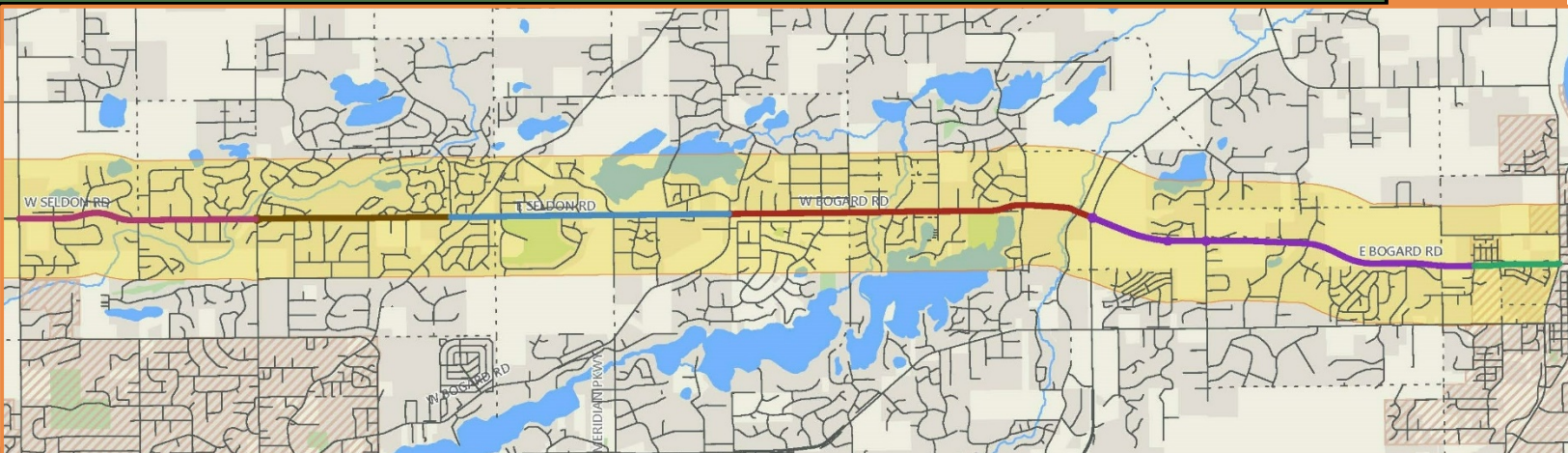
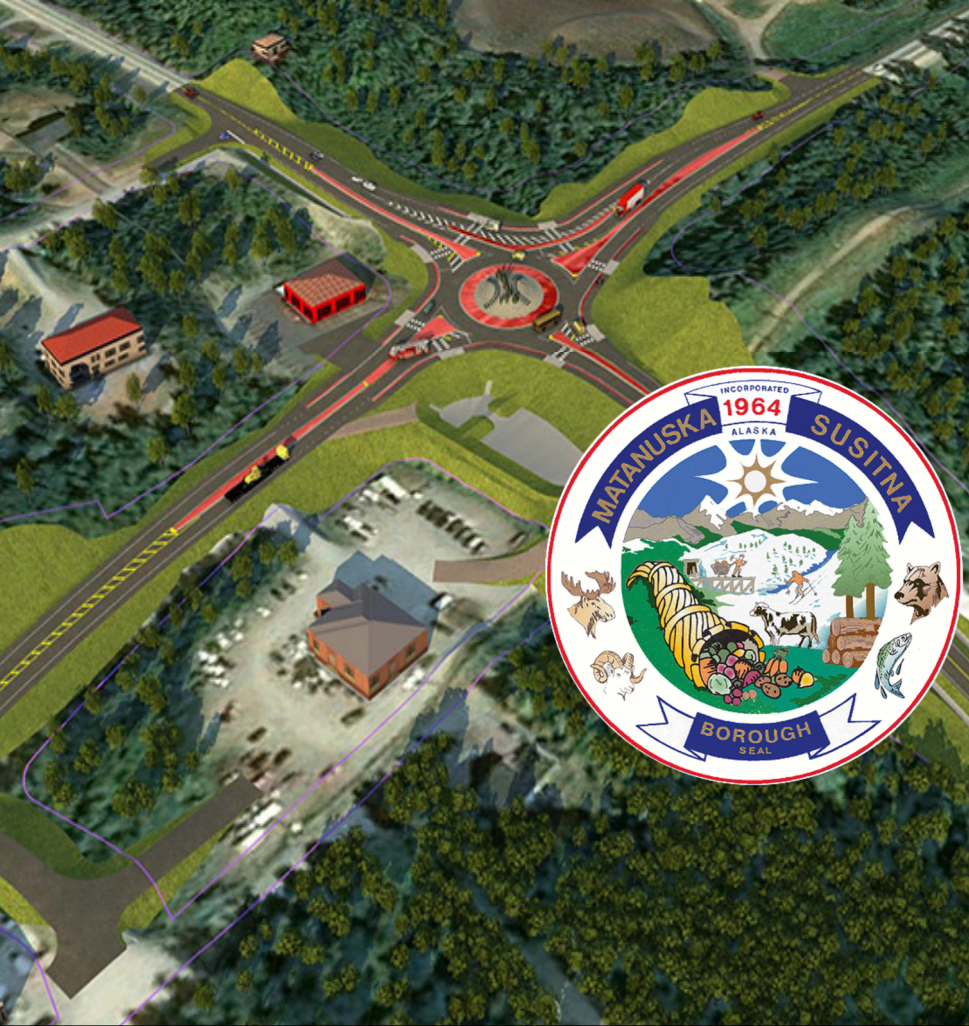


Matanuska-Susitna Borough

2025

DRAFT – Bogard-Seldon Corridor Access Management Plan



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Appendices

Appendix A. Typical Sections



Acronyms and Abbreviations

AAC	Alaska Administrative Code
AADT	average annual daily traffic
CAMP	Corridor Access Management Plan
CMF	crash modification factor
CTP	Community Transportation Program
DOT&PF	Alaska Department of Transportation & Public Facilities
HSIP	Highway Safety Improvement Program
mph	miles per hour
MSB	Matanuska-Susitna Borough
OSHP	Official Streets and Highways Plan
RIRO	right in/right out
ROW	right-of-way
SASS	Sub-Area Solution Studies
TIA	Traffic Impact Analysis
TWLTL	two-way, left-turn lane

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1 Introduction

1.1 Overview

The Matanuska-Susitna Borough (MSB), in cooperation with the State of Alaska Department of Transportation and Public Facilities (DOT&PF), is actively pursuing the management of access along the Bogard Road/Seldon Road Corridor (Bogard-Seldon Corridor) between the Glenn Highway and Church Road (see Figure 1).

This *Bogard-Seldon Corridor Access Management Plan (CAMP)* is the result of that effort. The CAMP establishes parameters to manage access to this vital arterial corridor consisting of both MSB- and DOT&PF-owned segments.

MSB Title 11: Roads, Streets, Sidewalks, and Trails authorizes the MSB to control access to its road network. MSB 11:10 Encroachment Permits and 11:12 Driveways Standards provides the authority to approve, establish design standards, manage, and revoke, and allows for an appeal process of encroachment and driveway permits. DOT&PF is authorized by 17 Alaska Administrative Code (AAC) 10.020 through 17 AAC 10.060 to control and manage approach roads and driveways that connect to state-owned roadways.

It is within the framework of the above codes that this CAMP makes recommendations to mitigate existing conflict points where feasible by eliminating or consolidating existing intersecting roads or driveways, and establishes spacing requirements for new driveways, and road intersections based on the corridor's functional classification. It also identifies traffic improvements such as roundabouts, medians, or other traffic control measures to facilitate traffic flow, improve safety, and minimize congestion.

There have been previous efforts to address access management along various segments of this corridor between the Glenn Highway and Church Road that resulted in draft CAMPs. DOWL prepared a draft CAMP for the entire corridor between the Glenn Highway and Church Road in 2010 and HDL prepared a draft CAMP for the corridor segment between Lucille Street and Church Road in 2017. These draft documents, though never adopted, provided significant information and are foundational to the current effort.

A third CAMP, prepared by Stantec Consulting Services, was adopted by the MSB Assembly in January 2017 entitled CAMP: Seldon Road Extension: Church Road to Pittman Road. This CAMP establishes access requirements for the final segment of the Bogard-Seldon Corridor based on the final route of the new road and is not addressed in this document. The final segment of the Seldon Road Extension from Windy Bottom Road to Pittman is programmed for construction in 2025 through DOT&PF's federally funded Community Transportation Program (CTP).

This CAMP divides the Bogard-Seldon Corridor into six segments based on land use and ownership (see Figure 1). There are narratives and maps that discuss and show specific recommendations to facilitate the CAMP's implementation by MSB Planning, Platting, and Public Works personnel and by DOT&PF's Planning, Right-of-Way, and Design staff.

This narrative and illustrative approach is also designed to help residents and developers easily find and understand the access requirements along the corridor and how they affect their property or future subdivision design.

These segments are:

- **Segment A:** Bogard Road - Glenn Highway to Palmer Moose Drive is an urban section within the City of Palmer that is owned and maintained by the MSB and is classified as a major arterial.
- **Segment B:** Bogard Road - Palmer Moose Drive to New Trunk Road is a rural section owned and maintained by the MSB and is classified as a major arterial.
- **Segment C:** Bogard Road - New Trunk Road to the Bogard/Seldon mini-roundabout intersection is a rural section owned and maintained by DOT&PF and is classified as a major arterial (minor arterial using the DOT&PF system).
- **Segment D:** Seldon Road - Bogard/Seldon intersection to Schrock Road is a rural section owned and maintained by DOT&PF and is classified as a minor arterial.
- **Segment E:** Schrock Road to Lucille Street is a rural section owned and maintained by the MSB and is classified as a minor arterial.
- **Segment F:** Lucille Street to Church Road is a rural section owned and maintained by the MSB and is classified as a minor arterial.

Both the MSB and DOT&PF recognize the importance of the Bogard-Seldon Corridor as an alternative to the Palmer-Wasilla Highway and, to a lesser extent, the Parks Highway. The MSB has made a specific effort to coordinate with DOT&PF and obtain their input in the development of access management recommendations along their corridor segments described in this CAMP. Though DOT&PF owns Segments C and D, the MSB, through its Planning and Platting Divisions, administers land use regulations and platting actions on adjacent properties. Close coordination and cooperation between the MSB and DOT&PF need to continue now and into the future to successfully implement the recommendations of the CAMP.

1.2 CAMP Goal and Strategies

The goal of this CAMP is to provide consistent access management along the Bogard-Seldon Corridor to the benefit of the public, development community, MSB, and DOT&PF, while remaining largely within the existing ROW¹. The CAMP should be reviewed and updated as conditions change along the corridor, including traffic volumes, traffic patterns, land development, and as significant funding opportunities arise.

The corridor managers will use this CAMP to meet this goal through managing to the following strategies:

- Improve safety to the traveling public including non-motorized users;

¹ A corridor plan with a longer planning horizon should be developed for this roadway segment in order to develop a vision for the roadway based on anticipated growth and development in the area.



- Preserve function and mobility of this important arterial corridor;
- Protect the public's significant financial investment in the design, construction, and maintenance of this corridor; and
- Manage existing and future access in a regular and consistent manner.

