AMATS: Glenn Highway Integrated Corridor Management (ICM) Study
IRIS Program No. CFHWY00289
Federal Project No. 0A16052

DRAFT Existing Conditions Report:
Part 3 Public Involvement Summary

July 2018

Prepared For: DOT&PF
Prepared By: Kinney Engineering, LLC
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<thead>
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<th>Description</th>
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</thead>
<tbody>
<tr>
<td>ADEC</td>
<td>Alaska Department of Environmental Conservation</td>
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<tr>
<td>AMATS</td>
<td>Anchorage Metropolitan Area Transportation Solutions</td>
</tr>
<tr>
<td>DOT&amp;PF</td>
<td>Alaska Department of Transportation and Public Facilities</td>
</tr>
<tr>
<td>FHWA</td>
<td>Federal Highway Administration</td>
</tr>
<tr>
<td>HOV</td>
<td>High-Occupancy Vehicle</td>
</tr>
<tr>
<td>ICM</td>
<td>Integrated Corridor Management</td>
</tr>
<tr>
<td>ITS</td>
<td>Intelligence Transportation Systems</td>
</tr>
<tr>
<td>JBER</td>
<td>Joint Base Elmendorf - Richardson</td>
</tr>
<tr>
<td>KE</td>
<td>Kinney Engineering, LLC</td>
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<tr>
<td>MOA</td>
<td>Municipality of Anchorage</td>
</tr>
<tr>
<td>MPT</td>
<td>Milepoint</td>
</tr>
<tr>
<td>MSB/ Mat-Su</td>
<td>Matanuska- Susitna Borough</td>
</tr>
<tr>
<td>NHS</td>
<td>National Highway System</td>
</tr>
<tr>
<td>NTS</td>
<td>Not to Scale</td>
</tr>
<tr>
<td>STRAHNET</td>
<td>Strategic Highway Network</td>
</tr>
<tr>
<td>TAC</td>
<td>Technical Advisory Committee</td>
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</table>
Definition of Terms

**Average Annual Daily Traffic (AADT):** A measurement of the number of vehicles traveling on a segment of highway each day, averaged over the year.

**Controlled Access Freeway:** Divided multi-lane highway without direct access to adjacent land uses. Users must utilize ramps to reach adjacent highway facilities with access to the adjacent land uses.

**Crash Modification Factor (CMF):** Factor associated with a safety treatment. Crashes for the condition without the safety treatment are multiplied by the crash modification factor to determine the number of crashes if the treatment is applied. CMFs are determined using a statistical analysis of sites with and without the treatment.

**Integrated Corridor Management (ICM):** Management of a transportation corridor to optimize use of available infrastructure by directing travelers to underutilized capacity (for example, shifting travel times, routes, or mode). Multijurisdictional partner agencies manage ICM corridors as collaborative, multimodal systems.

**Interchange:** Set of ramps and intersections used to allow traffic to travel to and from a controlled access freeway facility.

**Level of Service (LOS):** Performance measure concept used to quantify the operational performance of a facility and present the information to users and operating agencies. The actual performance measure used varies by the type of facility; however, all use a scale of A (best conditions for individual users) to F (worst conditions). Often, LOS C or D in the most congested hours of the day will provide the optimal societal benefits for the required construction and maintenance costs.

**Peak Hour Factor (PHF):** Measure of traffic variability over an hour period calculated by dividing the hourly flowrate by the peak 15-minute flowrate. PHF values can vary from 0.25 (all traffic for the hour arrives in the same 15-minute period) to 1.00 (traffic is spread evenly throughout the hour).

**Critical Accident Rate (CAR):** Statistical measure used in crash rate analysis to determine statistical significance. If the crash rate of the location in question is above the upper control limit for that location, the crash rate is above the average crash rate for similar facilities to a statistically significant level.

**Volume to Capacity Ratio (v/c):** Measure of how much of the available capacity of a facility is being used, calculated by dividing the demand volume by the capacity of a facility. Values of 0.85 or less indicate adequate capacity to serve the demand volume. When v/c is greater than 0.85, drivers begin to feel uncomfortably crowded.
1 Introduction

This memo describes efforts to reach out to the public regarding their experience with the Glenn Highway within the Municipality of Anchorage (MOA). Public outreach was anchored by an online interactive survey that allowed participants to describe:

- How often, when, what time, and what portions of the Glenn Highway they use.
- Where on the Glenn Highway they believe there are issues regarding safety/crashes, road conditions, congestion, wildlife, other issues, and suggestions.
- How they get information about traffic conditions on the Glenn Highway, their travel time flexibility, their mode of transport, and any additional ideas for improvements.
- Home and destination zip codes (start and end of trip) and the main purpose of their travels along this portion of the highway.

The survey was advertised to the public via social media outlets (such as Facebook pages and the NextDoor app) and at the Community Council meetings for the Eagle River area.
2 Public Involvement

One objective of the Glenn Highway ICM Study is to develop a feasible solution for improving traffic flow along the Glenn Highway between Knik River Bridge and Airport Heights Intersection during a non-recurring event. The project team reached out to the public, per methods presented in Table 1, to understand the public’s current concerns with the Glenn Highway, as well as to determine what alternate routes are already in place. The public was also given the opportunity to suggest improvements they would like to see or believe would help with congestion, safety concerns, road conditions, etc.

