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Recommendations and Implementation

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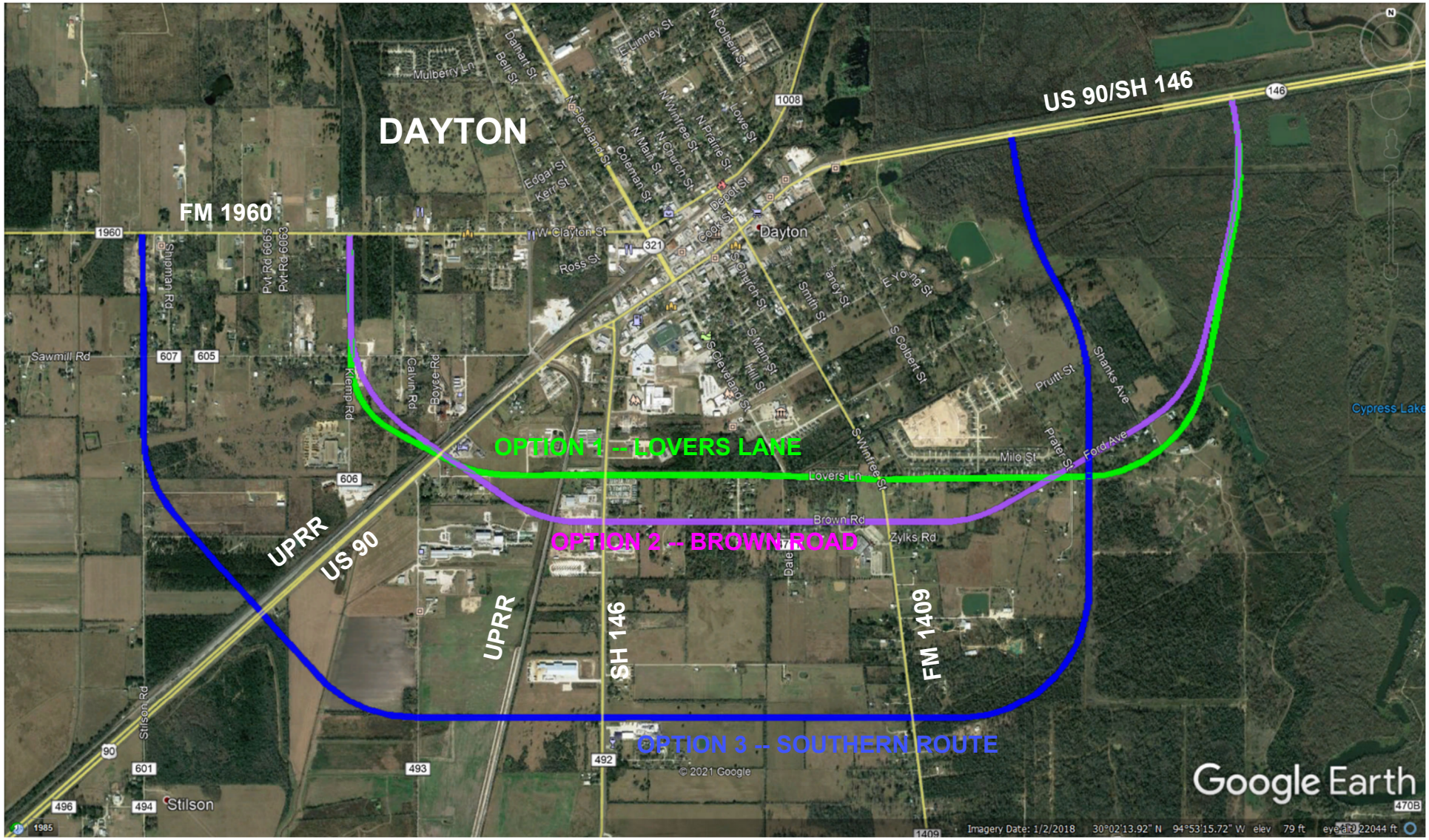
Dayton Bypass Alignment

LIBERTY COUNTY MOBILITY STUDY -- DAYTON BY-PASS



OPTION 1 -- LOVERS LANE; TOTAL LENGTH = 4.620 MILES; BRIDGE = 0.337 MILES; ROADWAY = 4.283 MILES
ESTIMATED CONSTRUCTION COST = $34M; 13 STRUCTURES IMPACTED (4 RESIDENCES AND 6 COMMERCIAL)

OPTION 2 -- BROWN ROAD; TOTAL LENGTH = 4.579 MILES; BRIDGE = 0.244 MILES; ROADWAY = 4.335 MILES
ESTIMATED CONSTRUCTION COST = $32M; 23 STRUCTURES IMPACTED (7 RESIDENCES AND 10 COMMERCIAL)

OPTION 3 -- SOUTHERN ROUTE; TOTAL LENGTH = 6.177 MILES; BRIDGE = 0.441 MILES; ROADWAY = 5.735 MILES
ESTIMATED CONSTRUCTON COST = $41.6M; 8 STRUCTURES IMPACTED (4 RESIDENCES AND 0 COMMERCIAL)

Dayton By-Pass Preliminary Construction Cost Estimates			TxDOT 12-Month Avg Bid (Beaumont Dist. & Statewide***)	Price	ALTERNATIVES CONSIDERED					
					Alternative #1 Lovers Lane		Alternative #2 Brown Road		Alternative #3 Southern Route	
Item No.	DESCRIPTION	Unit	USD	USD	Total Length = 4.620 miles		Total Length = 4.579 miles		Total Length = 6.177 miles	
					Qty	Cost	Qty	Cost	Qty	Cost
100 6002	PREPARING ROW	STA	$ 1,961.31	$ 3,500.00	243.92	$ 853,720	241.79	$ 846,265	326.13	$ 1,141,455
110 6001	EXCAVATION (ROADWAY)	CY	$ 13.30	$ 16.00	61,500	$ 984,000	55,100	$ 881,600	72,900	$ 1,166,400
132 6005	EMBANKMENT (FINAL)(ORD COMP)(TY C)	CY	$ 17.65	$ 16.00	114,600	$ 1,833,600	108,300	$ 1,732,800	136,100	$ 2,177,600
150 6001***	BLADING	STA	$ 137.18	$ 175.00	226.12	$ 39,571	228.89	$ 40,056	302.83	$ 52,995
247 6041	FL BS (CMP IN PLC)(TYA GR1-2)(FNAL POS)	CY	$ 92.38	$ 95.00	23,600	$ 2,242,000	23,900	$ 2,270,500	31,600	$ 3,002,000
260 6006	LIME TRT (EXST MATL) (6")	SY	$ 4.20	$ 5.00	87,200	$ 436,000	87,900	$ 439,500	118,600	$ 593,000
316 6405	ASPH (AC-20-5TR OR AC-20XP) - 0.2 gal/sy Underseal	GAL	$ 3.77	$ 4.50	20,100	$ 100,500	20,346	$ 101,730	26,918	$ 134,590
316 6440	AGGR (TY-B GR-3 OR TY-L GR-3)(SAC-B) - 100 sy/cy US	CY	$ 131.49	$ 150.00	1,005	$ 5,025	1,017	$ 5,085	1,346	$ 6,730
340 6106	D-GR HMA(SQ) TY-D PG64-22 (110 LB/SY*IN)	TON	$ 97.30	$ 105.00	16,600	$ 1,743,000	16,800	$ 1,764,000	22,200	$ 2,331,000
423 6001***	RETAINING WALL (MSE)	SF	$ 44.65	$ 50.00	75,200	$ 3,760,000	80,200	$ 4,010,000	59,400	$ 2,970,000
502 6001	BARRICADES, SIGNS AND TRAFFIC HANDLING	MO	$ 5,694.78	$ 6,000.00	30	$ 180,000	30	$ 180,000	30	$ 180,000
420 to 450	**BRIDGES:**									
	@ US 90/UPRR; Concrete TX Girder; 42' width Options 1 & 2: 350' length; Option 3: 375' length	SF	from BRG DIV	$ 80.00	14,700	$ 1,176,000	14,700	$ 1,176,000	15,750	$ 1,260,000
	@ UPRR; Concrete TX Girder; 42' width Options 1 & 2: 125' length; Option 3: 225' length	SF	from BRG DIV	$ 85.00	5,250	$ 446,250	5,250	$ 446,250	9,450	$ 803,250
	@ SH 146; Concrete TX Girder; 42' width Options 1, 2 & 3: length = 150'	SF	from BRG DIV	$ 85.00	6,300	$ 535,500	6,300	$ 535,500	6,300	$ 535,500
	@ Trinity River floodplain; Concrete TX Girder; 42' width Option 1: 5 bridges total length = 1155' Option 2: 4 bridges total length = 665' Option 3: 2 bridges total length = 1580'	SF	from BRG DIV	$ 70.00	48,510	$ 3,395,700	27,930	$ 1,955,100	66,360	$ 4,645,200
	BRIDGES SUBTOTAL:	**SF**			**74,760**	**$ 5,553,450**	**54,180**	**$ 4,112,850**	**97,860**	**$ 7,243,950**
602	**WZ TRAFFIC CONTROL**	MI		$ 2,000.00	4.620	$ 9,239	4.579	$ 9,159	6.177	$ 12,353
164	**SEEDING, SODDING, WATERING**	MI		$ 150,000.00	4.620	$ 692,955	4.579	$ 686,903	6.177	$ 926,506
460	**DRAINAGE**	MI		$ 500,000.00	4.620	$ 2,309,848	4.579	$ 2,289,678	6.177	$ 3,088,352
610	**ILLUMINATION**	MI		$ 550,000.00	4.620	$ 2,540,833	4.579	$ 2,518,646	6.177	$ 3,397,188
666 to 678	**PAVEMENT MARKINGS (PERM)**	MI		$ 20,000.00	4.620	$ 92,394	4.579	$ 91,587	6.177	$ 123,534
636 to 658	**SIGNING**	MI		$ 10,000.00	4.620	$ 46,197	4.579	$ 45,794	6.177	$ 61,767
162, 506 - 508	**SW3P**	MI		$ 75,000.00	4.620	$ 346,477	4.579	$ 343,452	6.177	$ 463,253
	SUBTOTAL					$ 23,768,810		$ 22,369,604		$ 29,072,673
	MOBILIZATION	LS		10%		$ 2,380,000		$ 2,240,000		$ 2,910,000
	CONTINGENCY	LS		30%		$ 7,844,643		$ 7,382,881		$ 9,594,802
	TOTAL					**$ 33,993,453**		**$ 31,992,485**		**$ 41,577,475**

CivilCorp
ENGINEERS • SURVEYORS

Engineer's Estimate of Total Project Cost (PRELIMINARY Estimate) — **August 2021**

Project: Dayton By-Pass Connecting FM 1960 west of Dayton to US 90/SH 146 east of Dayton

ALT.	Description	LENGTH	ESTIMATED TOTAL ROW	ESTIMATED ROW NEEDED	ESTIMATED ROADWAY COSTS	ESTIMATED BRIDGE COSTS	ESTIMATED TOTAL CONSTRUCTION COST (Plus 30%)	ESTIMATED ROW COSTS (@$12K/ACRE)	ESTIMATED TOTAL PROJECT COST
		MILES	ACRES	ACRES	$	$	$	$	$
1	**Lovers Lane**	4.620	56	45.1	$20,595,360	$5,553,450	$33,993,453	$541,200	**$34,534,653**
2	**Brown Road**	4.579	55.5	44.2	$20,496,754	$4,112,850	$31,992,485	$530,400	**$32,522,885**
3	**Southern Route**	6.177	74.9	72.8	$24,738,723	$7,243,950	$41,577,475	$873,600	**$42,451,075**

Corridor Implementation Matrix

Corridor Recommendation Matrix

Corridor ID	Corridor Name	Segment Start	Segment End	TOTAL Cost	TOTAL Benefits	B/C per Segment	Partner Agencies	Project Goals				Recommendations												
								Mobility	Safety	Economic	Overall Score	Install pedestrian elements	Install shared use path	Install sidewalk	Install through lane / widen road	Install / improve pavement markings	Realign intersection	Install / improve pavement	Construct roadway extension	Improve drainage	Construct grade separation	Refine access management	Proposed US 90 Bypass
A-1	SH 105/W Southline Street	SH 105	Washington Avenue	$ 29,112,163	$ -	0.00	Cleveland / Liberty County / TxDOT	●	◑	◑	◕	X	X	X	X				X				
B-1	FM 2025/Fenner Avenue (Proposed Extension)	Washington Avenue	Fenner Avenue/Nevell Street	$ -	$ -	N/A	Cleveland / Liberty County	○	○	○	○												
B-2	FM 2025/Fenner Avenue	Nevell Street	Issacks Street	$ 23,901	$ 103,257	4.32	Cleveland / Liberty County	◑	◕	◕	◕					X							
B-3	FM 2025/Fenner Avenue (Proposed Extension)	Issacks Street	FM 331	$ -	$ -	N/A	Cleveland / Liberty County	○	○	○	○												
B-4	FM 1010/Plum Grove Road	Southline Street	FM 2090	$ 113,856,998	$ -	0.00	Cleveland / Plum Grove / Liberty County	●	◑	◑	◕	X	X		X		X						
C-1	Houston Avenue	FM 787	SH 105	$ 13,801,432	$ 4,346,080	0.31	Cleveland / Liberty County / TxDOT	◕	◕	◑	◕	X	X	X	X					X			
D-1	N Travis Avenue	Travis Avenue/E 5th Street	Northern County Limits	$ -	$ -	N/A	Cleveland / Liberty County	○	○	○	○												
E-1	CR 2243	Northern County Limits	CR 2243	$ -	$ -	N/A	Cleveland / Liberty County	○	○	○	○												
E-2	CR 2243	CR 2243	SH 105	$ 1,512,626	$ 15,854,097	10.48	Cleveland / Liberty County	○	◕	◕	◕					X		X					
F-1	CR 2204/2201/2239	Northern County Limits	SH 321	$ -	$ -	N/A	Cleveland / Liberty County	◑	◑	○	◑												
G-1	CR 602/604/610/615	FM 686	FM 1960	$ -	$ -	N/A	Dayton / Liberty County	◑	◑	○	◑												
G-2	CR 602/604/610/615	FM 1960	US 90	$ 6,805,905	$ -	0.00	Dayton / Liberty County	◑	◑	◑	◑						X				X		
H-1	FM 1413	US 90	SH 146	$ 11,406,036	$ -	0.00	Dayton / Liberty County / TxDOT	◑	◑	◑	◑	X	X				X				X		
I-1	CR 486	FM 1413	17,419 feet south of FM 1413	$ 1,229,167	$ -	0.00	Dayton / Liberty County	◑	◑	◑	◑	X	X				X						
J-1	CR 491	US 90	FM 1413	$ 4,494,209	$ 206,513	0.05	Dayton / Liberty County	◑	◕	◑	◑							X					
K-1	Lovers Lane	SH 146	Lovers Lane	$ 4,375,084	$ 379,132	0.09	Dayton / Liberty County	○	◕	◑	◑					X			X				
L-1	Waco Street	Tram Road	Waco Street	$ -	$ -	N/A	Dayton / Liberty County	◑	○	○	◑												
L-2	CR 606/Klemp Road	FM 1960	End Point	$ 25,502,142	$ -	0.00	Dayton / Liberty County	◑	◑	◑	◑										X		X
M-1	Martin Luther King Jr Drive	US 90	US 90	$ 2,344,916	$ 2,362,606	1.01	Liberty / Liberty County	◑	●	◕	◕	X	X	X		X						X	
N-1	Main Street/State Loop 227	SH 146	Grand Avenue	$ 19,723,826	$ 28,219,657	1.43	Liberty / Liberty County / TxDOT	◕	●	◕	◕	X		X	X			X				X	
N-2	Main Street/State Loop 227	Grand Avenue	US 90 / SH 146	$ 6,984,449	$ 1,644,436	0.24	Liberty / Liberty County / TxDOT	◕	●	◑	◕	X		X	X			X				X	
O-1	Texas Street	Main Street/State Loop 227	Beaumont Avenue	$ 3,147,752	$ -	0.00	Liberty / Liberty County	◑	◑	◑	◑	X	X			X		X	X				
P-1	Beaumont Avenue	San Jacinto Street	Eastern City Limits	$ 18,634,068	$ 482,388	0.03	Liberty / Liberty County	◕	◕	◑	◕	X	X		X	X							
Q-1	Jefferson Drive	Main Street/State Loop 227	Lakeland Drive	$ 1,255,999	$ 482,388	0.38	Liberty / Liberty County	◕	◕	◑	◕	X	X		X	X							
R-1	Woodspring Road/Lakeland Drive	Main Street/State Loop 227	Wal-Mart Driveway	$ 351,771	$ -	0.00	Liberty / Liberty County	◑	◑	◑	◑	X	X			X							
R-2	Woodspring Road/Lakeland Drive	Wal-Mart Driveway	Woodspring Road	$ 441,665	$ -	0.00	Liberty / Liberty County	◑	◑	◑	◑	X	X			X							
S-1	SH 146	Northern County Limits	Main Street/State Loop 227	$ 505,525,604	$ 1,983,474	0.00	Dayton / Liberty / Liberty County / TxDOT	●	◕	◑	◕	X	X		X								
S-2	SH 146	Main Street/State Loop 227	Wal-Mart Driveway	$ 2,050,404	$ -	0.00	Dayton / Liberty / Liberty County / TxDOT	◕	◑	◑	◑	X	X		X								
S-3	SH 146	Wal-Mart Driveway	Beaumont Avenue	$ 19,836,683	$ 41,471,347	2.09	Dayton / Liberty / Liberty County / TxDOT	●	◕	◕	◕	X	X		X								
S-4	SH 146	Beaumont Avenue	US 90	$ 1,048,245	$ -	0.00	Dayton / Liberty / Liberty County / TxDOT	◑	◑	◑	◑	X	X		X								
S-5	SH 146/US 90	US 90/SH 146	East Street	$ 5,215,270	$ -	0.00	Dayton / Liberty / Liberty County / TxDOT	●	◑	◑	◕	X	X		X								
S-6	SH 146/US 90	East Street	Wallisville Road/Independence Stree	$ 529,036	$ -	0.00	Dayton / Liberty / Liberty County / TxDOT	◑	◑	◑	◑	X	X										
S-7	SH 146/US 90	Wallisville Road/Independence Street	Alabama Street	$ 2,005,076	$ 41,471,347	20.68	Dayton / Liberty / Liberty County / TxDOT	○	●	◕	◕	X	X										
S-8	SH 146/US 90	Alabama Street	East End of Bridge (Trinity River)	$ 3,300,460	$ -	0.00	Dayton / Liberty / Liberty County / TxDOT	◕	◑	◑	◑	X	X		X								
S-9	SH 146/US 90	East End of Bridge	West End of Bridge (Trinity River)	$ 2,459,134	$ -	0.00	Dayton / Liberty / Liberty County / TxDOT	○	◑	◑	◑	X	X		X								
S-10	SH 146/US 90	West End of Bridge (Trinity River)	Colbert Street	$ 27,206,728	$ -	0.00	Dayton / Liberty / Liberty County / TxDOT	○	◑	◑	◑	X	X		X								
S-11	SH 146/US 90	Colbert Street	SH 146	$ 6,715,349	$ 1,983,474	0.30	Dayton / Liberty / Liberty County / TxDOT	◕	◕	◑	◕	X	X		X								
S-12	SH 146	US 90/SH 146	rth End of Bridge (Trinity River Offsho	$ 72,390,325	$ 1,983,474	0.03	Dayton / Liberty / Liberty County / TxDOT	◕	◕	◑	◕	X	X		X								
S-13	SH 146	North End of Bridge	uth End of Bridge (Trinity River Offsho	$ 4,879,378	$ 1,983,474	0.41	Dayton / Liberty / Liberty County / TxDOT	◕	●	◑	◕	X	X		X								
S-14	SH 146	South End of Bridge (Trinity River Offshoot)	Southern County Limits	$ 4,397,044	$ -	0.00	Dayton / Liberty / Liberty County / TxDOT	◕	◑	◑	◑	X	X		X								

Intersection Implementation Matrix

Intersection Recommendation Matrix

Intersection ID	Name	TOTAL Cost	Crash Reduction Benefits	Delay & Travel Time Reduction Benefits	TOTAL Benefits	B/C per Intersection	Partner Agencies	Project Goals				Recommendations																
								Mobility	Safety	Economic	Overall Score	Install pedestrian elements	Install shared use path	Install sidewalk	Install left-turn lane	Install right-turn lane	Install through lane / widen road	Install / improve pavement markings	Realign intersection	Signalize	Optimize/coordinate signal	Change left-turn phasing	Add right-turn overlap	Install Flashing Yellow Arrow signal	Install intersection lighting	Install stop signs	Proposed US 90 Bypass
Cleveland - 1	US 59 Frontage Road & Old Cold Spring Road/Belcher Street	$ 3,582,294	$ 270,100	$ 22,660,247	$ 22,930,347	6.40	*Cleveland / Liberty County / TxDOT*	●	●	◕	●	X			X		X			X	X						
Cleveland - 2	SH 105 & Houston Street	$ 4,201,054	$ 5,518,611	$ 28,695,765	$ 34,214,376	8.14	*Cleveland / Liberty County / TxDOT*	●	●	◕	●		X		X		X				X	X	X				
Dayton - 1	US 90 & Waco Street	$ 1,006,500	$ 5,031,746	$ 3,905,070	$ 8,936,816	8.88	*Dayton / Liberty County / TxDOT*	●	●	◕	●					X	X			X	X						X
Dayton - 2	Waco Street & FM 1960	$ 4,213,605	$ 3,951,961	$ 73,263,885	$ 77,215,847	18.33	*Dayton / Liberty County / TxDOT*	●	●	◕	●					X	X		X			X	X				X
Dayton - 3	Cleveland Street & FM 1960/Clayton Street	$ 690,000	$ 33,683,110	$ 118,646,035	$ 152,329,145	220.77	*Dayton / Liberty County / TxDOT*	●	●	●	●	X				X		X				X	X				X
Dayton - 4	Winfree Street & Clayton Street	$ 5,350,872	$ 456,778	$ 226,415,005	$ 226,871,784	42.40	*Dayton / Liberty County*	●	●	◕	●				X	X	X	X		X		X	X				X
Dayton - 5	Clayton Street & Lowe Street	$ 5,642,339	$ -	$ -	$ -	0.00	*Dayton / Liberty County*	◑	◑	◑	◑								X						X		X
Dayton - 6	Cleveland Street & Linney Street	$ 200,000	$ -	$ 17,926,279	$ 17,926,279	89.63	*Dayton / Liberty County*	◕	◑	●	◕					X	X										X
Liberty - 1	Bowie Street & US 90	$ 471,000	$ 25,617,251	$ 3,522,246	$ 29,139,497	61.87	*Liberty / Liberty County / TxDOT*	◕	◕	●	◕	X	X								X	X					
Liberty - 2	Main Street (SL 227) & US 90	$ 1,184,500	$ 1,447,165	$ 19,723,091	$ 21,170,256	17.87	*Liberty / Liberty County / TxDOT*	◕	◕	◕	◕	X	X		X						X	X	X				
Liberty - 3	Independence Street & US 90	$ 1,216,000	$ 1,223,327	$ 54,376,288	$ 55,599,615	45.72	*Liberty / Liberty County / TxDOT*	●	●	◕	●	X	X		X	X					X	X					
Liberty - 4	US 90 & SH 146	$ 184,000	$ 3,892,044	$ 24,459,707	$ 28,351,751	154.09	*Liberty / Liberty County / TxDOT*	◕	●	●	●	X									X	X					
Liberty - 5	Travis Street & Sam Houston Street	$ -	$ -	$ 221,255	$ 221,255	0.00	*Liberty / Liberty County*	◕	◑	○	◑								X								
Liberty - 6	Bowie Street & Grand Avenue	$ 613,000	$ -	$ 200,948	$ 200,948	0.33	*Liberty / Liberty County*	◕	◑	◑	◑				X	X		X								X	
Liberty - 7	Main Street (SL 227) & Grand Avenue	$ 346,500	$ 476,613	$ 11,806,387	$ 12,283,001	35.45	*Liberty / Liberty County / TxDOT*	●	◕	◕	◕	X				X					X			X			
Liberty - 8	Bowie Street & Monta Street	$ 550,000	$ -	$ -	$ -	0.00	*Liberty / Liberty County*	◕	◑	◑	◑			X	X	X											
Liberty - 9	Bowie Street & Edgewood Street	$ 287,036	$ -	$ -	$ -	0.00	*Liberty / Liberty County*	◑	◑	◑	◑							X								X	
Liberty - 10	Main Street (SL 227) & Jefferson Drive	$ 4,571,041	$ 964,776	$ 393,753,971	$ 394,718,747	86.35	*Liberty / Liberty County / TxDOT*	●	◕	●	●	X		X	X		X	X			X			X			
Liberty - 11	Main Street (SL 227) & Cook Road	$ 3,561,309	$ 309,770	$ 72,188,649	$ 72,498,419	20.36	*Liberty / Liberty County / TxDOT*	●	◕	◕	◕			X		X	X		X		X						
Liberty - 12	Main Street (SL 227) & SH 146	$ 1,826,667	$ 16,060,610	$ 31,185,882	$ 47,246,492	25.86	*Liberty / Liberty County / TxDOT*	●	◕	◕	◕			X			X		X		X	X					
Plum Grove - 1	Plum Grove Rd & FM 1010/Baptist Church Loop Road	$ 2,626,116	$ -	$ -	$ -	0.00	*Plum Grove / Liberty County / TxDOT*	◑	◑	◑	◑								X								

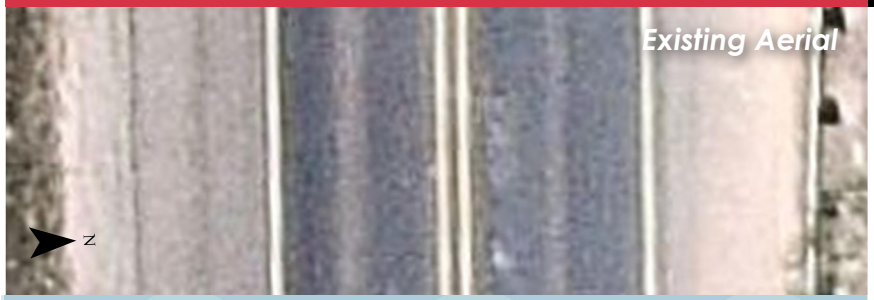
Corridor Summary Sheets

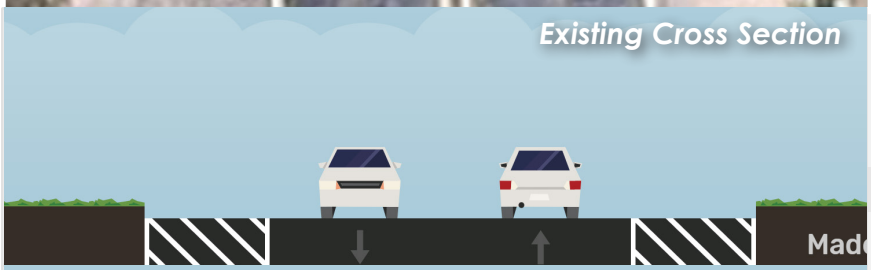
SH 105/W Southline Street

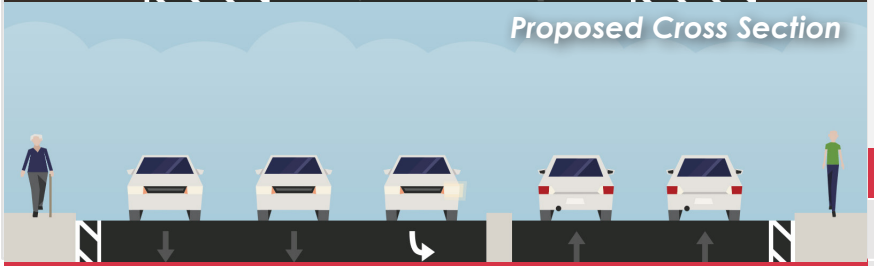
from SH 105 to Washington Avenue

Corridor-Segment ID: A-1

Cross-Sections







Capacity Data

Study Year	Average Daily Traffic	Volume-to-Capacity
2021	9117	0.37
2045	14664	0.59

Crash Data (2016-2020)

Total	Fatal	Serious Injury	Pedestrian	Bicycle
43	0	0	0	0

Recommended Improvements

General

Proposed Classification: Principal Arterial (4-6 lanes, Divided)

Short-Term

- Install pedestrian elements (marked crosswalks, countdown signals where applicable, curb ramps, etc) at intersections

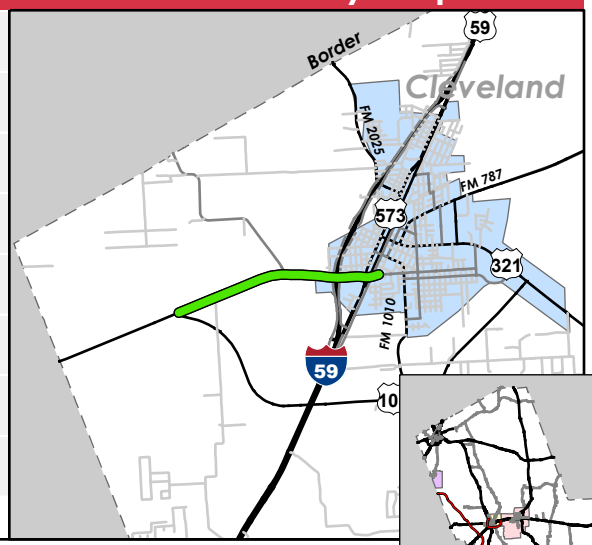
Long-Term

- Install 6-foot sidewalk along both sides of W Southline Street between Majnik Avenue and S Washington Avenue
- Install bikeway (shared use path or bike lanes) along the entire corridor
- Widen to minimum 4-lane divided cross-section with center raised median and turn bays where appropriate
- Extend W Southline Street from its existing terminus at S Washington Avenue to Southline Street or Truman Street on the east side of the railroad; install railroad crossing

Segment Characteristics

Segment Length (mi)	1.99
Posted Speed (mph)	65
ROW Width (ft)	110
Roadway Width (ft)	45
Number of Lanes	2
Center Type	Undivided
Center Width (ft)	0
Sidewalk Count	None

Location Key Map

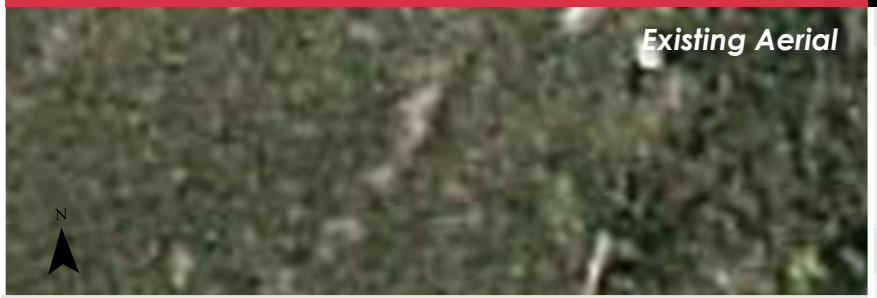


FM 2025/Fenner Avenue (Proposed Extension)

from Washington Avenue to Fenner Avenue/Nevell Street

Corridor-Segment ID: B-1

Cross-Sections



Existing Cross-Section

Proposed Cross-Section

Recommended Improvements

General

Proposed Classification: N/A

None; do not construct

- This extension would require constructing two new railroad crossings, which is not feasible in Cleveland because of the amount of existing crossings. We would need to exchange an existing crossing to build a new one, which is not desirable at This location.

