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IH 35E Managed Lanes Project SB 1420 Committee

March 9, 2012
City Council Chambers
City of Denton

Agenda Items 1-5

1. Welcome and Introductions – Presentation and handouts are available on the following website:
http://www.txdot.gov/project_information/projects/dallas/i35e/sb1420.htm
2. Approval of Minutes from December 19, 2011 (Handout 2.1)
ACTION ITEM
3. Grand Parkway Discussion
4. RTC Resolution (Handouts 4.1 and 4.2)
5. Environmental Clearance (Handouts 5.1, 5.2 and 5.3)

6. DRAFT Baseline Option & Revenue

Scenario 10 Project Summary

Managed Lanes

- Provide two reversible Managed Lanes between IH 635 and Loop 288 (minor improvements up to and including US 77)

General Purpose and Frontage Roads

- Re-use existing pavement where possible, add one general purpose lane in each direction from IH 635 to Loop 288
- Reconstruction of general purpose lanes deferred until 2023

Lake Lewisville

- Connect frontage roads across Lake Lewisville
- Build most of the ultimate southbound bridge; includes frontage roads, general purpose lanes and managed lanes
- Bridge width narrower than Scenario 6A

SH 121/IH 35E Interchange

- Construct the missing direct connector ramps to the North

Collector Distributor System at PGBT and SH 121

- Construct minimized collector-distributor (CD) system between PGBT and SH121 (toll CD's)

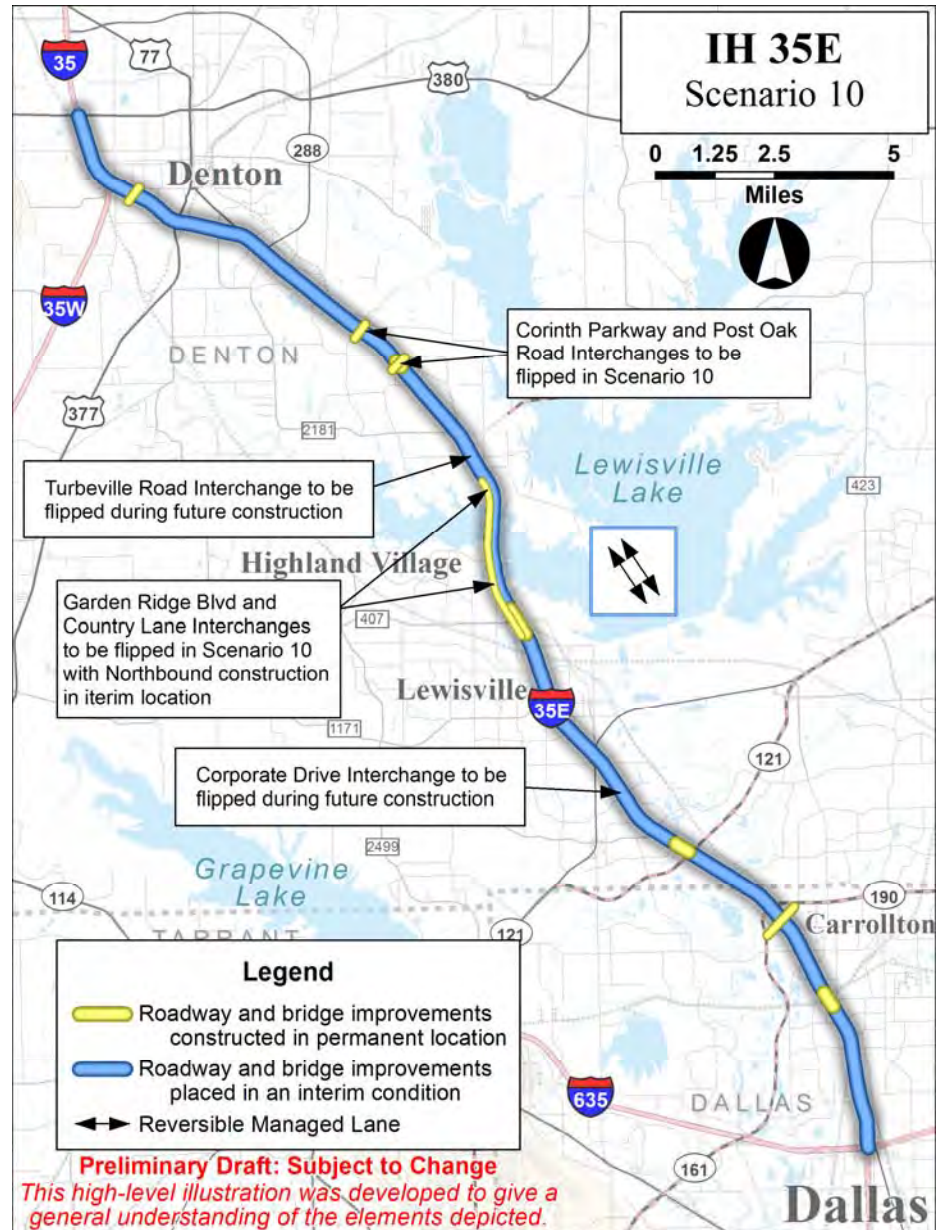
Right-of-Way Acquisition

- Minimized ROW acquisition/utility relocation where possible

Potential additional scope items

- One general purpose lane each direction from Loop 288 to US 380
- Full southbound bridge width at Lake Lewisville (same as 6A)
- Connection with IH 635

PRELIMINARY: SUBJECT TO CHANGE



6. DRAFT Baseline Option & Revenue

Segment Number & Limits		Length (Mi)	Cost ROW	Cost D-B	Total Cost
16	IH 35W - US 380*	1.2	\$ -	\$ 7	\$ 7
15	Loop 288 S - IH 35W*	3.8	\$ 23	\$ 39	\$ 62
14	Post Oak Drive - Loop 288 S	2.5	\$ -	\$ 63	\$ 63
13	Interchange @ Post Oak Drive	0.2	\$ -	\$ 11	\$ 11
12	Corinth Parkway - Post Oak Drive	0.7	\$ -	\$ 15	\$ 15
11	Interchange @ Corinth Parkway	0.6	\$ 29	\$ 30	\$ 59
10	Turbeville Road - Corinth Parkway	2.2	\$ -	\$ 46	\$ 46
9	FM 407 - Turbeville Road	3.4	\$ 149	\$ 261	\$ 410
	Additional bridge width at Lake Lewisville*		\$ -	\$ 8	\$ 8
8	Interchange @ FM 407	0.6	\$ 24	\$ 32	\$ 56
7	SH 121 - FM 407	5.5	\$ -	\$ 127	\$ 127
6	Interchange @ SH 121	0.9	\$ 49	\$ 79	\$ 128
5	Dickerson Parkway - SH 121	1.9	\$ -	\$ 103	\$ 103
4	Interchange @ Dickerson Parkway	0.1	\$ 63	\$ 54	\$ 118
3	Belt Line Road - Dickerson Parkway	1.4	\$ -	\$ 33	\$ 33
2	Interchange @ Belt Line Road	1.0	\$ 79	\$ 116	\$ 195
1	IH 635 - Belt Line Road	2.1	\$ -	\$ 50	\$ 50
0	Interchange Connection @ IH 635*	0.9	\$ -	\$ 40	\$ 40
Totals without additional items		23.1	\$ 394	\$ 1,021	\$ 1,415
Totals with additional items		29.0	\$ 417	\$ 1,115	\$ 1,532
All Costs in Millions (Nominal).					
*Item added to project at the request of SB 1420 Committee.					

Notes:

1. Costs shown are based on conceptual design and intended for planning purposes only. Right of Way costs are not intended to represent actual or projected Right-of-Way acquisition costs for the project. A detailed, or per parcel analysis was not performed. These costs are not final and are subject to change.
2. Grayed boxes with ROW costs indicate full or partial construction of the ultimate project– FM 407 to Turbeville is SB construction of the ultimate only.

PRELIMINARY DRAFT: SUBJECT TO CHANGE



6. DRAFT Baseline Option & Revenue - Summary

	Existing	6A	9	10
Length of Project	23.1	23.1	23.1	23.1
Limits	IH 635 - LP 288	IH 635 - LP 288	IH 635 - LP 288	IH 635 - LP 288
Cross Section North (2181 to 288)	2-2	2-2R-2	3-2R-3	3-2R-3
Cross Section Middle (C/L to 2181)	3-3	3-2R-3	4-2R-4	4-2R-4
Cross Section South (635 to C/L)	3-1-1-3	3-2R-3	4-2R-4	4-2R-4
Design/Build Costs	-	\$2,011	\$2,025	\$1,415
Add general purpose lane each direction from Loop 288 to US 380	-	\$69	\$69	\$69
IH 635 interchange connection	-	\$35 - \$40	\$35 - \$40	\$35 - \$40
Additional cost for shared use path on southbound Lake Lewisville bridge	-	-	-	\$6 - \$8

All Costs in millions (nominal)

**Capital costs for Scenarios 6A, 9, and 10 do not include costs associated with the construction of the IH 635 interchange.*

The information and analysis contained herein is preliminary in nature and for planning purposes only, and cannot be relied upon by any third party. The scenarios and costs, traffic, revenue, and financial projections were prepared in good faith and with reasonable care but is limited by the conceptual nature of the design. Data provided is subject to change up until contract award. The scenarios and results provided may vary from those resulting from the procurement process.

6. DRAFT Baseline Option & Revenue - Summary

	Existing	6A	9	10
Length of Project	23.1	23.1	23.1	23.1
Limits	IH 635 - LP 288	IH 635 - LP 288	IH 635 - LP 288	IH 635 - LP 288
Lane Miles - managed lanes (Total / Change from existing)	15.4 (HOV)	46.5 / 31.1	46.5 / 31.1	46.5 / 31.1
Lane Miles - general purpose * (Total / Change from existing)	130.6	157.8 / 27.2	198.2 / 67.6	188 / 57.4
Lane Miles - frontage roads (Total / Change from existing)	86.3	94.6 / 8.3	94.6 / 8.3	93.7 / 7.4
Design/Build Costs (nominal \$ millions)	-	\$2,011	\$2,025	\$1,415
Concession – Public Subsidy Required (nominal \$ millions)	-	\$812	\$1,157	\$745

* General Purpose lane calculation includes collector-distributor lanes in the area of PGBT and SH 121

Scenario 10 will include an additional 1.8 lane miles of general purpose lanes at the interchange connection at IH 635, an additional 7.6 lane miles of general purpose lanes from Loop 288S to IH 35W, and additional 2.4 lane miles of general purpose lanes from IH 35W to US 380

Capital costs for Scenarios 6A, 9, and 10 do not include costs associated with the construction of the IH 635 interchange.

