



Alaska Department of Transportation & Public Facilities

Juneau-Egan Dr & Yandukin Intersection Improvement Open House

Tuesday, December 12, 2017

Presentation at 5:30 PM

Keep Alaska Moving through service and infrastructure



History of Project

- **Area-wide planning studies**
 - Delay for Left-turn vehicles
 - Sight Distance
 - Connectivity for Pedestrians and Bicycles
- **Construction project**
 - Improved Sight Distance for Left-turners
- **Intersection study**
 - Safety concerns
 - Operational concerns
 - Connectivity for Pedestrians and Bicycles
 - Effect of concepts

Timeline...

- 2001: CBJ – Juneau Area Wide Transportation Plan
- 2003: DOT&PF – West Egan Drive Corridor Study
- 2012: DOT&PF – Egan/Yandukin Intersection Safety Enhancements Project
- 2013: CBJ – Comprehensive Plan of the City and Borough of Juneau
- 2017: CBJ – Draft Lemon Creek Area Plan
- 2017: Egan Dr & Yandukin Intersection Improvement Study

1. Several Area-Wide plans have been completed:

2001 CBJ Area Wide Plan, which considered needs throughout all of Juneau, identified operational concerns for left turns in the PM peak

2003 West Egan Drive Corridor Study (WEDCOR), which looked at operational and safety concerns along Egan Drive from Industrial Boulevard to Yandukin Drive (Fred Meyer), identified same left turn delay and also identified a sight distance concern for left turns. First study to suggest extending the Glacier Highway Spur behind Fred Meyer to the Egan/Glacier intersection near Nugget Mall.

2013 Comprehensive Plan, which is a guide for long-term growth, development, and preservation of valued resources, also promoted extension of Glacier Highway Spur to the Nugget intersection

2017 Draft Lemon Creek Area Plan, which is a closer look at the Comprehensive Plan in the Lemon Creek Area, also promotes extension of Glacier Highway Spur to the Nugget intersection

All of these plans discuss non-motorized connectivity, either across Egan Drive or along Egan Drive.

2. 2012: As part of the many projects DOT&PF has undertaken to address the primary concerns of the WEDCOR study, the 2012 Intersection Safety Enhancements Project made changes that improved the sight distance at the intersection

3. The current DOT&PF project (Egan Drive & Yandukin Intersection Improvement) is the first study targeted at this intersection alone. It is an opportunity to look more closely at what exactly is leading to the concerns at this intersection and the effect that different concepts would have on the surrounding network.



Data Collection

- September and October 2017
 - Safety (crash history from 2005 to 2014)
 - Turning movement counts (5 intersections)
 - Volume and speed counts (6 segments)
 - Origin and Destination study (how people travel to and from Fred Meyer area)
 - Left turn delay
 - Field observations

The project started by collecting information about safety and operations at the intersection to provide more information about the identified safety and operational concerns.



Presenting Tonight:

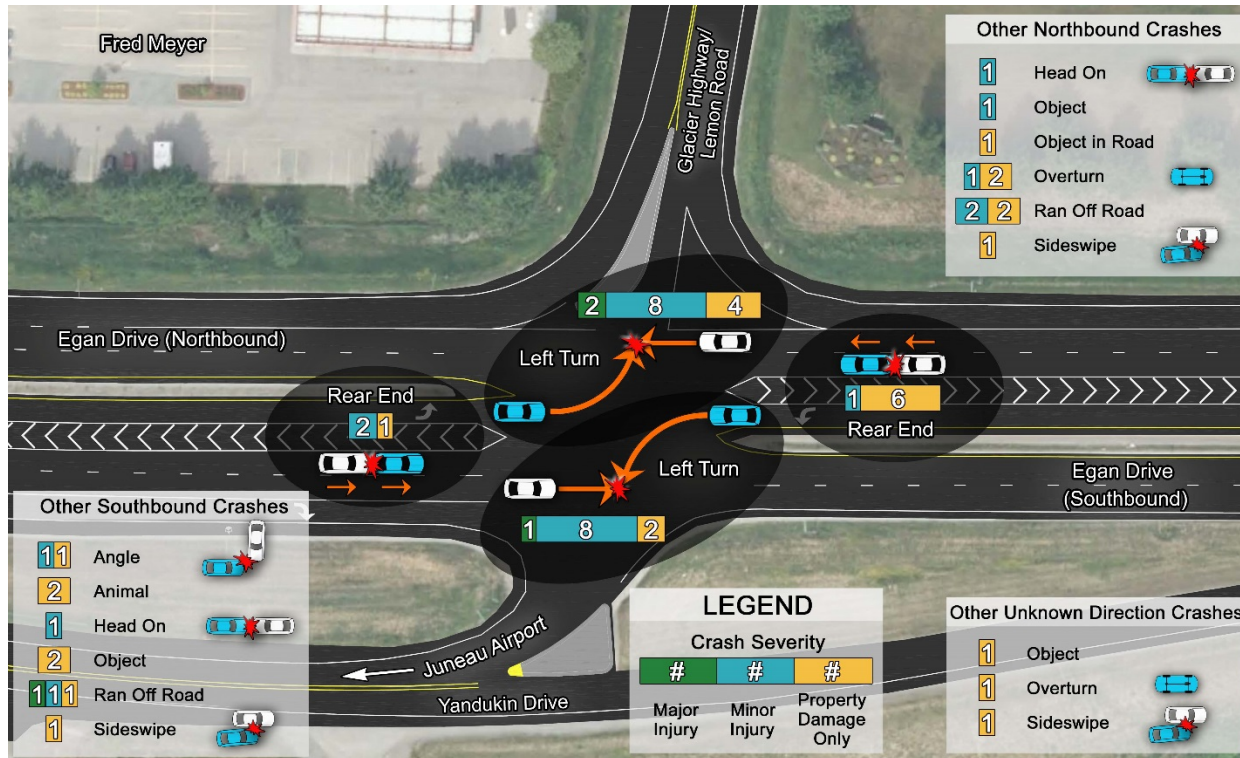
- Safety Concerns
 - Observed crash patterns
- Pedestrians and Bicycles
 - Connectivity
- Delay
 - Left turns
 - Through traffic
- Vehicle travel patterns
 - Out-of-direction travel (when a driver travels an indirect route, either because of a barrier or by choice.)