Table 1: Public Outreach

<table>
<thead>
<tr>
<th>Outreach</th>
<th>Description</th>
<th>Dates</th>
</tr>
</thead>
<tbody>
<tr>
<td>Announcements</td>
<td>Included:</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Project Website (<a href="http://dot.alaska.gov/glennstudy">http://dot.alaska.gov/glennstudy</a>)</td>
<td>February 2018 – ongoing</td>
</tr>
<tr>
<td></td>
<td>• Facebook</td>
<td></td>
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<tr>
<td></td>
<td>• Nextdoor App</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Community Council Meeting Announcements</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Federation of Community Councils</td>
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<tr>
<td></td>
<td>• Email</td>
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<td></td>
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<td>Community Council Presentations</td>
<td>Visited the following Community Councils at their monthly meetings:</td>
<td>March 2018</td>
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<td></td>
<td>• South Fork (March 1)</td>
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<td></td>
<td>• Eagle River (March 8)</td>
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<tr>
<td></td>
<td>• Eagle River Valley (March 14)</td>
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</tr>
<tr>
<td></td>
<td>• Birchwood (March 14)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Chugiak (March 15)</td>
<td></td>
</tr>
<tr>
<td>Anchorage Metropolitan Area Transportation</td>
<td>Presented at the following AMATS meetings:</td>
<td>February and March 2018</td>
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<tr>
<td>Solutions (AMATS) Meetings</td>
<td>• Technical Advisory Committee (TAC) (March 8)</td>
<td></td>
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<td></td>
<td>• Policy Committee (March 22)</td>
<td></td>
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<tr>
<td></td>
<td>• Freight Advisory Committee (February14)</td>
<td></td>
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<tr>
<td>Anchorage Transportation Fair</td>
<td>Provided graphics and project fact sheet at the Transportation Fair.</td>
<td>February 8, 2018</td>
</tr>
<tr>
<td></td>
<td>Tablets were available for the MetroQuest survey. Written comments were</td>
<td></td>
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<tr>
<td></td>
<td>also accepted.</td>
<td></td>
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<tr>
<td>Mat-Su Transportation Fair</td>
<td>Provided graphics and project fact sheet at the Transportation Fair.</td>
<td>September 27, 2017</td>
</tr>
<tr>
<td></td>
<td>Written comments were also accepted.</td>
<td></td>
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<tr>
<td>Online Survey (MetroQuest)</td>
<td>The survey included 5 screens soliciting input,</td>
<td>Survey was live from</td>
</tr>
<tr>
<td></td>
<td>including an interactive map.</td>
<td>February 5 until April 4, 2018</td>
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</table>
2.1 General Outreach

2.1.1 Announcements
The Alaska Department of Transportation and Public Facilities (DOT&PF) and Kinney Engineering worked together to advertise the project and the online survey. The survey was shared on the Alaska DOT&PF Facebook account, Central Region website, and Twitter. Kinney Engineering also shared this information through direct emails, community council presentations, transportation fairs, and posting to the Nextdoor website. Links to the survey were also posted on the Glenn Highway Traffic Report Facebook page.

2.1.2 Community Council Meetings
Kinney Engineering team members visited five Community Council meetings in March 2018: South Fork, Eagle River, Birchwood, Eagle River Valley, and Chugiak. The purpose of the project was explained, and attendees were encouraged to complete the online MetroQuest survey.

Summary Comments/Questions from attendees:

- Some locations were identified as congested or needing improvements including: Eagle River Loop Road interchange, Artillery Road interchange, southbound bridge over Eagle River, and the Mirror Lake interchange. Kinney Engineering responded that while the focus is not increasing capacity for recurring congestion, the study will consider all types of solutions for non-recurring congestion.

- Better use of the railroad for public transportation, Farm Road as an alternative access, and a frontage road connecting Mirror Lake and Thunderbird Falls were mentioned by community council members as possible alternative route options. Other improvements mentioned were emergency telephones with emergency light signaling, messaging boards, and promptly clearing vehicles from the side of the road.

See Appendix A for the Community Council Meeting Summaries.

2.1.3 AMATS Meetings
KE team members gave presentations about the project to the AMATS TAC, Policy Committee, and Freight Advisory Committee. KE explained the purpose of the project, which is to improve the efficiency of moving people and goods through the corridor, with an emphasis on non-recurring congestion (congestion due to crashes, construction, weather, etc.). KE also introduced the online survey, and everyone was encouraged to take the survey. Preliminary findings from the MetroQuest survey were reviewed and questions/comments/concerns were addressed.

See Appendix B for the AMATS Meeting Summaries

2.1.4 Transportation Fairs
Kinney Engineering attended the Mat-Su Borough Transportation Fair and the Anchorage Transportation Fair to inform the public of the study and encourage visitors to participate in the
MetroQuest survey. Project fact sheets and project area graphics were presented. Additionally, tablets were available for attendees to take the MetroQuest survey at the Anchorage Transportation Fair. KE also accepted written comments at both fairs.

See Appendix C for Transportation Fair Public Comments.

2.1.5 MetroQuest Survey
MetroQuest is an online software program that was used to prepare and operate an online interactive survey. The online interactive survey facilitated public involvement and feedback on the Glenn Highway. The survey was available to the public from February 5 until April 4, 2018.

The online survey is comprised of five different screens that asked users questions and guided them through the survey. During each section of the survey, participants were given opportunities to provide additional comments. The five screens were:

- **Welcome Screen**: Visitors were introduced to the goal of the project and were provided a map of the project boundaries.
- **Survey Part 1**: Visitors were asked a series of questions that help describe how often, when, what time, and what portions of the Glenn Highway they use.
- **Map**: Visitors were presented with an interactive map, where they were given the opportunity to identify, by dropping a marker, specific locations where they believe there is an issue, where they have a suggestion, or to provide comments. There were six markers available: safety/crashes, road conditions, congestion, wildlife, other issues, and suggestions.
- **Survey Part 2**: Visitors were asked how they get their information about traffic conditions on the Glenn Highway, their travel time flexibility, their mode of transport, and any additional ideas for improvements.
- **Wrap Up**: Visitors were asked to indicate their home and destination zip codes (start and end of trip) and the main purpose of their travels along this portion of the highway.

See Appendix D for the MetroQuest Survey Screens.

2.2 Online Survey Results
There were 4,891 participants in the online survey, as shown in Figure 1. The busiest comment period was March 28 through April 2, after a crash on March 21 that damaged the northernmost span of the Eagle River/Artillery Road overpass. This crash resulted in southbound traffic being diverted off the Glenn Highway, at the North Eagle River exit, through downtown Eagle River to the Hiland Road Interchange and caused significant delays.
Though 69% of respondents participated in the online survey after the March 21 crash, analysis of the comments and suggestions shows there was not a significant change in the type or comment or location identified for improvements after the crash. See Appendix F for a summary comparison of comments and suggestions before and after the crash.

