



Regional Service Through Unity... Meeting our Region's Needs Today and Tomorrow



MCKINNEY 3 TO MCKINNEY 4 PIPELINE

April, 2022

McKinney City Council



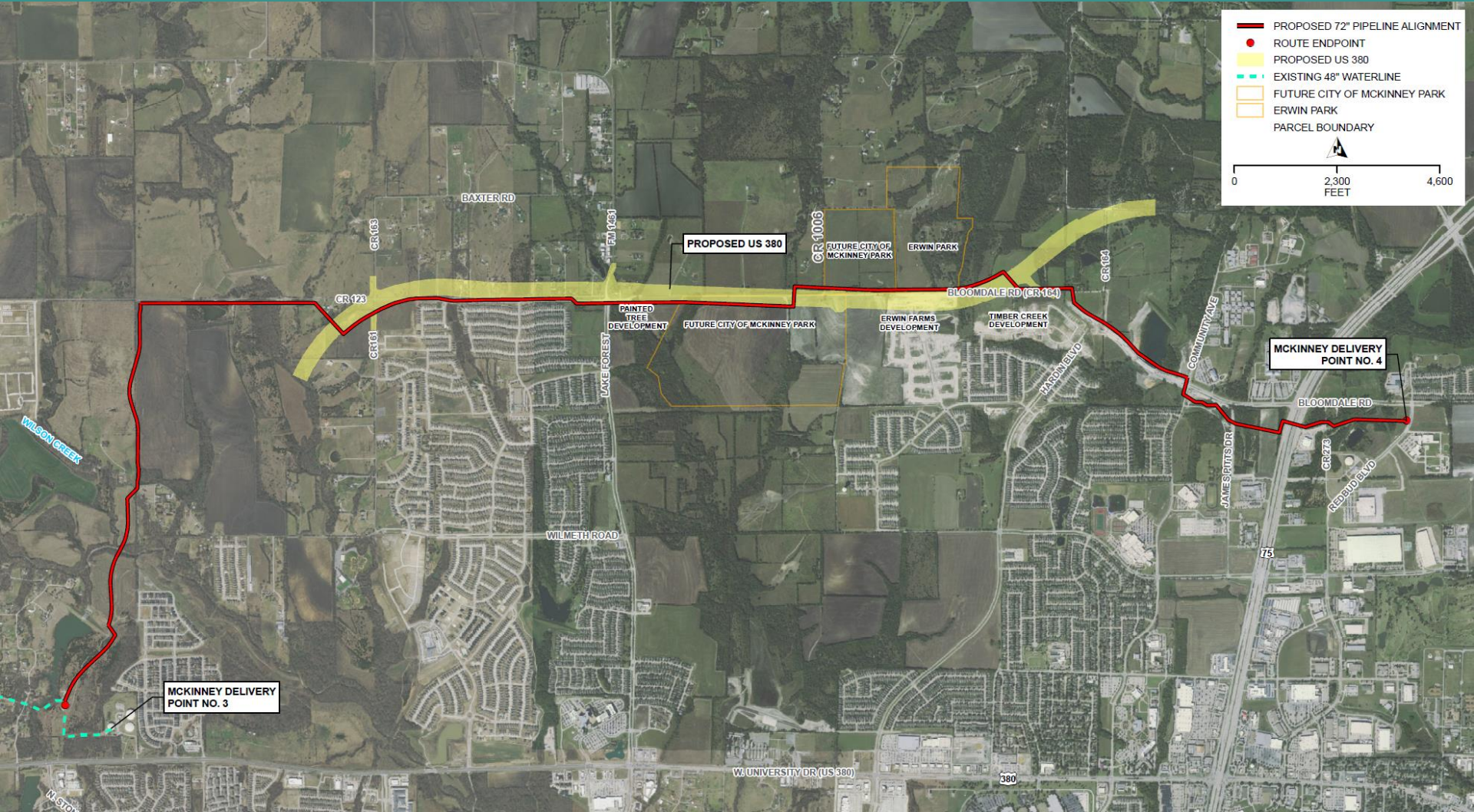
MCKINNEY 3 TO MCKINNEY 4 PIPELINE

Project Background and Overview

- A new 72” water pipeline to connect new Bois D’Arc Lake / Leonard Water Treatment Plant to NTMWD system
- Will provide additional water supply to the Cities of McKinney and Frisco, Towns of Prosper and Little Elm for an increase of 225,000 people
- The new supply will connect to Redbud PS (DP No. 4) and University Pump Station (DP No. 3)
- The new 8-mile long pipeline will serve to close a major loop in the North System and enhance the resiliency and reliability of water supply to this area.