This presentation discusses the main concerns that were identified during the data analysis.

We are asking for the public to comment on these concerns and any others the public experiences at this intersection.

We are also asking for comments about how to reduce or eliminate these concerns.

Crash History (2005 to 2014)

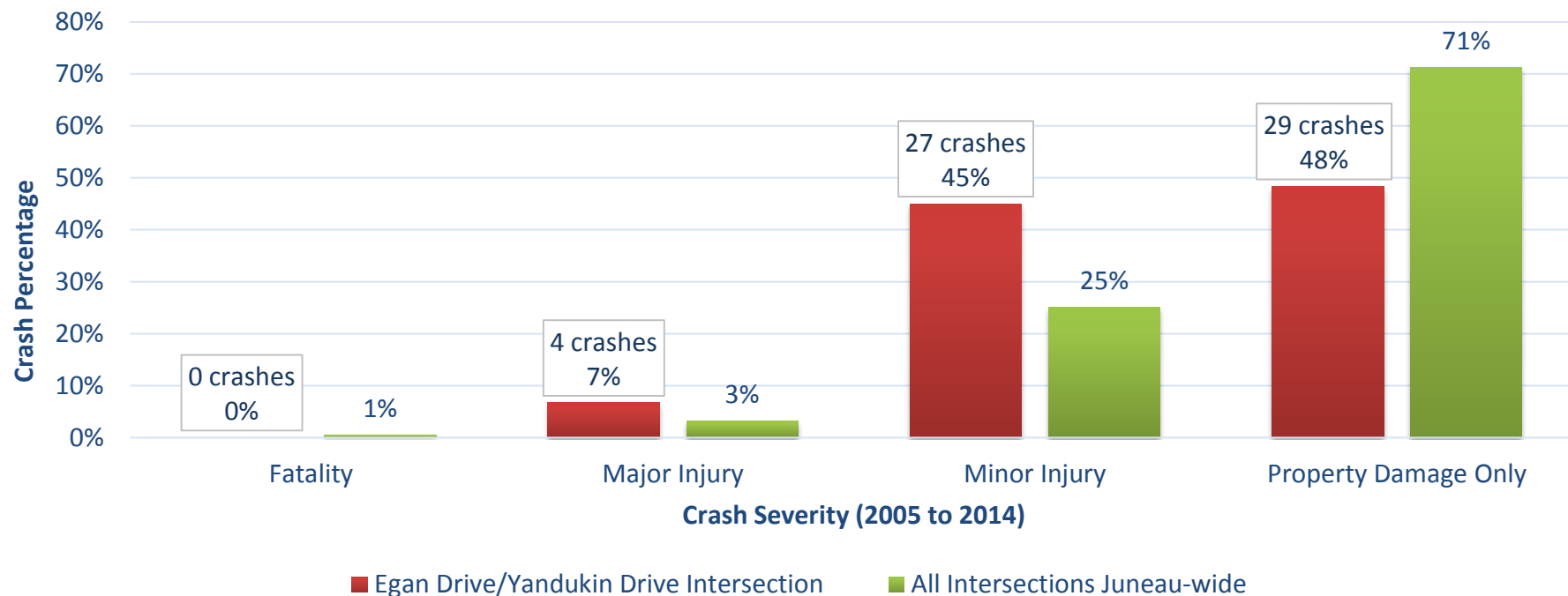


- There were 60 crashes at the intersection during the 10-year period from 2005 to 2014.
- The primary crash concerns at the intersection are left turn crashes and injury crashes.
- The left turn crashes occur both for vehicles turning left to access the Fred Meyer and for vehicles turning left to access the Airport.
- 19 of the 25 left turn crashes resulted in injuries to at least one person.
- The left turn crashes appear to be caused by difficulty in judging breaks in the oncoming traffic.

Crash Severity Definitions:

- **Major injury:** Crash that results in one or more persons being hospitalized
- **Minor injury:** Crash that does not result in any hospitalizations, but where there are injuries
- **Property Damage Only:** Crash that results in no injuries; only the vehicles involved or roadway infrastructure is damaged.

