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Technical Memo

To	Wes Ducey, SDOT Project Manager
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Date:	April 17, 2019
Project:	Magnolia Bridge Planning Study
Subject	Alternatives Analysis Summary

1. Executive Summary

The existing Magnolia Bridge currently serves to connect to and from Magnolia, Smith Cove Park/Elliott Bay Marina, Terminal 91/Elliot Bay Businesses, and 15th Ave W. The bridge serves 17,000 ADT and 3 King County Metro bus lines serving an average of 3,000 riders each weekday. The bridge was constructed 90 years ago and has deteriorated. While SDOT continues to perform maintenance to maintain public safety, the age and condition of the bridge structure means there will continue to be deterioration. In 2006, following a 4-year planning study; however, over the last decade, funding has not been identified to advance this alternative beyond 30% design.

This Magnolia Bridge Planning Study identified three Alternatives to the 2006 recommend In-Kind Replacement option. These Alternatives, along with the In-Kind Replacement option, have been analyzed and compared through a multi-criteria evaluation process. Focusing on the main connections into Magnolia and Smith Cove Park/Elliott Bay Marina, the Alternatives identified are:

- **Alternative 1**: a new Armory Way Bridge into Magnolia and a new Western Perimeter Road to Smith Cove Park/Elliott Bay Marina ($200M - $350M),
- **Alternative 2**: Improvements to the existing Dravus St connection into Magnolia and a new Western Perimeter Road to Smith Cove Park/Elliott Bay Marina ($190M – $350M),
- **Alternative 3**: Improvements to the existing Dravus St connection into Magnolia and a new Garfield St bridge to Smith Cove Park/Elliott Bay Marina ($210M - $360M), and
- **Alternative 4**: In-Kind Replacement of the existing Magnolia Bridge adjacent to its current location ($340M – $420M).

The multi-criteria evaluation processes focused on key metrics in five broad evaluation categories, including:

- **Mobility and Connectivity** including travel time modeling to key destinations served by the existing bridge based on estimated traffic growth in the Interbay corridor out to the year 2035;
- **Environmental Impacts** including impacts to existing land uses, sensitive areas, and natural hazards;
- **Cost Estimates** including planning-level cost estimates of construction, right-of-way, engineering, and administration;
- **Implementation Characteristics** including metrics that speak to aspects of the actual construction process and how each alternative may impact or benefit the traveling public; and
- **Community Support** including project-specific criteria related to the level of community support expressed by the public and stakeholders for each alternative during the MBPS outreach effort

After considering the scores of the alternatives among all the comparison metrics and applying a sensitivity analysis to the metric weights, two options consistently performed best – **Alternative 1 ($200-$350M)** and **Alternative 4 ($340-$420M)**.

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Appendices

3. Memo Purpose

The following memo memorializes the process, methodology, and results of the alternatives analysis conducted as a part of the Magnolia Bridge Planning Study (MBPS). The alternatives analysis represents the final step of the MBPS which was initiated in 2017. To support decision making going forward, this memo provides the City and stakeholders with a comparison of the Magnolia Bridge replacement options.

3.1. Introduction

3.1.1. Project Background

The Magnolia Bridge, originally built in 1930, is one of three arterial bridges that serve Magnolia which is home to over 20,000 Seattle residents. The bridge provides the most direct link between the 15th Avenue W/Elliot Avenue corridor and Magnolia Village, Port of Seattle's Terminal 91, Smith Cove, and the Elliott Bay Marina. In addition, Metro's Route 19, 24, and 33 provide transit service between Magnolia and Downtown Seattle using the Magnolia Bridge.

Over the decades, age and environmental impacts have weathered the Magnolia Bridge. SDOT performs regular maintenance and frequent inspections on the bridge to ensure it is safe to use. However, in the long term, a replacement will be needed for the bridge. In 2002, the year after the Nisqually Earthquake, SDOT received a grant to identify an alternative that would meet community needs and be well-suited to environmental conditions in the area.

More than 20 options were considered in the 2002 study, many of which were eliminated due to environmental restrictions, community concerns, and engineering limitations. Five alternatives were presented to the community. Ultimately, the community's preferred alternative was an in-kind replacement that would parallel the existing bridge to the south. To date, funding to complete the design and construct the preferred option has not been identified.

In 2017, the MBPS was launched to identify additional alternatives for the Magnolia Bridge. The study was funded by the Levy to Move Seattle. The study's primary goal is to identify and evaluate feasible alternatives to replace the functional needs of the existing Magnolia Bridge.

3.1.2. Project Purpose & Goals

The MBPS began by working with key stakeholders and SDOT staff to further clarify the purpose and goals for the project that were developed with stakeholders during the prior study. The full Project Purpose and Goals is presented in **Appendix A**. In summary, the study aimed to identify Magnolia Bridge replacement solutions that:

- Provide a safe route(s) to Magnolia
- Provide reliable and redundant access to and from Magnolia
- Grade separate any new route from the BNSF Mainline railroad tracks.
- Provide a route that will support Magnolia Village.

- Maintain or improve traffic flow on, and connections to, the 15th Avenue W corridor.
- Maintain access to the Smith Cove waterfront and improve connection between Magnolia and the Smith Cove waterfront.
- Maintain or improve access to Terminal 91.
- Improve the level of bicycle and pedestrian connections within and beyond the project area.
- Consider Sound Transit's future light rail extension project when evaluating alternatives.
- Consider cost-effective alternatives.
- Minimize or mitigate environmental impacts.
- Minimize disruption during construction.

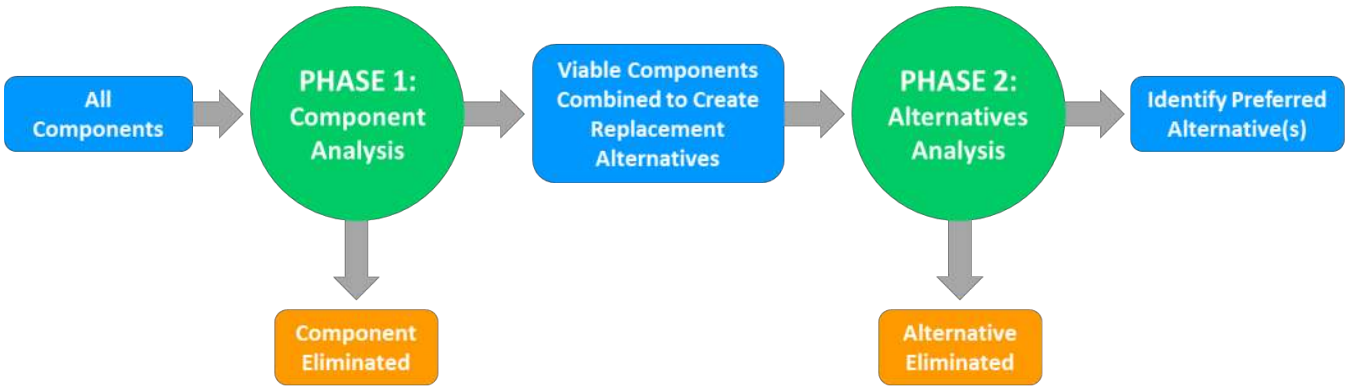
The goals, as identified in the purpose and goals document, provided a foundation for developing performance-based metrics that were used to evaluate alternatives.

3.1.3. Evaluation Process

At the start of the evaluation process, the project team identified potential components that could support a replacement of the Magnolia Bridge. Many of the components were considered in the 2002 study while some were new concepts. In total, sixteen potential components were identified which consisted of ten basic components, some with several route options (e.g., 2A or 2B).

The evaluation process was conducted in two phases, the Component Analysis phase and the Alternatives Analysis phase, as illustrated in **Figure 1**.

Figure 1. Weighting of Main Categories



During the Component Analysis, the sixteen potential components were put through a technical screening to determine which components seemed viable before advancing into the Alternatives Analysis and performing more in-depth analysis. The component analysis consisted of drafting a preliminary design to determine the geometric feasibility of each component and performing traffic operations analyses to test the component's ability to carry the projected volume of vehicle traffic in the 2035 horizon year. Components that were found to be technically feasible were advanced to the next phase of analysis. A summary of the Component Analysis methodology and results are described in a technical memorandum presented in **Appendix B**.

Viable components were then packaged together to create three bridge replacement alternatives that were considered functionally equivalent to the existing Magnolia Bridge. In addition, an in-kind replacement of the Magnolia Bridge was included as a fourth alternative. The following sections describe these alternatives, document the alternatives analysis process and methodology, and discuss the study results.

4. Description of Alternatives

The following describes the four Magnolia Bridge replacement alternatives that came out of the component analysis and were evaluated further as a part of the Alternatives Analysis. Geometric design was performed for these alternatives to identify appropriate lane widths, turn radii, freight access, pedestrian and bicycle facilities and connections, grades and profiles, sight distance, and required clearances. These preliminary designs are included in the Component Analysis attached in Appendix B.

4.1. Alternative 1 - Armory Way Bridge

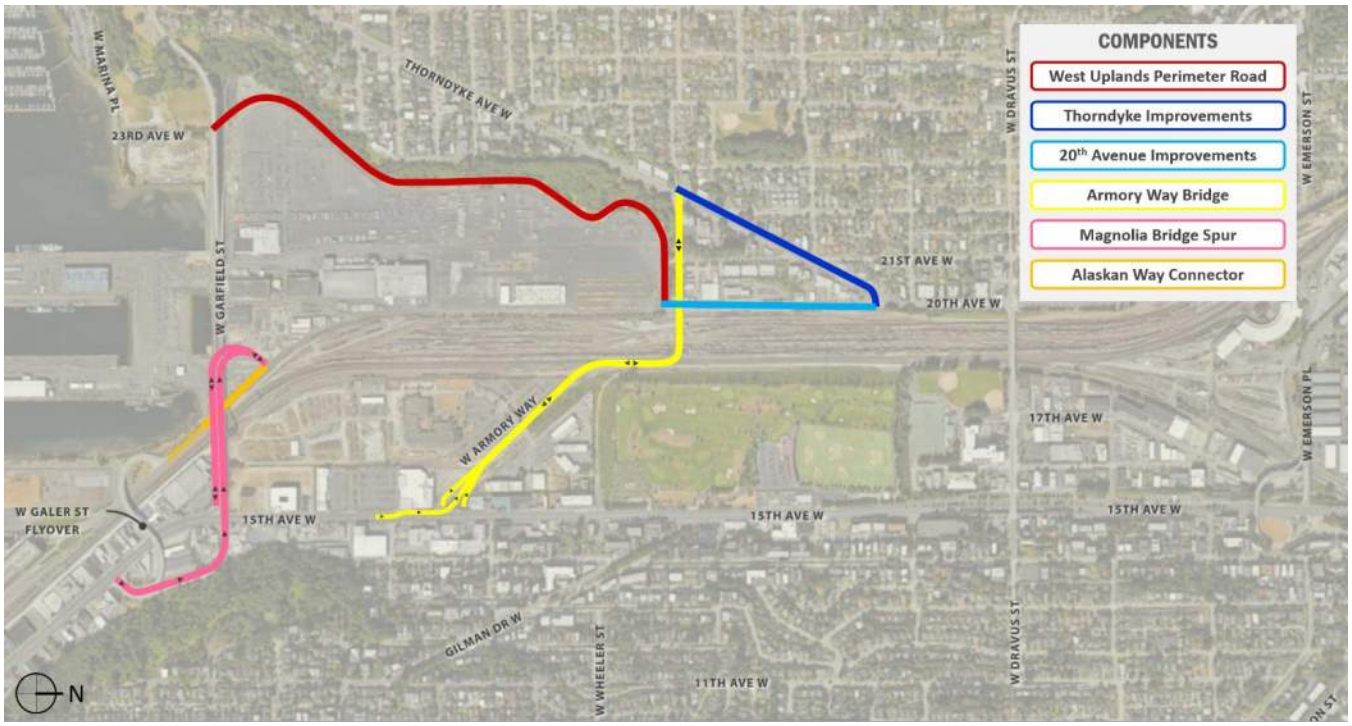
Alternative 1 would create a new access point to Magnolia by constructing a bridge between 15th Avenue W along Armory Way and connecting to Thorndyke Avenue W at Halladay Street, crossing over the BNSF railroad. The structure would have a northbound, on-ramp from 15th Avenue W designed to allow free-flow access to the bridge while accommodating a potential Sound Transit rail alignment.

To provide access to Smith Cove and the Elliott Bay Marina, a West Uplands Perimeter Road would be constructed along the Port of Seattle's property between 20th Ave W and 23rd Avenue W. Thorndyke Avenue W and 20th Ave W would be improved to accommodate traffic using the Armory Way Bridge and freight vehicles accessing the marina and port properties.

Alternative 1 also includes retrofitting the eastern most spur of the existing Magnolia Bridge, which crosses over 15th Avenue W and the BNSF railroad, by adding a ramp down to Alaskan Way W on the north side of the bridge. Improvements would also be made to Alaskan Way W between this new ramp and the existing ramp to the Galer Street Flyover. The component analysis revealed that these components are required to provide an alternative access to Terminal 91, Port of Seattle property, and Expedia campus and distribute traffic between the existing Galer Street Flyover and this new Garfield Street Flyover.

The existing Magnolia Bridge would be decommissioned.

Figure 2. Alternative 1 – Armory Way Bridge Concept



4.2. Alternative 2 - Dravus Street Upgrade

Alternative 2 would make major upgrades to the Dravus Street and 15th Avenue W interchange to improve capacity and traffic flow. In addition, Dravus Street would be widened between 15th Avenue W and 20th Avenue W, including the Dravus Street Bridge over the BNSF railroad. The resulting street would increase vehicle throughput at this critical connection point and greatly improve access for pedestrians, bicycles, and transit riders on Dravus Street.

To provide access to Smith Cove and the Elliott Bay Marina, a West Uplands Perimeter Road would be constructed along the Port of Seattle's property between 20th Ave W and 23rd Avenue W. The existing Elliott Bay Trail would be realigned to follow the new roadway. Also, 20th Ave W would be improved to accommodate traffic and freight vehicles accessing the marina and port properties.

Lastly, Alternative 2 also includes retrofitting the eastern most spur of the existing Magnolia Bridge, which crosses over 15th Avenue W and the BNSF railroad, by adding a ramp down to Alaskan Way W on the north side of the bridge. Improvements would also be made to Alaskan Way W between this new ramp and the existing Galer Street Flyover ramp. The component analysis revealed that these components are required to provide an alternative access to Terminal 91, Port of Seattle property, and Expedia campus and distribute traffic between the existing Galer Street Flyover and this new Garfield Street Flyover.

The remaining segments of the existing Magnolia Bridge would be decommissioned.

Figure 3. Alternative 2 – Dravus Street Upgrade Concept

4.3. Alternative 3 - Lower Magnolia Bridge

Alternative 3 would reconstruct the lower portion of the Magnolia Bridge to provide access to Terminal 91, Smith Cove, and the Elliott Bay Marina. The bridge structure would follow a similar alignment as the existing bridge, elevated over the BNSF railroad and the Port of Seattle property, but would drop to grade level at 23rd Avenue W. It would not continue to the top of the Magnolia bluff.

As with Alternative 2, Alternative 3 would make major upgrades to the Dravus Street and 15th Avenue W interchange and widen Dravus Street, including the Dravus Street Bridge over the BNSF railroad. The resulting street would increase vehicle capacity at this critical existing connection point and greatly improve access for pedestrians, bicycles, and transit riders using Dravus Street.

The remaining segments of the existing Magnolia Bridge would be decommissioned.

Figure 4. Alternative 3 – Lower Magnolia Bridge Concept

4.4. Alternative 4 – In-Kind Replacement

The In-Kind Replacement alternative would demolish and reconstruct a new bridge following a similar alignment and with the same functionality as the current bridge. The replacement would have the same functionality and similar geometry as the current bridge but designed to current code standards. There would be no other improvements or components included in the project.

Figure 5. In-Kind Replacement Concept

5. Analysis Methodology

The following section describes the analysis methodology used to evaluate the four Magnolia Bridge replacement alternatives. An overview of the evaluation criteria, weighting, and scoring methods is provided and followed by further details on each metric and the analysis results.

5.1. Evaluation Criteria and Weighting

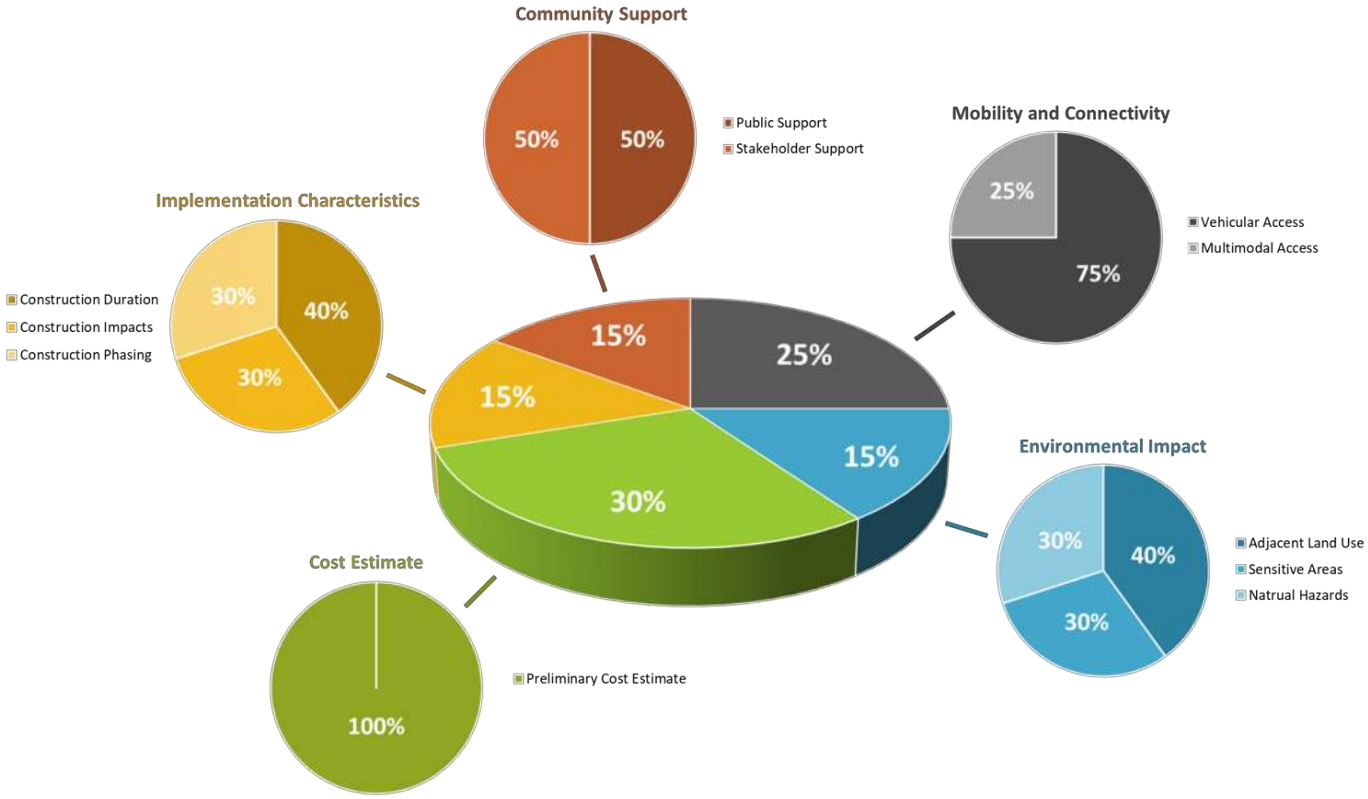
The MBPS took a performance-based approach to the alternatives analysis. The project purpose and goals were used as a basis for establishing the evaluation criteria that would be used to compare the four alternatives. The evaluation criteria fall into the following five broad evaluation categories:

- Mobility and Connectivity
- Environmental Impact
- Cost Estimate
- Implementation Characteristics
- Community Support

Within each of the five main categories, project-specific criteria were identified to evaluate the project goals, measured either qualitatively or quantitatively. Through discussions among SDOT, key stakeholders, and consultant project team, each of the five main categories was assigned a weight, as a percentage, to reflect how critical each category is to the decision-making process. In addition, each of project-specific criteria were assigned weights to indicate level of importance within the main category.

Identifying funding has been the largest hurdle to implementing the preferred, in-kind replacement, solution identified that was identified in the 2002 planning effort. Therefore, the current MBPS effort considered the Cost Estimate category to carry the most weight of any other category. The performance of the alternative, as measured by the Mobility and Connectivity category metrics, was considered to be the second most important category. The remaining three categories were equally weighted. **Figure 6** illustrates the assigned weights among the main categories and project-specific criteria.

Figure 6. Category and Criteria Weighting



Scoring of the alternatives was done in a relative manner, comparing the alternatives against each other as opposed to a "no-build" option. For each of the project-specific criteria, a scoring scale was developed to represent the range of values observed or measured. Using this scale, a score between 10 (worst score) and 90 (best score), was assigned to each of the alternatives.

The following sections provide details on each of the project-specific criteria including their analysis methods, metrics, and scoring results.

5.2. Mobility and Connectivity

The Mobility and Connectivity category made up 25-percent of the total weighted score and includes project-specific criteria that speak to the movement of people and goods into and out of Magnolia. The Magnolia bridge provides access between the Magnolia community and the rest of the City of Seattle. The bridge also provides the only public vehicular access to Smith Cove and the Elliott Bay Marina. The ideal solution provides efficient, safe, and improved multimodal access to and from Magnolia destinations. Detailed traffic analysis was performed and is presented in **Appendix C** (*Traffic Analysis-Future Traffic Forecasts and Operations,* Heffron Transportation, February 15, 2019). The results of that analysis were used to evaluate this group of criteria.

The following project-specific criteria were used to evaluate Mobility and Connectivity across a variety of modes.

5.2.1. Vehicular Access (75%)

Vehicular Access made up 75-percent of the Mobility and Connectivity category. To evaluate vehicular access, projected travel times between key origins and destinations within the study area were used as the quantitative metric. The weighting was evenly divided among the following sub criteria, representing specific origin-destination pairs (O-D pairs), as shown:

- Between Magnolia Village and Elliott Bay/Ballard Bridge (15%)
- Between Elliott Bay Marina/Smith Cove and 15th Ave W (15%)
- Between Elliott Bay Marina/Waterfront and Magnolia Village (15%)
- Access to Terminal 91/Alaskan Way W (15%)
- Traffic Flow on 15th Avenue (15%)

For each of the four alternatives, the 2035 forecasted traffic volumes were reassigned to the street network and routes between each O-D pair were mapped. Once the routes were established, traffic model software was used to determine average travel times for each of the designated routes. Travel times were calculated in both the AM and PM peak hours and also in both directions of travel. For instance, from the Magnolia Village to the Elliott Bay Marina as well as from the Elliot Bay Marina to the Magnolia Village.

Table 1 shows the results of the travel time analysis. The table includes the forecasted travel times for each of the alternatives by route, direction, and peak hour. An average travel time for each O-D pair is provided and was the metric used to score the alternatives. However, if the travel time for any route within an O-D pair exceeded one-hour, the alternative was assigned the lowest possible score for that O-D pair sub criteria category. Both Alternatives 2 and 3 were found to have at least one travel time that exceeded one hour, or 60 minutes.

Table 1. Vehicular Access – Travel Time Analysis Results

To Magnolia Village			Alt 1	Alt 2	Alt 3	Alt 4
Origin	**Destination**	**Peak Hour**	**Travel Time (minutes)**			
Magnolia Village	Elliott Avenue W	AM	17	20	39	6
Magnolia Village	Elliott Avenue W	PM	12	18	18	6
Elliott Ave W	Magnolia Village	AM	10	13	12	8
Elliott Ave W	Magnolia Village	PM	25	66*	78*	8
Magnolia Village	Ballard Bridge	AM	13	14	31	10
Magnolia Village	Ballard Bridge	PM	12	13	13	11
Ballard Bridge	Magnolia Village	AM	34	34	33	28
Ballard Bridge	Magnolia Village	PM	15	15	17	12
Average Travel Time			**17**	**24**	**30**	**11**

Between Smith Cove/Elliott Bay Marina and Elliot Bay/Ballard			Alt 1	Alt 2	Alt 3	Alt 4
Origin	**Destination**	**Peak Hour**	**Travel Time (minutes)**			
Smith Cove/Marina	Elliott Avenue W	AM	15	18	2	3
Smith Cove/Marina	Elliott Avenue W	PM	9	15	5	2
Elliott Avenue W	Smith Cove/Marina	AM	7	11	3	5
Elliott Avenue W	Smith Cove/Marina	PM	25	63*	4	5
Smith Cove/Marina	Ballard Bridge	AM	14	19	6	5
Smith Cove/Marina	Ballard Bridge	PM	15	14	16	12
Ballard Bridge	Smith Cove/Marina	AM	36	38	33	25
Ballard Bridge	Smith Cove/Marina	PM	18	18	16	10
Average Travel Time			**17**	**25**	**11**	**8**

Between Smith Cove/Elliott Bay Marina and Magnolia Village			Alt 1	Alt 2	Alt 3	Alt 4
Origin	**Destination**	**Peak Hour**	**Travel Time (minutes)**			
Magnolia Village	Smith Cove/Marina	AM	7	15	41	13
Magnolia Village	Smith Cove/Marina	PM	8	8	21	15
Smith Cove/Marina	Magnolia Village	AM	6	9	15	14
Smith Cove/Marina	Magnolia Village	PM	8	8	25	21
Average Travel Time			**7**	**10**	**26**	**16**

To Terminal 91/Expedia			Alt 1	Alt 2	Alt 3	Alt 4
Origin	**Destination**	**Peak Hour**	**Travel Time (minutes)**			
Terminal 91/Expedia	Elliott Avenue W	AM	2	2	2	2
Terminal 91/Expedia	Elliott Avenue W	PM	2	2	5	5
Elliott Ave W	Terminal 91/Expedia	AM	2	3	4	6
Elliott Ave W	Terminal 91/Expedia	PM	6	5	5	5
Terminal 91/Expedia	Ballard Bridge	AM	7	5	7	8
Terminal 91/Expedia	Ballard Bridge	PM	6	10	18	16
Ballard Bridge	Terminal 91/Expedia	AM	36	33	36	28
Ballard Bridge	Terminal 91/Expedia	PM	10	13	18	9
Average Travel Time			**9**	**9**	**12**	**10**

Along 15th Avenue W			Alt 1	Alt 2	Alt 3	Alt 4
Origin	**Destination**	**Peak Hour**	**Travel Time (minutes)**			
Ballard Bridge	Elliott Bay	AM	37	32	33	25
Ballard Bridge	Elliott Bay	PM	13	12	16	9
Elliott Bay	Ballard Bridge	AM	7	5	5	8
Elliott Bay	Ballard Bridge	PM	21	57	70*	32
Average Travel Time			**20**	**27**	**31**	**19**

*= Forcasted travel times over 1-hr were considered to be unacceptable. Any alternative with a travel time greater than 60 minutes was given the lowest possible score.

Based on the results of the Vehicular Access analysis, a scale was developed to score the alternatives relative to each other. **Table 2** shows the scoring matrix.

Table 2. Vehicular Access – Scoring Matrix

	10	30	50	70	90
Average Travel Time (minutes)	27 to 32	22 to 26	17 to 21	12 to 16	6 to 11

The scores assigned to each of the alternatives by origin-destination pair are shown in **Table 3**.

Table 3. Vehicular Access – Scoring Results

	Alt 1	Alt 2	Alt 3	Alt 4
To Magnolia Village	50	10	10	90
Between Smith Cove/Elliott Bay Marina and Elliot Bay/Ballard	50	10	90	90
Between Smith Cove/Elliott Bay Marina and Magnolia Village	90	90	30	70
To Terminal 91/Expedia	90	90	70	90
Along 15th Avenue W	50	10	10	50

5.2.2. Multimodal Mobility (25%)

Multimodal Mobility made up 25-percent of the Mobility and Connectivity category. The criteria are related to other road users, besides vehicles, that access Magnolia on a daily basis including pedestrians, bicycles, transit, and freight. A detailed transit and non-motorized transportation analysis was performed and is presented in **Appendix D** (*Transportation Analysis – Transit, Pedestrian and Bicycles*, Heffron Transportation, February 15, 2019). The results of that analysis were used to evaluate this group of criteria. Considerations for assessing the mobility of these modes are described below.

The 25-percent assigned to the Multimodal Mobility criteria is divided among the following sub criteria, representing different modal groups, as shown:

- Pedestrian and Bicycle (10%)
- Transit (10%)
- Freight (5%)

For each of the modal groups, a series of project-specific metrics related to connectivity and access were identified. Each metric was assigned a maximum value which in effect weighted the metrics within the modal group. Considering these metrics, the four alternatives were evaluated on a qualitative and comparative basis. **Table 4** summarizes the Multimodal Mobility metrics and analysis results.

Table 4. Multimodal Mobility – Analysis Results

Pedestrian and Bicycle	Max Value	Alt 1	Alt 2	Alt 3	Alt 4
Non-motorized connection between Magnolia and 15th Ave W/Elliott Ave	*66*	44	22	22	66
Non-motorized connection to existing facilities (trails, sidewalks, bike lanes)	*100*	100	100	66	33
Non-motorized connection between 15th Ave W/Elliott Ave and Smith Cove	*33*	22	11	33	33
Sum:	***199***	**166**	**133**	**121**	**132**
Percent:	***100%***	***83%***	***67%***	***61%***	***66%***
Transit	Max Value	Alt 1	Alt 2	Alt 3	Alt 4
Bus connection between Magnolia and Downtown Seattle	*100*	66	33	33	100
Bus connection between Magnolia and Smith Cove Light Rail Station	*33*	22	11	11	33
Bus connection between Magnolia and Interbay Light Rail Station	*33*	22	33	33	22
Bus connection between Magnolia and Interbay (Whole Foods)	*33*	33	11	11	22
Bus service near T-91 and Smith Cove Marina	*33*	11	11	11	33
Sum:	***232***	**154**	**99**	**99**	**210**
Percent:	***100%***	***66%***	***43%***	***43%***	***91%***
Freight	Max Value	Alt 1	Alt 2	Alt 3	Alt 4
Freight access to T-91/Expedia	*66*	66	66	44	44
Freight access to Magnolia	*33*	22	11	11	33
Traffic flow on 15thAve W/Elliott Ave	*100*	66	33	33	100
Sum:	***200***	**154**	**110**	**88**	**177**
Percent:	***100%***	***77%***	***55%***	***44%***	***89%***

Based on the results of the Multimodal Mobility analysis, a scale was developed to score the alternatives relative to each other. **Table 5** shows the scoring matrix.

Table 5. Multimodal Mobility – Scoring Matrix

	10	**30**	**50**	**70**	**90**
Percent of Maximum Value	43 to 52	53 to 62	63 to 71	72 to 81	82 to 91

The scores assigned to each of the alternatives by modal group are shown in **Table 6**.

Table 6. Multimodal Mobility – Scoring Results

	Alt 1	Alt 2	Alt 3	Alt 4
Pedestrian and Bicycle	90	50	50	50
Transit	50	10	10	90
Freight	70	30	10	90

5.3. Environmental Impacts

The Environmental Impacts category made up 15-percent of the total weighted score and includes project-specific criteria that speak to impacts to existing land uses, sensitive areas, and natural hazards. The ideal solution avoids or mitigates impacts to environmentally sensitive areas, minimizes impacts to natural hazards, and limits right-of-way acquisition as well as noise and visual pollution impacting adjacent residents and businesses.

The Environmental Impacts category includes the following project-specific criteria which were assigned individual weighting that makes up 100 percent of the Environmental Impacts Category.

5.3.1. Impacts to Adjacent Land Use (40%)

Impacts to Adjacent Land Uses made up 40-percent of the Environmental Impacts category. The 40-percent assigned to the Adjacent Land Use criteria is divided among the following sub criteria as shown:

- Right-of-Way Acquisition (20%)
- Visual and Noise Impacts (20%)

The evaluation of this project-specific criteria considers how much right-of-way acquisition would be required to construct each alternative. It also considers the magnitude of long-term impacts on visual character, including retaining walls and structures proposed, and noise levels in the surrounding areas.

Impacts to current land uses, such as Magnolia residences and Port of Seattle properties, were considered as well as impacts to planned land uses such as the Expedia development and the Port of Seattle's Upland development.

5.3.2. Impacts to Sensitive Areas (30%)

Impacts to Sensitive Areas made up 30-percent of the Environmental Impacts category.

The evaluation of this project-specific criteria considers potential impacts to protected wildlife habitats and mapped wetland areas which would require additional permitting and mitigation measures. The 30-percent assigned to the Sensitive Areas criteria is divided among the following sub criteria as shown:

- Protected Wildlife Habitat (15%)
- Wetland Areas (15%)

5.3.3. Impacts to Natural Hazards (30%)

Impacts to Natural Hazards made up 30-percent of the Environmental Impacts score. The evaluation of this project-specific criteria considers proximity to liquefaction zones and proximity to steep slopes and historic slide areas. The 30-percent assigned to the Sensitive Areas criteria is divided among the following sub criteria as shown:

- Steep Slopes (15%)
- Liquefaction Zone (15%)

5.3.4. Environmental Impact Analysis Results

To evaluate impacts for each of the project-specific criteria within the Environmental Impacts category, each of the project components that make up the alternatives was assigned points (0 through 4) based on the anticipated level of impact for each of the sub criteria. The anticipated level of impact was qualitatively determined by evaluating the footprint of each component in relation to the aerial image and various geospatial

data provided by the City of Seattle that represent each of the sub criteria. Depending on the project components involved in each alternative, a total score was determined for each of the three project-specific criteria related to Environmental Impacts. **Table 7** summarizes the points assigned to each component and the score for each alternative.

Table 7. Environmental Impacts – Analysis Results

	ADJACENT LAND USE			NATURAL HAZARDS			SENSITIVE AREAS		
Component	Visual & Noise Impacts	ROW Acquisition	**Raw Land Use Score**	Habitat	Wetland	**Raw Sensitive Areas Score**	Steep Slopes	Liquefaction Zone	**Raw Natural Hazard Score**
West Uplands Perimeter Road	0	2	**2**	0	2	**2**	1	1	**2**
20th Avenue W Improvements	0	0	**0**	0	1	**1**	0	1	**1**
Dravus Street Improvements	1	1	**2**	0	0	**0**	0	1	**1**
Armory Way Bridge	1	1	**2**	0	2	**2**	2	1	**3**
Thorndyke Avenue Improvements	0	0	**0**	0	0	**0**	0	0	**0**
Magnolia Bridge Spur	0	1	**1**	0	0	**0**	0	1	**1**
Alaskan Way Connector	0	0	**0**	0	0	**0**	0	1	**1**
Lower Magnolia Bridge	0	3	**3**	0	0	**0**	0	1	**1**
In-Kind Replacement	0	3	**3**	0	0	**0**	3	1	**4**

	ADJACENT LAND USE			NATURAL HAZARDS			SENSITIVE AREAS		
Alternative	Visual & Noise Impacts	ROW Acquisition	**Raw Land Use Score**	Habitat	Wetland	**Raw Sensitive Areas Score**	Steep Slopes	Liquefaction Zone	**Raw Natural Hazard Score**
Alternative 1	1	4	**5**	0	5	**5**	3	5	**8**
Alternative 2	1	4	**5**	0	3	**3**	1	5	**6**
Alternative 3	1	4	**5**	0	0	**0**	0	2	**2**
Alternative 4	0	3	**3**	0	0	**0**	3	1	**4**

Based on the results of the Environmental Impacts analysis, a scale was developed to score the alternatives relative to each other. **Table 8** shows the scoring matrix.

Table 8. Environmental Impacts – Scoring Matrix

	10	**30**	**50**	**70**	**90**
Total Points	7 to 8	5 to 6	4	2 to 3	0 to 1

The scores assigned to each of the alternatives by project-specific criteria related to Environmental Impacts are shown in **Table 6**.

Table 9. Environmental Impacts – Scoring Results

	Alt 1	Alt 2	Alt 3	Alt 4
Adjacent Land Use	30	30	30	70
Sensitive Areas	30	70	90	90
Natural Hazards	10	30	70	50

5.4. Cost Estimate

The Cost Estimate category made up 30-percent of the total weighted score and includes only one project-specific criteria that speaks to the expected cost of each alternative. The ideal solution is financially feasible and provides the most benefit to the traveling public for the lowest possible cost.

5.4.1. Preliminary Cost Estimate (100%)

Preliminary Cost Estimate is the only project-specific criteria identified under the Cost Estimate category. Therefore, the Preliminary Cost Estimate score makes up 100-percent of the Cost Estimate category.

