

# C1.02 - City of Buda T-Intersection Remodel

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## Introduction

The City of Buda seeks to revamp the intersection at Main Street and Jack C. Hays Trail due to various concerns like safety, quality of life, and future planning. Key areas for improvement include safe pedestrian crossings on Main St., optimizing intersection geometry for better traffic flow and safety, revising driveway connections to nearby businesses, and enhancing parking accessibility.

## Grading Criteria

	4-Way Traffic Signal	Roundabout
Safety	5	4
Cost	4	2
Parking	4	5
Maintainance	4	5
Traffic Flow	2	5
Tie- Ins	4	4
Construction	4	2
<b>Total</b>	<b>27</b>	<b>27</b>

1- Poor 2- Unsatisfactory 3- Satisfactory  
 4- Very Satisfactory 5- Outstanding

## Sustainability

Credit Category	Applicable	Submitted	Percentage
Quality of Life	164	124	76%
Leadership	110	51	46%
Resource Allocation	12	3	25%
Natural World	46	24	52%
Climate and Resilience	0	0	NaN%
<b>Total Points / %</b>	<b>332</b>	<b>202</b>	<b>61%</b>

Credit Category	Applicable	Submitted	Percentage
Quality of Life	148	113	76%
Leadership	110	51	46%
Resource Allocation	12	3	25%
Natural World	46	24	52%
Climate and Resilience	0	0	NaN%
<b>Total Points / %</b>	<b>316</b>	<b>191</b>	<b>60%</b>

## Project Alternatives

### Traffic Signal



A four-way intersection with traffic signals regulates traffic flow in all directions, facilitating orderly movement and increasing intersection capacity. These signals reduce pedestrian accidents and manage dense traffic, coordinating with pedestrian signals and crosswalks to enhance safety by ensuring vehicles stop at pedestrian crossings.

### Roundabout

The roundabout intersection is a circular intersection that enables continuous traffic flow around a central island. By allowing vehicles to enter and exit without stopping, it improves both traffic flow and pedestrian safety, crucial during peak hours and busy weekends in downtown Buda. Implementing this design will significantly enhance functionality and aesthetics at the intersection.



## Constraints & Standards

TxDOT, ADA, FHWA, ISI Envision, LCCA

## Second Semester Plan

In Senior Design II we plan to pick our most viable alternative to ensure it meets the goals set out for us by WSB. This will entail a more extensive design layout including a more accurate cost evaluation and an in-depth specification report.

## Team Photo



## Capital & Life Cycle Cost

### Capital Cost

**4-Way Traffic Light:**  
 \$ 1,539,186.45

**Roundabout:**  
 \$ 1,331,973.45

### Life Cycle Cost