Severity of Crashes

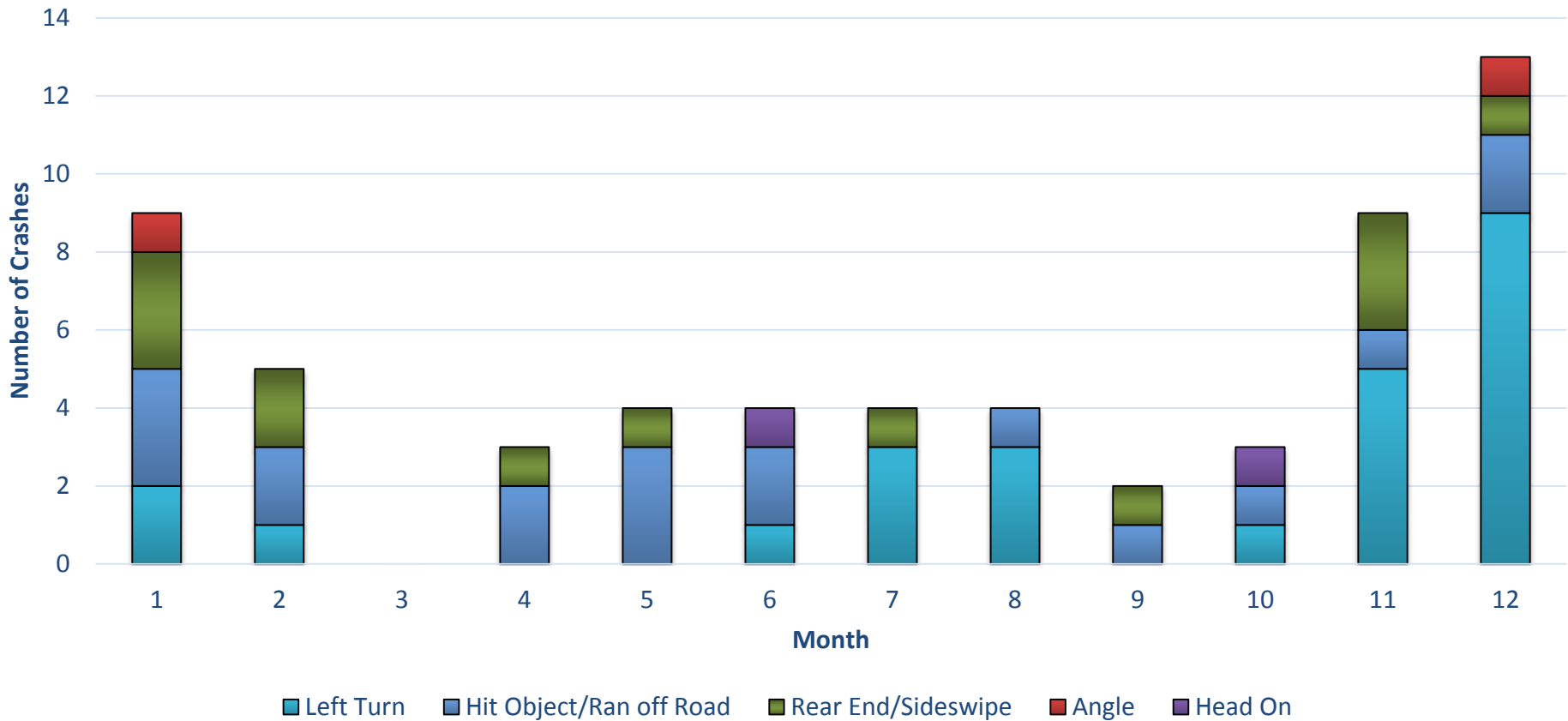


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Compared to all crashes that occurred in Juneau from 2005 through 2014, a higher percentage of crashes at the Fred Meyer intersection of Egan Drive at Yandukin result in injuries.

Type of Crash by Month of Year



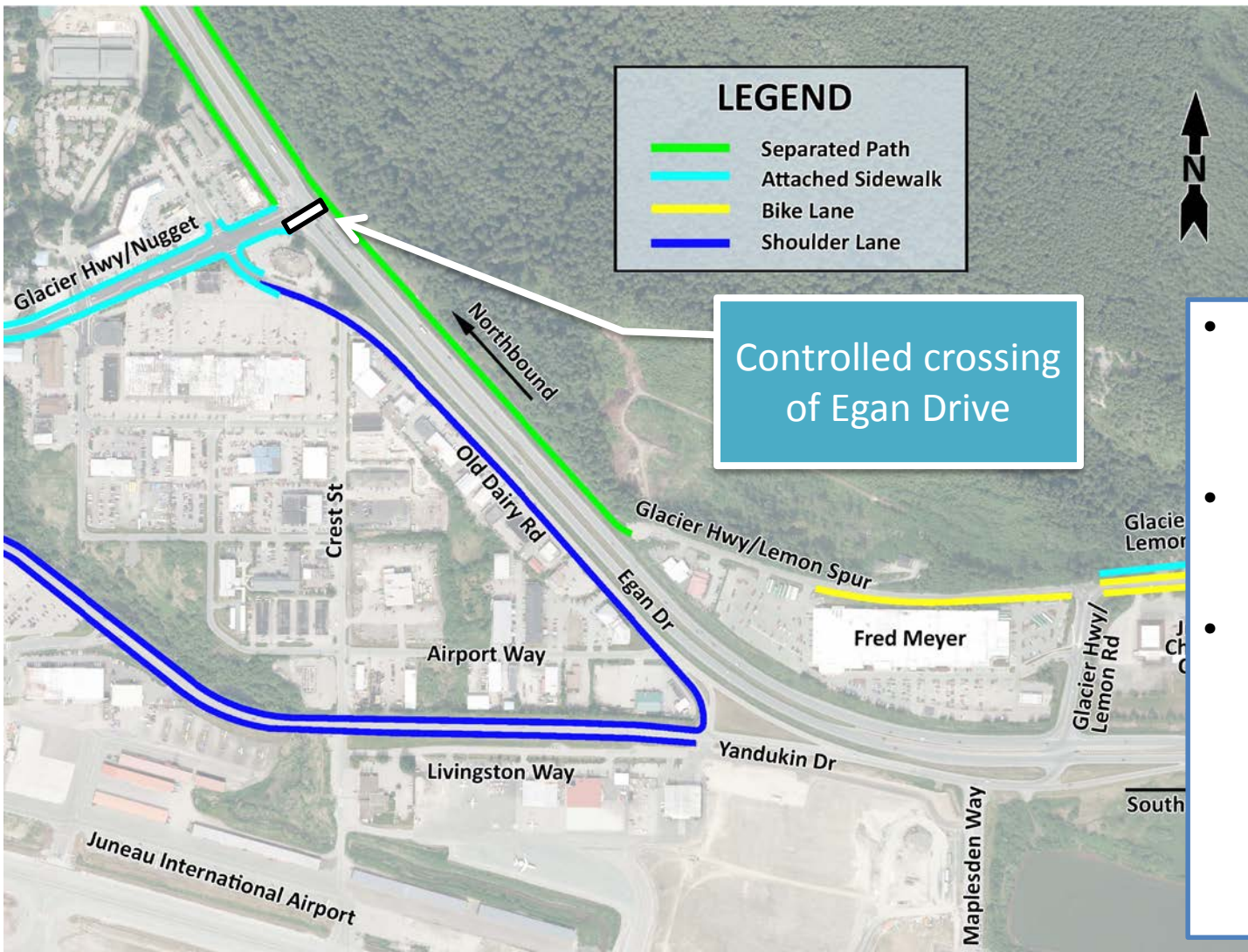
Left turn crashes appear to be more common in November and December than at other times of the year.



