

**Section 2 - Chapter 7**

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Phased Implementation Plan





## 7 Phased Implementation Plan

This chapter describes the recommended phased implementation plan for the Department's Proposed Action for the West Egan Drive Corridor (WEDCOR) through the year 2025. It identifies a sequence of transportation improvements that could be implemented in phases through the next 20 years. Its advantages are to allow ADOT&PF to respond to actual traffic demand as it occurs and to pace out the cost and construction over time.

### Methodology

Before developing this implementation plan, the project team identified elements of the Proposed Action that should be built in the near term (prior to 2015) as well as longer-term improvements (2015 to 2025). The interim forecast assumes no changes to the existing roads to accommodate estimated increases in weekday morning and evening peak hour traffic. The report does, however, identify locations, or "hot spots" where improvements consistent with the Proposed Action are needed by 2015 to maintain acceptable traffic operations.

Transportation system improvements consistent with the Department's Proposed Action were then identified for these locations. These were developed from a system perspective to ensure that the combined effects of each individual improvement project will result in a safe and efficient system, while still mitigating the identified local deficiency. The proposed implementation plan recommends an order of construction for these interim projects, the exact timing of which may vary depending on funding availability and actual traffic volume growth in the study area.

Year 2015 projected no-build weekday a.m. and p.m. peak hour volumes assume a linear growth rate between years 2002 and 2025 (see the Technical Memorandum in the Chapter 3 Appendix for the traffic volumes for these years). The evaluation of 2015 no-build traffic operations assumes the existing roadway network and traffic signal timings.

Based on this analysis, the following "hot spot" intersections are likely to require attention by the year 2015 (see Figure 7-1):

- Glacier Highway/Industrial Boulevard
- Egan Drive/Glacier Highway (North)
- Egan Drive/Mendenhall Loop Road
- Egan Drive/Glacier Highway (McNugget)
- Egan Drive/Yandukin Drive

In addition, motorists traveling onto Glacier Highway (Airport) at unsignalized intersections such as those at Old Dairy Road/Trout Street and Berners Avenue will experience excessive delays during the evening peak hour.

