AGENDA

CITY COUNCIL SPECIAL MEETING

CAPITAL IMPROVEMENTS PLAN (CIP)

AUGUST 22, 2023 @ 2:00 PM – 4:00 PM

Notice is hereby given the City Council for the City of Parker will meet on Tuesday, August 22, 2023 at 2:00 PM – 4:00 PM at the Parker City Hall, 5700 E. Parker Road, Parker, Texas, 75002. The City Council meeting will be open to the public and live streamed.

Pursuant to Texas Government Code § 551.127, notice is given that it is the intent of the City Council that a quorum of the Council will be physically present for the above-referenced meeting at Parker City Hall, 5700 E. Parker Road, Parker, Texas. Some council members or City employees may participate in this meeting remotely by means of video conference call in compliance with state law.

CALL TO ORDER – Roll Call and Determination of a Quorum

PUBLIC COMMENTS **The City Council invites any person with business before the Council to speak to the Council. No formal action may be taken on these items at this meeting. Please keep comments to 3 minutes.**

WOKSHOP

1. CAPITAL IMPROVEMENT PLAN (CIP)
   CONSIDERATION OF PHASED APPROACH

ADJOURN

In addition to any specifically identified Executive Sessions, Council may convene into Executive Session at any point during the open meeting to discuss any item posted on this Agenda. The Open Meetings Act provides specific exceptions to the requirement that a meeting be open. Should Council elect to convene into Executive Session, those exceptions will be specifically identified and announced. Any subsequent action, as a result of this Executive Session, will be taken and recorded in open session.

I certify that this Notice of Meeting was posted on or before August 18, 2023by 5:00 p.m. at the Parker City Hall and required by Texas Open Meetings Act (TOMA) is also posted to the City of Parker Website at www.parkertexas.us.

The Parker City Hall is Wheelchair accessible. Sign interpretations or other special assistance for disabled attendees must be requested 48 hours in advance by contacting the City Secretary's Office at 972 442 6811.

Date Notice Removed

Patti Scott Grey
City Secretary

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Council Agenda Item

Budget Account Code:	Meeting Date:	See above.
Budgeted Amount:	Department/ Requestor:	Council
Fund Balance-before expenditure:	Prepared by:	City Secretary Scott Grey for City Administrator Olson
Estimated Cost:	Date Prepared:	August 18, 2023
Exhibits:	*Please review information provided.*	

AGENDA SUBJECT

WORKSHOP:

CAPITAL IMPROVEMENT PLAN (CIP)

CONSIDERATION OF PHASED APPROACH

SUMMARY

Please review information provided.

POSSIBLE ACTION

City Council may direct staff to take appropriate action.

Inter – Office Use

Approved by:	Enter Text Here		
Department Head/ Requestor:	Patti Scott Grey	Date:	08/18/2023
City Attorney:	Amy J. Stanphill	Date:	08/xx/2023 via Municode
City Administrator:	Luke B. Olson	Date:	08/ xx /2023

BIRKHOFF, HENDRICKS & CARTER, L.L.P.
PROFESSIONAL ENGINEERS
Texas Firm F526

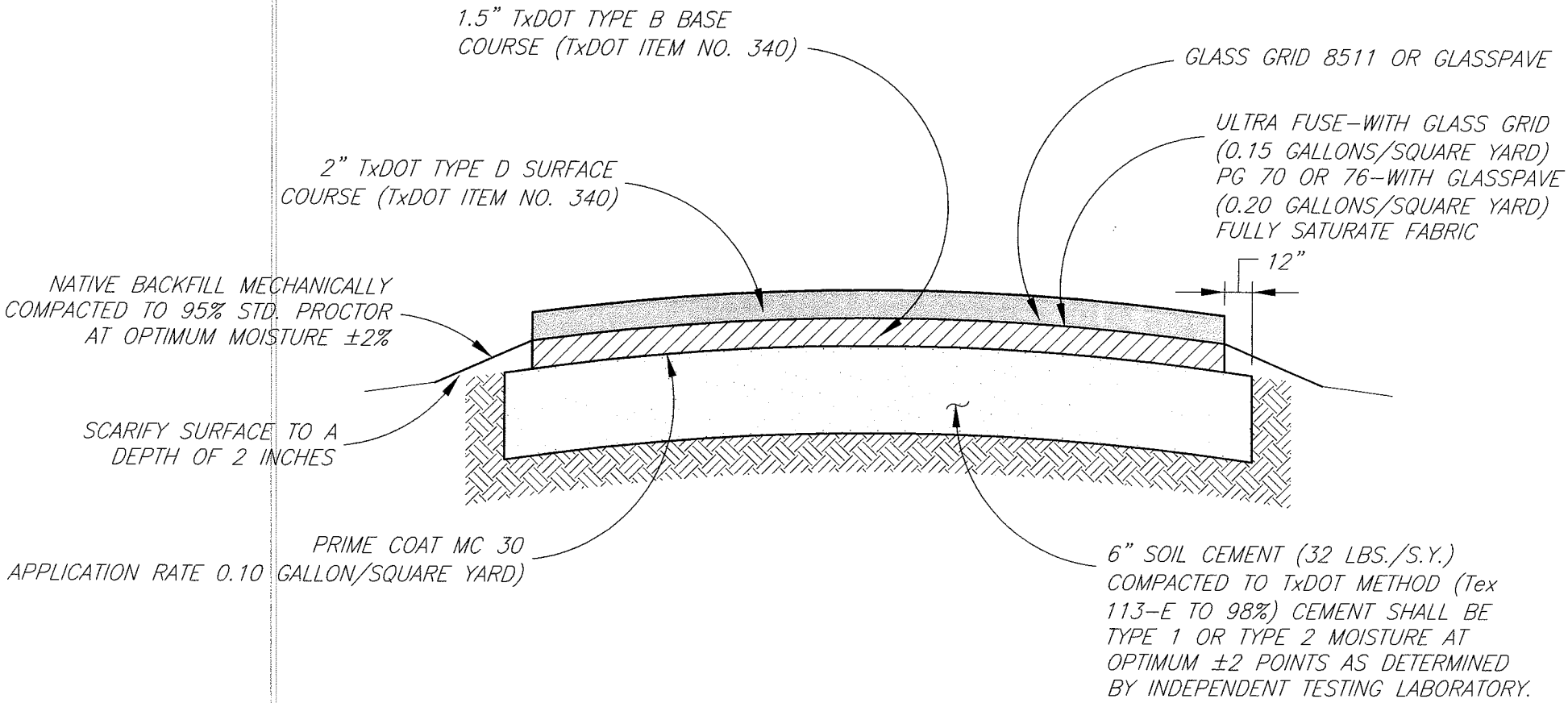
Project No. 4096-306

Client: CITY OF PARKER, TEXAS
Project: Roadway Remix & Glass Pave Dublin Road - Betsy to City Limit
25 Foot Width Remix Repave 5,300 L.F. 132,500 Square Feet

Date: 18-Aug-23
By: J.W.B.

