEVATION - WEST

Scale: NTS

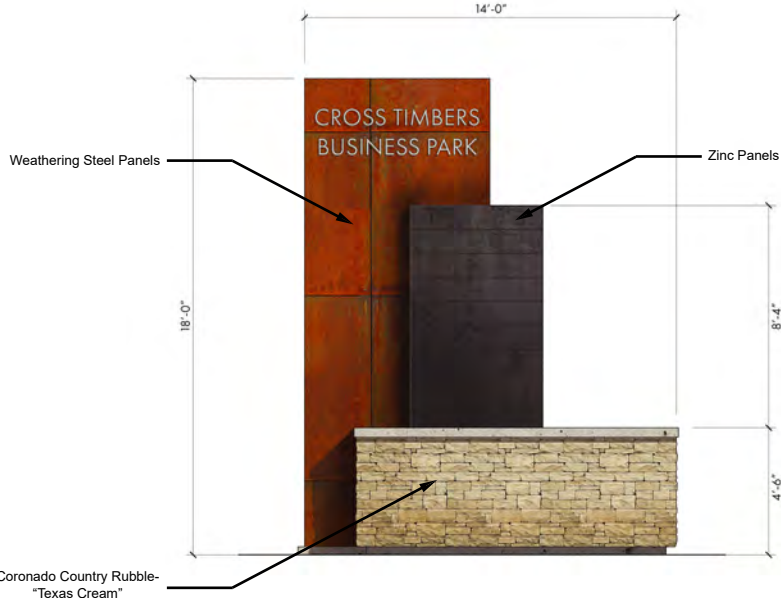
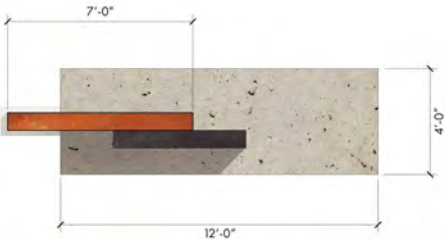


ENTRY PAVILION ELEVATION - NORTH

Scale: NTS

ENTRY PAVILION ELEVATION - EAST

Scale: NTS



MONUMENT SIGN ELEVATION

Scale: NTS



SCREEN WALL ELEVATION

Scale: NTS

Development Standards

Planned Development –No. 188 Cross Timbers Business Park

The development of the property comprising approximately 263 acres of land within the corporate limits of the Town of Flower Mound ("Town") shall be in accordance with the Town of Flower Mound Master Plan and the Land Development Regulations of the Town of Flower Mound, Texas, as amended, and shall be subject to the following conditions and requirements:

A. Exhibits

1. The following Exhibits are incorporated into this planned development.
 - a. Exhibit "C": Conceptual Site Plan.
 - b. Exhibit "D": Conceptual Landscape Plan.
 - c. Exhibit "E": Conceptual Elevations.
 - d. Exhibit "F": Entryway Monument and Pavilion

B. Permitted Uses

The Permitted Uses listed in the Campus Industrial District (CI) in the Town's Zoning Ordinance shall be permitted in the area designated as CI on Exhibit "C".

The Permitted Uses listed in the Industrial – 2 District (I2) in the Town's Zoning Ordinance except for Parking lot, trucks or trailers (transport) shall be permitted in the area designated as I2 on Exhibit "C".

Manufacturing - hazardous and objectionable as defined in the Town's Code (Section 98-2) is specifically prohibited anywhere in the Development.

C. Specific Uses

The uses listed as Specific Uses in the Campus Industrial District (CI) in the Town's Zoning Ordinance shall be permitted in the area designated as CI on Exhibit "C" with a Specific Use Permit (SUP) approved by the Town Council with the exception of Parking lot, trucks or trailers (transport) which will not be permitted.

The uses listed as Specific Uses in the Industrial – 2 District (I2) in the Town's Zoning Ordinance shall be permitted in the area designated as I2 on Exhibit "C" with a Specific Use Permit (SUP) approved by the Town Council.

D. Temporary Uses

The uses listed as Temporary Uses in the Campus Industrial District (CI) in the Town's Zoning Ordinance shall be permitted in the area designated as CI on Exhibit "C" only upon approval of a temporary use permit in accordance with the procedures and standards of 78-87 of the Land Development Code, "Temporary Use Permits."

The uses listed as Temporary Uses in the Industrial – 2 District (I2) in the Town's Zoning Ordinance shall be permitted in the area designated as I2 on Exhibit "C" only upon approval of a temporary use permit in accordance with the procedures and standards of 78-87 of the Land Development Code, "Temporary Use Permits."

E. Split Use Buildings

1. For buildings that cross CI and I2 zoning lines, floor plans and other exhibits required during site plan and building permit will require zoning lines be clearly shown. These zoning lines will clearly establish the internal area with CI allowable uses and the internal area with I2 allowable uses.

F. Dimensional Regulations.

The dimensional regulations listed in the Campus Industrial District (CI) and the Industrial 2 District (I2) in the Town's Zoning Ordinance shall be required for this Planned Development in general accordance with the designated areas on Exhibit "C" except as noted in paragraph Q "Modifications and Exceptions" below.

G. Parking

1. Parking lots must comply with the landscaping standards found in Section 82-243 and Section 94-63 of the Town's Code of Ordinances. This standard shall apply to truck courts if they are redeveloped as parking lots at any point in time.

H. Building Construction Standards

1. Roofs of buildings over 5,000 square feet will be painted a light color to improve energy efficiency.
2. Building electrical systems will support electric charging stations for vehicles including trucks and material handling equipment and auxiliary power units for trucks.

I. Screening

1. Screening: In general, buildings finished floor elevation will be constructed at

or near average street grade along Denton Creek Boulevard, as measured along the building frontage. Screening of building operations including truck docks will be achieved through the use of masonry walls, berms and landscaping as conceptually depicted in Exhibit E

Specific minor arterial screening requirements:

- a. Berms and walls that provide primary screening for truck courts shall be a minimum of 8 feet in height, measured from the adjacent top of curb elevation.
- b. On the east side of Denton Creek Boulevard, primary screening for truck courts will be provided by masonry walls.
- c. On the west side of Denton Creek Boulevard, at a minimum, walls shall be used at entrances from Denton Creek Boulevard to interior building sites when the entrance creates visibility of truck courts. The minimum requirements of screening walls shall be 50% of the total length of the west side of Denton Creek Boulevard where screening is required. Berms shall be landscaped in accordance with Section 90-222 and 90-223 of the Town's Code of Ordinances prior to subdivision acceptance ensuring appropriate screening of buildings from the minor arterial.
- d. At time of site plan, a site line exhibit shall be provided to show that that service areas, including, but not limited, to truck docks, layout or storage yards, utility components, and trash handling are fully screened from view from the right-of-way. Right of way includes, but is not limited to, Cross Timbers Road, Denton Creek Boulevard, Stonecrest Drive, and Canyon Falls Drive.

J. Interior Truck Stacking –

At site plan and subsequent tenant finish out related to tenant turnover, an analysis will be provided to the Director of Planning that demonstrates adequate truck stacking exists within the development to accommodate tenant requirements under normal operating conditions. Public streets will not be considered in this analysis.

K. Architectural Standards

Building elevations shall be in substantial compliance with the conceptual elevations in Exhibit E. Exhibit E contains conceptual elevations for three representative buildings. These elevations reflect the various floorplate sizes and configurations anticipated to meet the demands of the submarket.

The Development's Architectural theme will be in conformance with the Town's Urban Design Plan, and will utilize culture stone, steel canopies with factory finished wood textured metal soffits and paint finished concrete tilt-wall.

Development of Planned Development District No. (PD-188) is subject to the Town's Urban Design Plan and the specific building component elements

enumerated below.

1. Building Component Standards; Building Elevation Profiles and Roof Form shall substantially conform to the approved Concept Elevations (Exhibit "E").
2. The unified design theme depicted on the Concept Elevations (Exhibit E) shall be required within the development.
3. Building entries will be identified by various architectural features including canopies and portals.
4. The development shall substantially comply with the concept plan (Exhibit C) except as follows:
 - a. Buildings maybe reconfigured into separate individual buildings or combined at site plan subject to the following conditions:
 - b. Total square footage of the reconfigured buildings may not exceed the total square footage of the building(s) being replaced.
 - c. Building elevations must be substantially compliant with elevations for building A, D, E, J and the south elevation of building C contained in Exhibit E as appropriate.
 - d. This section does not apply to buildings that front Canyon Falls Drive or Cross Timbers Road, specifically buildings A, B, D and E are exempt from this section.
5. All building elevations will be articulated to meet or exceed the Town of Flower Mound Urban Design Plan. Buildings will reflect an architectural prominence, with particular attention being paid to architectural quality on the facades, rooflines, and elevations visible from Arterial Roadways.
6. Franchise utility panels and connection points shall be painted to match the color and texture of the building and located so that they are not visible from public roadways, except that Franchise utility panels and connection points facing Arterial Roadways will be kept at a minimum and adequately screened, with additional landscaping or other approved material during the Site Plan approval process, to obstruct visibility from Flower Mound Road.
7. Colors should be earth tones, or members of the beige and brown family of color or other colors in compliance with the Town's urban design standards.
8. Roof top mounted mechanical equipment shall not be visible from the public right-of-way or from neighboring residential buildings in accordance with Section 82-273 of the Town's Code of Ordinances.
9. Specific Building Material Standards shall include:
 - a. A minimum of eighty percent (80%) of the building wall area (not including doors and windows) on any elevation shall be of a primary masonry identified within the Town's Urban Design Plan. Up to twenty percent (20%) of any wall surface material on any elevation may be fiber cement board, cementitious plaster, E.I.F.S., CMU, or a combination of all.
 - b. The use of exposed standard concrete shall not be utilized for any elevation.

- c. Unpainted metal, galvanized metal, or metal subject to rusting shall not be used. All exposed metals shall have a factory-applied finish, if available. Weathered steel will be permitted for signage.
 - d. Not more than fifteen percent (15%) of any elevation shall be comprised of a color that is not considered an earth or wood tone. White or shades of white shall be considered an earth tone color.
10. Accessory buildings shall be:
- a. In substantial compliance with the building materials, colors and architectural standards outlined above.
 - b. Maximum square footage of 500 square feet.
 - c. Maximum height of 15 feet.
 - d. In compliance with the Town's Urban Design Plan including the pitched roof standard.

L. Landscaping

- 1. The landscaping shall substantially comply with landscaping shown on the concept landscape plan (Exhibit D).
- 2. Perimeter Landscaping along all property boundaries including the pavilion and entryway monument at Cross Timbers Road and Denton Creek Boulevard, compatibility buffer, railroad buffer, and landscaping adjacent to Cross Timbers Road, Stonecrest Boulevard and Denton Creek Boulevard will be installed prior to subdivision acceptance in accordance with Section 90-222 and 90-223 of the Town's Code of Ordinances.

M. Lighting

The following minimum standards for permanent lighting fixtures that are not in the Town's right of way or otherwise considered public improvements will apply:

- a. Full shielding of all lighting fixtures over 1000 initial lamp lumens
- b. A limit on the emission of short-wavelength light through one of the following restrictions:
 - i. The correlated color temperature (CCT) of lamps must not exceed 3000 Kel- vins; **OR**
 - ii. Allowed lighting must not emit more than 25% of its total spectral power at wavelengths 550 nanometers; **OR**
 - iii. The scotopic-to-photopic (S/P) ratio of allowed lighting must not exceed 1.3

N. Signage

Except as provided in this paragraph, signage shall comply with the Town's Sign Ordinance.

- 1. Entryway monument and the pavilion will be in substantial compliance with the

design, materials and dimensions contained in Exhibit F.

a. Maximum dimensions

i. Pavilion

- Maximum height is 18 feet
- Maximum linear dimension is 30 feet by 40 feet

ii. Entryway Monument

- Maximum height is 18 feet
- Maximum linear dimensions is 14 feet by 4 feet

2. Denton Creek Boulevard

- a. Signs indicating that Denton Creek Boulevard is not a truck route and no semi-trucks are allowed beyond this the northern property line will be posted.
- b. Signs will be posted at exits on to Denton Creek Boulevard indicating trucks may not turn north bound on to Denton Creek Boulevard.
- c. These signs shall be in conformance with the Town's Code of Ordinances and be designed in conjunction with and approved by the Town Engineer or other staff member as designated by the Town Engineer.

O. Noise

1. Noise levels at the property lines shall comply with residential noise limits in accordance with Section 34-181 Noise Standards.
2. Outdoor equipment related to specific tenants shall be equipped with noise limiting accessories when available.

P. High Voltage Electrical Transmission Line –

1. No building within the development shall be permitted within 50 feet of the edge of the right-of-way or easement of the high voltage electrical transmission line IF the use is also listed as a permitted use in the Town's office district (O) zoning classification (Chapter 98-542).
2. No building shall be located within the easement for a high voltage electrical transmission line.

Q. Railroad Buffer and Setback

1. Minimum buffer of 25 feet
2. Minimum building setback of 50 feet.

R. Modifications and Exceptions

The following modifications and exceptions to the Town's Ordinances shall apply to this Planned Development.

1. Height –
 - a. Height within the area marked H1 on Exhibit C shall be a maximum of 60

- feet.
- b. The height of buildings outside of the H1 area but partially or fully within the I2 area shall be a maximum of 45 feet.
 - c. In all other areas the height maximums contained in the CI zoning classification shall be required for this Planned Development in accordance with the designated areas on Exhibit "C".
2. Minimum setbacks and landscape buffer adjacent to Cross Timbers Road:
 - a. Building setback shall be a minimum of 110 feet.
 - b. Landscape buffer shall be a minimum of 60 feet.
 - c. These increased building setbacks and landscape buffer standards apply only to areas directly adjacent to Cross Timbers Road and shall be measured from the property line.
 3. Minimum landscape buffer along Denton Creek Boulevard shall be a minimum of 40 feet and shall be measured from the property line.
 4. Compatibility buffer:
 - a. The masonry wall shall be constructed adjacent to the parking areas in the northwest corner of the development as generally shown in exhibit C.
 - b. The compatibility buffer shall be a minimum of 60 feet but will be expanded in accordance with the area noted in Exhibit D.



PLANNING AND ZONING COMMISSION

AGENDA ITEM NO: 5

REGULAR ITEM

DATE: April 11, 2022

FROM: Chuck Russell, Principal Planner

ITEM: **Public Hearing to consider an ordinance amending the zoning (ZPD21-0017 – Cummings Ranch) from Agricultural District (A) to Planned Development District No. 190 (PD-190) for a cluster development with certain modifications, waivers and exceptions to the Code of Ordinances. The property is generally located north of Cross Timbers Road and east of Red Rock Lane.**

I. ITEM SUMMARY

This application has been reviewed by DRC and determined to be ready for consideration by the Planning and Zoning Commission. There is an exception request to the Town's regulations which necessitates special consideration by the Commission (see Analysis below).

This application will require final action by the Town Council.

II. APPLICATION ANALYSIS

The purpose of this request is to rezone approximately 349.357 acres of land in order to develop 218 residential lots in accordance with the cluster development option outlined in the Cross Timbers Conservation Development District (CTCDD) Area Plan in the Town's Master Plan (see below). The cluster development standards allow for lots that are smaller than the minimum two acres required by the existing Agricultural District (A) zoning.

As part of the request, the applicant is requesting an exception to the Code of Ordinances. In summary (see Section III, below, for detail):

Exception:

- Topographical Slope Exception

The subject property is mostly undeveloped except for a single-family residence, two abandoned gas well pads and several miscellaneous agricultural-related structures. Overhead utility lines are present along Cross Timbers Road, Red Rock Lane and Hawk Road. The applicant has stated "I think it is likely a future developer will come back to the town and make a request to leave all or some of the lines above ground when development is closer to happening. Without a developer in place to negotiate with the power providers and make decisions as to which company will service the property, we do not feel comfortable making the request to leave them above ground".

Primary access to the site will be from a new east/west thoroughfare across the middle of the subject property that has entrances at both Red Rock Lane and Shiloh Road. Two additional entrances are provided on Red Rock Lane, one on Shiloh Road and one on Hawk Road. There is no access proposed from Cross Timbers Road.

A Traffic Impact Analysis (TIA) was completed for the project outlining several roadway related improvements that will be necessitated by the proposed development:

- At the intersection of Cross Timbers Road (FM 1171) and Shiloh Road:
 - Add a southbound left turn lane
 - Restripe the northbound approach as left, Through + Right lanes
 - Operate northbound and southbound approaches concurrently
- Right turn and left turn lanes are warranted at the following study intersections:
 - Along Red Rock Lane at Fain Boulevard
 - Along Shiloh Road at Fain Boulevard
 - Along Eastbound Fain Boulevard at Shiloh Road

The accompanying concept plan [Attachment B(1)] depicts the subdivision design including the lot layout and designated open space areas. The development is proposed to be constructed in three phases. The applicant is also proposing a maximum of 218 developable single-family lots with a minimum lot size of 23,019 square feet. A total of 14 open space X-lots are being proposed, two would be dedicated to the Town as Park Land and 12 would be maintained by the Homeowner's Association. Since the property is located outside the Town's wastewater service area, all residential lots will contain individual septic systems.

On December 16, 2013, the Town Council approved Ordinance No. 64-13 which amended the CTCDD. The CTCDD is described in the Master Plan as:

"Predominantly residential development, typically being single family residential development at net densities no greater than one unit per two acres. Moderate increases in densities may be appropriate in combination with cluster developments, conservation easements and/or other conservation techniques that preserve the Cross Timbers ecosystem, other natural systems, and Scenic Corridors and Vistas. Commercial recreation uses, such as equestrian facilities, golf courses and other uses compatible with the conservation goals of the district are also suitable.

The Cross Timbers Conservation Development District Area Plan preserves the integrity of the largely intact Cross Timbers ecological area in central Flower Mound, which provides the Town with its unique country atmosphere and natural environment, while allowing environmentally sensitive development to occur. The area plan establishes development options within the district and identifies specific elements needing consideration."

The Area Plan contains several development options for land within the Cross Timbers District; a cluster development is one of the options.

The cluster development option is as follows:

- "8. Develop the property as a cluster development. The intent of the clustering option is to **maximize open space conservation**, including preserving Scenic

Corridors and Vistas, on a site-by-site basis to realize a community benefit that provides the Town with its unique country atmosphere and natural environment. **The continuation and/or connection of open space areas between adjacent developments are important** in protecting the ecological value in the District. Cluster developments may be allowed in the District and must demonstrate the following:

- a. **Density shall be commensurate with the quality and character of the open or natural lands conserved** and the extent to which the conserved land contributes to the preservation of the Cross Timbers Conservation Development District's country character, including its open, natural, scenic and ecological values. Density will be evaluated on a project-by-project basis. The maximum density that can be granted for a cluster development can be no more than 1 unit per 1.6 acres ($100/1.6 = 62$ units or a 24% increase above the base density). For example, on a 100-acre development, the 100 acres is divided by 1.6 to produce 62 units or a 24% (12 unit) increase in density above the base density of 1:2 or 50 units.
- b. Minimum lot size is one-half acre or 21,780 square feet; however, any development shall contain a mixture of lot sizes and any development shall be cognizant of external adjacent lot sizes.
- c. Open space may be managed by a land trust, Homeowners Association, and/or the Town. Any development proposal must detail the perpetual maintenance and funding for the open space areas, which must be feasible and appropriate for the areas preserved. Recreational uses may be allowed which may be appropriate given the type, location, intensity, and adjacency. Any recreational use should be characteristic of the District, compatible with adjacent land uses and should be open to the public. Floodplain may be counted as open space.

Cluster development shall demonstrate how the development provides an appropriate transition to existing land uses. Factors to be considered include lot sizes, intervening roadways, and use of open space, among other factors.”

The gross land area for the proposed development is 349.357 acres. As required by the Town’s Thoroughfare Plan, the applicant is dedicating approximately 10 acres of right-of-way for the new east/west collector (Jo Fain Boulevard). The applicant is dedicating an additional 7.769 acres of right-of-way for Shiloh Road, Red Rock Lane and Hawk Road. Excluding these right-of-way dedications, the net land area is 331.583 acres. The applicant’s Open Space Plan indicates approximately 175.902 acres (53%) of land being dedicated as open space. The applicant is proposing a density of 1 unit per 1.6 acres, which is the maximum allowed under the cluster development option.

As a part of the cluster development process, an enhanced public notification process is required that mandates a minimum of two neighborhood meetings be held to discuss the project prior to the application being considered by the Planning and Zoning Commission. Anyone who has signed up online is invited to these meetings, as well as adjacent property owners and HOAs. The first informational meeting was held on September 7, 2021, and the second informational meeting was held on March 9, 2022.

III. EXCEPTION:

A. Exception to Section 98-147, Topographic Slope

According to the Town Code, no development application or project shall be approved that proposes development on any existing topographical slopes of 12 percent or greater, or that proposes to alter any existing topographical slopes that are less than 12 percent but equal to or greater than five percent then available (other than within five feet of the footprint of the proposed structure or structures). The purpose of this criterion is to ensure that development is respectful of and appropriately integrated with the natural physical geography of the land in Flower Mound by requiring environmentally sensitive development techniques to eliminate "scrape and build."

Approximately 74.73 acres on site have naturally occurring topographic slopes between 5% and 12%. Of the 74.73 acres, 9.99 acres of the impacted slopes are not located within 5 ft. of the footprint of the structures. An exception for the 9.99 acres of impacted topographic slopes between 5% and 12% is being requested.

Section 98-147 "Topographical slope protection" allows for an applicant to request an exception to these standards as follows:

Exception. An exception to this requirement may be approved by the Town Council by the affirmative vote of at least three-fourths super majority vote of all members of the town council, for any development that keeps the character of the natural topography, and integrates the development into and maintains the overall integrity of the natural topography.

In considering an exception to this criterion, the town shall, in addition to the foregoing, consider the effects of granting an exception on other environmental features such as trees, habitats, floodplains, scenic vistas, ridgelines, and other environmental features as well as adjacency to established developments and neighborhoods.

IV. UNRESOLVED ISSUES:

A. Open Space, Ponds and Buffers

The applicant is proposing to donate 100.179 acres of open space to the Town for Park Land located south of proposed Jo Fain Boulevard [Attachment B(3)]. The remaining 75.723 acres of open space areas within the proposed subdivision would be maintained by the Homeowners' Association (HOA). On March 3, 2022, the Parks Board recommended accepting the western portion of the proposed Town Park Land and leaving the remainder as HOA maintained open space [Attachment A(3)]. The plans being considered by P&Z do not reflect the Parks Board recommendation (see Parks Board recommendation below).

There are four large ponds south of Jo Fain Boulevard, the applicant is requesting all four be included in the land dedicated to the Town. The Parks Board recommendation would only include the two western most ponds be located within Town Park Land. At this time, it is unknown which, if any, of these ponds will be used by the developer for detention. Staff has communicated to the applicant

concerns about the long-term maintenance of potential detention ponds since the applicant is proposing all ponds dedicated to the Town be maintained by the Town. The applicant is also proposing language that all ponds dedicated to the Town may be used for detention.

The Parks Board also recommended that the required 50-foot-wide scenic buffer along Cross Timbers Road, the required 25-foot-wide landscape buffer along Red Rock Lane and the required 15-foot-wide landscape buffer along Jo Fain Boulevard be placed within a maintenance easement to be maintained by the HOA. This includes all portions of these buffers that would be dedicated to the Town as Park Land. The applicant's proposed standards would require the Town to maintain all street buffer trees in the areas adjacent to Town Park Land. Staff's primary concern with different sections of landscape buffer along the same roadway being maintained by different entities is that they will likely be mowed and/or pruned at different times, creating a disjointed appearance for the neighborhood. Although the applicant has agreed to plant the required trees along Cross Timbers Road, there are no conceptual landscape plans depicting the required trees per the Town's Urban Design standards in any required buffer adjacent to the applicant's proposed Town Park Land.

The Parks Board also recommended that all land that will become HOA maintained remain publicly accessible. The applicant's proposed standards do not reflect this recommendation. The draft standards for this PD [Attachment B(2)], reflect the applicant's proposal and do not include language that staff proposed to address these issues.

On April 5, 2022, the Environmental Conservation Commission (ECC) recommended denial of an Open Space Management Plan and Concept Open Space Plan for the proposed Cummings Ranch cluster development (see ECC recommendation below). Concerns discussed at the ECC meeting included the need to create larger HOA open space areas, restoration of some open space areas (e.g. adding a mix of buffalo grass or other native grasses, native wildflowers, and approved seed mixes to be seeded seasonally) and removal of seven residential (Lots 1 through 7 on Block B) to preserve a stand of trees.

PARKS BOARD

On March 3, 2022, the Parks Board voted to recommend approval of Park Land Dedication of the area as defined in the drawing at the meeting and with the following additional items: a 50ft scenic landscape buffer along Cross Timbers Road will be included in an HOA maintenance easement, the standard landscape buffers along Red Rock Lane and the Collector Road (Jo Fain Boulevard) will be in HOA maintenance easements, the ecofringe along the back of the homes in the area detailed will be in an HOA maintenance easement, all land that will become HOA maintained will remain publicly accessible, and Park Development Fees in the amount of \$302,584.00. The items will be forwarded to the Town Council for consideration at the same time as the subject project.

The meeting can be viewed here:

<https://flowermoundtx.swagit.com/play/03042022-583/8/>

ENVIRONMENTAL CONSERVATION COMMISSION (ECC)

On April 5, 2022, the Environmental Conservation Commission (ECC) recommended denial of an Open Space Management Plan and Concept Open Space Plan for the proposed Cummings Ranch cluster development. On the same agenda, the ECC recommended denial of a permit to remove 28 of the existing 145 specimen trees on the site. The items will be forwarded to the Town Council for consideration at the same time as the subject project.

The meeting can be viewed here:

<https://flowermoundtx.swagit.com/play/04062022-855/7/>

V. CORRESPONDENCE

The Town Code requires both public notice in a newspaper of general circulation (Denton Record Chronicle) and notification of the property owners within 200 feet of the subject property for all zoning application requests. ZPD21-0017 had a total of 39 Property Owner Notifications mailed. At the time this report was written, staff had received no items of correspondence in support of this request, no items in opposition to this request and 2 items with questions of informational nature or concerns regarding this request (correspondence is calculated by each property/household). All written correspondence was sent directly to the Planning and Zoning Commission according to the public communication process.

VI. ATTACHMENTS

A. Background Information

1. Vicinity Map
2. Letter of Intent
3. Parks Board Recommendation Plan

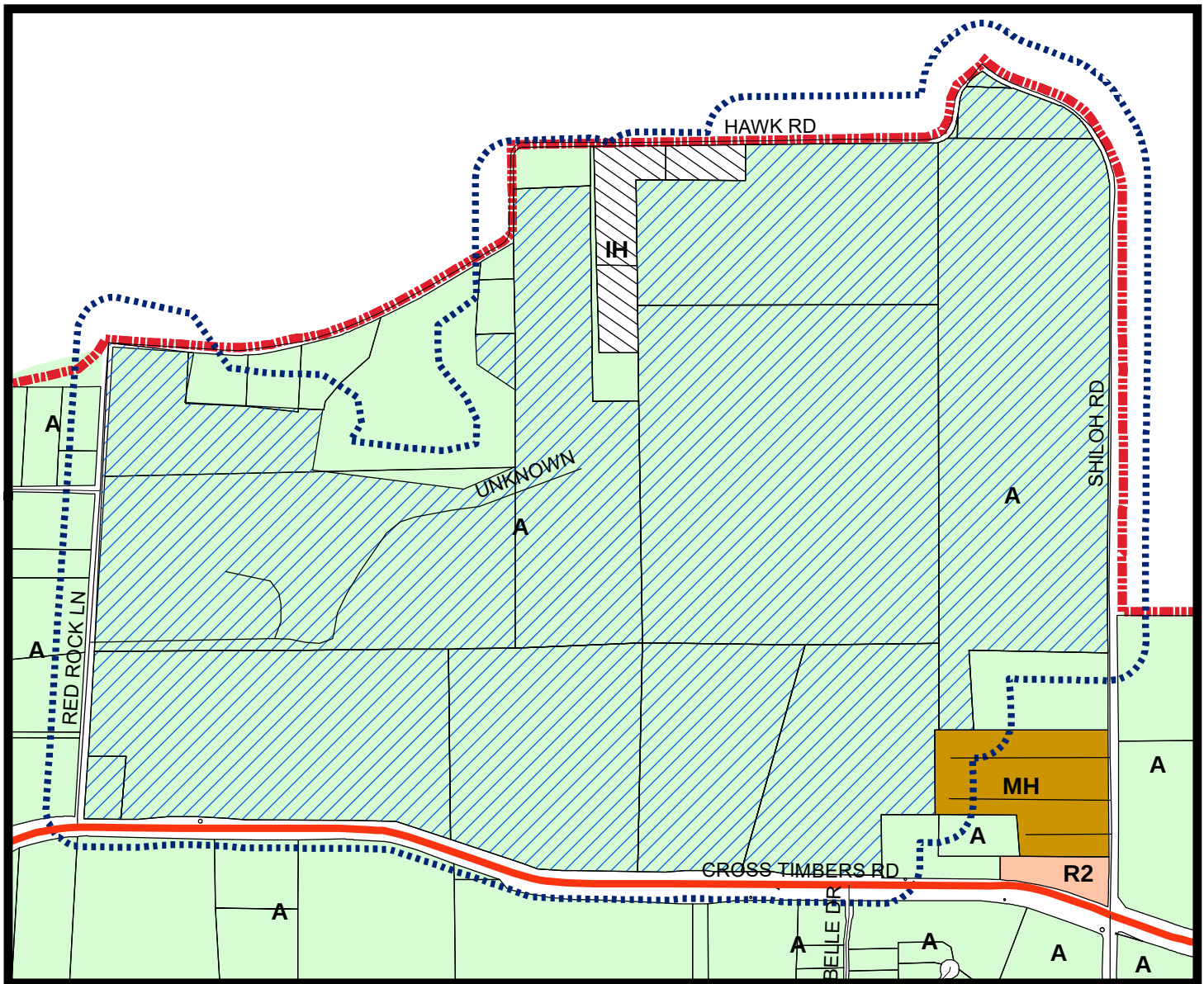
B. Application Details

1. Zoning Planned Development Package
2. Draft Planned Development (PD) Standards
3. Open Space Management Plan

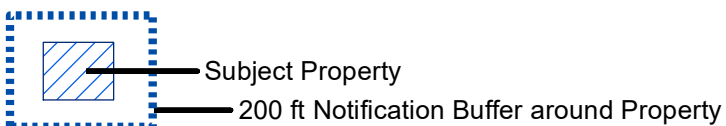
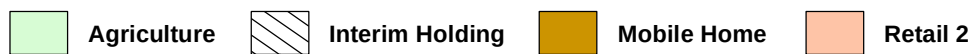


Vicinity Map

Reference Project: ZPD21-0017

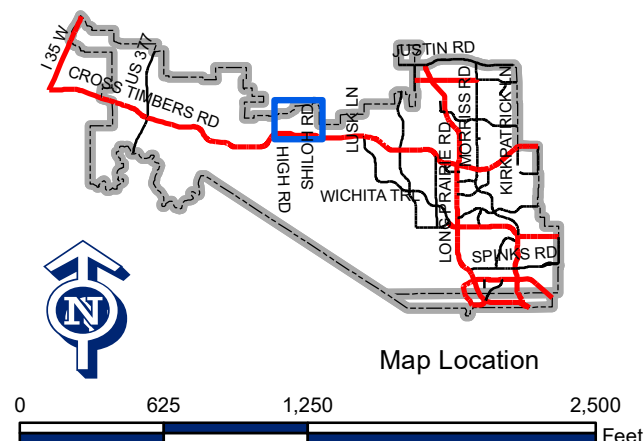


LEGEND



Visit www.fmdevmap.com to learn more about this project.

Visit <https://www.flower-mound.com/notifyme> to sign up for text message and/or email alerts for future projects.





February 11, 2022

Chuck Russell
Principal Planner
Planning Division
2121 Cross Timbers Road
Flower Mound, TX 75028

RE: Cummings Ranch Flower Mound (Community)
Flower Mound, Texas

Dear Mr. Russell,

Please accept this as our formal Letter of Intent to describe the requested Zoning Planned Development. Cummings Ranch Flower Mound community will be a high-quality, beautiful open-space community, consisting of a +/- 349.357 acre tract of land near the Intersection of Shiloh Road, along Cross Timbers Road (FM 1171). The proposed community is consistent with the Town's Master Plan and ordinance 63-14. We are utilizing site features such as topography, size, shape, and floodplain to plan this community. We have prepared a Zoning Planned Development Exhibit, Landscape Plan, and Concept Plan. We are preserving the natural topography, a portion of large canopy trees, scenic vistas, large parcels of open space which includes five lakes while maintaining the beauty and views along Cross Timbers Road.

The above-mentioned tracts are currently identified on the Town's Master Land Use Plan as Cross Timbers Conservation Development District (CTCDD). The existing zoning is agricultural. The proposed zoning is for a single-family cluster residential development, which is consistent with the updated 2013 Master Plan. The Cummings Ranch community will consist of 218 lots, with fifteen (15) open space lots, two of which we are proposing as park dedication. We are proposing to change the Zoning of the property from agricultural to a Planned Development. Proposed uses and development standards exceed and are consistent with the purposes of ordinance 63-14.

The proposed Planned Development District is consistent with the Town's vision, goals, objectives, and policies adopted in the Master Plan. Density of the proposed community shall not exceed 1 unit per 1.6 acres. Our plans conform to the Town's land development regulations.

We are providing approximately 176 acres (50%) of open space along with preserving the five large lakes on site. We are also providing a minimum 125' buffer along Cross Timbers Rd and 111' along Shiloh Rd; both of which are much more than the required.

This site has over 1,200 protected and specimen trees, as indicated in the specimen tree survey included in our application. The majority of trees are located near Cross Timbers or in the center of the property near the existing residence. The Concept Plan provided protects many of these trees.



Our plan includes a proposed 80' ROW rural collector through the property and 16" water line per the Town's Master Plans.

It is our plan, for the Home Owners Association (HOA) Board of Directors, in conjunction with a Certified Arborist, manages thirteen Open Space lots related to Cummings Ranch Flower Mound project. The remaining two open space lots totaling 100.003 acres are proposed dedication as Town Park.

Should you have any questions, please feel free to contact us.

Sincerely,
Jason Kilpatrick

Respectfully,
Ridinger Associates, Inc.
P.E. Firm No. 1969

A handwritten signature in blue ink, appearing to read "J. Kilpatrick", is written over a faint, larger blue signature.

Mr. Jason Kilpatrick
Engineer

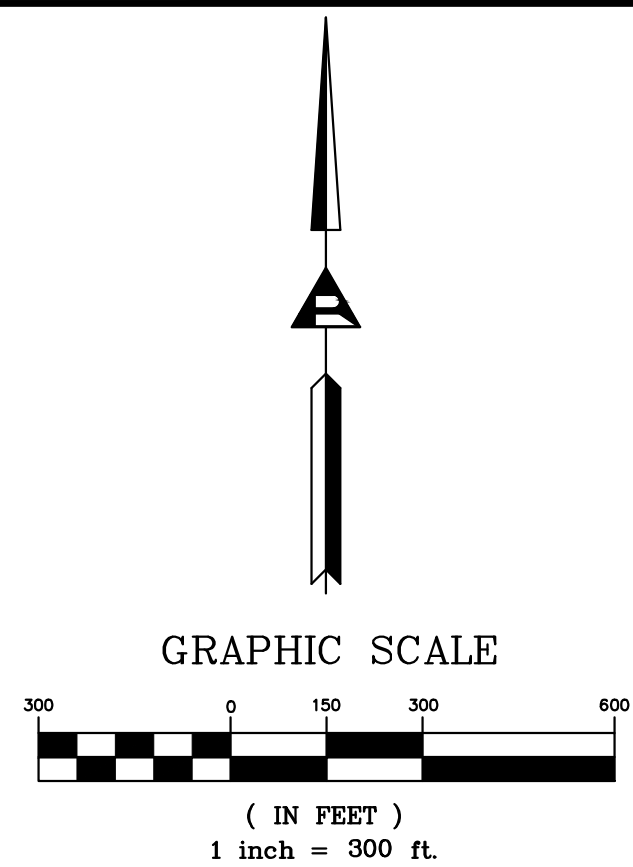
OPEN SPACE LOT TABLE	
PRIVATE OPEN SPACE LOTS:	
LOT 2X	5.888 ACRES
LOT 3X	24.926 ACRES
LOT 4X	2.995 ACRES
LOT 5X	2.197 ACRES
LOT 6X	10.086 ACRES
LOT 7X	0.813 ACRES
LOT 8X	2.914 ACRES
LOT 9X	8.166 ACRES
LOT 10X	2.501 ACRES
LOT 12X	2.488 ACRES
LOT 13X	0.802 ACRES
LOT 15X	11.947 ACRES
TOTAL PRIVATE OPEN SPACE AREA 75.723 ACRES	
POTENTIAL TOWN PARK OR OPEN SPACE LOTS:	
LOT 1X	13.822 ACRES
LOT 11X	86.357 ACRES
TOTAL POTENTIAL TOWN PARK OR OPEN SPACE AREA 100.179 ACRES	
TOTAL OPEN SPACE AREA 175.902 ACRES	

LEGEND

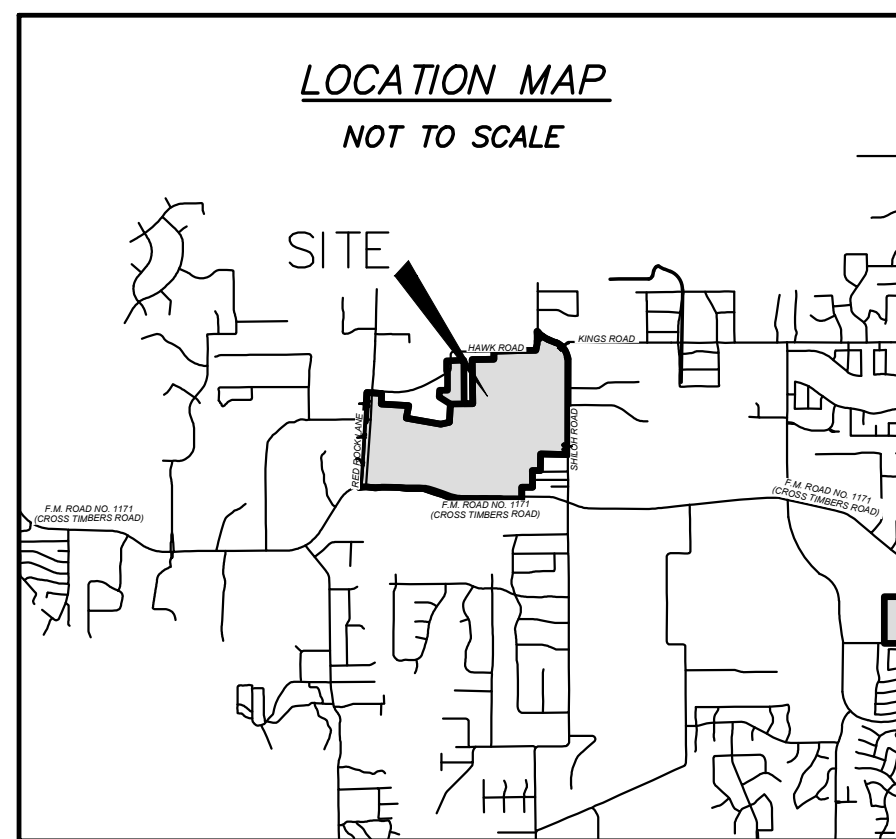
—	LOT LINE
—	D.R.D.C.T. DEED RECORDS, DENTON COUNTY, TEXAS
—	P.R.D.C.T. PLAT RECORDS, DENTON COUNTY, TEXAS
—	R.P.R.D.C.T. REPLAT RECORD DENTON COUNTY, TEXAS
---	PROPERTY BOUNDARY
---	ADJACENT PROPERTY BOUNDARY
---	PROPOSED R.O.W.
---	PROPOSED BACK OF CURB

AREA DATA TABLE	
GROSS SITE AREA	349.357 ACRES
SHILOH RD. R.O.W. DEDICATION	4.853 ACRES
RED ROCK LANE R.O.W. DEDICATION	1.815 ACRES
HAWK ROAD R.O.W. DEDICATION	1.101 ACRES
INTERNAL COLLECTOR R.O.W. DEDICATION	10.005 ACRES
TOTAL R.O.W. DEDICATION	17.774 ACRES
NET SITE AREA	331.583 ACRES
TOTAL OPEN SPACE AREA	175.902 ACRES

	POTENTIAL TOWN PARK
	H.O.A. MAINTAINED OPEN SPACE
	25' LANDSCAPE BUFFER
	17' BAR DITCH CREDIT
	10' ECO-FRIDGE BUFFER ALONG RESIDENTIAL LOTS



PROJECT DATA TABLE	
GROSS SITE AREA	349.357 ACRES
PROPOSED USE	SINGLE FAMILY RES.
CURRENT ZONING	AGRICULTURAL
EXTERNAL/COLLECTOR RIGHT-OF-WAY	
SHILOH ROAD	4.853 ACRES
RED ROCK LANE	1.815 ACRES
HAWK ROAD	1.101 ACRES
INTERNAL COLLECTOR	10.005 ACRES
TOTAL RIGHT-OF-WAY	17.774 ACRES
OPEN SPACE	
POTENTIAL TOWN PARK	100.179 ACRES
PRIVATE OPEN SPACE LOTS	75.723 ACRES
TOTAL OPEN SPACE	175.902 ACRES
PROPOSED LOTS	
RESIDENTIAL	218 LOTS
RESIDENTIAL LOTS AREA	138.86 ACRES
MIN. RESIDENTIAL LOT SIZE	23,019 S.F.
MAX. RESIDENTIAL LOT SIZE	44,458 S.F.
AVG. RESIDENTIAL LOTS SIZE	27,746 S.F.
POTENTIAL TOWN PARK	2 LOTS
PRIVATE OPEN SPACE	12 LOTS
TOTAL ALL LOTS	233 LOTS



CUMMINGS RANCH
Residential Subdivision
349.357 acres

in the
T.J. Payne Survey, Abstract No. 1056
T & P. Railroad Co. Survey, Abstract
No. 1618, John West Survey, Abstract
No. 1414, John West Survey, Abstract
No. 1415, H. Campbell, Abstract No.
1462, and the B.B.B. & C.R.R. Survey
Abstract No. 152

in the
Town of Flower Mound
Denton County, Texas



ENGINEER/APPLICANT:
RIDINGER ASSOCIATES, INC.
550 S. EDMONDS LANE, SUITE 101
LEWISVILLE, TX 75067
972-353-8000
CONTACT: DALE RIDINGER

OWNERS:
1309 LLC
P.O. BOX 292873
LEWISVILLE, TX 75029

Ridinger Associates, Inc.
Civil Engineers - Planners
Firm No. 1969
550 S. Edmonds Lane, Suite 101
Lewisville, Texas 75067
Tel. No. (972) 553-8000
Fax No. (972) 553-8011

CUMMINGS RANCH
RESIDENTIAL SUBDIVISION
FLOWER MOUND, TEXAS

OPEN SPACE PLAN

Scale: 1"=300'
Designed by: LDR
Drawn by: MAB
Checked by: LDR
Date: FEBRUARY 21, 2022
Project No. 180-001

MASTER PLAN FEATURES	
Land Use Plan	Cross Timbers Conservation Development District
Specific Plans	None
Urban Design Plan	Cross Timbers Conservation Development District
Parks and Trails	Proposed Park Land Dedication, Proposed Equestrian Trail, Proposed Bike Trail
Open Space Plan	
Thoroughfare Plan	Cross Timbers Road (F.M. 1171) - Major Arterial, ROW Width Varies Shiloh Road - Rural Collector, 80' ROW. Red Rock Lane - Rural Collector, 80' ROW. Proposed East-West Rural Collector, 80' ROW.
Water Plan	Long Prairie District, Existing 20" WM, N Side of Cross Timbers Road, Existing 16" WM, East side of Shiloh Rd., Proposed 16" WM along Prop. East-West Rural Collector. Proposed 16" WM Connection to EX 16" WM on East side of Shiloh Rd., Proposed 16" WM to be connected to 16" WM in Red Rock Ln.
Wastewater Plan	Unsewered Area. Cross Timbers Conservation District.

LOT BLOCK/LOT SQ. FT.

LEGEND

---	LOT LINE
---	D.R.D.C.T. DEED RECORDS, DENTON COUNTY, TEXAS
---	P.R.D.C.T. PLAT RECORDS, DENTON COUNTY, TEXAS
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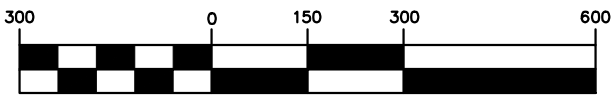
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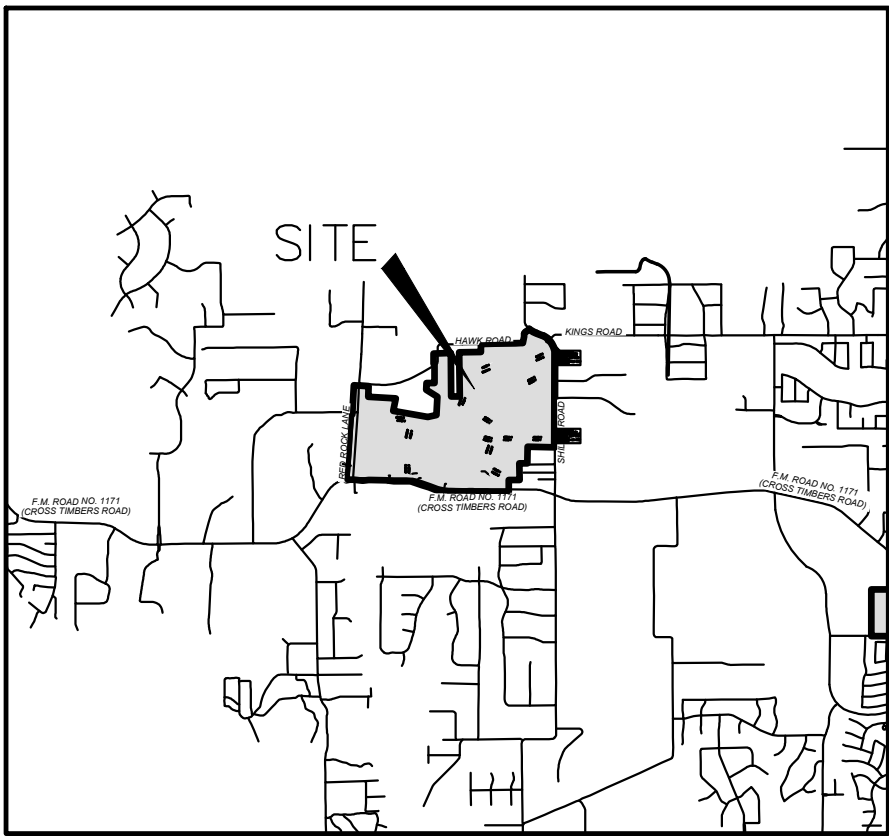
GRAPHIC SCALE



(IN FEET)
1 inch = 300 ft.

PROJECT DATA TABLE

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TOTAL ALL LOTS	233 LOTS



LOCATION MAP
NOT TO SCALE

CUMMINGS RANCH
Residential Subdivision

349.357 acres

in the
T.J. Payne Survey, Abstract No. 1056
T & P. Railroad Co. Survey, Abstract
No. 1618, John West Survey, Abstract
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in the
Town of Flower Mound
Denton County, Texas

Ridinger
Associates, Inc.
Civil Engineers - Planners

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Lewisville, Texas 75067
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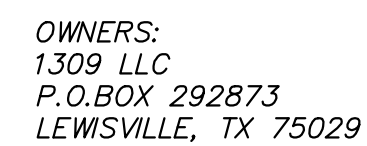
CUMMINGS RANCH
RESIDENTIAL SUBDIVISION
FLOWER MOUND, TEXAS

CONCEPT PLAN
218 RESIDENTIAL LOTS

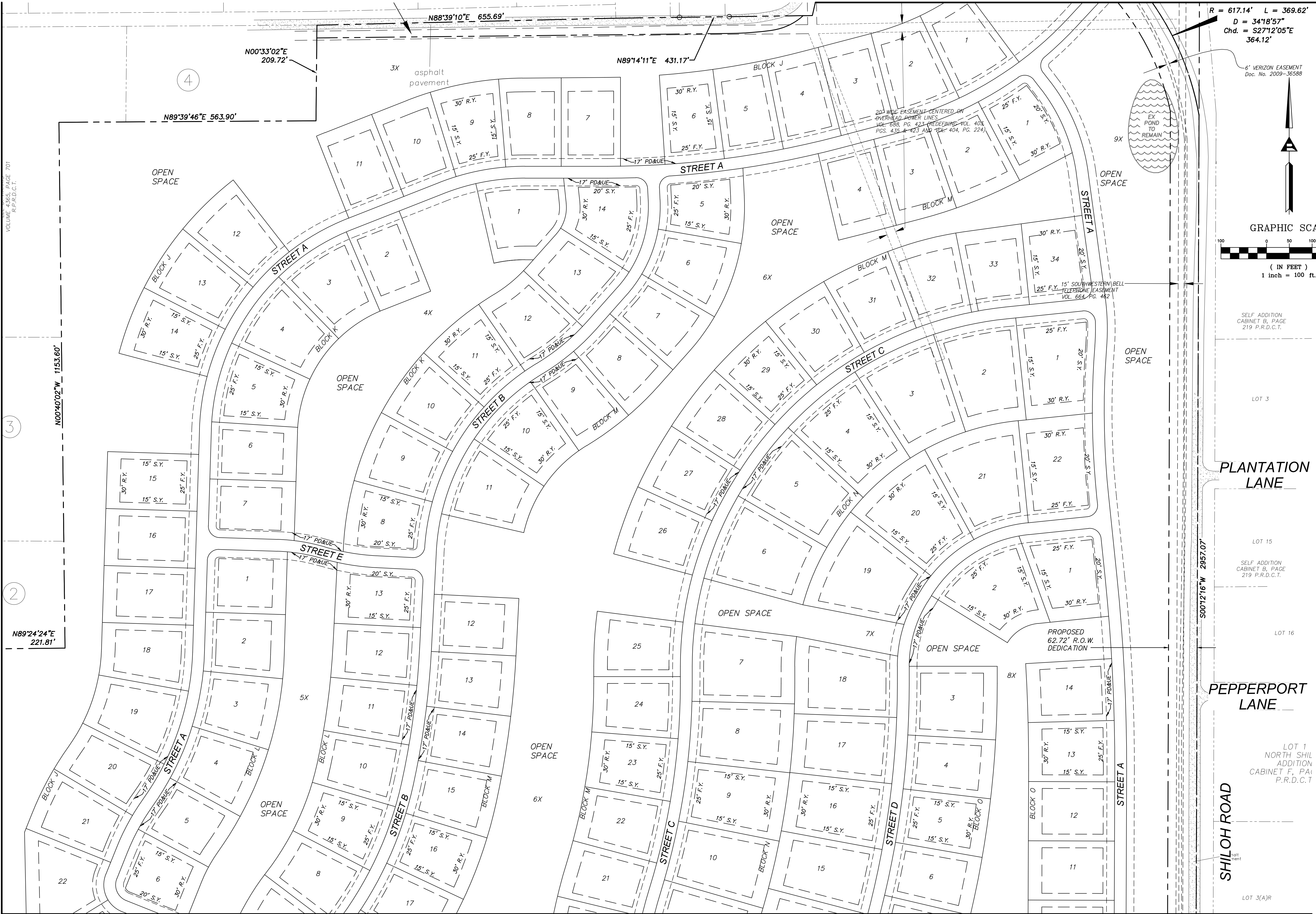
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Designed by: LDR
Drawn by: MAB
Checked by: LDR
Date: MARCH 11, 2022
Project No. 180-001

SHEET

1 OF 6



MATCHLINE SHEET 2 OF 6



MATCHLINE SHEET 2 OF 6

MATCHLINE SHEET 4 OF 6

Ridinger Associates, Inc.
Civil Engineers - Planners
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550 S. Edmonds Lane, Suite 101
Lewisville, Texas 75067
Tel. No. (972) 533-8000
Fax No. (972) 533-8001

CUMMINGS RANCH
RESIDENTIAL SUBDIVISION
FLOWER MOUND, TEXAS

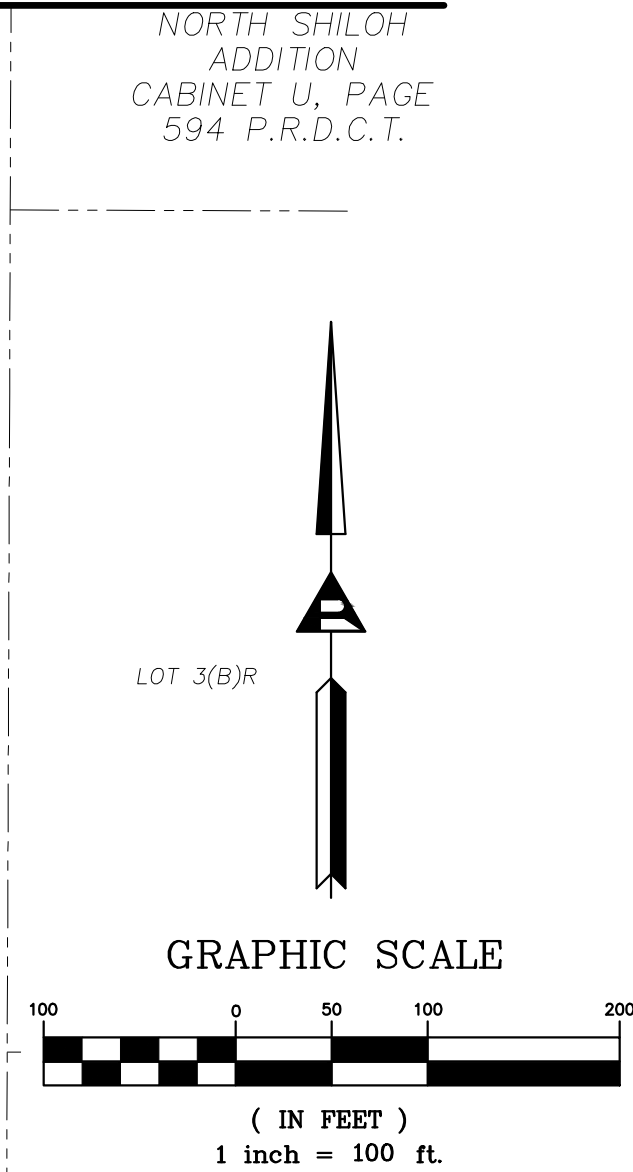
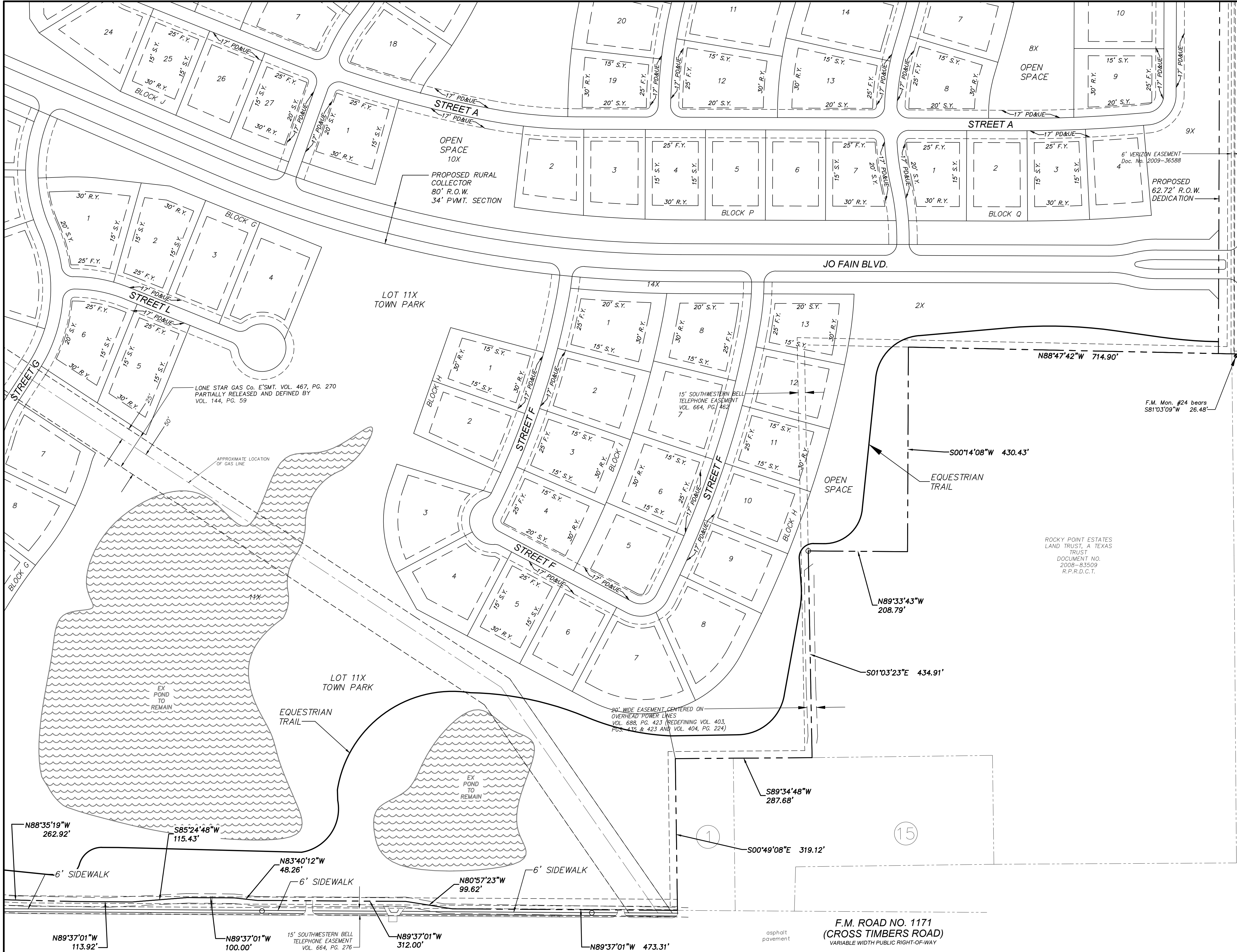
CONCEPT PLAN
218 RESIDENTIAL LOTS

Scale: 1"=100'
Designed by: LDR
Drawn by: MAB
Checked by: LDR
Date: MARCH 11, 2022
Project No. 180-001

SHEET
3 OF 6

MATCHLINE SHEET 3 OF 6

MATCHLINE SHEET 5 OF 6



LEFT TURN LANE REQUIRED ON
SHILOH RD. NORTHBOUND TO JO FAIN
BLVD. LEFT TURN LANE TO BE
CONSTRUCTED PER TOWN STANDARDS.

N: 7067875.747
E: 2388538.956

WAYNE L.
YARBROUGH
DOC. NO.
2001-112170
D.R.D.C.T.

Ridinger Associates, Inc.
Civil Engineers - Planners

Firm No. 1969
550 S. Edwards Lane, Suite 101
Lewisville, Texas 75067
Tel. No. (972) 553-8000
Fax No. (972) 553-8001

CUMMINGS RANCH
RESIDENTIAL SUBDIVISION
FLOWER MOUND, TEXAS

CONCEPT PLAN
218 RESIDENTIAL LOTS

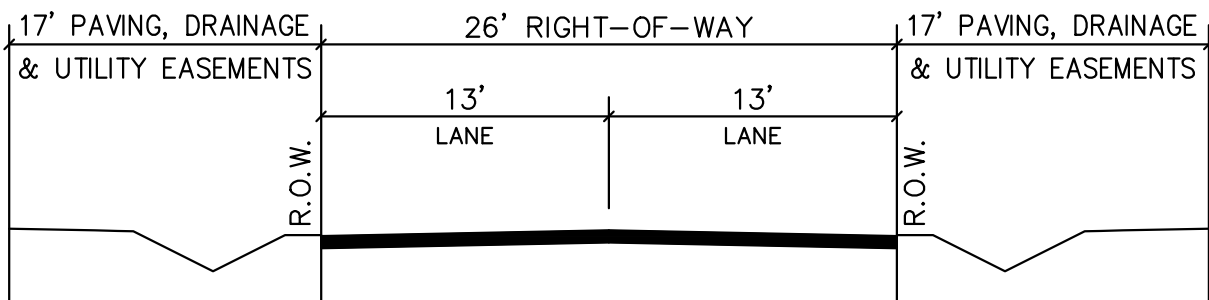
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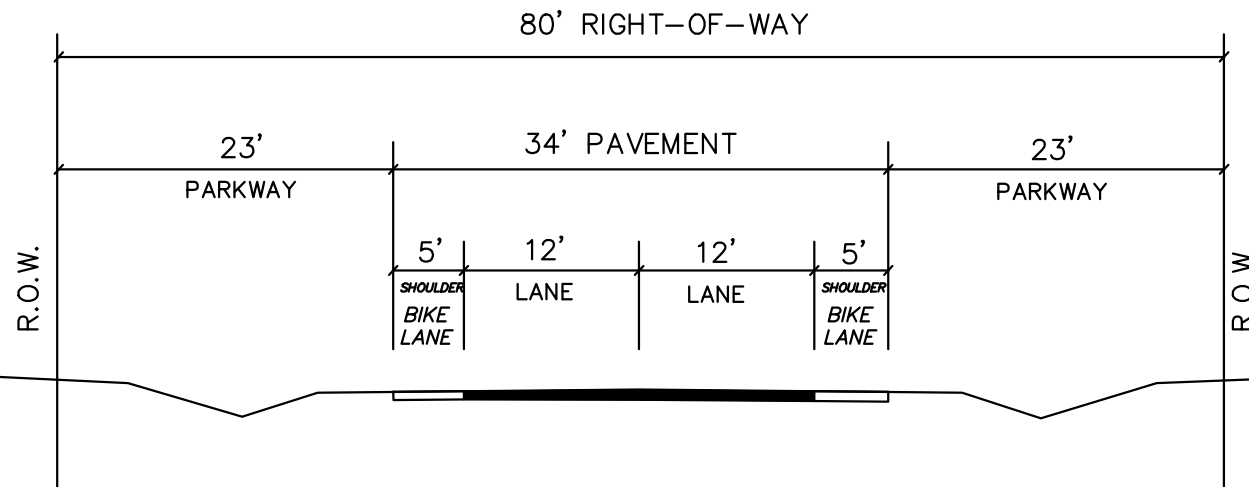
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CONCEPT PLAN
218 RESIDENTIAL LOTS

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Designed by: LDR
Drawn by: MAB
Checked by: LDR
Date: MARCH 11, 2022
Project No. 180-001



LOCAL RESIDENTIAL ESTATE



RURAL COLLECTOR

LOT	BLOCK	LOT SQ. FT.
1	A	25,203
2	A	26,056
3	A	29,682
4	A	25,593
1	B	32,578
2	B	30,184
3	B	30,130
4	B	30,325
5	B	33,379
6	B	32,288
7	B	35,699
1	C	27,254
2	C	27,291
3	C	25,200
4	C	25,200
5	C	33,603
6	C	25,042
7	C	25,021
8	C	25,021
9	C	25,014
10	C	25,010
11	C	25,024
12	C	25,089
1	D	27,465
2	D	28,056
3	D	27,012
4	D	32,296
5	D	27,509
6	D	27,094
7	D	30,427
1	E	33,563
2	E	31,974
3	E	31,921
4	E	31,958
5	E	33,578
6	E	34,425
7	E	30,976
8	E	30,902
9	E	30,560
10	E	35,032
1	F	25,086
2	F	27,408
3	F	26,615
4	F	26,642
5	F	26,404
6	F	27,172
7	F	36,403
8	F	28,296
9	F	28,723
1	G	34,317
2	G	29,054
3	G	28,290
4	G	29,656
5	G	28,336
6	G	28,422
7	G	25,678
8	G	25,655
9	G	25,214
10	G	25,574

LOT	BLOCK	LOT SQ. FT.
1	H	25,914
2	H	25,785
3	H	30,427
4	H	28,838
5	H	25,000
6	H	25,000
7	H	36,709
8	H	31,906
9	H	25,042
10	H	25,291
11	H	25,151
12	H	25,154
13	H	25,003
1	I	29,912
2	I	28,299
3	I	28,215
4	I	29,122
5	I	29,340
6	I	29,291
7	I	29,225
8	I	29,455
1	J	26,765
2	J	26,659
3	J	24,000
4	J	24,800
5	J	24,685
6	J	24,516
7	J	25,303
8	J	25,090
9	J	25,561
10	J	25,140
11	J	25,153
12	J	26,560
13	J	26,560
14	J	26,560
15	J	25,000
16	J	25,000
17	J	25,000
18	J	26,085
19	J	28,126
20	J	25,101
21	J	25,821
22	J	31,077
23	J	26,447
24	J	24,078
25	J	24,099
26	J	24,828
1	K	28,890
2	K	23,019
3	K	27,294
4	K	27,294
5	K	27,294
6	K	23,090
7	K	24,077
8	K	25,417
9	K	24,963
10	K	24,963
11	K	24,963
12	K	25,279
13	K	25,017
14	K	29,278

LOT	BLOCK	LOT SQ. FT.
1	L	24,092
2	L	23,636
3	L	24,747
4	L	24,747
5	L	23,064
6	L	25,117
7	L	26,771
8	L	24,964
9	L	25,202
10	L	24,247
11	L	23,708
12	L	23,070
13	L	24,121
1	M	26,903
2	M	26,668
3	M	25,296
4	M	25,052
5	M	25,629
6	M	25,685
7	M	24,063
8	M	23,488
9	M	23,127
10	M	26,525
11	M	26,991
12	M	23,431
13	M	23,583
14	M	23,583
15	M	23,996
16	M	24,343
17	M	24,343
18	M	27,304
19	M	25,155
20	M	24,586
21	M	23,623
22	M	24,672
23	M	24,672
24	M	24,513
25	M	25,025
26	M	25,364
27	M	25,026
28	M	25,177
29	M	25,177
30	M	25,177
31	M	25,177
32	M	25,109
33	M	24,070
34	M	24,724

LOT	BLOCK	LOT SQ. FT.
1	N	36,023
2	N	36,028
3	N	36,695
4	N	36,695
5	N	36,147
6	N	37,507
7	N	35,833
8	N	31,964
9	N	31,964
10	N	31,964
11	N	32,786
12	N	33,043
13	N	32,391
14	N	30,183
15	N	30,969
16	N	30,969
17	N	30,969
18	N	34,227
19	N	39,691
20	N	38,024
21	N	38,437
22	N	35,243

LOT	BLOCK	LOT SQ. FT.
1	O	30,090
2	O	34,072
3	O	30,139
4	O	23,972
5	O	23,972
6	O	23,972
7	O	23,972
8	O	28,368
9	O	26,010
10	O	24,570
11	O	24,570
12	O	24,570
13	O	24,968
14	O	25,057
1	P	28,551
2	P	24,050
3	P	24,037
4	P	24,005
5	P	24,035
6	P	24,035
7	P	25,316
1	Q	25,738
2	Q	24,260
3	Q	24,074
4	Q	24,014
1	R	44,458
2	R	38,950
3	R	39,191
4	R	43,750

CTCDD CLUSTER DEVELOPMENT
PD CONDITIONS

CUMMINGS RANCH IS LOCATED WITHIN THE CROSS TIMBERS CONSERVATION DEVELOPMENT DISTRICT (CTCDD) AND SHALL ADHERE TO THE TOWN'S MASTER PLAN AS AMENDED IN DECEMBER 2013 IN THE CROSS TIMBERS CONSERVATION DEVELOPMENT DISTRICT AREA PLAN, PARAGRAPHS 8(A-E) IN SECTION 2.0, AREA PLANS, OF THE MASTER PLAN, ORDINANCE NO. 64-13.