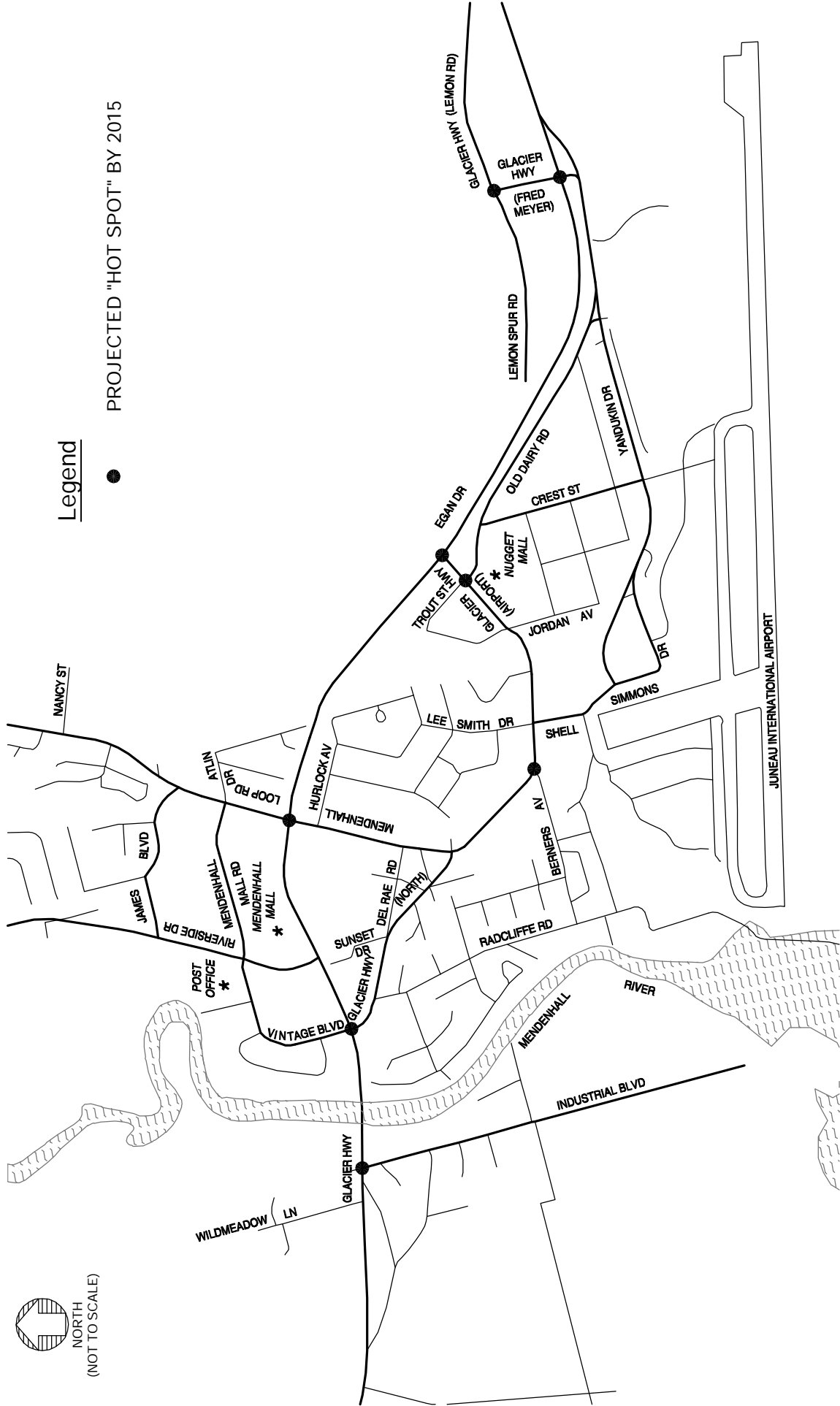


NORTH  
(NOT TO SCALE)

Legend



PROJECTED "HOT SPOT" BY 2015



# 2015 NO-BUILD TRAFFIC CONDITIONS

## West Egan Drive Corridor Study

Alaska Department of Transportation & Public Facilities

DATE  
JULY 2003

FIGURE  
**7-1**

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## Implementation Plan

For purposes of the implementation plan analysis, the WEDCOR study area is divided into subareas surrounding each of the individual projects. Geographically, generally west to east, the subareas are:

- Industrial Boulevard area and Brotherhood Bridge
- Vintage Boulevard to Mendenhall Loop Road
- Egan Drive/Glacier Highway (McNugget)
- Egan Drive/Yandukin Drive
- Mendenhall Loop Road/Glacier Highway (Airport) area
- Other improvements off Egan Drive

The project team investigated each subarea from a traffic operations and construction point of view. The intent of this investigation was to identify interim projects that would address the projected operational deficiencies while postponing (if possible) the building of expensive infrastructure such as bridges, retaining walls, and high fills. In addition, efforts were undertaken to ensure that each significant interim project will have, wherever possible, an expected life of at least ten years so that the disruptive community effects of construction activities are minimized.