Short-Term

Long-Term

Capacity Data

Study Year	Average Daily Traffic	Volume-to-Capacity
2021	N/A	N/A
2045	N/A	N/A

Crash Data (2016-2020)

Total	Fatal	Serious Injury	Pedestrian	Bicycle
N/A	N/A	N/A	N/A	N/A

Segment Characteristics

Segment Length (mi)	2.77
Posted Speed (mph)	N/A
ROW Width (ft)	N/A
Roadway Width (ft)	N/A
Number of Lanes	N/A
Center Type	N/A
Center Width (ft)	N/A
Sidewalk Count	N/A

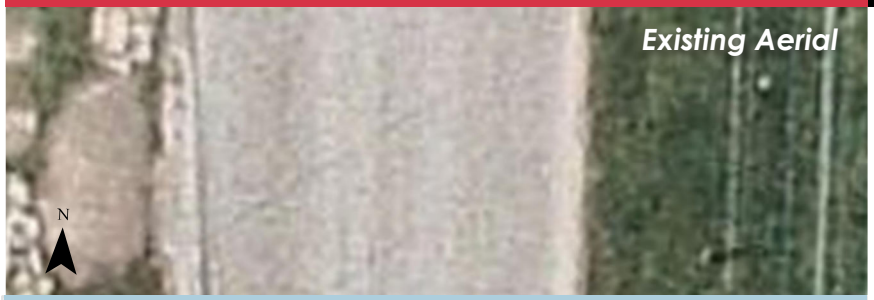
Location Key Map

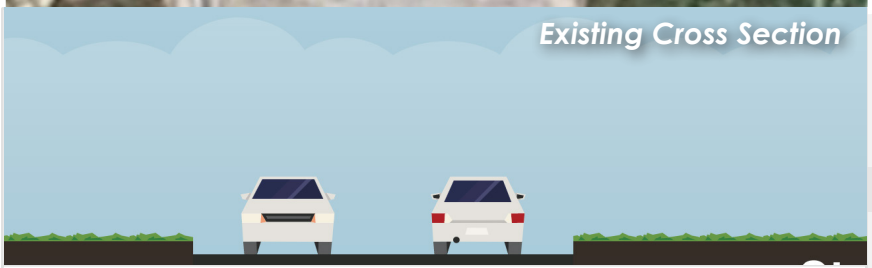
FM 2025/Fenner Avenue

from Nevell Street to Issacks Street

Corridor-Segment ID: B-2

Cross-Sections





Proposed Cross-Section

Recommended Improvements

General

Proposed Classification: Collector
None; utilize FM 1010/ Plum Grove Road (Corridor B-1*) as major north-south route in the vicinity

Short-Term

- Upgrade pavement markings

Long-Term

Capacity Data

Study Year	Average Daily Traffic	Volume-to-Capacity
2021	1580	0.05
2045	2541	0.09

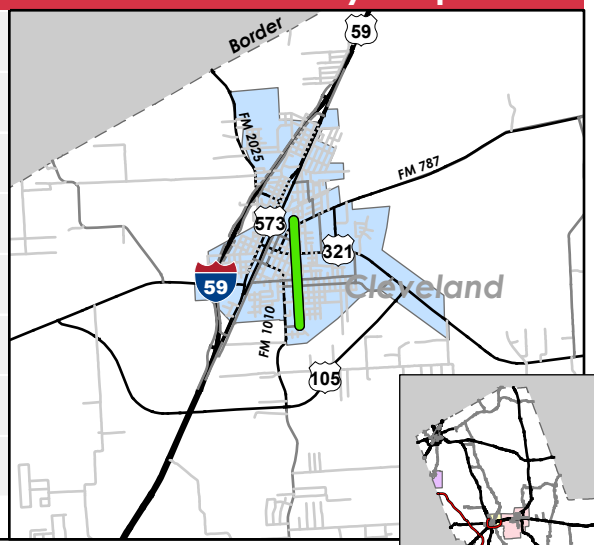
Crash Data (2016-2020)

Total	Fatal	Serious Injury	Pedestrian	Bicycle
25	0	0	0	0

Segment Characteristics

Segment Length (mi)	0.3
Posted Speed (mph)	30
ROW Width (ft)	50
Roadway Width (ft)	24
Number of Lanes	2
Center Type	Undivided
Center Width (ft)	0
Sidewalk Count	None

Location Key Map

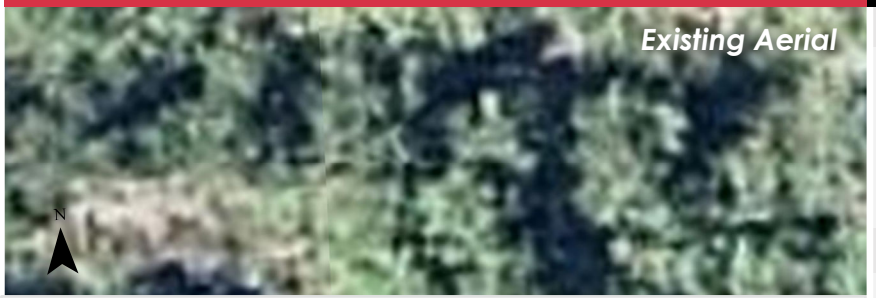


FM 2025/Fenner Avenue (Proposed Extension)

from Issacks Street to FM 331

Corridor-Segment ID: B-3

Cross-Sections



Existing Cross-Section

Proposed Cross-Section

Recommended Improvements

General

Proposed Classification: N/A

None; utilize FM 1010/ Plum Grove Road (Corridor B-1*) as major north-south route in the vicinity

Short-Term

Long-Term

Capacity Data

Study Year	Average Daily Traffic	Volume-to-Capacity
2021	N/A	N/A
2045	N/A	N/A

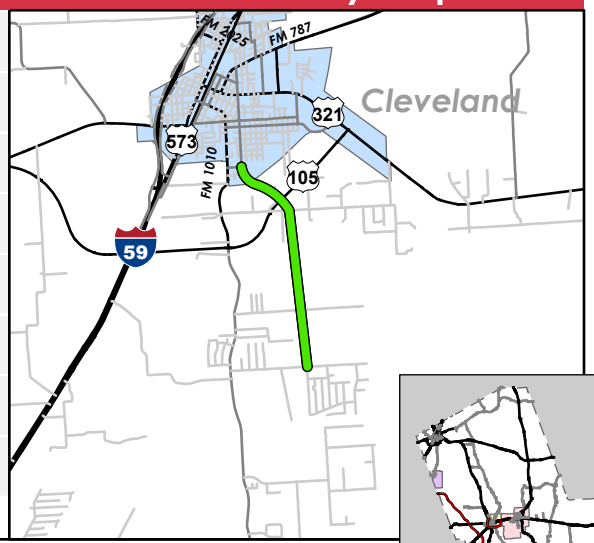
Crash Data (2016-2020)

Total	Fatal	Serious Injury	Pedestrian	Bicycle
N/A	N/A	N/A	N/A	N/A

Segment Characteristics

Segment Length (mi)	1.3
Posted Speed (mph)	N/A
ROW Width (ft)	N/A
Roadway Width (ft)	N/A
Number of Lanes	N/A
Center Type	N/A
Center Width (ft)	N/A
Sidewalk Count	N/A

Location Key Map

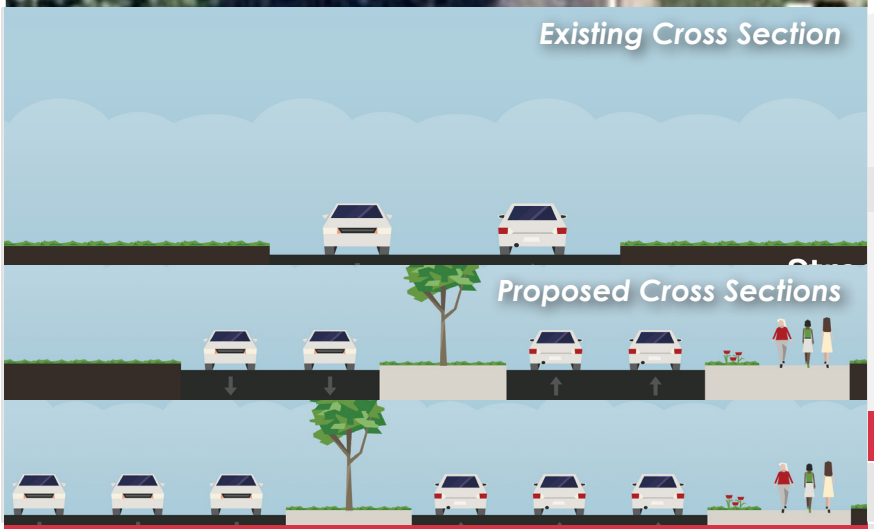


FM 1010/Plum Grove Road

from Southline Street to FM 2090

*Corridor-Segment ID: B-1**

Cross-Sections



Capacity Data

Study Year	Average Daily Traffic	Volume-to-Capacity
2021	7708	0.31
2045	12398	0.5

Crash Data (2016-2020)

Total	Fatal	Serious Injury	Pedestrian	Bicycle
200	3	39	1	1

Recommended Improvements

General

Proposed Classification: Principal Arterial (4-6 lanes, Divided)

Short-Term

- Install pedestrian elements (marked crosswalks, countdown signals where applicable, curb ramps, etc) at intersections
- Realign intersection with FM 2090 as a four-way instersection (see Intersection Plum Grove '- 1)

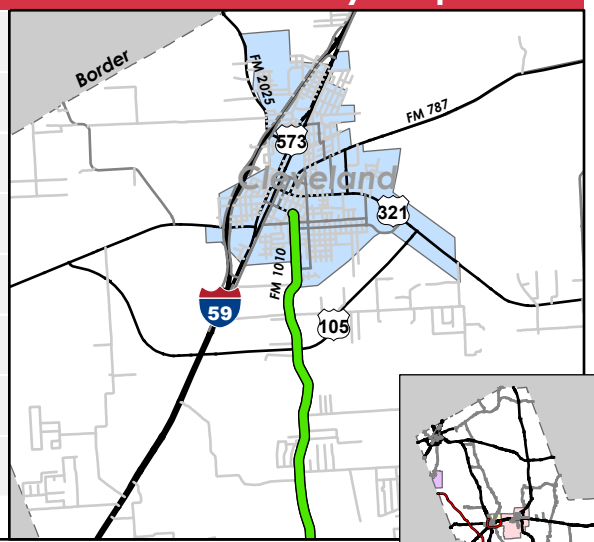
Long-Term

- Install 10-foot shared use path for pedestrian and bicyclist mobility between the cities of Cleveland and Plum Grove along the east side of FM 1010
- Widen to minimum 4-lane divided section between E Dallas Street and SH 105 bypass
- Widen to minimum 6-lane divided section between SH 105 bypass and terminus at future Grand Parkway

Segment Characteristics

Segment Length (mi)	8.67
Posted Speed (mph)	50
ROW Width (ft)	62
Roadway Width (ft)	30
Number of Lanes	2
Center Type	Undivided
Center Width (ft)	0
Sidewalk Count	None

Location Key Map

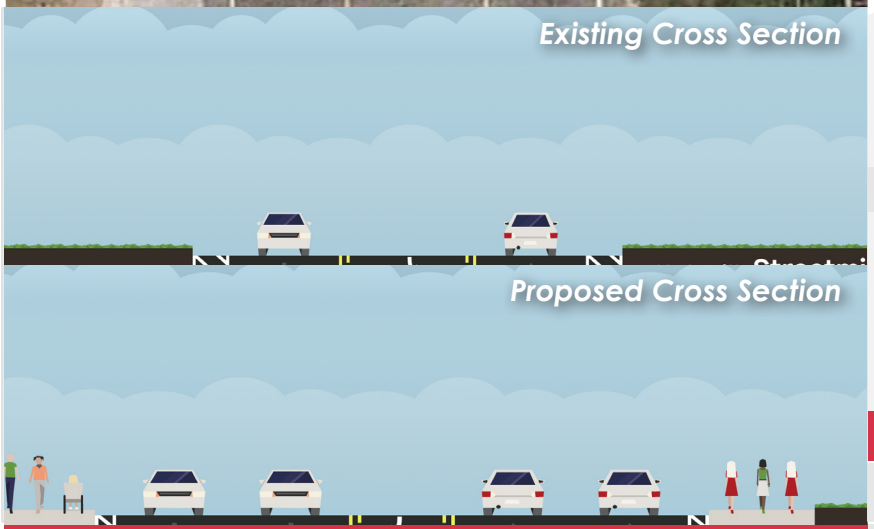


Houston Avenue

from FM 787 to SH 105

Corridor-Segment ID: C-1

Cross-Sections



Capacity Data

Study Year	Average Daily Traffic	Volume-to-Capacity
2021	14893	0.52
2045	23954	0.83

Crash Data (2016-2020)

Total	Fatal	Serious Injury	Pedestrian	Bicycle
307	1	5	2	3

Recommended Improvements

General

Proposed Classification: Principal Arterial (4-6 lanes, Divided)

Short-Term

- Install pedestrian elements (marked crosswalks, countdown signals where applicable, curb ramps, etc) at intersections

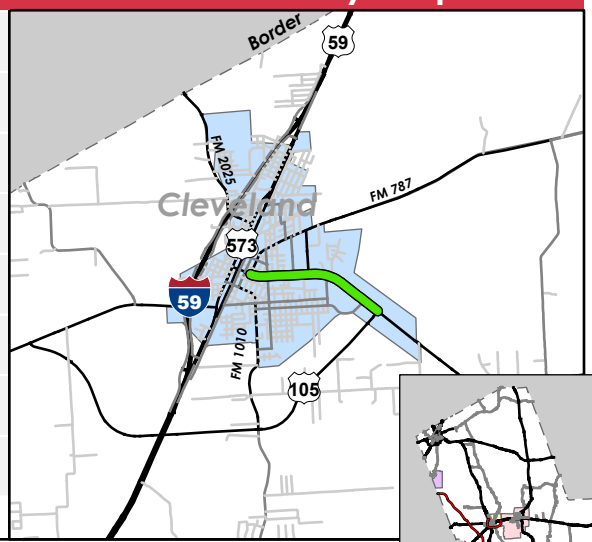
Long-Term

- Widen to minimum 5-lane cross-section with 14-foot center two-way left-turn lane
- Replace existing drainage with curb and gutter drainage
- Install 6-foot sidewalk along at least one side of the corridor
- Install bikeway (shared use path or bike lanes) along the entire corridor

Segment Characteristics

Segment Length (mi)	1.72
Posted Speed (mph)	50
ROW Width (ft)	80-100
Roadway Width (ft)	45
Number of Lanes	3
Center Type	TWLTL
Center Width (ft)	
Sidewalk Count	One Side

Location Key Map

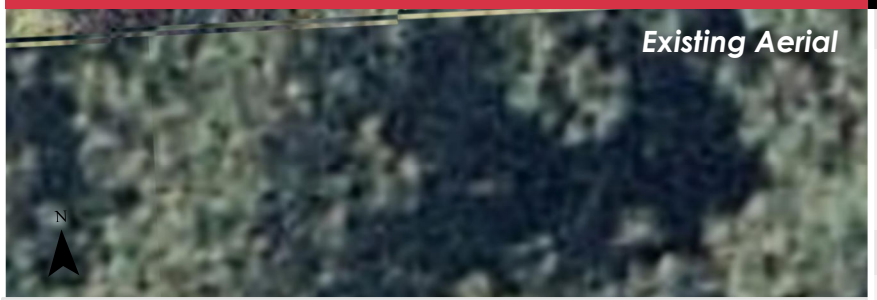


N Travis Avenue

from Travis Avenue/E 5th Street to Northern County Limits

Corridor-Segment ID: D-1

Cross-Sections



Existing Cross-Section

Proposed Cross-Section

Recommended Improvements

General

Proposed Classification: N/A
None; do not construct
- There is already a frontage road in This area

Short-Term

Long-Term

Capacity Data

Study Year	*Average Daily Traffic*	*Volume-to-Capacity*
2021	N/A	N/A
2045	N/A	N/A

Crash Data (2016-2020)

Total	*Fatal*	*Serious Injury*	*Pedestrian*	*Bicycle*
N/A	N/A	N/A	N/A	N/A

Segment Characteristics

Segment Length (mi)	2.68
Posted Speed (mph)	N/A
ROW Width (ft)	N/A
Roadway Width (ft)	N/A
Number of Lanes	N/A
Center Type	N/A
Center Width (ft)	N/A
Sidewalk Count	N/A

Location Key Map

CR 2243

from Northern County Limits to CR 2243

Corridor-Segment ID: E-1

Cross-Sections

Existing Cross-Section

Proposed Cross-Section

Recommended Improvements

General

Proposed Classification: N/A
None; do not construct
- Re-examine east-west connectivity in updated countywide Thoroughfare Plan

Short-Term

Long-Term

Capacity Data

Study Year	Average Daily Traffic	Volume-to-Capacity
2021	N/A	N/A
2045	N/A	N/A

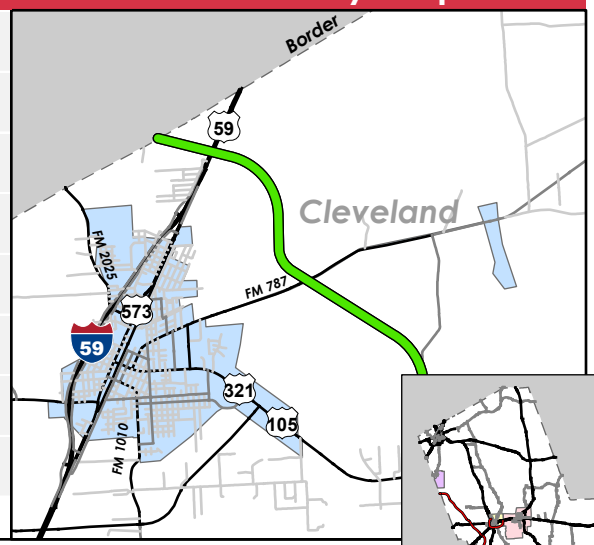
Crash Data (2016-2020)

Total	Fatal	Serious Injury	Pedestrian	Bicycle
1	0	0	0	0

Segment Characteristics

Segment Length (mi)	4.88
Posted Speed (mph)	45
ROW Width (ft)	N/A
Roadway Width (ft)	N/A
Number of Lanes	N/A
Center Type	N/A
Center Width (ft)	N/A
Sidewalk Count	N/A

Location Key Map

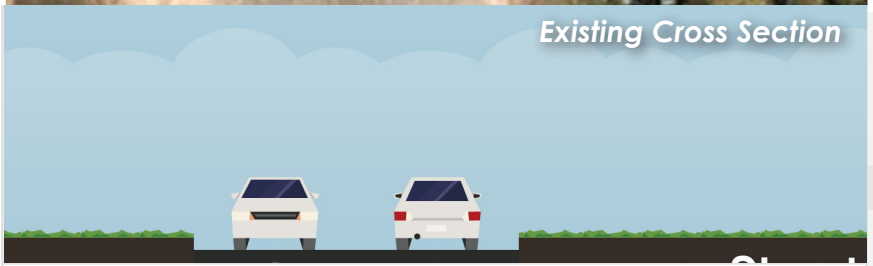


CR 2243

from CR 2243 to SH 105

Corridor-Segment ID: E-2

Cross-Sections



Proposed Cross-Section

Recommended Improvements

General

Proposed Classification: Minor Arterial

Short-Term

- Upgrade pavement
- Upgrade pavement markings

Long-Term

Capacity Data

Study Year	*Average Daily Traffic*	*Volume-to-Capacity*
2021	N/A	N/A
2045	N/A	N/A

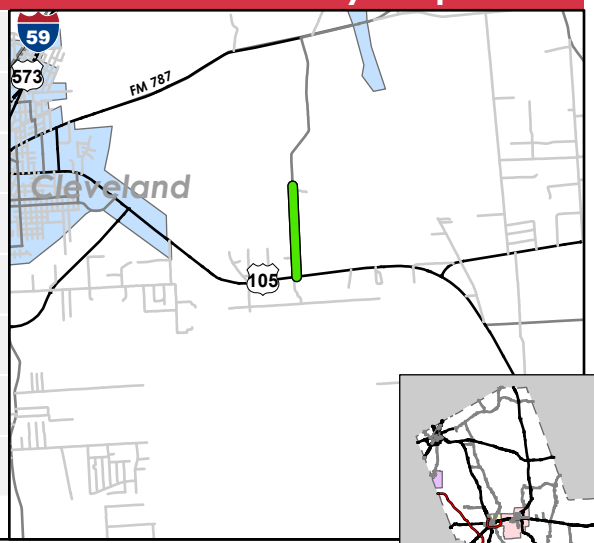
Crash Data (2016-2020)

Total	*Fatal*	*Serious Injury*	*Pedestrian*	*Bicycle*
9	1	0	0	1

Segment Characteristics

Segment Length (mi)	1.12
Posted Speed (mph)	45
ROW Width (ft)	60
Roadway Width (ft)	18
Number of Lanes	2
Center Type	Undivided
Center Width (ft)	0
Sidewalk Count	None

Location Key Map

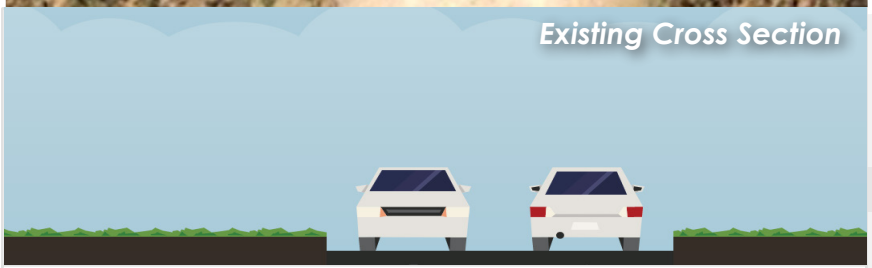


CR 2204/2201/2239

from Northern County Limits to SH 321

Corridor-Segment ID: F-1

Cross-Sections



Proposed Cross-Section

Recommended Improvements

General

Proposed Classification: N/A
- Re-examine north-south connectivity in updated countywide Thoroughfare Plan

Short-Term

Long-Term

Capacity Data

Study Year	*Average Daily Traffic*	*Volume-to-Capacity*
2021	352	0.01
2045	566	0.02

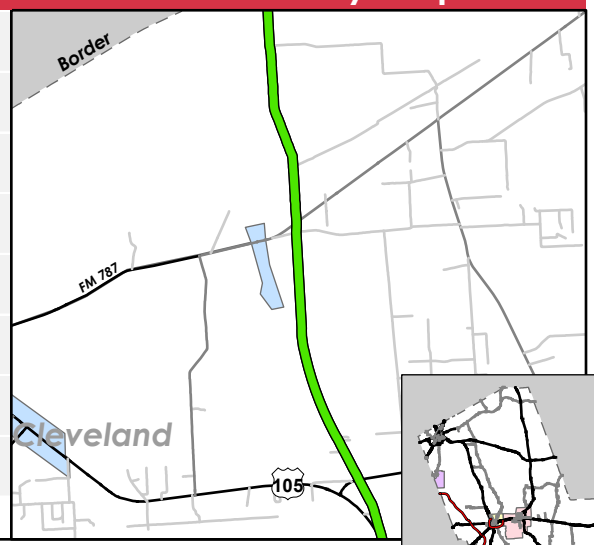
Crash Data (2016-2020)

Total	*Fatal*	*Serious Injury*	*Pedestrian*	*Bicycle*
6	0	1	0	0

Segment Characteristics

Segment Length (mi)	7.32
Posted Speed (mph)	60
ROW Width (ft)	50
Roadway Width (ft)	20
Number of Lanes	2
Center Type	Undivided
Center Width (ft)	0
Sidewalk Count	None

Location Key Map

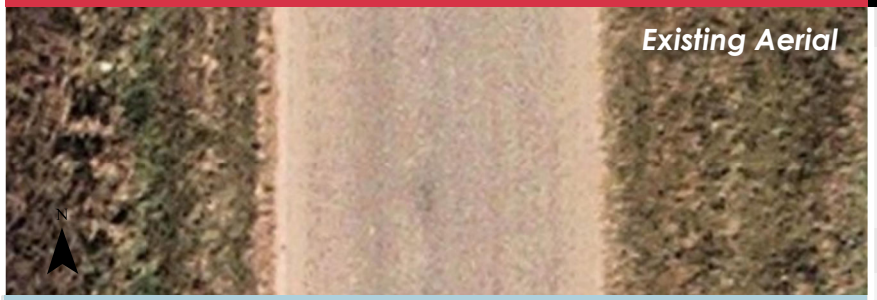


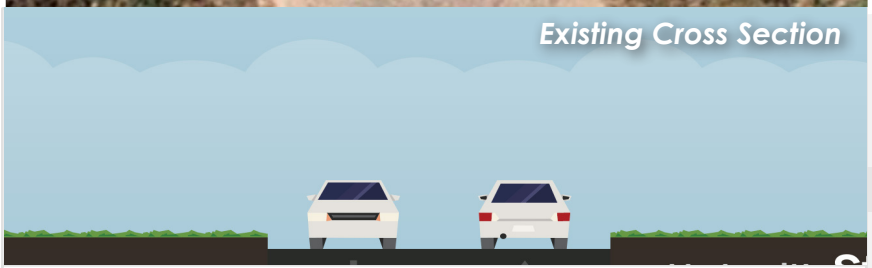
CR 602/604/610/615

from FM 686 to FM 1960

Corridor-Segment ID: G-1

Cross-Sections





Proposed Cross-Section

Recommended Improvements

General

Proposed Classification: Principal Arterial (4-6 lanes, Divided)
- Re-examine alignment and cross-section in updated countywide Thoroughfare Plan
- Further study required for the interchange of this corridor with Grand Parkway and FM 1960

Short-Term

Long-Term

Capacity Data

Study Year	Average Daily Traffic	Volume-to-Capacity
2021	322	0.01
2045	518	0.02

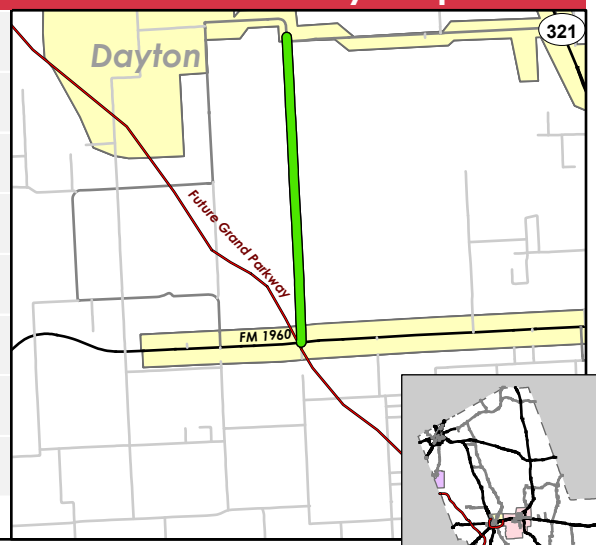
Crash Data (2016-2020)

Total	Fatal	Serious Injury	Pedestrian	Bicycle
6	0	0	0	0

Segment Characteristics

Segment Length (mi)	3.64
Posted Speed (mph)	30
ROW Width (ft)	50
Roadway Width (ft)	22
Number of Lanes	2
Center Type	Undivided
Center Width (ft)	0
Sidewalk Count	None

Location Key Map

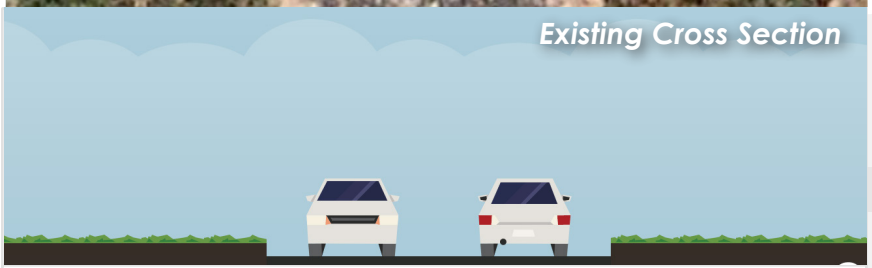


CR 602/604/610/615

from FM 1960 to US 90

Corridor-Segment ID: G-2

Cross-Sections



Proposed Cross-Section

Recommended Improvements

General

Proposed Classification: Principal Arterial (4-6 lanes, Divided)

Short-Term

Long-Term

- Provide grade-separated crossing over US 90 to connect with FM 1413 (Corridor H-1)
- Realign intersection with CR 602 in updated countywide Thoroughfare Plan

Capacity Data

Study Year	Average Daily Traffic	Volume-to-Capacity
2021	1107	0.04
2045	1781	0.06

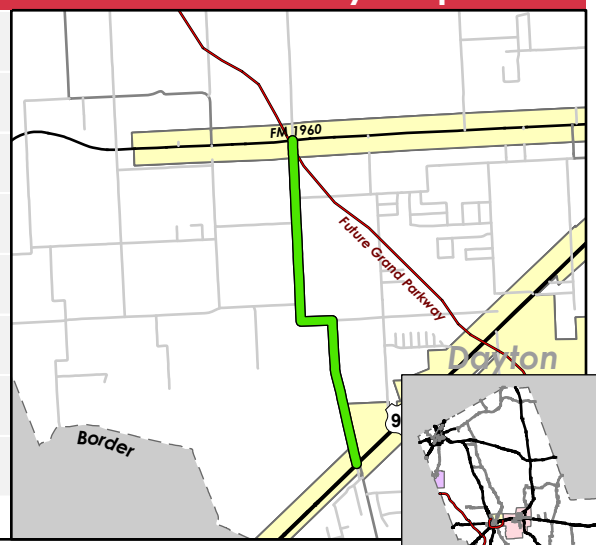
Crash Data (2016-2020)

Total	Fatal	Serious Injury	Pedestrian	Bicycle
18	1	1	0	1

Segment Characteristics

Segment Length (mi)	4.57
Posted Speed (mph)	30
ROW Width (ft)	N/A
Roadway Width (ft)	24
Number of Lanes	2
Center Type	Undivided
Center Width (ft)	0
Sidewalk Count	None

Location Key Map

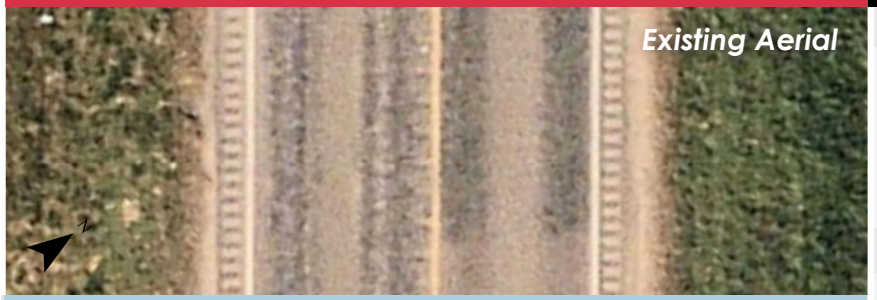


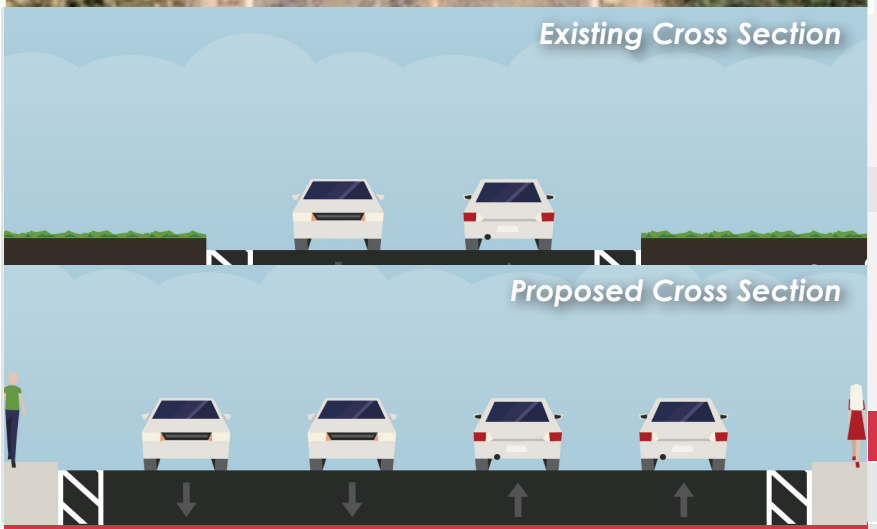
FM 1413

from US 90 to SH 146

Corridor-Segment ID: H-1

Cross-Sections





Capacity Data

Study Year	Average Daily Traffic	Volume-to-Capacity
2021	4709	0.19
2045	7574	0.3

Crash Data (2016-2020)