2.2.1 How and Why Survey Respondents Travel on the Glenn Highway
Participants were asked how often they travel the Glenn Highway between Airport Heights Drive and the Knik River Bridge. The survey allowed them to choose one of the following: daily (4+ times a week), weekly (1-3 times per week), twice a month, once a month, or never (<12 times annually). The majority of survey respondents answered four or more times per week, as seen in Figure 2.
Figure 2: Frequency of Travel

Respondents were asked to select what direction they typically travel along the Glenn Highway by time of day (southbound in the morning and northbound in the evening, northbound in the morning and southbound in the evening, or other). Eighty percent of respondents indicated that they typically head southbound in the morning and northbound in the evening, as shown in Figure 3.
Figure 3: Direction of Travel

Sample of ‘Other’ Responses:

- Weekend traveling - all times of the day
- Alternating southbound and northbound every morning
- I go into town from Eagle River generally after commuting hours
- I’m a shift worker and our schedule rotates. I’m on the highway at various hours throughout the year
- Weekends: outbound 10:00 am-12:00 pm; inbound 4:00 pm-8:00 pm
- Varies
- I switch days - two days a week I go northbound in the morning and return, three days per week I go southbound and return. I am in Eagle River
- Occasional trips to the Valley
- Anytime during the day

Each respondent was asked to select where they most frequently get on and off the Glenn Highway. The following access points were available to select:

- Glenn Highway north of Knik River
- Old Glenn Interchange
- Eklutna
- Thunderbird Falls
- Mirror Lake/ Edmonds Lake
- N Peters Creek
- S Peters Creek
- N Birchwood
The access points used the most when traveling southbound, towards Anchorage, are displayed in Figure 4. The access points used the most to travel northbound, towards Mat-Su, are displayed in Figure 5.

**Figure 4: Access Point Heading Southbound (Towards Anchorage)**
Heading southbound, 18% of respondents enter the highway from Eagle River, with the highest number coming from the Eagle River/ Hiland Road interchange. Heading northbound, 82% enter the highway in Anchorage, with the highest number coming from downtown.

The exit points used the most to exit the Glenn Highway when traveling southbound, toward Anchorage, are displayed in Figure 6. The exit points used most by respondents when traveling northbound on the Glenn Highway are displayed in Figure 7.
Figure 6: Exit Point Heading Southbound (Towards Anchorage)
Heading southbound, 72% of respondents exit the highway in Anchorage, with the highest number exiting into downtown. Heading northbound, 15% exit the highway in Eagle River, with the highest number exiting at the Eagle River/Hiland Road interchange. However, 67% exit north of the Knik River Bridge.

Respondents were also asked to select the time of day (all that apply) of their typical travel on the Glenn Highway. Figure 8 shows the number of times each time-period was selected. Additionally, respondents were asked to select why they most commonly travel the Glenn Highway. Respondents could select work, visiting friends and family, shopping, school, or other. The majority of respondents answered that they use the Glenn Highway to travel to work, as shown in Figure 9. The peak travel times seem to correspond with work commute times, with a peak in the morning before 9 am and a peak in the evening after 4 pm.
**Figure 8: Time of Travel**

**Figure 9: Purpose of Travel**
2.2.2 How Survey Respondents Get Information

In addition to understanding how and why respondents use the Glenn Highway, the online survey asked where users get information about the traffic conditions. The choices available were: Glenn Highway Traffic Report Facebook Page, Radio, 511, Nixle, Twitter, and Other, as seen in Figure 10. There were 7,074 responses to this question, as respondents were able to select all that apply.

![Information Source](image)

**Figure 10: Public Information Sources for Glenn Highway Traffic Conditions**

Respondents were also asked to describe/expand on the method they use: what radio stations, what feeds, explain other sources, and leave a comment. Some commenters expressed reliability of the traffic information sources they use. According to respondents, the top four radio stations for traffic information are AM 750, AM 650, FM 106.5, and FM 104, as shown in Table 2. Some of the ‘Other’ responses included, Waze App, word of mouth from friends, family, co-workers, texts, phone calls, Google, and television, as shown in Figure 11.
Table 2: Radio Station for Traffic Information

<table>
<thead>
<tr>
<th>Radio Station</th>
<th>Responses</th>
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<tbody>
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<td>AM 650</td>
<td>99</td>
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<tr>
<td>AM 700</td>
<td>20</td>
</tr>
<tr>
<td>AM 750</td>
<td>113</td>
</tr>
<tr>
<td>FM 91.1</td>
<td>66</td>
</tr>
<tr>
<td>FM 92.1</td>
<td>24</td>
</tr>
<tr>
<td>FM 97.3</td>
<td>24</td>
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<td>FM 98.9</td>
<td>37</td>
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<td>FM 107.5</td>
<td>72</td>
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<tr>
<td>Other Stations</td>
<td>144</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>1054</strong></td>
</tr>
</tbody>
</table>

Figure 11: Other Information Sources Mentioned
2.2.3 How Much Flexibility Do Respondents Have in Their Travel Time?

When there is an incident on the Glenn Highway, travel is suspended or slowed along the corridor. If users are made aware that travel is slowed or stopped, the users with flexibility can change their travel time. However, the users without flexibility are going to be using the corridor regardless; this group will be minimum desired to be accommodated on alternate routes.

The survey asked users if they are able to change their time of travel based on traffic conditions. Users were to select an option that best describes their flexibility in the morning and the evening. Figure 12 and Figure 13 show how many of the respondents might be able to change their travel times if they had information about the Glenn Highway traffic conditions.

![Flexibility in the Morning](image)

**Figure 12: Flexibility of Travel in the Morning**
In the morning, about 50% of respondents have no or slight flexibility, and 15% have complete flexibility. In the evening, 35% of respondents have no or slight flexibility and 20% have complete flexibility.