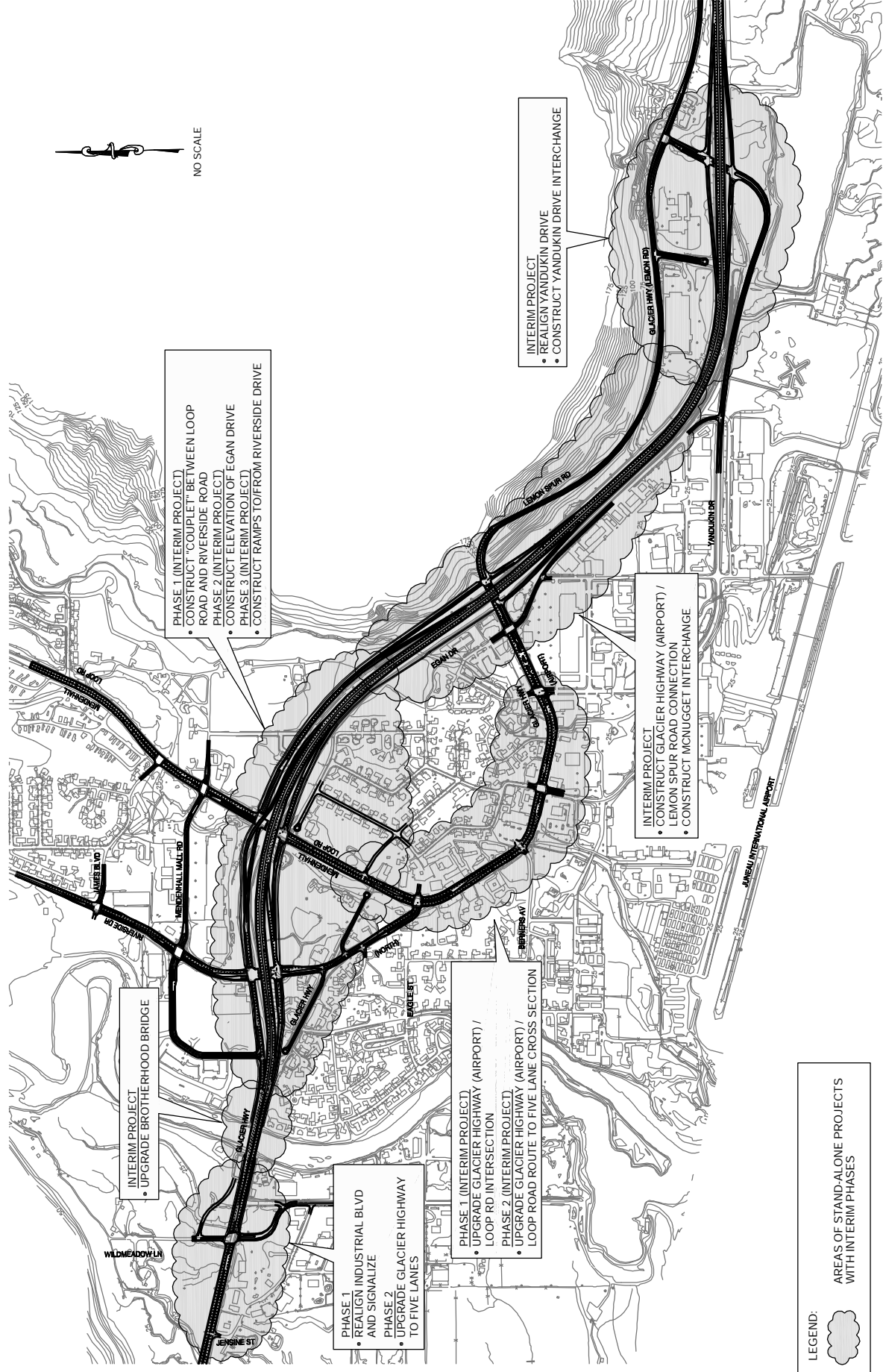
Figure 7-2 summarizes the proposed implementation plan. Each subarea includes a number of interim projects, and some subareas also include a recommended staging plan (two or more phases) for building the specified interim projects. Following the summaries of the recommendations, Appendix A describes proposed construction staging of some of the larger and more complex interim projects to be built by 2015. Appendix B summarizes their estimated costs, without adjustments for inflation.

Where possible, it will be important for ADOT&PF to acquire the right-of-way necessary to construct the interim improvements and proposed action. These activities would begin to occur immediately following formal approval of the environmental documentation.

### **Industrial Boulevard Area and Brotherhood Bridge**

By 2015, the intersection of Glacier Highway/Industrial Boulevard will need some type of signal improvement. However, this alone will not address the problem of the undesirable steep approach grade of the south leg of the intersection, insufficient vehicle storage space in the westbound left-turn lane, and/or the intersection's proximity to the Brotherhood Bridge. Since the Department's Proposed Action includes relocating this intersection to the west, any signal improvements will be temporary in nature and will be removed when Industrial Boulevard is realigned to align with Wildmeadow Lane.

