

C1.05- Roadway Project City of Buda

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Sponsor: WSB



Problem Statement

- The City of Buda is addressing safety and traffic flow concerns at Main Street and Jack C. Hayes Trail
- The Intersection currently lacks pedestrian crossings and turning lanes
- Congestion has increased due to residential and commercial development

This project aims to:

- Enhance Pedestrian Safety
- Improve Vehicular Movement
- Meet Local Access Needs

Alternatives Considered

During this project we began by considering 4 Different Alternative

- Alternative 1: Roundabout
- Alternative 2: Signalized Intersection
- Alternative 3: Channelized Right turns
- Alternative 4: Green T Intersection

Although each of these solutions offer great benefits, We decided to move forward with Signalized Intersection due to its ability to meet the City of Buda's needs.

Design Considerations

- Pedestrian Safety
- Improved Traffic Flow
- Feasibility of Driveway Tie-ins
- Emergency Vehicle Access

Engineering Solution



- Three-way signalized Intersection
- Improves pedestrian safety
- Added parking for nearby businesses
- Driveway tie-ins
- Supports foot traffic

Summary Cost Analysis

Capital Cost

Item	Rates	Estimated Cost
Bid Item Subtotal		\$475,000
Allowances		\$91,000
Design and Engineering	10%	\$50,000
Subtotal		\$140,000
Contingency	25%	\$150,000
Total		\$906,000

Life Cycle Cost

Cost Component	NPV (USD)
Initial Construction	\$738,959.00
Routine Maintenance (Annual \$20,000)	\$345,840.67
Energy Costs (Annual \$5,000)	\$86,460.17
Rehabilitation Year 15	\$166,579.35
Salvage Value Year 30	\$-46,247.80
Total Life Cycle Cost (NPV)	\$1,291,591.39

Sustainability Evaluation

Envision- Silver Rating

Score: 33%

Some Credits are non-applicable due to stage of planning



CREDIT CATEGORY	APPLICABLE	SUBMITTED	%
QUALITY OF LIFE	162	78	48%
LEADERSHIP	50	21	42%
RESOURCE ALLOCATION	66	22	33%
NATURAL WORLD	24	0	0%
CLIMATE AND RESILIENCE	190	43	23%
TOTAL POINTS / %	492	164	33%

Constraints and Standards

- TxDOT
- Envision
- USDOT
- AASHTO
- TRCT

Group Photo

