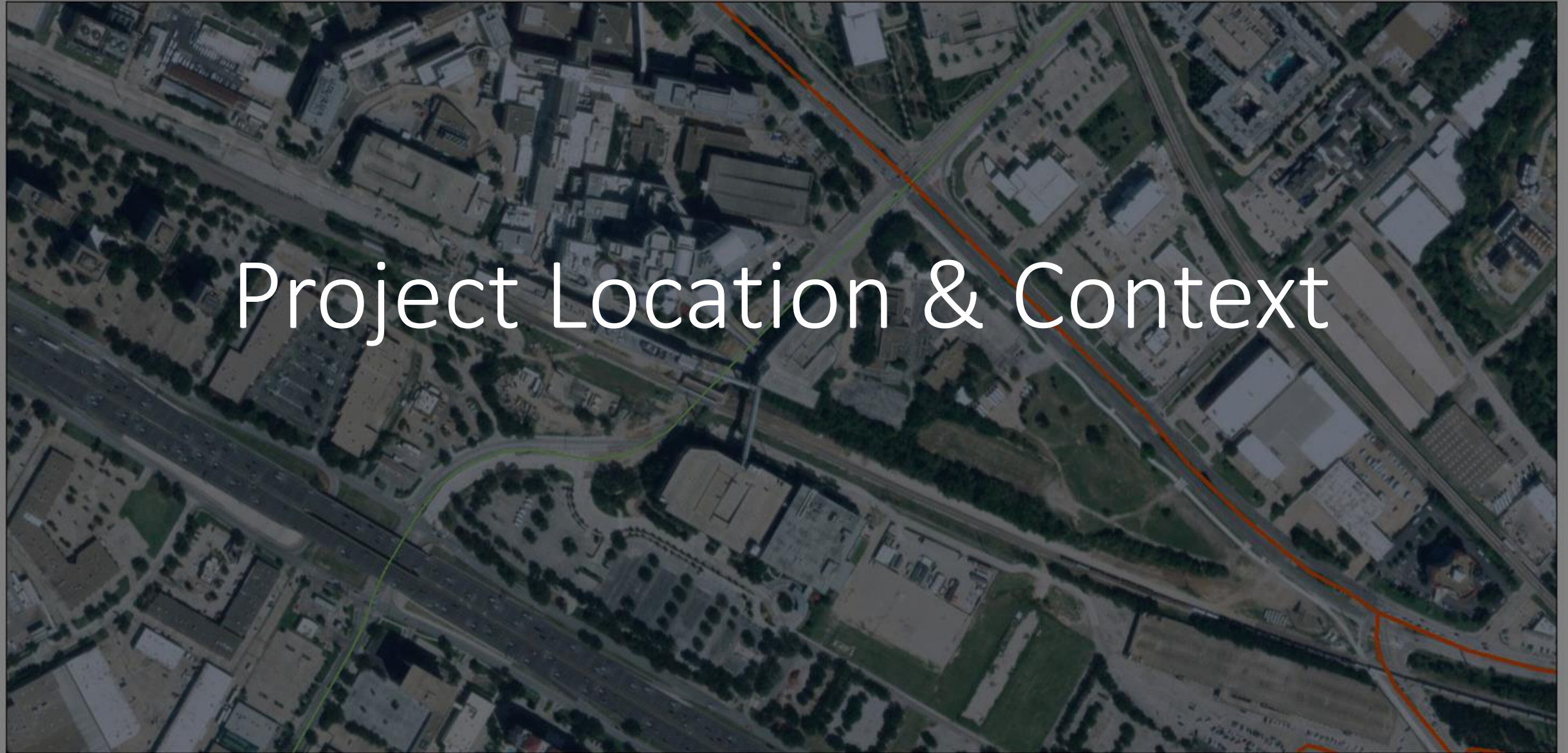


# MEDICAL DISTRICT DRIVE: Partnering and Innovation Delivers a Better Project

Presentation to  
SAME 23<sup>rd</sup> Infrastructure Forum  
Arlington, Texas  
February 9, 2024



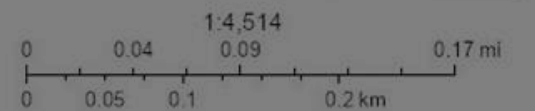
# Project Location & Context



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Dallas County Thoroughfare Designation

— PRIMARY ARTERIAL





CLEMENTS  
UNIVERSITY  
HOSPITAL

UT  
SOUTHWESTERN  
NORTH  
CAMPUS

PARKLAND  
MAMMOGRAPHY

BIOCENTER  
EAST  
CAMPUS

WEST  
CAMPUS

UT  
DALLAS

UT  
SOUTHWESTERN  
SOUTH  
CAMPUS

TWU

PARKLAND  
HOSPITAL

PARKLAND

ZALE  
LIPSHY PAVILION

PARKLAND

CHILDREN'S  
HEALTH

Medical/Market  
Center Station

SWMD/Parkland  
Station

Harry Hines Blvd.

Forest Park

Inwood Rd.

Inwood Rd.

Harry Hines Blvd.

Redfield St.

Butler

Butler

Tex Oak

Maple Ave.

Cass St.

Bengal St.

Kendall St.

Production Dr.

DART LIGHT RAIL

TRINITY RIVER EXPRESS R.R.

IH-35E (STEMMONS FREEWAY)



# Trinity Strand Trail

This map has been prepared courtesy of **VIRGINIA COOK, REALTORS.**

## DALLAS



- 1 Points of Interest**
1. New Parkland Hospital
  2. New Medical District/Parkland Dart Station
  3. UT Southwestern Medical Center
  4. Trinity Railway Express Station
  5. Children's Medical Center
  6. Dallas Market Center
  7. Future Turtle Creek Pedestrian Park
  8. Design District
  9. Future Trinity Stand/Katy Trail Connection



General trail location shown in red above.

Located in Dallas' popular Design District, this 2.5-mile trail follows what was once the original course of the Trinity River and provides people with an opportunity to exercise and to travel to nearby restaurants, corporate office buildings, and major hotels without the need of a car. Attractively designed, the trail features numerous trailheads and views of the Dallas skyline. Made possible by private contributions of land, time, and money and by funding from the City of Dallas, plans are already underway to further extend the trail into Dallas' Medical District, to have the trail connect with the Katy Trail, and to add a companion soft surface trail.

█ Trinity Stand Trail  
 █ Proposed Trail Extension  
 █ Katy Trail



This map is for informational purposes and only represents the approximate relative locations of the labeled features. This map was published in January 2016.

