



TRANSPORTATION & STREET IMPROVEMENTS PROGRAM

Project: Essen Lane at I-10 (Intersection Improvement)

Green Light Program ID: G
 Project Length (feet): Intersection
 Existing Typical Section: Six lanes, curb and gutter
 Proposed Typical Section: Add Two Turn Lanes

Project Overview

The existing Essen Lane is currently experiencing congestion during weekday peak periods at I-10. This congestion is due, in part, to the volume of turning movements of entering and exiting the interstate from Essen Lane. This project will add two additional turn lanes to provide dual left turns for southbound and northbound Essen Lane. The existing two through lanes will be shifted to the east in between the existing I-10 bridge bents and east bridge abutments. Additional project elements include retaining wall between the through lanes and bridge abutments and adding one additional lane to the I-10 westbound ramps and eastbound ramps near the intersections for left turn traffic.

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ASSUMPTIONS

- Incorporate HNTB’s study to widen Essen Lane to the east in order to add two left turn lanes and shift the two through lanes in between the existing bridge bents and abutments.
- Leave the existing I-10 bridges in place.
- Remove existing I-10 bridge header bank concrete riprap slope and provide soil nail retaining wall in order to widen Essen Lane and provide two additional left turn lanes.
- Project estimate assumes that the majority of the construction of this project will be completed during nighttime, off-peak hours.
- Project Budget assumes soil nailed retaining wall is an acceptable design alternative.

UTILITIES

Possible Utilities	Existing	Adjust / Relocate
Underground Electric		
Overhead Electric	●	●
Overhead Electric Transmission		
Water	●	●
Sanitary Sewer	●	●
Telephone	●	●
CATV	●	●
Gas Distribution	●	●
Gas HP Pipeline		

A subsurface utility investigation (SUE) should be performed, and related cost is included in the Final Engineering cost estimate.

HYDROLOGY / HYDRAULICS

- Existing curb and gutter with storm drainage system to collect surface runoff.
- Open ditch drainage from the I-10 ramps.
- Specific location of the trunk line is unknown, but proposed storm drain inlets and pipes will tie to the existing trunkline to drain to Ward’s Creek.



SIGNALIZED INTERSECTIONS

- There are existing signals at the I-10 eastbound and westbound ramp intersections with Essen Lane that will require signal modification or replacements.
- The existing configuration for Essen Lane contains 2 through lanes and 1 left-turn lane in the northbound and southbound directions.
- The proposed configuration will provide two through lanes and two left turn lanes for both northbound and southbound Essen Lane; and provide one left turn lane, one shared left turn and through lane and one right turn lane for eastbound and westbound ramps.
- The traffic signal analysis shows a level-of-service C for Essen Lane at I-10 eastbound ramps and a level-of-service E for Essen Lane at I-10 westbound ramps with this widening project for the 2030 design year.

RIGHT OF WAY IMPACTS

- Additional right of way will be required along the east right of way of Essen Lane to add additional lanes approaching the intersections and corner clips for the addition of right-turn lanes.
- Additional right of way required will impact the Scooter business on the southeast corner and a residence on the northeast corner of the intersections.

ENVIRONMENTAL CONCERNS

- Exxon is investigating the closed gas station for possibility of UST remediation.

SOILS

- Project area soils are level to gently sloping, somewhat poorly drained and moderately well drained.
- Project area soils are loamy and area has steep escarpments.



COST ESTIMATE

Project Description:	Add two turn lanes		
Project Length:	Intersection		
	CONSTRUCTION COST		
Section 200 -	Earthwork	\$	177,676
Section 300 -	Base and Subbase Courses	\$	349,067
Section 400 -	Surface Courses	\$	-
Section 500 -	Pavements	\$	719,867
Section 600 -	Structures	\$	274,200
Section 700 -	Drainage Work	\$	24,200
Section 800 -	Sanitary Sewer Work	\$	2,800
Section 905 - 906	Pavement Markings & Signalization	\$	428,600
Section 907 - 911	Concrete Curbs & Sidewalks	\$	72,000
	SUBTOTAL CONSTRUCTION COST (2006 \$)	\$	2,048,409
MOBILIZATION		\$	163,873
NIGHT WORK PREMIUM		\$	512,102
	SUBTOTAL	\$	2,724,384
CONTINGENCY & UNFORESEEN CONDITIONS		\$	544,877
	SUBTOTAL	\$	3,269,261
	TOTAL CONSTRUCTION COST (2006 \$)	\$	3,269,261
UTILITY RELOCATIONS		\$	128,340
TESTING		\$	81,732
LIGHTING, LANDSCAPING, SEEDING		\$	130,770
ENVIRONMENTAL STUDY		\$	100,000
ENGINEERING		\$	326,926
ENVIRONMENTAL MITIGATION		\$	50,000
RIGHT-OF-WAY		\$	2,393,500
	SUBTOTAL	\$	6,480,529
PROGRAM & CONSTRUCTION MANAGEMENT		\$	324,026
	TOTAL PROJECT COST (2006 \$)	\$	6,804,556

Comments:

- Unit costs are assumed to include contractor overhead, profit and mark-ups
- Environmental mitigation will include environmental and protection of cultural resources
- Mobilization is expected to be 8% of construction cost
- Contingency and Unforeseen Conditions are expected to be 20% of construction cost
- Testing is expected to be 2.5% of construction cost
- Lighting, Landscaping, and Seeding is expected to be 4% of construction cost
- Note: Percent Cost is for the GLP Program Average and NOT project specific obligation
- Engineering is expected to be 10% of construction cost
- Program & Construction Management is expected to be 5% of project costs
- Nightwork Premium is expected to be 25% of construction cost