Engineering Countermeasures

- Control Left Turns with a Signal
 - Decreases higher-injury left turn crashes
 - May increase lower-injury rear end crashes
 - Will introduce delay to Egan Drive traffic
- Eliminate Left Turns
 - Prohibits left turns at the intersection
 - May increase out-of-direction travel
- Separate Left Turns from Through Traffic
 - Bridge to provide physical separation
 - High construction costs

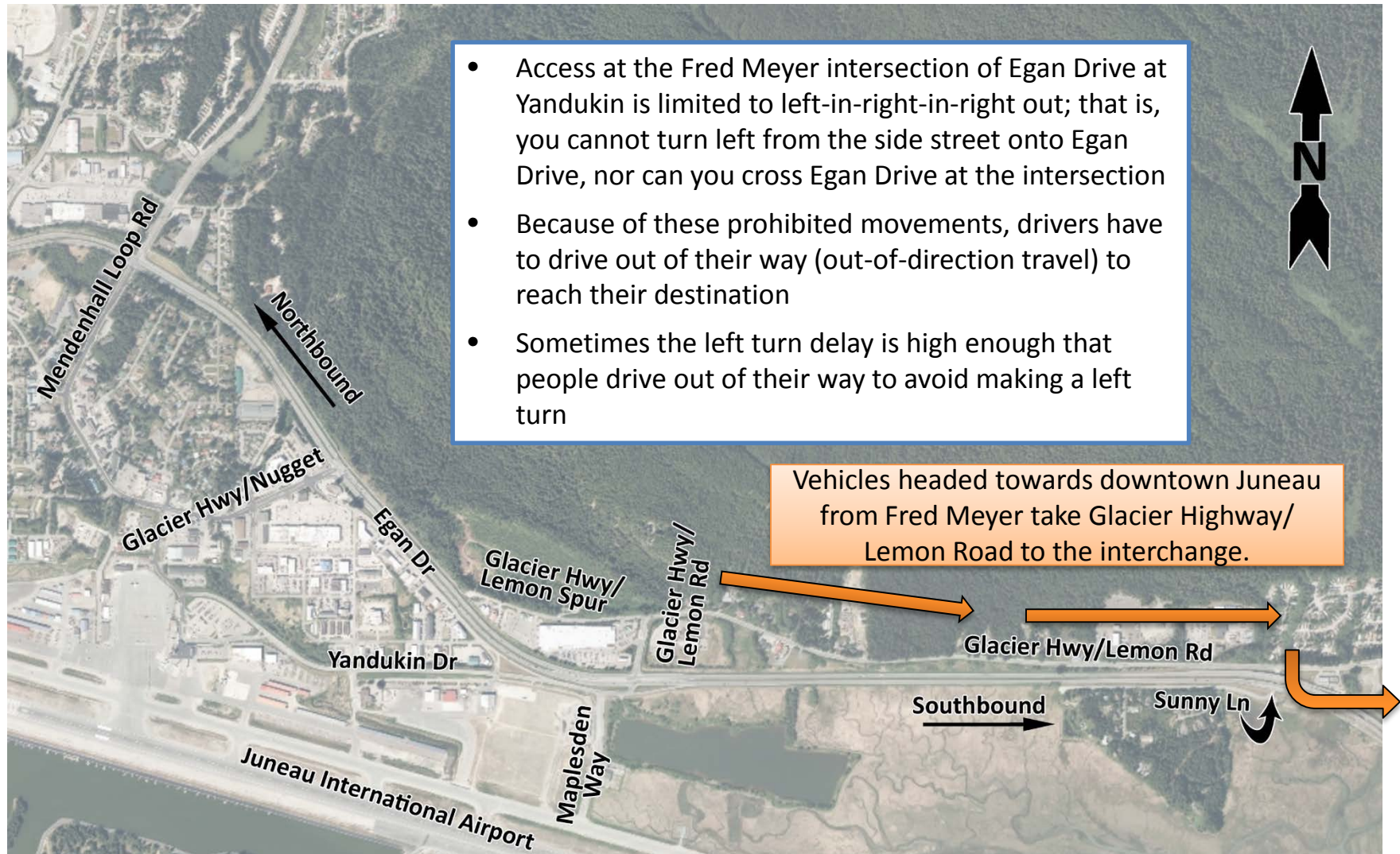
Other Concerns – Pedestrians and Bicycles



- There is a good pathway system for traveling along the north-east side of Egan Drive.
- There is a good pathway system for travel along Glacier Highway/Nugget
- Between the Fred Meyer and the area around the Airport, pedestrians and bicyclists travel out-of-direction to cross Egan Drive at Glacier Highway/ Nugget where there is a controlled crossing