### 2.2.4 Travel Mode Choices
Public transportation can help reduce congestion and travel time for all by reducing the number of vehicles traveling in a corridor. Currently, most respondents travel in single passenger vehicles as their main mode of transportation, while 28% of respondents either use buses, van pooling, or carpooling, as shown in Figure 14.
Figure 14: Mode of Travel

The survey asked users what would encourage them to use a different mode of transportation. There were about 2,800 comments, of which a third of the comments mentioned that there is nothing that would encourage them to take a different mode of transportation, or that another mode wouldn’t be possible with their schedules, etc. The most common responses were:

- Availability of commuter train
- Reliability and variability of public transportation schedules
- Secure and free parking
- Monetary incentives
- Buses

2.2.5 Problem Area Concerns and Suggestions

The online survey also included an interactive map where participants were asked to place icon markers to indicate locations where they feel there is an issue or where they would like to make suggestions. Participants were encouraged to provide comments about the concern or suggestion. The icon markers available were: Congestion, Safety Concern, Weather/Road Conditions, Suggestion, Wildlife Concern, and Other. More than 10,400 map markers were placed. The number of map markers placed for each category is shown in Figure 15.
Figure 15: Type of Map Marker Used

Approximately 52% of icon markers had comments. These comments were reviewed and organized into 20 different categories. This enabled easier evaluation of problem areas by type of comment. Figure 16 shows the number of comments for each category. The categories in blue represent concerns, the categories in yellow represent suggestions, and green represents categories that contain both concerns and suggestions.
Figure 16: Type and Frequency of Comments on the Survey Map
Congestion was cited more than twice as often as any other concern. Other common concerns included issues related to water or ice (including drainage), issues related to merge or diverge points (on-ramps, exit-ramps, merging lanes), pavement conditions, dangerous hills and curves, unsafe drivers, and wildlife. The most frequent suggestions were on-ramp improvements, additional lanes, carpool and bidirectional lanes, hill and curve improvements, alternate routes and frontage roads, winter and road maintenance, lighting and visibility improvements, and more police enforcement or new regulations.

The interactive map helped identify specific problem areas and general issues with the Glenn Highway corridor. Categorizing each comment allowed KE to evaluate if common problems or suggestions were recurring in certain areas.

Appendix E is a KMZ file that can be imported into a mapping program to view the location and type of the map markers and comments that were placed by survey participants.

**Congestion**

Congestion was the most reiterated concern with approximately 4,500 markers and 1,450 comments. Congestion issues that were often identified were:

- Traffic exceeds capacity
- Slow or improper merging
- Drivers staying in the left lane blocking the ability to pass
- On-ramp and exit-ramp design
- Distractions along the road side
- Accidents that cause delay because there are no alternative routes

Areas that were identified by the public to have the highest congestion were:

- Artillery Road/ Eagle River interchange (highest)
- North Eagle River Access Road interchange
- Eagle River southbound bridge
- Eagle River Loop interchange
- Fort Richardson interchange
- Muldoon Road interchange
- Airport Heights intersection

Common suggestions included:

- Adding another lane or widening the highway
- Adding a bidirectional lane that allows more traffic to head southbound in the morning and then northbound in the evening
- Extending merging lanes
- Connecting an alternate route or adding frontage roads to allow less congestion during a non-reoccurring event such as an accident
- Clearing away an accident quickly after the event to prevent further slowing down
- Develop better public transportation, including commuter rail
- Acceleration lane signal
Ice and Winter Conditions
The second highest concern was ice and winter conditions, including areas that have drainage issues that cause ice during freezing temperatures. Areas that were identified by the public to have the worst ice and winter conditions were:

- Knik River bridge
- Curve north of Eklutna interchange and Eklutna hill
- Eagle River southbound hill
- Between Mirror Lake and South Peters Creek
- Between South Peters Creek and North Birchwood

To mitigate the effect of winter conditions, respondents suggested:

- outlawing studs
- using chemical spray
- cutting back brush on shaded highway areas
- improving road drainage issues
- sanding and snow removal

On-Ramp/ Exit-Ramp/ Merging Lanes
On-ramps, exit-ramps, and merging lanes that were identified by the public as needing improvements were:

- South Peters Creek southbound on-ramp – uphill, short, and poor visibility
- Eagle River/ Artillery Road – on-ramps, merging lanes, and exit-ramps
- Eagle River/ Highland Road southbound on-ramp – needs merging lane improvements
- Fort Richardson/ JBER
- Muldoon Road

Additional Lanes/ Widen Highway
The public commented that additional lanes are needed to improve the capacity of the highway and lessen congestion and improve safety. These ideas include, a high-occupancy vehicle (HOV) lane, bidirectional lane, and extending merging lanes. Recommendations were mainly between the South Birchwood interchange and the Eagle River bridge.

Road Conditions
Another common concern and cause of congestion and safety issues are the road conditions. There were a lot of comments about rutting, potholes, and broken pavement and suggestions to do more frequent road maintenance and pavement upkeep.

Areas that were identified by the public to have the worst road conditions were:
• Knik River bridge (outside of project limits)
• Eklutna Flats (outside of project limits)

**Hill and Curve Improvements**
The following hills and curves were pinpointed as needing improvements:

• Curve north of Eklutna interchange
• Hill and curve north of the Eagle River bridge
• Southbound Eagle River bridge
• S-curves
• Muldoon curve

**Wildlife Concerns**
Areas that were identified by the public to have the most wildlife/vehicle collisions and wildlife concerns were:

• North of Knik River bridge (outside the project area)
• Eklutna Flats (outside the project area)
• Between North and South Birchwood interchanges
• S-curves
• Fort Richardson/ JBER interchange

Animal overpasses or fencing were proposed to help reduce the amount of wildlife that gets onto the highway. Better lighting was also recommended to reduce the amount of wildlife/vehicle collisions.

**Other Topics/ Suggestions**

• Offer education opportunities for drivers about merging and passing regulations
• Increase law enforcement/ implement new regulations/ add traffic cameras
• Install signs that show the current condition of the highway
• Construct the Knik Arm Bridge as an additional route
• Add more emergency turnouts/ highway crossings
• Install additional signs
  o Suggestions: Signs for ‘Passing only in Left Lane’, ‘Stay Right’, ‘Don’t Text and Drive’
• Move dynamic message sign location
• Widen shoulders
• Add guardrails
• Change speed limits (some suggested higher some lower)
• Construct raised medians
• Adapt highway for reversible lanes (lanes in which traffic can travel both directions depending on certain conditions)
- Create another entrance to JBER from Eagle River
- Extend the Old Glenn Highway
- Lay reflective paint for striping and/or better markings
- Post vertical clearance of bridges far ahead of each bridge
- Move disabled vehicles off road and roadside quickly proceeding an accident

### 2.2.6 Areas Represented

KE asked survey respondents to enter their home and destination zip codes when using the Glenn Highway, as well as their most common access points and exit points, in order to verify the geographic range of participants in the online survey.