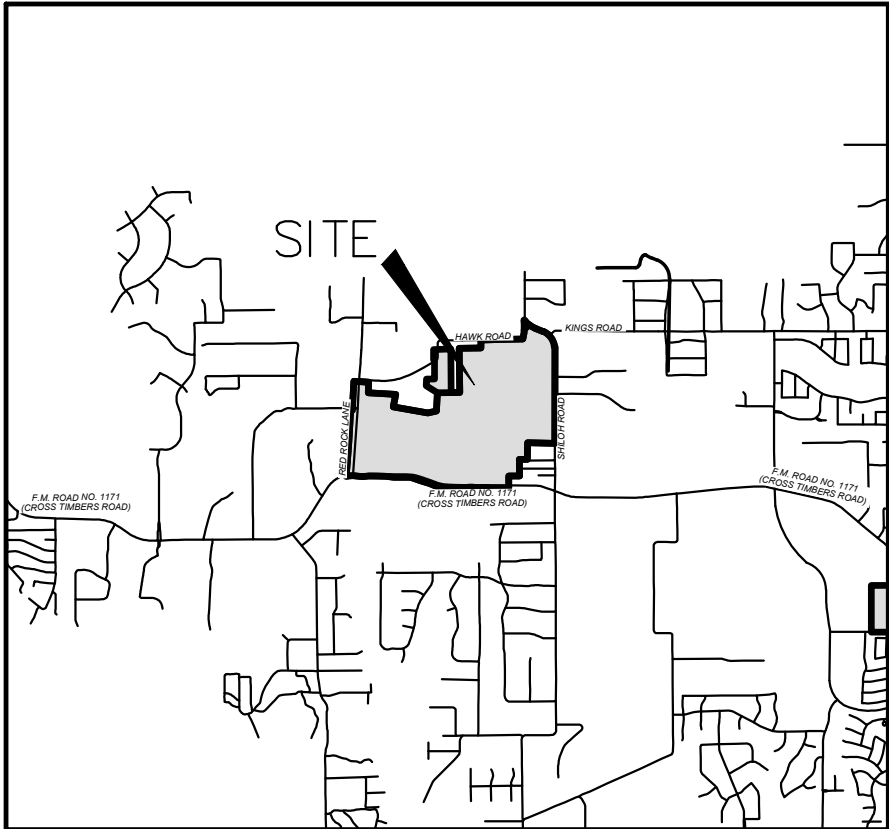
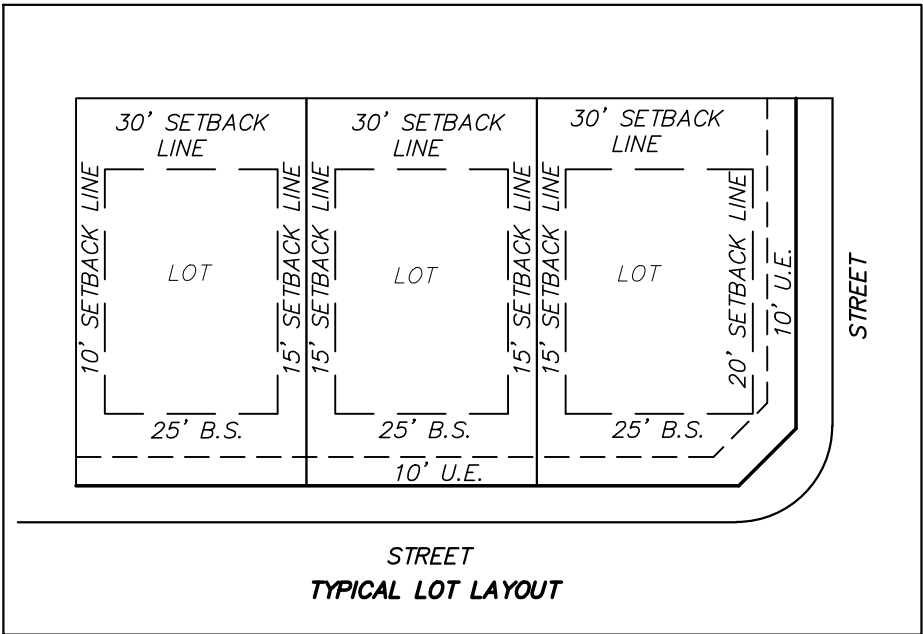
MIN. LOT AREA: 1/2 ACRE OR 21,780 SF
MAX. DENSITY: 1 UNIT PER 1.6 ACRES

MIN. CONSERVATION OPEN SPACE: 50% OF GROSS LAND AREA PRESERVED AS CONSERVED OPEN SPACE-- ALL RIGHTS-OF-WAY OR EASEMENTS FOR STREETS AND ALLEYS; LAND DEDICATED FOR PUBLIC USE; OR OPEN SPACE, PARK LAND AND BUFFER AREAS, AS ACKNOWLEDGED BY THE TOWN OF FLOWER MOUND STAFF, ANY ROAD THAT DOES NOT HAVE A HOME FRONTING ON IT TO BE OPEN SPACE AND ANY SINGLE LOADED ROAD TO COUNT 50% TOWARDS THE OVERALL OPEN SPACE CALCULATION.

MIN. LOT WIDTH: 100'
MIN FRONT YARD SETBACK: 25'
MIN REAR YARD SETBACK: 30'
MIN SIDE YARD SETBACK: 15'
MIN. CORNER LOT SETBACK: 20'
MIN. GROSS FLOOR AREA: 2,400 SF
MAX. LOT COVERAGE: 40%
MAX. HEIGHT/STORIES 35' / 3 STORIES AS MEASURED FROM THE FINISH FLOOR ELEVATION (FFE) TO THE TOP PLATE.

LOT	BLOCK	LOT SQ. FT.	LOT ACRES
1X TOWN PARK			13.822
2X			5.997
3X			25.147
4X			2.995
5X			2.197
6X			10.086
7X			0.813
8X			2.914
9X			8.166
10X			2.501
11X TOWN PARK			86.357
12X			2.488
13X			0.802
14X			0.218
15X			11.947

Size (Sq Ft)	Lots
23,000-23,999	17
24,000-24,999	38
25,000-25,999	56
26,000-26,999	17
27,000-27,999	12
28,000-28,999	13
29,000-29,999	10
30,000+	55
Total	218



LOCATION MAP
NOT TO SCALE

CUMMINGS RANCH
Residential Subdivision

349.357 acres

in the

T.J. Payne Survey, Abstract No. 1056
T & P. Railroad Co. Survey, Abstract
No. 1618, John West Survey, Abstract
No. 1414, John West Survey, Abstract
No. 1415, H. Campbell, Abstract No.
1462, and the B.B.B. & C.R.R. Survey
Abstract No. 152

in the

Town of Flower Mound
Denton County, Texas

ENGINEER/APPLICANT:

RIDINGER ASSOCIATES, INC.
550 S. EDMONDS LANE, SUITE 101
LEWISVILLE, TX 75067
972-353-8000
CONTACT: DALE RIDINGER

OWNERS:

1309 LLC
P.O.BOX 292873
LEWISVILLE, TX 75029

Scale: 1"=300'
Designed by: LDR
Drawn by: MAB
Checked by: LDR
Date: MARCH 11, 2022
Project No. 180-001

SHEET

6 OF 6

CUMMINGS RANCH
RESIDENTIAL SUBDIVISION
FLOWER MOUND, TEXAS

CONCEPT PLAN
218 RESIDENTIAL LOTS

Ridinger
Associates, Inc.
Civil Engineers - Planners
Firm No. 1969
550 S. Edmonds Lane, Suite 101
Lewisville, Texas 75067
Tel. No. (972) 553-8000
Fax No. (972) 553-8011

App.

Revisions

Date

No.

GENERAL LANDSCAPE NOTES

1. All landscape areas are to be received within .1' of proposed finish grade and free from all trash and debris.
 2. All trees are to be planted in pits twice the diameter of the tree ball and no deeper than the depth of the ball. Scarify all tree pit sides prior to planting. All trees are to be planted plumb and at or slightly above finish grade. All tree pits are to have a 3" watering saucer formed around the perimeter of the pit. All tree pits are to be top dressed with a 2" layer of shredded hardwood mulch. Stake and / or guy trees only at the direction of the landscape architect.
 3. Rotovate the existing soil of all planting beds to a minimum depth of 6". Add a 3" layer of premium compost as supplied by Living Earth Technology and till into the top 3" of the existing soil. Install all shrubs 1" above finish grade and fertilize with Agri-form slow release fertilizer tablets at the manufacturer's recommended rates of application. Top dress all planting beds with a 2" layer of shredded hardwood mulch.
 4. All planting beds not formed by a concrete curb or sidewalk are to be edged with Steel Edging (1/8"x4" painted green) or an approved equal. All edging stakes are to be placed to the inside of the bed and the top of the edging is to be no less than 1" and no more than 1.5" above proposed finish grade.
 5. All turf areas are to be hydromulch Bermudagrass, unless otherwise noted on the plan.
 6. Hydromulch with Bermudagrass seed at a rate of two (2) pounds per one thousand (1,000) square feet. If installation occurs between September 1 and April 1, all hydromulch areas to be Winter Ryegrass at a rate of four (4) pounds per thousand square feet. Contractor shall be required to re-hydromulch with Bermudagrass the following growing season.
 7. All sodded areas are to receive common bermuda sod laid parallel to the contour of the land. All sod on slopes greater than 1:4 is to be pinned with 1"x1"x12" wooden stakes. All sod is to be laid with tight joints and with all joints staggered. Roll all sod with a water ballast lawn roller upon installation and fertilize with a complete fertilizer (13-13-13) at the rate of 1.5# actual nitrogen per 1000 square feet. Water all sod thoroughly.
 8. All irrigation meter(s) are to be by utility contractors as per local codes. Irrigation sleeves to be installed by licensed irrigation contractor as per the plan.
 9. All irrigation controllers are to have mini-click freeze and rain stats installed as per manufacturer's recommendations.
 10. All irrigation sleeves to be by licensed irrigation contractor. All sleeves to be PVC schedule 40 with 90 degree elbows on both ends with extensions protruding 18" above proposed finish grade.
 11. All turf and planting beds to be zoned separately. All planting bed heads to be on 12" pop-up risers. All turf heads to be on 4" pop-up risers. All valves to be plastic valves. All equipment to be Rainbird or approved equal.
 12. All mainline and lateral line to have a minimum of 12" of cover and to be SDR (class 200) pipe.
 13. Quantities shown on plant list are landscape architect's estimate only and should be verified prior to bidding. Contractor shall be responsible for bidding and providing quantity of plants required at spacing designated for bed sizes and configurations shown on the plans regardless of quantities designated on plant list.
- IRRIGATION NOTES:
1. All landscaped areas shall be irrigated with an irrigation system capable of providing the proper amount of water for the particular for the particular type of plant material used. Irrigation will be provided by an underground sprinkler system, or a subterranean drip drip system as approved by the City Arborist.
 2. Automatic underground irrigation system shall be equipped with freeze guard set at 38 degrees F.
 3. Areas of open space which contain preserved trees need not be irrigated if the City Arborist determines irrigation would be harmful to the preserved trees.

LANDSCAPE BUFFER REQUIREMENT		
STREET	REQUIRED	PROVIDED
FM 1171	50' BUFFER	50' BUFFER
RED ROCK LANE	25' BUFFER	25' BUFFER
HAWK ROAD	25' BUFFER	25' BUFFER
McMAKIN ROAD	25' BUFFER	25' BUFFER
SHILOH ROAD	25' BUFFER	25' BUFFER
INTERIOR COLLECTOR	15' BUFFER	15' BUFFER

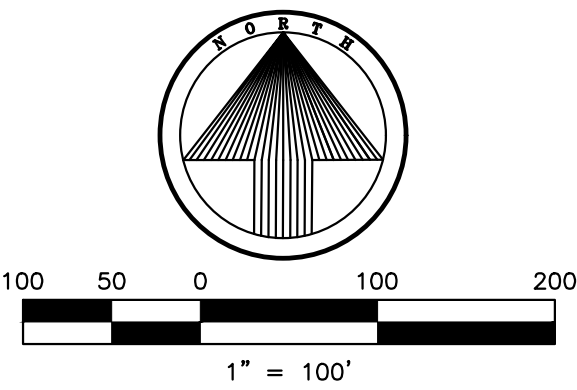
LANDSCAPE BUFFER TREE REQUIREMENT			
STANDARD	STREET FRONTAGE (LINEAR FEET)	REQUIRED	PROVIDED
1 PER 30 L.F.	FM 1171 = 3695 L.F. EXCLUDING FLOODPLAIN	123 TREES	48 CREDITS - 8 LARGE EXIST. POST OAKS IN BUFFER 75 ADDITIONAL TREES PROVIDED
1 PER 30 L.F.	RED ROCK LANE = 2473 L.F.	82 TREES	6 CREDITS FOR 1-25" EXIST. POST OAK IN BUFFER 76 ADDITIONAL TREES PROVIDED
1 PER 30 L.F.	HAWK ROAD = 1802 L.F.	60 TREES	6 CREDITS FOR 1-25" EXIST. POST OAK IN BUFFER 54 ADDITIONAL TREES PROVIDED
1 PER 30 L.F.	McMAKIN ROAD = 571 L.F.	19 TREES	19 TREES PROVIDED
1 PER 30 L.F.	SHILOH ROAD = 2839 L.F.	94 TREES	94 TREES PROVIDED
1 PER 30 L.F.	INTERIOR COLLECTOR = 5290 L.F.	176 TREES	176 TREES PROVIDED

NOTE: BUFFER AND STREET TREES ARE NOT REQUIRED ON DEDICATED PARKLAND. BUFFER TREES SHOWN ARE ILLUSTRATIVE OF REQUIRED TREES BASED ON LENGTH OF FRONTAGE. FINAL PLANTINGS OF REQUIRED TREES WILL BE DETERMINED BY THE FINAL DESIGNATION OF DEDICATED PARKLAND.

NOTE: LANDSCAPE AREAS SHOWN WITHIN LIMITS OF FLOODPLAIN ARE TO REMAIN NATURALIZED.

MAINTENANCE NOTE:

THE OWNER, TENANT AND THEIR AGENT, IF ANY, SHALL BE JOINTLY AND SEVERALLY RESPONSIBLE FOR THE MAINTENANCE OF ALL LANDSCAPING AND IRRIGATION. ALL REQUIRED LANDSCAPING SHALL BE MAINTAINED IN A NEAT AND ORDERLY MANNER AT ALL TIMES. THIS SHALL INCLUDE MOWING, EDGING, PRUNING, FERTILIZING, WATERING, WEEDING AND OTHER SUCH ACTIVITIES COMMON THE THE MAINTENANCE OF LANDSCAPING. LANDSCAPED AREAS SHALL BE KEPT FREE OF TRASH, LITTER, WEEDS AND OTHER SUCH MATERIAL OR PLANTS NOT A PART OF THE LANDSCAPING. ALL PLANT MATERIALS SHALL BE MAINTAINED IN A HEALTHY AND GROWING CONDITION AS IS APPROPRIATE FOR THE SEASON OF THE YEAR. ALL IRRIGATION HEADS WHICH ARE BROKEN AND FLOW WATER SHALL BE REPLACED OR REPAIRED IMMEDIATELY TO PREVENT THE WASTE OF WATER.



TOWN COMMENTS	
No.6	02-03-22 REVISED SITE PLAN
No.5	02-01-22 REVISED SITE PLAN
No.4	01-21-21 REVISED SITE PLAN
No.3	11-23-21 REVISED SITE PLAN
No.2	11-7-21 PER CITY COMMENTS
No.1	9-2-21 Per Revised Site Plan
No.	Date
Revisions	
App.	

PLAN LEGEND

- DENOTES LANDSCAPED AREA
- DENOTES LANDSCAPED AREA WITHIN FLOOD PLAIN TO REMAIN NATURALIZED
- DENOTES TEXAS ASH BUFFER TREES
- DENOTES RED OAK BUFFER TREES
- DENOTES BALD CYPRESS BUFFER TREES
- DENOTES LIVE OAK BUFFER TREES
- DENOTES SPECIMEN POST OAK TO PRESERVE

ST. CLAIR DESIGN GROUP, INC

Landscape Architecture

P. O. Box 12519
Dallas, Texas 75225
T. 214-454-9834

DATE SEALED: 03-11-22

DESIGN BY: JBS
DRAWN BY: JBS
CHECKED BY: SCOD
DATE: JULY 21, 2021

CUMMINGS RANCH
Residential Subdivision
349.357 acres
in the
T. J. Payne Survey, Abstract No. 1056
T. & P. Railroad Co. Survey, Abstract
No. 1618, John West Survey, Abstract
No. 1414, John West Survey, Abstract
No. 1415, H. Campbell, Abstract No.
1462, and the B.B.B. & C.R.R. Survey
Abstract No. 152
in the
Town of Flower Mound
Denton County, Texas

Scale: 1"=100'-0"
Designed by: JBS
Drawn by: JBS
Checked by: SCOD
Date: JULY 21, 2021
Project No. 035-033

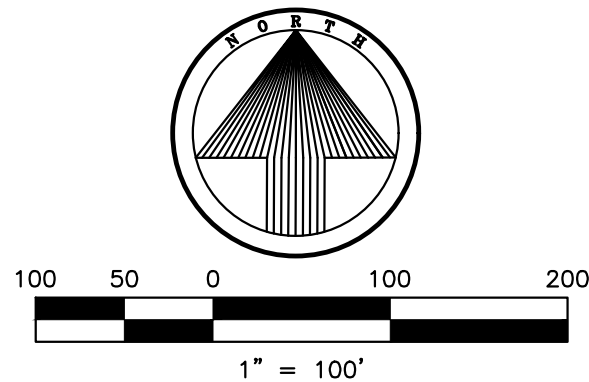
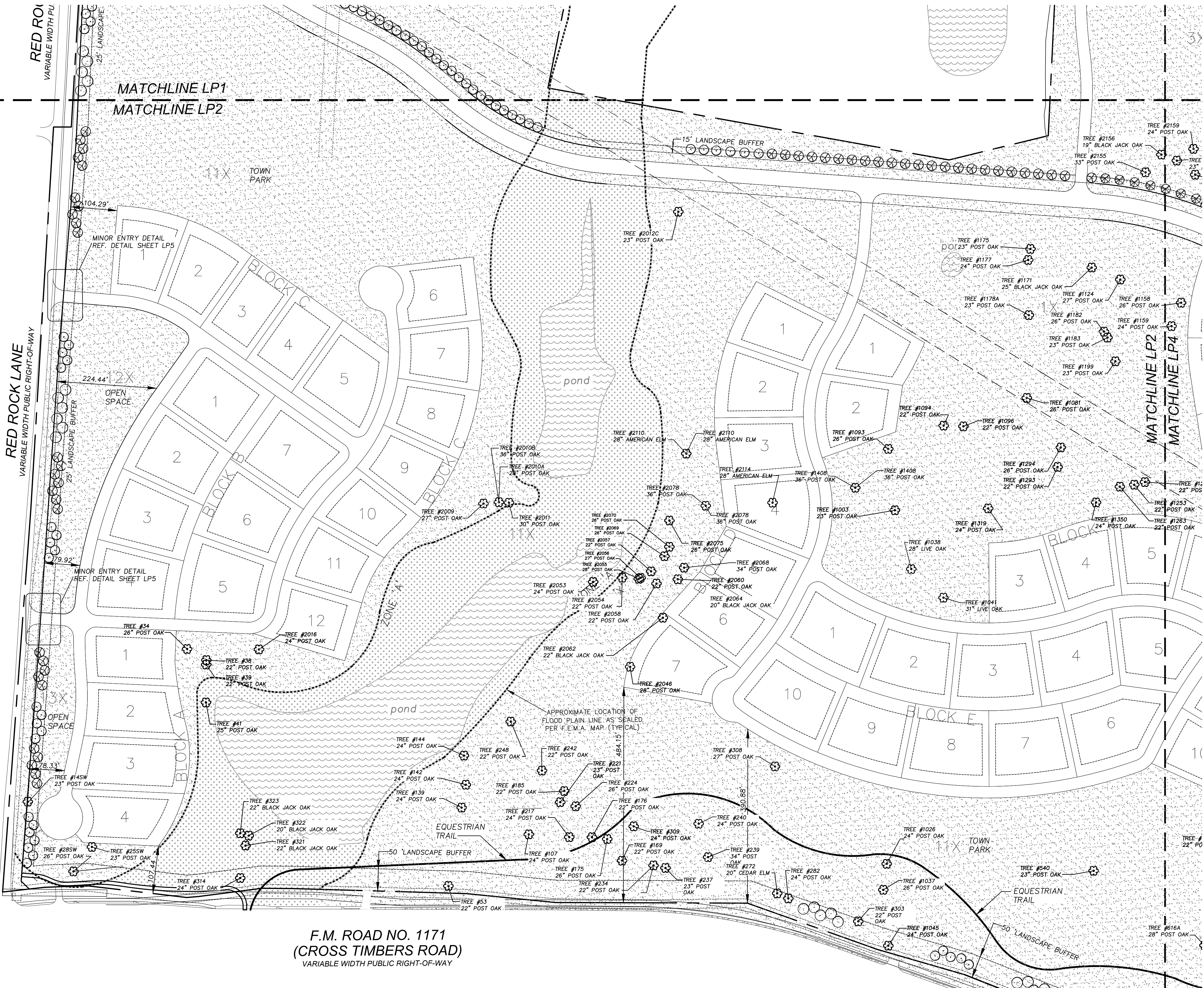
SHEET

LP-1

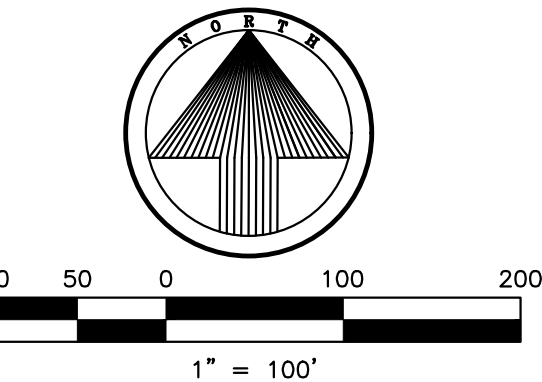
CUMMINGS RANCH
Residential Subdivision
FLOWER MOUND, TEXAS

CONCEPTUAL
LANDSCAPE PLAN

Ridinger Associates, Inc.
Civil Engineers - Planners
Firm No. 1969
550 S. Edwards Lane, Suite 101
Lewisville, Texas 75067
Tel. No. (972) 353-8000
Fax No. (972) 353-8011



No.	Date	Revisions	App.
No.8	03-11-22	TOWN COMMENTS	
No.7	02-11-22	REVISED SITE PLAN	
No.6	02-03-22	REVISED SITE PLAN	
No.5	02-01-22	REVISED SITE PLAN	
No.4	01-21-22	REVISED SITE PLAN	
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No.2	11-7-21	PER CITY COMMENTS	
No.1	9-2-21	Per Revised Site Plan	



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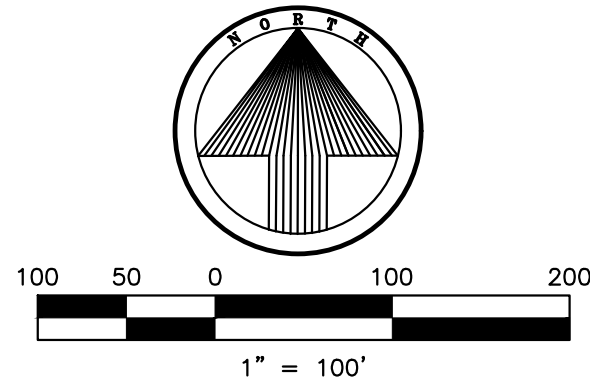
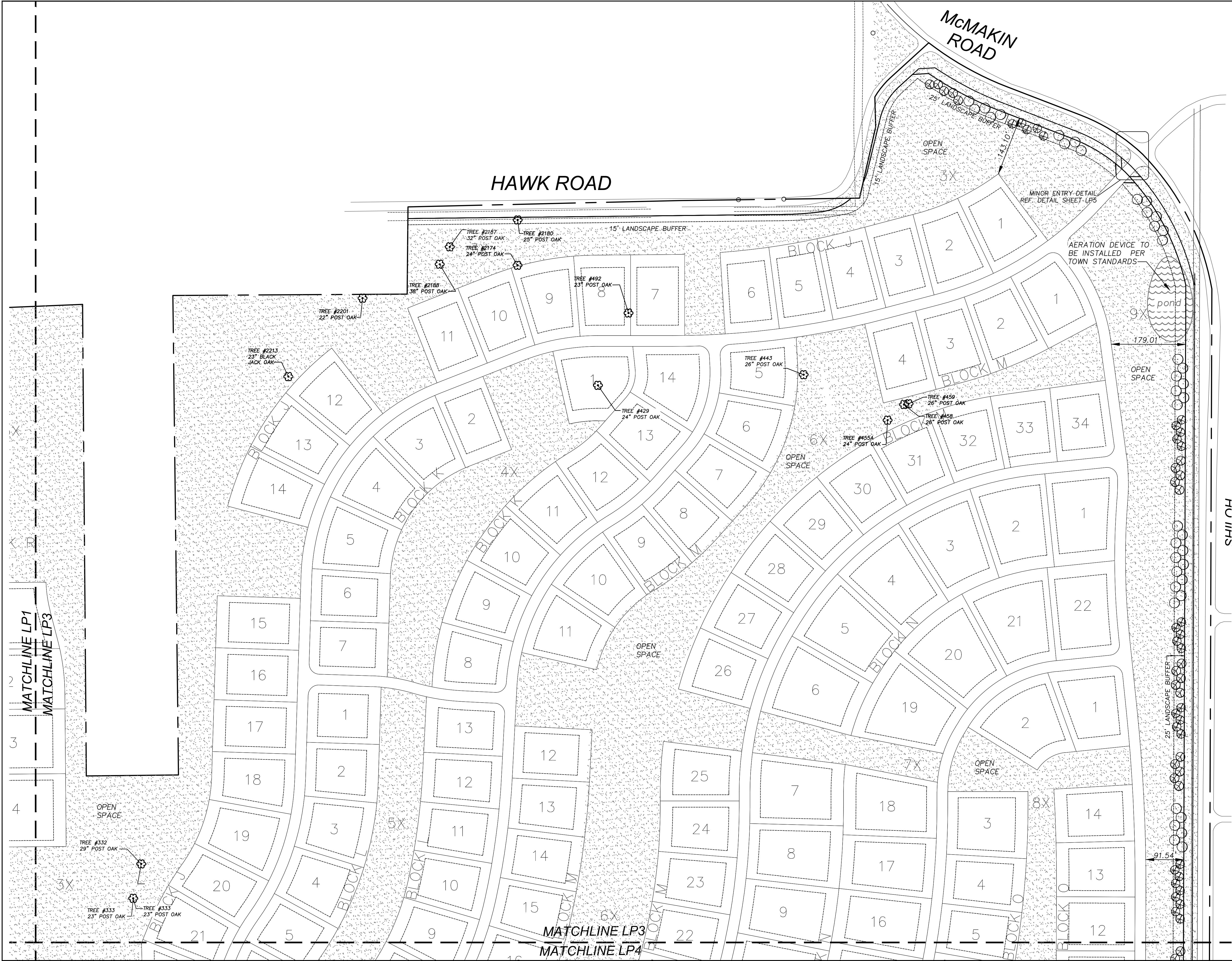
Ridinger
Associates, Inc.
Civil Engineers - Planners

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Tel. No. (972) 353-8000
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CUMMINGS RANCH
Residential Subdivision
FLOWER MOUND, TEXAS

CONCEPTUAL
LANDSCAPE PLAN

Scale: 1"=100'-0"
Designed by: JBS
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Project No. 035-033



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 550 S. Edwards Lane, Suite 101
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CUMMINGS RANCH
 Residential Subdivision
 FLOWER MOUND, TEXAS

CONCEPTUAL
 LANDSCAPE PLAN

ST. CLAIR DESIGN GROUP, INC.

Landscape Architecture

P. O. Box 12519
 Dallas, Texas 75225
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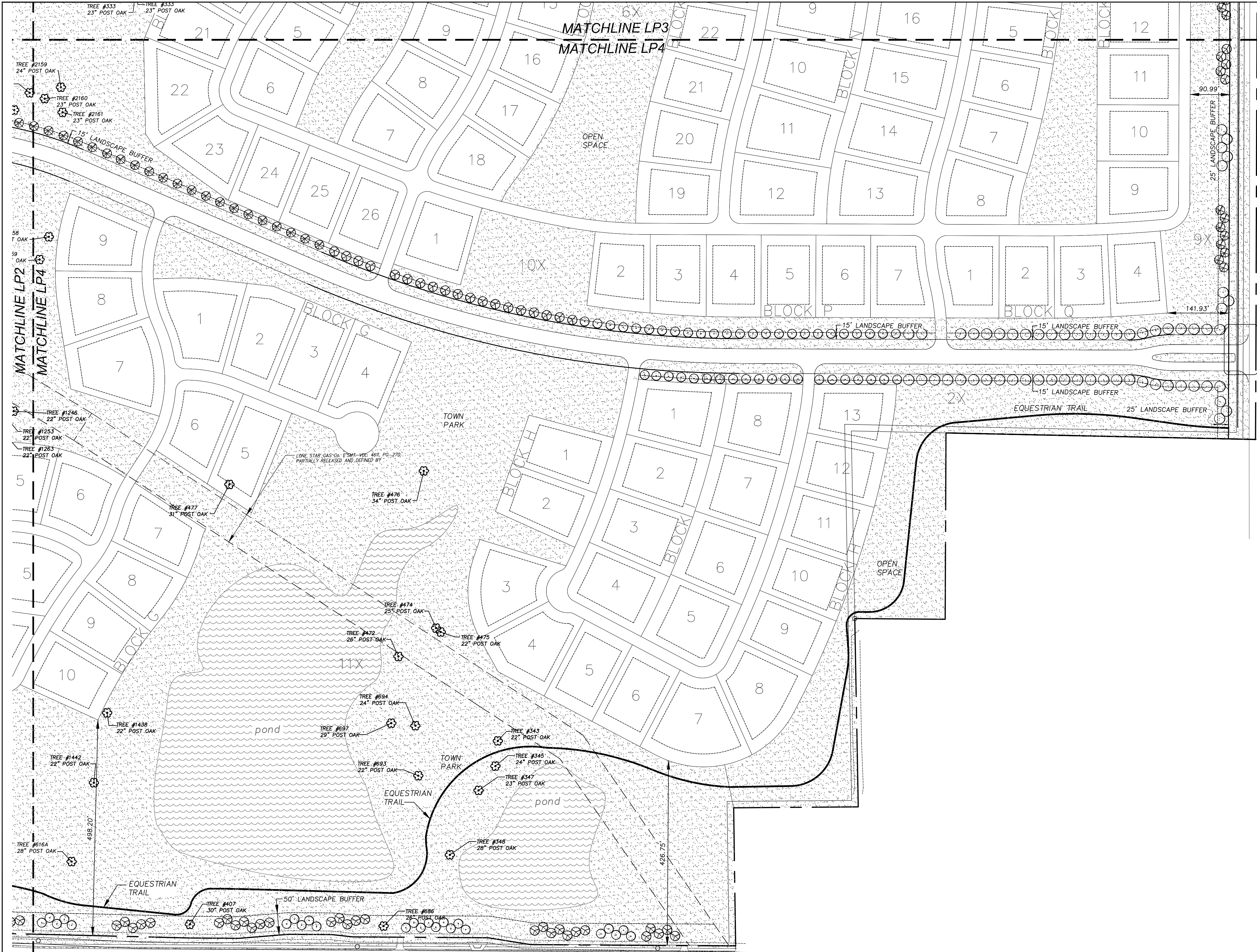
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CUMMINGS RANCH
 Residential Subdivision
 349.357 acres
 in the
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 in the
 Town of Flower Mound
 Denton County, Texas

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Project No. 035-033

SHEET
 LP-3



SHILOH ROAD

90.99'

25' LANDSCAPE BUFFER

141.93'

MAJOR ENTRY DETAIL
REF. DETAIL SHEET LP5

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Ridinger Associates, Inc.
Civil Engineers - Planners

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550 S. Edwards Lane, Suite 101
Lewisville, Texas 75067

Tel. No. (972) 353-8000
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ST. CLAIR DESIGN GROUP, INC.

Landscape Architecture

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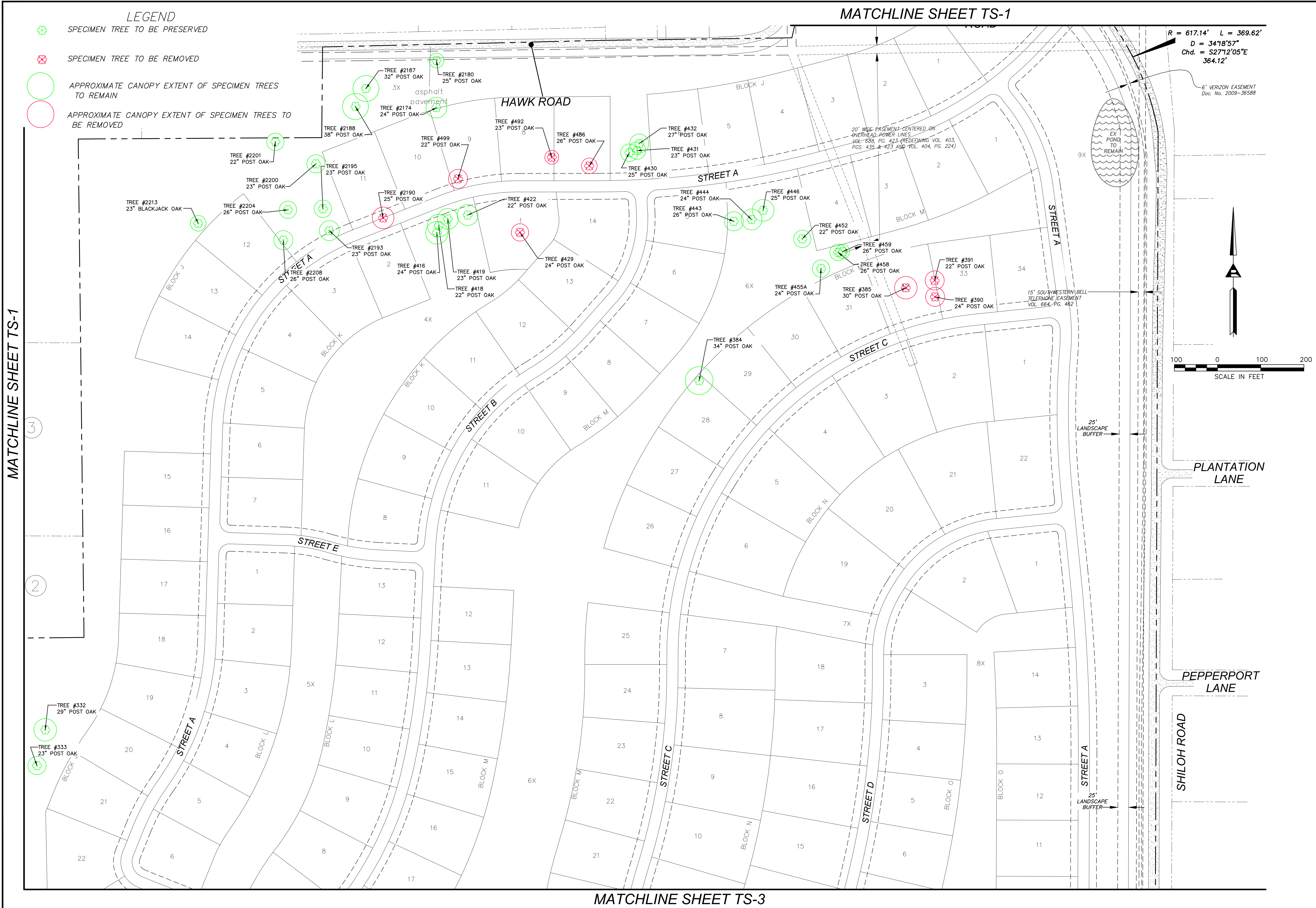
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Residential Subdivision
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Town of Flower Mound
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CUMMINGS RANCH
Residential Subdivision
FLOWER MOUND, TEXAS

CONCEPTUAL
LANDSCAPE PLAN

Scale: 1"=100'-0"
Designed by: JBS
Drawn by: JBS
Checked by: SCOG
Date: JULY 21, 2021
Project No. 035-033



Ridinger Associates, Inc.
Civil Engineers - Planners

Firm No. 1969
350 S. Edmonds
Law Suite 101
Lawrence, Texas 75067

03/11/22

CUMMINGS RANCH
RESIDENTIAL SUBDIVISION
FLOWER MOUND, TEXAS

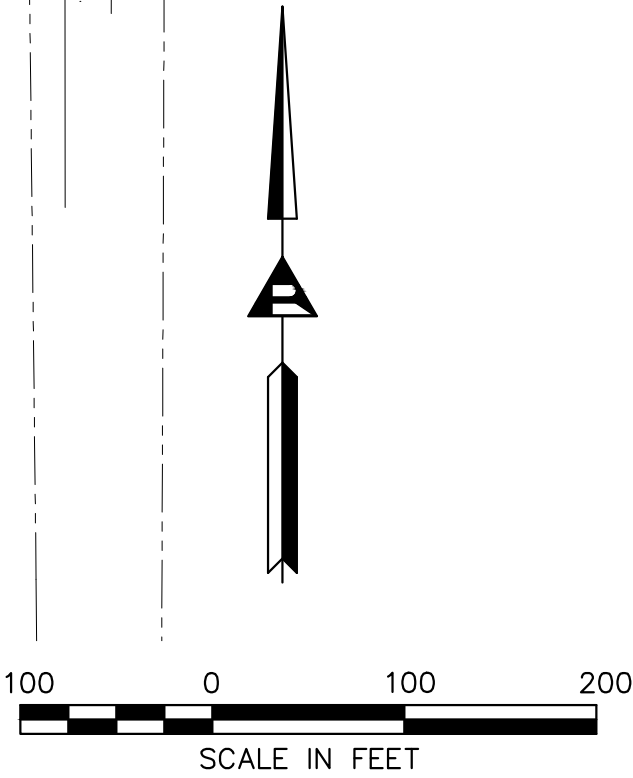
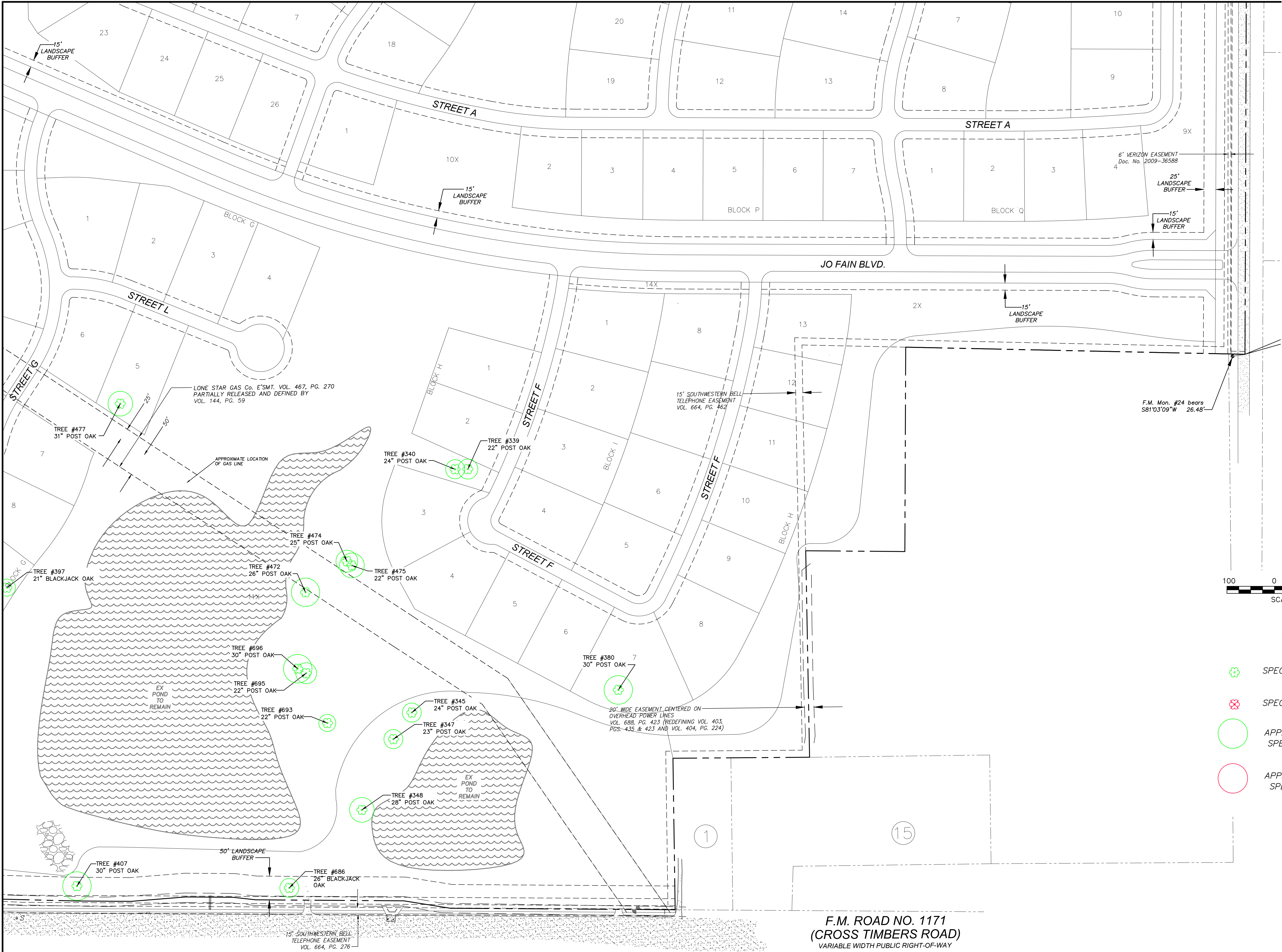
TREE SURVEY

Scale: 1" = 100'
Designed by: LDR
Drawn by: JWH
Checked by: JPK
Date: MARCH 11, 2022
Project No. 180-001

SHEET
TS-2

MATCHLINE SHEET TS-2

MATCHLINE SHEET TS-4



LEGEND

- SPECIMEN TREE TO BE PRESERVED
- SPECIMEN TREE TO BE REMOVED
- APPROXIMATE CANOPY EXTENT OF SPECIMEN TREES TO REMAIN
- APPROXIMATE CANOPY EXTENT OF SPECIMEN TREES TO BE REMOVED

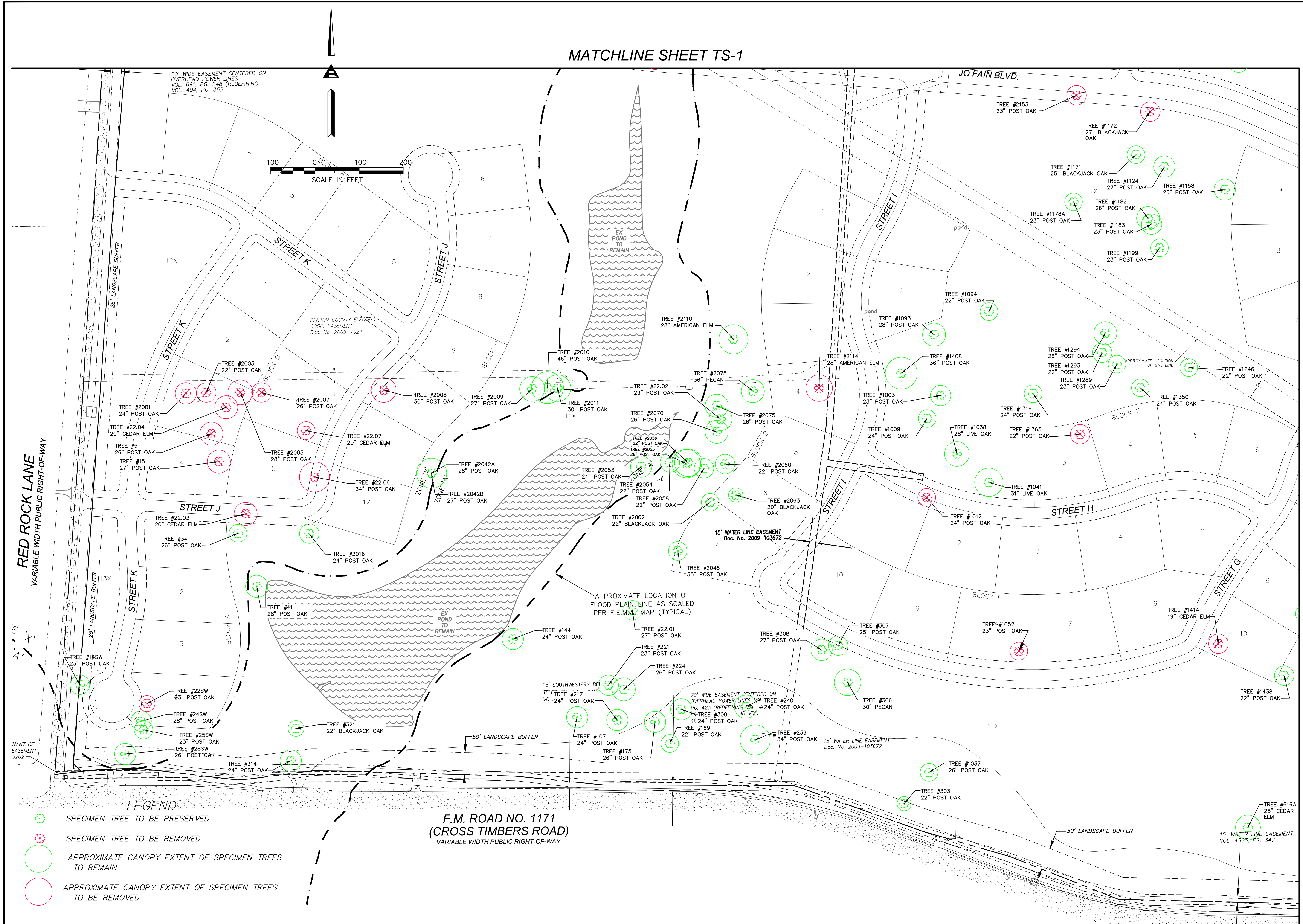
Ridinger Associates, Inc.
 Civil Engineers - Planners
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 Lewisville, Texas 75067
 Tel. No. (972) 353-8000
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MATTHEW CLEMENS
 asca
 AMERICAN SOCIETY OF CONSULTING ARCHITECTS
 03/11/22

CUMMINGS RANCH
 RESIDENTIAL SUBDIVISION
 FLOWER MOUND, TEXAS

TREE SURVEY

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03/11/22

CUMMINGS RANCH
RESIDENTIAL SUBDIVISION
FLOWER MOUND, TEXAS

TREE SURVEY

Scale: 1" = 100'
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Date: MARCH 11, 2022
Project No. 180-001

TAG NO.	CALIPER (IN.)	COMMON NAME / BOTANICAL NAME	PROTECTED / SPECIMEN	LOCATION	STATUS	CONDITION	COMMENTS	AVG RADIUS	CANOPY SQFT
14SW	23	POST OAK / QUERCUS STELLATA	SPECIMEN	OUTSIDE BUILDABLE AREA	PRESERVE	GOOD		22	1520
22SW	23	POST OAK / QUERCUS STELLATA	SPECIMEN	BUILDABLE AREA	REMOVE	GOOD		18	1017
24SW	28	POST OAK / QUERCUS STELLATA	SPECIMEN	BUILDABLE AREA	PRESERVE	GOOD		23	1661
25SW	23	POST OAK / QUERCUS STELLATA	SPECIMEN	BUILDABLE AREA	PRESERVE	GOOD		21	1385
28SW	26	POST OAK / QUERCUS STELLATA	SPECIMEN	OUTSIDE BUILDABLE AREA	PRESERVE	GOOD		24	1809
5	26	POST OAK / QUERCUS STELLATA	SPECIMEN	BUILDABLE AREA	REMOVE	GOOD		26	2123
15	27	POST OAK / QUERCUS STELLATA	SPECIMEN	BUILDABLE AREA	REMOVE	GOOD		27	2289
22.01	27	POST OAK / QUERCUS STELLATA	SPECIMEN	BUILDABLE AREA	PRESERVE	GOOD		22	1520
22.02	29	POST OAK / QUERCUS STELLATA	SPECIMEN	BUILDABLE AREA	PRESERVE	GOOD		29	2641
22.03	20	CEDAR ELM / ULMUS CRASSIFOLIA	SPECIMEN	RIGHT OF WAY	REMOVE	GOOD		16	804
22.04	20	CEDAR ELM / ULMUS CRASSIFOLIA	SPECIMEN	BUILDABLE AREA	REMOVE	GOOD		16	804
22.06	34	POST OAK / QUERCUS STELLATA	SPECIMEN	BUILDABLE AREA	REMOVE	GOOD		34	3630
22.07	20	CEDAR ELM / ULMUS CRASSIFOLIA	SPECIMEN	BUILDABLE AREA	REMOVE	GOOD		20	1256
34	26	POST OAK / QUERCUS STELLATA	SPECIMEN	BUILDABLE AREA	PRESERVE	GOOD		20	1256
41	28	POST OAK / QUERCUS STELLATA	SPECIMEN	BUILDABLE AREA	PRESERVE	GOOD		25	1963
107	24	POST OAK / QUERCUS STELLATA	SPECIMEN	BUILDABLE AREA	PRESERVE	FAIR	VISIBLE DECAY	24	1809
144	24	POST OAK / QUERCUS STELLATA	SPECIMEN	BUILDABLE AREA	PRESERVE	GOOD		24	1809
169	22	POST OAK / QUERCUS STELLATA	SPECIMEN	BUILDABLE AREA	PRESERVE	POOR		20	1256
175	26	POST OAK / QUERCUS STELLATA	SPECIMEN	BUILDABLE AREA	PRESERVE	GOOD		24	1809
217	24	POST OAK / QUERCUS STELLATA	SPECIMEN	BUILDABLE AREA	PRESERVE	GOOD		24	1809
221	23	POST OAK / QUERCUS STELLATA	SPECIMEN	BUILDABLE AREA	PRESERVE	GOOD		20	1256
224	26	POST OAK / QUERCUS STELLATA	SPECIMEN	BUILDABLE AREA	PRESERVE	GOOD		26	2123
239	34	POST OAK / QUERCUS STELLATA	SPECIMEN	BUILDABLE AREA	PRESERVE	GOOD		34	3630
240	24	POST OAK / QUERCUS STELLATA	SPECIMEN	BUILDABLE AREA	PRESERVE	FAIR		26	2123
303	22	POST OAK / QUERCUS STELLATA	SPECIMEN	OUTSIDE BUILDABLE AREA	PRESERVE	GOOD		16	804
306	30	PECAN / CARYA ILLINOINENSIS	SPECIMEN	BUILDABLE AREA	PRESERVE	GOOD		30	2826
307	25	POST OAK / QUERCUS STELLATA	SPECIMEN	BUILDABLE AREA	PRESERVE	GOOD		22	1520
308	27	POST OAK / QUERCUS STELLATA	SPECIMEN	BUILDABLE AREA	PRESERVE	GOOD		24	1809
309	24	POST OAK / QUERCUS STELLATA	SPECIMEN	BUILDABLE AREA	PRESERVE	GOOD		24	1809
314	24	POST OAK / QUERCUS STELLATA	SPECIMEN	OUTSIDE BUILDABLE AREA	PRESERVE	GOOD		24	1809
321	22	BLACKJACK OAK / QUERCUS MARILANDICA	SPECIMEN	BUILDABLE AREA	PRESERVE	GOOD		18	1017
329	39	POST OAK / QUERCUS STELLATA	SPECIMEN	BUILDABLE AREA	PRESERVE	GOOD		30	2826
330	34	POST OAK / QUERCUS STELLATA	SPECIMEN	BUILDABLE AREA	PRESERVE	FAIR	POISON IVY VINES	33	3419
332	29	POST OAK / QUERCUS STELLATA	SPECIMEN	BUILDABLE AREA	PRESERVE	GOOD		26	2123
333	23	POST OAK / QUERCUS STELLATA	SPECIMEN	BUILDABLE AREA	PRESERVE	GOOD		21	1385
339	22	POST OAK / QUERCUS STELLATA	SPECIMEN	BUILDABLE AREA	PRESERVE	GOOD		21	1385
340	24	POST OAK / QUERCUS STELLATA	SPECIMEN	BUILDABLE AREA	PRESERVE	GOOD		20	1256
345	24	POST OAK / QUERCUS STELLATA	SPECIMEN	BUILDABLE AREA	PRESERVE	GOOD		20	1256
347	23	POST OAK / QUERCUS STELLATA	SPECIMEN	BUILDABLE AREA	PRESERVE	GOOD		20	1256
348	28	POST OAK / QUERCUS STELLATA	SPECIMEN	BUILDABLE AREA	PRESERVE	GOOD	IN CULVERT	26	2123
380	30	POST OAK / QUERCUS STELLATA	SPECIMEN	BUILDABLE AREA	PRESERVE	GOOD		30	2826
384	34	POST OAK / QUERCUS STELLATA	SPECIMEN	BUILDABLE AREA	PRESERVE	GOOD		32	3215
385	30	POST OAK / QUERCUS STELLATA	SPECIMEN	BUILDABLE AREA	REMOVE	GOOD		26	2123
390	24	POST OAK / QUERCUS STELLATA	SPECIMEN	BUILDABLE AREA	REMOVE	GOOD		20	1256
391	22	POST OAK / QUERCUS STELLATA	SPECIMEN	BUILDABLE AREA	REMOVE	GOOD		22	1520
397	21	BLACKJACK OAK / QUERCUS MARILANDICA	SPECIMEN	BUILDABLE AREA	PRESERVE	GOOD		18	1017
407	30	POST OAK / QUERCUS STELLATA	SPECIMEN	OUTSIDE BUILDABLE AREA	PRESERVE	GOOD		30	2826
416	24	POST OAK / QUERCUS STELLATA	SPECIMEN	BUILDABLE AREA	PRESERVE	GOOD		26	2123
418	22	POST OAK / QUERCUS STELLATA	SPECIMEN	BUILDABLE AREA	PRESERVE	GOOD		26	2123
419	23	POST OAK / QUERCUS STELLATA	SPECIMEN	BUILDABLE AREA	PRESERVE	GOOD		24	1809
422	22	POST OAK / QUERCUS STELLATA	SPECIMEN	BUILDABLE AREA	PRESERVE	GOOD		24	1809
429	24	POST OAK / QUERCUS STELLATA	SPECIMEN	BUILDABLE AREA	REMOVE	GOOD		20	1256
430	25	POST OAK / QUERCUS STELLATA	SPECIMEN	BUILDABLE AREA	PRESERVE	GOOD		20	1256
431	23	POST OAK / QUERCUS STELLATA	SPECIMEN	BUILDABLE AREA	PRESERVE	POOR	DAMAGE	20	1256
432	27	POST OAK / QUERCUS STELLATA	SPECIMEN	BUILDABLE AREA	PRESERVE	GOOD		22	1520
443	26	POST OAK / QUERCUS STELLATA	SPECIMEN	BUILDABLE AREA	PRESERVE	GOOD		22	1520
444	24	POST OAK / QUERCUS STELLATA	SPECIMEN	BUILDABLE AREA	PRESERVE	GOOD		24	1809
446	25	POST OAK / QUERCUS STELLATA	SPECIMEN	BUILDABLE AREA	PRESERVE	GOOD		25	1963
452	22	POST OAK / QUERCUS STELLATA	SPECIMEN	BUILDABLE AREA	PRESERVE	GOOD		20	1256
455A	24	POST OAK / QUERCUS STELLATA	SPECIMEN	BUILDABLE AREA	PRESERVE	GOOD		20	1256
458	26	POST OAK / QUERCUS STELLATA	SPECIMEN	BUILDABLE AREA	PRESERVE	FAIR	CAVITY	19	1134
459	26	POST OAK / QUERCUS STELLATA	SPECIMEN	BUILDABLE AREA	PRESERVE	FAIR	IRREGULAR CANOPY	16 ONE SIDE	3
472	26	POST OAK / QUERCUS STELLATA	SPECIMEN	BUILDABLE AREA	PRESERVE	GOOD		23	1661
474	25	POST OAK / QUERCUS STELLATA	SPECIMEN	BUILDABLE AREA	PRESERVE	GOOD		23	1661
475	22	POST OAK / QUERCUS STELLATA	SPECIMEN	BUILDABLE AREA	PRESERVE	GOOD		26	2123
477	31	POST OAK / QUERCUS STELLATA	SPECIMEN	BUILDABLE AREA	PRESERVE	GOOD		26	2123
486	26	POST OAK / QUERCUS STELLATA	SPECIMEN	BUILDABLE AREA	REMOVE	GOOD		18	1017
492	23	POST OAK / QUERCUS STELLATA	SPECIMEN	BUILDABLE AREA	REMOVE	POOR	ROT	16	804
499	22	POST OAK / QUERCUS STELLATA	SPECIMEN	BUILDABLE AREA	REMOVE	POOR	ROT AT BASE	22	1520
616A	28	CEDAR ELM / ULMUS CRASSIFOLIA	SPECIMEN	BUILDABLE AREA	PRESERVE	FAIR	SAPSUCKER DAMAGE	28	2462
686	26	BLACKJACK OAK / QUERCUS MARILANDICA	SPECIMEN	OUTSIDE BUILDABLE AREA	PRESERVE	GOOD		20	1256
693	22	POST OAK / QUERCUS STELLATA	SPECIMEN	BUILDABLE AREA	PRESERVE	GOOD		18	1017
695	22	POST OAK / QUERCUS STELLATA	SPECIMEN	BUILDABLE AREA	PRESERVE	GOOD		22	1520

TAG NO.	CALIPER (IN.)	COMMON NAME / BOTANICAL NAME	PROTECTED / SPECIMEN	LOCATION	STATUS	CONDITION	COMMENTS	AVG RADIUS	CANOPY SQFT
695	22	POST OAK / QUERCUS STELLATA	SPECIMEN	BUILDABLE AREA	PRESERVE	GOOD		22	1520
696	30	POST OAK / QUERCUS STELLATA	SPECIMEN	BUILDABLE AREA	PRESERVE	GOOD		30	2826
1003	23	POST OAK / QUERCUS STELLATA	SPECIMEN	BUILDABLE AREA	PRESERVE	GOOD		23	1661
1009	24	POST OAK / QUERCUS STELLATA	SPECIMEN	BUILDABLE AREA	PRESERVE	GOOD		20	1256
1012	24	POST OAK / QUERCUS STELLATA	SPECIMEN	RIGHT OF WAY	REMOVE	GOOD		20	1256
1037	26	POST OAK / QUERCUS STELLATA	SPECIMEN	BUILDABLE AREA	PRESERVE	GOOD		20	1256
1038	28	LIVE OAK / QUERCUS VIRGIANA	SPECIMEN	BUILDABLE AREA	PRESERVE	GOOD		28	2462
1041	31	LIVE OAK / QUERCUS VIRGIANA	SPECIMEN	BUILDABLE AREA	PRESERVE	GOOD		32	3215
1052	23	POST OAK / QUERCUS STELLATA	SPECIMEN	BUILDABLE AREA	REMOVE	GOOD		20	1256
1093	28	POST OAK / QUERCUS STELLATA	SPECIMEN	BUILDABLE AREA	PRESERVE	GOOD		26	2123
1094	22	POST OAK / QUERCUS STELLATA	SPECIMEN	BUILDABLE AREA	PRESERVE	GOOD		20	1256
1124	27	POST OAK / QUERCUS STELLATA	SPECIMEN	BUILDABLE AREA	PRESERVE	GOOD		24	1809
1158	26	POST OAK / QUERCUS STELLATA	SPECIMEN	BUILDABLE AREA	PRESERVE	GOOD		24	1809
1171	25	BLACKJACK OAK / QUERCUS MARILANDICA	SPECIMEN	BUILDABLE AREA	PRESERVE	GOOD		20	1256
1172	27	BLACKJACK OAK / QUERCUS MARILANDICA	SPECIMEN	OUTSIDE BUILDABLE AREA	REMOVE	GOOD		27	2289
1178A	23	POST OAK / QUERCUS STELLATA	SPECIMEN	BUILDABLE AREA	PRESERVE	GOOD		20	1256
1182	26	POST OAK / QUERCUS STELLATA	SPECIMEN	BUILDABLE AREA	PRESERVE	GOOD		26	2123
1183	23	POST OAK / QUERCUS STELLATA	SPECIMEN	BUILDABLE AREA	PRESERVE	GOOD		23	1661
1199	23	POST OAK / QUERCUS STELLATA	SPECIMEN	BUILDABLE AREA	PRESERVE	GOOD		20	1256
1246	22	POST OAK / QUERCUS STELLATA	SPECIMEN	BUILDABLE AREA	PRESERVE	GOOD		20	1256
1289	23	POST OAK / QUERCUS STELLATA	SPECIMEN	BUILDABLE AREA	PRESERVE	GOOD		20	1256
1293	22	POST OAK / QUERCUS STELLATA	SPECIMEN	BUILDABLE AREA	PRESERVE	GOOD		22	1520
1294	26	POST OAK / QUERCUS STELLATA	SPECIMEN	BUILDABLE AREA	PRESERVE	GOOD		26	2123
1319	24	POST OAK / QUERCUS STELLATA	SPECIMEN	BUILDABLE AREA	PRESERVE	GOOD		20	1256
1350	24	POST OAK / QUERCUS STELLATA	SPECIMEN	BUILDABLE AREA	PRESERVE	GOOD		20	1256
1365	22	POST OAK / QUERCUS STELLATA	SPECIMEN	BUILDABLE AREA	REMOVE	GOOD		22	1520
1408	36	POST OAK / QUERCUS STELLATA	SPECIMEN	BUILDABLE AREA	PRESERVE	GOOD		36	4069
1414	19	CEDAR ELM / ULMUS CRASSIFOLIA	SPECIMEN	BUILDABLE AREA	REMOVE	GOOD		22	1520
1438	22	POST OAK / QUERCUS STELLATA	SPECIMEN	BUILDABLE AREA	PRESERVE	GOOD		22	1520
2001	24	POST OAK / QUERCUS STELLATA	SPECIMEN	BUILDABLE AREA	REMOVE	GOOD		24	1809
2003	22	POST OAK / QUERCUS STELLATA	SPECIMEN	BUILDABLE AREA	REMOVE	GOOD		22	1520
2005	28	POST OAK / QUERCUS STELLATA	SPECIMEN	BUILDABLE AREA	REMOVE	GOOD		28	2462
2007	26	POST OAK / QUERCUS STELLATA	SPECIMEN	BUILDABLE AREA	REMOVE	GOOD		22	1520
2008	30	POST OAK / QUERCUS STELLATA	SPECIMEN	BUILDABLE AREA	REMOVE	GOOD		28	2462
2009	27	POST OAK / QUERCUS STELLATA	SPECIMEN	BUILDABLE AREA	PRESERVE	GOOD		28	2462
2010	46	POST OAK / QUERCUS STELLATA	SPECIMEN	BUILDABLE AREA	PRESERVE	GOOD		46	6644
2011	30	POST OAK / QUERCUS STELLATA	SPECIMEN	BUILDABLE AREA	PRESERVE	GOOD		30	2826
2016	24	POST OAK / QUERCUS STELLATA	SPECIMEN	BUILDABLE AREA	PRESERVE	GOOD		22	1520
2042A	28	POST OAK / QUERCUS STELLATA	SPECIMEN	BUILDABLE AREA	PRESERVE	GOOD		34	3630
2042B	27	POST OAK / QUERCUS STELLATA	SPECIMEN	BUILDABLE AREA	PRESERVE	GOOD		27	2289
2046	35	POST OAK / QUERCUS STELLATA	SPECIMEN	BUILDABLE AREA	PRESERVE	GOOD		21	1385
2053	24	POST OAK / QUERCUS STELLATA	SPECIMEN	BUILDABLE AREA	PRESERVE	GOOD		24	1809
2054	22	POST OAK / QUERCUS STELLATA	SPECIMEN	BUILDABLE AREA	PRESERVE	GOOD		22	1520
2055	28	POST OAK / QUERCUS STELLATA	SPECIMEN	BUILDABLE AREA	PRESERVE	GOOD		26	2123
2056	22	POST OAK / QUERCUS STELLATA	SPECIMEN	BUILDABLE AREA	PRESERVE	GOOD		27	2289
2058	22	POST OAK / QUERCUS STELLATA	SPECIMEN	BUILDABLE AREA	PRESERVE	GOOD		22	1520
2060	22	POST OAK / QUERCUS STELLATA	SPECIMEN	BUILDABLE AREA	PRESERVE	GOOD		22	1520
2062	22	BLACKJACK OAK / QUERCUS MARILANDICA	SPECIMEN	BUILDABLE AREA	PRESERVE	GOOD		20	1256
2063	20	BLACKJACK OAK / QUERCUS MARILANDICA	SPECIMEN	BUILDABLE AREA	PRESERVE	GOOD		16	804
2070	26	POST OAK / QUERCUS STELLATA	SPECIMEN	BUILDABLE AREA	PRESERVE	GOOD		26	2123
2075	26	POST OAK / QUERCUS STELLATA	SPECIMEN	BUILDABLE AREA	PRESERVE	GOOD		26	2123
2078	36	PECAN / CARYA ILLINOINENSIS	SPECIMEN	BUILDABLE AREA	PRESERVE	GOOD		26	2123
2110	28	AMERICAN ELM / ULMUS AMERICANA	SPECIMEN	BUILDABLE AREA	PRESERVE	GOOD		33	3419
2114	28	AMERICAN ELM / ULMUS AMERICANA	SPECIMEN	BUILDABLE AREA	REMOVE	GOOD		30	2826
2127	28	POST OAK / QUERCUS STELLATA	SPECIMEN	RIGHT OF WAY	REMOVE	POOR	POISON IVY	18	1017
2153	23	POST OAK / QUERCUS STELLATA	SPECIMEN	RIGHT OF WAY	REMOVE	GOOD		22	1520
2155	33	POST OAK / QUERCUS STELLATA	SPECIMEN	BUILDABLE AREA	PRESERVE	FAIR	DAMAGE-CAVITY	18	1017
2156	19	BLACKJACK OAK / QUERCUS MARILANDICA	SPECIMEN	BUILDABLE AREA	PRESERVE	GOOD		16	804
2159	24	POST OAK / QUERCUS STELLATA	SPECIMEN	BUILDABLE AREA	PRESERVE	GOOD		20	1256
2160	23	POST OAK / QUERCUS STELLATA	SPECIMEN	BUILDABLE AREA	PRESERVE	GOOD		22	1520
2161	23	POST OAK / QUERCUS STELLATA	SPECIMEN	BUILDABLE AREA	PRESERVE	GOOD		22	1520
2174	24	POST OAK / QUERCUS STELLATA	SPECIMEN	BUILDABLE AREA	PRESERVE	GOOD		24	1809
2180	25	POST OAK / QUERCUS STELLATA	SPECIMEN	BUILDABLE AREA	PRESERVE	POOR	DAMAGE	17	907
2187	32	POST OAK / QUERCUS STELLATA	SPECIMEN	BUILDABLE AREA	PRESERVE	GOOD		30	2826
2188	38	POST OAK / QUERCUS STELLATA	SPECIMEN	BUILDABLE AREA	PRESERVE	GOOD		30	2826
2190	25	POST OAK / QUERCUS STELLATA	SPECIMEN	RIGHT OF WAY	REMOVE	GOOD		25	1963
2193	23	POST OAK / QUERCUS STELLATA	SPECIMEN	BUILDABLE AREA	PRESERVE	GOOD		23	1661
2195	23	POST OAK / QUERCUS STELLATA	SPECIMEN	BUILDABLE AREA	PRESERVE	GOOD		20	1256
2200	23	POST OAK / QUERCUS STELLATA	SPECIMEN	BUILDABLE AREA	PRESERVE	GOOD		22	1520
2201	22	POST OAK / QUERCUS STELLATA	SPECIMEN	BUILDABLE AREA	PRESERVE	GOOD		20	1256
2204	26	POST OAK / QUERCUS STELLATA	SPECIMEN	BUILDABLE AREA	PRESERVE	GOOD		20	1256
2208	26	POST OAK / QUERCUS STELLATA	SPECIMEN	BUILDABLE AREA	PRESERVE	GOOD		22	1520
2213	23	BLACKJACK OAK / QUERCUS MARILANDICA	SPECIMEN	BUILDABLE AREA	PRESERVE	GOOD		18	1017

DEVELOPMENT STANDARDS

Planned Development District - 190 (PD-190) Cummings Ranch

The development on the property comprising approximately 349.357 acres of land within the corporate limits of the Town of Flower Mound ("Town") and as described on Exhibit XX to this Zoning Ordinance adopting PD-190 (the Planned Development District (PD-190) or PD-190) shall be in accordance with the Town of Flower Mound *Master Plan* and the Land Development Regulations of the Town of Flower Mound, Texas, as amended, and shall be subject to the following conditions and requirements:

A. PERMITTED USES:

The following uses shall be the only uses permitted in the Planned Development District (PD-190).

1. Permitted Uses. The following uses shall be permitted in PD-190, subject to compliance with all applicable conditions and provisions of the Town's Land Development Regulations, as amended:
 - a. Dwelling, single-family detached;
 - b. Accessory use, general, subject to Section 98-972;
 - c. Garage Sale, subject to Section 98-982;
 - d. Home occupation, subject to Section 98-984;
 - e. Local utility line;
 - f. Model home;
 - g. Swimming pool, private; subject to Section 98-996; and
 - h. Park or playground, public.
2. Temporary Uses. Only the following temporary uses may be permitted in PD-190 subject to the approval of a temporary use permit in accordance with the procedures and standards of section 78-87 of the Code, "Temporary Use Permits:"
 - a. Asphalt/concrete batch plant, temporary, subject to section 98-974; and
 - b. Field office, temporary.

B. RESIDENTIAL DIMENSIONAL REGULATIONS

1. PD-190 Residential Lot Standards:
 - a. Minimum lot area per dwelling. The minimum lot area shall be 21,780 square feet, subject to section 98-1023;
 - b. Minimum lot width. The minimum lot width shall be 100 feet, subject to section 98-1024;

- c. Minimum front yard. The minimum front yard shall be 25 feet, subject to section 98-1026;
 - d. Minimum side yard. The minimum side yard shall be 15 feet, subject to section 98-1027;
 - e. Minimum rear yard. The minimum rear yard shall be 30 feet, subject to section 98-335;
 - f. Minimum floor area per unit. The minimum floor area per dwelling unit shall be 2,400 square feet, subject to section 98-1025;
 - g. Maximum lot coverage. The maximum lot coverage shall be 40% for all uses, subject to section, 98-1029; and
 - h. Maximum height. The maximum height of all buildings and structures shall be 3 stories or 35 feet for all uses, subject to section 98-1031.
2. The dimensional and area regulations shall not apply to common areas or lots owned by the homeowner's association for Cummings Ranch ("HOA"). Any common areas or lots owned by the HOA and any structure(s) thereon shall conform to all relevant provisions of the Town's Code of Ordinances and Land Development Regulations.

C. RESIDENTIAL LOT REQUIREMENTS

The following requirements shall apply to the residential lots within the development.

- 1. There shall be a maximum density of 218 dwelling units as shown on Exhibit "C."