To order to avoid the throw-away costs of a temporary signal and address the identified safety concerns, we recommend the improvements be constructed in these two phases:



**PHASED IMPLEMENTATION PLAN  
 DEPARTMENT'S PROPOSED ACTION**

West Egan Drive Corridor Study

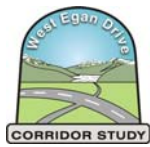
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FIGURE 7-2

SHEET 1 Of 1

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- Phase 1: Realign Industrial Boulevard to the west opposite Wildmeadow Lane, keeping the existing three-lane Glacier Highway. Place the signal poles to accommodate the future (2025) five-lane Glacier Highway. **Estimated cost to relocate the Industrial Boulevard intersection, with signalization: approximately \$2.3 million.**
- Phase 2: Replace Brotherhood Bridge and widen Glacier Highway to five lanes. **Estimated construction cost to upgrade Brotherhood Bridge, widen Glacier Highway to five lanes: approximately \$18.5 million.**

### **Vintage Boulevard to Mendenhall Loop Road**

The three intersections of Egan Drive with Vintage Boulevard, Riverside Drive, and Mendenhall Loop Road should be examined as a group as they are so close to one another. The following discussion presents an independent evaluation of each intersection, followed by a suggested phasing program to accommodate incremental traffic growth over the next 20 years.

- *Vintage Boulevard/Glacier Highway (North):* In order to maintain access to the surrounding neighborhood, the intersection of Glacier Highway (North)/Egan Drive can only be closed concurrently with the extension of Riverside Drive south of Egan Drive.
- *Riverside Drive:* Extending Riverside Drive south of Egan Drive to align with Glacier Highway (North) adds a northbound approach to an intersection already operating near capacity. An improvement at this intersection alone is likely to cause future capacity problems. Moreover, it is not cost-effective to add lanes to the existing at-grade intersection, as the Proposed Action calls for a grade-separated intersection at this location. An isolated improvement at this location is therefore not recommended.
- *Mendenhall Loop Road:* The Egan Drive/Mendenhall Loop Road intersection is currently congested during the weekday peak periods and, as described above, projected to be over capacity in the 2015 weekday a.m. and p.m. peak hours. The Proposed Action for this intersection identifies a grade-separated interchange. Adding temporary lanes to accommodate 2015 peak hour conditions is not cost-effective.

As improvements to individual intersections in this subarea are neither cost effective nor consistent with the Proposed Action, the project team recommends a three-phased construction sequence for the three intersections as a group, as shown in Figure 7-3 and described below:

#### *Phase 1: Couplet between Mendenhall Loop Road and Riverside Drive*

This first phase entails the construction of frontage roads, which also would be the boundaries of the Department's Proposed Action. Egan Drive traffic is divided between a pair of one-way frontage roads, with westbound traffic on the north and eastbound traffic on the south. This is expected to be an interim solution to traffic problems through approximately 2015 and thus allow the ADOT&PF to postpone more expensive items, such as bridges, retaining walls, and high fills. Although the number of traffic signals is doubled, from two to four, the new signals will serve fewer movements and thus can be operated more efficiently than the existing signals. This first phase also includes extending Riverside Drive; closing off Glacier Highway (North) at Egan Drive; relocating the Hurlock Avenue access; and closing Del Rae Road at Mendenhall Loop Road. **Estimated construction cost: approximately \$9.8 million.**



Extending Riverside Drive south of Egan Drive increases traffic on Glacier Highway (Airport), especially at the Glacier Highway (Airport)/Mendenhall Loop Road/Glacier Highway (North) intersection. As a result, this intersection should be signalized with the extension of Riverside Drive, and the placement of the signal poles should accommodate the ultimate design of the intersection. **Estimated cost to signalize the intersection: approximately \$0.8 million.**

#### *Phase 2: Elevate Egan Drive*

The second phase consists of building the bridges, fills, and potential retaining walls necessary to elevate Egan Drive over Mendenhall Loop Road and Riverside Drive. It will be done after the intersections of eastbound and westbound Egan Drive with Mendenhall Loop Road are overloaded due to high through traffic on Egan Drive. As the area where Egan Drive is raised is clear of traffic (due to the frontage road construction of Phase 1), this phase can be constructed relatively quickly, with minimal adverse impact on traffic. **Estimated cost: approximately \$24.6 million.**