Total	Fatal	Serious Injury	Pedestrian	Bicycle
67	2	2	0	0

Recommended Improvements

General

Proposed Classification: Principal Arterial (4-6 lanes, Undivided)

Short-Term

- Install pedestrian elements (marked crosswalks, countdown signals where applicable, curb ramps, etc) at intersections

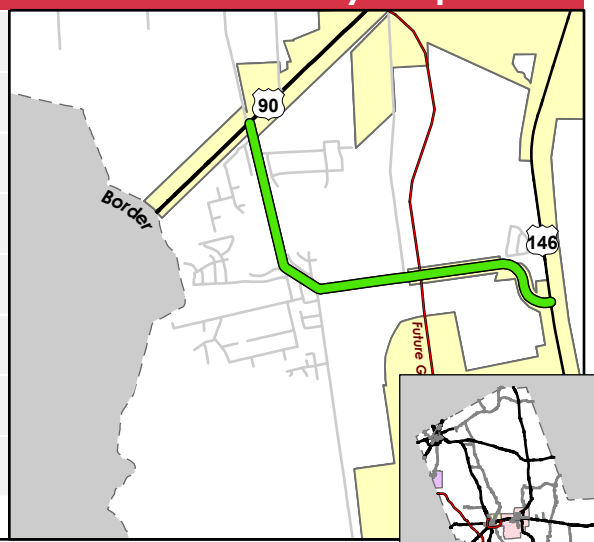
Long-Term

- Install 10-foot shared use path along at least one side of the corridor
- Realign intersection with CR 486 in updated countywide thoroughfare plan
- Realign intersection with SH 146 in updated countywide thoroughfare plan
- Construct grade-separated railroad crossing

Segment Characteristics

Segment Length (mi)	5.47
Posted Speed (mph)	50
ROW Width (ft)	60-70
Roadway Width (ft)	30
Number of Lanes	2
Center Type	Undivided
Center Width (ft)	0
Sidewalk Count	None

Location Key Map

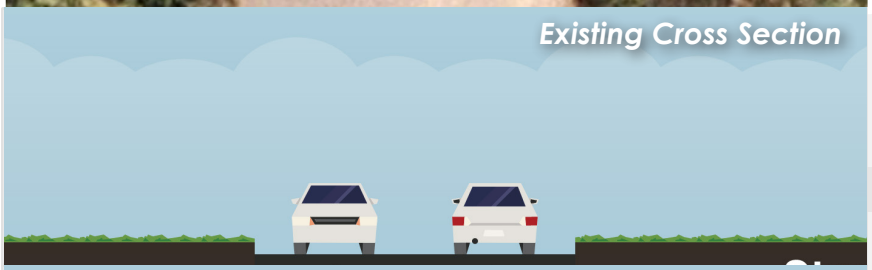


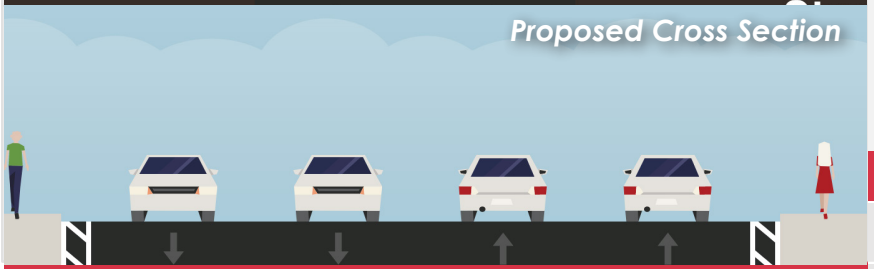
CR 486

from FM 1413 to 17,419 feet south of FM 1413

Corridor-Segment ID: I-1

Cross-Sections





Capacity Data

Study Year	Average Daily Traffic	Volume-to-Capacity
2021	815	0.03
2045	1311	0.04

Crash Data (2016-2020)

Total	Fatal	Serious Injury	Pedestrian	Bicycle
15	0	0	0	0

Recommended Improvements

General

Proposed Classification: Principal Arterial (4-6 lanes, Undivided)

Short-Term

- Install pedestrian elements (marked crosswalks, countdown signals where applicable, curb ramps, etc) at intersections

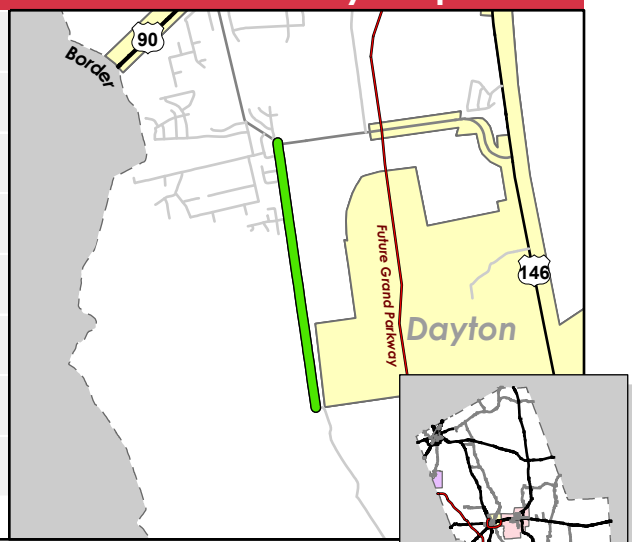
Long-Term

- Install 10-foot shared use path along at least one side of the corridor
- Realign intersection with FM 1413 in updated countywide thoroughfare plan

Segment Characteristics

Segment Length (mi)	3.3
Posted Speed (mph)	35
ROW Width (ft)	60
Roadway Width (ft)	22
Number of Lanes	2
Center Type	Undivided
Center Width (ft)	0
Sidewalk Count	None

Location Key Map

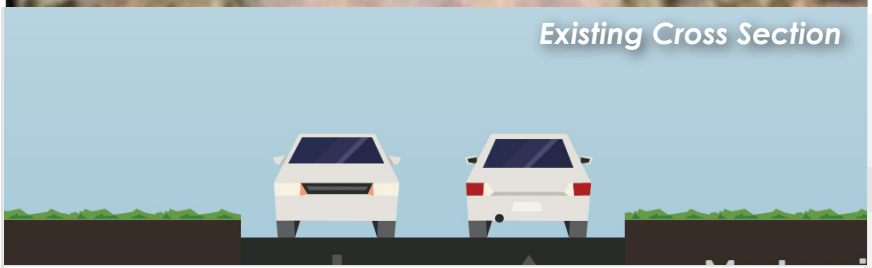


CR 491

from US 90 to FM 1413

Corridor-Segment ID: J-1

Cross-Sections



Proposed Cross-Section

Recommended Improvements

General

Proposed Classification: N/A
- Re-examine connections to SH 99, US 90, and FM 1413 in updated countywide Thoroughfare Plan

Short-Term

- Upgrade pavement for short-term residential use

Long-Term

Capacity Data

Study Year	Average Daily Traffic	Volume-to-Capacity
2021	121	0
2045	195	0.01

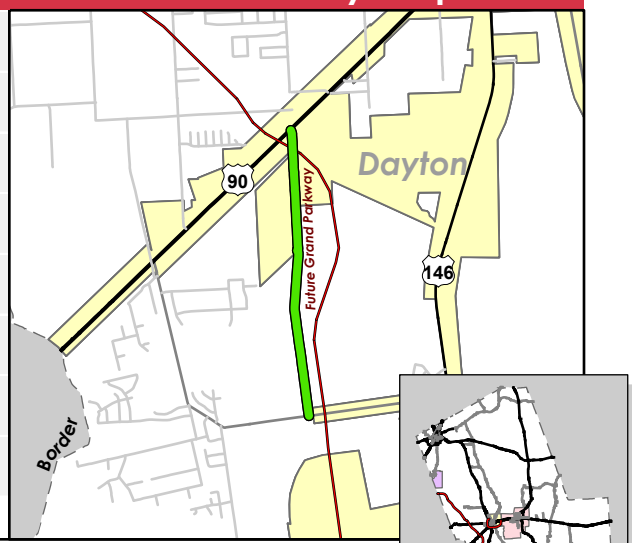
Crash Data (2016-2020)

Total	Fatal	Serious Injury	Pedestrian	Bicycle
3	0	0	0	0

Segment Characteristics

Segment Length (mi)	3.55
Posted Speed (mph)	30
ROW Width (ft)	50-170
Roadway Width (ft)	18
Number of Lanes	2
Center Type	Undivided
Center Width (ft)	0
Sidewalk Count	None

Location Key Map

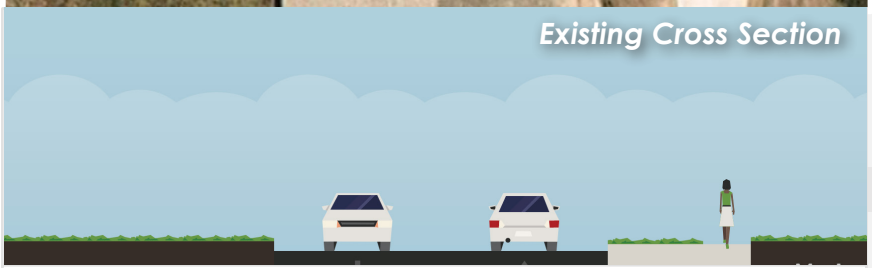


Lovers Lane

from SH 146 to Lovers Lane

Corridor-Segment ID: K-1

Cross-Sections



Proposed Cross-Section

Recommended Improvements

General

Proposed Classification: Collector

Short-Term

- Upgrade pavement markings

Long-Term

- Extend existing roadway westward from current terminus to connect with SH 146

Capacity Data

Study Year	Average Daily Traffic	Volume-to-Capacity
2021	N/A	N/A
2045	N/A	N/A

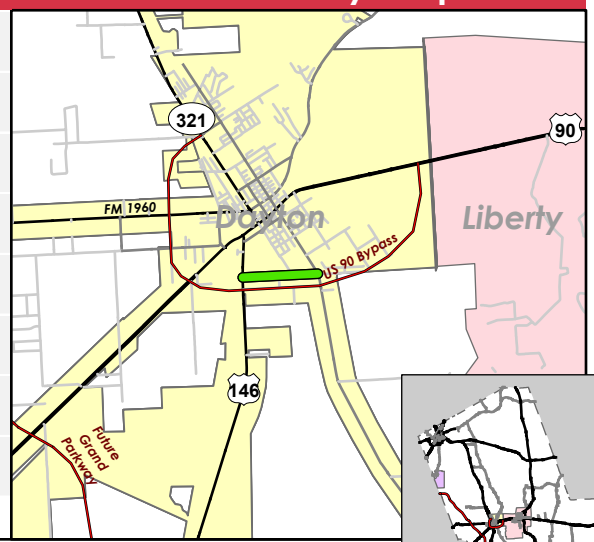
Crash Data (2016-2020)

Total	Fatal	Serious Injury	Pedestrian	Bicycle
1	0	1	0	0

Segment Characteristics

Segment Length (mi)	0.61
Posted Speed (mph)	N/A
ROW Width (ft)	N/A
Roadway Width (ft)	N/A
Number of Lanes	2
Center Type	Undivided
Center Width (ft)	N/A
Sidewalk Count	N/A

Location Key Map

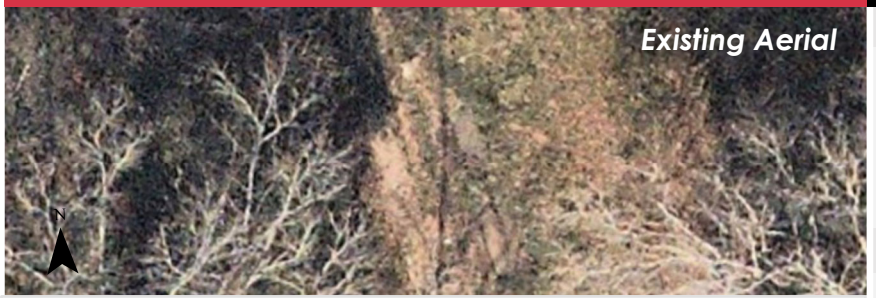


Waco Street

from Tram Road to Waco Street

Corridor-Segment ID: L-1

Cross-Sections



Existing Cross-Section

Proposed Cross-Section

Recommended Improvements

General

Proposed Classification: N/A
None; do not construct
- the Dayton bypass is proposed to be extended along Klemp road, which will merge into Norcross Lane. the extension of Waco Street would create an intersection with the bypass that would be too near the adjacent intersections per TxDOT standards

Short-Term

Long-Term

Capacity Data

Study Year	Average Daily Traffic	Volume-to-Capacity
2021	3019	0.1
2045	4856	0.17

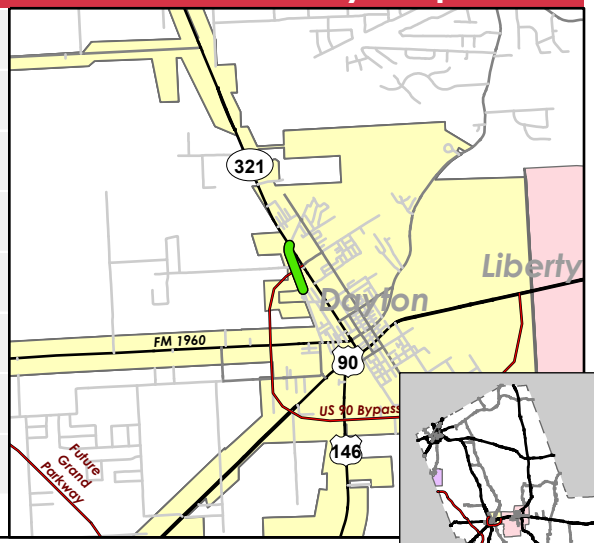
Crash Data (2016-2020)

Total	Fatal	Serious Injury	Pedestrian	Bicycle
8	0	0	0	0

Segment Characteristics

Segment Length (mi)	0.58
Posted Speed (mph)	N/A
ROW Width (ft)	N/A
Roadway Width (ft)	N/A
Number of Lanes	2
Center Type	Undivided
Center Width (ft)	N/A
Sidewalk Count	N/A

Location Key Map

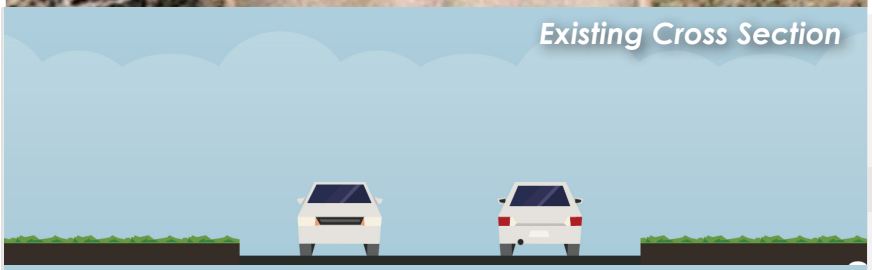


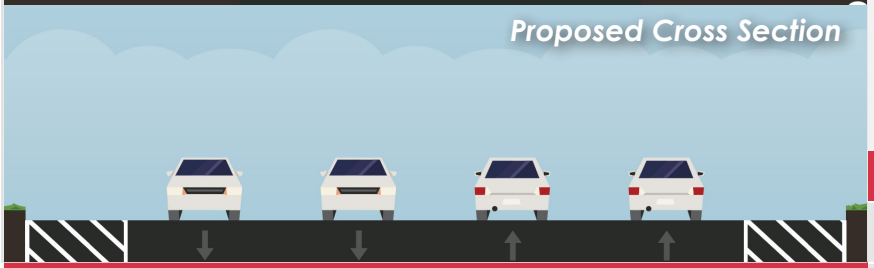
CR 606/Klemp Road

from FM 1960 to End Point

*Corridor-Segment ID: L-1**

Cross-Sections





Capacity Data

Study Year	Average Daily Traffic	Volume-to-Capacity
2021	825	0.03
2045	1327	0.05

Crash Data (2016-2020)

Total	Fatal	Serious Injury	Pedestrian	Bicycle
9	0	0	0	0

Recommended Improvements

General

Proposed Classification: Minor Arterial

Short-Term

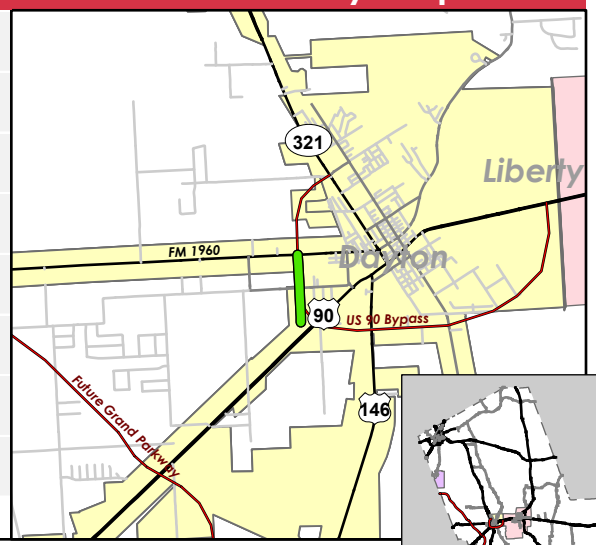
Long-Term

- Utilize as segment of US 90 bypass
- Construct grade-separated interchange with US 90

Segment Characteristics

Segment Length (mi)	0.83
Posted Speed (mph)	30
ROW Width (ft)	60
Roadway Width (ft)	28
Number of Lanes	2
Center Type	Undivided
Center Width (ft)	0
Sidewalk Count	None

Location Key Map

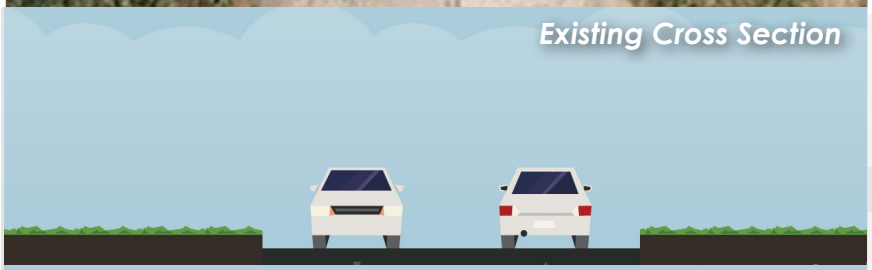


Martin Luther King Jr Drive

from US 90 to US 90

Corridor-Segment ID: M-1

Cross-Sections



Capacity Data

Study Year	Average Daily Traffic	Volume-to-Capacity
2021	1318	0.04
2045	2120	0.07

Crash Data (2016-2020)

Total	Fatal	Serious Injury	Pedestrian	Bicycle
41	0	1	1	1

Recommended Improvements

General

Proposed Classification: Minor Arterial

Short-Term

- Install pedestrian elements (marked crosswalks, countdown signals where applicable, curb ramps, etc) at intersections
- Upgrade pavement markings

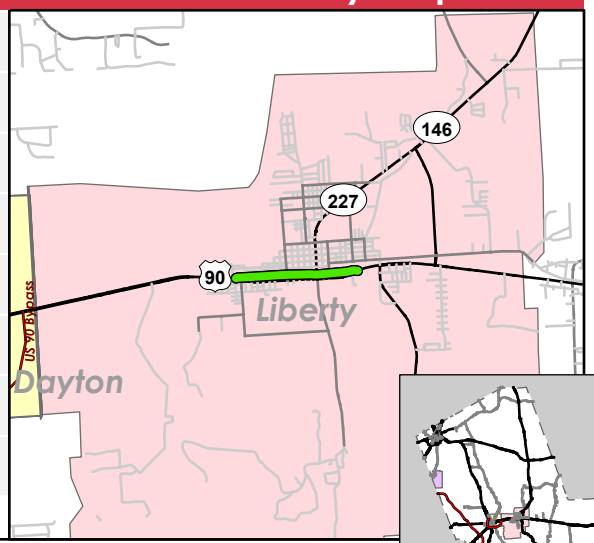
Long-Term

- Refine access management
- Install 6-foot sidewalk along at least one side of the corridor
- Install bikeway (shared use path or bike lanes) between US 90/SH 146 and Louisiana Street

Segment Characteristics

Segment Length (mi)	1.51
Posted Speed (mph)	30
ROW Width (ft)	50
Roadway Width (ft)	24
Number of Lanes	2
Center Type	Undivided
Center Width (ft)	0
Sidewalk Count	None

Location Key Map

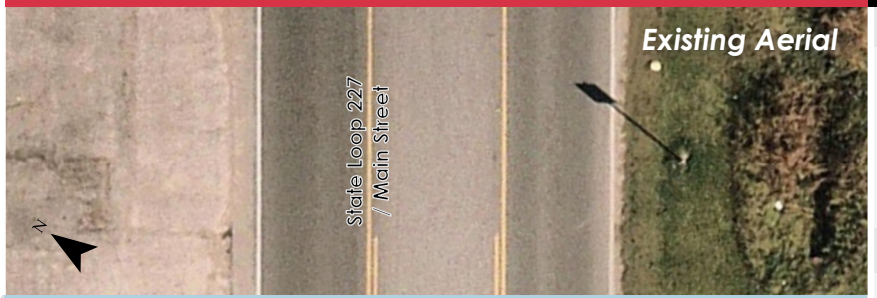


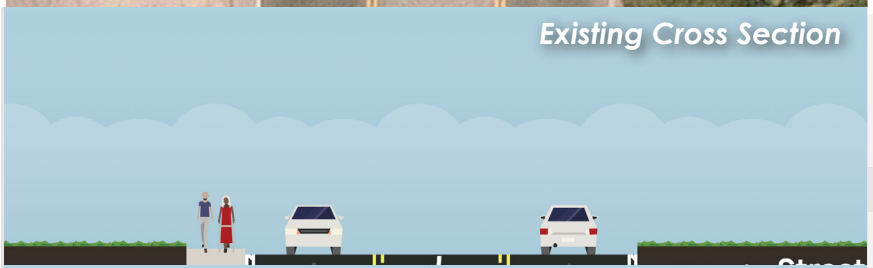
Main Street/State Loop 227

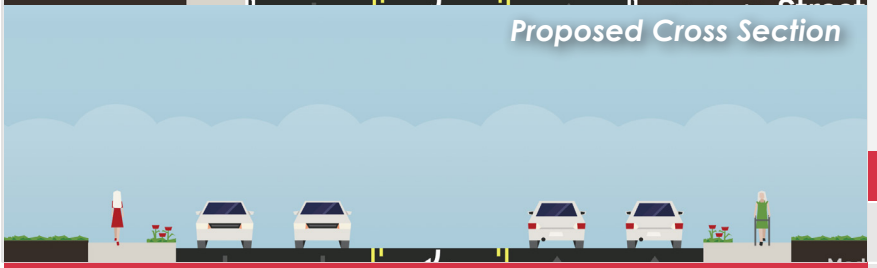
from SH 146 to Grand Avenue

Corridor-Segment ID: N-1

Cross-Sections







Capacity Data

Study Year	Average Daily Traffic	Volume-to-Capacity
2021	9559	0.22
2045	15375	0.36

Crash Data (2016-2020)

Total	Fatal	Serious Injury	Pedestrian	Bicycle
120	1	3	0	2

Recommended Improvements

General

Proposed Classification: Principal Arterial (4-6 lanes, Divided)

Short-Term

- Install pedestrian elements (marked crosswalks, countdown signals where applicable, curb ramps, etc) at intersections
- Upgrade pavement

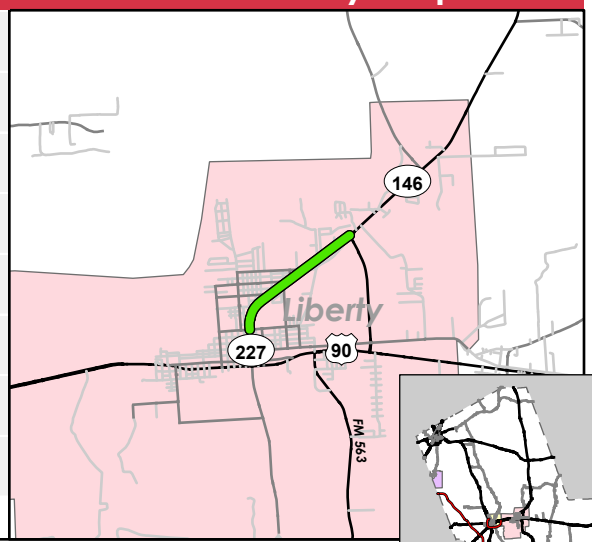
Long-Term

- Widen to minimum 5-lane cross-section with 14-foot center two-way left-turn lane
- Install 6-foot sidewalk along both sides of the corridor
'- Refine access management; further study required

Segment Characteristics

Segment Length (mi)	1.76
Posted Speed (mph)	45
ROW Width (ft)	60
Roadway Width (ft)	42
Number of Lanes	3
Center Type	TWLTL
Center Width (ft)	14
Sidewalk Count	None

Location Key Map

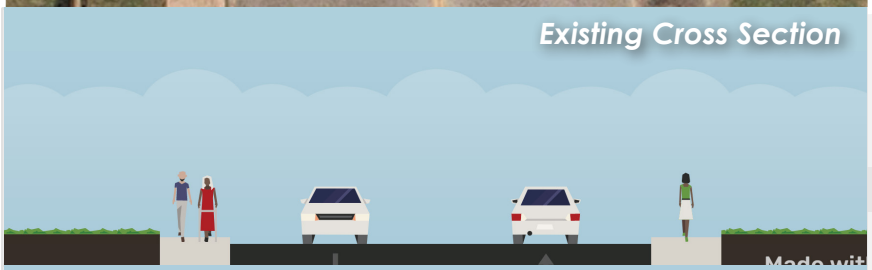


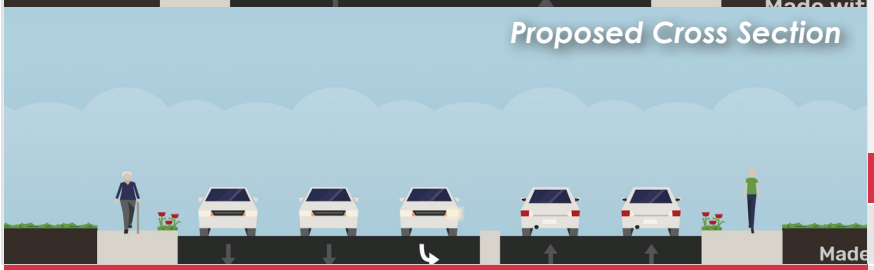
Main Street/State Loop 227

from Grand Avenue to US 90 / SH 146

Corridor-Segment ID: N-2

Cross-Sections





Capacity Data

Study Year	Average Daily Traffic	Volume-to-Capacity
2021	9559	0.33
2045	15375	0.53

Crash Data (2016-2020)

Total	Fatal	Serious Injury	Pedestrian	Bicycle
41	0	1	0	0

Recommended Improvements

General

Proposed Classification: Principal Arterial (4-6 lanes, Divided)

Short-Term

- Install pedestrian elements (marked crosswalks, countdown signals where applicable, curb ramps, etc) at intersections
- Upgrade pavement

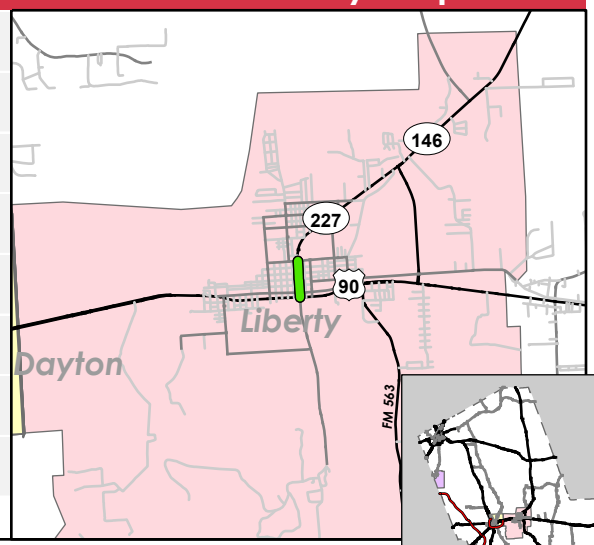
Long-Term

- Widen to minimum 4-lane divided cross-section with center raised median and turn bays where appropriate
- Install 6-foot sidewalk along both sides of the corridor
'- Refine access management; further study required

Segment Characteristics

Segment Length (mi)	0.45
Posted Speed (mph)	30
ROW Width (ft)	100
Roadway Width (ft)	36
Number of Lanes	2
Center Type	Undivided
Center Width (ft)	0
Sidewalk Count	Both Sides

Location Key Map

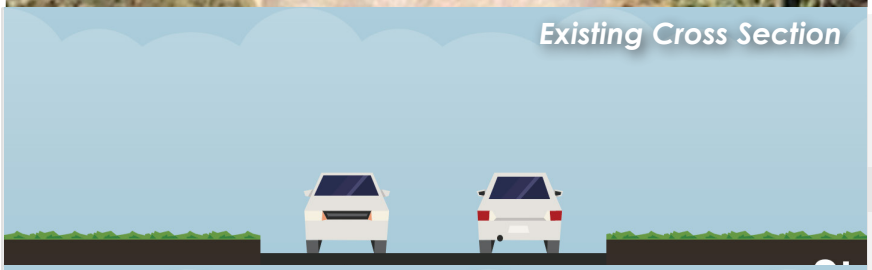


Texas Street

from Main Street/State Loop 227 to Beaumont Avenue

Corridor-Segment ID: O-1

Cross-Sections



Capacity Data

Study Year	Average Daily Traffic	Volume-to-Capacity
2021	1006	0.03
2045	1618	0.06

Crash Data (2016-2020)

Total	Fatal	Serious Injury	Pedestrian	Bicycle
N/A	N/A	N/A	N/A	N/A

Recommended Improvements

General

Proposed Classification: Principal Arterial (4 lanes, Undivided)

Short-Term

- Install pedestrian elements (marked crosswalks, countdown signals where applicable, curb ramps, etc) at intersections
- Upgrade pavement
- Upgrade pavement markings

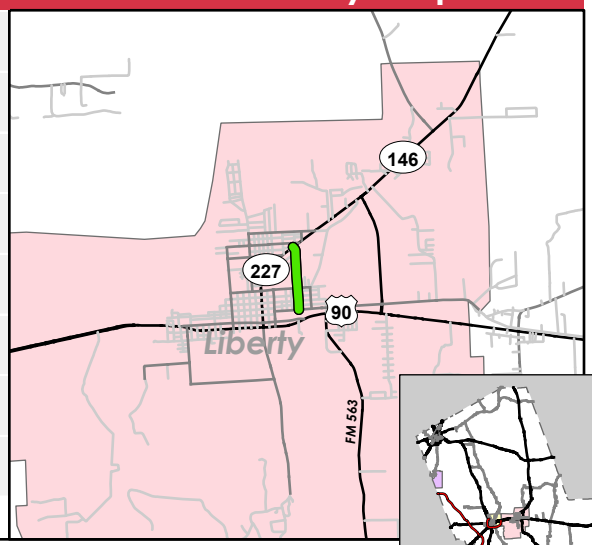
Long-Term

- Extend southward past existing terminus at Beaumont Avenue to connect to US 90 in updated countywide Thoroughfare Plan
- Install 10-foot shared use path or extend existing sidewalk along at least one side of the corridor