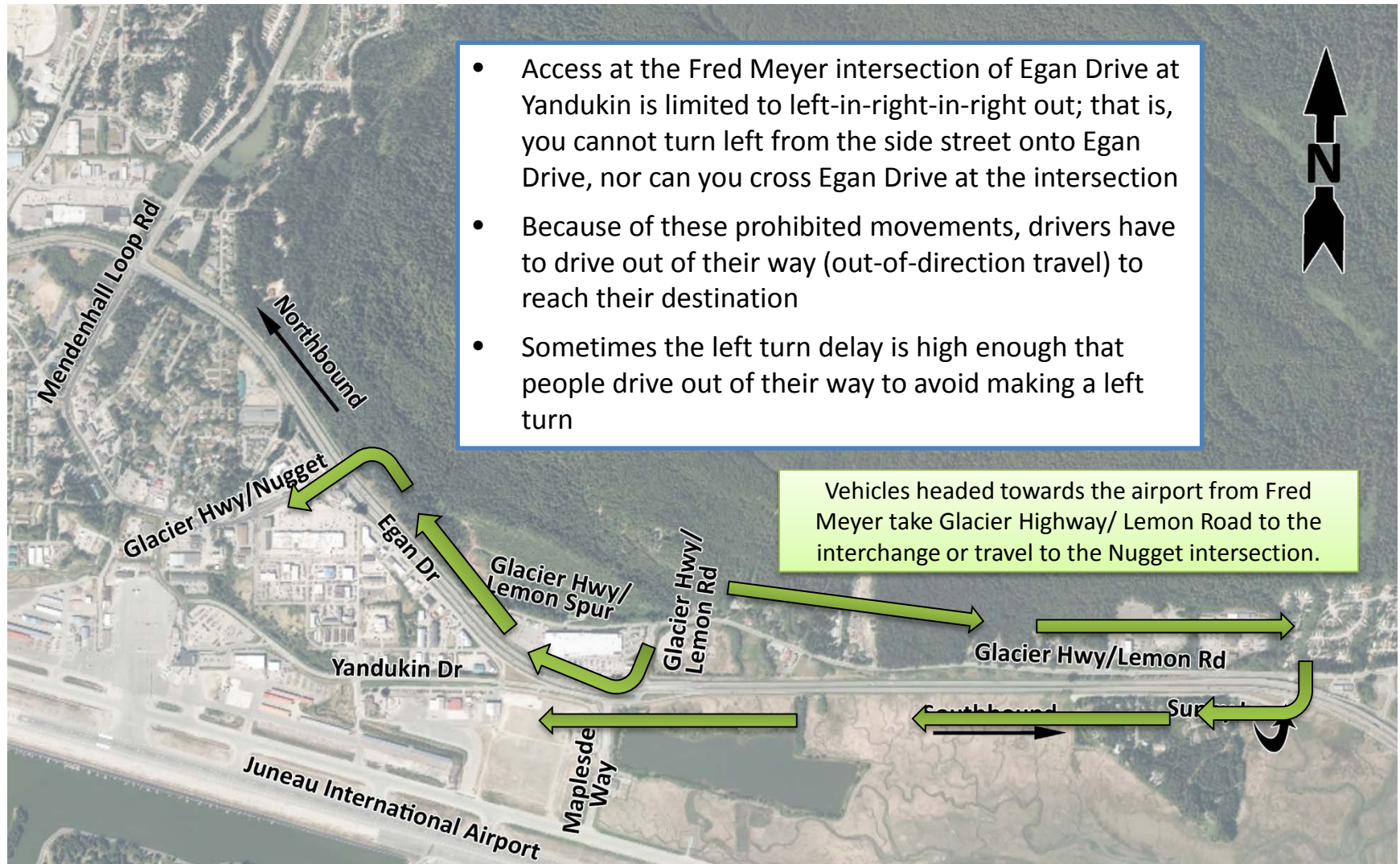
Other Concerns – Vehicle Out-of-Direction Travel

- Access at the Fred Meyer intersection of Egan Drive at Yandukin is limited to left-in-right-in-right out; that is, you cannot turn left from the side street onto Egan Drive, nor can you cross Egan Drive at the intersection
- Because of these prohibited movements, drivers have to drive out of their way (out-of-direction travel) to reach their destination
- Sometimes the left turn delay is high enough that people drive out of their way to avoid making a left turn