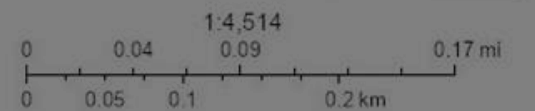
# Project Need & Purpose



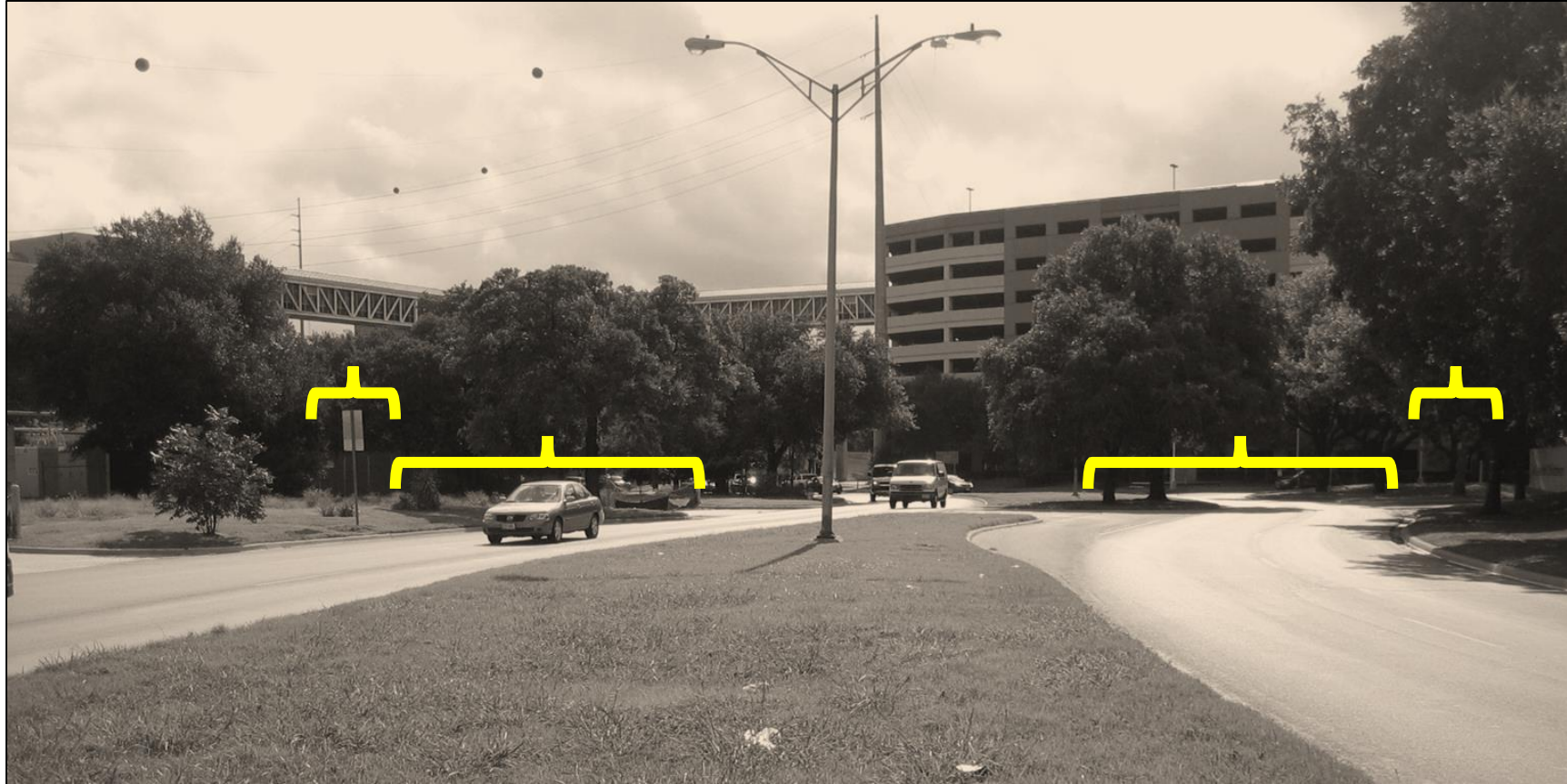
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Dallas County Thoroughfare Designation

— PRIMARY ARTERIAL



# Need



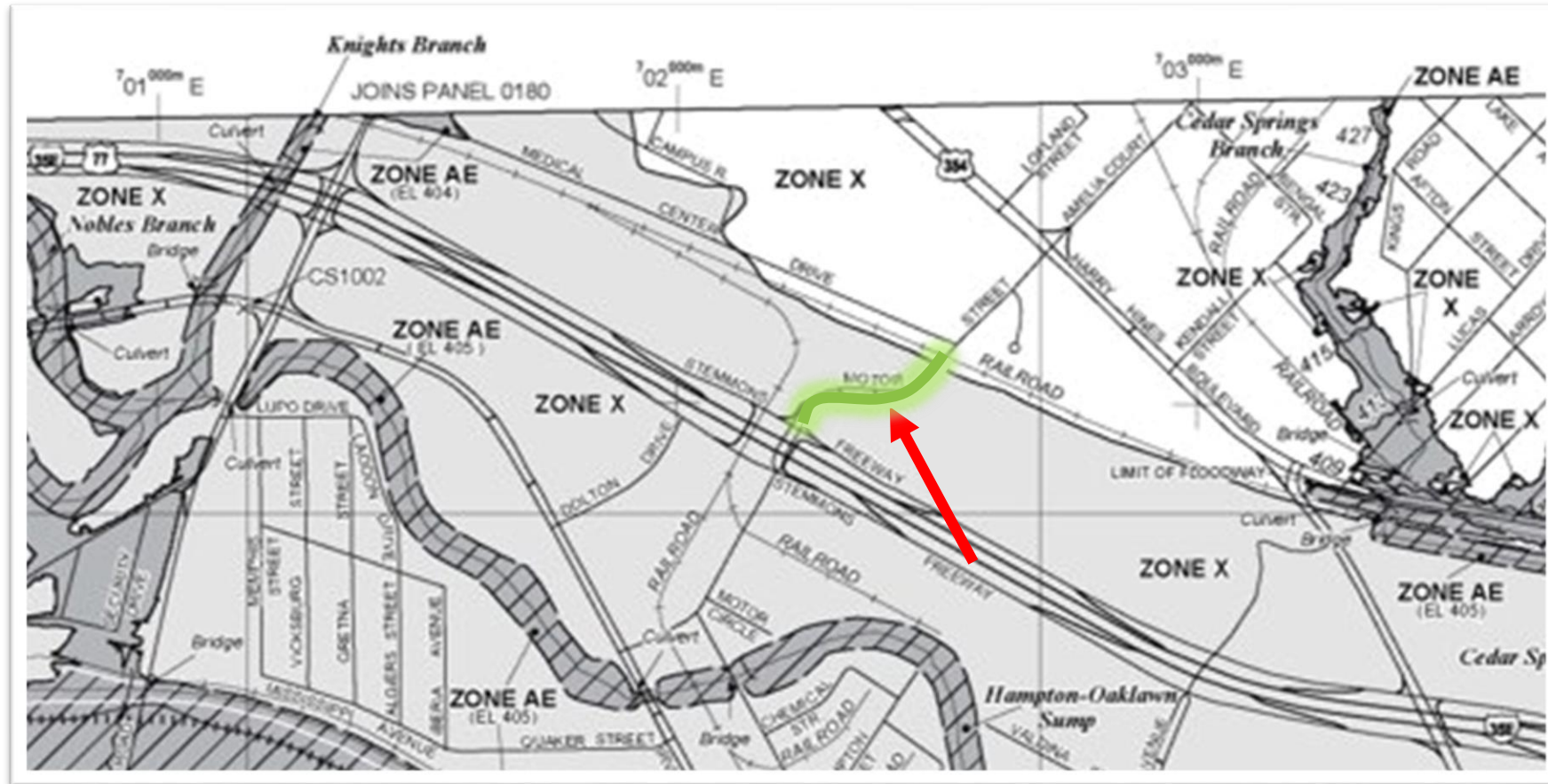
- × **Two Lanes in Each Direction (Failing LOS in 2045)**
- × **No Bicycle/Pedestrian Accommodations**

# Need



- × **Unsatisfactory Roadway Geometrics for Major Collector (e.g., horizontal curves )**
- × **Existing Trees in Median**

