

4-15-2019

I-86B / Pocatello Avenue Intersection Redesign

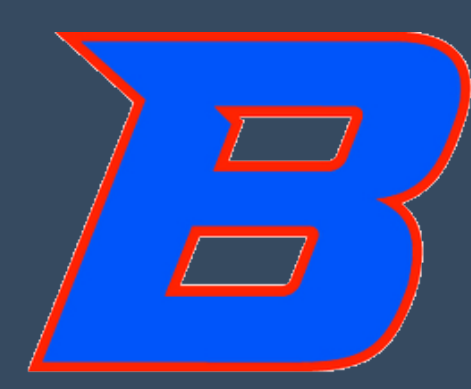
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I-86B/ Pocatello Avenue Intersection Redesign

CE 483 Civil Engineering Senior Design Project



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Project Overview

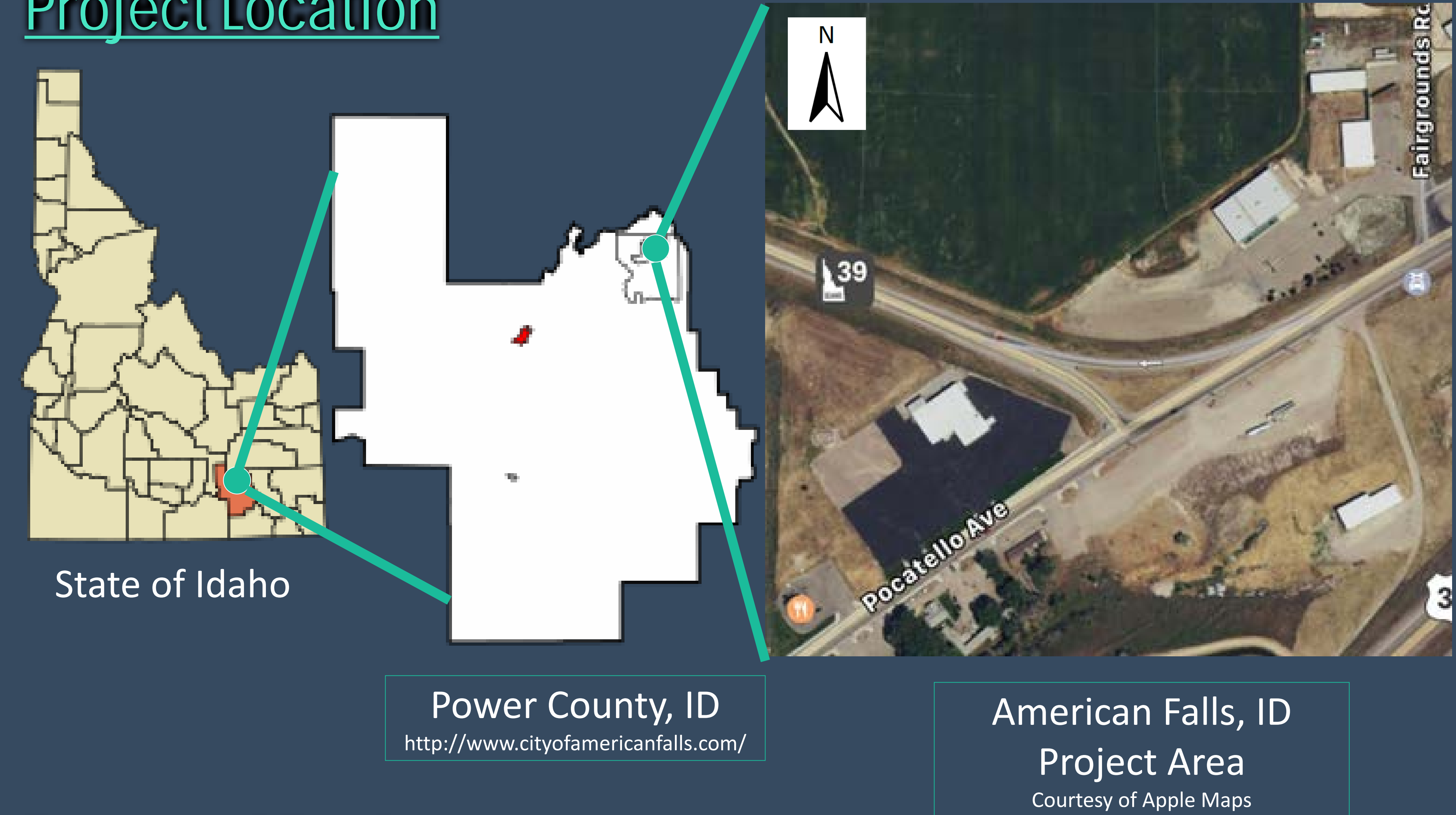
The I-86B/ Pocatello Avenue intersection located in American Falls, ID has been redesigned according to a request by the Idaho Transportation Department (ITD). The intersection redesign must eliminate the congestion that occurs from the freight traffic coming southbound to the intersection that has to stop at the existing stop sign. The design must be sustainable and aesthetic as an entrance into the City of American Falls. The final design includes geometric design, traffic flow, stormwater, and pavement design elements. All of the elements accounted for cost, safety, sustainability, and the presence of free flowing traffic for the traffic headed southbound towards the intersection.