For Alternative 4 (In-Kind Replacement), the cost estimate calculated for the 30% design effort in 2006 was updated to 2018 dollars by escalating each of the estimated unit costs. For instance, right-of-way costs were updated to 2018 dollars by escalating the unit cost of real estate based on the relative increase in King County assessments for adjacent parcels over the escalation period.

The escalated unit costs were then used to develop planning level cost estimates for each of the separate project components. The project component costs were then summed, depending on the configuration of each alternative, to create a total estimated project cost for Alternatives 1, 2, and 3.

Table 10 summarizes the estimated component costs and the total Preliminary Cost Estimate for each of the alternatives. Details on the cost estimates are included as **Appendix E**.

Table 10. Cost Estimate – Analysis Results

Component	Component Construction Cost Estimate
West Uplands Perimeter Road	$13,396,000
20th Avenue W Improvements	$1,004,000
Dravus Street Improvements	$44,712,000
Armory Way Bridge	$45,411,000
Thorndyke Avenue Improvements	$2,792,000
Magnolia Bridge Spur	$43,544,000
Alaskan Way Connector	$1,576,000
Lower Magnolia Bridge	$67,063,000
In-Kind Replacement	$191,123,000
Existing Bridge Demolition	$6,674,000

Alternative	Construction Cost Estimate (2018$)	Right-of-Way Cost Estimate (2018$)	Soft Costs Estimate (2018$)	Estimate Base Cost (2018$)	Contingency Cost Estimate (2018$)	**Total Cost Estimate (2018$)**
Alternative 1	$114,397,000	$44,596,000	$45,758,800	$204,751,800	$61,000,000	**$266,000,000**
Alternative 2	$110,906,000	$42,155,800	$44,362,400	$197,424,200	$59,000,000	**$256,000,000**
Alternative 3	$118,449,000	$44,406,800	$47,379,600	$210,235,400	$63,000,000	**$273,000,000**
Alternative 4	$197,797,000	$48,544,000	$59,339,100	$305,680,100	$92,000,000	**$398,000,000**

Based on the results of the Cost Estimate analysis, a scale was developed to score the alternatives relative to each other. **Table 11** shows the scoring matrix.

Table 11. Cost Estimate – Scoring Matrix

	10	30	50	70	90
Cost Estimate (2018$)	> $375M	$325M to $375M	$275M to $324M	$225M to $274M	< $225M

The scores assigned to each of the alternatives by project-specific criteria related to Cost Estimate are shown in **Table 12**.

Table 12. Cost Estimate – Scoring Results

	Alt 1	Alt 2	Alt 3	Alt 4
Preliminary Cost Estimate	70	70	70	10

5.5. Implementation Characteristics

The Implementation Characteristics category made up 15-percent of the total weighted score and includes project-specific criteria that speak to aspects of the actual construction process and how each alternative may impact or benefit the traveling public. The ideal solution will be constructed with minimal impacts to traffic and can be phased to provide interim functionality or benefit to the community.

The following project-specific criteria were used to determine the overall Implementation Characteristics of each alternative.

5.5.1. Construction Duration (40%)

Construction Duration made up 40-percent of the Implementation Characteristics category and relates to the overall anticipated length of construction. To evaluate construction duration, construction schedules were developed for each of the four alternatives. The estimated construction schedules are provided as **Appendix F**

A detailed construction schedule was prepared for Alternative 4 (In-Kind Replacement) during the 30% design effort in 2006. A construction management subconsultant reviewed and updated the previous schedule and prepared high-level schedules for each of the other alternatives using the same criteria and durations for like components. **Table 13** summarizes the estimated construction duration by alternative.

Table 13. Construction Duration – Analysis Results

	Alt 1	Alt 2	Alt 3	Alt 4
Construction Duration	29 months	29 months	35 months	31 months

Based on the results of the Cost Estimate analysis, a scale was developed to score the alternatives relative to each other. **Table 14** shows the scoring matrix.

Table 14. Construction Duration – Scoring Matrix

	10	30	50	70	90
Duration (months)	35 to 36	33 to 34	31 to 32	29 to 30	27 to 28

5.5.2. Construction Impacts (30%)

Construction Impacts made up 30-percent of the Implementation Characteristics category and relates to the anticipated length of significant impacts to traffic. Significant impacts were considered to be extended lane closures on roads classified as principal arterials, such as 15th Avenue W, Dravus Street, and the Magnolia Bridge. Construction impacts vary among the project components that make up each of the alternatives. For instance, reconstructing the Dravus Street interchange would have large impacts to the existing transportation network over the entire construction period. Alternatively, construction of the Amory Way Bridge or the West Uplands Perimeter Road, which are largely new roadway components, could be done with far fewer impacts to the traveling public.

To determine Construction Impacts, the construction schedules were evaluated to determine how many months of significant traffic impacts would be experienced in each schedule. If a project component was expected to introduce minor impacts to traffic, the duration of their exclusive work was eliminated from the overall duration of each alternative to determine the remaining months that the public would experience significant traffic impacts. **Table 15** summarizes the estimated length of construction impacts by alternative.

Table 15. Construction Impacts – Analysis Results

	Alt 1	Alt 2	Alt 3	Alt 4
Construction Impact	14 months	26 months	31 months	27 months

Based on the results of the Construction Impacts analysis, a scale was developed to score the alternatives relative to each other. **Table 16** shows the scoring matrix.

Table 16. Construction Impacts – Scoring Matrix

	10	30	50	70	90
Duration (months)	29 to 32	25 to 28	21 to 24	17 to 20	13 to 16

5.5.3. Construction Phasing (30%)

Construction Phasing made up 30-percent of the Implementation Characteristics category and relates to the ability of the alternative to be phased as to provide interim benefit or utility.

To evaluate construction phasing, project components were categorized by whether they provide independent utility or not. In other words, if constructed in isolation, would the project component provide a significant benefit to the traveling public. Most of the components provide no or very limited independent utility. However, the West Perimeter Road, the Dravus Street improvements, and the new Armory Way Bridge were determined to have a significant benefit to the public if constructed independently.

These three project components further analyzed based on two qualitative metrics, the magnitude of the expected benefit and the volume of traffic that would benefit from the component. These qualitative descriptors were multiplied to calculate an overall Independent Utility Score for each component which were then applied to the alternatives**. Table 17** summarizes the Construction Phasing analysis results.

Table 17. Construction Phasing – Analysis Results

Components with Independent Utility	Level of Benefit *(x)*	Traffic Volume to Benefit *(y)*	Component Independent Utility Score *(x*y)*
West Uplands Perimeter Road	Medium (50)	Low (30)	1500
Dravus Street Improvements	Medium (50)	High (70)	3500
Armory Way Bridge	Very High (90)	High (70)	6300

Alternative	Alternative Independent Utility Score
Alternative 1	7,800
Alternative 2	5,000
Alternative 3	3,500
Alternative 4	0

Based on the results of the Construction Phasing analysis, a scale was developed to score the alternatives relative to each other. **Table 18** shows the scoring matrix.

Table 18. Construction Phasing – Scoring Matrix

	10	30	50	70	90
Alternative Independent Utility Score	0 to 1,999	2,000 to 3,499	3,500 to 4,999	5,000 to 6,499	6,500 to 8,000

5.5.4. Implementation Characteristics Analysis Results

The scoring results of the three project-specific criteria within the Implementation Characteristics category are summarized in **Table 19**.

Table 19. Implementation Characteristics – Scoring Results

	Alt 1	Alt 2	Alt 3	Alt 4
Construction Duration	70	70	10	50
Construction Impacts	90	30	10	30
Construction Phasing	90	70	50	10

5.6. Community Support

The Community Support category made up 15-percent of the total weighted score and includes project-specific criteria related to the level of community support expressed by the public and stakeholders for each alternative during the MBPS outreach effort. The ideal solution is broadly supported by the general public as well as key stakeholders which include the Port of Seattle, BNSF, and Sound Transit.

5.6.1. Public Support (50%)

Public Support made up 50-percent of the Community Support category and was determined through public outreach activities and surveys. In public meetings, Magnolia residents and users of the Magnolia Bridge expressed strongly that their preferred solution is Alternative 4, an in-kind replacement of the existing bridge, over any of the other alternatives. The project team held a series of community events to share the alternative solutions and get feedback. The Outreach Summary Report is provided as **Appendix G**.

A survey was conducted to determine public preference between the three Magnolia Bridge replacement alternatives, not including the in-kind replacement. The results of the survey are provided in **Table 20**.

Table 20. Public Support – Survey Results

	Alt 1	Alt 2	Alt 3	Alt 4
Number of Votes	134	18	34	N/A

Based on the results of this survey and knowing that Alternative 4 was by far the most heavily preferred solution, the alternatives were scored as shown in **Table 21**.

Table 21. Public Support – Scoring Results

	Alt 1	Alt 2	Alt 3	Alt 4
Public Support	30	10	10	90

5.6.2. Stakeholder Support (50%)

Stakeholder Support made up 50-percent of the Community Support category. These scores were calculated for each alternative based on feedback received from SDOT, the Port of Seattle, BNSF, Sound Transit and others that were collected during the outreach for this project. During this time, we collected their input on the project purpose and goals, the components, and alternatives developed. Feedback was related to access to existing BNSF and Port properties and businesses, integration with Sound Transit's future West Seattle and Ballard Link Extension (WSBLE) rail project, potential impacts to current BNSF and Port operations, and potential conflicts with planned developments. **Table 22** summarizes the input we received for each of the alternatives.

Table 22. Stakeholder Support – Feedback Summary

	Alt 1	Alt 2	Alt 3	Alt 4
Port of Seattle	(+) Garfield St Flyover and Alaskan Way Connector provide redundant access option (-) Garfield St Flyover and Alaskan Way Connector impact Port property, security, and operations (-) West Perimeter Road impacts Port property and provides circuitous access to west side of T-91 (-) Impacts access to Anthony's	(+) Garfield St Flyover and Alaskan Way Connector provide redundant access option (-) Garfield St Flyover and Alaskan Way Connector impact Port property, security, and operations (-) West Perimeter Road impacts Port property (-) Impacts access to Anthony's	(+) Maintains existing Port access and operations (+) Potential to maintains Anthony's existing access (0) Property impacts to T-91 Uplands similar to existing structure	(++) Maintains existing Port access, mobility, and operations (+) Potential to maintains Anthony's existing access (0) Property impacts to T-91 Uplands similar to existing structure
Sound Transit*	(-) Requires design coordination with several WSBLE alternatives at new Armory Bridge & Garfield St Flyover	(0) Requires design coordination with some WSBLE alternatives at new Dravus St Upgrade & Garfield St Flyover	(+) Requires design coordination with some WSBLE alternatives at new Dravus St Upgrade	(++) Required design coordination limited to replacement of existing structure
BNSF	(-) Armory Bridge adds new crossing over rail hump yard (-) 20th Ave W impacts	(++) No new crossing over rail (-) 20th Ave W impacts	(++) No new crossing over rail	(++) No new crossing over rail

** WSBLE alternatives are planning concepts and are subject to change.*

Based on the input received, a score was assigned to each alternative by specific stakeholder. Input from each stakeholder was considered to be of equal weight. Therefore, an average of the three stakeholder scores was used to determine an overall score for stakeholder support. **Table 23** summarizes the stakeholder support scores by alternative.

Table 23. Stakeholder Support – Scoring Results

	Alt 1	Alt 2	Alt 3	Alt 4
Port of Seattle	30	30	70	90
Sound Transit	30	50	70	90
BNSF	30	70	90	90
Overall Stakeholder Support	**30**	**50**	**70**	**90**

6. Alternatives Analysis Results

The following provides a summary of the project-specific criteria scores and the application of the assigned category weights, as discussed at the beginning of Section 3, that were used to determine and overall score and ranking of the alternatives. In addition, a sensitivity analysis was conducted to see how changes to the category weights affect the overall ranking. The results of this analysis are also discussed below.

6.1. Analysis Results

Table 24 summarizes the results of the analysis methodology described in Section 3, compiling all the criteria scores in the five main categories for each of the alternatives.

Table 24. Summary of Analysis Scores Across Categories and Criteria

	Alternative 1	Alternative 2	Alternative 3	Alternative 4
Mobility and Connectivity				
Vehicular Access				
Magnolia Village	50	10	10	90
Smith Cove/Marina and 15th Ave W	50	10	90	90
Smith Cove/Marina and Magnolia	90	90	30	70
T91 and Alaskan Way	90	90	70	90
Along 15th Ave W	50	10	10	50
Vehicular Access				
Pedestrian and Bicycle Access	90	50	50	50
Transit Access	50	10	10	90
Freight Access	70	30	10	90
Environmental Impact				
Adjacent Land Use	30	30	30	70
Sensitive Areas	30	70	90	90
Natural Hazards	10	30	70	50
Cost				
Estimate (2018$)	70	70	70	10
Implementation Characteristics				
Construction Duration	70	70	10	50
Construction Impacts	90	30	10	30
Construction Phasing	90	70	50	10
Community Support				
Public Support	30	10	10	90
Stakeholder Support	30	50	70	90

Using these scores and applying the weights given to each of the project-specific criteria and sub criteria results in an overall score, out of a total of 100 points, for each of the main categories. The details of the alternative scoring are provided in **Appendix H** and a summary of the weighted scores for each main category by alternative is shown in **Table 25**.

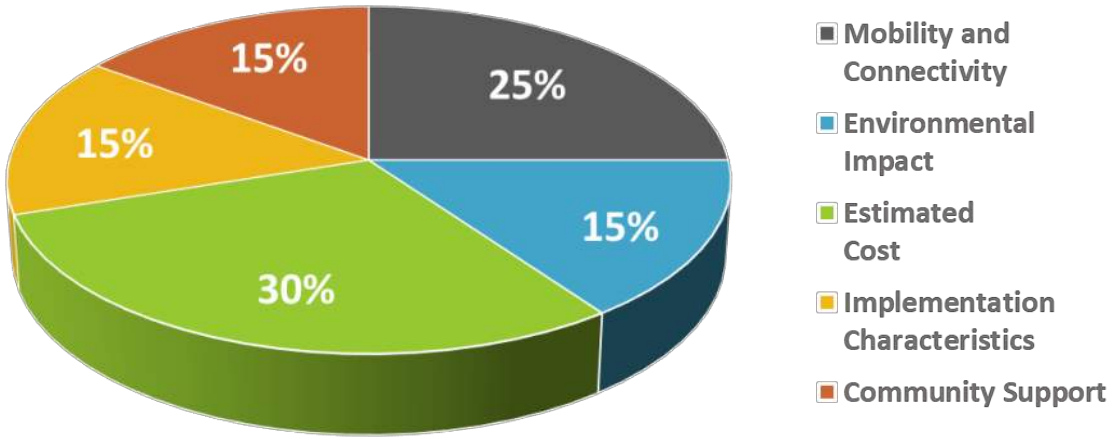
Table 25. Final Scores by Main Category

	Alternative 1	Alternative 2	Alternative 3	Alternative 4
Mobility and Connectivity	67	39	38	77
Environmental Impact	24	42	60	70
Cost Estimate	70	70	70	10
Implementation Characteristics	82	58	22	32
Community Support	30	30	40	90

6.2. Weighted Scores

As discussed in Section 3.1, each of the five main categories was assigned a weight, as a percentage, to reflect how critical each category is to the decision-making process. **Figure 7** illustrates the assigned weight of each category, as determined through discussions among SDOT, key stakeholders, and consultant project team.

Figure 7. Weighting of Main Categories



Once determined, these assigned weights were applied to the main category scores to determine an overall weighted score for each of the four Magnolia Bridge replacement alternatives which were then ranked. **Table 26** provides a summary of the weighted scores and ranked alternatives.

Table 26. Overall Weighted Scores and Ranked Alternatives

	Alternative 1	Alternative 2	Alternative 3	Alternative 4
Mobility and Connectivity				
Category Score	67	39	38	77
Assigned Weight	25%	25%	25%	25%
Weighted Score	16.8	9.8	9.5	19.3
Environmental Impact				
Category Score	24	42	60	70
Assigned Weight	15%	15%	15%	15%
Weighted Score	3.6	6.3	9.0	10.5
Cost Estimate				
Category Score	70	70	70	10
Assigned Weight	30%	30%	30%	30%
Weighted Score	21.0	21.0	21.0	3.0
Implementation Characteristics				
Category Score	82	58	22	32
Assigned Weight	15%	15%	15%	15%
Weighted Score	12.3	8.7	3.3	4.8
Community Support				
Category Score	30	30	40	90
Assigned Weight	15%	15%	15%	15%
Weighted Score	4.5	4.5	6.0	13.5
OVERALL WEIGHTED SCORE	**58.2**	**50.3**	**48.8**	**51.1**
ALTERNATIVE RANKING	**1**	**3**	**4**	**2**

Based on this analysis, Alternative 1 (Armory Way Bridge) is ranked the highest while Alternative 4 (In-Kind Replacement) and Alternative 2 (Dravus Street Bridge) are ranked in 2nd and 3rd place respectively with less than a one-point difference between their overall weighted scores. Alternative 3 (Lower Magnolia Bridge) come in last in the rankings.

6.3. Sensitivity Analysis

To test and verify the results of the study, a sensitivity analysis was conducted to understand how changes in the assigned weights might affect the ranked results. A series of different weighting scenarios were explored, each emphasizing a different focus. A summary of the results of the sensitivity analysis is provided in **Table 27**.

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Table 27. Sensitivity Analysis Results by Weighting Scenerio

SCENARIO A: PUBLIC ACCEPTANCE

	Mobility & Connectivity	Environmental Impacts	Estimated Cost	Implementation Characteristics	Community Support	Total Score	Rank
	40%	5%	5%	20%	30%		
Alternative 1 *Armory Way Bridge*	26.8	1.2	3.5	16.4	9.0	56.9	**2**
Alternative 2 *Dravus Street Bridge*	15.6	2.1	3.5	11.6	9.0	41.8	**3**
Alternative 3 *Lower Magnolia Bridge*	15.2	3.0	3.5	4.4	12.0	38.1	**4**
Alternative 4 *In-Kind Replacement*	30.8	3.5	0.5	6.4	27.0	68.2	**1**

SCENARIO B: EASE OF IMPLEMENTATION

	Mobility & Connectivity	Environmental Impacts	Estimated Cost	Implementation Characteristics	Community Support	Total Score	Rank
	5%	25%	40%	25%	5%		
Alternative 1 *Armory Way Bridge*	3.4	6.0	28.0	20.5	1.5	59.4	**1**
Alternative 2 *Dravus Street Bridge*	2.0	10.5	28.0	14.5	1.5	56.5	**2**
Alternative 3 *Lower Magnolia Bridge*	1.9	15.0	28.0	5.5	2.0	52.4	**3**
Alternative 4 *In-Kind Replacement*	3.9	17.5	4.0	8.0	4.5	37.9	**4**

SCENARIO C: COST, PERFORMANCE, & ACCEPTANCE

	Mobility & Connectivity	Environmental Impacts	Estimated Cost	Implementation Characteristics	Community Support	Total Score	Rank
	30%	5%	30%	5%	30%		
Alternative 1 *Armory Way Bridge*	20.1	1.2	21.0	4.1	9.0	55.4	**2**
Alternative 2 *Dravus Street Bridge*	11.7	2.1	21.0	2.9	9.0	46.7	**4**
Alternative 3 *Lower Magnolia Bridge*	11.4	3.0	21.0	1.1	12.0	48.5	**3**
Alternative 4 *In-Kind Replacement*	23.1	3.5	3.0	1.6	27.0	58.2	**1**

SCENARIO D: ALL EQUAL

	Mobility & Connectivity	Environmental Impacts	Estimated Cost	Implementation Characteristics	Community Support	Total Score	Rank
	20%	20%	20%	20%	20%		
Alternative 1 *Armory Way Bridge*	13.4	4.8	14.0	16.4	6.0	54.6	**2**
Alternative 2 *Dravus Street Bridge*	7.8	8.4	14.0	11.6	6.0	47.8	**3**
Alternative 3 *Lower Magnolia Bridge*	7.6	12.0	14.0	4.4	8.0	46.0	**4**
Alternative 4 *In-Kind Replacement*	15.4	14.0	2.0	6.4	18.0	55.8	**1**

For the majority of the weighting scenarios, Alternative 4 (In-Kind Replacement) was found to be the highest-ranking alternative. However, in Scenario B, which emphasized categories related to implementation of the project, Alternative 4 (In-Kind Replacement) was found to be the lowest-ranking alternative.

Both Scenarios C and D had Alternative 4 (In-Kind Replacement) and Alternative 1 (Armory Way Bridge) ranking in 1st and 2nd place with less than two-points difference in the overall weighted score.

The greatest differential between scores was seen in Scenario A which focused on achieving public acceptance. The scores of Alternatives 1 and 4 were still much higher than either Alternative 2 or 3. However, Alternative 4 (In-Kind Replacement) had a score almost ten-points higher than Alternative 1 (Armory Way Bridge).

7. Conclusions

This alternatives analysis ranked Alternative 1 (Armory Way Bridge) highest with Alternative 4 (In-Kind Replacement) and Alternative 2 (Dravus Street Bridge) ranked in 2nd and 3rd place respectively with less than one-point difference in their overall weighted scores. A sensitivity analysis of the scores indicated that variations in weighting of the criteria could significantly impact these results. The alternatives analysis and subsequent sensitivity analysis indicated that:

- Alternative 3 (Lower Magnolia Bridge) consistently ranked last with significantly lower scores than the highest performing alternative.
- While Alternative 3 (Lower Magnolia Bridge) ranked lowest in the implementation categories, it is ranked second highest in the environmental impact category and comparable to Alternative 4 (In-kind Replacement).
- Alternative 2 (Dravus Street Bridge) typically ranked in the middle of the results but is competitive in terms of cost, with a lower estimated cost than all other alternatives.
- In the vehicle access analysis, both Alternatives 2 (Dravus Street Bridge) and Alternative 3 (Lower Magnolia Bridge) were found to have routes with estimated travel times that exceeded one-hour which represents a high risk of unacceptable delays to the traveling public and would potentially require additional mitigation, if these alternatives moved forward.
- Alternative 1 (Armory Way Bridge), Alternative 2 (Dravus Street Bridge), and Alternative 4 (In-Kind Replacement) include components that would impact the hillside below Thorndyke Avenue W which presents some level of risk to the project in terms of construction and long-term roadway stability.
- Both Alternative 1 (Armory Way Bridge) and Alternative 4 (In-Kind Replacement) consistently performed best in most scenarios; although the better performing alternative swapped depending on the weighting of the criteria.

Looking closer at Alternative 1 (Armory Way Bridge) and Alternative 4 (In-Kind Replacement), these results indicate that:

- Alternative 1 (Armory Way Bridge) typically performed better than Alternative 4 (In-Kind Replacement) in terms of cost, access to the Smith Cove Waterfront, and Construction Duration and Impacts.
- Alternative 4 (In-Kind Replacement) typically performed better than Alternative 1 (Armory Way Bridge) in terms of mobility and access, environmental impacts, and community support.
- Alternative 1 (Armory Way Bridge) scored lowest in terms of environmental impacts and community support.
- Alternative 4 (In-Kind Replacement) scored lowest in terms of cost and construction duration and impacts.

Appendix A

Project Purpose and Goals

Magnolia Bridge Replacement Project – Purpose and Goals

The original *Magnolia Bridge Replacement Type, Size, and Location (TS&L) Study* (HNTB, July 2007) documented the purpose and goals for that project. These were developed in conjunction with the Seattle Department of Transportation (SDOT) and community as part of that process. The goals were used to create criteria by which the original 25 alignment alternatives were screened. The original purpose and goals were reviewed and revised with the Stakeholder Advisory Committee in May 2017.

Purpose

The purpose of the Magnolia Bridge Replacement Project is to replace the existing Magnolia Bridge structure, approaches, and related arterial connections with facilities that maintain convenient and reliable vehicular and non-motorized access between the Magnolia community and the rest of the City of Seattle. Because the existing bridge provides the only public vehicular access to the land between North Bay, also referred to as Terminal 91, Smith Cove Park, and Elliott Bay Marina, the project purpose also includes maintenance of access to these areas.

Project Goals

A. *Provide a safe route(s) to Magnolia.*
B. *Provide reliable and redundant access to and from Magnolia.*
C. *Provide a route that is grade-separated from the BNSF Mainline railroad tracks.*
D. *Provide a route that will support Magnolia Village businesses.*
E. *Maintain or improve traffic flow on, and connections to, the 15th Avenue W corridor.*
F. *Maintain or improve access between Magnolia and the Smith Cove waterfront.*
G. *Maintain or improve access to Terminal 91.*
H. *Improve the level of bicycle and pedestrian connections within and beyond the project area.*
I. *Consider Sound Transit's future light rail extension project when planning new routes.*
J. *Consider cost-effective alternatives.*
K. *Minimize or mitigate environmental impacts.*
L. *Minimize disruption during construction.*

Appendix B

Component Analysis

Technical Memorandum

To	Wes Ducey, SDOT Project Manager
From	Lisa Reid, PE, PMP/SCJ Alliance Marni C Heffron, PE, PTOE/Heffron Transportation Inc.
Date	March 27, 2019
Project	Magnolia Bridge Planning Study
Subject	Component Analysis Summary

Many potential alternatives are being considered to replace the existing Magnolia Bridge. These alternatives are comprised of many components that could be mixed and matched to create dozens of alternatives that replace the existing Magnolia Bridge functionality. Because it is not feasible within the study budget or schedule to evaluate all of these potential combinations, the project team has performed a "Component Analysis" to provide information that can then be used to determine the trade-offs of the various components and package components into alternatives which can be carried forward into the next phase of analysis.

1. Introduction to Component Analysis

For the Component Analysis, there are ten basic components being evaluated. Some of the components have several route options (e.g., 2A or 2B). Only one of these options would be needed in any alternative. Likewise, some of the components provide similar function (e.g., 4 or 5), but could have different geometric considerations due to nearby land uses or other constraints.

The individual components, including route options, are shown in **Figure 1**. For the Component Analysis, they were categorized into four groups:

- Southern Components:
  - Magnolia Bridge Segment to Alaskan Way (Component 7)
  - Alaskan Way Connector (Component 8)
  - East Uplands Perimeter Road (Component 9)
  - Magnolia Bridge Segment to 23rd Ave W (Component 10)
- Central Components
  - Armory Way Bridge (Components 5A and 5B)
  - Wheeler St Bridge (Components 4A and 4B)
- Northern Components
  - Dravus Street Improvements (Component 3)
- Western Components
  - West Uplands Perimeter Road (Component 1)
  - Magnolia Connector (Components 2A and 2B)

- New Bridge Port Connector (Components 6A, 6B, 6C, and 6D)

As a part of the Component Analysis, each component group was evaluated for traffic operations and geometric feasibility. The following chapters summarize the analysis and findings by component group, making recommendations about which components and configurations are viable for packaging into alternatives and moving forward in the next phase of analysis.

2. Component Analysis Methodology

2.1. Traffic Volume Forecasts

Future traffic volumes have been forecasted for two conditions that bracket the lowest and highest potential traffic volumes for each component. The methodology used to develop the 2035 traffic volume forecasts is documented in a separate *Technical Memorandum.*[1] The conditions used for the Component Analysis include:

- **Year 2035 Baseline Traffic Volumes** – These volumes assume that the existing travel patterns would remain the same in the future (meaning that Magnolia Bridge traffic would continue to use that bridge). Even though this is not a realistic scenario given the state of the Magnolia Bridge, it reflects the potential lowest volume of traffic that would be on any of the possible components.

- **Year 2035 No Action and Action Traffic Volumes** – These volumes assume that the Magnolia Bridge has been closed, and all traffic must divert either to existing routes (No Action Alternative) or to a future replacement alternative (Action). For any of the components, the condition that would result in the potential highest volume of traffic was used in the analysis.

Sensitivity analyses were performed assuming incremental-stepped growth between the lowest and highest traffic volume conditions. For some of the components, the analysis assumed 20% increments of the differential between the low and high-volume conditions; for other conditions, the volumes changed depending on the function served by the component. This incremental analysis provided information about whether a component could accommodate all or only part of the expected volume. If the latter, it indicates that the component must be paired with other components to achieve a fully-functional alternative.

2.2. Traffic Operations Analysis

Traffic operations analyses were performed for each traffic volume increment using the Synchro 10.1 analysis software. For some of the components, an initial configuration and modified configurations were tested to determine the potential benefits of different geometric layouts, and to determine the configuration that may be needed to accommodate the worst-case volumes. After the components are packaged to create alternatives, additional traffic operations analysis will be performed to assess the optimal configuration and to assess other metrics such as travel times.

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[1] Heffron Transportation, Inc., *Magnolia Bridge Long-Term Replacement Study, Traffic Analysis: Future Traffic Forecasts and Operations,* February 15, 2019

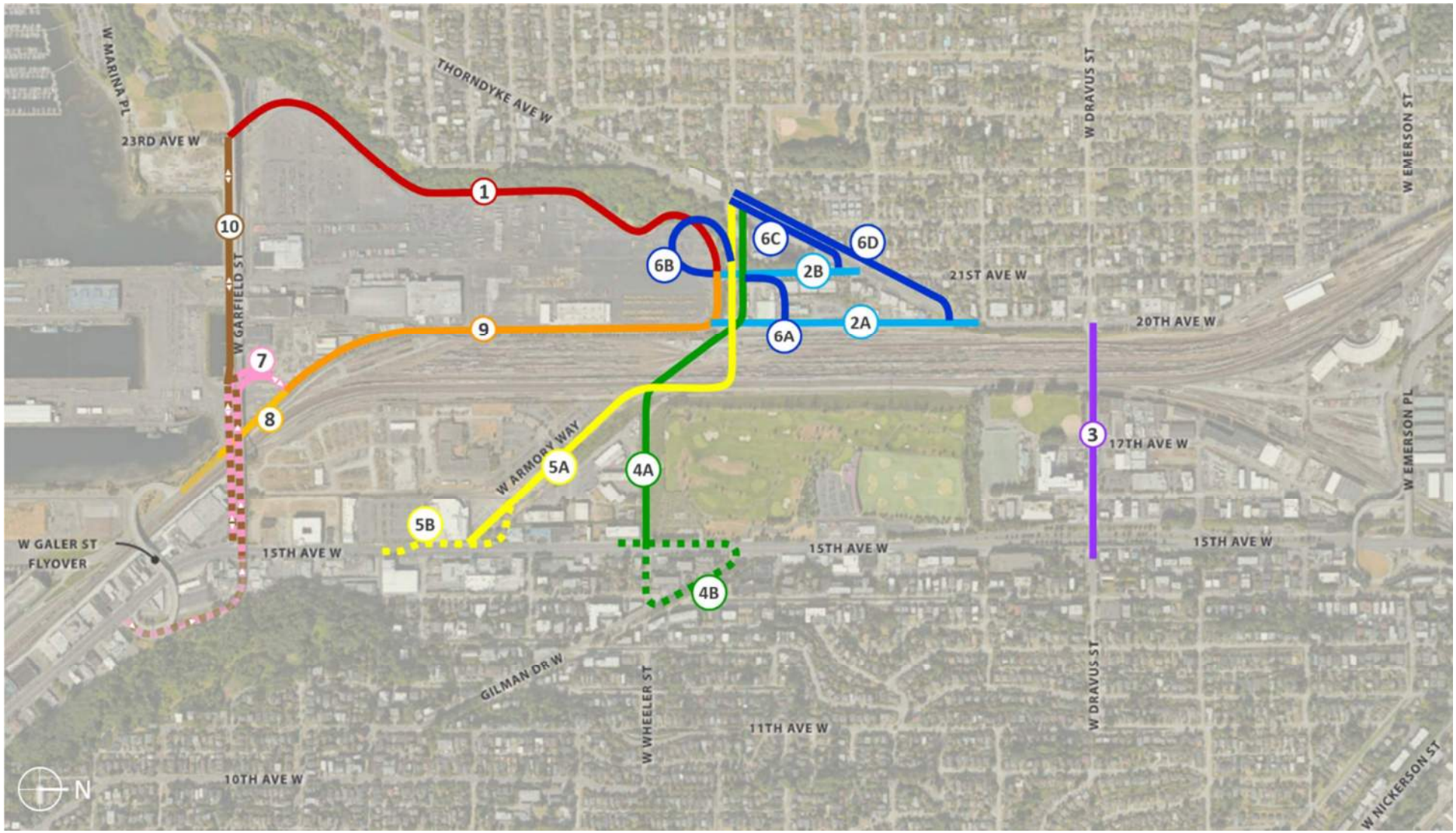


Figure 1. All Individual Components

2.3. Geometric Feasibility Analysis

In tandem with the traffic operations analysis, we tested components for geometric feasibility looking at roadway horizontal layouts including cross-section widths, turn radii, ROW impacts, ability to move freight, and pedestrian and bicycle connections; and vertical profiles including grades, sight distance, and required clearances. In some cases, the results of the traffic operations analysis informed the design requirements, especially at intersection locations. If a component was found to be both operationally and geometrically feasible, it is a viable component to include in alternatives for the following phase of analysis.

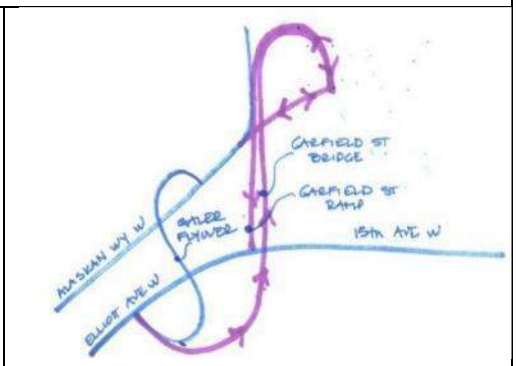
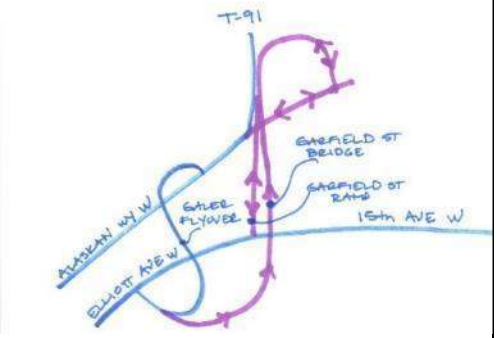
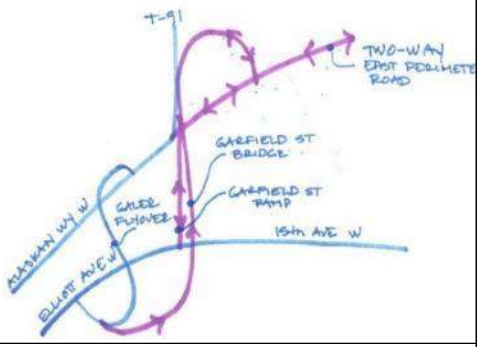
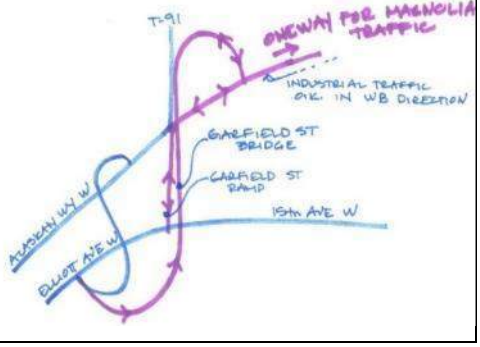
3. Southern Components Analysis

Figure 2. Southern Components: Magnolia Bridge Segment to Alaskan Way (7), Alaskan Way Connector (8), East Uplands Perimeter Road (9), and Magnolia Bridge Segment to 23rd Ave W (10)

3.1. Operational Analysis for Southern Components

The southernmost components could be combined in many ways that provide different functionality, affecting who would be served and the travel routes used. For the purpose of the Component Analysis, Components 7, 8, and 9 were evaluated using four different combinations/operating scenarios (including the baseline scenario). These are summarized in **Table 1**. Component 10 was added to the set after the initial evaluation at the request of community stakeholders and was evaluated separately.