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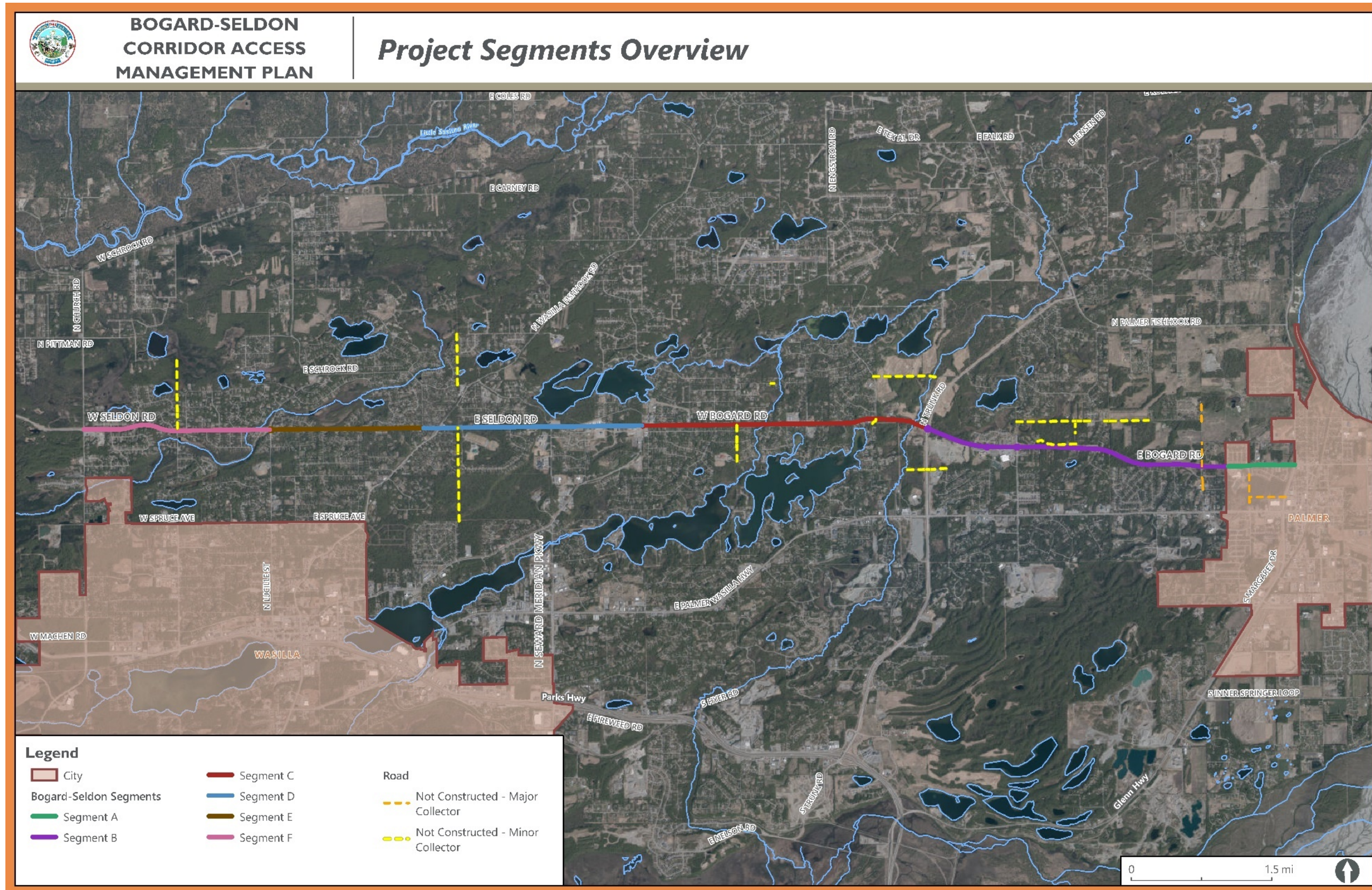


Figure 1: Project Segments Overview

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2 Corridor Background

The MSB and DOT&PF have, over time, added corridor segments to the original Bogard Road between Trunk Road and the Bogard-Seldon mini-roundabout. Projects have extended the corridor to both the east and the west, resulting in a nearly completed arterial corridor between the Glenn Highway in Palmer and Pittman Road in Meadow Lakes. These projects have resulted in a new east-west corridor in the MSB that provides a more desirable level of mobility, access, and safety. Due to the narrow right-of-way (ROW) width and the high level of development along the Palmer-Wasilla Highway, the impacts of upgrading capacity and managing access are significant. The Bogard-Seldon Corridor, on the other hand, is relatively undeveloped by comparison, has relatively few direct access points (except in the original Bogard Road segment between Trunk Road and the Bogard-Seldon roundabout), and provides a second cross-borough corridor that relieves congestion on the Palmer-Wasilla Highway while facilitating east-west travel across the northern core area of the MSB.

The Palmer-Wasilla Highway is a case in point of how a major arterial loses its function due to uncontrolled access resulting from past land use decisions and platting actions that did not consider access management. This CAMP provides a guide to correct deficiencies and avoid the repeat of similar undesirable outcomes in the future by making reasonable access decisions that benefit motorized and non-motorized corridor users and corridor managers. These recommendations will also protect the significant public capital and operational investment in the Bogard-Seldon Corridor.

3 Corridor Access Management

Corridor access management is defined as coordinating the balance of land access needs with area-wide transportation needs to ensure efficient traffic operations within a given roadway corridor. The main goal of access management is to reduce the number of conflict points along the corridor while still providing acceptable access to local roads, residential driveways, and businesses. It is the nexus between land use and transportation. Reasonable land use decisions will result in appropriate levels and locations of access along the corridor that will provide a well-functioning arterial well into the future.

Achieving the goals of the CAMP will be accomplished over time by implementing recommended improvements when feasible. Considering the long-term investment into improving access management along the corridor, it is infeasible to construct all the recommended improvements as a single project. Opportunities to incorporate the access management recommendations into other CIP and HSIP projects along the corridor should be leveraged to achieve incremental improvements to achieve the long-term access management goal along Bogard-Seldon corridor.

3.1 Methods

Access management is the process that affords transportation officials a method to provide reasonable access to land development while simultaneously preserving the safety, capacity, and mobility of the surrounding road system. The basic principles of access management are described below.

Separating Basic Conflict Areas. Intersections or driveways that access a highway or roadway represent basic conflict areas. A conflict is defined as the point at which a roadway user who is crossing, merging with, or diverging from a road or driveway conflicts with another roadway user using the same road or driveway. Adequate spacing between conflict points allows drivers to react to one situation at a time, providing greater opportunities to avoid potential conflicts with other vehicles, bicycles, or pedestrians. Aligning intersections or driveways directly across from each other also serves to reduce the number of conflict points within a given section of roadway.

Reducing Interference with Through-Traffic. Even when traffic is traveling in the same direction, conflicts can be created when a large speed differential exists between the faster- and slower-moving vehicles (i.e., vehicles traveling at the speed limit compared to vehicles that are accelerating or decelerating). Traffic often needs to slow down for other vehicles attempting to exit, enter, or travel across the roadway. Introducing turning lanes, adding acceleration/deceleration lanes, restricting turning movements, and providing sufficient spacing between access points and intersections allows turning traffic an opportunity to safely enter or exit the mainline traffic stream. Closely spaced access points tend to hinder the mobility and speed of through-traffic, thus reducing the free-flow speed of the roadway. Maintaining well-spaced access points allows through-traffic to flow more smoothly and with less delay. In this regard, any new signalized or roundabout access points must fit into the overall traffic management plan for the roadway to maintain positive traffic progression.

Limiting the Number of Conflict Points. Conflict points along a roadway exist primarily at side road or driveway intersections as vehicle travel paths cross, merge, or diverge; more conflict points generally lead to a higher potential for crashes. Accordingly, increasing the number of intersections within a given section of roadway increases the likelihood of vehicle impacts and diminishes the safety of the roadway. Limiting or reducing the number of intersections and approaches and their associated turn movements within a section of roadway significantly reduces the potential for vehicle collisions. Considering that a roundabout has fewer conflict points than a traditional signalized or unsignalized intersection, converting uncontrolled or controlled intersections to roundabouts can reduce the total number of conflict points along the corridor.

Managing Section Line Easements. There are 14 north/south section lines that intersect the corridor. There is one east-west section line where the corridor is located or closely follows. Seven of the north/south sections lines have roadways located within their easements. Five of the remaining seven have had their easements either vacated or partially vacated, with two remaining intact. Allowing road development or access in these remaining section line easements need to be reviewed and approved through a systems approach. Decisions should consider existing and future road networks, existing and future land use, access implications, creation of conflicts, and benefit to the existing

and future Bogard-Seldon Corridor. No section line easements should be vacated unless there is an equal or better access option.

Practicing Controlled Land Development. MSB growth policies, ordinances, and criteria contribute greatly to the development of a successful CAMP while also allowing for appropriate land development. The implementation of frontage roads, facilitation of internal vehicle circulation between commercial and private parcels, and use of shared parking areas reduce the number of driveways that residences and businesses need for access to the roadway.

Management and control of access can be regulated through statutes, regulations, land-use ordinances, geometric design policies, and access guidelines. The MSB and DOT&PF have the basic statutory authority—granted through state legislation—to control all aspects of roadway and highway design in the interest of protecting public safety, health, and welfare including access. Local governments can manage and control access through land-use regulations, platting actions, development setbacks, site design specifications, driveway permits, and other means that may influence capacity and mobility along a highway. The close coordination of state, borough, and local governments is essential for the successful implementation of this or any corridor access management plan.

Requiring developers to submit a traffic impact analysis (TIA) when traffic thresholds may be met prior to approval of platting actions or necessary permits is one way to manage and control future access to and from the Bogard-Seldon Corridor. TIAs should identify mitigation requirements in the event that traffic is impacted within the project area. Mitigation requirements may include intersection or roadway improvements, modifications to proposed access type or location, or improvements to non-motorized facilities. Recommended improvements identified by the TIA should be negotiated and apportioned between the developer and the roadway owner. Exceptions to identified TIA requirements should not be granted to any applicant.

Typical Section Application. The typical section along a corridor provides context to a driver regarding aspects such as urban or rural environment, reasonable speed, alternate modes of travel or presence of pedestrians, and access control. The typical section may also convey information that translates to driver expectation, such as density of access points or adjacent land uses. Developing the appropriate typical section along a corridor can be a tool to improve safety and vehicular traffic flow along a corridor. Appendix A depicts the following recommended typical sections:

- Two-lane with non-traversable median with median openings
- Three-lane with non-traversable median with median openings
- Five-lane with non-traversable median with median openings

The two-lane section may convey a rural or a low-speed urban context. The benefit of a two-lane section is minimal footprint. However, a two-lane section has capacity limitations and can impact flow due to left turns blocking through-traffic. To meet access management goals, the two-lane section would include non-traversable median. Left turn access that meets recommended access spacing may be provided via median openings.

A three-lane section can convey either a rural context with closely spaced access points or a 25- to 35-mile per hour (mph) urban context. A three-lane section mitigates left-turning traffic from blocking through-lanes, providing operational and safety benefits. The typical section can either provide a two-way left turn lane (TWLTL) or utilize non-traversable medians with left-turn lanes where appropriate. TWLTL does not reduce conflict points or control access like a median with adequately spaced left turn lanes and therefore should only be considered where a median with left turn lane does not adequately support required access to/from Bogard-Seldon.

A five-lane section conveys a 35- to 55-mph urban context. Capacity is the main criteria for considering a five-lane typical section. Existing access points, future access points, and existing and future average annual daily traffic (AADT) volumes are to be considered when determining the need for a five-lane typical section. Similar to the three-lane section, to meet access management goals, the five-lane section would include non-traversable median. Left turn access that meets recommended access spacing may be provided via median openings.

3.2 Access Management Strategies

Access management along the Bogard-Seldon Corridor is critical to the operational performance and safety of the corridor. The main goal of access management is to reduce the number of conflict points along the corridor while still providing acceptable access to local roads, residential driveways, and businesses. The strategies described below can be implemented as spot improvements, as part of larger improvement projects, or through site development along the corridor.

Increase Intersection and Driveway Spacing. Increasing intersection and driveway spacing where redundant access from local roads is provided will reduce the conflict points and improve intersection spacing along the corridor. Severing a connection and constructing a cul-de-sac is a low-cost solution to improve intersection spacing. Local connectivity is critical to this solution, and it may require additional connections within the local road network to provide acceptable connectivity.

Requiring future access points to meet or exceed recommended intersection spacing is critical to the safety, congestion management, traffic flow, and reliability along the Bogard-Seldon Corridor.

Table 1 provides recommended access point spacing consistent with the adopted 2017 Corridor Access Management Plan - Seldon Road Extension Church Road to Pittman Road. Reducing signalized intersection spacing to 1 mile can be considered to promote improved signal coordination and traffic flow. Reduction in signal spacing should be considered with increase in traffic demand and development which changes the roadway classification from rural to urban.



Table 1: Recommended Minimum Rural Intersection Spacing Guidelines

Proposed Intersection Improvement	Minimum Access Spacing	
	Feet	Miles
Controlled Intersection	5,280	1
Unsignalized intersection	2,640	1/2
Standard Roundabout Access	1,760 (minimum); 2,640 (preferred)	1/3 (minimum); 1/2 (preferred)
Right-In/Right-Out with Median	1,320	1/4
Directional Median Opening	1,320	1/4

¹Some existing controlled intersections do not meet the recommended spacing but should remain

No New Driveways. To the extent allowed by Alaska State Statutes, Alaska Administrative Code, DOT&PF Pre-Construction Manual, MSB Code, and MSB Subdivision Construction Manual, staff implementing this plan should avoid permitting any new driveways along the corridor. Access should be considered first to existing connecting roads, frontage roads, backage roads, or through an existing driveway. Future platting actions should avoid creating land locked lots that would require direct access to Bogard or Seldon Roads.

Exceptions may be made based on a MSB-approved and accepted TIA prepared by a traffic engineer licensed to do business in Alaska. DOT&PF may also allow exceptions based on a TIA or best engineering practices and judgement. The costs of identified traffic improvements should be negotiated between the developer and either the MSB or DOT&PF. If an exception for a new driveway is permitted, minimum access spacing shown in Table 1 must be provided. An exception for a new driveway requires the approval of MSB’s Public Works and Planning and Land Use Directors along borough owned Segments A, B, E and F or by DOT&PF if located along state-owned corridor Segments C and D. Acceptable stopping sight distance and intersection sight distance must be provided for all exceptions to new driveways along the corridor.