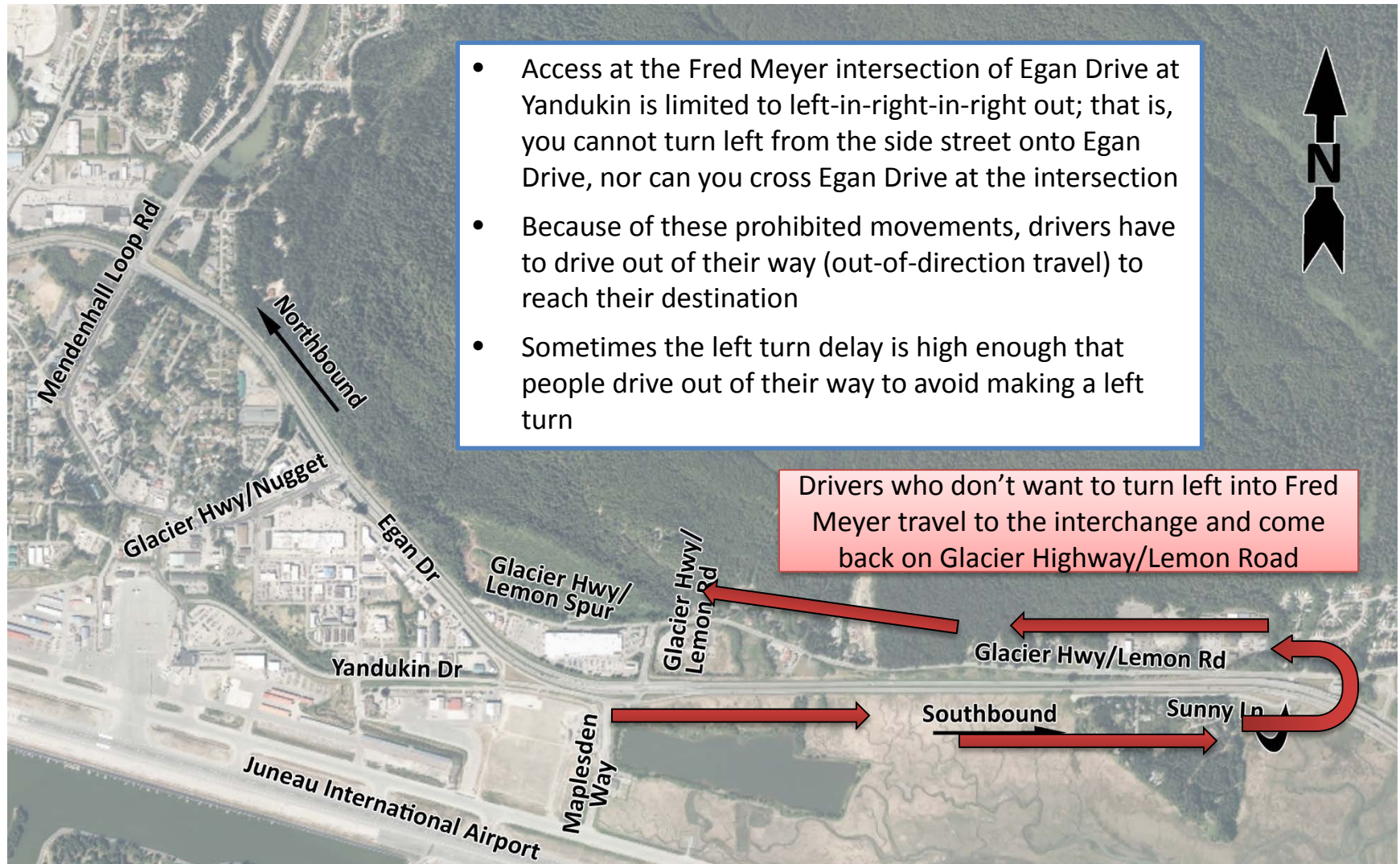
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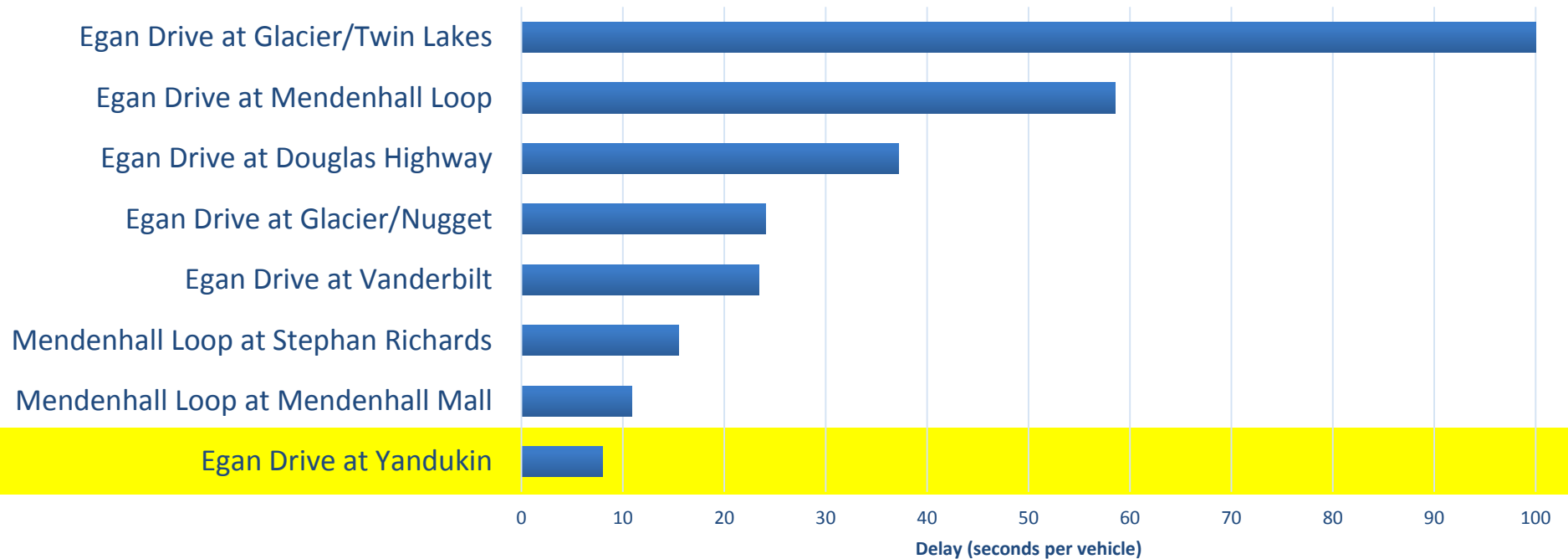
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Other Concerns – Delay on Egan Drive

PM Peak Average Vehicle Delay



The Egan Drive-Fred Meyer intersection experiences significantly less average delay per vehicle than many signalized intersections in Juneau. At the Fred Meyer intersection, the only movement that experiences delay is the left turns from Egan Drive. In the evening, the delay for left turns can be quite high (70 seconds per vehicle on average), but all other movements experience no delay, resulting in an average of about 8 seconds of delay per vehicle for all vehicles combined.



Summary of Concerns

- Left turn crashes due to difficulty in judging breaks in oncoming traffic
- Gaps in pedestrian and bicycle network
- Vehicle out-of-direction travel due to limited access at the intersection
- Desire not to increase delay to Egan Drive traffic