Pavement Elements

AASHTO 93 Flexible Pavement Section	
	0.46' 1/2" PG 70-28 Class SP-3 Superpave HMA (2 lifts)
	0.50' 3/4" Aggregate for Untreated Base, Type A
	1.54' Granular Subbase

The goal while designing a pavement cross section is to produce a product that will last the 20 year design-life without using excess materials, while accommodating the estimated traffic loads of 2042. This design is based on the American Association of State Highway Transportation Officials Guide for Design of Pavement Structures, 1993. This 30 inch cross section will cost approximately \$393,000

Project Location

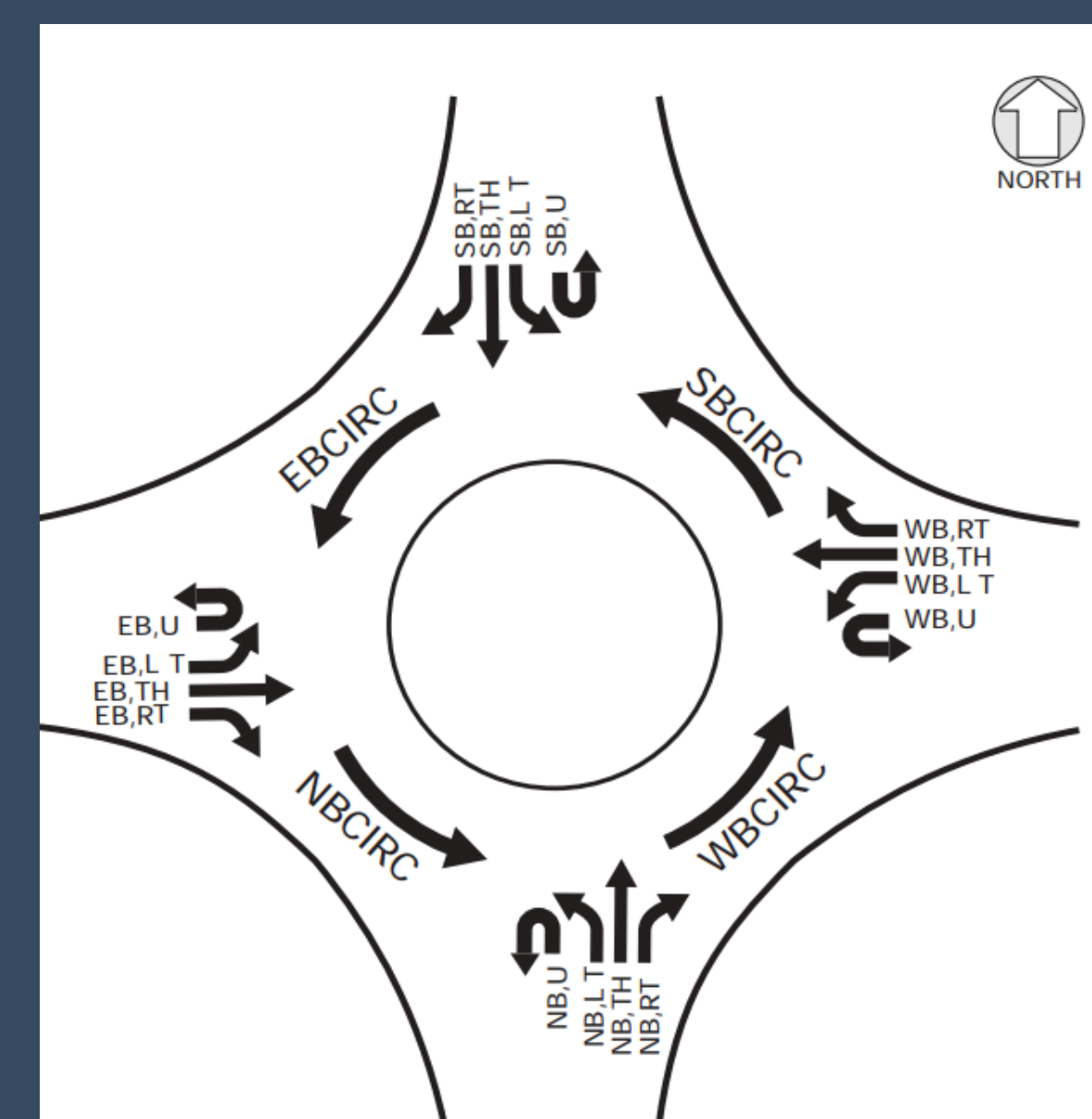


Geometric Design Elements

To accommodate the large freight traffic, the design needed to be able to allow the large turn radius to safely maneuver the roundabout. Some design features that were considered are:

- o Lane Widths
- o Design Speed
- o Splitter Island Widths and Lengths
- o Roundabout Diameter

Traffic Flow Elements



<https://safety.fhwa.dot.gov>

Circulating traffic flow representation of a four approach roundabout. Our design will have the same movement but with three approaches rather than four.

The stormwater design created included grass swales and vegetation in the intersection to provide short term storage for American Falls weather conditions.

Proposed Design