Consolidate Driveways. Consolidating driveways reduces the number of conflict points along the corridor, improving safety and the general flow of traffic. Consolidation of driveways can be achieved by combining existing driveways where feasible or by limiting the number of new driveways as land is developed. Realigning driveways that can be connected to a minor approach road without impacting circulation or structures within the property can also be implemented where feasible. Consolidation of driveways, especially as part of a roadway improvement project, is a low-impact, low-cost solution to reduce conflict points and to improve flow and safety along the corridor. Cost to the individual property owner needs to be considered if the closure of the driveway happens outside of a capital improvement project.

Rights-of-Way Acquisition/Donations. Acquiring ROW as part of a roadway improvement project or as an individual acquisition may be the only means to resolve an existing access issue. This may require full parcel acquisition of difficult driveways that cannot be realigned to an adjacent collector road, frontage road, or backage road. The purchase of access rights would be contingent on available funding and should be

considered when there is a willing seller, a change in land use, or when a traffic impact analysis indicate that acquisition is appropriate. Acquiring ROW from an unwilling seller is not recommended for the sole purpose of improving access management along the corridor unless it is tied to a road improvement project, a more comprehensive Corridor Study, or road design project.

Install Non-Traversable Median. A non-traversable median, such as a curbed median island, will restrict left-turn access to/from driveways and restrict left-turn and through-access to and from minor approaches along the Bogard-Seldon Corridor. Restricted movements are grouped and diverted to adjacent controlled or uncontrolled intersections to complete their desired movements. Installing a curbed median or barrier will effectively reduce the number of conflict points, but it will have an impact on traffic patterns and may increase the vehicle miles traveled. Installing medians may require minor widening of the corridor to provide width for the median and shy distance² or buffer to the curb.

Crash modification factors (CMF) are used to predict the expected increase or decrease in crashes that would be expected from a planned improvement. A CMF below 1 means that crashes will likely be reduced, while a CMF above 1 means that crashes are predicted to increase. Based on DOT&PF's Highway Safety Improvement Program (HSIP) Handbook, installing a non-traversable median provides a CMF 0.80, which predicts a crash reduction of 20 percent. Constructing a non-traversable median has an impact on traffic patterns and results in a slight increase in travel time and out-of-direction travel. Depending on the location of the proposed non-traversable median, there may be minor ROW impacts. A non-traversable median is a mid-range cost solution to reduce conflict points and improve safety.

Cul-de-sac Existing Local Roads. Eliminating existing local road connections to Bogard-Seldon by constructing cul-de-sacs will reduce conflict points and improve access spacing. Constructing cul-de-sacs can be considered at locations where existing local connections provide sufficient connections for the subdivisions. Constructing cul-de-sacs can either be a stand-alone project or part of a larger corridor improvement project. Constructing cul-de-sacs is a mid-range cost solution to reduce conflict points and improve access spacing. Emergency access through the cul-de-sac can be provided using rolled or mountable curb. Non-motorized connections can also be considered.

Closing existing roadway connections by constructing cul-de-sacs will impact existing traffic patterns and may also impact emergency response times. To ensure adequate access is maintained, a traffic impact analysis is recommended prior to design and construction of cul-de-sacs. Planned cul-de-sacs should be coordinated with emergency responders to confirm no significant impacts to response times will be realized.

Develop Frontage or Backage Roads. The use of frontage or backage roads where feasible is another means to reduce direct access to the Bogard-Seldon Corridor and improve traffic flow.

² Shy distance is the distance from the edge of the traveled way beyond which a roadside object will not be perceived as an obstacle by the typical driver to the extent that the driver will change the vehicle's placement or speed (Federal Highway Administration, Roadside Safety Field Guide 2014).

A backage road provides the same function as a frontage road, but it is located behind parcels rather than adjacent to the main corridor and ties into the collector road network that provides consolidated access to the main arterial road. Existing driveways connecting to Bogard-Seldon would be severed, and new connections to the backage road would be constructed.

The use of frontage and backage roads will effectively consolidate access points along Bogard-Seldon, reducing conflict points and improving safety. Although opportunities for developing backage roads may be limited due to the orientation of developed parcels and the inability to make a new driveway connection without significant impact to the property, there may be select locations where this strategy could be deployed with minor impact and mid-range cost. In areas where ROW acquisition is required to construct a frontage road, impacts and costs are anticipated to be high, and therefore a frontage/backage road may be less feasible.

The creation of frontage or backage roads may require changing existing street addresses of affected parcels. Address changes are doable but will have some repercussions and cause some inconvenience to affected property owners.

Realignment of Minor Approaches. Eliminating offset intersections by realigning minor approach roadways will improve intersection spacing. As development occurs, consideration for intersection consolidation through realignment can facilitate conflict point consolidation while maintaining access to existing and future subdivisions.

Future Intersection Control. Improving existing uncontrolled intersections to either a signal or a roundabout will improve traffic flow and safety along the corridor. Future controlled intersections should meet recommended intersection spacing and undergo a traffic analysis to determine the control type and expected intersection operations.

4 Corridor Segments

4.1 Introduction

Jurisdictional ownership, traffic volumes, existing land use, and existing corridor characteristics such as topography and access were used to divide the corridor into the six segments described below. Recommendations for each corridor segment are described within the report's narrative and correspondently shown on maps associated with the narrative. Additionally, a web map has been developed that shows each recommendation and allows the reader to zoom in and out of each recommendation for a more contextual view of the recommended action relative to the surrounding development. This web map is located at: [Link to be provided](#).

The CAMP's principles for access management (maintaining intersection spacing and limiting direct access of driveways and side streets onto the corridor) are non-negotiable. However, the specific details of proposed improvements described within this section will be advanced during engineering and design, once funding is available for projects, which may lead to modifications to the recommendations due to engineering challenges and opportunities identified during the design phase of each project.

4.2 Segment A – E Bogard Road - S Glenn Highway to E Palmer Moose Drive

Segment A is approximately 0.75 mile long and had an AADT of 6,580 vehicles in 2022. The existing section along E Bogard Road is two-lane, median-divided roadway with left- and right-turn lanes at the intersections (see Figure 2). Pathways are located on the south side of E Bogard Road along the entire segment and on the north side between Anna and Oscar Streets. Ten access points are located within this segment: four intersections (one signalized and three uncontrolled) and six driveways. West Auklet Avenue and Recon Circle serve as frontage roads on the north side of E Bogard Road and eliminate the need for any new direct access points from the undeveloped properties.

Within this section, the south side of the corridor is within the City of Palmer. On the north side of the corridor, the Valley Trails Subdivision is located within the city limits, but the rest of the corridor is outside the Palmer city limits.

4.2.1 Jurisdictional Ownership and Existing Right-of-way

This portion of E Bogard is owned by the MSB but is located within the city limits of Palmer. The ROW ranges between 150 feet within the city limits and 200 feet within the MSB.³

4.2.2 Existing Land Use and Future Development Opportunity

Segment A is considered an urban section along the corridor. Allowable land uses for property located within the City of Palmer are governed by the City's zoning code, while property outside the city limits is governed by MSB code. The MSB provides platting service for all properties along Segment A. The existing land use consists of Palmer High School, several residential subdevelopments, two churches, a pre-school, and a few commercial businesses (engineering and real estate). This segment has good access management in place, meeting access spacing guidance and providing sufficient connectivity to the traffic generators.

Palmer High School is in the southeast quadrant of E Bogard Road/E Palmer Moose Drive and has two driveway access points to/from E Bogard Road serving their main parking lot and bus circulation. Additional access points to the school are located off E Palmer Moose Drive and S Felton Street.

Residential subdivisions are located on the north and south sides of the corridor. The subdivisions use collector roads to gain access to/from E Bogard Road, including S Felton Street/Anna Street, W Auklet Avenue, Montgomery Way/W Recon Circle, and Silver Tip Drive.

³ ROW widths were estimated using MSB Parcel Viewer maps and represent the typical existing ROW width along the segment. The widths provided do not include additional widths at intersections or existing easements for drainage features.

There is developable land located on both the north and south sides of E Bogard Road between Glenn Highway and S Felton Street/Anna Street. Developable lands to the north will be accessed by either West Auklet Avenue or Recon Circle. Developable lands to the south will be accessed by the new Felton Street Extension.

4.2.3 Planned Improvement Projects

This segment of E Bogard Road was improved as part of the Bogard Road East Extension project. The extension of S Felton Street that connects E Bogard Road to the Palmer Wasilla Highway was opened in July 2023.

4.2.4 Recommendations

1. General

The existing access management along this segment of E Bogard Road is sufficient. It meets the recommended spacing requirements and follows the access management concepts incorporated into the design and construction of the Bogard Road East Extension by the MSB. Properties within the City of Palmer are zoned, identifying allowed land uses. Future land use within the City must comply with the current zoning map or must obtain a variance to allow non-conforming land use. This level of governance is beneficial to control access from properties within the city. Borough property is not zoned in the same manner, but access is controlled by the final Bogard Road East Extension improvements that were built to address future access requirements.

As future development occurs along this segment, preservation of the existing access management within the segment is critical. **No new access points to/from E Bogard Road should be provided** (see Figure 2). Any new connections within this segment will utilize the existing minor collectors or the frontage roads located on the north side of Bogard. Precluding future access points along this segment will better maintain existing function, flow, and safety while also protecting the public investment of recent improvements along the E Bogard Road Extension.

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Figure 2: Segment A Mapped Recommendations

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4.3 Segment B – E Bogard Road - E Palmer Moose Drive to N Trunk Road

Segment B is approximately 3.25 miles long and had an AADT ranging between 6,360 and 6,580 vehicles in 2022.⁴ The existing section along E Bogard Road varies between a two- and three-lane undivided section (see Figure 3). A separated shared-use path is located on the south side of E Bogard Road. There are 17 access points within this segment: 7 intersections, including 3 roundabouts and 4 stop-controlled intersections on the minor approaches, and 10 driveways. Three of the 10 driveways are currently only driveway aprons, two of which were located to access existing farmland and were negotiated by the MSB with the farm owner to allow existing farm access and facilitate future development as part of the Bogard Road East Extension project ROW settlement. These two driveways are permitted but are revocable and subject to review of future land use, access requirements, and CAMP-recommended access spacing. The other driveway apron is located between the two farm access driveways and provides access to the City of Palmer's water line and future booster station.

Unauthorized access north of the E Bogard Road/Hemmer Road intersection has been proactively addressed by the MSB through the placement of boulders and a guardrail. There may be an unpermitted driveway accessing Township 18N, Range 1E, Section 36, Block 19. There should be no direct access to this block. Access should be via the recommended 2022 Official Streets and Highways Plan (OSHP) minor collector standard frontage road connecting East Manna Drive and East Eminent Domain Circle through the subject parcel. Extending the frontage road per the OSHP will require additional ROW. The ROW dedication and construction of the frontage road to provide access to this block should be the responsibility of the developer. The frontage road horizontal and vertical alignments along with average access point spacing shall meet the requirements for a residential collector road according to the 2022 SCM.

The Trunk Road Corridor is identified as a regional development node in the Draft MSB Sub-Area Solutions Studies (SASS), and significant development is already occurring. This regional development node is envisioned to serve both mixed-use residential and commercial development. Development along the Trunk Road Corridor will result in increased traffic demand at the E Bogard Road/Trunk Road intersection. Access management within the vicinity of this intersection is critical and the recommended minimum access spacing needs to be provided.

This segment was designed and constructed by the MSB as part of the Bogard Road East Extension project, with access management as one of its primary objectives. The goals of this segment's recommendations are to do no harm and to protect its long-term function and safety. Also, effective access management along this segment will protect the MSB's \$45.0 million+ investment to construct the Bogard Road East Extension.

⁴ AADT traffic count data from the DOT&PF Traffic Analysis and Data Application website (<https://alaskatraficdata.drakewell.com/publicmultinodemap.asp>).

4.3.1 Jurisdictional Ownership Existing Right-of-way

This portion of E Bogard Road is owned by the MSB. The ROW ranges between 100 and 265 feet.⁵

4.3.2 Existing Land Use and Future Development Opportunity

Segment B is a rural section of the corridor and consists of residential subdivisions located mostly south of E Bogard Road, farmland is located to the north with future potential for development at various locations, and a gravel pit near Trunk Road that will likely be redeveloped in the near future. Colony Middle and High School, a veterinary clinic, one residential subdivision, and a church are located between 49th State Street and Trunk Road.

Large, undeveloped lots are located on the north and south sides of E Bogard Road east of 49th State Street. If these lots were to be developed in the future, access point spacing criteria shall be met.

