Corridor Access Management Plan
Seldon Road Extension
Church Road to Pittman Road

Project No. 35411
Wasilla, Alaska

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1.0 INTRODUCTION

The Matanuska-Susitna Borough (MSB) has obtained funding to extend Seldon Road westward from Church Road to Pittman Road.

In order to maintain the mobility and safety benefits of this minor arterial road, access will be limited along the new roadway to the extent possible. This *Access Management Plan* will provide the guidelines necessary to manage access along this segment of Seldon Road.

0 1 2 Miles

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SELDON ROAD EXTENSION
CHURCH ROAD TO PITTMAN ROAD
BOGARD ROAD/SELDON ROAD CORRIDOR
FIGURE 1

MATANUSKA-SUSITNA BOROUGH
CAPITAL PROJECTS DEPARTMENT

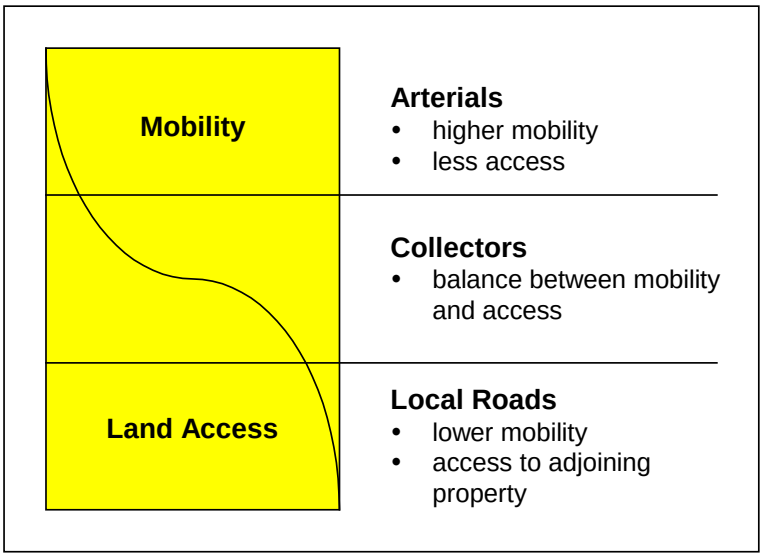
2.0 PURPOSE OF ACCESS MANAGEMENT

The purpose of access management is to provide vehicular access to land development in a manner that preserves the safety and efficiency of the transportation system.

Access Management Manual (TRB, 2003)

The road network is created to serve a single purpose – the movement of people and goods. From an operational perspective, this can be seen as a two-step process: entering or leaving the road network, and traveling through the road network. Unfortunately, these two steps conflict with each other, especially as volumes increase. That is to say, it is very difficult to enter a road that has a high volume of fast moving traffic. Similarly, a road cannot accommodate a high volume of fast moving traffic, if there are numerous driveways, where motorists are turning on and off of the road. As a result, a hierarchy of road classifications has been developed by the American Association of State Highway and Transportation Officials (AASHTO) that outlines the role each road type should be designed to fill in the road network. Higher classification roads (interstates, arterials) are intended to provide service to higher speed through-traffic, while lower classification roads are designed to provide access to individual parcels and destinations. This is shown graphically in Figure 1. Benefits and techniques for access management are also discussed in National Cooperative Highway Research Program (NCHRP) Report 420, *Impacts of Access Management Techniques* (Transportation Research Board (TRB), 1999)

Figure 2 Roadway Functional Roles



Source: Safety Effectiveness of Highway Design Features, Vol. 1 FHWA, 1992

Purpose of Access Management
January 2017

In order to maintain the mobility function of the higher class roadways, access must be limited. The most extreme example of this is how access to freeways is limited to interchanges. Arterials do not require such a high level of access control, but some control is prudent. This *Access Management Plan* provides the framework for managing that access.

The Seldon Road Extension is designed as a rural minor arterial, which means it will need a higher level of access control than collector or local roads, but lower level of access control than major arterials or freeways.