As shown previously in Figure 4 and Figure 7, 60% to 70% of the respondents indicated that they access the highway in the morning from north of the project area and exit the highway in the evening to north of the project area. Figure 17 and Figure 18 look only at how participants access and exit the highway from within the study area. Figure 17 compares participants’ most common southbound access points to the 5-year-average AADT for each access point on-ramp. Figure 18 compares participants’ most common exit points to the corresponding 5-year-average AADT for the exit-ramps. The figures compare the AADT distribution of traffic to the distribution of survey participants among the interchanges. Participants who access or exit the Glenn Highway north of the Knik River bridge are not represented.
For the majority of southbound on-ramps the distribution of AADT versus survey participant distribution were similar. Compared to the AADT averages, the Eagle River interchanges are well-represented. The relative lack of respondents getting on at the JBER, Arctic Valley Road, and Muldoon Road interchanges is expected, given that the advertising for the survey focused on areas with longer commutes (Eagle River and the Mat-Su Valley).
According to the AADT averages, the majority of interchanges were represented well. As with the previous graph, the relative lack of respondents exiting at the JBER, Arctic Valley Road, and Muldoon Road interchanges is expected, given that the advertising for the survey focused on areas with longer commutes (Eagle River and the Mat-Su Valley).

The final question on the survey asked for ‘home’ zip code and ‘destination’ zip code when traveling the Glenn Highway within the project limits, as shown in Figure 19 to Figure 22. There were 4,981 participants in the online survey of which 59% entered their start of travel zip code and 51% entered their destination zip code.
Figure 19: Home Zip Code Distribution of Survey Respondents who live in Municipality of Anchorage
Figure 20: Home Zip Code Distribution of Survey Respondents who live in Mat-Su Borough
Figure 21: Destination Zip Code Distribution of Survey Respondents who travel to Municipality of Anchorage
Figure 22: Destination Zip Code Distribution of Survey Respondents who travel to Mat-Su Borough

The largest group of respondents were from people who use the Glenn Highway to travel daily to work, heading southbound towards Anchorage in the morning and northbound towards Mat-Su in the evening. Similarly, the zip code distribution maps show that most of the participants in the survey start their trips in northeast Anchorage, Eagle River, Chugiak, Big Lake area, Wasilla, Butte, and Palmer and end their trips in downtown or mid-town Anchorage.
Appendix A    Community Council Meeting Summaries
Jeanne Bowie gave a brief overview of the project. She explained that the purpose of the project is to improve the efficiency of moving people and goods through the corridor, with an emphasis on non-recurring congestion (congestion due to crashes, construction, weather, etc). Jeanne discussed the online survey that is available and encouraged everyone to spend a few minutes taking the survey. She mentioned that we have had more than 1,000 people take the survey but we are looking for more input.

Jeanne explained that the project team is currently surveying agency stakeholders to determine how they react to an event on the highway as well as who they coordinate with and how they coordinate and communicate. She also mentioned the data collection efforts that are underway, including evaluating crashes, weather data, and looking at traffic volumes.

The study will consider feasible means to mitigate the traffic impact of non-recurring events. There will be a range of alternatives evaluated including improved communication, improved coordination between agencies, and improved infrastructure (such as frontage roads, median openings, etc). There will be a Public Open House in late May or early June where the draft plan will be presented for public review and comment.

Several comments/questions were raised by the attendees:

- Eagle River Loop Rd onto the highway gets backed up any time there is any kind of accident on the highway. Traffic also gets backed up on Yosemite Drive because cars can’t turn onto Eagle River Loop Road. The suggestion was that a better interchange design would help alleviate some of that.

- Will the study consider using the railroad as an alternative? Jeanne responded that yes, the study will look at how a passenger train could be used when there is an event on the highway.

- What kind of data trends are you seeing from the surveys completed thus far? Jeanne and Joann responded that we haven’t look closely at the data yet other than to verify that responses are coming from all geographic areas, with a high amount of participation from the Eagle River area.

- The Mirror Lake interchange is horrible—always backs up.

- Is the ICM Study limited to just the Glenn Highway or will you look at other roads? Jeanne answered that the study includes access to the Glenn and roads that provide alternative ways around the Glenn.

All attendees were reminded and encouraged to complete the Metro Quest survey.
MEETING SUMMARY

| Project: | AMATS: Glenn Highway Integrated Corridor Management (ICM) Study  
Project No. CFHWY00289/0A16052 |
<table>
<thead>
<tr>
<th></th>
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</tr>
</thead>
<tbody>
<tr>
<td>Meeting:</td>
<td>Eagle River Community Council</td>
</tr>
<tr>
<td>Date/Time:</td>
<td>March 8, 2018 7:00 pm</td>
</tr>
<tr>
<td>Location:</td>
<td>12001 Business Blvd, Room 170, Eagle River</td>
</tr>
</tbody>
</table>
| Team Attendees: | Jeanne Bowie, PE, PhD, PTOE, Kinney Engineering (KE)  
Danielle Bischoff, PE, KE |
| Public Attendees: | Approximately 30 |
| Meeting Materials: | • Project fact sheets  
• Display boards of project limits  
• Information card with survey link and project website address |

Jeanne Bowie gave a brief overview of the project. She explained that the purpose of the project is to improve the efficiency of moving people and goods through the corridor, with an emphasis on non-recurring congestion (congestion due to crashes, construction, weather, etc). Jeanne discussed the online survey that is available and encouraged everyone to spend a few minutes taking the survey. She mentioned that we have had 1,461 people take the survey as of today, but we are looking for more input.

Jeanne explained that the project team is currently surveying agency stakeholders to determine how they react to an event on the highway as well as who they coordinate with and how they coordinate and communicate. She also mentioned the data collection efforts that are underway, including evaluating crashes, weather data, and looking at traffic volumes.