4.3.3 Planned Improvement Projects

The 2022 MSB OSHP recommends the extension of Hemmer Road to the north of E Bogard Road, connecting to E Scott Road. Hemmer Road north extension has grade considerations and may impact a City of Palmer Water Utility well site. The Hemmer Road extension south of E Bogard Road, connecting to the Palmer-Wasilla Highway, is in development. A new traffic signal will be installed at Hemmer and Bogard as part of this project. These connections would provide improved local access in the vicinity of E Bogard Road while maintaining acceptable intersection spacing.

The MSB is planning to construct a pathway adjacent to 49th State Street from Bogard Road to the Palmer-Wasilla Highway, connecting the pathways along these routes and providing safe school access from the several multifamily residential units located on 49th State Street and other residential subdivisions. This project is currently under design.

4.3.4 Recommendations

1. General.

- The existing access management along Segment B meets the corridor recommendations (see Figure 3). Segment B is rural, and its intersection spacing should be maintained as a rural arterial for future developments described in Table 1. All methods of indirect access including access via collector, frontage, or backage roads to E Bogard Road must be proven infeasible prior to granting direct access that does not meet minimum access point spacing.

2. Driveway Closures/Alignment.

⁵ ROW widths were estimated using MSB Parcel Viewer maps and represent the typical existing ROW width along the segment. The widths provided do not include additional widths at intersections, and existing easements for drainage features are not included.

- Close the driveway to Central Gravel Products located just east of Trunk Road and shift it approximately 600 feet farther east when parcel is redeveloped. This will allow full access to and from the driveway without operational or safety impacts to the Trunk Road roundabout. Redevelopment of this parcel should include a road that connects to the Katherine Drive ROW to the south, providing access to Trunk Road.
 - An access point to the large property in the northeast quadrant of the Bogard Trunk intersection can be permitted and should be located opposite this relocated driveway in recommendation 4.3.4.2.
3. Consolidating or moving the two negotiated farm driveways accessing two farmland parcels (northern portion of T18 R2E Section 31 Block 3 and T18 R2E Section 31 Lot A6) on the north side of E Bogard Road should be considered upon redevelopment of the parcels. Direct access to E Bogard Road may be provided if the rural access spacing criteria described in Table 1 are met and supported by an approved traffic impact analysis that shows no impact and/or includes traffic impact mitigations that will be funded and provided by the developer.
4. **Frontage Road**
- A connecting frontage road should be constructed between E Manna Drive and E Eminent Domain Drive as recommended by the 2022 OSHP. Portions of this frontage should be a development requirement for the future subdivision of the large parcel designated as Township 18N, Range 1E, Section 36, Block 19. No direct access to Bogard Road should be permitted from this parcel directly across Cottage Hill Drive. Other secondary access opportunities may exist in lieu of the frontage road that may provide access to this parcel. A partial median opening located approximately 2,250 feet to the east of N 49th State Street will provide access to/from E Bogard Road, allowing right-in-right-out and a left turn from E Bogard Road. There is an existing roadway easement through Parcel 1332B04L004, however it is recommended to acquire this parcel.
 - Upon completion of the warranty period for the extension of E Manna Drive across the subject property described above, obliterate the existing N Colony Way roadway to the west of the subject property.
 - Dedicate ROW for the frontage road to continue from subject parcel to Arabian Acres, Lot 4, Block 4 to allow the future extension of the frontage road.
 - The section line easement along the northern boundary of the parcel 18N01E36B019 is set on the 2022 OSHP to have a minor collector route built in it. Dedicate ROW for and construct a stub road to reach the section line easement and Eagle Estates Addition #3, Tract A
5. **Direct Access**
- Access to the large triangular-shaped property (southern portion of T18 R2E Section 31 Block 3) south of E Bogard Road and east of N Arabian should be to

the south via Tabasco Cat Drive and Comanche Trail. No direct access to E Bogard Road will be permitted.

- Provide a new intersection on the south side of Bogard Road on the east side of Tract Number 18N01E36B020 that meets minimum access spacing shown in Section 3.1 Table 1. Plat details will determine specific location of the new intersection.

6. **Cul-de-sac.**

- Cul-de-sac N Colony Way. Access to Bogard Road will be provided by new frontage road described above.

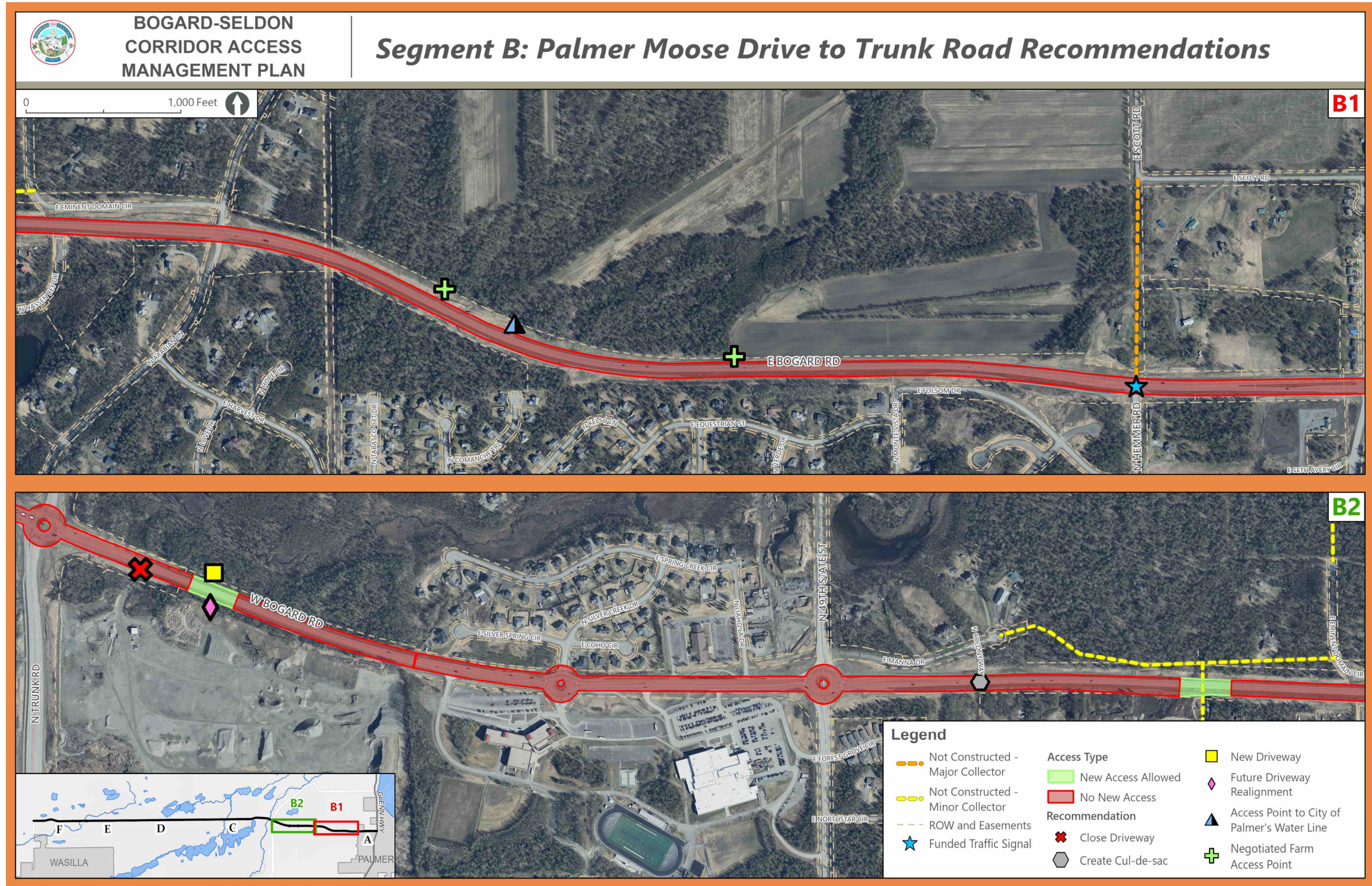


Figure 3: Segment B Mapped Recommendations

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4.4 Segment C – E Bogard Road - N Trunk Road to E Bogard Road/E Seldon Road

Segment C is a rural section along the corridor, is approximately 3.07 miles long, and had an AADT ranging between 8,640 and 12,100 vehicles in 2022.⁶ The existing section along E Bogard Road is a two-lane undivided roadway with no left-turn lanes provided at any intersection (see Figure 4 and Figure 5). There are 20 unsignalized intersections with the minor approach stop controlled, a single-lane mini-roundabout at E Bogard Road/E Seldon Road, and a total of 30 driveways with several residential properties having multiple access points to E Bogard Road. Several of the local road connections on the north and south sides do not align with each other, creating offset intersections and additional conflict points along the corridor.

The area adjacent to the Bogard-Seldon mini-roundabout has been identified as a neighborhood development node in the Draft MSB SASS. The vision for this node includes a mix of residential and mixed-use areas.

4.4.1 Jurisdictional Ownership Existing Right-of-way

This portion of E Bogard is owned by DOT&PF. The ROW ranges between 90 and 165 feet.⁷

4.4.2 Existing Lane Use and Future Development Opportunity

Most of the existing land use along Segment C consists of residential subdivisions on the north and south sides of E Bogard Road. Additionally, several businesses are located near N Greentree Street, including two storage facilities on the north side of E Bogard Road. Developable land is located predominantly to the north, between the Bogard-Seldon roundabout and Trunk Road.

Central Gravel Products is proposing a new material site located on the north side of E Bogard Road about 1,000 feet up Engstrom Road between Engstrom Road and Trunk Road. The proposed site will use Engstrom Road as its main access point leading to Bogard Road and is proposing an additional right in/right out (RIRO) driveway onto Bogard approximately halfway between Engstrom Road and Stringfield Road.

4.4.3 Planned Improvement Projects

DOT&PF has a current HSIP project to construct a roundabout at N Engstrom Road. The project will also realign Green Forest Drive to be the south leg of the Bogard-Seldon roundabout.

⁶ AADT traffic count data from DOT&PF's Traffic Analysis and Data Application website (<https://alaskatraficdata.drakewell.com/publicmultinodemap.asp>).

⁷ ROW widths were estimated using MSB Parcel Viewer maps and represent the typical existing ROW width along the segment. The widths provided do not include additional widths at intersections, and existing easements for drainage features are not included.

DOT&PF has approved FY2024 HSIP funding to make safety improvements along E Bogard Road-Road from N Greyling Street to E Grumman Circle. The improvements will seek to reduce the number of crashes and may include roundabouts, a median, and/or roadway widening.

DOT&PF has approved FY2024 HSIP funding to make safety improvements along Bogard Road between Trunk Road and Engstrom Road. The improvements will seek to reduce the number of crashes by reducing conflict points and may include a raised median to limit left-turning movements by directing traffic to the existing Trunk Road roundabout from the future roundabout at Engstrom Road.

DOT&PF has nominated a Community Transportation Program (CTP) project between Engstrom Road and N Greyling Street that may include a median to control left-turn movements, establish RIRO access points, and potential intersection improvements. Final recommendations would be based on a design study. This project nomination has been approved.

MSB is currently analyzing alignments of a new collector road connection between Engstrom Road and Trunk Road. A new connection will improve local connectivity, decrease traffic at the Engstrom Road and Bogard Road intersection, and provide an alternate route to and from Engstrom Road and Trunk Road. New connections would be provided on Trunk Road north of Bogard Road.

4.4.4 Recommendations

To improve the existing intersection spacing, reduce conflict points, and improve vehicular flow along Segment C, several access management strategies are recommended, including elimination or modification of driveways, realignment of minor approaches, and construction of backage road connections (see Figure 4 and Figure 5). Considering the existing number of access points within this segment, a systems approach should be taken to address the issues while maintaining access to existing residential driveways and local roads. The systems approach would seek to eliminate or preclude some left-turning movements to and from driveways and local roads and use the transportation network to divert the movement. Although the systems approach will require out-of-direction travel, it will reduce conflict points and improve traffic flow along the corridor. An example of the systems approach application would be to convert a driveway to RIRO and to utilize a roundabout downstream to divert the desired left-turn movement from the driveway. The recommendations below consider implementation of the systems approach described above:

1. **Realign Minor Approaches.** The following minor approaches were identified for realignment, eliminating offset intersections. These minor approaches include:
 - Realign Ashmore showing future connections to new Engstrom Green Forest roundabout. Connection is not included in current roundabout project.
 - Realign access to Fingers Lake State Park
 - Option 1: Realign access to connect with Ashmore Avenue. The roadway and realignment is anticipated to stay within existing MSB and DOT&PF ROWs.