Table 1. Southern Component Operating Scenarios Evaluated

Baseline – The existing Magnolia Bridge is removed, and no long-term mitigations are implemented. All Magnolia Bridge traffic rerouted to the W Dravus St or W Emerson Pl crossings. All Elliot Bay Park, Terminal 91, and Smith Cove Cruise traffic must use the Galer Flyover to reach sites west of the BNSF Railway tracks.	
Scenario 1 – Components 7+8 with eastbound only on Garfield Street ramp. All Magnolia Bridge traffic would continue to use W Dravus St or W Emerson Pl crossings. Component 7 retains the Magnolia Bridge segments that stretch from the Galer Flyover to just west of 15th Ave W, and rebuild the segments to the west. The Garfield Street ramp would be one-way eastbound only and the Garfield Street Bridge over 15th Ave W would be one-way westbound only. A new connection (Component 8) to Alaskan Way would connect the new bridge segment to Alaskan Way and Terminal 91. Inbound Terminal 91 and cruise terminal traffic arriving from the north would need to turn left at the Galer Flyover/Elliott Ave W intersection. Outbound traffic could split between the Galer Flyover and new ramp based on destination.	
Scenario 2 – Same as Scenario 1, but with two-way Garfield Street ramp. All Magnolia Bridge traffic would continue to use W Dravus St or W Emerson Pl crossings**.** Like scenario 1, except the ramp at W Garfield St would have two-way traffic (similar to the existing configuration). Inbound Terminal 91, Elliott Bay Park, and Smith Cove Cruise Terminal traffic from the south would continue to use the Galer Flyover, but inbound traffic from the north would be able to turn right to the two-way ramp at W Garfield St With this routing, it was assumed that the southbound left-turn movement at the Elliott Way W / Galer Flyover intersection could be eliminated.	
Scenario 3 – Components 7, 8 and 9 with two-way Garfield Street ramp and two-way East Uplands Perimeter Road. The same as Scenario 2, but with the addition of a roadway along the east side of the Uplands Port property that provides two-way access to Magnolia. The westbound Magnolia traffic coming from the south would use the Galer Flyover/Magnolia Bridge ramp and the perimeter road, while the traffic coming from the north would use the two-way W Garfield St ramp. Eastbound Magnolia traffic would access 15th Ave W using the two-way ramp at W Garfield St.	
Scenario 4 – Same as Scenario 3, but with a one-way westbound East Uplands Perimeter Road. Like Scenario 3, except the Upland perimeter road would be one-way westbound (northbound). This scenario only provides inbound access to the Magnolia neighborhood (if combined with Component 2A or 2B). Eastbound (outbound) Magnolia traffic would use alternative crossings further to the north.	

3.1.1. Traffic Volume Assumptions for Components 7 through 9

Because the various operating conditions could affect the Galer Flyover, five intersections were evaluated for the southern Component Analysis:

- Galer Flyover / Elliott Ave W
- W Galer St / 15th Ave W
- W Garfield St / 15th Ave W
- Galer Flyover / Alaskan Way W
- Alaskan Way W / Magnolia Bridge Ramp (proposed with Component 7).

All preexisting intersections were modeled with configurations that match existing geometries, with the one addition of a traffic signal at the Galer Flyover / Alaskan Way W intersection (to be built by Expedia). The proposed Alaskan Way W / Magnolia Bridge Ramp intersection was modeled with a signal and a similar geometric configuration to the Galer Flyover / Alaskan Way W intersection.

Unlike the analysis for the other components, the traffic volumes that might use these components are related to the trip generation for the primary destinations that could be reached: Elliott Bay Park, Terminal 91, and the Smith Cove Cruise Terminal. Year 2035 traffic volume estimates for those destinations were assumed for Scenarios 1 or 2 and were assigned according to the most direct access route. Scenarios 3 and 4 with either a two-way or one-way connection to Magnolia were modelled with the worst-case traffic for Magnolia. **It is noted that all the conditions assume a peak cruise day with two large ships at Terminal 91.**

3.1.2. Operational Analysis Results for Components 7 through 9

The analysis results were charted to show the potential range of intersection delay associated with the various scenarios described above. **Figure 3** shows intersection delays at key intersections during the AM peak hour; **Figure 4** shows intersection delays at key intersections during the PM peak hour. Each scenario features optimized signal timing and phasing, with the cycle lengths in the 15th Ave W corridor held to 150 seconds.

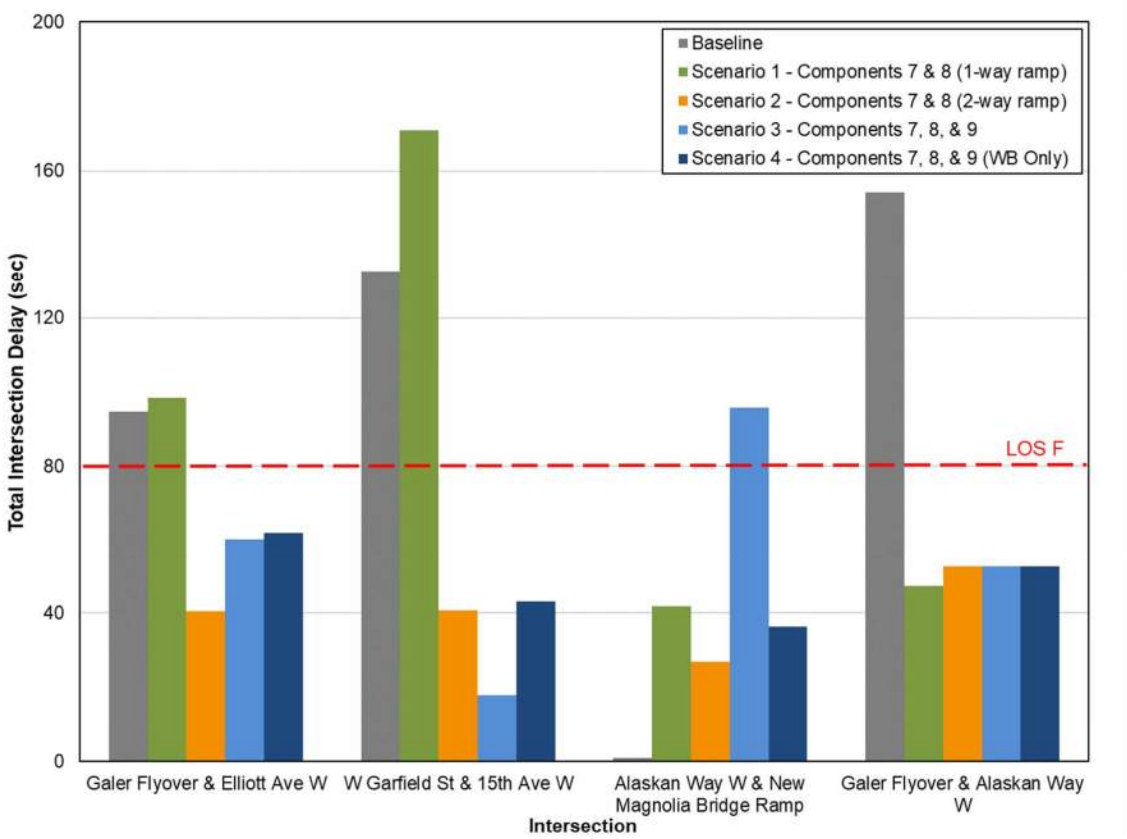


Figure 3. Total Intersection Delays with Two Cruise Ships at Terminal 91 – AM Peak Hour

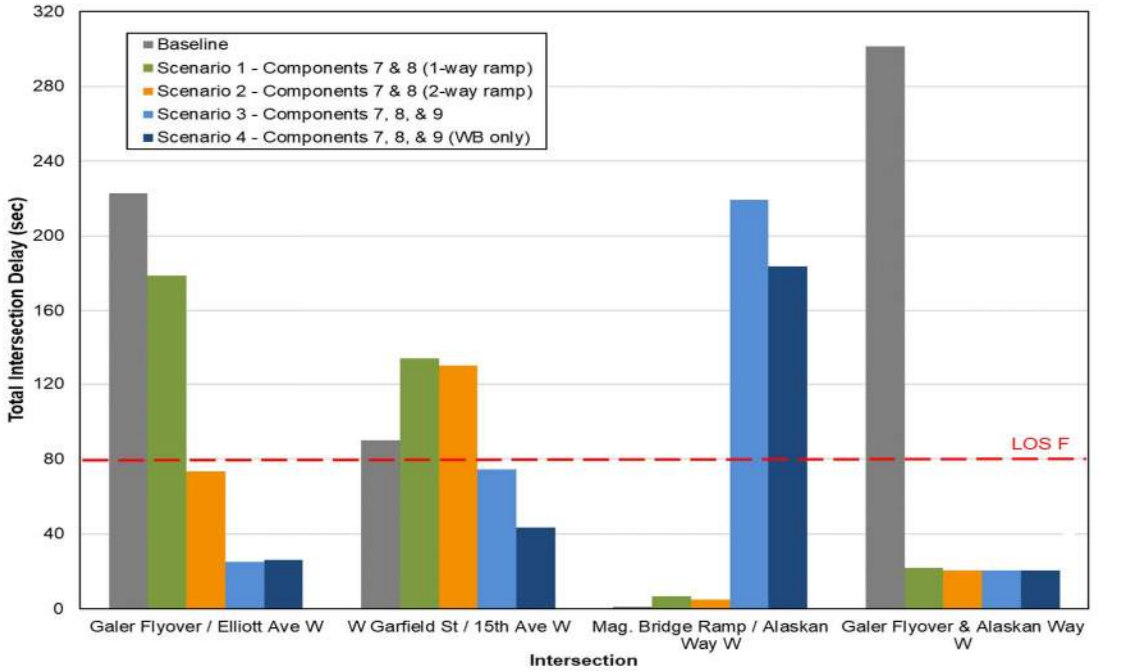


Figure 4. Comparison of Total Intersection Delays – PM Peak Hour

3.1.3. Queue Analysis for Components 7 through 9

In addition to intersection delays, the analysis also assessed queue lengths. **Table 2** presents the queue lengths for three significant movements: the southbound left-turn movement at Galer Flyover / Elliott Ave W, the eastbound through-left turn movement at W Garfield St / 15th Ave W, and the left turn coming off the Magnolia Bridge ramp (eastbound left) at the newly constructed intersection on Alaskan Way W.

Table 2. Intersection 95th Percentile Queue Lengths (in feet)– AM and PM Peak Hours

	SBL @ Galer Flyover/Elliott Ave W		EBL @ W Garfield St/ 15th Ave W		EBL @ Alaskan Way W/ Bridge Segment Ramp	
Scenario	**AM**	**PM**	**AM**	**PM**	**AM**	**PM**
Baseline	1625	309	1	0	1	0
Scenario 1 (1-way ramp)	1625	331	125	701	48	36
Scenario 2 (2-way ramp)	n/a	n/a	125	701	72	36
Scenario 3	n/a	n/a	270	869	382	910
Scenario 4 (WB Only)	n/a	n/a	125	651	279	887

Source: Heffron Transportation, Inc., March 2018. Queue calculated using Synchro 10.1. The "n/a" symbol denotes a movement no longer exists with the analysis scenario. All conditions assume two cruise ships at Terminal 91.

3.1.4. Operational Analysis for Component 10

Component 10 would create an elevated connection in the footprint of the existing Magnolia Bridge that connects between 15th Ave W and 23rd Ave W (there would be no connection to Magnolia). Component 10 would also eliminate the need for Component 1 (the West Uplands Perimeter Road). So the analysis assumes that Component 10 would provide all access to Smith Cove, and be used by 85% of Terminal 91 traffic and 70% of Smith Cove Cruise Terminal traffic. The remaining Terminal 91 and Smith Cove Cruise Terminal traffic would use the Galer Flyover along with all of the Elliott Bay Park traffic.

With Component 10, it is expected that the W Garfield St / 15th Ave W intersection would operate a LOS F during both the AM and PM peak hours. The Galer Flyover / 15th Ave W intersection would operate a LOS F during the AM peak hour and LOS C during the PM peak hour. In the AM peak hour, the queue of vehicles waiting to turn left from 15th Ave W to the Galer Flyover would exceed 850 feet and block an adjacent through lane. The queue in the eastbound through-left turn lane at the W Garfield St / 15th Ave W intersection would exceed 600 feet during the PM peak hour without any further intersection improvements.

3.2. Geometric Feasibility Analysis for Southern Components

3.2.1. Magnolia Bridge Segment to Alaskan Way (Component 7)

This component has been determined to be geometrically feasible. Details and results of the preliminary layout are described below and shown in **Figure 5**:

- **Design vehicle and speed.** WB-67 truck, 25 mph

- **SDOT's Proposed Streets Illustrated Classification.** Industrial Access
- **Cross-section.** Construct a new structure over BNSF to the west of 15th Ave W and loop down to Alaskan Way. One (12') WB lane would be constructed from 15th Ave W and merge into westbound lane at top of bridge. One (12') EB lane will loop up the ramp from Alaskan and widen to 2 lanes (both 12') over BNSF and down to an at grade connection at 15th Ave W. All travel lanes reduce to 11' before the horizontal curve that declines to Alaskan Way. Five-foot bike lanes are included on each side of the new structure alignment as Magnolia Bridge is listed in the City's bike route map.
- **Layout.** Grade and curvature would mimic the layout of the existing Galer St. flyover to the south. There would be approximately 100' to the east of the retaining walls on the loop ramp which the Port of Seattle could use to move people and goods north-south within their secured property.
- **Profile.** Grade needed to tie into the existing structure over 15th Ave W is 6.25%; slightly higher than the 6% maximum typically used for freight without a reduction in speed anticipated. Structure depth assumption is to match existing (6' feet). Maintains a minimum clearance of 23.5' over BNSF and 20.0' over Alaskan Way.

Figure 5. Component 7 Layout

3.2.2. Alaskan Way Connector (Component 8)

This component has been determined to be geometrically feasible. Details and results of the preliminary layout are described below and shown in **Figure 6**:

- **Design vehicle and speed.** WB-67 truck, 30 mph
- **SDOT's Proposed Streets Illustrated Classification.** Industrial Access
- **Cross-section.** One lane in each direction (both 11') with curb and gutter on both sides. Sidewalks and bike lanes are not included due to proximity of the existing multi-use path, which would be

reconstructed and relocated to the east side of Alaskan Way with a crossing back to existing alignment on west side at or south of T-91 East Gate.

- **Layout.** Coordinated with the design of Component 7 and travels under that component's BNSF overpass. Includes the redesign of the current intersection of Alaskan Way with the Port of Seattle's East Gate Access road and incorporates the layout of the existing multi-use path into its design. Ties into the existing Port of Seattle gate and requires a second gate be added on Alaskan Way to the north to secure entry into the Port's facilities.
- **Profile.** Grades typically match existing. Maintains a minimum clearance of 20.0' under new Component 7 bridge over BNSF.

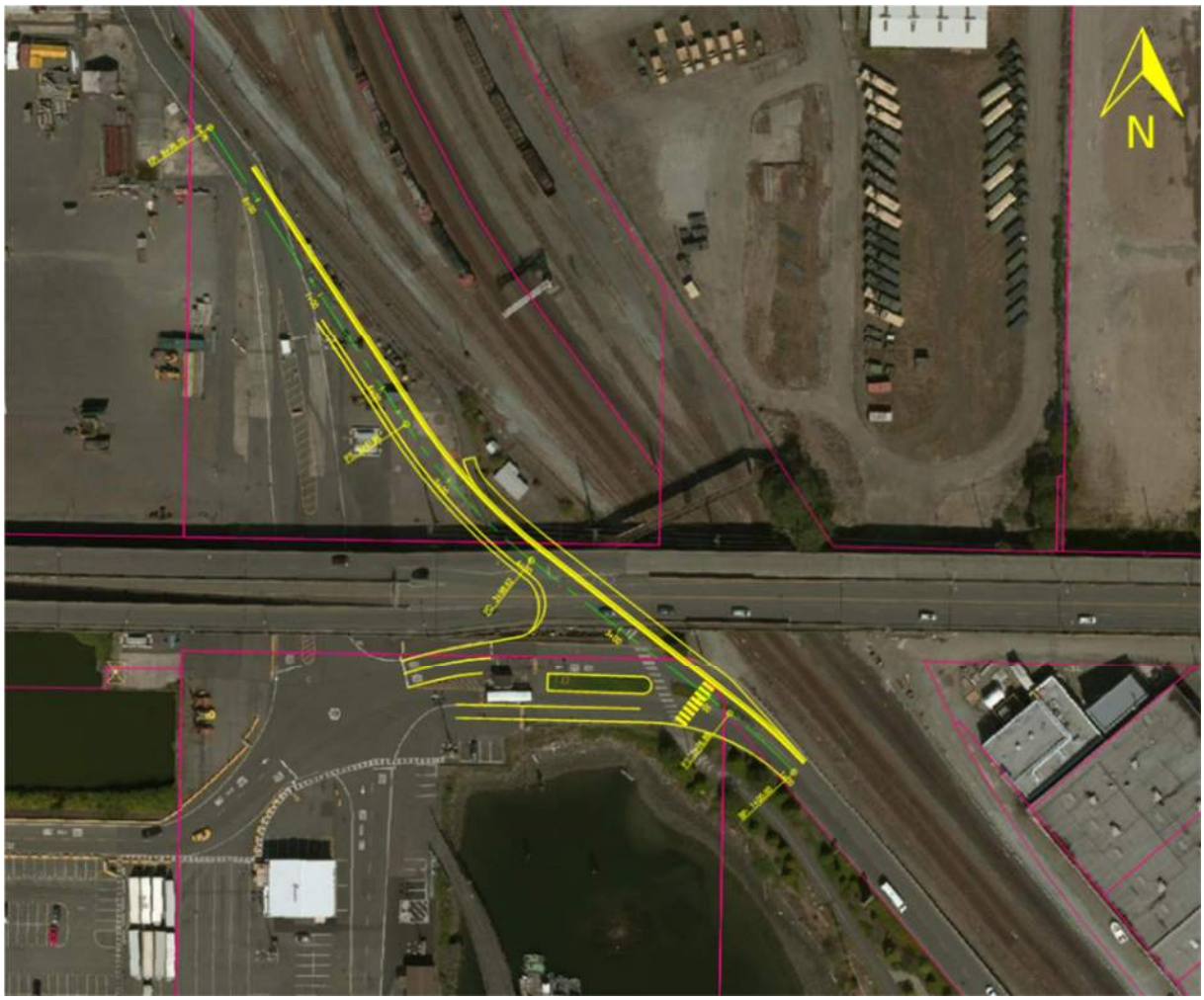


Figure 6. Component 8 Layout

3.2.3. East Uplands Perimeter Road (Component 9)

Due to proximity to existing structures and railroad spurs, Component 9 would have significant impacts to Port operations. For this reason, an East Uplands Perimeter Road is geometrically infeasible. Details and results of the preliminary layout are described below and shown in **Figure 7**:

- **Design vehicle and speed.** WB-67 truck, 35 mph

- **SDOT's Proposed Streets Illustrated Classification.** Minor Industrial Access
- **Cross-section.** One lane in each direction (both 11') with curb and gutter on both sides. Sidewalks and bike lanes are not included due to proximity of the existing multi-use path on the east side, which is assumed to remain in generally the same location. Roadway cross-section consists of a crowned roadway with 2% cross slopes and a 4% super in horizontal curves.
- **Layout.** Existing multi-use path to the east of the alignment has been left in place and incorporated into the design to reduce the footprint where possible and its layout enables the existing BNSF path bridge along the east side of the road to stay in place, if desired. The shared-use path crosses at an intersection on the north side of the Port of Seattle property to tie into the sidewalk alongside Component 2A. This multi-use path also ties into the existing path south of Component 8. The geometry does not physically impact any existing structures; however, its proximity to existing structures would likely make existing building access and truck loading at adjacent warehouse docks difficult and would make existing railroad spur unusable resulting in an **infeasible** finding for this component. The 25' excavation clearance required (BNSF standards) from the centerline of the outermost track may require some deviation or shoring to protect existing grades. Horizontal curves have been kept well above the minimum needed to maintain normal crown on the 4% super-elevation chart, enabling profile to match the existing grade.
- **Profile.** Grades are relatively flat through this component due to the existing graded pavement area it follows.

Figure 7. Component 9 Layout

3.2.4. Magnolia Bridge Segment to 23rd Ave W (Component 10)

This component has been determined to be geometrically feasible. Details and results of the preliminary layout are described below and shown in **Figure 8**:

- **Design vehicle and speed.** WB-67 truck, 35 mph
- **SDOT's Proposed Streets Illustrated Classification.** Urban Center Connector
- **Cross-section.** One lane in each direction (both 11'). Includes 5' bike lanes on each side of the new alignment to accommodate bicycle traffic as Magnolia Bridge is listed in the City's bike route map.
- **Layout.** Would build a new structure in the alignment of the existing Magnolia Bridge from the point where it crosses 15th Ave W to the west over BNSF and to the point where it crosses over the center Port of Seattle's north-south access road just west of Anthony's and then extend ramps down to 23rd Ave W on the west and down to 15th Ave W on the east. Does not include any access to the Port of Seattle's

Main Gate, now located in the center of the Magnolia Bridge. While the design could include an elevated connection to the Anthony's truck loading dock (now accessed from the Magnolia Bridge), temporary replacement of that truck loading facility would be required during the period between Magnolia Bridge demolition and completion of the new structure.

- **Profile.** Grade needed to tie into the existing structure over 15th Ave W is 6.25%; slightly higher than the 6% maximum typically used for freight without a reduction in speed anticipated. Structure depth assumed to match existing (6'). Maintains a clearance of 23.5' over BNSF and the Port's north-south road in and out of the Smith Cove Cruise Terminal.

Figure 8. Component 10 Layout

3.3. Summary of Key Findings for Southern Components

The Component Analysis for of these southern intersections revealed several key findings that inform potential alignment alternatives:

- **Components 7 and 8 (w/ two-way ramp access at W Garfield St) improve corridor operations.** Operations in this section of 15th Ave W improve when the southbound left-turn movement at the Galer Flyover can be eliminated. This improvement is most pronounced during the AM peak hour, when total intersection delay at the Galer Flyover / Elliott Ave W intersection is reduced by more than 75%. However, the existing eastbound approach at W Garfield St may struggle to accommodate the left-turning vehicles during the PM peak hour, when reported queue lengths exceed 700 feet. A new access point at the north end of Terminal 91 (Component 2A or 2B) that can serve Terminal 91 trips would reduce the strain on this movement.
- **Component 9 is not geometrically feasible.**
- **Components 7 and 8 improve operations at the west end of the Galer Flyover.** These two components provide operational benefits to the Elliott/15th Ave W corridor by providing another point of access to Terminal 91 and Smith Cove Cruise Terminal traffic other than the Galer Flyover. If the components can also serve Elliott Bay Park traffic arriving from the north, then the southbound left turn to the Galer Flyover could be prohibited. This provides the largest benefit to the Elliott/15th corridor. The benefits are most pronounced during the PM peak hour (when the southbound left turn would otherwise cross the high northbound through traffic on the corridor) and during mornings with cruise ship operations. It is noted that some of these benefits would be realized with Component 10, but that option would not serve Elliott Bay Park traffic, so the southbound left turn movement to the Galer Flyover would need to remain.
- **Components 7, 8, and 10 are geometrically feasible.**

Based on the analysis, the Magnolia Bridge Segment to Alaskan Way and the Alaskan Way Extension (Components 7 and 8) and the Magnolia Bridge Segment to 23rd Ave W (Component 10) will be carried forward to the alternatives analysis. Specifically, both Magnolia Bridge Segment options (Components 7 and 10) should have two-way access on the Garfield Street ramp.

Due to significant impact to Port of Seattle operations, the East Uplands Perimeter Road (Component 9) is not recommended for further consideration and will not be carried forward to the alternatives analysis.

4. Central Components

Figure 9. Central Components: Wheeler St Bridge (4A and 4B) and Armory Way Bridge (5A and 5B)

4.1. Operational Analysis of Central Components

The two components central components would have a similar function, which would create a new grade-separated crossing of the BNSF Railway tracks between the 15th Ave W corridor and Thorndyke Ave W. Traffic that may choose to use either route would be similar. Five different operating scenarios were evaluated for these components:

- **Scenario 1 – Wheeler Street at-grade intersection at 15th Ave W (Component 4A):** All Magnolia Bridge traffic would be rerouted to a new roadway in the W Wheeler St alignment and structure over the BNSF tracks. The roadway would intersect 15th Ave W with a conventional surface intersection.
- **Scenario 2 – Armory Way at-grade intersection at 15th Ave W (Component 5A):** All Magnolia Bridge traffic would be rerouted to a new roadway in the Armory Way alignment and structure over the BNSF tracks. The roadway would intersect 15th Ave W with a conventional surface intersection.

- **Scenario 3 – Wheeler / Armory Couplet (Component 4A + 5A):** The eastbound and westbound Magnolia Bridge traffic would be split to the two new one-way structures described above. The westbound traffic would be routed to W Wheeler St, and the eastbound traffic would be routed to Armory Way. Both routes would intersect 15th Ave W at conventional surface intersections.
- **Scenario 4 – Wheeler Street Flyover (Component 4B):** An elevated overpass would be built to serve the northbound-to-westbound movements so that they do not turn left from 15th Ave W. The overpass would utilize Gilman Dr W as part of its ramp, looping right from 15th Ave W to Gilman Drive W and then right again onto a new overpass in the W Wheeler St alignment. Eastbound traffic would intersect 15th Ave W at a conventional at-grade intersection.
- **Scenario 5 – Armory Way Flyover (Component 5B):** An elevated overpass would be built to serve the northbound-to-westbound movements so that they do not turn left from 15th Ave W. The overpass would rise from the center lanes on 15th Ave W and pass over southbound traffic.

4.1.1. Operational Analysis Results for Central Components

The analysis results were plotted to show the potential range of intersection delay associated with the various scenarios described above. **Figure 10** shows intersection delays at the W Wheeler St / 15th Ave W intersection; **Figure 11** shows results for the W Armory Way / 15th Ave W intersection. The basic scenarios assume limited changes to the existing intersection configuration (single northbound left turn lane, and two-lane approach eastbound on the side street). The "Mitigated" scenarios include a second northbound left-turn lane and a three lane eastbound approach (one left-turn lane, one thru-left-turn lane, and one right-turn lane).

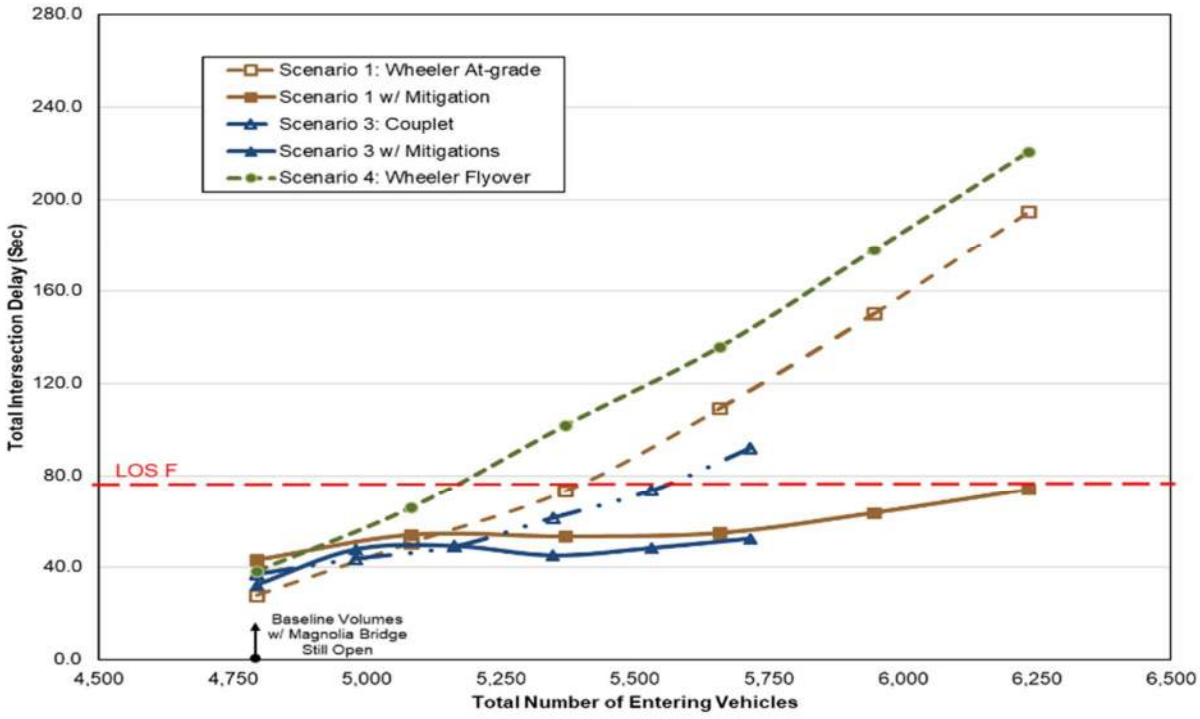


Figure 10. W Armory Way / 15th Ave W Intersection Delay with Various Scenarios

Source: Heffron Transportation, Inc., March 2018. Note: The maximum volume for the Couplet is less than for other scenarios since only one direction of traffic would use Wheeler Street.

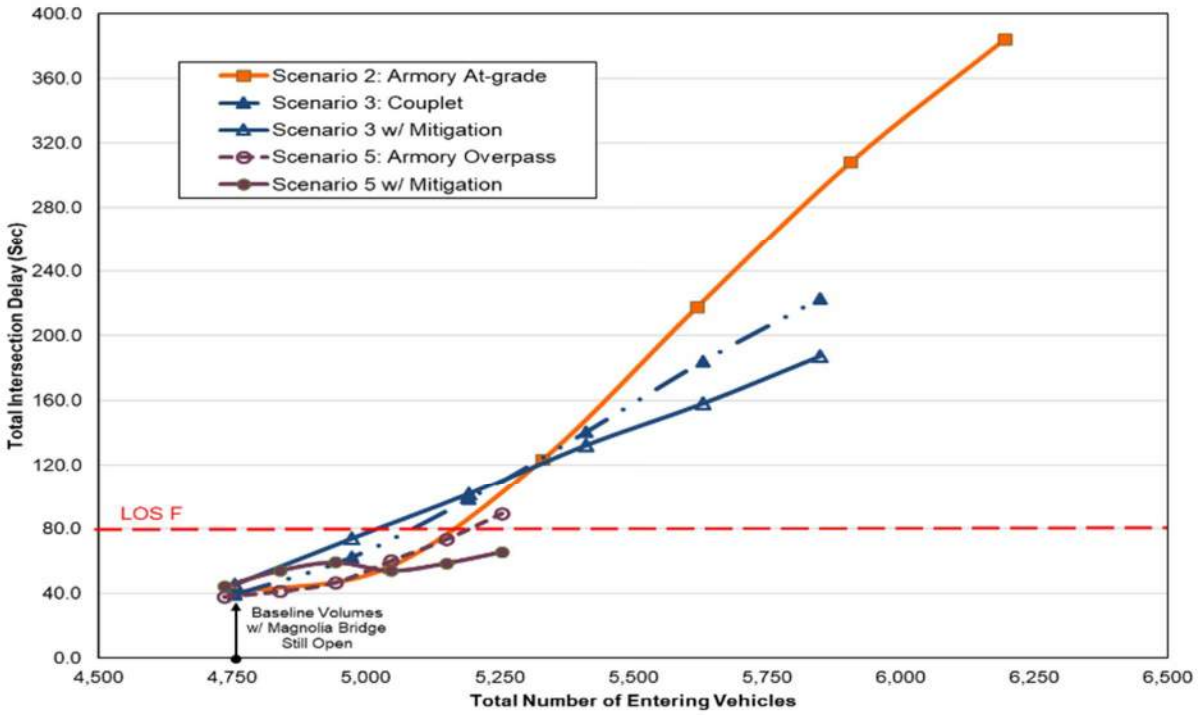


Figure 11. W Armory Way / 15th Ave W Intersection Delay with Various Scenarios

Source: Heffron Transportation, Inc., March 2018. Note: The maximum volume for the Couplet is less than for other scenarios since only one direction of Magnolia-bound traffic would use Armory Way. The maximum volume for the Armory Overpass is also less since northbound left-turn traffic would not go through the at-grade intersection.

4.1.2. Queue Analysis for Central Components

Another key metric is the length of the northbound left turn queue approaching each intersection. This was tested for the W Wheeler St intersection, which is further away from nearby intersections (1,015 feet) that may affect queue model results. The queue lengths would be similar at Armory Way; however, it has less available storage space (about 540 feet) between it and the next closest signalized intersection. **Figure 12** illustrates the results of the queue analysis for the Wheeler Street Bridge (at-grade intersection treatment).

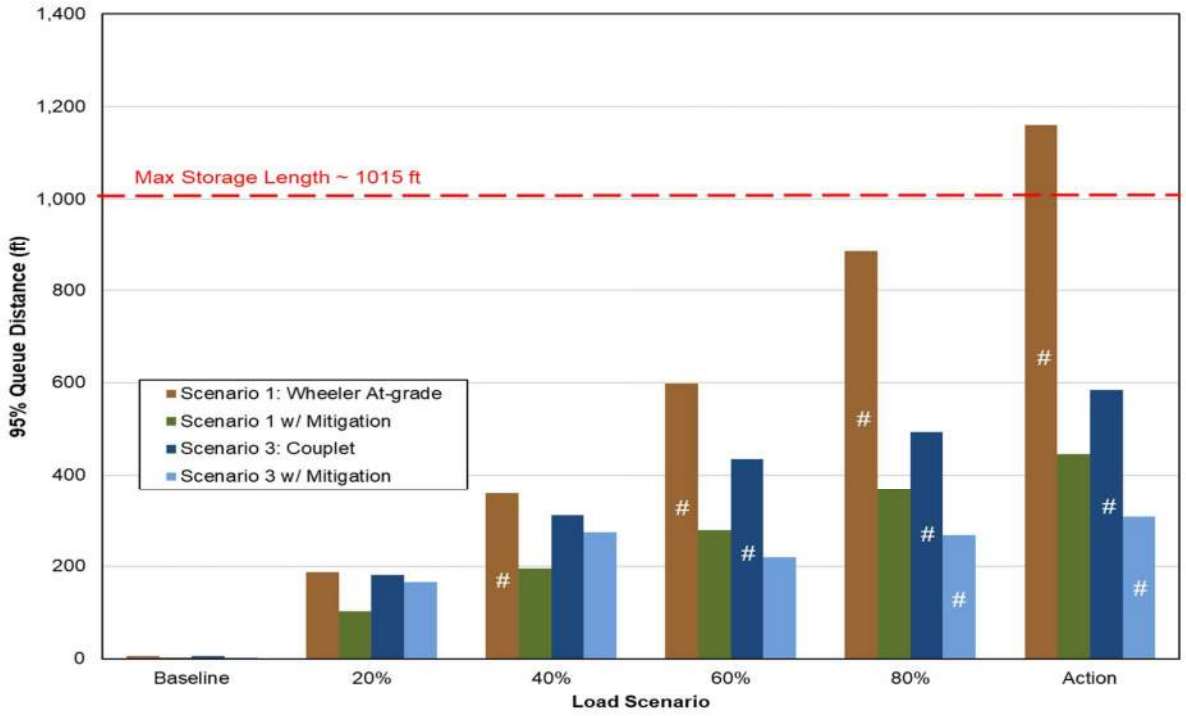


Figure 12. W Wheeler St / 15th Ave W – Northbound Queue Lengths

Source: Heffron Transportation, Inc., March 2018. Queue calculated using Synchro 10.1. The 95% queue length calculations account for upstream metering. The "#" symbol denotes results when the lane group's v/c >1 and the actual queue length may be longer than the reported value.

4.2. Geometric Analysis of Central Components

4.2.1. Wheeler Street Bridge (Components 4A and 4B)

Both Component 4A, Wheeler Street Bridge with an at-grade intersection at Wheeler and 15th Ave W and Component 4B, Wheeler Street Bridge with a hook to Gilman Dr W and a grade-separated intersection at Wheeler and 15th Ave W, were found to be geometrically infeasible. Details and results of the preliminary layout of each component are described below and Component 4B is shown in **Figure 13** below.

- **Design vehicle and speed.** WB-67 truck, 25 mph
- **SDOT's Proposed Streets Illustrated Classification.** Urban Center Connector
- **Cross-section.** One lane in each direction (both 11') with curb and gutter and a 10' multi-use path on the south side of the road.
- **Layout of 4A.** The layout of Component 4A includes an at-grade intersection at Wheeler and 15th Ave W. There is approximately 1,015' available for NB left turn storage and the queue length needed exceeds this which indicates a dual-left turn would be needed. However, there is not enough width available for a dual NB left-turn pocket; therefore, Component 4A was found to be geometrically infeasible.
- **Layout of 4B.** The layout of Component 4B requires a very tightly skewed right-turn onto Gilman Drive W that increases significantly in grade as you proceed southeast on Gilman. This turn cannot be designed to accommodate trucks with the combined skew and grade differential. In addition, the slow speeds

necessary to accommodate the right-turning traffic would back up NB 15th Ave W significantly. Therefore, Component 4B was found to be geometrically infeasible.