D. SUPPLEMENTAL STANDARDS

- 1. The development of PD-190 is subject to the approved Environmental Protection Plan.
- 2. The development of PD-190 is subject to the approved Open Space Management Plan (OSMP).
- 3. The homeowner or home builder may choose to install an ornamental metal, tubular steel, wrought iron or split-rail fence on the residential lot that is adjacent to open space or may choose to leave their property unfenced. If a pool is installed, a fence must be constructed either by the homebuilder or homeowner, in accordance with Town requirements.
- 4. As a Cluster Development, PD-190 shall have a minimum of fifty percent (50%) of the gross land area (excluding right-of-way dedication required in the Town's Throughfare Master Plan) preserved as open space for the development as depicted in Exhibit "XX" below. Open Space shall be managed by a qualified nonprofit entity or organization that manages open

space, such as a land trust, HOA, or other qualified entity, pursuant to section 170(h) of the Internal Revenue Code, as amended, and as may be approved and accepted by the Town. The final OSMP shall conform with the following:

- a. Be in accordance with Ordinance No. 64-13; Section 5/Cross Timbers Conservation District Area Plan (CTCDD);
 - b. Be submitted and approved by the Town prior to the submittal of the first record plat within the development;
 - c. Be recorded in the deed records of Denton County, Texas, as a restriction running with the land simultaneously with recording of the first record plat;
 - d. Substantially conform to the draft OSMP submitted to the Environmental Conservation Commission and Planning and Zoning Commission for consideration of the Zoning application (ZPD21-0017) and identified as Attachment XX of the agenda item;
 - e. Provide Eco Fringe buffers at a minimum width of ten feet (10') adjacent to all lots that abut public and private open space and which shall be maintained by the HOA.
5. A six-foot (6') sidewalk shall be required along the north side of Cross Timbers Road.
 6. An equestrian trail with a minimum width of fifteen feet (15') shall be provided from Shiloh Road to Red Rock Lane in land that is not accepted as Town Park. The equestrian trail may meander throughout the open space provided that an equestrian access easement is present.
 7. All detention ponds shall comply with the aeration and pond for requirements found in the Town's Engineering Construction Standards.
 - a. Maintenance for all wet ponds located within land to be dedicated to the Town for Park Land shall be the responsibility of the Town. Wet ponds located in the land to be dedicated to the Town for Park Land may be utilized by the development for detention.
 - b. All wet ponds in HOA property will be maintained by the HOA.
 8. Prior to approval of a development plan, a development agreement outlining all details of Park Land transfer and acceptance shall be submitted to the Town for review and must be approved either prior to or concurrently with the development plan by Town Council.

9. The dams adjacent to Cross Timbers Road represent a significant hazard to a secondary highway. These dams will require TCEQ permits prior to acceptance of the subdivision.
10. All required street buffer trees along “Jo Fain Boulevard” shall be installed within a maintenance easement prior to the acceptance of the corresponding Phase shown on the Conceptual Site Plan.
11. Required 50-foot (50') wide Scenic Buffer in HOA Open Space along Cross Timbers Road.
 - a. If the Scenic Buffer is located within land to be dedicated as Town Park, the developer will be responsible to plant the required trees in the buffer. The Town will be responsible for all fence removal, fence construction, and fence maintenance associated with the 50-foot Street Buffer.
 - b. If the Scenic Buffer is located within land to be HOA Open Space, the developer will be responsible for removing and reinstalling the existing pipe rail fence (or similar allowed by Town ordinance) at the 50-foot (50') buffer line measured from the existing right-of-way prior to acceptance of the corresponding Record Plat.
12. Existing monumentation, farm fencing, concrete driveways, pond structures, feeding troughs, animal pens, and other ranch or farm style infrastructure found on future Town Park Land shall be removed and disposed of prior to Park Land acceptance by the Town. The Town's Parks & Recreation Director has discretion on what may or may not stay intact on the Park Land as depicted on the Conceptual Site Plan. All Park Land damaged by the removal and disposal of said items above shall be cleaned up, graded, and restored with a native vegetation prior to acceptance by the Town.

E. EXCEPTIONS

1. Topographical Slope Protection – Section 98-147. Impact to slopes that are between 5% and 12% are allowed in areas as shown in Exhibit “XX.” the approved Environmental Protection Plan, subject to Section 98-147 (b).

OPEN SPACE MANAGEMENT PLAN

Planned Development District 190 (PD-190)

Cummings Ranch

Property Description

As set forth in the Concept Plan (Exhibit “A”) hereto, which is hereby incorporated herein by reference for all purposes. This Open Space Management Plan applies to Open Space/X-lots as set forth in Exhibit A.

As set forth in the Open Space Plan (Exhibit “B”) hereto, which is hereby incorporated herein by reference for all purposes.

As set forth in the Landscape Plan (Exhibit “C”) hereto, which is hereby incorporated herein by reference for all purposes.

Present Condition of the Property

The natural characteristics of the Property will be outlined in a report (Exhibit “D”) completed on December 17, 2021, Revised February 11, 2022 (the “EPP”), by Groundwater & Environmental Services, Inc. (GES)

Introduction

As set forth in the Open Space Plan (Exhibit “B”), there are thirteen open space lots, including potential parks, consisting of 176.450 acres.

There are 13 open space lots, lots 2X, 3X, 4X, 5X, 6X, 7X, 8X, 9X, 10X, 12X, 13X, 14X and 15X, consisting of approximately 76.271 acres, to be managed by the HOA. The 13 HOA open space lots are planned for the Home Owners Association (HOA) Board of Directors in conjunction with a ISA Certified Arborist to manage and maintain the Open Space related to Cummings Ranch.

The structure and guidelines for the HOA will be defined by the Dedications and Restrictions (Deed Restrictions), which will be recorded by the Developer after the Final Plat is approved for the first phase of development, as required by the Town. The Covenants Conditions and Restrictions shall set forth all enforcement guidelines, and reporting standard for the HOA and/or Land Trust to provide an open space management report annually to the Town/EEC.

There are 2 open space lots, lots 1X and 11X consisting of approximately 100.179 acres, to be managed and maintained by the Town of Flower Mound Parks Department.

Purpose

The purpose of the preservation of open space includes but is not limited to one or more of the following:

- Retaining or protecting the relatively natural habitat of wildlife, plants, and similar ecosystems on the Property;
- Protecting natural resources, maintaining or enhancing air and water quality;

- Preserving the historical, architectural, archaeological, or cultural aspects of the Property;
- Preserving the open space characteristic of Property pursuant to The Town of Flower Mound's Master Plan 2001 (including, but not limited to, the Land Use Plan for the "Cross Timbers Conservation Development District"), Open Space Plan, SMARTGrowth Management Plan, Land Development Regulations governing the Cross Timbers Conservation Developments, and Planned Development District No. 190;
- Permitting the Property (as suitable) for non-intensive outdoor recreation by the public, including hiking, horseback riding, nature observation, and enjoyment of open space, all in accordance with applicable laws and regulations.
- Land in its natural state requires little to no maintenance and carries minimal costs for maintenance.

Prohibited Activities

Any activity on, or use of, the Property inconsistent with the purpose of the open space is prohibited. The Property shall be preserved, to the extent practicable, in its natural condition and restricted from any development that would impair or interfere with the values of the Property. The following activities and uses are expressly prohibited, restricted, or reserved as indicated hereunder:

Vegetation: There shall be no large-scale removing, destroying, cutting, trimming, harming, or altering of any vegetation, or disturbing or changing in any way the natural habitat existing on the Property after the Final Acceptance Date by the Town. The use of pesticides, biocides, insecticides, fungicides, rodenticides, and herbicides on the Property shall be limited so as to preserve the natural characteristics of the Property. The use of such products and/or mowing of the Property, as necessary to control pests or vermin, may be allowed. Mowing and/or trimming may be conducted along boundary lines to allow access for maintenance. If any trails are constructed on the Property, trail boundaries may be maintained through trimming or mowing. In the event that vegetation must be altered in order to or remedy a condition which presents a danger to persons, such alterations shall be allowed, notwithstanding the foregoing.

Uses: No commercial, residential or industrial activity shall be conducted upon the Property. There shall be no storing or dumping of soil, trash, ashes, garbage, waste, abandoned vehicles, appliances, machinery, hazardous or toxic substances or waste, or any placement of underground or above ground storage tanks or other materials on the Property that may negatively impact or be detrimental to the Property or to the surface or subsurface waters of the Property. Livestock animals shall not be allowed on the property.

Topography: After the Final Acceptance Date by the Town, there shall be no change in the topography of the Property. There shall be no filling, excavating, grading, or dredging upon the Property. There shall be no removing of topsoil, peat, sand, gravel, rock or other materials from the Property.

Soil or Water Degradation: After the final acceptance date by the Town, there shall be no use of or the conducting of any activity on the Property that is likely to cause soil degradation,

erosion, depletion or pollution of, or siltation on, any surface or subsurface waters of the Property, and there shall be no change to the surface or subsurface hydrology of the Property.

Construction: There shall be no constructing or placing of any building, mobile home, asphalt or concrete pavement, permanent billboard or other advertising display, antenna, utility pole, tower, conduit, line, pier, landing, dock, or any other temporary or permanent structure or facility or any other man-made structures on the HOA maintained property.

Roads: There shall be no construction of new roads on the Property or any enlargement, widening, or modification to any existing roads on the Property.

Waters: There shall be no polluting, altering, manipulating, depleting or extracting of surface or subsurface water (including, but not limited to, ponds, creeks or other water courses) or any other water bodies on the Property. There shall be no conducting or allowing any entity or person to conduct activities on the Property that would be detrimental to water purity or that alter the natural water level or flow in or over the Property (including, but not limited to, damming or construction in any free flowing water body, nor any manipulation or alteration of natural water courses, fresh water lake and pond shores, marshes or other water bodies).

Vehicles: After the Final Acceptance Date by the Town, and subject to compliance with the Americans with Disabilities Act, there shall be no operating or allowing the operation of any motorized vehicles on the Property, except for maintenance.

Easements: There shall be no new easements on, over, under, across, along or through the Property, including, but not limited to, access easements and utility easements provided.

Signage: No permanent signage shall be permitted on or over the Property, except the posting of no trespassing signs, signs giving directions or proscribing rules and regulations for use of the Property and/or signs identifying the purpose of the preserved property. Until the sale of the last of the lots owned by developer in the Cummings Ranch subdivision, the developer or his designee may place "For Sale" signs on the Property, provided that the total number of such signs does not exceed the total number of such lots owned by the developer. Signs must be in accordance with the Town's code.

Exceptions to the Above Listed Prohibited Activities: Exceptions to the above listed prohibited activities may be requested by the HOA. Exceptions must be approved by the Town.

Duration

Perpetual.

General Provisions

(l) Amendment.

1. Maintenance of Common Areas:

- a. All Common Areas (X-Lots) that are to be conveyed to the Homeowners Association (HOA) by the Developer; the HOA will be established by the

Developer as a Nonprofit Corporation. The members will be the Cummings Ranch lot owners with one (1) vote for each Lot Owner in all matters. The initial Board of Directors will be appointed by the developer. Once the Cummings Ranch community is 80% complete (174 homes occupied), a Board of Directors will be elected by the Homeowners to manage and oversee the business and all other matters of the HOA, including the conservation (Open Space) requirements of the Town.

- b. The structure and guidelines for the HOA will be defined by the Dedications and Restrictions (Deed Restrictions), which will be recorded by the Developer after the Final Plat is approved, as required by the Town. The Covenants, Conditions and Restrictions shall set forth all enforcement guidelines.
- c. The maintenance and management of the Common Areas (X-Lots 2X thru 10X & 12X thru 15X) will be the responsibility of the HOA Board of Directors. The Common Areas (X-Lots 2X thru 10X & 12X thru 15X) and their care will be as follows:

HOA Open Space (X-Lots)

1. Lot 2X, excluding 25' Landscape Buffer along Shiloh, excluding 25' Landscape Buffer along proposed Jo Fain Blvd., excluding the eco-fringe buffer, and excluding the necessary efforts to construct and maintain the required equestrian trail, shall remain in its natural state and mowed approximately 2 to 3 times per year as determined by the HOA. In addition, a living screen will be planted along adjacent properties to the east and south.
2. Lot 3X, excluding 25' Landscape Buffer along proposed Jo Fain Blvd, excluding Bar Ditch Open Space, excluding Eco-fringe buffer, and excluding maintenance to existing maintenance structures, shall remain in its natural state and mowed approximately 2 to 3 times per year as determined by the HOA. In addition, a living screen may be planted and maintained along adjacent properties.
3. Lot 4X, excluding the Eco-fringe buffer, and excluding Bar Ditch Open Space, to remain in its natural state and be mowed 2 to 3 times per year as determined by the HOA.
4. Lot 5X, excluding the Eco-fringe buffer, and excluding Bar Ditch Open Space, to remain in its natural state and be mowed 2 to 3 times per year as determined by the HOA.
5. Lot 6X, excluding the Eco-fringe buffer, and excluding Bar Ditch Open Space, to remain in its natural state and be mowed 2 to 3 times per year as determined by the HOA.
6. Lot 7X, excluding the Eco-fringe buffer, and excluding Bar Ditch Open Space, to remain in its natural state and be mowed 2 to 3 times per year as determined by the HOA.
7. Lot 8X, excluding the Eco-fringe buffer, and excluding Bar Ditch Open Space, to remain in its natural state and be mowed 2 to 3 times per year as determined by the HOA.

8. Lot 9X, excluding the 25' Landscape buffer along Shiloh Rd, excluding HOA Maintained Pond, excluding Eco-fringe buffer, and excluding Bar Ditch Open Space, to remain in its natural state and to be mowed 2 to 3 times per year as determined by the HOA.
 9. Lot 10X, excluding 25' Landscape Buffer along proposed Jo Fain Blvd., excluding Eco-fringe buffer, and excluding Bar Ditch Open Space, to remain in its natural state and to be mowed 2 to 3 times per year as determined by the HOA.
 10. Lot 12X, excluding 25' Landscape Buffer along Red Rock Ln., and excluding Bar Ditch Open Space, to remain in its natural state and be mowed 2 to 3 times per year as determined by the HOA.
 11. Lot 13X, excluding 25' Landscape Buffer along Red Rock Ln., and excluding Bar Ditch Open Space, to remain in its natural state and mowed 2 to 3 times per year as determined by the HOA.
 12. Lot 14X, to be maintained as 25' Landscape Buffer along proposed Jo Fain Blvd.
 13. Lot 15X, excluding 25' Landscape Buffer along proposed Jo Fain Blvd., excluding 25' Landscape Buffer along Red Rock Ln., and excluding Bar Ditch Open Space, to remain in its natural state and to be mowed 2 to 3 times per year as determined by the HOA. In addition, a living screen may be planted and maintained along adjacent property. Maintenance of 100-year floodplain shall be limited to maintaining proper drainage, mowing as specified above, and clearing any blockages, debris, or trash. Maintenance of Riparian habitat identified in EPP shall be limited to clearing debris trash.
- d. Natural State of HOA Open Space (X-lots)
1. Option 1: Keep Coastal Bermuda for low maintenance open space.
 2. Option 2: Control burn to remove the existing Bermuda subject to Town and State requirements. Add a mix of buffalo grass or other native grasses, native wildflowers, and approved seed mixes shall be seeded seasonally.
- e. Existing Structures
1. There are four existing structures located on the far north portion of the western side of lot 3X, near Hawk Road. These four structures are planned to be utilized as HOA maintenance facilities and shall remain on HOA maintained open space (Lot 3X).
- f. Bar Ditches in Open Space
1. To be maintained by HOA during regular maintenance.
 2. Mowing as needed
- g. Riparian Habitat and 100-year Floodplain
1. Located on Lot 15X
 2. To be maintained by HOA during regular maintenance
 3. Maintenance shall be kept to a minimum such as clearing blockages, trash, and

- debris and maintaining proper drainage
- h. Drainage Culverts in Open Space
 - 1. To be maintained by the HOA during regular maintenance.
- i. Landscape Buffer in Open Space
 - 1. Located 25' outside of ROW along Shiloh Rd, Red Rock Ln, and proposed Jo Fain Blvd.
 - 2. To be maintained by the HOA during regular maintenance
 - 3. Mowing as needed
- j. Drainage Culverts in Open Space
 - 1. To be maintained by the HOA during regular maintenance.
- k. Fencing in Open Space
 - 1. All fencing to be maintained by HOA during regular maintenance.
- l. Masonry Entry Feature in Open Space
 - 1. All masonry features in open space to be maintained by the HOA during regular maintenance.
- m. Pond in HOA Open Space
 - 1. To be maintained by HOA during regular maintenance.
 - 2. Pond water level will be maintained by rainfall and a water well.

All open space areas Lots 2X thru 10X, Lots 12X thru 15X shall be supervised and managed by the HOA Board of Directors. The HOA Board of Directors must be under the direction of a ISA Certified Arborist.

The HOA will fulfill the conservation covenants as provided in the deed restrictions.

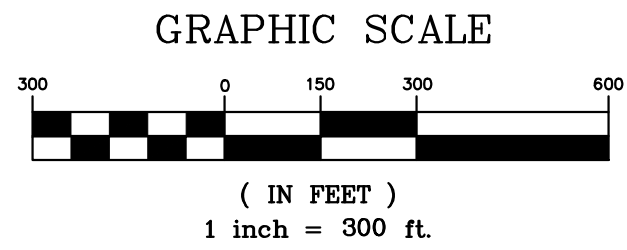
OPEN SPACE LOT TABLE	
PRIVATE OPEN SPACE LOTS:	
LOT 2X	5.888 ACRES
LOT 3X	24.926 ACRES
LOT 4X	2.995 ACRES
LOT 5X	2.197 ACRES
LOT 6X	10.086 ACRES
LOT 7X	0.813 ACRES
LOT 8X	2.914 ACRES
LOT 9X	8.166 ACRES
LOT 10X	2.501 ACRES
LOT 12X	2.488 ACRES
LOT 13X	0.802 ACRES
LOT 15X	11.947 ACRES
TOTAL PRIVATE OPEN SPACE AREA 75.723 ACRES	
POTENTIAL TOWN PARK OR OPEN SPACE LOTS:	
LOT 1X	13.822 ACRES
LOT 11X	86.357 ACRES
TOTAL POTENTIAL TOWN PARK OR OPEN SPACE AREA 100.179 ACRES	
TOTAL OPEN SPACE AREA 175.902 ACRES	

LEGEND

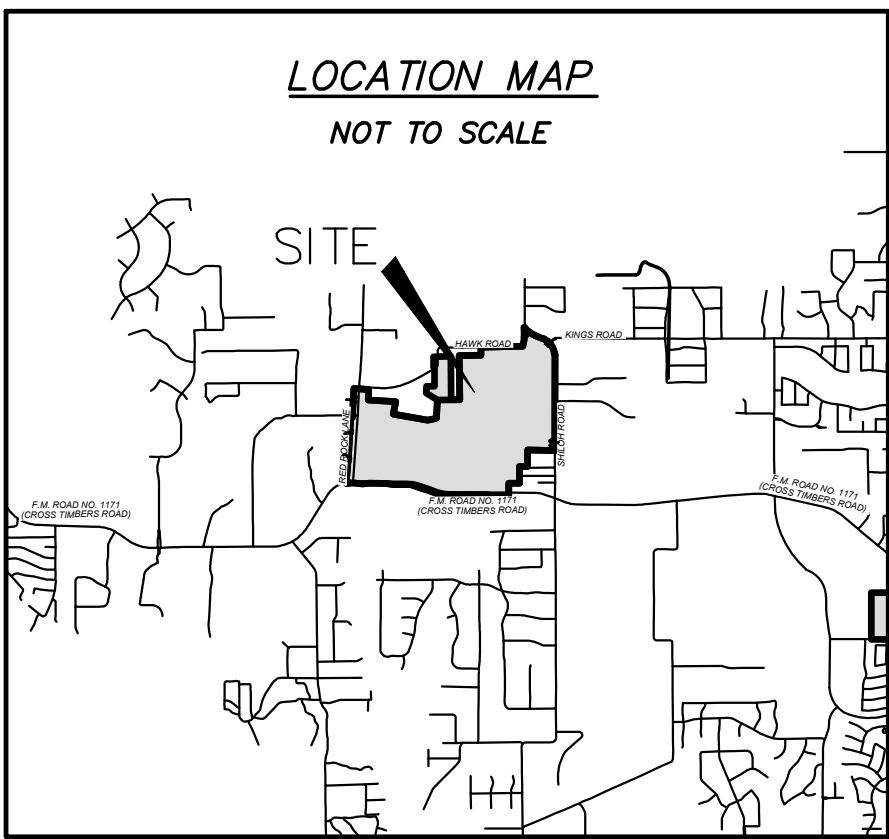
—	LOT LINE
—	D.R.D.C.T. DEED RECORDS, DENTON COUNTY, TEXAS
—	P.R.D.C.T. PLAT RECORDS, DENTON COUNTY, TEXAS
—	R.P.R.D.C.T. REPLAT RECORD DENTON COUNTY, TEXAS
- - -	PROPERTY BOUNDARY
- - -	ADJACENT PROPERTY BOUNDARY
- - -	PROPOSED R.O.W.
- - -	PROPOSED BACK OF CURB

AREA DATA TABLE	
GROSS SITE AREA	349.357 ACRES
SHILOH RD. R.O.W. DEDICATION	4.853 ACRES
RED ROCK LANE R.O.W. DEDICATION	1.815 ACRES
HAWK ROAD R.O.W. DEDICATION	1.101 ACRES
INTERNAL COLLECTOR R.O.W. DEDICATION	10.005 ACRES
TOTAL R.O.W. DEDICATION	17.774 ACRES
NET SITE AREA	331.583 ACRES
TOTAL OPEN SPACE AREA	175.902 ACRES

	POTENTIAL TOWN PARK
	H.O.A. MAINTAINED OPEN SPACE
	25' LANDSCAPE BUFFER
	17' BAR DITCH CREDIT
	10' ECO-FRIDGE BUFFER ALONG RESIDENTIAL LOTS



PROJECT DATA TABLE	
GROSS SITE AREA	349.357 ACRES
PROPOSED USE	SINGLE FAMILY RES.
CURRENT ZONING	AGRICULTURAL
EXTERNAL/COLLECTOR RIGHT-OF-WAY	
SHILOH ROAD	4.853 ACRES
RED ROCK LANE	1.815 ACRES
HAWK ROAD	1.101 ACRES
INTERNAL COLLECTOR	10.005 ACRES
TOTAL RIGHT-OF-WAY	17.774 ACRES
OPEN SPACE	
POTENTIAL TOWN PARK	100.179 ACRES
PRIVATE OPEN SPACE LOTS	75.723 ACRES
TOTAL OPEN SPACE	175.902 ACRES
PROPOSED LOTS	
RESIDENTIAL	218 LOTS
RESIDENTIAL LOTS AREA	138.86 ACRES
MIN. RESIDENTIAL LOT SIZE	23,019 S.F.
MAX. RESIDENTIAL LOT SIZE	44,458 S.F.
AVG. RESIDENTIAL LOTS SIZE	27,746 S.F.
POTENTIAL TOWN PARK	2 LOTS
PRIVATE OPEN SPACE	12 LOTS
TOTAL ALL LOTS	233 LOTS



CUMMINGS RANCH Residential Subdivision

349.357 acres
in the
T.J. Payne Survey, Abstract No. 1056
T & P. Railroad Co. Survey, Abstract
No. 1618, John West Survey, Abstract
No. 1414, John West Survey, Abstract
No. 1415, H. Campbell, Abstract No.
1462, and the B.B.B. & C.R.R. Survey
Abstract No. 152
in the
Town of Flower Mound
Denton County, Texas

ENGINEER/APPLICANT:
RIDINGER ASSOCIATES, INC.
550 S. EDMONDS LANE, SUITE 101
LEWISVILLE, TX 75067
972-353-8000
CONTACT: DALE RIDINGER

OWNERS:
1309 LLC
P.O. BOX 292873
LEWISVILLE, TX 75029

Ridinger Associates, Inc.
Civil Engineers - Planners
Firm No. 1969
550 S. Edmonds Lane, Suite 101
Lewisville, Texas 75067
Tel. No. (972) 553-8000
Fax No. (972) 553-8011

CUMMINGS RANCH
RESIDENTIAL SUBDIVISION
FLOWER MOUND, TEXAS

OPEN SPACE PLAN

Scale: 1"=300'
Designed by: LDR
Drawn by: MAB
Checked by: LDR
Date: FEBRUARY 21, 2022
Project No. 180-001



PLANNING AND ZONING COMMISSION

AGENDA ITEM NO: i WORK SESSION ITEM

DATE: April 11, 2022

FROM: Chuck Jennings, Director of Parks and Recreation

ITEM: **MPA21-0010 – Trails and Bikeways Master Plan**

The Town adopted its first comprehensive parks and trails master plan in 1989, which was updated in 1994, 2001, 2010, and 2017. These plans briefly touched on trails and did not cover bikeways. This Trails and Bikeways Master Plan is a comprehensive study that is just focusing on these two areas. The plan will serve as a roadmap to guide short and long-range priorities for the trails and bikeways network in Flower Mound over the next 10+ years. As part of the planning process, an assessment of existing conditions and future needs was conducted for **off-street trails, on-street bikeways, equestrian trails, and nature trails.**

The Town of Flower Mound entered into a Professional Services Agreement with Halff Associates on February 1, 2021, which was broken into five phases: Phase 1 – Community Understanding, Phase 2 – Community Visioning, Phase 3 – Needs Assessment, Phase 4 – Proposed Network, and Phase 5 – Action Plan. Staff held a kickoff meeting on February 23, 2021, with Halff regarding the master plan and the consultant toured many of the Town's trails and bikeways in March and April of 2021.

Throughout the months of May and June, the consulting team conducted a community input survey which had close to 1,000 responses. The team hosted visioning meetings on May 4 and 5 that included three stakeholder listening sessions, a Steering Committee meeting, Technical Working Group meeting, and a public open house at the Community Activity Center, where over 80 people attended including some from the Town Council and various Town Boards and Commissions. For residents that could not attend these meetings, the Town offered residents the opportunity to visit a virtual engagement room which mimicked the items discussed and questions asked at the public open house. Some questions that were asked of different groups and of the public at the different meetings included the following:

- What is your vision for the future of trails and bikeways in Flower Mound?
- What are some of the challenges related to trails and bikeways in Flower Mound today?
- In your opinion, what is the most important action item that should result from this plan?
- What one word would you use to describe Trails and Bikeways in Flower Mound Today?
- What one word would you use to describe how you envision Trails and Bikeways in Flower Mound in the Future?
- Where are trails and bikeways most needed in Flower Mound?
- Where do barriers to walking, running, cycling, or horseback riding exist in Flower Mound today?

Key take away from the engagement included:

- Creating more of an east/west connection
- Filling in gaps in the system

- Providing a variety of trail types throughout the Town
- Providing more connections to the USACE trails
- More designated bikeway accommodations
- Additional trail access points, trailheads, and trail amenities
- Completing the loops for equestrian trails

Halff was also tasked with performing a deep assessment on five different corridors within Flower Mound. The consultant toured these areas in July and August to fully understand the opportunities, constraints, and feasibility of constructing trail or bikeways. The five areas studied were Cross Timbers E/W Connection, Shiloh Dr., Long Prairie Rd. (Veloweb corridor), Gaston Park/Long Prairie Rd., and Timber Creek trail connection. The study of the five corridors will be included in the overall master plan and will address crossings, overhead clearance, utility conflicts, property ownership and estimates of probable costs.

As part of the master plan process Halff Associates contracted with Civic Brand to develop a project brand identity package to be used throughout the planning process and in marketing pieces. In addition to the project branding, Civic Brand was responsible for the creation and updating of the project webpage (www.flowermoundtrailsplan.com). The website will remain active three months after the completion of the project. Civic Brand worked with Halff and Town staff to create three short, informative videos regarding trails and bikeways to generate excitement about the plan. Lastly, Civic Brand worked with staff to develop trail branding considerations. Signage is typically provided at trailheads and at key decision-making points along a trail. Signage can mark access points to the trail, provide directional and distance guidance for trail users, direct users to locations of key amenities along the trails, and provide brand recognition of the trail system. Halff has incorporated their recommendations into the draft master plan.

The draft master plan will be presented at various meetings throughout April with final approval occurring in June. The schedule below details the upcoming meeting dates:

- o April 7 Parks Board / Transportation Commission – Joint Work Session
- o April 11 Planning & Zoning Commission – Work Session
- o April 21 Town Council – Work Session
- o May 5 Parks Board – Public Hearing
- o May 10 Transportation Commission - – Public Hearing
- o May 23 Planning & Zoning Commission - Public Hearing
- o June 6 Town Council - Public Hearing for the approval of the Master Plan

To keep up with Flower Mound's growth, new development and redevelopment, and shifting demographic trends, developing a Trails and Bikeways Master Plan is essential to ensure that these facilities meet the needs of the community today and in the future.

The Planning and Zoning Commission makes recommendations to the Town Council regarding all updates to the Town's Master Plan. Town staff is requesting input regarding the Draft Master Plan.

I. ATTACHMENTS

A. Draft Parks, Recreation, and Open Space Master Plan

DRAFT 4.7.2022

TRAILS & BIKEWAYS MASTER PLAN • FLOWER MOUND, TEXAS •

ACKNOWLEDGMENTS

The following individuals are recognized for their significant contributions to the preparation of the Town of Flower Mound Trails and Bikeways Master Plan.

STEERING COMMITTEE

Aarush Das
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Mehul Desai
Stephen Harris
Karissa Hiegel
Simon Hodgson
David Johnson
Craig Martin
Dale Olson
Lee Robodos
Brad Ruthrauff
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John Chapman
Melissa Demmitt
Matt Hotelling
Clay Riggs
Brian Waltenburg
JP Walton
Matt Woods

TOWN COUNCIL

Mayor Derek France
Adam Schiestel
Sandeep Sharma
Ben Bumgarner
Jim Engel
Ann Martin

PARKS BOARD

Teresa Thomason (Chair)
Rick Kenyon (Vice Chair)
Scott Langley
Allen Pichon
Holly Royer
Mark Mayer
Jennifer Romaszewski

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Chris Reed
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Marie Jackson
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Haley Carruthers

CivicBrand

Ryan Short
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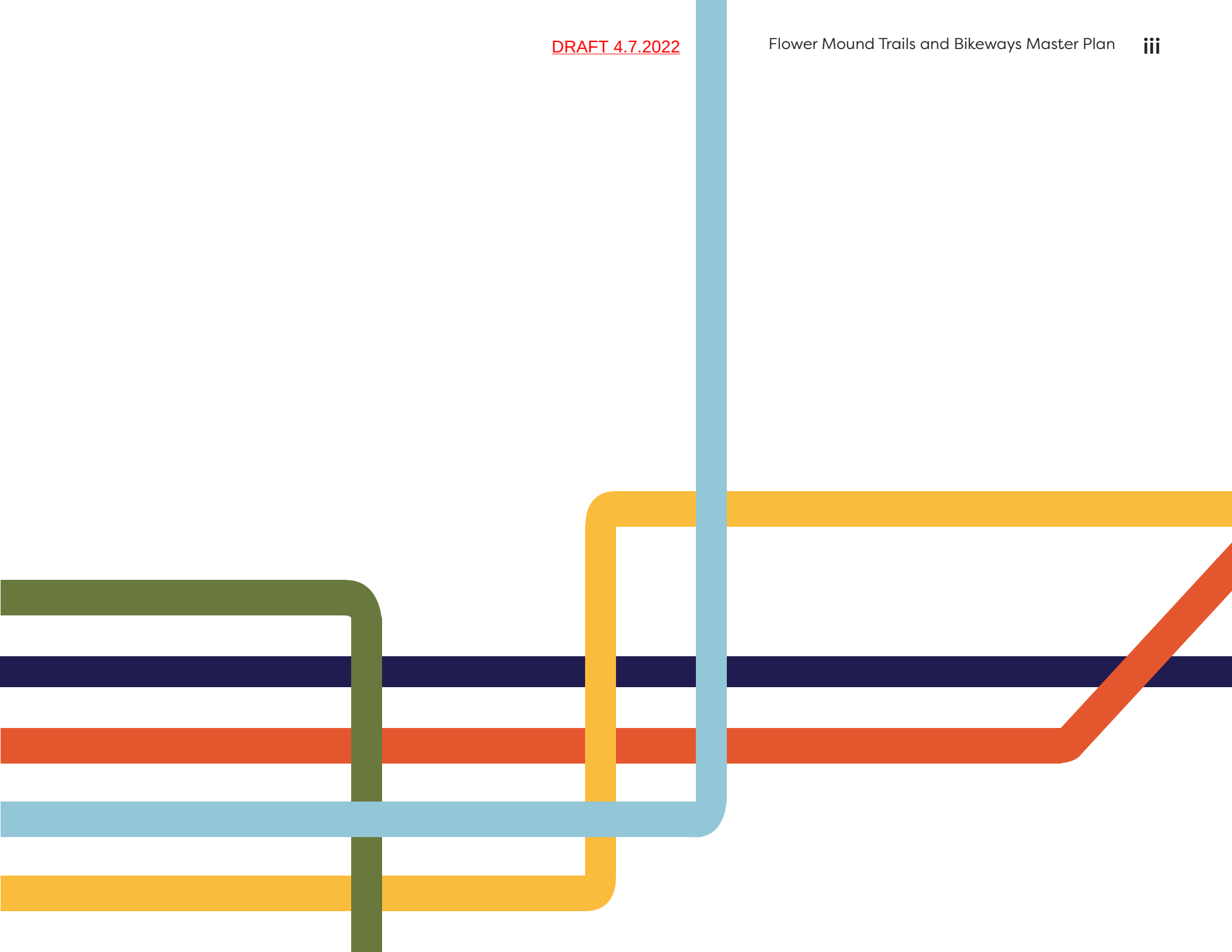
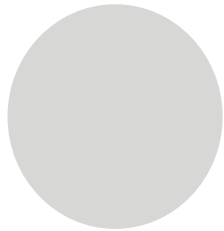


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LIST OF ACRONYMS

AASHTO: American Association of State Highway Transportation Officials
ACS: American Community Survey
ADA: Americans with Disabilities Act
ADAAG: Americans with Disabilities Act Accessibility Guidelines
CRIS: Crash Record Information System
CTETA: Cross Timbers Equestrian Trail Association
DFW: Dallas-Fort Worth
DORBA: Dallas Off-Road Bicycle Association
ESRI: Environmental Systems Research Institute
ISD: Independent School District
ITE: Institute of Transportation Engineers
LOS: Level of Service
NACTO: National Association of City Transportation Officials
NCTCOG: North Central Texas Council of Governments
PRMP: Parks and Recreation Master Plan
PROWAG: Public Rights-of-Way Accessibility Guidelines
ROW: Right-of-Way
RRFB: Rectangular Rapid Flashing Beacons
TAS: Texas Accessibility Standards
TMUTCD: Texas Manual on Uniform Traffic Control Devices
TTI: Texas Transportation Institute
TxDOT: Texas Department of Transportation
USACE: U.S. Army Corps of Engineers

Introduction
Plan Purpose
Benefits of Active Transportation
Planning Process
Plan Structure
Vision & Goals



01 INTRODUCTION



INTRODUCTION

The Town of Flower Mound Trails and Bikeways Master Plan serves as a blueprint for the future implementation of on-street bikeways and off-street trail facilities throughout the town. The facilities recommended in this plan provide safe routes for cycling, walking, running, hiking, paddling, and horseback riding throughout the town and connecting to adjacent communities.

BACKGROUND

The Town of Flower Mound is located in Denton County. The town lies on the northern shore of Lake Grapevine, approximately 23 miles northwest of Dallas and 23 miles northeast of Fort Worth. With its proximity to the Dallas Fort Worth Airport, major employers and entertainment opportunities, a unique and cultivated environment, great schools, and high-quality public facilities, Flower Mound has become a desirable place to live in the Dallas-Fort Worth (DFW) Metroplex. The Town's population has grown 20% in the last 10 years and is projected to roughly double in size to 117,555 residents by 2045¹. While the eastern side of the town is primarily built out, there is an abundant amount of open space and vacant land in the western portion of Flower Mound. As the town continues to grow, the demand for a high-quality trails and bikeways system will continue to increase for both recreation and commuting purposes.

In 2017, the Town of Flower Mound updated their parks and recreation master plan. While this plan addressed trails, it did not provide the detailed guidance and implementation necessary to create a comprehensive system. The Town's intent was to later develop a trails and bikeways master plan to better assess the community's trail system needs today and in the future.

The trails and bikeways in Flower Mound today include a variety of branded trails named after wildflowers on the eastern side of town and soft surface trails used by hikers, mountain bikers, and equestrian users around Grapevine Lake. While these are great amenities and provide residents and visitors with active recreation opportunities, overall the trails are not well-connected and lack way-finding. This plan identifies key opportunities to expand and enhance the trails and bikeways system to connect residents to schools, parks, neighborhoods, entertainment centers, and adjacent communities.

1. Source: NCTCOG Regional Data Center, 2020.



PLAN PURPOSE

The purpose of the Trails and Bikeways Master Plan is to guide the development of network recommendations, design guidelines, and implementation recommendations for a system of off-street trails and on-street bikeways that will connect users to key destinations within Flower Mound and provide connections to adjacent communities. This plan will augment previous planning efforts to create community and provide active and healthy lifestyle opportunities.

A key component of the Trails and Bikeways Master Plan is a needs assessment which determines the existing conditions of the trail system, compares it to similar communities, and explores opportunities to enhance the network. A corresponding implementation plan provides a guide for trail and bikeway development and design through the next decade.

KEY OBJECTIVES OF THIS PLAN:

- Create a *vision* for the trails and bikeways system based on a robust public engagement process;
- Conduct a *needs assessment* to determine how Flower Mound aligns with benchmark communities and where trails and bikeways are needed;
- Identify a *comprehensive and connected network* of trails and bikeways to be implemented over the next 20+ years;
- Provide *design standards and policy recommendations* for the system; and,
- Provide guidance necessary to *implement the plan* in short, mid, and long-range targets.



BENEFITS OF ACTIVE TRANSPORTATION

The benefits of active transportation are well documented and include: healthier lifestyles, economic benefits, safer spaces, and social benefits.

HEALTH BENEFITS

\$1 invested in trails can yield a return of investment ranging from \$1.65 to \$13.40 in medical benefits

ECONOMIC BENEFITS

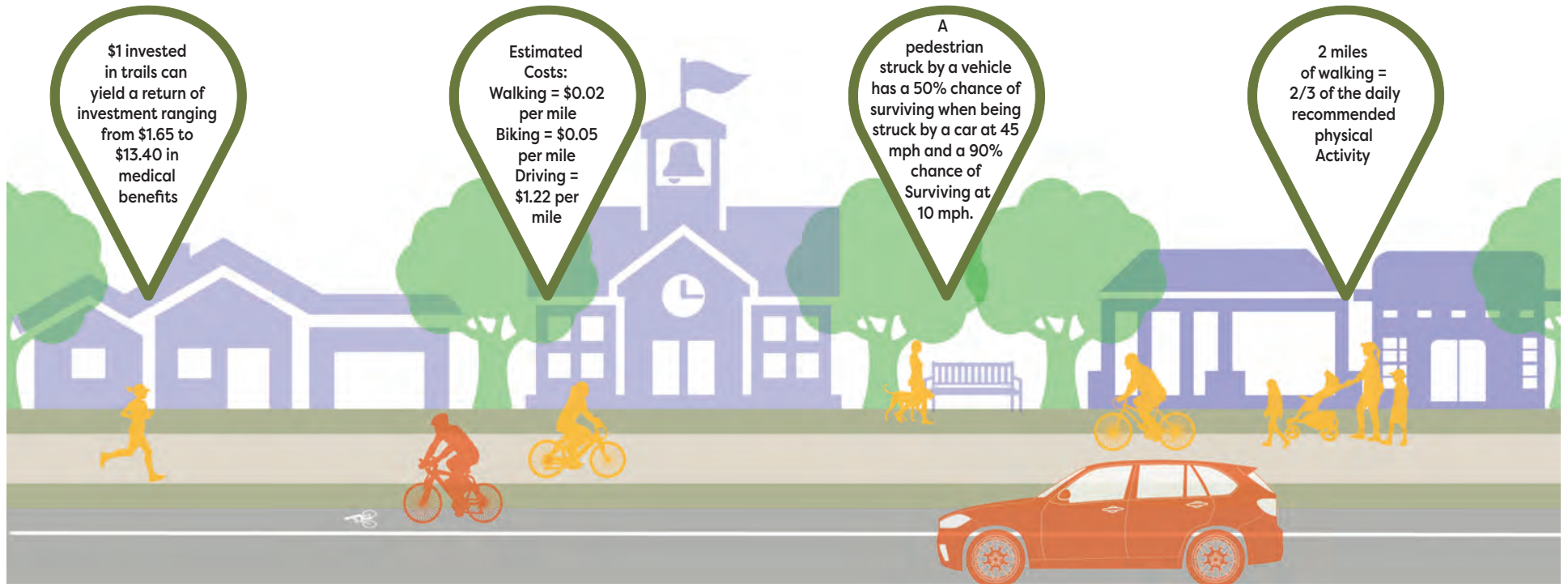
Estimated Costs:
Walking = \$0.02 per mile
Biking = \$0.05 per mile
Driving = \$1.22 per mile

SOCIAL BENEFITS

A pedestrian struck by a vehicle has a 50% chance of surviving when being struck by a car at 45 mph and a 90% chance of surviving at 10 mph.

SAFETY BENEFITS

2 miles of walking = 2/3 of the daily recommended physical activity



Source: <https://www.saferoutespartnership.org/healthy-communities/101/facts>

Source: Active Transportation and Health Economic Impact Study, Southern California Association of Governments

Source: "Impact Speed and a Pedestrian's Risk of Severe Injury or Death," Brian Teft, September 2011, <http://aaaafoundation.org/wp-content/ds/2018/02/2011PedestrianRiskVsSpeedReport.pdf>

Source: <https://www.saferoutespartnership.org/>

By providing a safe and connected trails and bikeways system, walking and biking becomes more convenient. It is easier to incorporate physical activity into daily life when there is an accessible system. Active transportation can help combat obesity, improve mental health, and improve moods.

Proximity to parks and trails can have a positive impact on property values. There has been an increased demand for walkable places in Flower Mound, as illustrated in the Town Plan. Walking and biking can reduce costs associated with vehicle ownership, like routine maintenance, gas, and wear and tear on tires.

Trails and bikeways can connect residents to neighborhoods, parks, schools, entertainment areas, and surrounding communities. By activating the public realm, you can create social spaces that encourage interaction, and increase safety along corridors. Trails and bikeways provide safe, equitable transportation options.

Roadways can be designed to be safer for all roadway users. Improvements include reduction in the number or width of travel lanes, widths, and speeds as well as intersection and mid-block crossing improvements. This can lead to less severe crashes, increased comfort, and usability of the roadway system for all users.

PLANNING PROCESS

The development of this plan spanned approximately 15 months, starting in February 2021 and concluding in April 2022. Throughout this process, Town staff, a designated steering committee, stakeholders, elected/appointed officials, and citizens were engaged to guide the master plan recommendations. The resulting community-driven vision forms the foundation for the future of trails and bikeways in Flower Mound for the next decade.

Phase 1: Community Understanding

The first step in any planning process is understanding the existing trails and bikeways system in the Town. This includes assessing the trails system, identifying strengths and opportunities, as well as gaining an understanding of the current population and relevant studies that may impact the Trails and Bikeways Master Plan.

Phase 2: Community Visioning

Engaging the community for their vision to create the overall system helps to create the vision and goals for plan. Engagement opportunities included virtual engagement rooms, public open houses, an online survey, interactive maps, and pop-up tents at community events.

Phase 3: Needs Assessment

An analysis of the needs and overall trails system compared to national best practices helps to identify recommendations for the proposed trails and bikeways network. This includes assessing the existing network, identifying safety issues and barriers, determining where gaps may exist, and assessing demand for new facilities.

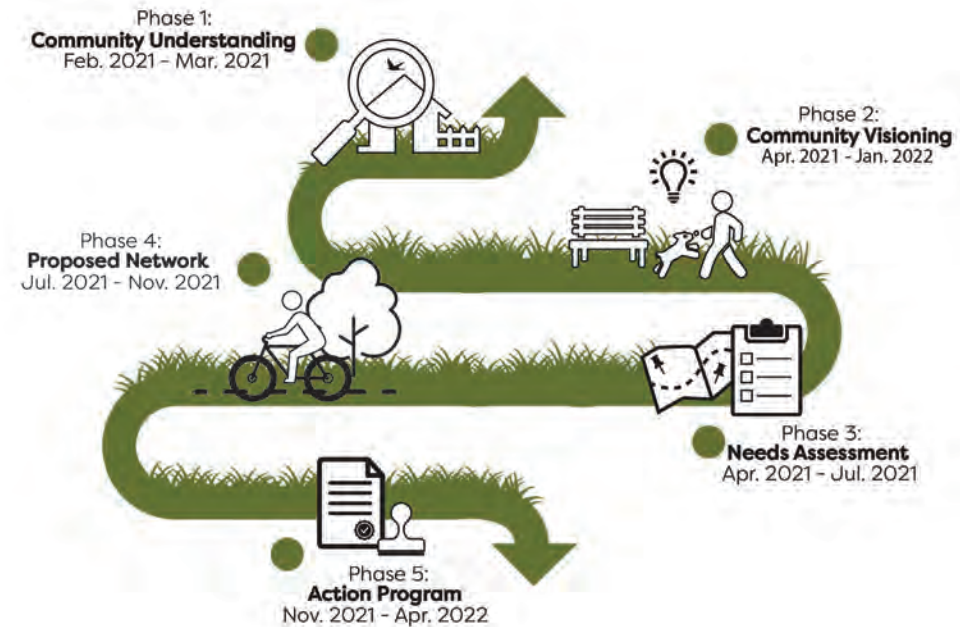
Phase 4: Proposed Network

Based on the needs assessment, a proposed network was created based on the barriers, opportunities, and desires of the community. The proposed network includes a variety of facility types, guidance on facility design standards, and policies related to bikeway and trail development.

Phase 5: Action Program

Finally, an action plan was developed to provide implementation strategies to create the proposed network. Recommendations for implementation are prioritized by short-term (1-5 years), mid-term (6-10 years), and long-term (10+ years) priorities.

FIGURE 1.1 PLANNING PROCESS



PUBLIC VISIONING EXERCISES

PLAN STRUCTURE

The Flower Mound Trails and Bikeways Master Plan is separated into seven chapters.

01

Introduction – Describes the plan purpose and background and provides the plan's vision and goals.

02

Community Context – Provides an overview of the Town of Flower Mound, including demographics, relevant plans and studies, and the existing trails and bikeways system.

03

Trails & Bikeways System Needs – Documents the analysis undertaken which determines the needs for additional trails and bikeways by determining the current level of service, community needs, and barriers and opportunities for the system.

04

Trails & Bikeways System Network – Creates a proposed network and facility hierarchy to connect neighborhoods to key destinations and to surrounding communities.

05

Trails & Bikeways Standards – Provides design guidelines for the creation of bikeway facilities, roadway crossing safety, trailheads and amenities, signage/way-finding, maintenance, and a framework for a branding system.

06

Implementation – Prioritizes projects and provides implementation strategies for short and long-term improvements. This chapter identifies policy recommendations, potential projects, and potential funding mechanisms and partnerships to develop the system.

07

Appendix – Provides additional data, graphics, and resources to support the Trails and Bikeways Master Plan.

PLAN VISION AND GOALS

Visioning was a substantial part of the public engagement process. In the first phase of the project, the Town hosted a variety of meetings among key stakeholders and the general public. During those meetings, attendees were asked how they envision walking, cycling, riding, and paddling in Flower Mound in the future. Input from the engagement helped shape the vision and goals for the Town of Flower Mound Trails and Bikeways Master Plan.

PLAN VISION

The Town of Flower Mound will have a connected, safe, and accessible system of trails and bikeways that promotes public health, economic development, and active transportation to improve overall quality of life for residents and visitors for generations to come.

GOAL 1: CONNECTED COMMUNITY

Create a complete trails and bikeways system that connects the community with active transportation options.

Objective 1.1: Increase trail level of service.

Objective 1.2: Provide trail and bikeway connections to key destinations.

Objective 1.3: Fill in gaps in the existing trail system.



PUBLIC VISIONING EXERCISES:
ARTS FESTIVAL

GOAL 2: SAFE AND ACCESSIBLE SYSTEM

Ensure the trails and bikeway system is safe, comfortable, and accessible for users of all abilities and ages.

Objective 2.1: Provide a variety of facility types appropriate for different abilities.

Objective 2.2: Improve overall safety and comfort of existing facilities.

Objective 2.3: Address areas identified as barriers within the existing trail system.

GOAL 3: USER FRIENDLY

Improve awareness, signage, and usability of the trails and bikeways system.

Objective 3.1: Increase awareness of the existing trail and bikeway system.

Objective 3.2: Create a consistent brand across the trails system so it is easily recognizable.

Objective 3.3: Install wayfinding signage to direct users to destinations along the trails.

GOAL 4: UNIQUE SYSTEM

Design and construct trails that support the health and wellness of the community and natural environment.

Objective 4.1: Provide for safe and convenient active transportation options.

Objective 4.2: Provide for interpretative and educational opportunities along trails.

Objective 4.3: Utilize an environmentally-friendly and context-sensitive approach to developing and maintaining trails.



INDIAN BLANKET TRAIL

GOAL 5: PARTNERSHIPS

Leverage partnerships between the Town and the community, internal and external organizations, and outside agencies to achieve a connected trails and bikeways system.

Objective 5.1: Pursue joint projects with surrounding cities, the County, NCTCOG, TxDOT, USACE, and utility providers.

Objective 5.2: Maintain relationships with user groups to solicit feedback on the trails and bikeways system.

Objective 5.3: Work with other departments to incorporate bicycle and pedestrian accommodations into ongoing or upcoming projects.

GOAL 6: FUNDING

Pursue a variety of funding sources for trails and bikeway development.

Objective 6.1: Apply for grant funding to implement trail and bikeway projects.

Objective 6.2: Continue to work with developers to ensure trails and bikeways are included with new development.

Objective 6.3: Coordinate with user and volunteer groups to help fund improvements to trails and bikeways.



LAKESIDE MIXED USE DEVELOPMENT

History
Demographics
Planning Guidelines
Existing Trails and Bikeways System



02 COMMUNITY CONTEXT



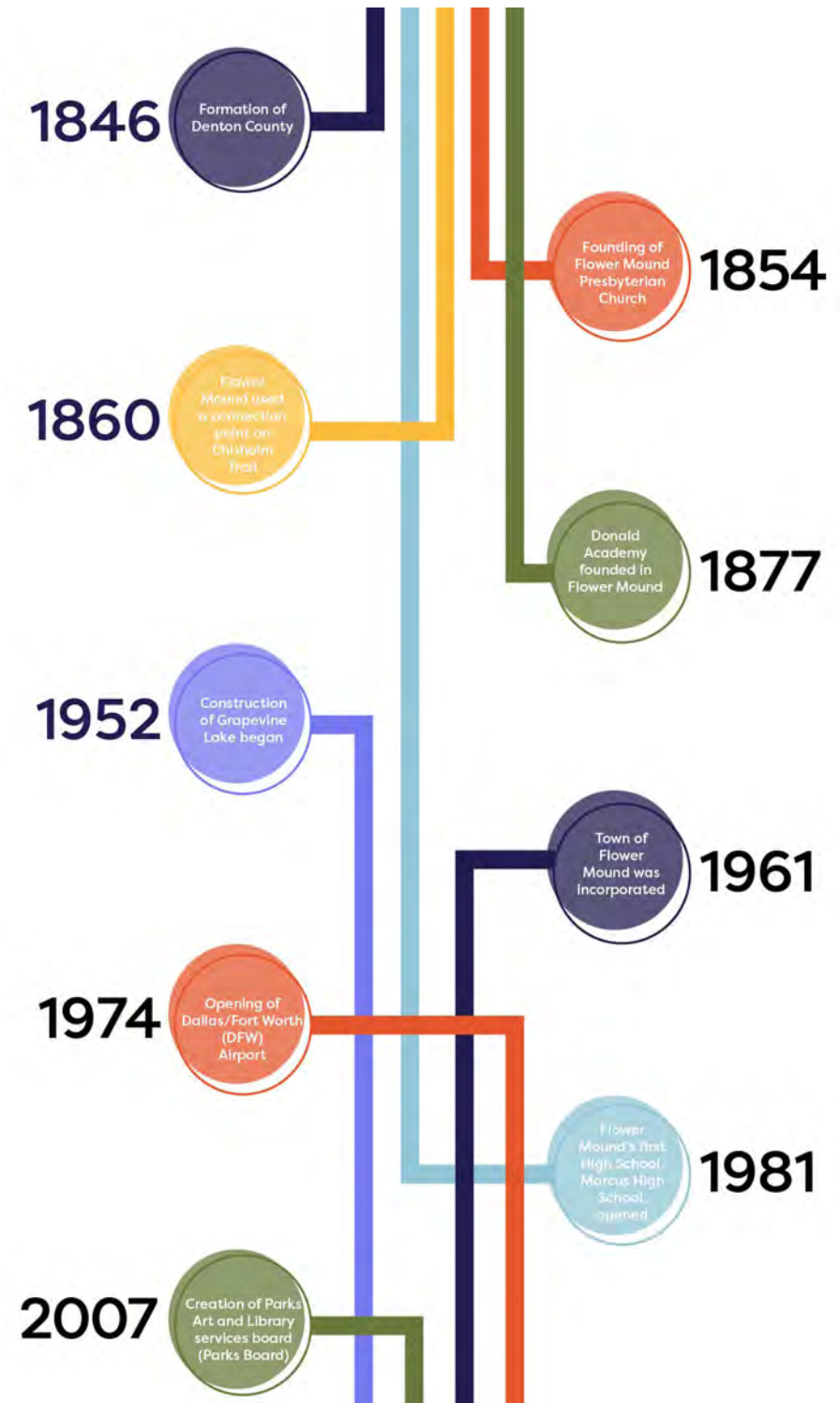
HISTORY

Based off archaeological surveys completed by the U.S. Army Corps of Engineers (USACE), people settled in Denton County as early as 4,000 – 2,500 B.C. However, in 1846 Denton County was officially formed in Texas. During the 1840s, the area of Flower Mound was used as religious camps and was permanently inhabited during the 1850s. In 1854, Flower Mound Presbyterian Church was founded. Flower Mound's most unique feature is its natural landscape. This made the area a great location for the Chisholm Trail. During the 1860s, along what would be Interstate 35 West (I-35W) today, the Chisholm Trail provided a network to over six million cattle during the 20-year period following the Civil War. In 1877, Donald Academy was founded in Flower Mound and was the largest rural school in Denton County. The school catered to grades first to tenth.

Transitioning into the 20th century, the landscape of Flower Mound began to truly take its form. In 1952, the construction of Grapevine Lake began and lasted for about a year. With the opening of road networks during the late 1950s like I-35 East, regional visitors could travel more easily throughout the Dallas-Fort Worth Area. To avoid being annexed by the City of Irving, in 1961 the Town of Flower Mound incorporated, and Bob Rheudasil became the first mayor of the Town. With the opening of Dallas/Fort Worth (DFW) Airport in 1974, Flower Mound's population boomed. During this decade, the first school in the Lewisville Independent School District opened in Flower Mound, Timber Creek Elementary. Then in 1981, Marcus High School, Flower Mound's first high school within the town boundaries, opened its doors to students. While the first traces of Flower Mound's Park Board dates before 1985, in 2007 the Town's Parks, Art and Library Services Board was created which is now readily recognized as today's parks board. Over the years, Flower Mound has continued to expand and build a community filled with recreation opportunities for its residents.



FIGURE 2.1: HISTORICAL TIMELINE OF FLOWER MOUND



DEMOGRAPHICS

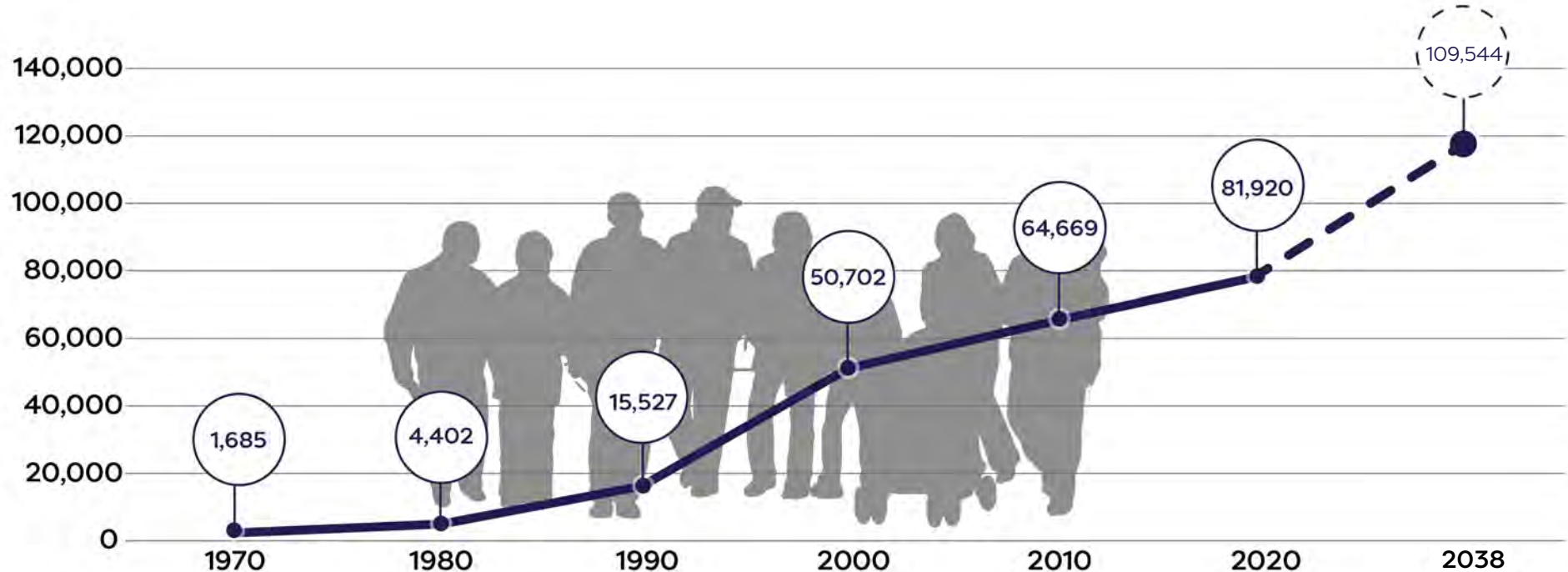
The demographic makeup of a community is significant in the beginning of the planning process. Demographic characteristics such as population growth, age, gender, race, and income help paint the landscape of a community and contribute to what the needs are for different trails and bikeways.

GROWTH TRENDS

Flower Mound experienced a significant increase in population during the 1970s. This corresponds with many neighboring communities as the entire region saw a huge population boom during this time with the opening of DFW Airport in 1974 and subsequent expansion of road networks and job opportunities. Over the next 30 years, Flower Mound's population would continue to expand exponentially, with the most significant growth period occurring during the 1980s. After the 1990s, Flower Mound's population growth began to plateau. However, the town has seen an increase in their population by 54 percent since 2000. Based off population projections by the Town of Flower Mound, by 2038 the Town will be built-out with a population of approximately 109,544 residents. This would be about a 50 percent increase over the next 20 years.



FIGURE 2.2: FLOWER MOUND POPULATION GROWTH



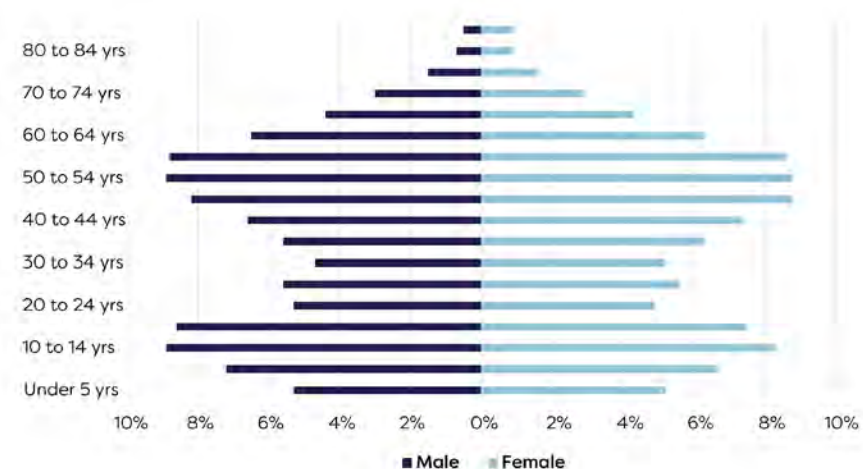
Source: Town of Flower Mound Planning Department

AGE AND GENDER CHARACTERISTICS

Flower Mound's population is characterized by two principal age groups: middle-aged adults and children. In 2020, individuals between the ages of 45-54 represented the largest portion of the population, equaling 17.4 percent. The next largest age group is between the ages of 55-64 making up 11 percent. The third largest group is younger adults between the ages of 10-14. Together these three cohorts reflect an older population being dominant in Flower Mound along with a strong presence of families. This idea can also be reinforced through the Town's median age of 39 years. This is older than both Denton County's median age of 35 and the state of Texas median age of 34.

Females make up 50.8 percent of the overall population. However, males in Flower Mound surpass their female counterparts between the ages of 5 to 24 and 50 to 74. The age groups where females surpass males is children under the age of 5 and individuals between the ages 30 to 49 and 70+.

FIGURE 2.3: AGE AND GENDER, 2020



RACE AND ETHNICITY CHARACTERISTICS

In 2020, 77.7 percent of Flower Mound's population identified as white, followed by 12.5 percent of residents identifying as Asian, and 4.4 percent identifying as Black. The percentage of residents that identify as Hispanic ethnicity is 9.9 percent. Over the past ten years, Flower Mound's overall population has increased by about 27 percent and during that time most racial and ethnic groups saw an increase as well. The group with the largest percent increase was the Asian population (85 percent increase from 2010 to 2020). The second group that saw the second largest increase was Black residents with a percent increase of 74 percent.

TABLE 2.1: RACE AND ETHNICITY CHARACTERISTICS

Race	2010	2020	Percent Change
Total Population	64,669	81,920	26.7%
White	83.8%	77.7%	- 17.3%
Black	3.2%	4.4%	74.4%
American Indian and Alaska Native	0.5%	0.5%	23.5%
Asian	8.6%	12.5%	85.4%
Native Hawaiian and Other Pacific Islander	0.1%	0.1%	45%
Other Race	1.6%	2.1%	62.9%
Two or More Races	2.2%	2.7%	59%
Ethnicity			
Hispanic or Latino (of any race)	8.4%	9.9%	49.7%

Source: U.S. Census Bureau, Census 2010 Summary File 1. ESRI forecasts for 2020.

HOUSEHOLD CHARACTERISTICS

The majority of Flower Mound's housing stock is occupied and owned. In 2020, 99 percent of housing units were occupied. Since 2010, this percentage has increased by 2 percent. Of the occupied housing units in Flower Mound, 83.9 percent are owned, meaning that the remaining 15.4 percent are rented. The remaining 0.8 percent represents vacant units. These housing characteristics have stayed relatively consistent since 2010. The average housing value is currently \$403,416, which is one of the highest average values in the DFW region. 51.1 percent of houses in Flower Mound fall within the value bracket of \$300,000 to \$499,999.

The median household income in Flower Mound is \$138,873. This is significantly higher than the median household income of Denton County (\$86,913) and the state (\$61,874). Of the residents that live in Flower Mound, 68.8 percent of the population make \$100,000 or more. These housing characteristics indicate that many households in Flower Mound have higher disposable incomes than other communities in the DFW region to spend on recreation and leisure.

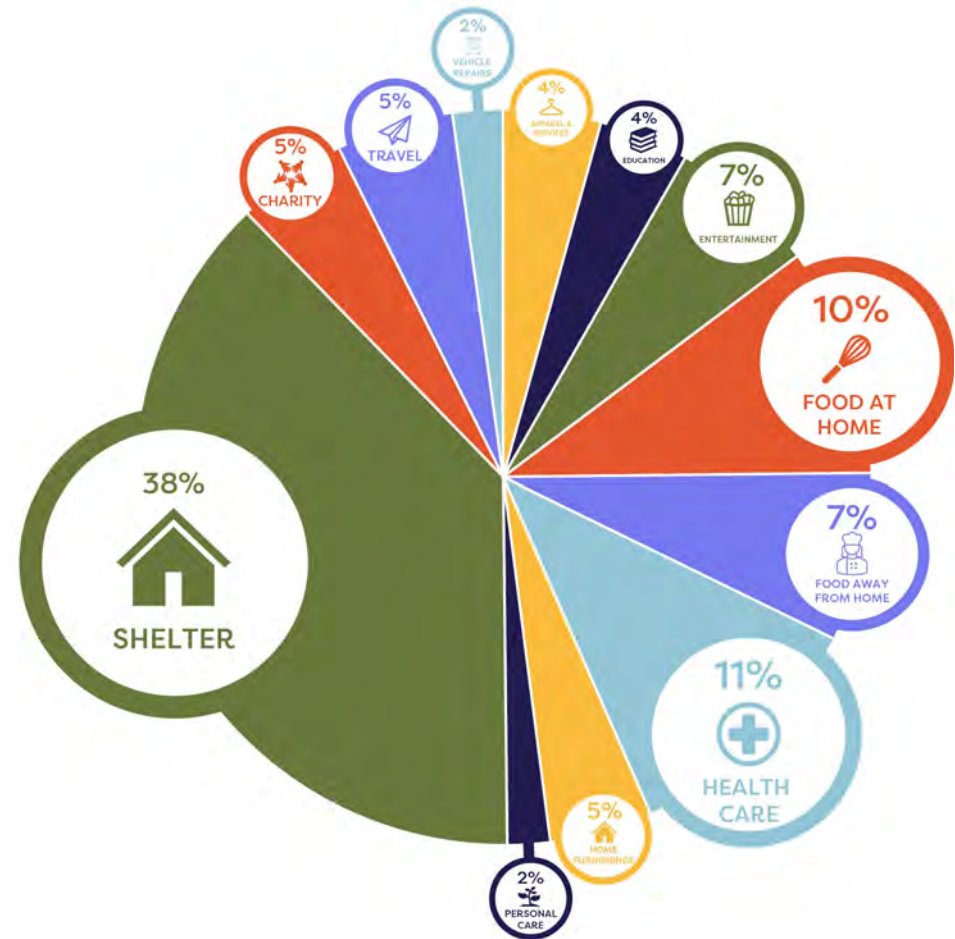
Figure 2.4 displays Flower Mound's consumer spending in 2020. Consumer spending shows the amount spent on a goods and services by households in Flower Mound in the year of 2020. The largest category individuals in Flower Mound spent money on was towards their houses (38 percent). The second largest category was spent towards health care costs (11 percent). Followed by food categories, such as food at home (10 percent) and food away from home (7 percent).

TABLE 2.2: HOUSEHOLD CHARACTERISTICS (2010-2020)

	2010	2020
Total Housing Units	43,097	51,244
Occupied Housing Units (%)	90.6%	91.1%
Vacant Housing Units (%)	9.4%	8.0%
Owner-Occupied Housing Units	18,488	22,747
Median Mortgage Cost	\$1,545	\$1,698
Renter-Occupied Housing Units	47.7%	46.7%
Median Rent	\$782	\$1,082
Total Households	95,794	126,100
Median Household Income	\$44,415	\$60,018

Source: 2015-2019 American Community Survey 5-Year Estimates; 2006-2010 American Community Survey 5-Year Estimates.

FIGURE 2.4: CONSUMER SPENDING



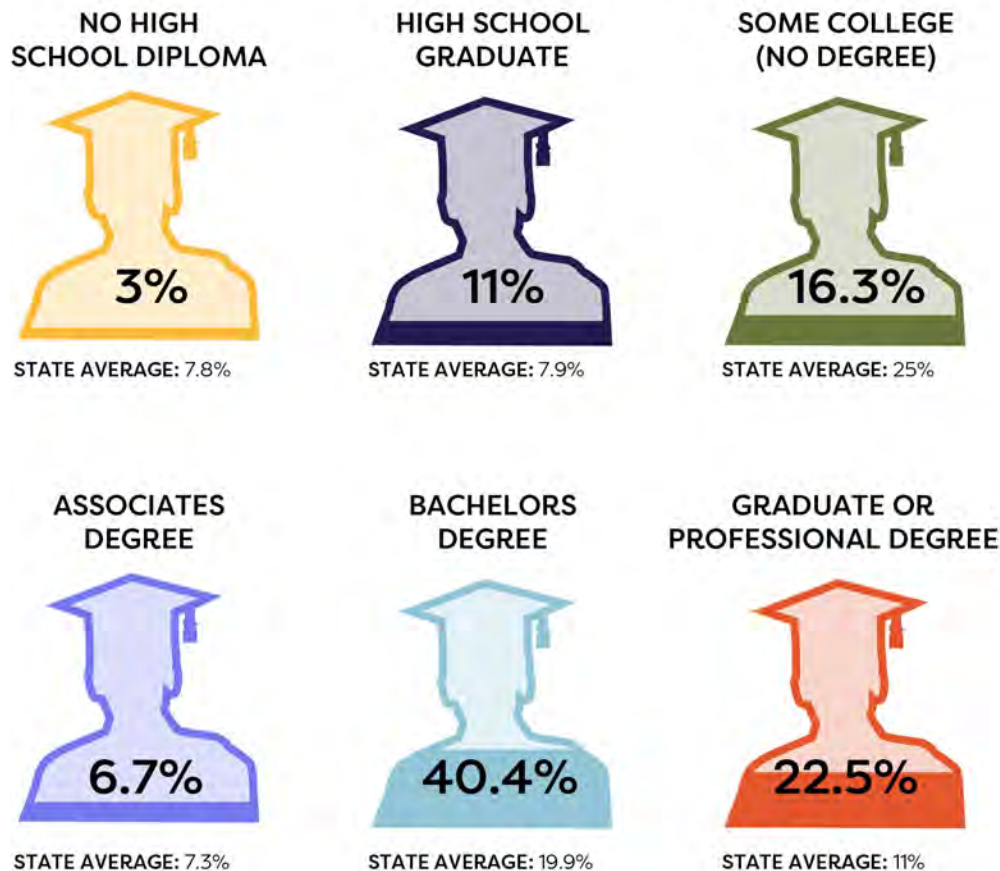
Source: U.S. Census Bureau, Census 2010 Summary File 1. ESRI forecasts for 2020.



EDUCATIONAL ATTAINMENT

Among the residents in Flower Mound who are over the age of 25, 40.4 percent have a bachelor's degree. This percentage is higher than the Denton County average at 30.8 percent and the state average at 19.9 percent. The next largest group is residents who earned their graduate or a professional degree, which make up 22.5 percent of Flower Mound's population. This percentage is also higher than the Denton County average of 15.4 percent and the state average of 11 percent. Overall, most of the population who are over the age of 25 have received a bachelor's degree or higher.