Access management must be thoughtfully planned and managed to be successful. Otherwise, driveways and access points end up being located and constructed without regard to how they fit into the entire system, which often leads to inconsistent spacing, multiple conflict points, and poor sight distance, as seen on the Palmer-Wasilla Highway. In the MSB, access management will be implemented by both the Platting Board and through the driveway permit process. The entities that oversee both of these processes must be informed of and supportive of the *Access Management Plan* in order for it to be successful. It is equally important for the agencies to work with the public to ensure understanding and buy-in of the safety, mobility, and public investment benefits of access management while being sensitive to individual landowners needs for access and mobility.

3.0 BENEFITS OF ACCESS MANAGEMENT

Controlling access on roadways provides the following key benefits:

- Helps maintain efficient traffic flow
- Increases public safety
- Protects the public's financial investment in roadway infrastructure

The *Access Management Manual* states that decreasing signal spacing from four per mile to two per mile decreases total delay by 60 percent and vehicle hours of travel by 50 percent. At unsignalized access points, close spacing decreases egress capacity when spacing is less than 1.5 times the acceleration distance. Entering traffic causes slowdowns in through traffic as far as 620 feet upstream of access points.

Similarly, crash rates along corridors with two signals per mile is about half of the rate on corridors with four or more signals per mile. For unsignalized access points, crash rates increase by about 40 percent for each doubling of access density. Crash rates increase as access density increases because intersections have so many conflict points. Additionally, intersections have areas of influence upstream and downstream of the intersection due to speed differentials and decision sight distances. When intersection areas of influence overlap, driver attention is spread over a greater number of potential conflicts, which compounds the conflicts experienced at an isolated intersection. Eliminating overlapping areas of influence at intersections is, therefore, an important element in enhancing roadway safety.

The benefits of access management are experienced by society as a whole. Adjacent land owners may object to having their access limited to provide benefits to society. It is important to recognize that these are not abstract benefits, but are quantifiable benefits that correlate to the investment the public is making in constructing this new facility. Additionally, lack of access management increases congestion, which is a deterrent to potential customers and homebuyers.

It cannot be overstated how important internal neighborhood connectivity is to the efficient operation of arterial roadways. Efficient internal connectivity allows neighbors to travel within their neighborhood as long as possible. In some instances this will keep local traffic off of arterial roads. In other instances, it may mean that instead of a resident making a turn on to Seldon Road only to make another turn on to Church Road, they can access Church Road directly from their neighborhood. This reduces congestion on the road network, reduces left turns at intersections, reduces out of direction travel, and keeps travelers on safer, low-volume streets for more of their trips. To this end, as the adjacent parcels are platted and developed, the road networks need to connect to Pittman Road to the north and west, Church Road to the east, and Spruce Road (extended) to the south. A good example of this is how Little Rain Road and Gentle

Breeze Drive in the Bruce Lake Subdivision are platted all the way to the adjacent parcel boundaries.

In summary, implementing an *Access Management Pl*an that manages the location and density of public and private accesses to the roadway helps to promote the safe and efficient travel of the public and maintains the significant investment the public is making in the road network.

4.0 PROJECT OVERVIEW FOR SELDON ROAD EXTENSION

The extension of Seldon Road from Church Road to Pittman Road is a step toward constructing an east-west corridor connecting Palmer with Houston. The project was divided into two phases for design and construction due to funding constraints. Phase I extends between Church Road and Beverly Lake Road at Windy Bottom Road. Phase II will extend between Phase I and Pittman Road, north of Beverly Lake Road.

Initial studies and planning for the Phase I route were undertaken by the MSB in the 1980s. Based on this work, a 200-foot wide right-of-way (ROW) easement was secured from Church Road to Beverly Lake Road. The Seldon Road extension begins at the intersection of Seldon Road and Church Road, then follows high ground to avoid wetlands until it ties into Beverly Lake Road at Merri Belle Lake Subdivision.

With the exception of three parcels in the Merri Belle Subdivision, construction was through undeveloped lands owned by the State and the MSB.

The alignment for Phase II, between Phase I and Pittman Road, was chosen to minimize right-of-way, utility and construction costs, private property impacts, and environmental impacts. Roadway geometry and access control characteristics were considered for their relative safety benefits. The approved route begins by connection to the end of the Phase 1 alignment near Windy Bottom Road, and extends in a north westerly direction to stay north of Beverly Lake Road, and then sweeps southwest to merge into Pittman Road near Meadow Lakes Elementary School.