C

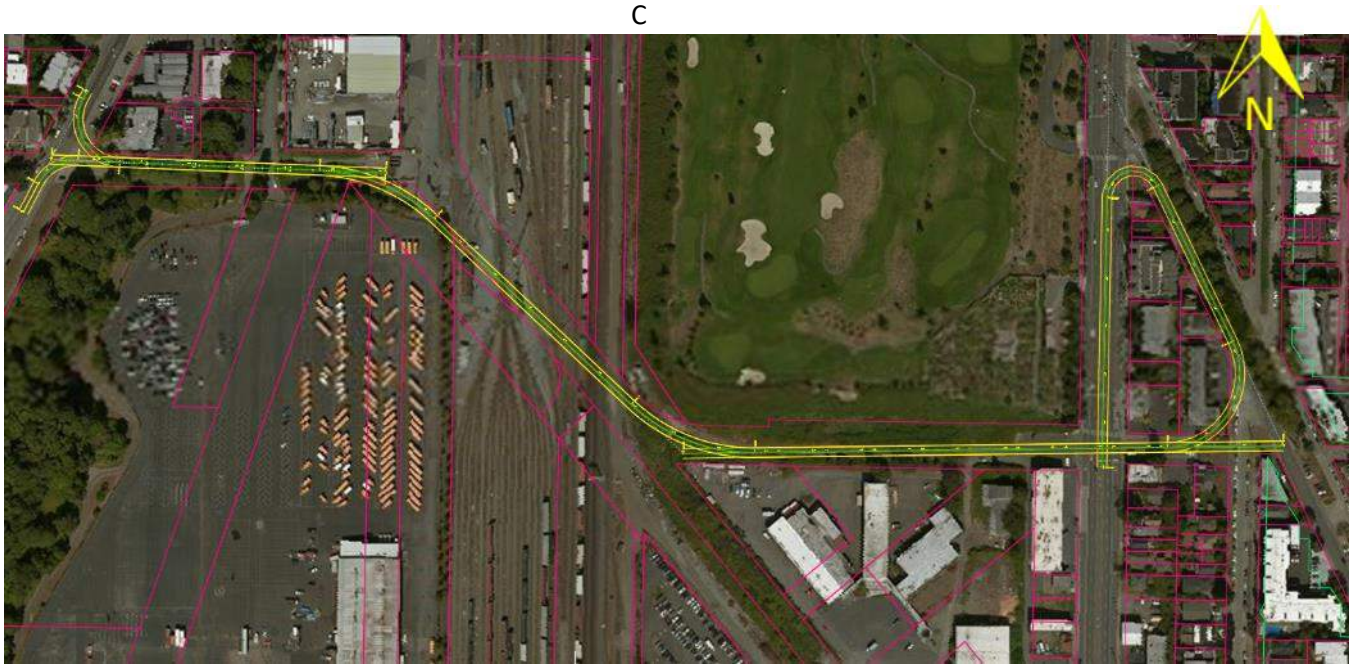


Figure 13. Component 4B Layout

4.2.2. Armory Way Bridge (Components 5A and 5B)

Component 5A, which turns from NB 15th Ave W to Armory Way at an at-grade intersection was found to be geometrically infeasible. Component 5B, which turns from NB 15th Ave W to Armory Way via a grade-separated flyover to Armory Way was found to be geometrically feasible. Details and results of the preliminary layout of each component are described below and Component 5B is shown in **Figure 14**:

- **Design vehicle and speed.** WB-67 truck, 35 mph
- **SDOT's Proposed Streets Illustrated Classification.** Industrial Access
- **Cross-section.** One lane in each direction (12' elevated, 11' at-grade) with curb and gutter and a 10' multi-use path on the south side of the road. In addition, Armory Way includes one lane WB and one lane EB widening to two lanes EB at 15th Ave W (these tuck under some of the elevated structure carrying traffic over BNSF).
- **Layout of 5A.** The layout of Component 5A includes an at-grade intersection at Armory Way and 15th Ave W. There is insufficient length between Armory Way and the turn into Whole Foods to the south to provide this required queue length and there is also insufficient width to make this a dual left-turn. Therefore, Component 4A was found to be geometrically infeasible.
- **Layout and Profile of 5B along 15th Ave W.** The layout of Component 5B includes a grade-separated left-turn flyover to an elevated structure over Armory Way from NB 15th Ave W to WB Armory Way. The NB to WB movement onto the Armory way elevated structure weaves under a potential Sound Transit LRT structure and then increases in grade so that it would go over the SB 15th Ave W lanes with 20' of

clearance underneath. This Component would require widening of the existing travelled way on 15th Ave W but would not have significant impacts to buildings alongside the street. Approximately 1,000 L.F. of a NB bus-only / right-turn only lane on 15th Ave W would be eliminated and replaced with a general through-lane in between Armory Way S and roughly 100' south of W Howe St. A 10' width was assumed for the protected median on 15th Ave W. This accounts for 5' diameter columns and vertical back barrier on the NB and SB sides.

- **Layout and Profile of 5B along Armory Way.** The alignment along Armory way includes both elevated lanes and at-grade lanes for business access. One WB lane is elevated from 15th Ave W all the way to Thorndyke, with a ramp down to at-grade Armory Way to provide business access to vehicles that have turned onto Armory from NB 15th Ave W. One EB lanes enters the west end of Armory elevated on the same structure as WB traffic and then drops down to grade mid-way down Armory Way. There is one lane in each direction (WB and EB) at-grade, adjacent to and partially under the elevated structure to provide business access. The WB at-grade lane merges with the ramp down from the elevated ramp and continues to a turn-around provided under the elevated structure at the eastern end of Armory Way to allow at-grade traffic to turn around and access businesses on both sides of Armory Way. The EB at-grade lanes extends from the turn-around to 15th Ave W and is joined by the EB lane from the elevated structure, providing two EB lanes at 15th Ave W. There is a 10' multi-use path along the south side of Armory Way, there is one section that is reduced to 9' to avoid impacts to existing structures.
- **Layout and Profile of 5B over BNSF and to Thorndyke.** The elevated Armory Way structure continues from the east end of existing Armory Way over the BNSF tracks near the old city right-of-way and continues elevated to Thorndyke Ave W. There are minor Impacts to the golf course on the east side of the BNSF tracks if the crossing of BNSF is constructed perpendicularly to the tracks. These could be reduced or avoided as designed where Armory crosses BNSF at a skew. The diagonal crossing would span approximately 480 LF over the tracks at an approximate 42° angle.
- **Structure Depth**. 6'
- **Other Considerations.** The proposed alignment down Armory runs along the path of existing utility poles that are assumed to eventually be installed underground. A new Self Storage building has been constructed on the south side of Armory Way and was considered with this layout (shown in light blue in **Figure 14, Figure 15**, and **Figure 16**).

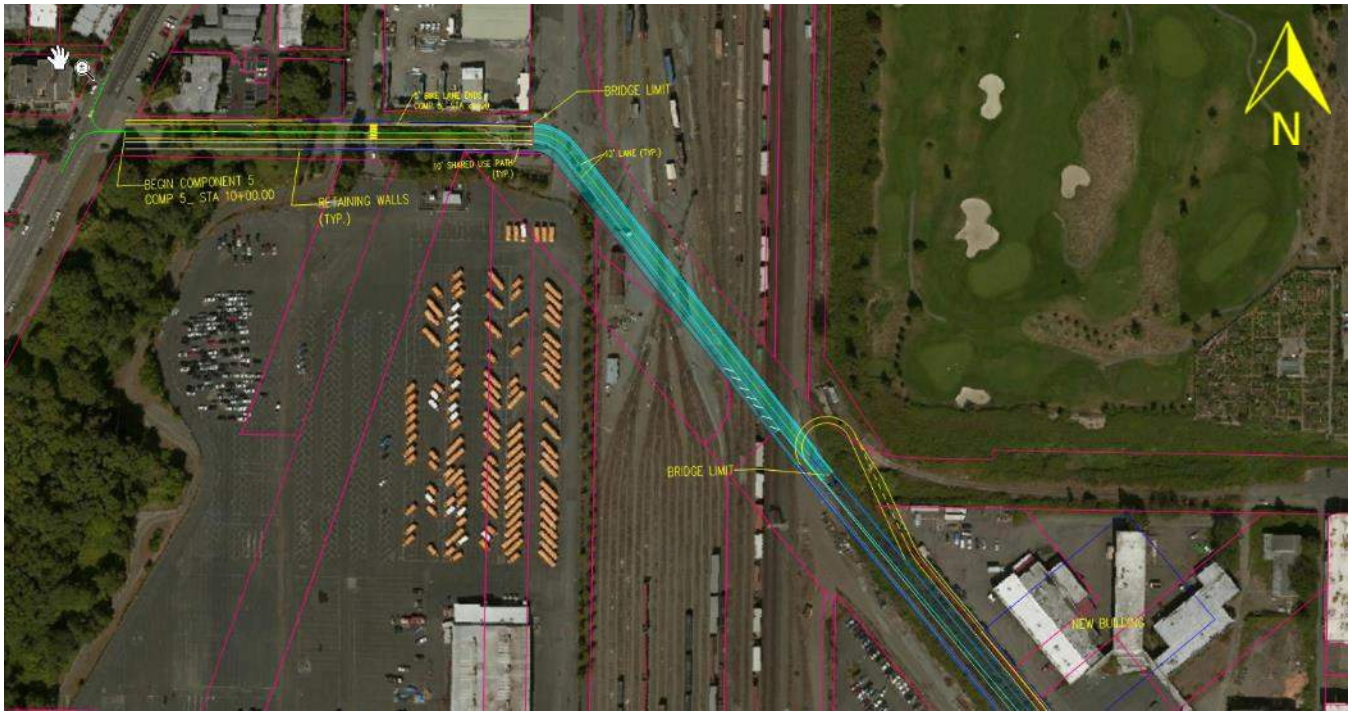


Figure 14. Component 5B Layout – West

Figure 15. Component 5B Layout – Middle

Figure 16. Component 5B Layout - East

4.3. Summary of Key Findings for Central Components

The Component Analysis for Wheeler and Armory Way revealed several key findings that inform potential alignment alternatives:

- **The critical movement that affects operations is the northbound left turn movement from 15th Ave W towards Magnolia.** This movement to the Magnolia Bridge is currently accommodated by a right-turn off-ramp and bridge over 15th Ave W. Putting the movement at a traditional at-grade intersection would result in substantial queues on 15th Ave W. The queue storage potential is greatest at W Wheeler St, which is located about 1,015 feet from the next closest signalized intersection. Armory Way has much less queue storage space, with about 550 feet to the next closest intersection. Given the need to accommodate a queue, a dual left turn lane would be needed to serve the northbound traffic destined to Magnolia. This feature is not geometrically feasible.
- **Left turn overpass improves operations, but not if it uses Gilman Dr W.** The volume of northbound-to-westbound traffic can be served by an overpass. However, if the overpass is located at Gilman Drive W (as in Scenario 4), that traffic must travel north on 15th Ave W through both the W Armory Way and W Wheeler St intersections, affecting traffic operations at those intersections. The volume is high enough that it may require an additional northbound lane (or use of the transit lane). The loop to Gilman Dr W was deemed to be geometrically infeasible. Access to an overpass south of Armory Way would have fewer conflicts on the corridor.

- **Eastbound traffic will require added lane capacity at 15th Ave W intersection.** Wherever eastbound traffic rejoins 15th Ave W, the design should consider three eastbound lanes to provide for dual left-turn lane and a single right-turn lane.
- **Components 5B is geometrically feasible.** Although Component 5B includes some very complicated alignments, it appears to be feasible to construct within the Armory Way corridor. Further design and stakeholder considerations need to be explored as the project proceeds.

Based on the operational and geometric analysis, only the Armory Way Bridge with an elevated northbound on-ramp (Component 5B) will be carried forward to the alternatives analysis.

5. Northern Component

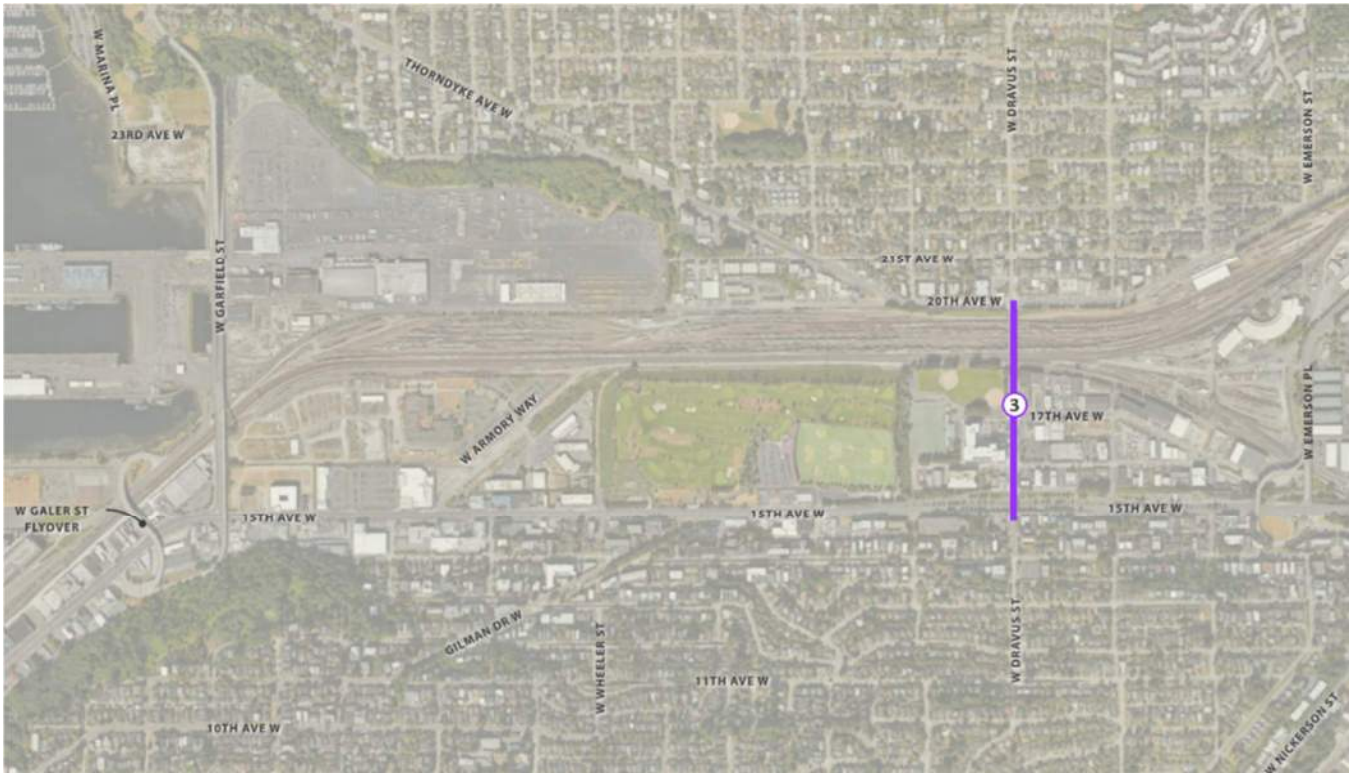


Figure 17. Northern Component: Dravus Street (3)

5.1. Operational Analysis of Northern Component

The Dravus Street Component would include upgrading the interchange at W Dravus St/15th Ave W (to be referred to as the Dravus Interchange). This example compares the existing "tight-diamond" configuration that has two sets of on/off ramps to a configuration that would create a modified Single-Point Urban Interchange (SPUI) that includes pedestrian crossings on all four approaches plus transit bypass lanes on the on and off-ramps (transit buses exit the 15th Ave W corridor, stop on the ramps for passengers, and then return to 15th Ave W).

The Dravus Interchange was evaluated to determine if it could be improved to accommodate all traffic that needs to cross the BNSF Railway tracks. The worst-case volumes assume that the Magnolia Bridge is closed and all traffic must divert to alternative routes, with the majority of that traffic diverting to W Dravus St Analysis was performed for both sets of volumes as well as for four intermediate conditions that reflect 20% increments of the differential between the low and high-volume conditions.

5.1.1. Operational Analysis Results for Dravus Interchange

Operations analysis was performed assuming that the Dravus Interchange would be rebuilt as a SPUI, as described above. Various lane configurations for the SPUI were tested. The No Action condition assumed the short-term improvements recommended in the Magnolia Bridge Emergency Closure Study, which for this interchange would implement a dual-left turn at the northbound off-ramp and upgrading the signal system. The results of the incremental analysis and different geometric conditions are summarized in **Figure 19**.

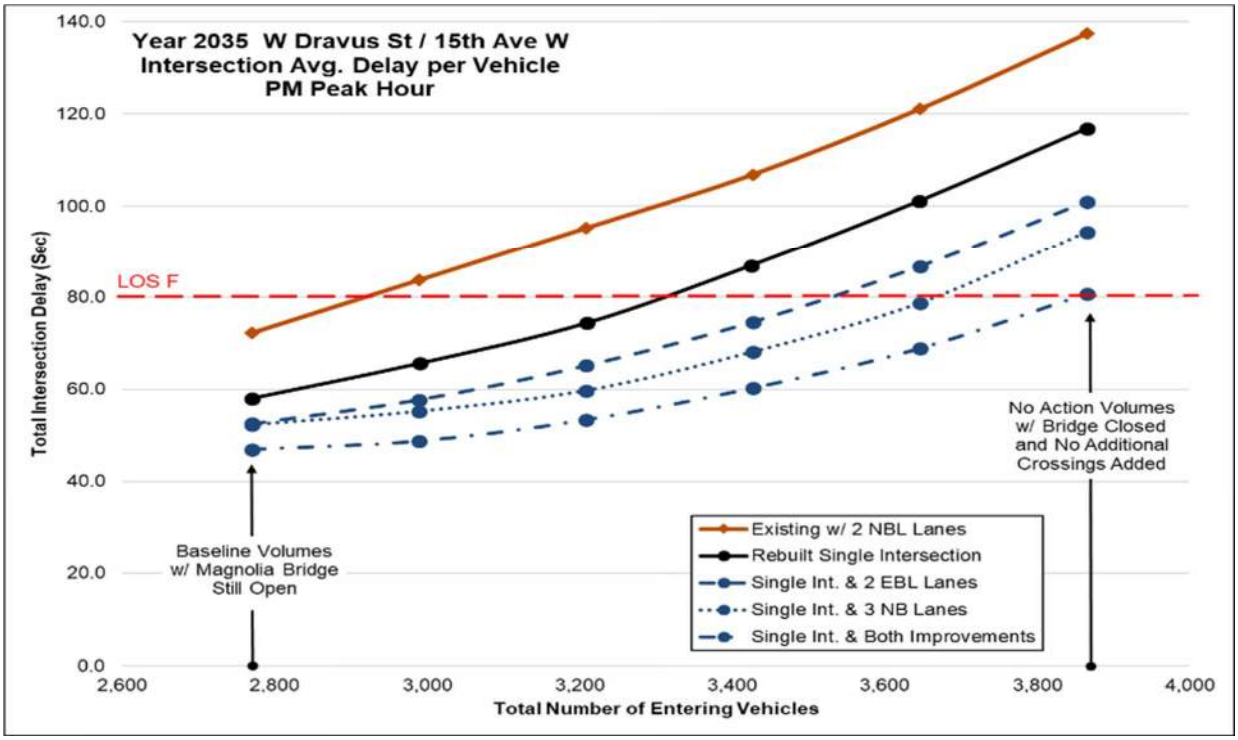


Figure 19. Component Analysis – Dravus Street Interchange

Source: Heffron Transportation, Inc., February 2018

5.1.2. Operational and Geometric Analysis for W Dravus St/20th Ave W Intersection

An operational and geometric analysis was performed for the Component 3 roadway network along Dravus Street that included the intersection with 20th Ave W. The analysis included the following scenarios:

- **Scenario 1 – No changes to the existing intersection:** The existing intersection would need to accommodate the increased traffic under the worst-case scenario without any improvements.
- **Scenario 2 – Protected eastbound/westbound left turns**: The innermost eastbound and westbound lanes would be converted from shared thru-left-turn lanes to dedicated left-turn lanes with protected phasing. This improvement would carry forward to the following scenarios.
- **Scenario 3** – **Additional eastbound/westbound lanes**: Add an additional lane in both eastbound and westbound directions of travel. Both approaches would include one dedicated left-turn lane, a thru lane, and one shared thru-right-turn lane. This analysis considered adding split traffic control to permit a shared westbound thru-left-turn lane, but vehicular operations were better with the protected phasing.
- **Scenario 4** – **Dual northbound right-turn lanes**: Extend the existing right-turn pocket and add a second dedicated right-turn lane. Northbound and southbound traffic control changed to split phasing.
- **Scenario 5** – **Combine scenarios 3 and 4**: Add both the additional eastbound/westbound lanes and the additional northbound right-turn lane.

It is assumed that a two-way protected bicycle lane remains on the east side of the 20th Ave W, which impacts operations by limiting the northbound right-turn movement. **Table 3** presents the LOS results at the intersection with 20th Ave W assuming the worst-case future traffic volumes that W Dravus St would carry all traffic that now uses the Magnolia Bridge. As shown, only Scenario 5 would achieve better than failing operations during both peak hours for this worst-case condition. Fewer auxiliary lanes would be needed if this component were paired with others that reduced the traffic load on W Dravus St. The existing structure over BNSF would require a widening of 12 ft to accommodate the new center lane that is needed to tie-in the additional left turn pocket needed for the Dravus Street intersections with 17th Ave W and 20th Ave W.

Table 3. Level of Service – W Dravus St and 20th Ave W Intersection – Worst-Case Traffic Volumes

	Scenario 1		Scenario 2		Scenario 3		Scenario 4		Scenario 5	
AM Peak Hour	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay
Overall Intersection	F	>1,000	F	96.5	E	63.1	D	50.1	D	39.9
Eastbound Approach	E	60.8	F	126.8	E	74.4	F	97.9	D	53.8
Westbound Approach	F	>3,000	D	44.3	D	39.1	C	26.7	C	29.4
Northbound Approach	F	257.3	F	122.7	E	69.5	C	28.0	C	27.9
Southbound Approach	F	103.8	F	109.2	F	87.9	F	103.0	E	79.5
PM Peak Hour	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay
Overall Intersection	F	>1,000	F	170.8	E	70.6	F	172.0	E	61.3
Eastbound Approach	D	37.7	F	89.2	E	76.1	E	78.2	E	66.9
Westbound Approach	F	>1,500	F	219.4	E	64.2	F	202.6	D	49.3
Northbound Approach	F	139.9	E	60.5	E	56.8	D	44.0	C	34.8
Southbound Approach	F	272.0	F	219.8	F	105.9	F	321.8	F	132.5

Source: Heffron Transportation, Inc., July 2018. Assumes no other connections to Magnolia are constructed.

5.2. Geometric Analysis for Northern Component

5.2.1. Dravus Street Improvements (Component 3)

This component has been determined to be geometrically feasible. Details and results of the preliminary layout of each component are described below and in **Figure 18** and **Figure 19**:

- **Design vehicle and speed.** WB-67 truck, Dravus – 25 mph, 15th Ave W – 30 mph
- **SDOT's Proposed Streets Illustrated Classification.** Dravus – Neighborhood Corridor/Urban Access Connector, 15th Ave W – Urban Center Connector. Intersection design is a low-speed SPUI at Dravus and 15th Ave W, modified to include thru movements required for buses and business access along the ramps.
- **Cross-section.** All travel lanes are 11' wide. Dravus includes two 11' travel lanes both EB and WB from 20th Ave W to 14th Ave W, tapering down to one 11' lane each direction to the east of 14th Ave W and to match existing. Along Dravus to the west of 20th Ave W, one 11' WB lane and two 11' EB lanes taper into the existing one lane each direction after 22nd Ave W. All roads include curb and gutter, and Dravus has a 5' bike lane and 6' sidewalks on both sides. The SPUI ramps are set at 14' to accommodate the turning paths of the larger WB-67 trucks with the SB On ramp having 1, NB Off ramp 2, SB Off ramp 1, and the NB On ramp 2. An additional 12' right turn/thru lane is include on the NB Off and SB Off ramps. Includes a 20' median area along 15th Ave W for the placement of potential piers for Sound Transit LRT. Maintains three lanes NB and SB on 15th Ave W.
- **Layout.** Requires reconstruction and widening of the existing bridge over the BNSF railway tracks. SPUI layout includes new retaining walls along 15th Ave W to maintain a small footprint and reduce impacts

along Dravus and 15th Ave W.

- **Profile.** Existing grade of Dravus coming into the SPUI from the east of the is extremely steep at ~14 %, while from the west grades are ~10 %. The design of the SPUI assumes that the grade of the new construction along Dravus will remain somewhere near existing because flattening the roadway would require the existing structures along Dravus to either be removed or costly retaining walls.
- **Structure Depth.** 6'
- **Other Considerations.** The SPUI impacts businesses on NE, SW, and SE corners of the intersection. Coordination of the design at 15th Ave W with a potential Sound Transit LRT station includes pedestrian walkways to access a station over Dravus.

Figure 18. Component 3 SPUI Layout

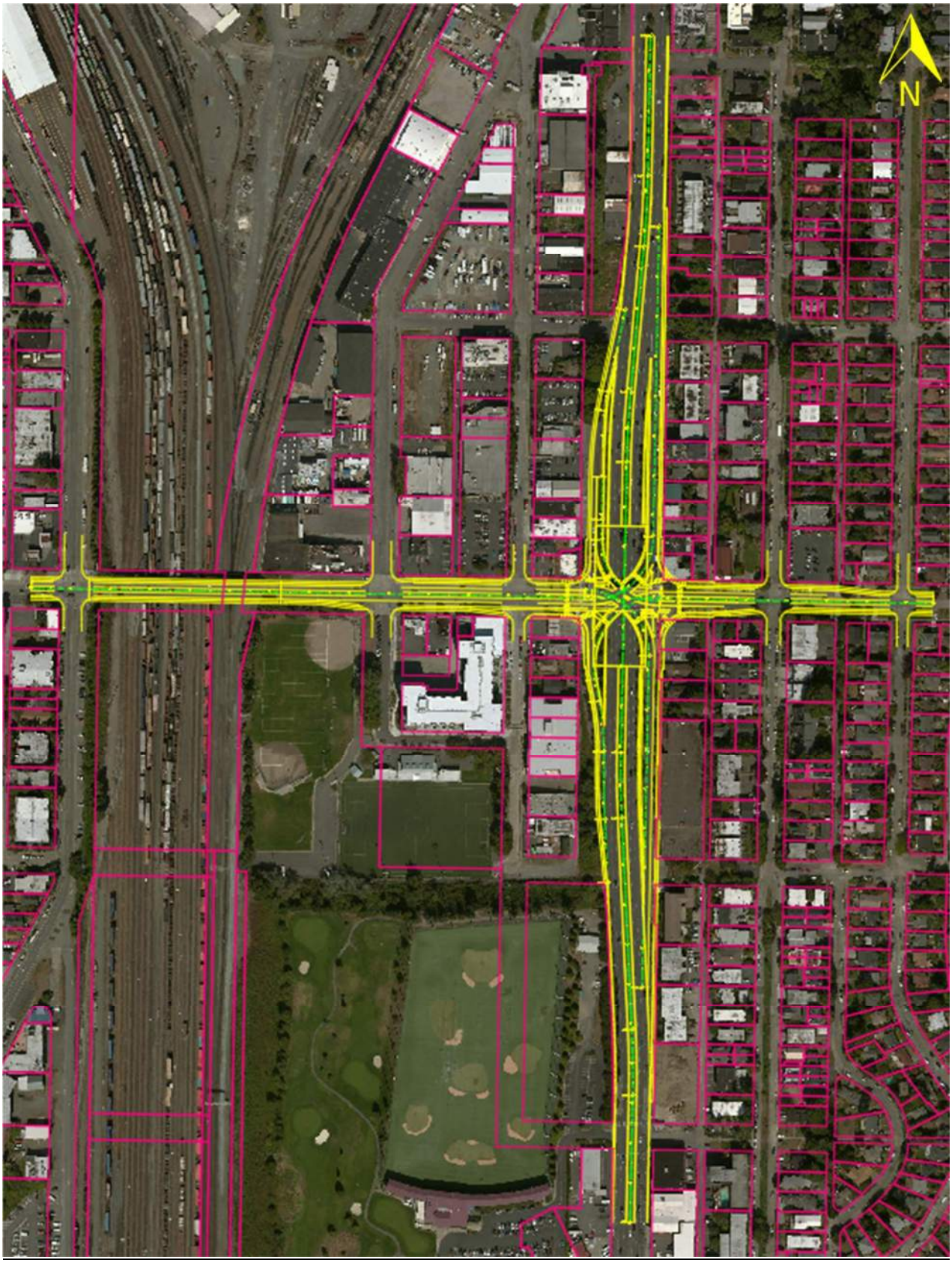


Figure 19. Component 3 Layout

5.3. Summary of Key Findings for Northern Component

Several findings can be discerned from the analysis, including:

- **The SPUI improves operations at W Dravus St / 15th Ave W**. The existing Dravus Street Interchange with the short-term improvements would operate at LOS F conditions with even small amounts of traffic added to it. A SPUI with both improvements, two westbound left-turn lanes and three northbound lanes, is geometrically feasible but would still approach LOS F conditions under the worst-case volume conditions with Magnolia Bridge closed. This indicates that pairing this option with another component should be considered.
- **The Dravus corridor may require improvements**. The Dravus Street corridor between 15th Ave W and 20th Ave W will need to be improved if no additional Magnolia crossing is built. These improvements include additional lanes at the intersections with 17th Ave W and 20th Ave W and the widening of the BNSF crossing.
- **Component 3 is geometrically feasible.** It is geometrically feasible to construct the SPUI at 15th Ave W, widen the Dravus BNSF crossing, and expand the 17th Ave W and 20th Ave W intersections. These improvement would increase the infrastructure footprint along this corridor, but would improve operations considerably.

Based on this analysis, Dravus Street Improvements (3) will be carried forward to the alternatives analysis.

6. Western Components

Figure 20. Western Components: West Upland Perimeter Road (1), Magnolia Connector (2A and 2B), and New Bridge Port Connector (6A, 6B, 6C, and 6D)

6.1. Operational Analysis for Western Components

Operational analysis for these components was limited. The preference for 20th Ave W (Component 2A) over 21st Ave W (Component 2B) was largely based on geometric and land use considerations. Both options would require a new signal on Thorndyke Ave W; however, it should be noted that the intersection of Thorndyke Ave W and 21st Ave W is a complex, five-leg intersection which was expected to pose more challenges in processing traffic safely and efficiently when compared to the intersection of Thorndyke Ave W and 20th Ave W.

Components 6A and 6B are both ramp structures that are expected to be costly to construct. To determine their viability, the volume anticipated to use them was estimated to understand if the benefit justified the cost of construction. For the worst-case forecast, it was assumed that all traffic to/from Elliott Bay Marina and Smith Cove as well as less than 5% of the Port of Seattle traffic would use this connector in conjunction with either a new Wheeler Street Bridge or an Armory Way Bridge. The projected peak hour volume occurs in the PM with 140 trips leaving and 80 trips entering the Port/Marina/Smith Cove for a total of 220 trips using this component during the PM peak period. The anticipated volume that would benefit from either ramp option would not justify the cost of constructing these elevated structures when a proximate access route is available via Thorndyke Ave W. Geometric Analysis for Western Components.

6.1.1. West Upland Perimeter Road (Component 1)

This component has been determined to be geometrically feasible. Details and results of the preliminary layout of each component are described below and in **Figure 21** and **Figure 22**:

- **Design vehicle and speed.** WB-67 truck, 30 mph
- **SDOT's Proposed Streets Illustrated Classification.** Minor Industrial Access
- **Cross-section.** One lane in each direction (both 11') with curb and gutter and an existing multi-use path to the west of the alignment.
- **Layout.** Layout typically follows the existing multi-use path and will require stabilization of the western slope in order to avoid encroaching on Port of Seattle property.. Several horizontal curves have been flattened to meet design standards as needed. The additional costs required for slope stabilization offset the cost of right-of-way needed in order to avoid the slope. Note that the proposed layout will avoid a power substation on the north end of the Port of Seattle property. Elliot Bay Trail will tie into its existing path at the beginning and end of the alignment, including access to the soccer/recreation field on the southwest side of the Port. This layout is designed to connect with Components 10 and 2B or 2A.
- **Profile.** The vertical profile of this layout is relatively flat with a maximum grade of 1.2% and minimal earthwork will be necessary because the existing pavement is already flat. The roadway cross section consists of crowned roadway with 2% cross slopes and 4% superelevation in horizontal curves.

Figure 21. Component 1 Layout South

Figure 22. Component 1 Layout North

6.1.2. Magnolia Connector (Components 2A and 2B)

Components 2A and 2B connect Components 1 and 9 to Thorndyke Ave W. Component 2A uses 20th Ave W and Component 2B uses 21st Ave W. Component 2B was eliminated from consideration because its need to accommodate freight traffic would be inconsistent with the existing residential land use, the EB to SB right-turn

from Thorndyke Ave W to 21st Ave W has significant impacts, and because there is less available right-of-way than Component 2B which would adversely impact the parking on this residential Street.

Component 2A was found to be geometrically feasible. Details and results of the preliminary layout is described below and is shown in **Figure 23**:

- **Design vehicle and speed.** WB-67 truck, 30 mph
- **SDOT's Proposed Streets Illustrated Classification.** Minor Industrial Access
- **Cross-section.** One lane SB and one lane NB (both 11'). NB lane includes a 3' buffer to a 10' multi-use path. Curb and gutter on both sides.
- **Layout.** The layout typically follows the same alignment as existing 20th Ave W. The existing multi-direction bike path running along the east side of Thorndyke Ave W will continue along the east side of this component in accordance with the City's bike route plan.
- **Profile.** Profile grade is relatively flat for this component at ~3%. The roadway cross section consists of crowned roadway with 2% cross slopes and 4% superelevation in horizontal curves
- **Other Considerations.** There are currently no impacts to the BNSF railway tracks with this layout. There are impacts to the existing parking spaces on the west side of the roadway, but this parking is currently within the City's right-of-way.

Figure 23. Component 2A Layout

6.1.3. New Bridge Port Connector (Components 6A, 6B, 6C, and 6D)

Components 6A, 6B, and 6C connect to Component 2B which was determined to be geometrically infeasible in 6.1.2 above and were not examined in more detail. Component 6D was found to be geometrically feasible. Details and results of the preliminary layout is described below and is shown in **Figure 24**:

- **Design vehicle and speed.** WB-67 truck, 30 mph
- • **SDOT's Proposed Streets Illustrated Classification.** Neighborhood Corridor
- **Cross-section.** This component would match the existing curb-to-curb cross section of Thorndyke Ave W and tie into Component 2A. The roadway consists of one 11' lane in each direction, a 5' bike-lanes in each direction, curb and gutter, and 6' sidewalks on both sides.
- **Layout.** The layout typically follows the same alignment as existing Thorndyke Ave W.
- **Profile.** Grades typically match existing. The roadway cross section consists of crowned roadway with 2% cross slopes and 4% superelevation in horizontal curves. The EB to SB turn to Component 2A (20th Ave W) accommodates the design vehicle and requires a retaining wall.

Figure 24. Component 6D Layout

6.2. Summary of Key Findings for Western Components

Based primarily on geometric feasibility and considering land use impacts, the West Uplands Perimeter Road (Component 1), 20th Ave W improvements (Component 2A), and improvements to Thorndyke Ave W (Component 6D) will be carried forward to the alternatives analysis.

The Component Analysis for these revealed several key findings can be discerned, including:

- **Components 1, 2A, and 6D are geometrically feasible.** The preliminary layout of Component 1 shifts the alignment to the east of the existing shared use path to avoid impacts to the slopes to the west of the path. However, impacts to the Port of Seattle could be reduced by shifting the alignment into the slope, and increased costs for retaining walls and slope stabilization would likely offset right-of-way costs for the existing layout. The improvements in Component 2A required along 20th Ave W generally fit within the City's right-of-way and are consistent with the land use of this street.

7. Component Analysis Conclusions

Below is a summary of each evaluated components based on whether they were found to be required, optional, or non-feasible.

7.1. Feasible Components

Based on our preliminary analysis, the following components were found to be both operationally and geometrically feasible. These components will be packaged into alternatives for the next phase of evaluation.

7.1.1. West Uplands Perimeter Road (1)

This component (or Component 10) would be required to provide access between Magnolia and the Elliott Bay Marina and Smith Cove Parks. It would run alongside the alignment of the existing Elliott Bay Trail but deviates at a few points to meet minimum horizontal and vertical curve requirements and meet stopping sight distance requirements. This component is classified as Minor Industrial Access and would be designed to accommodate large vehicles including trucks, trailers, and delivery vehicles.