ENGINEER'S OPINION OF CONSTRUCTION COST

Item No.	Description	Quantity	Unit	Price	Amount
1	For Scarifying, Mixing Existing Surface & Base, and Mechanically Compacting	14,725	S.Y.	$ 25.00	$ 368,125.00
2	For Cement Mixing (32 #/s.y.)	236	Tons	$ 240.00	$ 56,640.00
3	For MC30 Prime Coat 0.10 Gal/S.Y.	1,473	Gal.	$ 1.50	$ 2,209.50
4	For Furnishing & Laying 1.5-Inch HMAC Type "B"	1,215	Tons	$ 150.00	$ 182,250.00
5	For AC25TR Tack Coat / PG-70 / PG-76 0.2 Gal./S.Y.	2,945	Gal.	$ 3.50	$ 10,307.50
6	For GlasPave® 50	14,725	S.Y.	$ 7.00	$ 103,075.00
7	For Furnishing & Laying 2-Inch HMAC Type "D" Roadway Surface on Compacted subgrade, including Tack Coat	1,620	Tons	$ 170.00	$ 275,400.00
8	For Roadway Edge Grading	10,600	L.F.	$ 4.00	$ 42,400.00
9	For Barricades	1	L.S.	$ 20,000.00	$ 20,000.00
10	Thermo Plastic Stop Lines	1	EA.	$ 800.00	$ 800.00
	Subtotal:				**$ 1,061,207.00**
				Contingency (25%):	$ 265,301.75
				Testing (3%):	$ 31,836.21
				Engineer 3% [No Engineering Plans]:	$ 31,836.21
				Total:	**$ 1,390,181.17**



NOTES:

1. NO RECYCLED ASPHALT (RAP) IS ALLOWED.
2. PROVIDE IN–PLACE DENSITY TEST EVERY 500 FEET OF COMPACTED WORK TO THE CITY.
3. PLACE FABRIC OR GRID WITH MECHANICAL LAYDOWN MACHINE.
4. SURFACES SHALL BE CLEAN PRIOR TO PLACING TACK COATS.
5. FABRIC OR GRID SHALL LAY FLAT WITH NO WRINKLES. WRINKLES SHALL BE REMOVED BY LIFTING AND PLACING OR CUT WITH OVERLAP IN DIRECTION OF PAVING EQUIPMENT.

ROADWAY REMIX & GLASS GRID

CITY OF PARKER, TEXAS

ROAD REHABILITATION

BIRKHOFF, HENDRICKS & CARTER, L.L.P.
PROFESSIONAL ENGINEERS
TBPE Firm No. 526; TBPLS Firm No. 10031800
11910 Greenville Ave., Suite 600 Dallas, Texas 75243 (214) 361-7900

JULY 2023

BIRKHOFF, HENDRICKS & CARTER, L.L.P.
PROFESSIONAL ENGINEERS
Texas Firm F526

Project No. 4096-306

Client: CITY OF PARKER, TEXAS
Project: S-Curve Reconstruction Paving Only Edgemere to Creekside
1,250 L.F. 25 Foot Width

Date: 18-Aug-23
By: J.W.B.

ENGINEER'S OPINION OF CONSTRUCTION COST

Item No.	Description	Quantity	Unit	Price	Amount
1	Unclassified Excavation	1,495	C.Y.	$ 25.00	$ 37,375.00
2	Flex Base / Crushed Concrete	1,250	C.Y.	$ 70.00	$ 87,500.00
3	Prime Coat MC30 - 0.10 Gal./S.Y.	350	Gal.	$ 1.50	$ 525.00
4	Type B Asphalt 1.5 inches	290	Ton	$ 165.00	$ 47,850.00
5	ACTR 25 / PG 70 / PG 76 / 0.2 Gal./S.Y.	700	Gal.	$ 2.55	$ 1,785.00
6	For GlasPave® 50	3,472	S.Y.	$ 7.00	$ 24,304.00
7	Type D Asphalt 2.0 Inches	385	Ton	$ 170.00	$ 65,450.00
8	Double Yellow Center Line	800	S.F.	$ 5.00	$ 4,000.00
9	Edge Fill	100	C.Y.	$ 50.00	$ 5,000.00
10	3 Stop Signs with Post	6	EA.	$ 500.00	$ 3,000.00
11	Barricades	1	L.S.	$ 10,000.00	$ 10,000.00
	Subtotal:				**$ 286,789.00**
	Contingency (25%):				$ 71,697.25
	Testing (3%):				$ 8,603.67
	Engineer (10%):				$ 28,678.90
	Total:				**$ 395,768.82**

Summary of CIP meeting 8/8/2023

8/8 CIP Meeting Summary

- Defined the initial scope to include roads, drainage, water
- Subsequent scope to include building facilities
- Discussed previous work which identified priority streets
  - Collector, Residential
  - Phase 1, Phase 2
- Discussed Dublin Road S-curve (reconstruction and drainage issues)
- Discussed different road repair methods
  - Reconstruct, Remix, Overlay, Fog/Slurry Sealant
- Discussed an estimate of funds available for 2023-2024
- Created an initial high-level draft proposal to allocate funds toward projects (next page)
  - Consideration for High Traffic Collector Streets, Safety, Severe/Very Poor condition Residential Streets
- Noted that we should not move forward with Streets until Drainage and Water lines are scoped
- AR: Council to consider the initial draft proposal for 2023-2024 dtreetsand bring additional thoughts/questions/alternative proposals to the next meeting
- AR: Luke/Gary: Obtain more detailed cost estimates for Lewis, Curtiss and the South Dublin Road S-Curve in detail (safety) and to also look at Church, Grey and Donihoo for poor PCI numbers

Draft Initial Proposal – Street Repairs

Phase	Area	Street	Section	LF	Current Street Width	Avg DTV	Condition	Rating	Resurface Method	Cost/sqft	Total Sqft	Estimated Cost	Cost Estimate
	Collector Streets												
1	SW	Dublin Road - South	South	5,907	20	1,456	Very Poor	30-33	Reconstruct		118,140		200000 and 200000 N&S patching
1	NE	Lewis Lane		3,286	20	781	Poor	40	Reconstruct		65,720		200,000
2	SW	Dublin Road - North	North	7,957	20	1,640		45-50	Reconstruct		159,140		
2	NE	Curtis Road ^		1,783	21	1,185		40			37,443		200000
	Total Collector			18,933									
	Residential Streets												
1	NW	Church Lane		2,172	22		Severe	20	Reconstruct		47,784		200000
1	SW	Grey/Gray Lane		2,211	19	Preserve Access	Very Poor	25	Remix		42,017		200000
1	SW	Gregory Lane (Grey to Hogge)	Gray to 2551	1,277	22	289	Poor	40	Remix		28,094		
1	NW	Hackberry Lane	Donihoo to PecanOrchard	1,763	21	458	Poor	40	Reconstruct		37,023		
1	NE	Pecan Orchard (Springhill Estates to Hackberry Lane)	Springhill Estates to Hackberry Lane	1,146	20	433	Poor	50	Remix		22,920		
1	SE	Moss Ridge *		6,195	24		Fair	55			148,676		
2	NW	Donihoo Lane		2,037	21		Very Poor	35	Reconstruct		42,777		200000
2	SW	Gregory Lane (Bridge to end)	Bridge to End	4,171	22		Poor	40	Remix		91,762		
2	NW	Hackberry (Pecan Orchard to Cul de Sac)	Pecan Orchard to Cul-de-Sac	1,674	21		Poor	40	Reconstruct		35,154		
2	SW	Ranchview		1,002	19	109	Poor	40	Remix		19,039		
2	SW	Woodcreek		668	19		Poor	40	Remix		12,695		
2	NW	Kara Lane		2,606	20	287	Poor	45	Overlay		52,120		
2	NE	Pecan Orchard Drive (Hackberry to Cul de Sac)	Hackberry Lane to Cul de sac	1,088	20		Poor	50	Remix		21,760		
2	NW	Wagon Wheel		1,676	24	183	Poor	50	Remix		40,224		
2	NW	Windmill Creek Drive *		1,628	22		Poor	50	Overlay		35,816		
2	NW	Sycamore Lane		5,319	18	375		55	Reconstruct		95,742		
	Total Residential			36,633									

Discussion Material for CIP meeting 8/22/2023

Parker CIP Projects

Collector Roads that Require Reconstruction

- Dublin Road
- Lewis Lane
- Curtis Lane

*Need to also include plans for drainage and water lines

Types of Road Failures

1. Ruts

The longitudinal depressions or cuts in the flexible pavement are known as ruts. These are usually formed ion earth or W.B.M roads of one lane width due to repetitive traffic wheel loads on the same location, particularly under wheeled traffic.