Segment Characteristics

Segment Length (mi)	0.78
Posted Speed (mph)	30
ROW Width (ft)	60
Roadway Width (ft)	24
Number of Lanes	2
Center Type	Undivided
Center Width (ft)	0
Sidewalk Count	One Side

Location Key Map

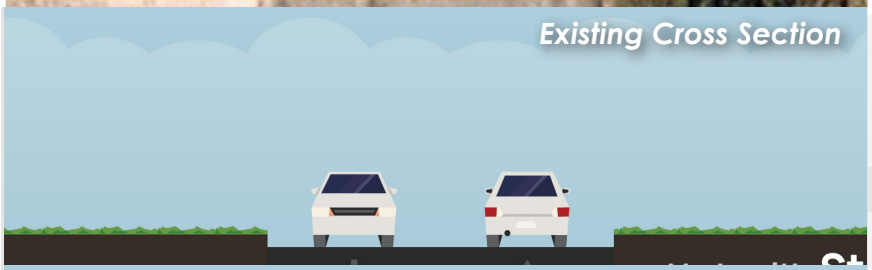


Beaumont Avenue

from San Jacinto Street to Eastern City Limits

Corridor-Segment ID: P-1

Cross-Sections



Capacity Data

Study Year	Average Daily Traffic	Volume-to-Capacity
2021	1449	0.05
2045	2331	0.08

Crash Data (2016-2020)

Total	Fatal	Serious Injury	Pedestrian	Bicycle
35	0	1	0	0

Recommended Improvements

General

Proposed Classification: Major Collector (4 lanes, Undivided)

Short-Term

- Install pedestrian elements (marked crosswalks, countdown signals where applicable, curb ramps, etc) at intersections
- Upgrade pavement markings

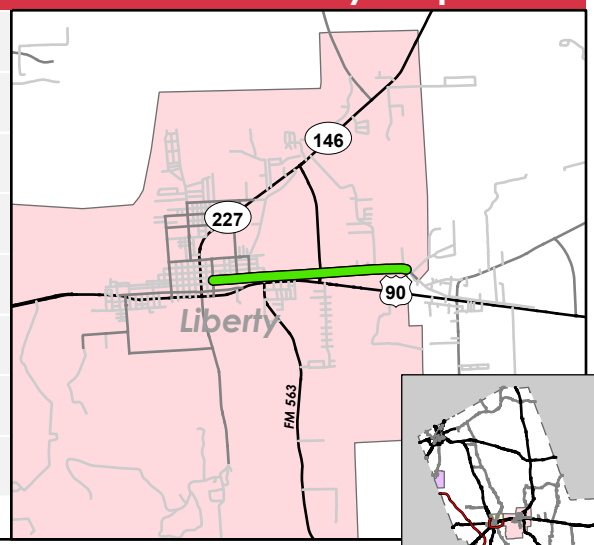
Long-Term

- Install 10-foot shared use path for pedestrian and bicyclist mobility along at least one side of Beaumont Avenue
- Widen to 4-lane undivided cross-section

Segment Characteristics

Segment Length (mi)	2.39
Posted Speed (mph)	30
ROW Width (ft)	60
Roadway Width (ft)	24
Number of Lanes	2
Center Type	Undivided
Center Width (ft)	0
Sidewalk Count	None

Location Key Map

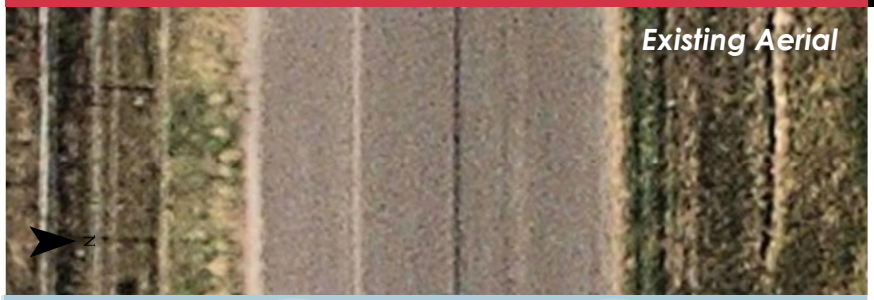


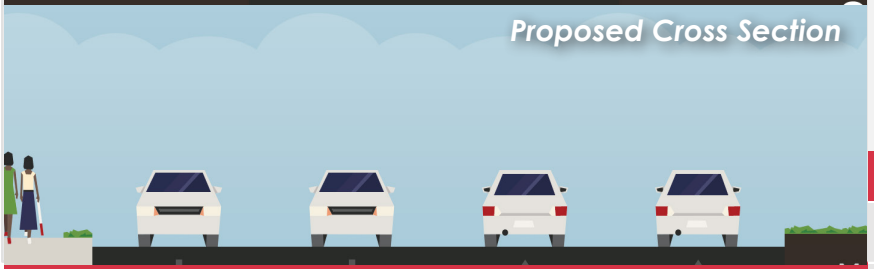
Jefferson Drive

from Main Street/State Loop 227 to Lakeland Drive

Corridor-Segment ID: Q-1

Cross-Sections





Capacity Data

Study Year	Average Daily Traffic	Volume-to-Capacity
2021	2405	0.08
2045	3868	0.13

Crash Data (2016-2020)

Total	Fatal	Serious Injury	Pedestrian	Bicycle
10	0	1	0	0

Recommended Improvements

General

Proposed Classification: Collector (4 lanes, Undivided)

Short-Term

- Install pedestrian elements (marked crosswalks, countdown signals where applicable, curb ramps, etc) at intersections
- Upgrade pavement markings

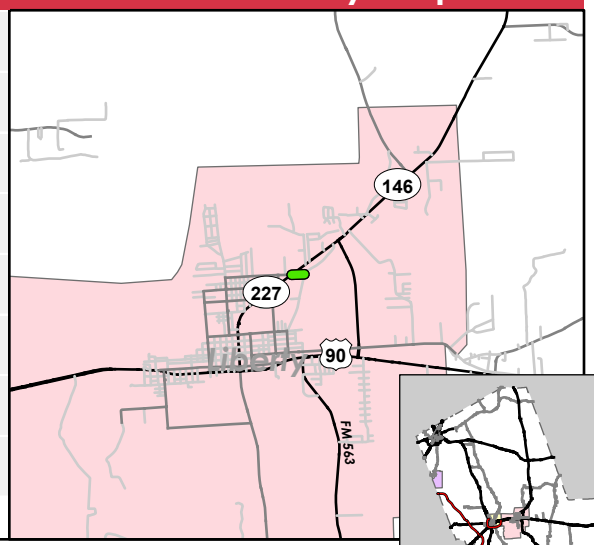
Long-Term

- Install 10-foot shared use path or 6-foot sidewalk along at least one side of the corridor
- Widen to 4-lane undivided cross-section

Segment Characteristics

Segment Length (mi)	0.16
Posted Speed (mph)	30
ROW Width (ft)	60
Roadway Width (ft)	24
Number of Lanes	2
Center Type	Undivided
Center Width (ft)	0
Sidewalk Count	None

Location Key Map

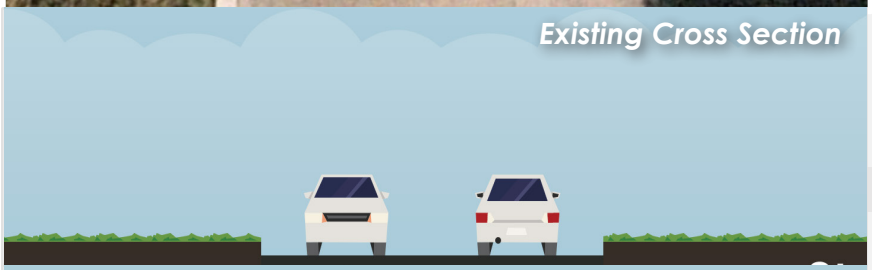


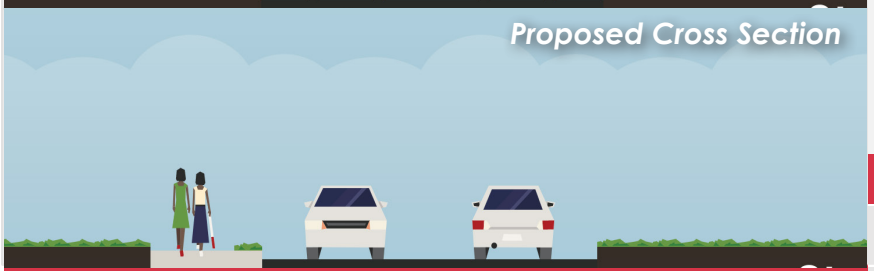
Woodspring Road/Lakeland Drive

from Main Street/State Loop 227 to Wal-Mart Driveway

Corridor-Segment ID: R-1

Cross-Sections





Capacity Data

Study Year	Average Daily Traffic	Volume-to-Capacity
2021	1771	0.06
2045	2849	0.1

Crash Data (2016-2020)

Total	Fatal	Serious Injury	Pedestrian	Bicycle
4	0	0	0	0

Recommended Improvements

General

Proposed Classification: Collector

Short-Term

- Install pedestrian elements (marked crosswalks, countdown signals where applicable, curb ramps, etc) at intersections
- Upgrade pavement markings

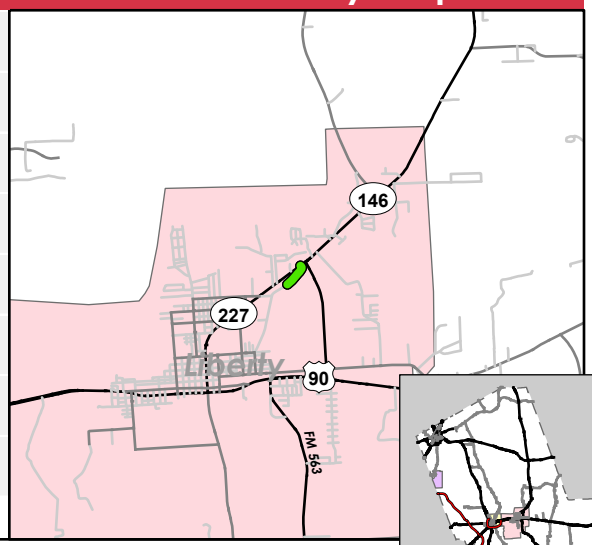
Long-Term

- Install 10-foot shared use path or 6-foot sidewalk along at least one side of the corridor

Segment Characteristics

Segment Length (mi)	0.3
Posted Speed (mph)	30
ROW Width (ft)	60
Roadway Width (ft)	36
Number of Lanes	3
Center Type	TWLTL
Center Width (ft)	14
Sidewalk Count	None

Location Key Map



Woodspring Road/Lakeland Drive

from Wal-Mart Driveway to Woodspring Road

Corridor-Segment ID: R-2

Cross-Sections

Capacity Data

Study Year	Average Daily Traffic	Volume-to-Capacity
2021	1771	0.06
2045	2849	0.1

Crash Data (2016-2020)

Total	Fatal	Serious Injury	Pedestrian	Bicycle
1	0	0	0	0

Recommended Improvements

General

Proposed Classification: Collector

Short-Term

- Install pedestrian elements (marked crosswalks, countdown signals where applicable, curb ramps, etc) at intersections
- Upgrade pavement markings

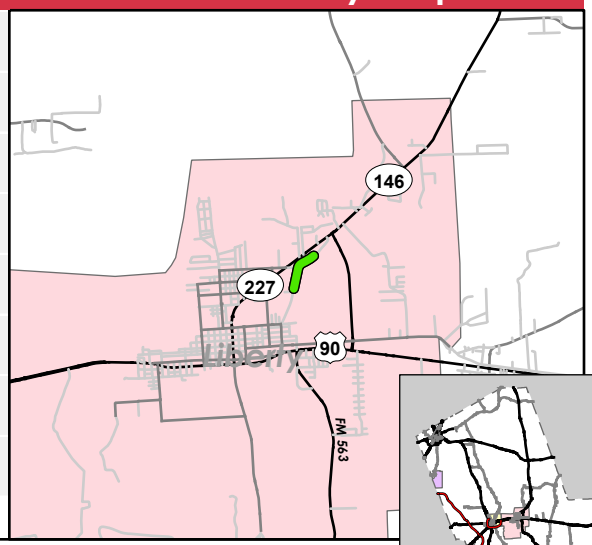
Long-Term

- Install 10-foot shared use path or 6-foot sidewalk along at least one side of the corridor

Segment Characteristics

Segment Length (mi)	0.51
Posted Speed (mph)	30
ROW Width (ft)	60
Roadway Width (ft)	24
Number of Lanes	2
Center Type	Undivided
Center Width (ft)	0
Sidewalk Count	None

Location Key Map

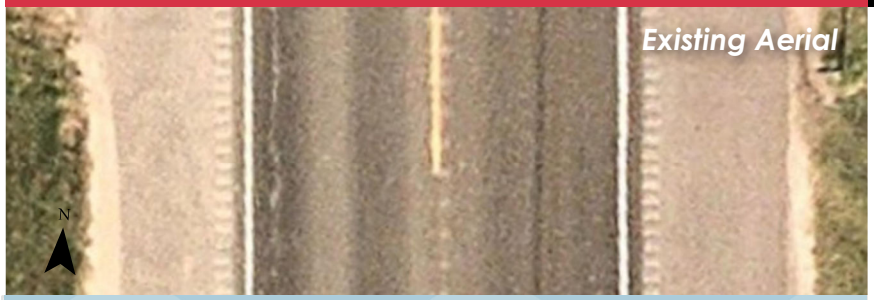


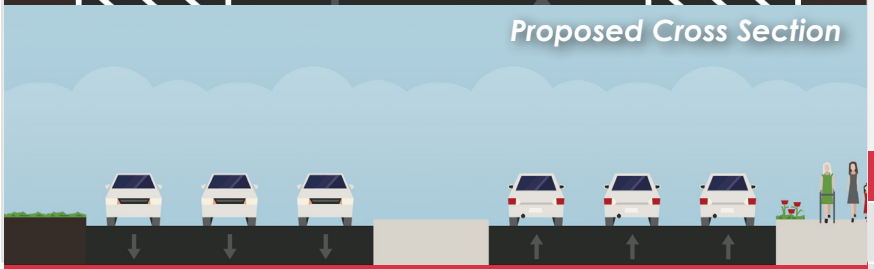
SH 146

from Northern County Limits to Main Street/State Loop 227

Corridor-Segment ID: S-1

Cross-Sections





Capacity Data

Study Year	Average Daily Traffic	Volume-to-Capacity
2021	2063	0.46
2045	3318	0.73

Crash Data (2016-2020)

Total	Fatal	Serious Injury	Pedestrian	Bicycle
261	6	12	1	1

Recommended Improvements

General

Proposed Classification: Principal Arterial (6 lanes, Divided)

Short-Term

- Install periodic pedestrian crossings (marked crosswalks, crossing signs, etc)

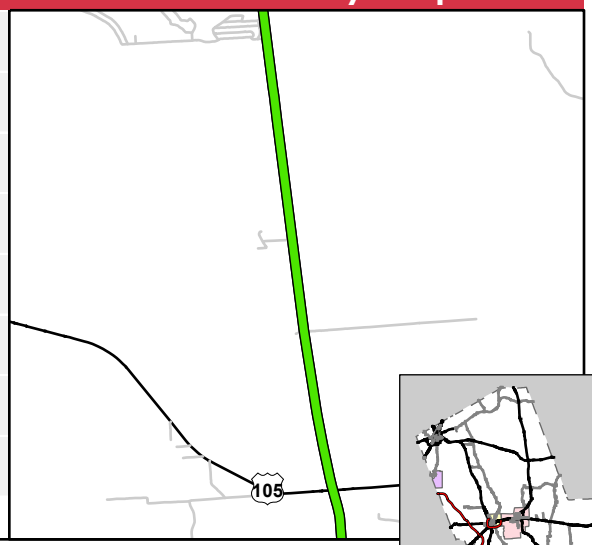
Long-Term

- Install 10-foot shared use path for pedestrian and bicyclist mobility along at least one side of the corridor
- Widen to 6-lane divided cross-section

Segment Characteristics

Segment Length (mi)	29.51
Posted Speed (mph)	65
ROW Width (ft)	100
Roadway Width (ft)	45
Number of Lanes	2
Center Type	Undivided
Center Width (ft)	0
Sidewalk Count	None

Location Key Map

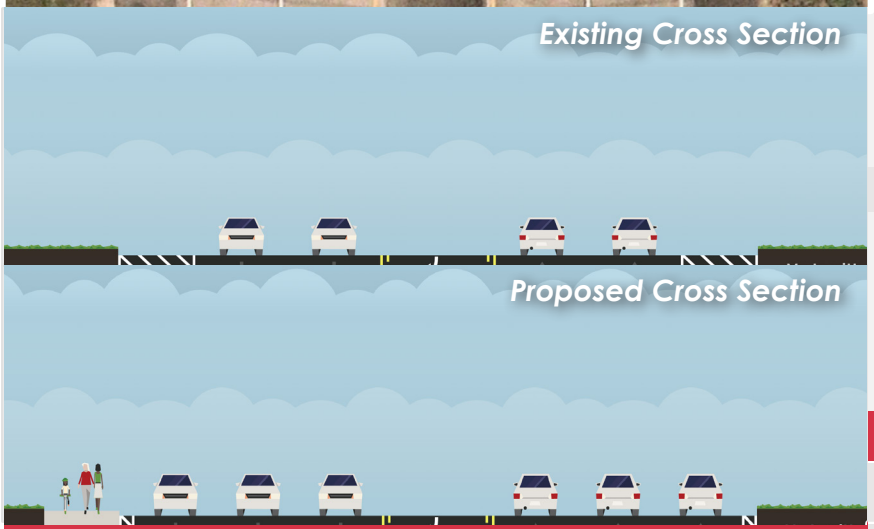


SH 146

from Main Street/State Loop 227 to Wal-Mart Driveway

Corridor-Segment ID: S-2

Cross-Sections



Capacity Data

Study Year	Average Daily Traffic	Volume-to-Capacity
2021	8785	0.12
2045	14130	0.2

Crash Data (2016-2020)

Total	Fatal	Serious Injury	Pedestrian	Bicycle
5	0	0	0	0

Recommended Improvements

General

Proposed Classification: Principal Arterial (6 lanes + TWLTL)

Short-Term

- Install periodic pedestrian crossings (marked crosswalks, crossing signs, etc)

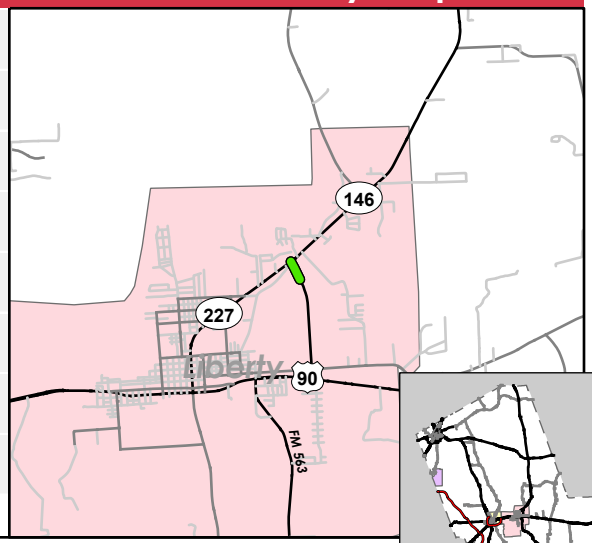
Long-Term

- Install 10-foot shared use path for pedestrian and bicyclist mobility along at least one side of the corridor
- Widen to 7-lane cross-section with 14-foot center two-way left-turn lane

Segment Characteristics

Segment Length (mi)	0.25
Posted Speed (mph)	45
ROW Width (ft)	160
Roadway Width (ft)	88
Number of Lanes	5
Center Type	TWLTL
Center Width (ft)	15
Sidewalk Count	None

Location Key Map

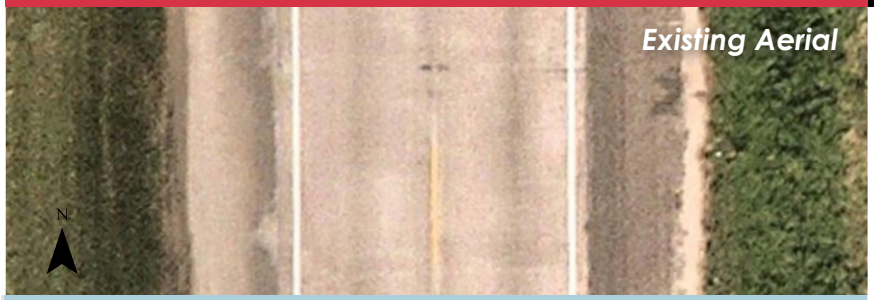


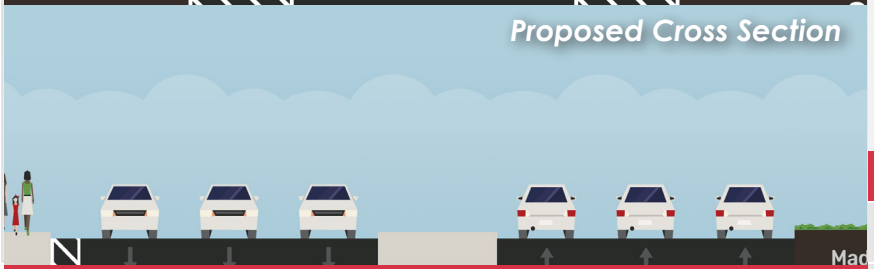
SH 146

from Wal-Mart Driveway to Beaumont Avenue

Corridor-Segment ID: S-3

Cross-Sections





Capacity Data

Study Year	Average Daily Traffic	Volume-to-Capacity
2021	8785	0.29
2045	14130	0.47

Crash Data (2016-2020)

Total	Fatal	Serious Injury	Pedestrian	Bicycle
10	2	0	0	1

Recommended Improvements

General

Proposed Classification: Principal Arterial (6 lanes, Undivided)

Short-Term

- Install periodic pedestrian crossings (marked crosswalks, crossing signs, etc)

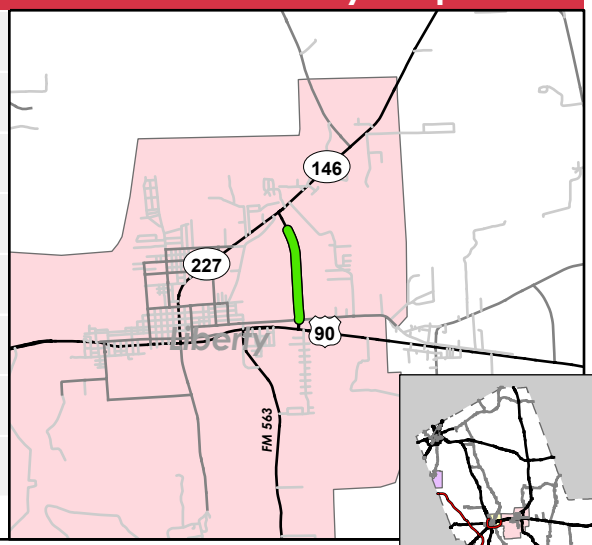
Long-Term

- Install 10-foot shared use path for pedestrian and bicyclist mobility along at least one side of the corridor
- Widen to 6-lane divided cross-section

Segment Characteristics

Segment Length (mi)	1.12
Posted Speed (mph)	45
ROW Width (ft)	140
Roadway Width (ft)	45
Number of Lanes	2
Center Type	Undivided
Center Width (ft)	0
Sidewalk Count	None

Location Key Map

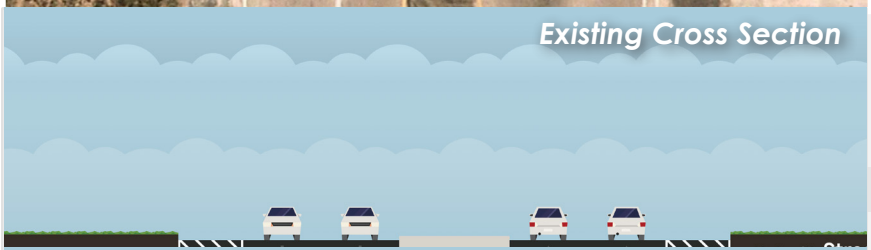


SH 146

from Beaumont Avenue to US 90

Corridor-Segment ID: S-4

Cross-Sections



Capacity Data

Study Year	Average Daily Traffic	Volume-to-Capacity
2021	8785	0.07
2045	14130	0.12

Crash Data (2016-2020)

Total	Fatal	Serious Injury	Pedestrian	Bicycle
48	0	0	0	0

Recommended Improvements

General

Proposed Classification: Principal Arterial (6 lanes, Divided)

Short-Term

- Install periodic pedestrian crossings (marked crosswalks, crossing signs, etc)

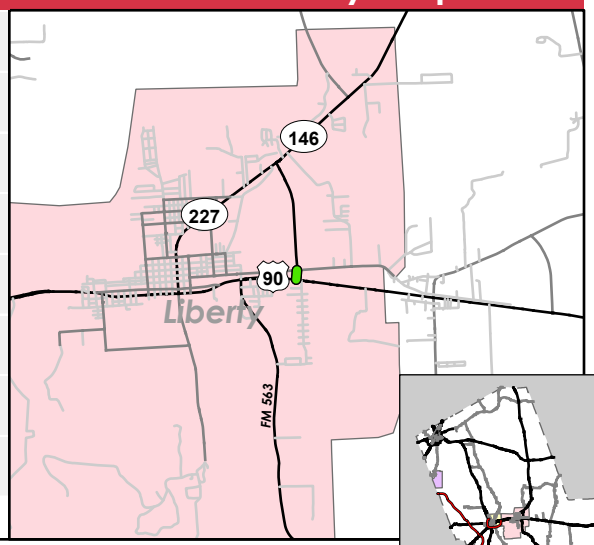
Long-Term

- Install 10-foot shared use path for pedestrian and bicyclist mobility along at least one side of the corridor
- Widen to 6-lane divided cross-section

Segment Characteristics

Segment Length (mi)	0.12
Posted Speed (mph)	55
ROW Width (ft)	140
Roadway Width (ft)	100
Number of Lanes	4
Center Type	Divided
Center Width (ft)	17
Sidewalk Count	None

Location Key Map

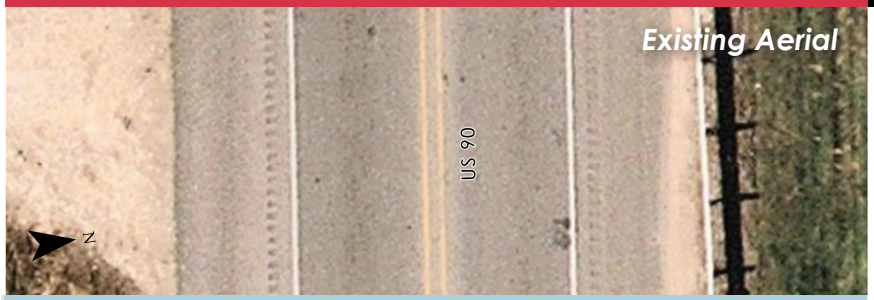


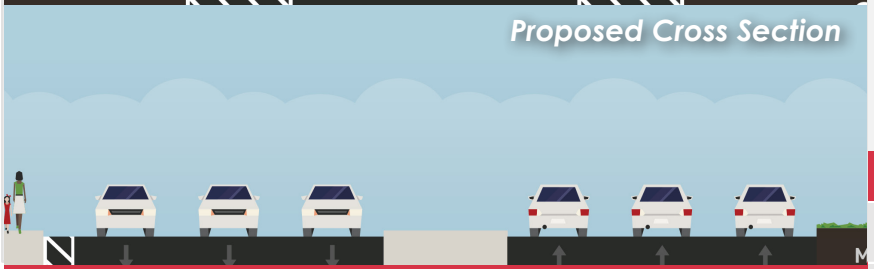
SH 146/US 90

from US 90/SH 146 to East Street

Corridor-Segment ID: S-5

Cross-Sections





Capacity Data

Study Year	Average Daily Traffic	Volume-to-Capacity
2021	15698	0.55
2045	25249	0.88

Crash Data (2016-2020)

Total	Fatal	Serious Injury	Pedestrian	Bicycle
40	0	0	0	0

Recommended Improvements

General

Proposed Classification: Principal Arterial (6 lanes, Divided)

Short-Term

- Install periodic pedestrian crossings (marked crosswalks, crossing signs, etc)

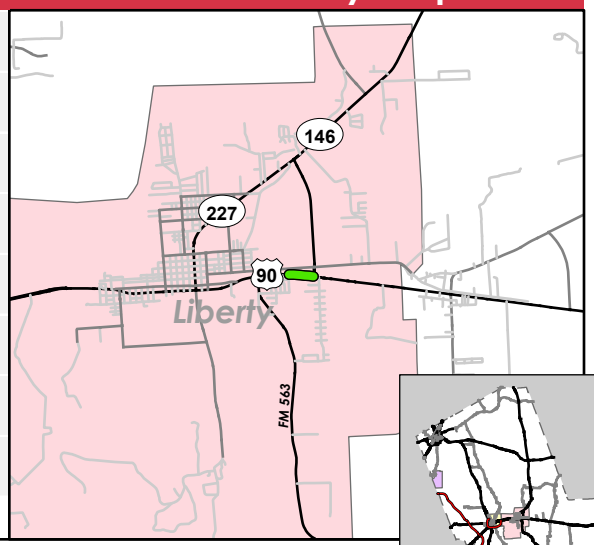
Long-Term

- Install 10-foot shared use path for pedestrian and bicyclist mobility along at least one side of the corridor
- Widen to 6-lane divided cross-section

Segment Characteristics

Segment Length (mi)	0.3
Posted Speed (mph)	50
ROW Width (ft)	200
Roadway Width (ft)	48
Number of Lanes	2
Center Type	Undivided
Center Width (ft)	0
Sidewalk Count	None

Location Key Map

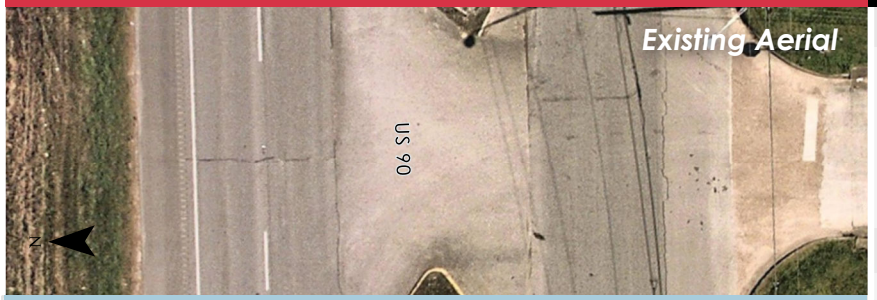


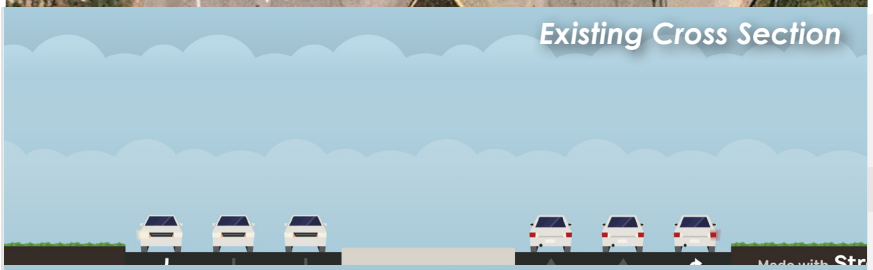
SH 146/US 90

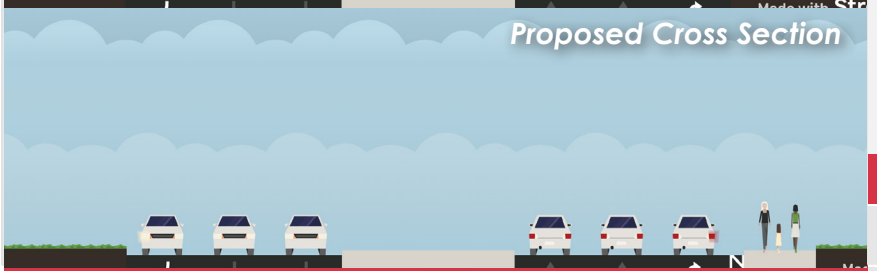
from East Street to Wallisville Road/Independence Street