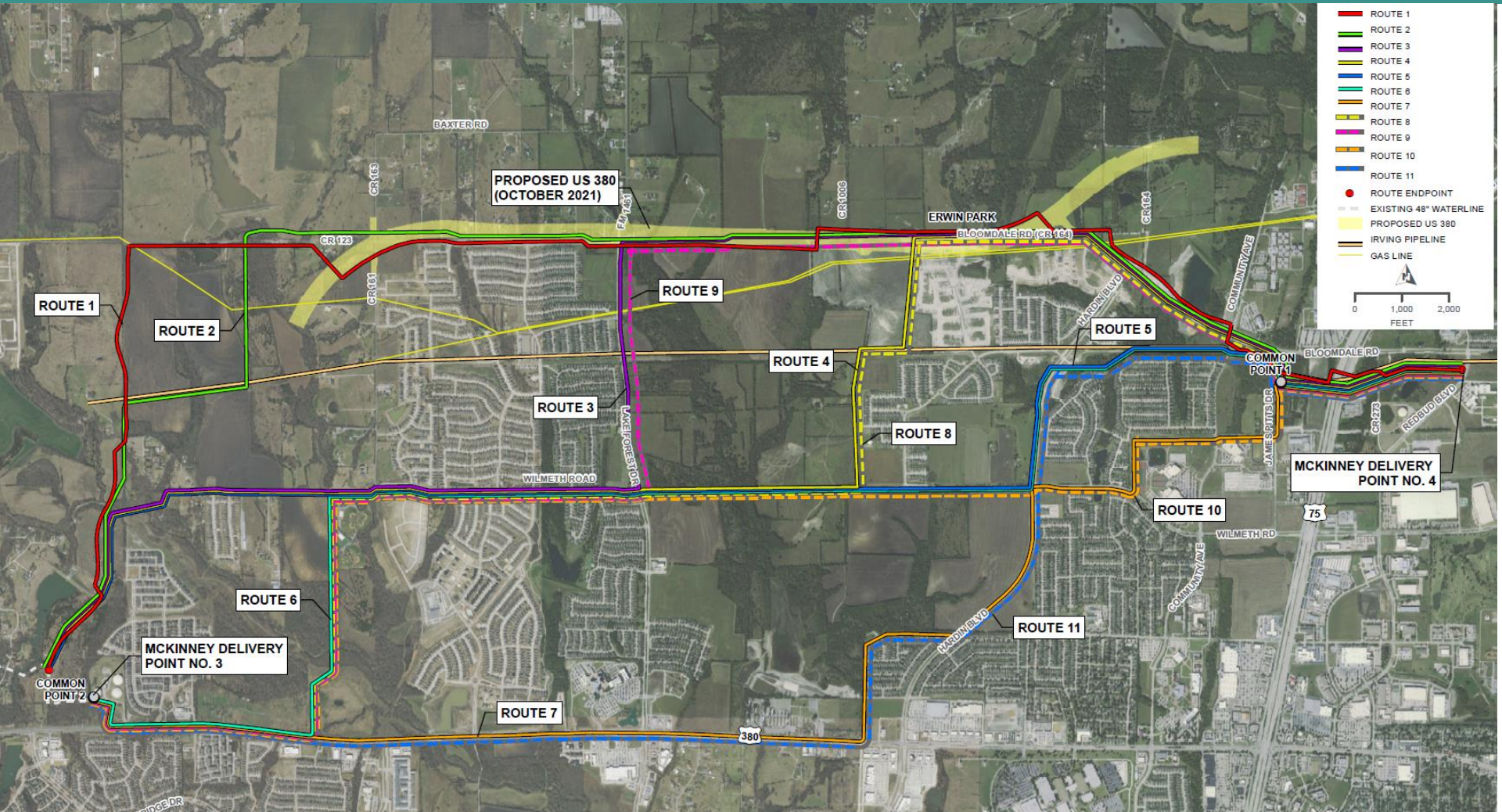


PROJECT LOCATION





ALTERNATE PIPELINE ALIGNMENTS





COORDINATION WITH PARTNER AGENCIES