The following table outlines traffic projections developed in support of Seldon Road Extension.

Table 1 Traffic Projections for Seldon Road Extension

	Phase I	Phase II
AADT - 2018	3,500	4,400
AADT - 2038	10,752	9,125
Design Hour Volume	9.0%	9.0%
Truck Percentage	4%	4%
Design Speed	55 M.P.H.	55 M.P.H.
AADT = Average Annual Daily Traffic		

4.1 SELDON ROAD – PITTMAN ROAD INTERSECTION

The intersection with Pittman Road is expected to become a signal controlled (or roundabout) intersection in the future. The project had originally envisioned a stop controlled intersection in which Seldon Road would tee into Pittman Road. Upon closer inspection, during access planning, several factors caused us to rethink this layout. Future projected traffic volumes for Seldon Road exceed those for the north leg of Pittman Road by a factor of 2. The intersection was modified to allow Seldon Road traffic to flow directly onto Pittman Road and vice versa south of the intersection, while the north leg of Pittman intersects Seldon Road at a 90 degree angle. The change in the intersection geometry improves performance (level of service) by allowing the majority of traffic to proceed without delay, while also providing a new, safer access option for Meadow Lakes Elementary at a future controlled intersection with Pittman Road.

The proposed intersection configuration minimizes the number of left turns from Seldon Road onto Pittman Road, thereby reducing the number of conflicting movements at the intersection and the risk of the most severe type of collision (angle).

5.0 PROPERTY OWNERSHIP AND PARCEL DATA

Property ownership and parcel data shown in Figure 2 and Figure 3 were developed using data from the MSB GIS Division. Adjacent property is owned by private entities, the MSB and the State of Alaska. New ROW will be acquired from numerous private parcels on the west end of the project and from the MSB Tract at the Church Road intersection.

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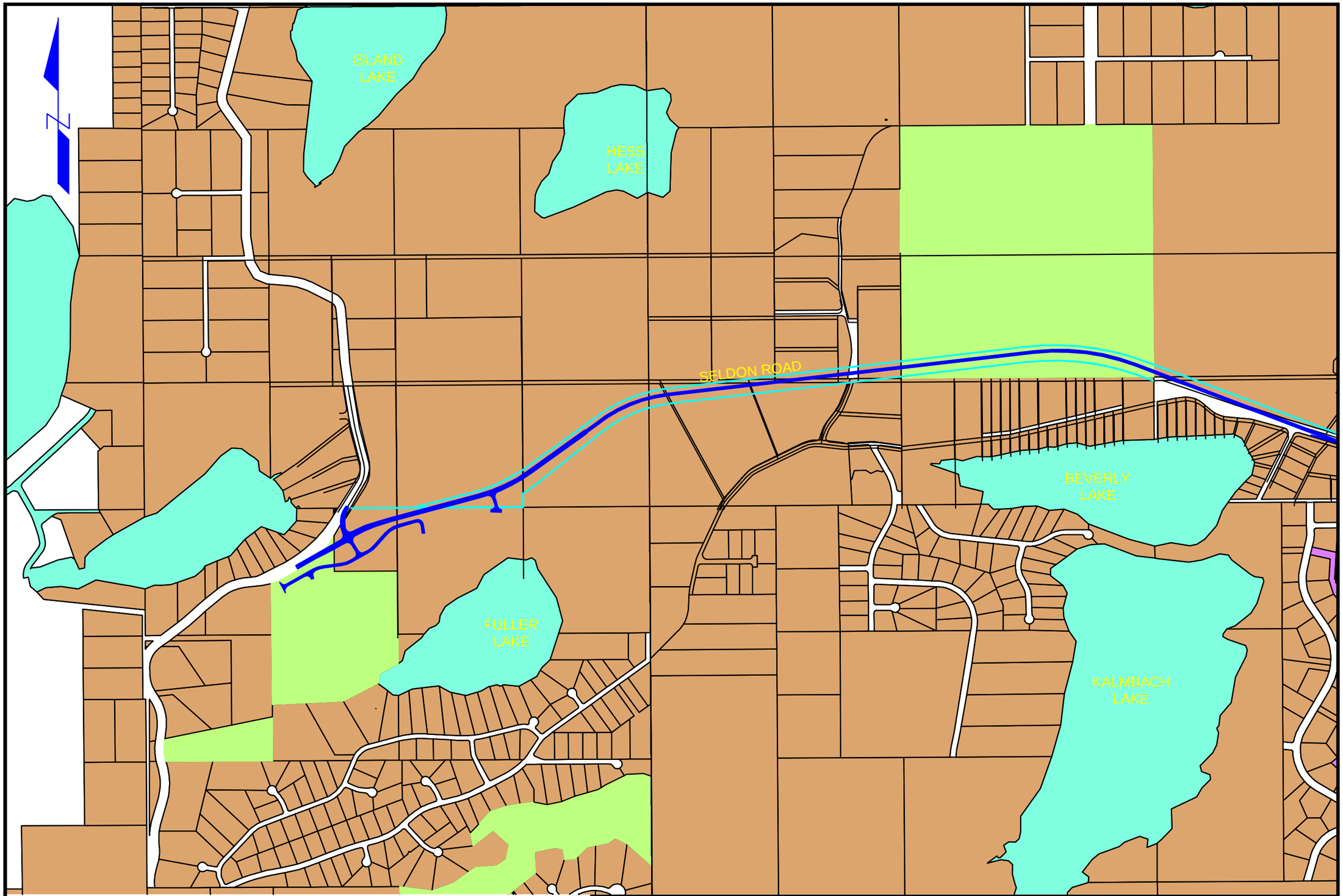
SELDON ROAD EXTENSION
CHURCH ROAD TO PITTMAN ROAD
PROPERTY OWNERSHIP MAP
FIGURE 3