The study will consider feasible means to mitigate the traffic impact of non-recurring events. There will be a range of alternatives evaluated including improved communication, improved coordination between agencies, and improved infrastructure (such as frontage roads, median openings, commuter rail, HOV lanes, etc). There will be a Public Open House in late May or early June where the draft plan will be presented for public review and comment.

Several comments/questions were raised by the attendees:

- *When will the survey close?* Danielle responded that the survey will be closing April 1st.

- A community member commented that he had already taken the survey and he liked the way it was put together.

All attendees were reminded and encouraged to complete the Metro Quest survey. Jeanne reminded the high school students in attendance that they are eligible to take the survey as well.
| **Project:** | AMATS: Glenn Highway Integrated Corridor Management (ICM) Study  
Project No. CFHWY00289/0A16052 |
<table>
<thead>
<tr>
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<tbody>
<tr>
<td><strong>Meeting:</strong></td>
<td>Birchwood Community Council</td>
</tr>
<tr>
<td><strong>Date/Time:</strong></td>
<td>March 14, 2018 7:00 pm</td>
</tr>
<tr>
<td><strong>Location:</strong></td>
<td>Beach Lake Ski Chalet (17611 S Birchwood Loop Road, past Chugiak High School)</td>
</tr>
</tbody>
</table>
| **Team Attendees:** | Danielle Bischoff, PE Kinney Engineering (KE)  
James Smith, PE, KE |
| **Public Attendees:** | Approximately 13 |
| **Meeting Materials:** | • Project fact sheets  
• Information card with survey link and project website address |

Danielle Bischoff gave a brief overview of the project. She explained that the purpose of the project is to improve the efficiency of moving people and goods through the corridor, with an emphasis on non-recurring congestion (congestion due to crashes, construction, weather, etc). Danielle discussed the online survey that is available and encouraged everyone to spend a few minutes taking the survey. She mentioned that we have had more than 1,500 people take the survey but we are looking for more input.

Danielle explained that the project team is currently surveying agency stakeholders to determine how they react to an event on the highway as well as who they coordinate with and how they coordinate and communicate. She also mentioned the data collection efforts that are underway, including evaluating crashes, weather data, and looking at traffic volumes.

The study will consider feasible means to mitigate the traffic impact of non-recurring events. There will be a range of alternatives evaluated including improved communication, improved coordination between agencies, and improved infrastructure (such as frontage roads, median openings, etc). There will be a Public Open House in late May or early June where the draft plan will be presented for public review and comment.

**Several comments/questions were raised by the attendees:**

- Several attendees asked if it was possible to retake the survey to locate more incident locations. They were told that they could take the survey again and just skip to the map page section.

- There were some questions which lead to a discussion about the meaning and purpose of only looking at “non-recurring congestion”. The group seemed to have a hard time understanding the type of events we were looking for in the survey, and how the survey results would be used in a final report.

All attendees were reminded and encouraged to complete the Metro Quest survey. The presentation and the Q/A session took about 10 minutes.
Jeanne Bowie gave a brief overview of the project. She explained that the purpose of the project is to improve the efficiency of moving people and goods through the corridor, with an emphasis on non-recurring congestion (congestion due to crashes, construction, weather, etc). Jeanne discussed the online survey that is available and encouraged everyone to spend a few minutes taking the survey. She mentioned that while we have had more than 1,500 people take the survey, we are looking for more input.

Jeanne explained that the project team is currently surveying agency stakeholders to determine how they react to an event on the highway as well as who they coordinate with and how they coordinate and communicate. She also mentioned the data collection efforts that are underway, including evaluating crashes, weather data, and looking at traffic volumes.

The study will consider feasible means to mitigate the traffic impact of non-recurring events. There will be a range of alternatives evaluated including improved communication, improved coordination between agencies, and improved infrastructure (such as frontage roads, median openings, etc). There will be a Public Open House in late May or early June where the draft plan will be presented for public review and comment.

Several comments/questions were raised by the attendees:

- **Are we looking for safety improvements?** Over in the European theatre they have emergency telephones every mile or so. There are red flashing lights mounted above the emergency telephones that can be activated in an emergency. Jeanne responded that yes, the project does consider safety improvements. While mitigating congestion due to crashes is what we are focusing on, we are interested in collecting all ideas and input.

- **Will the study consider using the railroad as an alternative?** Jeanne responded that yes, the study will look at how a passenger train could be used when there is an event on the highway.

- **Will the project take using Farm Road as an alternate access into account?** Jeanne responded that while she wasn't sure of the location of Farm Road, she thinks that this alternative is and should be part of the conversation. Ideas like this are exactly the kind of input we are looking for.

- **The Community Council has been having ongoing conversations about the need for improvements at the Artillery Road intersection. Please make sure that upgrades to this intersection are taken into consideration for this project.** Jeanne responded that yes, while our focus is not increasing capacity for recurring congestion, we will be considering all types of solutions for non-recurring congestion. This may include considerations for adding lanes to the Glenn Highway or improving frontage roads.
• *How are you soliciting input?* Jeanne responded that the link to the MetroQuest survey has been posted on the Facebook pages for the Glenn Highway Traffic Report and the DOT. Additionally, the project team has been presenting at community council meetings and will be hosting a public open house in May/June.

• *Tom Freeman asked for Jeanne’s number.* Jeanne kindly acquiesced.

All attendees were reminded and encouraged to complete the Metro Quest survey.
Jeanne Bowie gave a brief overview of the project. She explained that the purpose of the project is to improve the efficiency of moving people and goods through the corridor, with an emphasis on non-recurring congestion (congestion due to crashes, construction, weather, etc). Jeanne discussed the online survey that is available and encouraged everyone to spend a few minutes taking the survey. She mentioned that we have had more than 1,500 people take the survey, but we are looking for more input.

Jeanne explained that the project team is currently surveying agency stakeholders to determine how they react to an event on the highway as well as who they coordinate with and how they coordinate and communicate. She also mentioned the data collection efforts that are underway, including evaluating crashes, weather data, and looking at traffic volumes.