7.1.2. 20th Ave W Improvements (2A)

This component would be required in conjunction with Component 1 to connect to Thorndyke Ave W The alignment on 20th Ave W (Component 2A) is preferred over 21st Ave W (Component 2B) because it better accommodates traffic both geometrically and operationally, and has adjacent land uses that are appropriate with the freight-carrying function of the connection. The layout would provide an 10' shared-use lane in the northbound direction that ties into the multi-direction bike lane on Thorndyke. This component is classified as Minor Industrial Access and would accommodate large vehicles including trucks, trailers, and delivery vehicles. The layout fits within the City's existing right-of-way and is consistent with the land use along 20th Ave W.

7.1.3. Dravus Street Improvements (3)

Component 3 would increase capacity along W Dravus St, an existing access point to Magnolia, by widening the roadway, including the existing bridge structures, and making improvements to the intersections at 15th Ave W and 20th Ave W. At 15th Ave W a new, modified Single-Point Urban Interchange (SPUI) would be constructed that would allow traffic to be controlled at a single signal versus the two competing signals currently operating in a tight diamond configuration.

7.1.4. Armory Way Bridge (5B)

The braided on-ramp option for the Armory Way Bridge would create a new access point to Magnolia via an elevated bridge structure from 15th Ave W along Armory Way W, crossing diagonally over the BNSF railroad, and connecting to Thorndyke Ave W at W Halladay St. The structure would have a northbound, on-ramp from 15th Ave W designed to allow free-flow access to the bridge while also accommodating the ST3 alignment. The layout includes a 5' bike lane on the north side of the structure and a 10' shared-use sidewalk on the south side of the structure. Further refinements in design should consider consolidating those onto the south side to improve bike safety. This Component would require minimal widening on 15th Ave W and minimal impacts to buildings in the area.

7.1.5. Thorndyke Ave W Improvements (6D)

Component 6D provides access between the new Armory Way Bridge and 20th Ave W, providing a connection between 15th Ave W and Terminal 91, Smith Cove Parks, and Elliott Bay Marina. It would include improvements to the intersection of Thorndyke Ave W and 20th Ave W to accommodate turns for freight vehicles and buses. This component is required if paired with the Armory Way Bridge (5B) and 20th Ave W Improvements (2A). The layout assumes the existing Thorndyke geometry with bike lanes in both directions.

7.1.6. Magnolia Bridge Segment to Alaskan Way (7)

This component, in combination with the Alaskan Way W Extension (Component 8), would relieve pressure on the existing Galer St Flyover to serve the combine traffic associated with Terminal 91, Smith Cove Cruise Terminal and Elliott Bay Park. Analysis shows that the two components would help relieve congestion on the Elliott/15th Ave W corridor, particularly if southbound left turns to the Galer Flyover can be reduced or eliminated.

7.1.7. Alaskan Way W Extension (8)

This component, in combination with the Magnolia Bridge Segment to Alaskan Way (Component 7), provides access to Terminal 91 and Elliott Bay Park and relieves pressure on the existing Galer St Flyover.

7.1.8. Magnolia Bridge Segment to 23rd Ave W (10)

Component 10 provides access from 15th Ave W to Elliott Bay Marina, Smith Cove Parks, and the Port of Seattle. It is an alternative to the West Uplands Perimeter Road and 20th Ave W Improvements (Components 1 and 2A). However, this component does not improve access between Magnolia and the Elliott Bay Marina and Smith Cove Parks. This component does not provide the redundant access to Terminal 91 and Elliott Bay Park that would relieve pressure on the Galer Street flyover.

7.2. Non-Feasible Components

The following components were found to be infeasible based on either operational analysis, geometric analysis, or both. These components will not be included in any alternative that moves forward.

7.2.1. 21st Ave W Improvements (2B)

The additional traffic expected to use this connection, including freight, is incompatible with the residential land use located on 20th Ave W. In addition, the right-of-way is narrow and significant impacts to the already minimal parking would occur. In contrast, Component 2A on 20th Ave W fits within the City's right-of-way and is consistent with the land use of that street.

7.2.2. Wheeler Street Bridge (4A and 4B)

Both options for a new Wheeler Street Bridge are unable to provide adequate operations due to geometric constraints. Both options have right-angle or acute turns that reduce the operational capacity of the component. The components would experience unacceptable levels of delay and congestion along the 15th Ave corridor.

7.2.3. Armory Way Bridge (5A)

The at-grade, intersection option for an Armory Way Bridge was found to be infeasible due to prohibitive queue lengths for the northbound left turn onto the bridge. Additionally, a dual left turn on 15th Ave W to accommodate the high volume of Magnolia-bound traffic was found to be geometrically infeasible and incompatible with a potential Link light rail alignment.

7.2.4. New Bridge Port Connector (6A, 6B, and 6C)

Components 6A and 6B would be ramp structures that provide more direct access between 15th Ave W and the Port property, Smith Cove, and Elliott Bay Marina. However, the volume of traffic expected to use these components is too small to justify the significant cost of additional elevated structures. In addition, these components must be paired with Component 2B which was determined to be infeasible.

7.2.5. East Uplands Perimeter Road (9)

An East Uplands Perimeter Road would provide access between 20th Ave W/West Uplands Perimeter Road and Alaskan Way W/Magnolia Bridge Ramp. Access to the road could potentially be limited to Port and/or transit uses or one-way traffic northbound. Stakeholders at the Port of Seattle shared that the existing building need to maintain access to the existing railroad spurs along this alignment. Their use of these tracks consists of pulling cars back and forth and queuing them on the lines, which will not work from an operational or safety perspective with this component.

Appendix C

Travel Time Analysis

TECHNICAL MEMORANDUM

Project: **Magnolia Bridge – Long Term Replacement Study**

Subject: Traffic Analysis: Future Traffic Forecasts and Operations

Date: April 5, 2019

Authors: Marni C. Heffron, P.E., P.T.O.E.
Robert H. Frankel, E.I.T.

Detailed traffic analysis was performed to assess replacement alternatives for the Magnolia Bridge. This memorandum documents the data and assumptions used to forecast future traffic volumes for each alternative and assesses traffic operating conditions. It focuses on the vehicle traffic operations; other modes of travel (transit, bicycle and pedestrian) are addressed in a separate technical memorandum.

1. Replacement Alternatives

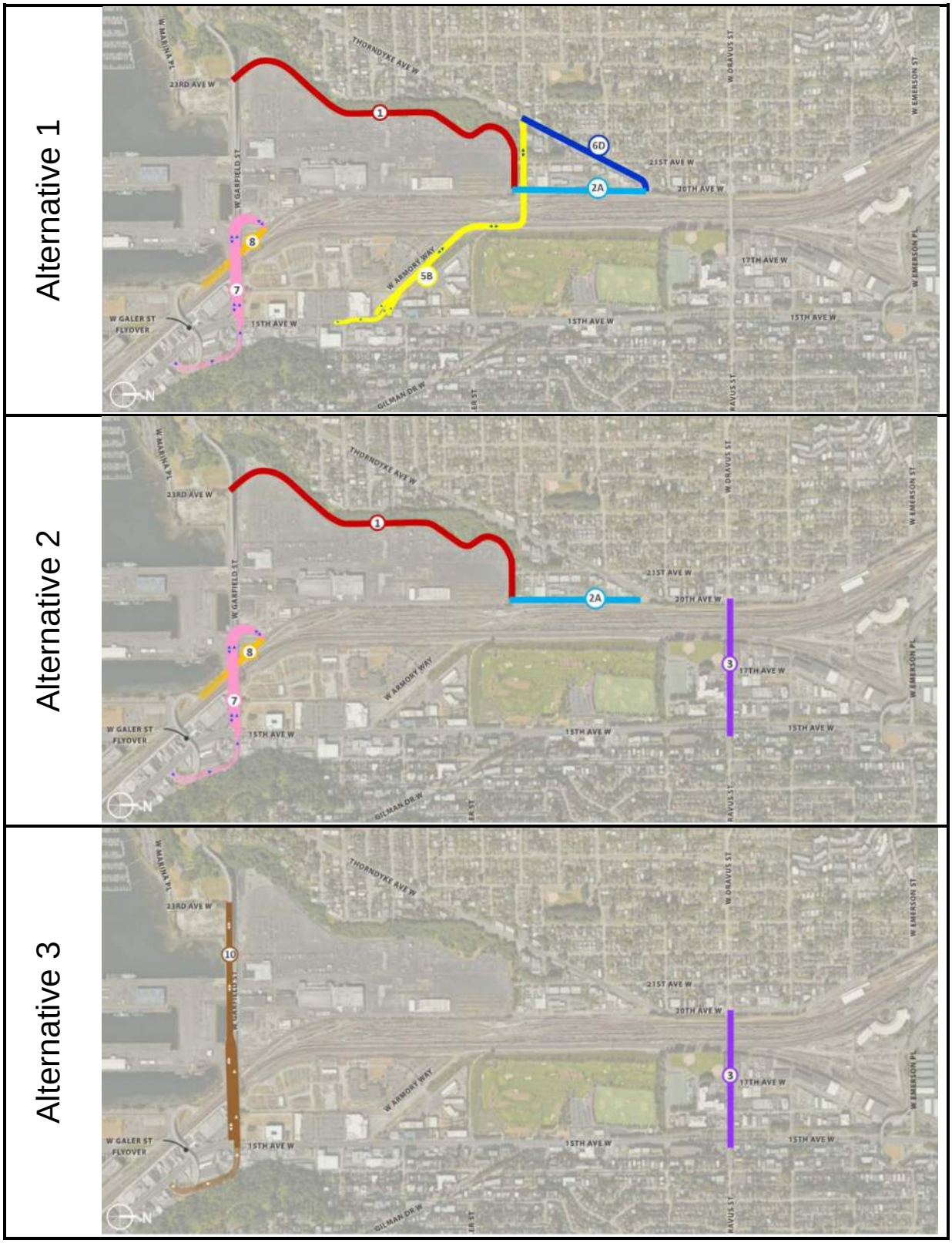
Analysis was performed for four replacement alternatives. This includes the "In-Kind Replacement" that was identified in the 2007/2008 study as the Preferred Alternative. It also assesses three additional "lower cost" alternatives that were the primary focus of the current study. The four alternatives are shown on Figure 1 and briefly described below. The new alternatives are comprised of building blocks, or components, that were created for this study; the components that make up each alternative are listed.

In-Kind (1:1) Replacement Alternative would construct a new bridge immediately south of the existing Magnolia Bridge. It would have similar connections to 15th Ave W and 23rd Ave W as exists today. The existing "center ramps" to Terminal 91 would be eliminated.

Alternative 1 (*Components 1, 2A, 5B, 6D, 7 & 8*) would remove the existing Magnolia Bridge between the BNSF Railroad tracks and the top of the bluff at Thorndyke Ave W. It would build a new bridge over the railroad tracks plus a roadway that connects the 15th Ave W/W Armory Way intersection to Thorndyke Ave W just south of W Raye St. Smith Cove and the Elliott Bay Marina would be accessed via a new surface road built along the western edge of Terminal 91 (T-91) that would connect to Thorndyke Ave W at 20th Ave W. It would also rebuild and extend the W Garfield St connection west over the railroad tracks and extend Alaskan Way north to serve both T-91 and Expedia, and allow some turns to the Galer Flyover to be eliminated in order to improve through traffic on the 15th/Elliott Ave W corridor.

Alternative 2 (*Components 1, 2A, 3, 7 & 8*) has many of the same components as Alternative 1 except that instead of the W Armory Way railroad crossing it would substantially improve the W Dravus Street corridor. This alternative would replace the existing tight-diamond ramp configuration at the 15th Ave W/W Dravus St intersection with a modified single-point urban interchange (SPUI). It would also upgrade and widen the railroad bridge between 17th Ave W and 20th Ave W.

Figure 1. Magnolia Bridge Replacement Alternatives



Source: SCJ Alliance, July 2018.

Alternative 3 (*Components 3 and 10*) would have the same upgrades in the W Dravus St corridor as Alternative 2, but none of the other components. The W Garfield St section would instead be reconfigured to include a new bridge that connects 15th Ave W to 23rd Ave W. This new structure would provide access to Smith Cove, the Elliott Bay Marina, and portions of T-91.

No Action Alternative assumes that no improvements are constructed, and the existing Magnolia Bridge deteriorates to the point of being closed to all traffic. This condition was evaluated in order to quantify the full benefits of the action alternatives.

2. Analysis Methodology

Future traffic volumes were forecast for year 2025 and 2035 conditions. These forecasts assume substantial growth associated with 58 planned new developments in the Ballard, Magnolia and Interbay neighborhoods, including full build out of the Expedia Campus and future development of about 1 million square feet of industrial space at the Port of Seattle's Terminal 91 Uplands. Detailed information about what is included in the future forecasts is provided in Section 3.

Traffic operations analysis was performed using the Synchro 10.1 platform. Levels of service were determined using this model, and travel times for various routes were determine using the micro-simulation module, SimTraffic. These models account for recent and planned changes in the roadway and intersection configurations, including the new protected bicycle lane along 20th Ave W/Gilman Ave W. It is noted that Sound Transit's planned Ballard-to-West Seattle Link Light Rail line is not accounted for in the future analysis since its target opening date is 2035, beyond the horizon year for this analysis. The Seattle Department of Transportation and Sound Transit are coordinating on alternatives analysis, and the eventual preferred alternatives for each project will be incorporated into each project's design and environmental analysis.

3. Traffic Volumes Forecasts for 2025 and 2035

3.1. Traffic Growth Assumptions

Future "baseline" traffic forecasts were prepared for 2025 and 2035 conditions, which assume that the Magnolia Bridge would remain functional. This allows growth on the bridges to be assessed compared to existing conditions. Further analysis (described later in this report) was then performed to redistribute the traffic volumes for the various alternatives. The following presents the growth assumptions included in these future baseline models.

Background Growth Rate

A background growth rate of 0.4% was applied to the existing 2017 traffic volumes to account for traffic growth that may not be included in the pipeline projects listed below. This rate was derived for the *Expedia Campus at 1201 Amgen Court W Transportation Technical Report*[1].

Pipeline Projects

Substantial new development is planned in the Ballard, Magnolia and Interbay neighborhoods. Traffic associated with 58 planned development projects (known as "pipeline" projects) was added to the future forecasts. This includes three major development projects: full build out of the Expedia Campus, three planned projects at Fishermen's Terminal, and about one million square feet of future industrial space at Terminal 91. A full list of the pipeline projects is presented in Attachment A.

[1] Heffron Transportation Inc., Revised Report, December 14 ,2016.

3.2. 2025 and 2035 Baseline Traffic Models

Future traffic volumes were forecast for year 2025 and 2035 conditions. Most of the comparative analysis was performed for 2035 conditions, but the earlier horizon was also forecast for the purpose of construction planning when needed. The following describes how the various elements listed previously were layered together for each of the future conditions.

- **Forecast 2025 with Magnolia Bridge Open (Baseline Condition)**
  - Existing volumes grown at a compound annual growth rate of 0.4% for eight years
  - Expedia phase one project trips added
  - 60% of the Terminal 91 project trips added
  - All trips associated with three Fishermen's Terminal projects added
  - All trips associated with the remaining 55 pipeline projects added (See Table A in Attachment A)

- **Forecast 2035 with Magnolia Bridge Open (Baseline condition)**
  - Existing volumes grown at a compound annual growth rate of 0.4% for eighteen years
  - Expedia full build project trips added
  - 100% of the Terminal 91 project trips added
  - All trips associated with three Fishermen's Terminal projects added
  - All trips associated with the remaining 55 pipeline projects added (See Table A in Attachment A)

3.3. Cumulative Growth

The cumulative growth associated with the assumptions described above was determined by comparing the existing (2017), 2025 and 2035 baseline traffic volumes. Table 1 shows the cumulative growth on 15th Ave W, the Magnolia Bridge, W Dravus St, and W Emerson St. In addition, Figures B through E (attached) show analysis of cumulative growth at four intersections in the study area.

Table 1. Cumulative Growth Across Corridor Screenlines – PM Peak Hour

Roadway	Year 2017 Volumes	Year 2025 [1]		Year 2035 [1]	
		Volumes	% Change from 2017	Volumes [1]	% Change from 2017
15th Avenue W (North of W Garfield St)					
Northbound	1,980	2,460	+24%	2,870	+45%
Southbound	1,620	1,770	+9%	1,930	+16%
Both Directions	3,600	4,230	+18%	4,800	+33%
Magnolia Bridge [2] (West of 23rd Avenue W)					
Eastbound	300	320	+7%	330	+10%
Westbound	910	940	+3%	990	+9%
Both Directions	1,210	1,260	+4%	1,320	+9%
W Dravus St (Over Railroad Tracks)					
Eastbound	740	790	+7%	840	+14%
Westbound	870	960	+10%	1,050	+21%
Both Directions	1,610	1,750	+9%	1,890	+17%
W Emerson Place (East of 19th Ave W)					
Eastbound	1,050	1,140	+9%	1,180	12%
Westbound	1,010	1,050	+4%	1,090	+8%
Both Directions	2,060	2,190	+6%	2,270	+9%
Three Bridges – Cumulative [3]					
Eastbound	2,090	2,250	+8%	2,350	+12%
Westbound	2,790	2,950	+6%	3,130	+12%
Both Directions	4,880	5,200	+7%	5,480	+12%

Source: Heffron Transportation, Inc., November 2017.

1. *Forecasted volumes with existing Magnolia Bride still open.*
2. *Terminal 91 trips are not included because these trips only utilize the portion of the bridge east of 23rd Ave W.*
3. *Includes volumes from the Magnolia Bridge, W Dravus St, and W Emerson Place. As shown, the cumulative growth would vary by segment. Overall, PM peak hour traffic to and from Magnolia across all three crossings would increase by about 0.6% per year compounded over the 18-year period. Over the same 18-year period, PM peak hour traffic in the 15th Ave W corridor would increase by about 2.1% per year in the northbound direction and 0.8% per year in the southbound direction.*

The growth forecasts for the three Magnolia Bridge Crossings derived for this analysis are slightly higher than those forecast for the City's *2035 Comprehensive Plan* (adopted October 17, 2016). Year 2035 traffic forecasts provided in the transportation appendix of the *Mayor's Recommended Plan*[2] were derived from projected PM peak hour volume-to-capacity ratios (V/Cs) of vehicular traffic on arterials crossing screenlines defined throughout the City.[3] Comparisons can be made to the Comprehensive Plan's estimate for traffic crossing the Ballard Bridge, and traffic crossing the three bridges to Magnolia. The forecasts developed for this Magnolia Bridge study estimated that PM peak hour traffic crossing the Ballard Bridge would be 3,350 vehicles in the northbound direction and 2,450 vehicles in the southbound direction. The Comprehensive Plan model estimated those volumes at 3,300 and 2,015 vehicles, respectively. This shows that volumes in the peak direction are nearly identical for the two

2 *Seattle 2035 Comprehensive Plan, Mayor's Recommended Plan,* May 2016.

3 Volume-to-capacity values listed for the screenlines was used to estimate future volumes. This assumes that the corridors selected would have no major changes proposed that would change capacity. City of Seattle DPD Director's Rule 5-2009, Attachment C, which presents capacities at the various screenlines used to assess Transportation Concurrency.

forecast models; the higher volume estimates in the southbound direction used for this study reflect changes in existing travel patterns compared to those assumed in the Comprehensive Plan. This study's forecasts for the three Magnolia Bridge crossings (3,100 PM peak hour trips in the westbound direction and 2,400 in the eastbound direction) are also slightly higher than those reflected in the Comprehensive Plan (about 2,400 in each direction). The higher peak direction trips are also based on more recent counts of existing conditions on the bridge and account for growth associated with many planned development projects.

Based on the cumulative growth, the baseline forecasts derived for the Magnolia Bridge analysis are reasonable. The baseline forecasts were then used to derive the traffic volumes for the various alternatives. This analysis assumed that the traffic volumes reflect a demand that would need to be served by the system, and would redistribute to the available travel routes. The redistribution process is described in the following sections.

4. Year 2035 Traffic Volumes for Alternatives Analysis

4.1. No Action Condition

The No Action condition assumes that no improvements are constructed, and the existing Magnolia Bridge deteriorates to the point of having to be closed to all traffic. This condition was evaluated in order to quantify the full benefits of the action alternatives. Traffic volumes for this condition were developed by Concord Engineering, Inc. (CEi) as documented in its *Approach for Developing Future Baseline Volumes with Magnolia Bridge Closure* [4] memorandum. The No Action Alternative assume triage-level improvements that were recommended in the *Magnolia Bridge Traffic Maintenance During Bridge Closure*[5] (also referred to as the Short-Term Plan). Year 2035 volumes for this condition assume the following:

Magnolia traffic: Approximately 80% of the projected year 2035 traffic on the Magnolia Bridge would divert to the W Dravus St crossing, the remaining 20% would divert to W Emerson St.

Smith Cove / Elliott Bay Marina traffic: All Smith Cove and Elliott Bay Marina traffic would be rerouted to a surface road along the west side of T-91 that would be accessed from 20th Ave W (as recommended in the Short-Term Plan).

Expedia Traffic: All Expedia traffic would continue to utilize the Galer Flyover.

T-91 Traffic: If the Magnolia Bridge and ramps at 23rd Ave W are no longer available, most of the traffic associated with future development at T-91would need to access the terminal using the Galer Flyover. The exception would be for certain groups of traffic that would instead divert to a new northern access point from 20th Ave W, including:

- All traffic traveling between T-91 and Magnolia.
- One-third of the traffic traveling between T-91 and areas to north, like Ballard and Fremont.
- Traffic from Queen Anne neighborhood that could use W Dravus St.

Cruise traffic: All inbound and outbound cruise traffic was assumed to use the Galer Flyover (including the trips that now use 23rd Ave W to access the cruise parking area).

4 Concord Engineering, Inc., *Approach for Developing Future Baseline Volumes with Magnolia Bridge Closure*, 2018.
5 Heffron Transportation, Inc., November 10, 2017.

4.2. In-Kind (1:1) Replacement Alternative

Traffic volumes for this alternative were assumed to be similar to the future baseline traffic volumes. Some adjustments were made after initial analysis so that no single crossing was disproportionately more congested than the others. This "congestion balancing" accounts for the fact that the system has multiple route choices, and motorists may choose to divert to another route if it is less congested. Approximately 200 vehicles were reassigned from the W Dravus St crossing to the Magnolia Bridge to balance congestion in the 15th Ave W corridor. This alternative also assumes that there would be no access to Terminal 91 or Smith Cove via 20th Ave W.

4.3. Alternative 1

As described above, Alternative 1 includes a new bridge at W Armory Way, a new surface road to Smith Cove, and a new connection between 15th Ave W and Alaskan Way W (T-91/Expedia) at W Garfield St. These new improvements are expected to change traffic patterns as follows:

Magnolia traffic: The new W Armory Way crossing would primarily serve traffic traveling between upper Magnolia and areas south, such as Downtown Seattle. Volumes were first balanced between the three crossings (W Armory Way, W Dravus St, and W Emerson St) based on travel patterns. The volumes were then rebalanced after initial analysis to account for congestion. As noted for the In-Kind Replacement, "congestion balancing" accounts for the fact that the system has multiple route choices, and motorists may choose to divert to another route if it is less congested. For example, some community members have reported that they no longer use W Emerson St due to changes at the W Emerson St/Gilman Ave W intersection. The congestion balancing would account for this type of diversion with traffic growth in all three corridors.

Smith Cove/Elliott Bay Marina traffic: Smith Cove would to be accessed from 20th Ave W and the new surface road on the west side of Terminal 91 (Component 1). Some of the Smith Cove traffic destined for areas to the south would divert from W Dravus St to the new W Armory Way crossing.

Expedia traffic: With the addition of the new W Garfield St connection to Alaskan Way W, it is assumed that the southbound left-turn movement from Elliott Ave W onto the Galer Flyover would be prohibited. With this change, inbound Expedia traffic coming from the north would be rerouted from the Galer Flyover to the new W Garfield St connection. It was assumed that all other Expedia traffic would continue to use the Galer Flyover.

T-91 traffic: Alternative 1 would create a new northern access route to T-91. It was assumed that the following traffic would use this new northern access on 20th Ave W:

- All traffic traveling between T-91 and Magnolia.
- One-third of the traffic traveling between T-91 and areas to north, such as Ballard and Fremont.
- Traffic from Queen Anne neighborhood that could use W Dravus St.

The new W Garfield St connection would serve the balance of the T-91 traffic from the north that would not use the northern access. Inbound traffic coming from the south was assumed to use the spur off the Galer Flyover to access the new W Garfield St ramp instead of continuing across the flyover. It is noted that depending on the final design features, some large trucks may continue to use the Galer Flyover to enter and exit the site; however, to evaluate the operational needs, this traffic was assumed to use the new W Garfield St connection.

Cruise traffic: All inbound and outbound cruise traffic was assumed to follow the same patterns as the rest of the T-91 traffic, and would use the new W Garfield St connection exclusively.

4.4. Alternative 2

Alternative 2 includes an improved W Dravus St corridor, a new surface road to Smith Cove, and a new connection between 15th Ave W and Alaskan Way W (T-91/Expedia) at W Garfield St. These new improvements would change traffic patterns as follows:

Magnolia traffic: In Alternative 2, Magnolia travel patterns remained largely unchanged from the No Action condition. Traffic volumes were rebalanced between the W Dravus St and W Emerson Place crossings to ensure that no one crossing was disproportionately more congested.

Smith Cove traffic: Like in the No Action condition, Smith Cove would continue to be accessed from 20th Ave W.

Expedia traffic: The changes described above for Alternative 1 also apply to this alternative. Inbound Expedia traffic coming from the north would be rerouted from the Galer Flyover to the new W Garfield St connection. All other Expedia traffic would continue to use the Galer Flyover.

T-91 traffic: The changes described above for Alternative 1 also apply to this alternative. Inbound T-91 traffic coming from the north would be rerouted to the new northern access gate or the W Garfield St connection. Additionally, inbound traffic coming from the south would use the spur off the Galer Flyover to access the new W Garfield St ramp instead of continuing across the flyover. All outbound T-91 traffic would be diverted from the Galer Flyover to either W Garfield St or the new northern access gate.

Cruise traffic: All inbound and outbound cruise traffic was assumed to follow the same patterns as the rest of the T-91 traffic, and would use the new W Garfield St connection exclusively.

4.5. Alternative 3

Alternative 3 includes an improved W Dravus St corridor and a new connection between 15th Ave W and 23rd Ave W (T-91/Smith Cove) at W Garfield St. These new improvements would impact traffic patterns in the following ways.

Magnolia traffic: In Alternative 3, Magnolia travel patterns remained largely unchanged from the No Action condition. Traffic volumes were rebalanced between the W Dravus St and W Emerson Place crossings to ensure that no one crossing was disproportionately more congested.

Smith Cove traffic: In Alternative 3, all access to Smith Cove would occur via the W Garfield St structure (with no access from 20th Ave W). In total, this change would impact approximately 170 trips during the AM peak hour and 215 trips during the PM peak hour.

Expedia traffic: All Expedia traffic would continue to use the Galer Flyover, as is the case in the No Action condition.

T-91 traffic: This alternative was assumed to have no north access to 20th Ave W. All inbound traffic from the north was assumed to use the W Garfield St connection and approximately 70% of the inbound traffic from the south would use the spur off the Galer Flyover to access W Garfield St; the remaining 30% would continue to use the Galer Flyover. In total, approximately 85% of the T-91 traffic was assumed to use the new W Garfield St connection to 23rd Ave W and the remaining 15% would use the Galer Flyover.

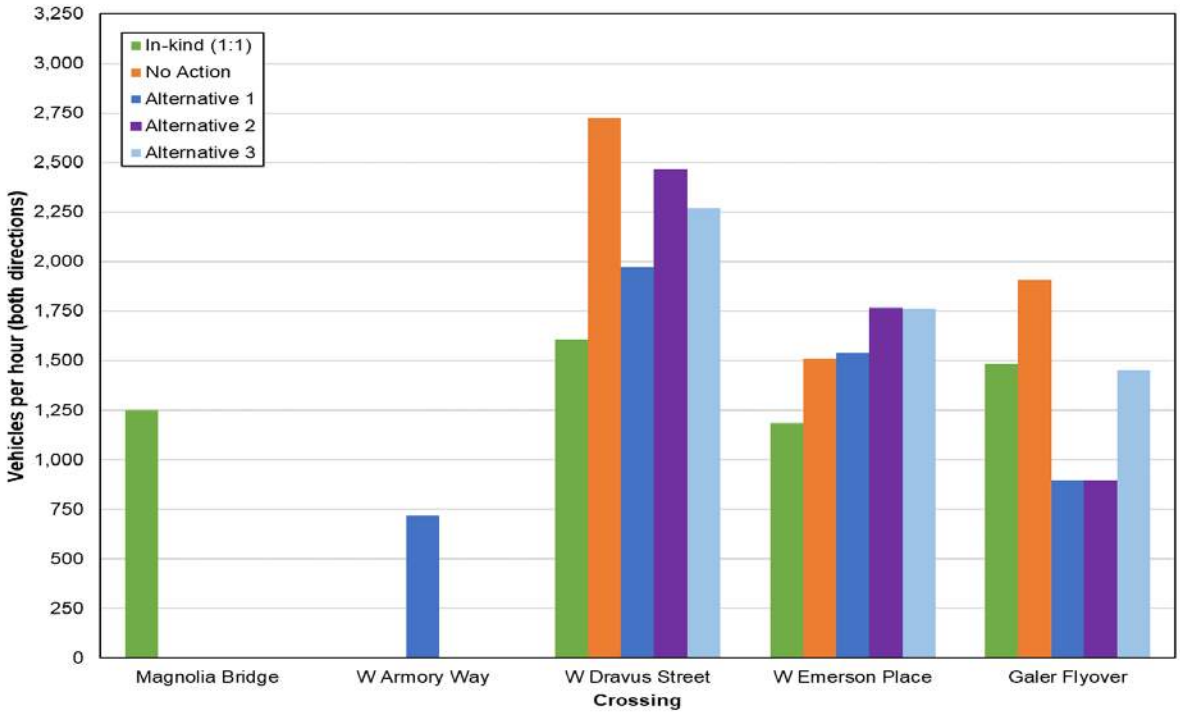
Cruise traffic: For the purpose of analysis, it was assumed that internal operations on cruise day would change to allow more traffic to access the terminal from the W Garfield St connection. Approximately 70% of the inbound traffic and 65% of the outbound traffic to the cruise terminal was assumed to use

the connection to the 23rd Avenue W ramps. This accounts for most of the passenger vehicle trips made to the terminal including trips by passengers, taxis, and car-share services. Freight and high-capacity vehicles (e.g., buses and shuttles) were assumed to use the Galer Flyover.

4.6. Total Bridge Crossings by Alternative

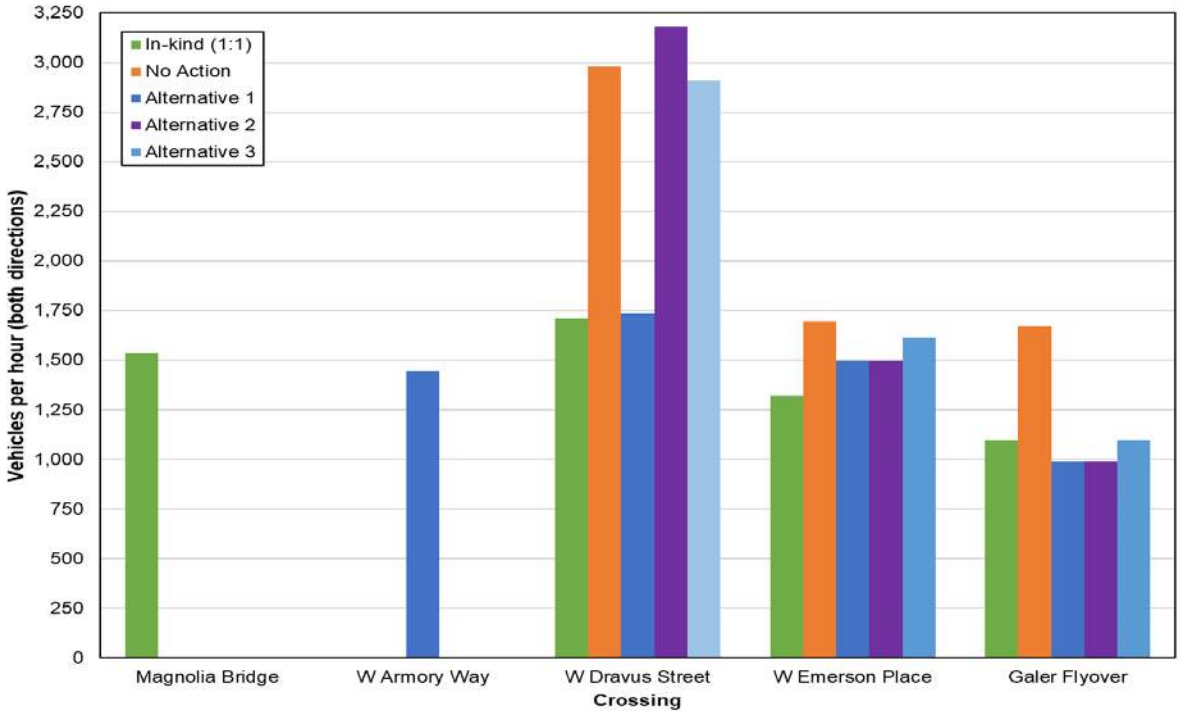
The figures below show the total traffic volumes crossings each bridge in each alternative. Figure 2 shows the crossings during the AM peak hour and Figure 3 shows the crossings during the PM peak hour.

Figure 2. 2035 Traffic Volumes by Alternative – AM Peak Hour



Source: Concord Engineering, Inc. and Heffron Transportation, Inc., September 2018.

Figure 3. 2035 Traffic Volumes – PM Peak Hour



Source: Concord Engineering, Inc. and Heffron Transportation, Inc., October 2018.

5. Traffic Operations Analysis

Level of service analysis was conducted for study area intersections for the AM and PM peak hour conditions in year 2035. All analyses were performed using the Synchro 10.1 traffic operations analysis software. Details related to development of the models is presented in Attachment C. The results are summarized in Table 2.

Table 2. Level of Service Summary – Year 2035 AM and PM Peak Hours

	No Action		In-Kind (1:1)		Alternative 1		Alternative 2		Alternative 3	
Peak Hour / Intersections	LOS [1]	Delay [2]	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay
AM Peak Hour										
Galer Flyover/Elliott Ave W	F	57	C	32	B	15	B	12	C	22
W Garfield St/15th Ave W	F	103	B	11	C	29	C	27	F	81
W Armory Way/15th Ave W	F	145	D	50	F	167	F	141	F	171
Gilman Dr W/15th Ave W	F	134	E	68	F	131	F	138	F	159
W Dravus St/15th Ave W	E [3]	62	D [4]	35	D [4]	45	C	29	C	30
W Dravus St/20th Ave W	F	172	D	40	D	50	D	44	D	40
W Emerson Pl/Nick St Ramp [5]	D	37	C	27	D	47	F	95	F	95
W Emerson Pl/Gilman Ave W [5]	D	49	D	51	E	77	F	126	F	126
20th Ave W/Thorndyke Ave W	B [5]	13	B	10	A [5]	9	B [5]	16	B	18
W Blaine St/Thorndyke Ave W	B	18	A	9	B	16	B	18	B	18
Galer Flyover/Alaskan Way W [5]	E	69	D	40	E	55	E	57	C	43
Garfield Ramp/Alaskan Way W	n/a	n/a	n/a	n/a	C	18	C	18	n/a	n/a
PM Peak Hour										
Galer Flyover/Elliott Ave W	F	163	C	28	E	73	E	73	F	106
W Garfield St/15th Ave W	F	87	E	55	F	97	F	98	F	137
W Armory Way/15th Ave W	F	111	C	24	C	40	F	112	F	119
Gilman Dr W/15th Ave W	F	189	F	105	E	66	F	191	F	225
W Dravus St/15th Ave W	F [3]	105	E	65	E [4]	70	E	78	E	71
W Dravus St/20th Ave W	F	114	C	32	E	55	E	64	E	56
W Emerson Pl/Nick St Ramp [5]	D	42	C	29	C	29	C	29	C	29
W Emerson Pl/Gilman Ave W [5]	F	133	E	76	F	99	F	106	F	134
20th Ave W/Thorndyke Ave W	A [5]	9	B	12	B [5]	13	A [5]	8	C	16
W Blaine St/Thorndyke Ave W	B	12	B	15	C	18	B	13	B	13
Galer Flyover/Alaskan Way W [5]	F	291	C	30	E	58	E	59	C	28
Garfield Ramp/Alaskan Way W	n/a	n/a	n/a	n/a	A	9	A	9	n/a	n/a

Source: Concord Engineering, Inc. and Heffron Transportation, Inc., October 2018.
Note: All level of service calculations performed using the Synchro 10.1 traffic operations analysis software. Signalized intersection results reported using the Synchro module. Phase splits and offsets optimized for future conditions.