5. Longitudinal Cracking

The formation of cracks in the longitudinal direction of road pavement is called longitudinal cracking.

This failure is caused due to frost action, different volume changes in subgrade, settlement of filling material, or due to sliding of side slopes.

6. Map Cracking

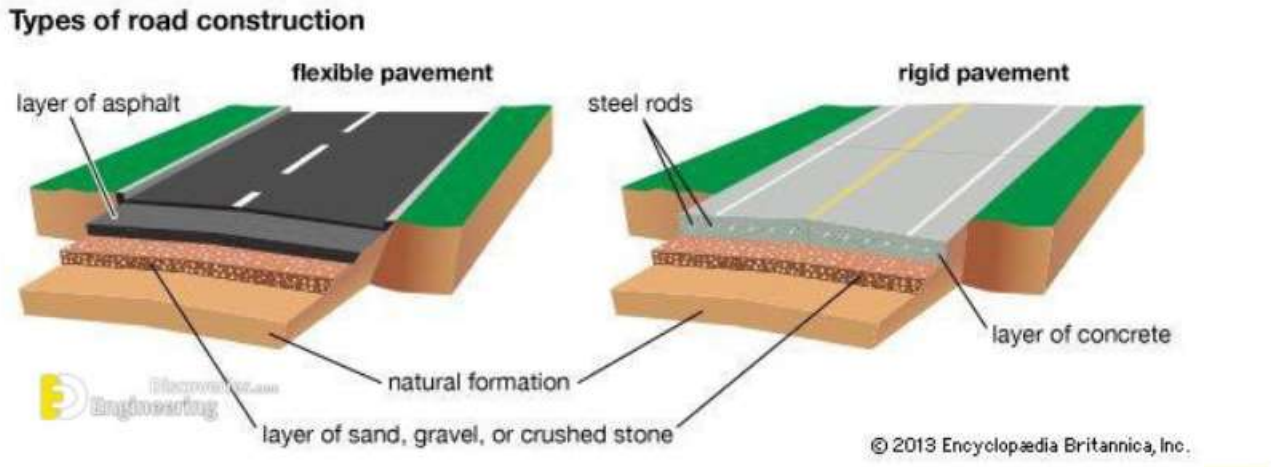
The development of irregular cracks, usually formed on bituminous surfacing is called map cracking.

This type of flexible road failure is due to excessive wear of the road surface or localized weakness in the underlying base course.

Dublin Road

- Dublin Road is a high traffic volume collector street
- Due to the extent of the “Aligator/Map Cracks”, Rut damage, and portions of failed base, Overlay method is not recommended
- Need to define the reconstruction method
- Reconstruction may include the following steps
  - Demolish, Haul Off, and/or “Recycle in Place” the existing asphalt
  - Prepare the roadway to be ready for flex base
    - Assume that we will widen the Street to 22 feet
  - Apply and compact a 12” flex base layer
  - Cover with 1.5” asphalt layer
  - Apply a primer/adhesion layer and GlasPave Road Fabric
  - Cover with 2” asphalt top layer
  - Apply Topcoat Sealant and Paint stripes and/or use reflective center markers
- Traffic control and “Right of Way” are needed

Reconstruction method



	Flexible Pavement	Rigid Pavement
1.	It consists of a series of layers with the highest quality materials at or near the surface of pavement.	It consists of one layer Portland cement concrete slab or relatively high flexural strength.
2.	It reflects the deformations of subgrade and subsequent layers on the surface.	It is able to bridge over localized failures and area of inadequate support.
3.	Its stability depends upon the aggregate interlock, particle friction and cohesion.	Its structural strength is provided by the pavement slab itself by its beam action.
4.	Pavement design is greatly influenced by the subgrade strength.	Flexural strength of concrete is a major factor for design.
5.	It functions by a way of load distribution through the component layers	It distributes load over a wide area of subgrade because of its rigidity and high modulus of elasticity.
6.	Temperature variations due to change in atmospheric conditions do not produce stresses in flexible pavements.	Temperature changes induce heavy stresses in rigid pavements.
7.	Flexible pavements have self healing properties due to heavier wheel loads are recoverable due to some extent.	Any excessive deformations occurring due to heavier wheel loads are not recoverable, i.e. settlements are permanent

Difference between Flexible Pavements and Rigid Pavements

courtesy: www.theconstructor.org

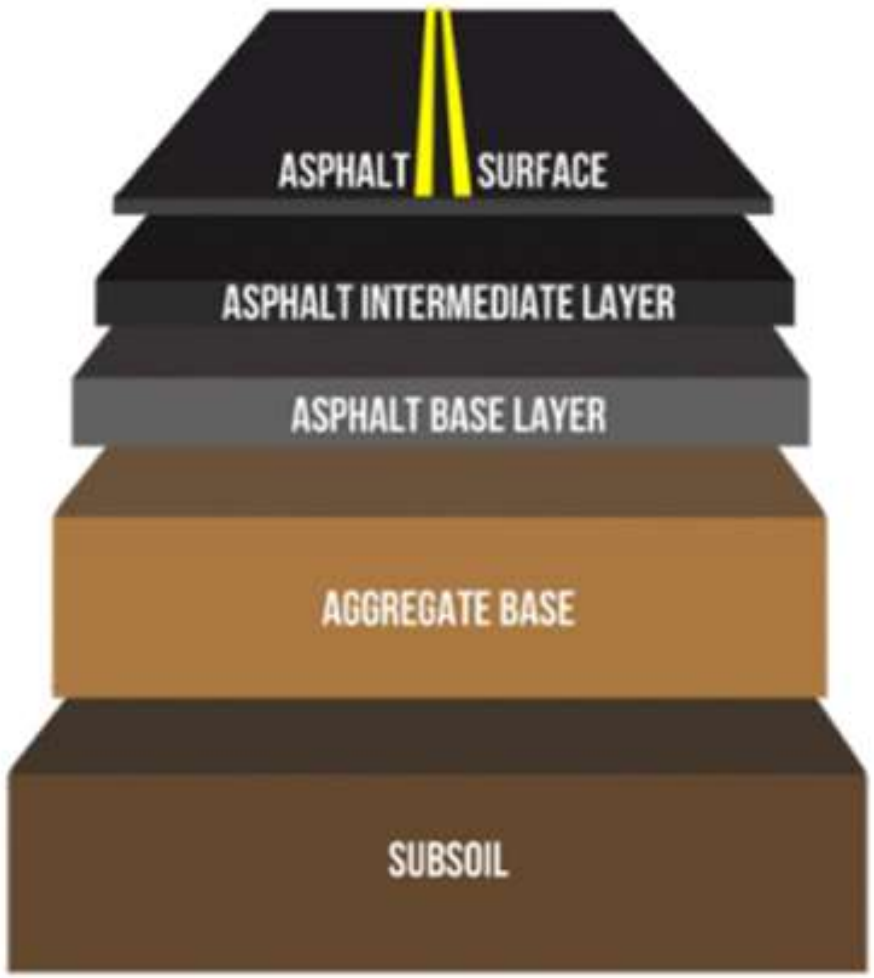
Reconstruct Cost Analysis

- Define the reconstruction method
  - For straight road segments versus S-Curve
- The goal is to achieve the most cost-effective price per square foot
  - Without sacrificing quality
- It will be important to get cost estimates for each layer/line item
- While prices for materials and labor do fluctuate, we need to assess ways to minimize the cost/sqft while maintaining quality