FIGURE 2.5: EDUCATIONAL ATTAINMENT, 2020



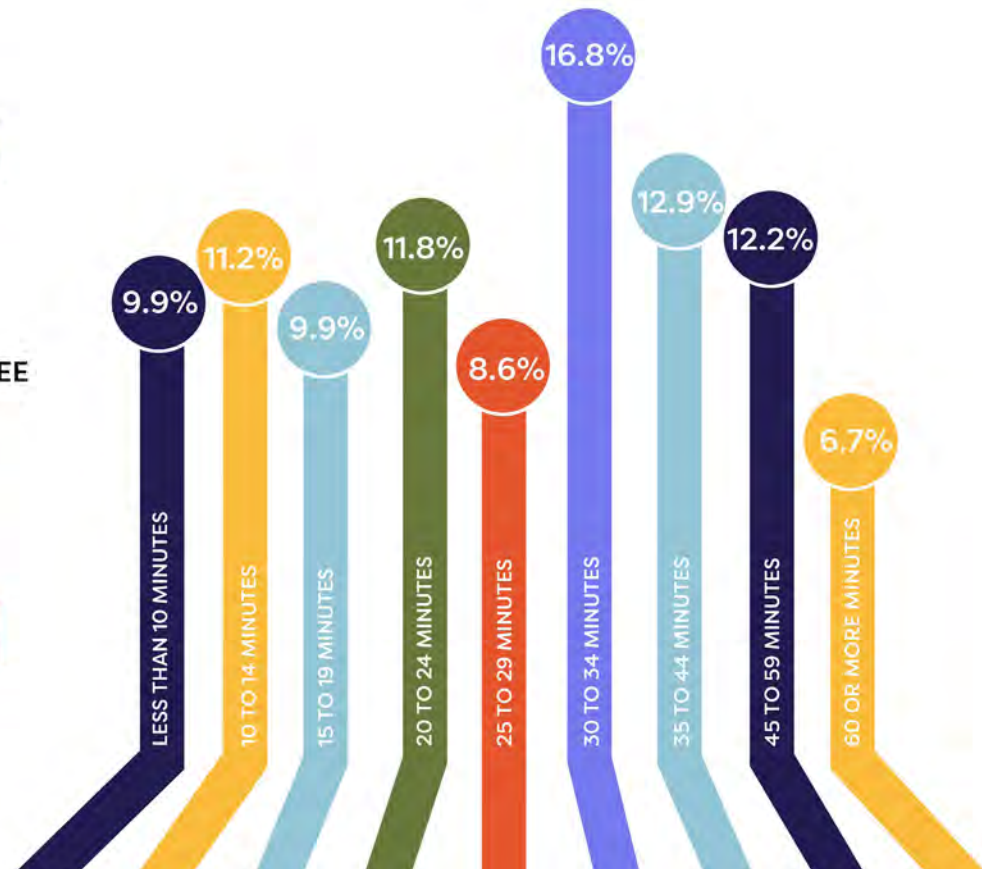
Source: U.S. Census Bureau, Census 2010 Summary File 1. ESRI forecasts for 2020.

COMMUTE TIME

According to the Census Bureau, the average commute time in 2019 was 28.4 minutes. Over the past five years, this number has decreased from 29.2 minutes and currently is at its lowest. For the working population over the age of 16, the most common commute time frame was between 30-34 minutes (16.8 percent). Additionally, 21.1 percent of the population in Flower Mound have a shorter commute time between 10-19 minutes and 25.1 percent of the population have a longer commute time between 35 – 59 minutes. In 2019, most of the population used a car, truck, or van as a means of transportation to work (86.6 percent). This number has fallen slightly since 2014. Over the past five years, Flower Mound has seen an increase of its population working from home and biking to work.

FIGURE 2.6: AVERAGE COMMUTE TIME, 2019

Source: U.S. Census Bureau, 2018 ACS 5-Year Estimates.

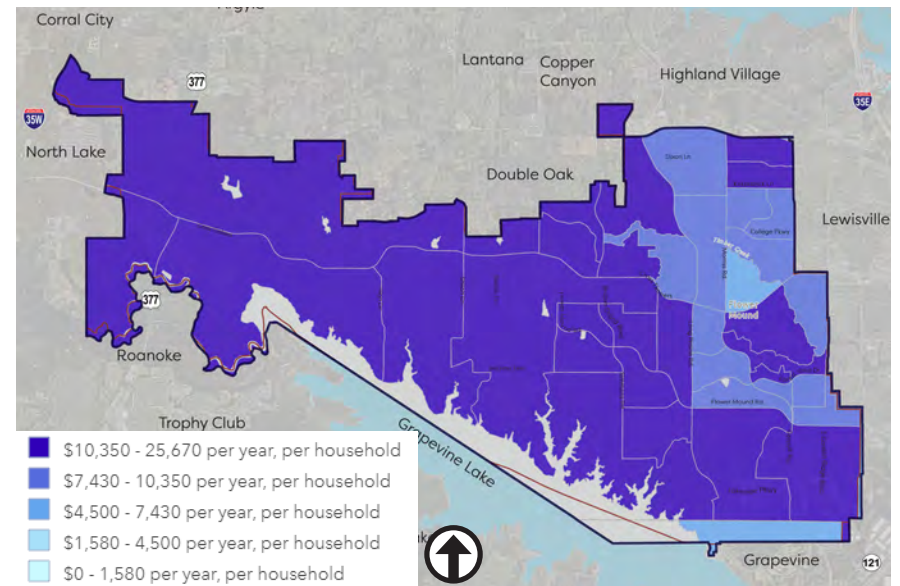


HEALTH

Figure 2.7 displays the average amount spent on healthcare per household in Flower Mound in 2021. All residents in the Town spend at least \$4,500 per year towards their health. However, the largest proportion of the Town spends in the highest bracket that ranges between \$10,350 - \$25,670 a year. This aligns with healthcare services being the second largest category of consumer spending for the Town.

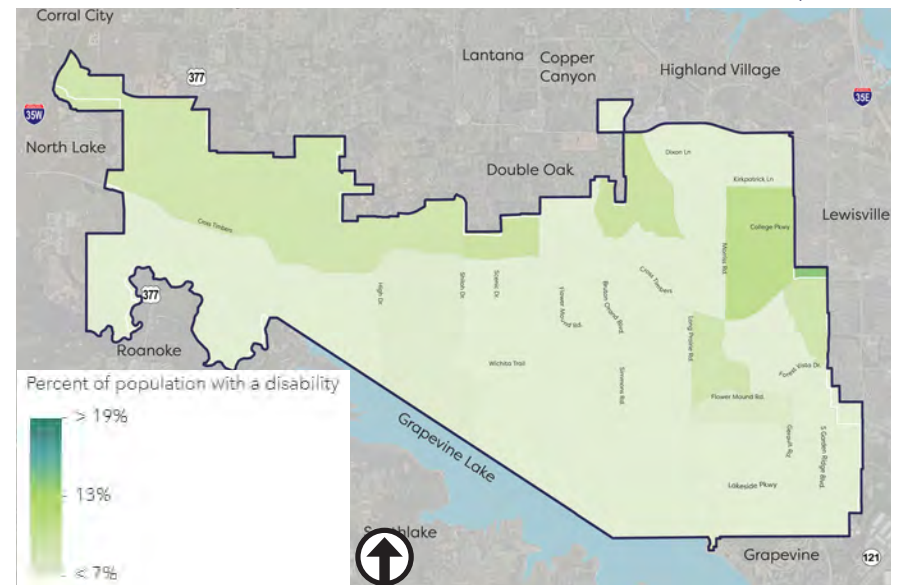
Figure 2.8 displays the percent of population with a disability, based off the six different types of disabilities: mobility/physical, visual, mental health, intellectual, hearing, and learning. Overall, Flower Mound has a low percentage of its population with a disability; in 2019, 5.8 percent of Flower Mound residents had a disability. The largest share of the population with a disability was residents over the age of 65 (55 percent). They are also concentrated on the east side of Flower Mound between Kirkpatrick St and Cross Timbers, primarily around the Pink Evening Primrose Trail.

FIGURE 2.7: HEALTH SPENDING, 2021



Source: ESRI's 2021 U.S. Consumer Spending Data in Census 2010 Geo-graphics, Business Analyst.

FIGURE 2.8: PERCENT OF POPULATION WITH A DISABILITY, 2014



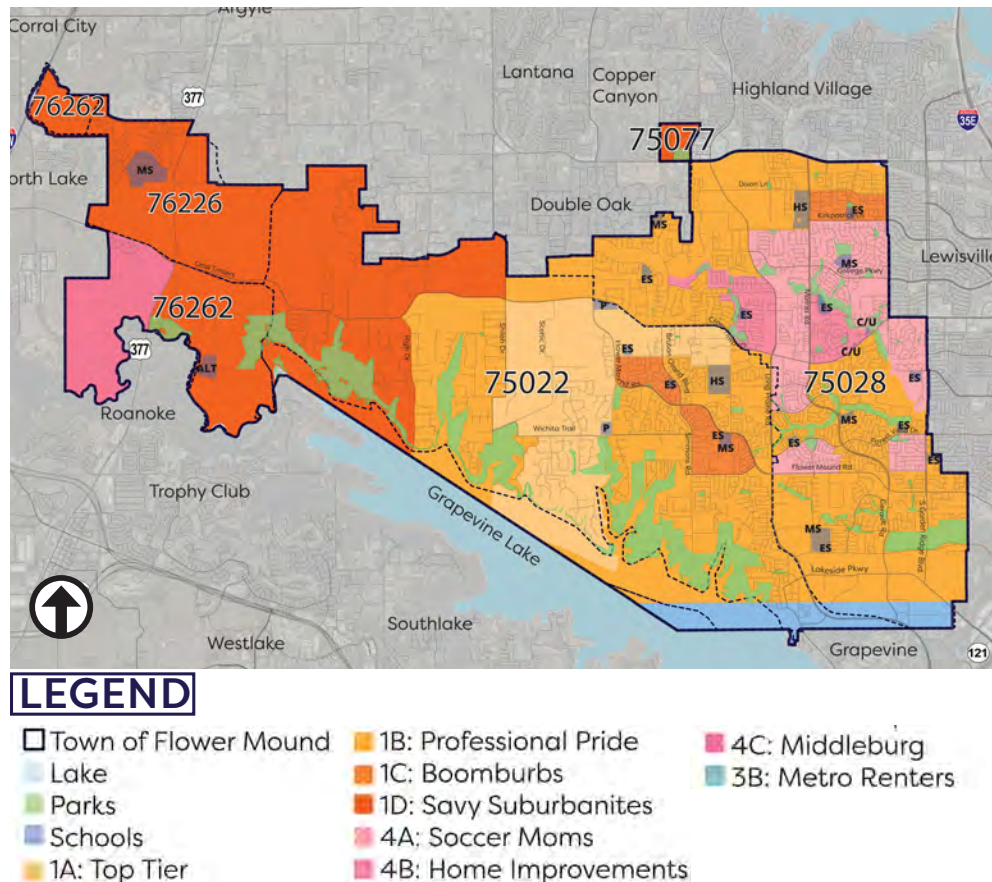
Source: 2010-2014 American Census Survey 5 year-data, Business Analyst.



ESRI TAPESTRY SEGMENTS

ESRI (Environmental Science and Research Institute) is a demographic and mapping company that uses spatial data to help inform communities. The ESRI tapestry market segmentation identifies markets in each community using its geographic, socioeconomic, and demographic characteristics. This helps communities better understand their consumer market. Based on Census block groups in Flower Mound, the top three most represented segments within Flower Mound are “Professional Pride,” “Soccer Moms,” and “Boomburbs”. Page 25 and 26 display all the segments that are represented within Flower Mound along with their associated characteristics and definitions. **Figure 2.9** displays the location of zip codes in Flower Mound and the associated tapestry segments.

FIGURE 2.9: ESRI TAPESTRY SEGMENTS



1A TOP TIER

This segment is considered the wealthiest Tapestry market; members earn more than three times the average US household income. They are also highly educated and more than one in three residents have a postgraduate degree. They are socially responsible consumers that aim for a balanced lifestyle and take interest in expanding their knowledge.

Median Household Income

\$173,200

Median Age

47.3

Average Household Size

2.84

1B PROFESSIONAL PRIDE

These residents are well-educated, career professionals that work in fields such as science, technology, law, or finance. They are goal-oriented and have well established families. Households in this segment like routine as a daily ingredient to their lifestyle.

Median Household Income

\$138,100

Median Age

40.8

Median Household Size

3.13

1C BOOMBURBS

This is a new growth market with many well-educated young professionals with new families. The unemployment in this segment is low and most households have more than two workers. They are well connected to the newest technology and trends. Physical fitness is a priority for this group and leisure activities include sports such as hiking, biking, and golf.

Median Household Income

\$113,400

Median Age

34

Median Household Size

3.25

1D SAVVY SUBURBANITES

This segment includes residents who are well educated and well capitalized. They are informed shoppers and do extensive research prior to making a purchase. They are in older neighborhoods and include families that have no children or adult children. Their suburban lifestyle has a focus on the outdoors like gardening or active pursuits.

Median Household Income

\$108,700

Median Age

45.1

Median Household Size

2.85



4A SOCCER MOMS

These residents are an affluent and family-oriented market. The neighborhoods have a country flavor that are in the suburban periphery of metropolitan areas. This group carries a higher level of debt with the largest proportion having only some college. They favor time saving services and purchases revolve around family-oriented products. Outdoor activities are an important aspect of this group's lifestyle.

Median Household Income

\$90,500

Median Age

37

Median Household Size

2.97

4B HOME IMPROVEMENT

This group is comprised of primarily married couple families that own a single-family home. They have high participation in the labor force and households typically have 2+ workers. Majority of incomes go towards paying off student loans, home mortgages, and eating out.

Median Household Income

\$72,100

Median Age

37.7

Median Household Size

2.88

4C MIDDLEBURG

These residents have transformed from the easy pace of country living to semi-rural subdivisions. They are family-oriented consumers and typically a younger demographic. 65 percent have a high school diploma or some college and have a labor force participation rate typical of a younger population. Outdoor activities popular with this segment include hunting, fishing, and baseball.

Median Household Income

\$59,800

Median Age

36.1

Median Household Size

2.75

3B METRO RENTERS

This segment is highly mobile and well educated with many still enrolled in college. Socializing is important to them as well as environmentally safe practices. They participate in leisure activities such as outdoor activities and yoga. They are very well connected and get a lot of their information via technology.

Median Household Income

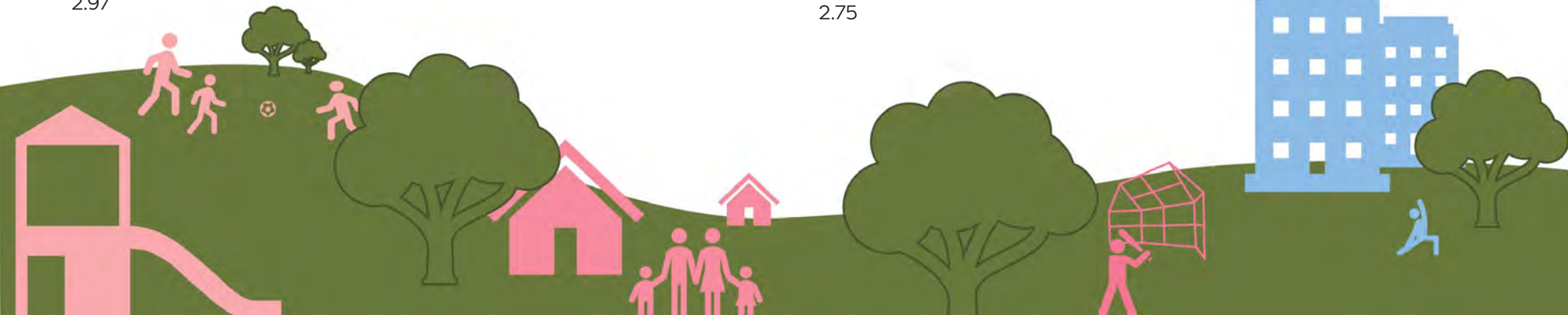
\$67,000

Median Age

32.5

Median Household Size

1.67



PLANNING GUIDANCE

PARKS AND RECREATION MASTER PLAN UPDATE

The 2017 Parks and Recreation Master Plan (PRMP) provides a framework for strategies regarding acquisition and development of recreation facilities for Flower Mound in the future. This plan focuses on the needs of the community within the next five to ten years and uses insights through engagement efforts as a foundation. The primary outcomes of the master plan were to identify a vision for the Parks and Recreation Department, determine the level of needs in current offerings, identify new opportunities that can be met by the department, complete initial testing on strategies for funding, and identify possible parks/facility components for new and future facilities. Finally, this plan identifies a variety of recommendations for the direction of the Parks and Recreation facilities for implementation.

According to the PRMP's level of service analysis, **paved multi-use trails were listed as the highest priority need** out of all parks and recreation amenities assessed as part of the plan. Nature trails and unpaved multi-use trails were also listed as a high priority. Additionally, the overall quality of walking/biking trails was identified as the highest-ranking response for survey takers when asked which services should receive the most attention over the next five years. Equestrian trails were ranked near the bottom in several questions related to identifying needs and priorities moving forward.

The strategic recommendations in the Parks and Recreation Master Plan outline action plans towards the community vision. There are four core community visions that are summarized by parkland and trails community mandates, facilities, programming, and operations and staffing. These four concepts each have a set of strategies that can be used as a road map for the future.

FIGURE 2.10: PRIORITIZED PROGRAM RANKING IN PARKS MASTER PLAN

Facility	Priority
Paved multi-use trails	High
Small neighborhood parks	
Nature trails (paved and unpaved)	
Large community parks	
Outdoor swimming pools/water parks	
Outdoor amphitheaters	
Off-leash dog park	
Unpaved multi-use trails	Medium
Community garden	
Outdoor water splash pads	
Picnic areas/pavilions	
Outdoor tennis courts	
Playground equipment	
Indoor gymnasiums	
Outdoor basketball courts	
Disc golf course	Low
Outdoor fishing areas	
Soccer fields	
Campgrounds	
Skate park	
Baseball & softball fields	
Football & lacrosse fields	
Boardwalks	
Cricket fields	
Equestrian trails	



BLUEBONNET TRAIL

ECONOMIC DEVELOPMENT PLAN

The mission of the economic development plan is to expand the commercial tax base and increase sales tax revenue through resiliency and sustainability efforts. This plan outlines goals, objectives, and strategies to create a diversified and regionally competitive economy within Flower Mound. One major goal outlined in this plan is to develop community resources that contribute to a business environment to encourage development. One example of a strategy that supports this concept is the prioritization of transportation and mobility planning to ensure the efficiency of the thoroughfare system. Another example is maintaining comprehensive park systems and preserving the natural environment that enhance the quality of life and support economic goals. Together, these strategies work to support the community in encouraging high-quality development and promote economic activity.



OPEN SPACE PLAN

A previous vision for Flower Mound identified that a key goal was focused on preservation. The open space plan creates the foundation of a vision for how to adequately produce strategies towards defining and conserving open spaces. These strategies provide an array of techniques to maintain the town's unique natural environment. The plan highlights that it is not to be used as simply an inventory but instead provides an appropriate menu of protection techniques for agricultural, natural, and scenic open spaces in Flower Mound. This plan also determines funding strategies with the best potential as well as voluntary and incentive opportunities for landowners. Finally, the plan does reference providing trail connections throughout open space areas, but also notes that paved recreational trails are not the primary intended use of open space in Flower Mound.



LAND USE PLAN

The Land Use Plan aims to promote more efficient uses of land within Flower Mound. The plan goals center around preservation of the unique natural environment, mitigation efforts of rapid urbanization, creation of a balanced tax base, and development efforts that have exemplary quality and design. These goals reflect Flower Mound's vision of the community and dictates the shape of the town and identifies strategies achieved. The specific land use categories can be found in this plan in more detail, along with specific details regarding six major planning areas which include: Lakeside Business District, Long Prairie District, Cross Timbers Protection Area, Cross Timbers Conservation Development District, Prairie Vista District and Denton Creek District.

The Lakeside Business District prioritizes commercial development to spark economic growth. Long Prairie District is 90 percent developed, however any future uses will comply with emphasizing quality of life and preserving remaining natural landscapes. The Cross Timbers Protection Area covers the areas within the Long Prairie District where Cross Timbers exist. The purpose is to preserve the remnants of the Cross Timbers that have been compromised due to urbanization and enact development standards to uphold the remaining Cross Timbers environmental character. The Cross Timbers Conservation Development District and the Prairie Vista District preserve the ecological area in central Flower Mound. Lastly, the Denton Creek District prioritizes future growth and economic opportunity through supporting uses such as commercial, industrial development, mixed office, retail, and residential uses.

FIGURE 2.11: DISTRIBUTION OF LAND USES FROM THE TOWN OF FLOWER MOUND'S MASTER PLAN

Land Use	Percentage of the Acreage	Flexibility Factor
Non-residential Uses*	45%	-25%
Public Uses	5%	±5%
Residential Uses**	45%	25%
Civic/Open Space (Public and Private)	5%	+10%
Total	100%	

**Non-residential uses shall include retail, office, hospitality, entertainment, etc.*

*** Residential uses above commercial uses shall not be included in the calculation of percentage of residential uses in the overall development*



THOROUGHFARE PLAN

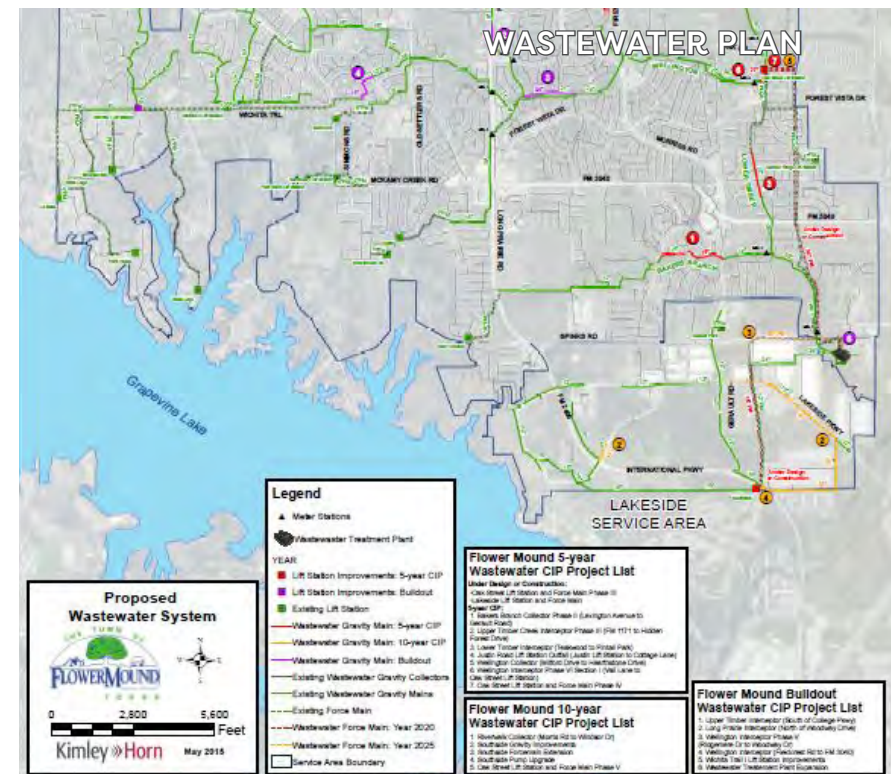
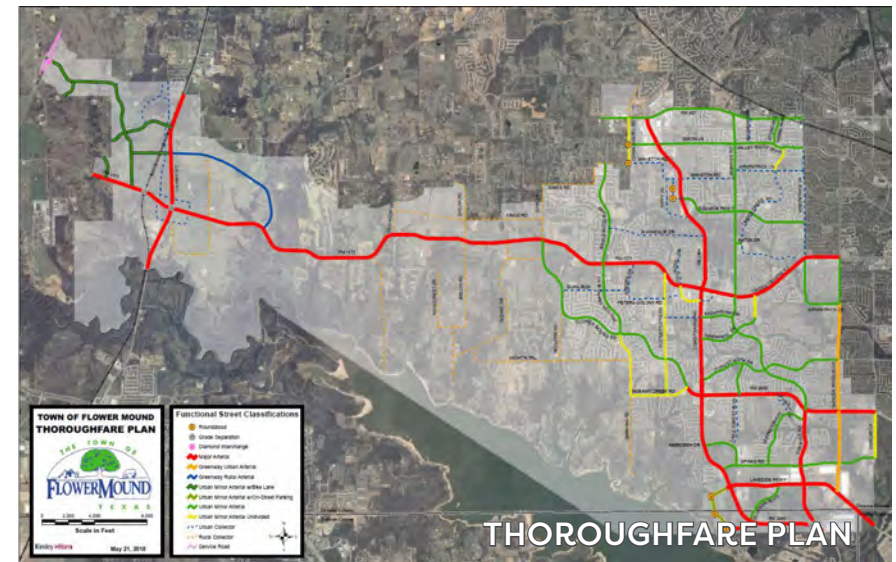
The thoroughfare plan uses projected land uses to guide the development of future thoroughfares. Recommendations were based off technical modeling and information obtained by the public in hearings as well. The features of this plan include a lakeside parkway connection to SH 121, Flower Mound Road, Kirkpatrick Extension, and collector street cross-sections. Recommendations display cross-sections that display the intended configuration of future roadways based on their purpose; the only proposed cross-section with on-street bicycle accommodations is the urban minor arterial with bike lanes. In this cross-section, a 5-foot bike lane is included in both directions with striping designating the bike lane from the travel lane. According to the 2018 thoroughfare map, roadways designated as the urban minor arterial with bike lanes are all located in the far western portion of the town which is currently primarily undeveloped.

WASTEWATER PLAN

The Wastewater Plan is an update from the Wastewater Master Plan adopted in 2009 and then amended in 2015 based on new demographics, land uses, and growth projections. The purpose was to provide strategies for the future of wastewater management within Flower Mound. The 2015 amendments projected growth for 2020, 2025, and community build out and provided a guide to infrastructure needs. These recommendations directly link to the community's land use plan. Two major planning areas were identified to project wastewater demands: Lakeside and Denton Creek. This plan provides recommendations for the wastewater treatment plant, service areas, and each of the five districts outlined in the land use plan.

WATER PLAN

The Water Plan is based on the updates created in 2015 to the 2009 Water Master plan. The purpose of this plan is to assess the existing conditions of the water storage and distribution system as well as to project future needs. The components that have been evaluated in this document are water supply, ground storage, elevated storage, pumping stations, and the distribution system. Other aspects of this plan outline the Denton Creek Reuse Water Master Plan and the Lakeside Reuse Water Master Plan. Both master plans were adopted to meet Flower Mound's reuse water system infrastructure needs, and to provide tools and strategies for current and future needs.



URBAN DESIGN PLAN

The Flower Mound Urban Design Plan provides design guidelines for landscaping elements and architectural standards for non-residential buildings. This was created as part of the Flower Mound Master Plan and was reviewed via community engagement and focus groups. The purpose of the plan is to provide structure to establish community-wide architectural standards for non-residential projects and landscape, gateway, and intersection treatments in the five districts outlined in the land use plan. Each district has a distinct goal that aims to strengthen the community and character identity of the following districts:

- Lakeside Business District
- Long Prairie District
- Cross Timbers Conservation Development District
- Denton Creek District
- Prairie Vista District

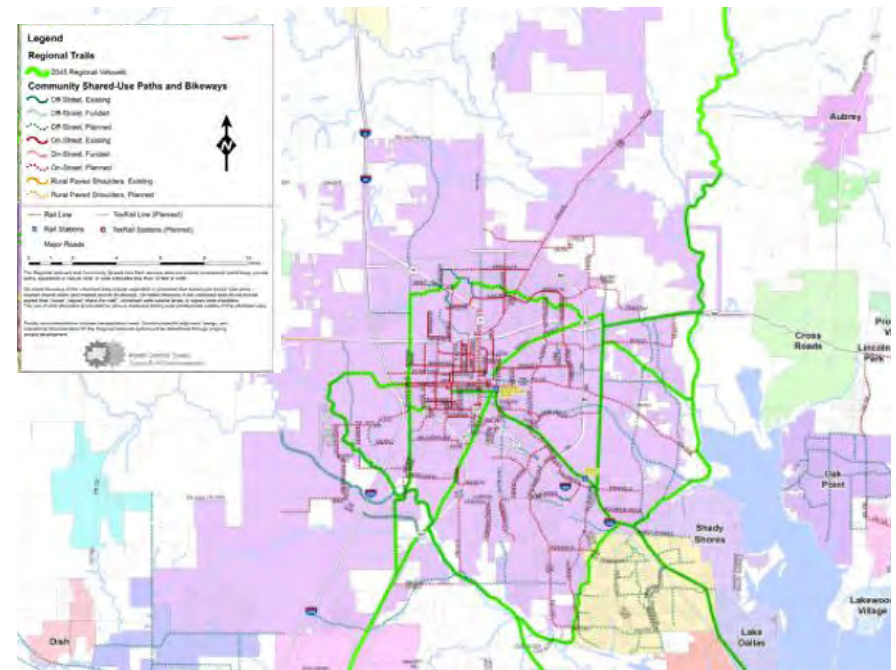


NCTCOG VELOWEB

The North Central Texas Council of Governments (NCTCOG) Regional Veloweb is a regional network of off-street shared use trails. These trails serve as a network of active transportation for multiple user groups including bicyclists, pedestrians, and other non-motorized modes of transportation. The Veloweb is updated by NCTCOG and the latest version of the regional network is included in the NCTCOG Mobility 2045 plan. This plan contains 1,876 miles of off-street trails that has planned connections in 10 counties and 105 cities in North Central Texas. Determining the alignments for the Veloweb trails are achieved through collaborative planning efforts between NCTCOG staff and local governments.

The Mobility 2045 Plan outlines the Veloweb trail segments as existing, funded and planned. Within the context of Flower Mound, all the Veloweb segments are categorized as 'planned' trails. Most of the planned trails are north to south making connections to neighboring communities.

FIGURE 2.12: NCTCOG VELOWEB REGIONAL MAP



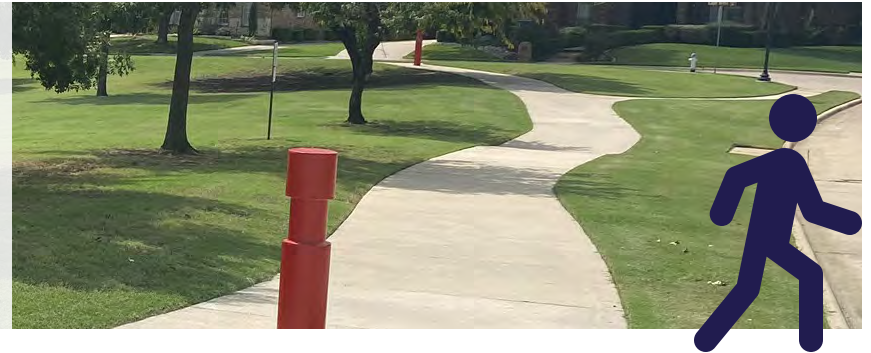
EXISTING TRAILS AND BIKEWAYS SYSTEM

The Flower Mound trail system has diverse offerings for its residents and visitors from across the region and beyond. These trails aim to connect residential neighborhoods to schools, parks, and commercial centers and expand mobility for its residents. Flower Mound has a unique natural landscape that adds to the overall experience of trail users. Currently, there are 62.2 miles of 8' or wider paved Town trails, 5.6 miles of on-street bikeways, 13 miles of equestrian trails, and 34.5 miles of trails owned and maintained by other entities within Flower Mound. **Figure 2.13** and **Table 2.3** displays Flower Mound's inventory of trails and on-street bikeways.

For the purpose of this inventory the following facility definitions are used:

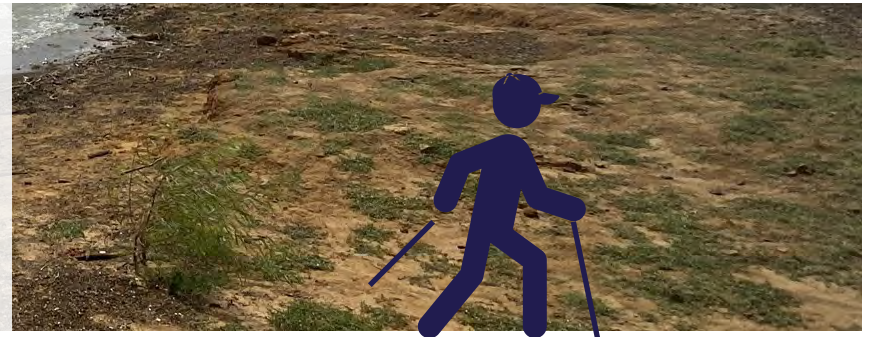
Town Trails:

Trails that are owned and mostly maintained by the Town of Flower Mound. These trails include multi-use paved trails that are between 4-foot and 10-foot in width, soft-surface trails, and equestrian soft-surface trails that range between 15-foot to 50-foot. The Town has developed a trail naming system for much of the existing trail system; the majority of existing trails are named after various wildflowers. These trails are referred to as “branded trails”.



Other Trails:

Multi-use soft-surface paths for hiking and mountain biking that are located within the Town of Flower Mound but are not owned or maintained by the Town. The Dallas Off-Road Bicycle Association (DORBA) maintains over 30 miles of soft-surface trails on USACE land along the shores of Grapevine Lake.

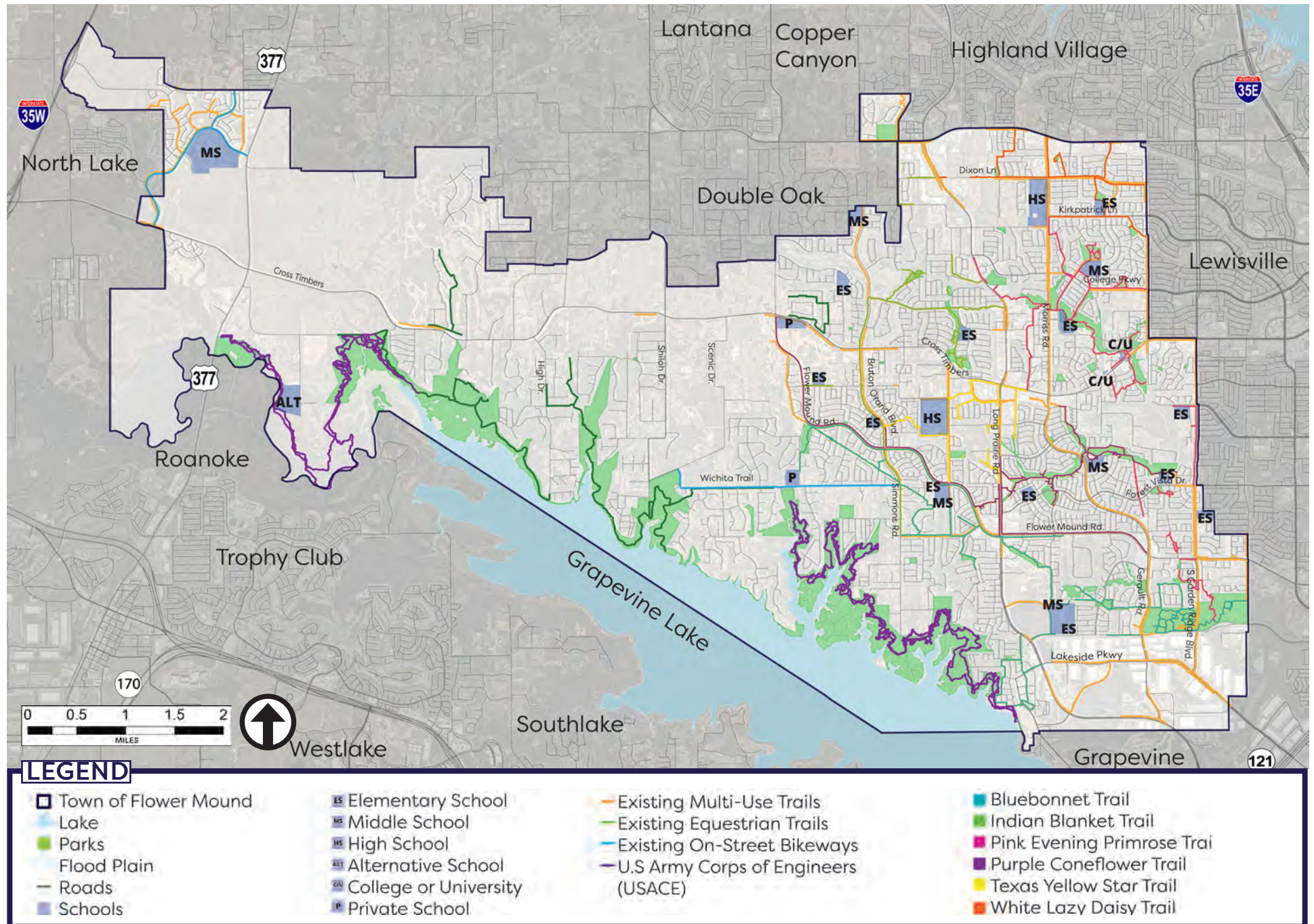


On-Street Bikeways:

Designated accommodations for bicyclists within a roadway such as bike lanes and shared-use lanes. There are existing on-street bikeways along Wichita, Waketon, and Canyon Falls in Flower Mound today.



FIGURE 2.13: EXISTING TRAILS



TOWN TRAILS

Flower Mound's town trails include paved multi-use, soft-surface, and equestrian trails. These trails are owned and mostly maintained by the Town of Flower Mound. Currently, there are 62.2 miles of multi-use trails within Flower Mound's trail system that are 8 feet or wider. 70.6 percent of those paved multi-use trails that are 8 feet or wider are within Flower Mound's designated branded trail network, which are named after wildflowers found in Texas. The Bluebonnet Trail has the most mileage out of all the branded multi-use trails and connects to the town's most prominent park, Heritage Park. There is one short segment of the Pink Evening Primrose trail that is made from decomposed granite. Another type of soft-surface trail maintained by the Town is the equestrian trails. There is a total of 13 miles of equestrian trails located within neighborhoods in the central portion of Flower Mound.

TABLE 2.3: TOWN TRAIL INVENTORY

Trail Name	Length (Miles)	Width (Feet)	Surface Type
Bluebonnet Trail	18.7	4'-10'	Cement
Indian Blanket Trail	8.4	5'-10'	Cement
Pink Evening Primrose Trail	13.0	4'-10'	Cement/Soft-Surface
Purple Coneflower Trail	12.0	4'-8'	Cement
Texas Yellow Star Trail	4.9	4'-8'	Cement
White Lazy Daisy Trail	5.7	4'-10'	Cement
Unnamed Multi-Use Trails	40.9	4'-10'	Cement
Connectors (Unnamed)	1.9	4'	Cement
Equestrian Trails	13.0	15'-50'	Soft-Surface
Total Length	118.5		
Total Length* (8ft or wider) (*Does not include equestrian or soft-surface trails)	62.2		
Total Length* (Less 8ft) (*Does not include equestrian or soft-surface trails)	43.3		

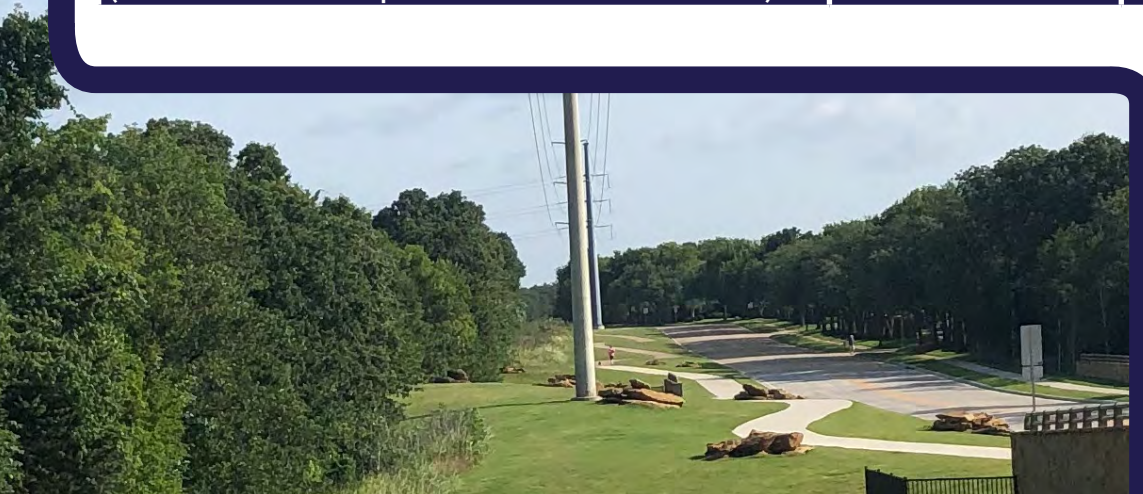
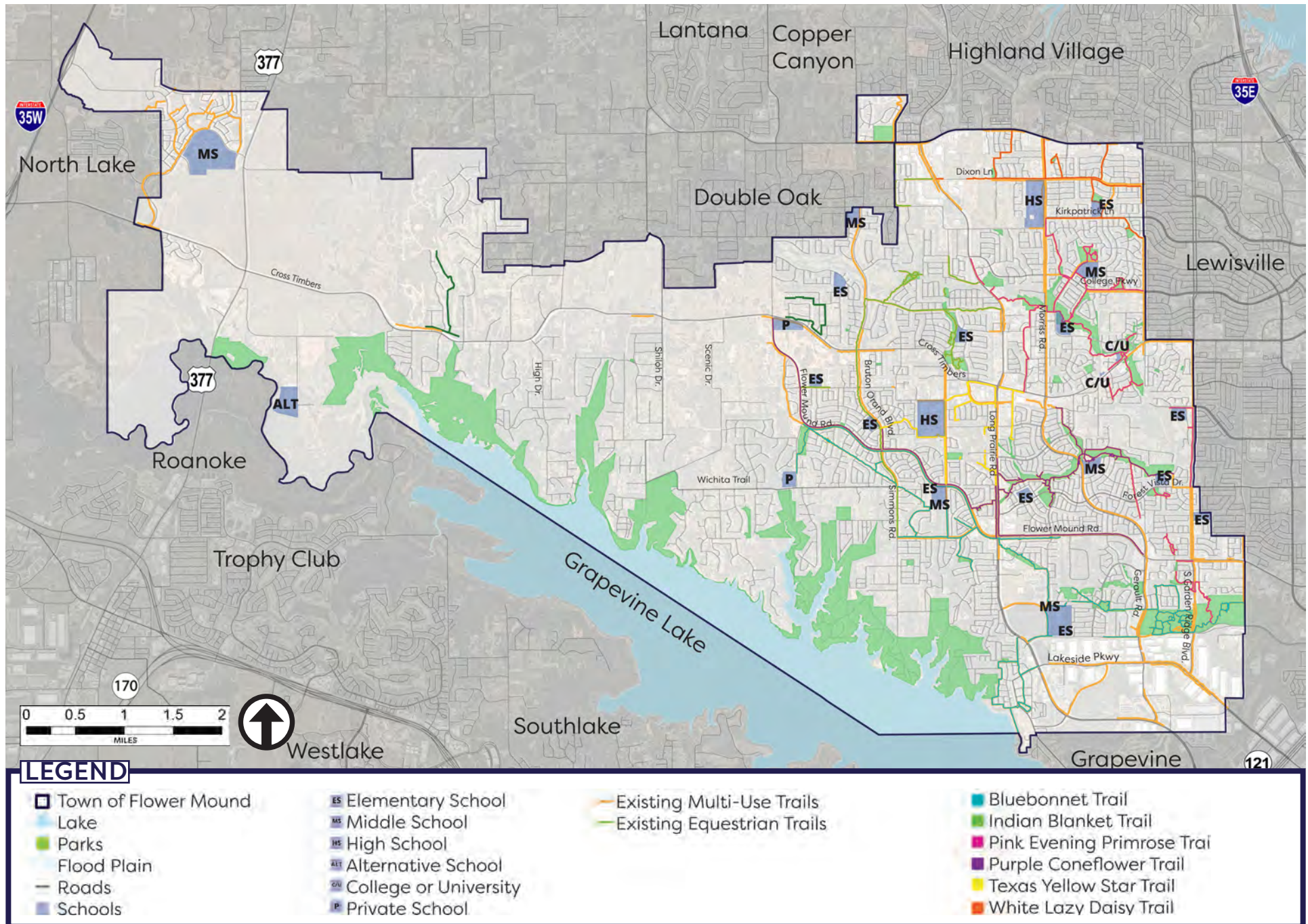


FIGURE 2.14: EXISTING TOWN TRAILS



While there are segments of the existing branded trails that are 4-foot – 6-foot in width, to be considered multi-use trails, the facilities should be at least 8-foot wide, but preferably 10-foot. **Figure 2.15** depicts the breakdown of the widths of existing trails. The majority of trails today are 8-foot wide; but 34 percent are 6-foot or narrower. The needs assessment in Chapter 3 goes into more detail about the need for wider trails.

FIGURE 2.15: EXISTING TOWN MULTI-USE TRAIL WIDTH PERCENTAGES

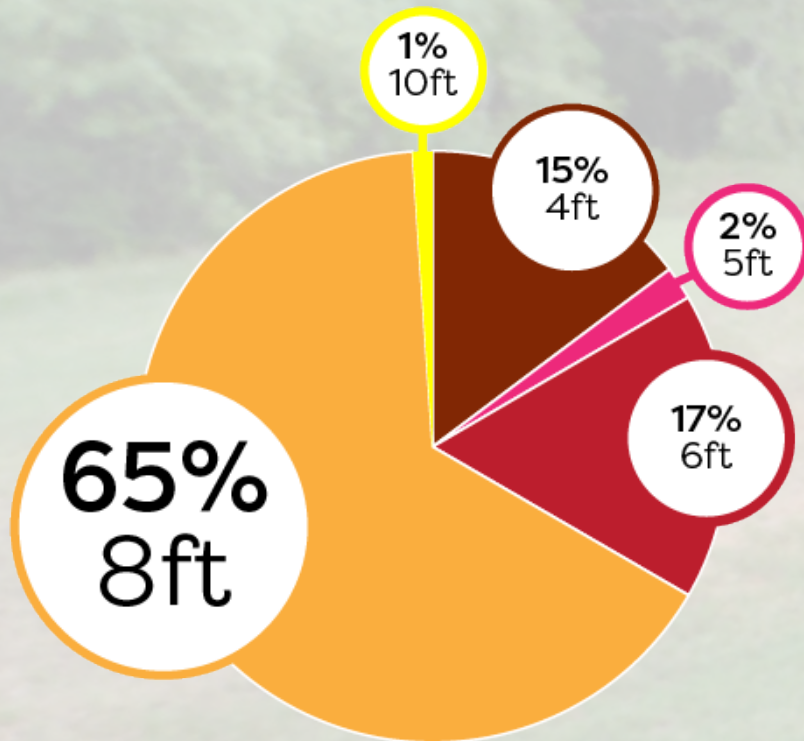
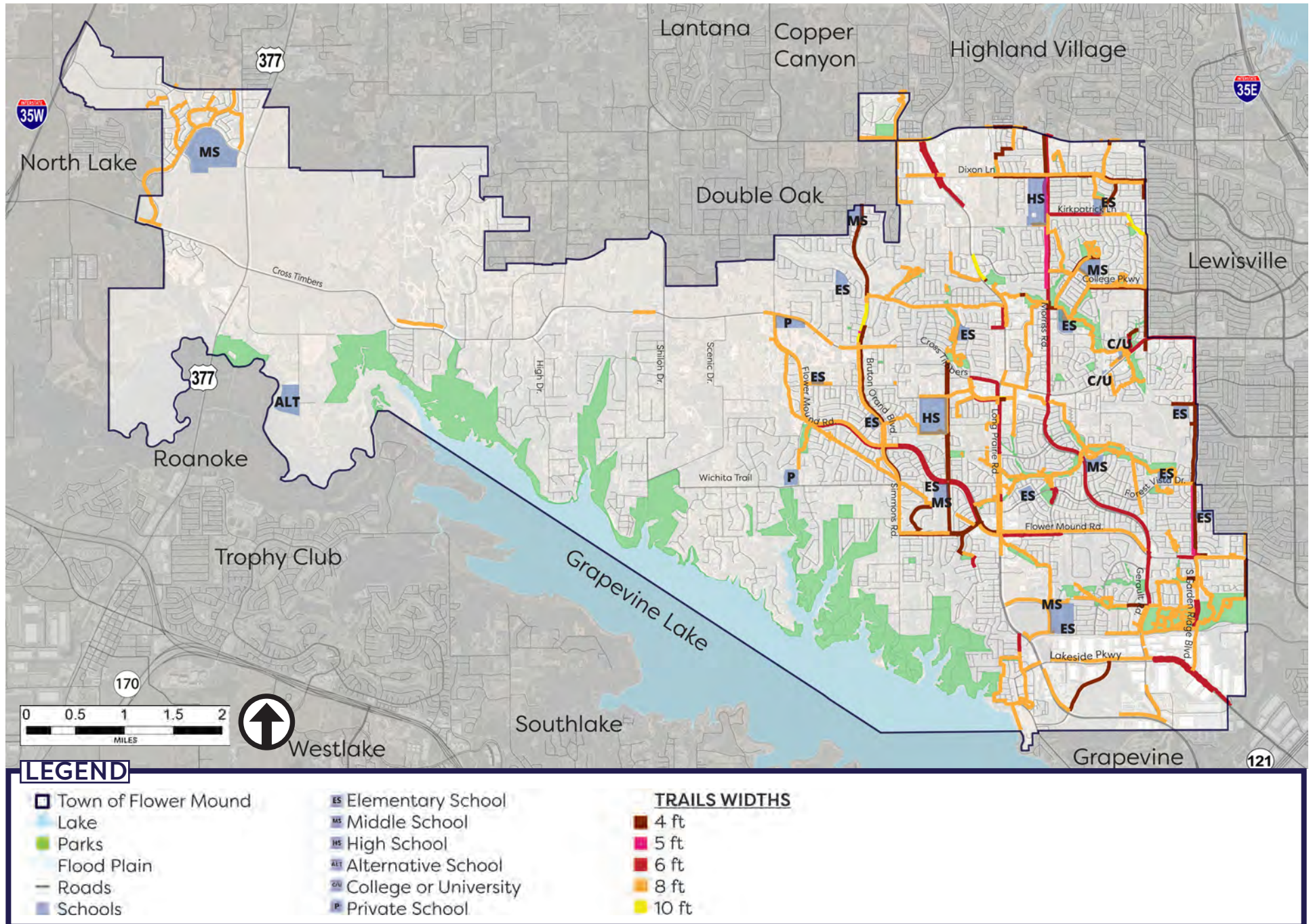


FIGURE 2.16: EXISTING TOWN MULTI-USE TRAILS BY WIDTH



OTHER TRAILS

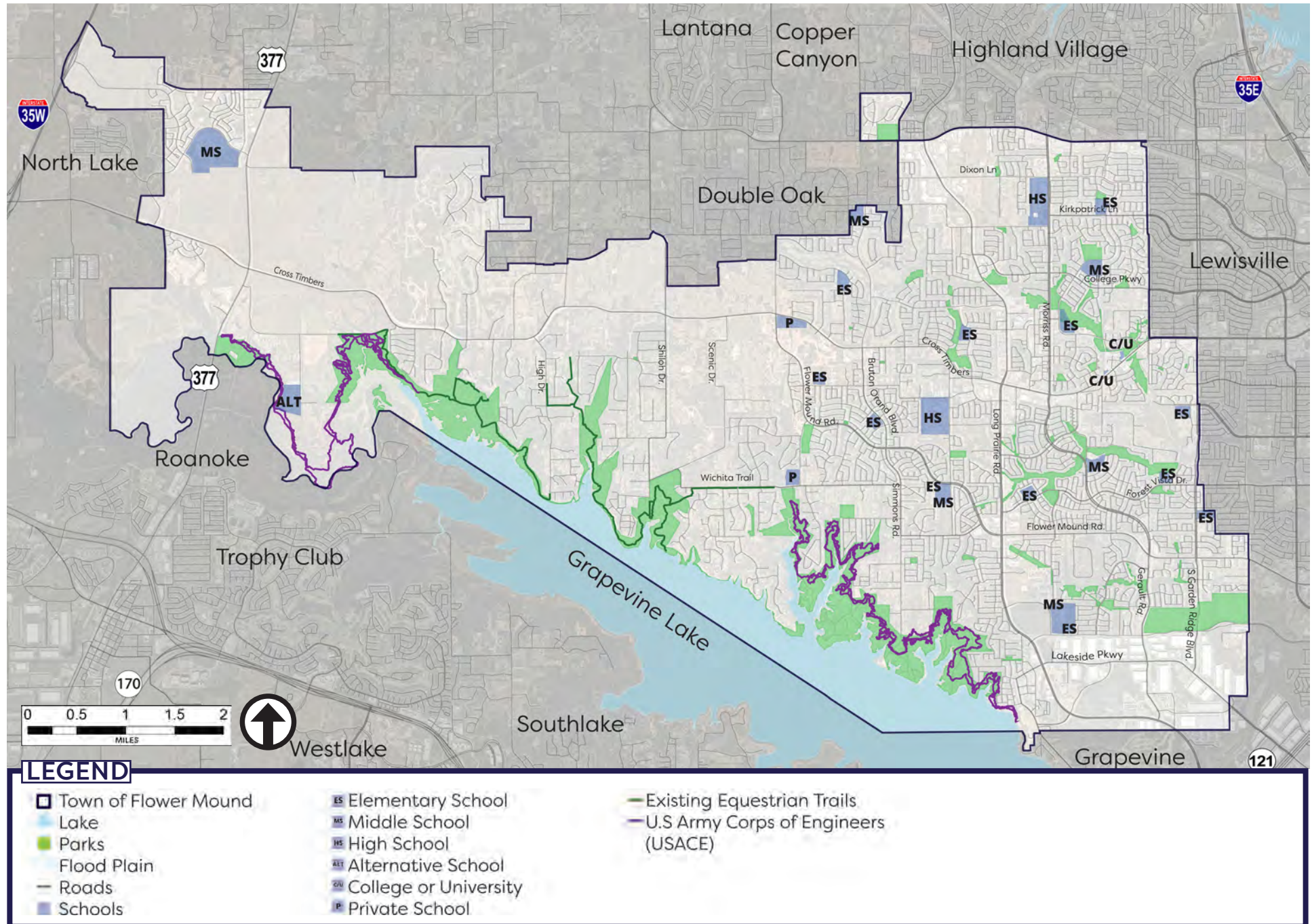
Flower Mound's proximity to Grapevine Lake adds to the natural landscape of the town. Many of the soft-surface trails in Flower Mound are located along the northern shore of Grapevine Lake on the Town's southern border. These trails are located on United States Army Corps of Engineers (USACE) property and are maintained by DORBA (Dallas Off-Road Bicycle Association). The USACE trails are primarily used for mountain biking, hiking, and, where designated, equestrian use.

TABLE 2.4: OTHER TRAILS INVENTORY

Trail Name	Length (Miles)	Width (Feet)	Surface Type
Blue Diamond	0.6	6'	Soft-Surface
Boy Scout Loop	3.0	6'	Soft-Surface
Knob Hill	12.9	6'	Soft-Surface
MAAD East Loop	3.5	6'	Soft-Surface
MAAD West Loop	3.3	6'	Soft-Surface
Murrell Loop	3.3	6'	Soft-Surface
North Shore Far West	2.7	6'	Soft-Surface
Rockledge Loop	2.3	6'	Soft-Surface
Twin Coves Loop	2.7	6'	Soft-Surface
Undesignated	0.2	N/A	Soft-Surface
Total Length	34.5		



FIGURE 2.17: EXISTING OTHER TRAILS





ON-STREET BIKEWAYS

Flower Mound currently has a limited offering for existing on-street bikeways. The types of on-street bikeways in Flower Mound are primarily designated bike lanes that are located on Wichita Trail and Canyon Falls Drive. There are also shared lane markings on Prairie Ridge Road and Waketon Street.

TABLE 2.5: ON-STREET BIKEWAY INVENTORY

Bikeway Name	Length (Miles)	Accommodation
Canyon Falls Drive	1.9	Bike Lane
Prairie Ridge Road	0.5	Shared Lane Markings
Waketon Street	0.8	Shared Lane Markings
Wichita Trail	2.4	Bike Lane
Total Length	5.6	

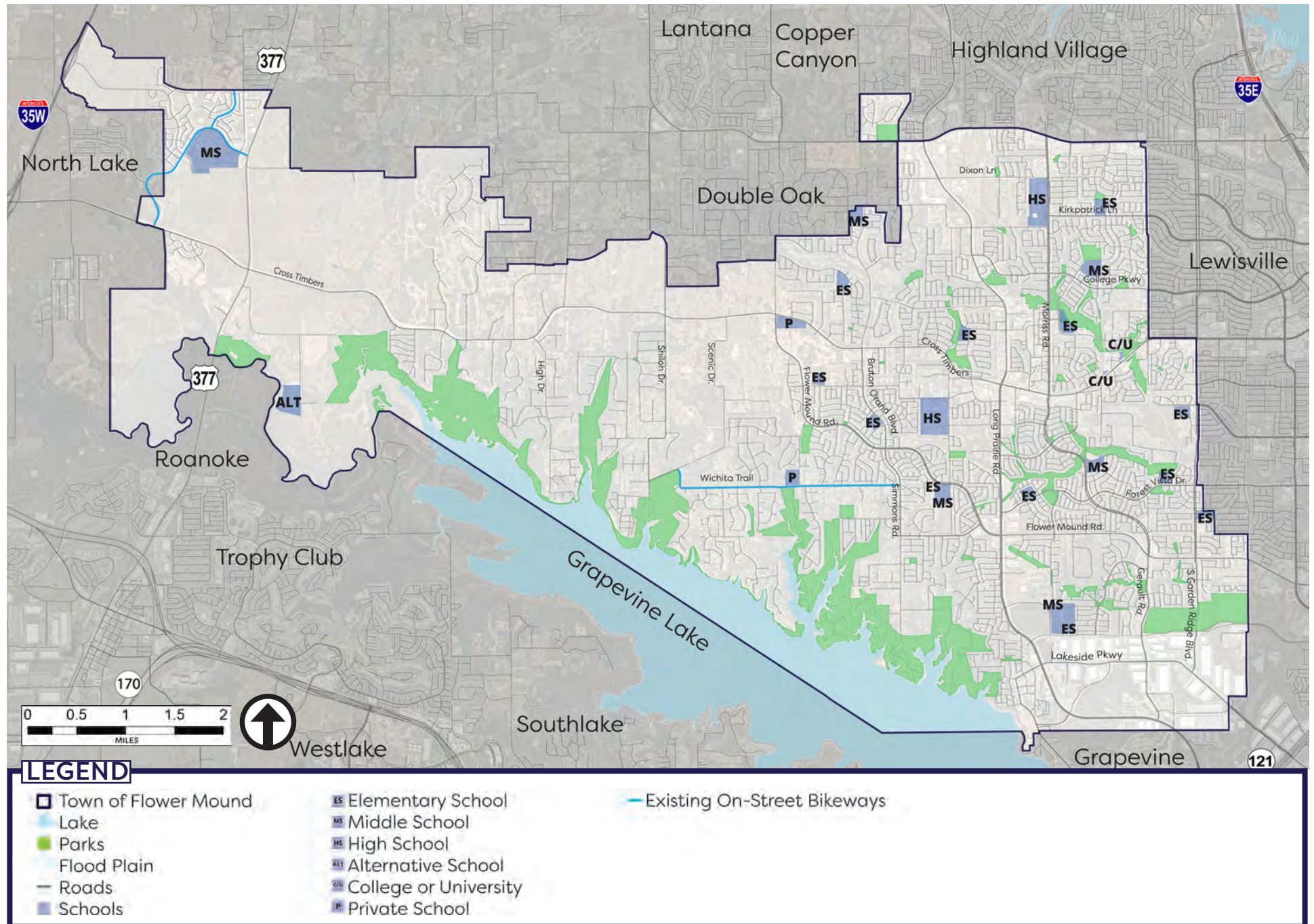


SHARED-USE LANE



CYCLISTS

FIGURE 2.18: EXISTING ON-STREET BIKEWAYS



CURRENTLY PLANNED SYSTEM

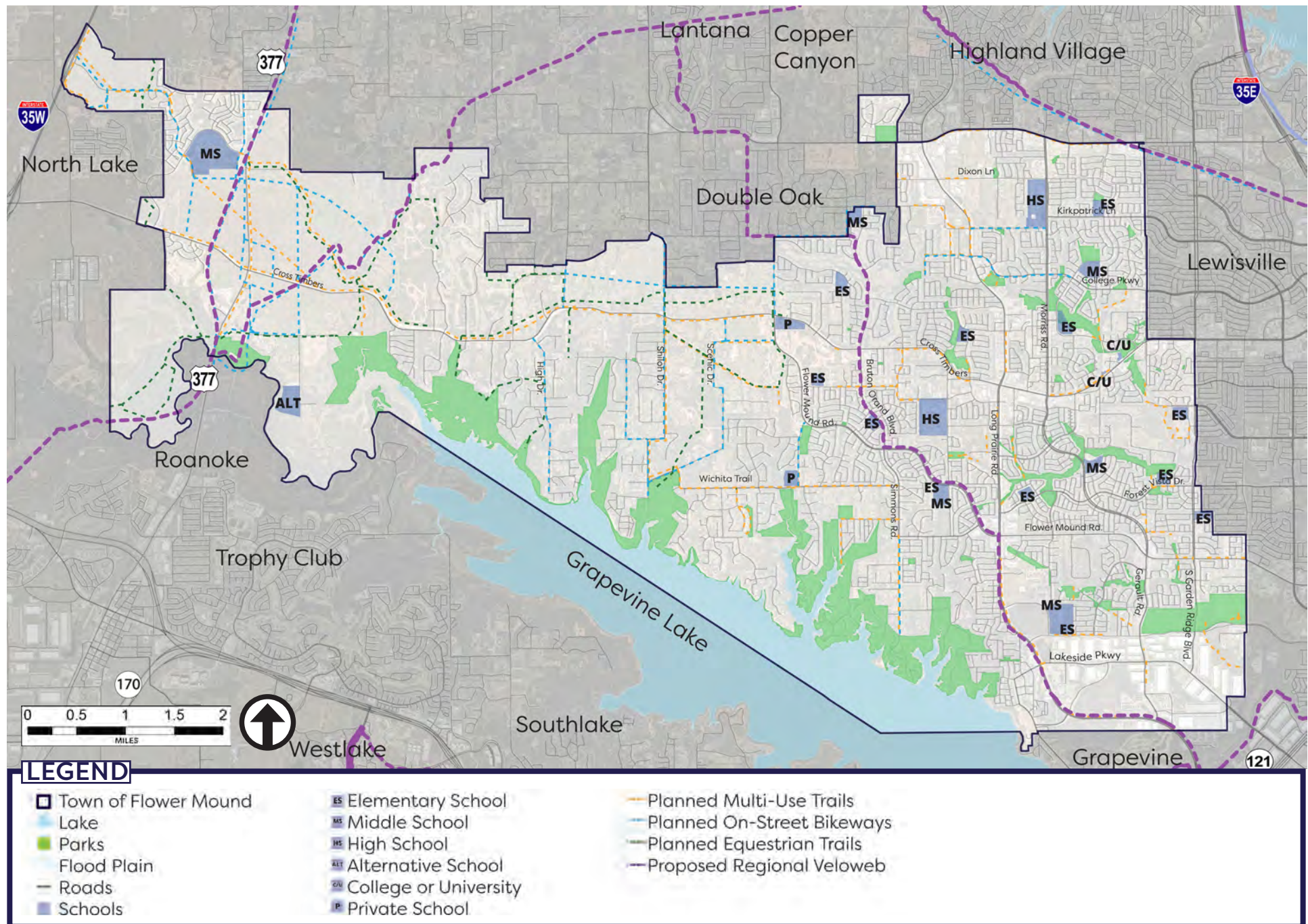
The 2017 Park and Trails Plan established a network of planned trails and bikeways for the town. This plan identified over 50 miles of additional Town Trails and nearly 30 miles of additional on-street bikeways. These planned routes aim to fill gaps in the current trails system in Flower Mound and increase regional and internal connectivity. The currently planned trails will be reviewed as part of this planning effort to determine if they are still warranted and feasible.

TABLE 2.6: EXISTING & CURRENTLY PLANNED SYSTEM

Facility Type	Existing Length (miles)	Planned Length (miles)
Town Trails (8' or wider)	62.2	53.4
On-Street Bikeways	5.6	29.0
Equestrian Trails	13.0	22.7
Total Length	80.8	105.1



FIGURE 2.19: 2017 MASTER PLAN PROPOSED TRAILS & BIKEWAYS



**System Users
Community Input
Needs Assessment
Barriers & Opportunities**



03 TRAILS AND BIKEWAYS SYSTEM NEEDS



A comprehensive trails and bikeways system is designed based on the needs of the community, the opportunities that exist, and the barriers that may prevent connections. This chapter describes Flower Mound's identified needs based on existing conditions, safety issues, standards, and benchmarking. This chapter also identifies needs based on community engagement, existing barriers in the trail system, and opportunities for new trail and bikeway corridors.

SYSTEM USERS

Trails and bikeways can be designed to serve a range of users that express and exhibit different needs, interests, and abilities. Communities that recognize and acknowledge the overlapping needs and preferences of their residents are best able to develop a trails and bikeways system that efficiently accommodates multiple user groups.



PEDESTRIANS

A large number of people use trails for recreational purposes and some use them for commuting purposes as well. Walking is a great option for passive recreation because it is affordable and accessible for most people. It is also important to provide pedestrian connections for residents without access to a vehicle. Therefore, it is crucial that trails provide connectivity between neighborhoods and nearby destinations to encourage walking. When developing trails for pedestrians it is important to design them to be safe, enjoyable, and comfortable.



RUNNERS/JOGGERS

Trail systems are great locations for runners and joggers who seek opportunities for sports, leisure, and fitness since they provide a safe, off-street environment away from motor vehicles. Multi-use trails provide adequate space for runners and joggers to safely and comfortably pass other users and provides enough space for running groups and meet-ups. Runners prefer either paved or soft-surface trails, so providing options for both is important.



BICYCLISTS

Bicyclists consist of three groups: the occasional rider (children and seniors); the recreational rider (basic); and, the more experienced rider (advanced).

Children and Seniors

Children and seniors represent some of a community's most vulnerable demographic groups and therefore require easily accessible trail routes that are simple and easy to navigate. When developing trails and bikeways, it is important to provide spaces that are safe and comfortable for children and seniors. These groups typically prefer to ride on an off-street trail that is located away from the roadway to minimize potential interaction with motorists.

Basic

Bicyclists who fall within the basic skill category typically ride for leisure and prefer off-street trails or sidepaths adjacent to roadways. This user group is less likely to cycle as a mode of transportation since they are generally less confident riders. However, they are more likely to ride on-street within residential neighborhoods with low traffic speeds and within parks.

Advanced

Experienced bicyclists typically view cycling as a mode of transportation and are more comfortable using on-street facilities. These bicyclists are confident on roadways and undeterred by various roadway conditions, including sharing lanes with motor vehicle traffic. Users within this group may be part of a cycling organization or view cycling as a viable commuting option for some of their weekly trips. If advanced riders use trails, implementing speed control elements is recommended to reduce the potential for conflict with slower trail users.



MOUNTAIN BIKERS

Mountain bikers use soft-surface off-road trails for recreation and fitness purposes. Soft-surface trails can incorporate features such as jumps, ramps, and grade changes to add obstacles for the trail users. These narrow trails can be designed for beginners through advanced riders and typically attract visitors from outside of the community.



HIKERS

Hikers use soft-surface off-road trails for recreation, leisure, and fitness purposes. Hikers enjoy physical activity in a more natural setting. Hiking trails can be designed with grade changes and switch backs to add variation for beginners to advanced hikers.



EQUESTRIAN USERS

Equestrian trails are enjoyed by people on horseback as a way to explore nature and ride in a different environment than arena riding. These trails are often soft-surface and natural. Equestrian trails may be designed primarily for horseback riding, or they may be shared for soft-surface walking, jogging, and biking. If multiple users are allowed, the trails should provide etiquette on sharing the trail for all users.



PADDLE SPORTS

Kayakers and canoers utilize a network of waterway trails. These trails, sometimes called paddling trails or blueways, are accessed through launch points along a river, creek, lake, or other body of water. Paddlers may consist of people in kayaks, canoes, small non-motorized boats, or paddle boards and may have varying experience levels.



COMMUNITY INPUT

Engaging with current and future trail system users to collaborate on the vision and goals of the trail system is a crucial part of the planning process. Establishing engagement sessions that reach a variety of residents in Flower Mound help the Town benchmark needs of the community regarding opportunities and barriers in the existing trails system. Various engagement methods were utilized that involved a variety of stakeholders and the community. These engagement efforts included a steering committee representing a diverse selection of community members and interests, a technical working group comprised of town staff, listening sessions, and in-person and online public engagement.

STEERING COMMITTEE

The Steering Committee is comprised of community leaders and key community stakeholders to review and guide the plan development. Members included representatives from cycling, running, and riding groups, boards and commissions, Lewisville ISD, and students. This committee met three times during the process to help with identifying trails and bikeways needs, visioning, reviewing findings and preliminary recommendations, and recommending approval of the final plan.



TECHNICAL WORKING GROUP

The Technical Working Group is comprised of town staff members from various departments to assist with review and development of the plan. During the planning process, the group met three times to discuss current and future needs, review preliminary recommendations, and provide final guidance on the draft plan. Having input from different departments throughout the process helped to ensure that the recommendations were feasible.



STAKEHOLDER LISTENING SESSIONS

During the initial phase of the project, visioning meetings with community organizations and key community representatives were conducted to solicit feedback on the strengths and weaknesses of the Town's existing trails and bikeways system. These meetings were designed to assess the needs and desires for the trails and bikeways system in the Town. Invited groups included governmental agencies, trail and bikeway user groups, economic development groups, and education groups.