1. *Level of service.*
2. *Average seconds of delay per vehicle.*
3. *Delay for the two adjacent intersections approximated as one intersection for sake of comparison. No Action condition includes short-term mitigations – vehicles exiting 15th Ave W to W Dravus St in the southbound direction rerouted to 17th Ave W.*
4. *Delay for the two adjacent intersections approximated as one intersection for sake of comparison.*
5. *Intersection signalized in this analysis. Phasing limits northbound right turns and southbound left turns to account for the cycle track on east side of Gilman Ave W. Phasing includes westbound bicycle crossing phase for the cycle track on the south side of Gilman Ave W that overlaps with the southbound left turn.*

6. Travel Times

The level of service analysis for individual intersections, presented in the section above, provides useful information about potential causes of congestion, and can be used to identify potential improvement needs such as the need for additional lanes or changes to signal timing and phasing at a particular intersection. However, even well-functioning intersections can experience congestion created by downstream congestion. To account for these cumulative effects, the networks were analyzed in the SimTraffic micro-simulation program.

The results from the micro-simulation analyses were used to calculate travel times along significant routes of travel for each alternative. The following travel routes were analyzed in both directions of travel:

A. Between Magnolia Village and Elliott Ave W (just south of the Galer Flyover)
B. Between Alaskan Way W (T-91/Expedia) and Elliott Ave W (just south of the Galer Flyover)
C. Between Smith Cove Park and Elliott Ave W (just south of the Galer Flyover)
D. Between Smith Cove Park and Magnolia Village
E. Between the Ballard Bridge and Magnolia Village
F. Between the Ballard Bridge and T-91/Expedia
G. Between the Ballard Bridge and Smith Cove Park
H. Along Elliott/15th Ave W from the Ballard Bridge to just south of the Galer Flyover

The routes and calculated travel times for the three replacement alternatives are shown in Attachment D. The travel times are also summarized in Table 3. It is acknowledged that motorists may not tolerate very long travel times, and would likely either change their mode of travel, their time of travel, or avoid the trip altogether. However, for the purpose of comparing the potential impacts of the alternatives, no changes in trip behavior were considered.

Table 3. Summary of Travel Times – Year 2035 AM and PM Peak Hours

Travel Time Route	No Build		In-Kind		Alt. 1		Alt. 2		Alt. 3	
	AM	PM	AM [1]	PM	AM	PM	AM	PM	AM	PM
A. From Magnolia Village to Elliott Ave W	126	46	6	6	17	12	20	18	39	18
A. From Elliott Ave W to Magnolia Village	19	80	8	8	10	25	13	66	12	78
B. From T-91/Expedia to Elliott Ave W	5	5	2	5	2	2	2	2	2	5
B. From Elliott Ave W to T-91/Expedia	4	10	6	5	2	6	3	5	4	5
C. From Smith Cove to Elliott Ave W	67	40	3	2	15	9	18	15	2	5
C. From Elliott Ave W to Smith Cove	16	70	5	5	7	25	11	63	3	4
D. From Magnolia Village to Smith Cove	83	40	13	15	7	8	15	8	41	21
D. From Smith Cove to Magnolia Village	23	20	14	21	6	8	9	8	15	25
E. From the Ballard Br. to Mag. Village	35	68	28	12	34	15	34	15	33	17
E. From Mag. Village to Ballard Br.	50	33	10	11	13	12	14	13	31	13
F. From Ballard Br. to T-91/Expedia	47	25	28	9	36	10	33	13	36	18
F. From T-91/Expedia to Ballard Br.	9	19	8	16	7	6	5	10	7	18
G. From Ballard Br. to Smith Cove	39	72	25	10	36	18	38	18	33	16
G. From Smith Cove to Ballard Br.	28	39	5	12	14	15	19	14	6	16
H. Northbound along 15th Ave W	9	66	8	32	7	21	5	57	5	70
H. Southbound along 15th Ave W	41	15	25	9	37	13	32	12	33	16

Source: Concord Engineering, Inc. and Heffron Transportation, Inc., February 2019.
Note: All travel times calculations based on results from the SimTraffic 10.1 micro-simulation software with an average of 5 runs. Results reported in minutes.

1. W Galer St/Elliott Ave W intersection removed from the In-Kind (1:1) AM peak hour model in order to generate accurate micro-simulation results. The delays associated with this intersection were manually factored into the travel time calculations

7. Results with Cruise Operations at T-91

This analysis also considered conditions with active cruise ship operations at T-91. The additional traffic volumes generated by two cruise ships at the terminal were added to the networks to assess how this extra demand might impact the three replacement alternatives. The most significant impacts occur during the AM peak hour, when the ships are loaded/unloaded. Table 4 shows intersection delays at key intersections during the AM peak hour when two cruise ships call at T-91.

Table 4. Level of Service Summary – 2035 **AM Peak Hour** With and Without Cruise Ships

Intersections	In-Kind (1:1)		Alternative 1		Alternative 2		Alternative 3	
	LOS [1]	Delay [2]	LOS	Delay	LOS	Delay	LOS	Delay
No Cruise Ships								
Galer Flyover/Elliott Ave W	C	25	B	11	B	12	C	29
W Garfield St/15th Ave W	B	10	C	26	C	29	F	81
W Armory Way/15th Ave W	D	48	F	169	F	142	F	172
Galer Flyover/Alaskan Way W [3]	C	39	E	57	E	57	C	43
Garfield Ramp/Alaskan Way W	n/a	n/a	C	18	C	18	n/a	n/a
With Cruise Ships								
Galer Flyover/Elliott Ave W	D	40	C	27	D	52	C	35
W Garfield St/15th Ave W	B	18	D	41	C	33	F	96
W Armory Way/15th Ave W	E	60	F	187	F	153	F	183
Galer Flyover/Alaskan Way W [3]	D	43	E	57	E	57	D	46
Garfield Ramp/Alaskan Way W	n/a	n/a	C	19	C	19	n/a	n/a

Source: Concord Engineering, Inc. and Heffron Transportation, Inc., September 2018.
Note: All level of service calculations performed using the Synchro 10.1 traffic operations analysis software. Signalized intersection results reported using the Synchro module. Phase splits and offsets optimized for future conditions.

1. *Level of service.*
2. *Average seconds of delay per vehicle.*
3. *Intersection signalized in this analysis.*

8. Benefits of Component 7 and 8 on Elliott Ave Operations

The level of service and travel time analysis determined that two components provided substantial benefit to operations along the Elliott/15th Ave corridor. Component 7 would reconstruct the existing Garfield St connection to the Elliott/15th Ave W corridor and bring it to grade on Terminal 91 west of the BNSF mainline. Component 8 would connect the west end of the new structure to existing Alaskan Way. Together these components would provide alternative access to Terminal 91 and Expedia campus and would allow some turns to be prohibited along the Elliott Ave corridor, improving mainline traffic flow. Without these components, most of the Terminal 91 traffic would share the existing Galer Flyover with all of Expedia Traffic. Alternatives 1 and 2 included these two components while the In-Kind Alternative and Alternative 3 did not.

Without Components 7 and 8, the analysis determined potential operational issues:

- Southbound left turn from Elliott Ave W to Galer Flyover would have long queues that could extend into adjacent through lanes.
- Westbound left turn from Galer Flyover to Elliott Ave W would reduce capacity for northbound through movements on Elliott Ave W.
- West end of Galer Flyover at Alaskan Way would exceed capacity of two-lane intersection, creating backup over flyover on peak cruise days.

With the Garfield St Connection and Alaskan Way Extension, the southbound left turn from Elliott Ave W to the Galer Flyover could be prohibited, and traffic volumes would be split between the two access options. Egress traffic from Terminal 91 could access the southbound flow of Elliott Ave W with a right turn movement instead of a left turn movement. These changes in flow would reduce congestion at each end of the Galer Flyover.

9. Recommended Improvements to Alternatives

The analysis determined several potential improvements that could be considered in the next phase of design. These are described below:

All Alternatives

All alternatives are expected to increase traffic through the W Dravus St/20th Ave W intersection. In the existing configuration, northbound right turns from 20th Ave W to W Dravus St conflict with bicycle traffic on the two-way cycle track across the east leg of the intersection. The northbound right turns can only move during the overlap phase with the westbound left turn from W Dravus St to 20th Ave W. Without improvements, the analysis determined that the intersection would fail and the northbound right-turn queue could extend into the adjacent lane. This is remedied in Alternatives 2 and 3 by constructing an additional northbound right turn lane when the Dravus Street corridor is rebuilt. Because this corridor would not be expanded for the In-Kind (1:1) Alternative or Alternative 1, the following alternative improvements are suggested:

- Relocate the northbound right-turn lane to the east of cycle track so the cyclists and the northbound right-turn traffic can operate simultaneously. This would require a longer dedicated right-turn lane and a channelized location for vehicles to cross the cycle track.
- Add a dedicated northbound left-turn pocket with protected-permissive phasing by removing some of the parking on the west side of 20th Ave W.

- Convert the innermost eastbound and westbound lanes from shared thru-left turn lanes to dedicated left-turn lanes with protected-permissive phasing.

All alternatives are expected to increase traffic through the W Emerson St/Gilman Boulevard intersection. This all-way stop intersection currently operates at LOS F and is expected to degrade with future growth. The Short-Term Closure Plan in the *Magnolia Bridge Traffic Maintenance During Bridge Closure Report*[6] recommended that operation of the W Emerson Place/Gilman Ave W intersection be monitored, and a traffic signal installed at the point that traffic signal warrants. Should the intersection be signalized, the signal phasing will need to account for the cycle tracks on the east side of Gilman Ave W and the south side of Emerson Ave W. It also recommended that the west leg of the intersection be converted to one-way westbound at the time of signalization. These changes should be considered for any of the alternatives.

The Gilman Dr W/15th Ave W intersection is also expected to operate at LOS F for all alternatives due to the fact Gilman Dr W has only one travel lane. The Queen Anne Community Council has previously voiced concerns about cut-through traffic across the top of Queen Anne Hill and noted that increasing the capacity of Gilman Dr W could attract more cut-through traffic. Therefore, any improvements to this intersection should consider the cut-through impact.

In-Kind (1:1) Replacement

As described in Section 8 above, operations on the Elliott / 15th Ave corridor would improve if a direct connection from the Magnolia Bridge can be provided so that the southbound left turn movement to the Galer Flyover can be prohibited.

Alternative 1

The eastbound approach at the 15th Ave W/Armory Way intersection is projected to fail during the AM peak hour when this route would be the primary egress from Magnolia. The eastbound right turn movement is currently served by only one lane, and right-turning traffic must yield to pedestrians who cross the south leg of the intersection. Two potential improvements could be considered to improve vehicle operations:

- Remove the crosswalk on the south side of the intersection (the pedestrian crosswalk would remain on the north side of the intersection).
- Provide a dual right turn lane on the eastbound approach.

This alternative assumes that a new traffic signals would be installed at the Thorndyke Ave W/20th Ave W intersection and the Thorndyke Ave W/Armory Way intersection. Additional improvements along Thorndyke Ave W may be needed to serve local turn movements (e.g., left turn lanes at key intersections), provide for transit stops, and restrict potential cut-through traffic on non-arterial streets that connect to Thorndyke Ave W.

Alternative 2

This alternative assumes that the intersection at Thorndyke Ave W/20th Ave W would be signalized. No additional changes to the alternative would be needed other than those listed above for all alternatives.

[6] Heffron Transportation, Inc., *Magnolia Bridge Traffic Maintenance During Bridge Closure*, Prepared for the Seattle Department of Transportation, November 10, 2017.

Alternative 3

Operations on the Elliott/15th Ave W corridor would improve if a direct connection from the Magnolia Bridge can be provided so that the southbound left turn movement to the Galer Flyover can be prohibited. No additional changes to the alternative would be needed other than those listed above for all alternatives.

Table 5 is a summary of recommended infrastructure improvements.

Table 5. Additional Improvements with Replacement Alternatives

Improvement	In-kind (1:1)	Alternative 1	Alternative 2	Alternative 3
1. Update signal phasing and provide additional northbound and southbound lanes at W Dravus St/20th Ave W intersection	▲	▲	▲	▲
2. Signalize W Emerson Pl/Gilman Ave W intersection	▲	▲	▲	▲
3. Signalize 20th Ave W/Thorndyke Ave W intersection		▲	▲	
4. Provide Garfield Street Connection	▲	▲	▲	▲
5. Change stop control at W Blaine St/Thorndyke Ave W intersection so only the northbound approach of Thorndyke Ave W is stop-controlled		▲	▲	▲
6. Add an auxiliary lane in the uphill (southwest) direction of Thorndyke Ave W		▲	▲	▲
7. Widen westbound approach at Gilman Ave W/15th Ave W intersection (If desired by neighborhood)	◊	◊	◊	◊

▲ *Recommended in Addition to Basic Component Improvements*
◊ *Improvement should consider potential cut-through effects*

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Attachments:
- A – Pipeline Traffic
- B – Traffic volume comparisons at key intersections
- C – Synchro model adjustments
- D – Travel time analysis and results

ATTACHMENT A

PIPELINE DEVELOPMENTS INCLUDED IN FUTURE GROWTH FORECASTS

Pipeline Projects

Substantial new development is planned in the Ballard, Magnolia and Interbay neighborhoods. An initial list of pipeline projects in the study areas was compiled for the *Expedia Campus at 1201 Amgen Court W Transportation Technical Report*[7]. Three of the pipeline projects located along W Dravus St (permit #s 3019398, 3017929, and 302381) were updated to reflect permit information as of October 2017. This list of pipeline projects is presented in Table A; three large pipeline projects not included in this list are described below.

Table A. Pipeline Projects Included in Future Traffic Forecasts for Magnolia Bridge Analysis

Map ID [a]	SDCI Number [b]	Address	Land Use	Square Footage [c]	Units [d]
1	3016656	6301 15th Ave NW	Mixed Use	2,500 sf	61 du/2 l-w
2	3017177	1506 NW 61st St	Multi Family		33 du
3	3020482	5611 17th Ave NW	Multi-Family		74 rooms [e]
4	3020002	1552 NW 58th St	Multi Family		18 du
5	3015859	1762 NW 59th St	Multi Family		25 du
6	3020344	1706 NW 56th St	Mixed-Use		141 du/16 l-w
7	3019360	1718 NW 56th St	Mixed-Use		150 du/17 l-w
8	3017258	1731 NW 57th St	Multi Family		48 du
9	3012436	1760 NW 56th St	Mixed Use	1,282 sf	135 du
10	3017791	2003 NW 57th St	Mixed-Use		118 du/14 l-w
11	3015955	5601 20th Ave NW	Mixed Use	1,884 sf	35 du/3 l-w
12	3021541	5512 17th Ave NW	Mixed Use	1840 sf	84 du
13	3018670	1701 NW 56th St	Mixed Use	4,406 sf	177 du/22 l-w
14	3018687	1448 NW Market St	Office/Retail	169,555 sf office 32,728 sf retail	
15	3015112	1417 NW 54th St	Custom & Craft [2]	46,475 sf	
16	3015204	1510 NW 52nd St	Multi-Family		50 rooms
17	3017093	1516 NW 51st St	Multi Family		90 du/1l-w
18	3016115	1411 NW 50th St	Office	20,000 sf	
19	3013009	1515 NW Leary Way	Custom & Craft	100,000 sf	
20	3016534	1455 NW Leary Way	Medical Office	30,000 sf	
21	3014491	3420 15th Ave W	Mixed-Use		38 rooms/4 l-w
22	3019398	3230 16th Ave W	Multi Family		225 du
23	3017929	1518 W Dravus St	Multi Family		38 du
24	3020381	3046 17th Ave W	Mixed-Use	1,066 sf retail	59 du
25	3009726	2406 32nd Ave W	Mixed-Use	6,392 sf	24 du
16	3013191	2900 3rd Ave W	Assisted Living		128 beds
27	3015522	901 McGraw St	Multi Family		58 du
28	3017442	1550 W Armory Wy	Commercial	25,000sf	
29	3017443	1700 W Armory Wy	Commercial	24,930 sf	
30	3022095	1602 15th Ave W	Self-storage facility	200,000 sf	
31	3020317	512 5th Ave W	Multi Family		46 du
32	3020181	203 W Republican St	Mixed-Use		92 du/1 l-w

[7] Heffron Transportation Inc., Revised Report, December 14 ,2016.

Table A. Pipeline Projects Included in Future Traffic Forecasts for Magnolia Bridge Analysis

Map ID [a]	SDCI Number [b]	Address	Land Use	Square Footage [c]	Units [d]
33	3012851	500 3rd Ave W	Mixed-Use		71 du/5 l-w
34	3012746	521 2nd Ave W	Mixed-Use		33 du/3 l-w
35	3006977	509 1st Ave W	Mixed-Use		40 du/3 l-w
36	3014863	531 Queen Anne Ave	Mixed-Use	16,200 sf	34 du
37	3018022	513 1st Ave N	Mixed-Use	8,000 sf	110 du
38	3005778	100 Republican St	Mixed-Use	17,725 sf	275 du
39	3017467	450 3rd Ave W	Office	183,779 sf	
40	3018158	19 W Harrison	Mixed-Use	685 sf	41 du/4 l-w
41	3017667	300 1st Ave	Mixed-Use		133 du/10 l-w
42	3013058	306 Queen Anne Ave	Mixed-Use		50 du/3 l-w
43	3012878	315 1st Ave N	Mixed-Use	12,018 sf	212 du
44	3016745	219 1st Ave N	Mixed-Use	1,725 sf	45 du
45	3021477	215 1st Ave N	Mixed-Use	1,500 sf	60 du
46	3018206	400 Roy St	Mixed-Use	3,200 sf	66 du
47	3015918	701 5th Ave N	Mixed-Use	3,600 sf	97 du
48	3019621	200 2nd Ave W	Mixed-Use		75 du/4 l-w
49	3010551	101 John St	Mixed-Use	2,550 sf	75 du/6 l-w
50	3015680	101 Denny Wy	Mixed-Use	2,624 sf	82 du
51	3016538	3031 Western Ave	Multi-Family		100 du
52	3015549	124 Denny Wy	Mixed-Use	2,550 sf	75 du/6 l-w
53	3016806	307 Broad St	Multi-Family		149 du
54	3015251	600 Wall St	Mixed-Use	1,950 sf	400 du
55	3022669	1650 W Armory Way	Mixed-Use	68,000 sf	

Source: DPD/SDCI Parcel Viewer, accessed November 2015, and updated in August 2016 and October 2017.

a. Map ID was included in the Expedia Transportation Analysis described previously.

b. Project number at Seattle Department of Construction and Inspections (SDCI).

c. Square footage of non-residential uses

d. "du" = dwelling unit; "l-w" = live-work unit

e Units for Congregate Care are defined as rooms

In addition to the 55 projects described above, traffic associated with three major developments was added to the forecasts. These include:

Expedia Interbay Campus

- The *Expedia Campus at 1201 Amgen Court W Transportation Technical Report* includes an estimate of the total project trips that will be generated by the new Expedia campus. The report analyzed two stages of growth for the Expedia campus: phase one reflects conditions when the campus initially opens (anticipated in 2019) and the full build condition reflects conditions when the Expedia is fully built out (anticipated in 2030).
    - The Expedia Phase 1 trips (1071 inbound and 80 outbound trips in the morning and 144 inbound and 703 outbound trips in the afternoon) were included in the year 2025 forecasts.
    - The Expedia Full Build trips (1213 inbound and 90 outbound trips in the morning and 155 inbound and 755 outbound trips in the afternoon) were included in the year 2035 forecasts.

Terminal 91 Development

- The forecasted traffic volumes include growth associated with future projects at the Port of Seattle's Terminal 91. These estimates are based on analysis in the *Transportation Technical Report for Draft EIS Port of Seattle's North Bay Redevelopment* [8].
- The North Bay EIS Alternative 5 assumed a total of 990,000 sf of mixed employment uses (525,000 sf of light industrial, 350,000 sf of research & development space, 100,000 sf of office space plus 15,000 sf of retail goods and services). The trips associated with these uses likely represent a worst-case condition since the likely development will include less of the high employee density uses. The trips included in the analysis, as estimated in the North Bay EIS are:
    - AM Peak Hour: 550 inbound and 110 outbound trips
    - PM Peak Hour: 170 inbound and 580 outbound trips

  The 2025 traffic volume forecasts assume 60% of this traffic; the 2035 forecasts assume all of the T-91 traffic.
- This analysis assumes all entering/exiting trips must use the existing access points located off of 23rd Ave W.
    - The original analysis assumed some trips access Terminal 91 from the north (via 20th or 21st Ave W), but this access is not yet approved.
    - Since there are no ramps serving traffic that arrives at Terminal 91 from the west, this analysis assumes any vehicles traveling to/from Magnolia must make a large loop using 15th Ave W and Dravus St to enter/leave the site.
- See the *Transportation Technical Report for Draft EIS Port of Seattle's North Bay Redevelopment* for more information.

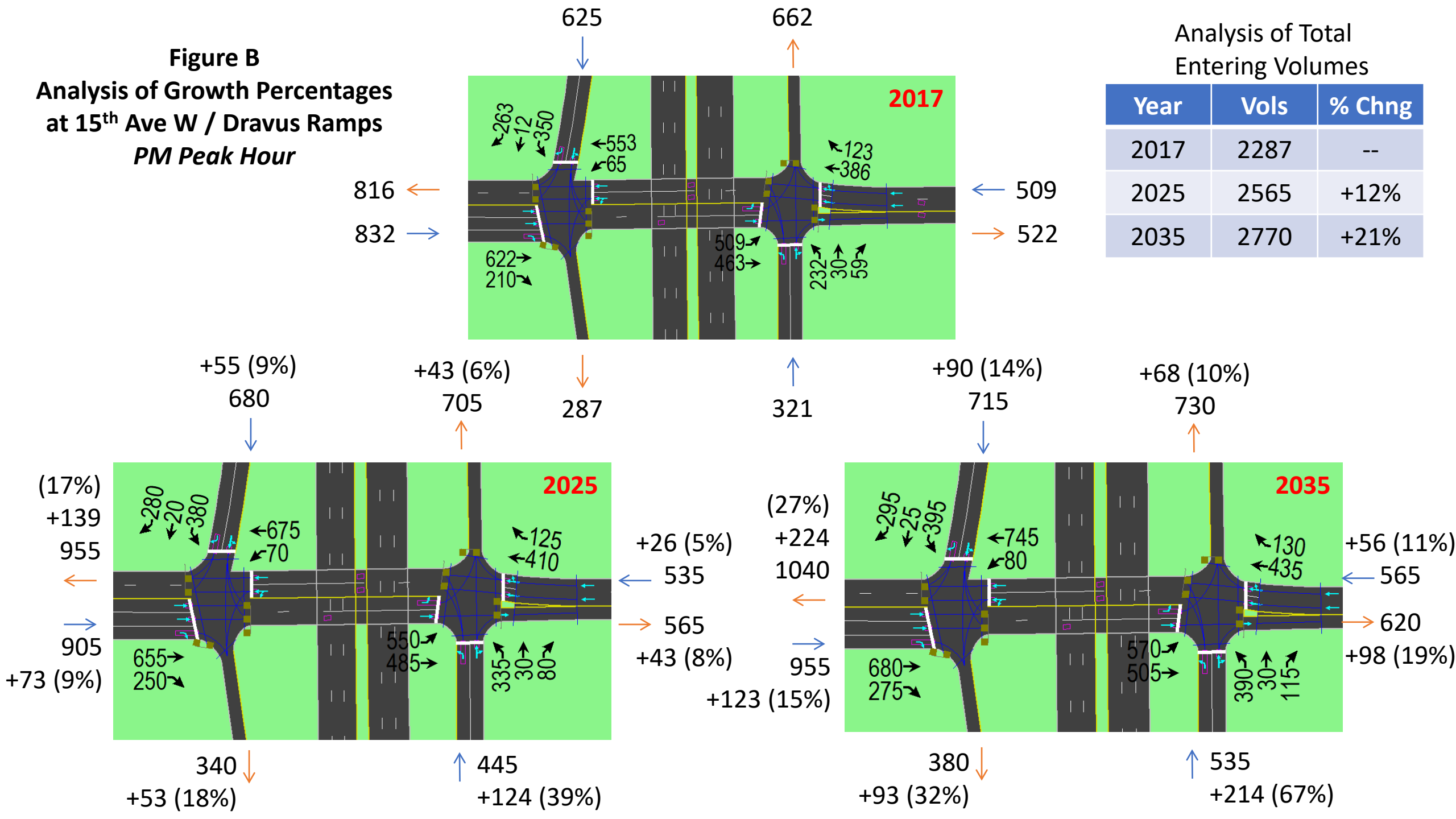
Fishermen's Terminal Projects

- Traffic associated with three development projects at Fishermen's Terminal were included in the future forecasts: The Gateway Building, West Wall Redevelopment, and a new south industrial building. Traffic estimates were obtained from the *Environmental Checklist for the Fishermen's Terminal: Gateway, West Wall, and Seattle Ship Supply Improvement Project* (EA Engineering, Science, and Technology, Inc., PBC Cultural Resource Consultants, and Transpo Group, September 8, 2017.) It accounted for
    - 21,000 sf marine sales & services,
    - 55,000 sf warehouse,
    - 10,250 sf office,
    - 48,200 sf maritime flex-industrial,
    - 33,000 sf exterior storage, and
    - 26.000 workforce & maritime incubator.
- The combined projects are expected to generate 175 trips during the AM peak hour and 51 trips during the PM peak hour.

[8] *Transportation Technical Report for Draft EIS Port of Seattle's North Bay Redevelopment,* Heffron Transportation, Inc., March, 2015.

ATTACHMENT B
TRAFFIC VOLUME COMPARISONS

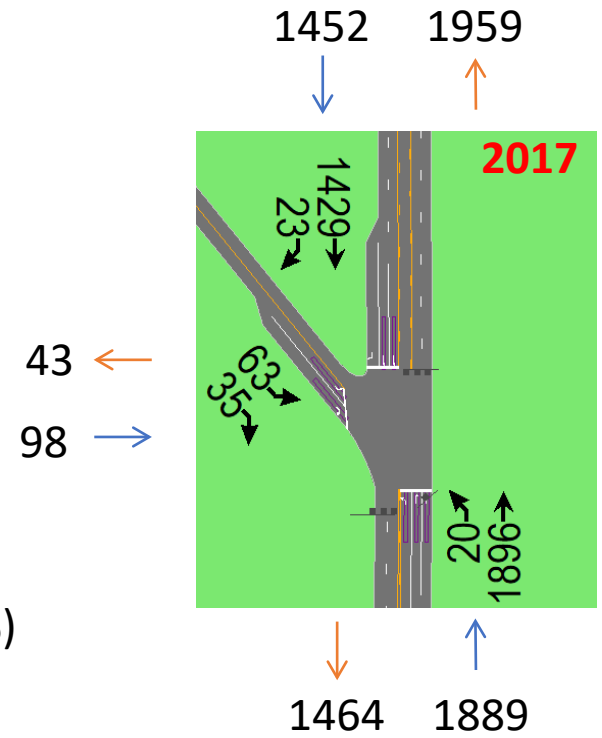
Figure B
Analysis of Growth Percentages
at 15th Ave W / Dravus Ramps
PM Peak Hour



Analysis of Total Entering Volumes

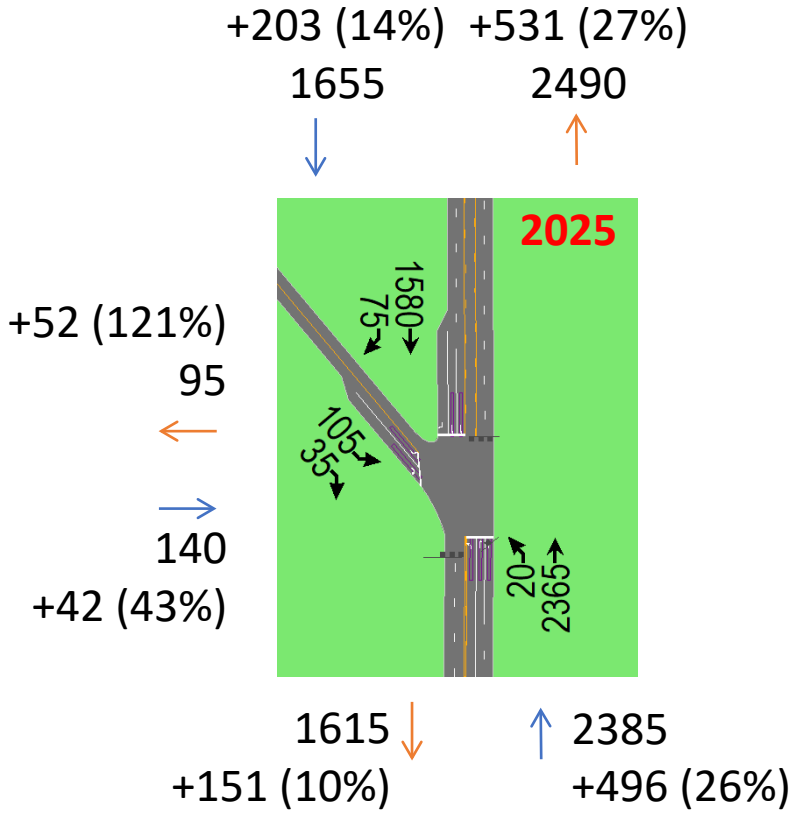
Year	Vols	% Chng
2017	2287	--
2025	2565	+12%
2035	2770	+21%

Figure C
Analysis of Growth Percentages
at 15th Ave W / W Armory Way
PM Peak Hour



Analysis of Total Entering Volumes

Year	Vols	% Chng
2017	3439	--
2025	4180	+22%
2035	4755	+38%



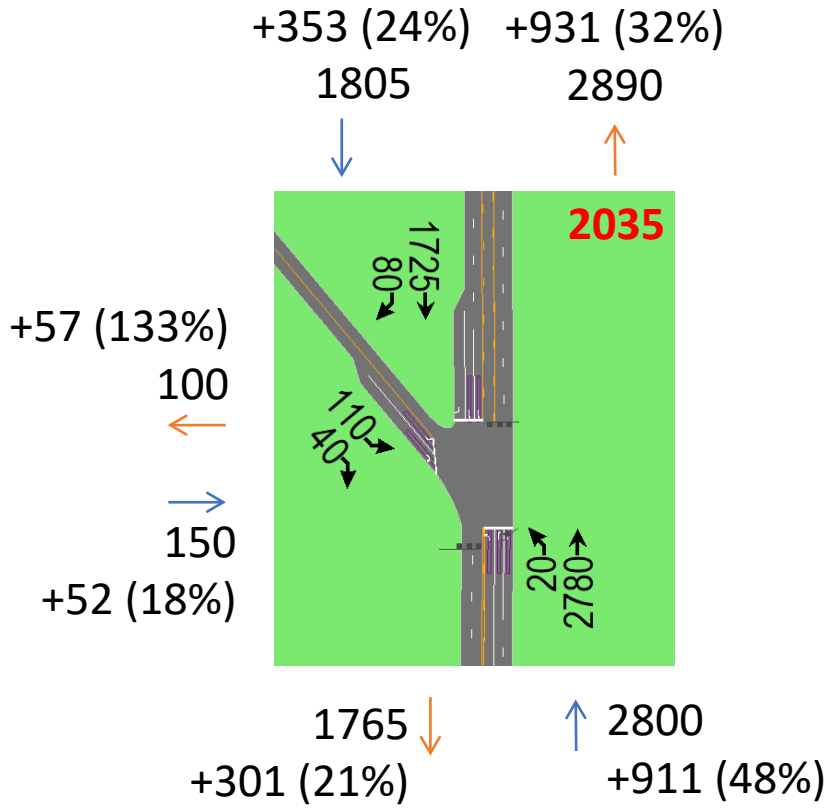
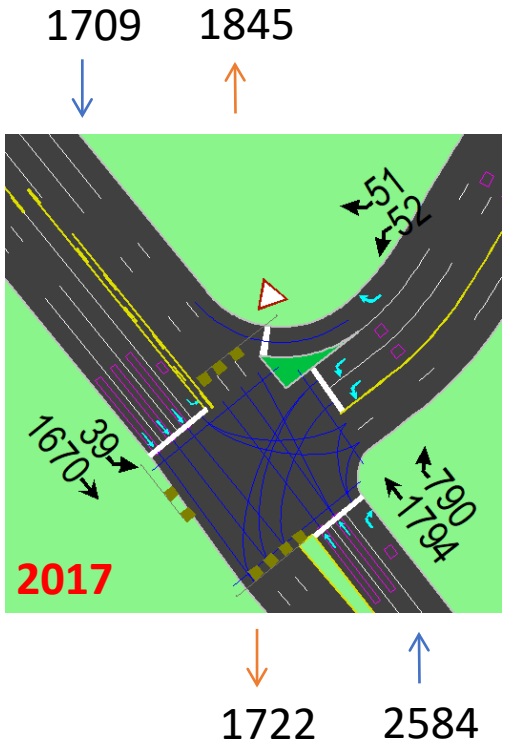


Figure D
Analysis of Growth Percentages
at 15th Ave W / Galer Flyover
PM Peak Hour

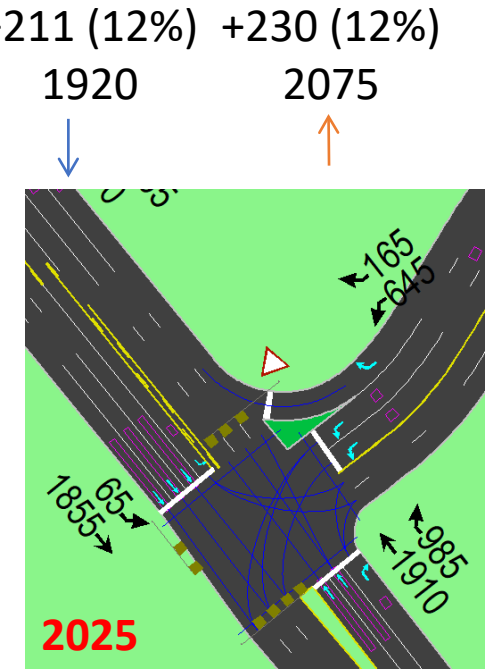


← 103

→ 829

Analysis of Total Entering Volumes

Year	Vols	% Chng
2017	4396	--
2025	5625	+28%
2035	5965	+36%

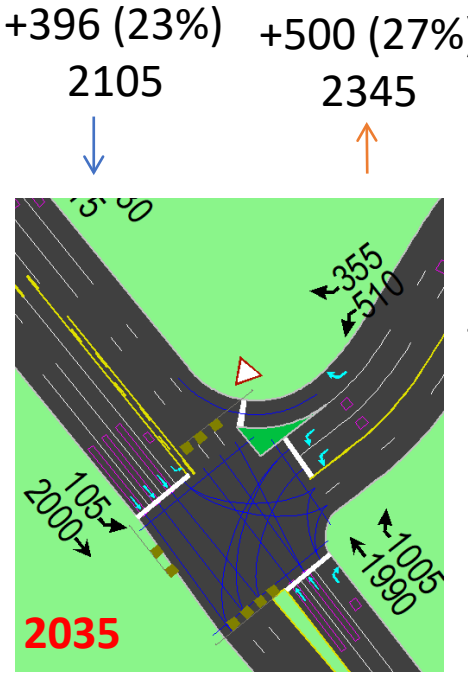


+707 (686%)

← 810

→ 1050

+221 (27%)



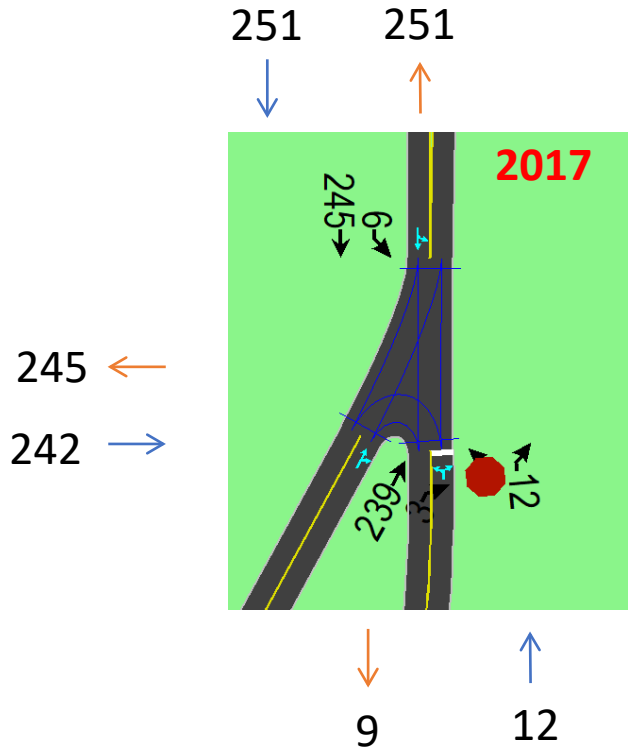
+762 (740%)

← 865

→1110

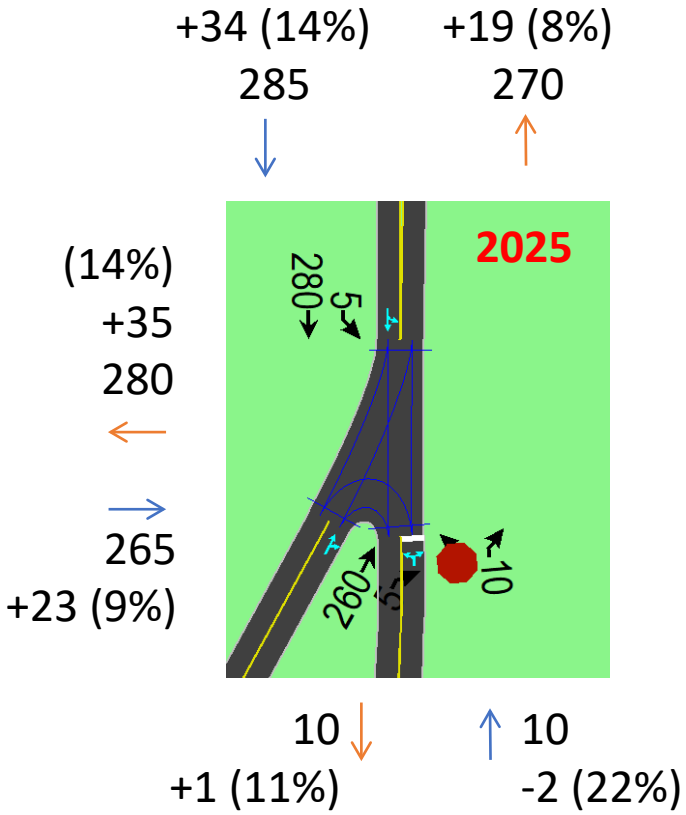
+ (34%)

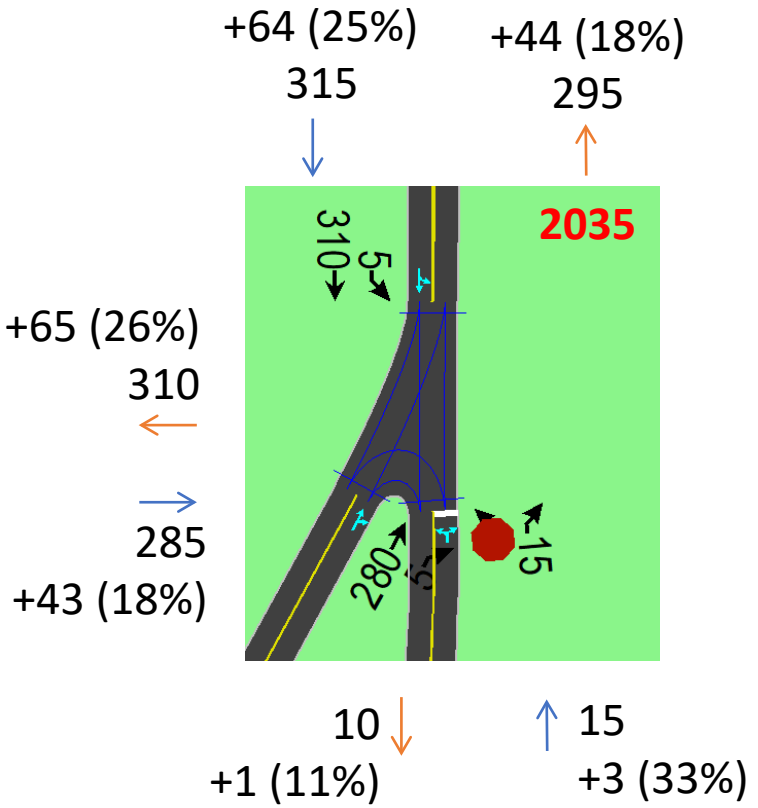
Figure E
Analysis of Growth Percentages
at 20th Ave W / Thorndyke
PM Peak Hour



Analysis of Total Entering Volumes

Year	Vols	% Chng
2017	505	--
2025	560	+11%
2035	615	+22%





ATTACHMENT C
SYNCHRO MODEL ADJUSTEMENTS

Synchro Model for Existing Conditions

All traffic operations analyses were performed using the Synchro 10 software. The steps used to develop Existing Conditions model are summarized below.