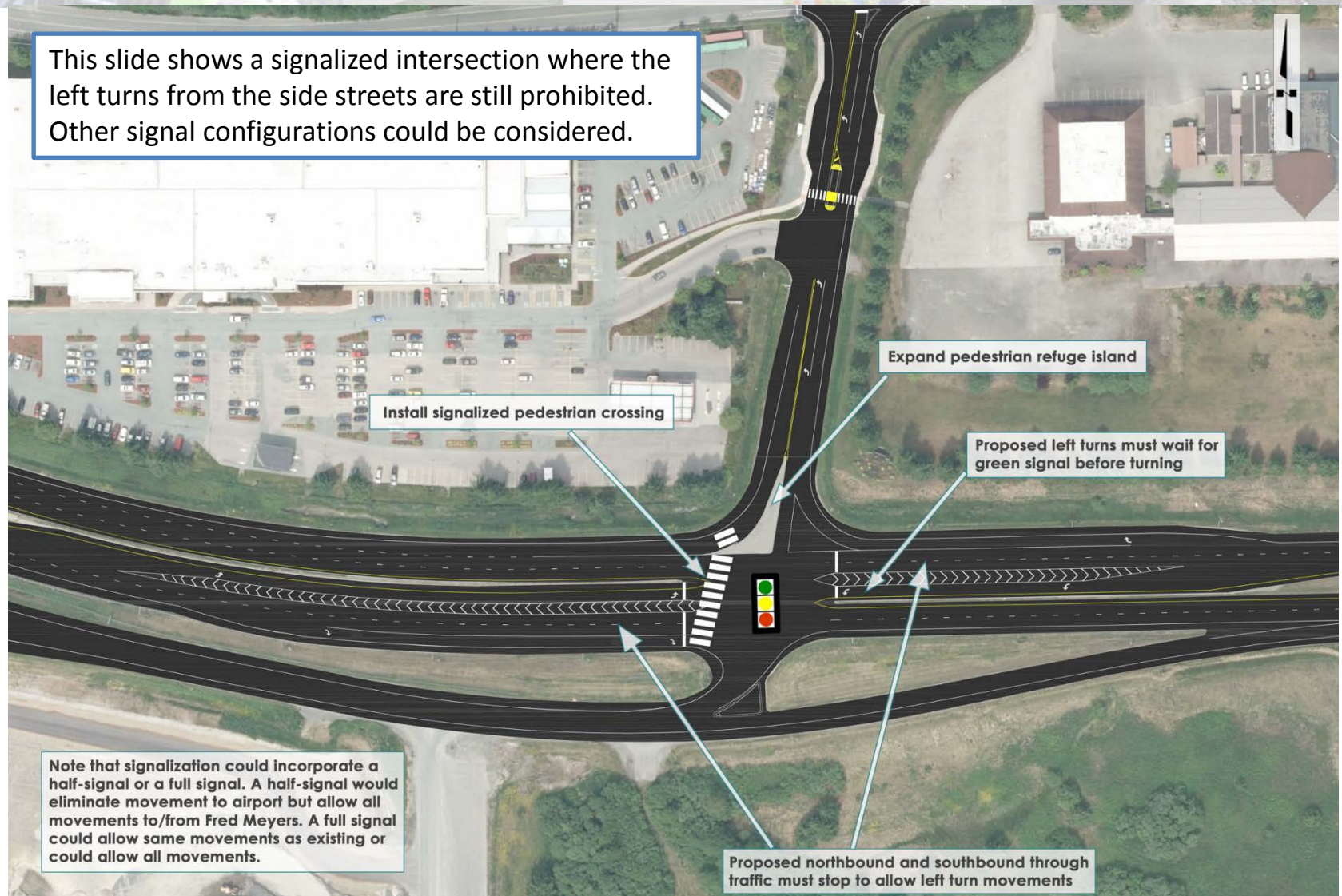


Improvement Concepts

- A: Control Left Turn Movements (Signalize Intersection)
- B: Eliminate Left Turn Movements (Create Four-Way Intersection at Egan Drive & Glacier Highway/Nugget)
- C: Separate Left Turn Movements (Build Grade-Separated Interchange)

Concept A

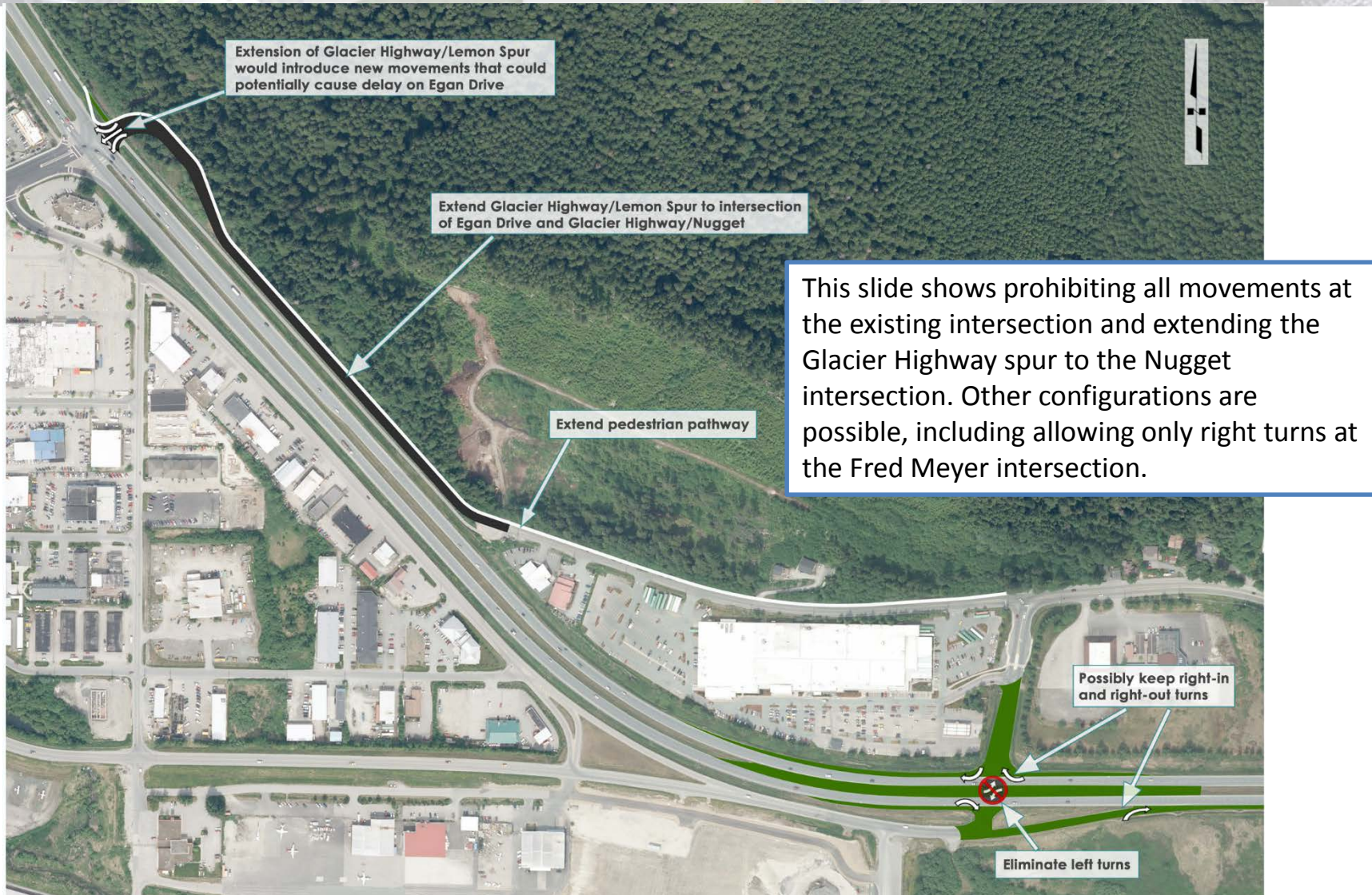
This slide shows a signalized intersection where the left turns from the side streets are still prohibited. Other signal configurations could be considered.