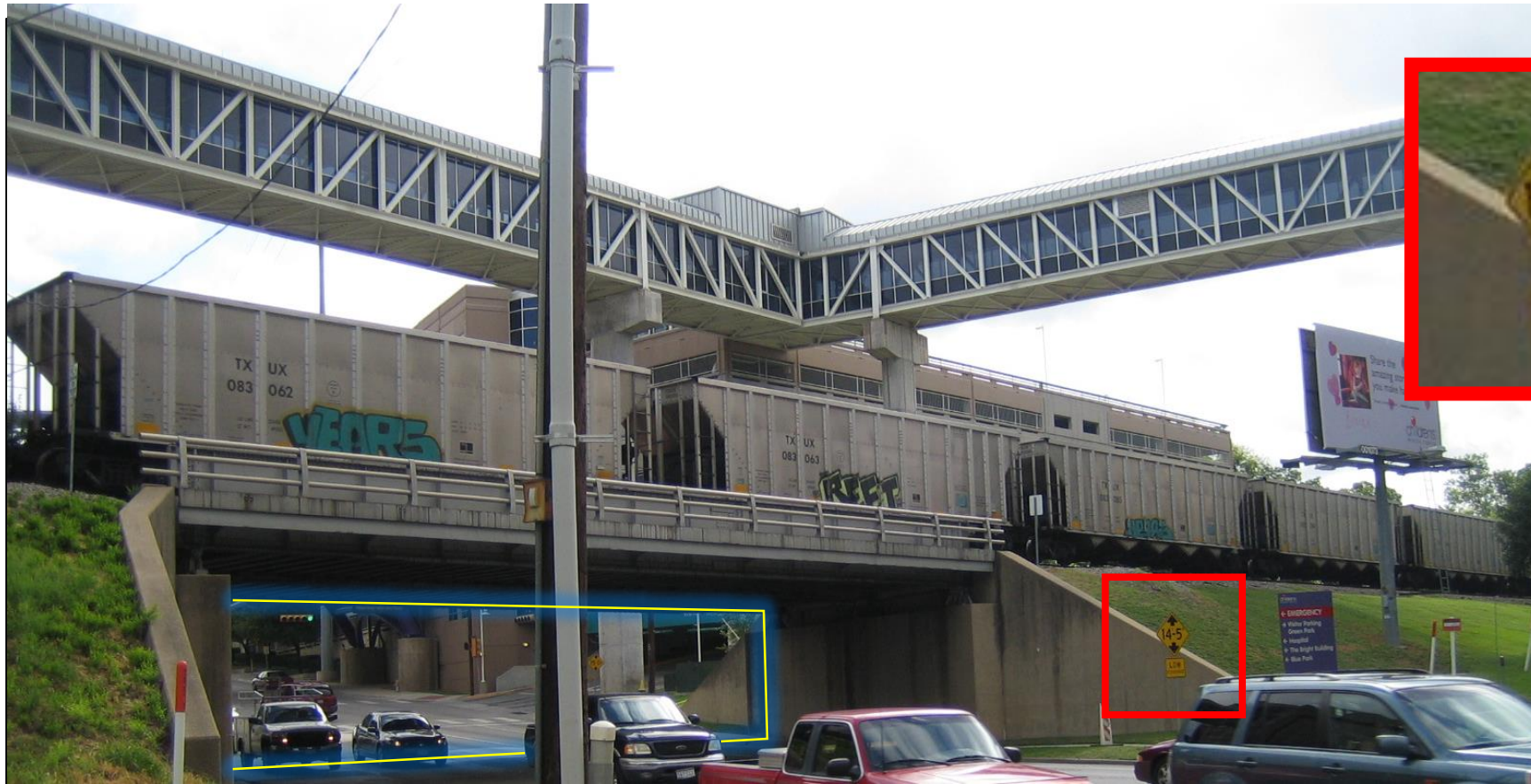
# Need



× **Within the FEMA 100-yr Flood Plain –  
Historic flooding in this area**



# Need

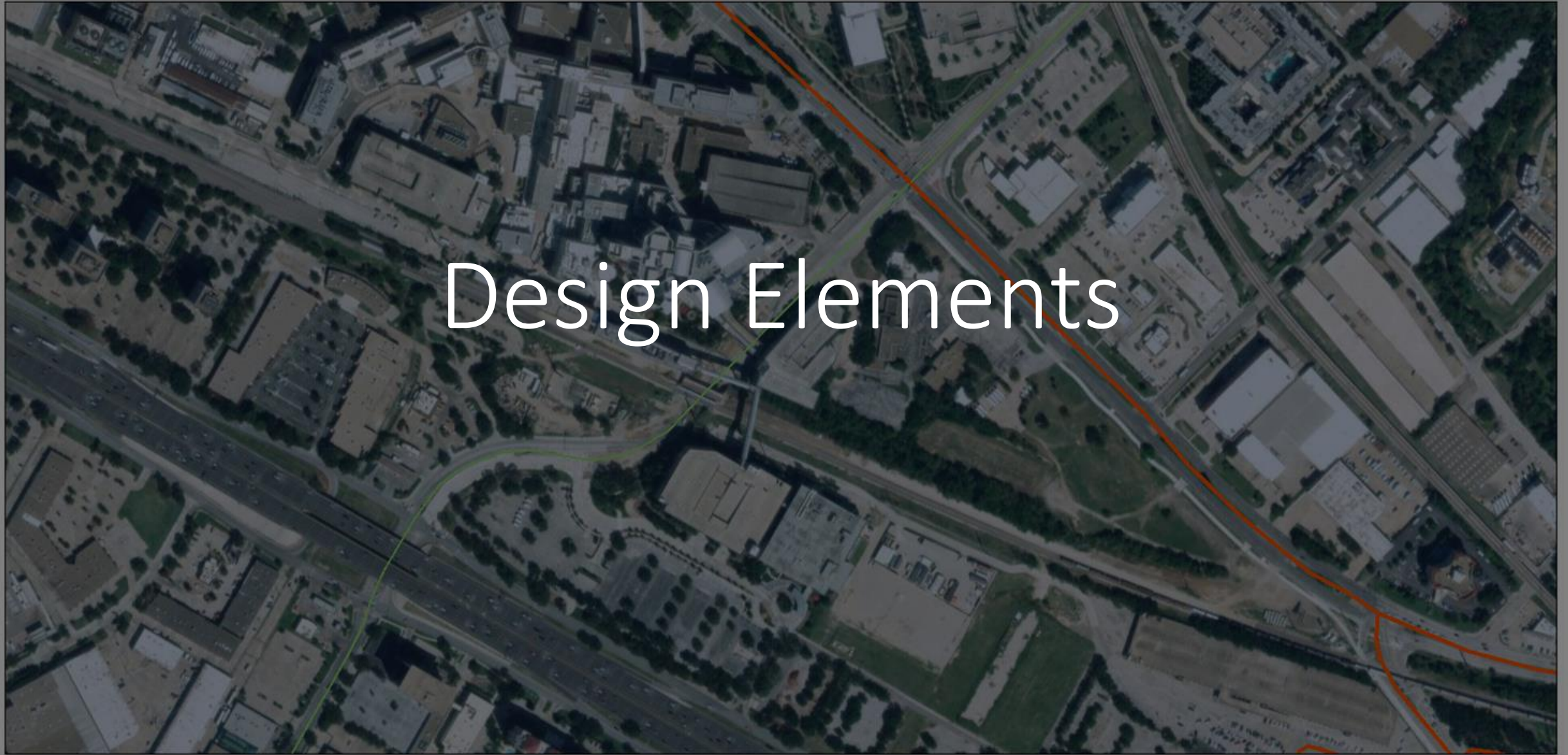


× Inadequate vertical clearance at TRE bridge

# Purpose and Scope

- ✓ Maintain safe, reliable and efficient mobility for all travel modes
- ✓ Meet current roadway classification design guidelines with AASHTO and TMUTCD
- ✓ Raise the street above 100-year flood elevation in compliance with City/FEMA guidelines
- ✓ Raise the DART/TRE bridges to provide safe vertical clearance
- ✓ Provide hike and bike lanes in compliance with TDLR guidelines

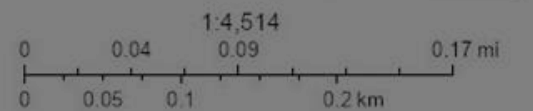
# Design Elements

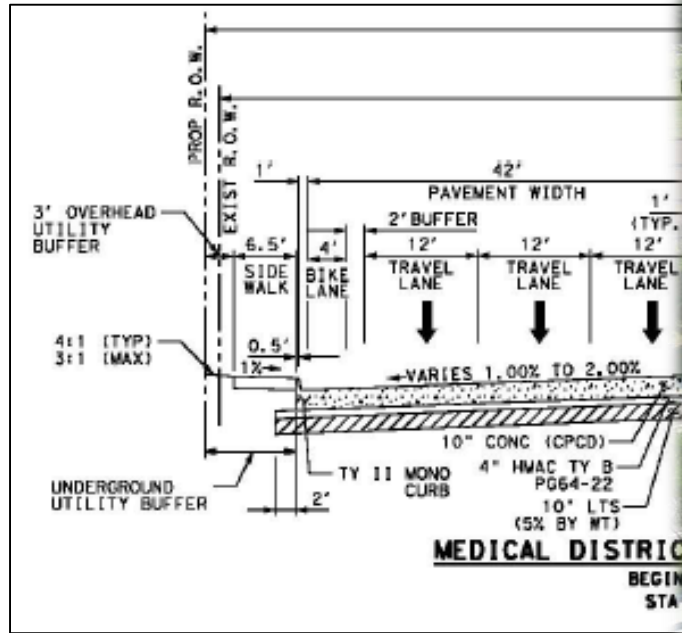


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Dallas County Thoroughfare Designation

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- Added through lane, turn lanes
- Wide sidewalks and separate bike lanes in both directions.
- New traffic signal for Childrens Medical Center main entrance with FO conduit the length of the project.
- Upsized storm drainage system.

**CURRENT COST ESTIMATES & FUNDING SOURCES**  
**Project Name: Medical District Drive, MCIP 30228**  
**TxDOT CSJ: 0918-45-884**

# Project Actual Costs

- Funding information is from the Sixth Amendment to the Project Specific Agreement which is currently awaiting Dallas City Council approval.
- Significant cost increases resulted from change in abutment foundation type, dealing with unforeseen utility conflicts, and delay impacts.