Estimated cost/sqft to Reconstruct with a Flexible Asphalt Road

Description	Cost/sqft
Recycle existing asphalt in place	$1.00
Flex Base Material (12" depth)	$1.00
Flex Base Delivery Fee	$1.68
Spreading and compacting the flex base	$0.50
Asphalt 1.5" sublayer	$3.00
GlasPave Material	$0.50
Asphalt 2" top layer	$3.00
Total	$10.68

Preliminary, Subject to Change (Not Verified, May Vary Widely)



Flexible Asphalt Road Layers

*Note: Engineer's Budgetary Cost Estimate to Reconstruct with Flex Base = $16.25/sqft

*Note: Engineer's Budgetary Cost Estimate to Remix = $10.20/sqft

Cost Analysis – Dublin Road South

- Demolition/Removal/Recycle existing Asphalt
  - What is the most cost-effective way to remove or reuse the existing asphalt?
- Grading and preparation of the sub-base
  - What is the scope of work for this phase and what is the estimated cost?
  - How many core samples are required and what impact could the data have on the project?
    - (12 core samples were recommended, can we get by with 3 or 4?)
- Flex Base
  - Need to consider the cost of the material and delivery cost
  - Need to know the specific grade or type of Flex Base and get pricing (from several sources)
  - Vendor “A” material cost = $15.00/ton, delivery $25.50/ton (Assumes 1.65 ton/cu yd)
  - Vendor “B” material cost = $59.00/cu yd, delivery cost $11.00/cu yd
- Asphalt base layer, Intermediate Asphalt Layer and Surface Layer
  - Need a cost estimate
  - Example: Vendor “C” estimated $3.00/sqft for a 2” asphalt overlay on an existing road
    - Need estimate for new construction asphalt road layers
- GlasPave
  - Which type do we need?
  - GlasPave 50 estimate $0.45 – $0.50 per square ft.
  - GlasPave 25 estimate $0.19 per square ft.

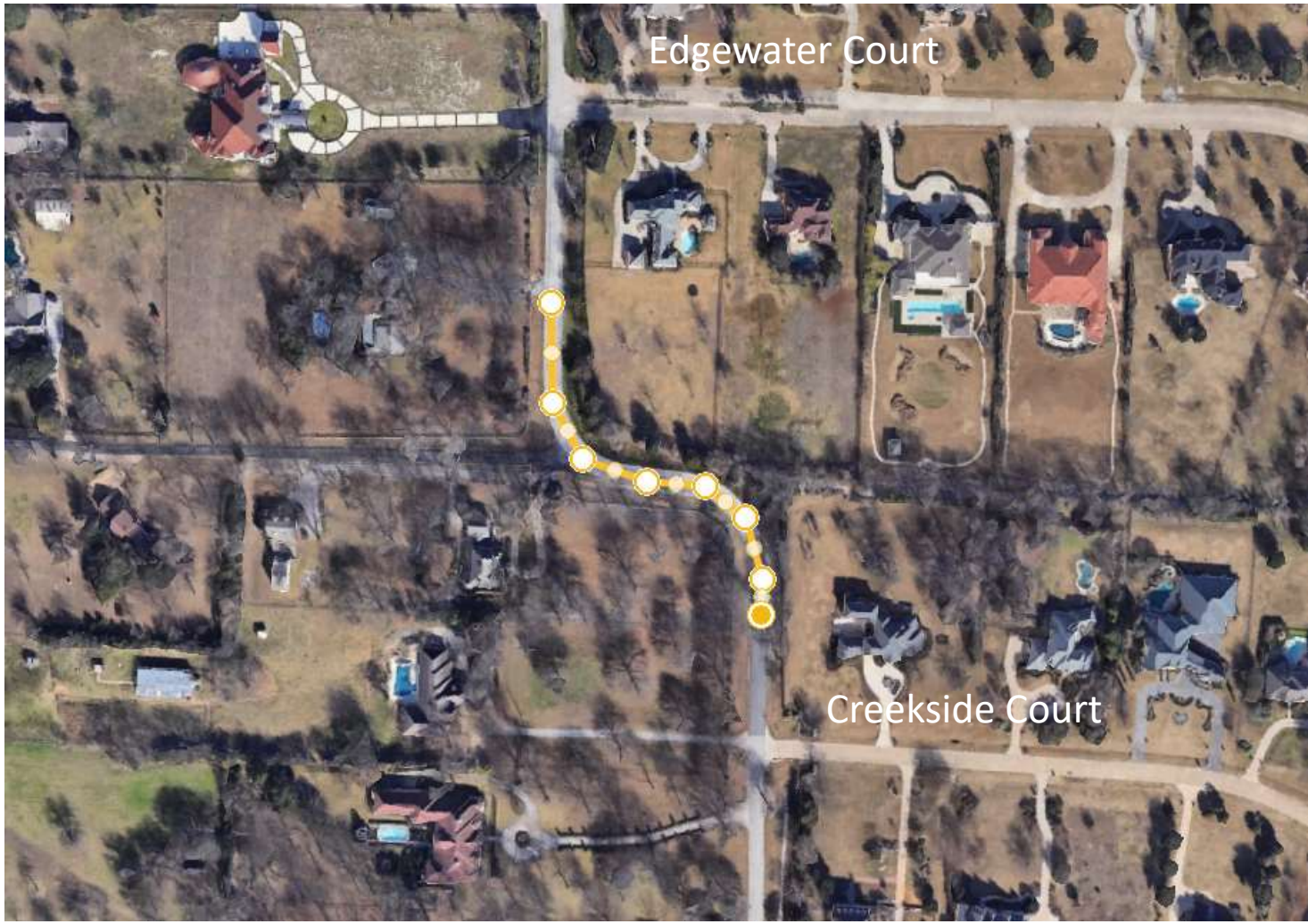
Cost Guidance from our City Engineer

Title	Product	Description	Cost	Cost/sqft
Concrete	Concrete	6" reinforced concrete w/ 6" lime treated subgrade	637	$26.54
Reconstruct	Asphalt	12' flexbase material, 1.5" asphalt, glass pave, and 2" asphalt	390	$16.25
Remix	Asphalt	remix existing roadbed w/ cement, placing 1" asphalt with glass pave and 1.5" asphalt	245	$10.20
Overlay	Asphalt	2" overlay with glas pave between existing and new	110	$4.58

- Also need to account for the design and costs for drainage, engineering, water lines, Right of Way, Traffic Control

Dublin Road S-Curve

- Full Reconstruction of the Road Base with flexible asphalt road
- 600 linear feet is shown
- Need to address drainage



Dublin Road South Cost Analysis and Proposal (Estimated)

- Assume Full Reconstruction of the Road Base with flexible asphalt road for 600 linear feet through the S-Curve
- Assume Remix method to be used for the straight roadway sections of Dublin Road South
- Is this a recommended solution?