MATANUSKA-SUSITNA BOROUGH
CAPITAL PROJECTS DEPARTMENT



BOROUGH
STATE
PRIVATE
PROPOSED ALIGNMENT
RIGHT OF WAY
0 0.1 0.2 Miles

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SELDON ROAD EXTENSION
CHURCH ROAD TO PITTMAN ROAD
PHASE II PROPERTY OWNERSHIP MAP
FIGURE 4

MATANUSKA-SUSITNA BOROUGH
CAPITAL PROJECTS DEPARTMENT

6.0 ACCESS MANAGEMENT RECOMMENDATIONS

The *Access Management Manual* recommends the following access spacing for rural minor arterials:

Table 2 Minimum Intersection Spacing Guidelines

	Minimum Access Spacing	
	Feet	**Miles**
Signalized Intersection		2
Standard Roundabout Access - No Median	2,640	Min. 1/3, 1/2 preferred
Right-In/Right-Out (w/Median)	1,320	1/4
Directional Median Opening	1,320	1/4

It should be noted that signalized intersections, if provided, need to be spaced at regular intervals. This is necessary to provide efficient progression through the series of signals. The ideal spacing for signals depends on the signal timing plans and desired corridor speed.

Ideally, access to the arterial network would coincide with section or partial section lines (1/4, 1/16, etc.) These lines often already have ROW easements and serve as boundaries between neighboring developments. However, topographic constraints can thwart the use of legal parcel boundaries for roads. That is the case for Seldon Road extension, as wetlands exist on one or both sides of Seldon Road at the 1/4 section lines within the Phase I project area. In addition, the existing accesses at Windy Bottom Road and Wyoming Drive do not occur on any regular section line.

