

Bryan Water Initiative

LSB Waterways

Paul Caleb Byorth, Hannah Looney, Satindra Saravanan



TEXAS A&M UNIVERSITY

Department of Biological and Agricultural Engineering

Introduction

The objective of the Bryan Waterfront Initiative is to connect landmarks in between the Bryan and College Station communities while providing recreational waterfront opportunities. By improving bike and pedestrian infrastructure, we are seeking to promote a healthy lifestyle, attraction to local businesses, and community development.

Design Objectives

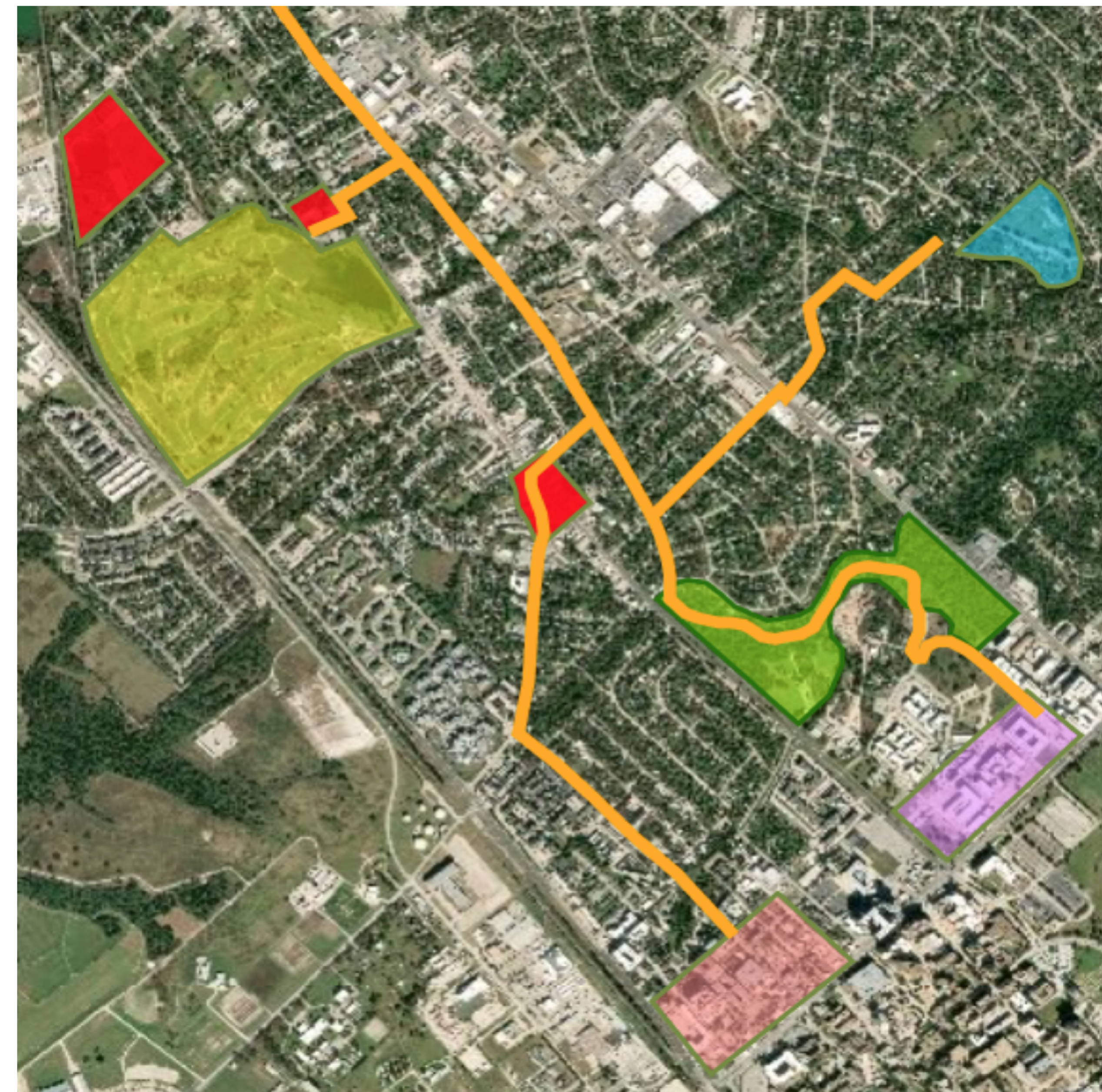
Our teams initial plan included pedestrian and bike paths adjacent to a proposed waterway. After completing an initial site assessment on the area, it was found that many of the routes we planned for the waterway were only part of intermittent streams and weren't continuously flowing. Therefore, after discussing with our client, we decided to go ahead and focus on the bike routes to connect landmarks in the city.

The ultimate goal was to tie our proposed pedestrian paths and bike routes to the Bryan Midtown Project that recently got passed by its city council. The midtown project includes the construction of a large Bryan Superpark and sporting facility. The objectives of the project include conducting an economic analysis of the project to provide a cost estimate for the City of Bryan. The City of Bryan has a series of lakes that run into Burton Creek requiring water quality tests to be run as well.

Our team also researched bike lane specifications and standards to provide designs for the streets based on existing infrastructure, traffic capacity, and roadway requirements.

For our water quality tests, we had 3 locations that were of primary concern as water runs from: Finfeather Lake, the Municipal Golf Course Lake, into Burton Creek. The analysis would include plate swabbing and involve colony counts for Kirby-Bauer testing.

Proposed Route



Orange: Design Route - Red: Midtown Project Developments - Light Red: NorthGate District

Purple: Century Square - Green: Hensel Park - Yellow: Bryan "Super Park"

Blue: Tanglewood Park

Cost Analysis

| Construction Type | Road Length (ft) | # of Units | Cost Per Unit (\$/ft) or (\$/Unit) | Total Cost (\$) |
|-----------------------|------------------|------------|------------------------------------|------------------|
| Bike Lane | 8580 | - | 3 | 25740 |
| Buffered Bike Lane | 11666 | - | 5 | 58330 |
| Sidewalk Installation | 10345 | - | 27 | 279315 |
| Sidewalk Expansion | 2082 | - | 20 | 41640 |
| Crosswalk | - | 6 | 1000 | 6000 |
| Rapid Flashing Beacon | - | 1 | 12000 | 12000 |
| Signs | - | 15 | 150 | 2250 |
| Total | | | | \$425,275 |

Conclusion

By consulting various resources, conducting field tests, and speaking with advisors, our team has come up with the best possible solution to connect Downtown Bryan and Century square. Following the Texas Department of Transportation guidelines for bike lane specifications, our team has designated construction proposals for each street along the route.

This solution implements as much previously existing infrastructure and planning as possible to drive down the cost. Another potential cost cut may come from value added tax for businesses affected by the proposed route and improvements.

From the Kirby Bauer water quality analysis of the three water elements, the results showed an average count of 91.7 colonies in Burton Creek, 19 colonies in the Municipal Golf Course Lake, and 200 colonies present in Finfeather Lake. This tells us that future maintenance may be needed to keep Finfeather Lake's water quality up to health standards.

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