Dublin Road South	
Length of section (linear ft)	5,907
New Road width (ft)	22
Total sqft	129,954
S-Curve Sub-Section	
Length of subsection section (lf)	600
New width of sub-section (lf)	22
Total stft for S-Curve sub-section	13,200
Cost per sqft (Full Reconstruction)	16.25
Total cost for S-Curve Sub Section	**$ 214,500.00**
Remaining Straight Road Sections for Dublin Road South	
Length of remaining straight roadway sections (5907 - 600)	5,307
New width of straight roadway sections	22
Total sqft for straight roadway sections	116,754
Cost per sqft (Remix)	10.2
Total cost for straight roadway sections for Dublin Road South	**1190890.8**
Total cost estimate for combination of Reconstruction and Remix	**$ 1,405,390.80**

Dublin Road Drainage

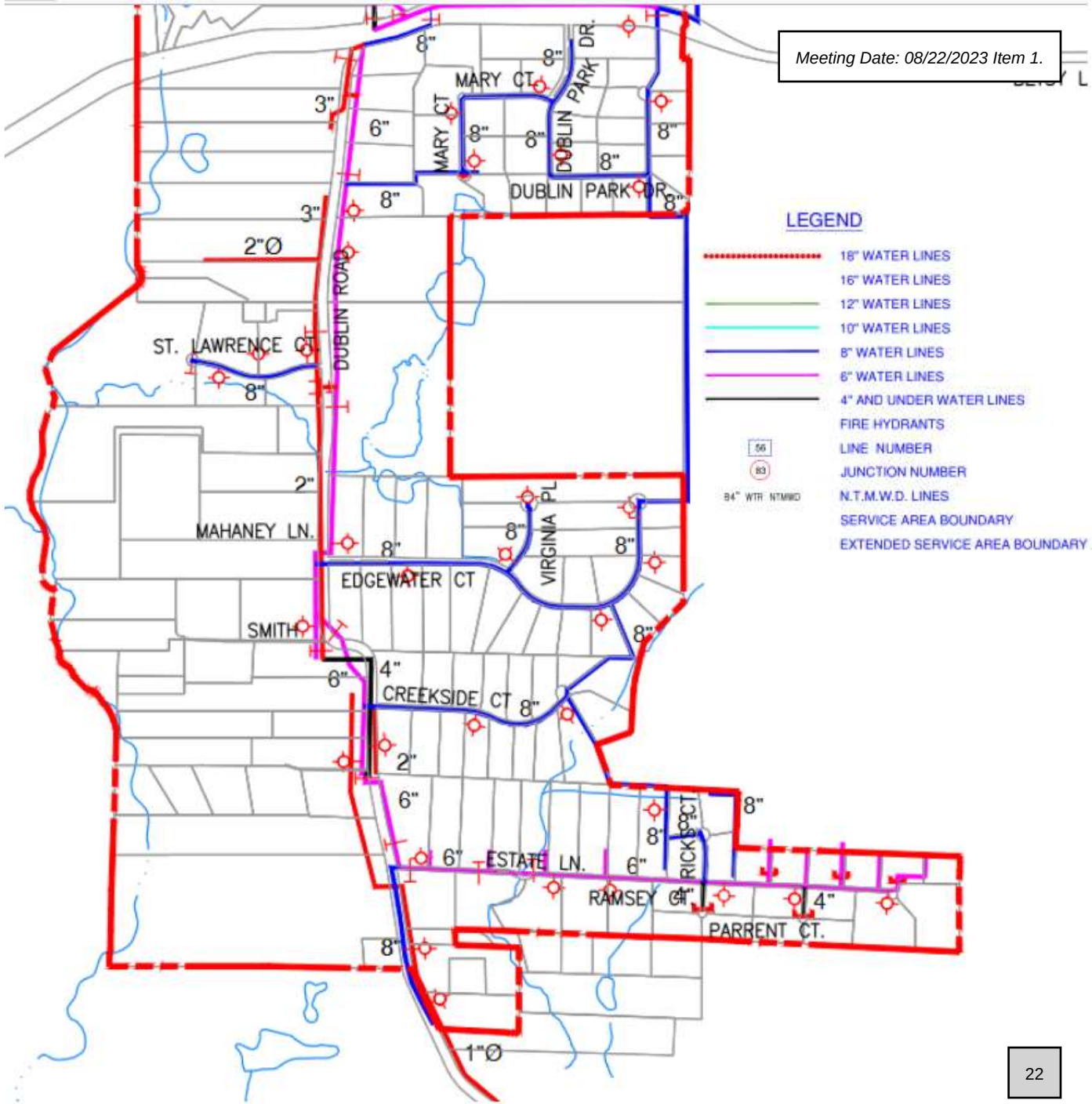
- Can we summarize the issue associated with drainage along the S-Curve?
  - Where does water collect or become obstructed from flowing?
- What are the options for a solution?
  - Mr. Birkhoff described one option to route the water to the East but requires an easement
  - Another option was to first route to the south then connect with an existing drainage channel
  - Can we see these options drawn on a map?
- The estimate for drainage for Dublin Road South is shown as 1.9M
  - What is involved in the solution?
  - What are the cost elements/ line items?
    - Sizes, type and number of culverts needed and lengths
    - Excavation costs (trenches)
    - Reestablishing vegetation
    - Right of Way
    - Engineering
    - Other?

Water Lines on Dublin Road South

- Define the scope of work needed for the project
- What water lines need to be replaced?
- Will we also need to replace valves, hydrants, other?
- What are the cost elements/ line items associated with the project?
  - Type of pipes needed and length
  - Excavation (trenches)
  - Right of Way
  - Engineering
  - Other?