<b>Total Estimated Project Cost</b>	
	<b>Estimated Cost</b>
Construction (Paving, Drainage, & RR Bridge)	\$18,974,113
DART/TRE R/R Work	\$4,500,000
Utilities (Franchise) Relocation	\$500,000
Design (Paving, Drainage, RR Bridge, Environmental)	\$2,388,000
Dallas County IHPD	\$1,400,000
ROW	\$1,220,113
DWU Design & Construction*	\$706,666
<b>Subtotal</b>	<b>\$28,076,965</b>
TxDOT Costs (Direct State Costs)	\$326,846
TxDOT (Indirect State Cost)	\$1,321,484
<b>TOTAL</b>	<b>\$31,337,222</b>
<b>Total Project Funding Source</b>	
	<b>Committed Amount</b>
City of Dallas	\$1,363,792
City of Dallas Amendment 4	\$500,000
City of Dallas Amendment 5	\$236,000
City of Dallas Amendment 6	\$123,535
City of Dallas DWU *	\$308,530
City of Dallas DWU Additional **	\$189,663
City of Dallas DWU Amendment 5**	\$67,072
City of Dallas DWU Amendment 6**	\$141,401
Dallas County	\$4,662,264
Dallas County Amendment	\$500,000
Dallas County Amendment 6	\$1,346,991
Federal STP-MM (Construction)	\$14,970,000
Federal Congressional Demo (Eng, ROW, Utilities)	\$4,406,490
Federal Amendment	\$1,200,000
TxDOT (Indirect State Cost)	\$1,321,484
<b>TOTAL</b>	<b>\$31,337,222</b>

\* DWU Design & Construction breakdown of Design \$26,320.00, Construction \$381,936.00, and Contingencies \$89,937.00 for a total of \$498,193.00

\*\*Dallas Water Utilities – Funded items by City of Dallas DWU

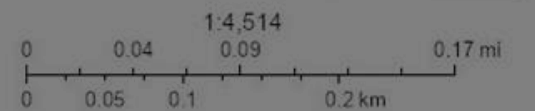
# Partnering Approach



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Dallas County Thoroughfare Designation

— PRIMARY ARTERIAL



# Participating – TRUST, COMMITMENT, SHARED VISION

- Partnering is voluntarily setting up working relationships that assure an environment that facilitates a “team” approach to conducting business and solving problems
- Effectively partnering through the life of the project will:
  - Improve team problem solving and mutual respect
  - Assure open communications and prompt resolution of issues
  - Help avoid unnecessary time “writing letters” and other adversarial pursuits.
  - Provide job satisfaction and pride in accomplishment



Dr. Elba Garcia  
Dallas County  
Commissioner  
District 4



Alberta Blair, P.E.  
Director of  
Public Works

# Participating Stakeholders



## Agency Partners:

Dallas County  
TxDOT/FHWA  
City of Dallas/DWU  
NCTCOG  
DART/TRE

## Southwestern Medical District :

Children's Medical Center (CMC)  
Parkland Hospital  
UT Southwestern Medical Center

## Other Key Stakeholders:

Stemmons Corridor Business Association  
Texas Tree Foundation  
Trinity Strand Trail

## Franchise Utilities

## Consultant Team / Contractor Team



# Formal Arrangements

- Incorporated in Contracts
- Initiated by Workshops
- Convened Regularly
- Independently Evaluated Regularly



# Commitment and Shared Vision

**MEDICAL DISTRICT DRIVE (I-35 TO SOUTHWESTERN MEDICAL AVENUE) MCIP PROJECT 30228\_4**

**"THE MEDICAL DISTRICT DRIVE STAKEHOLDERS MISSION IS TO PROVIDE A TRANSPORTATION SOLUTION THAT HONORS THE MULTI-MODAL NATURE OF THE SOUTHWESTERN MEDICAL DISTRICT AREA, MESHES WITH THE HISTORIC AND ONGOING PLANNING WORK BY THE STAKE-HOLDERS, AND PROVIDES PREDICTABLE EMERGENCY VEHICULAR TRAVEL TIMES DURING AND FOLLOWING CONSTRUCTION."**

**Our Project Specific Goals Are:**  
 To maintain good communication, team work, coordination and development of a good set of plans that will result in a completed project with minimum disruption during construction, while meeting project goals and stakeholder objectives.

*Stakeholder List:*  
 Tom Green, Dallas County  
 Keith Bergman, Koolhaas Hoot and Associates, Inc.  
 Carlos Davison, Southwestern Medical District  
 Linda Trevino, Jacobs  
 Steven Wilson, Jacobs  
 Steven Salcedo, Jacobs  
 Elizabeth Hovest, Jacobs  
 Ali Zahedi, Jacobs  
 Spencer Isaac, Jacobs  
 John Hovest, Jacobs  
 Michael, Jacobs  
 Commissioner Rita Garcia, Dallas County  
 DWU, Dallas County  
 Jim Chishti, Dallas County  
 Dallas County - PD  
 Ann Kamuchela, Jacobs  
 Ash, City

AT DESIGN KICK-OFF

**MEDICAL DISTRICT DRIVE MCIP NO. 30228**

**OUR PROJECT SPECIFIC GOALS ARE:**  
 To maintain good communication, teamwork, and coordination. Complete project with minimum disruption during construction, within budget, and safety as possible. Improved flow for EMS vehicles, patients and visitors. Enhanced gateway entry into Medical District. Improve safety of the area and improved facilities for all modes of travel.

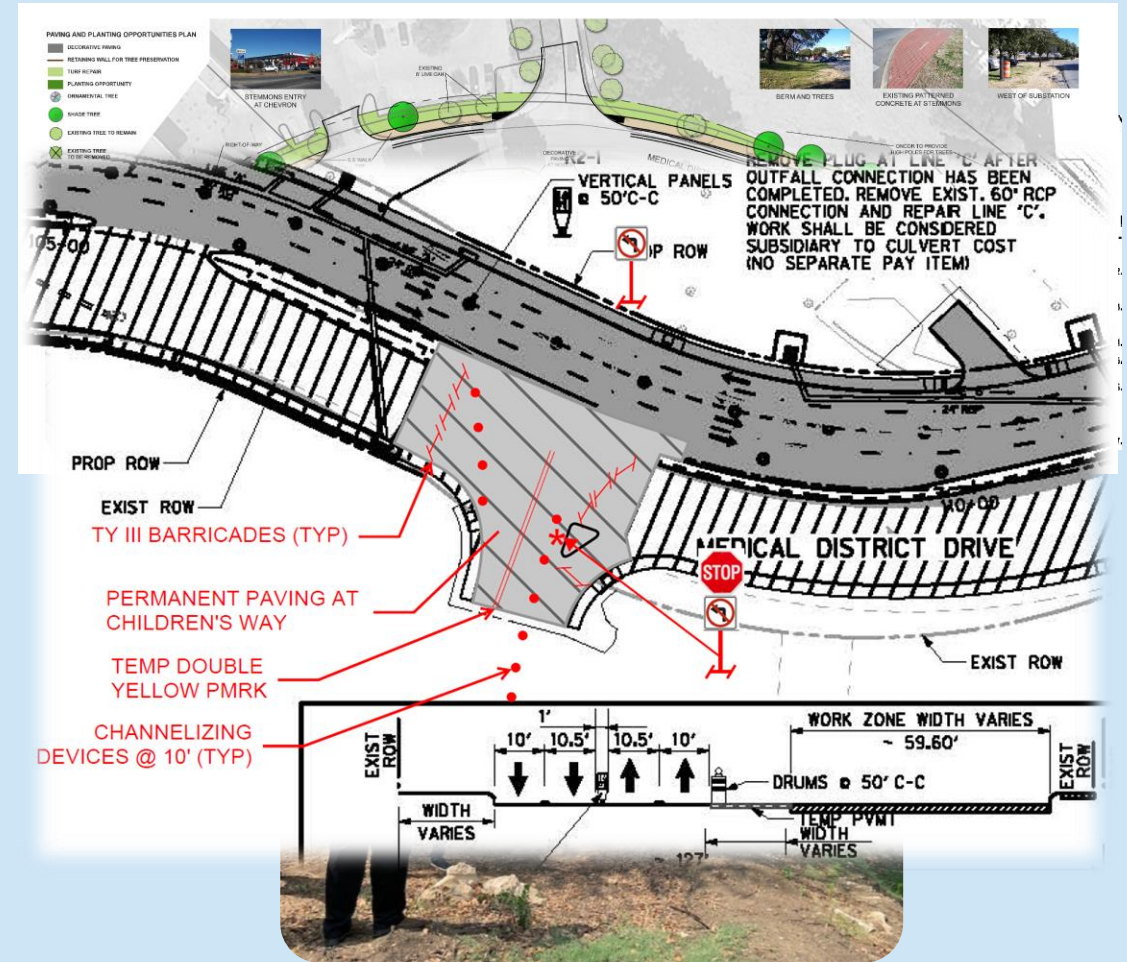
*Stakeholder Signatures:*  
 Tom Green, Dallas County  
 Keith Bergman, Koolhaas Hoot and Associates, Inc.  
 Carlos Davison, Southwestern Medical District  
 Linda Trevino, Jacobs  
 Steven Wilson, Jacobs  
 Steven Salcedo, Jacobs  
 Elizabeth Hovest, Jacobs  
 Ali Zahedi, Jacobs  
 Spencer Isaac, Jacobs  
 John Hovest, Jacobs  
 Michael, Jacobs  
 Commissioner Rita Garcia, Dallas County  
 DWU, Dallas County  
 Jim Chishti, Dallas County  
 Dallas County - PD  
 Ann Kamuchela, Jacobs  
 Ash, City