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Agenda Items 7-10

7. Request for Qualifications Status:

http://www.txdot.gov/project_information/projects/dallas/i35e/rfq.htm

8. Discussion of the issuance of the report of determinations made by the committee to the Executive Director of TxDOT regarding the IH 35E Managed Lanes Project (**Handout 8.1**)

- RTC Policy on Managed Lanes (**Handout 8.2**)
- Public, Private, Combination of Public Private finance
- Toll Revenue Risk

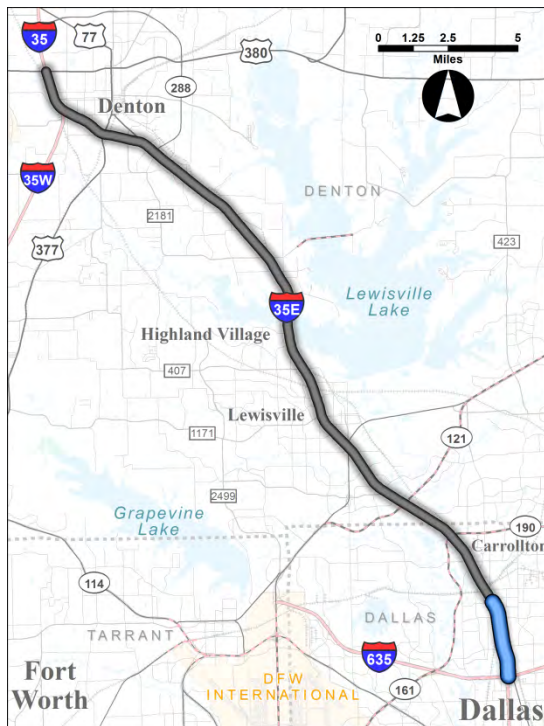
9. Public Comments

10. Adjourn – **ACTION ITEM**

Appendix A – Scenario 10 Breakout

Scenario 10: Segment 1 – IH 635 to Belt Line Road

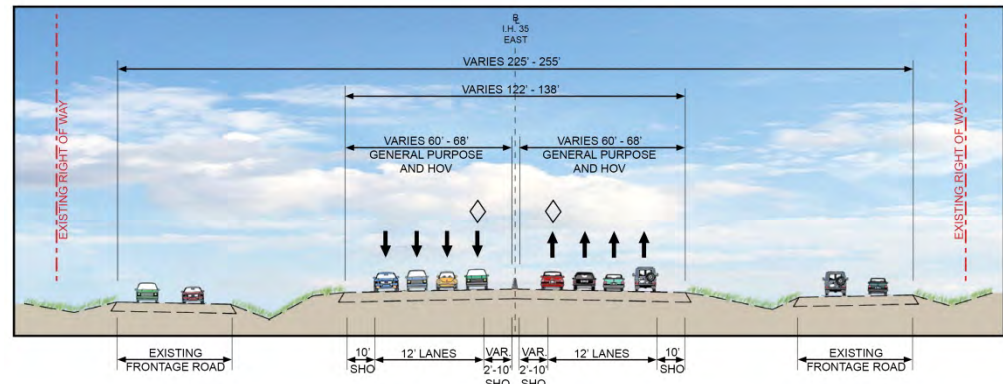
Length	2.1 miles
Estimated Design & Construction Cost	\$50 M
Estimated Right-of-Way Cost	\$0



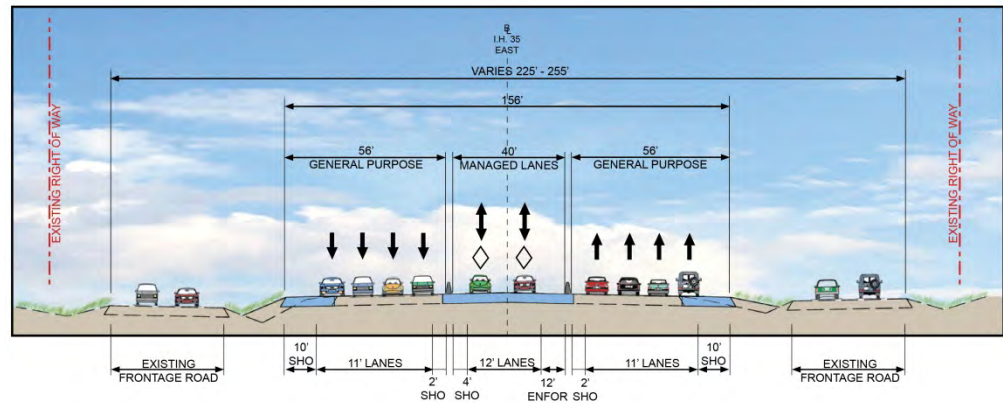
PRELIMINARY: SUBJECT TO CHANGE

Right-of-Way costs shown are based on conceptual design and intended for planning purposes only and are not intended to represent actual or projected Right of Way acquisition costs for the project. A detailed, or per parcel, analysis was not performed. These costs are not final and are subject to change.

Existing Typical Section



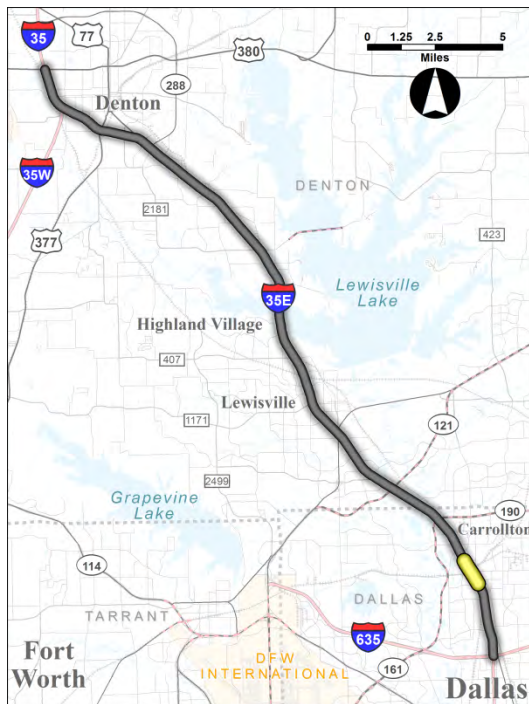
Proposed Typical Section



Segment 1 Details	Existing Lanes Each Way	Proposed Lanes Each Way	Additional Lane Miles
General Purpose Lanes	3	4	4.2
Managed Lanes	1	2 (reversible)	0
Frontage Road Lanes	2	2	0
Total			4.2

Scenario 10: Segment 2 – Belt Line Road Interchange

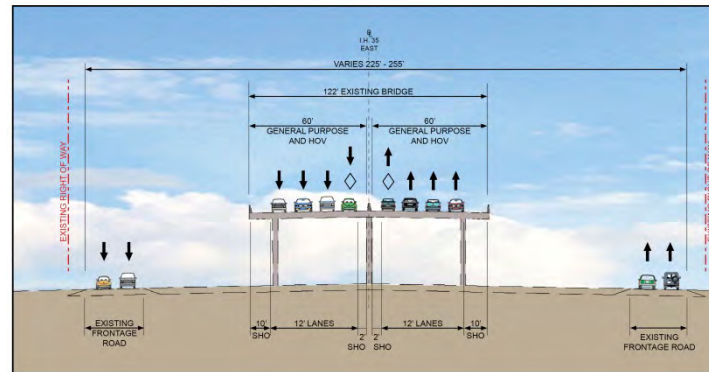
Length	1 mile
Estimated Design & Construction Cost	\$116 M
Estimated Right-of-Way Cost	\$79 M



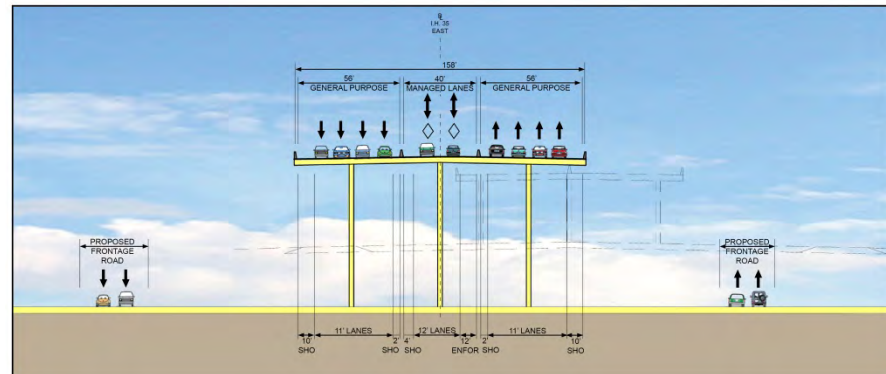
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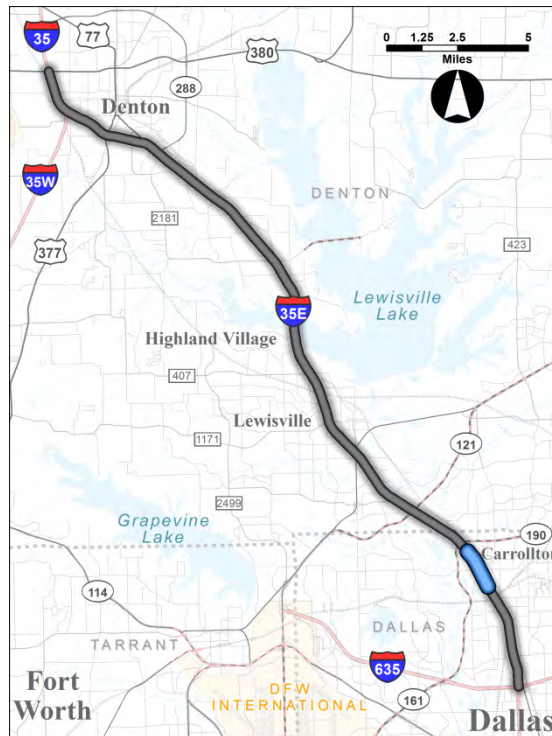
Proposed Typical Section



Segment 2 Details	Existing Lanes Each Way	Proposed Lanes Each Way	Additional Lane Miles
General Purpose Lanes	3	4	2
Managed Lanes	1	2 (reversible)	0
Frontage Road Lanes	2	2	0
Total			2

Scenario 10: Segment 3 – Belt Line Road to Dickerson Parkway

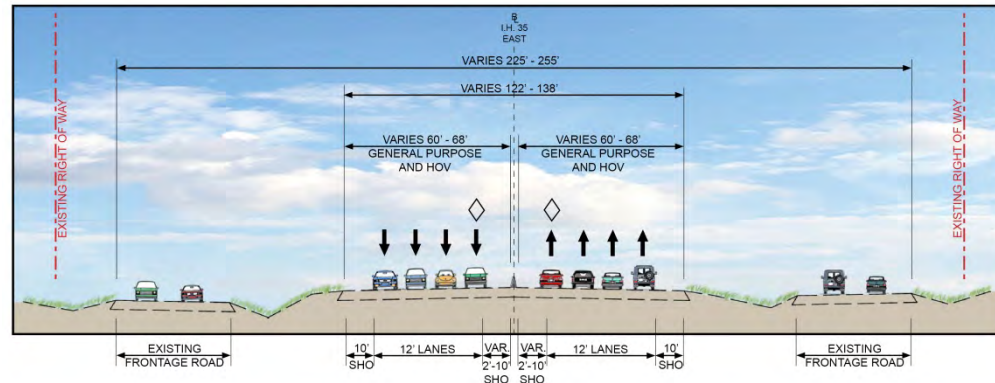
Length	1.4 miles
Estimated Design & Construction Cost	\$33 M
Estimated Right-of-Way Cost	\$0



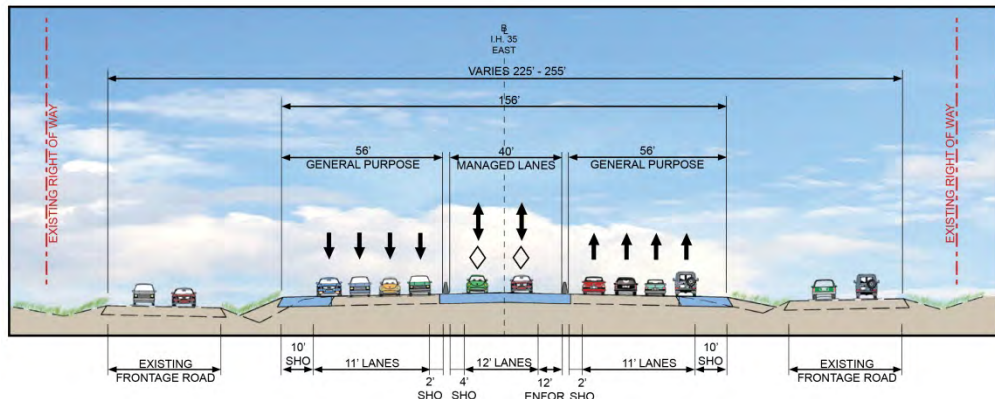
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Existing Typical Section