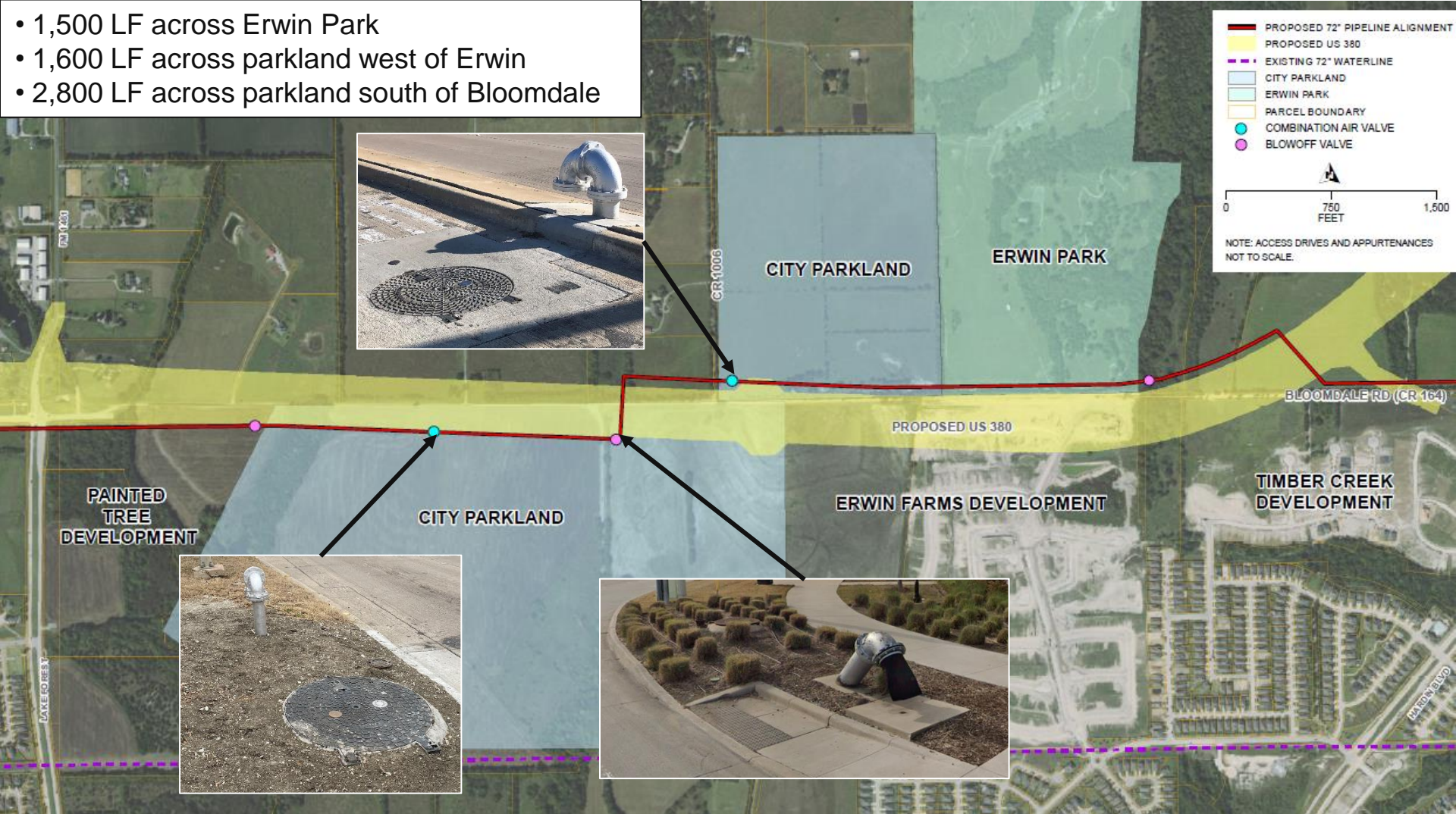
McKinney 3 to McKinney 4 Pipeline Alignment at Bloomdale Rd