AT CONSTRUCTION KICK-OFF

# Benefits – Some Examples



- CMC improved downstream storm trunk, increasing system capacity
- CMC took over/redesigned fronting sidewalk → saving trees, adding plants
- TTF provided expert assistance with tree preservation
- Project revised traffic control to minimize disruption, add movements



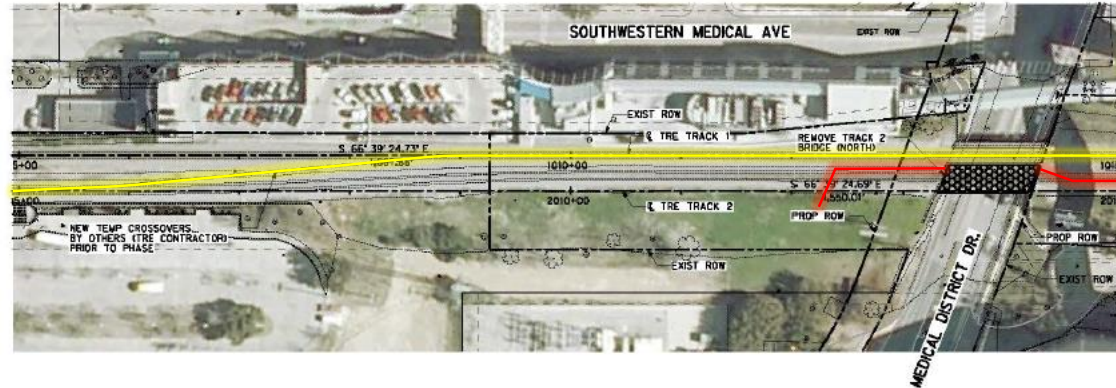
# Benefits – Some Examples



- Elimination of Shoofly Bridge saved project over \$1.1 M during design
- TRE contractor responsible for RR Safety Training, flagging, and track construction
- Project re-graded areas for future track signal and removed bungalow



# Maintaining Rail Services



- LEGEND**
- ▨ PERMANENT PVMT THIS PHASE/STAGE
  - ▨ TEMP PVMT THIS PHASE/STAGE
  - ▨ BRIDGE WORK THIS PHASE/STAGE
  - ▨ COMPLETED PERMANENT PVMT
  - ▨ COMPLETED TEMP PVMT
  - ▨ COMPLETED PERMANENT BRIDGE WORK
  - ▲ TCP SIGN
  - CHANNELIZING DEVICES
  - TYPE II BARRICADE
  - ➔ TRAFFIC FLOW ARROW (PROP)
  - ➔ TRAFFIC FLOW ARROW (EXIST)

MATCH LINE NB STA 1015+00

**PHASE 2B:**

1. THE CONTRACTOR WILL REMOVE TRACK 2 FROM SERVICE IN COORDINATION WITH CONTRACTOR WORKING ON MEDICAL DISTRICT DRIVE (MDD), AFTER SWITCHING RAIL SERVICE TO TRACK 1.
2. THE CONTRACTOR WILL REMOVE RAIL AND BALLAST BETWEEN TRACK 2 STATION 2006+00 TO STATION 2036+00.
3. MDD CONTRACTOR TO REMOVE TRACK 2 BRIDGE ACROSS MDD.

**PHASE 2C:**

1. MDD CONTRACTOR TO CONSTRUCT NEW TRACK 2 BRIDGE ACROSS MDD, ASSOCIATED RETAINING WALLS, AND EMBANKMENT FOR NEW TRACK 2 ALIGNMENT.
2. THE CONTRACTOR WILL FOLLOW UP ITEM 1 AND PLACE BALLAST, TIES AND RAIL.
3. THE CONTRACTOR WILL TEST RAIL AND GET TRACK 2 READY FOR SERVICE.



MATCH LINE NB STA 1015+00



**UEG**  
urban | engineers | group

187 Turtle Creek Blvd, 4th & Dallas, Texas 75207  
(214) 208-1000 p  
(214) 202-1612 f  
FIRM REGISTRATION No. F0332

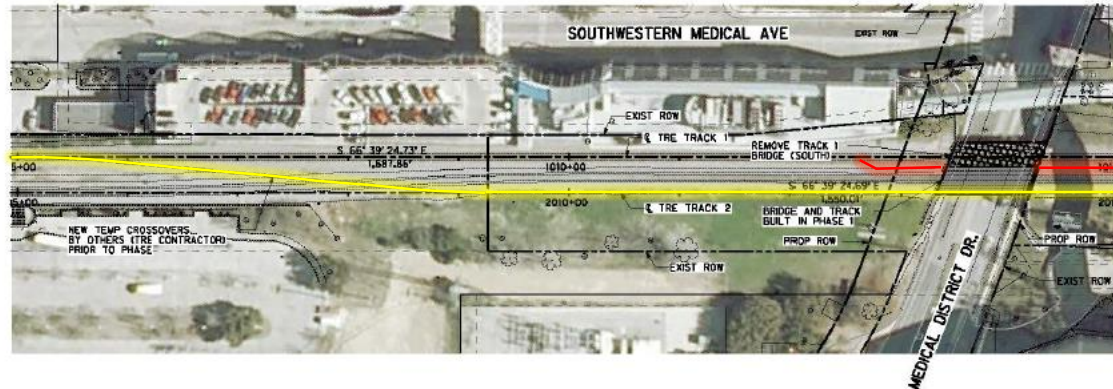
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**MEDICAL DISTRICT DRIVE**  
TRAFFIC CONTROL PLAN  
PHASE 2B & 2C

Scale 1"=100'(H) SHEET 2 OF 2

DESIGN	FSS	FEAT/NO. DATE	6	FEDERAL AID PROJECT NO.	(See Title Sheet)	ROUTE NO.	
CHECK	FSS	STATE	TEXAS	DISTRICT	DALLAS	SHEET NO.	25
DATE	HR	CONTR. SECTION	0918	45	884		

# Maintaining Rail Services



**LEGEND**

- PERMANENT PVMT THIS PHASE/STAGE
- TEMP PVMT THIS PHASE/STAGE
- BRIDGE WORK THIS PHASE/STAGE
- COMPLETED PERMANENT PVMT
- COMPLETED TEMP PVMT
- COMPLETED PERMANENT BRIDGE WORK
- TCP SIGN
- CHANNELIZING DEVICES
- TYPE II BARRICADE
- TRAFFIC FLOW ARROW (PROP)
- TRAFFIC FLOW ARROW (EXIST)



### PHASE 3B.

1. THE CONTRACTOR WILL BUILD NEW TEMPORARY CROSSOVER FROM TRACK 1 TO NEW TRACK 2.
2. THE WILL REMOVE TRACK 1 FROM SERVICE IN COORDINATION WITH MDD CONTRACTOR.
3. THE CONTRACTOR WILL REMOVE RAIL AND BALLAST BETWEEN TRACK 1 STATION 1006+00 TO STATION 1036+00.
4. MDD CONTRACTOR TO REMOVE TRACK 1 BRIDGE ACROSS MDD.

### PHASE 3C.

1. MDD CONTRACTOR TO CONSTRUCT NEW TRACK 1 BRIDGE ACROSS MDD, ASSOCIATED RETAINING WALLS, AND EMBANKMENT FOR NEW TRACK 1 ALIGNMENT.
2. THE CONTRACTOR WILL FOLLOW UP ITEM 1 AND PLACE BALLAST, TIES AND RAIL, COMPLETE ALL TRACK CROSS OVERS.
3. THE CONTRACTOR WILL TEST RAIL AND GET TRACK 1 READY FOR SERVICE.
4. BOTH TRACKS 1 AND 2 ARE IN SERVICE AFTER COMPLETION OF PHASE 2.