Corridor-Segment ID: S-6

Cross-Sections







Capacity Data

Study Year	Average Daily Traffic	Volume-to-Capacity
2021	15698	0.27
2045	25249	0.44

Crash Data (2016-2020)

Total	Fatal	Serious Injury	Pedestrian	Bicycle
50	0	0	0	0

Recommended Improvements

General

Proposed Classification: Principal Arterial (6 lanes, Divided)

Short-Term

- Install periodic pedestrian crossings (marked crosswalks, crossing signs, etc)

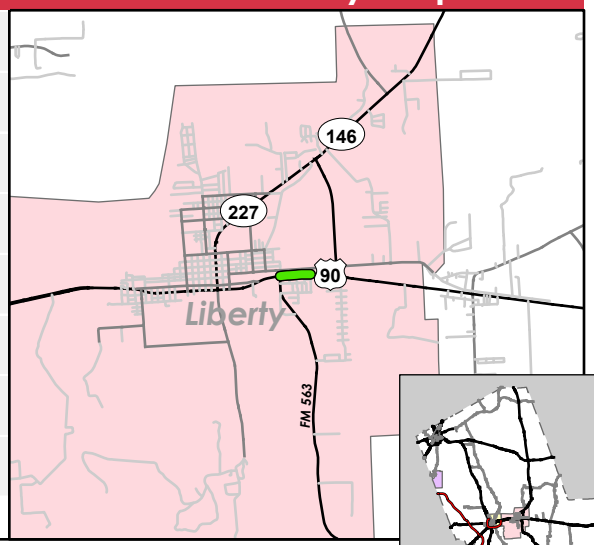
Long-Term

- Install 10-foot shared use path for pedestrian and bicyclist mobility along at least one side of the corridor

Segment Characteristics

Segment Length (mi)	0.38
Posted Speed (mph)	45
ROW Width (ft)	203
Roadway Width (ft)	100
Number of Lanes	4
Center Type	Divided
Center Width (ft)	24
Sidewalk Count	None

Location Key Map

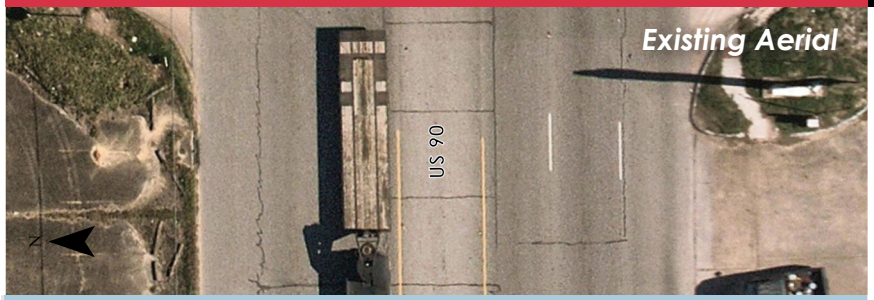


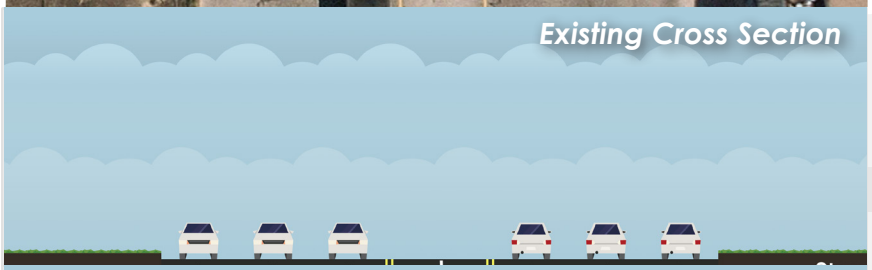
SH 146/US 90

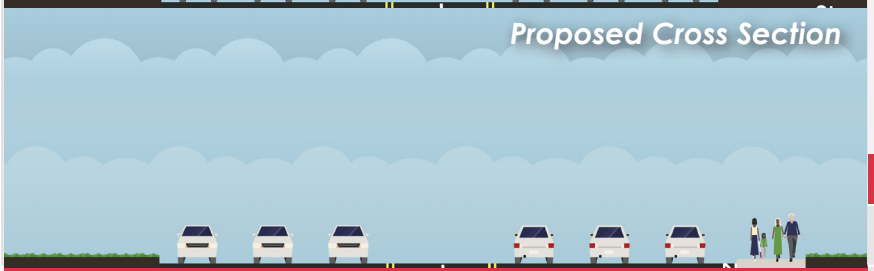
from Wallisville Road/Independence Street to Alabama Street

Corridor-Segment ID: S-7

Cross-Sections







Capacity Data

Study Year	Average Daily Traffic	Volume-to-Capacity
2021	N/A	N/A
2045	N/A	N/A

Crash Data (2016-2020)

Total	Fatal	Serious Injury	Pedestrian	Bicycle
139	1	2	0	1

Recommended Improvements

General

Proposed Classification: Principal Arterial (No Cross-Section Change)

Short-Term

- Install periodic pedestrian crossings (marked crosswalks, crossing signs, etc)

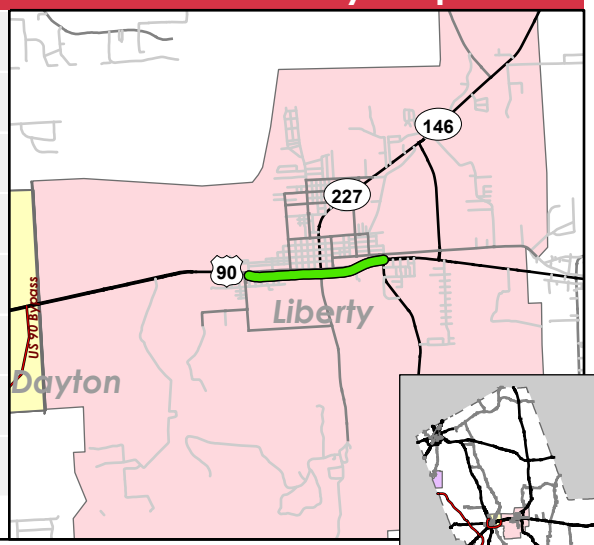
Long-Term

- Install 10-foot shared use path for pedestrian and bicyclist mobility along at least one side of the corridor

Segment Characteristics

Segment Length (mi)	1.69
Posted Speed (mph)	65
ROW Width (ft)	115
Roadway Width (ft)	85
Number of Lanes	7
Center Type	TWLTL
Center Width (ft)	16
Sidewalk Count	None

Location Key Map

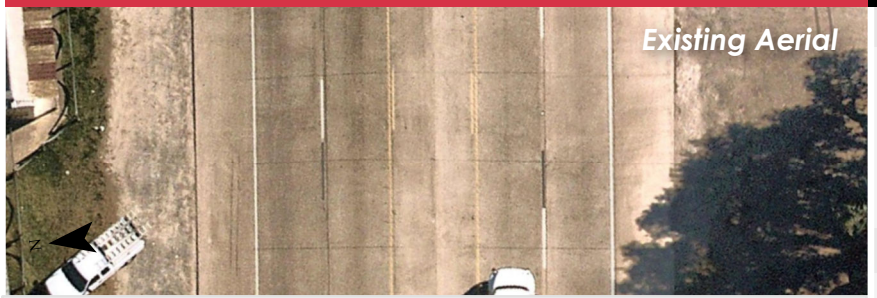


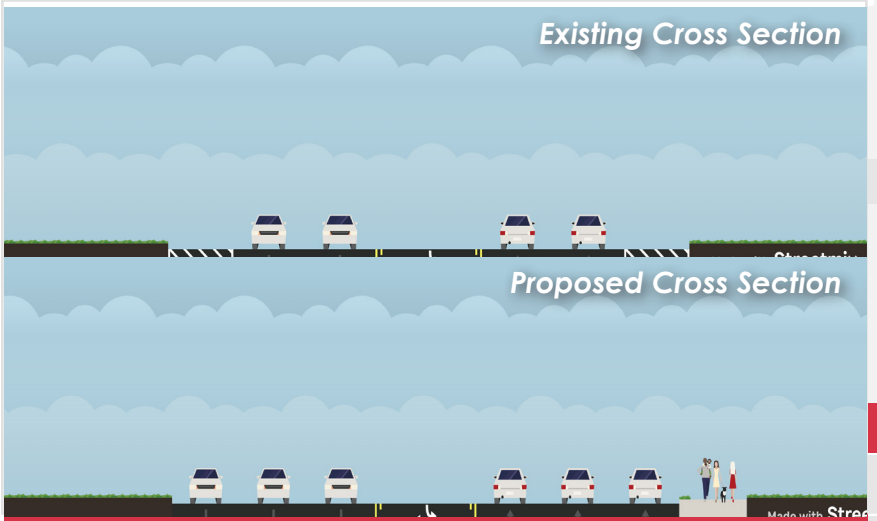
SH 146/US 90

from Alabama Street to East End of Bridge (Trinity River)

Corridor-Segment ID: S-8

Cross-Sections





Capacity Data

Study Year	Average Daily Traffic	Volume-to-Capacity
2021	20175	0.35
2045	32450	0.56

Crash Data (2016-2020)

Total	Fatal	Serious Injury	Pedestrian	Bicycle
23	0	1	0	0

Recommended Improvements

General

Proposed Classification: Principal Arterial (6 lanes + TWLTL)

Short-Term

- Install periodic pedestrian crossings (marked crosswalks, crossing signs, etc)

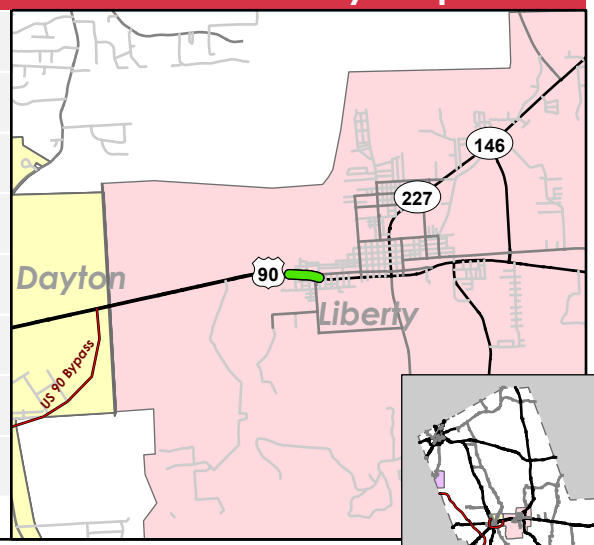
Long-Term

- Install 10-foot shared use path for pedestrian and bicyclist mobility along at least one side of the corridor
- Widen to 7-lane cross-section with 14-foot center two-way left-turn lane

Segment Characteristics

Segment Length (mi)	0.38
Posted Speed (mph)	65
ROW Width (ft)	150
Roadway Width (ft)	87
Number of Lanes	5
Center Type	TWLTL
Center Width (ft)	18
Sidewalk Count	None

Location Key Map

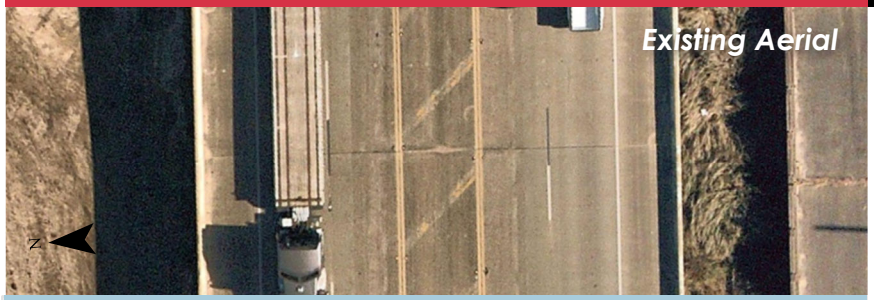


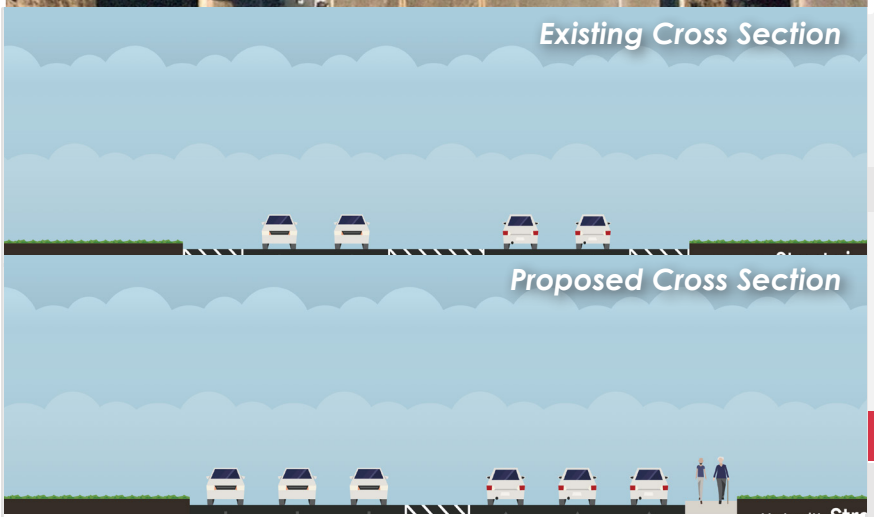
SH 146/US 90

from East End of Bridge to West End of Bridge (Trinity River)

Corridor-Segment ID: S-9

Cross-Sections





Capacity Data

Study Year	Average Daily Traffic	Volume-to-Capacity
2021	N/A	N/A
2045	N/A	N/A

Crash Data (2016-2020)

Total	Fatal	Serious Injury	Pedestrian	Bicycle
4	0	0	0	0

Recommended Improvements

General

Proposed Classification: Principal Arterial (6 lanes, Divided)

Short-Term

- Install periodic pedestrian crossings (marked crosswalks, crossing signs, etc)

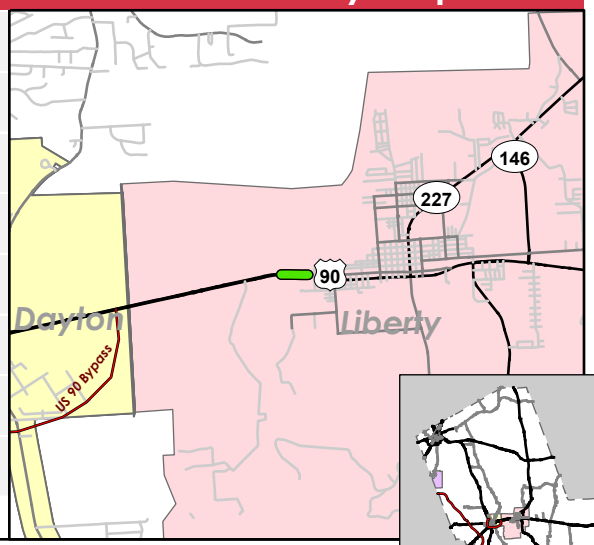
Long-Term

- Install 10-foot shared use path for pedestrian and bicyclist mobility along at least one side of the corridor
- Widen to 6-lane divided cross-section

Segment Characteristics

Segment Length (mi)	0.33
Posted Speed (mph)	65
ROW Width (ft)	175
Roadway Width (ft)	85
Number of Lanes	4
Center Type	Divided
Center Width (ft)	16
Sidewalk Count	None

Location Key Map

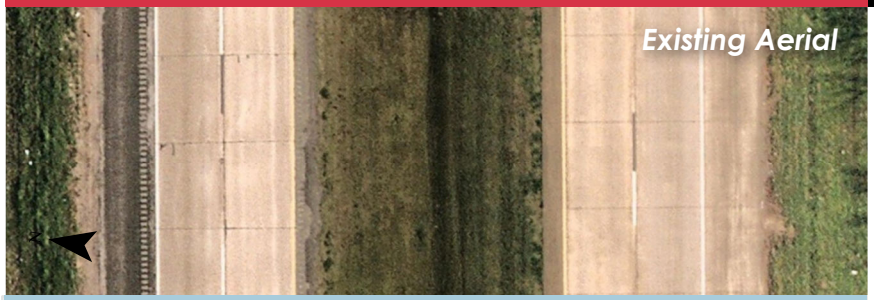


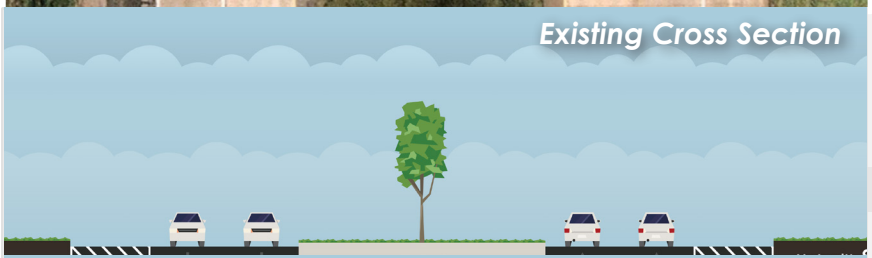
SH 146/US 90

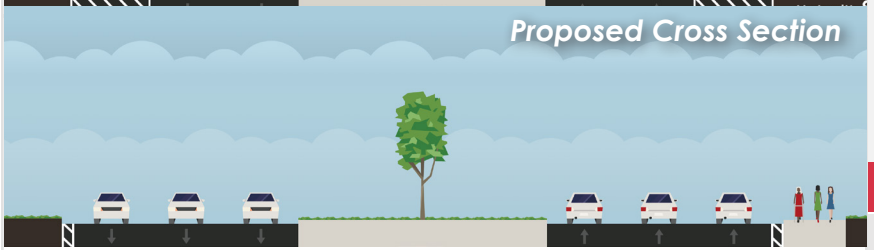
from West End of Bridge (Trinity River) to Colbert Street

Corridor-Segment ID: S-10

Cross-Sections







Capacity Data

Study Year	Average Daily Traffic	Volume-to-Capacity
2021	N/A	N/A
2045	N/A	N/A

Crash Data (2016-2020)

Total	Fatal	Serious Injury	Pedestrian	Bicycle
43	1	5	0	0

Recommended Improvements

General

Proposed Classification: Principal Arterial (6 lanes, Divided)

Short-Term

- Install periodic pedestrian crossings (marked crosswalks, crossing signs, etc)

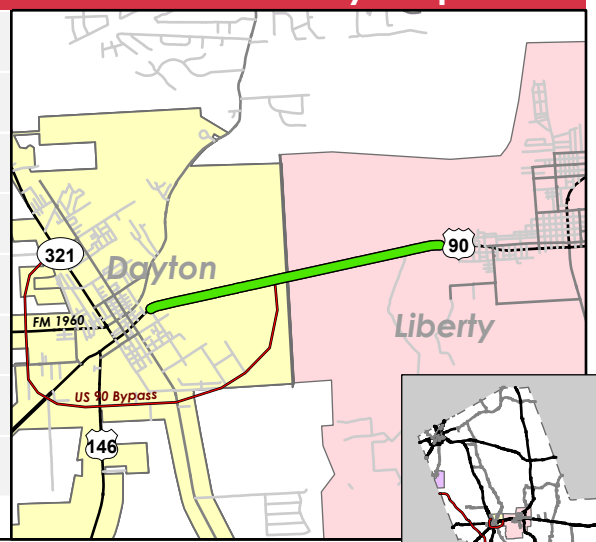
Long-Term

- Install 10-foot shared use path for pedestrian and bicyclist mobility along at least one side of the corridor
- Widen to 6-lane divided cross-section

Segment Characteristics

Segment Length (mi)	3.65
Posted Speed (mph)	65
ROW Width (ft)	160
Roadway Width (ft)	120
Number of Lanes	4
Center Type	Divided
Center Width (ft)	40
Sidewalk Count	None

Location Key Map

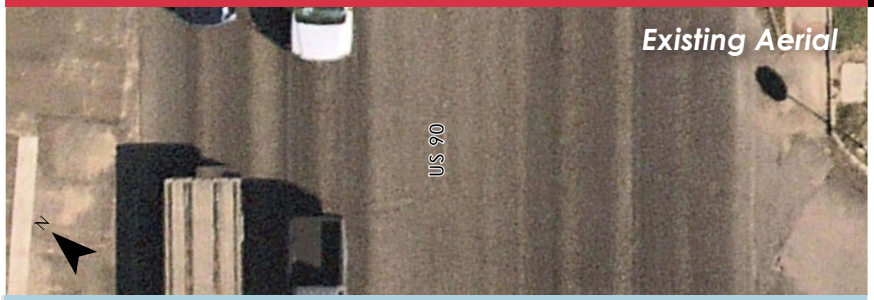


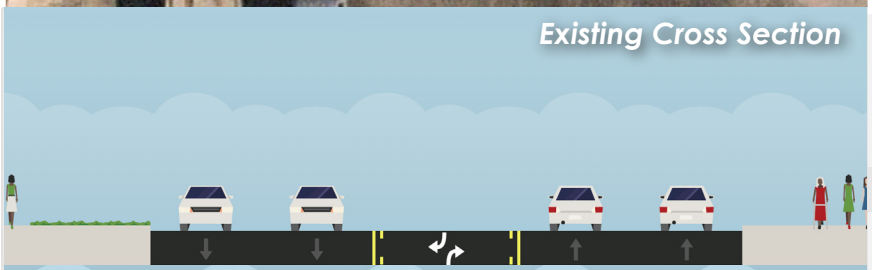
SH 146/US 90

from Colbert Street to SH 146

Corridor-Segment ID: S-11

Cross-Sections





Capacity Data

Study Year	Average Daily Traffic	Volume-to-Capacity
2021	14530	0.25
2045	23371	0.41

Crash Data (2016-2020)

Total	Fatal	Serious Injury	Pedestrian	Bicycle
332	1	7	0	1

Recommended Improvements

General

Proposed Classification: Principal Arterial (6 lanes + TWLTL)

Short-Term

- Install periodic pedestrian crossings (marked crosswalks, crossing signs, etc)

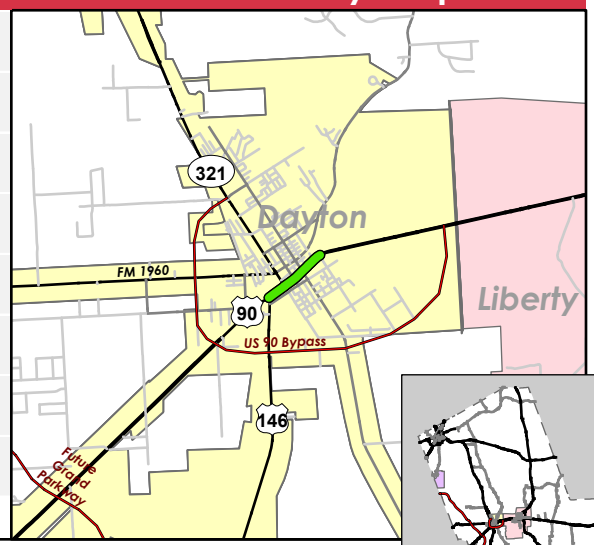
Long-Term

- Install 10-foot shared use path for pedestrian and bicyclist mobility along at least one side of the corridor
- Widen to 7-lane cross-section with 14-foot center two-way left-turn lane

Segment Characteristics

Segment Length (mi)	0.82
Posted Speed (mph)	65
ROW Width (ft)	80
Roadway Width (ft)	64
Number of Lanes	5
Center Type	TWLTL
Center Width (ft)	16
Sidewalk Count	Both Sides

Location Key Map

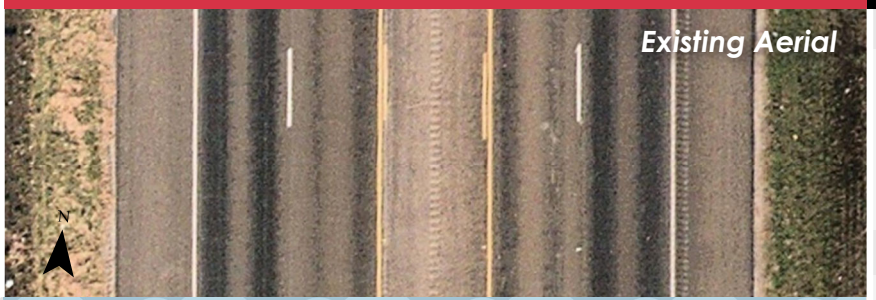


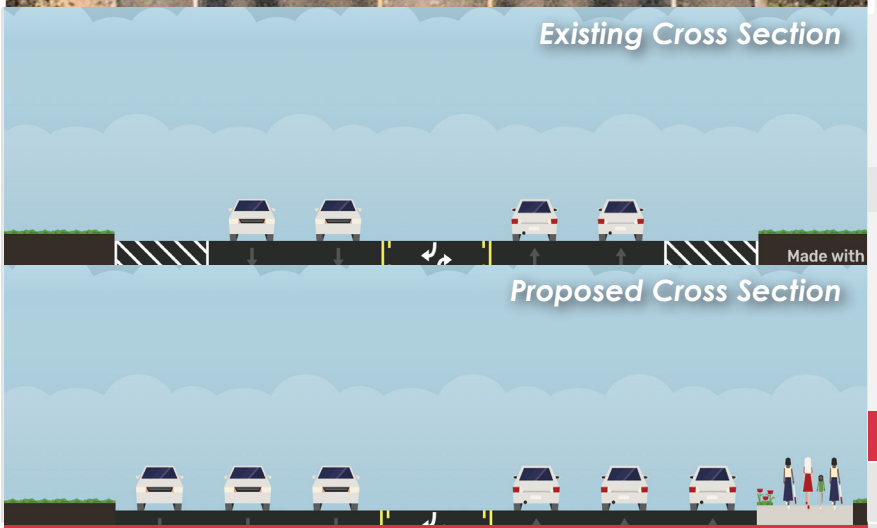
SH 146

from US 90/SH 146 to North End of Bridge (Trinity River Offshoot)

Corridor-Segment ID: S-12

Cross-Sections





Capacity Data

Study Year	Average Daily Traffic	Volume-to-Capacity
2021	14832	0.26
2045	23856	0.41

Crash Data (2016-2020)

Total	Fatal	Serious Injury	Pedestrian	Bicycle
244	3	12	0	1

Recommended Improvements

General

Proposed Classification: Principal Arterial (6 lanes + TWLTL)

Short-Term

- Install periodic pedestrian crossings (marked crosswalks, crossing signs, etc)

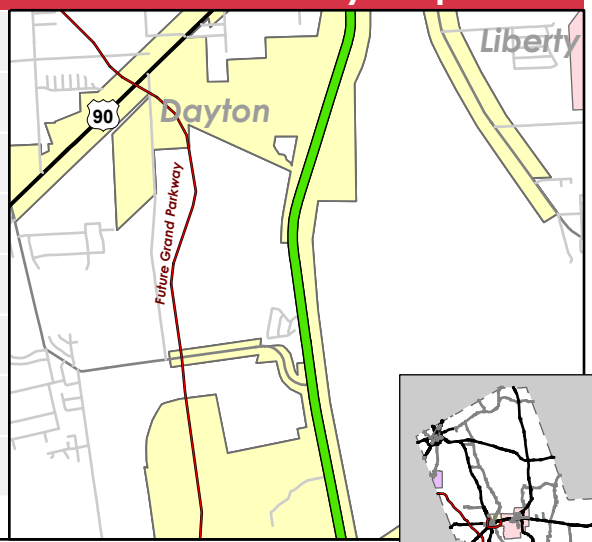
Long-Term

- Install 10-foot shared use path for pedestrian and bicyclist mobility along at least one side of the corridor
- Widen to 7-lane cross-section with 14-foot center two-way left-turn lane

Segment Characteristics

Segment Length (mi)	9.74
Posted Speed (mph)	65
ROW Width (ft)	140
Roadway Width (ft)	85
Number of Lanes	5
Center Type	TWLTL
Center Width (ft)	14
Sidewalk Count	None

Location Key Map

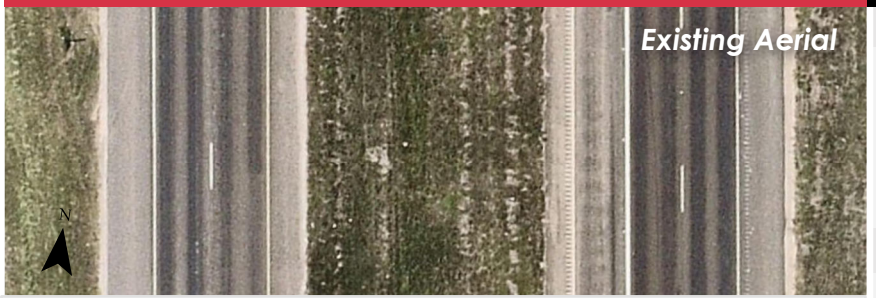


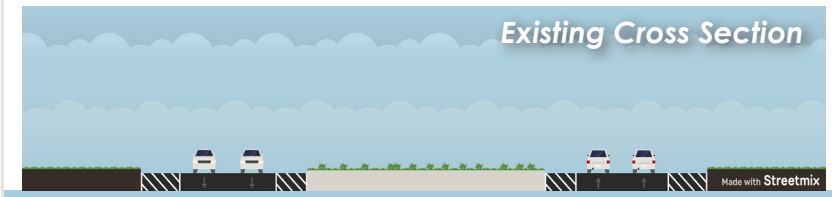
SH 146

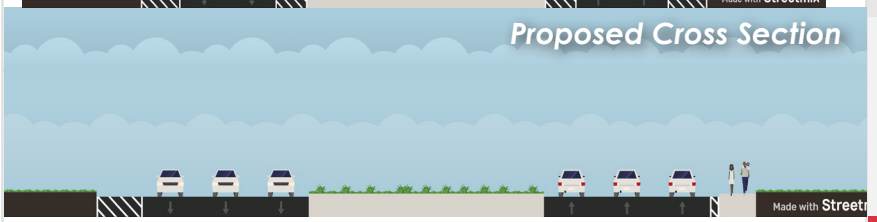
from North End of Bridge to South End of Bridge (Trinity River Offshoot)

Corridor-Segment ID: S-13

Cross-Sections







Recommended Improvements

General

Proposed Classification: Principal Arterial (6 lanes, Divided)

Short-Term

- Install periodic pedestrian crossings (marked crosswalks, crossing signs, etc)

Long-Term

- Install 10-foot shared use path for pedestrian and bicyclist mobility along at least one side of the corridor
- Widen to 6-lane divided cross-section

Capacity Data

Study Year	Average Daily Traffic	Volume-to-Capacity
2021	15728	0.27
2045	25298	0.44