Additional Criteria Set with Coordination among NTMWD, City of McKinney, Collin County, TxDOT

- TxDOT's US 380 Bypass ROW to avoid crossing Erwin Park
- NTMWD waterline to avoid crossing Erwin Farms and Timber Creek developments south of Bloomdale Rd
- NTMWD waterline easement to follow the northern boundary of Bloomdale RD to avoid encroaching more into Erwin Park
- NTMWD waterline crosses west of CR 1006 with input from TxDOT and City of McKinney
- NTMWD waterline easement follows south side of TxDOT US 380 Bypass west of CR 1006 to set southern boundary of TxDOT ROW

PIPELINE CROSSING CITY OF MCKINNEY PARKLAND

- 1,500 LF across Erwin Park
- 1,600 LF across parkland west of Erwin
- 2,800 LF across parkland south of Bloomdale





CLOSING THOUGHTS

The McKinney 3 to McKinney 4 Pipeline is a critical transmission main to deliver water to the City of McKinney and neighboring cities from the Bois d'Arc Lake

The Proposed alignment has the fewest impacts to the City of McKinney:

- Crosses the fewest number of parcels, crosses undeveloped land, minimal impact to existing developments
- Least amount of street/traffic disruptions and utility conflicts
- Total requested parkland easement is 10.6 acres for 5,800 LF of pipeline
- Lowest cost alternative for Regional Water system customers



QUESTIONS? FOLLOW US @NTMWD



www.BoisdArcLake.org



BENEFITS TO MCKINNEY FROM THE PROJECT

The McKinney No. 3 to McKinney No. 4 Pipeline

- The water pipeline will provide additional water capacity to the City of McKinney’s University Pump Station.
- The water pipeline will also provide resiliency and redundancy by being a second source of water delivery to City of McKinney’s University Pump Station.
- The water pipeline also connects with the Virginia Ground Storage Tank in McKinney that provides water system pressure and storage.



ALTERNATIVE ROUTES IDENTIFIED

Objective: Identify 80-ft wide Pipeline Corridors from McKinney No. 3 to McKinney No. 4

3 Pipeline Corridors were identified across City of McKinney from McKinney No. 3 (west of University Pump Station at US 380) to McKinney No. 4 (at RedBud Blvd). Each alternate route had minor differences along these general corridors.

- **North Corridor** is generally along Bloomdale Rd
- **Central Corridor** generally parallels City of Irving water line easement and along Wilmeth Rd
- **South Corridor** is generally along US 380



ALTERNATIVE ROUTE CRITERIA

Costs Factors

Capital Cost - cost to construct pipeline and appurtenances

Easement Cost – Permanent easement acquisition

Non-Costs Factors

ROW Acquisition – Number of parcels crossed, Impacts to TxDOT 380 project and McKinney CIP projects

Environmental and Cultural impacts – wetlands/streams/historic sites impacts and permitting

Existing Utilities – utility conflicts and coordination

Surface and Street Impacts – level of street repair during construction

Traffic Impacts – level of traffic control during construction

Schedule and Constructability – route complexity due to easement width and access