OPEN HOUSE

Two public open houses were offered to solicit feedback from the community during the planning process. The first was conducted in person and virtually to determine the needs and vision of the community for the trails and bikeways system. The second meeting was held at the end of the project to allow the community to review and provide feedback on the draft master plan.



POP-UP EVENTS

The team attended Town of Flower Mound events to increase awareness of upcoming engagement opportunities (discussed on page 45) and to collect information about the existing trails and bikeways system in Flower Mound. The pop-up events included the Arts in the Park inaugural event and a Friday night concert series event in Heritage Park.



BOARD & COMMISSION MEETINGS

Presentations to the Parks Board, Transportation Commission, Planning & Zoning Commission, and Town Council during the process allowed the team to gather additional input and review draft recommendations for the plan.



ONLINE ENGAGEMENT

Several online engagement methods were used to reach people who weren't able to attend events in person.

- The **Project Website** was established to advertise upcoming meetings, update the community on the status of the project, allow for input, access virtual engagement rooms and community surveys, and share data and reports created through the process.
- A **Community-wide Online Survey** was conducted early in the process to garner feedback on the community's trails and bikeways system. There were a total of 947 responses received between May and June 2021.
- A **Virtual Public Engagement Room** was developed to mimic the activities conducted at the first public open house in May 2021 in an online setting. The site generated roughly 1,300 views and nearly 100 people provided input via the virtual public engagement room stations.
- An **Interactive Map** was developed to allow residents to give location-specific input on needed connections within the system.
- A series of **Educational Videos** were developed about the Flower Mound trails and bikeways system and the master plan initiative. The videos outlined the plan process, reviewed the current conditions and plan goals, and provided an overview of the plan recommendations.



PUBLIC OPEN HOUSE

ENGAGEMENT RESULTS:

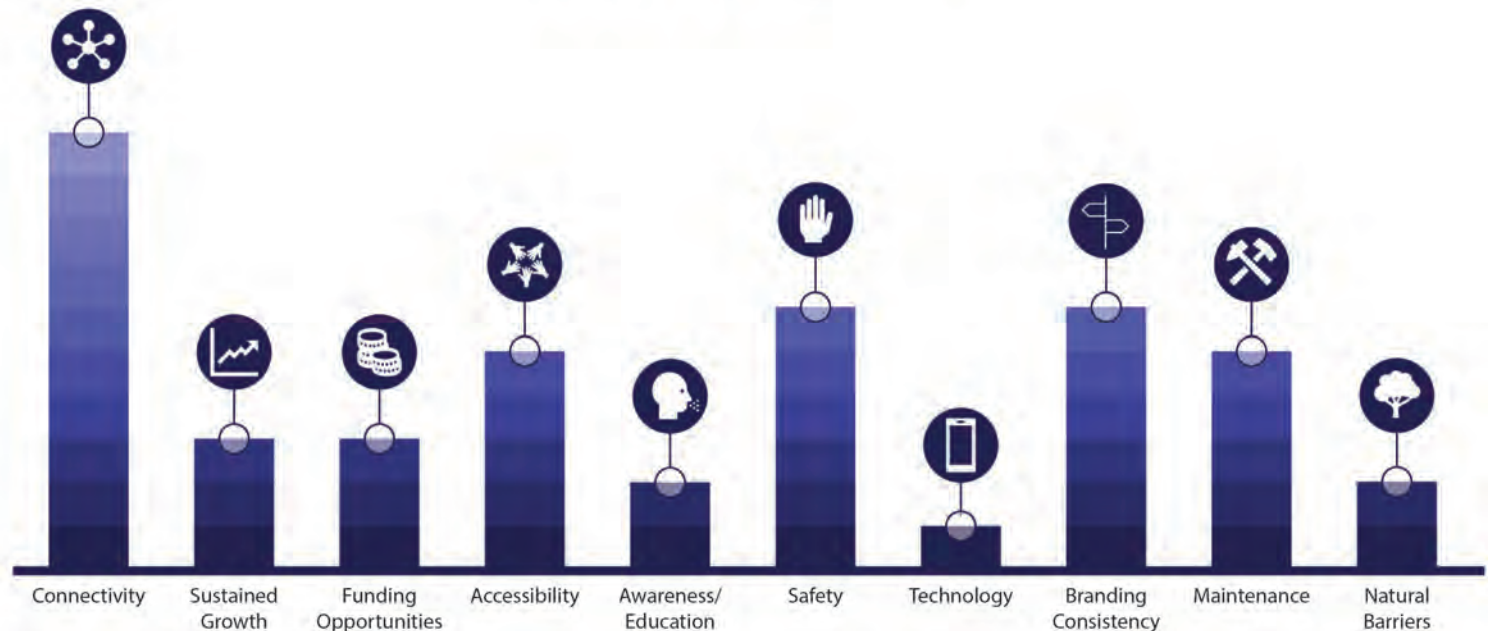
Steering Committee, Technical Working Group, and Stakeholder Listening Sessions

The following questions were asked during our visioning sessions in May 2021. The following graphics are a summary of the questions that were posed to the Steering Committee, Technical Working Group, and stakeholder listening sessions.

WHAT IS YOUR
VISION FOR
THE FUTURE
OF TRAILS AND
BIKEWAYS IN
FLOWER MOUND?

SCENIC USERS
EQUESTRIAN INTERNAL
REGIONAL APP LIGHTING
UNIQUE SAFETY FRIENDLY
CONNECTIONS NATURAL
BIKE TRAILS PRESERVE
WAY-FINDING LOCAL
AWAWARENESS COMMUNITY
DESTINATIONS ACCESS
SIGNAGE LANES
AWARD-WINNING

WHAT ARE SOME OF
THE CHALLENGES
RELATED TO TRAILS
AND BIKEWAYS IN
FLOWER MOUND
TODAY?



ENGAGEMENT RESULTS:

Public Open House & Virtual Public Engagement Room

The following questions were asked during the first public open house in May 2021 and within the virtual public engagement room that was available immediately following the open house. The following graphics are a summary of the feedback that was received during those meetings.

WHAT ONE WORD
WOULD YOU USE TO
DESCRIBE TRAILS
AND BIKEWAYS IN
FLOWER MOUND
TODAY?

TOWN TRAIL
PEACEFUL
SEGREGATED
MAINTENANCE
PATCHY
GAPS
QUIET
INCOMPLETE
DISCONNECTED
LIMITED CONNECTION
LOVE

WHAT ONE WORD
WOULD YOU USE TO
DESCRIBE HOW YOU
ENVISION TRAILS
AND BIKEWAYS IN
FLOWER MOUND IN
THE FUTURE?

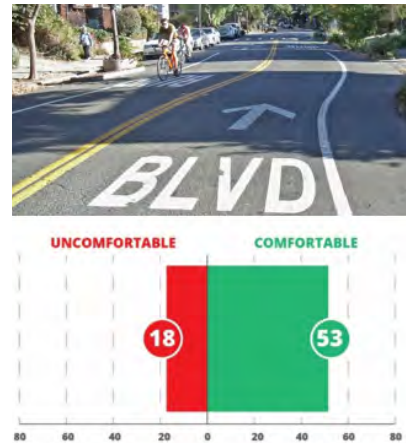
COORDINATION
MOUNTAIN BIKES
COMMITTEE
CLEANER
CONTINUITY
COMPREHENSIVE
BIKING TRAIL
CONNECTED
ACCESSIBLE
RESPECTFUL
COMMUNITY
MEDAL BIKE CITY
MOUNTAIN BIKES
DESTINATIONS
INTERCONNECTED PAVEMENT LAKE
WESTERN CORRIDOR
SOFT SURFACE
TRAILHEAD
EAST TO WEST
NEIGHBORING
ACCESSIBLE
LOW IMPACT
PROGRESSIVE ENTRANCE

ENGAGEMENT RESULTS:

Public Open House & Virtual Public Engagement Room

The following graphics summarize feedback received during the public open house and virtual public engagement room. Participants were asked to choose if they would feel comfortable or uncomfortable using the depicted facility. The number below each picture show the total responses for each.

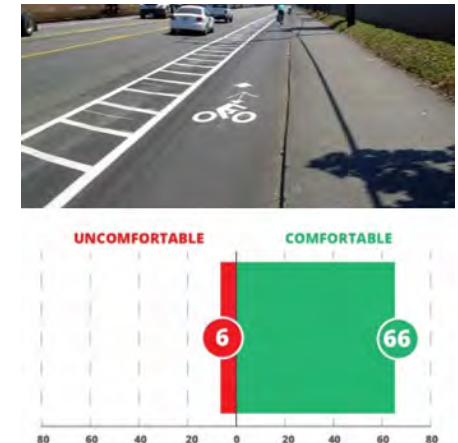
WHAT IS YOUR
LEVEL OF
COMFORT WITH
THE FOLLOWING
TYPES OF ON-
STREET BICYCLE
FACILITIES?
(TOP 3 OF 6)



**WIDE
SHOULDER**



CYCLE TRACK

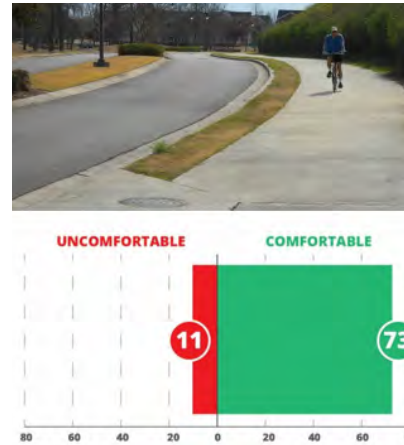


**BUFFERED
BIKE LANE**

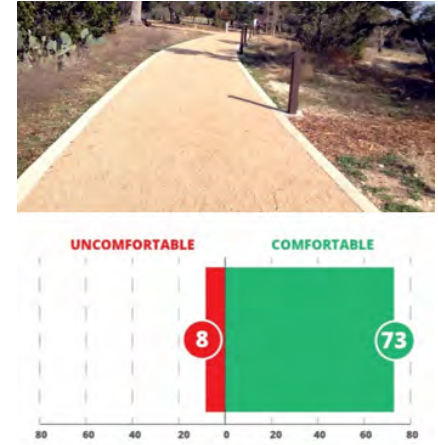
WHAT IS YOUR
LEVEL OF COMFORT
WITH THE
FOLLOWING TYPES
OF OFF-STREET
TRAILS?
(TOP 3 OF 6)



**SHARED-USE
PATH
(PAVED)**



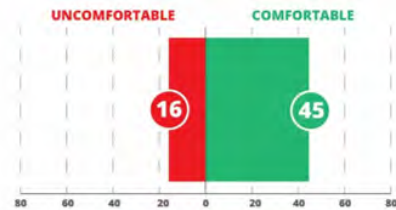
**SIDEPATH
(PAVED)**



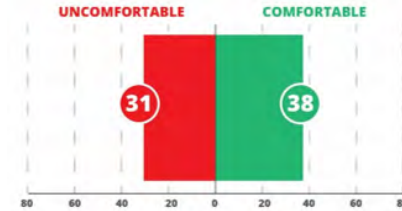
**SHARED-USE
PATH
(SOFT SURFACE)**

ENGAGEMENT RESULTS: Public Open House & Virtual Public Engagement Room

WHAT IS YOUR
LEVEL OF
COMFORT WITH
THE FOLLOWING
TYPES OF
EQUESTRIAN
PATHS?



**SOFT-SURFACE
(AWAY FROM ROAD)**



**SOFT-SURFACE
(ADJACENT TO ROAD)**

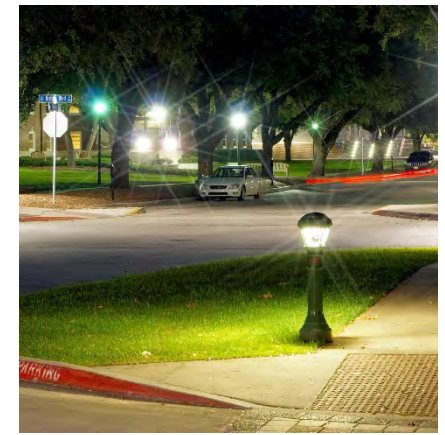
WHAT ARE YOUR
TOP THREE
PREFERRED TRAIL
AMENITIES THAT
YOU WOULD LIKE
TO SEE ALONG
TRAILS IN FLOWER
MOUND?



**WAYFINDING
SIGNAGE**



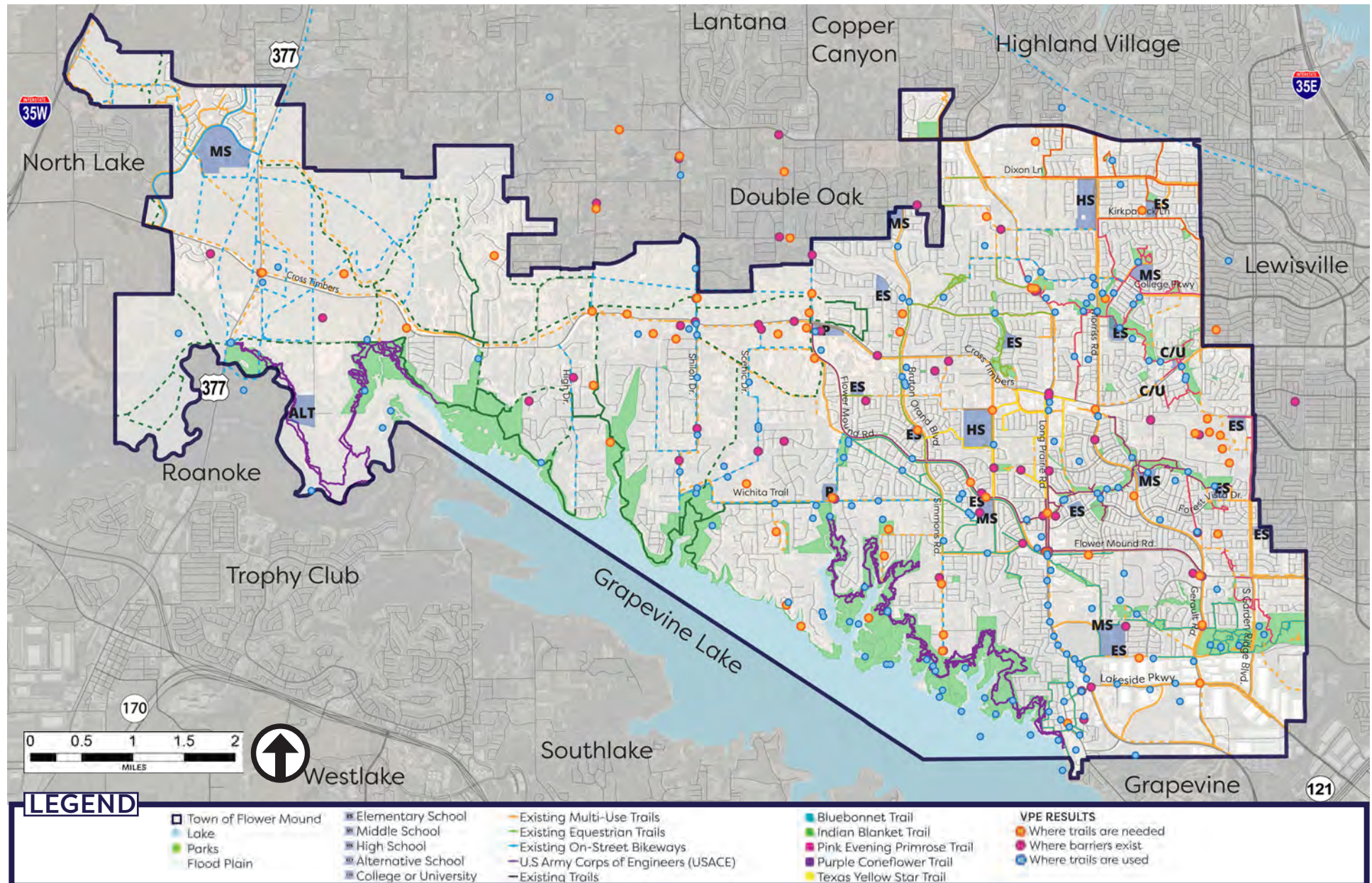
PARKING



LIGHTING

ENGAGEMENT RESULTS: Virtual Public Engagement Room

FIGURE 3.1: VIRTUAL ENGAGEMENT ROOM RESULTS

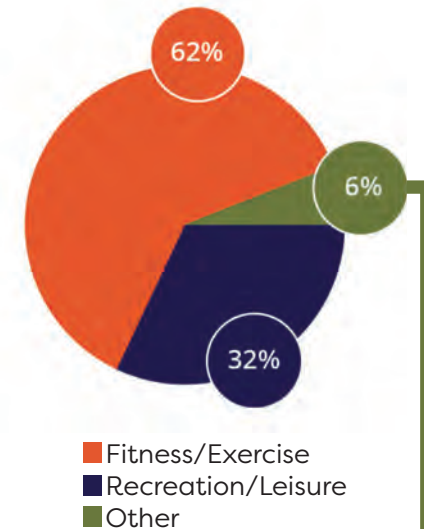


ENGAGEMENT RESULTS: Public Open House & Virtual Public Engagement Room

WHAT TYPE
OF TRAIL OR
BIKEWAY
IN FLOWER
MOUND DO
YOU GENERALLY
USE?



WHAT IS YOUR
PRIMARY
PURPOSE FOR
USING A TRAIL
OR BIKEWAY IN
FLOWER MOUND?



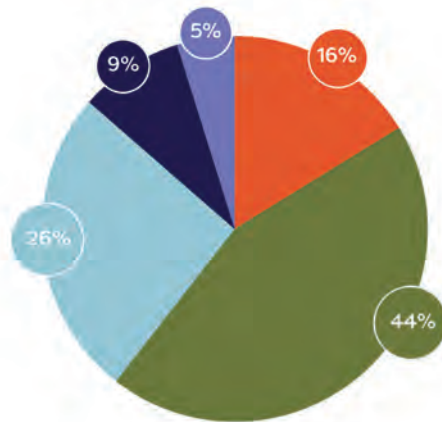
Other (6%) Breakdown



Commuter to work/school	(20%)
Trips in neighborhood	(18%)
Run errands	(6%)
Visit friends/family	(8%)
I do not use a trail/bikeway	(18%)
Other	(31%)

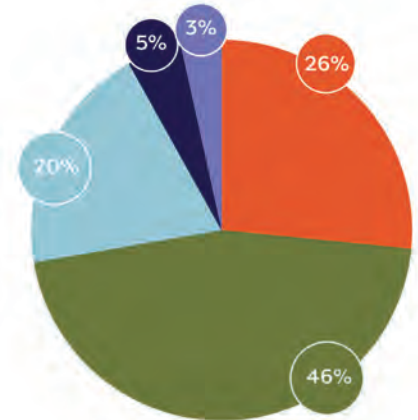
ENGAGEMENT RESULTS: Public Open House & Virtual Public Engagement Room

HOW OFTEN DID
YOU USE TRAILS OR
BIKEWAYS IN FLOWER
MOUND PRE-COVID?



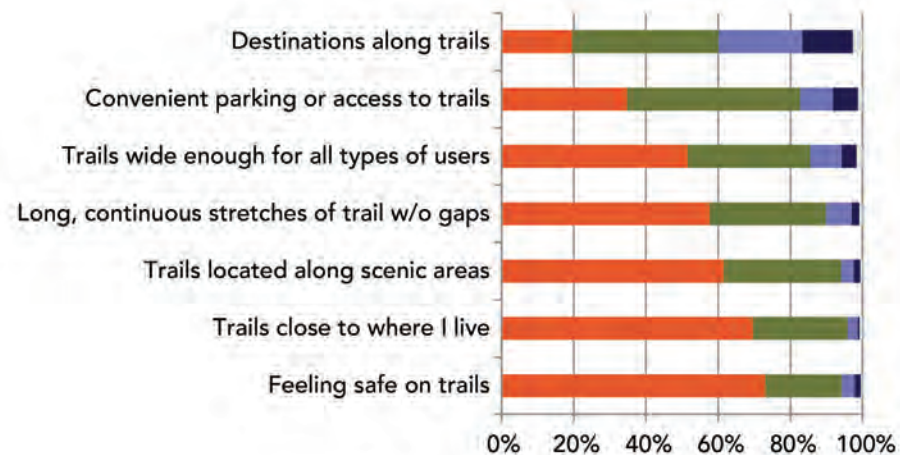
■ Daily
■ A few times a week
■ A few times a month
■ A few times a year
■ Never

HOW OFTEN DID
YOU USE TRAILS OR
BIKEWAYS IN FLOWER
MOUND DURING
COVID?



■ Daily
■ A few times a week
■ A few times a month
■ A few times a year
■ Never

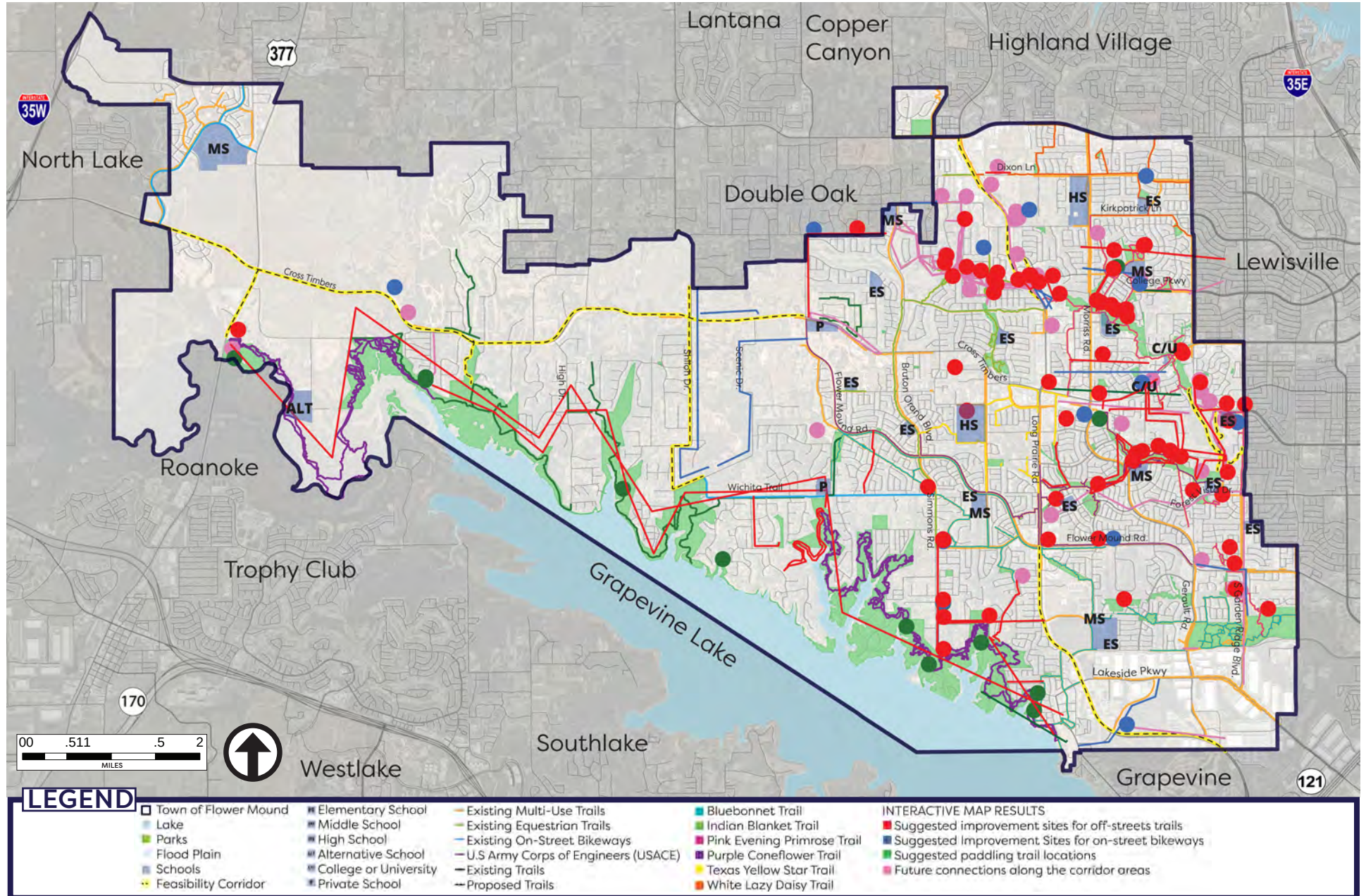
HOW IMPORTANT
ARE EACH OF
THE FOLLOWING
FEATURES OF TRAIL
FACILITIES?



■ Very important
■ Important
■ No opinion
■ Not very important
■ Not Important at all

ENGAGEMENT RESULTS: Interactive Online Map

FIGURE 3.2: INTERACTIVE ONLINE ENGAGEMENT MAP



ENGAGEMENT KEY TAKEAWAYS:

- Filling in gaps in the system for overall better connectivity is needed.
- Wayfinding and directional signage is needed to help users identify what trail they are on and where they are going.
- Intersection crossings should be improved in many areas.
- Additional amenities, such as lighting, parking, and drinking fountains, are desired throughout the trail system.
- Off-street trails are preferred by a majority of respondents to roadside trails.



PURPLE CONEFLOWER TRAIL

NEEDS ASSESSMENT

As indicated in the previous section, the residents of Flower Mound have established that trails and bikeways are very important to their community. As the population in the town continues to increase, an additional burden will be placed on existing trail and bikeway facilities. This section provides the current state of Flower Mound's trails and bikeways today and projected into the future.

To evaluate the needs of the community, assessments of the existing system were conducted. Based on the assessment findings, recommendations for the future network can be proposed to ensure users of all ages and abilities are considered. Assessments are based on community input, trail evaluations, trail level of service, comparison to benchmark communities, opportunities and barriers, roadway characteristics, and potential corridor assessments.

TRAIL EVALUATION

This planning process evaluated the existing named trails in the Flower Mound system. The assessment considered trail surface conditions, railway clearance, grades and slopes, roadside clearance, street intersections/trail crossings, constructed railway features, safety/security, signage and wayfinding, and trailheads. This section provides the key findings from each of the evaluations.



PINK EVENING PRIMROSE TRAIL



KNOB HILLS TRAIL

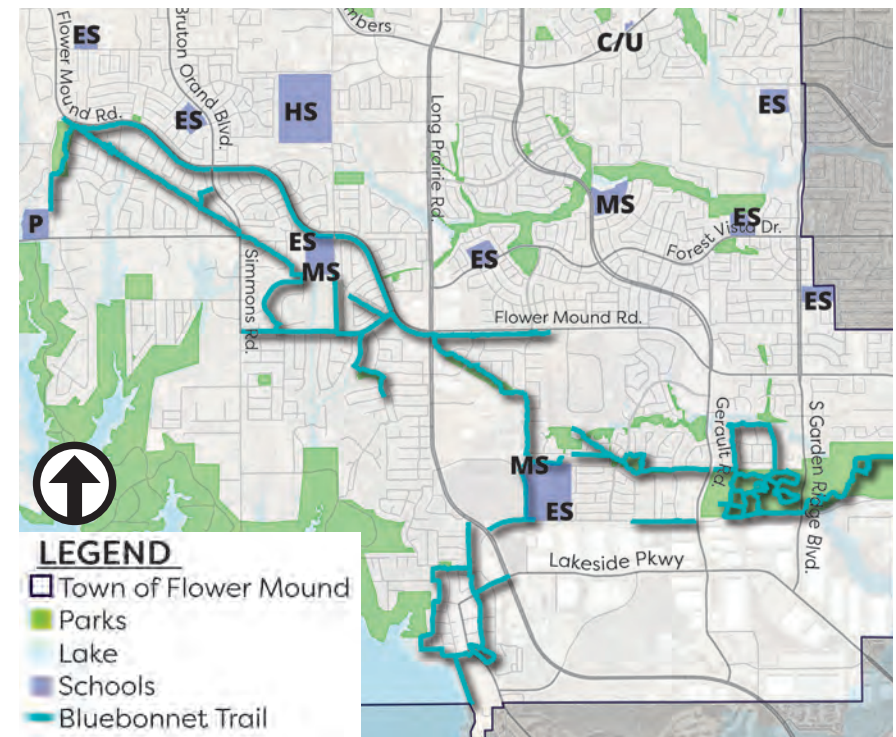
BLUEBONNET TRAIL

Length: 18.07 miles

The Bluebonnet Trail runs from Bakersfield Park in the far southeastern corner of the town to the northwest ending at Post Oak Park. The trail is the longest of all the six branded trails (see page 27). There are numerous neighborhood connections to the trail; while the trail provides access to residents, it is disconnected in areas and features some segments that are only 4' in width. The trail is generally in good condition with adequate vertical and horizontal clearance. Most of the trail is designed at a grade and slope that is comfortable. However, the segment along Winding Oaks Drive and Pasadena Place includes switchbacks and a slope that may not be ADA accessible.

Improvements to intersection crossings are needed, both within the neighborhoods and along major corridors such as FM 2499. There are benches, waste receptacles, and pet waste stations scattered along the trail, however additional facilities such as water fountains, bike racks, and bike repair stations would improve the overall user experience. Additional signage and trail branding are needed for wayfinding and safety. Finally, the trail connects to many parks, schools, and other named trails, but additional segments would better connect the community.

FIGURE 3.3: BLUEBONNET TRAIL KEY MAP



Trail marker in a neighborhood



Trail within a power line easement



Retaining wall adjacent to trail



Trailhead marker

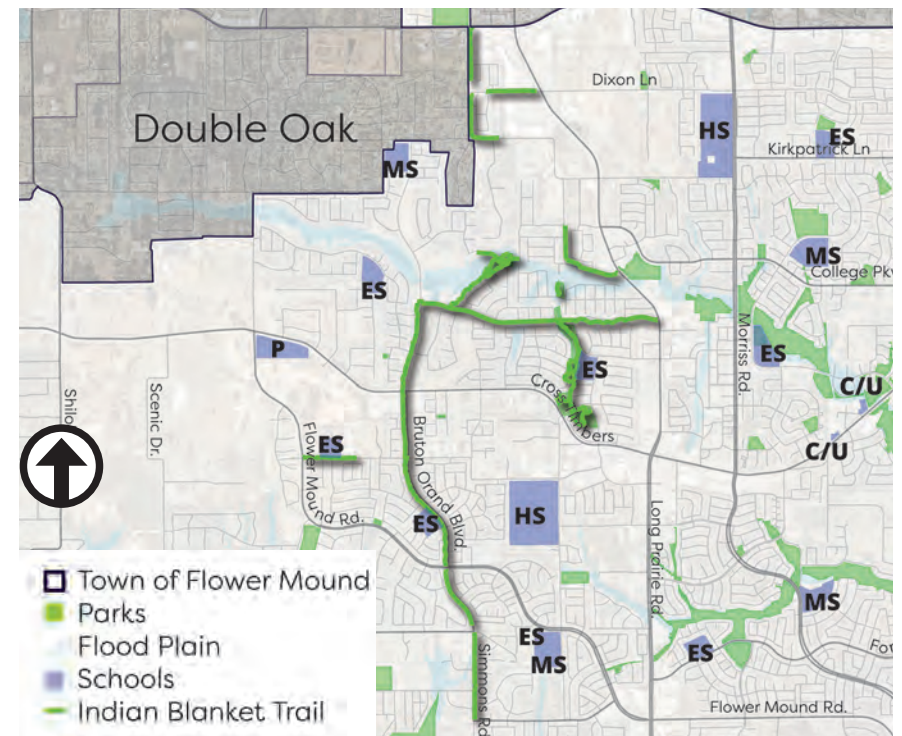
INDIAN BLANKET TRAIL

Length: 8.33 miles

The Indian Blanket Trail runs along West Windsor Drive, south to Simmons Road, connects Westchester Park to Spring Lake Park, and eventually connects to the Bluebonnet Trail. The trail segments north of Windsor Drive are largely disconnected, and there are portions of the trail that are only 4'-6' in width. The trail is generally in good condition with adequate vertical and horizontal clearance and designed at a grade and slope that is comfortable.

Improvements to intersection crossings are needed throughout the trail corridor. There are benches, waste receptacles, and pet waste stations, however additional facilities such as water fountains and bike racks could improve the overall user experience. Additional signage is needed for wayfinding and safety. The addition of trailheads would better identify the branding and location of the trail. Finally, the trail provides good access to neighborhoods, but aside from parks and schools there are not many destinations accessible from the trail.

FIGURE 3.4: INDIAN BLANKET TRAIL KEY MAP



Trail adjacent to roadway



Signalized pedestrian crossing



8' trail segment



Amphitheater in Park

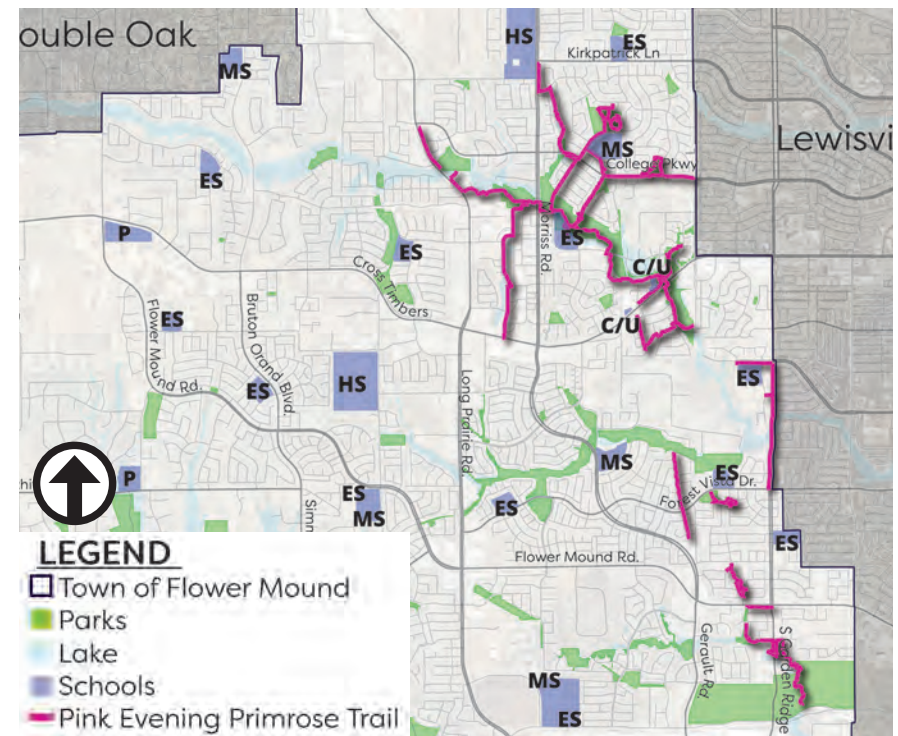
PINK EVENING PRIMROSE TRAIL

Length: 12.18 miles

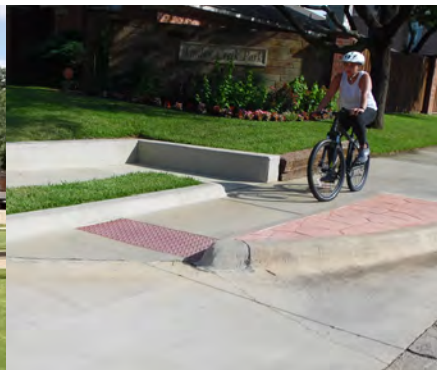
The Pink Evening Primrose Trail is a north-south trail corridor in the far eastern portion of Flower Mound. The trail runs through numerous neighborhoods and connects to schools, parks, and the Bluebonnet Trail. The trail width varies from 6' to 8'. The trail is generally in good condition with adequate vertical clearance, however in some areas trees, vegetation, and retaining walls present horizontal clearance constraints. Most of the trail is designed at a grade and slope that is ADA accessible, but there are a few areas along the trail that are a little steep. The trail includes a few pedestrian activated signals, but additional improvements to intersection crossings are needed. The trail also travels under two major roadways: Morriss Road near the Riverwalk and Cross Timbers Road (FM 1171). Both undercrossings would be safer if they were wider and if they had more cautionary signage to ensure users slow down when approaching the bridge. There are many segmented parts of the overall trail that could be better connected.

There are benches, waste receptacles, fitness stations, and pet waste stations located along the trail, however those facilities are mainly around the Timber Trails Park. Additional facilities such as water fountains, bike racks, and bike repair stations installed along the trail would improve the experience for trail users. Additional signage is needed for wayfinding and safety. Some of the corners and bends in the trail are difficult to navigate and views of oncoming traffic by trail users are obscured. There are also older bridges that should be assessed by a structural engineer to ensure their safety. Finally, the trail connects parks and schools but filling the gaps in the overall corridor would improve connectivity to schools, parks, and key destinations such as Riverwalk.

FIGURE 3.5: PINK EVENING PRIMROSE TRAIL KEY MAP



Red bollards designating trail



Intersection ramp



Trail bridge near Riverside



Fitness station along trail

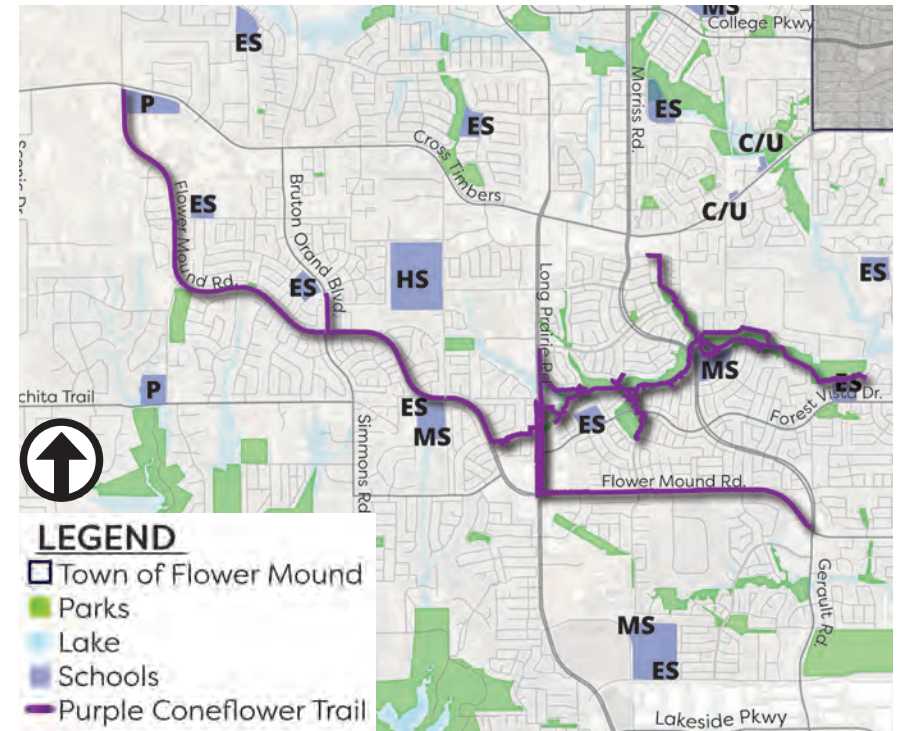
PURPLE CONEFLOWER TRAIL

Length: 11.93 miles

The Purple Coneflower Trail is an east/west corridor located north of the Bluebonnet Trail and connects the Tree Farm to Liberty Elementary School. While the trail provides access to numerous residents, it is disconnected in areas and has segments that are 4' to 6' in width in neighborhood loops. Additionally, the segment located along Flower Mound Road is only 4' wide. It is generally in good condition with adequate vertical and horizontal clearance. Most of the trail is designed at a grade and slope that is comfortable, but a few segments have steep slopes and grading issues. Improvements to some intersection crossings are needed as there are fewer pedestrian activated signals along this trail compared to others within the town. Long Prairie Road (FM 2499) poses a significant barrier as the only way to get across now is at a signalized intersection.

There are standard amenities such as benches, waste receptacles, and pet waste stations, but enhancements to the amenities such as water fountains, lighting, and bike repair stations could improve trail experiences. Red bollards are prevalent along the trail, and there are two larger trailheads. Additional signage is needed for wayfinding and safety. Finally, the trail connects parks and schools, but additional routes or segments would better connect the community to other trails and destinations.

FIGURE 3.6: PURPLE CONEFLOWER TRAIL KEY MAP



Pedestrian bridge over creek



Red bollards within a neighborhood



Trail leading to a park



Trailhead

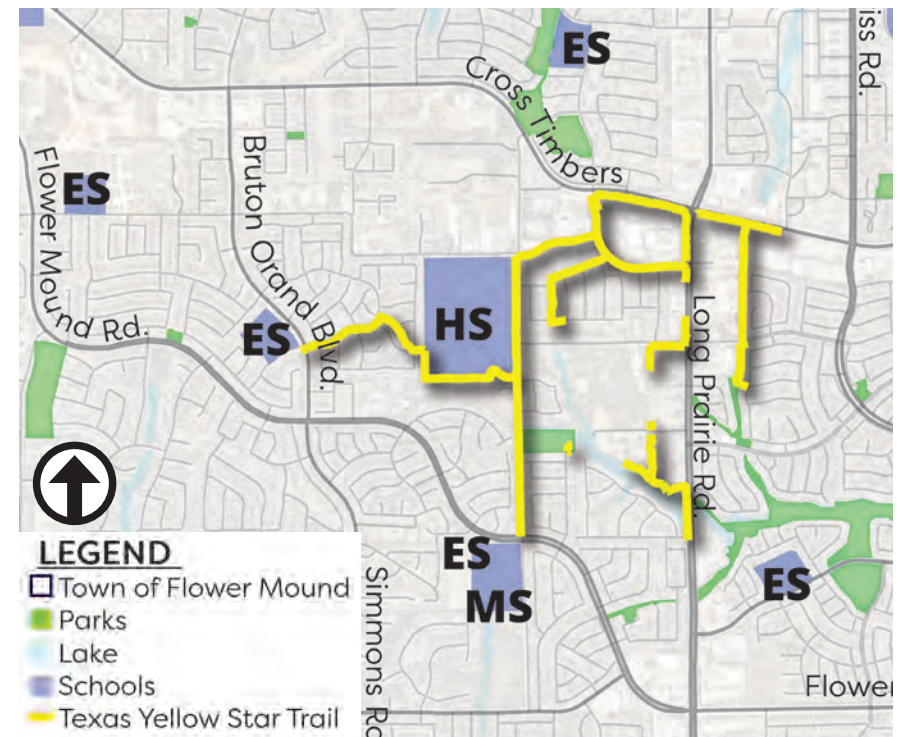
TEXAS YELLOW STAR TRAIL

Length: 4.73 miles

The Texas Yellow Star Trail is a shorter trail corridor in central Flower Mound. It links Wellington Elementary School and Flower Mound High School to the surrounding community. The trail is in good condition, with most segments being 8'-10' in width, and primarily runs adjacent to Old Settlers Road. Newer sections of trail that have been built with recent development are in very good condition. Much of the landscape is maintained by non-municipal entities such as homeowner associations.

The trail has adequate vertical and horizontal clearance and is designed at a grade and slope that is accessible for most users. Improvements to intersection crossings are needed. There are minimal amenities along the trail so additional trail amenities would improve the trail experience. Additional signage is needed for wayfinding and safety. The trail connects parks and schools, but additional routes or segments would better connect the community.

FIGURE 3.7: TEXAS YELLOW STAR TRAIL KEY MAP



Red bollards within a neighborhood

Trail near the high school

Overgrowth along trail

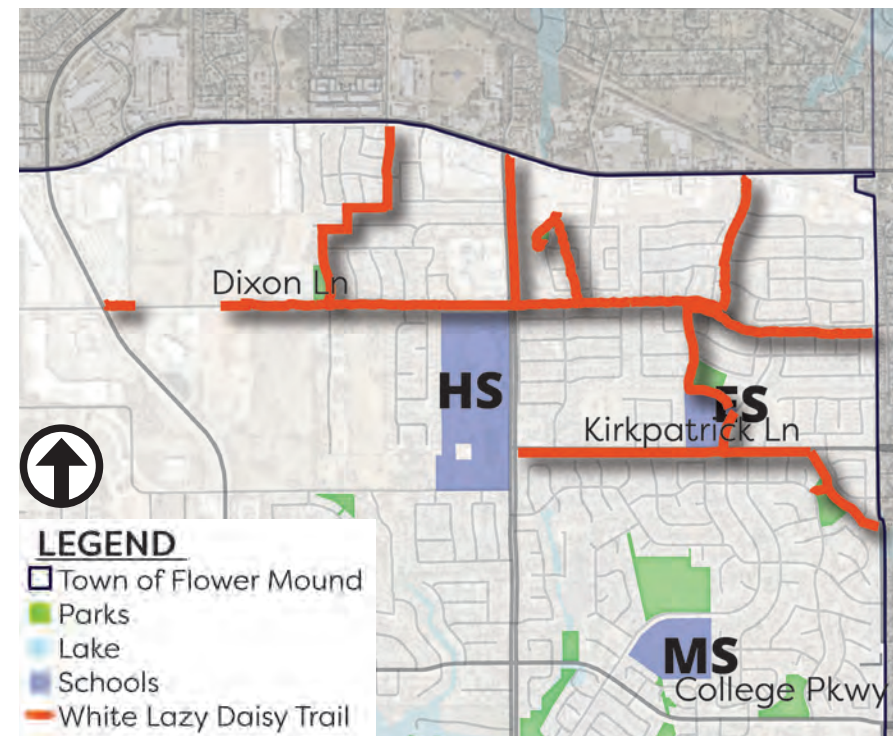
Neighborhood access point

WHITE LAZY DAISY TRAIL

Length: 5.78 miles

The White Lazy Daisy Trail is located in northern Flower Mound and connects Dixon Park to Prairie Trail Elementary School. There are numerous neighborhood connectors to the trail. The trail is in good condition, is mostly 8' in width, and runs adjacent to the roadway with some shade provided by vegetation. There is adequate vertical and horizontal clearance, with some vegetation encroachment. Most of the trail is designed at a grade and slope that is comfortable, however, portions along Valley Ridge Boulevard are steep and may not allow for ADA accessibility. Improvements to intersection crossings are needed as crosswalks, signage, improved ramps, and lighting is lacking along the corridor. There are limited amenities along the trail. Additional signage is needed for wayfinding and safety.

FIGURE 3.8: WHITE LAZY DAISY TRAIL KEY MAP



Curb ramp

Trail between houses

Trail adjacent to a school

Intersection crossing

OVERALL TRAIL EVALUATION KEY FINDINGS

- Wayfinding and directional signage along the trail system is needed.
- Four-foot wide segments should not be considered “trails”, instead they should be denoted as connectors to the trail system.
- Roadway crossings need to be improved to increase the safety for trail users, especially at major intersections that are identified as barriers to the system.
- Additional amenities along the trail are needed, such as bike racks, and lighting.
- Maps located at trailheads are outdated and with a rapidly growing system will likely continue to be. Alternatives such as QR codes that link to an online map should be explored.
- Emergency call boxes, lighting, cameras, and other safety factors should be included to increase safety and comfort.
- An overall ADA assessment of the trail system would confirm where trails are not ADA accessible.



BLUEBONNET TRAIL

TRAIL LEVEL OF SERVICE

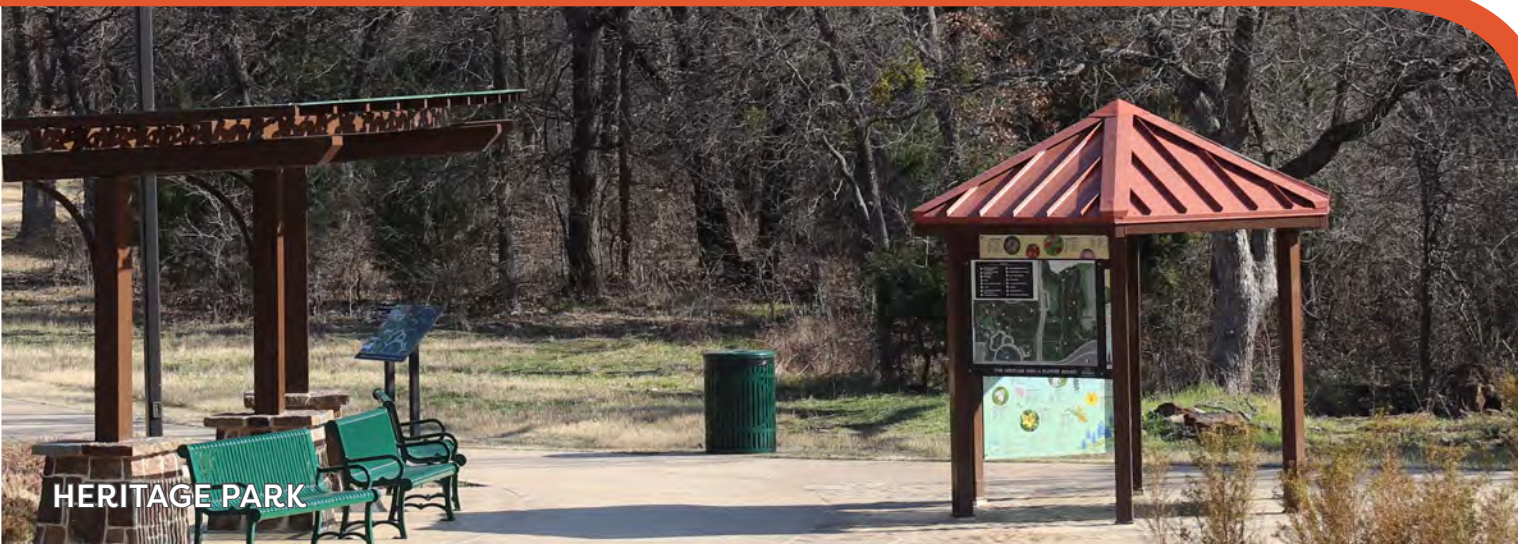
Level of Service (LOS) is a metric used to compare the miles of trail within a community with the total population. The LOS analysis includes an assessment of existing and proposed trails and compares it to existing and future populations. **Table 3.1** below shows the level of service for 6-foot and wider paths and 8-foot and wider paths. In order to compare to other communities, the LOS figures for trails 8-foot or wider is recommended to meet regional standards. The Future LOS represents the level of service if no additional trails were built between now and 2038, indicating that the level of service would decrease with expected additional population growth. A target LOS is defined in **Chapter 4**.

TABLE 3.1: TRAIL LEVEL OF SERVICE

2020 Population* (Current Population)		78,080	
2038 Population** (Projected Build-Out Population)		109,544	
Trails = 6' or wider multi-use paths		Trails = 8' or wider multi-use paths	
Current LOS - 2020	1 mile per 867 residents (1.15 miles per 1,000)	Current LOS- 2020	1 mile per 1,251 residents (0.80 miles per 1,000)
Future LOS - 2038 (No additional trails built)	1 mile per 1,217 residents (0.82 miles per 1,000)	Future LOS -2038 (No additional trails built)	1 mile per 1,756 residents (0.57 miles per 1,000)
Future LOS - 2038 (All currently proposed trails built)	1 mile per 769 residents (1.30 miles per 1,000)	Future LOS-2038 (All currently proposed trails built)	1 mile per 947 residents (1.06 miles per 1,000)

*Source: NCTCOG Regional Data Center, 2020.

**Source: Town of Flower Mound.



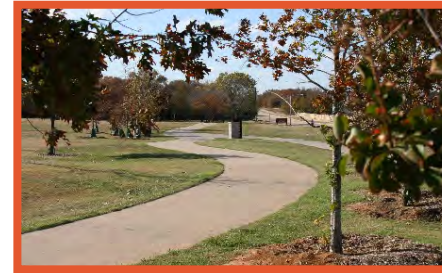
BENCHMARK COMMUNITIES

When analyzing the current LOS for Flower Mound, it is important to consider how it compares to cities of similar size and demographic composition in the DFW region. The population-per-mile benchmark is used to compare to the different cities; the lower the population-per-mile, the higher the LOS is for the trail system. Based on an average of many DFW communities, a regional benchmark of 1 mile of trail for every 1,200 residents has been established. The following communities are frequently used by Flower Mound to compare amenity and facility offerings. The following comparison only considers existing paved trails that are 8' or greater in width. Flower Mound has a current (2021) LOS of 1 mile per 1,251 residents. This ratio is better than the other identified benchmark communities, which indicates that Flower Mound has more trails per resident than the other communities but does not indicate the connectivity and accessibility of the overall system by comparison. Additionally, LOS just looks at the quantity of trails, not at the quality or condition of trails.



COLLEYVILLE

1 mile per 1,330 residents
Population: 26,462
Existing Trail Miles: 20
City Area: 8,384 Acres



LEWISVILLE

1 mile per 5,172 residents
Population: 106,386
Existing Trail Miles: 21
City Area: 23,488 Acres



GRAPEVINE

1 mile per 2,424 residents
Population: 53,317
Existing Trail Miles: 22
City Area: 20,480 Acres



MCKINNEY

1 mile per 3,515 residents
Population: 182,055
Existing Trail Miles: 52
City Area: 40,320 Acres



KELLER

1 mile per 2,783 residents
Population: 46,813
Existing Trail Miles: 17
City Area: 11,840 Acres



FLOWER MOUND

1 mile per 1,251 residents
Population: 78,080
Existing Trail Miles: 62.4*
City Area: 27,776

**Includes paved multi-use paths 8' or wider*

BICYCLE AND PEDESTRIAN CRASH DATA

To identify potential safety issues for the existing bicycle and pedestrian network in Flower Mound, bicycle and pedestrian crash data was evaluated. The database used for this section is the Texas Department of Transportation (TxDOT) Crash Record Information System (CRIS) 2016-2020 bicycle and pedestrian crash data. Only reported crashes are represented in the data, so if a minor crash occurs that was not reported to the police, this data would not reflect it. The points displayed in **Table 3.2** represent the number of crash types in Flower Mound. **Figure 3.9** represents the locations of bicycle and pedestrian crashes separated by user type (bicycle or pedestrian) and crash type (fatal or non-fatal).

Of all crashes involving a bicyclist and/or pedestrian between 2016-2020, sixty-five percent involved bicycles and were mostly non-fatal. Thirty five percent involved pedestrians and were mostly non-fatal. A common thread for the crashes is that they occurred along major roadways mainly at intersections where the trail system exists on at least one side of the road. The crashes can be contributed to gaps in the system and unsafe, unidentified, or non-existent pedestrian crossings. The fatal pedestrian crash was in the same location as a non-fatal bicycle crash and a non-fatal pedestrian crash, indicating that the intersection may need improvements. The fatal bicycle crash occurred on a six-lane major thoroughfare between two existing neighborhoods and close to Heritage Park. Without appropriate signage and advanced warning, motorized vehicles may not be aware of pedestrians and bicyclists crossing roadways or using facilities along roadways.

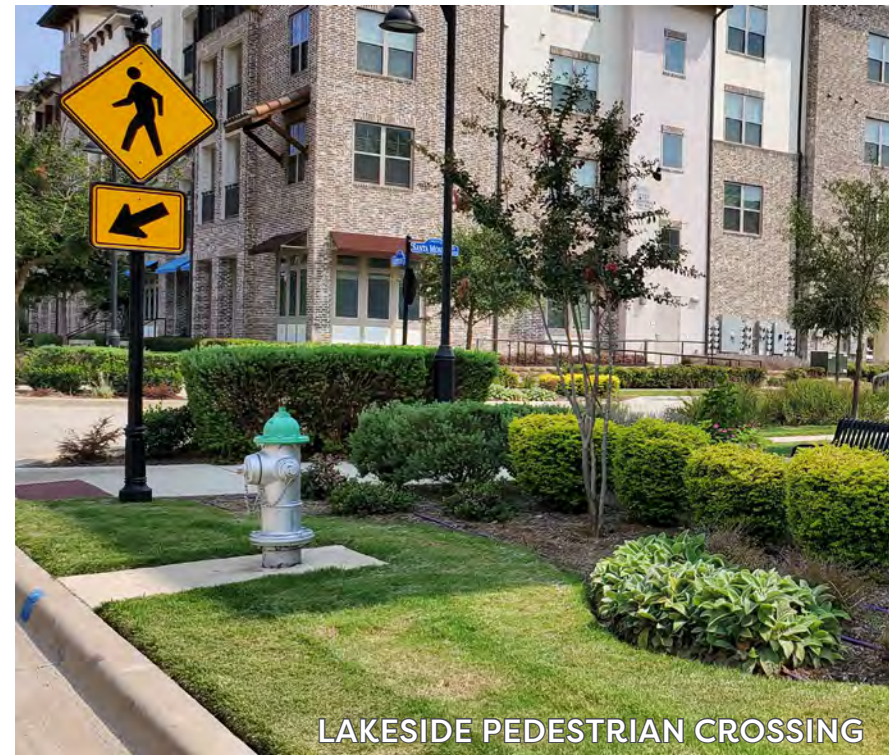
TRAIL USAGE

Strava is a Global Positioning System (GPS) application that allows runners, cyclists, and walkers to track their preferred routes or discover popular routes used by other users. Recent Strava data for Flower Mound is shown as a heat map in **Figure 3.10** on page 67 to indicate the most frequently used trail facilities while **Figure 3.11** on page 67 displays the most frequently used bikeway facilities. Strava data was used to show where people are biking and walking in Flower Mound today. As illustrated by Figures 3.12 and 3.13, major trails are heavily used, as well as sidewalks along major roadways and within neighborhoods. Sidewalks, bike lanes, and trails are more prevalent and used in the eastern part of Flower Mound. Both figures illustrate the locations of gaps in the system, where barriers may exist, and where trails and bikeways can be added.

TABLE 3.2: BICYCLE AND PEDESTRIAN CRASH DATA

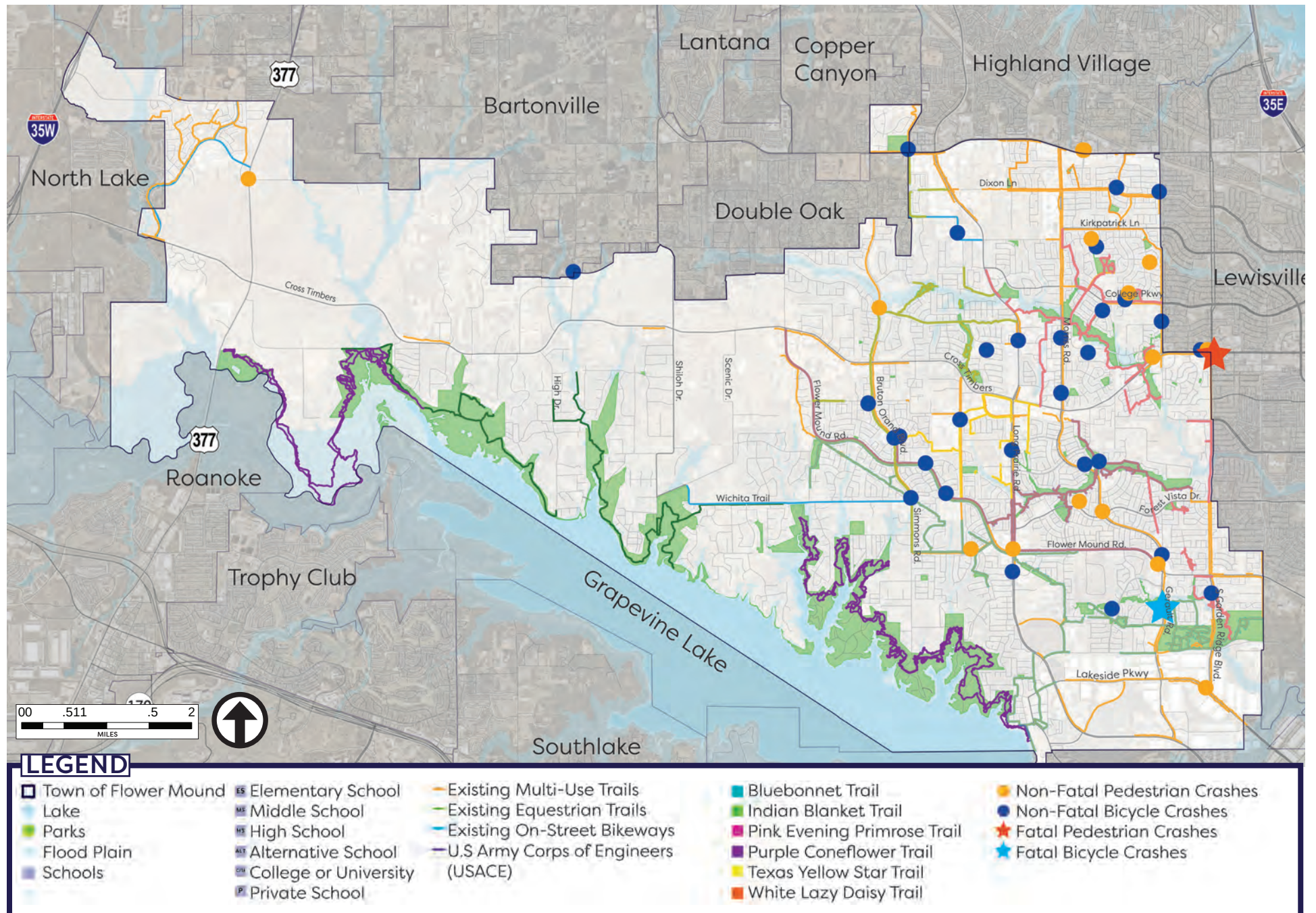
Crash Type	Number of Crashes
Non-Fatal Bicycle	31
Fatal Bicycle	1
Non-Fatal Pedestrian	16
Fatal Pedestrian	1

Source: TxDOT Motor Vehicle Crash Data for Flower Mound, 2016-2020



LAKESIDE PEDESTRIAN CROSSING

FIGURE 3.9: BICYCLE AND PEDESTRIAN CRASH MAP, 2016 - 2020



Source: TxDOT Motor Vehicle Crash Data for Flower Mound, 2016-2020

ON-STREET BIKEWAY ASSESSMENT

The goal of recommending new bikeway designations is to provide safe on-street bicycle routes throughout Flower Mound that increase connectivity between neighborhoods and to regional destinations. The three types of on-street bikeway accommodations that are preferred by planning participants are shared-use lanes, standard bike lanes, and buffered bike lanes. These accommodations were determined by examining multiple attributes of Flower Mound's existing roadway system such as speed limit, existing traffic volumes, available capacity, and right-of-way widths. Examples of these facilities can be found on page 48 in the engagement section. As a reminder, bicyclists can also use sidepaths or off-street trails if they do not wish to ride in the street.

SHARED – USE LANES

Shared-use lanes are the easiest to implement and are proposed for roadways with low speeds and volumes since cyclists share the lane with motor vehicles. Utilizing these bikeway accommodations along Flower Mound's local and collector roads provides opportunities to expand upon the existing network and connect key areas.

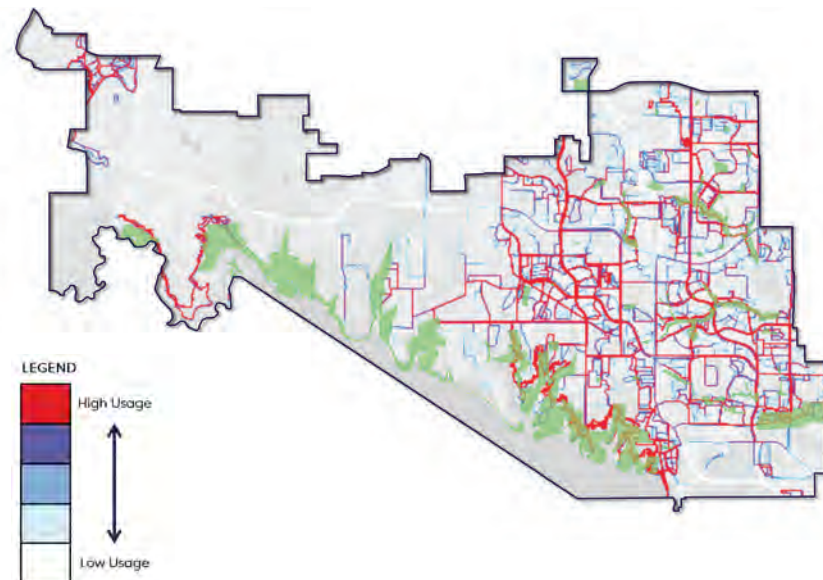
STANDARD BIKE LANES

Standard bike lanes are recommended along roadways that have slightly higher speeds and volumes for the safety of the user. These designations are also recommended on roadways that have the available width to accommodate modifications. Standard bike lanes offer increased comfort for cyclists and can encourage use by those that don't feel comfortable in a shared lane.

BUFFERED BIKE LANE

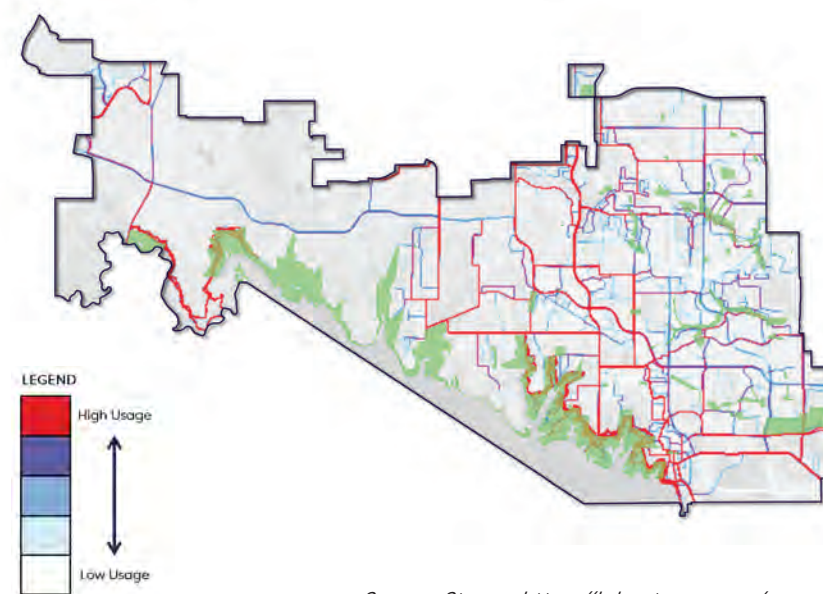
Similar to standard bike lanes, buffered bike lanes are offered along roadways that have higher speeds and volumes that need a spatial separation from the motor vehicles. However, these act as a major arterial for the bikeway network of a community. A buffered bike lane is used to connect major destinations and are proposed along major arterials in a community.

FIGURE 3.10: STRAVA PEDESTRIAN HEAT MAP, MAY 2021



Source: Strava, <https://labs.strava.com/>

FIGURE 3.11: STRAVA BICYCLE HEAT MAP, MAY 2021



Source: Strava, <https://labs.strava.com/>

BARRIERS AND OPPORTUNITIES

Based on the needs assessment and public input described earlier in this chapter, a series of barriers and opportunities were identified to help further expand the trails and bikeways system.

BARRIERS

The major barriers that exist in Flower Mound today can be divided into the following four categories and are shown in **Figure 3.12** on page 69.



SAFETY ISSUES

This type of barrier includes major safety concerns along the trails such as lack of cautionary signage, unsafe roadway crossings, steep slopes or drop-offs, and poor visibility. Safety issues may discourage use of trails and bikeways because a user cannot cross roadways or maneuver trails safely. Improved roadway crossings throughout the system could improve safety for trail and bikeway users. Slope concerns exist along the Texas Yellow Star Trail and the White Lazy Daisy Trail. There is a need for additional cautionary signage at each of the trail crossings under roadway bridges.



PHYSICAL BARRIERS

This type of barrier includes major roadways, rail lines, and water features which may present difficulties to connect the trail system. Intersections with Flower Mound Road, Cross Timbers Road, Gerault Road, and Long Prairie Road present major challenges to the safety and accessibility of the trails and bikeways system. Flower Mound Road is a major physical barrier along the entire system, as it is a six-lane, heavily traveled roadway with high posted speed limits.



ACCESSIBILITY

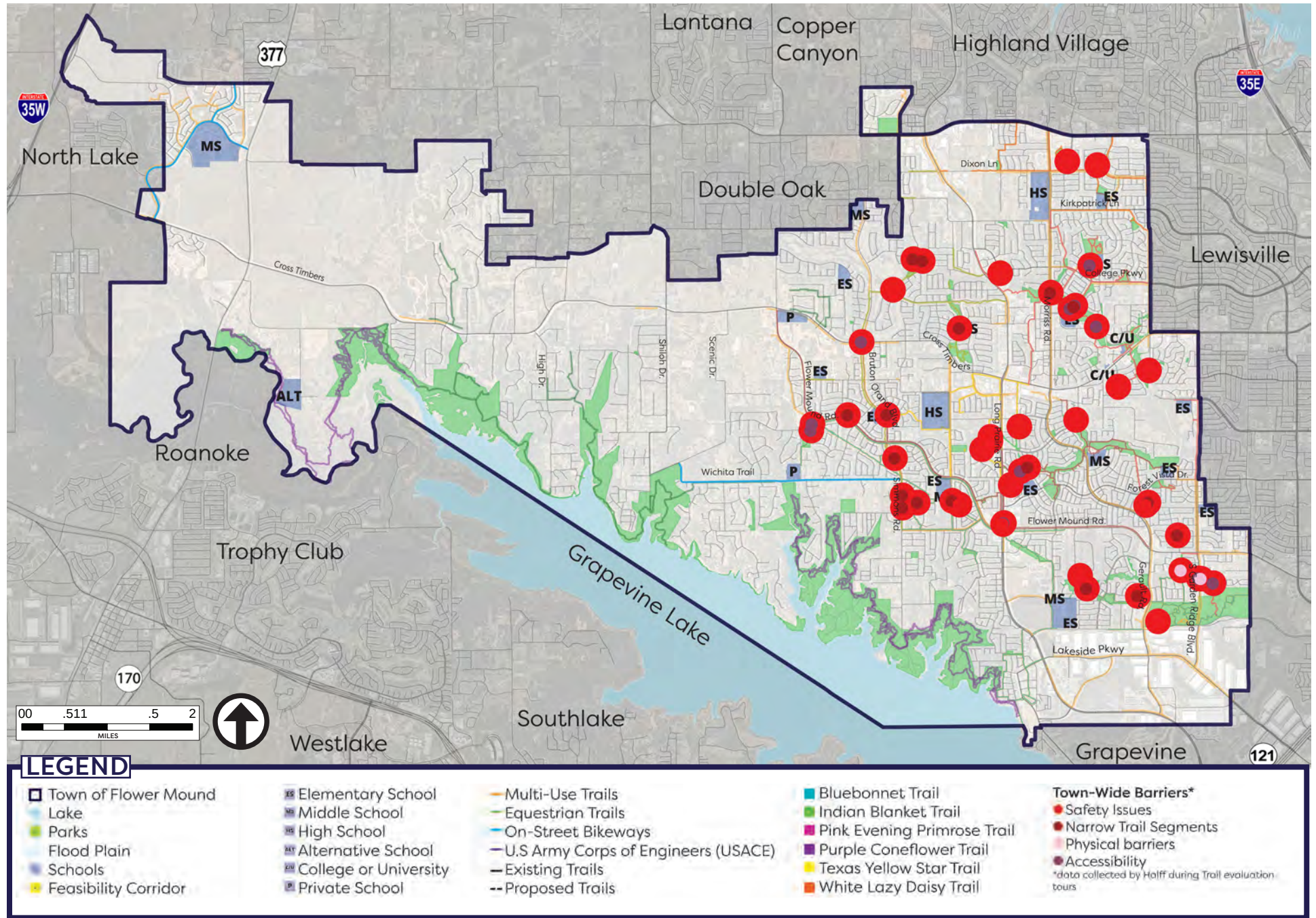
This type of barrier includes trail segments that are too narrow, including trails that are less than 8' in width. These segments may not be able to be widened due to right-of-way constraints, physical barriers, or may include bridges and infrastructure that cannot be widened. Narrow segments existing throughout the system, but are especially frequent within neighborhoods and internal to parks. As shown in **Figure 3.14**, just 64 percent of the trail system is 8 foot or wider. Narrow segments should be evaluated to see if they can be widened to meet national standards for trail widths.