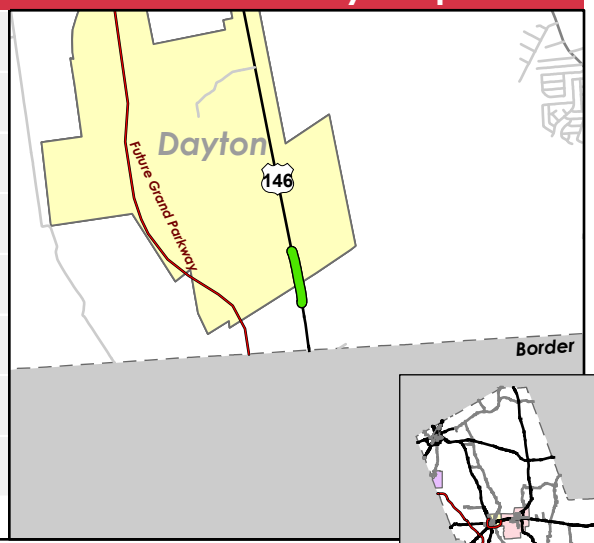
Crash Data (2016-2020)

Total	Fatal	Serious Injury	Pedestrian	Bicycle
8	0	1	0	1

Segment Characteristics

Segment Length (mi)	0.66
Posted Speed (mph)	65
ROW Width (ft)	200
Roadway Width (ft)	145
Number of Lanes	4
Center Type	Divided
Center Width (ft)	58
Sidewalk Count	None

Location Key Map

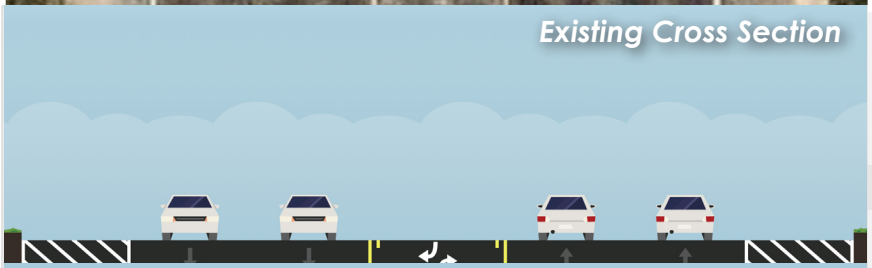


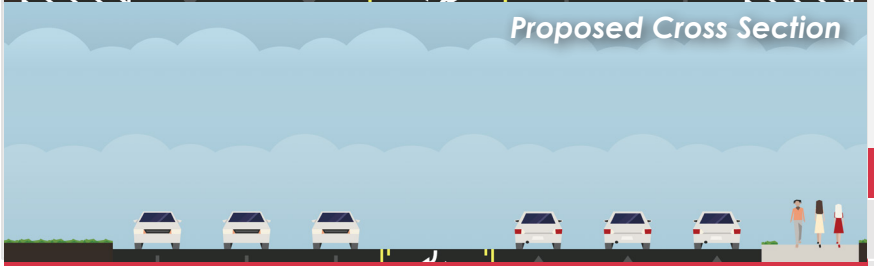
SH 146

from South End of Bridge (Trinity River Offshoot) to Southern County Limits

Corridor-Segment ID: S-14

Cross-Sections





Capacity Data

Study Year	Average Daily Traffic	Volume-to-Capacity
2021	15728	0.27
2045	25298	0.44

Crash Data (2016-2020)

Total	Fatal	Serious Injury	Pedestrian	Bicycle
5	0	1	0	0

Recommended Improvements

General

Proposed Classification: Principal Arterial (6 lanes + TWLTL)

Short-Term

- Install periodic pedestrian crossings (marked crosswalks, crossing signs, etc)

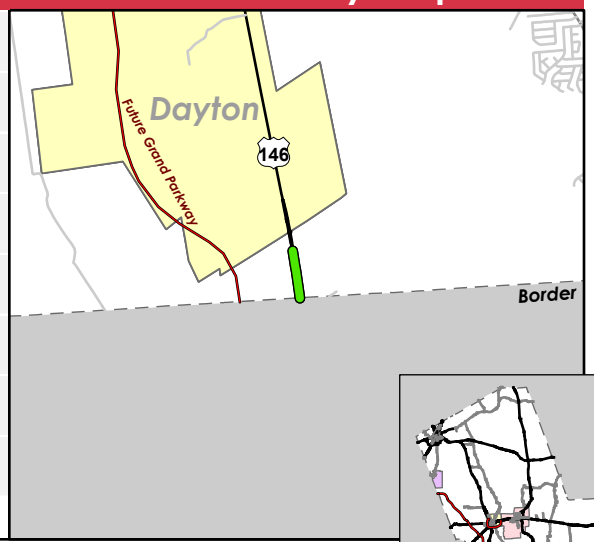
Long-Term

- Install 10-foot shared use path for pedestrian and bicyclist mobility along at least one side of the corridor
- Widen to 7-lane cross-section with 14-foot center two-way left-turn lane

Segment Characteristics

Segment Length (mi)	0.59
Posted Speed (mph)	65
ROW Width (ft)	140
Roadway Width (ft)	83
Number of Lanes	5
Center Type	TWLTL
Center Width (ft)	14
Sidewalk Count	None

Location Key Map



Intersection Summary Sheets

Liberty County Mobility Study, Intersection Summary Sheets

US 59 Frontage Road & Old Cold Spring Road/Belcher Street

Intersection ID: Cleveland - 1

Existing Aerial View

Recommended Improvements

Timeline	Short-Term	Long-Term
Overall Intersection	- Signalize - Install sidewalks across bridge and pedestrian infrastructure (curb ramps, crosswalks, countdown signals, etc) at intersections	- Optimize cycle length and phase splits
Lane Configuration		- Widen bridge to 4 lanes - Install left-turn lane - northbound
Turn Types		

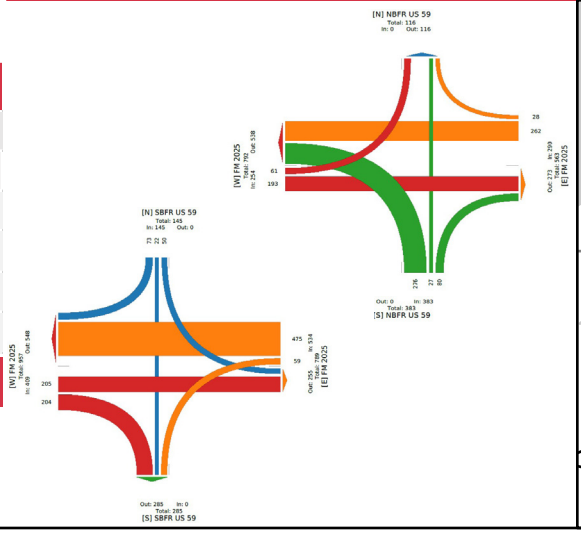
Traffic Model Results

Peak Hour	Study Year	Existing Conditions		With Recommendations	
		Delay (s/veh)	LOS	Delay (s/veh)	LOS
AM Peak	2021	16.8 (15.3)	C (C)	7.9 (10.9)	A (B)
	2045	86.9 (76.0)	F (F)	9.9 (12.7)	A (B)
PM Peak	2021	25.6 (14.7)	D (B)	7.9 (7.3)	A (A)
	2045	160.3 (57.8)	F (F)	8.6 (9.4)	A (B)

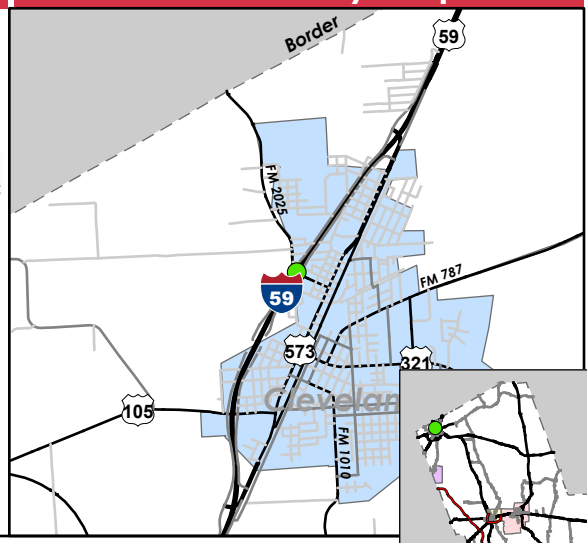
Crash Data (2016-2020)

Total	Fatal	Serious Injury
43	0	1

2021 Movement Counts



Location Key Map



SH 105 & Houston Street

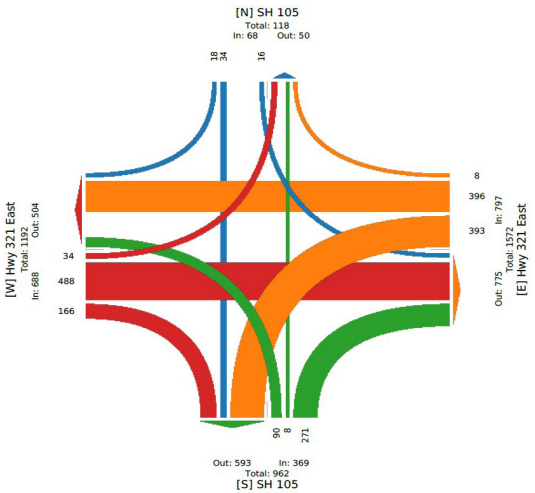
Intersection ID: Cleveland - 2

Existing Aerial View

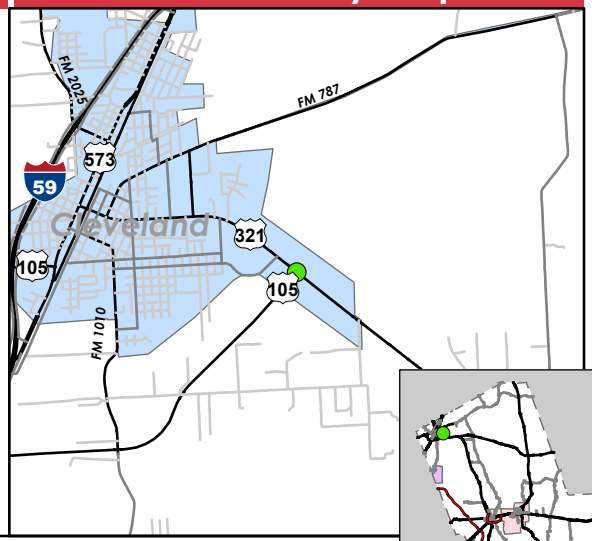
Recommended Improvements

Timeline	Short-Term	Long-Term
Overall Intersection	- Optimize cycle length and phase splits - Install shared use path on north and south sides of Houston Street, traveling west	
Lane Configuration	- Install left-turn lane - northbound	- Install left-turn lanes (dual left) - northbound and westbound - Install through lane - eastbound and westbound
Turn Types		- Protected (Left-Turn) - all approaches - Permissive+Overlap (right-turn) - eastbound, northbound

2021 Movement Counts



Location Key Map



Traffic Model Results

Peak Hour	Study Year	*Existing Conditions*		*With Recommendations*	
		Delay (s/veh)	LOS	Delay (s/veh)	LOS
AM Peak	2021	523.8	F	155.6	F
	2045	1004.6	F	30.1	C
PM Peak	2021	30.3	C	27.5	C
	2045	150.2	F	45.1	D

Crash Data (2016-2020)

Total	*Fatal*	*Serious Injury*
80	0	6

US 90 & Waco Street

Intersection ID: Dayton - 1

Existing Aerial View

Recommended Improvements

Timeline	Short-Term	Long-Term
Overall Intersection	- Signalize - Coordinate signals along US 90	- Proposed US 90 bypass is expected to relieve congestion at this intersection - Upgrade Waco Street to Major Collector: 2-4 lanes, curb and gutter, sidewalks
Lane Configuration	- Install exclusive right-turn and left-turn lanes - southbound	- Install exclusive right-turn lane with 500' storage - westbound
Turn Types		

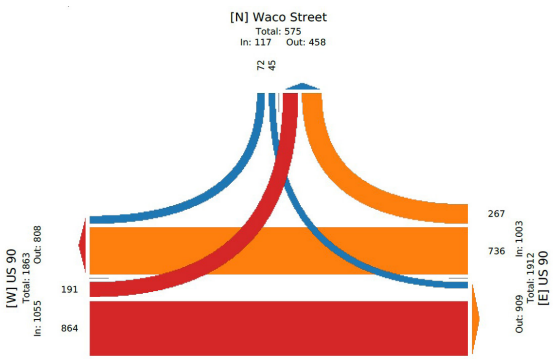
Traffic Model Results

Peak Hour	Study Year	Existing Conditions		With Recommendations	
		Delay (s/veh)	LOS	Delay (s/veh)	LOS
AM Peak	2021	123.6	F	13	B
	2045	4128.3	F	7.2	A
PM Peak	2021	4.4	A	5.6	A
	2045	20	C	5.5	A

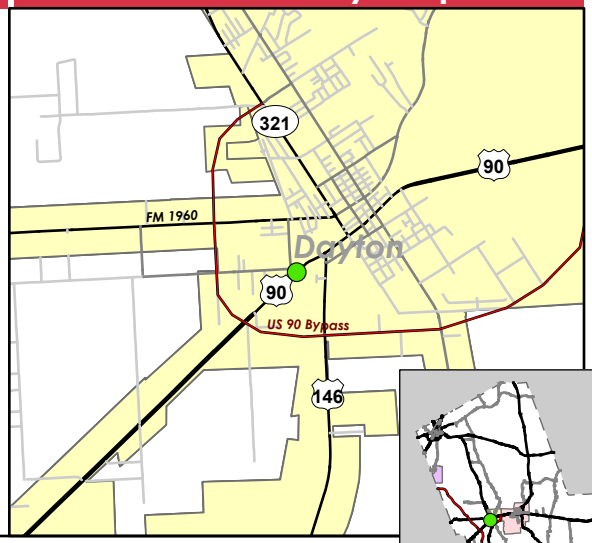
Crash Data (2016-2020)

Total	Fatal	Serious Injury
63	0	4

2021 Movement Counts



Location Key Map



Waco Street & FM 1960

Intersection ID: Dayton - 2

Existing Aerial View

Recommended Improvements

Timeline	Short-Term	Long-Term
Overall Intersection		- Proposed US 90 bypass is expected to relieve congestion at this intersection - Realign northbound and southbound legs of Waco Street
Lane Configuration	- Install one through lane - eastbound and westbound	- Install exclusive right-turn lane with 200' storage - eastbound - Install exclusive right-turn lane - northbound
Turn Types	- Permitted+Protected (Left-Turn) - westbound - Permissive+Overlap (right-turn) - northbound	

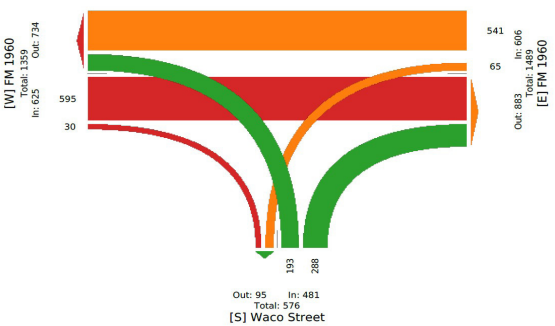
Traffic Model Results

Peak Hour	Study Year	*Existing Conditions*		*With Recommendations*	
		Delay (s/veh)	LOS	Delay (s/veh)	LOS
AM Peak	2021	33.7	C	21.4	C
	2045	201.7	F	4.6	A
PM Peak	2021	80	E	32.6	C
	2045	293.7	F	8.8	A

Crash Data (2016-2020)

Total	*Fatal*	*Serious Injury*
26	0	0

2021 Movement Counts



Location Key Map

Cleveland Street & FM 1960/Clayton Street

Intersection ID: Dayton - 3

Existing Aerial View

Recommended Improvements

Timeline	Short-Term	Long-Term
Overall Intersection	- Install high visibility marked crosswalks - Install pedestrian signals	- Proposed US 90 bypass is expected to relieve congestion at this intersection
Lane Configuration	- Install through-right turn lane (in addition to existing exclusive right-turn lane) - eastbound	- Install exclusive right-turn lane with 200' storage - westbound
Turn Types	- Flashing Yellow Arrow (Left-Turn) - all approaches	- Permissive+Overlap (right-turn) - eastbound and westbound

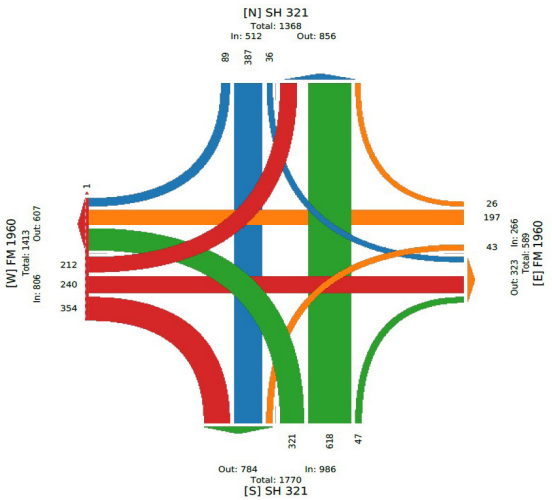
Traffic Model Results

Peak Hour	Study Year	*Existing Conditions*		*With Recommendations*	
		Delay (s/veh)	LOS	Delay (s/veh)	LOS
AM Peak	2021	129.8	F	42.1	D
	2045	287.7	F	48.1	D
PM Peak	2021	83.2	F	48	D
	2045	229	F	39.7	D

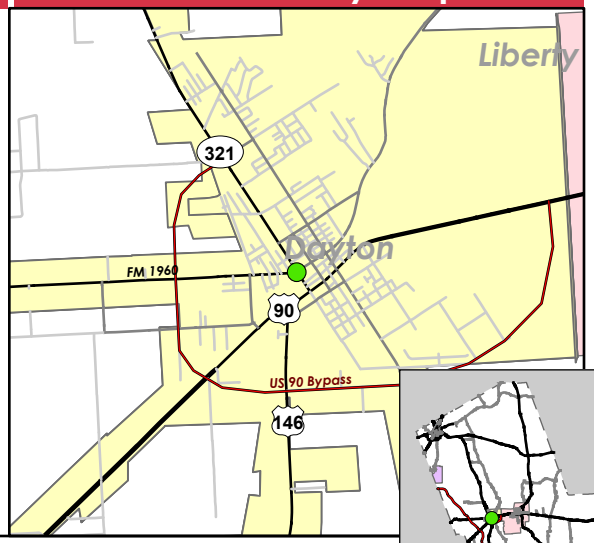
Crash Data (2016-2020)

Total	*Fatal*	*Serious Injury*
87	1	4

2021 Movement Counts



Location Key Map



Winfree Street & Clayton Street

Intersection ID: Dayton - 4

Existing Aerial View

Recommended Improvements

Timeline	Short-Term	Long-Term
Overall Intersection	- Signalize - Install high visibility marked crosswalks	- Proposed US 90 bypass is expected to relieve congestion at this intersection
Lane Configuration	- Install left-turn lanes - westbound and northbound	- Install exclusive left-turn lanes - all approaches - Install through lane - eastbound and westbound - Install exclusive right-turn lane - northbound - Add storage to right-turn lane - eastbound
Turn Types		- Permitted+Protected (Left-Turn) - all approaches - Permissive+Overlap (right-turn) - northbound

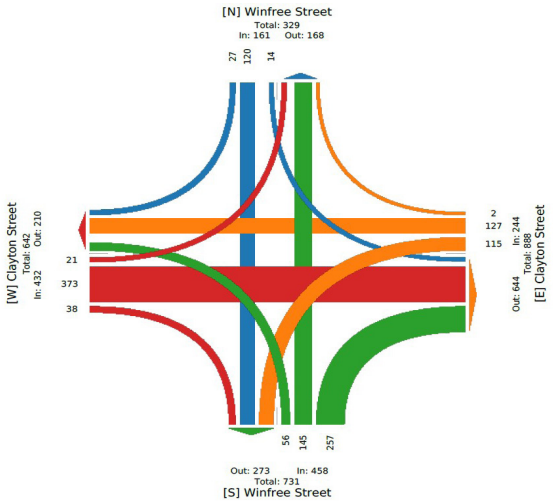
Traffic Model Results

Peak Hour	Study Year	*Existing Conditions*		*With Recommendations*	
		Delay (s/veh)	LOS	Delay (s/veh)	LOS
AM Peak	2021	117.9	F	10.4	B
	2045	482.2	F	32.2	D
PM Peak	2021	214.7	F	24.6	C
	2045	663.3	F	27.1	D

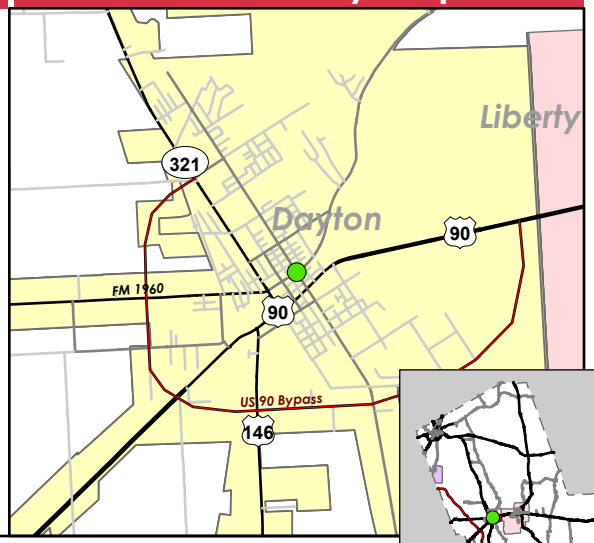
Crash Data (2016-2020)

Total	*Fatal*	*Serious Injury*
23	0	1

2021 Movement Counts



Location Key Map



Clayton Street & Lowe Street

Intersection ID: Dayton - 5

Existing Aerial View

Recommended Improvements

Timeline	Short-Term	Long-Term
Overall Intersection	- Install lighting and signage - Realign to intersect at right-angle	- Proposed US 90 bypass is expected to relieve congestion at this intersection
Lane Configuration		
Turn Types		

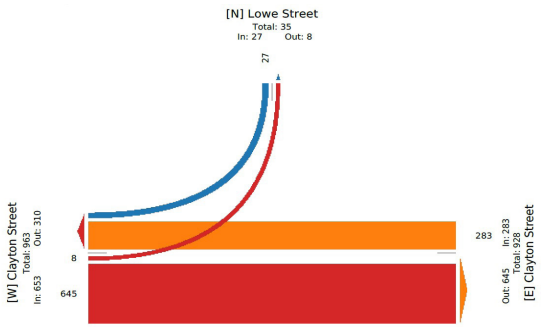
Traffic Model Results

Peak Hour	Study Year	Existing Conditions		With Recommendations	
		Delay (s/veh)	LOS	Delay (s/veh)	LOS
AM Peak	2021	0	A	0	A
	2045	0.1	A	0.1	A
PM Peak	2021	0.4	A	0.4	A
	2045	0.5	A	3.6	A

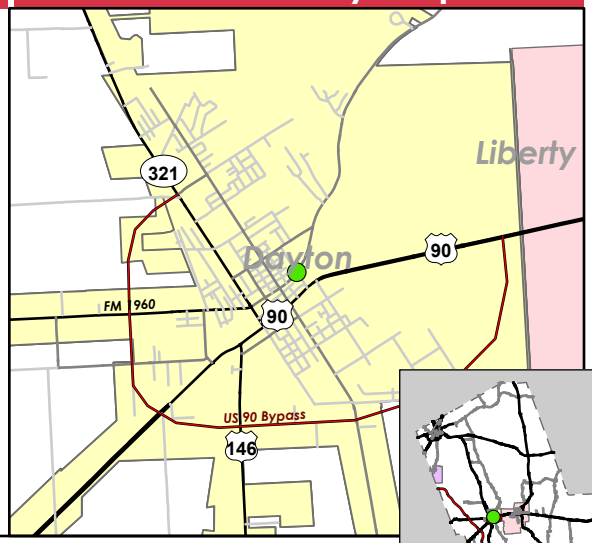
Crash Data (2016-2020)

Total	Fatal	Serious Injury
0	0	0

2021 Movement Counts



Location Key Map



Cleveland Street & Linney Street

Intersection ID: Dayton - 6

Existing Aerial View

Recommended Improvements

Timeline	Short-Term	Long-Term
Overall Intersection	None	- Proposed US 90 bypass is expected to relieve congestion at this intersection - Upgrade Linney Street to Major Collector: curb and gutter, sidewalks
Lane Configuration		- Install exclusive right-turn lane - westbound
Turn Types		

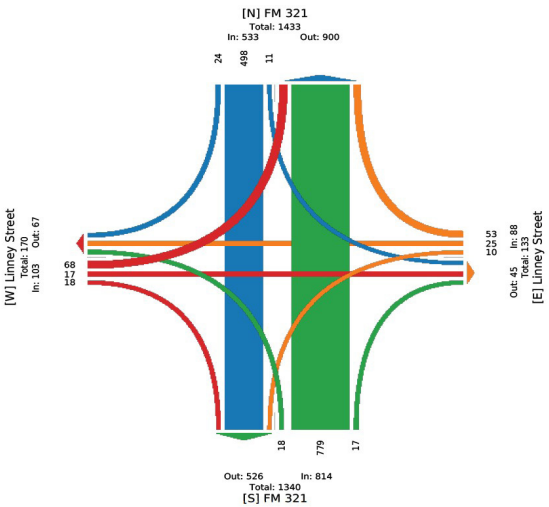
Traffic Model Results

Peak Hour	Study Year	Existing Conditions		With Recommendations	
		Delay (s/veh)	LOS	Delay (s/veh)	LOS
AM Peak	2021	8.6	A	8.6	A
	2045	29.3	C	8	A
PM Peak	2021	9	A	8.8	A
	2045	66.6	E	8.7	A

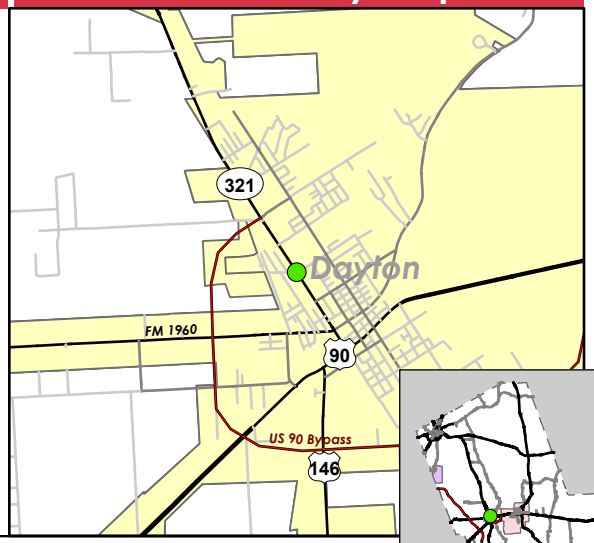
Crash Data (2016-2020)

Total	Fatal	Serious Injury
51	1	6

2021 Movement Counts



Location Key Map



Bowie Street & US 90

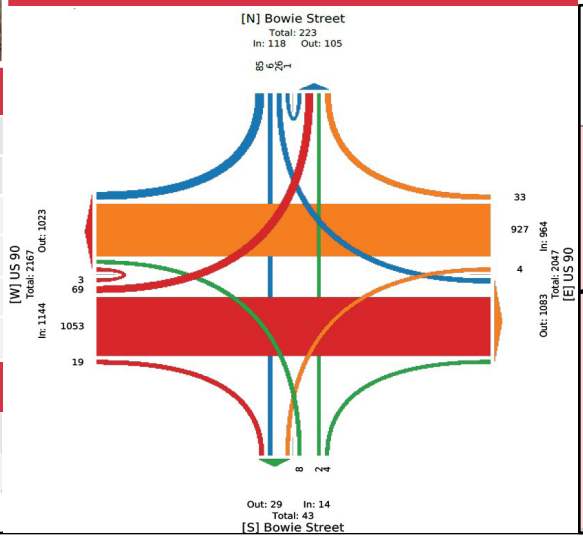
Intersection ID: Liberty - 1

Existing Aerial View

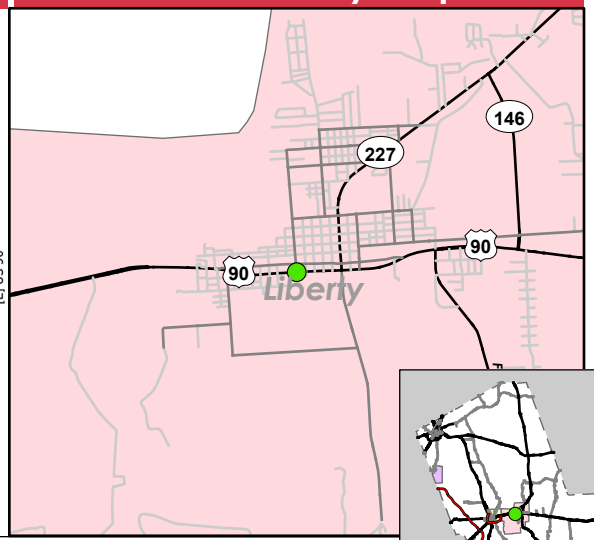
Recommended Improvements

Timeline	Short-Term	Long-Term
Overall Intersection	- Optimize cycle length and phase splits - Coordinate signals along US 90	- Install shared use path along one side of US 90 - Install curb ramps, crosswalks, and pedestrian signals
Lane Configuration		
Turn Types		- Permitted+Protected (Left-Turn) - eastbound, westbound

2021 Movement Counts



Location Key Map



Traffic Model Results

Peak Hour	Study Year	Existing Conditions		With Recommendations	
		Delay (s/veh)	LOS	Delay (s/veh)	LOS
AM Peak	2021	24.8	C	17.6	B
	2045	108.8	F	10.4	B
PM Peak	2021	11.4	B	12.1	B
	2045	23	C	13.4	B

Crash Data (2016-2020)

Total	Fatal	Serious Injury
34	1	0

Main Street (SL 227) & US 90

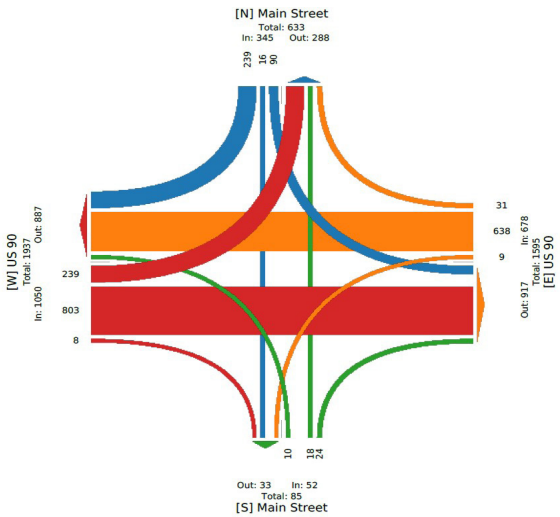
Intersection ID: Liberty - 2

Existing Aerial View

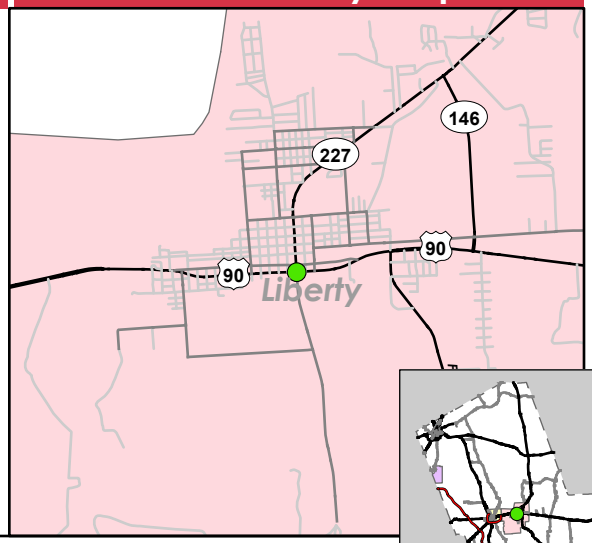
Recommended Improvements

Timeline	Short-Term	Long-Term
Overall Intersection	- Coordinate signals along US 90	- Install shared use path along one side of US 90 - Install curb ramps, crosswalks, and pedestrian signals
Lane Configuration	- Install exclusive left-turn lane - southbound	
Turn Types	- Permitted+Protected (Left-Turn) - all approaches - Permissive+Overlap (right-turn) - southbound	