Note that signalization could incorporate a half-signal or a full signal. A half-signal would eliminate movement to airport but allow all movements to/from Fred Meyers. A full signal could allow same movements as existing or could allow all movements.

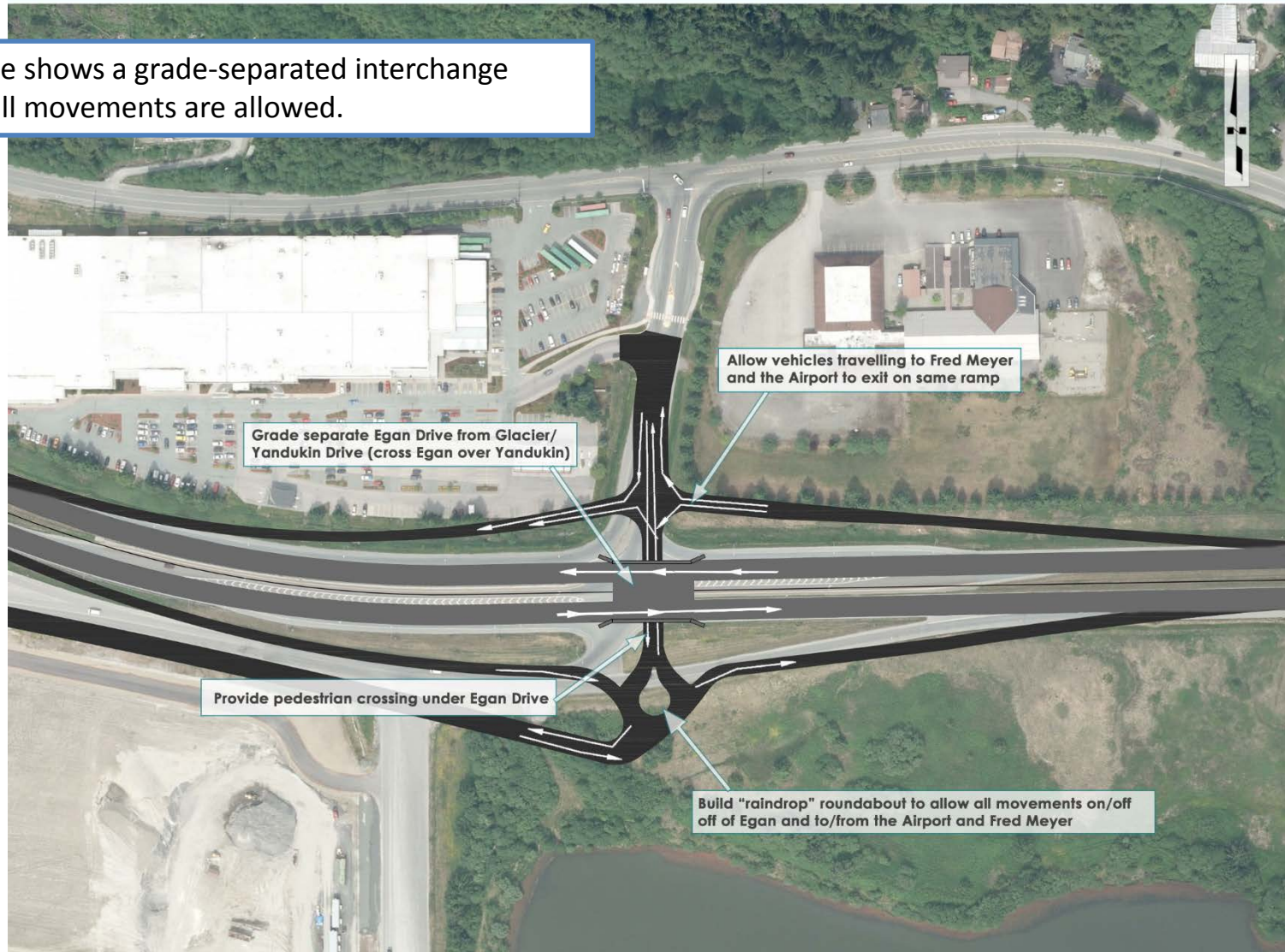
Proposed northbound and southbound through traffic must stop to allow left turn movements

Concept B



Concept C

This slide shows a grade-separated interchange where all movements are allowed.





Safety

- Concept A (Signal)
 - Reduces left turn and injury crash potential
 - Increases rear end crash potential
- Concept B (Eliminate Left Turns – Extend Glacier Highway to Nugget Intersection)
 - Eliminates all left-turn crashes at Fred Meyer
 - May increase crash potential at Nugget
- Concept C (Grade Separated Interchange)
 - Reduces crash potential for ALL crash types



Delay

- Concept A (Signal)
 - Reduces left turn delay in peak volume periods
 - Increases delay for Egan through traffic all day
- Concept B (Eliminate Left Turns – Extend Glacier Highway to Nugget Intersection)
 - May increase delay at the Nugget intersection
- Concept C (Grade Separated Interchange)
 - Reduces delay to left turns
 - No increase in delay to Egan through traffic



Other

- Concept A (Signal)
 - Mid-range costs
 - Improved pedestrian crossing
 - Could reduce out-of-direction travel
- Concept B (Eliminate Left Turns – Extend Glacier Highway to Nugget Intersection)
 - Relatively high cost
- Concept C (Grade Separated Interchange)
 - Relatively high cost
 - Improved pedestrian crossing
 - Reduces out-of-direction travel



Please submit your comments!
Comment forms are available on
the project website:

<http://dot.alaska.gov/sereg/projects/egan-yandukin/>