The study will consider feasible means to mitigate the traffic impact of non-recurring events. There will be a range of alternatives evaluated including improved communication, improved coordination between agencies, and improved infrastructure (such as frontage roads, median openings, etc). There will be a Public Open House in late May or early June where the draft plan will be presented for public review and comment.

Several comments/questions were raised by the attendees:

- Discussion about if the link to the survey is posted on the community council page. A community council board member will confirm that the link is posted.

- Are alternative routes being considered? Jeanne responded that yes, the study will look at this.

- Have we observed specific areas that have been called out with the most issues? Jeanne responded that no, we have not looked at the data in-depth yet.

- Frontage roads connecting Mirror Lake to Thunder Bird Falls is a priority of this community council.

- A new southbound bridge over Eagle River is also a priority for the community council as this area commonly backs up during morning rush hour, especially in the winter.

- Vehicles left on the side of the road are an issue. He would like to see them removed more quickly, currently they will remain there for a week or more and frequently cause traffic to slow down. He suggested that contracts with towing companies be considered so that vehicles are removed within hours of an incident.
• **Will the study be looking at the message board?** Jeanne responded that yes, the study will be looking at this. The message board receives the information from 511. We have the 511 data and we will be looking through this.

• Suggestions and discussion of the use of portable changeable message board signs on or before the on ramps to indicate when there is a traffic incident impeding the flow of traffic. It is frustrating getting on the highway and getting stuck.

• **Is it possible that the police, fire department, and volunteer fire department don’t communicate with each other?** Danielle responded that these agencies do have communication with each other. We are looking to understand how they communicate with each other, what coordination they have with other agencies (such as DOT) and what can we do to improve communication.

All attendees were reminded and encouraged to complete the Metro Quest survey.
Appendix B AMATS Meeting Summaries
| Project: AMATS: Glenn Highway Integrated Corridor Management (ICM) Study  |
|---------------------------------------------------|-----------------------------------------------|
| Project No. CFHWY00289/0A16052                   |                                               |
| Meeting: AMATS, Freight Advisory Committee       |                                               |
| Date/Time: February 14, 2018 3:00 pm            |                                               |
| Location: Municipality of Anchorage, Main Conference Room, 4700 Elmore Road, Anchorage |                                               |
| Team Attendees: Jeanne Bowie, PE, PhD, PTOE, Kinney Engineering (KE) Joann Mitchell, PE, KE |                                               |
| Public Attendees: Approximately 3                |                                               |
| Meeting Materials: Power Point Presentation      |                                               |

Joann Mitchell gave a presentation about the project. She explained that the purpose of the project is to improve the efficiency of moving people and goods through the corridor, with an emphasis on non-recurring congestion (congestion due to crashes, construction, weather, etc).

Joann explained that the study would include an online public survey to help us understand how the public gets information about traveling, as well as an agency survey for stakeholders to determine how they react to an event on the highway as well as who they coordinate with and how they coordinate and communicate.

Joann mentioned that other data collection efforts are underway, including evaluating crashes, weather data, and looking at traffic volumes.

The study will consider feasible means to mitigate the traffic impact of non-recurring events. There will be a range of alternatives evaluated including improved communication, improved coordination between agencies, and improved infrastructure (such as frontage roads, median openings, etc). There will be a Public Open House in late May or early June where the draft plan will be presented for public review and comment.
Jeanne Bowie gave a presentation about the project. She explained that the purpose of the project is to improve the efficiency of moving people and goods through the corridor, with an emphasis on non-recurring congestion (congestion due to crashes, construction, weather, etc). Jeanne discussed the online survey that is available and encouraged everyone to spend a few minutes taking the survey. She mentioned that we have had 1,461 people take the survey as of today, but we are looking for more input. Jeanne reviewed some of the preliminary findings that we are seeing with the survey.

Jeanne explained that the project team is currently surveying agency stakeholders to determine how they react to an event on the highway as well as who they coordinate with and how they coordinate and communicate. She showed the agencies we have reached out to and those who have responded to our survey. She asked the attendees to reach out to us if they knew of any information that would be beneficial to the study.

Jeanne mentioned that other data collection efforts are underway, including evaluating crashes, weather data, and looking at traffic volumes.

The study will consider feasible means to mitigate the traffic impact of non-recurring events. There will be a range of alternatives evaluated including improved communication, improved coordination between agencies, and improved infrastructure (such as frontage roads, median openings, etc). There will be a Public Open House in late May or early June where the draft plan will be presented for public review and comment.

Several comments/questions were raised by the attendees:

- **Why have HOV lanes not been implemented?** Jim Amundsen responded that HOV lanes cannot be utilized on a 4-lane highway. The 6-lane segment of the highway only extends from Airport Heights to Hiland Rd.

- **Stephanie Mormilo commented that she thought it was a very well-designed survey and was happy with the map function.**

All attendees were reminded and encouraged to complete the Metro Quest survey.
Jeanne Bowie gave a presentation about the project. She explained that the purpose of the project is to improve the efficiency of moving people and goods through the corridor, with an emphasis on non-recurring congestion (congestion due to crashes, construction, weather, etc). Jeanne discussed the online survey that is available and encouraged everyone to spend a few minutes taking the survey. She mentioned that 1,531 people have taken the survey as of today and the survey is open until April 1, 2018. Jeanne reviewed some of the preliminary findings from the survey.

Jeanne explained that the project team is currently surveying agency stakeholders to determine how they react to an event on the highway as well as who they coordinate with and how they coordinate and communicate. She showed the agencies that have been contacted and those who have responded to the survey.

Jeanne mentioned that other data collection efforts are underway, including evaluating crashes, weather data, and looking at traffic volumes.

The study will consider feasible means to mitigate the traffic impact of non-recurring events. There will be a range of alternatives evaluated including improved communication, improved coordination between agencies, and improved infrastructure (such as frontage roads, median openings, etc). There will be a Public Open House in late May or early June where the draft plan will be presented for public review and comment.