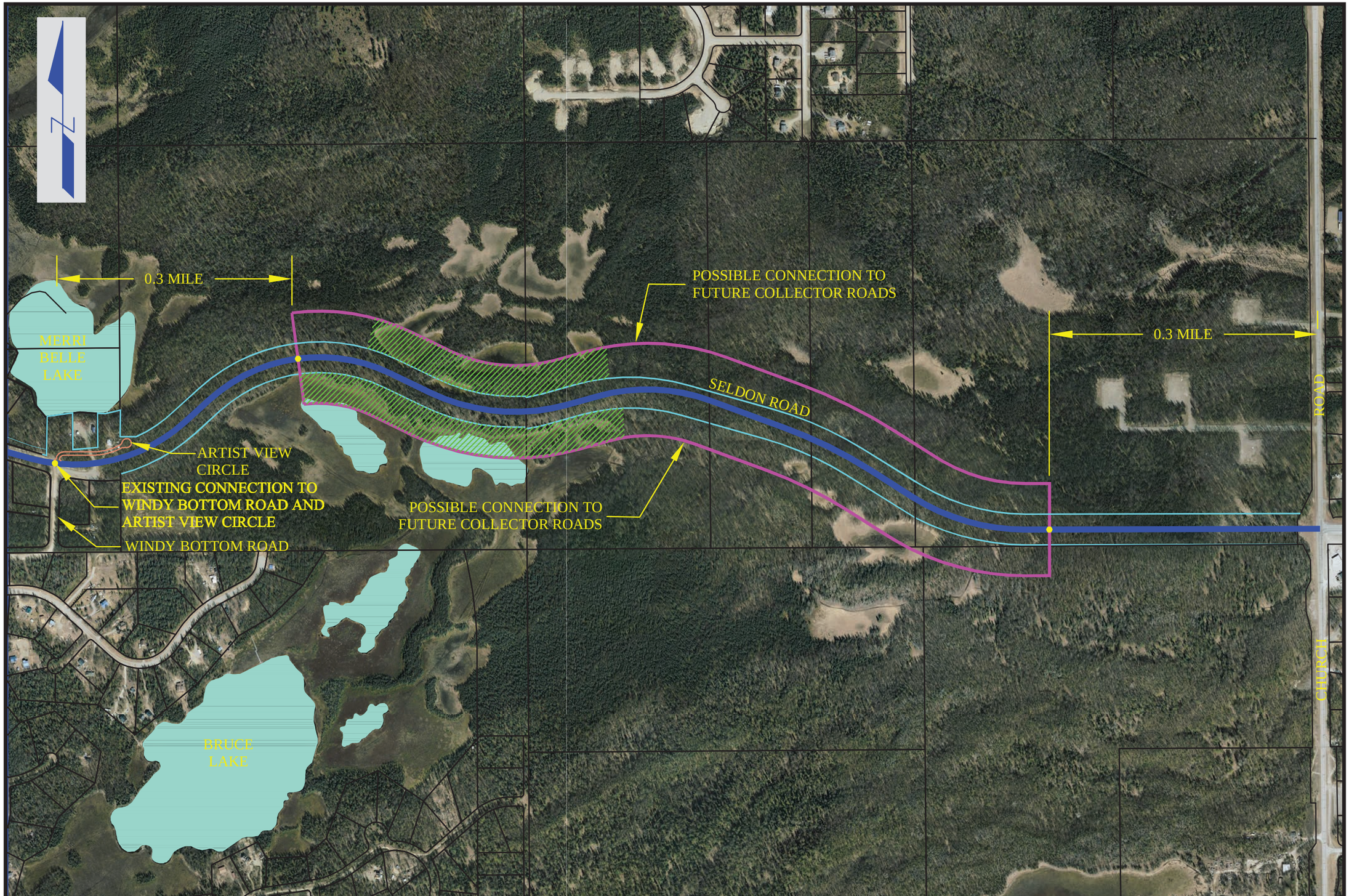
Combining the spacing guidelines listed above and the topographic constraints of the Seldon Road Corridor, the access management recommendations for the corridor are as follows:

1. To maintain uninterrupted traffic flow and minimize safety conflicts, Seldon Road shall have a minimum access spacing of 1/3-mile, and preferably 1/2-mile in areas where specific access points have not been identified in this document
2. Restricted (left-in/right-in/right-out) access may be considered 1/6-mile east of Pittman Road and 1/6-mile west of Church Road if commercial development requires such access.
3. Roads intersecting Seldon Road shall serve more than one development and connect to other access points on the road network. New cul-de-sacs directly off Seldon Road shall be prohibited unless serving an area constrained by topography.
4. Access to Seldon Road shall be limited to public roads, and no new driveways shall be permitted.