#### *Phase 3: New Ramps to/from Riverside Drive and Downtown*

This will be built when the Egan Drive/Mendenhall Loop Road ramp terminals can no longer handle the traffic to both Mendenhall Loop Road and Riverside Drive. The construction would have minimal impact on the traffic patterns. **Estimated cost: approximately \$6.4 million.**

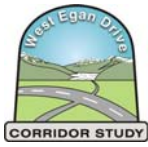
### **Egan Drive/Glacier Highway (McNugget)**

Due to the expected high through traffic volume on Egan Drive, it does not appear that any interim solution would work for more than five years. The project team investigated the possibility of creating a four-legged intersection by constructing the Lemon Spur Road connection and allowing full traffic movements (e.g. left, through and right turns to and from all approaches). However under the Proposed Action, motorists will not be able to access Egan Drive to and from the west via the Glacier Highway (Airport)/Lemon Spur intersection. The addition of traffic movements during an interim phase that are later removed as part of the Proposed Action is undesirable. Therefore it is recommended that the intersection be upgraded in one phase, as outlined in the Proposed Action.

During the construction period, turning movements to and from Egan Drive will need to be restricted (Appendix A). It will still be necessary to maintain access to area businesses and residences. Therefore, it is necessary to build the Yandukin Drive interchange prior to upgrading the Egan Drive/Glacier Highway (McNugget) intersection. By allowing the full exchange of traffic in all directions, the Yandukin Drive interchange will be a critical alternate route during the construction of the Egan Drive/Glacier Highway (McNugget) interchange. **Estimated construction cost: approximately \$12.5 million.**

### **Egan Drive/Yandukin Drive**

The Egan Drive/Yandukin Drive interchange is an independent project that can be built any time during the implementation plan of the Proposed Action. However, as noted previously, to maintain anticipated travel patterns during the construction of the Egan Drive/Glacier Highway (McNugget) interchange, the Yandukin interchange should be built before the Egan Drive/Glacier Highway (Airport) interchange. This also will extend the operational life of the



Egan Drive/Glacier Highway (Airport) intersection, due to the left turn access to and from Egan Drive and Yandukin Drive. The intersection of Glacier Highway (Lemon Road)/Glacier Highway (Fred Meyer) intersection would be signalized with construction of the Yandukin Interchange. **Estimated construction cost: approximately \$16.0 million.**

### **Mendenhall Loop Road/Glacier Highway (Airport) area**

As noted previously, the intersection of Glacier Highway (Airport)/Mendenhall Loop Road/Glacier Highway (North) will need to be signalized with the extension of Riverside Drive. Between 2015 and 2025, Glacier Highway (Airport) will need to be widened to five lanes. **Estimated cost to widen the Glacier Highway (Airport)/Mendenhall Loop Road route to five lanes: approximately \$14.4 million.**