Comments from the committee members:

- Assembly Member John Weddleton suggested that autonomous vehicles should be considered and suggested that the taxi industry be contacted.
- Chris Schulte, MOA, commented that the MetroQuest survey as well done. He found it intuitive and engaging.
Appendix C  Transportation Fair Comments
Appendix D  MetroQuest Survey

Figure D-1: MetroQuest Survey Home Screen

Figure D-2: Survey (Part 1) Frequency of Your Travel
Figure D-3: Survey (Part 1) Direction You Travel

Figure D-4: Survey (Part 1) Time of Day You Travel
Figure D-5: Survey (Part 1) Southbound Access/Exit Points

Figure D-6: Survey (Part 1) Northbound Access/Exit Points
Figure D-7: MetroQuest Survey Map (Screen 3)

Figure D-8: Survey (Part 2) Traffic Reports
Figure D-9: Survey (Part 2) Flexibility

Figure D-10: Survey (Part 2) Transportation Modes
Figure D-11: Survey (Part 2) Ideas

Figure D-12: Survey (Part 2) Expand Mode of Travel
Figure D-13: Survey Wrap Up Screen
Appendix E  MetroQuest KMZ File

See Attached KMZ File
Appendix F  Effects of Bridge Incident on Data

The majority of participants completed the survey after the crash event on March 21st, 2018. The crash caused delay and lane closures along the Glenn Highway for a few days. In order to assure that the crash did not result in biased data, survey responses before the event and after the event were compared. Table F-1 demonstrates the number of icon markers that were generated from the public in “hot spot” locations along the Glenn Highway before and after the incident. As shown in this table, the “hot spots” have approximately the same percentage at each location before and after the crash.

Table F-1: Hot Spot Locations along the Glenn Highway

<table>
<thead>
<tr>
<th>North → South</th>
<th>Locations</th>
<th>Before March 21&lt;sup&gt;st&lt;/sup&gt;</th>
<th>After March 21&lt;sup&gt;st&lt;/sup&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Number of Markers</td>
<td>Number of Markers</td>
<td>Number of Markers</td>
</tr>
<tr>
<td>Downtown Anchorage</td>
<td>69</td>
<td>2%</td>
<td>187</td>
</tr>
<tr>
<td>Bragaw/ Boniface/ Airport Heights</td>
<td>300</td>
<td>8%</td>
<td>680</td>
</tr>
<tr>
<td>Muldoon</td>
<td>297</td>
<td>8%</td>
<td>767</td>
</tr>
<tr>
<td>JBER/ Arctic Valley/ S Curves</td>
<td>306</td>
<td>8%</td>
<td>734</td>
</tr>
<tr>
<td>Eagle River</td>
<td>1142</td>
<td>30%</td>
<td>3265</td>
</tr>
<tr>
<td>N. Eagle River</td>
<td>477</td>
<td>12%</td>
<td>1326</td>
</tr>
<tr>
<td>Peters Creek/ Birchwood</td>
<td>359</td>
<td>9%</td>
<td>889</td>
</tr>
<tr>
<td>Eklutna/ Thunderbird</td>
<td>338</td>
<td>9%</td>
<td>907</td>
</tr>
<tr>
<td>Old Glenn Interchange and Eklutna Flats</td>
<td>270</td>
<td>7%</td>
<td>694</td>
</tr>
<tr>
<td>North of the Knik River Bridge</td>
<td>126</td>
<td>3%</td>
<td>408</td>
</tr>
<tr>
<td>Total Number of Markers:</td>
<td>3838</td>
<td>Total Number of Markers:</td>
<td>10433</td>
</tr>
</tbody>
</table>

There were five icon markers available to place on the map part of the survey. Figure F-1 shows the frequency for each type of map marker that was placed before and after the crash incident on March 21.
Before the crash, 41% of the map markers placed were about congestion, after the crash 44% of icons placed were the congestion icon. Similarly, 9% of icons were suggestions before the crash and 7% were suggestions after the crash. The distribution between the categories stayed relatively the same before and after the incident.

Additionally, the flexibility of users in the morning before and after the crash were compared, as shown in Figure F-2 and Figure F-3, no change in the distribution was observed.
Flexibility in the Morning

<table>
<thead>
<tr>
<th></th>
<th>Respondents Before March 21st</th>
<th>Respondents After March 21st</th>
</tr>
</thead>
<tbody>
<tr>
<td>No Flexibility</td>
<td>15%</td>
<td>20%</td>
</tr>
<tr>
<td>Slight Flexibility (15 minutes)</td>
<td>25%</td>
<td>30%</td>
</tr>
<tr>
<td>Flexible (30 minutes)</td>
<td>20%</td>
<td>15%</td>
</tr>
<tr>
<td>Flexible (1 hour)</td>
<td>10%</td>
<td>5%</td>
</tr>
<tr>
<td>Flexible (2 hours)</td>
<td>5%</td>
<td>0%</td>
</tr>
<tr>
<td>Complete Flexibility</td>
<td>10%</td>
<td>15%</td>
</tr>
</tbody>
</table>

Figure F-2: Flexibility in the Morning Before and After the Crash on March 21st

Flexibility in the Evening

<table>
<thead>
<tr>
<th></th>
<th>Respondents Before March 21st</th>
<th>Respondents After March 21st</th>
</tr>
</thead>
<tbody>
<tr>
<td>No Flexibility</td>
<td>10%</td>
<td>5%</td>
</tr>
<tr>
<td>Slight Flexibility (15 minutes)</td>
<td>20%</td>
<td>15%</td>
</tr>
<tr>
<td>Flexible (30 minutes)</td>
<td>15%</td>
<td>10%</td>
</tr>
<tr>
<td>Flexible (1 hour)</td>
<td>10%</td>
<td>5%</td>
</tr>
<tr>
<td>Flexible (2 hours)</td>
<td>5%</td>
<td>0%</td>
</tr>
<tr>
<td>Complete Flexibility</td>
<td>10%</td>
<td>15%</td>
</tr>
</tbody>
</table>

Figure F-3: Flexibility in the Evening Before and After the Crash on March 21st
Finally, KE compared respondent’s comments about what would encourage them to choose a different mode for travel. This also had no change in the distribution, comparing before and after the incident, as shown in Figure F-4.

![Bar chart showing public comments about changing mode choice.](image)

**Figure F-4: Public Comments about Changing Mode Choice**