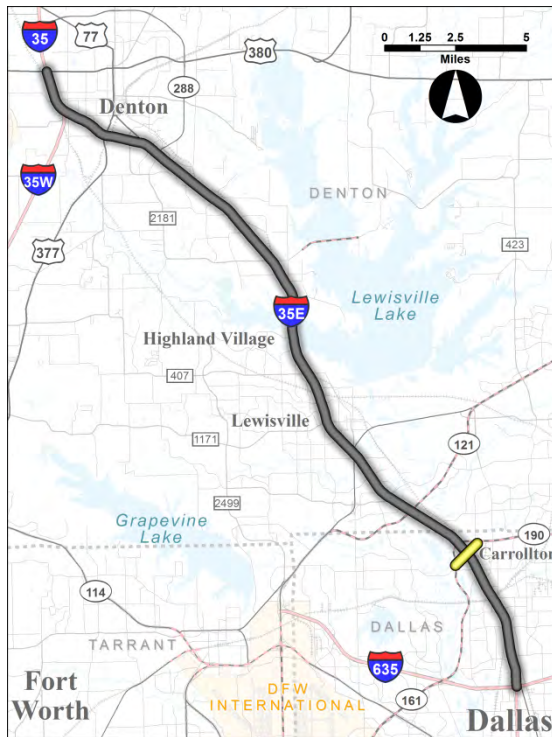
Proposed Typical Section



Segment 3 Details	Existing Lanes Each Way	Proposed Lanes Each Way	Additional Lane Miles
General Purpose Lanes	3	4	2.8
Managed Lanes	1	2 (reversible)	0
Frontage Road Lanes	2	2	0
Total			2.8

Scenario 10: Segment 4 – Dickerson Parkway Interchange

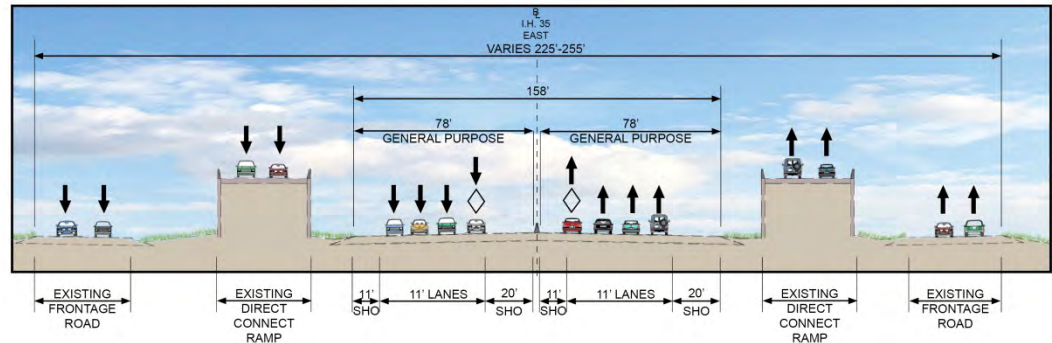
Length	0.1 miles
Estimated Design & Construction Cost	\$54 M
Estimated Right-of-Way Cost	\$63 M



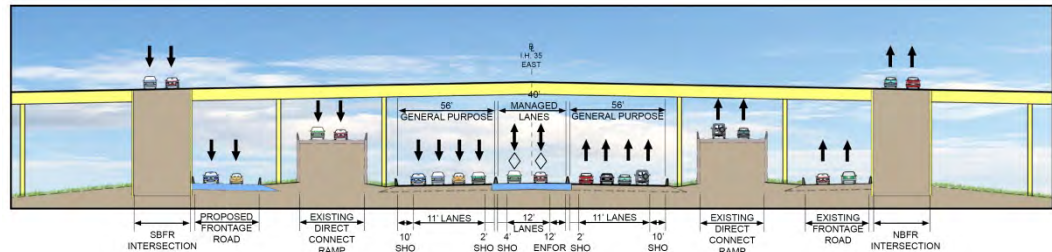
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Existing Typical Section



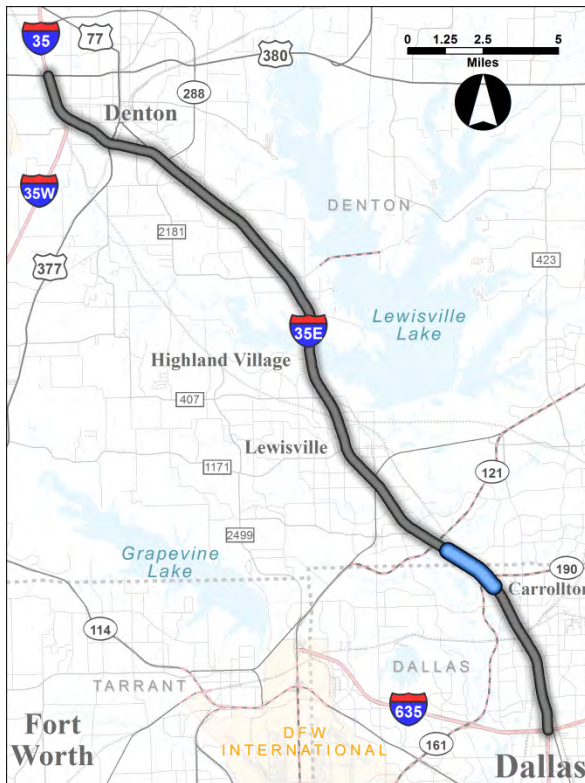
Proposed Typical Section



Segment 4 Details	Existing Lanes Each Way	Proposed Lanes Each Way	Additional Lane Miles
General Purpose Lanes	3	4	0.2
Managed Lanes	1	2 (reversible)	0
Frontage Road Lanes	2	2	0
Total			0.2

Scenario 10: Segment 5 – Dickerson Parkway to SH 121

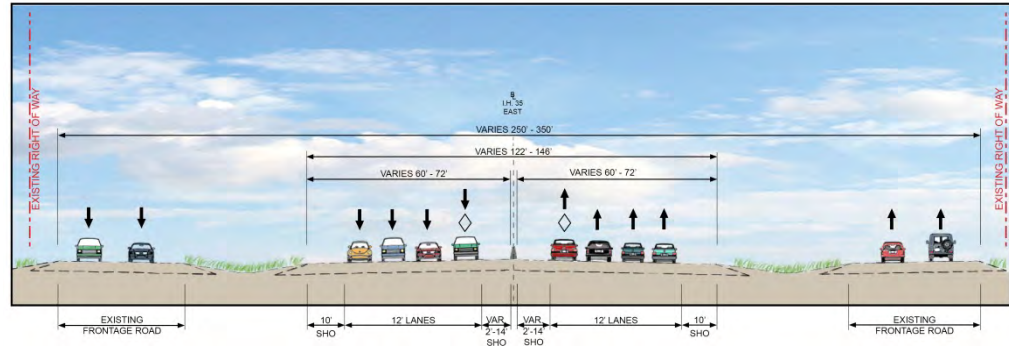
Length	1.9 miles
Estimated Design & Construction Cost	\$103 M
Estimated Right-of-Way Cost	\$0



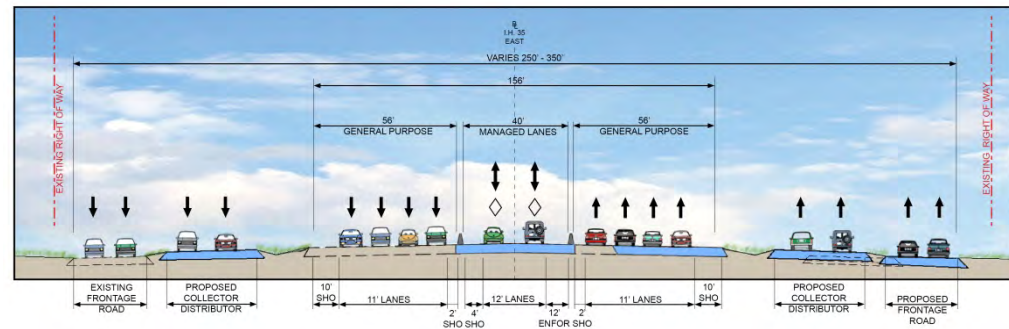
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Existing Typical Section



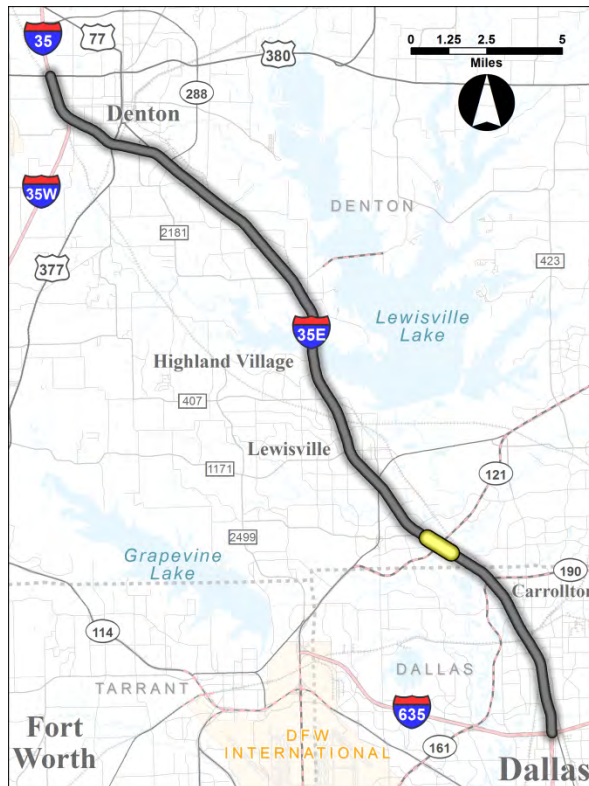
Proposed Typical Section



Segment 5 Details	Existing Lanes Each Way	Proposed Lanes Each Way	Additional Lane Miles
General Purpose Lanes	3 / 4	4	3.8
Managed Lanes	1	2 (reversible)	0
Frontage Road Lanes	2	2	0
Collector-Distributor Lanes	0	2	7.6
Total			11.4

Scenario 10: Segment 6 –SH 121 Interchange (North Direct Connector Ramps)

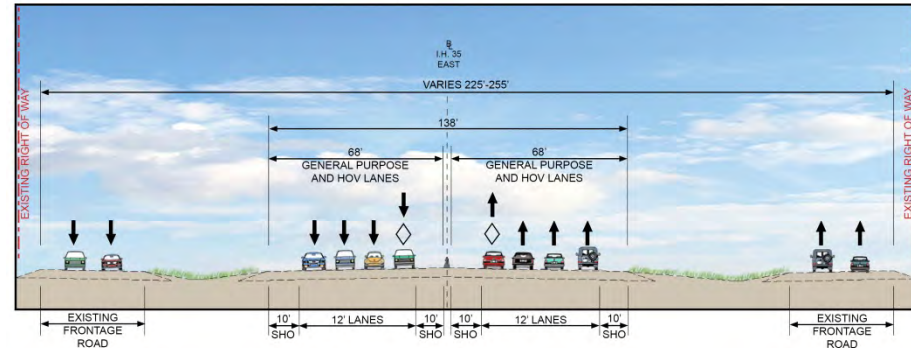
Length	0.9 miles
Estimated Design & Construction Cost	\$79 M
Estimated Right-of-Way Cost	\$49 M