Operation and Maintenance (O&M) – accessibility for work on pipeline



COMPARISON OF PIPELINE CORRIDORS

OPTION	GENERAL DESCRIPTION <i>(Starting at University Pump Station)</i>	ADVANTAGES	DISADVANTAGES
<p>North Corridor (Feasible, Optimal, and Recommended Corridor)</p> <p>Routes 1, 2</p>	<p>Route generally follows Future Stonebridge Rd and Bloomdale Rd</p>	<ul style="list-style-type: none"> • Corridor is mostly in undeveloped areas • Less utility conflicts • Provides a 80-ft buffer between neighborhoods and future US 380 Bypass 	<ul style="list-style-type: none"> • Pipeline traverses a total of 10.6 acres of disturbance to City designated parkland
<p>Central Corridor</p> <p>Routes 3, 4, 5, 8, 9, 10</p>	<p>Route follows Future Stonebridge Rd, parallels Wilmeth Rd to Hardin Blvd</p>	<ul style="list-style-type: none"> • Avoids City-designated parkland • Avoids potential conflict with US 380 Bypass 	<ul style="list-style-type: none"> • Neighborhood developments built up to Wilmeth Rd. • Requires Tunneling in Wilmeth • Major street/traffic disruptions in street ROW. • Reduced pipeline easement width; no space for 2nd pipeline
<p>South Corridor</p> <p>Routes 6, 7, 11</p>	<p>Route parallels US HWY 380 and parallels Irving Waterline Easement</p>	<ul style="list-style-type: none"> • Avoids City-designated parkland • Avoids sensitive forested wetlands • Avoids potential conflict with US 380 Bypass 	<ul style="list-style-type: none"> • Existing US 380/University Drive corridor is congested with utilities • Not enough space for 80-ft wide easement for two pipelines • Disruptions to Businesses • Major Traffic disruptions



NORTH PIPELINE CORRIDOR

The North Pipeline Corridor: Routes 1 and 2 had the least impacts to Non-Cost Factors and had the lowest Project Costs

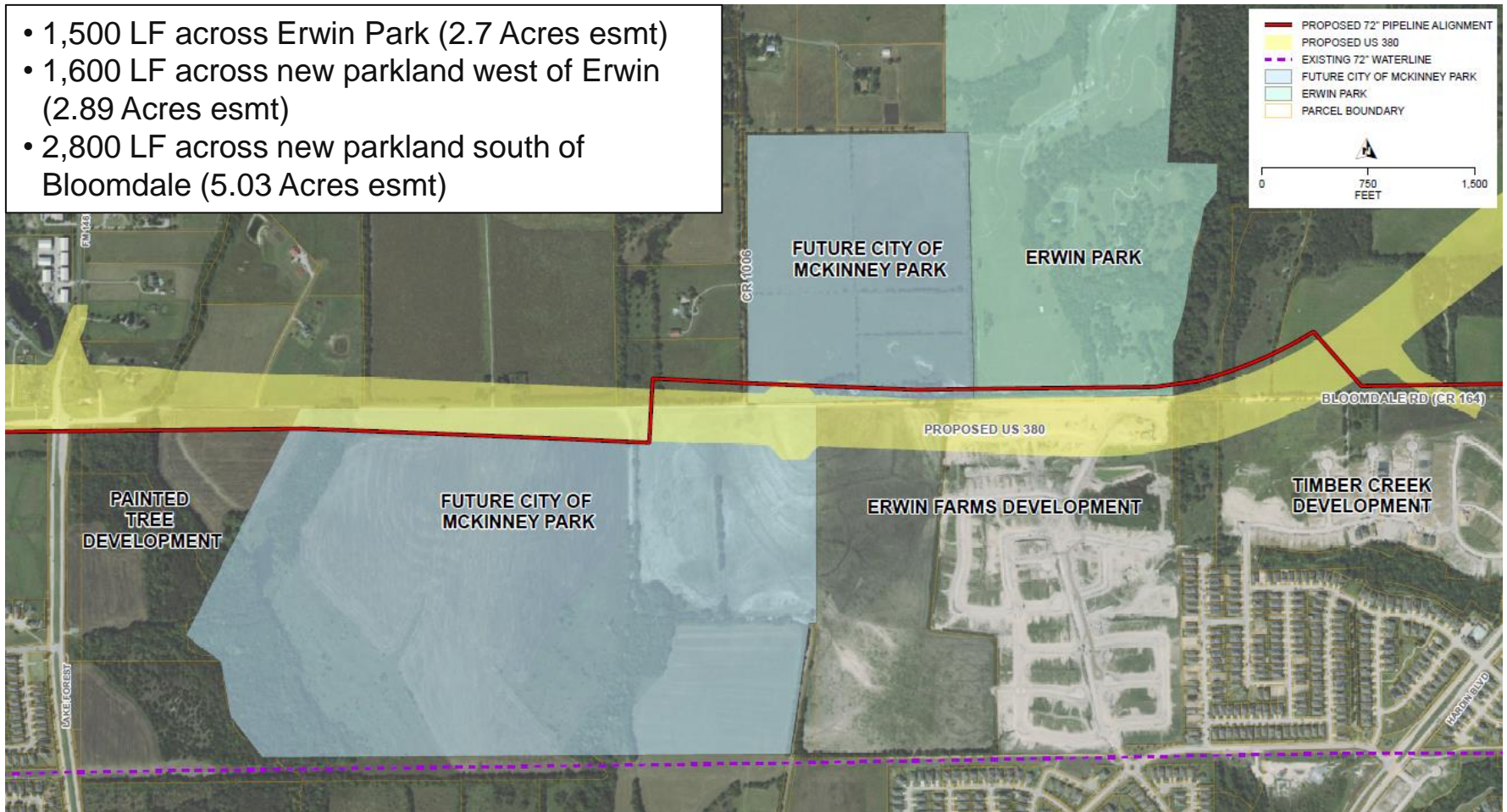
- Route 1 had the least impact to City of McKinney roads, lowest number of parcel crossings, fewest utility conflicts, and provides best access for maintenance with proximity to public road ROW
- Route 2 encroached on more parcels and higher construction cost due to greater tunnel length required
- **Route 1 is the Preferred Alignment based on the Evaluation Criteria of cost and non-cost factors.**