**UEG**  
urban | engineers | group

187 Turle Creek Blvd, Ste A  
Dallas, Texas 75207  
(214) 202-1600 p  
(214) 202-1613 f  
FIRM REGISTRATION NO. F0332

**Texas Department of Transportation**  
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**MEDICAL DISTRICT DRIVE**  
TRAFFIC CONTROL PLAN  
PHASE 3B & 3C

Scales: 1"=100'(H) SHEET 2 OF 2

DESIGN	PERM. DESIG.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
FSS	6	(See Title Sheet)	CS
CHECK			
FSS	STATE	DISTRICT	COUNTY
GRAPHIC	TEXAS	DAL	DALLAS
HR	CONTROL SECTION	JOS	
CHECK	FSS	0918	45
			884
			27

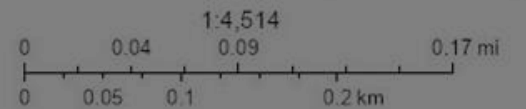
# Challenges & Innovations



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Dallas County Thoroughfare Designation

— PRIMARY ARTERIAL



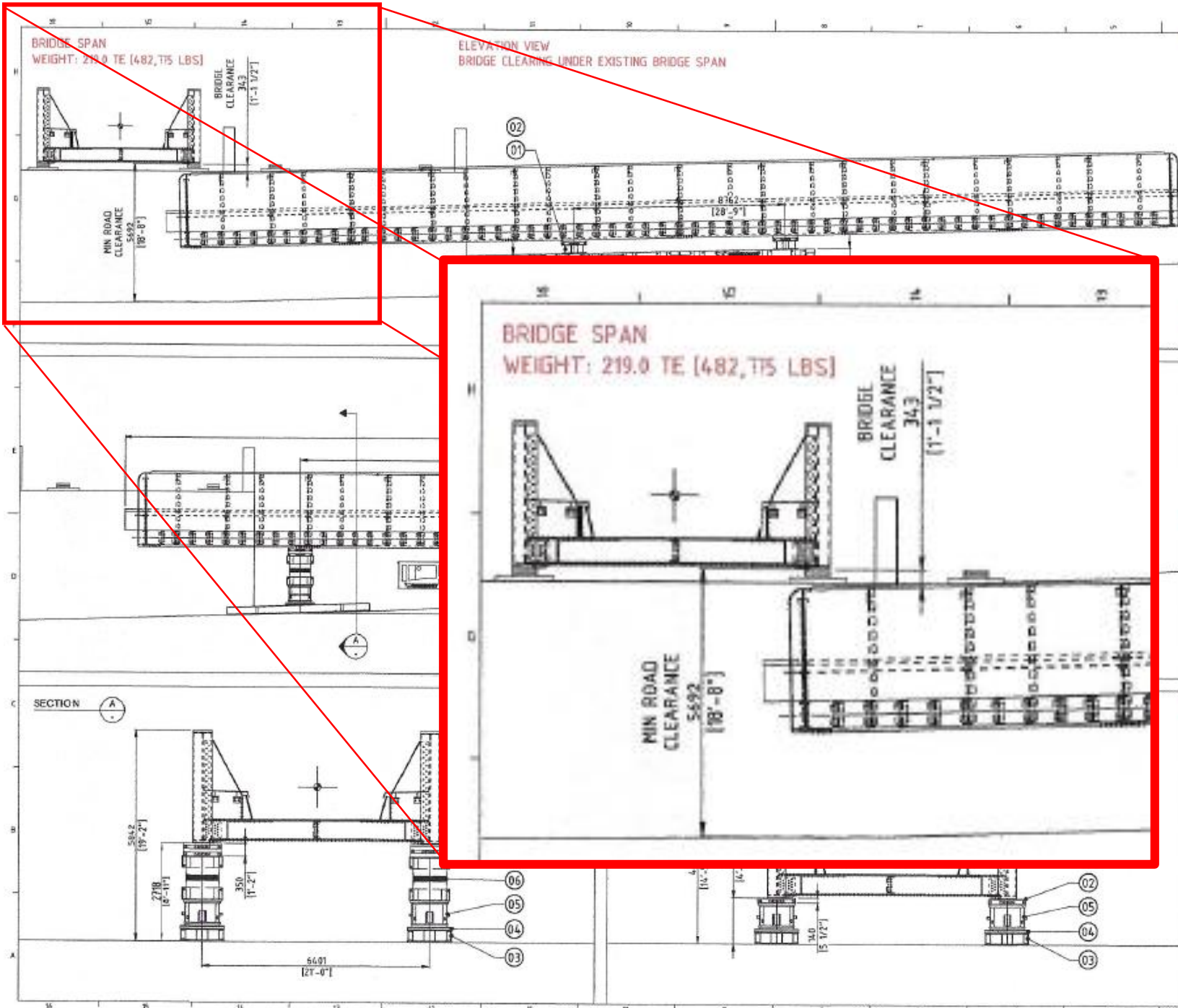
# Construction Challenges

- Despite months of coordination with all stakeholders, Oncor power pole project was not communicated with Dallas County
- Immediately required re-design of City of Dallas box culverts behind CMC's purple parking garage
- Further constrained bridge replacement working conditions









- GENERAL NOTES**
- 1 THE CLIENT IS RESPONSIBLE FOR THE PREPARATION OF THE TRANSPORT AREA TO ENSURE THAT IT IS CAPABLE OF ACCOMMODATING THE LOADS GENERATED BY THE TRAILERS AND JACKING ARRANGEMENTS DURING ALL TRANSPORT / LOADING / UNLOADING AND JACKING OPERATIONS. GROUND TO BE SUITABLE, COMPACTED & LEVELLED FOR SAFE & CONVENIENT TRANSPORT OPERATION.
  - 2 THE CLIENT IS RESPONSIBLE FOR THE STRUCTURAL INTEGRITY OF THE LOAD TO BE JACKED AND TRANSPORTED.
  - 3 THE CLIENT IS TO IDENTIFY AND CONFIRM THE SUITABILITY OF THE SUPPORT POINTS TO BE UTILIZED DURING THE JACKING AND TRANSPORT OF THE LOAD.
  - 4 SECURE CARGO ONTO THE TRAILER USING LASHING MATERIAL, TO PREVENT SLIDING AND/OR TIPPING OFF THE LOAD.
  - 5 3/4 PLYWOOD OR ANTI SLIP MATERIAL TO BE USED BETWEEN ALL STEEL CONTACT AREAS TO PROMOTE FRICTION.
  - 6 ALL CHAINS GRADE TO 1/2 11,300 LB. CAPACITY (SINGLE) AND TIGHTENED WITH BINERS (NOT SHOWN) 13,000 LB. CAPACITY.
  - 7 THIS DRAWING IS PREPARED ON THE INFORMATION RECEIVED FROM THE CLIENT.
  - 8 CLIENT SHALL VERIFY AND CONFIRM THAT THE REFERENCE DRAWINGS ARE CORRECT AND ACCORDING TO THE LATEST REVISIONS.
  - 9 ADDITIONAL LOWERING STEP MAY BE REQUIRED TO SET BRIDGE ON BEARING PADS. SEE SHEET 4 FOR DETAILS.

**MATERIALS LIST**

POS	QTY	DESCRIPTION	MATERIAL/ CAPACITY	DIMENSIONS	WEIGHT (lbs each)
01	2	Loadspreader 25'	P00LSP-254114	25' x 35" x 12"	6200
02	10	Jacking Timbers	100 Pieces/Box	35" x 4" x 4"	3000
03	8	Loadspreader 20' 1	P00LSP-204812-01	20'1 x 4" x 1"	5600
04	4	Jacking Plate 2"		4' x 4' x 2"	1300
05	4	Climbing Jacks 500 Tn	P00JA-CL-DA-500-4	38" x 35" x 25"	4630
06	8	Support Cylinder 4"	P00SUL-H48-34D-3	38" x 35" x 4"	2620
07	4	Climbing Jacks 300 Tn	P00JA-CL-DA-300-2	29" x 27" x 1'10"	1744
08	4	Support Cylinder 2 1/2"	P00SUL-H40-34D-1	38" x 35" x 3 1/4"	2520
09	16	Support Cylinder 2"	P00SUL-H24-20D-2	38 x 38 x 2"	2200
10	4	Mega Jack 250 Tn	P00JA-HY-DA-250-1	78" x 78" x 8 1/2"	14500
TOTAL (lbs):					247,592

**REFERENCE DRAWINGS**

REF	DRAWING NUMBER	REV
01	1017-010-0534-MCIP-30208-Plans-CP	22MAY2017
02	E1 - Rev 0	

**DRAWING STATUS**

APPROVED FOR EXECUTION

00	Final Issue	17JUN22	REV	DATE	BY	CHKD	DATE
REV	DESCRIPTION	DATE	DRAWN	DATE	CHKD	DATE	

Without authorized signature this document is uncontrolled, not binding, and for information purposes only.