NARROW TRAIL SEGMENTS

This type of barrier includes potential ADA compliance, lack of wayfinding/directional signage, and locations where trails dead end without warning. The entire trail system would benefit from increased wayfinding signage, but this would be especially useful where named trails intersect, or to provide direction to key destinations in Flower Mound.

FIGURE 3.12: MAJOR BARRIERS FOR TRAILS & BIKEWAYS IN FLOWER MOUND



OPPORTUNITIES

Based on the needs assessment, evaluation of the existing trail system, and stakeholder input, opportunities for the trails and bikeways system were identified. These opportunities serve as a framework for the recommendations presented later in the document. **Figure 3.15** on page 72 shows opportunities in map form and the following categories are described below and on page 71.



CONNECTIONS TO MAJOR DESTINATIONS

Connections throughout the town were identified as important by system users. Key destinations include schools, parks, libraries, and activity centers such as Lakeside, Riverwalk, Parker Square, Grapevine Lake, Town Hall, and Stone Creek. Providing better connectivity to these places can reduce dependence on automobiles and encourage active transportation and healthier lifestyles.



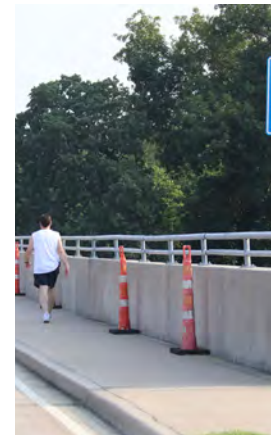
INTERJURISDICTIONAL CONNECTIONS

Interjurisdictional connections present opportunities to connect Flower Mound to adjacent communities like Grapevine, Coppell, Lewisville, Highland Village, Double Oak, North Lake, Roanoke, and Trophy Club. Improving bicycle and pedestrian connections to these communities, either through the expansion of the Regional Veloweb trailway system or through new connections, will enhance regional connectivity and provide access to key activity centers for residents of the region.



ACCESSIBILITY

The overall trails and bikeways system can be enhanced through filling in gaps in the existing system and providing for better connections to existing neighborhoods. Gaps in the system exist along all named and unnamed trails in Flower Mound. Potential new trails and connections would improve the accessibility of the system.



CORRIDORS TO WIDEN

Segments of trails that are less than 8 feet in width should be widened where possible to meet current standards and best practices. Opportunities to widen existing trails exist along Long Prairie Road, Gerault Road, S. Garden Ridge Blvd, Lakeside Parkway, and many other roads in eastern Flower Mound, as shown in **Figure 3.13**.

OPPORTUNITIES CONTD.



ADDITIONAL CONNECTIVITY OPPORTUNITIES

Opportunities to expand the system exist throughout the town. This plan considers five feasibility corridors discussed later in this plan and utility corridors as places where new trails can be constructed to expand the system. It also looks at new paddling launch points for a paddling trail system, additional locations for trails along greenways or creeks, and improved intersection crossings to improve overall connectivity of the system.



PLACEMAKING

Placemaking can help strengthen and improve a community or system by improving the public realm. Placemaking strategies that can improve the trails and bikeways system in Flower Mound include branding of the trail system through trail naming, wayfinding, and trailheads. Interpretive signage can be included along trails to help educate the community about environmental resources, arts, culture, and history. Intersections of trails can be designed to match the brand of the trail systems.



AMENITIES

Amenities can improve the overall experience for trail users. They provide shade, shelter, places to rest, and places to dispose of waste. Trailheads can be used to identify the start and end of trails. Wayfinding signage can help people identify where they are and where they want to go, while providing for branding along the trail. Other amenities that can improve user experience along trails and bikeways include: bike racks, bike repair stations, waste receptacles, benches, pet waste stations, lighting, and parking.

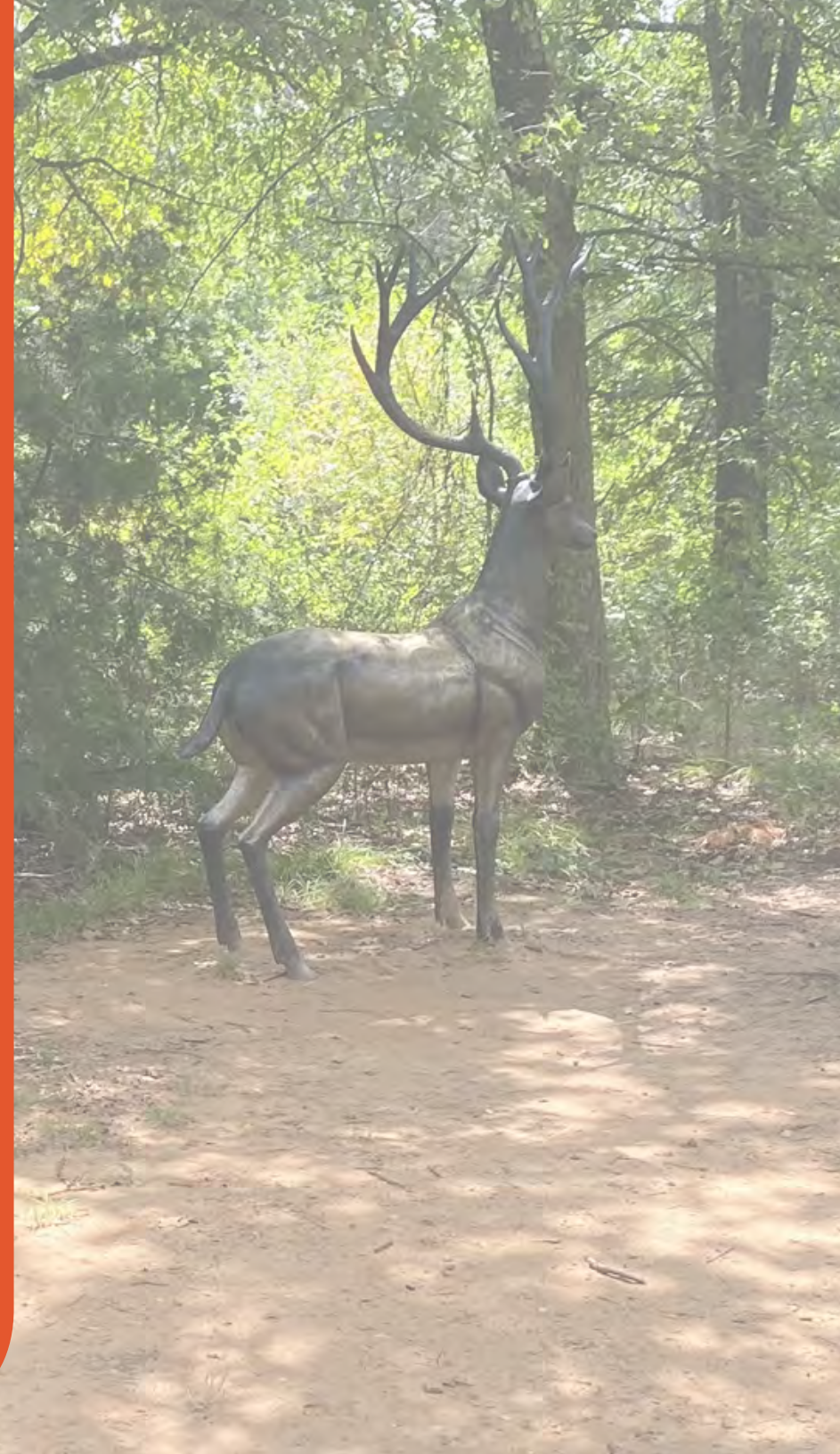
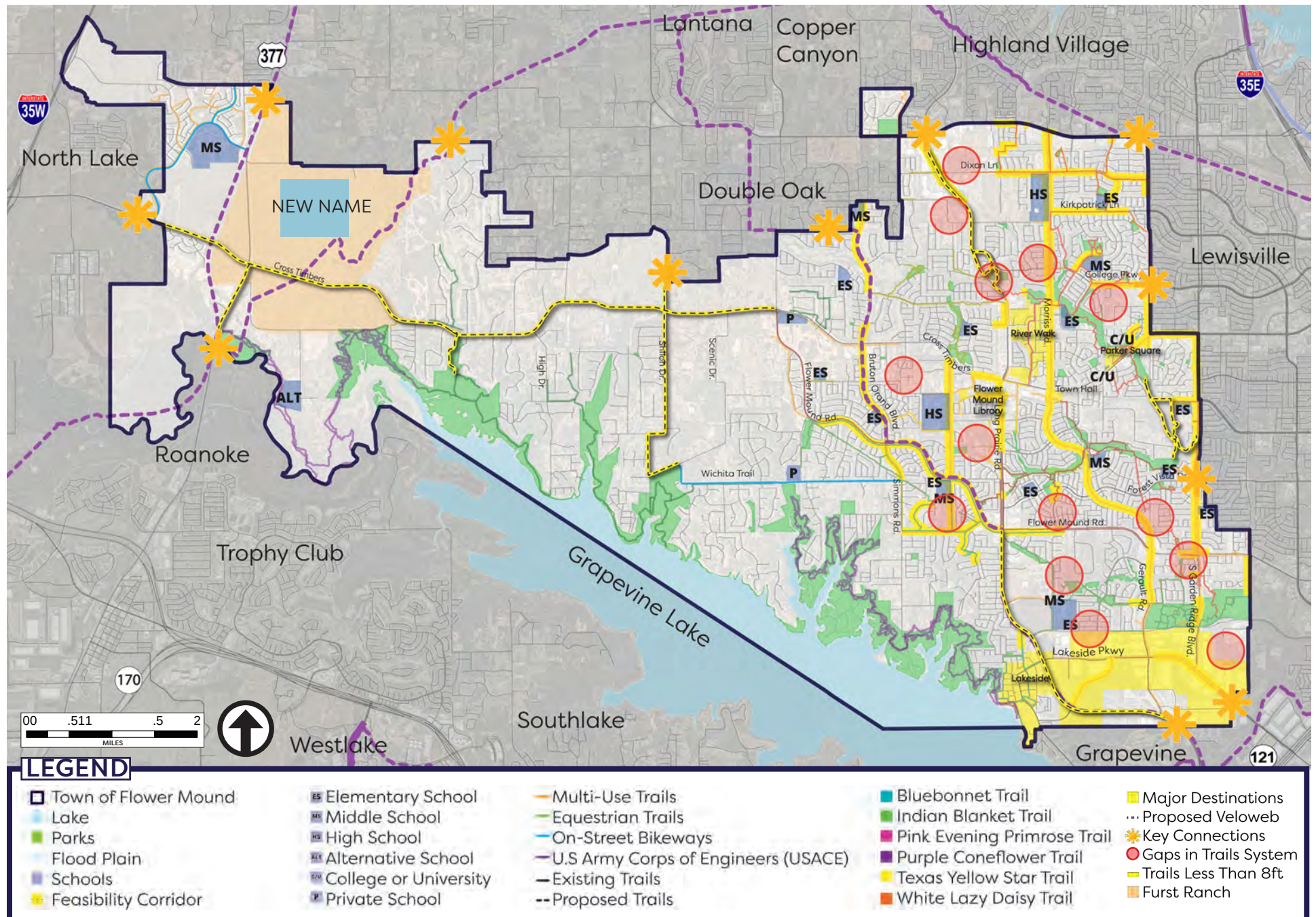
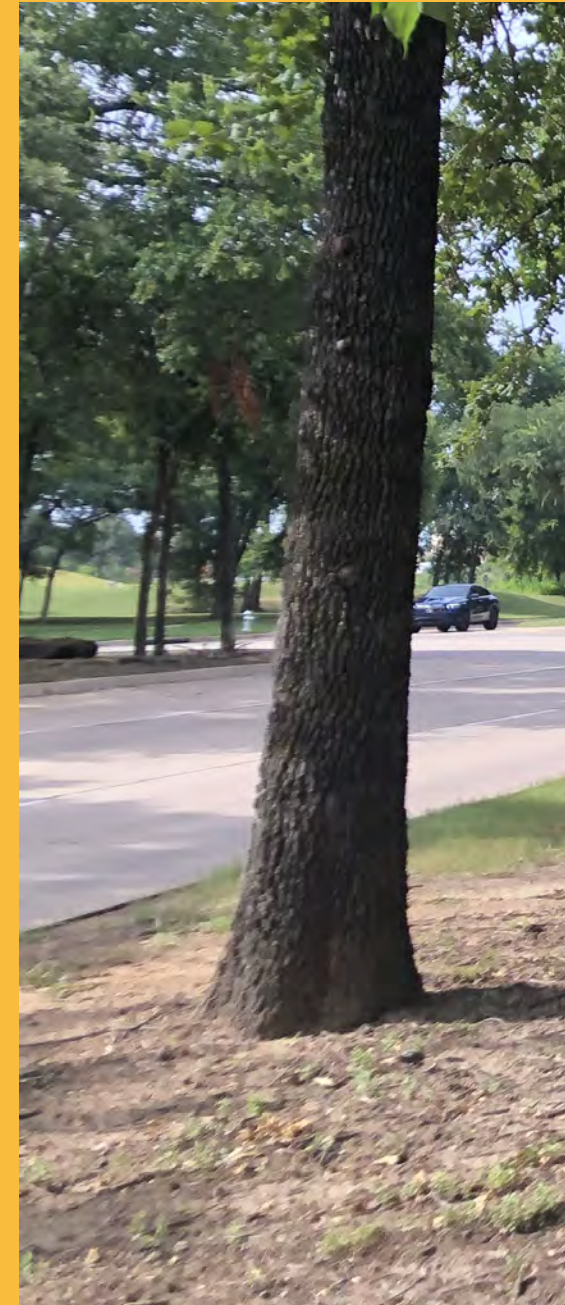


FIGURE 5.1: MAJOR OPPORTUNITIES FOR TRAILS & BIKEWAYS IN FLOWER MOUND



**Corridor Identification
Facility Hierarchy
Recommended Network**



O4 TRAILS & BIKEWAYS SYSTEM NETWORK



This plan proposes a well-connected network of on- and off-street trails and bikeways throughout the town. The proposed network was developed through a combination of research, field observation, and community input, much of which has been summarized in preceding chapters. The network depicted intends to encourage recreation, active transportation, and healthy living for generations to come.

CORRIDOR IDENTIFICATION

Five primary evaluation criteria were considered to determine the suitability of the trails and bikeways network in Flower Mound. These criteria, listed below, are used to help determine the level of impact and feasibility of each segment. Not all trails align with each criterion.

Connects the system – The segment would provide connections to the existing or planned system by filling a gap within the existing network.

Connects to destinations – The segment would provide connections to community destinations such as parks, schools, entertainment, and employment opportunities.

Addresses safety issues – The segment would address safety concerns to improve access to the system.

Increases access – The segment is located close to residential areas and would provide additional connectivity to neighborhoods.

Feasibility of corridor – The segment should be generally feasible to construct. Elements considered during a planning level review include available right-of-way or easements, lane widths, property ownership, topography, and floodplain.

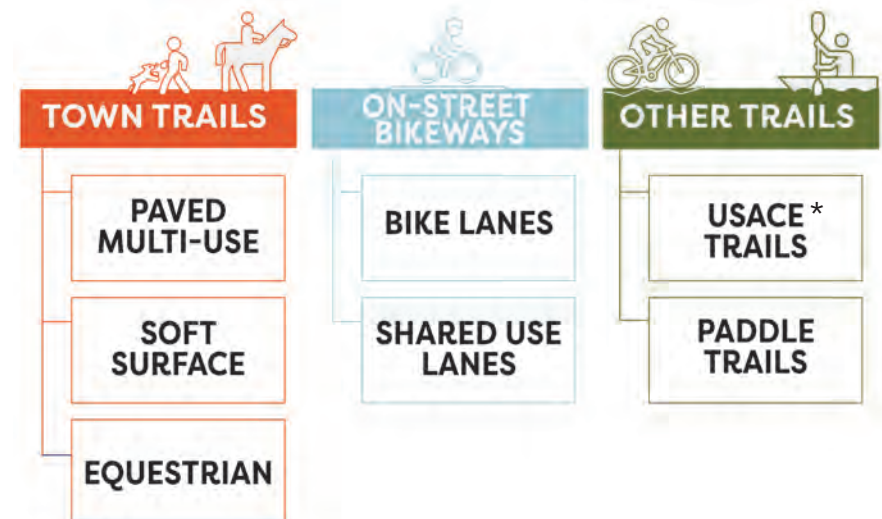
FACILITY HIERARCHY

The Town of Flower Mound's network includes town trails, connectors, on-street bikeway facilities, and other trails, as shown in **Figure 4.1**. Each facility is designed to accommodate specific users. This section discusses key characteristics of each facility hierarchy. More details on design characteristics of each facility type is included in Chapter 5.



PINK EVENING PRIMROSE TRAIL

FIGURE 4.1: FACILITY HIERARCHY



* US Army Corps of Engineers

TOWN TRAILS

Town Trails provide a high level of comfort for users based on widths and locations of the trails. These trails include paved multi-use trails, soft surface trails, and equestrian trails that are maintained by the Town.



PAVED MULTI-USE TRAILS

Paved multi-use trails can be located adjacent to roadways, within utility easements, or within parks and greenways. These wide, paved facilities are comfortable for bicycle and pedestrian users of various ages and abilities. The minimum width for trails is recommended to be 12', however, 10' may be applicable in areas where there are existing ROW constraints. This is consistent with AASHTO and regional standards. For trails designated as part of the Regional Veloweb, the trail should be 12' to meet NCTCOG standards and provide for a high level of comfort. These paths can be used for recreational uses or for commuting when they connect to employment centers and schools.



PAVED MULTI-USE TRAIL



SOFT SURFACE TRAILS

Soft surface trails maintained by the Town should be designed with decomposed granite or another soft surface material, and can be used in environmentally sensitive areas and should be a minimum of 8' in width. Soft surface trails provide recreational opportunities, connect people to nature, and can be less expensive to construct. There is heavier maintenance required on these trails to maintain ADA accessibility. Anticipated users include walkers, joggers, and people wanting to experience the outdoors.



SOFT SURFACE TRAIL



EQUESTRIAN TRAILS

Equestrian trails are trails for primary use by people on horseback. These natural surface trails can be located through wooded and vegetated areas to provide people with alternative riding experiences and allows them to explore nature. The surface material is typically compacted earth with a width of approximately 15'. Where possible, considerations for hitching posts and trailer parking should be incorporated into equestrian trailheads.



BRIDLEWOOD EQUESTRIAN TRAIL

ON-STREET BIKEWAYS

BIKE LANES



Bike lanes are designated spaces on roadways with relatively higher volumes and travel speeds. Based on AASHTO and Town standards, the minimum width of a bike lane is 5' to provide a more comfortable space for bicyclists. When the facilities are buffered with either striping or a physical barrier, bike lanes can be attractive for a wider range of comfort levels.

SHARED-USE LANES



Shared-use lanes are designated roadways with low traffic volumes and speeds, and include pavement markings on the road to indicate the street is to be shared between vehicles and bicyclists. Pavement markings include arrows and a bicycle, and the roads typically include shared lane signage. In lower traffic areas such as residential streets, these roadways can be designated with just signage and not pavement markings.



SHARED-USE LANE

OTHER TRAILS

OTHER SOFT SURFACE TRAILS



The US Army Corps of Engineers (USACE) owns soft-surface trails along Grapevine Lake that are maintained by the Dallas Off-Road Bicycling Association (DORBA) and the Cross Timbers Equestrian Trails Association (CTETA). These trails provide recreational opportunities for mountain bikers, hikers, people on horseback, and nature seekers. Any proposed changes to the trail system should be coordinated with the USACE. These trails vary in width and are typically compacted dirt.



USACE TRAIL AT GRAPEVINE LAKE

PADDLING TRAILS



Paddling trails located on Grapevine Lake are designated water way trails that provide the opportunity to explore the lake, engage with nature, bird watch, fish, and experience similar water-based activities. Paddling trails are associated with a series of launch points where paddling users can put in and take out their watercraft. Considerations for interactions with operators of motorized boats is important.



TWIN COVES PARK KAYAK LAUNCH

OTHER FACILITIES



CONNECTORS

Connectors are enhanced sidewalks up to 8' in width that connect neighborhoods to key destinations, such as employment centers, entertainment opportunities, schools, and parks. All new connectors or reconstruction of existing connectors should be widened 6'-8' where feasible. This facility type is typically found along major roadways that have constraints restricting the construction of a wider multi-use path. These facilities differ from other sidewalks within the Town since they fill in key gaps in the overall trail and bikeway system.



HIERARCHY SUMMARY

Table 4.1 provides a summary of the key characteristics of each proposed facility type. For additional descriptions of the design of each facility type, please refer to Chapter 5.

TABLE 4.1: HIERARCHY SUMMARY

Facility Type	Preferred Surface Material	Width (Feet)	Primary Users	Locations
Town Trails				
Paved Multi-Use Trails	Concrete	12', 10' if existing ROW constraints	Pedestrian and Cyclist	Adjacent to roadways, greenbelt corridors, utility easements, within parks
Soft Surface Trails	Decomposed Granite	8'	Pedestrians	Areas of environmental interest
Equestrian Trails	Compacted Earth	15'	Equestrian Users	Located away from roadways
On-Street Bikeways				
Bike Lanes	Pavement	5' minimum	Cyclist	Roadways with speeds less than 45 mph
Shared-Use Lanes	Pavement	14' lane width	Cyclist	Roadways with speeds less than 35 mph
Other Trails				
USACE Trails	Compacted Earth	Varies	Hikers, Mountain Bikers, Equestrian	Within USACE land
Paddling Trails	n/a	n/a	Kayaks, Canoes	Along Grapevine Lake
Other Facilities				
Connectors	Concrete	6'-8' depending on existing ROW constraints	Pedestrians	Adjacent to roadways

RECOMMENDED NETWORK

The recommended network of trails, bikeways, and connectors were informed by public input, needs assessments, corridor evaluations, and guidance from the overall plan goals. This section discusses the proposed network and subsequent impacts to future levels of service (see Chapter 3 for level of service definition).

COMBINED RECOMMENDATIONS

The combined recommendations create a robust trails and bikeways system throughout Flower Mound to connect residents to key destinations and to the larger DFW region. Some of the key components of the network recommendations are described below.

Major Destinations in Flower Mound include parks, schools, major employers, and entertainment centers. As development occurs in these areas, there are opportunities to enhance the system by widening existing facilities, filling in gaps, and constructing new facilities. As development occurs in western Flower Mound, connections should be provided to future destinations.

Regional Connections are important to connect residents to opportunities in surrounding communities. Interjurisdictional connections include trails and bikeways that can connect Flower Mound's citizens to all the DFW Metroplex has to offer, and improves overall regional connectivity, mobility, and recreation.

Filling in Gaps in the existing trail and bikeway system was identified as a priority through the master plan public input process. Many of the existing trail gaps are located in the eastern part of Town that is primarily built-out. This plan sought to fill in strategic gaps to provide more continuous trail segments. Many of these gaps are found along the branded trails such as the Pink Evening Primrose Trail and the Bluebonnet Trail.

TABLE 4.2: RECOMMENDED SYSTEM WIDE FACILITY MILEAGE

Facility Type	Existing Mileage	Recommended Mileage	Total Mileage
Town Trails	59.6	82.1	141.6
On-Street Bikeways	4.7	34.8	39.5
Other Trails	34.5	2.3	36.8
Total	113.5	129.8	243.3

HOW TO USE THE MAP

The Trails and Bikeways Master Plan recommendations map should serve as a blueprint for town staff, leaders, and developers when considering new trails and bikeways within Flower Mound. Whenever a new development or redevelopment is proposed, the associated recommended trail facility is required to be constructed by the developer. Moreover, whenever a roadway is built, expanded, or reconstructed, the proposed bikeway accommodations should be included. Furthermore, future updates to the Thoroughfare Plan may necessitate modifications to the alignments of trails adjacent to roadways and on-street bikeway accommodations. Finally, the Trails and Bikeways Master Plan map may be amended by the Town Council; it is recommended that these modifications occur annually to reflect facilities that are built and other needed changes.

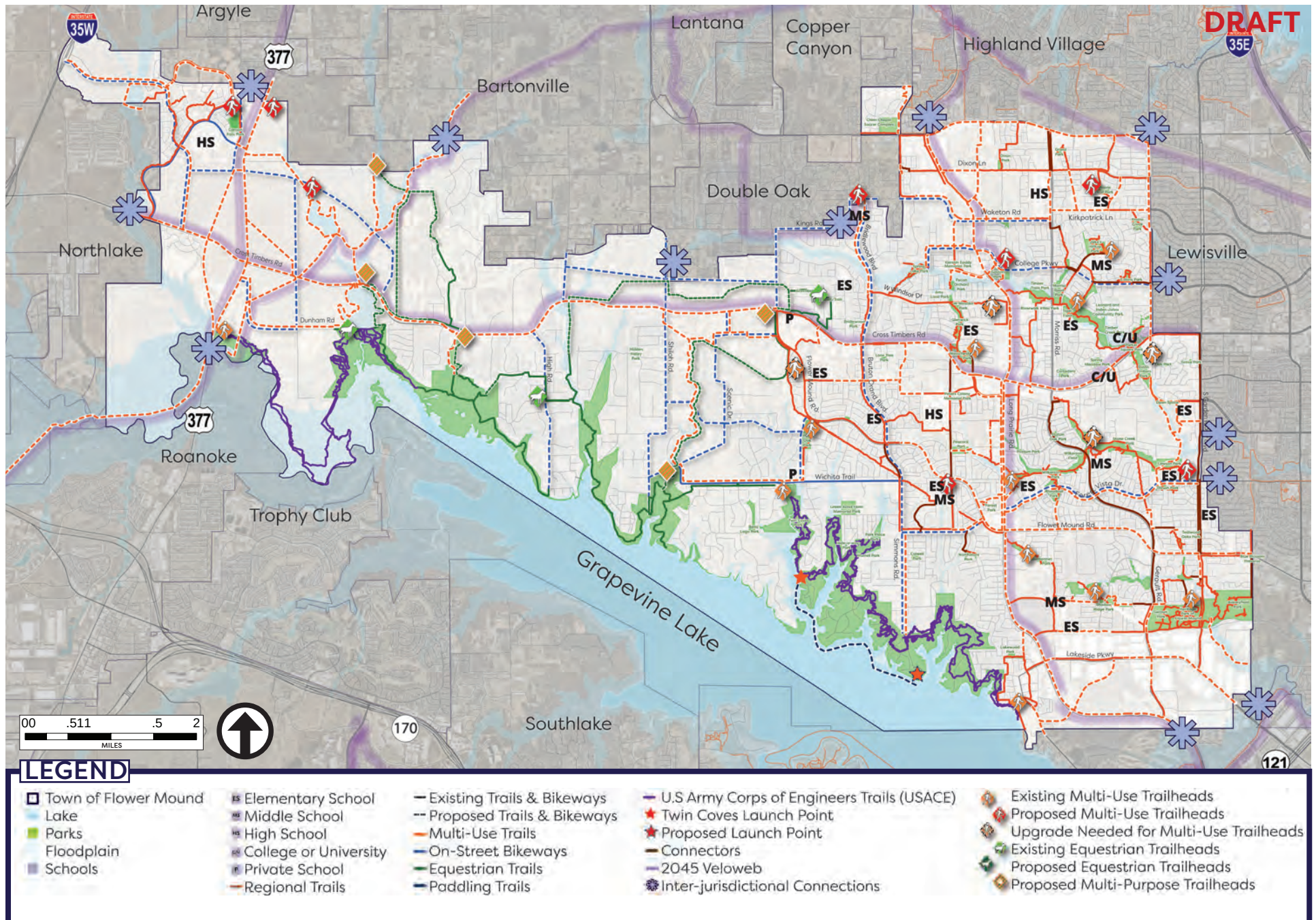
Figure 4.2 on the facing page represents the collective network recommendations for the Town of Flower Mound. **Table 4.2** provides details on the existing and proposed mileage of all facility types. **Table 4.3** shows how implementing these recommendations would change the Town's level of service.

TABLE 4.3: BUILD-OUT LEVEL OF SERVICE (LOS)*

2020 Population	78,080
2038 Population	109,544
Current Trail LOS (2020)	1 mile per 1,310 residents
Future Trail LOS (2038)	1 mile per 1,318 residents
All Recommend Trails LOS (2038)	1 mile per 898 residents

**Trails included in LOS calculations just includes paved multi-use trails.*

FIGURE 4.2: COMBINED RECOMMENDATIONS MAP



TOWN TRAIL RECOMMENDATIONS

Figure 4.3 illustrates the network of town trails intended to accommodate both pedestrians and bicyclists. The designated facilities aim to provide town-wide connectivity to destinations and the larger DFW Region.

PAVED MULTI-USE TRAILS

The proposed paved multi-use trails create town-wide connections and fill in gaps in the existing trail network along major roadways, along greenways, and through utility easements. These trails connect to the regional system, improve connectivity throughout the Town, and provide Flower Mound's residents better access to destinations such as parks, schools, entertainment, and employment centers. Flower Mound has the ability to use undeveloped land and floodways throughout the Town to improve access to the overall trail system. The recommended segments include widening existing trails to meet new standards, and constructing new trails to improve the overall network.

SOFT SURFACE TRAILS

Soft surface trails will primarily exist on the USACE property along Grapevine Lake. Beyond the existing soft-surface trails that are managed by the Town today, there are no additional soft-surface trails recommended since they are not accessible to all users.

EQUESTRIAN TRAILS

The Town of Flower Mound has an active and avid equestrian community. This plan seeks to connect existing trails, create trail loops, and enhance the overall equestrian trails network to connect riders with nature. There are opportunities to finish trail loops where development is proposed on the more natural, west side of Town. The addition of trails to connect north of Cross Timbers Road to the USACE trails along Grapevine Lake are provided at locations where trails either already exist, or where there will be enhanced trail crossing infrastructure, such as an underpass.

TABLE 4.4: TOWN TRAILS RECOMMENDATION SUMMARY

Facility Type	Existing Mileage	Recommended Mileage	Total Mileage
Paved Multi-use Trails	59.6	82.1	141.6
Soft Surface Trails	0.1	0	0.12
Equestrian Trails	14.6	10.9	25.5
Total	74.2	93.0	167.22

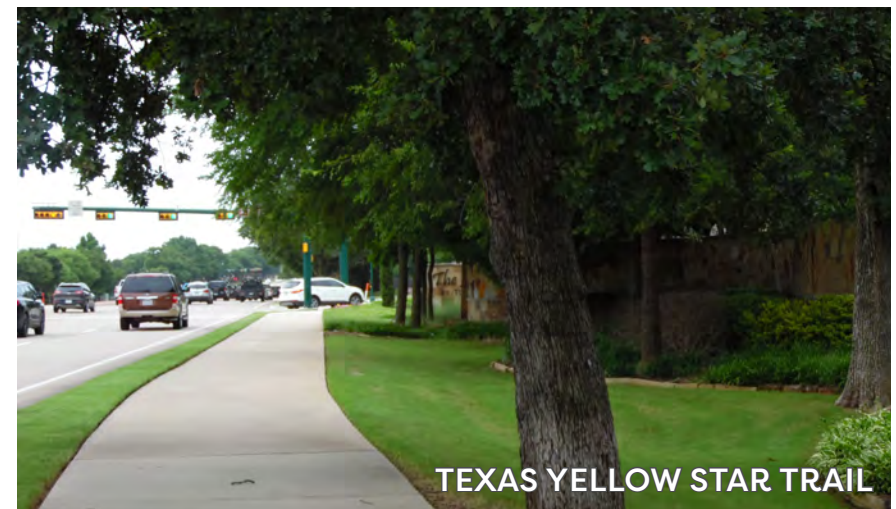
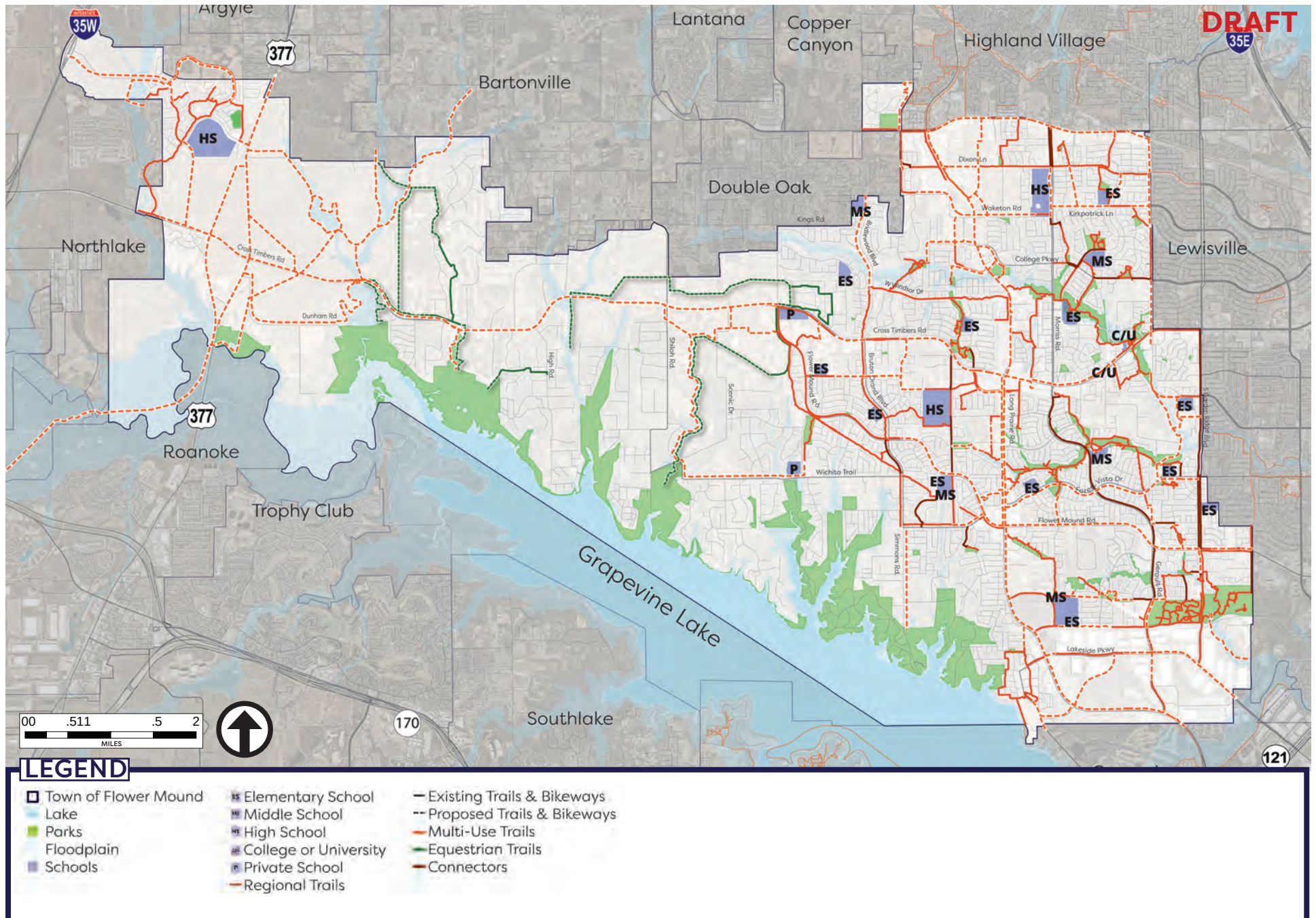


FIGURE 4.3: TOWN TRAILS RECOMMENDATIONS MAP



ON-STREET BIKEWAYS RECOMMENDATIONS

BIKE LANES

Bike lanes have been recommended for the roadways that have relatively higher speeds and volumes and have the available right-of-way, or pavement width, to accommodate the modifications necessary to install bike lanes. Proposed bike lanes were designated along roadways where continuous and comfortable routes for residents are feasible. They provide key connections to the mountain biking trails along Grapevine Lake and to the proposed or existing Town Trails. Generally, riders feel an increased level of comfort on separated facilities, such as bike lanes, and as such they should be implemented opportunistically. The Town should consider designs to add bike lanes where feasible when roads throughout the Town are reconstructed, whether they are shown on this map or not. Future updates to the thoroughfare plan can also indicate where additional bike lanes are feasible.

SHARED-USE LANES

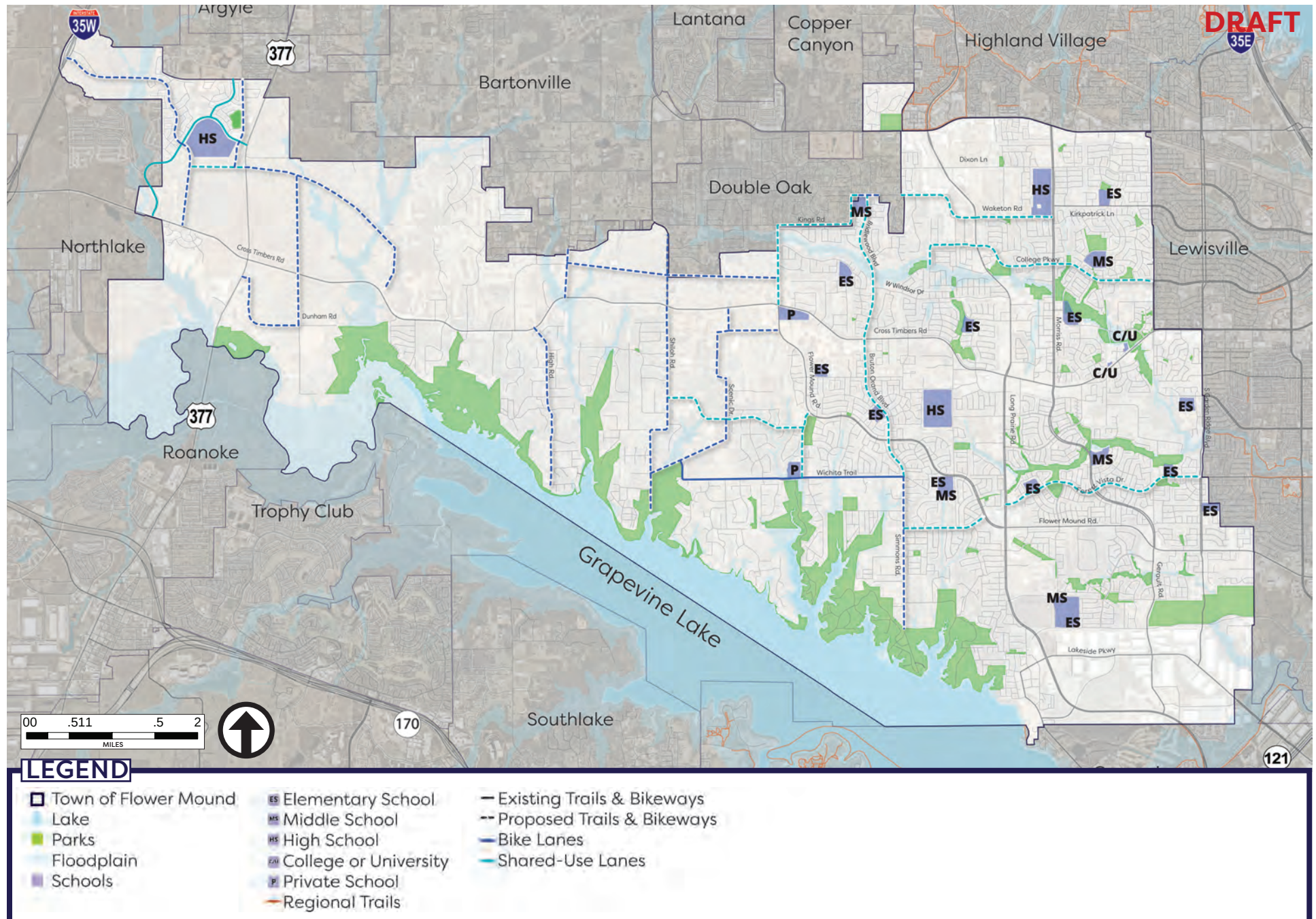
Shared-use lanes can be easily implemented and require little change to the existing roadway. A majority of the bikeway facilities on the east side of Town are shared-use lanes due to existing constraints. These routes are on local roads or collectors with low volumes and speeds, which are more ideal for creating a comfortable riding experience for users of all ages and abilities. These routes connect residents to the trail system, bike lanes, and destinations throughout the Town.

TABLE 4.5: ON-STREET BIKEWAYS RECOMMENDATION SUMMARY

Facility Type	Existing Mileage	Recommended Mileage	Total Mileage
Bike Lanes	2.4	16.5	18.9
Shared-Use Lanes	2.3	18.3	20.6
Total	4.7	34.8	39.5



FIGURE 4.4: ON-STREET BIKEWAYS RECOMMENDATIONS MAP



OTHER TRAILS RECOMMENDATIONS

Other trails include the USACE soft-surface trails along Grapevine Lake and paddling trails in Grapevine Lake. These are diverse trails intended to serve a variety of users.

USACE TRAILS

USACE Trails are soft-surface trails located along Grapevine Lake and are maintained by DORBA and CTETA. This plan does not propose any additional trails on USACE property; additional trails would need to be planned by the USACE based on their requirements. These trails primarily serve mountain bikers, hikers, and equestrian users and attract people from around the DFW region.

PADDLING TRAILS

Paddling Trails are shown with proposed and existing launch points. These trails are intended to serve water users, including kayakers, canoers, and paddle boarders, exclusively.

TABLE 4.6: OTHER TRAILS RECOMMENDATION SUMMARY

Facility Type	Existing Mileage	Recommended Mileage	Total Mileage
USACE Trails	34.5	0	34.5
Paddling Trails	0	2.3	2.3
Total	34.5	2.3	36.8

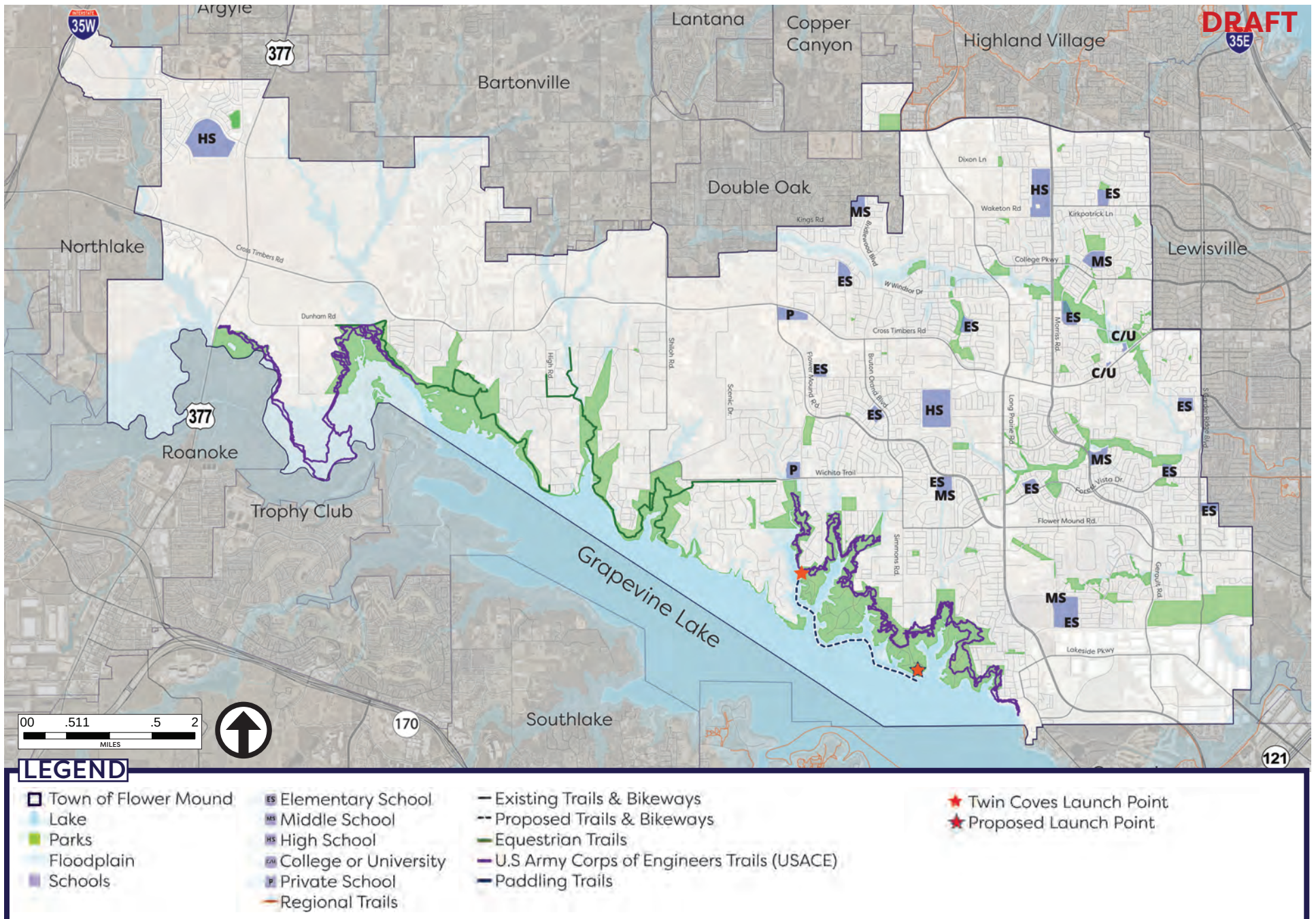


GRAPEVINE LAKE



CYCLIST AT KNOB HILLS

FIGURE 4.5: OTHER TRAILS RECOMMENDATIONS MAP



OTHER CONSIDERATIONS



TOWN CONNECTORS

These are sidewalks that connect trails to major destinations and are usually on major roadways such as collectors and arterials, where existing constraints prohibit widening to a trail. The desired width for connectors is 8', however where existing constraints exist and sidewalks cannot be widened, they should be a minimum of 6'.



TRAILHEADS

Key entrances to the trail system should be designated by trailheads. They should be distributed throughout the town at major destinations, such as at community parks and entertainment centers. Features typically found at a trailhead include parking, restrooms, wayfinding and regulation signage, drinking fountains, benches, bike repair stations, and trash receptacles.



TRAIL ACCESS POINTS

For a trail system to be comprehensive and connected, there should be multiple access points to the trails from existing and planned developments adjacent to the trail system. Trail access points do not have amenities like a trailhead, but they can include signage and branding associated with both the trail system and the place they are tying in from to establish sense of place.



PADDLING LAUNCH POINTS

Flower Mound has the unique opportunity to create water-based recreation around Grapevine Lake. By providing a network of launch points, residents can explore different parts of the lake, have multiple entrance and exit points, and engage in different experiences based on the surroundings of each launch point. Launch points should be in areas with flat banks or beaches that have shallow water close to the shoreline or along creek segments with established launch pads.



MAJOR PEDESTRIAN CROSSINGS

There are two types of roadways crossings. This section includes basic descriptions, more detailed design considerations for roadway crossings are provided in Chapter 5.



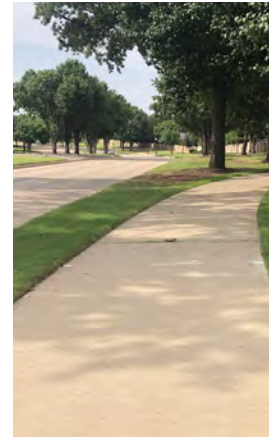
Roadway Intersections

Intersections are an important design consideration when creating a trails and bikeway system. Major roadways crossings are a barrier to connectivity in Flower Mound. Intersections should be enhanced for pedestrian crossings including signage, high emphasis pavement markings, and signalization. Major intersections include Long Prairie and Cross Timbers, Long Prairie and Flower Mound Road, and cross Timbers and US 377.



Mid-block Crossings

Mid-block crossings are where facilities cross a road at a location between intersections. They should be designed to alert drivers to trail users crossing the road through signage, rectangular rapid flashing beacons, and pavement markings relative to the roadway where the trails are crossing. Existing mid-block crossings in Flower Mound include along Gerault, Garden Ridge, and Morriss. Where a trail crosses a local road or neighborhood street, advanced signage and pavement markings should be included to alert drivers that people may be crossing the road.



INTERJURISDICTIONAL CONNECTIONS

The recommended network should take advantage of opportunities to connect residents to surroundings trails and bikeways in communities like Double Oak, Copper Canyon, Highland Village, Grapevine, and Lewisville. Interjurisdictional connections allow Flower Mound residents to access amenities and entertainment throughout the DFW Metroplex.

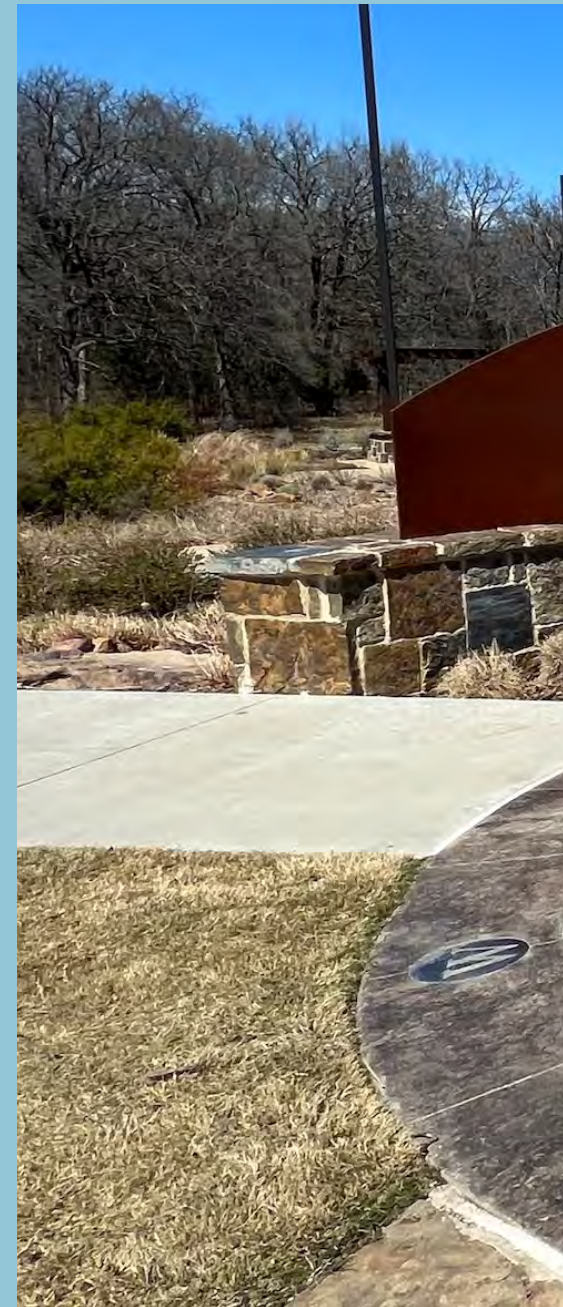


REGIONAL VELOWEB

The Regional Veloweb is an expansive network of off-street shared-use paths that can accommodate multiple user groups including bicyclists, pedestrians, and other non-motorized modes of transportation throughout the DFW Region. The Veloweb is compiled and continuously updated by the NCTCOG through planning efforts with local jurisdictions. The latest version of the regional network is included in the NCTCOG Mobility 2045 plan and contains 1,883 miles of off-street trails.

The NCTCOG Mobility 2045 Plan has established a hierarchy of existing, funded, and planned Veloweb trail segments. The Veloweb segments in Flower Mound include Long Prairie Road from Grapevine to Highland Village, Cross Timbers Road, 377, and an east/west connection from 377 to Bartonville. These corridors may be prime candidates for funding sources that place importance on creating regional connections. Veloweb routes in Flower Mound are shown in **Figure 4.2.**

Design Guidelines Toolbox Using the Toolbox



05 TRAILS & BIKEWAYS DESIGN STANDARDS



HERITAGE PARK NATURE TRAIL

DESIGN GUIDELINES TOOLBOX

This plan proposed a diverse network of trail and bikeways to accommodate different types of users. These facilities have design standards intended to provide safety and convenience for various users. It is important to note that all trails and bikeways should at a minimum meet the American Association of State Highway and Transportation Officials (AASHTO), TxDOT, and Town of Flower Mound standards and should exceed those standards if and where possible. This section outlines design considerations related to various aspects of trail and bikeway facilities. Listed below are sources for the most commonly used standards for pedestrian and bicycle facility design; the recommended standards in this plan complies with these sources:

- **AASHTO**: American Association of State Highway and Transportation Officials
- **ADAAG**: American with Disabilities Act Accessibility Guidelines
- **ITE**: Institute of Transportation Engineers
- **NACTO**: National Association of City Transportation Officials
- **PROWAG**: Public Rights-of-Way Accessibility Guidelines
- **TAS**: Texas Accessibility Standards
- **TMUTCD**: Texas Manual on Uniform Traffic Control Devices
- **TTI**: Texas Transportation Institute
- **TxDOT**: Texas Department of Transportation
- **NCTCOG**: North Central Texas Council of Governments

The intent is after this master plan is adopted, the Town will incorporate the design considerations described in this chapter into the applicable development regulations (subdivision ordinance, technical standards manual, etc.).

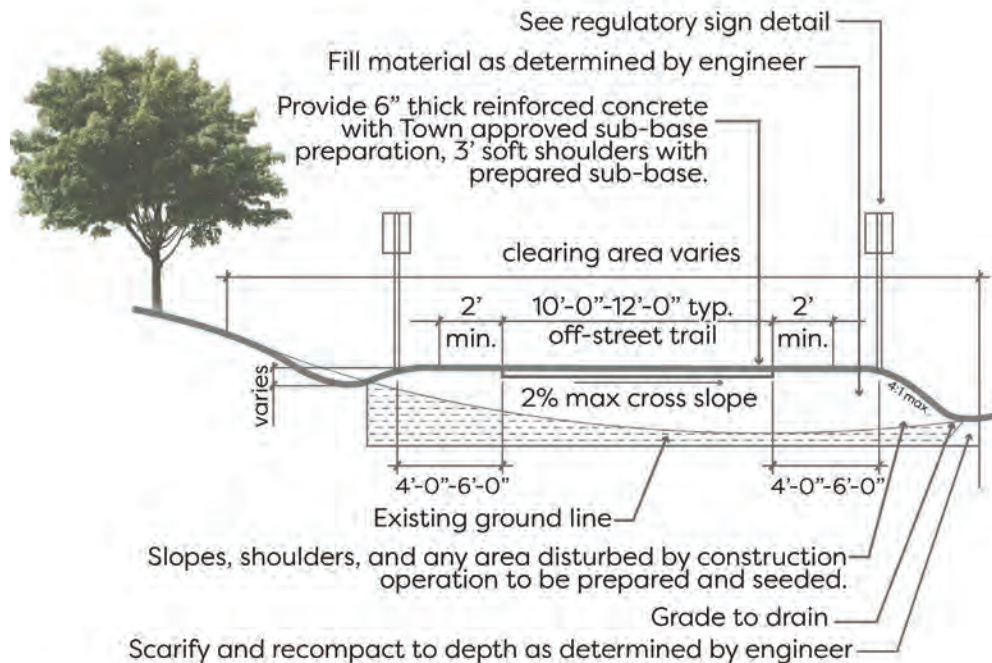


PAVED MULTI-USE TRAILS

Paved multi-use trails include trails located off-street and adjacent to the roadway. This first section outlines design features for paved multi-use trails to:

- Utilize guidelines to protect existing natural features along the trails. Canopy trees should be protected where feasible, and natural drainage patterns should be supported to reduce any impacts to the existing water systems. They should follow the natural topography.
- Alignment of trails should provide visual and experiential diversity. Extreme curves or long straight segments should be avoided where possible, except where tree preservation or other obstructions necessitate such an alignment.
- Intersections with trails and roadways should be located where sight lines are not obstructed, trail users are clearly visible, and should occur in locations that are strategic and necessary for the circulation of the trail system.
- Trails should align with all crosswalks and incorporate handicap accessible ramps that meet the ADAAG, PROWAG, and TAS standards.

FIGURE 5.1: TYPICAL TRAIL CROSS-SECTION

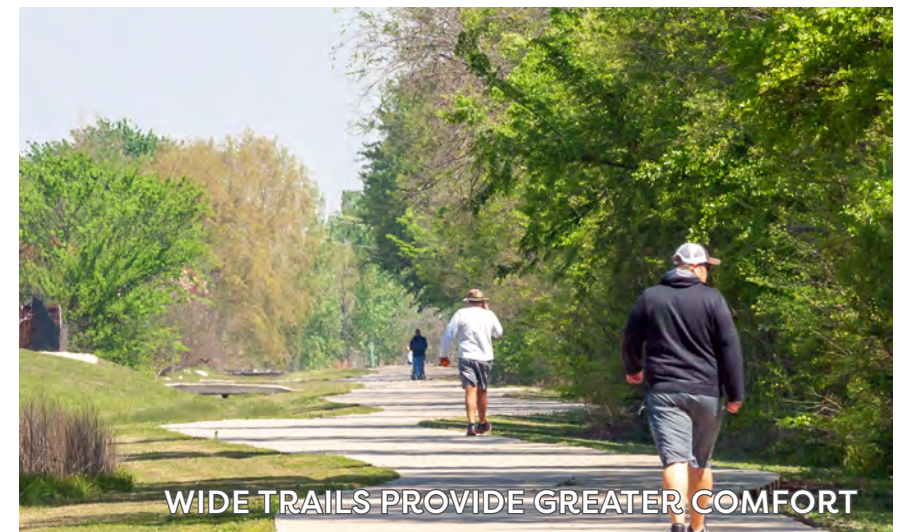


TRAIL WIDTH

Paved multi-use trails include existing and future Town trails as well as Veloweb trails. While the existing trails mainly are 8', where feasible they should be widened to 10' – 12'. All newly constructed multi-use trails should be a minimum of 12' in width, unless there are existing ROW constraints, then 10' may be considered. [Figure 5.1](#) illustrates a typical off-street trail cross-section.

As discussed in previous chapters, there are several gaps that exist in the existing trail system. Where a gap in the trail system is being filled, the Town should reserve the right to determine the required width to fill the gap in the system based on the following criteria. All trail segments do not have to meet all the criteria, the Town has the ability to determine feasibility on a case-by-case basis.

- Distance of the gap to be filled, for example it may not make sense to have a 100 foot stretch of 12' trail when the adjacent segments are eight feet.
- Available right-of-way or easement constraints.
- Location of existing utilities and the inability to relocate them.
- Presence of environmentally sensitive resources.
- Other property constraints, such as existing infrastructure.



PAVEMENT STRUCTURE

Paved multi-use trail pavement should be six inches thick reinforced concrete with a heavy broom finish. Expansion joints should be placed in the trail at an interval of 40' for 10' wide trails and 50' to 60' for 12' wide trails. Expansion joints should be topped and sealed with a self-leveling elastomeric joint compound and should be flush with the top surface of pavement on both sides of the joint. Control joints should be placed at intervals equal to the trail width and the depth should be one-fourth of the pavement thickness. The joints should be saw-cut and 1/4" wide. In order to provide the most user comfort, the finished surface of trails should not vary more than 1/4" from the lower edge of an 8' long straight edge when laid on the surface in any direction.

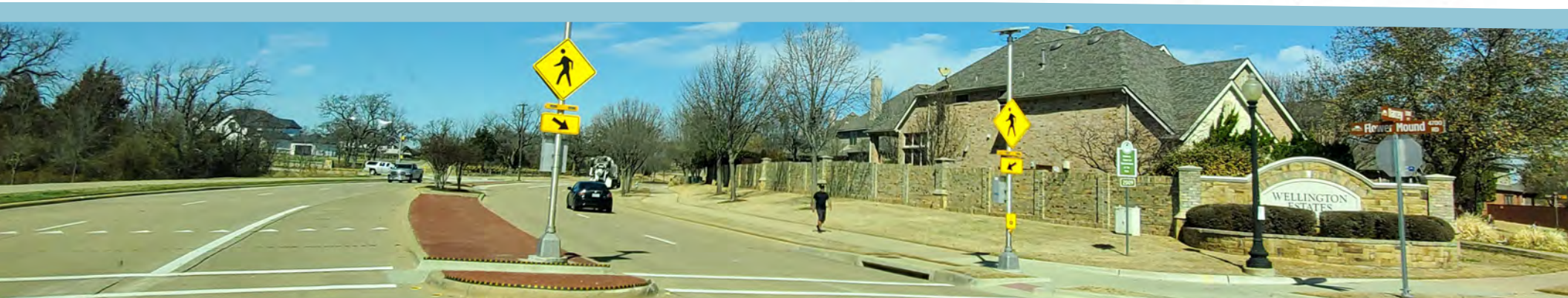
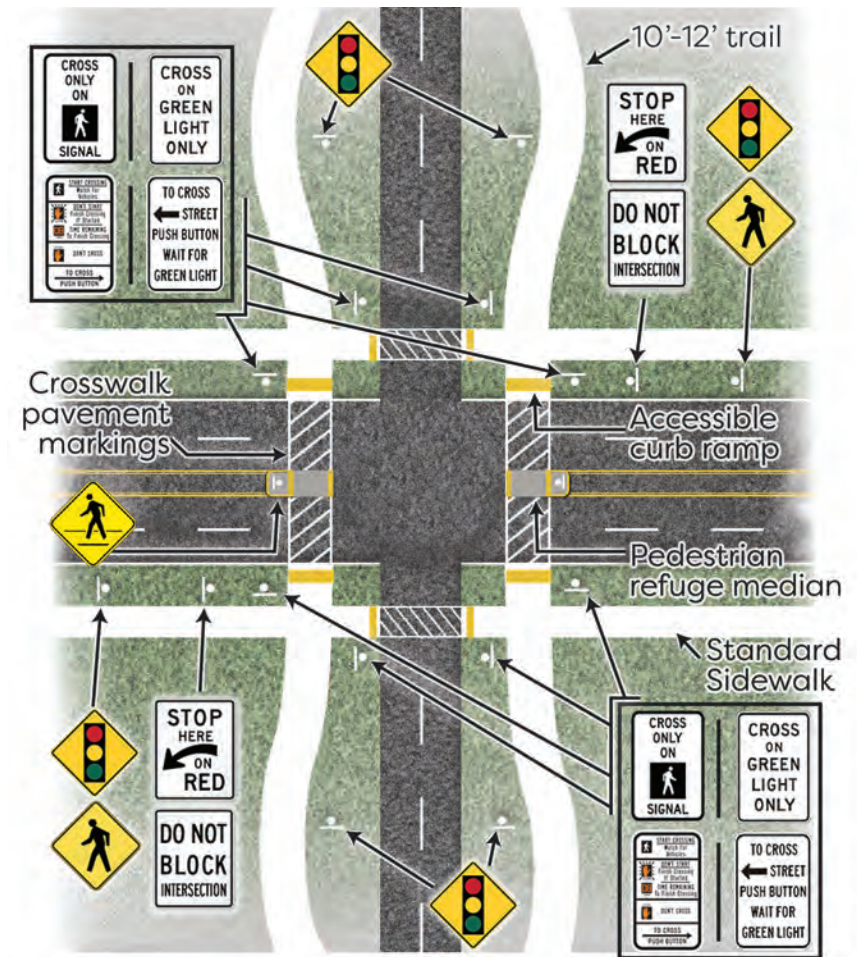
INTERSECTION TREATMENTS

Proper intersection treatments are important to reduce potential conflicts between trail users and motorists. In order to reduce conflict points, the corner radius for a 90-degree intersection should typically be 15'.

Trail crossings should include the appropriate signage, crosswalk markings, and pedestrian signals as generally depicted in [Figure 5.2](#). An alternative, more expensive option for crossing roadways is to construct a pedestrian bridge or tunnel to provide a fully separated roadway crossing experience without conflicts from automobiles. There are several examples of trail underpasses in Flower Mound today that avoid an at-grade crossing for trail users.

Additional intersection crossing considerations are provided later in this section.

FIGURE 5.2: TYPICAL INTERSECTION TREATMENT



RECTANGULAR RAPID FLASHING BEACONS AND MEDIAN REFUGE ISLANDS ENHANCE SAFETY AT INTERSECTIONS

EASEMENTS

When a trail is located away from a roadway, such as in a utility easement or adjacent to natural features, a 50' minimum easement is required. This is to ensure there is enough room to align trails away from creeks where erosion could impact the usability of the trail. For trails adjacent to a railroad, an easement of 20' outside of the railway foul zone is needed to ensure there is enough room for track maintenance.

VERTICAL AND HORIZONTAL CLEARANCE

Vertical clearance refers to the area above a trail that is to remain clear from obstructions. The recommended vertical clearance over a trail is 10' or higher; this height accommodates maintenance, patrol, and emergency vehicle access. All underpasses and tunnels should be a minimum of 8' in height and where there are vertical clearances less than 10', warning signage should be posted. In order to meet clearance standards for safety and visibility along trails, tree removal or pruning may be necessary in some areas. The trail evaluation section in Chapter 3 identified areas along existing trails that need to have vegetation scaled back; some of these areas are along trails that are not maintained by the Town so coordination with the HOA or other entity is needed.

The recommended horizontal clearance is the area on each side of the trail to remain free of obstructions. This area enhances the aesthetics, function, and safety for trail users. The desired horizontal clearance is two feet to five feet on each side of trail for heavily used trails. When a trail is adjacent to a roadway, the greatest separation in the form of a landscaped buffer, should be provided between trail users and vehicular travel lanes, where space exists. According to AASHTO, a five foot buffer from the trail facility and the roadway is recommended for optimum user comfort and safety.

OTHER CONSIDERATIONS

Design Speed

Design speed refers to the preferred speed of the fastest common user, so on multi-use trail, that would be an experienced cyclist. For paved multi-use trails, a minimum design speed of 20 mph should generally be used if the trail grade is less than 5 percent slope. In areas where strong prevailing winds exist or the trail grade exceeds 5 percent, a trail design speed of 30 mph is recommended.

Trail Drainage

Trail drainage should be designed to have adequate drainage away from the trail to mitigate flooding and debris after rain events. This requires the cross-slope of areas adjacent to trail shoulders to have at least a 2 percent minimum slope away from the trail and for the trail surfaces themselves to have a cross slope of 1 percent. Greater cross slope along the trail can make it difficult for some users to safely navigate the trail.

Visual Clearance

Trails should be designed to prevent blindspots. Blindspots create conflicts between users, creating safety concerns. Where blindspots exist, the trail should be widened, striped, and signed to provide the greatest awareness of oncoming trail traffic. Advanced warning can improve awareness and reduce potential conflicts.



BLUE BONNET TRAIL

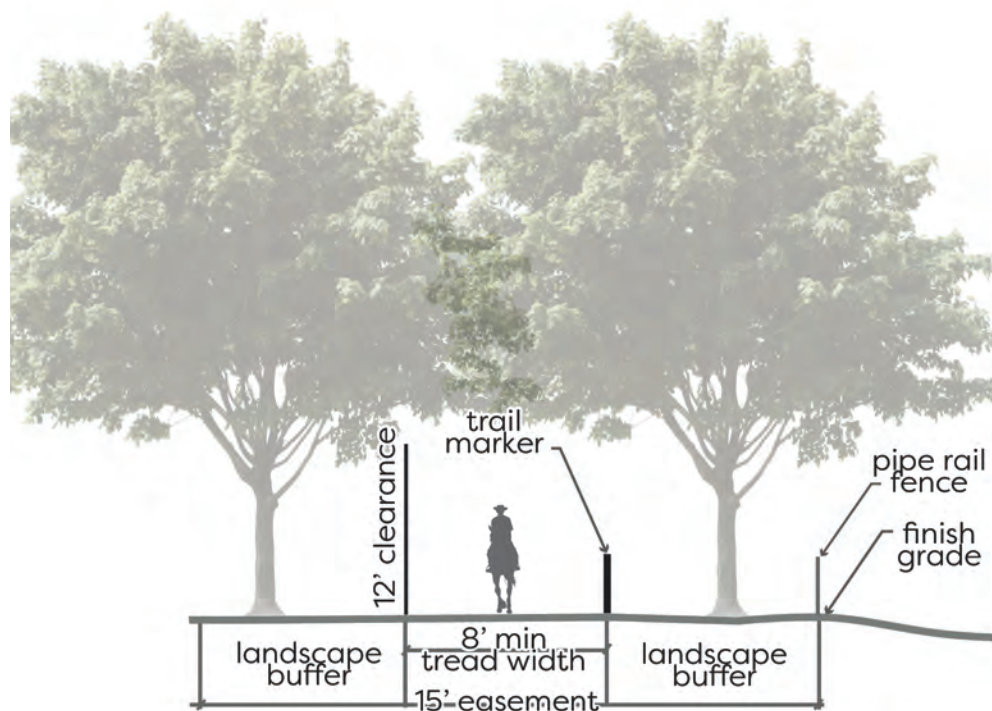
SOFT SURFACE TRAILS

EQUESTRIAN TRAILS

Equestrian trails are designed to provide outdoor experiences to people on horseback in rural or urban settings. Trails should be designed to be comfortable for users and provide space and buffers for multiple users, regardless of location. They should create safe loops with variety of amenities to ensure they are usable and safe.