Water Lines on Dublin Road South

- Identify which water lines need to be replaced



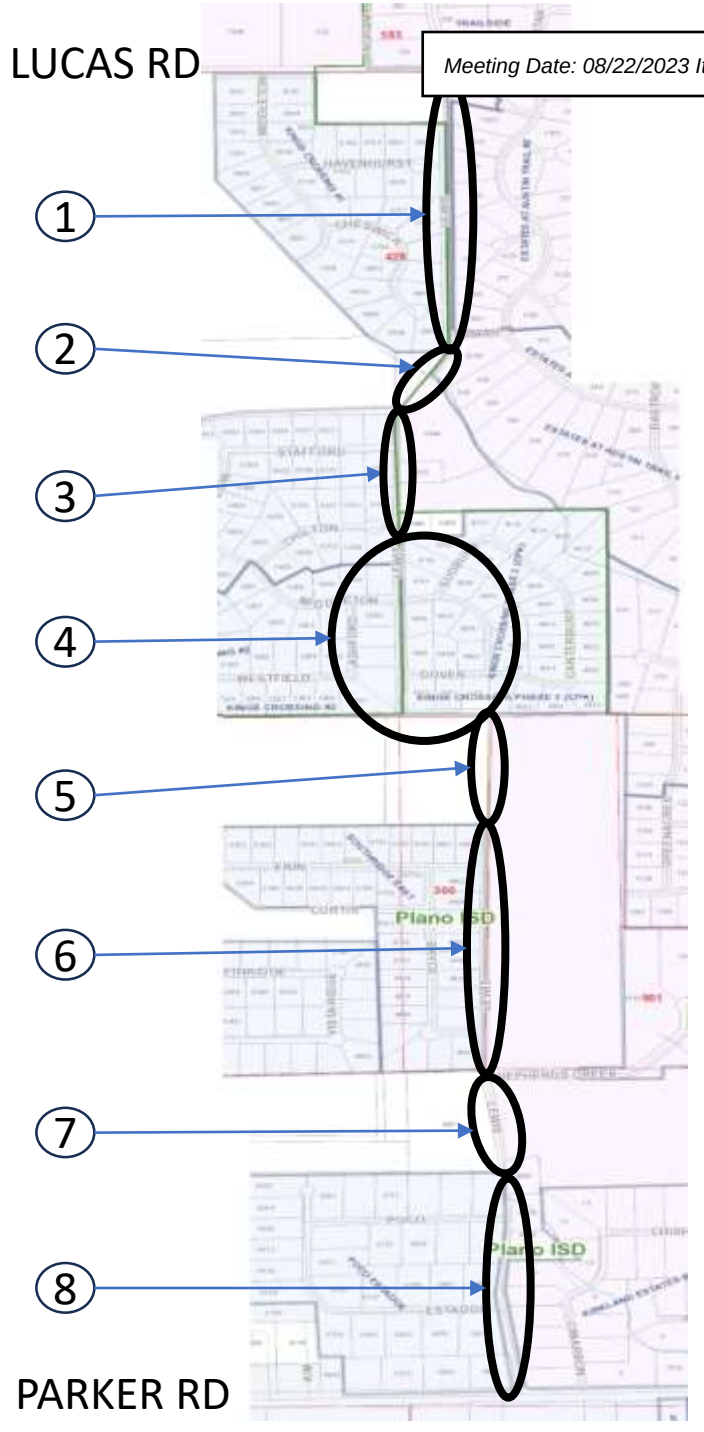
Lewis Lane

- Determine who owns each section
- Define the scope of work for 2023-2024
- Define the plan for near-term action and a long-term plan