### **Other Improvements**

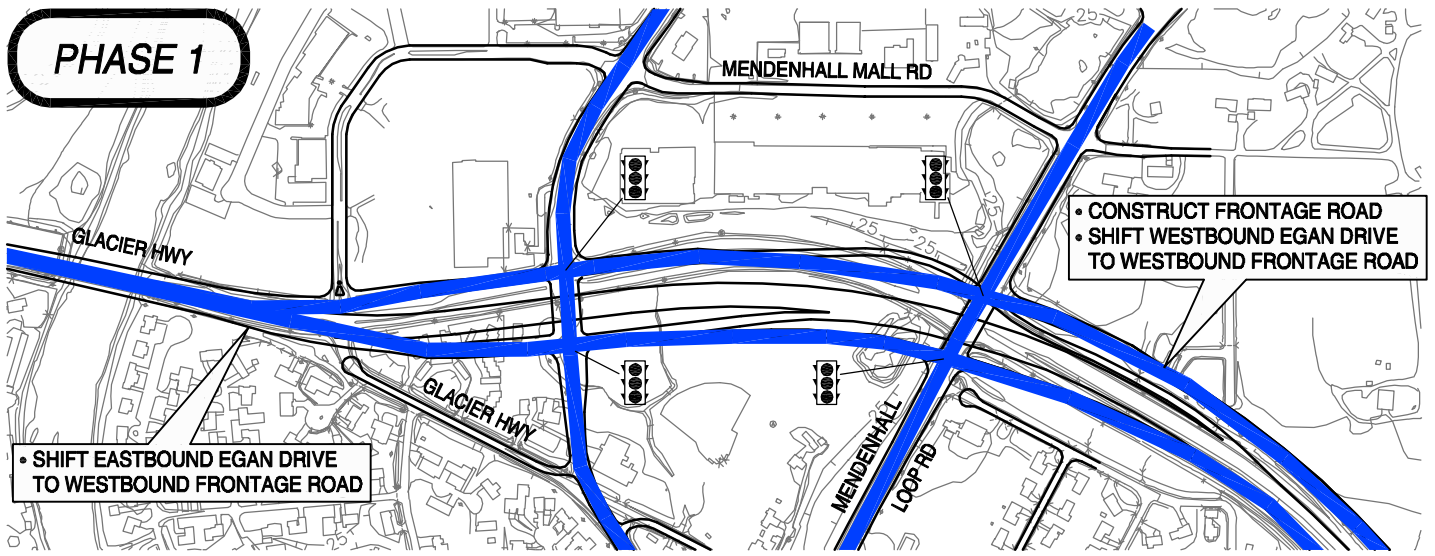
Additional transportation improvements, such as widening streets, adding turning lanes and signals at intersections, and access management, are independent of the projects identified previously. Notably, the Proposed Action includes widening Riverside Drive north of Mendenhall Mall Road through James Boulevard; signalizing the intersection of James Boulevard at Riverside Drive; and closing or restricting access to Kodzoff Acres Mobile Home Park. In addition, as several of the larger Egan Drive projects are likely to affect traffic patterns, the sequencing of this work should be coordinated with periodic monitoring of traffic operations in the study area.

### **Possible Construction Sequence**

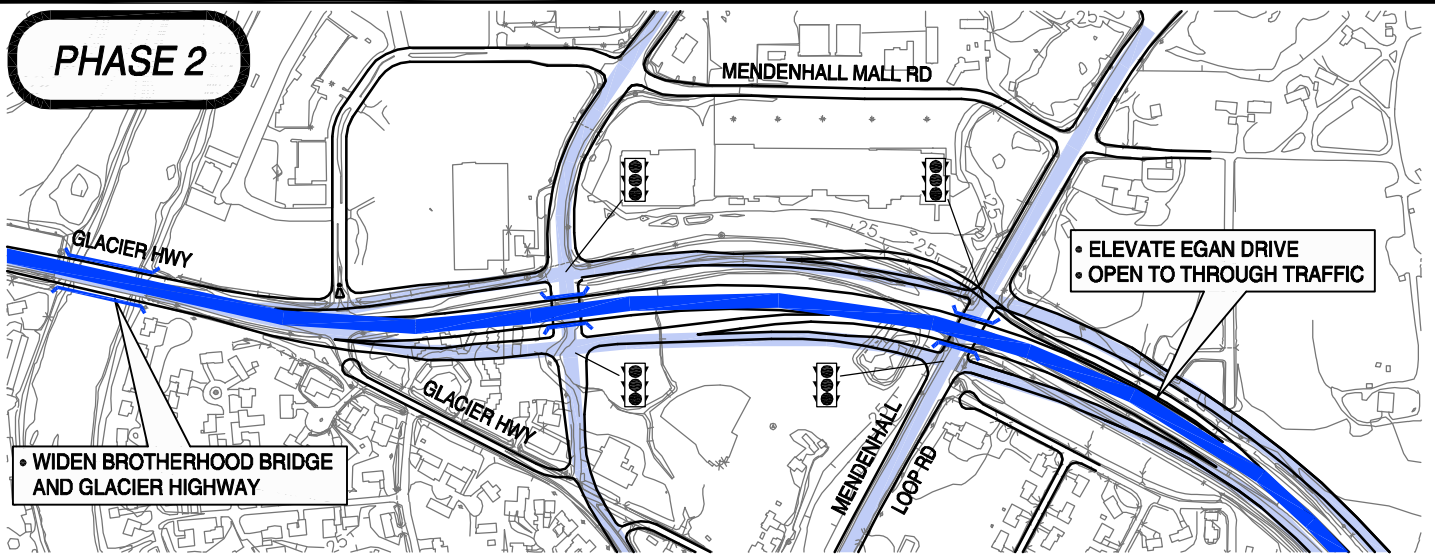
Based on the various needs for traffic operations in interim years, time required, cost, and other factors, the proposed construction phasing of the Egan Drive/Mendenhall Loop Road/Riverside Drive area is shown in Figure 7-3. A more detailed construction sequence is provided in Appendix A. Assuming that the Yandukin Drive interchange, Egan Drive Couplet between Vintage Boulevard and Mendenhall Loop Road, and Industrial Boulevard improvements are constructed by 2015 it is forecast that all of the intersections with Egan Drive will operate at Level of Service C or better. Appendix C provides a detailed summary of the results of the traffic operations analysis.



