

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION & PUBLIC FACILITIES
Central Region Traffic & Safety Section

Federal Fiscal Year (FFY) 2018 Highway Safety Improvement Program (HSIP)
Candidate Description and Cost Estimate

Name:

18CR01: Bogard Rd at Engstrom Rd / Green Forest Dr Intersection Improvements

Location:

Proposed improvements would be located in the Matanuska-Susitna Borough (MSB) at the intersections of Bogard Road, Coordinated Data System (CDS) Route # 170700, and Engstrom Road, CDS Route # 170900, as well as Bogard Road and Green Forest Drive (no CDS Route number).

Bogard at Engstrom

Bogard Road is a two lane road at Engstrom. It is owned by the Alaska Department of Transportation & Public Facilities (DOT&PF) and is classified as an Urban Minor Arterial.

Engstrom Road is a two lane road at Bogard. It is owned by the MSB and is classified as an Urban Collector.

The T-intersection is stop controlled with a stop sign on Engstrom Road. The posted speed is 45 miles per hour on Bogard. Engstrom has a posted speed of 35 miles per hour. The average entering Annual Average Daily Traffic (AADT) was 8,122 for 2011 (the middle year of the 2009-2013 study period).

Bogard at Green Forest

Bogard Road is a two lane road at Green Forest. It is owned by the DOT&PF and is classified as an Urban Minor Arterial.

Green Forest is a two lane road at Bogard. It is owned by the MSB and is classified as an Urban Collector.

The T-intersection is stop controlled with a stop sign on Green Forest Drive. The posted speed is 45 miles per hour on Bogard. Green Forest has a posted speed of 25 miles per hour. The average entering AADT was 7,837 for 2011 (the middle year of the 2009-2013 study period).

Safety Problem Description:

The T-intersections are less than 200 feet apart, so the influence area for each intersection overlaps with the other. This short distance creates conflict and has the potential to increase crashes.

The Bogard at Engstrom and the Bogard at Green Forest intersections are included on Central Region's unsignalized intersection monitoring list. There are 135 intersections currently being monitored. The Engstrom and Green Forest intersections are two of about 20 intersections on the list with at least one serious injury crash and no recently completed or upcoming project.

Existing Crash Patterns:

Bogard at Engstrom

There were 11 total crashes at the intersection during the 2009-2013 study period. There were 5 property damage only, 5 minor injury, 1 major injury, and 0 fatal crashes. Crashes susceptible to mitigation include 6 rear end, 2 angle, and 1 sideswipe. The remaining crashes were run off the road or animal related.

The intersection accident rate for the study period was 0.74 crashes per Million Entering Vehicles (MEV). This exceeds the statewide average intersection accident rate of 0.52 crashes per MEV for a stop controlled intersection with three approaches. The safety index was 0.85.

Bogard at Green Forest

There were 5 total crashes at the intersection during the 2009-2013 study period. There were 4 property damage only, 1 minor injury, 0 major injury, and 0 fatal crashes. Crashes susceptible to mitigation include 3 rear end and 2 angle.

The intersection accident rate for the study period was 0.35 crashes per MEV. This is below the statewide average intersection accident rate of 0.52 crashes per MEV for a stop controlled intersection with three approaches. The safety index was 0.40.

Proposed Mitigation:

Either Engstrom Road or Green Forest Drive would be realigned to create one intersection with four approaches. The average entering AADT of the new intersection was estimated as 8,602 for the 2009-2013 study period. A single lane roundabout is proposed to mitigate crashes. The minor street at this location serves as a collector with good spacing from adjacent intersections and traffic volumes near 2,000 vehicles per day, making it a feasible site for a roundabout. Road realignment and widening would impact adjacent properties and utilities.

Strategic Highway Safety Plan Conformance:

The proposed improvements are consistent with the Alaska Strategic Highway Safety Plan, Roadway Strategies: Engineering, Strategy 2 - Action 2.5: Implement infrastructure projects to address intersection crashes.

Benefit/Cost Ratio:

This candidate has a benefit/cost ratio of **0.61:1**, which exceeds the minimum benefit/cost ratio of 0.2:1 listed in the current HSIP Handbook.