Lewis Lane Right-of-Way

- Review the plats
- Discuss the issues
- Prepare a Plan
- Implement the Plan

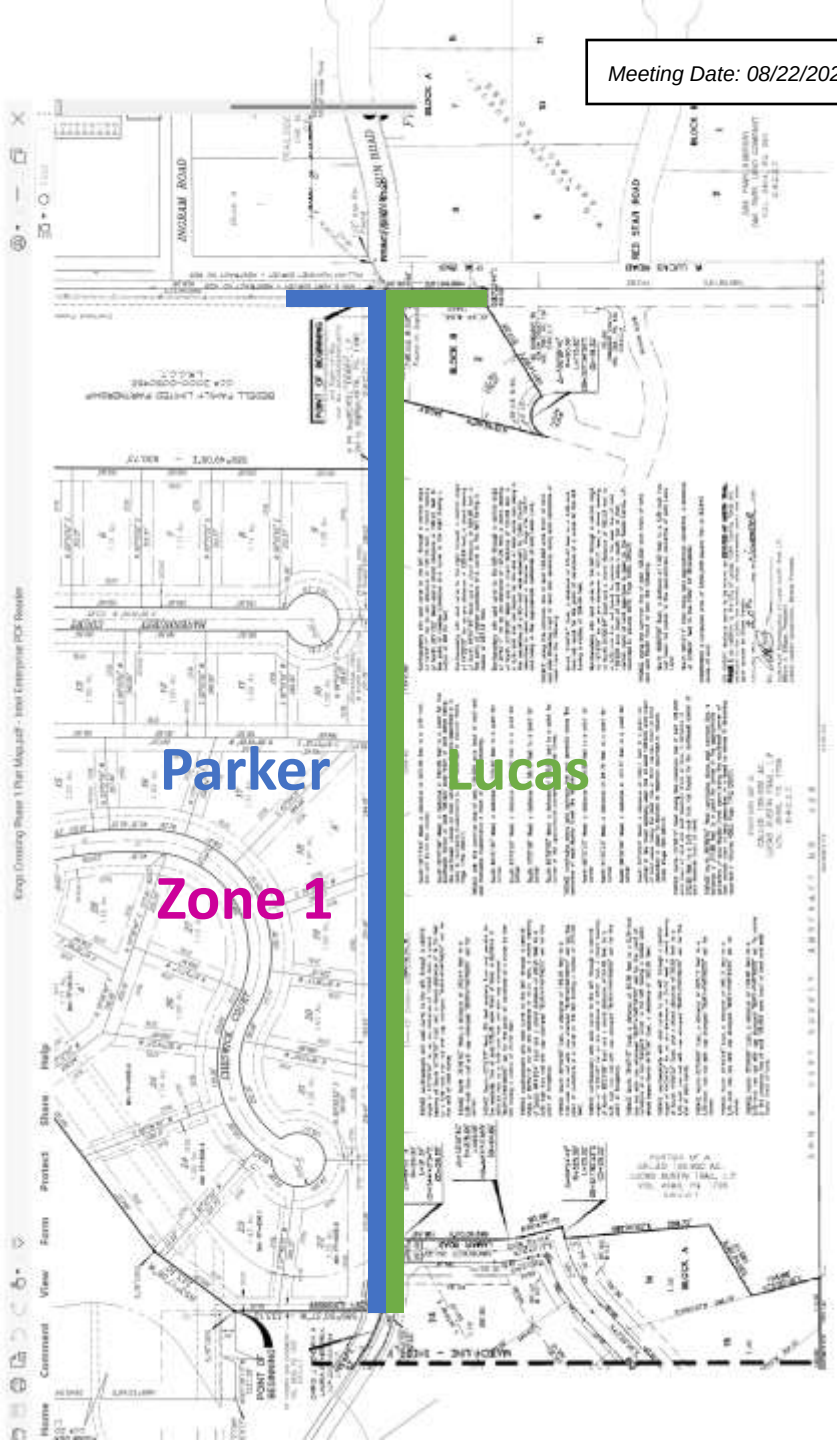
Right of Way Zones



Lewis Lane Right-Of-Way

Zone 1: From Lucas Road to the Southern border of Kings Crossing Phase 1

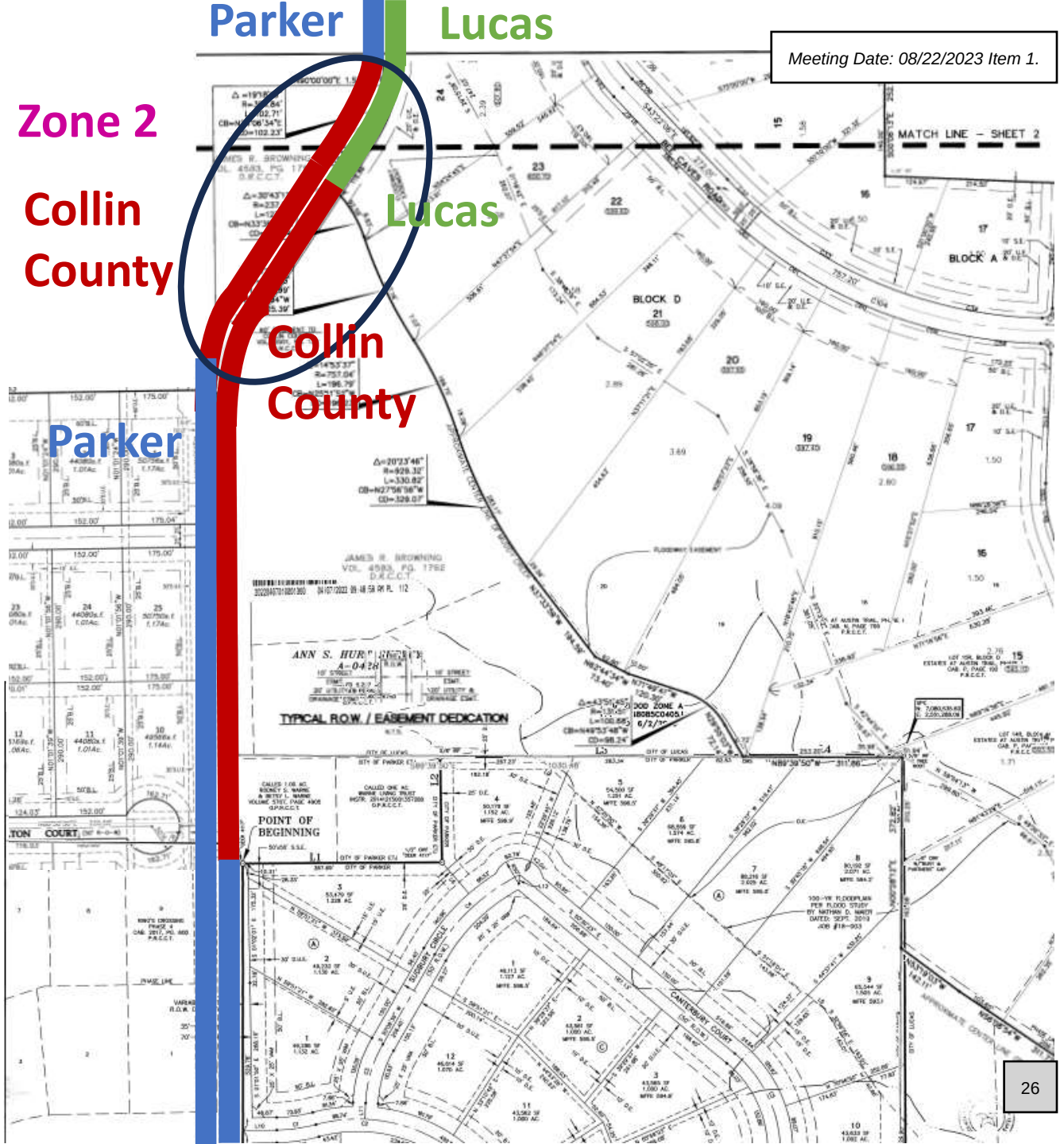
- Parker has Right of Way for the Southbound Lane (West Side)
- Lucas has Right of Way for the Northbound Lane (East Side)
- The Northbound Lane has significant damage
- Can we work together with Lucas to address the Northbound Lane damage?



Lewis Lane Right-Of-Way

Zone 2: From the Southern border of Kings Crossing Phase 1 to Northern border of Kings Crossing Phase 2

- Small Triangle partially owned by Lucas and Collin County
- Road Surface seemingly in good condition



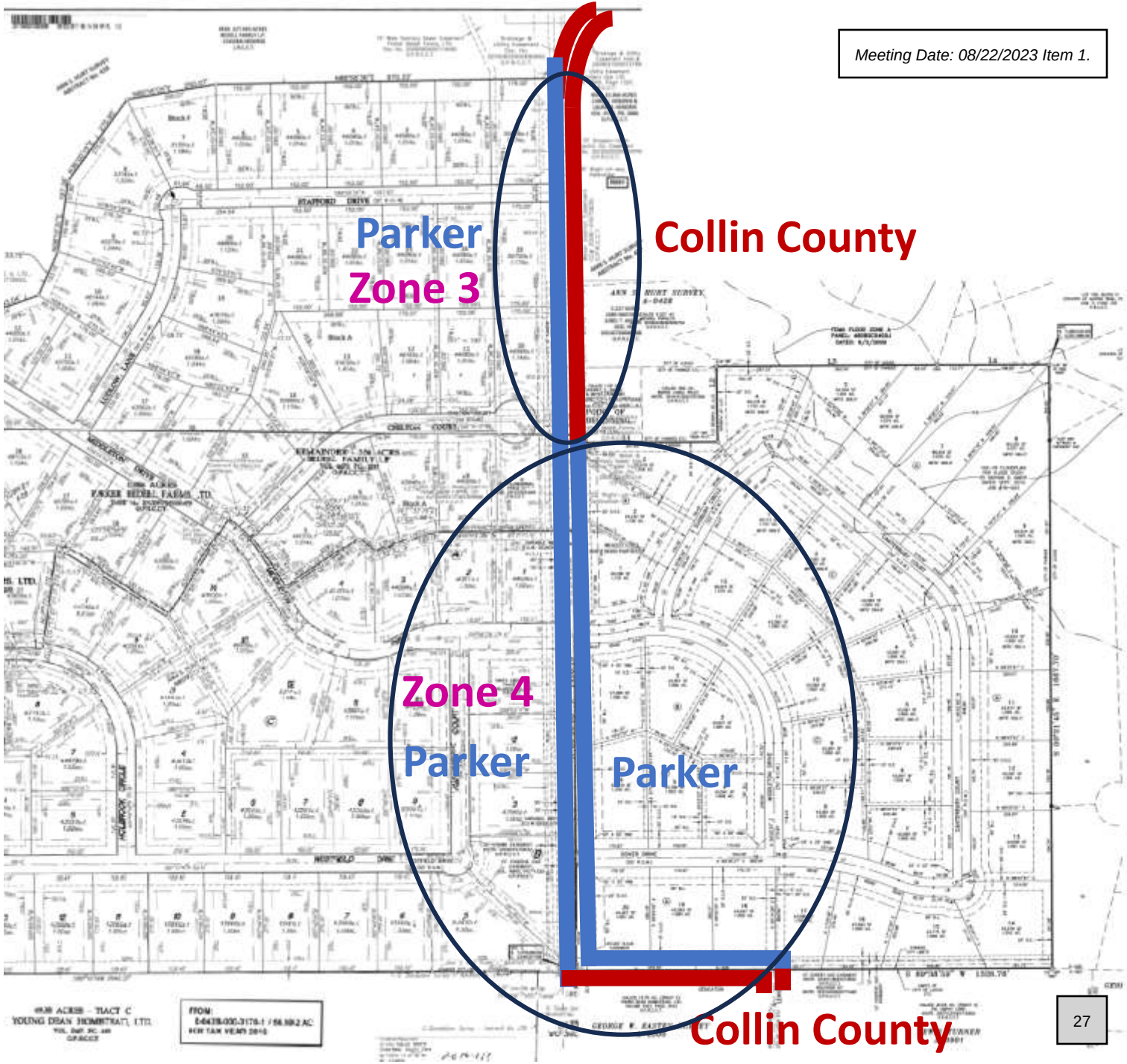
Lewis Lane Right-Of-Way

Zone 3: From Northern border of Kings Crossing Phase 2 to Northern Border of Kings Crossing Phase 3

- Partially owned by Parker and Collin County

Zone 4: From Northern border of Kings Crossing Phase 3 to Southern Border of Kings Crossing Phase 3