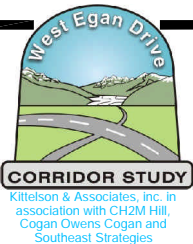
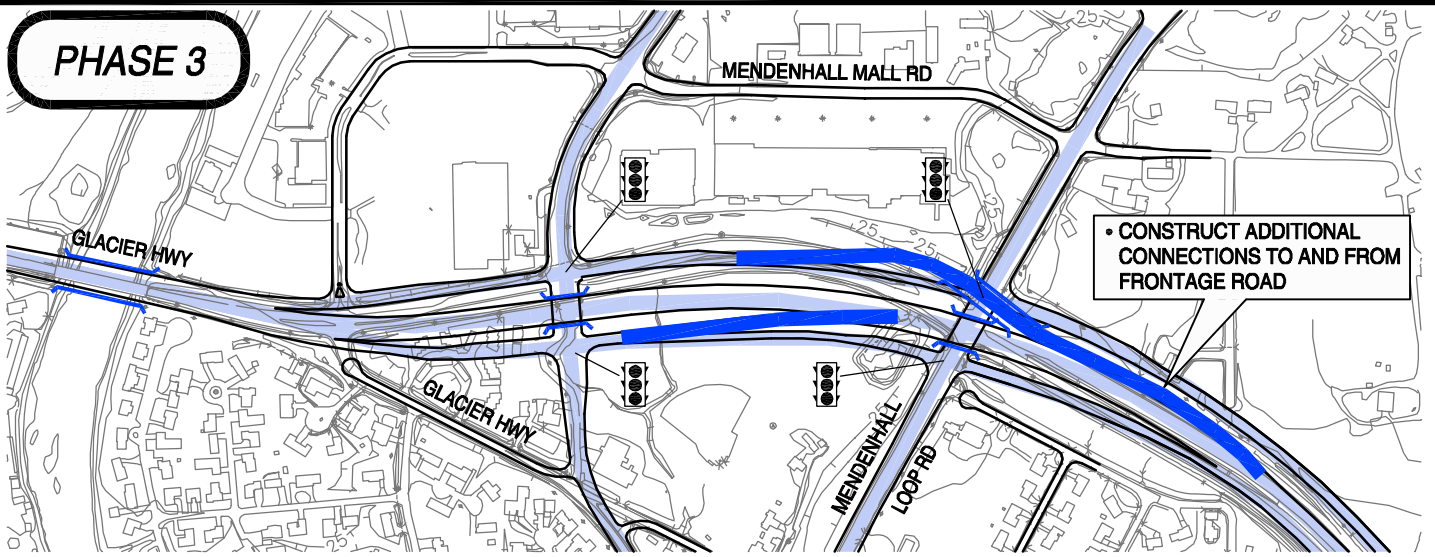
### PHASE 1



### PHASE 2



### PHASE 3



## PHASED IMPLEMENTATION AT VINTAGE BLVD / RIVERSIDE DR / MENDENHALL LOOP RD

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FIGURE  
7-3

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