2021 Movement Counts



Location Key Map



Traffic Model Results

Peak Hour	Study Year	Existing Conditions		With Recommendations	
		Delay (s/veh)	LOS	Delay (s/veh)	LOS
AM Peak	2021	25.4	C	16.9	B
	2045	47.4	D	26.1	C
PM Peak	2021	31.5	C	20.6	C
	2045	79	E	38	D

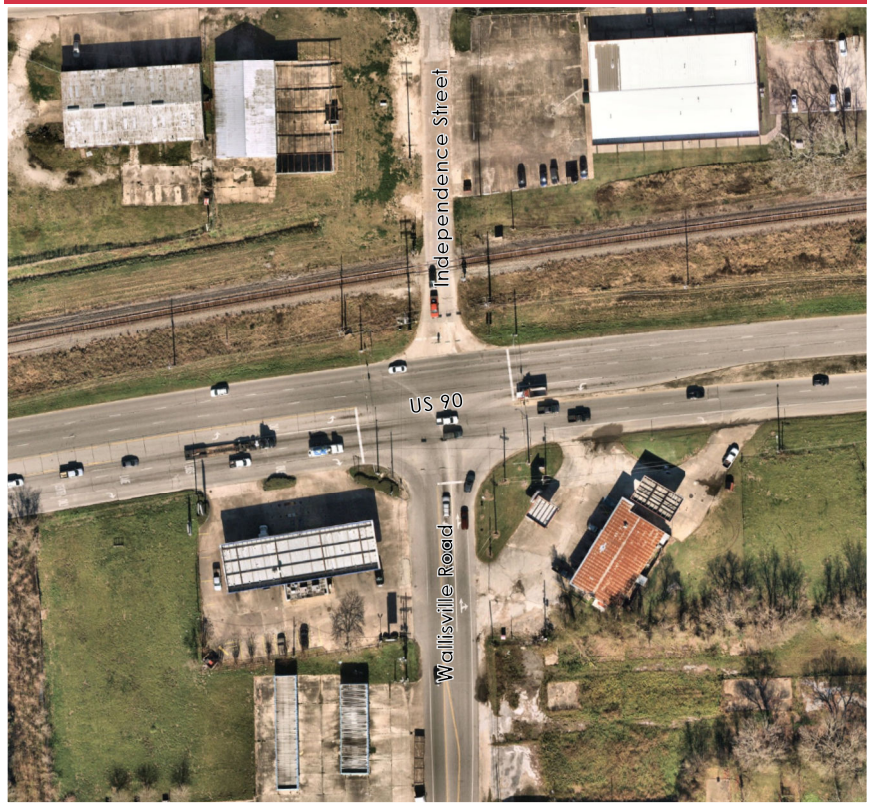
Crash Data (2016-2020)

Total	Fatal	Serious Injury
51	0	1

Independence Street & US 90

Intersection ID: Liberty - 3

Existing Aerial View



Recommended Improvements

Timeline	Short-Term	Long-Term
Overall Intersection	- Optimize cycle length and phase splits - Coordinate signals along US 90	- Install shared use path along one side of US 90 - Install curb ramps, crosswalks, and pedestrian signals
Lane Configuration		- Install exclusive right-turn lanes - northbound and southbound - Install exclusive left-turn lane - southbound
Turn Types	- Permitted+Protected (Left-Turn) - eastbound, westbound	

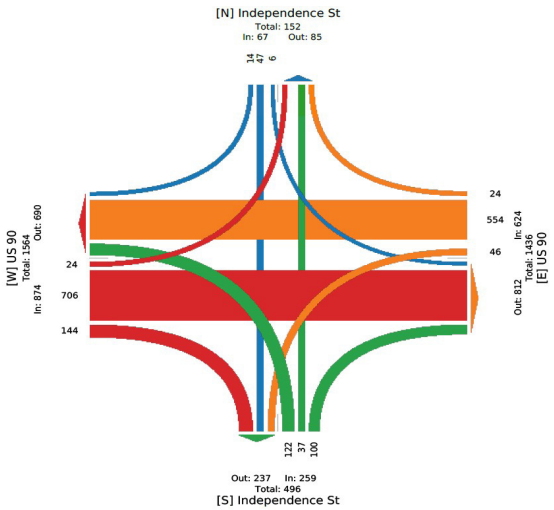
Traffic Model Results

Peak Hour	Study Year	Existing Conditions		With Recommendations	
		Delay (s/veh)	LOS	Delay (s/veh)	LOS
AM Peak	2021	39.8	D	25.8	C
	2045	71.5	E	28.8	C
PM Peak	2021	70	E	38.5	D
	2045	197.6	F	40.8	D

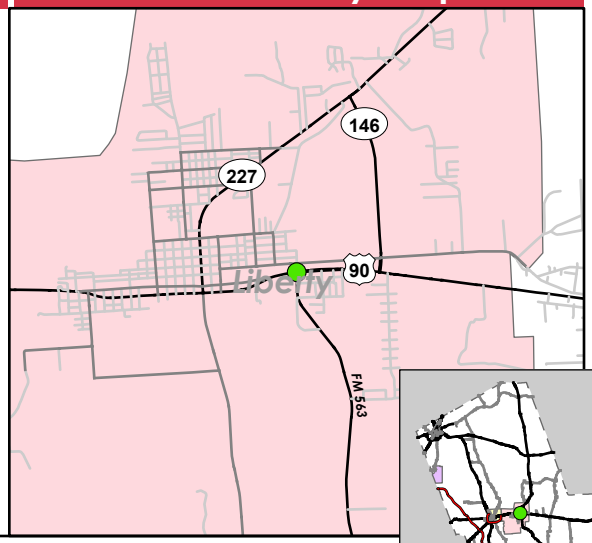
Crash Data (2016-2020)

Total	Fatal	Serious Injury
47	0	3

2021 Movement Counts



Location Key Map



US 90 & SH 146

Intersection ID: Liberty - 4

Existing Aerial View

Recommended Improvements

Timeline	Short-Term	Long-Term
Overall Intersection	- Coordinate signals along US 90	- Optimize cycle length and phase splits - Install shared use path along one side of US 90; install curb ramps, crosswalks, and pedestrian signals
Lane Configuration		
Turn Types	- Permitted+Protected (Left-Turn) - eastbound	

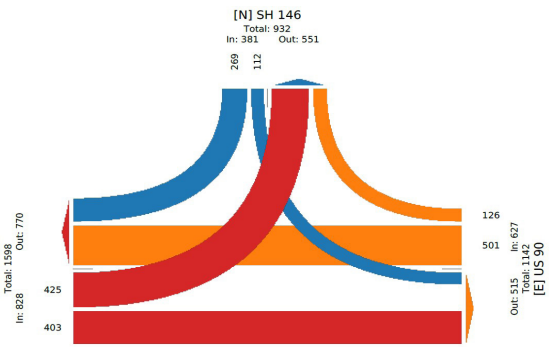
Traffic Model Results

Peak Hour	Study Year	Existing Conditions		With Recommendations	
		Delay (s/veh)	LOS	Delay (s/veh)	LOS
AM Peak	2021	17.5	B	16.4	B
	2045	29.9	C	12.2	B
PM Peak	2021	26.2	C	11.7	B
	2045	115.4	F	26.6	C

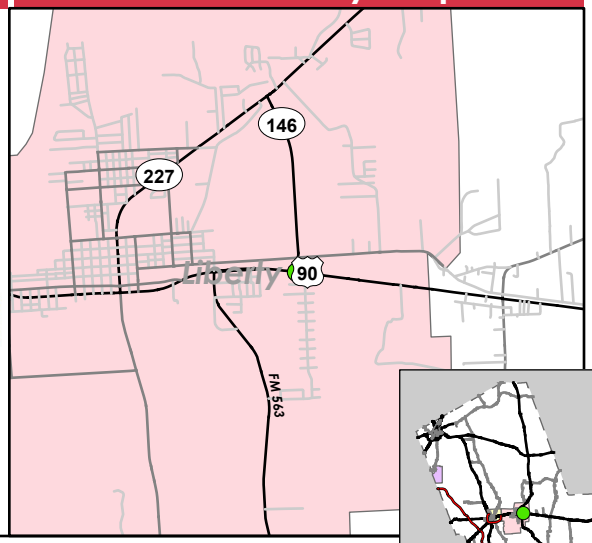
Crash Data (2016-2020)

Total	Fatal	Serious Injury
133	0	8

2021 Movement Counts



Location Key Map



Travis Street & Sam Houston Street

Intersection ID: Liberty - 5

Existing Aerial View

Recommended Improvements

Timeline	Short-Term	Long-Term
Overall Intersection	None	- Realign intersection per Courthouse streetscape design
Lane Configuration		
Turn Types		

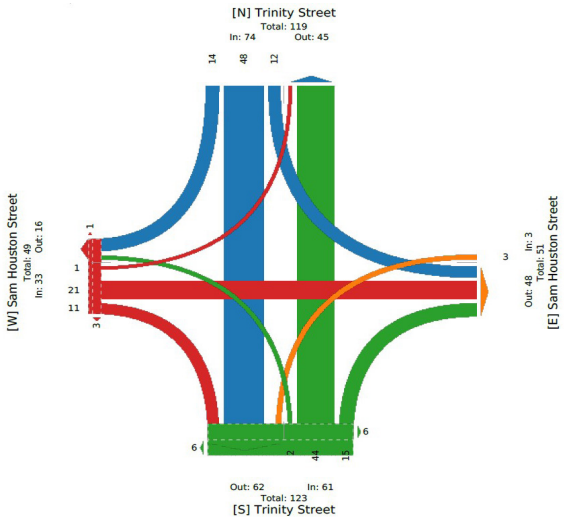
Traffic Model Results

Peak Hour	Study Year	Existing Conditions		With Recommendations	
		Delay (s/veh)	LOS	Delay (s/veh)	LOS
AM Peak	2021	7.7	A	7.7	A
	2045	8.6	A	8.6	A
PM Peak	2021	7.8	A	7.8	A
	2045	8.8	A	8.8	A

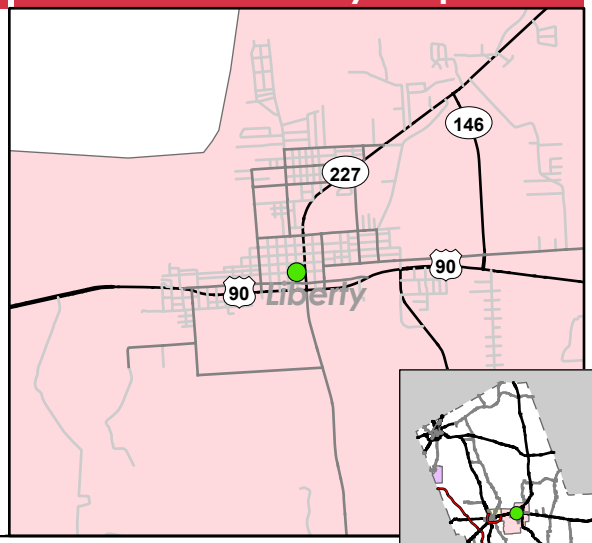
Crash Data (2016-2020)

Total	Fatal	Serious Injury
2	0	0

2021 Movement Counts



Location Key Map



Bowie Street & Grand Avenue

Intersection ID: Liberty - 6

Existing Aerial View

Recommended Improvements

Timeline	Short-Term	Long-Term
Overall Intersection	- Install stop signs at all 3 approaches - Refresh striping and install high visibility marked crosswalks	None
Lane Configuration	- Install exclusive left-turn lane - westbound	- Install exclusive right-turn lane - northbound - Install exclusive left-turn lane - southbound
Turn Types		

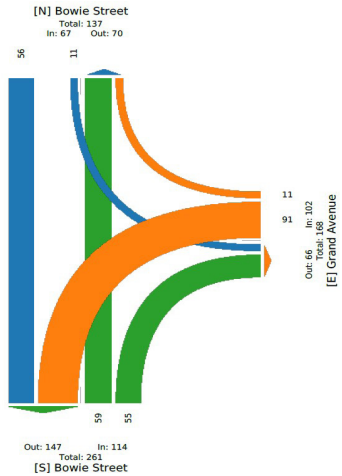
Traffic Model Results

Peak Hour	Study Year	Existing Conditions		With Recommendations	
		Delay (s/veh)	LOS	Delay (s/veh)	LOS
AM Peak	2021	17.3	C	10.8	B
	2045	291.3	F	13.5	B
PM Peak	2021	10.1	B	8.7	A
	2045	14.1	B	12	B

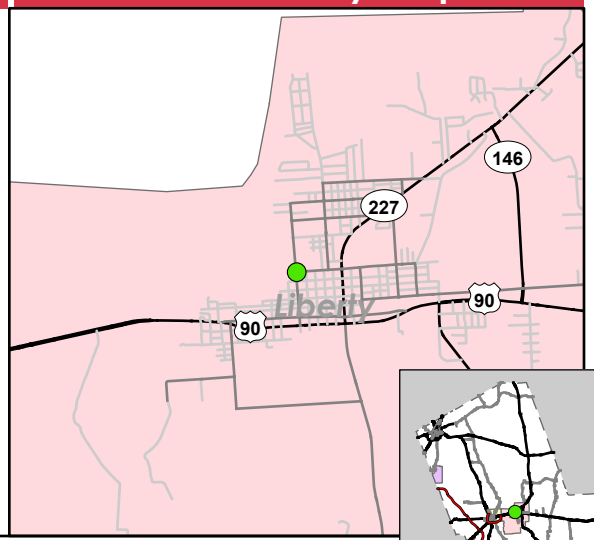
Crash Data (2016-2020)

Total	Fatal	Serious Injury
3	0	0

2021 Movement Counts



Location Key Map



Liberty County Mobility Study, Intersection Summary Sheets

Main Street (SL 227) & Grand Avenue

Intersection ID: Liberty - 7

Existing Aerial View

Recommended Improvements

Timeline	Short-Term	Long-Term
Overall Intersection	- Optimize cycle length and phase splits - Install high visibility marked crosswalks, curb ramps, and pedestrian signal	
Lane Configuration		- Change exclusive right-turn lane to a through-right turn lane - southbound
Turn Types	- Flashing Yellow Arrow (Left-Turn) - all approaches	

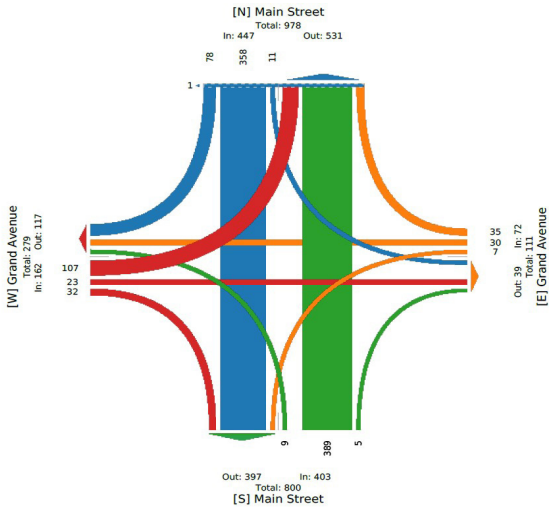
Traffic Model Results

Peak Hour	Study Year	*Existing Conditions*		*With Recommendations*	
		Delay (s/veh)	LOS	Delay (s/veh)	LOS
AM Peak	2021	244.4	F	25.9	C
	2045	587.6	F	55.2	E
PM Peak	2021	25.1	C	18.6	B
	2045	91	F	31.4	C

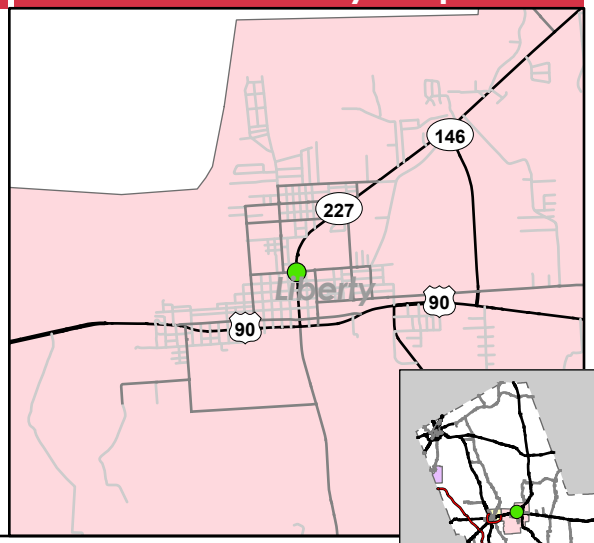
Crash Data (2016-2020)

Total	*Fatal*	*Serious Injury*
15	0	2

2021 Movement Counts



Location Key Map



Bowie Street & Monta Street

Intersection ID: Liberty - 8

Existing Aerial View

Recommended Improvements

Timeline	Short-Term	Long-Term
Overall Intersection	None	- Providing safe walking routes to schools in the area may reduce traffic here in the morning
Lane Configuration		- Install exclusive right-turn lane - northbound - Install exclusive left-turn lanes - southbound and westbound
Turn Types		

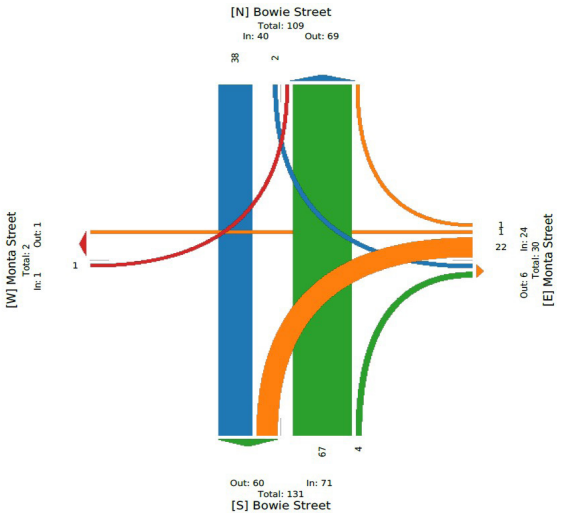
Traffic Model Results

Peak Hour	Study Year	Existing Conditions		With Recommendations	
		Delay (s/veh)	LOS	Delay (s/veh)	LOS
AM Peak	2021	15.1	C	15.1	C
	2045	283	F	87.2	F
PM Peak	2021	1.9	A	1.9	A
	2045	2.1	A	2.1	A

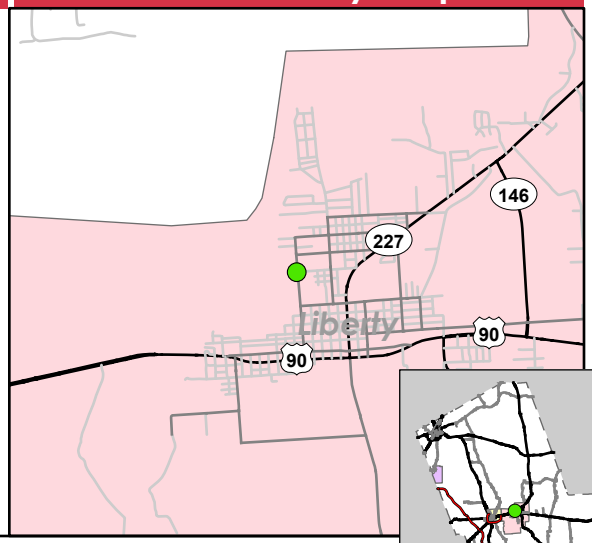
Crash Data (2016-2020)

Total	Fatal	Serious Injury
1	0	0

2021 Movement Counts



Location Key Map



Bowie Street & Edgewood Street

Intersection ID: Liberty - 9

Existing Aerial View

Recommended Improvements

Timeline	Short-Term	Long-Term
Overall Intersection	- Install stop signs at all approaches - Refresh and install striping	None
Lane Configuration		
Turn Types		

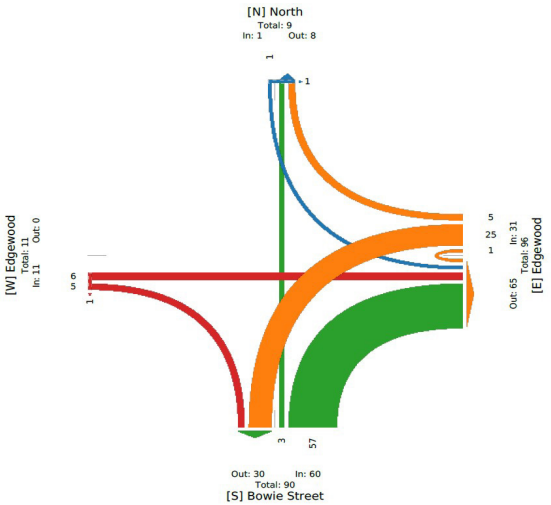
Traffic Model Results

Peak Hour	Study Year	Existing Conditions		With Recommendations	
		Delay (s/veh)	LOS	Delay (s/veh)	LOS
AM Peak	2021	0	A	7.7	A
	2045	0	A	8.6	A
PM Peak	2021	0	A	7	A
	2045	0	A	7.3	A

Crash Data (2016-2020)

Total	Fatal	Serious Injury
0	0	0

2021 Movement Counts



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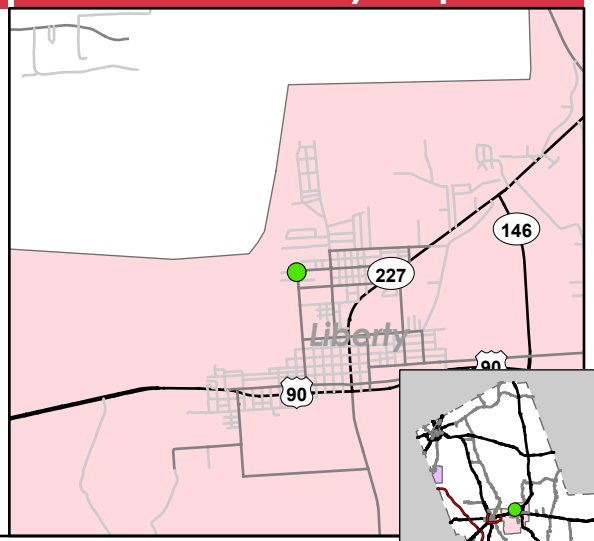


Main Street (SL 227) & Jefferson Drive

Intersection ID: Liberty - 10

Existing Aerial View

Recommended Improvements

Timeline	Short-Term	Long-Term
Overall Intersection	- Optimize cycle length and phase splits - Install high visibility marked crosswalks	- Install sidewalks along both sides of Main Street - Install curb ramps, crosswalks, and pedestrian signals
Lane Configuration	- Install left-turn lanes - eastbound and westbound - Install through lane - northbound	- Install exclusive through lanes - westbound and southbound approaches
Turn Types	- Flashing Yellow Arrow (Left-Turn) - all approaches	

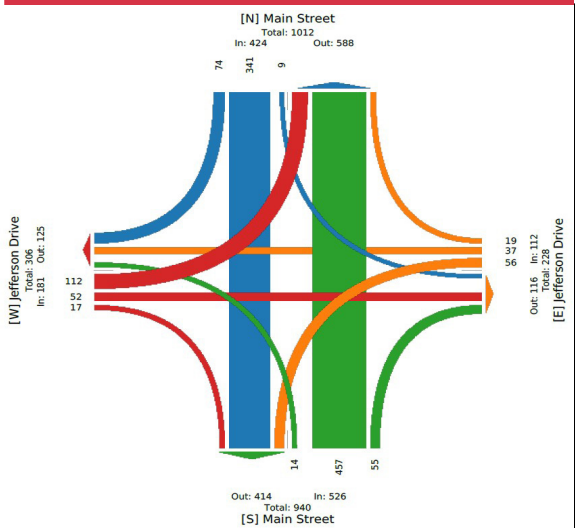
Traffic Model Results

Peak Hour	Study Year	*Existing Conditions*		*With Recommendations*	
		Delay (s/veh)	LOS	Delay (s/veh)	LOS
AM Peak	2021	539.3	F	52.6	D
	2045	1048.4	F	55	D
PM Peak	2021	456.3	F	28.3	C
	2045	997.3	F	44.3	D

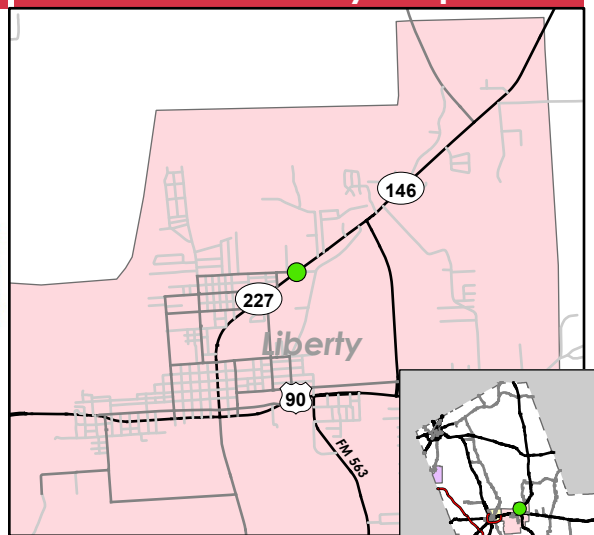
Crash Data (2016-2020)

Total	*Fatal*	*Serious Injury*
20	0	1

2021 Movement Counts



Location Key Map



Main Street (SL 227) & Cook Road

Intersection ID: Liberty - 11

Existing Aerial View

Recommended Improvements

Timeline	Short-Term	Long-Term
Overall Intersection	- Optimize cycle length and phase splits	- Realign driveway with Cook Road to make a 4-legged intersection - Install sidewalks both sides of Main Street
Lane Configuration	- Install exclusive right-turn lane - southbound	- Install exclusive through lanes - northbound and southbound
Turn Types		

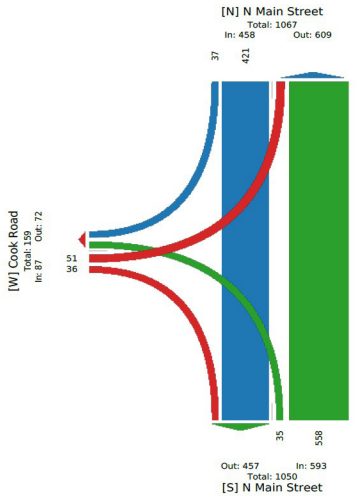
Traffic Model Results

Peak Hour	Study Year	Existing Conditions		With Recommendations	
		Delay (s/veh)	LOS	Delay (s/veh)	LOS
AM Peak	2021	48	D	20.8	C
	2045	265.3	F	19.7	B
PM Peak	2021	18.4	B	12.3	B
	2045	251.9	F	13.3	B

Crash Data (2016-2020)

Total	Fatal	Serious Injury
13	0	2

2021 Movement Counts



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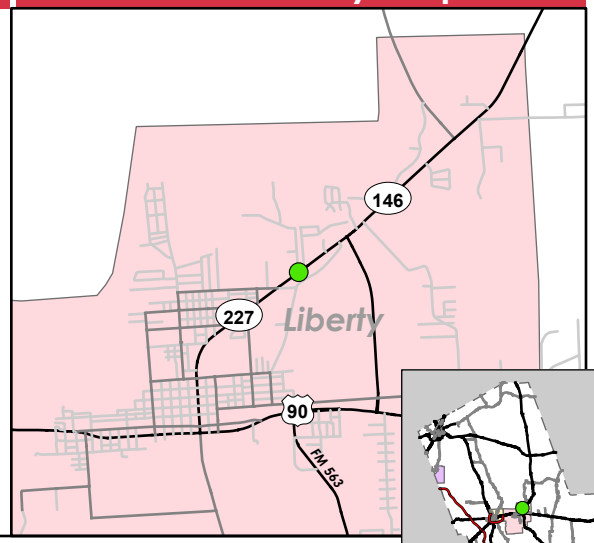
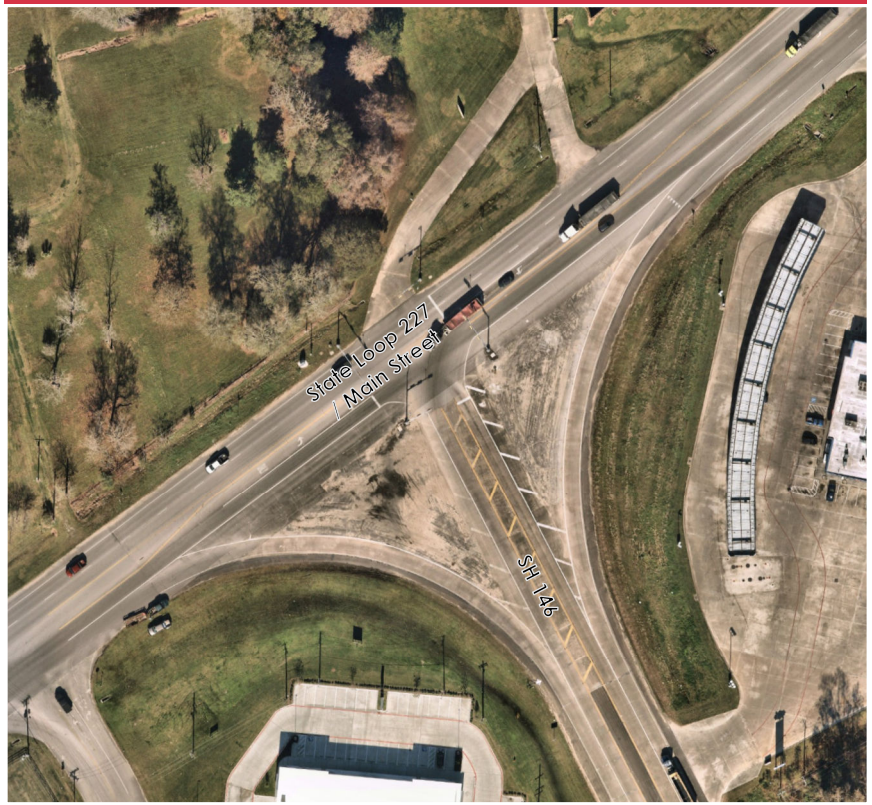


Liberty County Mobility Study, Intersection Summary Sheets

Main Street (SL 227) & SH 146

Intersection ID: Liberty - 12

Existing Aerial View



Recommended Improvements

Timeline	Short-Term	Long-Term
Overall Intersection	- Optimize cycle length and phase splits	- Realign driveway (southbound approach) to make a 4-legged intersection - Install sidewalks both sides of Main Street and SH 146
Lane Configuration		- Install exclusive through lanes - northbound
Turn Types	- Permitted+Protected (Left-Turn) - southbound	

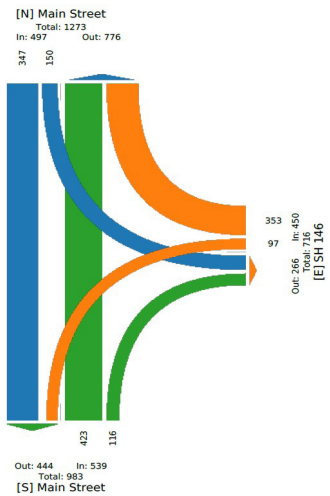
Traffic Model Results

Peak Hour	Study Year	Existing Conditions		With Recommendations	
		Delay (s/veh)	LOS	Delay (s/veh)	LOS
AM Peak	2021	38	D	19.5	B
	2045	177.3	F	24.8	C
PM Peak	2021	45.7	D	22.9	C
	2045	137.9	F	29.3	C

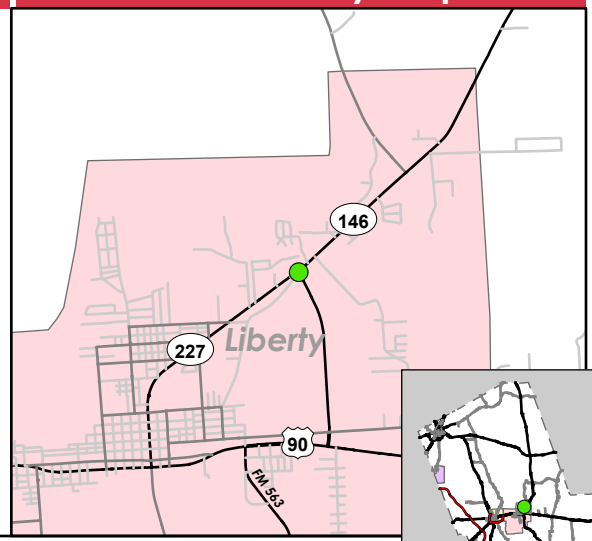
Crash Data (2016-2020)

Total	Fatal	Serious Injury
25	1	1

2021 Movement Counts



Location Key Map



Liberty County Mobility Study, Intersection Summary Sheets

Plum Grove Rd & FM 1010/Baptist Church Loop Road

Intersection ID: Plum Grove - 1

Existing Aerial View

Recommended Improvements

Timeline	Short-Term	Long-Term
Overall Intersection	None	- Realign neighborhood entrace road with FM 2090 to make a 4-legged intersection (configuration requires further study)
Lane Configuration		
Turn Types		

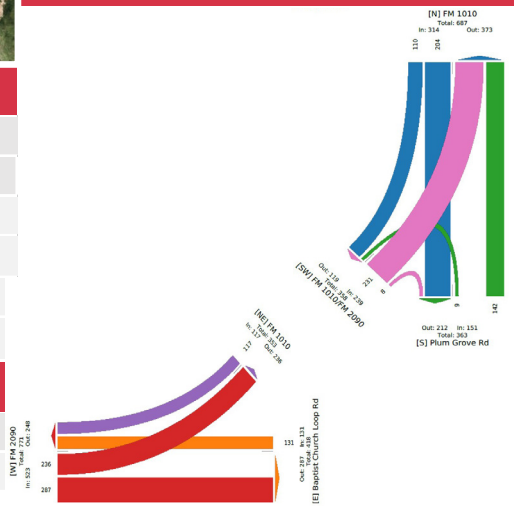
Traffic Model Results

Peak Hour	Study Year	Existing Conditions		With Recommendations	
		Delay (s/veh)	LOS	Delay (s/veh)	LOS
AM Peak	2021	5.2 (4.6)	A (A)	5.2 (4.6)	A (A)
	2045	12.3 (5.7)	B (A)	258.1	C
PM Peak	2021	3.7 (5.7)	A (A)	3.7 (5.7)	A (A)
	2045	5.2 (9.6)	A (A)	143	C

Crash Data (2016-2020)

Total	Fatal	Serious Injury
12	0	3

2021 Movement Counts



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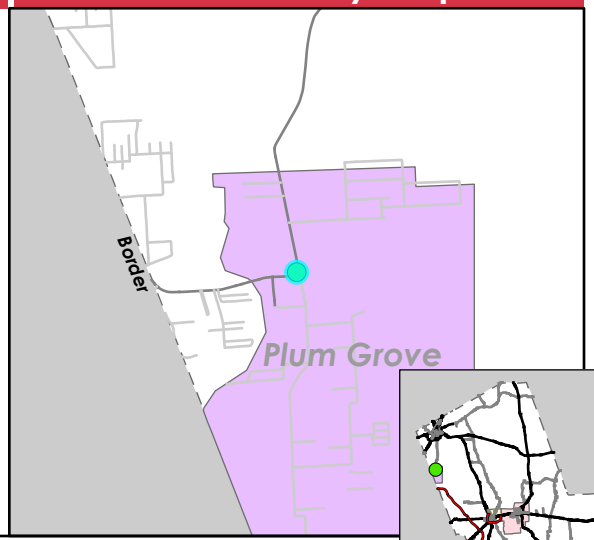

Transit and Active Modes Recommendations Memo

ASAKURA ROBINSON

MEMO

To: Kimley Horn
From: Asakura Robinson
Re: Liberty County Bicycle, Pedestrian and Transit Recommendations – Revised
Date: November 17, 2021

This memo provides bicycle, pedestrian and transit recommendations and additional considerations for future planning. For maps and background information documenting existing conditions that informed these specific recommendations, please see the Liberty County Mobility Study – Bicycle, Pedestrian, and Transit Existing Conditions Memo (July 2021).