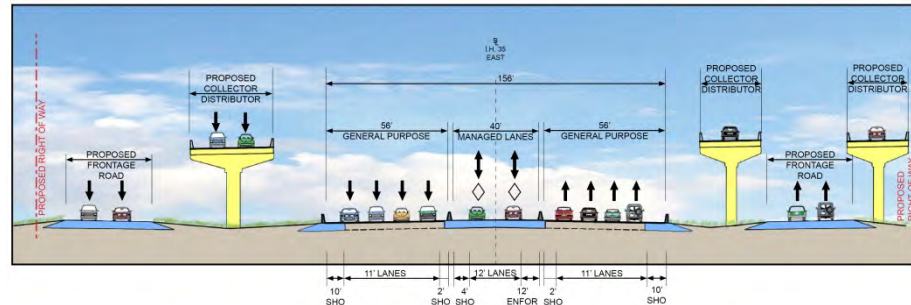
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Existing Typical Section



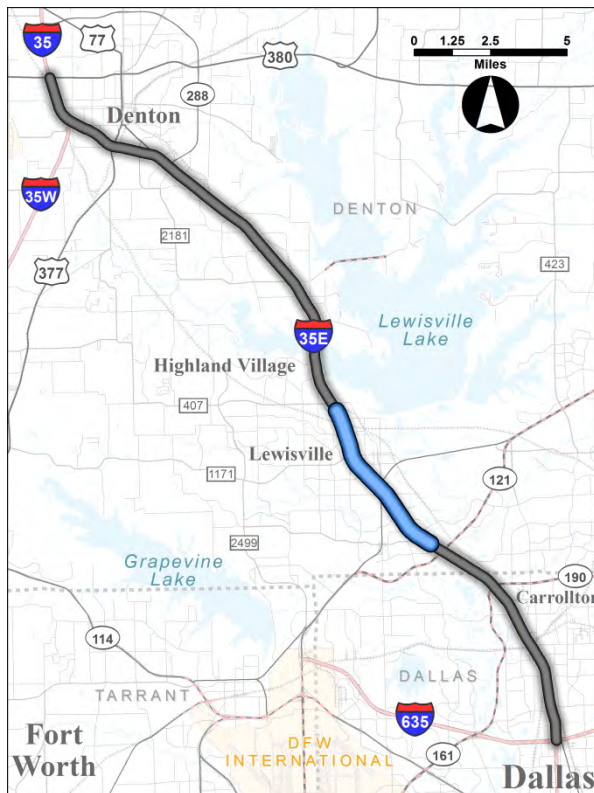
Proposed Typical Section



Segment 6 Details	Existing Lanes Each Way	Proposed Lanes Each Way	Additional Lane Miles
General Purpose Lanes	3	4	1.8
Managed Lanes	1	2 (reversible)	0
Frontage Road Lanes	2	2	0
Collector-Distributor Lanes	0	2	3.6
Total			5.4

Scenario 10: Segment 7 – SH 121 to FM 407

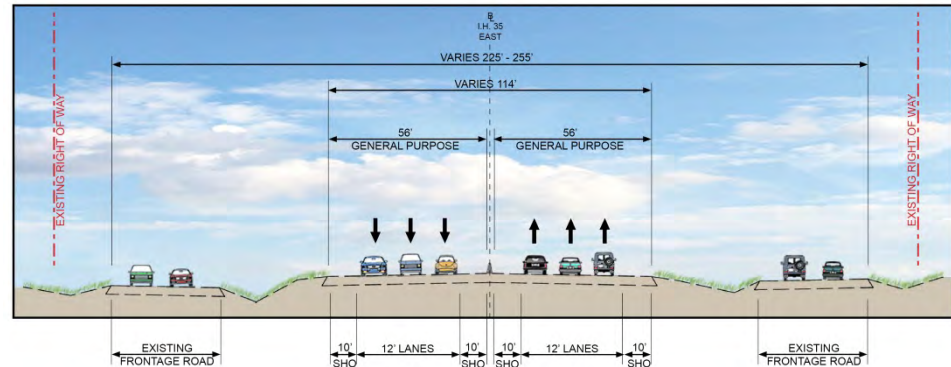
Length	5.5 miles
Estimated Design & Construction Cost	\$127 M
Estimated Right-of-Way Cost	\$0



PRELIMINARY: SUBJECT TO CHANGE

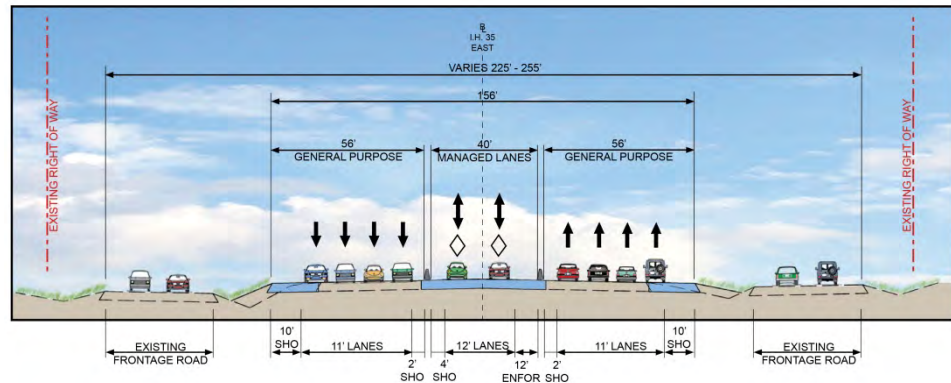
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Existing Typical Section*



* Existing HOV extends north to Corporate Dr. See Segment 6 Typical Section for reference.

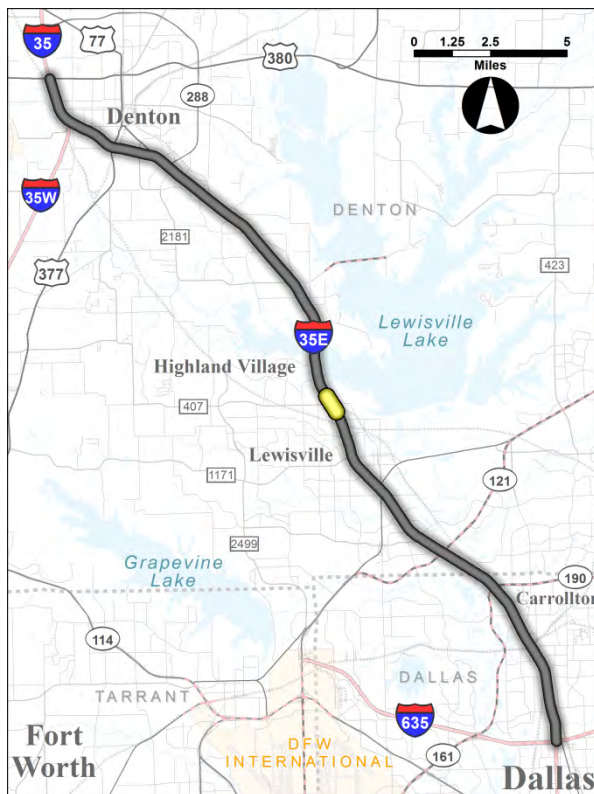
Proposed Typical Section



Segment 7 Details	Existing Lanes Each Way	Proposed Lanes Each Way	Additional Lane Miles
General Purpose Lanes	3	4	11
Managed Lanes	0 / 1 (partial)	2 (reversible)	10.7
Frontage Road Lanes	2	2	0
Total			21.7

Scenario 10: Segment 8 –FM 407 Interchange

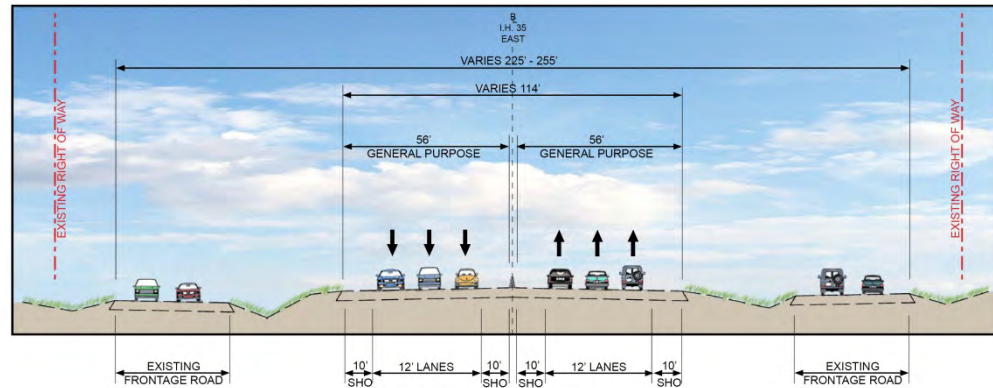
Length	0.6 miles
Estimated Design & Construction Cost	\$32 M
Estimated Right-of-Way Cost	\$24 M



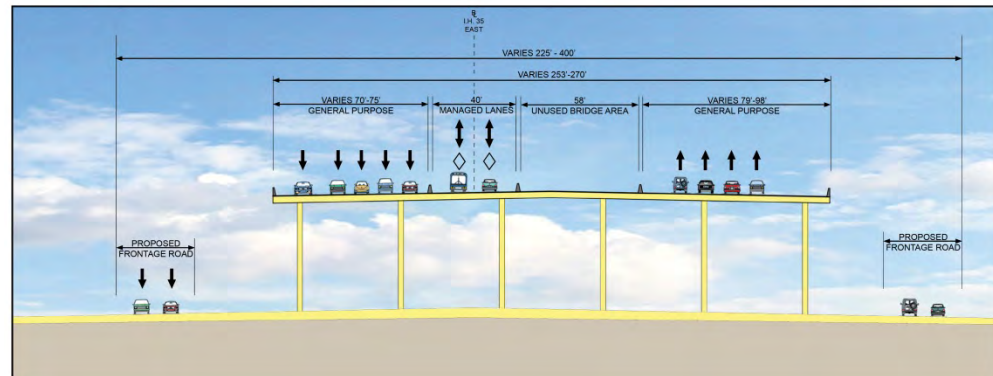
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Existing Typical Section



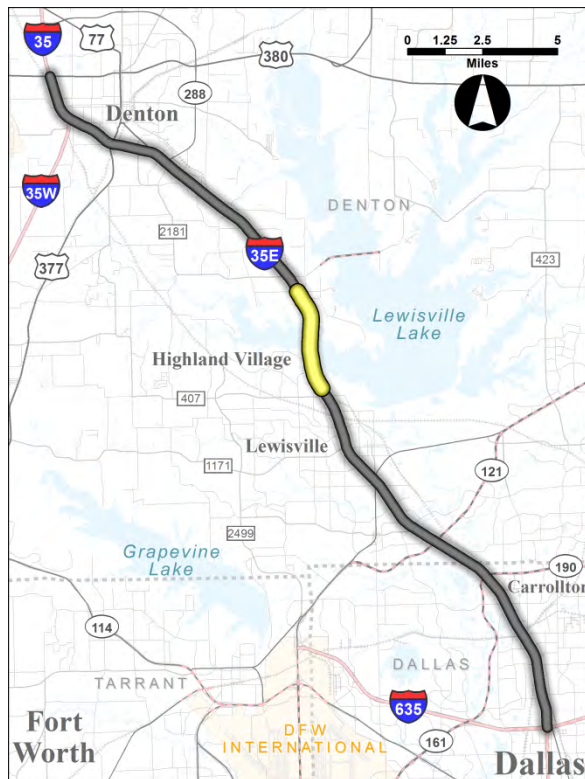
Proposed Typical Section



Segment 8 Details	Existing Lanes Each Way	Proposed Lanes Each Way	Additional Lane Miles
General Purpose Lanes	3	4	1.2
Managed Lanes	0	2 (reversible)	1.2
Frontage Road Lanes	2	2	0
Total			2.4