- Option 2: If Option 1 above is determined to be infeasible, realign the Finger Lakes State Park entrance to align opposite N Sebastian Drive. Due to existing ROW limits and topography, this alternative may impact properties on the north side of E Bogard Road to obtain proper alignment. Improvements may include RIRO and/or median opening with left turn lanes.
 - Realign N Moose Street with N Cottonwood Loop.
- 2. Driveway Closures.** The following driveways were identified to be eliminated:
- South side of E Bogard Road, approximately 165 feet west of Green Forest Drive:
 - This will require that Ashmore Avenue be extended to the realigned Green Forest Drive to re-establish a driveway onto Ashmore Avenue.
 - Close the storage facility business driveway on the northside of Bogard Road.
 - Provide a new driveway connection for the facility off of N Greentree Street. This impacts one undeveloped parcel.
 - South side of E Bogard Road approximately 545 feet east of N Keith Street.
 - Access to business is provided by existing driveway off of N Keith Street
 - North side of E Bogard Road approximately 70 feet east of N Earl Drive.
 - Residential property has two driveway connections. Both driveways will be closed and one driveway will be reestablished to a new frontage road extending from Bear Cub Court, as described below.
 - North side of E Bogard Road approximately 175 feet west of N Earl Drive.
 - Driveway access will be reestablished to a new frontage road extending from Bear Cub Court, as described below.
 - North side of E Bogard Road approximately 375 feet east of Bogard-Seldon roundabout.
 - This is a redundant access point. Business access off N Lazy Eight Court will be maintained.
 - South side of E Bogard Road approximately 100 feet, 240 feet, 360 feet, and 575 feet west of N Keith Street.
 - These three business access points will be re-established onto the E Radon Drive backage road recommended below.
 - North side of E Bogard Road between N Engstrom Road and Old Homestead Road.
 - Consolidate existing driveways from five to a minimum of one and maximum of two driveways
 - For access to parcels 18N01E27D001 and 12N01E27D002, consolidate access points to one shared access driveway.

- Specific driveway location and number of driveways to be determined in the future.
- South side of E Bogard Road approximately 250 feet west of Cottonwood Loop
 - Access to parcel 6445B02L022 will be maintained via the existing driveway off E Alder Drive.

3. Driveway Modifications:

- If storage facility driveway access onto N Greentree Street is determined to be infeasible, the existing driveway will become RIRO. This will impact business access, requiring out-of-direction travel for vehicles to complete a U-turn to access the driveway.

4. Construct Non-traversable Medians/Barriers. Constructing non-traversable medians will resolve the left-turn conflicts along the entire segment; however, this will also have an impact on mobility to and from existing driveways. To mitigate this, a systems approach is recommended. The proposed roundabout at N Engstrom Road and the potential for additional roundabouts or traffic signals between it and the existing Bogard/Seldon mini-roundabout provide a greater opportunity to maintain indirect access while eliminating left turns:

- The N Engstrom Road roundabout provides an opportunity to implement a systems approach to access management on the east end of Segment C. The existing roundabout at Trunk Road and the proposed roundabout at N Engstrom Road provide an opportunity to use barriers as medians to preclude left turns from the driveways and minor approaches located between the two roundabouts. Seven total access points will be converted to RIRO, including six driveways and the N Stringfield Road intersection.
- Using the existing Bogard-Seldon mini-roundabout, if one or more roundabouts/signals were constructed either at Caribou Street, Moose Street, or Bear Street, medians could be constructed between the Bogard-Seldon mini-roundabout and N Earl Drive to reduce left turn conflicts. The roundabouts will provide indirect access to the existing driveways that become RIRO. Construction of a median should be coordinated with the potential HSIP or CTP improvements, as this may allow for implementation of the systems approach to provide the left-turn access downstream of the impacted driveways and local roads. A future analysis is recommended to determine the capacity of the existing Bogard-Seldon mini-roundabout to identify the need for any additional improvements.
 - If a non-traversable median barrier is not constructed at Lagoon Drive, Lagoon Drive will no longer meet intersection spacing requirements. It is recommended then to cul-de-sac Lagoon Drive.
 - It is not recommended to cul-de-sac Earl Drive due to impacts to school access and bus routes.

5. Frontage Roads

- Close direct access from N Lazy Eight Court. Construct a frontage road connecting N Lazy Eight Court to N Departure Court.
 - Potential alternative would include realigning E Bogard Road to the south near the mini-roundabout to minimize impacts.
- Close direct access from N Chandelle Court. Construct a frontage road between N Chandelle Court and N Departure Court. The frontage road will impact parcels 2324B01L008 and 2324B01L021.
- Construct a frontage road connecting N Caribou Street, N Moose Street, and N Bear Street. Full access to/from E Bogard Road will be provided at N Moose Street with future intersection control improvements, described below. N Caribou Street and N Bear Street will be right-in-right-out as described below.
 - Existing driveways connecting to E Bogard Road will be re-established onto the frontage road.
- Construct a frontage road extending from Bear Cub Court to existing driveway for parcels 6365B02L015, 6365B02L014, and 6365B02L013.
 - Existing driveways will be re-established onto the frontage road.

6. Backage Roads.

- The segment from Radon Drive to E Radon Drive will serve as a backage road by connecting the two road segments. Re-establishing the business access off Radon Drive and East Radon Drive will eliminate four access points on the south side of E Bogard Road between N Lagoon Drive and N Keith Street. This will require the combination of lots owned by the same owner. Alternative alignments may be considered as follows:
 - i. Connect the two ends of E Radon Drive by jogging south to minimize impacting existing buildings.
 - ii. Improve the west and east ends of E Radon Drive to provide new access to interior parcels on each side. Include cul-de-sacs or vehicle turnarounds for MSB snow maintenance and emergency response vehicles.
 - iii. Property acquisition.
- Connecting E Fir Road to Finger Lake Elementary School provides dual access to the school and allows access from the west without having to enter Bogard Road.

7. Roadway Connections.

- Connect Dolly Varden Drive to Toller Court. ROW exists.
- Maintain full access onto Bogard Road for N Departure Court and the western access of Cottonwood Loop

- Connect N Keith Street to N McRae Drive. This improvement will impact undeveloped portions of two parcels.
- Connect N. Burlwood Lane to N Greentree Street. This improvement will impact undeveloped portions of two or four parcels depending on the new roadway alignment; 6469B02L006, 6469B02L001, 6469B02L005, and 6469B02L002. Alignments may include a roadway connection along north side of the parcels, in the middle of the parcels, or on the south side of the parcels. Specific alignment and design of the new roadway connection will be determined when a project in this area along E Bogard Road is funded. At that time, other alternatives may be considered to accomplish the goal of closing N Burlwood Lane and providing new access onto N Greentree Street.
- Construct N Greyling Street extension from E Birch Acres Drive and E Pike Avenue to current MSB roadway standards.
 - a. Challenges to extending N Greyling Street may arise due to non-conforming parcels in this subdivision.
 - b. If extending N Greyling Street to E Pike is determined infeasible, an alternative connection would be to connect E Birch Acres to N Bear Street. This would achieve the goal of closing access to E Bogard Road from N Greyling Street to improve intersection spacing.

8. Directional Medians, left turn lanes, and Right-In-Right-Out

- Convert N Caribou Street to either a right-in-right-out with median or directional median opening.
- Convert N Bear Street to a right-in-right-out with median.
- Convert N Earl Drive to right-in-right-out with median.
- Convert N Sebastian Drive to right-in-right-out with median.
- Construct left turn lanes on E Bogard Road at Departure Court-Cottonwood Loop with a directional median opening.

9. No New Direct Access. Due to the density of access points along Segment C, no new direct access should be provided along Segment C except for the OSHP's recommended south extension of Bear Street depicted in the dashed yellow line on Figure 4. Any new development along this segment should connect to local roads and collectors to access E Bogard Road.

10. Cul-de-sac.

- Cul-de-sac Chandell Court. Access to be provided via new backage road described above.
- Cul-de-sac N Lagoon Drive. Access to be maintained via N Barrys Resort Drive and the E Radon Drive backage road described above.
- Cul-de-sac N McRae Drive. Access to be maintained via new roadway connection between N Keith Drive and N McRae Drive described above.

- Cul-de-sac N Burlwood Lane. Access to be maintained via new roadway connection between N Greentree Street and N Burlwood Lane described above
- Cul-de-sac E Ashmore Avenue connection to E Bogard Road. Access to be maintained via Ashmore Avenue and N Green Forest Drive.
- Cul-de-sac N Greyling Steet. Access to be maintained via new roadway connection between E Birch Acres Drive and E Pike Avenue.
- Cul-de-sac N Lazy Eight Court. Access to be maintained via new frontage road between N Lazy Eight Court to N Departure Court described above.

11. Roadway Improvements

- Improve E Pike Avenue and E King Salmon Drive to meet MSB road standards from N Bear Street to N Loris Way.
 - a. Challenges improving to E Pike Avenue to E King Salmon Drive may arise due to non-conforming parcels in this subdivision.
- Improve N Greyling Street to meet MS road standards from E Pike Avenue to E Birch Acres Drive.
- Improve E Toller Court to MSB road standards from N Greentree Street to N Dolly Varden Drive.
- Improve Ashmore Avenue to MSB road standards from N Green Forest Drive to new Finger Lakes State Park access recommended above.

12. Future Intersection Control. The Bogard Road/Moose Street/Cottonwood Loop intersection is a potential location for intersection control. Future engineering will determine the final intersection control treatment. Intersection treatment may include:

- Signalized intersection including left turn lanes.
- Roundabout.
- Signalized intersection with non-traversable medians. Drivers desiring to turn left onto/from E Bogard Road would use the adjacent roundabouts to U-turn as described in Section 4.4.4.4 above.



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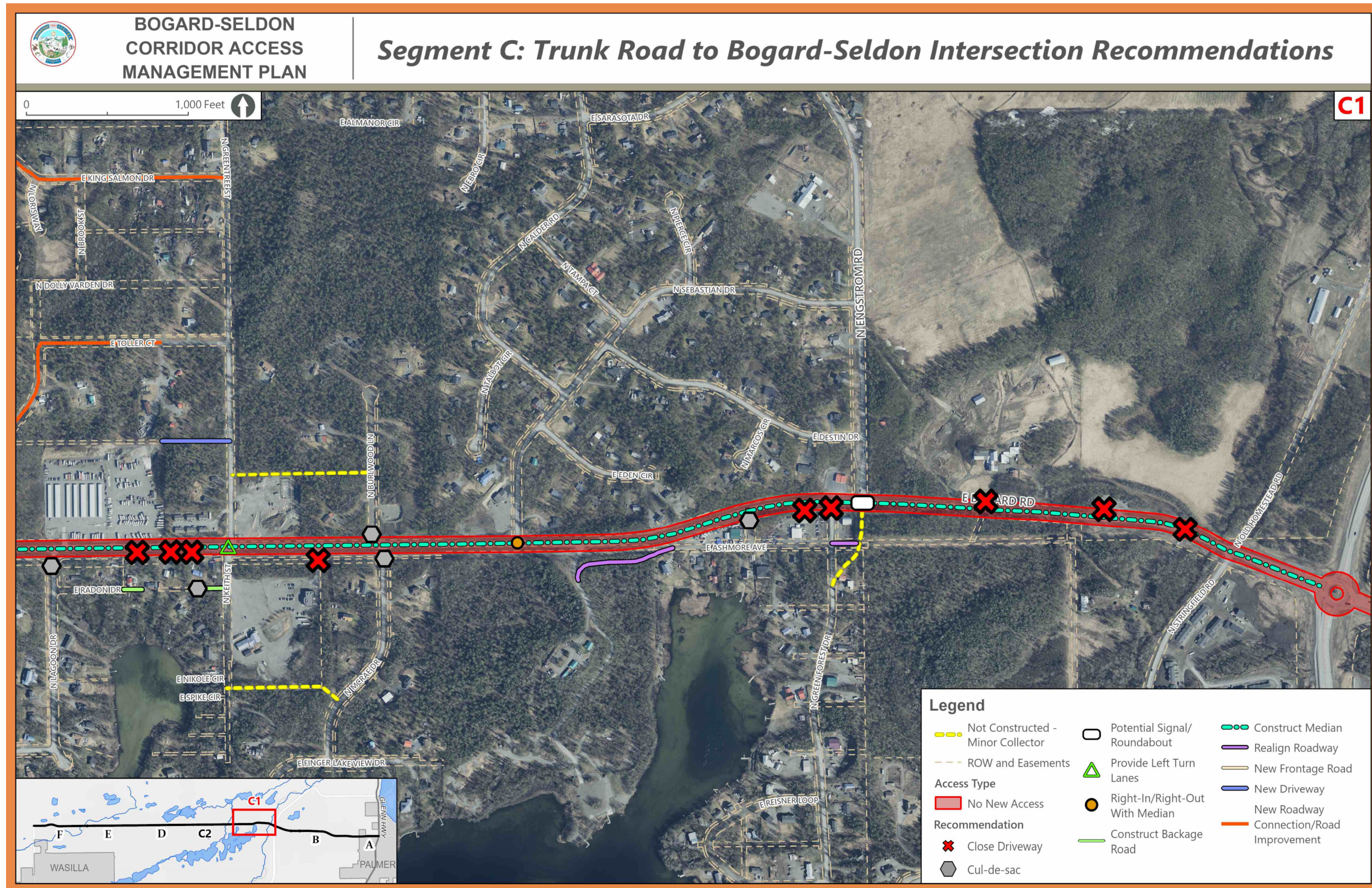