Original Synchro Files (2015/2016): The Synchro model was originally developed by the Seattle Department of Transportation in 2010 for its corridor signal upgrade project. Heffron Transportation updated these models in 2016 for the Expedia Project EIS analysis, and incorporated the following changes:

- All traffic volumes were updated for both the AM and PM peak hour condition using traffic counts performed in the summer and fall 2015.
- Intersection geometries were updated to reflect new the transit lanes based on a field inventory in 2015.
- Signal phasing and timing was updated based on signal dial cards provided by SDOT in 2015.

First Iteration (Summer 2017): The original model described above was further updated for use on the *Magnolia Bridge Traffic Maintenance During Bridge Closure*[9] project, which:

- Removed all intersections south of the Galer Flyover and north of the Ballard Bridge.
- Added the following new intersections:
  - W Blaine Street / Thorndyke Avenue W
  - W Armour Street / 21st Avenue W / Thorndyke Avenue W
  - W Dravus Street / 20th Avenue W
  - W Dravus Street Overpass ramps / 15th Avenue W (two intersections)
  - W Emerson Place / W Thurman Street / Gilman Avenue W
  - W Emerson Place / 19th Avenue W
  - W Emerson Place / Nickerson Street overpass (west of 15th Avenue W)
  - Nickerson Street / 13th Avenue W
- Updated traffic volumes based on new AM and PM peak period traffic counts performed by SDOT in March of 2017 at the 8 new intersections listed above plus full-week machine counts performed on the three major routes to Magnolia (Magnolia Bridge, W Dravus Street, and W Emerson Pl) in March and April 2017.
- Existing volumes balanced across the networks. Traffic volumes on three Magnolia connection routes balanced to match the full week machine counts. Volumes discrepancies between 2015 and 2017 counts were balanced where needed.
- Roadway networks modified to account for planned improvements:
  - The 20th Avenue W/W Dravus Street and Gilman Avenue W/W Emerson Place intersections updated to reflect the protected bicycle lanes (PBL) installed along the east side of 20th Avenue W/Gilman Avenue W and along the south side of W Emerson Place in 2017.
  - Signal timing at 20th Avenue W/W Dravus Street updated to account for the PBL based on a preliminary signal timing card provided by SDOT.
  - Signal cycle lengths and splits for intersections in the 15th Avenue W corridor (including the Dravus Street ramps) optimized in Synchro.

[9] Heffron Transportation, Inc., November 10, 2017.

Second Iteration (October/November 2017): Networks from first iteration edited and expanded by Concord Engineering, Inc. (CEi).

- The roadway network was expanded to include the following intersections:
  - 15th Avenue W / W Howe Street / Whole Food Driveway
  - 15th Avenue W / W Bertona Street (includes ramps to/from Dravus St)
  - 23rd Avenue W / The Magnolia Bridge on/off ramps
  - 20th Avenue W / Thorndyke Avenue W
  - 17th Avenue W / W Dravus Street
  - 11th Avenue W / W Dravus Street
- Signal timings at newly-added intersections based on SDOT timings cards.
- New Counts performed in October 2017 at these newly-added intersections and at the following intersections already included in the networks:
  - 15th Avenue W / Gilman Drive West
  - Alaskan Way W / W Galer Street (16th Avenue W)
  - 21st Avenue W / Thorndyke Avenue W / W Armour Street
- Speed limits changed to 30 mph on 15th Ave W, 25 mph for arterials, and 20 mph for residential streets per Seattle new speed limit policy published last year.
- Updated the signal timing at 20th Ave & W Dravus St to reflect the current timing in field with the newly added PBL.

Third Iteration (November 2017): CEi transmitted back to HTi for further refinement and future forecasting.

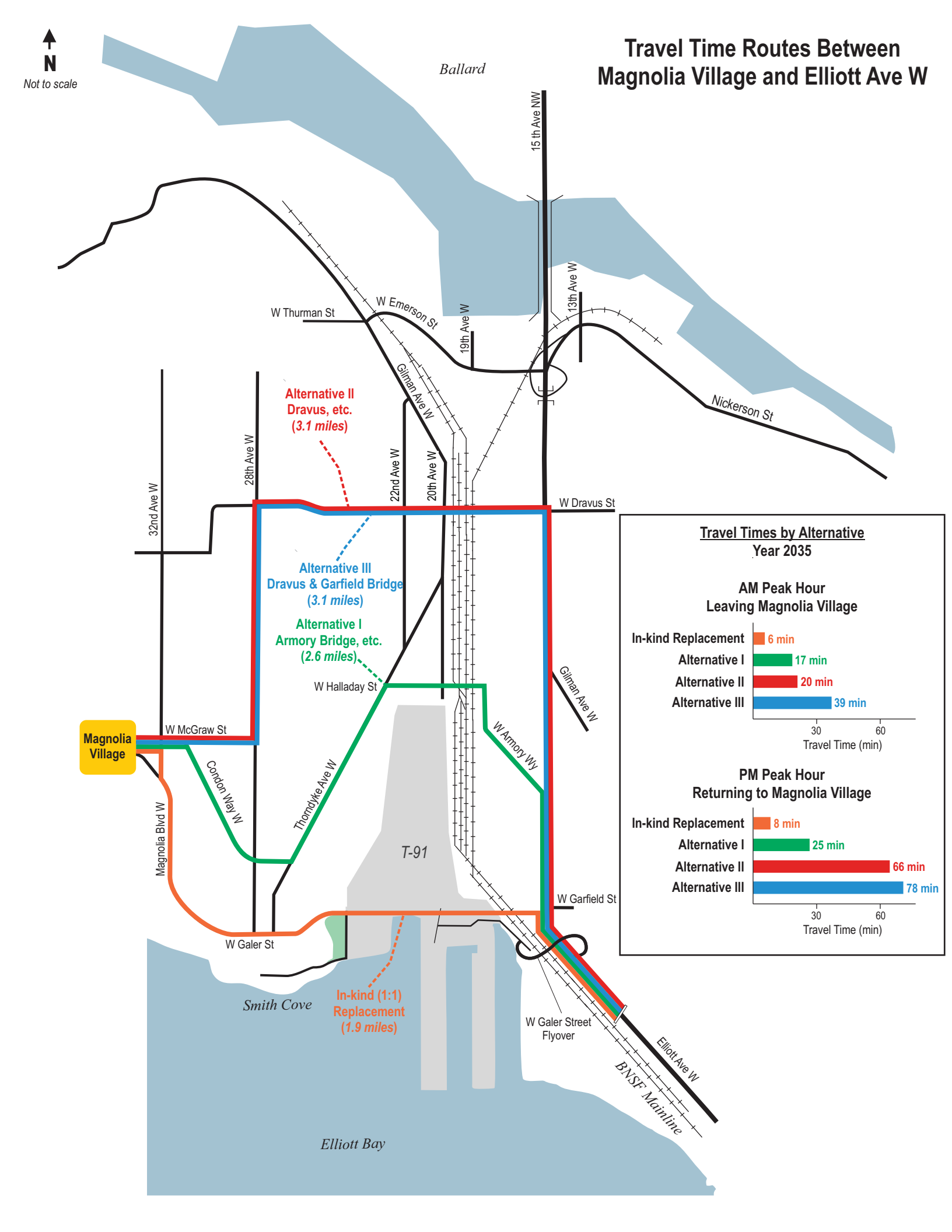
- Roadway geometries modified:
  - Added spur off of the Galer Flyover to show split between vehicles connecting to the Magnolia Bridge and those continuing across the Galer Flyover to Alaskan Way W.
  - At the 21st Avenue W / Thorndyke Avenue W / W Armour Street intersection, consolidated the volumes to/from 21st Avenue W onto W Armour Street so that it is possible to report delay/LOS values using the HCM 2016 methodology in Synchro.
- Removed all lane coding errors so these networks can be analyzed in SimTraffic if desired.
- Traffic volumes balanced between intersections where discrepancies occurred because the counts were performed at different times.
  - Compared intersection counts from summer 2015, March 2017, and October 2017 to historic tube counts provided by SDOT.
  - Volumes on the three major Magnolia connections again re-balanced to match the volumes from the full week counts performed by SDOT in the spring of 2017 for the analysis of an emergency Magnolia Bridge closure. The addition of the counts on 23rd Avenue W under the Magnolia Bridge allowed for further refinement of the distribution of vehicles traveling across the bridge.
- Reduced vehicle imbalances to zero between intersections where there are no intermediate exits. The most critical segments include:
  - The Galer Flyover
  - The Magnolia Bridge
    - The vehicle imbalance in the westbound direction between 15th Avenue W and the 23rd Avenue W ramps should match the number of vehicles turning from the Galer Flyover onto the newly added spur.
    - The balancing assumes the gates at the center Magnolia Pier ramp east of 23rd Avenue W are closed

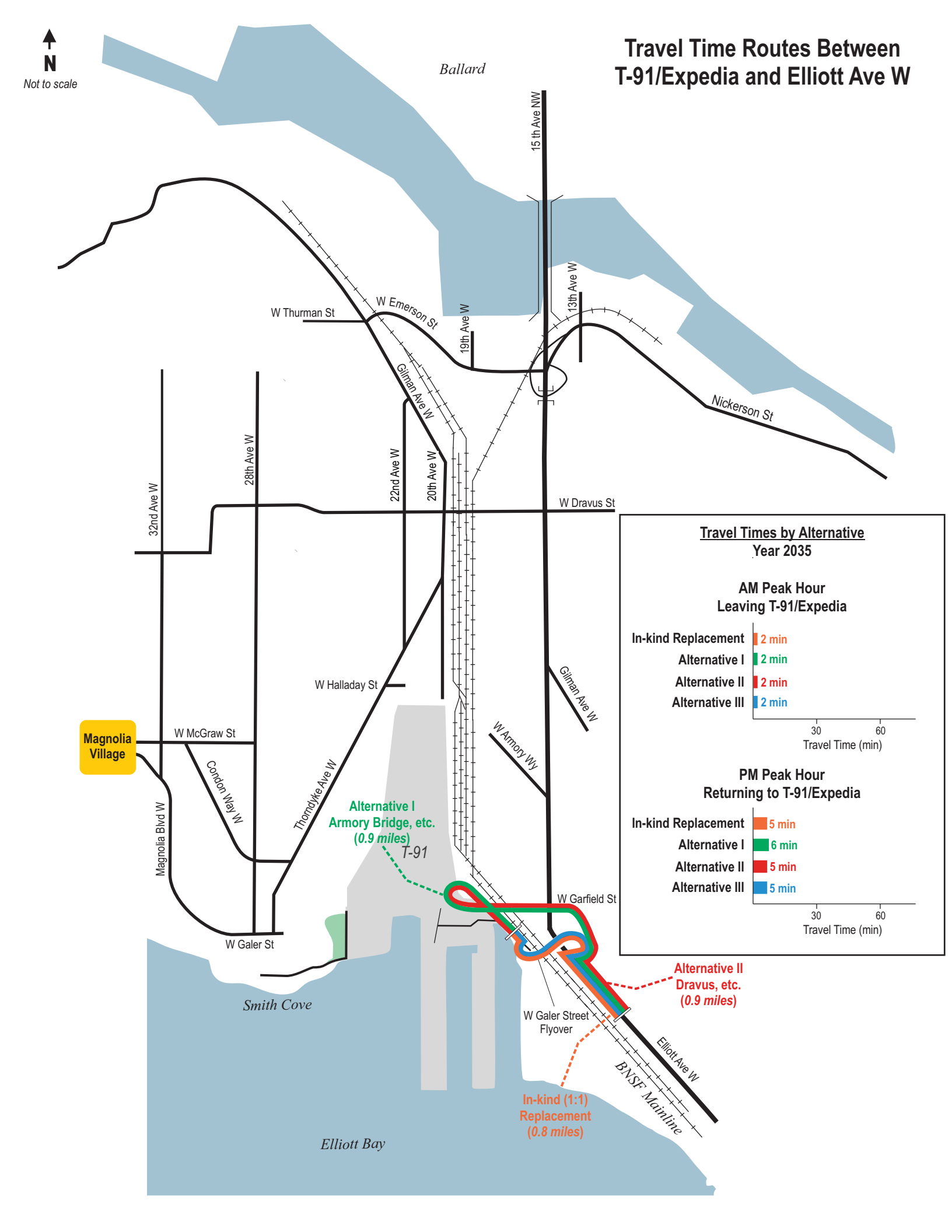
- W Dravus Street in-between the 15th Avenue W northbound and southbound ramps
- W Dravus Street northbound on-ramp to 15th Avenue West
- W Dravus Street between 17th Avenue W and 20th Avenue W (bridge over the railroad tracks)
- Thorndyke Avenue W between W Armour Street and 21st Avenue West (south leg)

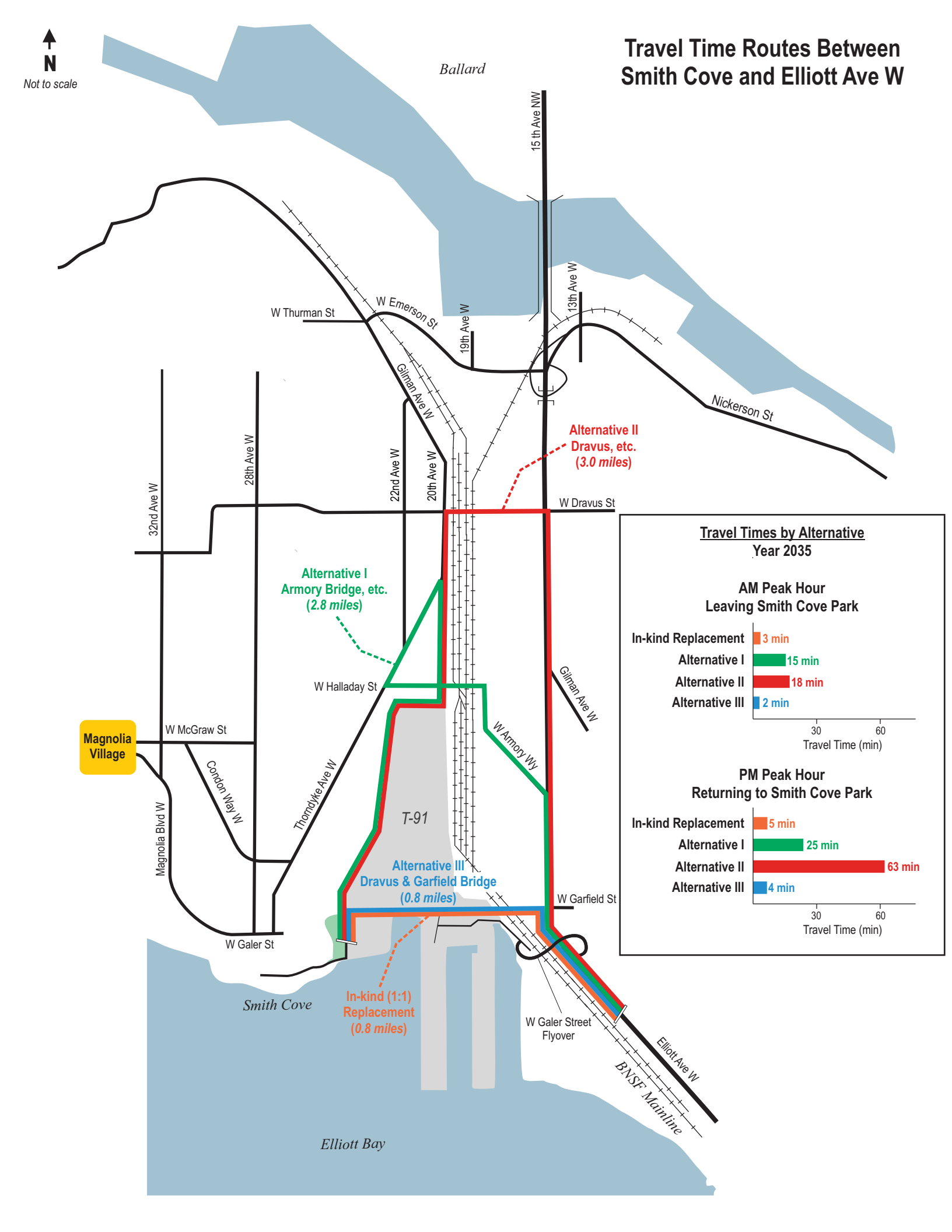
Synchro Models for Future Alternatives

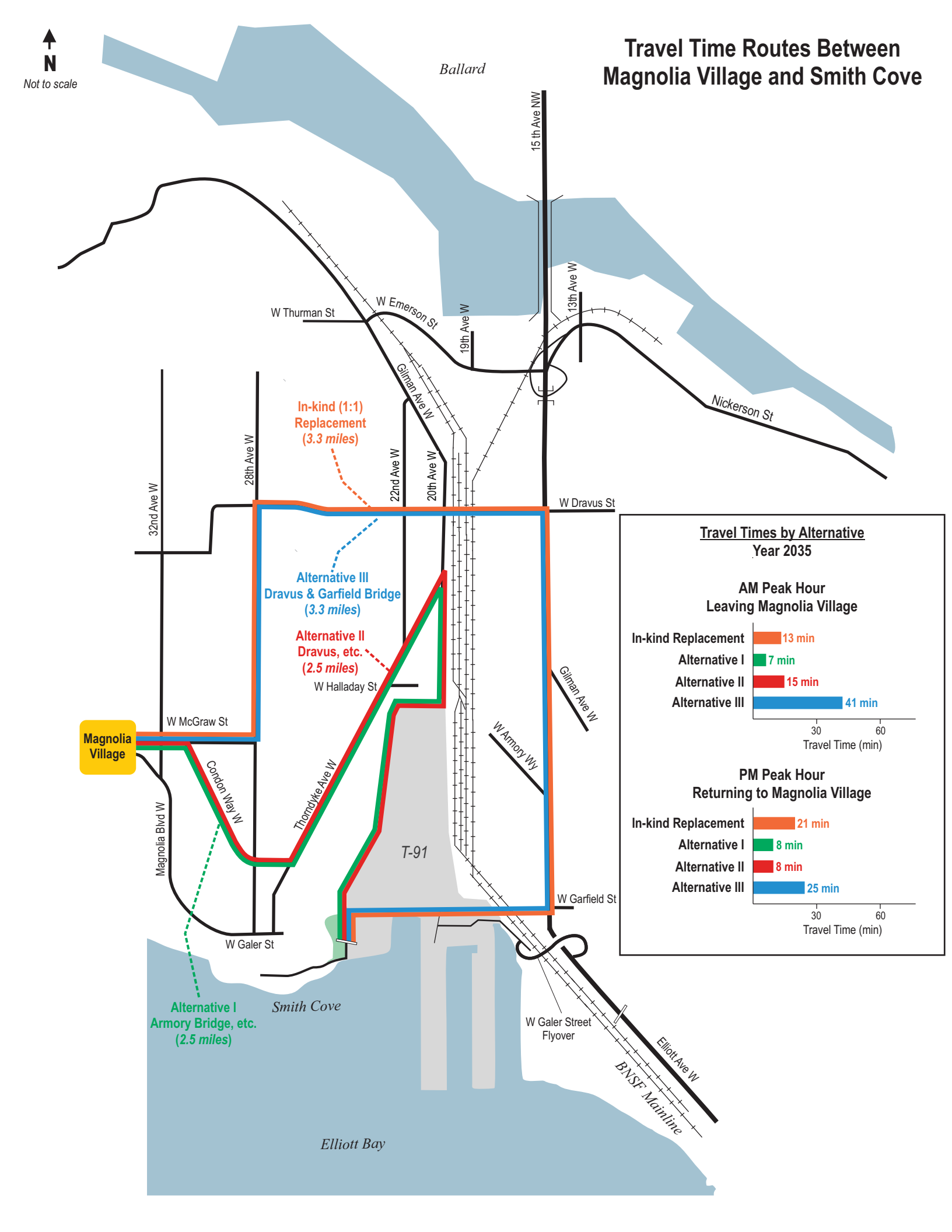
Separate AM and PM Synchro models were prepared for each alternative. Changes to lane geometry were based on the alternative design and informed by the Component Analysis (described in a separate memorandum). Traffic volumes were then adjusted for each alternative as described in the body of this report.

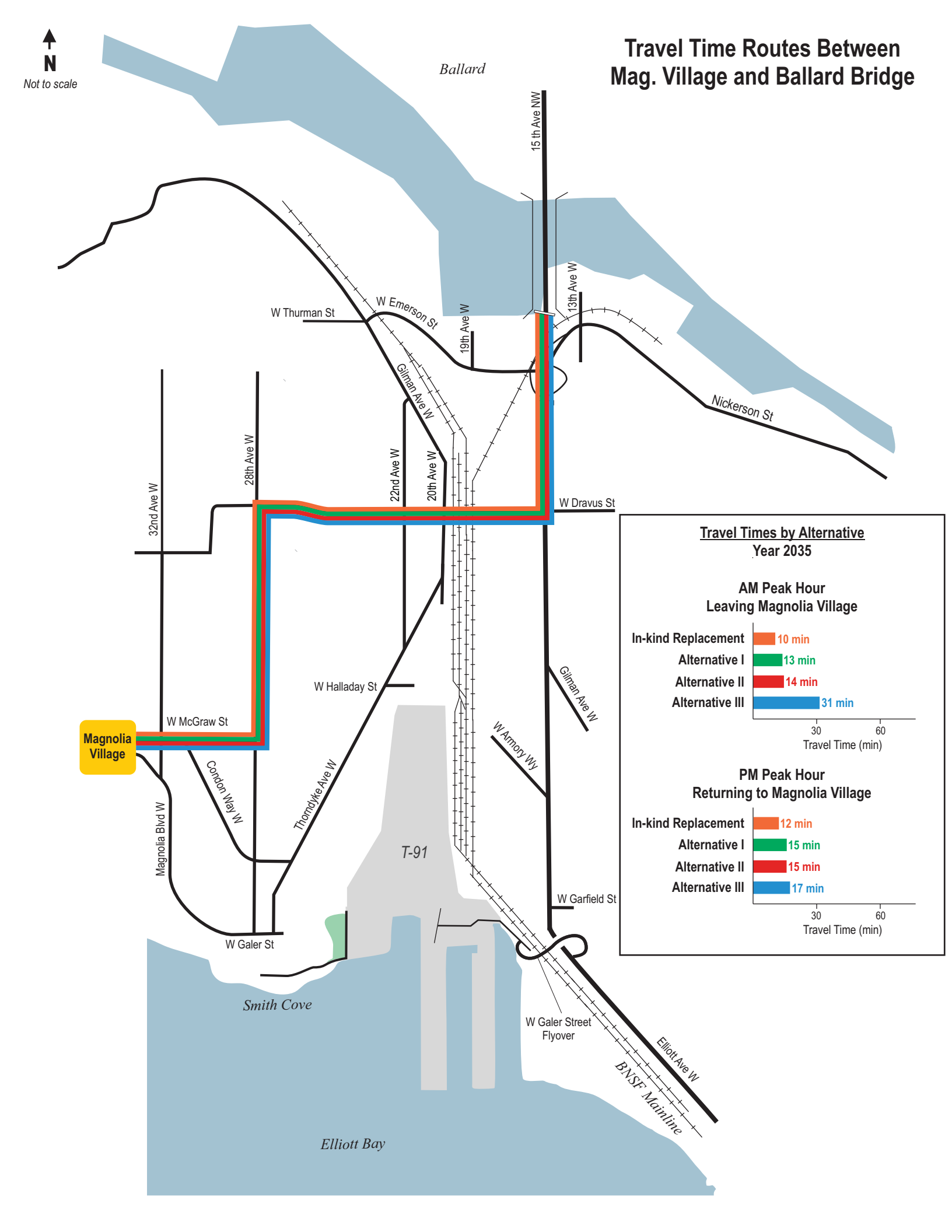
ATTACHMENT D
TRAVEL TIME ANALYSIS ROUTES AND RESULTS

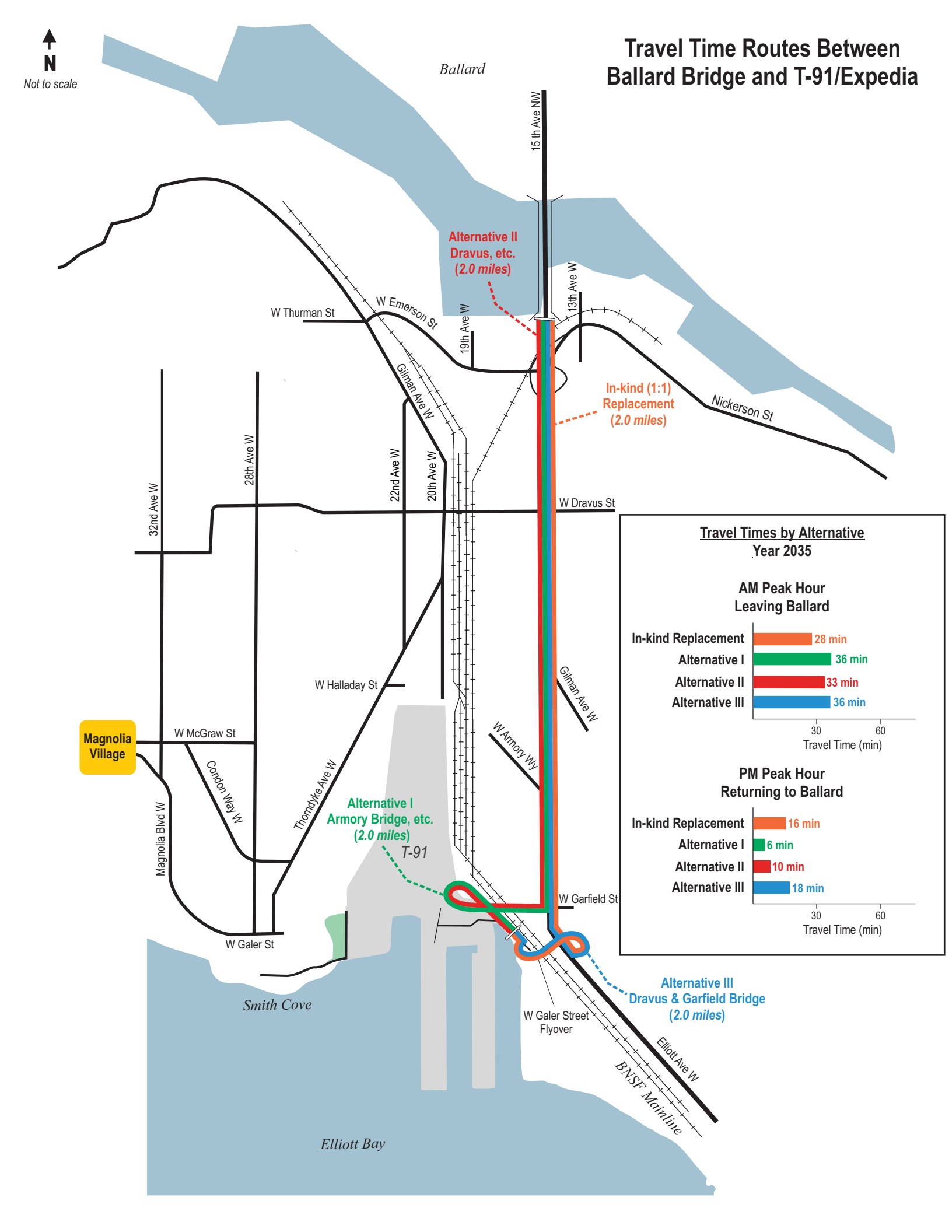

N
Not to scale
Travel Time Routes Between
Magnolia Village and Elliott Ave W
Ballard
15 th Ave NW
W Thurman St
W Emerson St
19th Ave W
13th Ave W
Gilman Ave W
Nickerson St
Alternative II
Dravus, etc.
(3.1 miles)
32nd Ave W
28th Ave W
22nd Ave W
20th Ave W
W Dravus St
Alternative III
Dravus & Garfield Bridge
(3.1 miles)
Alternative I
Armory Bridge, etc.
(2.6 miles)
W Halladay St
Gilman Ave W
Magnolia Village
W McGraw St
Condon Way W
Thorndyke Ave W
W Armory Wy
Magnolia Blvd W
T-91
W Garfield St
W Galer St
Smith Cove
In-kind (1:1)
Replacement
(1.9 miles)
W Galer Street
Flyover
Elliott Ave W
BNSF Mainline
Elliott Bay
Travel Times by Alternative
Year 2035
AM Peak Hour
Leaving Magnolia Village
In-kind Replacement 6 min
Alternative I 17 min
Alternative II 20 min
Alternative III 39 min
30
60
Travel Time (min)
PM Peak Hour
Returning to Magnolia Village
In-kind Replacement 8 min
Alternative I 25 min
Alternative II 66 min
Alternative III 78 min
30
60
Travel Time (min)

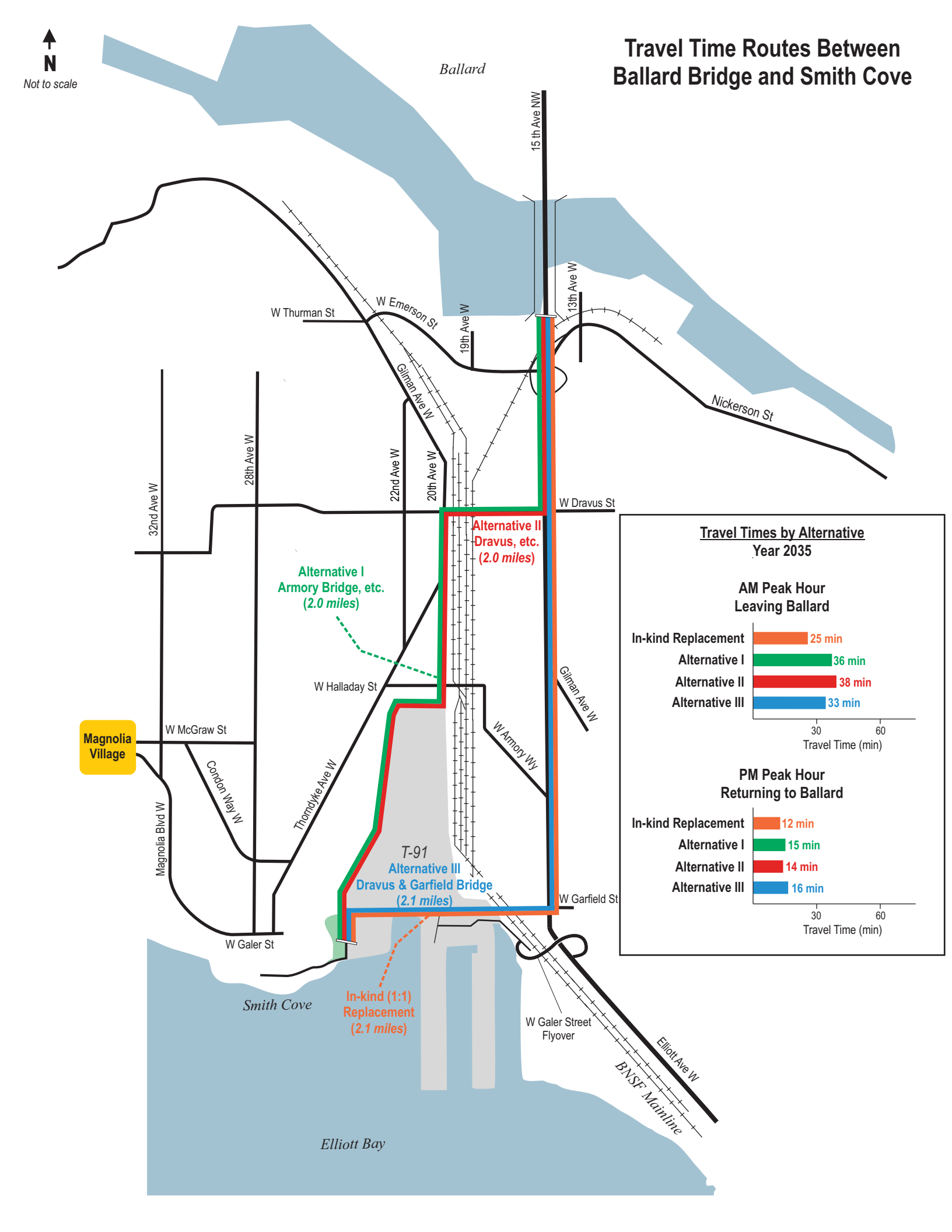

N
Not to scale
Travel Time Routes Between
T-91/Expedia and Elliott Ave W
Ballard
15 th Ave NW
W Thurman St
W Emerson St
19th Ave W
13th Ave W
Gilman Ave W
Nickerson St
32nd Ave W
28th Ave W
22nd Ave W
20th Ave W
W Dravus St
W Halladay St
Gilman Ave W
Magnolia Village
W McGraw St
Condon Way W
Thorndyke Ave W
W Armory Wy
Magnolia Blvd W
Alternative I
Armory Bridge, etc.
(0.9 miles)
T-91
W Garfield St
W Galer St
Smith Cove
Alternative II
Dravus, etc.
(0.9 miles)
W Galer Street
Flyover
Elliott Ave W
BNSF Mainline
In-kind (1:1)
Replacement
(0.8 miles)
Elliott Bay
Travel Times by Alternative
Year 2035
AM Peak Hour
Leaving T-91/Expedia
In-kind Replacement 2 min
Alternative I 2 min
Alternative II 2 min
Alternative III 2 min
30
60
Travel Time (min)
PM Peak Hour
Returning to T-91/Expedia
In-kind Replacement 5 min
Alternative I 6 min
Alternative II 5 min
Alternative III 5 min
30
60
Travel Time (min)