MCKINNEY 3 TO MCKINNEY 4 PIPELINE ALIGNMENT

Pipeline Crossing City of McKinney Parkland

- 1,500 LF across Erwin Park (2.7 Acres esmt)
- 1,600 LF across new parkland west of Erwin (2.89 Acres esmt)
- 2,800 LF across new parkland south of Bloomdale (5.03 Acres esmt)





LIMITED APPURTENANCES ON PARKLAND

There is approximately 3,100 LF of transmission pipeline across parkland north of Bloomdale Rd and 2,800 LF south of Bloomdale Rd.

Given the topography of the land and length of pipeline there will be critical appurtenances that are required to ensure the integrity of the pipeline.

Where possible, the appurtenances that are near a property line are placed on the adjacent property.

In accordance with state regulations and for maintenance and operability, these critical appurtenances remained on Parkland:

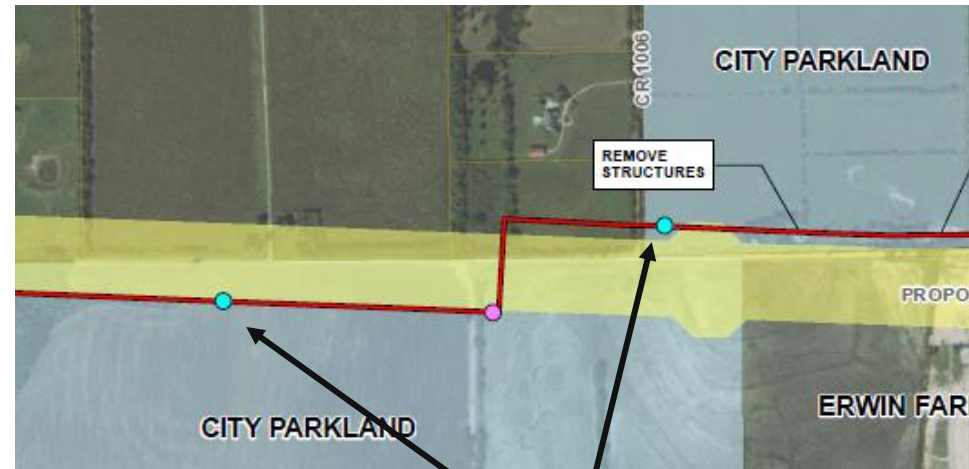
- Air release-vacuum valves
- Blow off valve
- Access drives



LIMITED APPURTENANCES ON PARKLAND

Air Release–Vacuum Valves

Texas Commission of Environmental Quality (TCEQ) requirements. Texas Administrative Code RULE §290.44 Water Distribution (d)(1): *Air release devices shall be installed in the distribution system at all points where topography or other factors may create air locks in the lines. Air release devices shall be installed in such a manner as to preclude the possibility of submergence or possible entrance of contaminants.*



Air Valve Manholes will be installed at grade and placed in coordination with the Parks department

Air Valves are recommended every half mile of pipeline and at natural high points. Minor high points have been eliminated to limit the number of air valves to the minimum required for this segment.