5. The undeveloped area beginning 1/3-mile west of Church Road and ending 1/3-mile east of the Windy Bottom Road/Artist View Circle intersection is open to development of collector roads on both the north and south sides of Seldon Road. Development of a Collector Road on either side of Seldon Road should take into consideration the probable development of a collector road on the opposite side of Seldon Road to maintain the minimum 1/3-mile access spacing, although 1/2-mile spacing is preferable.
6. The connection at Windy Bottom Road/Artist View Circle that was constructed under the Seldon Road Phase 1 project shall be maintained. Access to the State of Alaska Department of Natural Resources (DNR) lands may be accessed from the cul-de-sac at the end of Artist View Circle (north of Seldon Road), or from Windy Bottom Road (south of Seldon Road).
7. The driveways from lots 1 through 4 of Merri Belle Subdivision shall connect to the new access road, Artist View Circle. Direct access from these parcels to Seldon Road shall be prohibited.
8. A full access connection to Beverly Lake Road is planned at the section line, approximately 1/2-mile west of the Windy Bottom Road/Artist View Circle intersection. Any future connection to the undeveloped lands to the north shall be made at this intersection. Beverly Drive will not be connected to Seldon Road in order to maintain the minimum spacing.
9. Wyoming Drive will be connected to Seldon Road under the Seldon Extension Phase II project.
10. A future collector road connection may be developed approximately 0.4 miles west of Wyoming Drive if Fishback Road is to be extended along a section line easement. A connection to the north side of the road is possible as well, provided it is directly opposite the Fishback Circle connection.
11. A connection to Zehnder Road and Fuller Lake Subdivision will be made at Monroe Circle. An access to the land north of Zehnder Road is allowable directly opposite the Monroe Circle intersection.
12. The Zehnder Road approach at Pittman Road will be removed.
13. Full access to north Pittman Road will be made from a new 4-way intersection with the south leg and a new frontage road connecting to Zehnder Road and Meadow Lakes Elementary School. Adequate ROW will be reserved for future intersection control, either by traffic signal or roundabout.
14. A frontage road will connect Meadow Lakes Elementary School to Zehnder Road. The existing public access to the school will remain.

Access recommendations for the Seldon Road corridor are depicted in figures 5 and 6.

The existing Church / Seldon intersection is expected to operate with acceptable levels of service through 2025, but will likely need a roundabout or traffic signal after that time. The addition of turn lanes will also reduce delay and enhance traffic safety at the intersection.



PROPOSED ALIGNMENT

RIGHT OF WAY

CONNECTIONS UNLIKELY IN HIGH VALUE WETLANDS

0 0.1 0.2 Miles

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SELDON ROAD EXTENSION
CHURCH ROAD TO PITTMAN ROAD
ACCESS RECOMMENDATIONS
FIGURE 5