In Flower Mound, the Town maintains several miles of equestrian trail and there is additional mileage located on the USACE land by Grapevine Lake. The recommended design considerations in this section only refers to the equestrian trails maintained by the Town.

FIGURE 5.3: TYPICAL EQUESTRIAN TRAIL CROSS-SECTION



Equestrian Trail Widths

Equestrian trails should be a minimum of 8' within a 15' easement. The trail surface within the easement should be a minimum of 8' in width, this provides space for passing. The vertical clearance for equestrian trails should be 12' to allow for space for a person on horseback. Trees may need to be pruned or removed in some cases to meet vertical clearance requirements.

Surface Materials

Trails should generally be native materials, such as compacted dirt. In rural and preserve settings, they may include rivers or creek crossings, hills, woods, and other natural features. In urban areas, where multiple users are intended, the trails may be more compact, and comprised of crushed granite, dirt, or other accessible surfaces.

Amenities

Amenities along the trail may differ based on the intended purpose and user of the trail. If the trail is designed to be challenging and provide jumps, they may be offset from the trail to allow for more novice users to not encounter obstacles. Trails should also be marked by trailheads, provide adequate parking for vehicles and trailers, and informational signage with information about trail length, amenities, and etiquette. Posts should be provided to allow for the temporary tie up of horses.



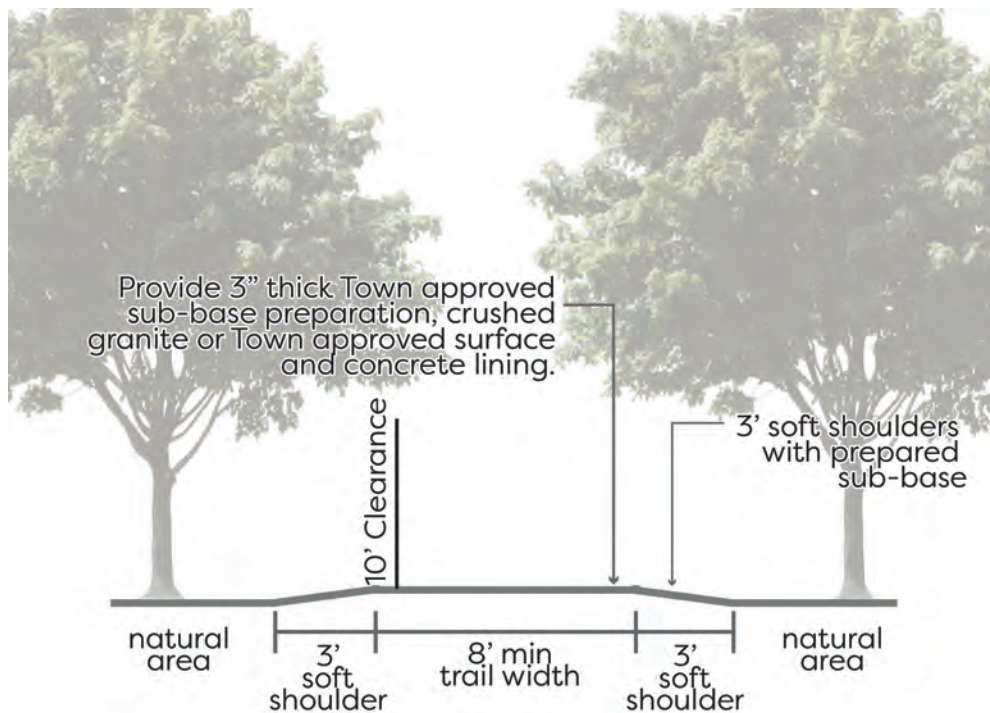
OTHER SOFT-SURFACE TRAILS

Other soft-surface trails may include natural trails through nature preserves, such as the USACE trails along Grapevine Lake, and town maintained soft-surface trails through parks and adjacent to roadways. Soft-surface trails are typically designed for hikers, mountain bikers, and equestrian users. Soft surface trails maintained by DORBA do not have provided standards.

Town Maintained Soft-Surface Trails

Town maintained soft-surface trails should be a minimum of 8' in width. They should include a clear zone of at least 3' on each side and a vertical clearance of at least 10' in height. Trees may need to be cut down or pruned to ensure proper vertical clearance. The trails should be a firm, stable surface such as decomposed granite. In order to maintain form, the trail should be lined by concrete, metal, or a similar hard lining.

FIGURE 5.4: TYPICAL SOFT SURFACE TRAIL CROSS-SECTION



ON-STREET BIKEWAYS

Two types of on-street bikeways are identified on the recommended network: bike lanes and shared-use lanes. This section outlines key considerations for each type of facility in order to:

- Determine appropriate facility types based on roadway travel speeds, traffic volumes, available pavement widths, and roadway functional classification.
- Identify continuous bicycle routes through high demand corridors to provide connections throughout the Town and to adjacent communities.
- Provide guidance on pavement markings, signage, or a combination along identified and future routes to communicate safety procedures and provide wayfinding.



BIKE LANES

Bike lanes are a portion of the travel lane marked for the exclusive use by people on bicycles. This space is separated from travel lanes by striping and signage. Benefits of bike lanes include: enabling people to ride at a constant speed; making bicycles and their space physically visible; and, encouraging people on bicycles to use the street rather than sidewalks where the conflicts with pedestrians are greater. Bike lanes are typically implemented on roadways with relatively higher speeds and traffic volumes.

Width

Width is important to consider when designing your system. The minimum width for a standard one-direction bike lane is 5' from the face of curb or on an open shoulder to allow people on bicycles to be far enough from the curb to avoid debris and drainage grates.

Bike lanes can either be standard bike lanes or separated bike lanes as shown in [Figures 5.5](#) and [5.6](#). Standard bike lanes have a painted stripe that separates the bicycle traffic from vehicles while the buffered bike lanes have a minimum 3' painted or physical buffer between the bike lane and the travel lane.

Markings

Markings should follow the MUTCD, including a one-way directional arrow, bike lane marking, and a solid white stripe. They should be placed at regular intervals in accordance with guidance from the MUTCD and AASHTO. Where a buffer exists, additional white striped hatches and an additional white stripe are needed. When the bike lane is between on-street parking and vehicular travel lanes, the lane should be lined on each side with a white stripe so vehicles that are parking are aware of the boundaries.

Signage

Signage required for bike lanes include those that state the bike lane is for cyclist use only. 'Bike Lane' signs should generally be provided adjacent to lane markings but not at all markings to avoid overuse, unless otherwise noted by national or Town standards. Signage, along with the pavement markings, can improve visibility and awareness of people on bicycles for motorists.

FIGURE 5.5: TYPICAL STANDARD BIKE LANE

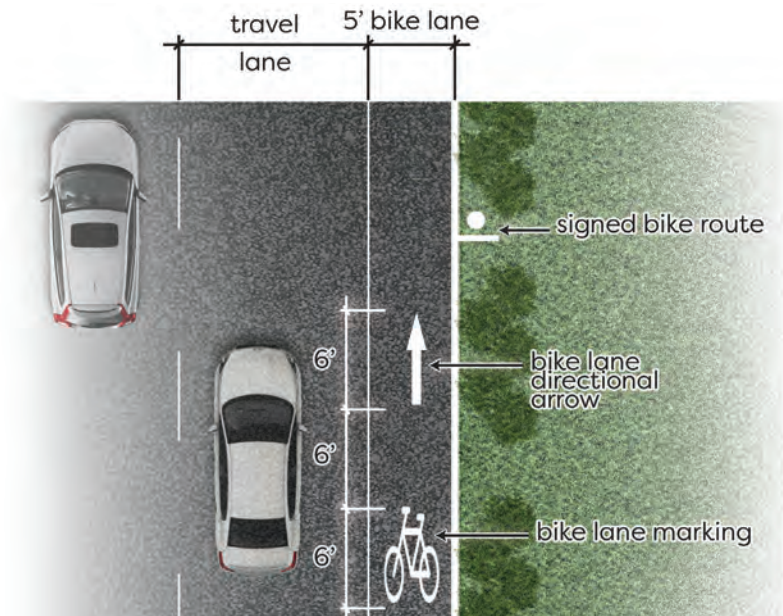


FIGURE 5.6: TYPICAL BUFFERED BIKE LANE

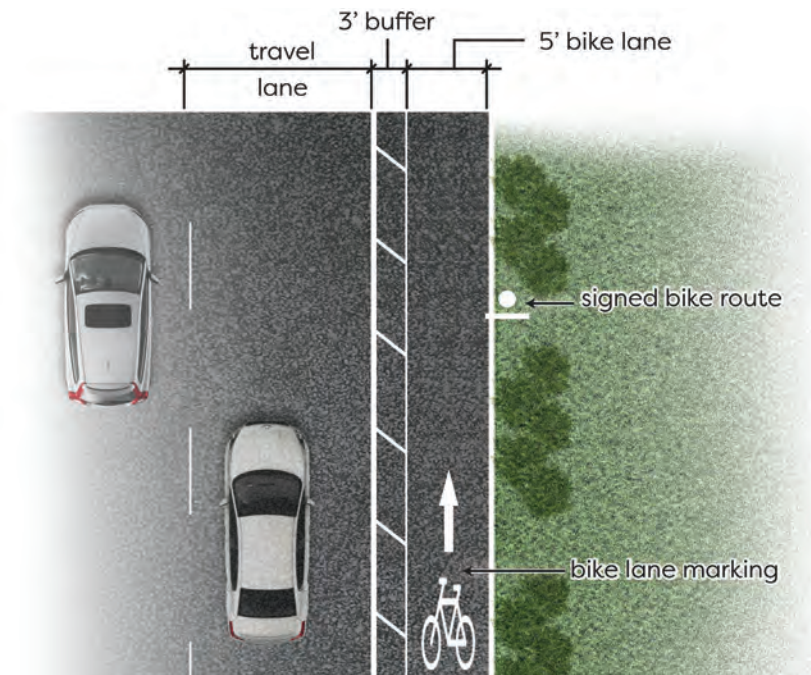
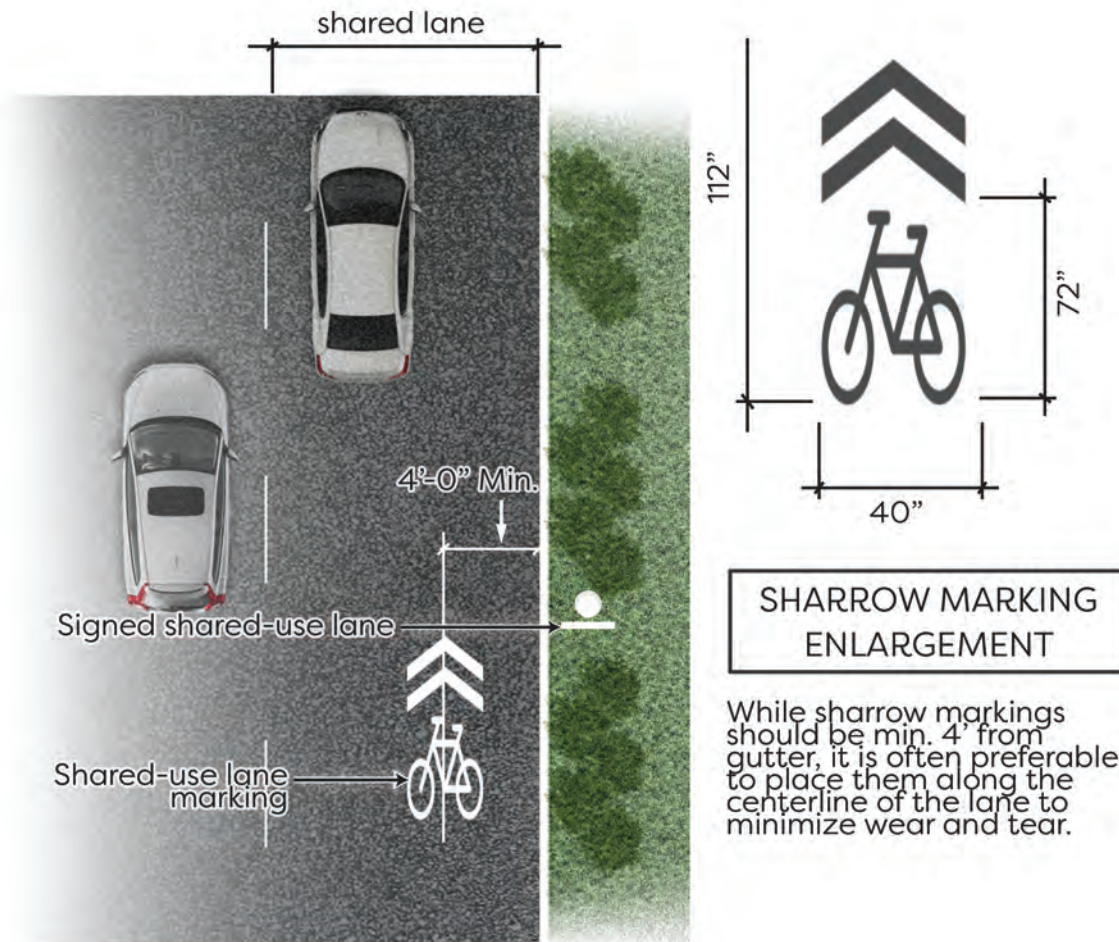


FIGURE 5.7: TYPICAL SHARED-USE LANE



SHARED-USE LANES

Shared-use lanes are when a lane on a street is designed for both drivers and people on bicycles. The designation is usually shown by pavement markings and/or signage. This accommodation is typically used on a street with a relatively low travel speeds (less than 35 mph) and relatively low volumes since there is no physical separation between the cyclists and motor vehicles.

Roadway Lane Width

Bike lane width that supports shared-use should meet or exceed 14', not including the curb and gutter where they exist. If the lane is less than 14', then cyclists may ride in the middle of the lane. If the lane is 14' or greater, state law dictates that the cyclist must ride near the curb.

Shared-Use Markings

Shared-use lane markings should be located a minimum of 4' from the curb on roadways without on-street parking and a minimum of 5' from the outside of the parking lane on roads with on-street parking. Markings should occur immediately after intersections and at intervals of not greater than 250' unless otherwise required by the Town.

Signage

Signage should be provided along shared-use lanes. Required signage includes 'Share the Road' and 'Bicycle May Use Full Lane' signs, which alert motorists that they may encounter people on bicycles and encourage respectful shared use of the roadway.

Signed Route Considerations

Signed route considerations for residential streets with low speeds and low volumes should have signage without accompanying pavement markings. This would include 'Share The Road' and 'Bicycle May Use Full Lane' signage.

BIKEWAY INTERSECTION TREATMENTS

Intersections are the point where multiples modes of transportation meet, facilities overlap, and should be designed in a safe and efficient matter. At a minimum, intersections should clearly imply how to navigate the intersection for all users through signalization, pavement markings, aligning turning movements, and providing logical routes. Some best practices for intersection treatments related to bikeways include:

Bike Boxes

Bike boxes can be used at intersections where there is not enough width to continue a separate bike facility and a designated right-turn lane. Bike boxes are defined spaces at the head of signalized intersections which provide safe, comfortable, and visible spaces for people on bicycles at intersections. To effectively communicate the purpose of the bike box, appropriate signage and pavement markings are required.

An ingress lane within the bike lane, defined by colored pavement, should be provided as cyclists approach the bike box at intersections. Change in pavement color alerts riders of approaching intersections and community cyclists' priority to motorists. Signage such as 'Stop Here on Red', 'Yield to Bikes' and 'No Turn on Red' are examples of informative signage directing users how to share the roadway at these types of intersections.

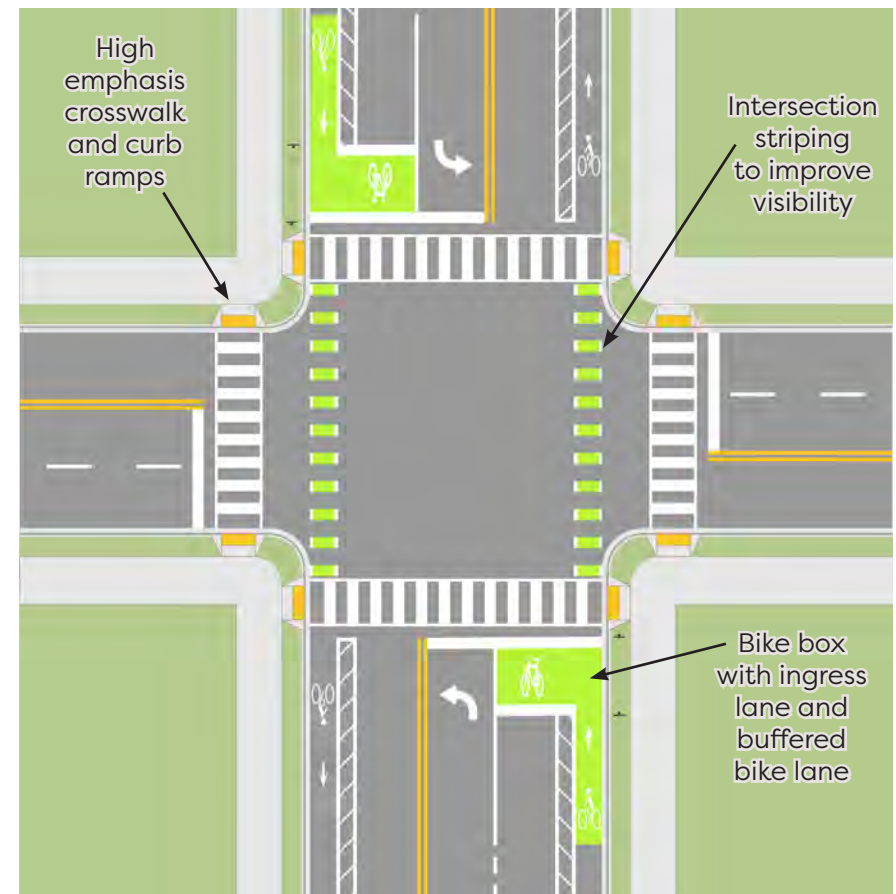
Driveway Crossings

Driveway crossings may include additional elements such as color, signs, signalization, and pavement markings. Continuing marked bicycle facilities at driveway intersections ensures that separation, positioning, and awareness is maintained through the intersection conflict areas.

OTHER CONSIDERATIONS

On-street bikeways should be safe and usable; they should have a smooth surface, uniform width, and should be free of encroachments and bumps such as utility lids, wide cracks, and longitudinal joints. Grates should be bicycle-safe without longitudinal openings to avoid tires being stuck. The use of uneven surfaces such as brick, pavers, or stamped concrete is not recommended along on-street bikeways.

FIGURE 5.8: TYPICAL BIKE BOX TREATMENT



PADDLING TRAILS

A well-designed paddling trail network should include consistent signage and branding, various launch points, and amenities for users of various skill levels, interests, and comforts.

LAUNCH POINTS

Launch points should take into consideration cost, topography, and accommodate expected volume of users. Launch points can be unimproved locations on shallow beaches or easily accessible creeks. Using this type of launch point can increase access quickly, however, may lack formal amenities that draw users to the site, such as parking and restrooms. More formal launch points can also be installed where there are existing motorized boat launches, however, special consideration should be given to the location of these launches to best reduce conflicts between paddle users and motorized boats. An informational kiosk should be provided at all launch points. Each kiosk should include information regarding waterway conservation, ethics, route guidance (including length and difficulty), and rules for paddling. Signage directing people to the launch points should be provided to increase awareness of the facility.

SIGNAGE/MARKERS

Signage and markers are important for a waterway system. Signage should guide paddle trail users, provide information for all waterway users to inform them of potential conflicts, and guide people on the water to other launch points and destinations. Signage at launch points can provide safety information, encourage the use of personal flotation devices, and provide emergency information. The TPWD has paddling trail markers that can be installed along the route. Trail markers can be installed on posts along the shore, or in the water attached to buoys.



TPWD PADDLING TRAIL TYPICAL SIGNAGE

Image Source: Texas Parks and Wildlife

CONNECTORS

As presented in Chapter 4, connectors are sidewalks that fill a gap in the trail network where limitations for a wider facility exist. This section describes the design objectives for pedestrian facilities, such as connectors, including:

- Location of the sidewalk to be within, or parallel to the right-of-way within a pedestrian easement, with a buffer from vehicular traffic, preferably at least 2' wide.
- Crossings at intersections should be given priority considerations to improve safety and reduce potential conflicts.
- ADA compliant ramps should be placed at intersections, driveways, and roadway crossings.

WIDTH

Connector width is important when designing Town Connectors. Because connectors are used to improve system connectivity and higher pedestrian volumes are anticipated, the desired width is 8'. The minimum acceptable width for a connector is 6' where there are existing constraints such as right-of-way or utilities. All new connectors and improvements to existing connectors should be widened to the greatest extent possible.

INTERSECTION TREATMENTS

Intersection treatments are needed to ensure safety at conflict points. It is recommended that pedestrian crossings at roadway intersections and driveways be designed in a manner that reinforces the right-of-way of pedestrians and prioritizes their safety. To reduce conflicts at intersections, the corner radius for a 90-degree intersection should typically be 15'. Curb extensions can better align crossings at intersections, force vehicles to make slower turns by reducing turning radii, and improve visibility for pedestrians crossing the street.

STANDARD PEDESTRIAN CROSSINGS

Standard pedestrian crossings use a combination of pavement markings, signals, and accessible ramps to cross intersecting streets with two-way traffic. Highly visible 'zebra' pavement striping is recommended as they better alert motor vehicles to yield to pedestrians. Routine maintenance of the crosswalk striping is recommended to ensure they are visible.

ENHANCED CROSSWALKS

Enhanced crosswalks may use a combination of pavement markings, pavement materials, mid-block crossing islands, and pedestrian signals such as rapid flashing beacons or pedestrian hybrid beacons to increase driver awareness of pedestrian activity and increase comfort of walkers.

DRIVEWAY CROSSINGS

Driveway crossings along major and minor thoroughfares should be designed to provide safety for pedestrians. Sidewalks and sidepaths should be set back from the back of curb at a sufficient distance to avoid crossing driveway aprons to maintain existing cross slopes and meet ADA accessibility standards. The Town should evaluate its driveway spacing and access management standards in order to improve the pedestrian realm and reduce conflicts between pedestrians, bicyclists, and motor vehicles.



INTERSECTION CONSIDERATIONS

A well-designed intersection facilitates the movements in a safe and efficient manner. Conflicts between uses should be reduced by heightened visibility, denoting clear roadway use through signage and pavement markings, and by ensuring users are aware of each other.

MEDIAN REFUGE ISLANDS

Median refuge islands are protected spaces positioned in the center of the roadway used to facilitate bicycle and pedestrian crossings by having an additional protected stop when crossing at an intersection. This treatment is most appropriate for roadways with higher volumes, faster speeds, and wider pavement widths. Refuge medians reduce crossing lengths, increase visibility of crossing movements, calm traffic through physical design, and prioritize crossing movements. Medians should be a minimum of 6' in width, be well lit, and if any vegetation is included it should be low to improve visibility. Median refuge islands are preferred at signalized intersections, however they can also be a treatment for mid-block crossings.



CURB RAMPS

Curb ramps should be designed for the use of mobility devices (including scooters, walkers, and crutches), provide direction and guidance for roadway crossings, and meet all ADA and PROWAG standards. One curb ramp should be provided for each crosswalk, which usually translates to two per corner, and one on each side of the crosswalk. This provides direction and reduces crossing distances as opposed to when there is one crosswalk per corner. Curb ramps should be sloped to provide a smooth transition from sidewalk to crosswalk. In some cases, curb extensions can be installed to better align crosswalks, reduce crossing distances, and slow turning movements for vehicles.

TRAFFIC CONTROL SIGNAGE

Traffic control signage should indicate crossing features for all roadway users based on guidance from the MUTCD. Signage should be highly visible and capture the attention of all users approaching the crossing area. Intersections can be further enhanced by flashing beacons, pavement markings, or change in pavement material. It is important to note that placing too many traffic control devices at one crossing can be overwhelming and may result in the loss of impact.



CROSSWALKS

Crosswalks should be clearly marked and highly visible. Where a crosswalk is signalized, leading pedestrian signals and longer walk signal times can improve accessibility for pedestrians. To minimize conflicts, other pedestrian crossing tools can include protected only left-turn phases, prohibiting right turns on red where sight lines may be reduced or where a leading pedestrian interval is used, and signage to remind drivers to yield to pedestrians. Intersections can include raised crosswalks to slow vehicles and improve visibility of pedestrians. Additional considerations should be included for pedestrians that are visually or hearing impaired. Implementing elements such as Accessible Pedestrian Signals (APS) with integrated audio devices, detectable warning surfaces or tactile pavement, and flashing lights can aid in creating a safe and comfortable pedestrian crossing environment.

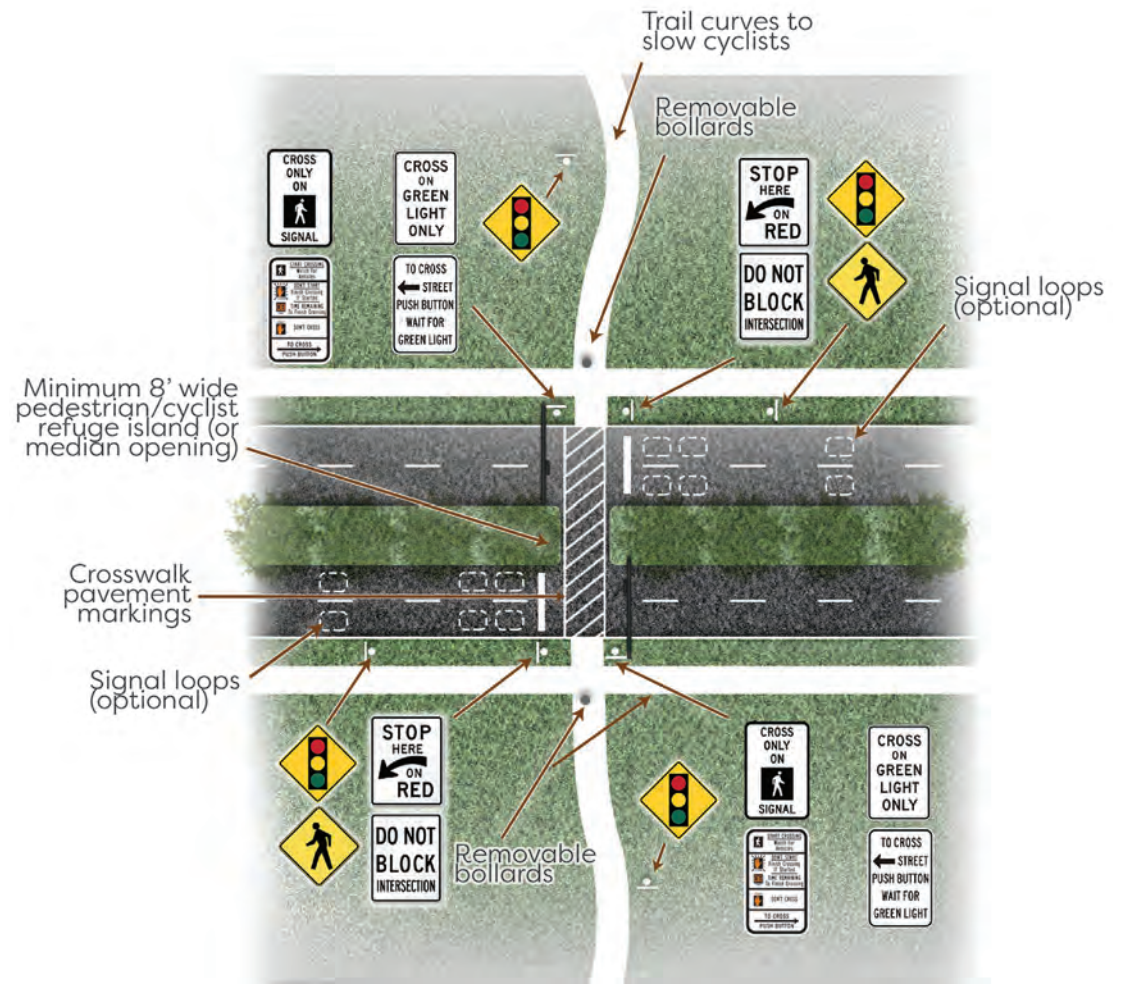
MID-BLOCK CROSSINGS

Where a trail crosses a roadway not at an intersection, special consideration should be given to inform drivers that someone may cross the road. Figure 5.9 shows typical treatments for mid-block crossings, including rectangular rapid flashing beacons (RRFB), pavement markings, and signage. Local roads may not require a RRFB due to lower roadway speed and volumes. In some cases, the mid-block crossing area can be raised in order to provide a flat crossing surface and slow automobiles at the crossing area.

RECTANGULAR RAPID FLASHING BEACONS

Rectangular Rapid Flashing Beacons (RRFB) are highly visible traffic control devices that help alert motor vehicles of mid-block crossings. RRFB's include rectangular lights that flash at an irregular pattern when pressed by pedestrians crossing the street. These lights are positioned below a crossing sign and above a crosswalk arrow. The sign is pedestrian activated, typically by using a push button. The crossings can be accompanied by advanced signage and stop lines on each side of the intersection to alert drivers to the upcoming mid-block crossing.

FIGURE 5.9: MID-BLOCK CROSSING



TRAIL FEATURES

Trail features can enhance the overall user experience of a trail. This includes improved access, signage, and amenities to support users along the trails. This section details trail amenity features to be considered when designing trails throughout the town. The Parks and Recreation Department will need to determine the placement of each amenity type throughout the network based on the intended goals of each trail.

TRAILHEADS

Trailheads are located at key entrances to the trail system allowing users to access a trail, including within community parks and major destinations. Features typically found at a trailhead include:

- Parking: A minimum of 10 spaces for major trailheads and five spaces at minor trailheads. Shared parking should be encouraged where appropriate.
- Restrooms are appropriate at major trailheads
- Informational Signage should include a larger kiosk with a map, rules and regulations, contact information
- Lighting promotes safety and accessibility.
- Amenities could be provided at all trailheads benches, trash receptacles, bike rack, drinking fountains, and bike repair stations

The typical trailhead amenities described here are appropriate for enhancing existing trailheads as well as to guide required amenities for future trailheads. [Figures 10](#) and [11](#) show how major and minor trailheads can be designed.

TRAIL ACCESS POINTS

Trail access points are locations along an off-street trail where users can access a trail. Access points can be found at parks, trail intersections, or minor destinations. Typically, they consist of a brief, paved spur that connects to an existing sidewalk. Trail markers and directional signage should aid users in wayfinding. Additional trail amenities at trail access points are not required.

TRAIL SIGNAGE

The trail network should be identified by consistent signage. Branding is covered in more detail later in this section.

FIGURE 5.10: EXAMPLE MAJOR TRAILHEAD



FIGURE 5.11: EXAMPLE MINOR TRAILHEAD



TRAIL AMENITIES

BIKE RACKS

Bike racks allow trail users to safely secure their bicycles while stopping at destinations along the trail, such as parks and entertainment centers. Bike racks should be located at trailheads and where the trail intersects with key destinations.

BIKE REPAIR STATIONS

Bike repair stations are self-service stations that include tools to perform basic repairs and maintenance to bicycles, including filling deflated tires or changing a flat tire. Such stations should be placed near bicycle parking found at key destinations like parks, schools, and commercial areas.

PARKING

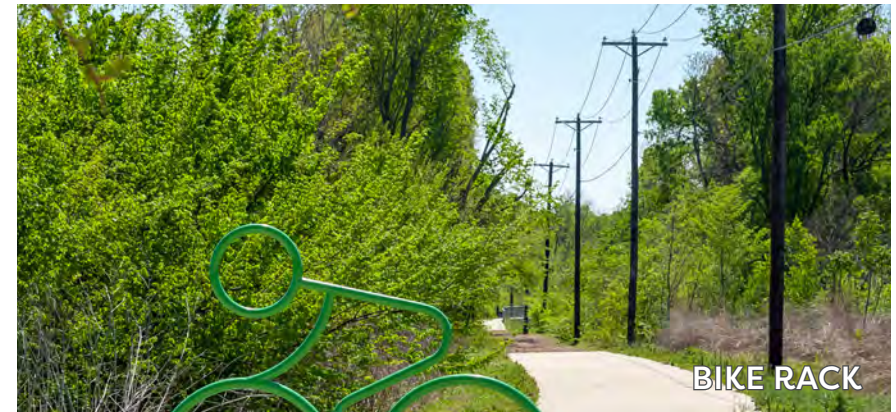
Parking should be provided at all trailheads, with a minimum of 10 spaces. Providing parking allows residents who cannot walk or bike to the trail network the ability to utilize the trail system. Alternative ADA accessible parking surfaces, such as permeable pavement or pavers can be considered where appropriate for parking areas.

TRASH RECEPTACLES

Trash receptacles improve the overall cleanliness of the trail system. They allow users of the trail to dispose of trash in areas where there is a demonstrated need. Typically, these are found only at trailheads. Pet waste stations should be provided along the trail at regular intervals for the easy disposal and collection of pet waste.

SEATING

Seating such as benches, provide respite points along the trails. They should be placed at regular intervals along trails along with other amenities such as hydration stations and trash receptacles.



BIKE RACK



WASTE RECEPTACLES



BIKE REPAIR STATION

SHADE

Shade should be provided where possible along the trail to provide comfort and cooling along the trail during the summer months. Shade trees should be placed along trails at regular intervals, but it is important that they remained trimmed to maintain at least ten feet vertical clearance from the trail. Where shade trees cannot be placed due to constraints, shade structures can be included near benches, trail markers, scenic viewing points, and other resting places along the trail.

HYDRATION STATIONS

Drinking fountains or water bottle fill stations provide trail users and their pets hydration opportunities while using the trail. Hydration stations should be located at trailheads where there is existing water infrastructure to connect to, such as at parks. Otherwise, there is a risk that the water can become stagnant with little use.

FITNESS STATIONS

Fitness stations placed along trails are particularly useful for joggers and cyclists seeking to stretch, warm up, and cool down before or after a run or bike ride. Similar to those located within a park, a fitness station offers trail users an opportunity to engage with static exercise equipment and further their health goals.

INFORMATIONAL KIOSKS

Information kiosks should provide information on amenity locations, trail rules, trail distances, and regulations. They should be placed at all trailheads to convey trail information and provide a sense of place and safety for trail users.



INFORMATIONAL KIOSK



HYDRATION STATIONS



FITNESS STATIONS

TRAIL BRANDING

SIGNAGE

Signage is typically provided at trailheads and at key decision-making points along a trail. Signage can mark access points to the trail, provide directional and distance guidance for trail users, direct users to locations of key amenities along the trails, and provide brand recognition of the trail system. Signage can help identify and brand a trail for users.

FIGURE 5.12: BRANDING CONSIDERATIONS



WAYFINDING

Wayfinding helps trail users identify their location on a trail or bikeway, distance to key destinations, and provides directional and distance guidance for preferred routes. Wayfinding can be provided along trails or bikeways by using MUTCD approved signage. Wayfinding includes maps, directional signage, mile markers, and trailhead markers.

MAP

Maps should be included at all major and minor trailheads to help identify the trail network and branded segments.

DIRECTIONAL

Directional signage guides users of the trail system. It provides them with mileage, location information, and directions. These should be placed at trailheads and major trail access points to help guide trail goers along the trail.

TRAILHEAD MARKERS

Trailhead markers are located at trail access points. They can also be located where a trail meets a street right-of-way, where an access point into the trail system is located. They should include the trail and intended users of the trail.

MILE MARKERS

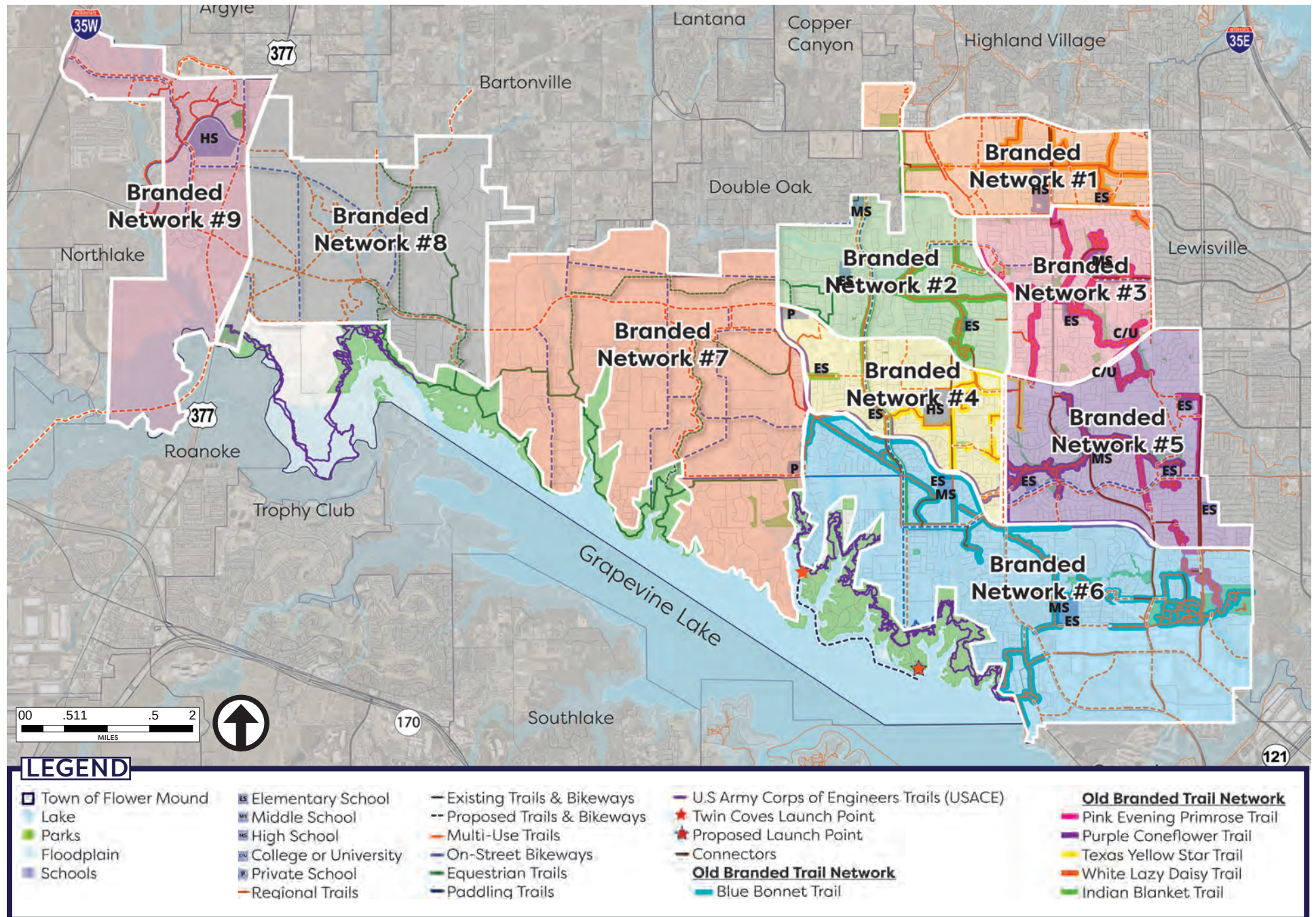
Trail markers should be placed at regular intervals along the trail to identify mileage, provide direction, and provide location information for emergency situations. They can help users be informed as to how far they've traveled. At a minimum, trail markers should be installed at every trailhead, trail access point, and trail intersection, however, trail markers should ideally be placed along the trail at $\frac{1}{4}$ to $\frac{1}{2}$ mile intervals.

DIGITAL SIGNAGE CONSIDERATIONS

A QR code can be included on all signage, which can take a trail user to a website to track where they are located on the trail network. A QR code is a matrix that is readable by a phone camera, and is linked to a specific website.



FIGURE 5.13: RECOMMENDED TRAIL REGIONS OF FLOWER MOUND



FUTURE BRANDING NAMES

The current branding system for the Flower Mound trails system is based on North Texas wildflowers. To help facilitate clear wayfinding while on the trails, [Figure 5.13](#) represents new proposed networks for branded trails in Flower Mound. As Flower Mound grows and more trails are constructed, this will help create clear guidelines on which branded system new trails would fall into. These networks are based off of major roadways and geographies. Using this system to identify new branded trail corridors and rename existing ones helps with overall branding and placemaking along each trail segment and maintenance needs.

Additional trail names need to be considered as more trails are constructed in rural and undeveloped areas of the Town.

New branded networks can build on the Texas wildflower theme. A list of potential trails include:

- Goldenrod
- Winecup
- Sunflower
- Basketflower
- Rain Lily
- Prickly Pear Cactus

Another option for new networks can enhance the nature theme by using plants found in the natural environment. Examples include:

- Texas Sage (shrub)
- Trumpet Vine (vines)
- Post Oak (tree)



RAIN LILY



BASKET FLOWER



SUNFLOWER

SAFETY AND SECURITY

LIGHTING

Lighting is important to consider when designing trails. Properly installing and maintaining lighting along a trail improves safety for trail users at dawn and dusk and in dark spaces such as densely wooded areas and underneath roadway overpasses. Lighting can improve visibility, increase access and convenience, and give trail users a sense of safety when using trails outside of daylight hours. Because nighttime etiquette is not always followed, proper lighting can help to increase visibility of trail users and reduce the likelihood of crashes. AASHTO recommends lighting to be installed in tunnels or overpasses, at trailheads, at bridge entrances and exits, at public gathering places, along streets, at crosswalks, at path intersections, and to illuminate key signage.

BRIDGES & LOW WATER CROSSINGS

Bridges and low water crossings should be designed by a Texas Professional Engineer and meet all Town or State established engineering standards. Low water crossings should not exceed four feet from the path to the waterway flowline unless otherwise approved by the Town Engineer. Any crossing exceeding this separation will require a bridge to ensure the trail meets all accessibility requirements. For creek crossings that require a short span, box culverts can be used with handrails.

TRAIL SAFETY RAILINGS

Safety railings should be provided where there is significant topography changes within five feet of the trail shoulder. The top of the railing should be a minimum of four feet higher than the trail surface. Railing should be horizontal to avoid catching bicycle handlebars and should be constructed in accordance with the latest International Building Code regulations.

WEB BASED TRAIL SAFETY

Web based trail safety is when there is a downloadable smart phone application (app) that can help a resident track their location on the trail system. The app can be used in tandem with trail signage to allow a trail user to identify their location in case of emergency. In addition to the app, QR codes to connect users to websites and maps to identify where they are on the trail system. There may be strategic locations to provide wireless internet services for trail users, such as in parks or at major trailheads.



MAINTENANCE

Trails and bikeways should be regularly maintained to ensure they meet vertical and horizontal clearance requirements, they are free of debris, and maintain their integrity.

MOWING AND LANDSCAPING

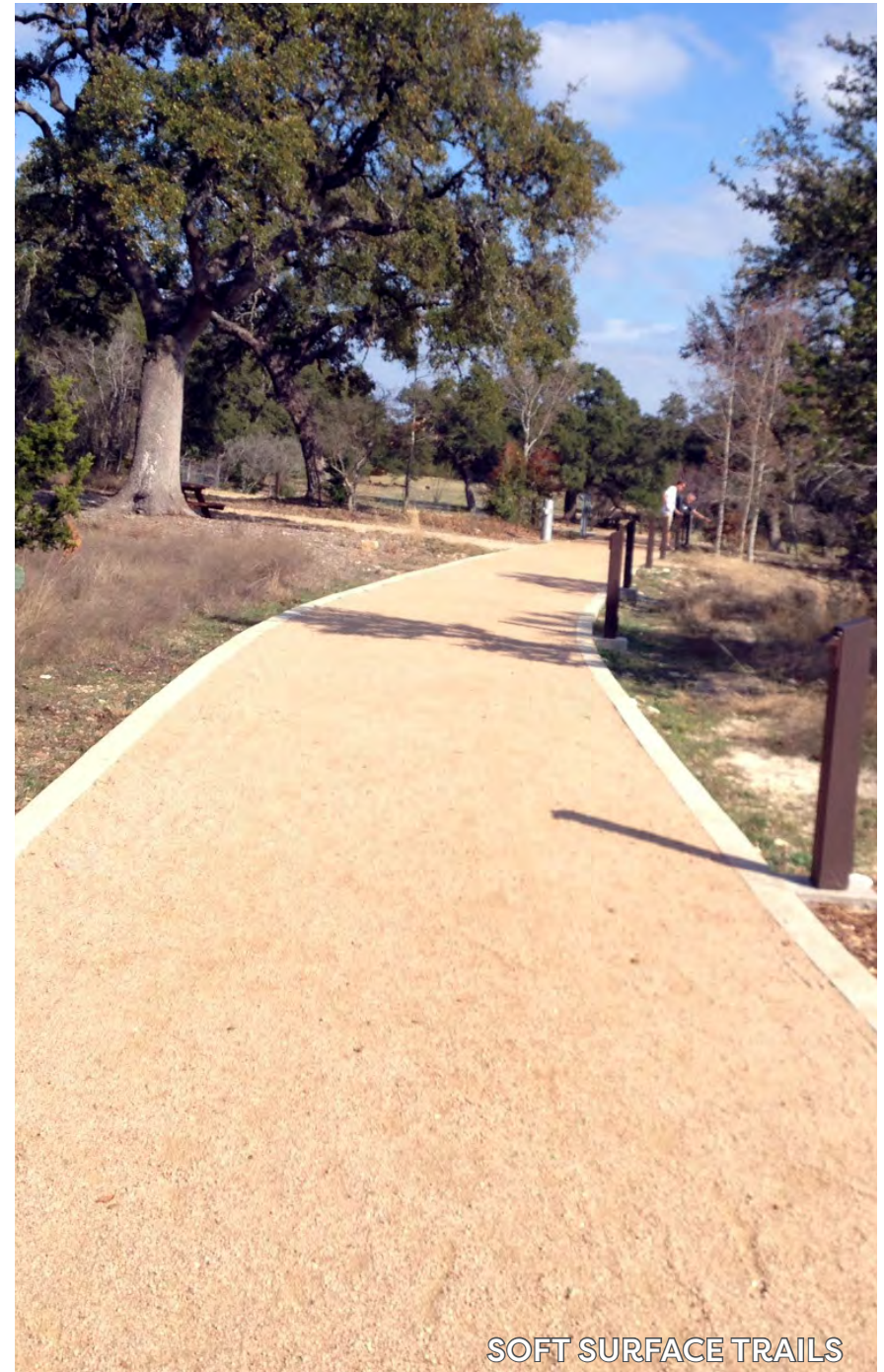
In order to ensure there is no debris or obstructions encroaching on trail surfaces, routine mowing and weed wacking is recommended. Removal or "cutting back" of vegetation in the clearance zones is required to maintain a safe environment along the trails.

SOFT SURFACE TRAILS

Soft surface trails should be maintained regularly to ensure they meet ADA requirements, have a compact surface, and are free from debris and animals such as snakes. This may need to be done more frequently than for paved trails.

VOLUNTEER GROUPS

Volunteer groups can be utilized to support the Town's maintenance program. The Town can support "Adopt a Trail" or "Friends of the Trail" groups that help with litter clean-up, tree planting, and raising funds for trail amenities. Trail volunteer groups can help with security patrolling along trails and identify maintenance concerns to Town staff.



USING THE TOOLBOX

UPDATING STANDARDS

The design considerations included in this chapter represent guidance for future updates to the Town's development ordinances. Upon adoption of the overall Trails and Bikeways Master Plan, these recommendations should be codified into the Town of Flower Mound Code of Ordinances and the Design Criteria and Construction Manual where applicable.

DEVELOPMENT REGULATIONS

The character and minimum dedication standards related to trails should be updated to reflect this plan's design considerations. The design considerations included in this chapter represent guidance for future updates to the Town's development ordinances. Examples where updates should be considered include Land Development Regulations Article V, Division 5: Sidewalks and Subdivision Regulations Article 6 Division 8: Parks and Recreational Areas. Both sections should be updated to reflect the standards in this document, including width of sidewalks and trails, and trail classifications. An audit of the existing regulations can identify other necessary amendments to implement this plan.

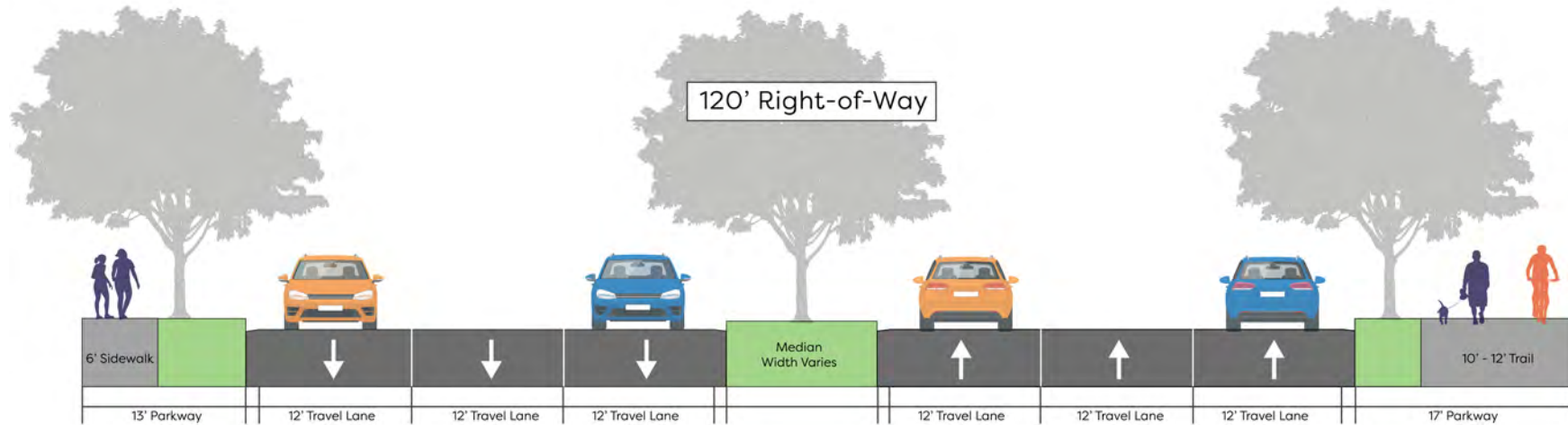
INTEGRATION WITH THOROUGHFARE PLAN

The Town Thoroughfare Plan was last updated in 2013, however minor amendments have occurred since then. The plan specifies a variety of thoroughfare types, each with its own function and typical cross-section. Some of the cross-sections include specifications on the type and width of trail, pedestrian, or bikeway facility, but not all of the cross-sections address these multi-modal facilities. In order to better accommodate trail and bikeway facilities into future updates of the thoroughfare plan, modifications to the roadway cross-sections should be considered. [Figures 5.14 - 5.25](#) on the following pages depict possible updates to the cross-sections as they exist today to more fully integrate trail and bikeway accommodations as recommended in this master plan. The following cross-sections are proposed modifications to the cross-sections from the Town Thoroughfare Plan. These recommendations may need to be modified as necessary to account for existing conditions and constraints. Nothing in this plan should prohibit or limit the use easements or landscape buffers outside of the right-of-ways to enhance or improve the location of trails along roadway corridors.

ENGINEERING DESIGN STANDARDS

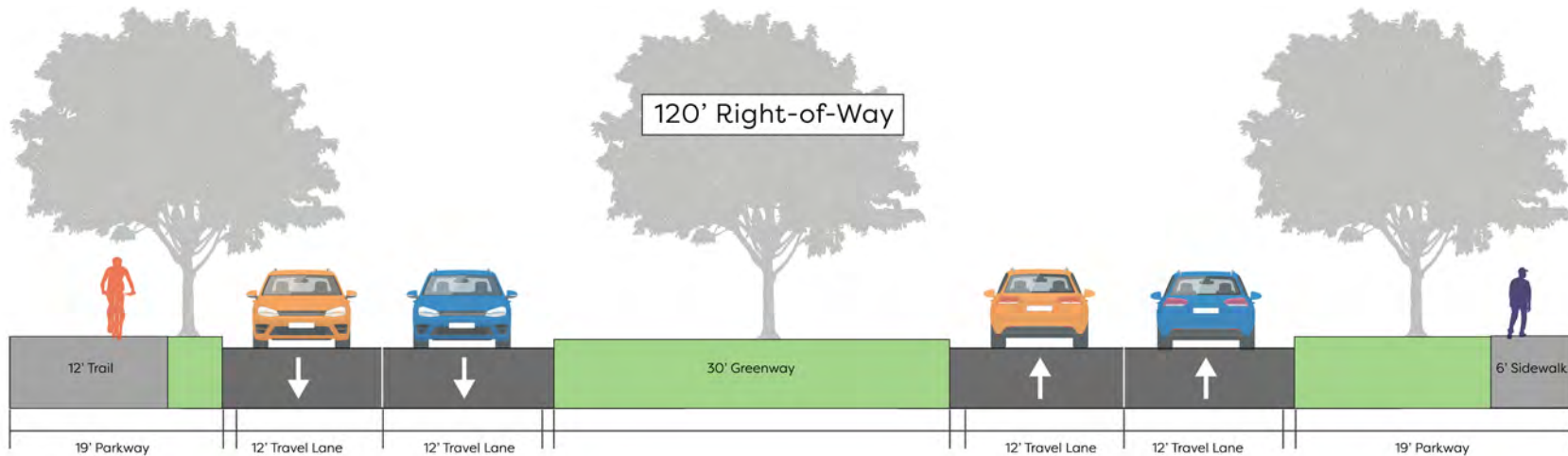
The thoroughfare plan is codified through Engineering Design Standards (EDS). The EDS should be updated to reflect recommendations outlined in this plan, including any lane widths, right-of-ways widths, design speeds considerations, driveway spacing to improve the pedestrian realm, and similar topics.

FIGURE 5.14: MAJOR ARTERIAL PROPOSED CROSS-SECTION



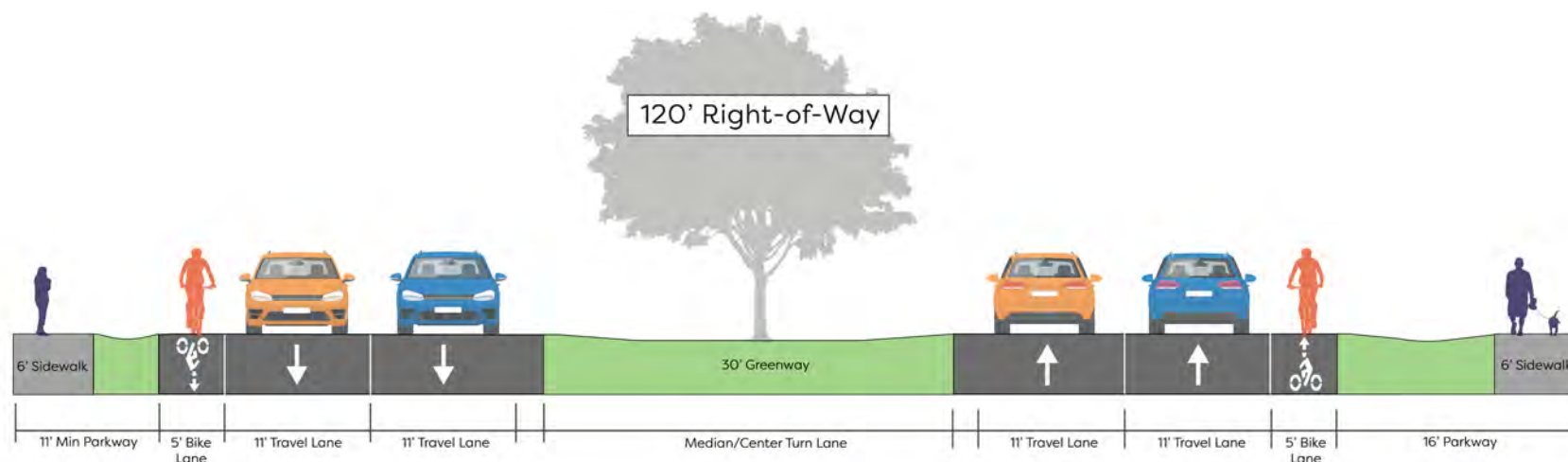
Major arterials include roads such as FM 1171, US HWY 377 and FM 2499. While these roads are mostly built-out, any new construction or reconstruction should consider minimizing the median in order to increase the buffer between pedestrian zones and motor vehicles. The road should also include a 6' wide sidewalk and 12' wide shared-use path where able.

FIGURE 5.15: GREENWAY URBAN ARTERIAL PROPOSED CROSS-SECTION



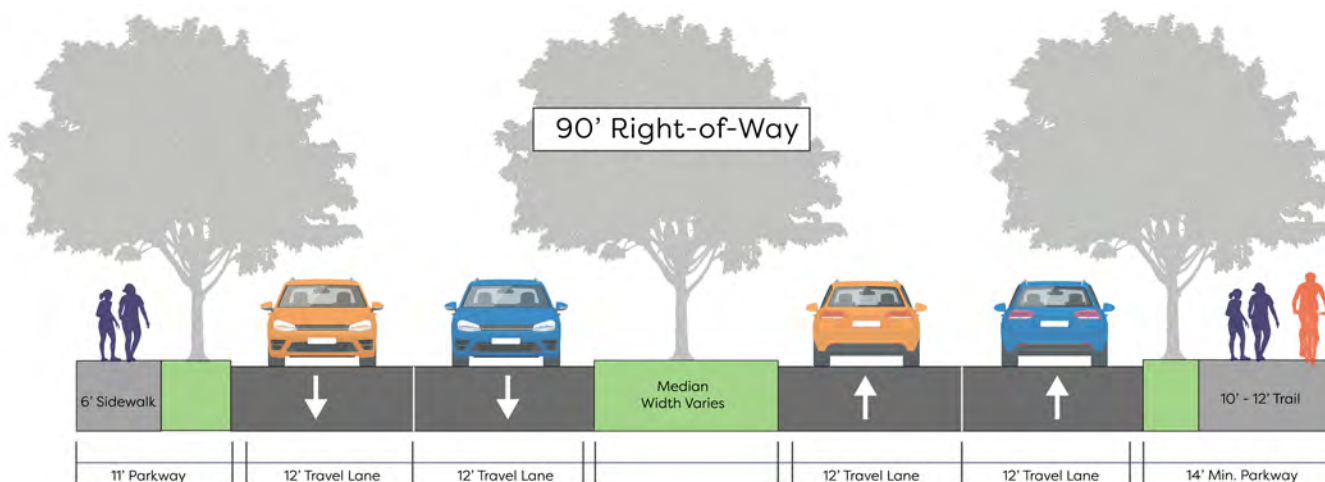
Greenway urban arterials include roads such as Garden Ridge Trail. This corridor should include a 12' wide shared use path where possible in order to create a comfortable shared realm. If the corridor is redeveloped, the median should be reduced in order to increase the width of the landscape buffer.

FIGURE 5.16: GREENWAY RURAL ARTERIAL PROPOSED CROSS-SECTION



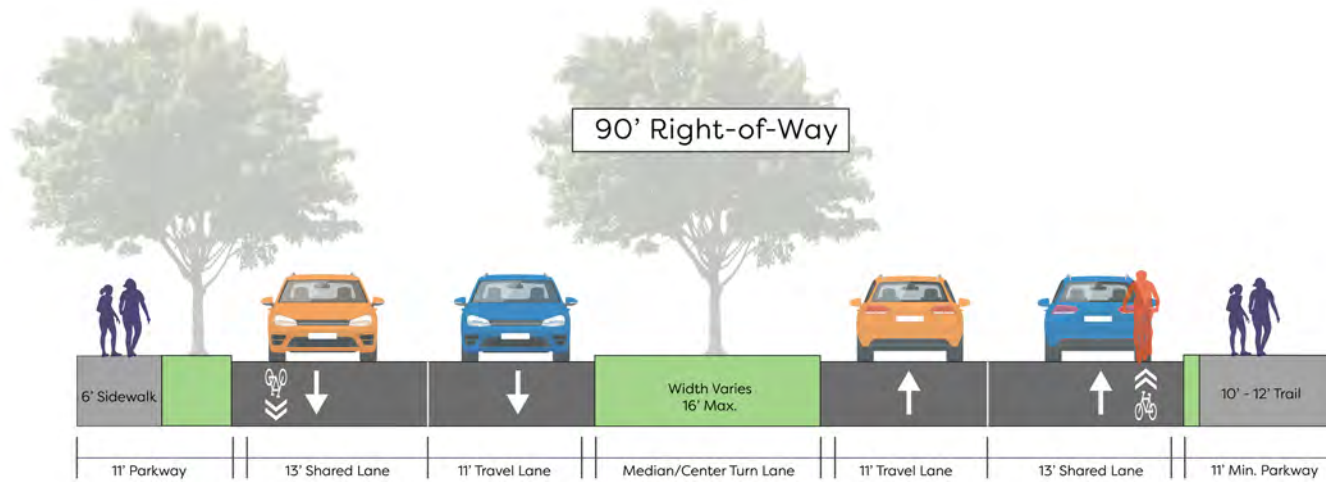
Greenway rural arterials are a future roadway classification in west Flower Mound. This roadway should include a landscaped median/center turn lane, bike lanes on each side of the road, and sidewalks with a minimum width of 6' on each side. If possible, the center turn lane should be reduced to the minimum necessary width in order to widen the parkways for landscape buffers between the sidewalk and motor vehicle lanes.

FIGURE 5.17: URBAN MINOR ARTERIAL PROPOSED CROSS-SECTION



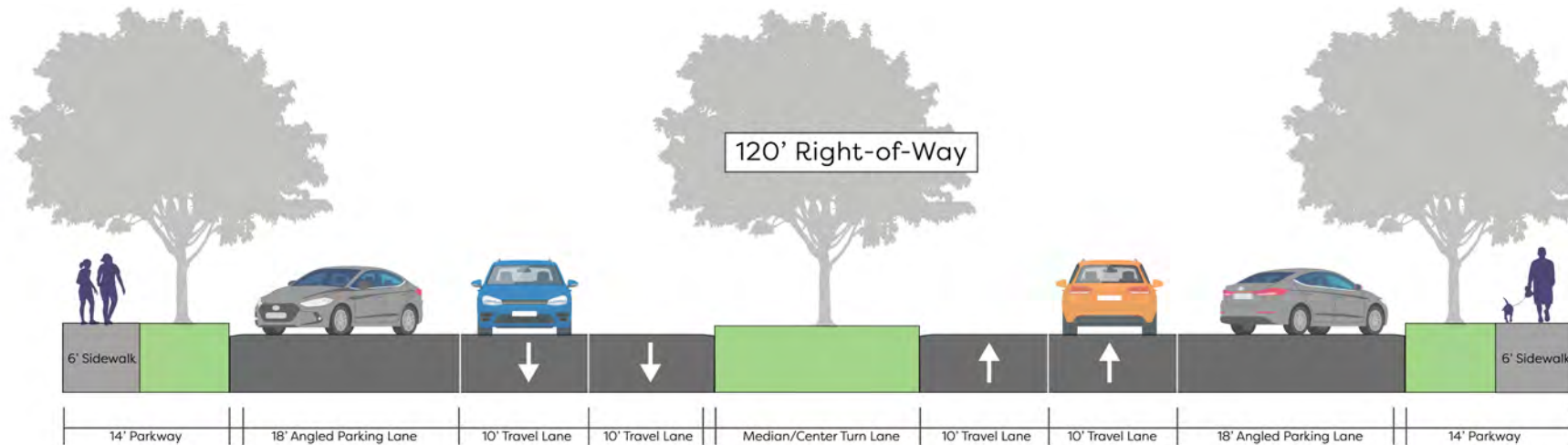
Urban minor arterials include a majority of the built roads in eastern Flower Mound, such as Flower Mound Road and Morris Road which move people and vehicles to destinations throughout the Town. Where able, this roadway cross-section should include a 10'-12' shared use path, a six foot sidewalk, and landscaped medians. It is recommended that when redevelopment of minor arterials occurs, the median be reduced in order to increase buffers and landscaped areas between the pedestrian ways and travel lanes. All new minor arterials should include 100' right-of-ways to ensure there adequate space to accommodate all facilities.

FIGURE 5.18: URBAN MINOR ARTERIAL WITH SHARED LANE PROPOSED CROSS-SECTION



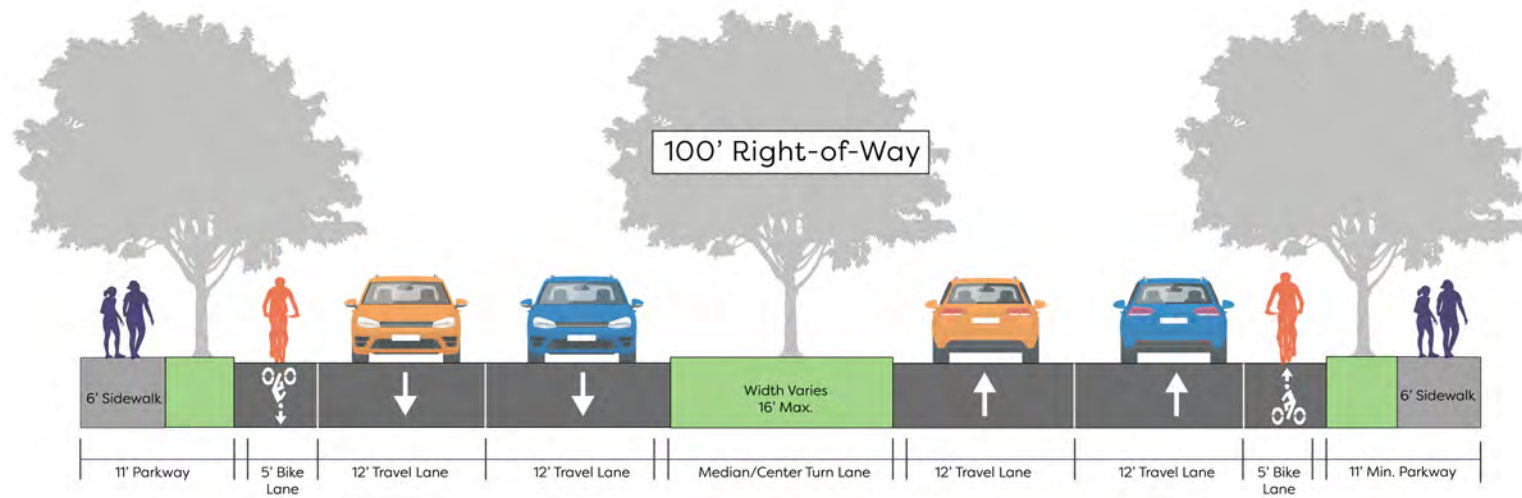
Urban minor arterials with shared-use lane is a new subclassifications of the urban minor arterial. In order to facilitate bicycle movement throughout the city, this roadway can include a shared-use lane by reducing the internal lane width, which allows the outside lane to be 13' with the additional 1' curb and gutter, making the total lane width 14'. This cross-section should include a 6' sidewalk and a 10'-12' shared use path.

FIGURE 5.19: URBAN MINOR ARTERIAL WITH ON-STREET PARKING PROPOSED CROSS-SECTION



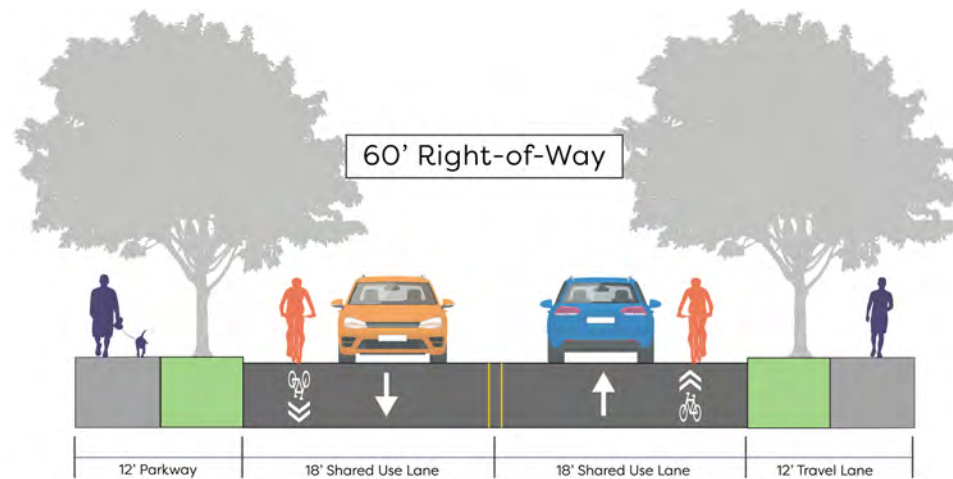
Urban minor arterials with on-street parking are found within the Lakeside Development. These roads are intended to provide parking for the shops and restaurants and provide wide sidewalks to encourage walking throughout the community. No changes have been proposed to this cross-section. Any new roadway segments should consider providing enhanced sidewalks where pedestrian volumes are expected to be higher.