- Partially owned by Parker and Collin County
- Recently paved by the developer



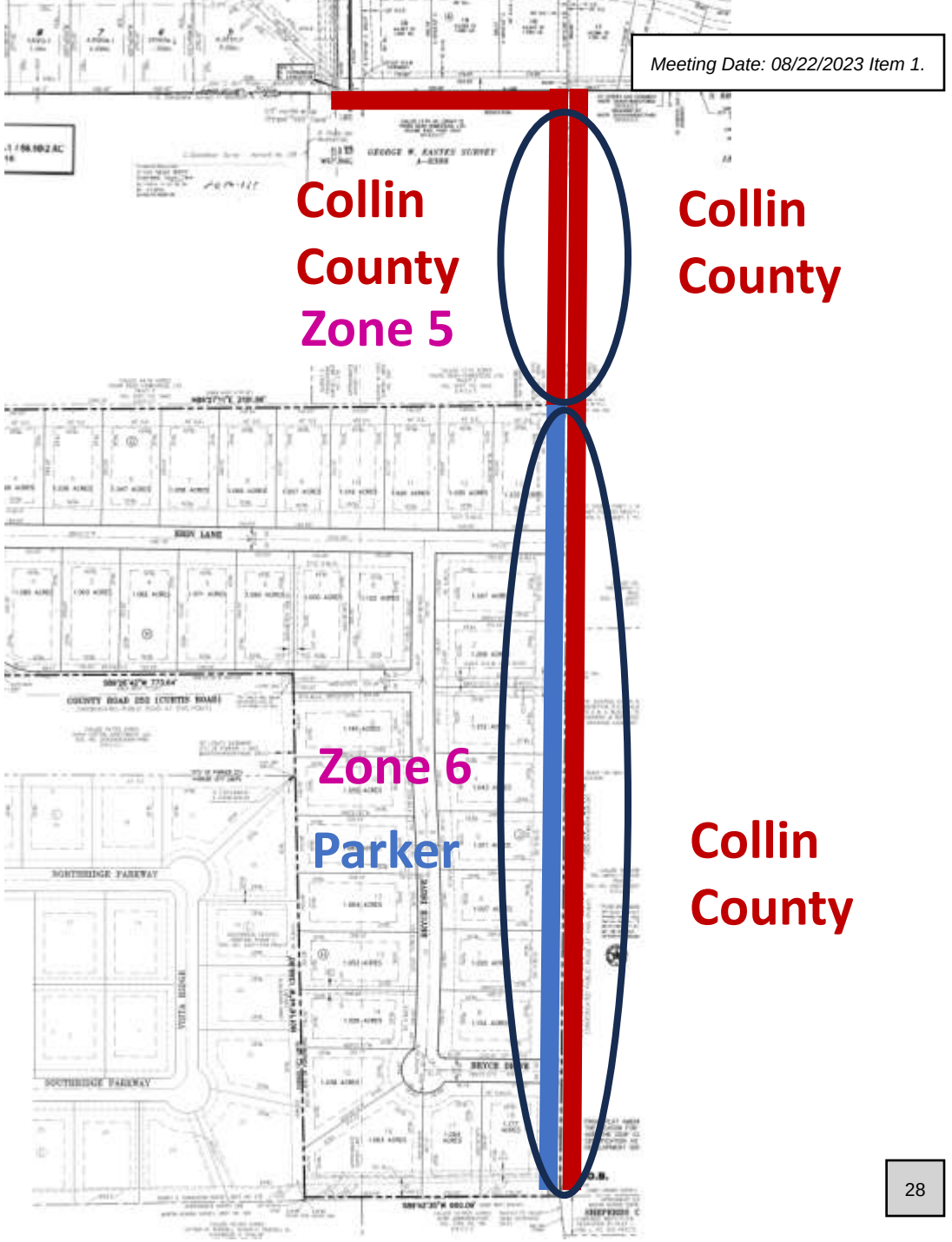
Lewis Lane Right-Of-Way

Zone 5: From Southern border of Kings Crossing Phase 3 to Southern Border of Northern Border of Southridge East

- Owned by Collin County

Zone 6: From Northern border of Southridge East to Southern Border of Southridge East

- Partially owned by Parker and Collin County



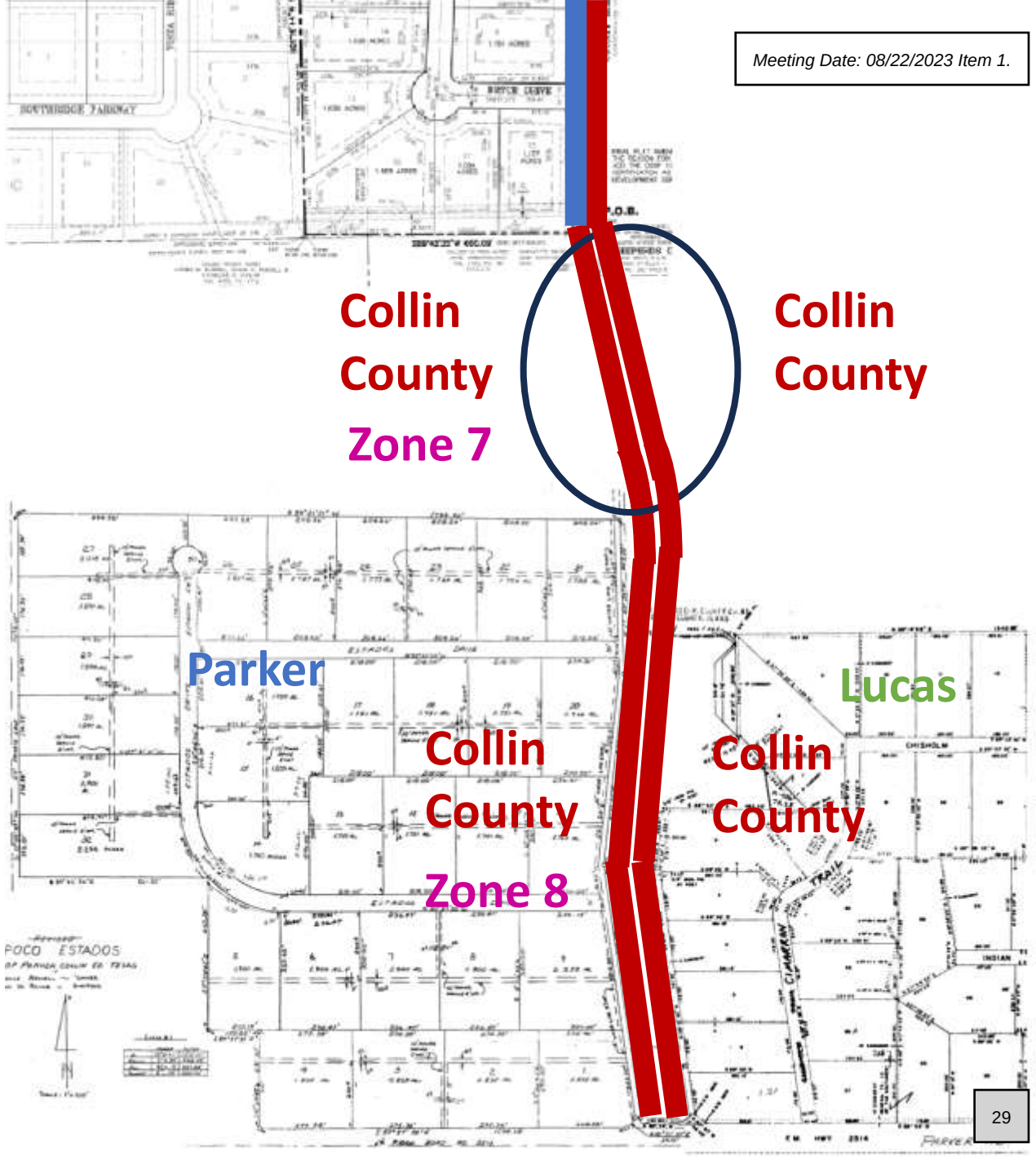
Lewis Lane Right-Of-Way

Zone 7: From the Southern border of Southridge East to the Northern border of Poco Estados

- Owned by Collin County

Zone 8: From the Northern border of Poco Estados to the Southern border of Poco Estados

- Owned by Collin County



Discussion and Next Steps