Cost Estimate:

Attachments:

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To Fairbanks
(Region Boundary: Little Coal Creek MP 163)



Talkeetna

Alaska Railroad

Petersville Rd

Talkeetna Spur Rd

Parks Highway

Susitna River

**Bogard Rd at Engstrom Rd /
Green Forest Dr
Intersection Improvements**

To Tok
(Region Boundary: MP 118)

Fishhook Willow Road

Willow

Sutton

Glenn Highway

Matanuska River

Houston

Palmer

Wasilla

Wasilla/Fishhook Road

Palmer/Wasilla Hwy

Big Lake Rd

Knik/Goose Bay Road

Matanuska River
Knik River

Knik Arm

Old Glenn Highway

Glenn Highway

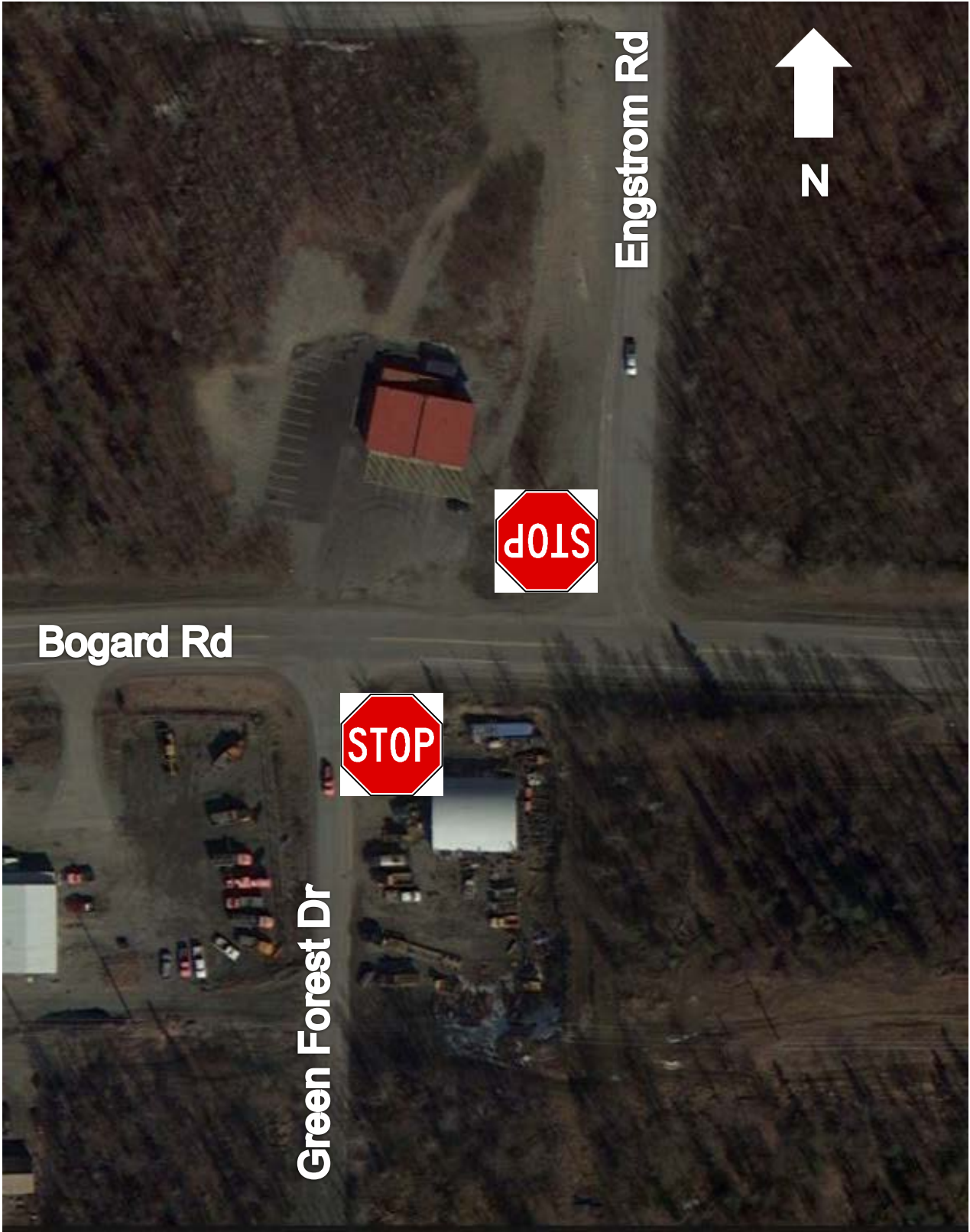
Eagle River

Alaska Railroad

Eagle River Rd

Anchorage

State of Alaska Department of Transportation & Public Facilities Central Region Traffic & Safety	
Highway Safety Improvement Program FFY 2018 Nomination 18CR01 / Bogard Rd at Engstrom Rd / Green Forest Dr Intersection Improvements Vicinity Map	
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Existing Layout



Proposed Layout

***Note:**

This figure depicts the design concept as shown in the project nomination from 2017. Design has progressed since this original concept figure and nomination package. The project no longer includes relocation of the fire station.



Northbound on Greenforest Drive



Southbound on Engstrom Road



Eastbound on Bogard Road



Westbound on Bogard Road