FIGURE 5.20: URBAN MINOR ARTERIAL WITH BIKE LANES PROPOSED CROSS-SECTION



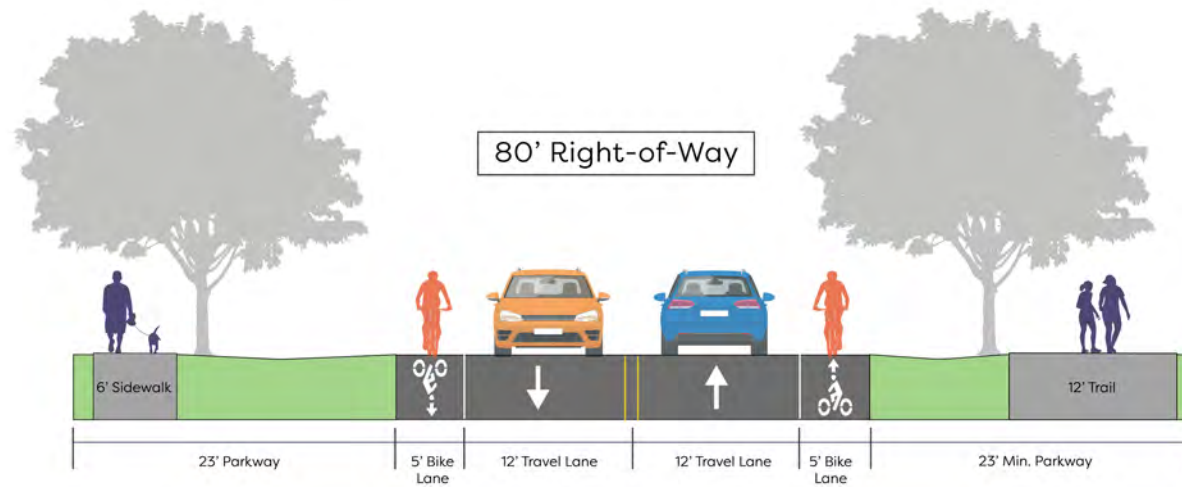
Urban minor arterials with bike lanes include roadways in west Flower Mound, including Canyon Falls Drive and other future corridors in the Canyon Falls Development. This cross-section provides 5' wide dedicated bike lanes, and 6' wide sidewalks on each side of the road.

FIGURE 5.21: URBAN COLLECTOR PROPOSED CROSS-SECTION



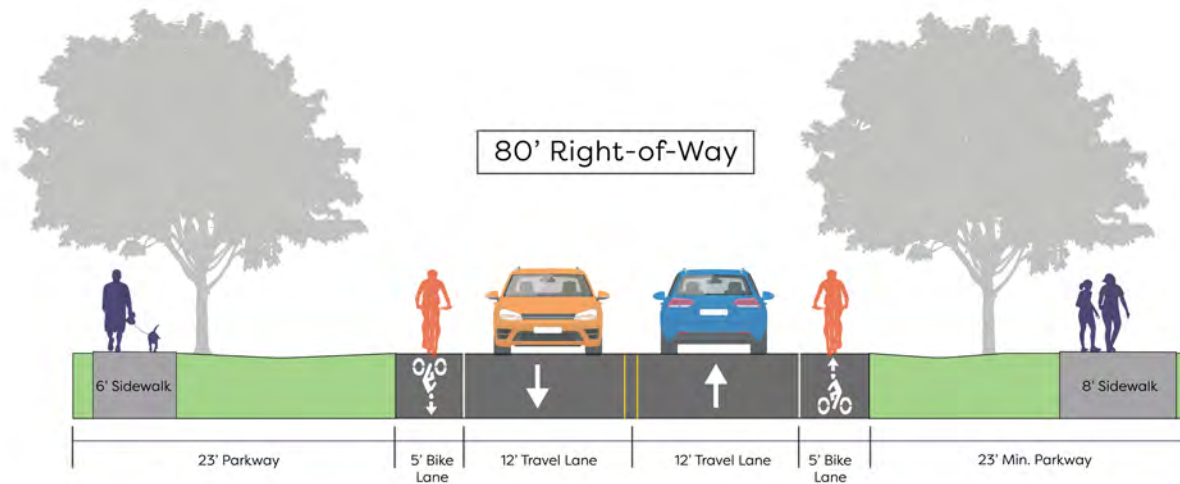
Urban collectors are roads in Flower Mound connect residents to arterial roadways. These include roads like Quail Run, Kirkpatrick Lane, and Lake Forest Boulevard. This cross-section should include shared-use lanes, and 6' wide sidewalks buffered by landscaping. It would be appropriate to consider 5' bike lanes on urban collectors in place of the shared-use lane markings.

FIGURE 5.22: RURAL COLLECTOR PROPOSED CROSS-SECTION - A



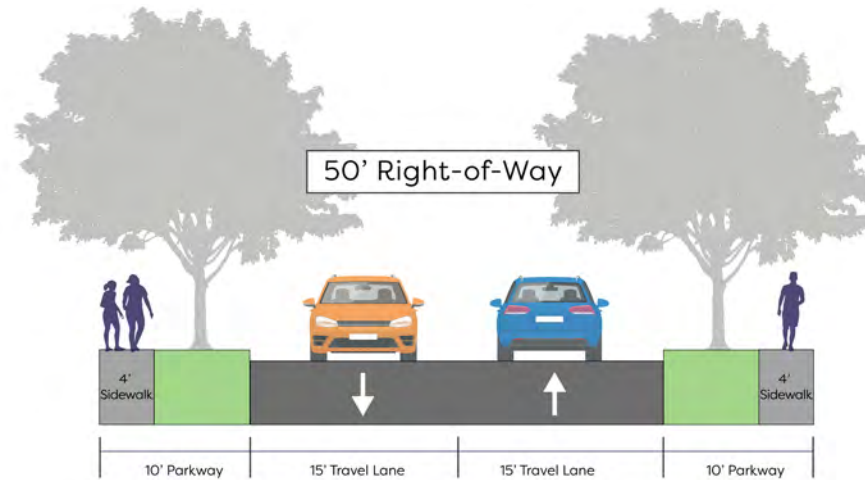
Rural collectors are roads in Flower Mound mainly found on the rural and undeveloped areas of the Town. These corridors should include bike lanes and 6' wide sidewalks. Where identified on the trails master plan, they should also include a 12' wide shared-use path.

FIGURE 5.23: RURAL COLLECTOR PROPOSED CROSS-SECTION - B



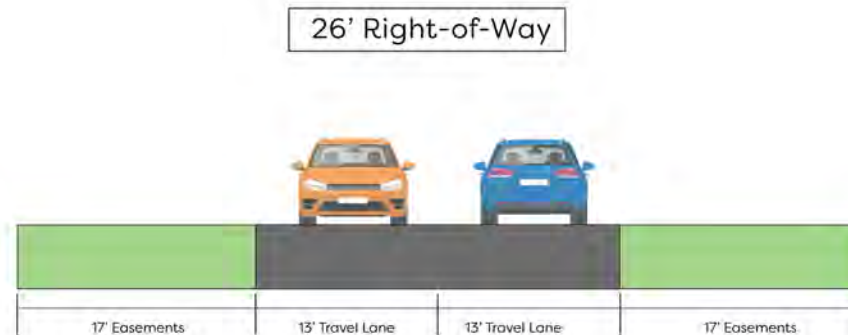
Rural collectors are roads in Flower Mound mainly found on the rural and undeveloped areas of the Town. These corridors should include bike lanes and collectors, with a 6' - 8' wide sidewalks.

FIGURE 5.24: LOCAL RESIDENTIAL URBAN PROPOSED CROSS-SECTION



Local residential urban roads are primarily residential roadways. There are no recommended changes to this cross-section. These roads can be considered for shared-use path signage due to the lower speeds and volumes. There should be connectivity from residential streets to the town-wide trails and bikeways system.

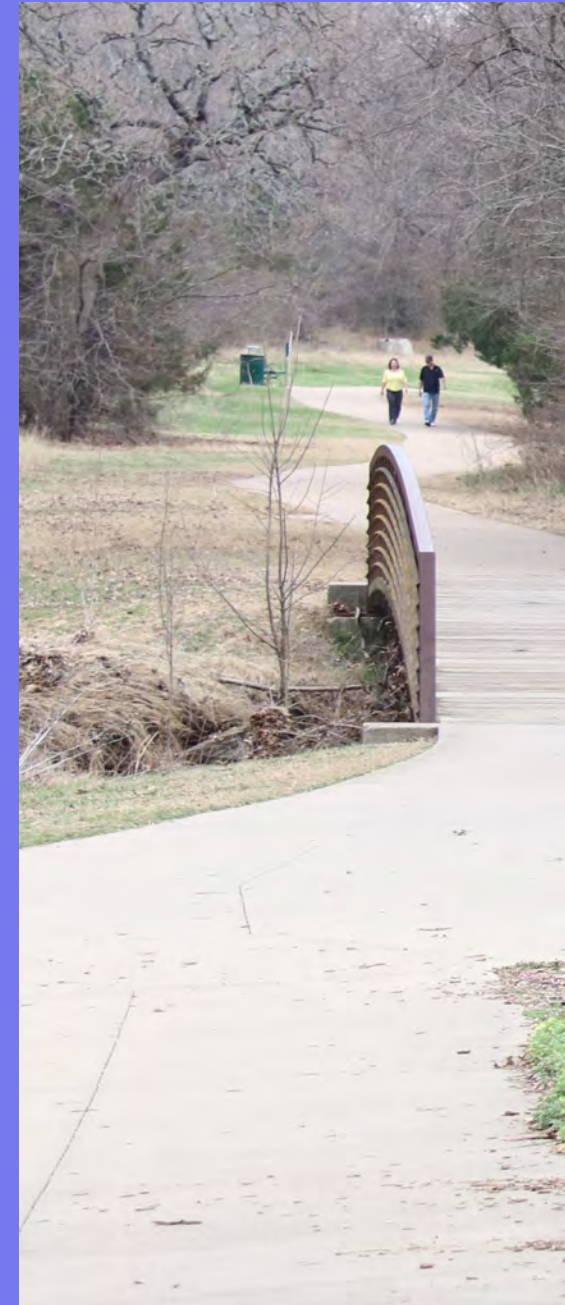
FIGURE 5.25: LOCAL RESIDENTIAL ESTATE PROPOSED CROSS-SECTION



Local residential estate roads are mainly local roads within large lot subdivisions. There are no recommended changes to this cross-section.

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Corridor Prioritization Implementation Plan Conclusion



O6 IMPLEMENTATION



Implementation of this plan's trails and bikeways recommendations will take time, funding, and coordination amongst various partners. This chapter presents a prioritized list of projects to implement over time by facility type. Also presented are policies, programs, and projects that can help support implementation of the trail and bikeway corridors. Funding opportunities and details on plan administration are also discussed.

CORRIDOR PRIORITIZATION

As described in Chapter 4, this master plan recommends over 90 miles of new trail and bikeway facilities in Flower Mound. All of the recommendations cannot be implemented at once, so the project team conducted a prioritization process to compare and rank the most important projects. A set of prioritization criteria was established and refined with the Steering Committee and Technical Working Group. Once the criteria were set, each proposed trail and bikeway segment was scored based on the established criteria and given an overall score, which was then translated to high, medium, and low priorities.

- **High Priority:** Corridors that should be initiated in the first five years of plan implementation.
- **Medium Priority:** Corridors that should be initiated in years five to ten of plan implementation.
- **Low Priority:** Corridors that should be initiated beyond year ten of plan implementation.



PURPLE CONEFLOWER TRAIL

TOWN MULTI-USE TRAILS

The Town's multi-use trail network will provide critical connections, improve existing corridors and facilities, and enhance safety for trail users. This section includes the action program for the Town to consider investment over the planning horizon.

CRITERIA

The criteria in [Table 6.1](#) were used to score each of the town paved multi-use trail segments in order to determine the proposed timing for implementation. In order to determine the weighted score for each project, the criteria were assigned a weight based on the level of importance determined by the Steering Committee, Technical Working Group, and planning team.

TABLE 6.1: TOWN MULTI-USE TRAIL CRITERIA DESCRIPTIONS

Criteria	Description
Connects to key destinations	The trail segment connects residents to parks, schools, major shopping centers, or employment centers.
Connects to the existing trail/ bikeway network	The trail segment provides a connection to the existing trail/bikeway network to create loops, primary routes, and high connectivity throughout the system.
Creates an interjurisdictional connection	The trail segment connects residents to surrounding communities and improves regional connectivity.
Located on the designated Regional Veloweb	The trail segment is part of the designated Regional Veloweb and connects residents to the greater DFW Metroplex. The Regional Veloweb provides funding opportunities through NCTCOG.
Solves a safety issue or overcomes a barrier	The trail segment addresses an identified safety issue or barrier.
Fills a gap in the existing system	The trail segment fills a gap in the existing system by connecting two segments of existing trail.
Improves an existing trail	The trail segment widens an existing facility to enhance the comfort along the trail.
Ease of implementation	The trail segment is feasible to construct. Factors considered for this criterion include property ownership, topography, floodplain, and barriers.
Amount of environmentally sensitive areas disturbed	The trail segment provides the least disruption of natural areas.
Facilitates bicycling/walking to school	The trail segment provides safe, off-street routes for students of all ages to get to school from their homes.
Population density	The trail segment provides access to higher population densities.
Primary Trail	The trail segment is located on the primary trail or loop trail, as shown in Figure 6.9 on page 138.

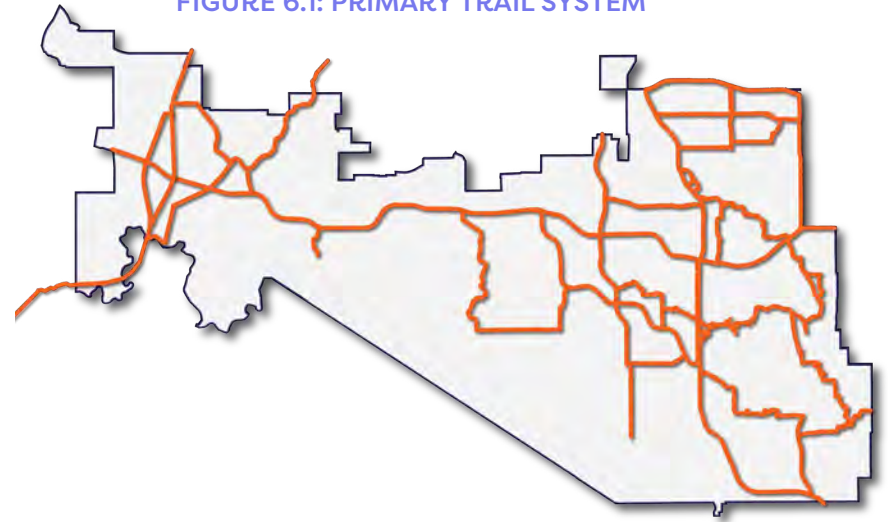
PRIMARY TRAIL CORRIDORS

Primary trails, shown in [Figure 6.1](#), are characterized by their accessibility through the Town. They are major east/west and north/south trails through Flower Mound, primarily located on major roadways like Long Prairie, Cross Timbers, and US-377. Many of these longer corridors are also part of the Regional Veloweb, which provide regional and local connectivity and can support major trailheads at main trail junctions. Primary trails can also be located through greenways and off major corridors to create loops and linkages to parks, schools, and destinations.

Primary trails provide residents with continual corridors for walking, jogging, or general exercise purposes. In contrast, intersecting loop trails bring diversity to the system and create various milegags for trail users. Loops create scenic or relaxing experiences by connecting to off-road trail segments, improving shade along trails, and providing access to nature and exploration.

The concept of primary trail corridors was used as a scoring criteria (see [Table 6.1](#) on page 124). While not all projects that scored as "high priority" are located on the primary trail system, primary trails should be used to identify grant and bond program projects.

FIGURE 6.1: PRIMARY TRAIL SYSTEM



TOWN MULTI-USE TRAIL NETWORK ACTION PLAN

There are a total of 82.1 miles of recommended off-street trails, 21 percent of which are designated as high priority, 24 percent as medium priority, and 55 percent as low priority, as shown in [Figure 6.2](#) (page 127). [Figure 6.3](#) (page 128) and [Table 6.2](#) represent the action plan for the Town's multi-use trail network.

[Table 6.2](#) provides the **Corridor ID** for the trail projects shown from north to south; the **Facility Type** to determine if it's a multi-use trail, part of the Regional Veloweb, or one of the more detailed feasibility corridors; the **Corridor** to describe where the segment is located; the **Length** of each project; and the **Priority** of the project based on the weighted criteria.

In eastern Flower Mound, most trail corridors recommend filling gaps in the existing system and upgrading existing trails and sidewalks to reflect the recommendations of this plan. New trail segments include trails along greenways, easements, and undeveloped land.

In western Flower Mound, new trail segments are recommended through undeveloped land and along major corridors. It is anticipated that many of these trail segments will be constructed by private developers in conjunction with property development.

FIGURE 6.2: TOWN MULTI-USE TRAIL PRIORITY BREAKDOWN

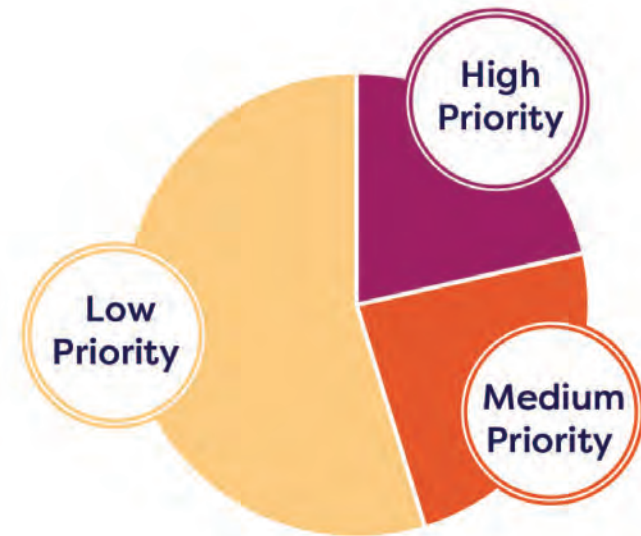


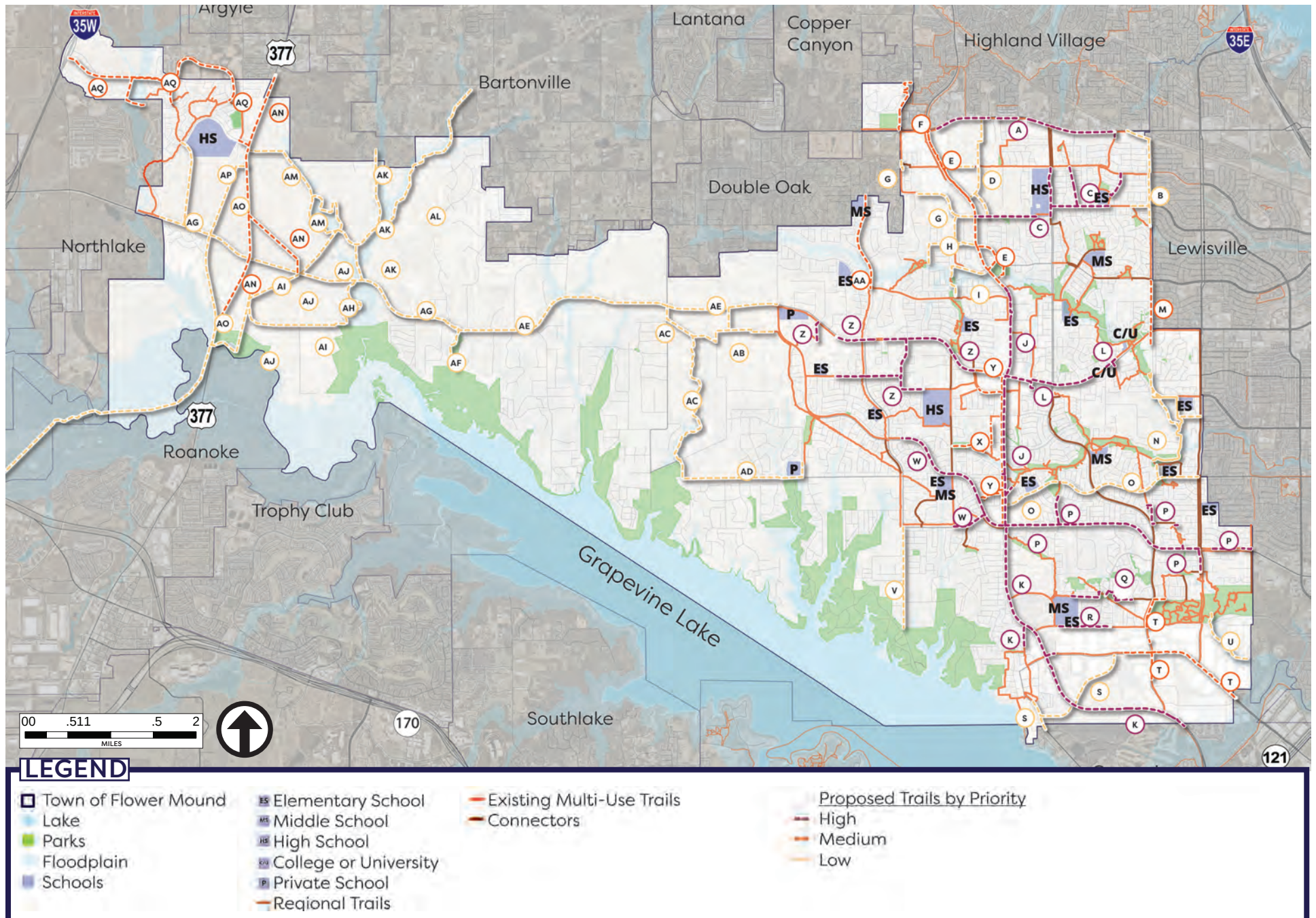
TABLE 6.2: TOWN MULTI-USE TRAILS RECOMMENDATION SUMMARY

Corridor ID	Facility Type	Corridor	Length (miles)	Priority
A	Multi-Use	Justin Rd		High
B	Multi-Use	Lone Buck Dr		Low
C	Multi-Use	Waketon/Morris/Kirkpatrick Ln		High
D	Multi-Use	Easement/Dixon Ln		Low
E	Proposed Veloweb	Long Prairie Rd/College Pkwy		Medium
F	Multi-Use	Chin Chapel Rd		Medium
G	Multi-Use	Chinn Chapel Rd/Waketon Rd		Low
H	Multi-Use	Rippy Rd/Pecan Meadows		Low
I	Multi-Use	Rippy Rd/Birch St		Low
J	Proposed Veloweb	Long Prairie Rd		High
K	Proposed Veloweb	Long Prairie Rd		High
L	Proposed Veloweb	Cross Timbers Rd		High

TABLE 6.2: TOWN MULTI-USE TRAILS RECOMMENDATION SUMMARY

Corridor ID	Facility Type	Corridor	Length (miles)	Priority
M	Multi-Use	Kirkpatrick Ln		Medium
N	Feasibility Corridor	Kirkpatrick Ln/Timber Creek Easement		Low
O	Multi-Use	Forest Vista Dr		Low
P	Multi-Use	Flower Mound Rd./Garden Ridge Blvd.		High
Q	Multi-Use	Shadow Ridge Park/Sweet Water Ln		High
R	Multi-Use	Spinks Rd		High
S	Multi-Use	Lakeside Pkwy/Lakeside Village Pkwy		Low
T	Multi-Use	Lakeside Pkwy/Gerault Rd.		Medium
U	Multi-Use	Easement by Water Treatment Plant		Low
V	Multi-Use	Simmons Rd		Low
W	Multi-Use	Flower Mound Rd./McKamy Creek		High
X	Multi-Use	Peacock Park		Medium
Y	Multi-Use	Long Prairie Rd		Medium
Z	Multi-Use	Cross Timbers Rd/Auburn Dr/Quail Rn/Peters Colony		High
AA	Multi-Use	Bridlewood Blvd		Medium
AB	Multi-Use	Walsingham/Scenic		Low
AC	Proposed Veloweb	Shiloh Easement		Low
AD	Multi-Use	Wichita Trail		Low
AE	Proposed Veloweb	1171 - Cross Timbers		Low
AF	Feasibility Corridor	Floodplain		Low
AG	Feasibility Corridor	1171 - Cross Timbers		Low
AH	Multi-Use	Floodplain		Low
AI	Multi-Use	Dunham Rd		Low
AJ	Proposed Veloweb	Future Corridor		Low
AK	Multi-Use	Floodplain		Low
AL	Proposed Veloweb	Floodplain		Low
AM	Multi-Use	Furst Ranch (Future Development)		Medium
AN	Proposed Veloweb	377		Medium
AO	Multi-Use	Railroad Corridor		Low
AP	Multi-Use	Future Corridor		Low
AQ	Multi-Use	Prairie Ridge Rd/Denton Creek Blvd		Medium

FIGURE 6.3: TOWN MULTI-USE TRAILS RECOMMENDED NETWORK



ON-STREET BIKEWAYS

On-street bikeways include bike lanes and shared-use lanes to improve active transportation town-wide. Many of the identified routes are frequently used by bicyclists, and connect residents to destinations and the region. On-street facilities can provide critical connections where other facilities may be constrained.

CRITERIA

The following criteria in [Table 6.3](#) was used to score each of the on-street bikeway segments in order to determine the proposed timing for implementation. In order to determine the weighted score for each project, the criteria were assigned a weight based on the level of importance determined by the Steering Committee, Technical Working Group, and planning team. Many of the criteria are similar to the trails, as they help to create a complete network. Level of comfort and level of coordination are specific to the bikeways in order to evaluate rights-of-way constraints and user preference.



TABLE 6.3: ON-STREET BIKEWAYS CRITERIA

Criteria	Description
Connects to the existing trail/ bikeway network	The bikeway segment provides a connection to the existing trail/bikeway network to create loops, primary routes, and high connectivity throughout the system.
Creates an interjurisdictional connection	The bikeway segment connects residents to surrounding communities and improves regional connectivity.
Solves a safety issue or overcomes a barrier	The bikeway segment addresses an identified safety issue or barrier.
Level of Comfort	The bikeway segment provides a high level of comfort. Comfort is a critical factor for the development of bikeways; the more comfortable a facility is perceived, the greater chance the facility will be utilized by users of all ages and abilities. The level of comfort of a roadway takes into consideration traffic volumes, speeds, and pavement widths.
Fills a gap in the existing system	The bikeway segment fills gap in the existing system by connecting two segments of existing bikeways. The existing system is relatively disjointed, filling in gaps will help improve connectivity, particularly on the east side of the Town.
Improves an existing facility	The bikeway segment improves a facility that cyclists currently use.
Ease of implementation	The bikeway segment is feasible to construct. Factors considered for this criterion include rights-of-way widths, speed of roadway, pavement widths, and roadway constraints.
Level of coordination needed with other entities	The bikeway segment requires little coordination with other entities. Bikeways are easier to implement when less coordination is needed. Entities that may need to be coordinated with include TxDOT, railroads, utility companies, and the USACE.
Population Density	The bikeway segment provides access to higher population densities.

ON-STREET BIKEWAYS NETWORK ACTION PLAN

There are a total of 39.5 miles of recommended on-street bikeways, 41 percent of which are designated as high priority, 18 percent as medium priority, and 41 percent as low priority, as shown in [Figure 6.4](#). [Figure 6.5](#) and [Table 6.4](#) represent the action plan for on-street bikeways in Flower Mound.

[Table 6.5](#) provides the **Corridor ID** for the bikeway projects shown from north to south; the **Facility Type** to determine if it's a shared-use lane or bike lane; the **Corridor** to describe where the segment is located; the **Length** of each project; and the **Priority** of the project based on the weighted criteria.

In eastern Flower Mound, bikeways provide connections to surrounding communities, and connect to parks, schools, and destinations.

In western Flower Mound, bikeways connect residents to the USACE trails, are proposed with future roadways, and connect residents to parks and schools.

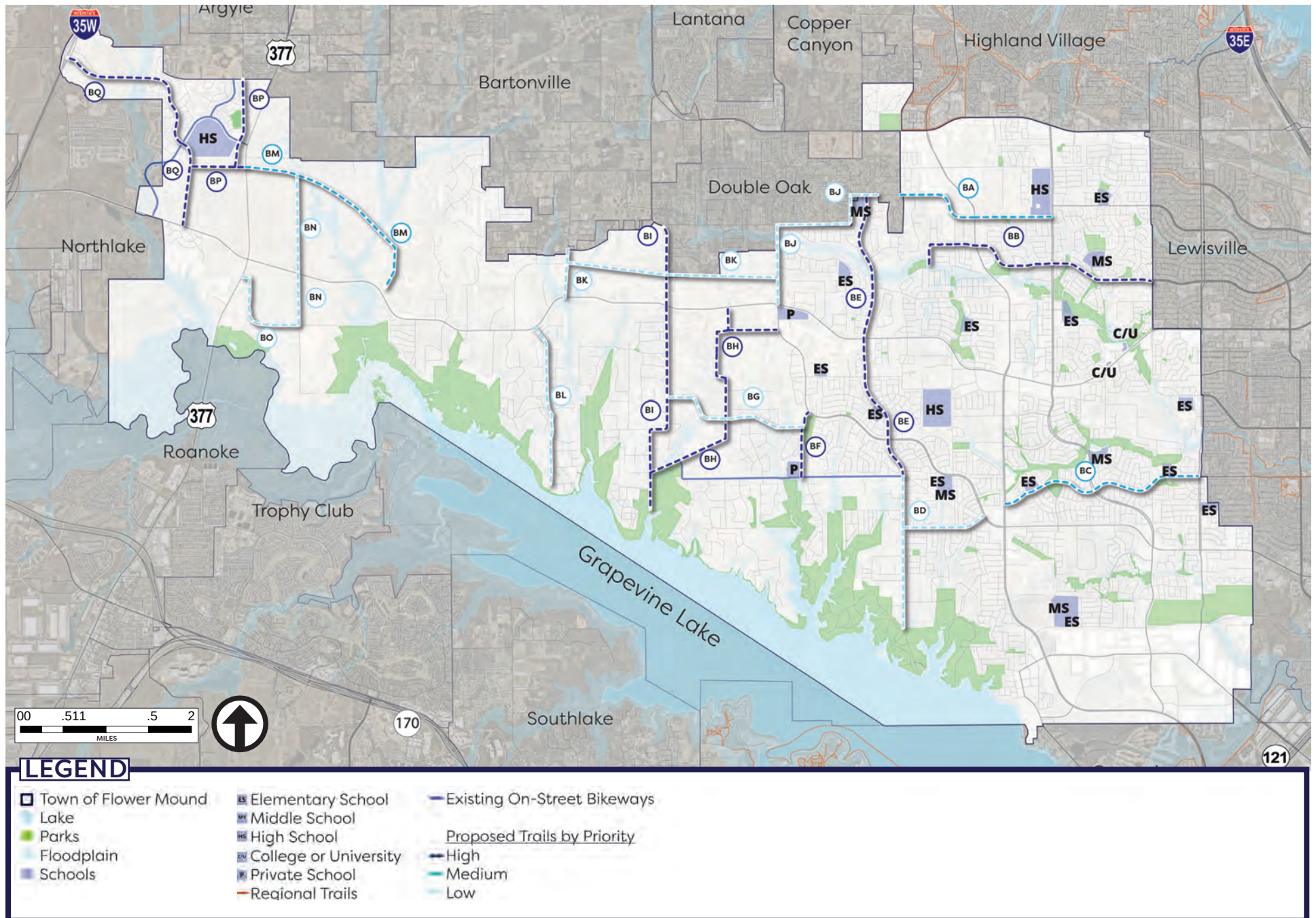
FIGURE 6.4: ON-STREET BIKEWAYS PRIORITY BREAKDOWN



TABLE 6.4: ON-STREET BIKEWAYS RECOMMENDATION SUMMARY

Corridor ID	Facility Type	Corridor	Length (miles)	Priority
BA	Shared-Use Lane	Waketon Rd		Medium
BB	Shared-Use Lane	College Pkwy		High
BC	Shared-Use Lane	Forest Vista Dr		Medium
BD	Shared-Use Lane	Simmons Rd		Low
BE	Shared-Use Lane	Bridlewood Blvd./Burton Orand Blvd		High
BF	Shared-Use Lane	Skillern Rd		High
BG	Shared-Use Lane	River Hill Dr		Low
BH	Bike Lane/Shared-Use Lane	Scenic Dr		High
BI	Bike Lane	Shiloh Rd		High
BJ	Shared-Use Lane/Bike Lane	Lusk Ln/Kings Rd/Waketon Rd		Low
BK	Bike Lane	Red Rock Ln/Future Corridor		Low
BL	Bike Lane	High Rd.		Low
BM	Bike Lane	Future Corridor		Medium
BN	Bike Lane	Future Corridor		Low
BO	Bike Lane	Dunham Rd		Low
BP	Shared-Use Lane/Bike Lane	Future Corridor/Stonecrest Dr		High
BQ	Bike Lane	Denton Creek Blvd		High

FIGURE 6.5: ON-STREET BIKEWAYS RECOMMENDED NETWORK



NON-TRADITIONAL TRAIL FACILITIES

For the non-traditional trails, including town equestrian trails and paddling trails, 25 percent are high priority trails, 63 percent are medium priority trails, and 12 percent are low priority trails, as shown in [Figure 6.6](#). [Figure 6.7](#) and [Table 6.5](#) represent the action plan for non-traditional trail facilities, including equestrian trails and paddling trails.

TOWN EQUESTRIAN TRAILS

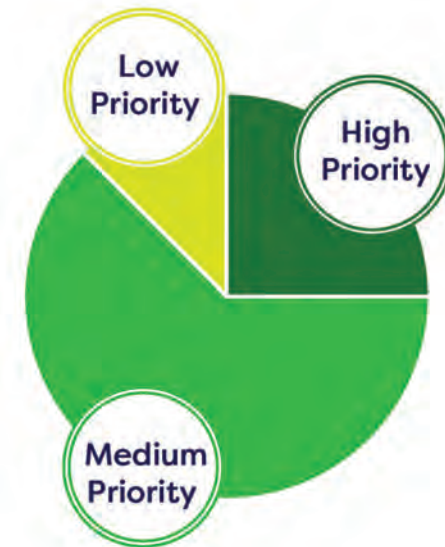
There are a total of 10.9 miles of equestrian trails recommended in this master plan. While there is not a set of established prioritization criteria for equestrian trails specifically, based on feedback from citizens and stakeholders, the most important components were:

- Completing existing equestrian trail loops
- Providing more connections to the existing USACE equestrian trails

OTHER TRAILS - PADDLING TRAILS

There are 2 miles of paddling trails recommended in this master plan. Similar to equestrian trails, there is not a set of established prioritization criteria for paddling trails. Given that there is only one primary recommended segment, this corridor was given a prioritization of medium priority based on the anticipated complexity to complete.

FIGURE 6.6: NON-TRADITIONAL TRAILS PRIORITY BREAKDOWN



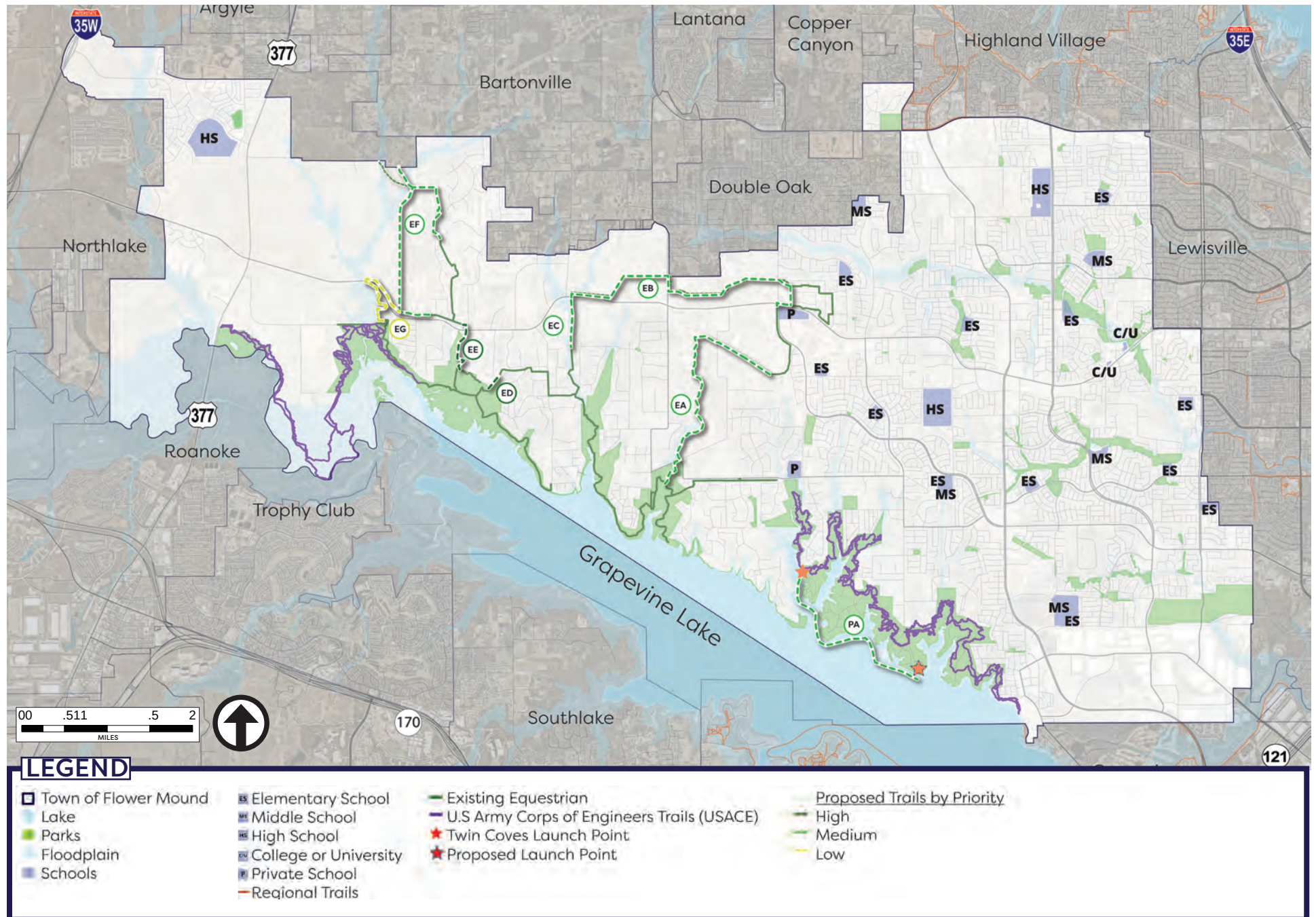
OTHER TRAILS - USACE TRAILS

This plan does not recommend additional USACE soft surface trails. Important considerations include implementing cautionary signage to reduce potential conflict from different users.

TABLE 6.5: NON-TRADITIONAL TRAILS RECOMMENDATION SUMMARY

Corridor ID	Facility Type	From	To	Priority
EA	Equestrian	Melville Cir	Rocky Point	Medium
EB	Equestrian	Brindle Wy	Cross Timbers	Medium
EC	Equestrian	Cross Timbers	Raintree Pl	Medium
ED	Equestrian	Hidden Brook Farm		High
EE	Equestrian	Cross Timbers	Hidden Ridge Dr	High
EF	Equestrian	Cross Timbers	Montalcino	Medium
EG	Equestrian	Cross Timbers		Low
PA	Paddling	Twin Coves	Murrel Park	Medium

FIGURE 6.7: NON-TRADITIONAL TRAIL PRIORITIZATION



PLAN IMPLEMENTATION

TYPICAL FACILITY COSTS

While implementing each corridor will pose different challenges, it is beneficial to establish typical facility costs to help with planning and budgeting. [Table 6.6](#) represents the typical planning level cost range for all of the facility types recommended in this master plan.

These cost ranges are based on recent project bids, current market trends, and engineering standards and design methods. Each estimate considers general cost elements, demolition, transportation, and grading costs based on similar projects. *It is important to note that these cost estimate ranges are at a pre-design level and will likely change as additional planning, design, and engineering occurs for each project.*

TABLE 6.6: TYPICAL PROJECT COSTS BY FACILITY

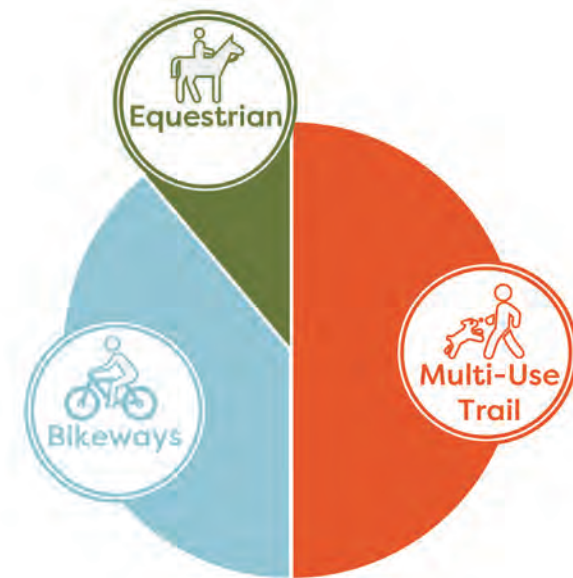
Facility Type	Parameters	Typical Cost Range
Paved Multi-Use Trail	12' paved trail	\$1.35 – \$1.9M per mile
Paved Multi-Use Trail	10' paved trail	\$1.35 – \$1.9M per mile
Connector	8' paved wide sidewalk	\$1.0M – \$1.4M per mile
Soft-Surface Trail	8' decomposed granite trail with grading	\$600,000 – \$900,000 per mile
Equestrian Trail	8' natural surface trail with grading	\$250,000 – 400,000 per mile
Bike Lane	Lane striping, signage, and pavement markings on both sides of the street	\$95,000 per mile (existing street surface)
Shared-Use Lane	Signage, pavement markings	\$75,000 per mile (existing street surface)
Shared-Use Lane	Signage	\$3,000 per mile
Paddling Trail	Signage, informational signage kiosk,	\$2,000 – \$10,000 per mile based on signage
Sidewalk	6' sidewalk	\$900,000 – \$1.6M per mile

Note: Costs for a specific trail or bikeway facility will vary based on site conditions and as additional planning, design, and engineering occurs. An inflation rate of 3% per year should be factored into any project cost. Chapter 5 includes typical crosssections and additional design considerations for these facility types. Source of cost estimates is Half Associates, Inc. based on similar projects.

PRIORITY PROJECTS

[Figure 6.8](#) illustrates the percentage of the high priority projects by facility type. Overall, 50 percent of the high priority projects are for Town multi-use trails, 39 percent are for bikeways, and 11 percent are for equestrian trails. All high priority projects are combined into a single systemwide prioritization map and table, shown in [Figure 6.9](#) (page 136) and [Table 6.7](#) (page 135).

FIGURE 6.8: PRIORITY BREAKDOWN



[Table 6.7](#) (page 135) provides the **Corridor ID** for the high priority projects; the **Facility Type** to determine if it's a multi-use trail, bikeway, or equestrian trail; the **Corridor** to describe where the segment is located; the **Length** of each project; and the **Cost Estimate Range** of the project based on the average of the planning level typical project costs; and **Partnerships** to identify potential funding partners for the construction of the system. Due to the length of many of the prioritized trail and bikeway segments, a variety of funding mechanisms may need to be utilized in order to complete the network, including private developer funds, Town funds, state entities such as TxDOT, regional funding opportunities with NCTCOG, and voter approved bond projects.

Most high priority Town multi-use trails are located in eastern Flower Mound. These trails enhance safe routes to school, fill in critical gaps, and connect residents to destinations in Flower Mound and the DFW region. These corridors can be implemented as one project with voter approved bonds or grant programs, or they can be divided into smaller segments to be included in the Town's annual budget.

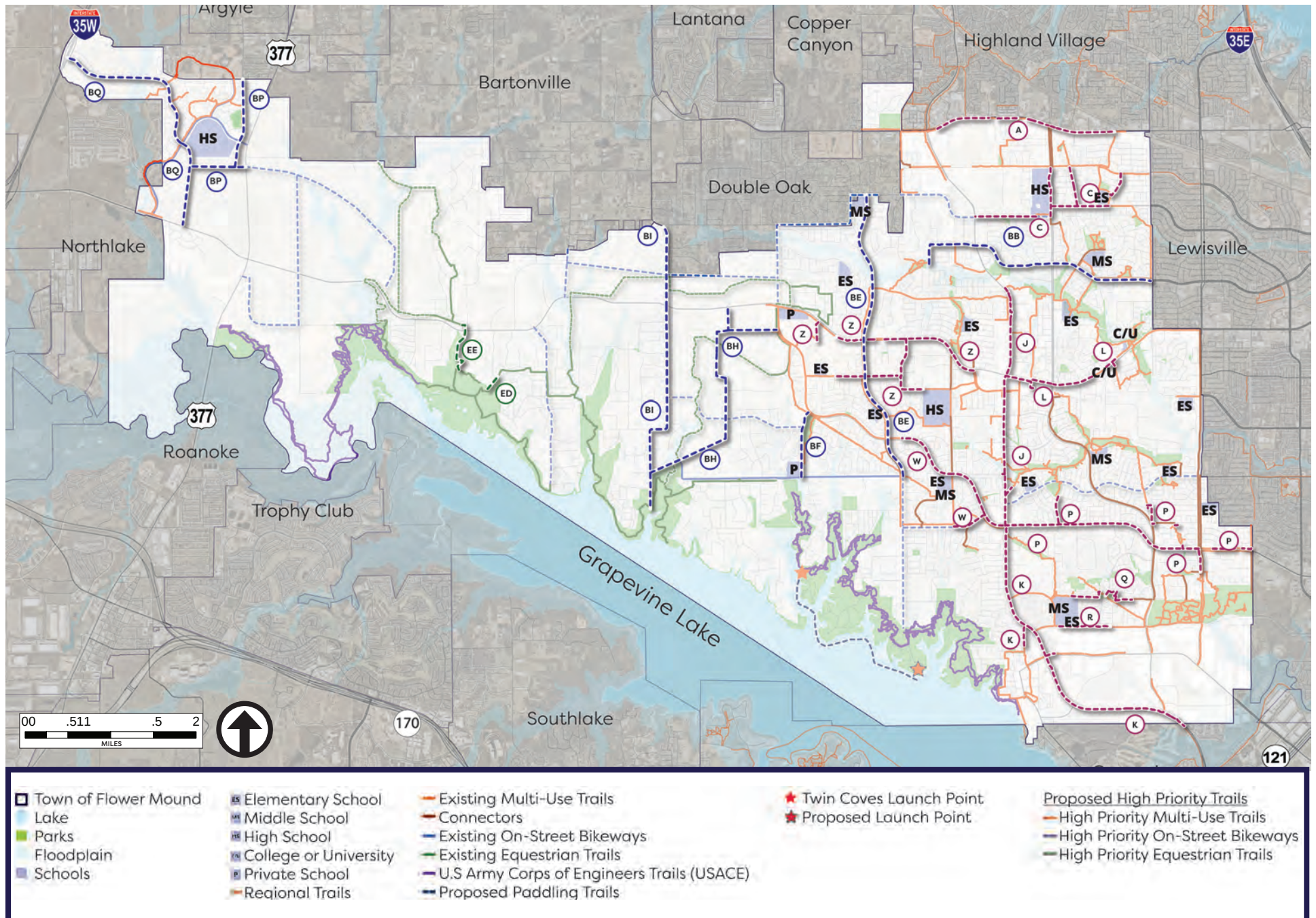
High priority bikeway corridors are located throughout Flower Mound. These were identified as heavily used corridors by bicyclists during the needs assessment, and should be improved to enhance safety and awareness of multiple roadway users. High priority bikeways provide residents with access to parks, schools, existing trails and bikeways, and surrounding jurisdictions.

TABLE 6.7: PRIORITY TRAILS RECOMMENDATION SUMMARY

Corridor ID	Corridor	Facility Type	Length (miles)	Average Cost Estimate	Funding Partnerships
A	Justin Rd	Multi-Use	1.7	\$2,763,600	Developer, CIP, Bond
C	Waketon/Morris/Kirkpatrick Ln	Multi-Use	2.3	\$3,802,653	Developer, CIP, Bond
J	Long Prairie Rd	Proposed Veloweb	2.5	\$4,119,589	Developer, CIP, NCTCOG, Bond
K	Long Prairie Rd	Proposed Veloweb	3.5	\$5,696,871	Developer, CIP, NCTCOG, Bond
L	Cross Timbers Rd	Proposed Veloweb	1.12	\$1,824,699	Developer, CIP, NCTCOG, Bond
P	Flower Mound Rd./Garden Ridge Blvd.	Multi-Use	3.18	\$5,169,875	Developer, CIP, NCTCOG, Bond
Q	Shadow Ridge Park/Sweet Water Ln	Multi-Use	0.77	\$1,255,926	Developer, CIP
R	Spinks Rd	Multi-Use	0.53	\$856,482	Developer, CIP
W	Flower Mound Rd./McKamy Creek	Multi-Use	1.87	\$2,953,822	Developer, CIP, Bond
Z	Cross Timbers Rd/Auburn Dr/Quail Rn/Peters Colony	Multi-Use, Proposed Veloweb	2.98	\$4,837,647	Developer, CIP, NCTCOG, Bond
BB	College Pkwy	Shared-Use Lane	2.57	\$192,649	CIP, NCTCOG, Developer
BE	Bridlewood Blvd./Burton Orand Blvd	Shared-Use Lane	3.01	\$225,985	Transportation Funds, CIP, NCTCOG
BF	Skillern Rd	Shared-Use Lane	0.67	\$50,034	Transportation Funds, CIP, NCTCOG
BH	Scenic Dr	Bike Lane/Shared-Use Lane	2.80	\$226,775	Transportation Funds, CIP, NCTCOG
BI	Shiloh Rd	Bike Lane	3.01	\$285,904	Transportation Funds, CIP, NCTCOG
BP	Future Corridor/Stonecrest Dr	Shared-Use Lane/Bike Lane	0.90	\$85,667	Transportation Funds, CIP, NCTCOG
BQ	Denton Creek Blvd	Bike Lane	1.73	\$163,998	Transportation Funds, CIP, NCTCOG
ED	Hidden Brook Farm	Equestrian	0.58	\$363,736	Developer, CIP
EE	Cross Timbers	Equestrian	0.16	\$100,288	Developer, CIP

*Corridor ID is based on the Action Plan for each facility type (see pages 125-132)

FIGURE 6.9: HIGH PRIORITY TRAIL AND BIKEWAY CORRIDORS



OTHER CONSIDERATIONS

Figure 6.10 (page 138) shows proposed trailhead locations and major conflict points. While these considerations have not been included in the prioritization tables, they should be considered for future funding opportunities in order to improve safety, accessibility, and usability of the overall trails and bikeways network.

TRAILHEADS

Potential trailhead locations are depicted in **Figure 6.10** (page 138). Trailheads identified include equestrian, multi purpose, and multi-use.

Equestrian Trailheads

Equestrian trailheads are located at major entry points to the equestrian trail system. These should include a variety of amenities including informational signage, parking, and tie ups. **This plan does not propose any new equestrian trailhead. The new trailheads for equestrian trails are identified as multi purpose trailheads.** Existing trailheads should be evaluated and enhanced in order to provide the necessary amenities for horseback riding and accessing existing equestrian trails.

Multi Purpose Trailheads

Multi purpose trailheads are located in locations where multi-use trails and equestrian trails converge. Due to their location and anticipated user demand, a wider range of amenities should be provided, including parking areas with trailer parking and automobile parking, lighting, seating, signage, waste receptacles, bike amenities, shade, and similar amenities. The location of horse tie-ups should be away from the bike and pedestrian entry to the trail system to reduce user conflict. Signage should include a map, directional, safety precautions, and rules and regulations for using the trail for the various users. **This plan proposes 5 new multi purpose trailheads.**

Multi-Use Trailheads

Multi-use trail trailheads are located where trails converge, or at trail entry points for pedestrians and bicyclists. These should include parking, benches, signage, waste receptacles, and similar amenities described in Chapter 5.

The anticipated user volume, space limitations, and similar elements may determine the classification of trailhead. Existing trailheads are used to mark entry of trails from neighborhoods, but may not include recommended amenities to enhance access and usability of the trail. These should be enhanced where identified on **Figure 6.9**. **The plan proposes 12 new or enhanced trailheads.**



MAJOR CONFLICT POINTS

Major Intersections

Intersection design recommendations were discussed in Chapter 5. **Figure 6.9** (page 138) shows locations where intersection improvements and enhancements may be necessary to improve safety in the trail system. Major intersections are generally located where a trail crosses an arterial roadway, or where a trail crosses at least four lanes of traffic. Intersections should be analyzed ensure they maximize safety and reduce conflicts.

Major intersections are along the following corridors:

- Flower Mound Road
- Long Prairie Road
- Cross Timbers Road
- Morriss Road
- Simmons Road/Bruton Orand Boulevard

Mid-Block Crossings

There may be additional intersections and mid-block crossings that are not identified on this map which should be evaluated for safety improvements and enhancements, especially where a trail crosses a road mid-block. The level of design may vary based on the roadway conditions.

Mid-block crossings are along the following corridors:

- Lexington Avenue
- College Parkway
- Northshore Boulevard
- Garden Road
- Forest Vista Drive

Existing Trail Improvements

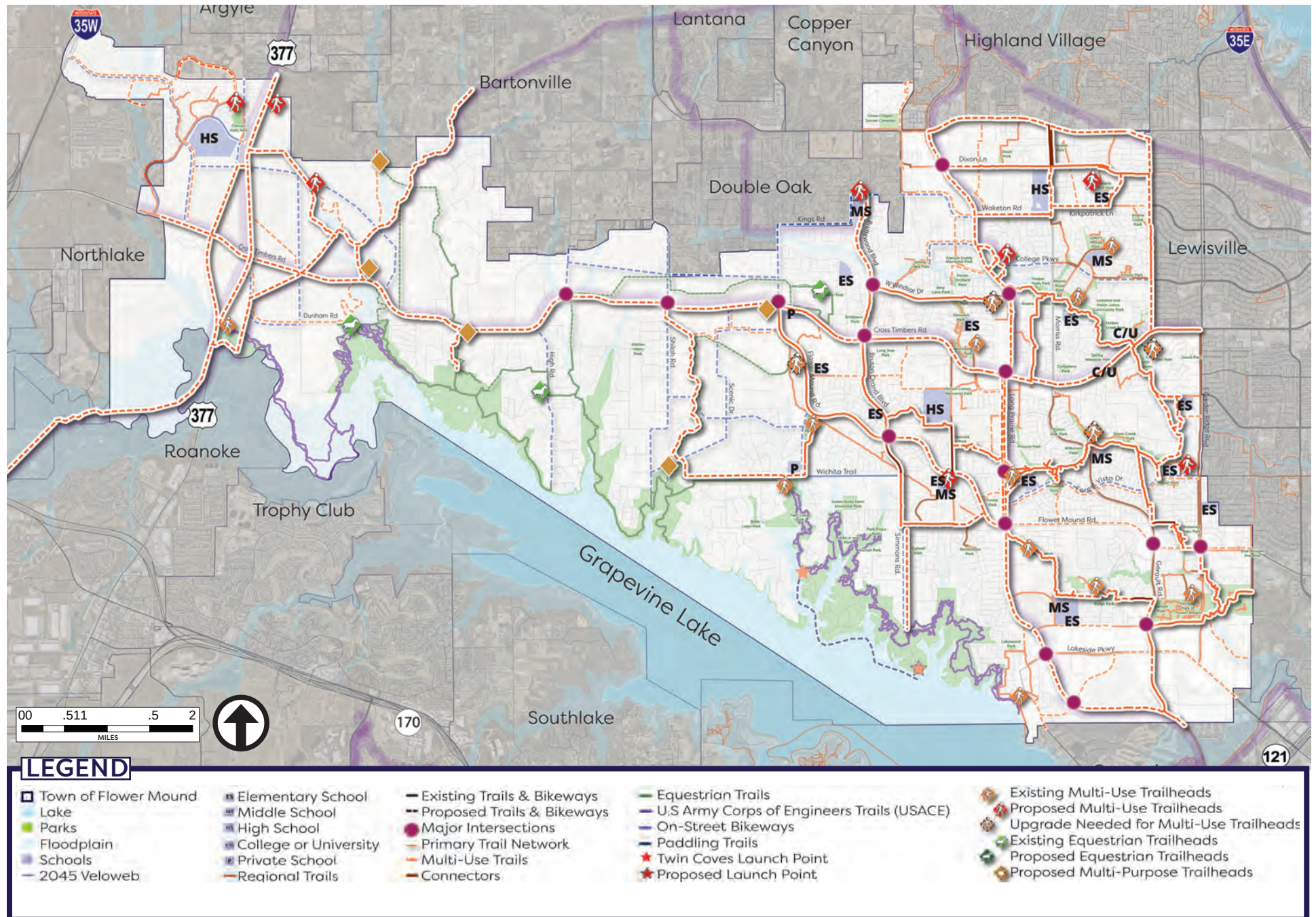
The existing system was addressed in Chapter 3. During the assessment, various maintenance and safety concerns were analyzed. Concerns to be evaluated include blindspots, i.e. where there is a 90 degree turn in the trail, bridge replacement needs, and low hanging vegetation. While some concerns can be fixed relatively easily, some need further investigation.

Areas for further investigation include:

- **Pink Evening Primrose Trail** - Blind curves at Rustic Timbers Park/ Parker Square Park and various locations along Timber Creek
- **Bluebonnett Trail** - Various locations along the gasline easement should be studied in further detail, or alternative accesible routes identified.
- **All trails** - low hanging vegetation should be removed on a regular basis
- **All trails** - extreme curves are discouraged, where extreme curves do exist, they should be studied to determine if there are opportunities to ease the curve.



FIGURE 6.10: PRIMARY TRAILS, TRAILHEADS, AND MAJOR INTERSECTIONS



POLICIES, PROGRAMS, AND PROJECTS

There are various policy changes, programs, and projects that can be completed to support the implementation of Flower Mound's recommended trails and bikeways network. The master plan goals and objective previously presented in Chapter 1 identifies initiatives that should be considered to help with overall plan implementation, and proposes metrics for tracking the plan's implementation.

GOAL 1: CONNECTED COMMUNITY

Create a complete trails and bikeways system that connects the community with active transportation options.

OBJECTIVES:

- **1.1:** Increase trail level of service.
- **1.2:** Provide trail and bikeway connections to key destinations.
- **1.3:** Fill in gaps in the existing trail system.

INITIATIVES:

- **Policy:** Attain a target level of service for trails of 1 mile per 1,000 residents.
- **Project:** Undergo design of the feasibility and high priority corridors.

METRICS:

- Increased levels level of service:
 - Mileage of off-street trails within Flower Mound.
 - Mileage of on-street bikeways in Flower Mound.
 - Mileage of new and improved connectors in Flower Mound.
 - Mileage of equestrian trails in Flower Mound.
- Greater percentage of bicycle and pedestrian mode share counts from the Census
- Number of interjurisdictional connections

GOAL 2: SAFE & ACCESSIBLE SYSTEM

Ensure the trails and bikeway system is safe, comfortable, and accessible for users of all abilities and ages.

OBJECTIVES:

- **2.1:** Provide a variety of facility types appropriate for users of different abilities.
- **2.2:** Improve overall safety and comfort of existing facilities.
- **2.3:** Address areas identified as barriers within the existing trail system.

INITIATIVES:

- **Policy:** Implement additional roadway crossing improvements.
- **Project:** Tie trail makers and system branding to the EMS system
- **Policy:** Incorporate the design standards included in this master plan into the Town's standards.
- **Policy:** Implement blindspot and safety improvements on existing trails.
- **Project:** Evaluate high-frequency crash locations on an annual basis

METRICS:

- Number of crashes involving bicyclists
- Number of crashes involving pedestrian
- Number of roadway crossings improved (at intersections or mid-block)
- Number of blindspots improved

GOAL 3: USER FRIENDLY

Improve awareness, signage, and usability of the trails and bikeways system.

OBJECTIVES:

- **3.1:** Increase awareness of the existing trail and bikeway system.
- **3.2:** Create a consistent brand across the trails system so it is easily recognizable.
- **3.3:** Install wayfinding signage to direct users to destinations along the trails.

INITIATIVES:

- **Program:** Implement the systemwide wayfinding and branding plan for the trails and bikeways system.
- **Program:** Develop a bicycle etiquette/awareness program that addresses cyclist and motor vehicle etiquette.
- **Project:** Install trail counters along the system to determine areas with most usage.
- **Project:** Create a smart phone application that links to a GPS system to provide guidance and assistance on the trail.

METRICS:

- Number of new trailhead installations
- Facility usage from trail counters and Strava data
- Number of new amenities along the trail including:
 - Amenities (benches, trash receptacles, bike racks, bike repair stations, and similar)
 - Parking areas
 - Wayfinding features

GOAL 4: UNIQUE SYSTEM

Design and construct trails that support the health and wellness of the community and natural environment.

OBJECTIVES:

- **4.1:** Provide trails through natural areas, parks, and open space.
- **4.2:** Provide for interpretative and educational opportunities along trails.
- **4.3:** Utilize an environmentally-friendly and context-sensitive approach to developing and maintaining trails.

INITIATIVES:

- **Project:** Install interpretative signage that educates users on historic, cultural, and natural resources.
- **Project/Program:** Install new shade trees and explore additional shade opportunities along the trails.
- **Policy:** Encourage trails around stormwater ponds and through natural areas.

METRICS:

- Miles of trail constructed in greenways
- Number of new shade trees planted along trails
- Number of interpretive signage installations

GOAL 5: PARTNERSHIPS

Leverage partnerships between the Town and the community, internal and external organizations, and outside agencies to achieve a connected trails and bikeways system.

OBJECTIVES:

- **5.1:** Pursue joint projects with surrounding cities, the County, NCTCOG, TxDOT, TPWD, USACE, and utility providers.
- **5.2:** Maintain relationships with user groups to solicit feedback on the trails and bikeways system.
- **5.3:** Work with other departments to incorporate bicycle and pedestrian accommodations into ongoing or upcoming projects.

INITIATIVES:

- **Policy:** Provide NCTCOG with updated trail files so they can update their regional maps.
- **Project:** Update the Town's thoroughfare plan to include the additional bicycle/pedestrian accommodations recommended in this plan.
- **Program/Policy:** Work with the City of Grapevine to identify future kayak/canoe launch points to apply for TPWD Trail funding.
- **Program/Policy:** Work with adjacent cities to identify interjurisdictional trail opportunities and funding options.

METRICS:

- Miles of trail completed on the Regional Veloweb
- Miles of trail completed on USACE lands
- Number of meetings with outside entities regarding trail and bikeway planning, design, and construction with the construction and reconstruction of roadways

GOAL 6: FUNDING

Pursue a variety of funding sources for trails and bikeway development.

OBJECTIVES:

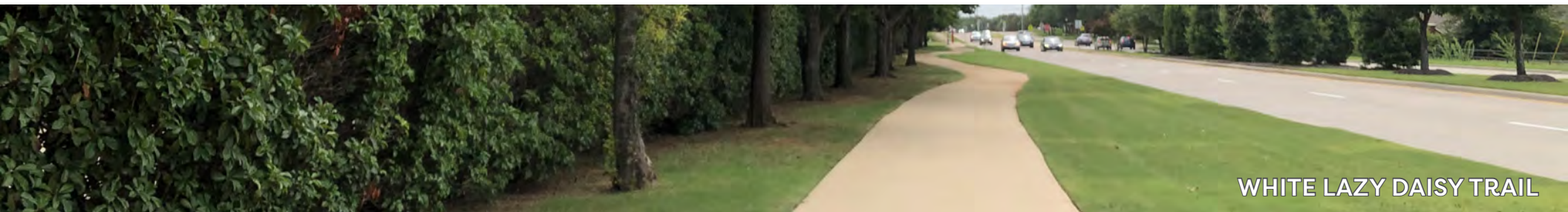
- **6.1:** Apply for grant funding to implement trail and bikeway projects.
- **6.2:** Continue to work with developers to ensure trails and bikeways are included with new development.
- **6.3:** Coordinate with user and volunteer groups to help fund improvements to trails and bikeways.

INITIATIVES:

- **Policy:** Utilize the prioritization criteria developed for this master plan to prioritize future CIP projects for trails and bikeways.
- **Policy:** Utilize 4B Sales Tax funds for trail infrastructure projects.
- **Project:** Submit applications for Transportation Alternative and Safe Routes to School funding where applicable.

METRICS:

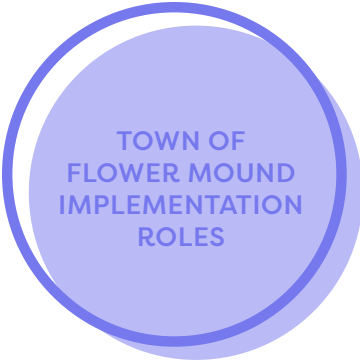
- Amount of grant funding received for trail and bikeway implementation
- Percent of Town's budget dedicated to trail and bikeway implementation



PLAN ADMINISTRATION

IMPLEMENTATION ROLES

There are various public and private entities that will have roles in the implementation and maintenance of the Trails and Bikeways Master Plan.



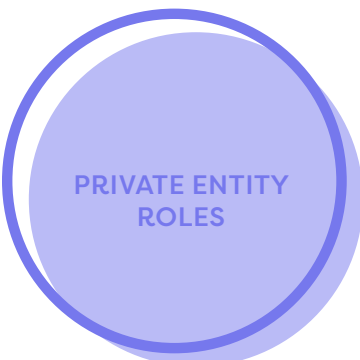
TOWN OF FLOWER MOUND IMPLEMENTATION ROLES

- The **Parks and Recreation Department** will incorporate trails into park facilities, maintain the trail infrastructure, and track the progress of the plan.
- The **Transportation Services Department** will prioritize bicycle facilities in the design and implementation of roadway construction projects and coordinate thoroughfare plan updates consistent with this plan.
- The **Planning Department** will continue to coordinate the construction of trails identified within the plan with new development projects and provide updates to the land development code and subdivision regulations.
- **Elected and Appointed Officials** are responsible for supporting the plan and determining funding eligibility for projects.



OTHER PUBLIC ENTITY IMPLEMENTATION ROLES

- **TxDOT** will coordinate the construction of trails and bikeways in construction or improvement projects, provide facility types which are consistent with the plan, and support bikeway designation efforts.
- **Denton County** will partner with the Town to identify and develop the bicycle and pedestrian network.
- **Utility Companies** will continue to support the development of off-street trails within utility easements given appropriate design measure for the trails are followed.



PRIVATE ENTITY IMPLEMENTATION ROLES

- **Developers** will be responsible for the construction of trails and bikeways within development projects consistent with this plan to enhance connectivity and user experience for the overall network.
- **Foundations/Non-Profits** will continue to support the construction, maintenance, and implementation of trails and bikeways.
- **Homeowners Associations** will continue to maintain trails within their neighborhoods and support the implementation of the plan.

FUNDING OPPORTUNITIES

There are a variety of funding opportunities to implement the vision of this plan. This section outlines typical funding opportunities at local, state, and federal levels but does not represent a comprehensive list of funding sources.



- The **General Fund** is used for smaller repair and replacement efforts and routine maintenance for existing parks and facilities. It also funds the administration and services provided by the Town of Flower Mound. The general fund provides funds for routine pavement and sidewalk maintenance.
- The **Special Revenue Fund** are funds from special revenue sources to support the development of new facilities. In Flower Mound, these include:
 - Park Development Fund
 - Street Maintenance Tax
 - 4B Parks Sales Tax funding
- **Capital Improvement Program (CIP)** Expenditures provide funding for significant public improvements, such as the construction of new parks, replacement of park equipment, new trail construction, and street construction and maintenance projects which can include on and off-street bicycle facilities.



The North Central Texas Council of Governments (NCTCOG) appropriates funds for transportation improvement projects from the Federal Government and TxDOT. NCTCOG then administers the funds to local jurisdictions for the construction of projects which improve mobility and air quality throughout the region. **They administer the following funds:**

- **The Transportation Alternatives Program (TAP)** are funds for the construction of on- and off-road bicycle and pedestrian facilities, shared-use paths, similar bicycle and pedestrian safety measures, and Safe Routes to School (SRTS) projects. These projects focus on interconnectivity within communities, to destinations such as schools and employment centers, and connections to the region.
- **Transportation Improvement Program (TIP)** is a short-term planning document for various transportation related projects in the DFW region. This plan is updated every two years and is created in concert with TxDOT, local governments, and transportation authorities. The program implements projects identified in the Master Transportation Plan (MTP) through 2045.

STATE FUNDING
SOURCES

- **Transportation Alternatives Set-Aside Program** are funds administered by TxDOT for bicycle and pedestrian infrastructure projects in communities with less than 200,000 people. These projects focus on interconnectivity within communities, to destinations such as schools and employment centers, and connections to the region.
- **National Recreational Trails Grants** are administered by the Texas Parks and Wildlife Division (TPWD) for the construction of new recreational trails, to improve existing trails, to develop trailheads and amenities, and to acquire land for trail construction. The reimbursable grants can be up to 80 percent of the project cost for non-motorized trail projects up to \$300,000.
- **Outdoor Recreation Grants** provide 50 percent matching grant funds to cities, counties, Municipal Utility Districts (MUDs), and other special districts with a population less than 500,000 to acquire and develop parkland or to renovate existing public recreation areas. There are two funding cycles per year with a maximum award of \$500,000. Projects must be completed within three years of approval. Application deadlines are October 1st of each year (the master plans submission deadline is 60 days prior to application deadline). Award notifications occur 6 months after deadlines.

FEDERAL FUNDING
SOURCES

- **Rebuilding American Infrastructure with Sustainability and Equity (RAISE)** Discretionary Grants are available on a competitive basis for projects that will have a significant impact on local and regional travel. The Department of Transportation administers funding. Projects can include roadway, rail, and alternative transportation.
- **Congestion and Air Quality Improvement Program (CMAQ)** funds are for projects that help improve air quality. Bicycle and pedestrian facilities are eligible for these funds because they act as an alternative mode of transportation and reduce emissions from automobiles.
- **Surface Transportation Block Grant Program (STBG)** funds are for projects that address mobility needs for bicycle and pedestrian improvement projects. Federal funds are allocated to TxDOT to distribute. TxDOT works with MPO's to administer the funds for eligible and prioritized projects.

CONCLUSION

The Flower Mound Trails and Bikeways Master Plan is a community-driven vision for creating a comprehensive and diverse network of trails and bikeways. When the recommendations from this plan are implemented, the Town will have a safe, well-connected, and accessible trails and bikeways network for users of all ages and abilities.