Figure 4: Segment C Mapped Recommendations (1 of 2)

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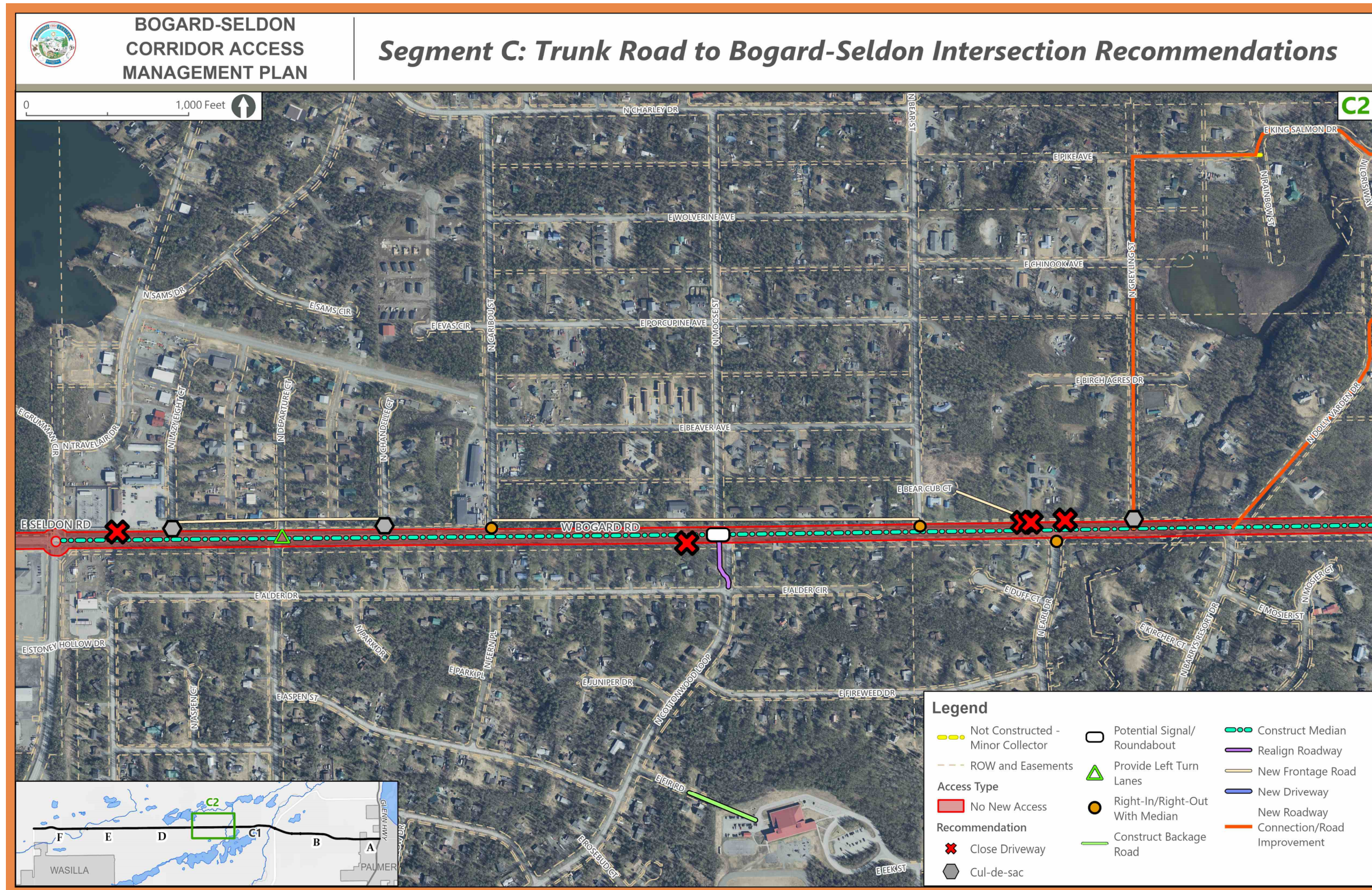


Figure 5: Segment C Mapped Recommendations (2 of 2)

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4.5 Segment D – E Seldon Road – E Bogard Road-E Seldon Road Roundabout to Schrock Road

Segment D is a rural section along the corridor and is approximately 2.35 miles long, with an AADT ranging between 5,870 and 7,820 vehicles.⁸ The existing section along E Seldon Road is a two-lane undivided roadway with left-turn lanes provided at the following intersections (see Figure 6):

- N Seward Meridian Parkway
- Larson Elementary Road
- Wasilla-Fishhook Road

North Seward Meridian Parkway and Wasilla Fishhook Road intersections with Seldon Road have traffic signals. There are nine unsignalized intersections and one signalized intersection within this segment. For the unsignalized intersections, the minor approaches are stop-controlled. There is only one driveway access point along this segment.

4.5.1 Jurisdictional Ownership Existing Right-of-way

This portion of E Bogard Road is owned by DOT&PF. The ROW ranges between 80 and 200 feet.⁹ This segment may be transferred to MSB upon completion of the currently nominated CTP projects from Wasilla-Fishhook Road to Lucille Street.

4.5.2 Existing Land Use and Future Development Opportunity

Most of the existing land use along Segment D consists of residential subdivisions on the north and south sides of E Seldon Road. Several schools are located south of E Seldon Road, including:

- Off N Seward Meridian Parkway:
 - Teeland Middle School
 - Mat-Su Career and Technical High School
 - Fronteras Spanish Emersion Charter School
- Off Larson Elementary Road:
 - Larson Elementary

Also located south off E Seldon Road is the Alcantra Recreation Facility, which includes disc golf and sport fields.

⁸ AADT traffic count data from DOT&PF's Traffic Analysis and Data Application website (<https://alaskatraficdata.drakewell.com/publicmultinodemap.asp>).

⁹ ROW widths were estimated using MSB Parcel Viewer maps and represent the typical existing ROW width along the segment. The widths provided do not include additional widths at intersections, and existing easements for drainage features are not included.

4.5.3 Planned Improvement Projects

An extension is planned to have N Seward Meridian Parkway establish a complete connection between E Seldon Road and E Bogard Road. Once the connection is complete, N Seward Meridian Parkway will extend from the Parks Highway to E Seldon Road, providing a new north-south arterial. Completing this connection will likely result in a change in traffic patterns throughout the area. The new traffic patterns may lead to traffic diverting from the Parks Highway to the Bogard-Seldon Corridor during peak congestion. From a systems approach, this diversion would be viewed as a benefit, as it will improve connectivity and relieve congestion along the Parks Highway, allowing traffic demand to better balance the Bogard-Seldon Corridor and the Parks Highway.

4.5.4 Recommendations

1. **General.** Segment D has sufficient intersection spacing and access control. This access control should be preserved, and the number of access points along this segment should not be increased (see Figure 6).
2. **Left Turn Lanes.** Considering the minimal number of existing access points along this segment, providing left-turn lanes at the unsignalized intersections will eliminate left-turning vehicles blocking the through-lane without requiring a three-lane section for the entire segment (see Figure 6). Directional median openings with left-turn pockets are recommended at:
 - Northgate Place
 - Tait Drive
 - N Woodfield Drive
 - Schrock Road
3. **Cul-de-sac.**
 - Terrell Drive should be converted into cul-de-sac, removing its access to E Seldon Road. It has other access options available.
 - N Arctic Fox Drive (see Figure 6). Access to the residential subdevelopment will be maintained off Wasilla-Fishhook Road.
 - N Anoka Place. Access will be maintained from E Lakeview Road. Alternative access to E Lakeview Road include:
 - i. E Wanamingo Drive
 - ii. N Oronoco Court
 - iii. N Anoka Place
4. **Intersection Closure.** East Village Drive's intersection with Seldon should be closed. Other access is available.
5. **Driveway Closures.**
 - Existing access to storage unit business should closed and move to aligned with Tate.

- Remove driveway from large gravel pad east of the N Seward Meridian Parkway/Lakeview Drive/E Seldon Road intersection. Access currently available to E Lakeview Road.
6. **Road Connection.** Extend E Porcupine Trail to E Serendipity Loop. This connection, when constructed, will address the proposed OSHP minor collector located in section line easement between E Village Drive and Larson School Circle. Having it connect to E Serendipity Loop, combined with closing E Village Drive intersection with Seldon, will consolidate three potential access points to one access point. Alternative connections to be considered to connect E Village Loop to N Larson Elementary Circle include:
- Connect E Porcupine Trail to E Serendipity Loop
 - Connect E Village Circle to N Larson Elementary Circle
7. **Right Turn Lane.** Add an eastbound right turn lane from E Seldon Road onto N Larson Elementary Circle.



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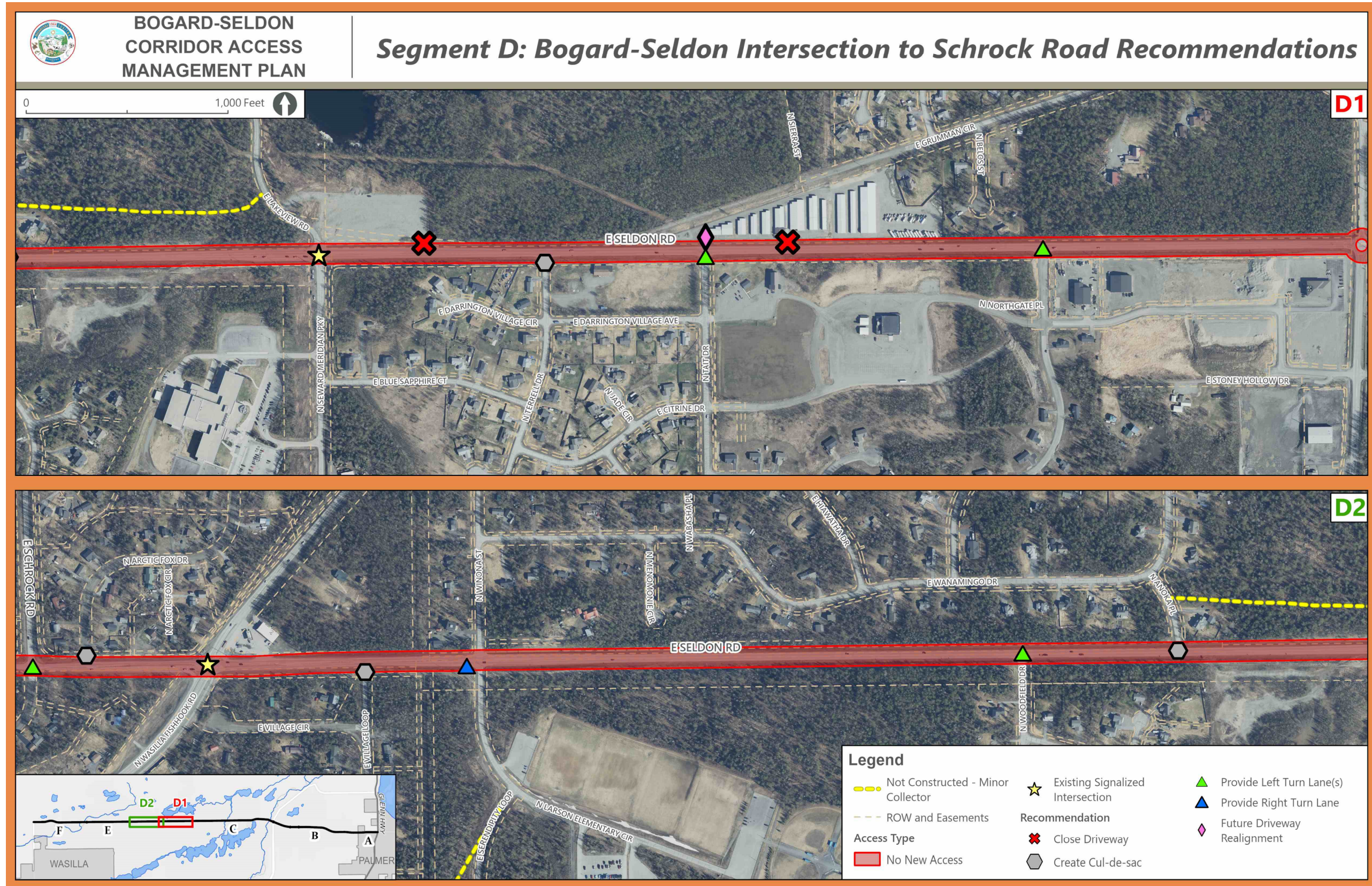


Figure 6: Segment D Mapped Recommendations

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4.6 Segment E – E Seldon Road – Schrock Road to N Lucille Street

Segment E is a rural section along the corridor, is approximately 1.63 miles long, and had an AADT ranging between 5,200 and 7,820 vehicles in 2022.¹⁰ The existing section along E Seldon Road is a two-lane, undivided roadway (see Figure 7).