CLIENT: **Yellowstone Crane**

PROJECT: **Dallas Bridge Replacement**

TITLE: **Jacking Arrangement for Bridge Span**

**MAMMOET**

2500 Park Ave., Suite 1000  
Tel: +1 870 360 2300 Fax: +1 870 360 2310  
www.mammoet.com

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SCALE: NTS SIZE: D DRAWING NUMBER

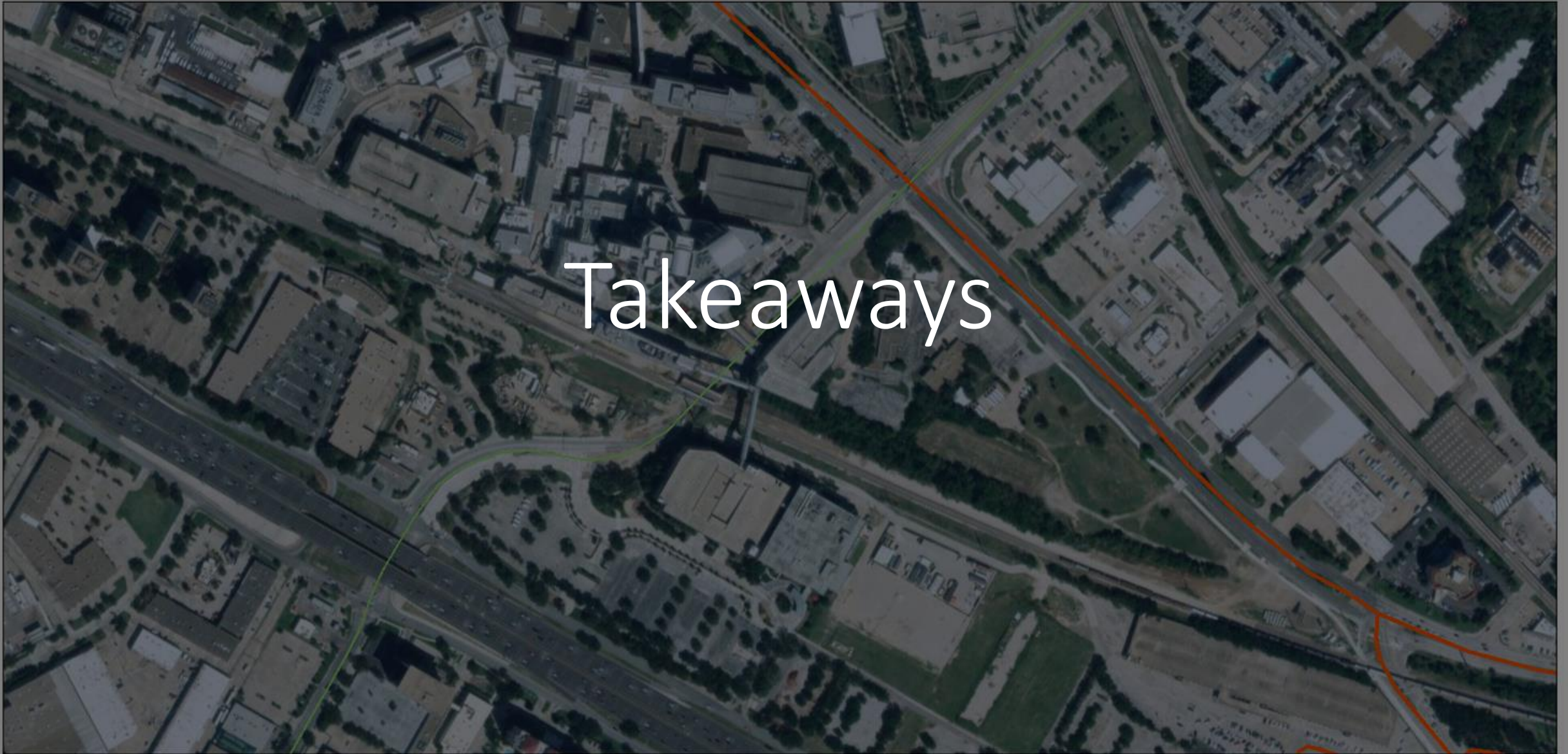
SAP No:	PROJECT No:	SUB:	DOCS:	PART:	SHT:	REV:
7000246031	15072930 - P033 - D -	J03	-	2/4	-	00

# Construction Webcam



- Enabled continual oversight of project by County, partners and consultant team
- Helped overcome issues raised during COVID lockdown and periods of severe weather
- Created a permanent visual record of the project.

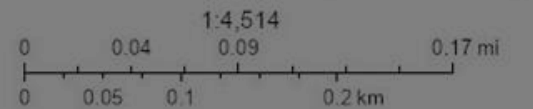
# Dallas County Throughfare Map



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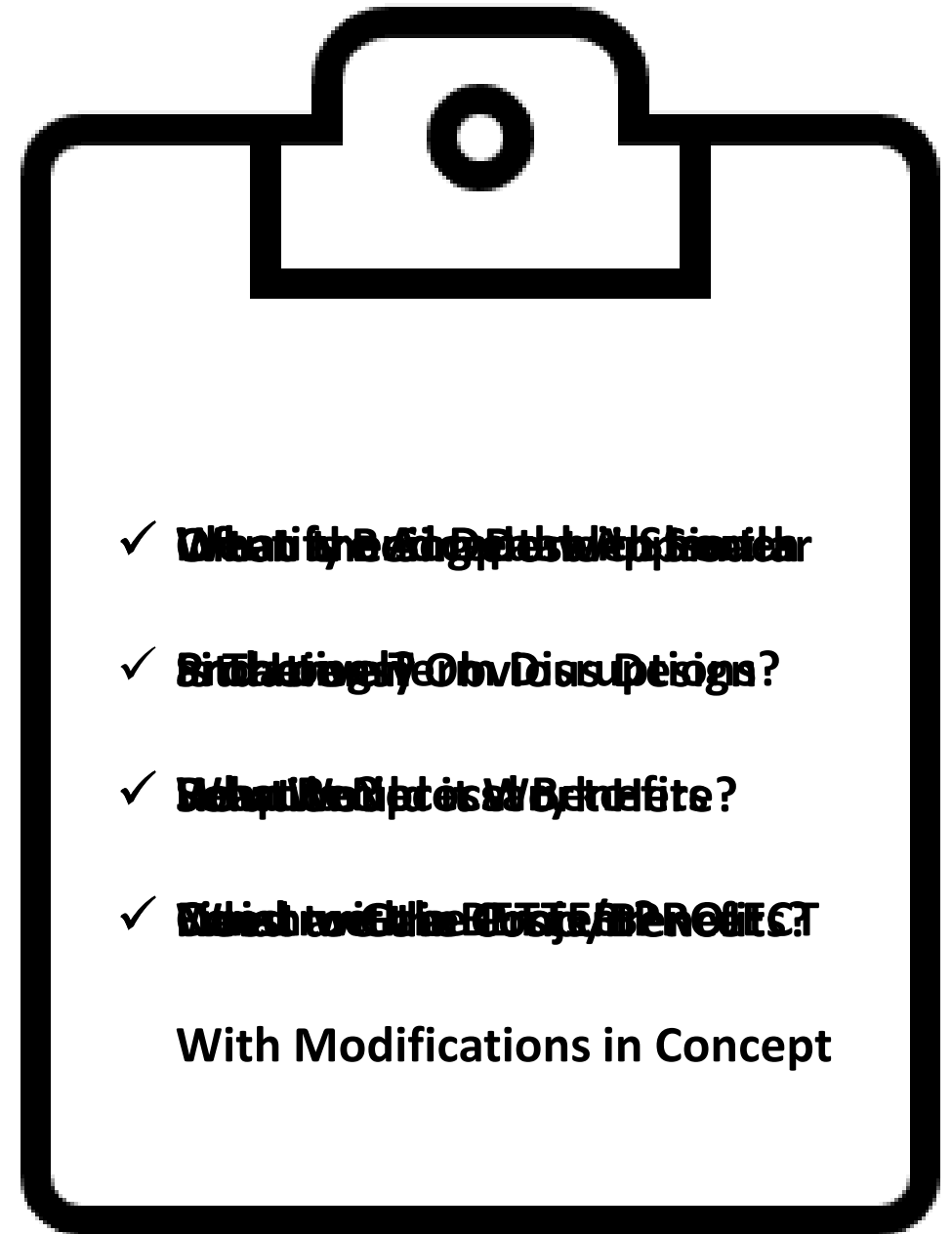
Dallas County Thoroughfare Designation