Scenario 10: Segment 9 – FM 407 to Turbeville Road (Lake Lewisville Bridge)

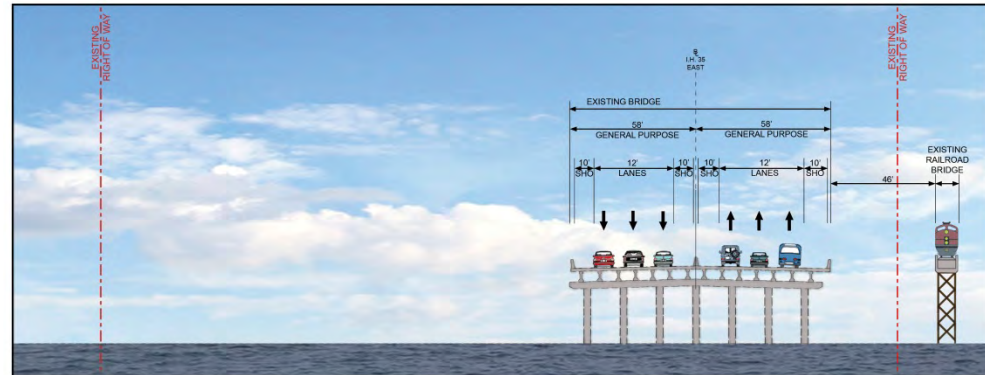
Length	3.4 miles
Estimated Design & Construction Cost	\$261 M
Estimated Right-of-Way Cost	\$149 M



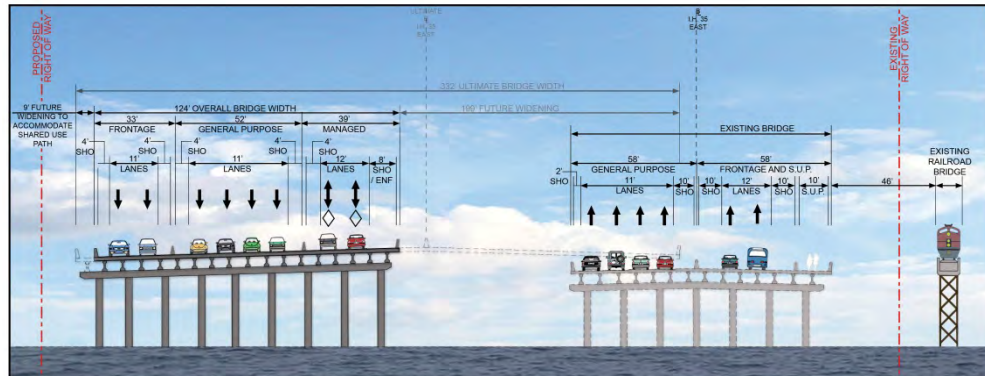
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Existing Typical Section



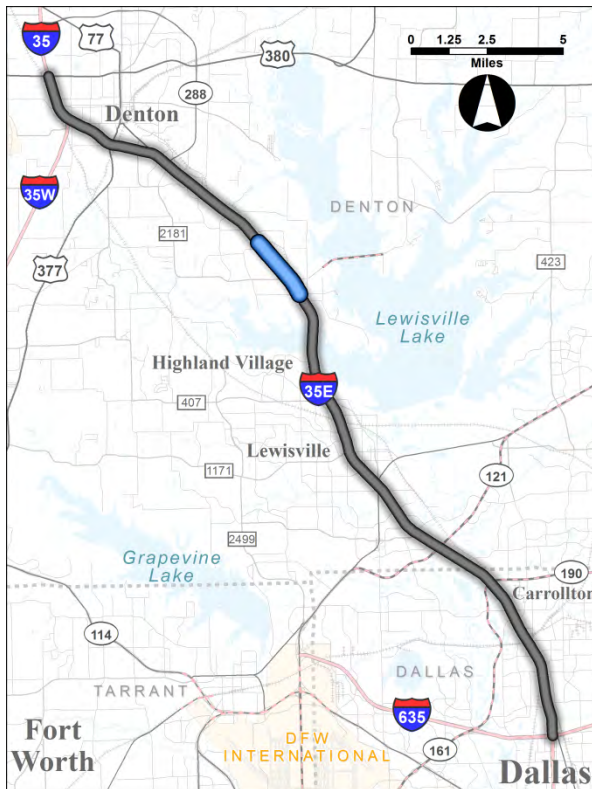
Proposed Typical Section



Segment 9 Details	Existing Lanes Each Way	Proposed Lanes Each Way	Additional Lane Miles
General Purpose Lanes	3	4	6.8
Managed Lanes	0	2 (reversible)	6.8
Frontage Road Lanes	0 / 2 (partial)	2	7.4
Total			21.0

Scenario 10: Segment 10 – Turbeville Road to Corinth Parkway

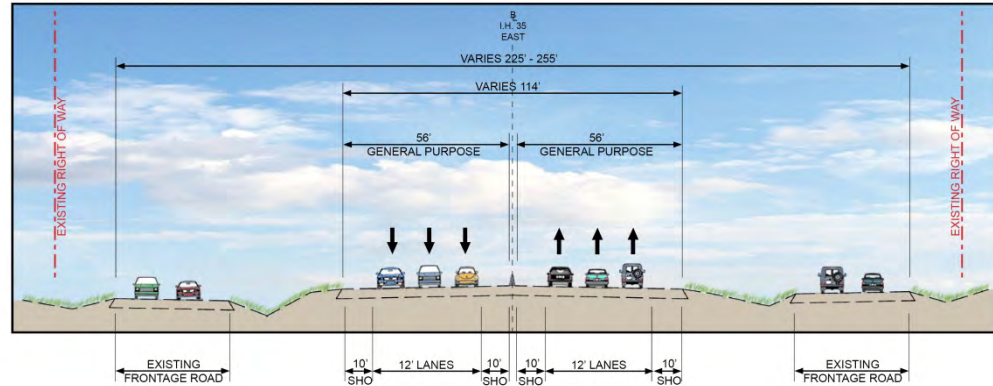
Length	2.2 miles
Estimated Design & Construction Cost	\$46 M
Estimated Right-of-Way Cost	\$0



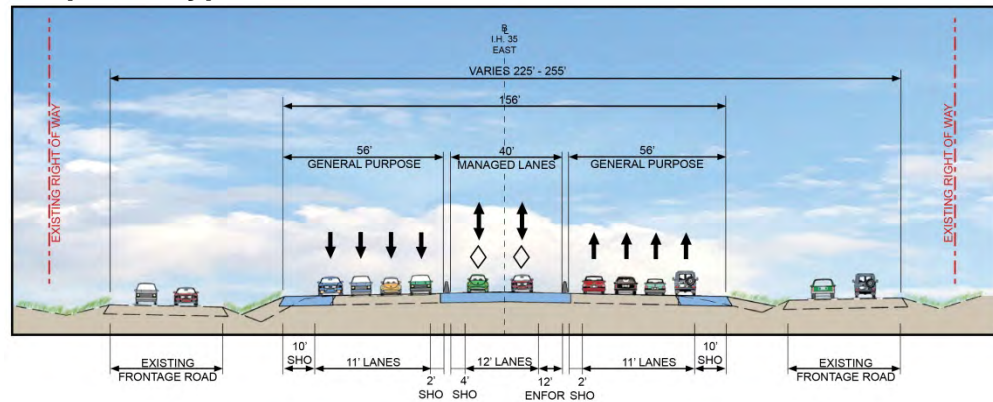
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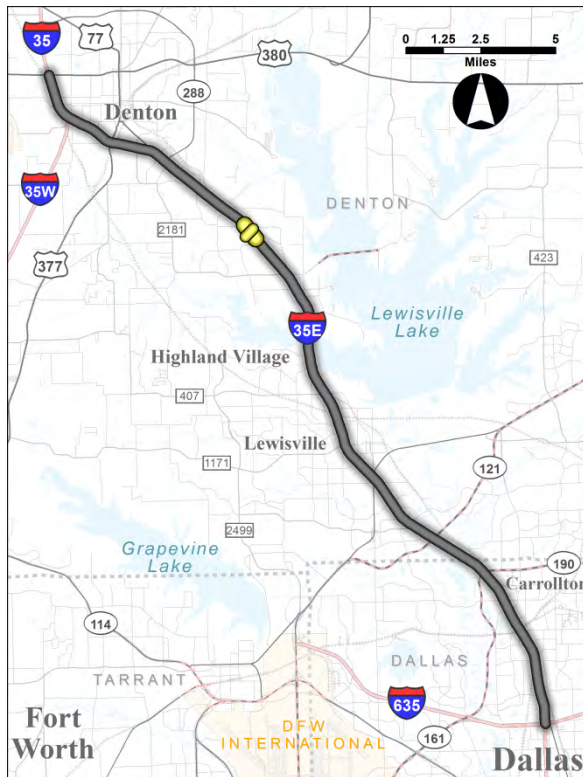
Proposed Typical Section



Segment 10 Details	Existing Lanes Each Way	Proposed Lanes Each Way	Additional Lane Miles
General Purpose Lanes	3	4	4.4
Managed Lanes	0	2 (reversible)	4.4
Frontage Road Lanes	2	2	0
Total			8.8

Scenario 10: Segment 11 – Corinth Parkway Interchange (Interchange flip)

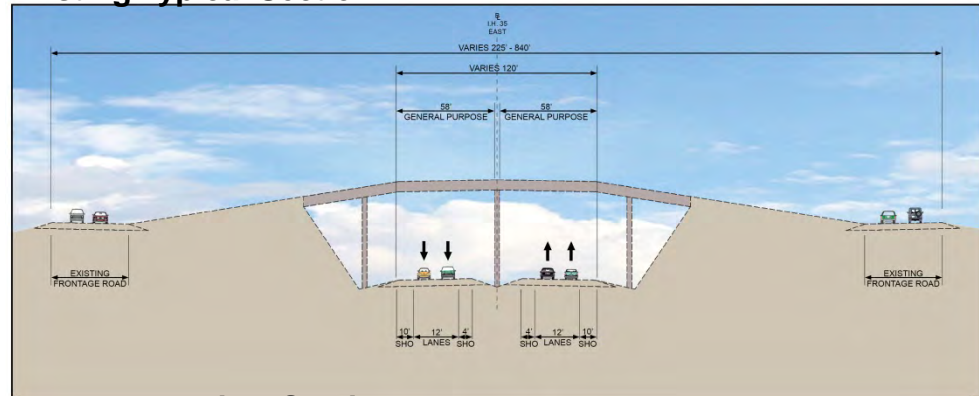
Length	0.6 miles
Estimated Design & Construction Cost	\$30 M
Estimated Right-of-Way Cost	\$29 M