There are 13 unsignalized intersections within this segment, including the multi-lane roundabout at N Lucille Street. For the unsignalized intersections, the minor approaches are stop-controlled. There are 13 driveway access points along this segment.

4.6.1 Jurisdictional Ownership Existing Right-of-way

This portion of Seldon Road is owned by MSB. The ROW ranges between 80 and 120 feet.¹¹

4.6.2 Existing Lane Use and Future Development Opportunity

Most of the existing land use along Segment E consists of residential subdivisions on the north and south sides of E Seldon Road. The Twindly Bridge Charter School is located in the northeast quadrant of the N Lucille Street intersection. Developable land is located on the north and south sides of E Seldon Road.

4.6.3 Planned Improvement Projects

MSB has nominated projects for funding through DOT&PF's federally funded Community Transportation Program to improve this segment. These projects are under consideration but are currently unfunded. The projects' combined scopes would:

Upgrade Seldon Road, between Wasilla Fishhook Road and Lucille St, to an arterial highway standard with separated pathway. The roadway should be designed to serve local, regional, and freight travel. The project will construct pathway, widen the travel lanes, provide a shoulder, provide an improved clear zone, drainage and other safety features including signage. The project will include other safety and capacity improvements as appropriate.

MSB is also proposing to improve Lucille Street south of E Seldon Road. Improvements to the roadway, a pathway from Spruce Street to E Seldon Road, and the addition of a left-turn lane for Tanaina Elementary School are included in the design. The timing of these improvements depends on when funding is available.

¹⁰ AADT traffic count data from DOT&PF's Traffic Analysis and Data Application website (<https://alaskatraficdata.drakewell.com/publicmultinodemap.asp>).

¹¹ ROW widths were estimated using MSB Parcel Viewer maps and represent the typical existing ROW width along the segment. The widths shown do not include additional width at intersections, and existing easements for drainage features are not included.

4.6.4 Recommendations

The number of access points along Segment E should not be increased. Other access management recommendations include eliminating driveway access and constructing cul-de-sacs to reduce access points (see Figure 7). Although Segment E has several offset intersections, realigning the minor approaches would have significant ROW implications, and therefore is viewed as cost-prohibitive.

1. Driveway Closures. The following driveways were identified to be eliminated:

- South side of E Seldon Road, approximately 165 feet west of Nancy Way:
 - Re-establish access to parcel off Nancy Way.
- South side of E Seldon Road, approximately 270 feet east of Holly Way:
 - Maintain existing access to parcel off Holly Way.
- South side of E Seldon Road, approximately 260 feet west of N Hematite Drive:
 - Maintain access via new backage road described below
- South side of E Seldon Road, approximately 430 feet west of N Hematite Drive:
 - Maintain access via new backage road described below
- South side of E Seldon Road, approximately 600 feet west of N Hematite Drive:
 - Maintain access via new backage road described below
- South side of E Seldon Road, approximately 810 feet west of N Hematite Drive:
 - Maintain access via new backage road described below

2. Cul-de-sacs. Eliminating local road connections will improve intersection spacing while maintaining acceptable local access to and from E Seldon Road. The following local roads are recommended to be converted to cul-de-sacs:

- N Jacksnipe Drive:
 - Access to/from Seldon Road is maintained off E Schrock Road.
- N Jasper Drive:
 - Access to/from E Seldon Road is maintained off Ravens Flight Drive and N Hematite Drive.
- N Brennas Way:
 - Access to/from E Seldon Road is maintained off Ravens Flight Drive and N Hematite Drive.
- N Kintrye Lane:
 - Access to/from E Seldon Road is maintained off Lochcarron Drive.
- N Old Squaw Loop:
 - Access to/from Old Squaw Loop will be maintained via new roadway connection between N Old Squaw Loop and E Pintail Drive

3. **Right In/Right Out.** To improve access spacing and reduce conflict points as an interim improvement prior to N Snow Goose Drive being realigned as described below, it is recommended to convert N Snow Goose Drive to RIRO.

- N Snow Goose Drive
 - Traffic wanting to go east and coming from the west will divert through the residential subdivision onto E Schrock Road.

4. **Backage Road**

Construct a backage road behind the seven parcels located south of E Seldon Road, west of N Hematite Drive. The backage road will connect to N Hematite Drive, maintaining access for the seven parcels. Partial acquisition and new driveway connections to the backage road for each of the seven parcels will be required.

5. **Roadway Connections** Connect E Pintail Drive to N Old Squaw Loop. Proposed alignment will be determined during the environmental and design phase of the project.

6. **Realign Intersection.** To improve intersection spacing, it is recommended to realign N Snow Goose drive. Alternative alignments to be considered include:

- Preferred Alignment – reroute N Snow Goose Drive to align with N Hematite Drive. This will require grading to reduce the hill to provide adequate intersection sight distance on E Seldon Road.
- Alternative Option – Close N Snow Goose Drive and reroute existing driveways along N Snow Goose Drive onto E Seldon Road via a new roadway connection between N Hawk Owl Circle and Grey Owl Circle to line up opposite Holly Way.

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Figure 7: Segment E Mapped Recommendations

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4.7 Segment F – Seldon Road – N Lucille Street to Church Road

Segment F is a rural section along the Bogard-Seldon Corridor, is approximately 2.00 miles long, and had an AADT ranging between 3,980 and 5,200 vehicles in 2022.¹² The existing section along E Seldon Road is a two-lane undivided roadway (see Figure 8).

There are 15 unsignalized intersections within this segment, and the minor approaches are stop-controlled. There are 11 driveway access points located mostly on the north side of Seldon Road.

4.7.1 Jurisdictional Ownership Existing Right-of-way

This portion of Seldon Road is owned by the MSB. The ROW ranges between 82 and 200 feet.¹³

4.7.2 Existing Lane Use and Future Development Opportunity

Most of the existing land use along Segment F consists of residential subdivisions on the north and south sides of E Seldon Road. A gas station is located in the southeast quadrant at the Church Road intersection. Adjacent to the gas station is an existing quarry, which is well suited for redevelopment in the future.

The area adjacent to the Seldon Road and Church Road intersection has been identified as a neighborhood node in the Draft MSB SASS. This neighborhood node provides the opportunity for significant developments in the north and southwest quadrants. This includes the Alaska Mental Health Trust planned development of 600 residential units in the southwest quadrant. There is a large MSB parcel in the northwest quadrant that may be suitable for a school site and supporting residential and small commercial developments.

4.7.3 Planned Improvement Projects

Construction of the N Ward Drive extension to the north is identified in the OSHP. The N Ward Drive extension will provide an opportunity to reduce conflict points along E Seldon Road. As part of the extension project, a cul-de-sac can be constructed at N Tamar Road. Access to E Seldon Road would be re-established by connecting Chesapeake Street to the N Ward extension. The driveway on the north side of E Seldon Road between N Ward Drive and N Tamar Road can also be closed and realigned to connect to the N Ward extension.

¹² AADT traffic count data from DOT&PF's Traffic Analysis and Data Application website (<https://alaskatrafficdata.drakewell.com/publicmultinodemap.asp>).

¹³ ROW widths were estimated using MSB Parcel Viewer maps and represent the typical existing ROW width along the segment. The widths shown do not include additional width at intersections, and existing easements for drainage features are not included.

4.7.4 Recommendations

Improving intersection spacing and reducing the number of conflict points will improve access management along Segment F (see Figure 8). The following improvements are recommended:

1. **Cul-de-sacs.** Eliminating local road connections will improve intersection spacing while maintaining acceptable local access to and from E Seldon Road. The following local roads are recommended to be converted to cul-de-sacs:
 - Sarah's Way:
 - Access to and from Seldon Road is maintained off N Brocton Avenue.
 - N Banner Way:
 - Access to/from Seldon Road is maintained off N Eureka Circle. This is the preferred access management treatment to improve intersection spacing while eliminating an offset intersection.
 - A viable alternative that may be considered includes closing N Eureka Circle
 - i. Realign N Banner Way to align with N Mountain Crest intersections.
 - N Oxford Drive:
 - Access to/from Seldon Road is maintained off Mountain Crest Drive and N Brocton Avenue.
 - N Intuition Drive:
 - Access to/from Seldon Road is maintained off N Ryahs Way and new frontage road described below.
 - N Cambay Court:
 - Access to/from Seldon Road is via new frontage road described below.
2. **Driveway Closures.** The following driveways were identified to be eliminated:
 - North side of Seldon Road, approximately 95 feet east of N Brocton Avenue:
 - Re-establish access by constructing new driveway off N Brocton Avenue.
 - North side of Seldon Road, approximately 160 feet west of N Brocton Avenue:
 - Re-establish access by constructing new driveway off N Brocton Avenue.
 - North side of Seldon Road, approximately 230 feet east of W Sarah's Way:
 - Remove secondary driveway and maintain primary driveway to/from Seldon Road.
 - North side of Seldon Road between N Intuition Drive and 480 feet east of Cambay Court:

- Re-establish 8 driveways, including existing shared access driveway at parcel 7543000L001, onto the new frontage road proposed below.
- North side of Seldon Road, approximately 295 feet east of Church Road:
 - Shift existing driveway approximately 250 feet to the east
- 3. **Roadway Realignment.** To further improve unsignalized intersection spacing, N Eureka Circle should be realigned to the west to align with Mountain Crest Drive. This will impact 2 parcels.
- 4. **Frontage Road.** Construct a frontage road on the northside of Seldon Road between N Intuition and the private driveway located at Parcel 7543000L001. Re-establish all existing driveways onto the new frontage road. Eliminate N Cambay Court's access to Seldon Road and connect N Cambay Court to the frontage road. This improvement will impact nine private parcels. The frontage road will include a turnaround at the intersection of parcel 7543000L001 and the frontage road to accommodate MSB road maintenance and emergency response vehicles. Access onto W Seldon Road will be provided at N Tamar Road.
- 5. **Future Development.** The existing quarry located near the southeast quadrant of Church Road will likely be redeveloped in the future. Although it is not possible to provide access to the parcel while maintaining the recommended intersection spacing within a rural segment, any future access point to the parcel should be located approximately 750 feet east of Church Road. Access should be controlled by installing a non-traversable median and providing directional median openings at the new access point located at equal distance between Church Road and W Discovery Loop.

The northwest and southwest quadrants also provide future development opportunities. As previously described, the potential 600 residential units in the southwest quadrant and the potential for the northwest quadrant, currently owned by MSB, could have significant access management implications if not planned accordingly. To preserve the operations and safety of the Seldon Road/Church Road intersection, access point spacing, as identified in Table 1, is recommended. A full median opening access point to the west is likely infeasible based on the existing parcel limits in the north and southwest quadrants. Therefore, upon development, a directional median opening access point to and from Seldon Road should be provided a minimum of 1,320 feet west of Church Road. To provide additional connections to the developments in the north and southwest quadrants, additional access points can be provided to and from Church Road. These access points should be a minimum of 1,320 feet north and south of Seldon Road to meet spacing criteria.

- 6. **Future Intersection Control.** The existing Seldon Road/Church Road Intersection is currently stop controlled on the Seldon Road Legs and free on the Church Leg. As traffic demand increases, this intersection will require a higher level of intersection control with either a traffic signal or roundabout.
- 7. **Roadway Improvements.** Improve W Scheelite Drive to meet MSB road standards from N Banner Way to Lucille Street.