— PRIMARY ARTERIAL

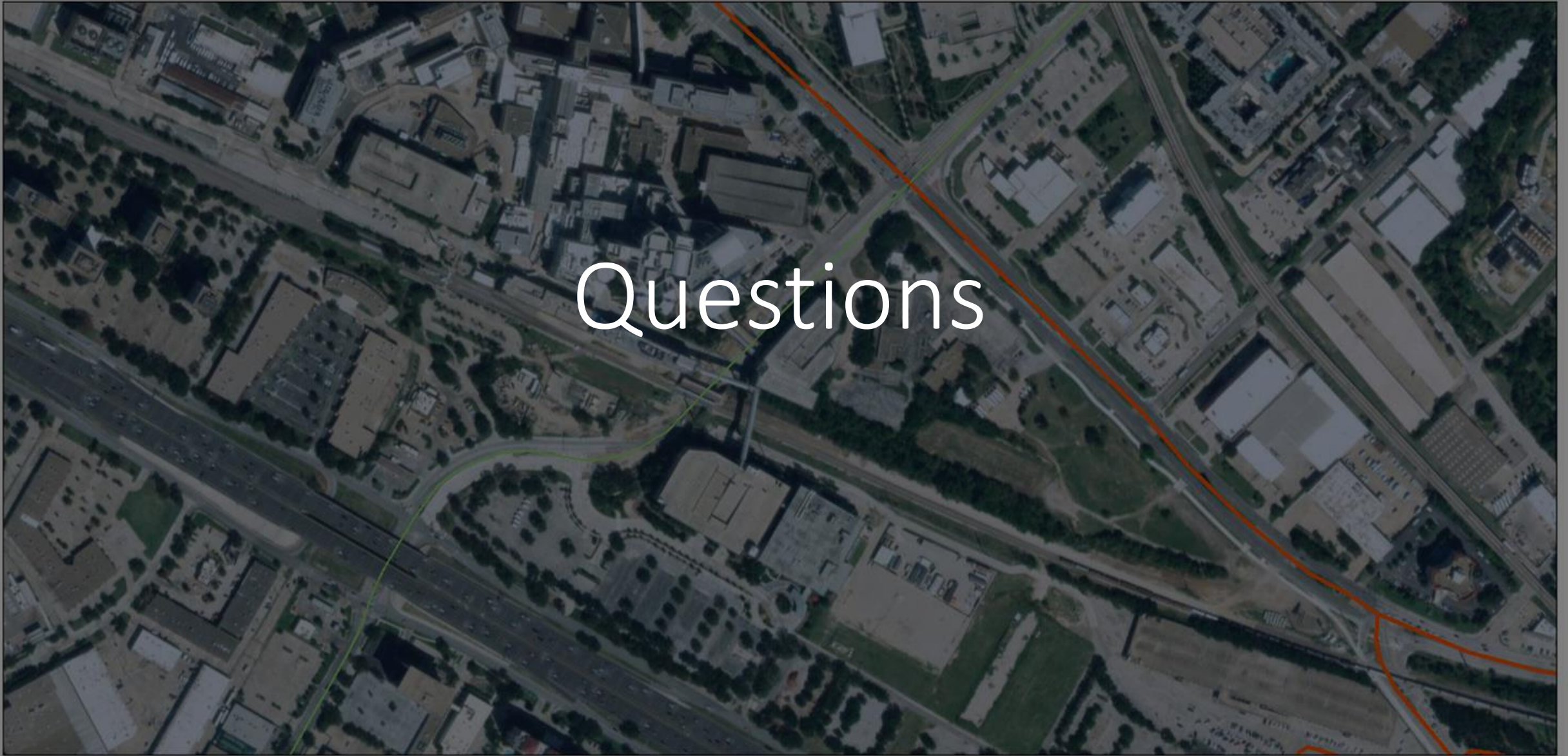


# Lessons Learned

- Pursue and Reinforce Partnerships
- Examine Design Constraints
- Explore Available Technological Solutions
- Identify Ways to Adapt the Design in Construction



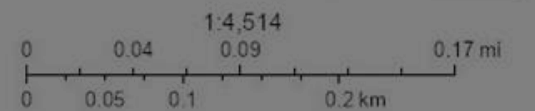
# Dallas County Throughfare Map



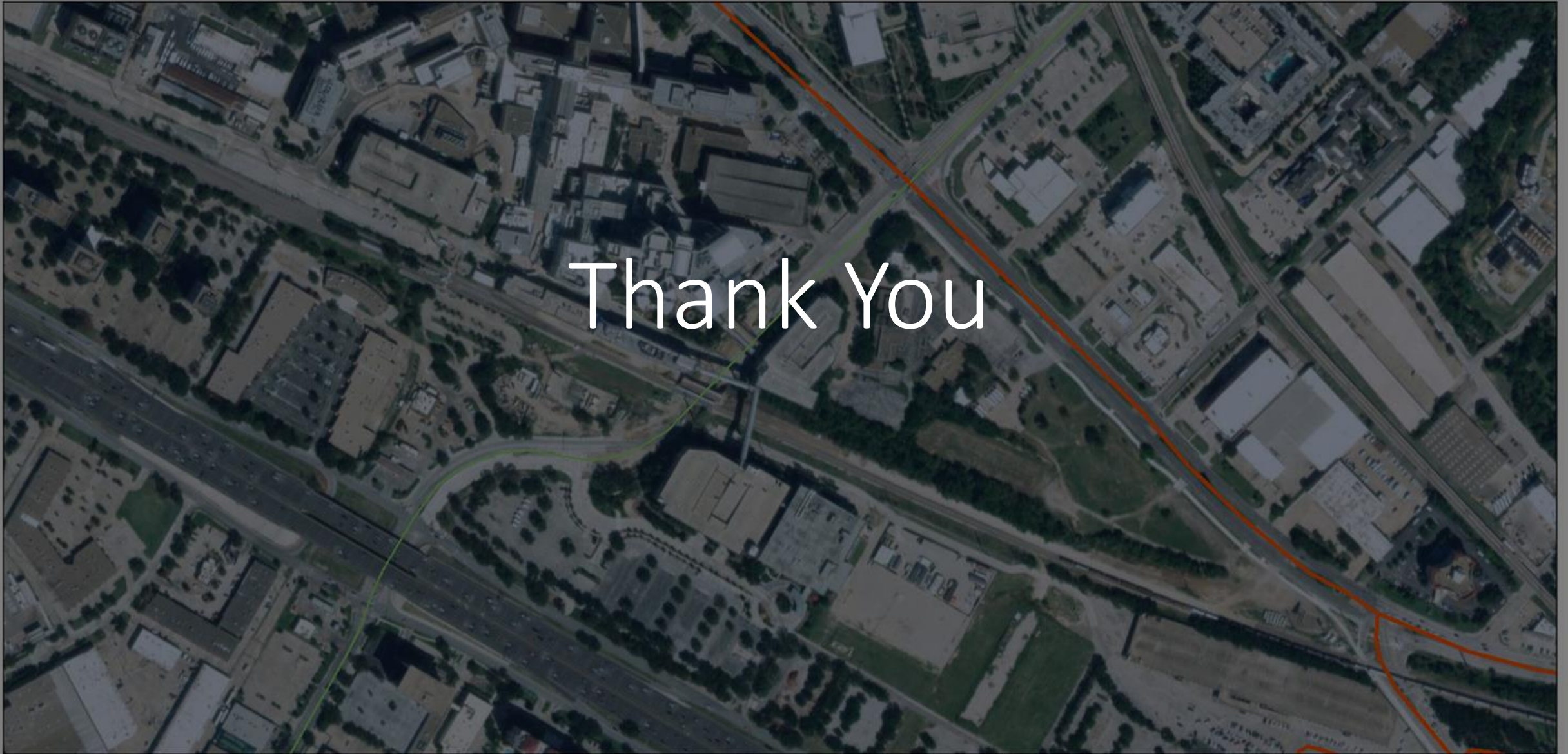
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Dallas County Thoroughfare Designation

— PRIMARY ARTERIAL



# Dallas County Throughfare Map



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Dallas County Thoroughfare Designation

— PRIMARY ARTERIAL