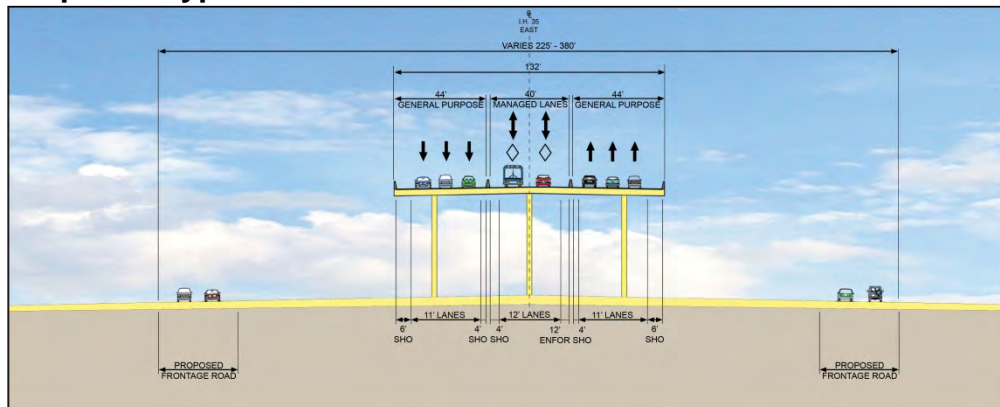
PRELIMINARY: SUBJECT TO CHANGE

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Existing Typical Section



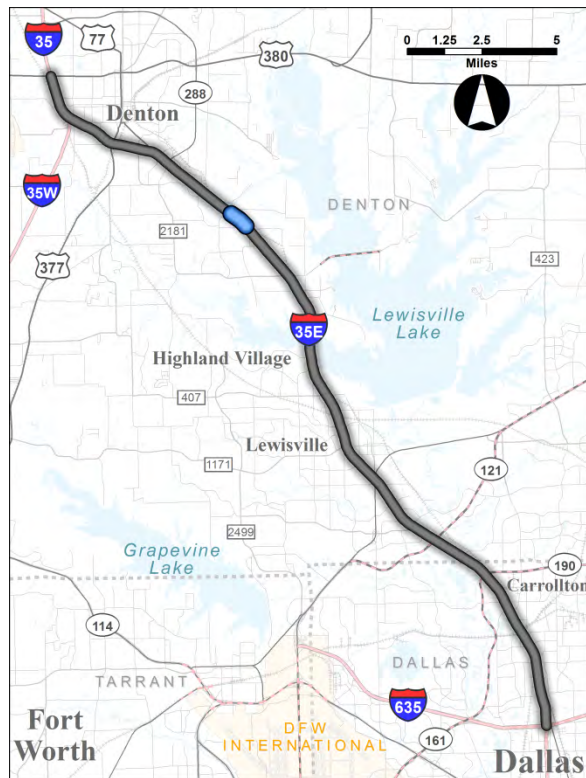
Proposed Typical Section



Segment 11 Details	Existing Lanes Each Way	Proposed Lanes Each Way	Additional Lane Miles
General Purpose Lanes	2	3	1.2
Managed Lanes	0	2 (reversible)	1.2
Frontage Road Lanes	2	2	0
Total			2.4

Scenario 10: Segment 12 – Corinth Parkway to Post Oak Drive

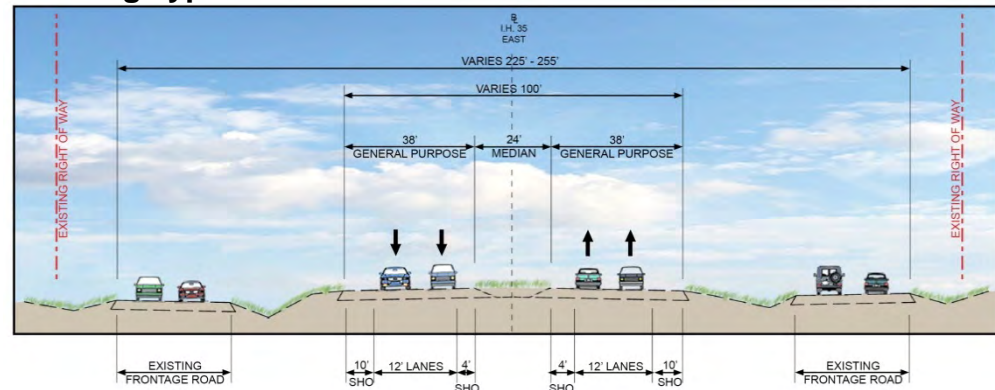
Length	0.7 miles
Estimated Design & Construction Cost	\$15 M
Estimated Right-of-Way Cost	\$0



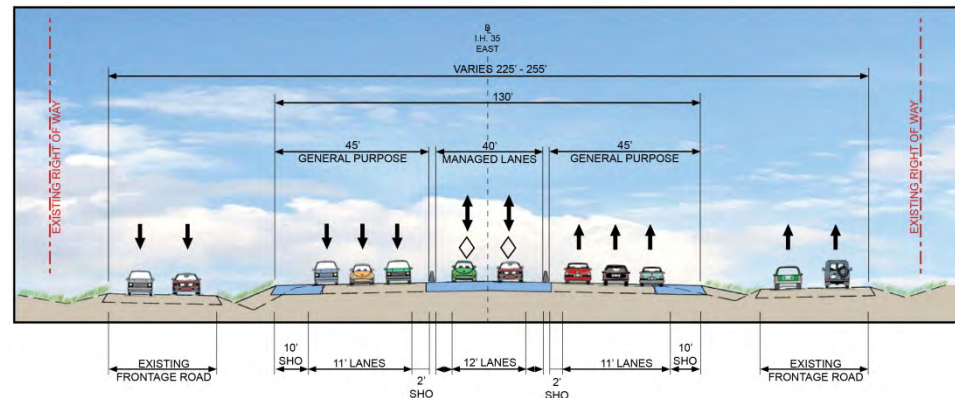
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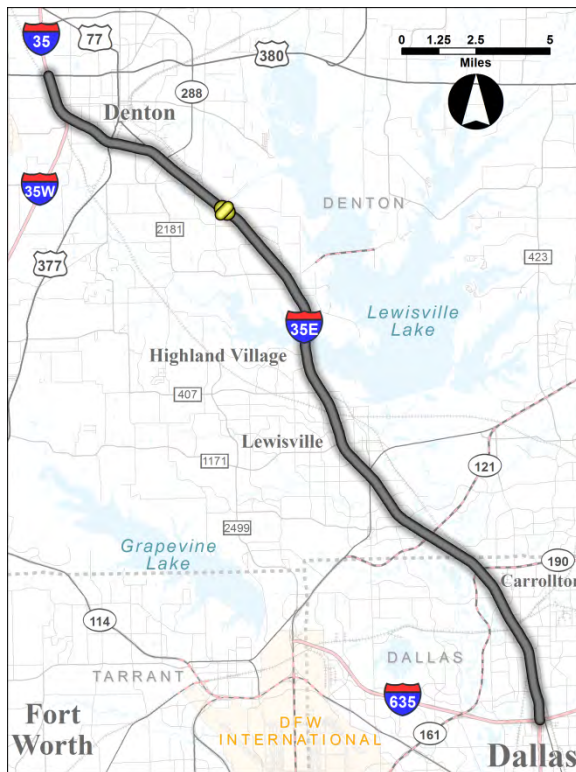
Proposed Typical Section



Segment 12 Details	Existing Lanes Each Way	Proposed Lanes Each Way	Additional Lane Miles
General Purpose Lanes	2	3	1.4
Managed Lanes	0	2 (reversible)	1.4
Frontage Road Lanes	2	2	0
Total			2.8

Scenario 10: Segment 13 – Post Oak Drive Interchange

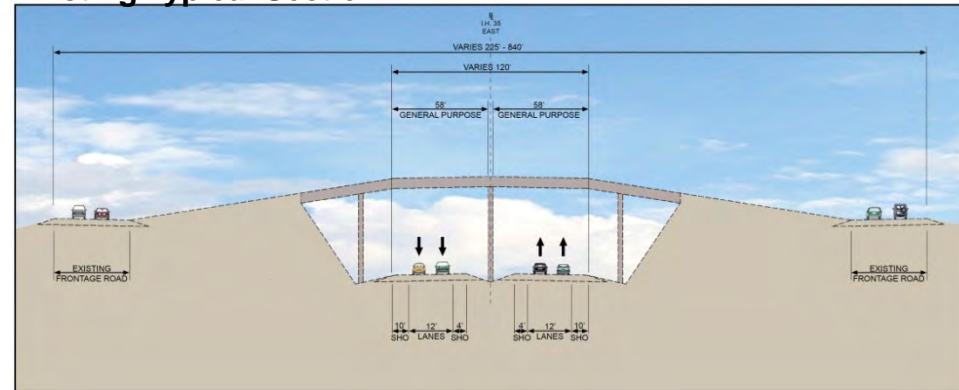
Length	0.2 miles
Estimated Design & Construction Cost	\$11 M
Estimated Right-of-Way Cost	\$0



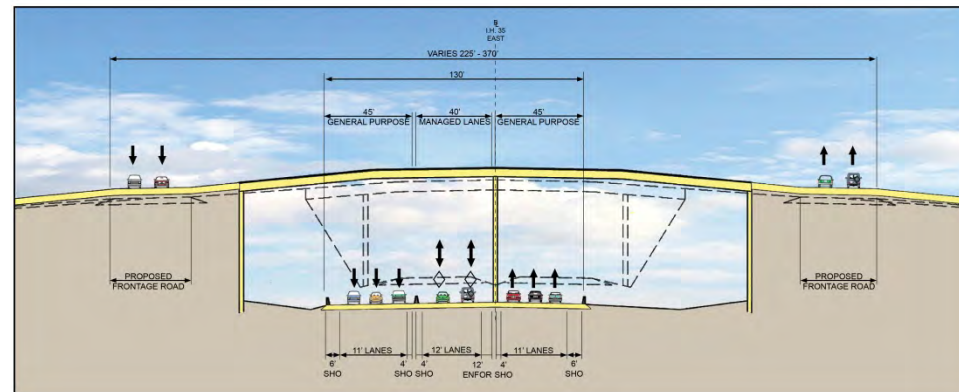
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Existing Typical Section



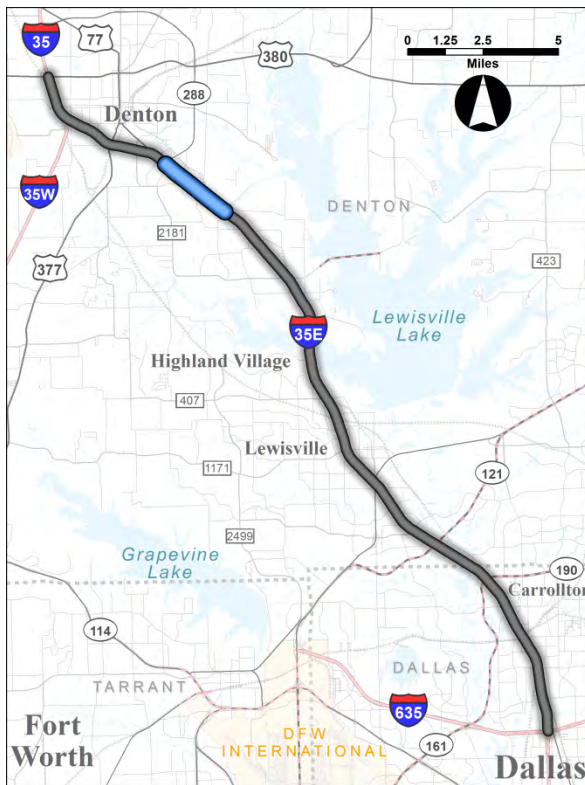
Proposed Typical Section



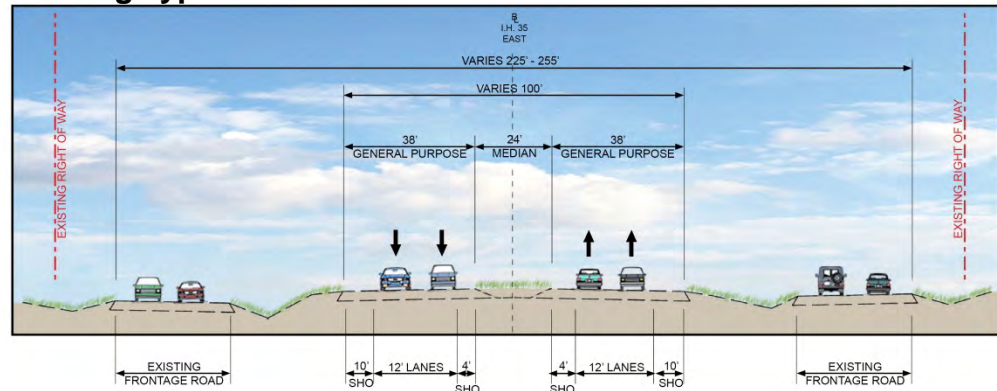
Segment 13 Details	Existing Lanes Each Way	Proposed Lanes Each Way	Additional Lane Miles
General Purpose Lanes	2	3	0.4
Managed Lanes	0	2 (reversible)	0.4
Frontage Road Lanes	2	2	0
Total			0.8