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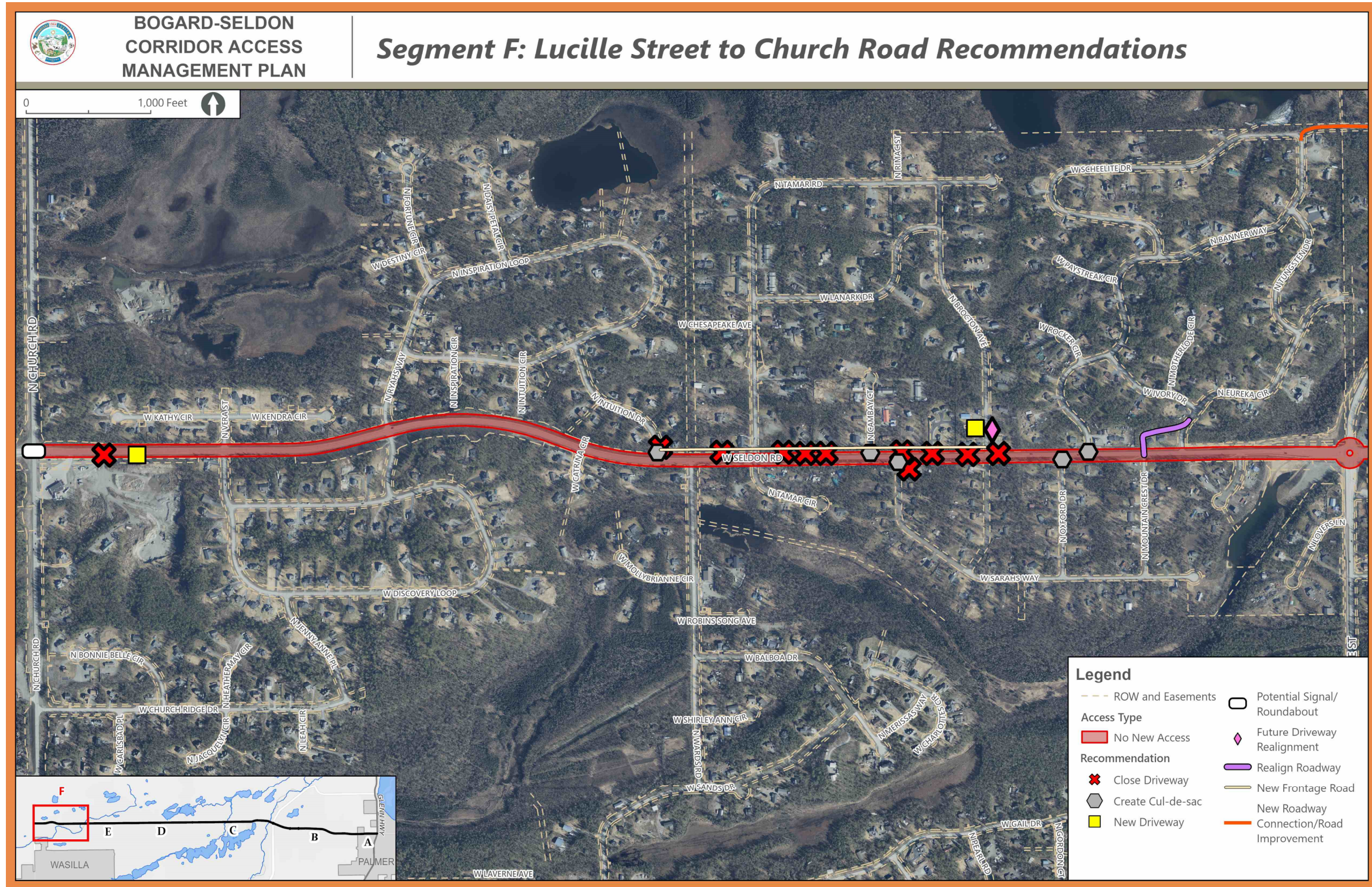


Figure 8: Segment F Mapped Recommendations

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5 Implementation

The CAMP's implementation strategies for platting actions and driveway permits along the Bogard-Seldon Corridor are described below. This section also identifies additional actions the MSB should take to assist in the implementation of access management principles.

5.1 Platting Actions

Platting actions must comply with the recommendations of the adopted Bogard Seldon Corridor Access Management Plan.

Questions or requests for exemptions require a review by MSB Planning and MSB Public Works and with exceptions approved by the Directors of Planning and Land Use and Public Works. Exceptions must be based on a traffic impact study completed by a registered Professional Engineer in the State of Alaska and any additional engineering studies necessary to support the approval of an exception.

The petitioner may be required to provide additional engineering data as required by the MSB or provide a Traffic Impact Analysis, if traffic thresholds are met, to facilitate the review by MSB Planning and Public Works.

DOT&PF review and approval of exceptions are required for requests accessing state owned segments of the Bogard Seldon Corridor.

5.2 Driveway Permits

1. MSB and DOT&PF Driveway and Encroachment permits should comply with the recommendations of this CAMP prior to their approval.
2. DOT&PF should comply with the recommendations of adopted MSB Corridor Access Management Plans in their review and issuance of driveway permit applications and may include a review of MSB Public Works prior to issuance.

5.3 Other Recommendations

1. MSB Staff Training: Platting, Planning, Permitting, and Public Works staff should receive training in the principles of access management and the importance of access management plans in maintaining the function of the MSB transportation system. The principles need to be incorporated into the planning, platting, and permitting processes as well as the design of new or upgraded higher functional roadways to improve mobility and safety and to protect investments.
2. MSB Board Training: Platting Board, Transportation Advisory, Planning Commission, and Assembly members should receive training in the principles of access management and its benefits in creating and maintaining a reliable, safe, and well-functioning road network. Access management also protects public transportation investments by extending the functional life of the roadway.

3. Title 43 should be amended to require that all plats must conform to the recommendations of adopted CAMPs to provide the Platting Board the authority to implement the CAMP's recommendations.
4. The MSB Subdivision Construction Manual should be updated to include access management principles. It should also be updated to address rural access spacing requirements in addition to the urban spacing requirements it addresses now.¹⁴
5. Recognizing roads are developed over time through joining unconnected segments, road extensions, and other improvements. Private development is often a catalyst for partial roadway upgrades, leaving the state or local government with corridors comprised of segments owned by multiple parties. Coordination between state and local governments and the private sector to consolidate ownership when feasible and to share the costs of upgrades when possible.
6. MSB and DOT&PF should coordinate with the MPO planning process to identify projects and opportunities to incorporate the recommendations within this CAMP.
7. This plan should be reviewed and updated every five years to keep pace with traffic demand increases, urbanization, population growth, development patterns, and increase densities.

6 Conclusion

Access management is where land use and transportation merge. Proper land use decisions along the corridor are critical to the continued function of the Bogard-Seldon Corridor. Platting drives land use within the MSB outside of incorporated communities. Platting and permit actions must incorporate the recommendations of this and any other adopted Corridor Management Plans as part of the approval process to safeguard the integrity, safety, and function of the MSB road network.

¹⁴ The designation of urban or rural is based on the road owner's functional classification system.

Appendix A. Typical Sections

The typical cross-section along the Bogard-Seldon Corridor should be consistent with the roadway classification, function, and adjacent land uses, although the cross-section width may vary along the corridor due to a change in adjacent land uses or topographical or ROW constraints. Due to the corridor characteristics, the varying existing ROW widths, and the site-specific constraints and needs of each segment, various typical sections (described below) can be constructed to address specific challenges along each segment of the Bogard-Seldon Corridor. The typical sections described below do not include major intersections along the corridor. Intersection lane configuration and required widths are predicated on intersection control and capacity analysis and therefore may require additional widths. The widths shown below can be reduced or expanded based on engineering judgement to address site-specific constraints.

Two-Lane Section

A two-lane section can be considered where existing ROW is not wide enough for a three-lane section or where precluding left-turn access to/from driveways and minor streets is desirable. The two-lane section requires a minimum total width of 62–66 feet and consists of the following (see Figure A-1):

- Two 12-foot travel lanes, one in each direction
- An 8-foot median:
 - A 4-foot-wide raised curbed median or barrier
 - A 2-foot buffer on each side
- Eight-foot paved shoulders
- A 3:1 or 4:1 ditch
- A 10-foot shared-use path

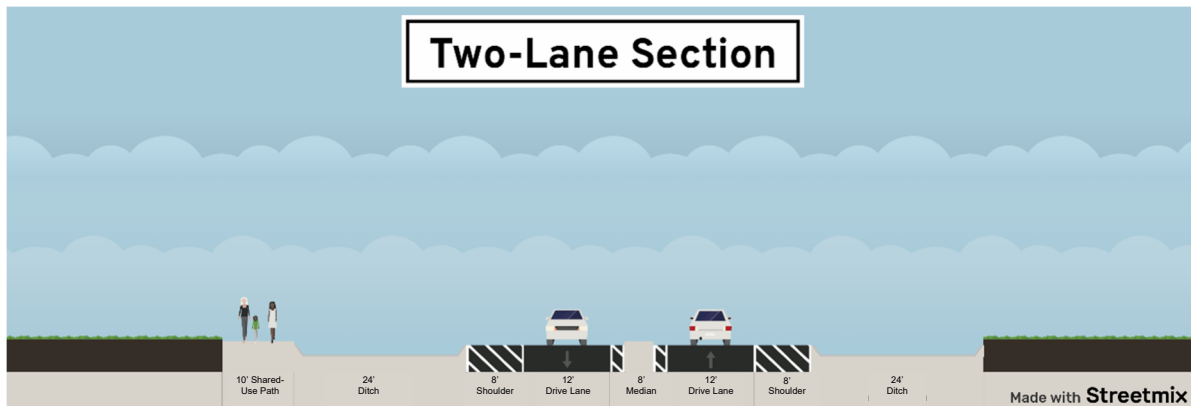


Figure A-1: Two-Lane Typical Section

Three-Lane Section

The unconstrained typical section requires a minimum width ranging between 70 and 74 feet. The typical section consists of the following (see Figure A-2):

- Two 12-foot travel lanes, one in each direction
- A 16-foot median to serve either a non-traversable median with appropriately spaced left-turn pockets or two-way-left-turn lane where determined to be appropriate
- Eight-foot paved shoulders
- A 3:1 or 4:1 ditch
- A 10-foot shared-use path

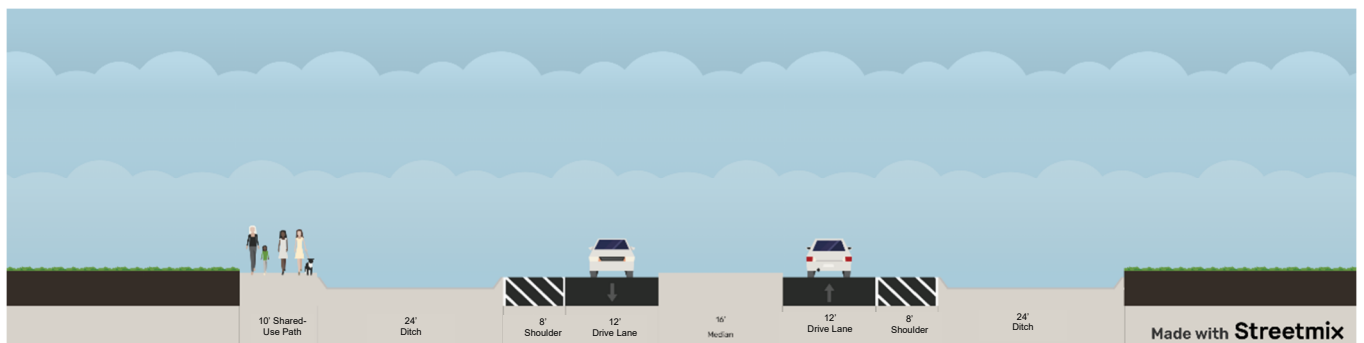


Figure A-2: Three-Lane Typical Section

Five-Lane Section

Considering the future capacity and operations of the Bogard-Seldon Corridor is essential for its resiliency, future performance, and safety. Given the projected growth and significant potential for future development along the corridor, the Bogard-Seldon Corridor will exceed the capacity of a three-lane facility. Planning for future widening or constructing a wider five-lane typical section today where AADT approaches 10,000 vehicles is prudent. The five-lane section requires a minimum width ranging between 94 and 98 feet. The typical section (see Figure A-3) consists of the following:

- Four 12-foot travel lanes, one in each direction
- A 16-foot median to serve a non-traversable median with appropriately spaced left-turn pockets
- Eight-foot paved shoulders
- A 2- to 4-foot transition zone
- A 10-foot shared-use path

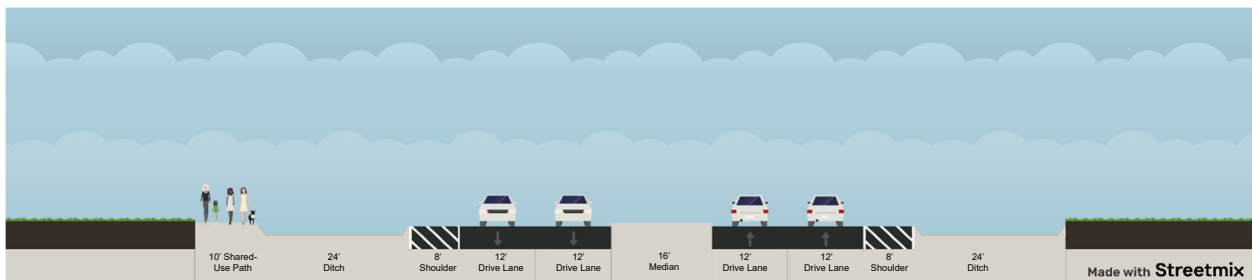


Figure A-3: Five-Lane Typical Section