MATANUSKA-SUSITNA BOROUGH
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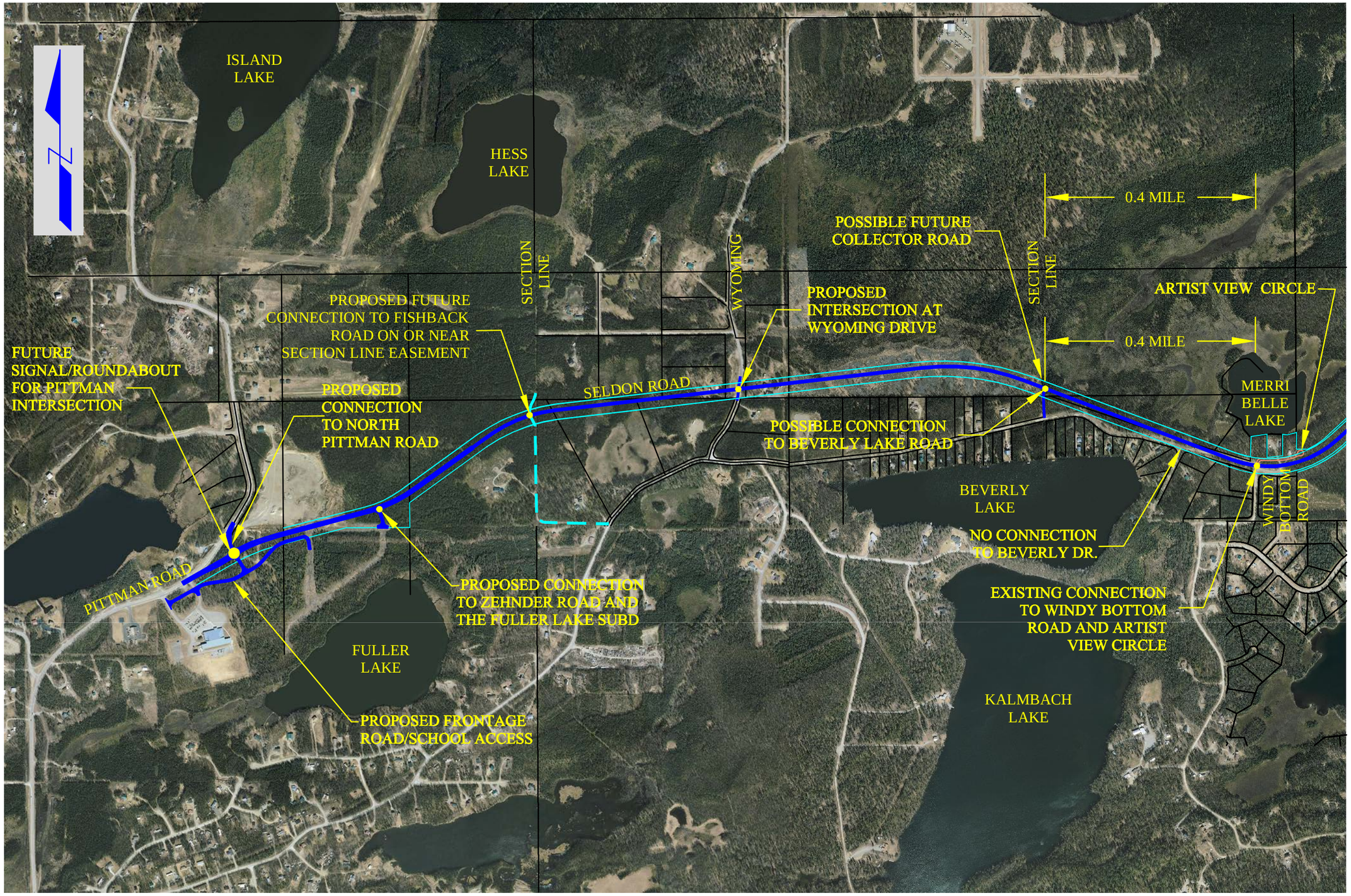

PROPOSED ALIGNMENT

RIGHT OF WAY

0 0.1 0.2 Miles

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SELDON ROAD EXTENSION
CHURCH ROAD TO PITTMAN ROAD
PHASE II ACCESS RECOMMENDATIONS
FIGURE 6

MATANUSKA-SUSITNA BOROUGH
CAPITAL PROJECTS DEPARTMENT

7.0 PUBLIC INVOLVEMENT

During the course of Seldon Road Extension, Phase II project development, the project team received input and provided updates on the Corridor Access Management Plan to the following stakeholders.

Meadow Lakes CC	November 12, 2014	Meadow Lakes Elementary
Open House	November 13, 2014	Meadow Lakes Elementary
Transportation Advisory Board	December 17, 2014	MSB Assembly Chambers
MSB Planning Commission	January 21, 2015	MSB Assembly Chambers
Meadow Lakes CC	May 14, 2015	Meadow Lakes Elementary
Open House	October 20, 2015	Meadow Lakes Elementary
Mat-Su Transportation Fair	October 22, 2015	Menard Sports Center, Wasilla
Transportation Advisory Board	October 28, 2015	MSB Assembly Chambers
MSB Planning Commission	February 1, 2016	MSB Assembly Chambers
Mat-Su Transportation Fair	September 22, 2016	Raven Hall, Alaska State Fairgrounds