Pedestrian Recommendations

Although the cities of Cleveland, Dayton, and Liberty either specify detailed sidewalk regulations or state that such sidewalk regulations exist, sidewalks are not standard nor uniformly available in larger downtown areas nor across the county, as documented in the existing conditions memo; Liberty County does not mention any sidewalk regulations in its subdivision and development regulations.[1, 2, 3]

Accessible, connected networks of sidewalk and street crossings designed to current standards are recommended in areas with the highest potential to generate walking trips. The Cities of Cleveland, Dayton, and Liberty should prioritize connecting existing segments in their downtown areas and within walking distance of school campuses. The implementation of these recommended pedestrian routes and design guidelines also support transit riders getting to and from destinations specified in the existing conditions memo.

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[1] The City of Cleveland Code of Ordinances, updated December 11, 2020 and enacted May 19 2020, states that "All sidewalks, curbs and gutters, and driveways constructed in the city shall conform to the plans and specifications established by the city which are on file in the city secretary's office" in Sec. 102-9. – Specifications for sidewalks, curbs and gutters, driveways. https://library.municode.com/tx/cleveland/codes/code_of_ordinances?nodeId=PTIICOOR_CH102STSIOTPUPL_ARTIINGE_S102-9SPSICUGUDR

[2] The City of Dayton Engineering Design Standards and Details document, finalized in January 2020, specifies sidewalk design standards in section 2.3 Sidewalks, Bikeways and Pedestrian Access on p. 8. Section 2.3 B relates to sidewalk locations and states that "sidewalks shall be constructed along all collector and arterials thoroughfares and perimeter streets" while Section 2.3 C relates to sidewalk standards and specifies that sidewalks "shall be at least five feet wide in both residential and nonresidential developments and shall be located between the curb or grade line of the public street and the ROW line or public access easement if approved by the City, no closer than five feet to the curb or grade line, unless otherwise approved by the City." https://www.cityofdaytontx.com/home/showpublisheddocument/10/637654129237174945

[3] The City of Liberty Code of Ordinances, adopted September 29, 2021,

The County and municipalities should adopt and consistently implement pedestrian facility standards and guidelines that employ national best practices, including but not limited to the following:[4]

- Sidewalks
    a. Standard 6' width where right-of-way allows; minimum 5' width.[5]
    b. A minimum of 8' width is desired where a sidewalk is "directly adjacent moving traffic."[6]
    c. Provide sidewalks on both sides of the street within downtown areas.[7]
    d. Amenities such as shade, lighting, and benches should be considered where right-of-way (ROW) is available to serve pedestrians of all ages and abilities.[8]
- Curb Ramps and Crossings
    a. Parallel curb ramps for all newly installed sidewalks
- Appropriate curb and gutter design to grade-separate pedestrians from automobile traffic and to support stormwater drainage
- Use of traffic signals designed to facilitate safe pedestrian crossings, including pedestrian countdowns, pedestrian-activate crossings, and
- Approved traffic calming countermeasures designed to mitigate speeding in areas where pedestrians are more active, such as speed humps, curb extensions, medians, and radar speed feedback signs.

Inventory existing sidewalk segments in Cleveland, Dayton, and Liberty. Existing downtown area sidewalks are discontinuous, lack ADA accessible curbs and widths, and have deteriorating pavement. As gaps are filled to create a continuous sidewalk network, existing segments should be repaired or replaced as part of larger projects:

1. Document condition of existing sidewalk segments and evaluate for accessibility using an established methodology, such as the Pedestrian Environmental Quality Index (PEQI)
2. Determine phased schedule for full repair, replacement or redesign that aligns with capital improvement projects and funding cycles

Connect existing sidewalk segments in the downtown areas to create a continuous network. The mix of civic uses, restaurants, services, and tourist destinations and accommodations in the downtown areas of Cleveland, Dayton, and Liberty offer opportunities for walking trips, but such trips require quality pedestrian infrastructure. Major "spines" are prioritized to create the backbone of a robust sidewalk network radiating outward from each downtown area:

1. Cleveland
    a. East and West Houston Street (SH 321)
    b. North and South Washington Avenue (SH 573)
    c. Southline Street

[4] National and state-level best practices are informed by the National Association of City Transportation Officials (NACTO), the American Association of State Highway and Transportation Officials (AASHTO), the Institute of Transportation Engineers (ITE), the Texas Department of Transportation (TxDOT) Roadway Design Manual, and the Texas Accessibility Standards.
[5] Sidewalks, National Association of City Transportation Officials, 2021. https://nacto.org/publication/urban-street-design-guide/street-design-elements/sidewalks/
[6] Sidewalks, National Association of City Transportation Officials, 2021. https://nacto.org/publication/urban-street-design-guide/street-design-elements/sidewalks/
[7] Sidewalks, National Association of City Transportation Officials, 2021. https://nacto.org/publication/urban-street-design-guide/street-design-elements/sidewalks/
[8] Sidewalks, National Association of City Transportation Officials, 2021. https://nacto.org/publication/urban-street-design-guide/street-design-elements/sidewalks/

    d. Nevell Street (FM 787)
2. Dayton
    a. North and South Winfree Street (FM 1409)
    b. FM 1960 E Rd and West Clayton Street
    c. West and East Houston Street
3. Liberty
    a. Main Street (SH 227)
    b. Grand Avenue
    c. Sam Houston Street
    d. Beaumont Avenue

Provide sidewalk infrastructure along recommended walking routes to nearby school campuses from surrounding neighborhoods. School campuses lack sidewalk facility connections to surrounding residential neighborhoods, representing opportunities to serve existing and new schools with pedestrian infrastructure. While not every street or road within a ¼ to ½ mile radius of an existing campus requires a sidewalk, priority should be given to at least two direct routes approaching from different cardinal directions. Bussing policies vary by school district: Dayton Independent School District (ISD) busses all students, Cleveland ISD does not bus students within 2 miles of campus, and Liberty ISD will bus students who live in "areas where hazardous traffic conditions and/or a high risk of violence exist for students who live within two miles of the campus" which LISD classifies as "all roads adjacent to LISD campuses." All new school developments should incorporate sidewalk connections in all directions to surrounding neighborhoods. Recommended new connections:

1. Cleveland
    a. Northside Elementary School
        i. North Blair Avenue
        ii. Margie Street
        iii. North Mason Street
    b. Southside Elementary School
        i. South College Avenue
        ii. South William Barnett Avenue
        iii. Southline Street
    c. Eastside Elementary School
        i. Jefferson Avenue
    d. Cleveland Middle and High Schools
        i. Truman Street
        ii. Houston Street (SH 321)
    e. Proposed School Location
        i. Mildred Street
        ii. Doris Street
        iii. Helen Street
        iv. Meadows Street
2. Dayton
    a. Dr. E. R. Richter Elementary
        i. Cherry Creek Rd
        ii. North Winfree Street
    b. Colbert Elementary School
        i. East Houston Street
        ii. South Colbert Street
    c. Kimmie M. Brown Elementary School

        i. Brown Road
        ii. South Winfree Street (FM 1409)
    d. Nottingham Elementary School
        i. West Houston Street
    e. Stephen F. Austin Elementary
        i. South Cleveland Street
        ii. SH 146
    f. Dayton High School
        i. Norcross Lane
        ii. Tram Road
        iii. North Cleveland Street
    g. Wood Wilson Jr. High School
        i. West Houston Street
        ii. South Cleveland Street
        iii. SH 146
3. Liberty
    a. Liberty Elementary School
        i. Grand Avenue
        ii. Bowie Street
        iii. Milam Street
        iv. North Travis Street
    b. San Jacinto Elementary School
        i. Bowie Street
        ii. Monta Street
        iii. Milam Street
        iv. North Travis Street
    c. Liberty Middle School
        i. North Travis Street
        ii. Jefferson Drive
        iii. North Main Street
    d. Liberty High School
        i. Jefferson Drive
        ii. North Main Street
        iii. Panther Lane

Identify high priority intersections for enhanced pedestrian safety. High visibility marked crosswalks should be placed at:

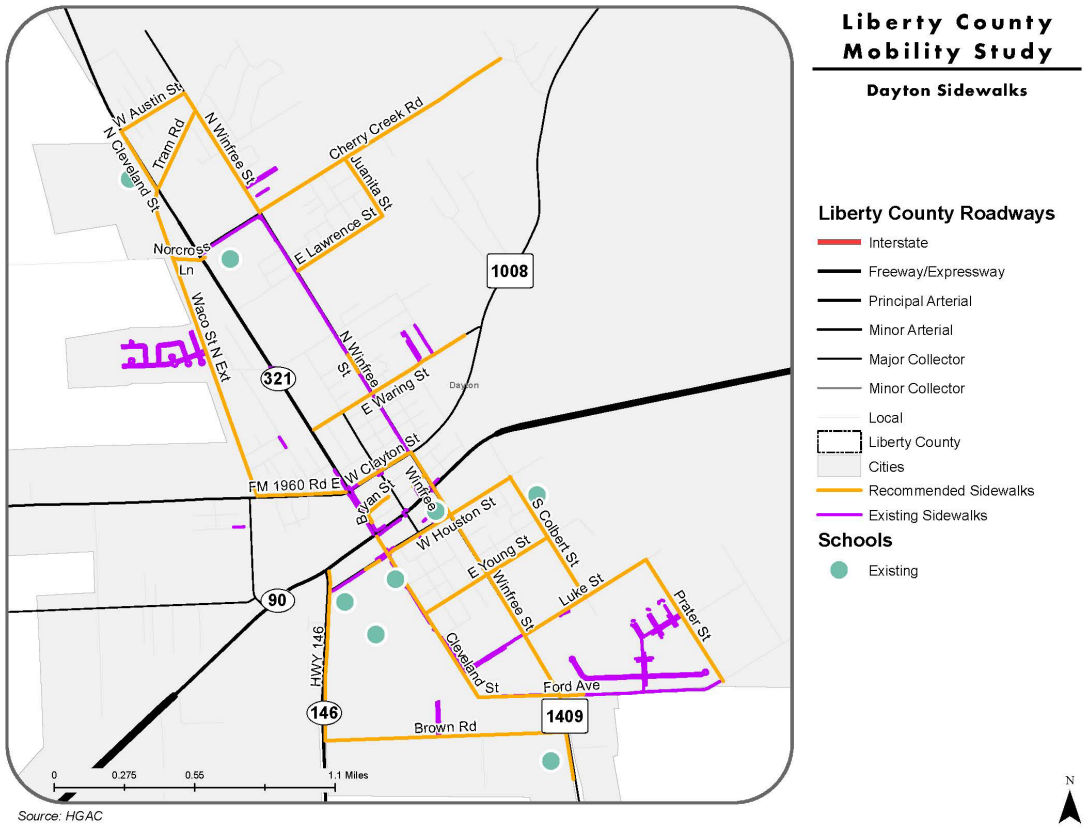
1. Intersections with three or more lanes in any direction
2. Intersections with annual average daily traffic (AADT) counts exceeding 15,000 vehicles
3. Intersections within ¼ mile of any school campus
4. Priority intersections include:
    a. Dayton
        i. West Clayton Street with North/South Winfree Street and Cleveland Street
        ii. West Houston Street with North/South Winfree Street and Cleveland Street
    b. Cleveland
        i. East Houston Street with South Washington (SH 573), South College Avenue, and Charles Barker Avenue
        ii. West Southline Street and South Washington (SH 573)
    c. Liberty

i. Main Street with Sam Houston Street, Grand Avenue, and Jefferson Drive
ii. Grand Avenue with Bowie Street

Provide sidewalk infrastructure along fixed transit routes. Prioritize areas of frequent transit fixed route boardings and alightings "hotspots" with improved pedestrian infrastructure while providing sidewalks along entire fixed transit route length in lieu of formal bus stops since passengers have the option of boarding and alighting at any point along these transit routes. Recommended new connections:

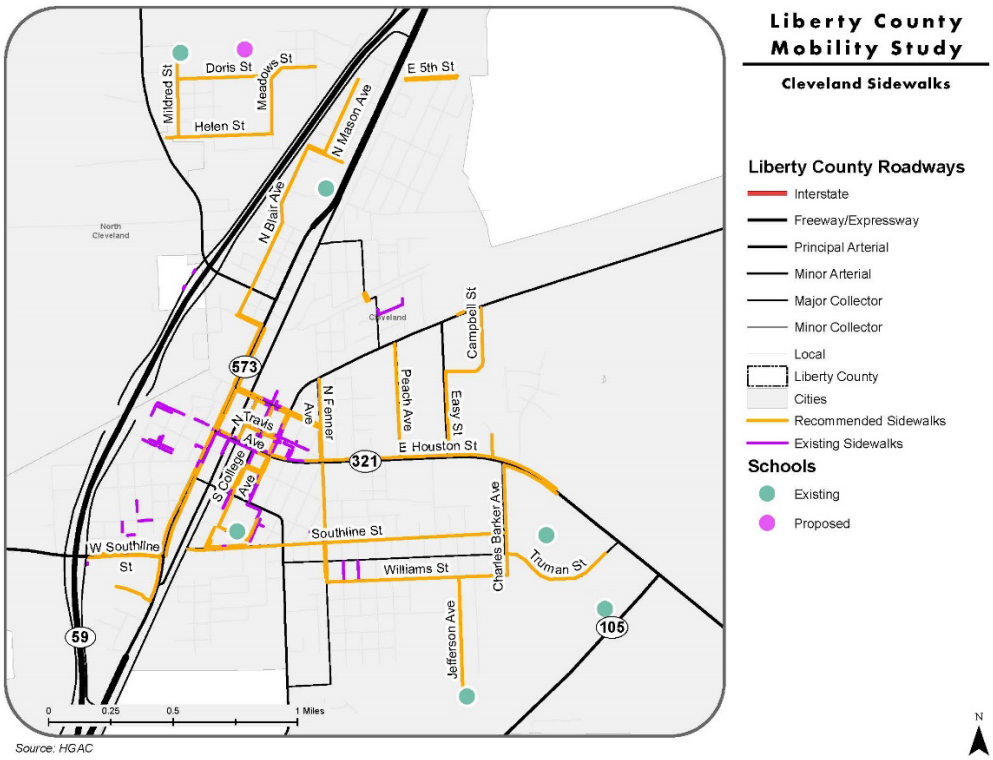
1. Cleveland
    a. North Blair Avenue
    b. West Crockett Street
    c. North and South College Avenue
    d. Peach Avenue
    e. Easy Street
    f. Campbell Street
    g. West Southline Street
2. Dayton
    a. Waco Street North
    b. Luke Street
    c. Prater Street
3. Liberty
    a. Lakeland Drive
    b. Magnolia Street

Map 1: City of Dayton Sidewalk Recommendations

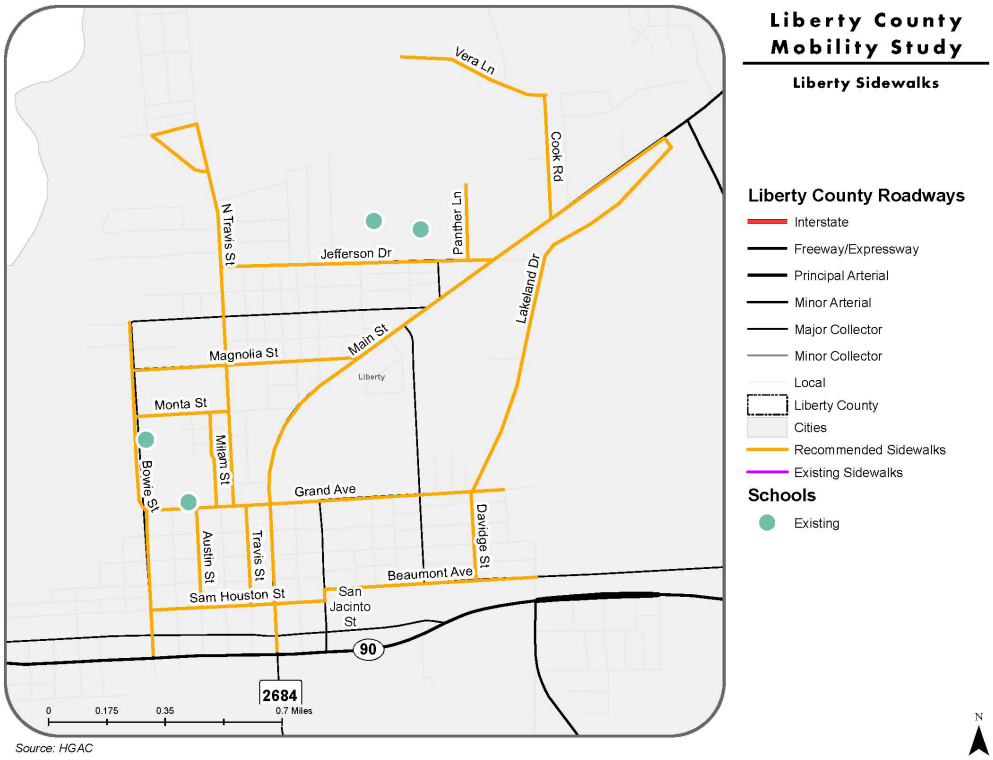


Source: HGAC

Map 2: City of Cleveland Sidewalk Recommendations



Map 3: City of Liberty Sidewalk Recommendations



Bicycle Recommendations

Although there are no designated on-street bicycle facilities located within Liberty County, Strava data and stakeholder feedback demonstrate demand along several major routes and thoroughfares throughout the county; there are very few dedicated bike trails within the county including near the Trinity River National Wildlife Refuge McGuire and Brierwood Unit Parking Lots, which do not connect to any other bikeways.

Assess downtown areas of Cleveland, Dayton, and Liberty for on-street bikeway facility treatments. Existing downtown area sidewalks are discontinuous, lack ADA accessible curbs and widths, and have deteriorating pavement. As gaps are filled to create a continuous sidewalk network, existing segments should be repaired or replaced as part of larger projects:

1. Document existing street conditions using an established methodology, such as the Bicycle Environmental Quality Index (BEQI)
2. Determine potential on-street facilities and treatments for to align with future street reconstruction projects.

Utilize existing major thoroughfares with wide shoulders and right-of-way for bikeway connections between cities. Although the lack of route options other than major auto thoroughfares presents one of the biggest challenges, according to bicycle riders and advocates in Liberty County, these thoroughfares also present opportunities for utilizing underutilizing right-of-way (ROW) for future on- or off-street facilities when routinely maintained and kept free from debris and other materials which may present a hazard for people biking. While further exploration after route selection is required for

determining facility types based on available ROW, posted speed limits, and ADT, suggested corridors are presented here:

1. FM 787
2. FM 1010
3. FM 1011
4. SH 105
5. SH 90
6. SH 321
7. SH 146

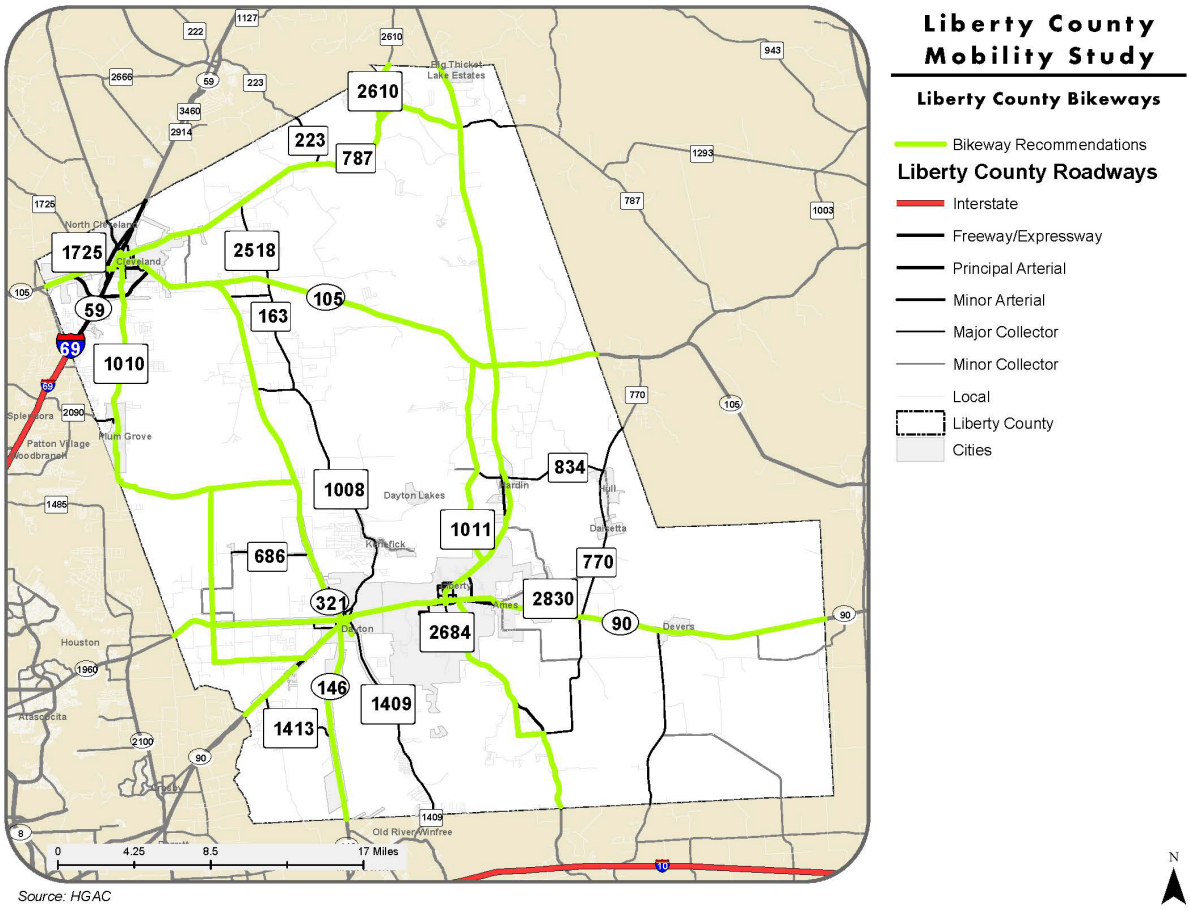
Adopt design guidelines for new roadway construction and maintenance plans that accommodate people biking, including facility design standards and guidelines. Such guidelines should emphasize physical separation between people biking on roadways with posted speed limits above 30 miles per hour and may include:

- NACTO's Contextual Guidance for Selecting All Ages and Abilities Bikeways for roadway segments within city limits, especially where bikeways may be directly adjacent roadways and vehicular traffic[9]
- Bicycle paths separated from vehicular traffic that are a minimum of 8' wide for bidirectional travel or a minimum of 5' for one-way travel[10]
- Shared use paths for bicycle and pedestrian activity separated from vehicular traffic that are a minimum 10' wide for bidirectional travel or a minimum of 6' for one-way travel
- Appropriate curb and gutter design to grade-separate bicyclists from automobile traffic and to support stormwater drainage

Consider the Trinity River corridor as a future shared hike-and-bike trail to preserve natural habitat, discourage development in floodplains, and provide a major north-south alignment across the county. Presently, two shorter trail segments emanating from parking lots within the Trinity River Wildlife Refuge exist but do not connect to other facilities outside of the refuge. A continuous north-south trail along either or both sides of the Trinity River is recommended for additional, further study.

Map 4: Liberty County Bikeway Recommendations

[9] NACTO, https://nacto.org/wp-content/uploads/2017/12/NACTO_Designing-for-All-Ages-Abilities.pdf
[10] Small Town and Rural Multimodal Networks, Federal Highway Administration (FHWY), https://www.fhwa.dot.gov/environment/bicycle_pedestrian/publications/small_towns/page04.cfm


Liberty County Mobility Study
Liberty County Bikeways
Bikeway Recommendations
Liberty County Roadways
Interstate
Freeway/Expressway
Principal Arterial
Minor Arterial
Major Collector
Minor Collector
Local
Liberty County
Cities
2610
223
787
2518
1725
105
163
59
1010
1008
1011
834
686
770
321
2830
2684
90
146
1409
1413
0
4.25
8.5
17 Miles
N

Source: HGAC

Transit Recommendations

In coordination with local municipalities, develop long-range capital improvement plans to build basic passenger facilities at high-ridership stops, including landing pads, signage, shelters, and sidewalks. Ridership data provided by Brazos Transit District indicates the following stops have high levels of boardings and alightings, and should therefore be considered priorities:

1. Liberty
    a. Near the Liberty courthouse offices,
    b. The shopping center bounded by North Main Street, Jefferson Drive and Cook Road,
    c. Walmart on North Main Street
2. Ames
    a. West Main Street and Martin Luther King Road;
3. Dayton
    a. The Dayton Park Apartments,
    b. The Dayton Housing Authority and the adjacent multifamily housing units along North Winfree Street,
    c. The commercial strip along SH146 east of South Winfree Street
4. Cleveland:
    a. The commercial area at the intersection of North Cleveland and West Clayton Streets
    b. Near Crockett Street and North College Avenue
    c. Near Manjik Avenue and West Southline Street

Plan for a Park & Ride facility and multimodal connections to it at the location of US-90 and the future Grand Parkway. A growing population will increase demand for convenient mobility options to regional destinations. Liberty County and municipalities should study the viability of providing a park and ride facility that offers County residents and workers convenient and efficient regional public transportation services to and from destinations such as Downtown Houston and the Texas Medical Center via US-90, and other large employment and activity centers. The City of Cleveland's further distance from regional destinations and current lack of regional trip demand makes a Park & Ride facility there less viable in the short-term. If residential and commercial development continues apace for 10 to 20 years, the County and City should consider a facility that offers commuter service to Kingwood, the Woodlands, and Bush Intercontinental Airport.

Identify a dedicated funding source to provide a local match for federal operating funds. Lack of a dedicated funding source, such as a sales or ad valorem tax, or impact fees, limits the ability for the Brazos Transit District to supply additional service. An intergovernmental task force or work group responsible for exploring the viability of such sources could identify long-term opportunities to tie future growth and land development of Liberty County to increased transit service. These opportunities should include but not be limited to:

- Increase municipal general fund expenditures for local matches. This would require raising additional local revenue or reallocating funds used for other purposes.
- Advocate for dedication of public transportation funds in annual TXDOT budget for exurban areas.
- Establish county or municipal Transportation Reinvestment Zone. State code authorizes Texas counties and cities to create zones in "unproductive and underdeveloped," in which incremental property tax gains from new development is dedicated to identified needs.
- Establish a county or municipal sales tax dedicated to transit services.
- Establish a county or municipal property tax dedicated to transit services.
- Increase the local vehicle registration fee and dedicate it to transit services. A $10 local fee is currently charged for vehicle registration, in addition to state vehicle registration fees.
- Implement a regional gas tax**.** State legislation would be required for metropolitan regions to establish and collect their own gas taxes, which could provide revenue to support local public transportation.

- Increase the state gas tax. The state gas tax of 20 cents per gallon has not changed since first established in 1991. Future legislative action could expand of the state gas tax could dedicate new funds to local public transportation needs, among other transportation infrastructure and services.

Publish General Transit Feed Specification data to allow mobile navigation applications to integrate fixed route schedules and alignments into trip options. This is a low-cost and globally practiced method for making service information more accessible to users. Although the fixed routes do not have designated stops, locations of scheduled turns can be used to indicate scheduled arrival times by location.

Houston-Galveston Area Council