Scenario 10: Segment 14 – Post Oak Drive to Loop 288

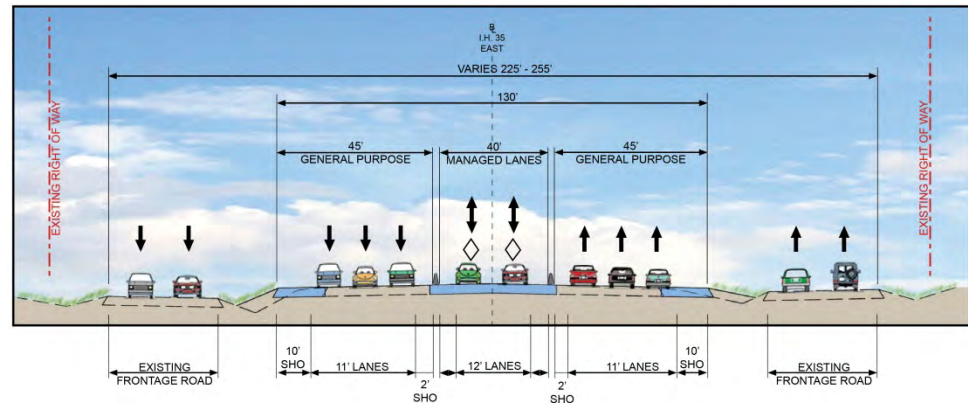
Length	2.5 miles
Estimated Design & Construction Cost	\$63 M
Estimated Right-of-Way Cost	\$0



Existing Typical Section



Proposed Typical Section



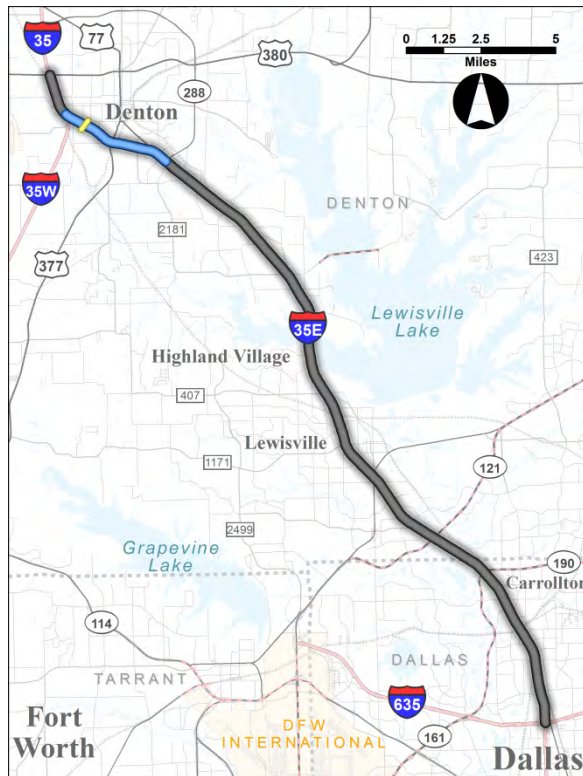
PRELIMINARY: SUBJECT TO CHANGE

Right-of-Way costs shown are based on conceptual design and intended for planning purposes only and are not intended to represent actual or projected Right of Way acquisition costs for the project. A detailed, or per parcel, analysis was not performed. These costs are not final and are subject to change.

Segment 14 Details	Existing Lanes Each Way	Proposed Lanes Each Way	Additional Lane Miles
General Purpose Lanes	2	3	5.0
Managed Lanes	0	2 (reversible)	5.0
Frontage Road Lanes	2	2	0
Total			10

Scenario 10: Segment 15 – Loop 288 to IH 35W

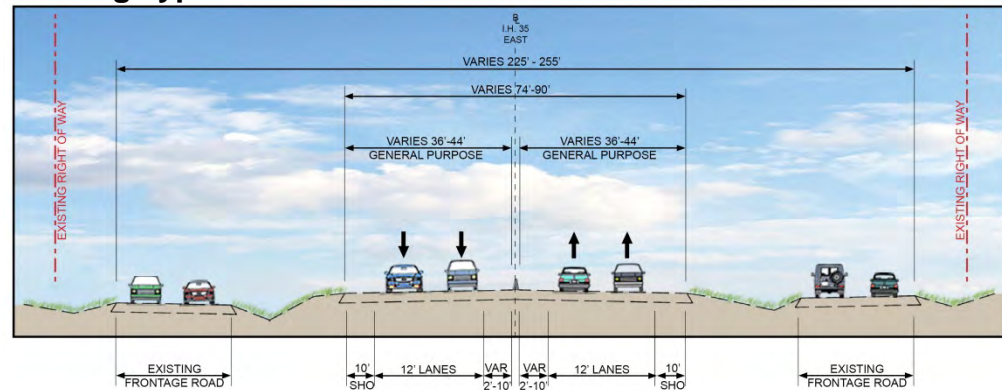
Length	3.8 miles
Estimated Design & Construction Cost	\$39 M
Estimated Right-of-Way Cost	\$23 M



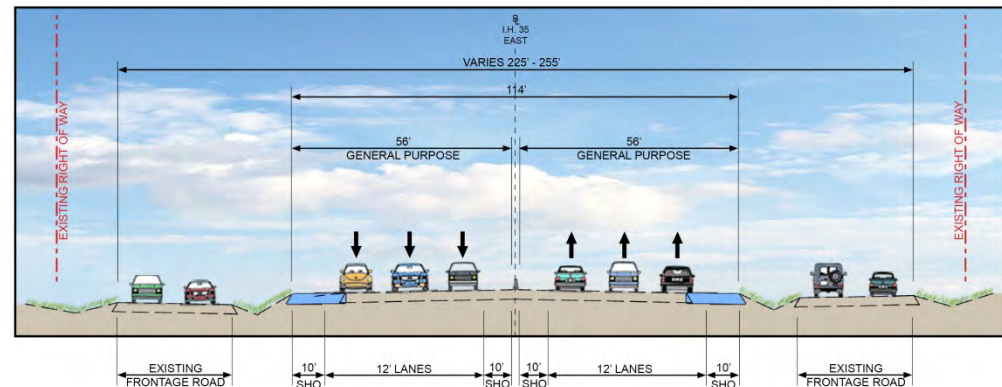
PRELIMINARY: SUBJECT TO CHANGE

Right-of-Way costs shown are based on conceptual design and intended for planning purposes only and are not intended to represent actual or projected Right of Way acquisition costs for the project. A detailed, or per parcel, analysis was not performed. These costs are not final and are subject to change.

Existing Typical Section



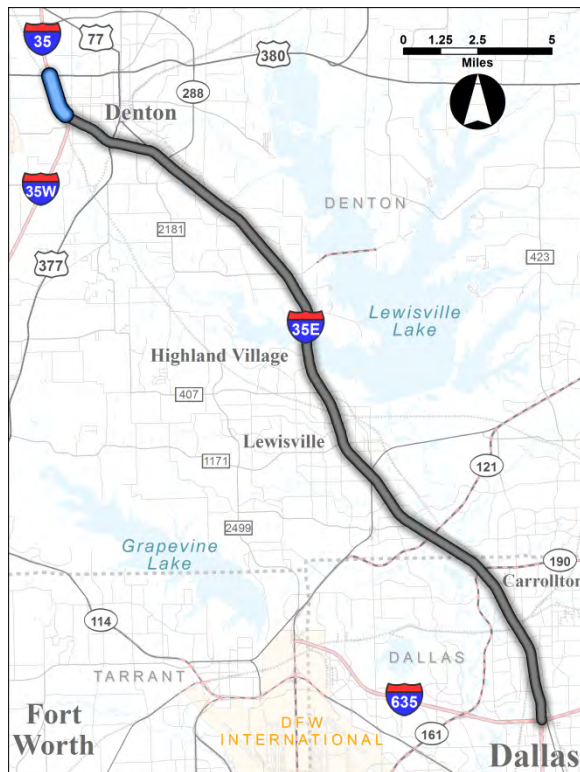
Proposed Typical Section



Segment 15 Details	Existing Lanes Each Way	Proposed Lanes Each Way	Additional Lane Miles
General Purpose Lanes	2	3	7.6
Managed Lanes	0	0	0
Frontage Road Lanes	2	2	0
Total			7.6

Scenario 10: Segment 16 – IH 35W to US 380

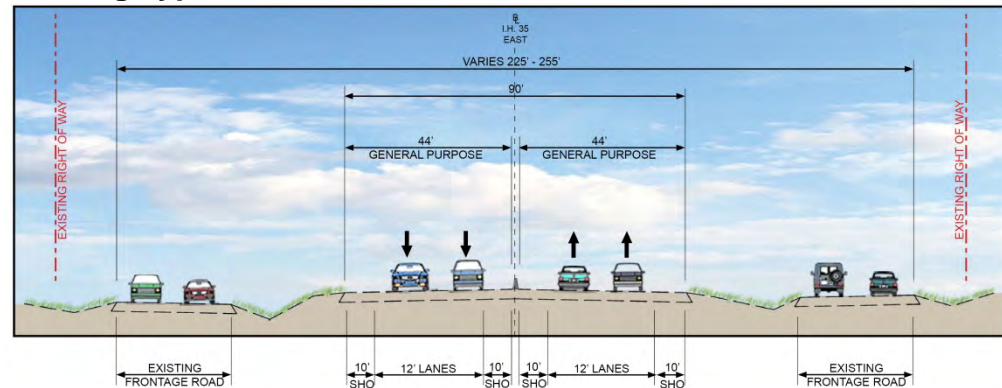
Length	1.2 miles
Estimated Design & Construction Cost	\$7 M
Estimated Right-of-Way Cost	\$0



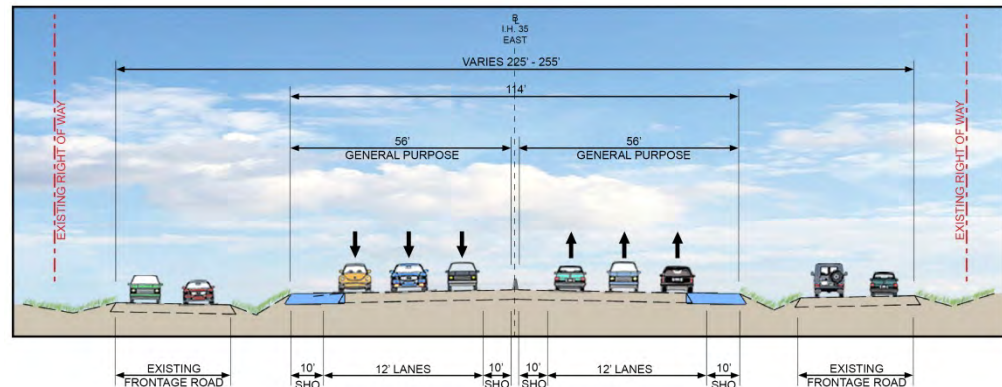
PRELIMINARY: SUBJECT TO CHANGE

Right-of-Way costs shown are based on conceptual design and intended for planning purposes only and are not intended to represent actual or projected Right of Way acquisition costs for the project. A detailed, or per parcel, analysis was not performed. These costs are not final and are subject to change.