- One is between CR 1006 and future CR 1006
- Another is south of Bloomdale at a natural high point of the ground line.



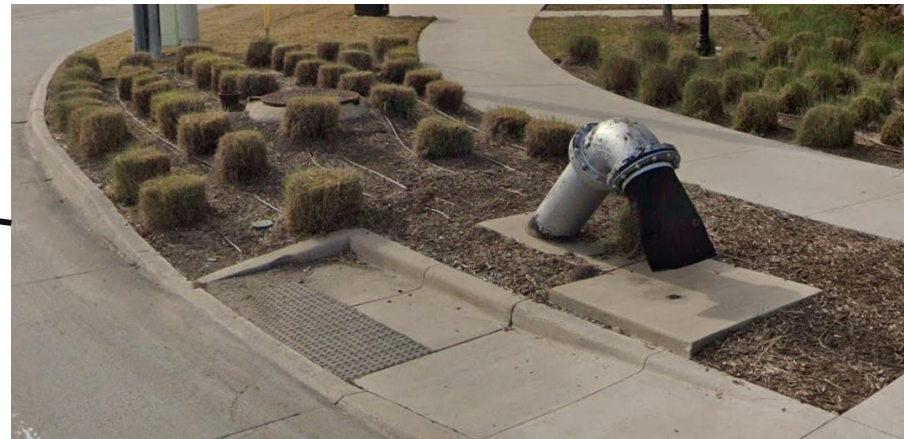
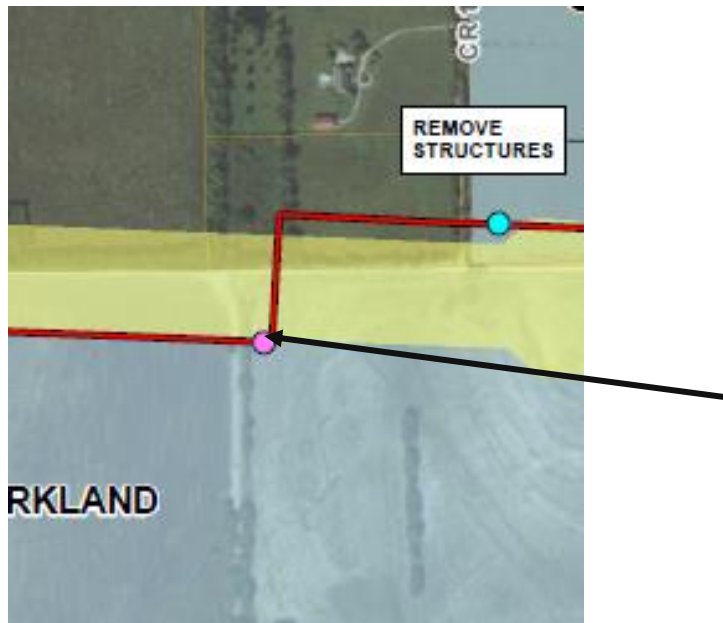


LIMITED APPURTENANCES ON PARKLAND

Blow Off Valve (BOV)

For maintenance and operability of pipeline, Blow offs are located at low points to drain the line.

One BOV will be located at CR 943 and would generally drain into the existing storm system. The BOV location and appearance will be coordinated with the Parks Department.



Each air valve and blow off valve location will have operation and maintenance access acceptable to the Parks Director.



PIPELINE CORRIDOR CONSTRUCTION AND RESTORATION

To provide minimal visual impact:

- Grading
- Landscaping
- At grade infrastructure
- Coordination with City Parks Department