Existing Typical Section



Proposed Typical Section



Segment 16 Details	Existing Lanes Each Way	Proposed Lanes Each Way	Additional Lane Miles
General Purpose Lanes	2	3	2.4
Managed Lanes	0	0	0
Frontage Road Lanes	2	2	0
Total			2.4

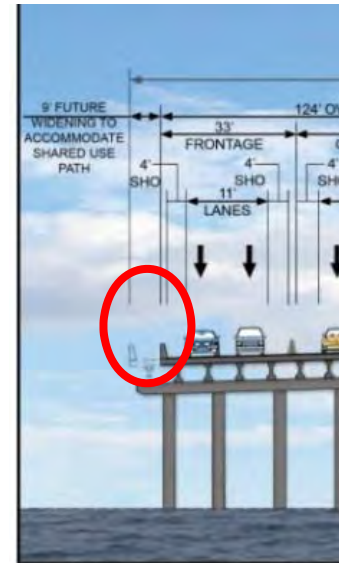
Key Differences Between Scenario 6A and 10

Typical Section	Scenario 6A	Scenario 10
Additional General Purpose Lanes in Each Direction	0	1
General Purpose Lane Width	12'	11'
Inside Shoulder	10'	2'
Outside Shoulder	10'	10'

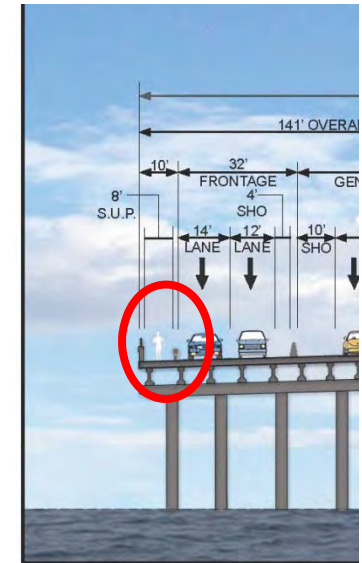
Other Differences

- Reduced width on new southbound Lake Lewisville Bridge
- Reduced improvements in collector-distributor system
 - No direct connections to managed lanes
 - Reduced number of collector-distributor and auxiliary lanes

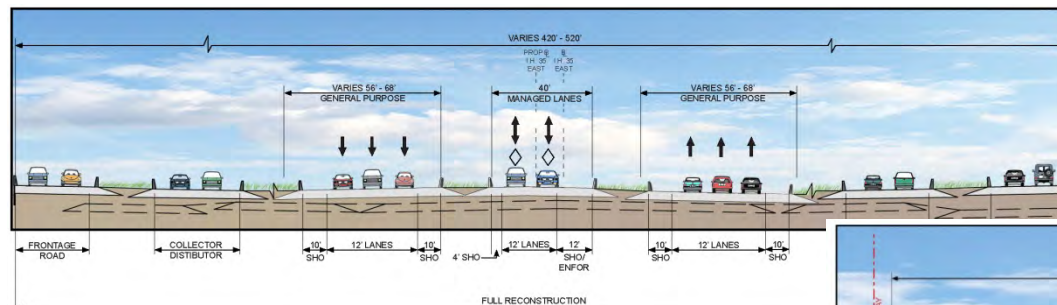
Scenario 10



Scenario 6A

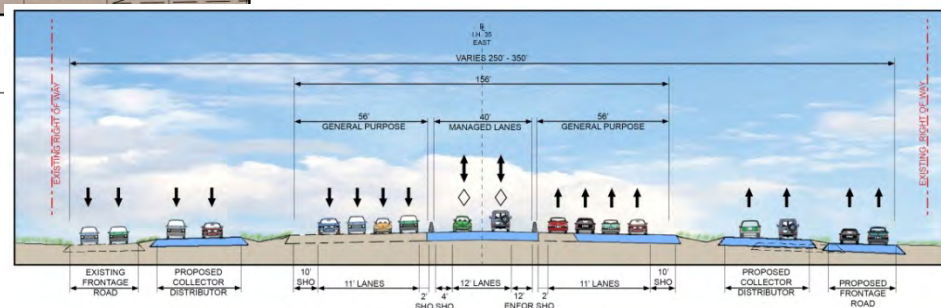


Lake Lewisville Bridge



Scenario 6A Collector-Distributor System

Scenario 10 Collector-Distributor System



Appendix B – Net Present Value Analysis

Net Present Value of Revenues Analysis

Net Present Value of Revenues (millions)	6A	9	10
10 Year (8% Discount Rate)	\$ 283.9	\$ 227.2	\$ 214.8
10 Year (10% Discount Rate)	\$ 228.4	\$ 182.9	\$ 175.8
20 Year (8% Discount Rate)	\$ 584.5	\$ 462.4	\$ 462.3
20 Year (10% Discount Rate)	\$ 431.9	\$ 342.2	\$ 346.4

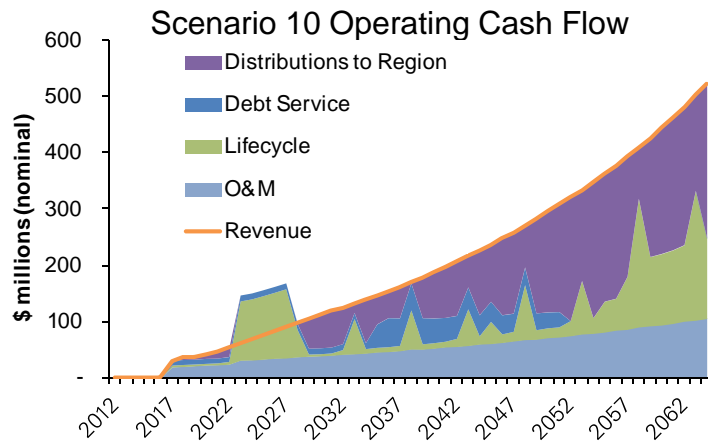
The information and analysis contained herein is preliminary in nature and for planning purposes only, and cannot be relied upon by any third party. The scenarios and costs, traffic, revenue, and financial projections were prepared in good faith and with reasonable care but is limited by the conceptual nature of the design. Data provided is subject to change up until contract award. The scenarios and results provided may vary from those resulting from the procurement process.

Appendix C – Additional Financial Data

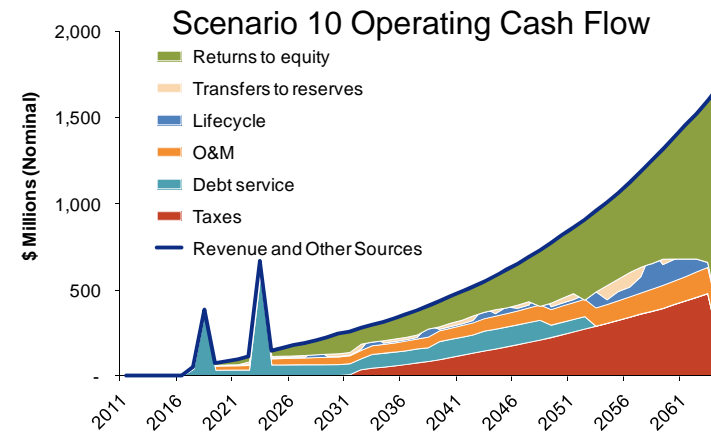
Scenario 10 Comparative Cash Flow Analysis

- The following graphs show the use of funds during the operating period:

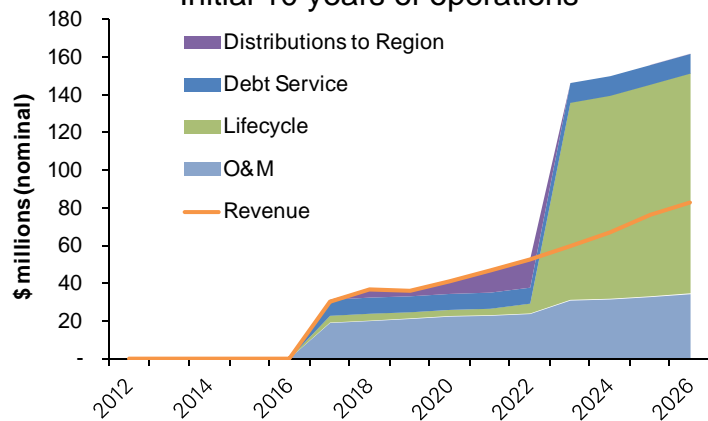
DB Analysis



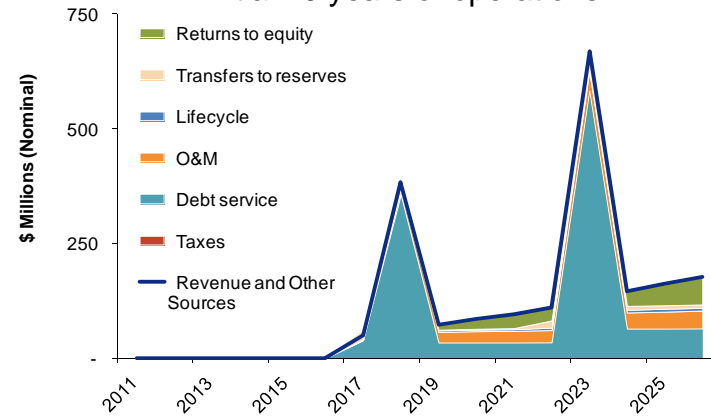
Concession Analysis



Scenario 10 Operating Cash Flow Initial 10 years of operations



Scenario 10 Operating Cash Flow Initial 10 years of operations



CONFIDENTIAL DRAFT FOR DISCUSSION

Comparison of Key Metrics

❑ Key inputs for analysis:

Inputs Analysis (nominal \$ millions)	Scenario 6A	Scenario 9	Scenario 10
Construction costs	\$2,011	\$2,025	\$1,415
O&M costs, including tolling	\$4,012	\$3,551	\$3,584
Lifecycle costs, including reconstruction	\$2,465	\$2,639	\$2,640
Aggressive revenue forecast	\$33,975	\$27,753	\$29,040
Conservative revenue forecast	\$13,123	\$10,125	\$10,531

- ❑ The additional GP lane in each direction eases congestion and reduces demand for the Managed Lanes, thus reducing revenue in Scenarios 9 and 10 from Scenario 6A
- ❑ The reduction in transactions on the Managed Lanes also reduces transactions costs, resulting in lower O&M costs from Scenario 6A
- ❑ Construction costs do not increase substantially from Scenario 6A to Scenario 9 due to the significantly reduced shoulder
- ❑ The reduction in scope from Scenario 9 to Scenario 10 reduces construction costs, but does not have a significant impact on revenue