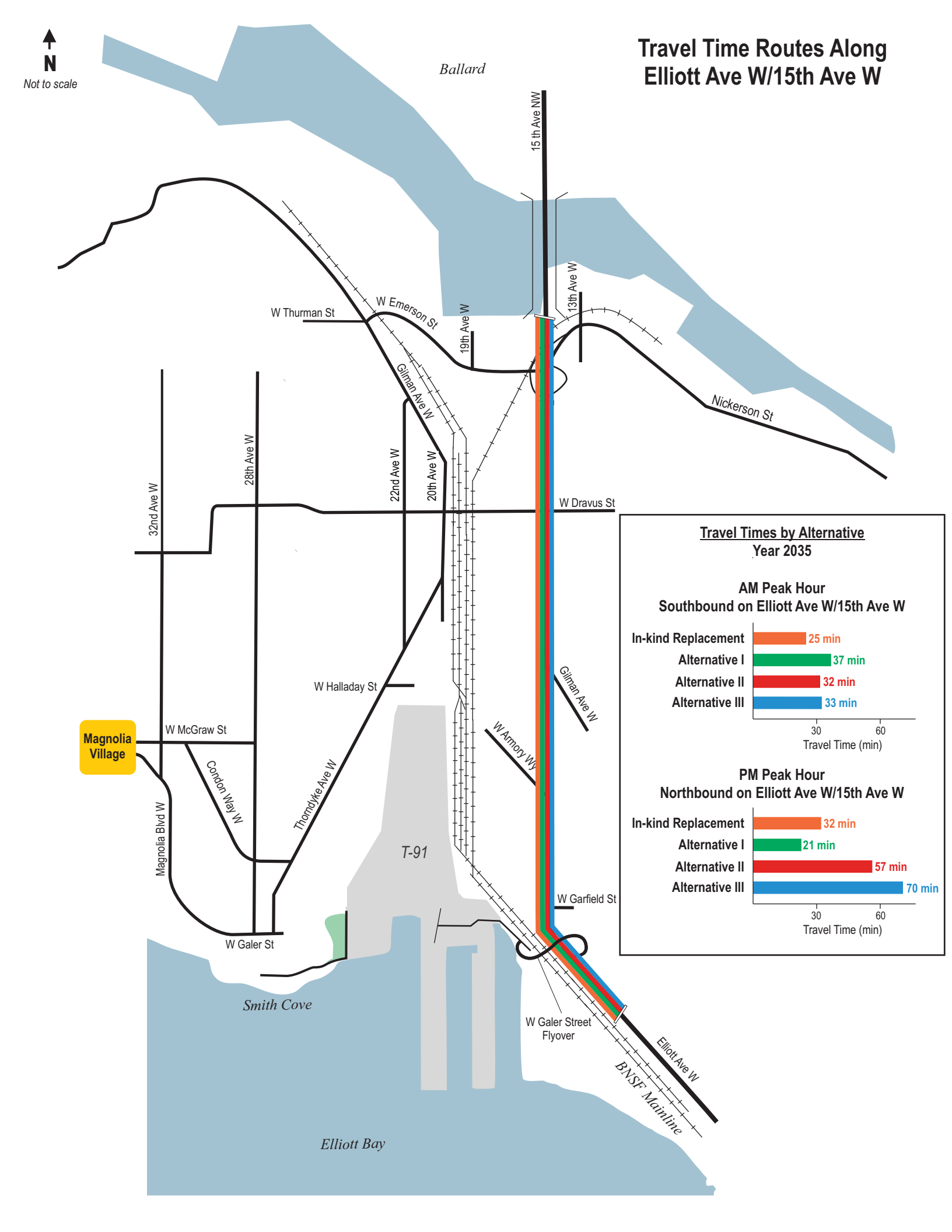

N
Not to scale
Travel Time Routes Between
Smith Cove and Elliott Ave W
Ballard
15 th Ave NW
W Thurman St
W Emerson St
19th Ave W
13th Ave W
Gilman Ave W
Nickerson St
Alternative II
Dravus, etc.
(3.0 miles)
28th Ave W
22nd Ave W
20th Ave W
32nd Ave W
W Dravus St
Alternative I
Armory Bridge, etc.
(2.8 miles)
W Halladay St
Gilman Ave W
Magnolia
Village
W McGraw St
W Armory Wy
Condon Way W
Thorndyke Ave W
Magnolia Blvd W
T-91
Alternative III
Dravus & Garfield Bridge
(0.8 miles)
W Garfield St
W Galer St
Smith Cove
In-kind (1:1)
Replacement
(0.8 miles)
W Galer Street
Flyover
Elliott Ave W
BNSF Mainline
Elliott Bay
Travel Times by Alternative
Year 2035
AM Peak Hour
Leaving Smith Cove Park
In-kind Replacement 3 min
Alternative I 15 min
Alternative II 18 min
Alternative III 2 min
30
60
Travel Time (min)
PM Peak Hour
Returning to Smith Cove Park
In-kind Replacement 5 min
Alternative I 25 min
Alternative II 63 min
Alternative III 4 min
30
60
Travel Time (min)


N
Not to scale
Travel Time Routes Between
Magnolia Village and Smith Cove
Ballard
15 th Ave NW
W Thurman St
W Emerson St
19th Ave W
13th Ave W
Gilman Ave W
Nickerson St
In-kind (1:1)
Replacement
(3.3 miles)
32nd Ave W
28th Ave W
22nd Ave W
20th Ave W
W Dravus St
Alternative III
Dravus & Garfield Bridge
(3.3 miles)
Alternative II
Dravus, etc.
(2.5 miles)
W Halladay St
W McGraw St
Magnolia Village
Condon Way W
Thorndyke Ave W
Magnolia Blvd W
T-91
W Armory Wy
Gilman Ave W
W Garfield St
W Galer St
Alternative I
Armory Bridge, etc.
(2.5 miles)
Smith Cove
W Galer Street
Flyover
Elliott Ave W
BNSF Mainline
Elliott Bay
Travel Times by Alternative
Year 2035
AM Peak Hour
Leaving Magnolia Village
In-kind Replacement 13 min
Alternative I 7 min
Alternative II 15 min
Alternative III 41 min
30
60
Travel Time (min)
PM Peak Hour
Returning to Magnolia Village
In-kind Replacement 21 min
Alternative I 8 min
Alternative II 8 min
Alternative III 25 min
30
60
Travel Time (min)


N
Not to scale
Travel Time Routes Between
Mag. Village and Ballard Bridge
Ballard
15 th Ave NW
W Thurman St
W Emerson St
19th Ave W
13th Ave W
Gilman Ave W
Nickerson St
32nd Ave W
28th Ave W
22nd Ave W
20th Ave W
W Dravus St
W Halladay St
W McGraw St
Magnolia Village
Condon Way W
Thorndyke Ave W
Magnolia Blvd W
W Armory Wy
T-91
W Garfield St
W Galer St
Smith Cove
W Galer Street Flyover
Elliott Ave W
BNSF Mainline
Elliott Bay
Travel Times by Alternative
Year 2035
AM Peak Hour
Leaving Magnolia Village
In-kind Replacement 10 min
Alternative I 13 min
Alternative II 14 min
Alternative III 31 min
30
60
Travel Time (min)
PM Peak Hour
Returning to Magnolia Village
In-kind Replacement 12 min
Alternative I 15 min
Alternative II 15 min
Alternative III 17 min
30
60
Travel Time (min)


N
Not to scale
Travel Time Routes Between
Ballard Bridge and T-91/Expedia
Ballard
15 th Ave NW
Alternative II
Dravus, etc.
(2.0 miles)
W Thurman St
W Emerson St
19th Ave W
13th Ave W
Gilman Ave W
In-kind (1:1)
Replacement
(2.0 miles)
Nickerson St
32nd Ave W
28th Ave W
22nd Ave W
20th Ave W
W Dravus St
W Halladay St
Gilman Ave W
W Armory Wy
Magnolia
Village
W McGraw St
Condon Way W
Thorndyke Ave W
Magnolia Blvd W
Alternative I
Armory Bridge, etc.
(2.0 miles)
T-91
W Garfield St
W Galer St
Smith Cove
Alternative III
Dravus & Garfield Bridge
(2.0 miles)
W Galer Street
Flyover
Elliott Ave W
BNSF Mainline
Elliott Bay
Travel Times by Alternative
Year 2035
AM Peak Hour
Leaving Ballard
In-kind Replacement 28 min
Alternative I 36 min
Alternative II 33 min
Alternative III 36 min
30
60
Travel Time (min)
PM Peak Hour
Returning to Ballard
In-kind Replacement 16 min
Alternative I 6 min
Alternative II 10 min
Alternative III 18 min
30
60
Travel Time (min)


N
Not to scale
Travel Time Routes Between
Ballard Bridge and Smith Cove
Ballard
15 th Ave NW
W Thurman St
W Emerson St
19th Ave W
13th Ave W
Gilman Ave W
Nickerson St
32nd Ave W
28th Ave W
22nd Ave W
20th Ave W
W Dravus St
Alternative II
Dravus, etc.
(2.0 miles)
Alternative I
Armory Bridge, etc.
(2.0 miles)
W Halladay St
Gilman Ave W
Magnolia
Village
W McGraw St
W Armory Wy
Condon Way W
Thorndyke Ave W
Magnolia Blvd W
T-91
Alternative III
Dravus & Garfield Bridge
(2.1 miles)
W Garfield St
W Galer St
Smith Cove
In-kind (1:1)
Replacement
(2.1 miles)
W Galer Street
Flyover
Elliott Ave W
BNSF Mainline
Elliott Bay
Travel Times by Alternative
Year 2035
AM Peak Hour
Leaving Ballard
In-kind Replacement 25 min
Alternative I 36 min
Alternative II 38 min
Alternative III 33 min
30
60
Travel Time (min)
PM Peak Hour
Returning to Ballard
In-kind Replacement 12 min
Alternative I 15 min
Alternative II 14 min
Alternative III 16 min
30
60
Travel Time (min)


N
Not to scale
Travel Time Routes Along
Elliott Ave W/15th Ave W
Ballard
15 th Ave NW
W Thurman St
W Emerson St
19th Ave W
13th Ave W
Gilman Ave W
Nickerson St
32nd Ave W
28th Ave W
22nd Ave W
20th Ave W
W Dravus St
W Halladay St
Gilman Ave W
W Armory Wy
Magnolia Village
W McGraw St
Condon Way W
Thorndyke Ave W
Magnolia Blvd W
T-91
W Garfield St
W Galer St
Smith Cove
W Galer Street
Flyover
Elliott Ave W
BNSF Mainline
Elliott Bay
Travel Times by Alternative
Year 2035
AM Peak Hour
Southbound on Elliott Ave W/15th Ave W
In-kind Replacement 25 min
Alternative I 37 min
Alternative II 32 min
Alternative III 33 min
30
60
Travel Time (min)
PM Peak Hour
Northbound on Elliott Ave W/15th Ave W
In-kind Replacement 32 min
Alternative I 21 min
Alternative II 57 min
Alternative III 70 min
30
60
Travel Time (min)

Appendix D

Transit and Non-Motorized Analysis

TECHNICAL MEMORANDUM

Project: **Magnolia Bridge Long Term Replacement Study**

Subject: Transportation Analysis – Transit, Pedestrian and Bicycles

Date: February 15, 2019

Authors: Marni C. Heffron, P.E., P.T.O.E.
Robert H. Frankel, E.I.T.

This memorandum evaluates non-motorized and transit conditions that could be affected by the Magnolia Bridge Long-Term Replacement options. It describes existing conditions and use for those modes of travel, analyzes growth trends, and presents a comparative analysis of each replacement alternative. Analysis of vehicle traffic was presented in a separate technical memorandum.

1. Existing Conditions

This section presents information about the existing pedestrian, bicycle, and transit connections to Magnolia. It provides information about the existing non-motorized infrastructure and volumes, transit service and ridership, and planned improvements.

1.1. Pedestrian and Bicycle Facilities

There are three bridges that currently connect Magnolia and Interbay neighborhoods. The pedestrian and bicycle facilities on those bridges are described below:

- **Magnolia Bridge** has a sidewalk along its south side that is approximately 5-feet wide. Portions of the sidewalk are separated from vehicle traffic by a short concrete barrier. There are no marked bicycle facilities, so bicyclists must use the sidewalk or ride in one of the vehicles lanes. There is a pedestrian stairway linking the south side sidewalk with surface inside Terminal 91.
- **W Dravus St** has sidewalks on both sides of the bridge over the railroad tracks that are each approximately 5-feet wide. The sidewalks are separated from the vehicle lanes by a short concrete barrier. For bicyclists, there are "sharrows" painted in the outside travel lanes, which are pavement markings placed in the roadway to highlight the shared space. The sidewalks connect to the grid of streets east and west of the bridge; however, the sharrow marking are not continuous, with a gap in markings between 17th Ave NW and 15th Ave NW. The bridge over 15th Ave NW does have sharrows.
- **W Emerson St** has a sidewalk along its north side between 15th Ave W and Gilman Ave W. The bridge that connects to 15th Ave W and W Nickerson Street (east end of this segment) has about a 5-foot sidewalk separated from the vehicle lanes by a low metal railing. Pedestrians and bicycles typically share this space. The bridge over the BN Railroad Mainline tracks has a sidewalk on the north side that is approximately 8-feet wide plus a two-way protected bicycle lane (PBL) on the south side of the bridge that is approximately 10-feet wide. The PBL connects between the PBL on the east side of Gilman Ave W and 21st Ave W, where bicyclists merge onto the Ship Canal Trail on the south side of W Emerson St.

The **Elliott Bay Trail** and **Ship Canal Trail** link Interbay to other neighborhoods. The Elliott Bay Trail is primarily located along the western edge of BN's railyard and connects south through Centennial Park and Myrtle Edwards Park to downtown. A spur of this trail loops to the west side of Terminal 91, connecting to 20th Avenue W and Smith Cove Park and Marina. The Ship Canal Trail connects from W Emerson St east to Fremont along the south side of the Ship Canal. In 2018, the City completed the PBLs on 20th Ave W, Gilman Ave W, and W Commodore Way that connect the Elliott Bay Trail on the south to the Ballard Locks crossing on the north.

The City of Seattle's adopted 2014 *Bicycle Master Plan* (BMP) [1] and 2017 *Pedestrian Master Plan* (PMP) [2] outline the proposed non-motorized network for the City. The PBLs described previously were recommended by these plans. BMP recommendations for the area that have not yet been implemented include:

- Construct a cycle track on W Dravus St between 20th Ave W and 14th Ave W.
- Construct off-street bicycle lanes on the Magnolia Bridge and the Galer Flyover that connect to a new cycle track on Magnolia Blvd W.
- Construct a new off-street trail through Interbay. The new trail would connect to the Elliott Bay Trail on the south, run along the western edge of the Interbay Golf course, and connect to W Dravus St near 16th Ave W.
- Add in-street bicycle lanes with minor separation on Thorndyke Ave W.

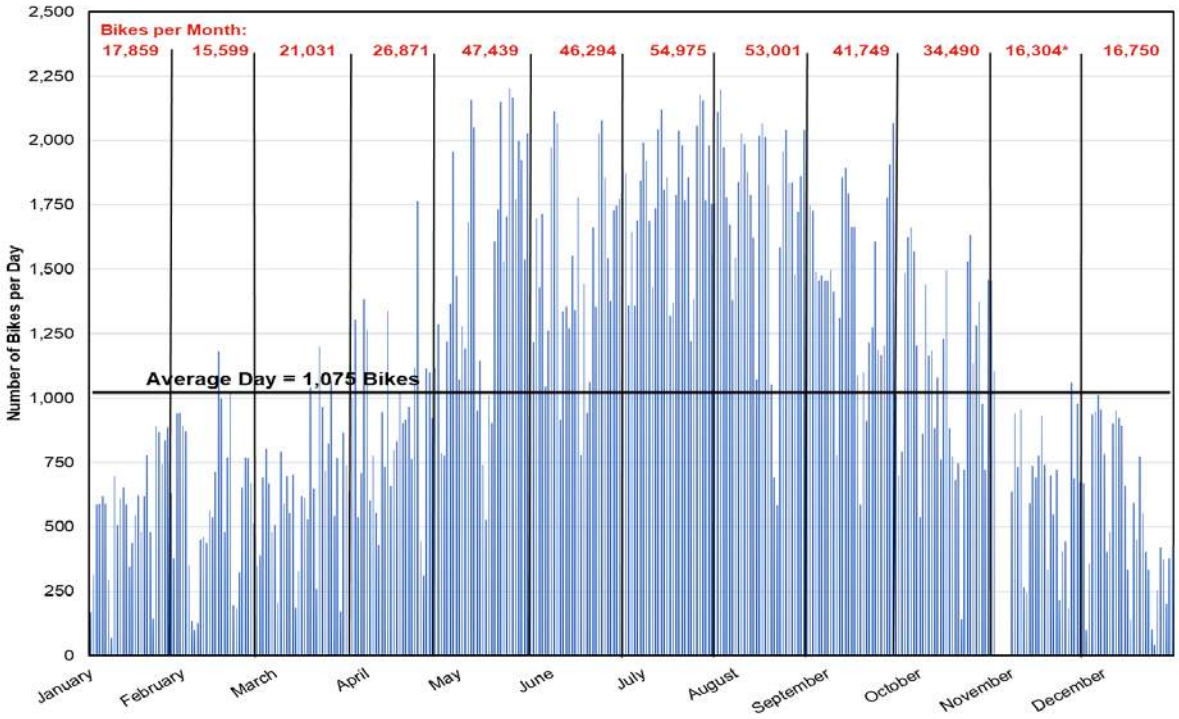
There are no Magnolia-specific pedestrian improvements identified in the PMP, in part, because the sidewalk network is already relatively complete. However, the Magnolia Bridge and W Dravus St are included in the Priority Investment Network.

1.2. Existing Pedestrian and Bicycle Volumes

The Seattle Department of Transportation (SDOT) maintains a permanent bicycle and pedestrian counting station on the Elliott Bay Trail in Myrtle Edwards Park that provides daily and hourly counts. Data from 2014 through September 30, 2018 were available. Figure 1 shows the number of bicycles per day and month (in both directions) that used the trail for all of 2017, the last full year for which data were available. The counter is located approximately two miles away from the Magnolia-end of the trail, so there are many non-Magnolia users included in the data; however, these volumes shows the seasonal nature of non-motorized users, which would be true in Magnolia as well. The peak volumes occur during the summer months.

[1] Seattle Department of Transportation, *City of Seattle Bicycle Master Plan*, 2014
[2] Seattle Department of Transportation, *City of Seattle Pedestrian Master Plan*, June 2017

Figure 1. Bike Volumes on the Elliott Bay Trail by Day and Month – 2017

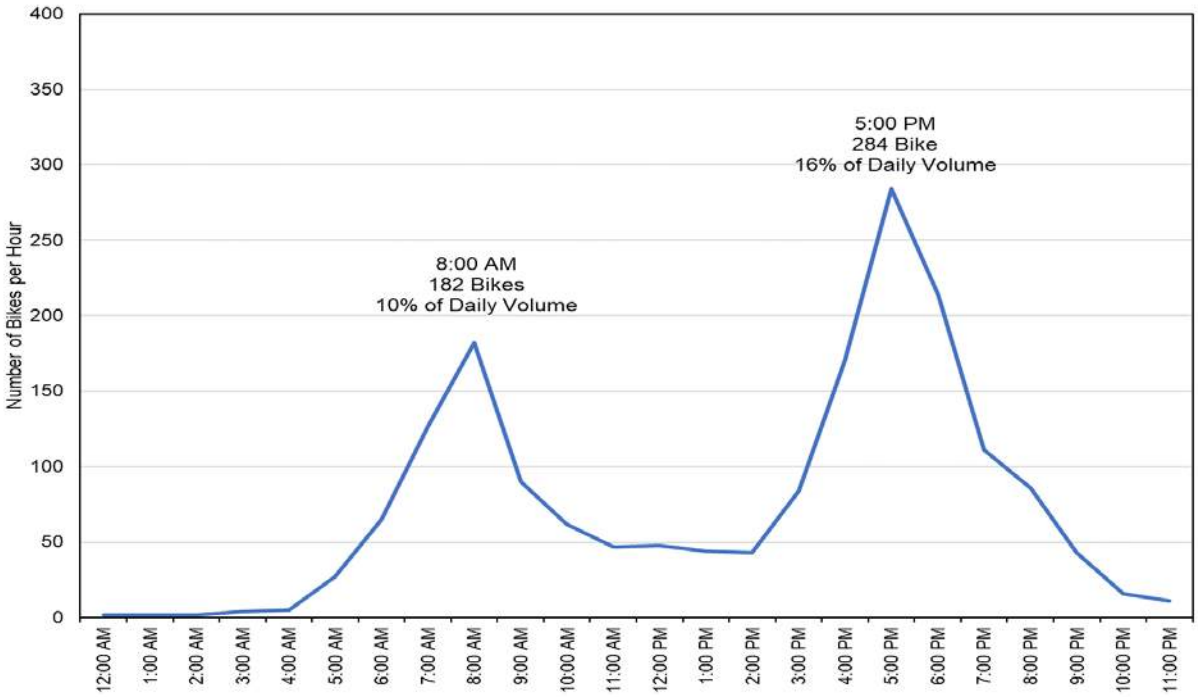


Source: SDOT, 2017.

** November monthly totals are low between 11/2/2017 and 11/6/2017 likely because of equipment malfunction.*

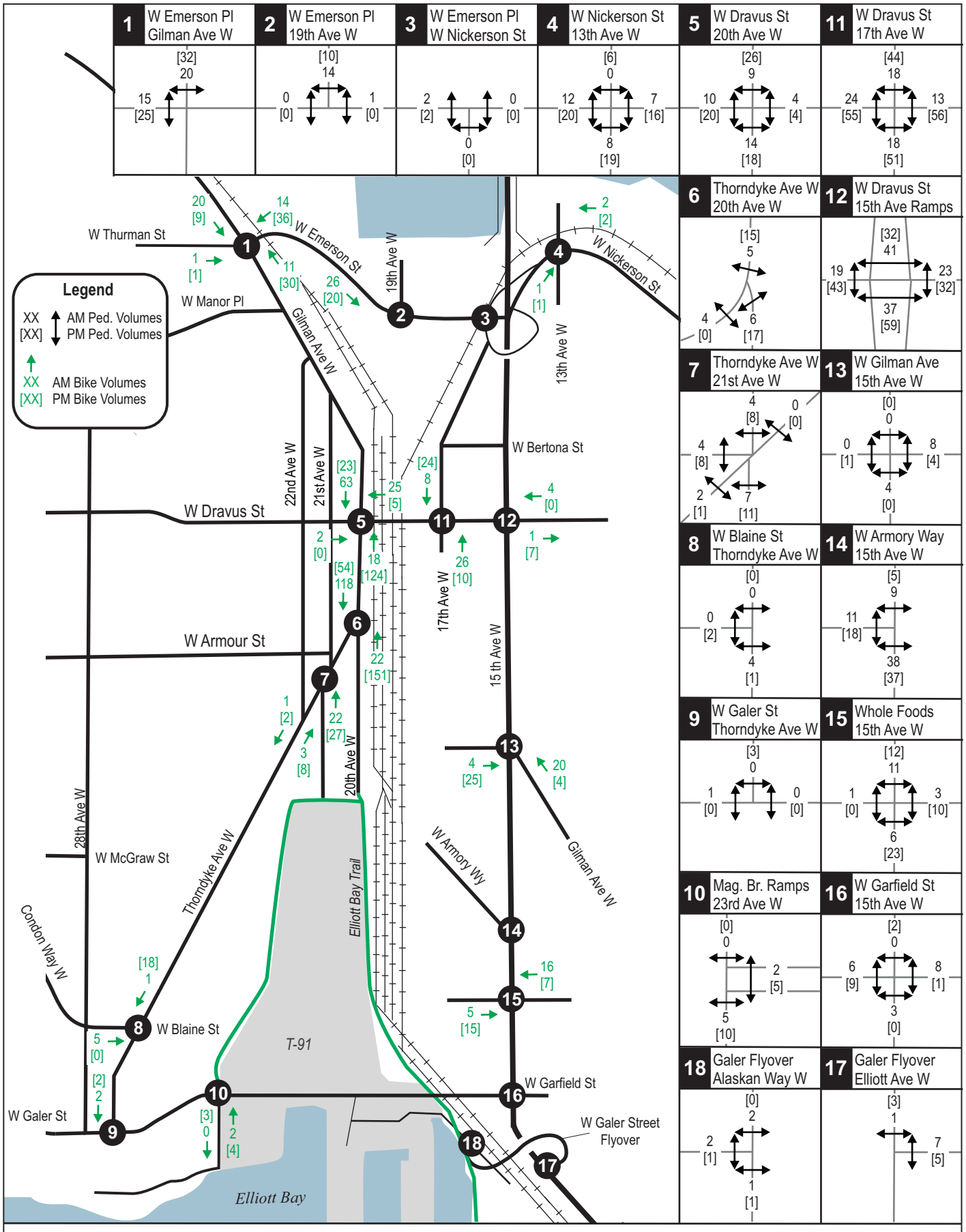
Data for July were evaluated to show bike use by time of day. These reflect the average weekday in that month, and are plotted in Figure 2. This shows that the peak hours coincide with traditional morning and afternoon commuter peaks. The data also found that weekday bicycle volumes were higher than on weekends for both total day as well as hourly peak periods.

Figure 2. Bicycle Volumes by Time of Day – Average Weekday in July 2017



Source: SDOT, 2017.

Single-day volume counts were performed at several intersections in Magnolia and Interbay in late March and early October 2017 for which detailed pedestrian crossing and bicycle movements by intersection approach were collected. As noted previously, bicycle trips are highly seasonal and fluctuate with weather conditions. Pedestrian movements are less affected by season since some of those trips are related to walking to bus stops or local businesses. For the purpose of this analysis, the pedestrian and bicycle volumes reflect average conditions. Figure 3 shows intersection-level pedestrian and bicycle movements during the AM and PM peak hours.



MAGNOLIA BRIDGE
Long Term Replacement Study

Figure 3
Existing Pedestrian and Bicycle Volumes
AM & PM Peak Hours

heffron transportation inc

1.3. Existing Transit Connections

King County Metro (Metro) provides bus service to Magnolia with three routes (19, 24, and 33) traveling over the Magnolia Bridge and one route (31) using W Emerson St. Metro Route 994 is a custom bus route designed for private school students that utilizes both W Dravus St and the Magnolia Bridge. The bus routes that service Magnolia are shown in Figure 3.

Table 1 summarizes the existing transit service. Route 19 only operates in the peak direction during the commuter peak periods (e.g., inbound to downtown in the morning and outbound in the afternoon). This route was suspended in 2014 as part Metro budget cuts, but was later restored in 2015 with voter-approved funds from the City of Seattle. Route 994 only operates on weekdays with two daily trips. In total, 51 buses travel over the Magnolia Bridge during the three-hour AM commute period while 54 buses use the bridge during the three-hour PM commute period.

Figure 4 Magnolia Transit Network

Source: King County Metro

Table 1. Existing Transit Service

Routes	Destinations Served	Number of Buses	
		Weekday AM Commute Period [a]	Weekday PM Commute Period [b]
RapidRide D Line	Crown Hill, Ballard, Interbay, Seattle Center, and Downtown Seattle	To Downtown: 24 To Crown Hill: 20	To Downtown: 23 To Crown Hill: 25
24 (& 19 [c])	Magnolia, Seattle Center, and Downtown Seattle	To Downtown: 14 To Magnolia: 6	To Downtown: 6 To Magnolia: 15
31	Magnolia, Seattle Pacific University, Fremont, Wallingford, and the University District	To University District: 9 To Magnolia: 4	To University District: 7 To Magnolia: 8
32	Seattle Center, Interbay, Seattle Pacific University, Fremont, Wallingford, and the University District	To University District: 8 To Seattle Center: 6	To University District: 8 To Seattle Center: 8
33	Discovery Park, Interbay, Seattle Center, and Downtown Seattle	To Downtown: 10 To Discovery Park: 6	To Downtown: 6 To Discovery Park: 10
994 [d]	Downtown Seattle, Seattle Center, Magnolia, Ballard, University Prep, and Lakeside School	To Lakeside School: 1 To Downtown: 0	To Lakeside School: 0 To Downtown: 1

Source: King County Metro Transit Website, November 2018.

a. AM commute service provided between ~6:00 A.M. and 9:00 A.M.

b. PM commute service provided between ~4:00 P.M. and 7:00 P.M.

c. Route only operates during the weekday peak hours and only serves the peak direction of travel

d. Custom bus route designed to serve students at private schools in north Seattle. Only operates on weekdays.

1.4. Existing Transit Ridership

Table 2 summarizes the most recent ridership data from the Spring of 2018;[3] Figure 5 shows the total number of transit riders entering and exiting Magnolia over the course of an average weekday. A total of 2970 transit riders cross the Magnolia Bridge during a typical weekday. Figure 5 shows that the Magnolia bus routes are primarily utilized by commuters, with large spikes during the morning and afternoon commute periods. These transit users also follow typical commuter patterns, with the majority leaving Magnolia in the morning and returning to Magnolia in the afternoon.

Table 2. Average Ridership – Spring 2018

	Average Number of Riders		
Routes *Data Location*	Weekday AM Commute Period [a]	Weekday PM Commute Period [b]	All Day
RapidRide D Line *On 15th Ave W at Armory Way*	To Downtown: 1025 To Crown Hill: 400	To Downtown: 580 To Crown Hill: 1070	To Downtown: 3330 To Crown Hill: 3170
24 (& 19 [c]) *On the Magnolia Bridge.*	To Downtown: 430 To Magnolia: 45	To Downtown: 65 To Magnolia: 470	To Downtown: 780 To Magnolia: 860
31 *On Emerson Pl at 21st Ave W*	To University District: 100 To Magnolia: 5	To University District: 35 To Magnolia: 55	To University District: 225 To Magnolia: 100
32 *On 15th Ave W at Armory Way*	To University District: 70 To Seattle Center: 65	To University District: 95 To Seattle Center: 75	To University District: 315 To Seattle Center: 280
33 *On the Magnolia Bridge*	To Downtown: 385 To Discovery Park: 40	To Downtown: 75 To Discovery Park: 320	To Downtown: 770 To Discovery Park: 595

Source: King County Metro Transit, October 2018. Data rounded to the nearest five. No data available for Route 994.

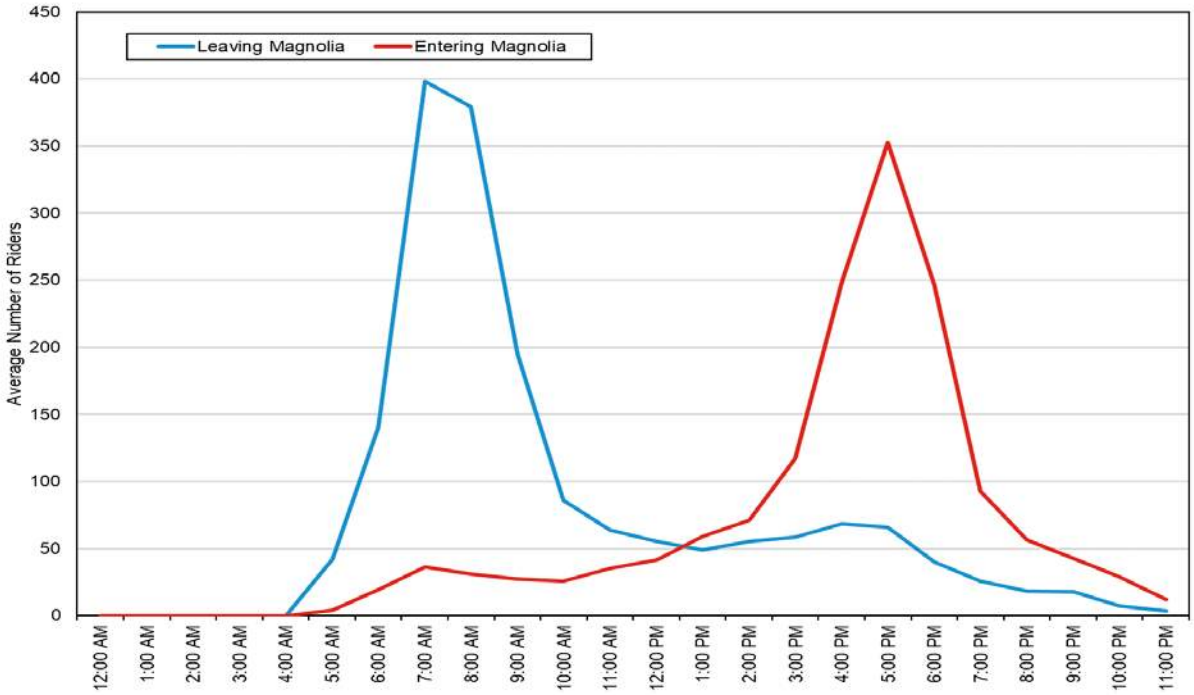
a. AM commute service provided between ~6:00 A.M. and 9:00 A.M.

b. PM commute service provided between ~4:00 P.M. and 7:00 P.M.

c. Routes only operate during the weekday peak hours and only serves the peak direction of travel

[3] King County Metro, stop level data obtained via email from Chad Armstrong, October 2018.

Figure 5. Magnolia Transit Ridership by Time of Day – Average Spring Day



Source: King County Metro, October 2018.
Note: Includes ridership on routes 19, 24, 31, and 33. Data collected midspan on Magnolia Bridge and on W Emerson Pl at 21st Ave W. No data available for Route 994.

2. Pedestrian, Bicycle, and Transit Growth

This section summarizes recent growth trends and highlights some factors that may influence growth of transit and non-motorized trips in the future.

2.1. Pedestrian and Bicycle Growth

Information from the *Seattle Bicycle Master Plan*[4] shows that bicycle trips into the core area of downtown have increased by 5.5% per year from 1995 to 2011. That growth rate, which is higher than population growth in the City, reflects a shift to bicycling from other modes of transportation. For the purpose of this analysis, that growth rate was assumed to continue into the future. At that rate, bicycle volumes are expected to nearly double by the year 2030.

Pedestrian volumes would increase due to population growth as well as with increased transit use with riders walking to bus stops and major transit stations. The bicycle growth rate of 5.5% was also assumed for pedestrian trips.

2.2. Transit Ridership Growth

Metro publishes performance metrics for every route in an annual system evaluation.[5] Metro began reporting ridership figures in these annual reports in 2013. Figure 6 shows the average weekday ridership each year since 2012 for the primary Magnolia routes. The chart shows a generally upward trend in transit ridership, with an average annual increase of 4 percent per year. Considering the past

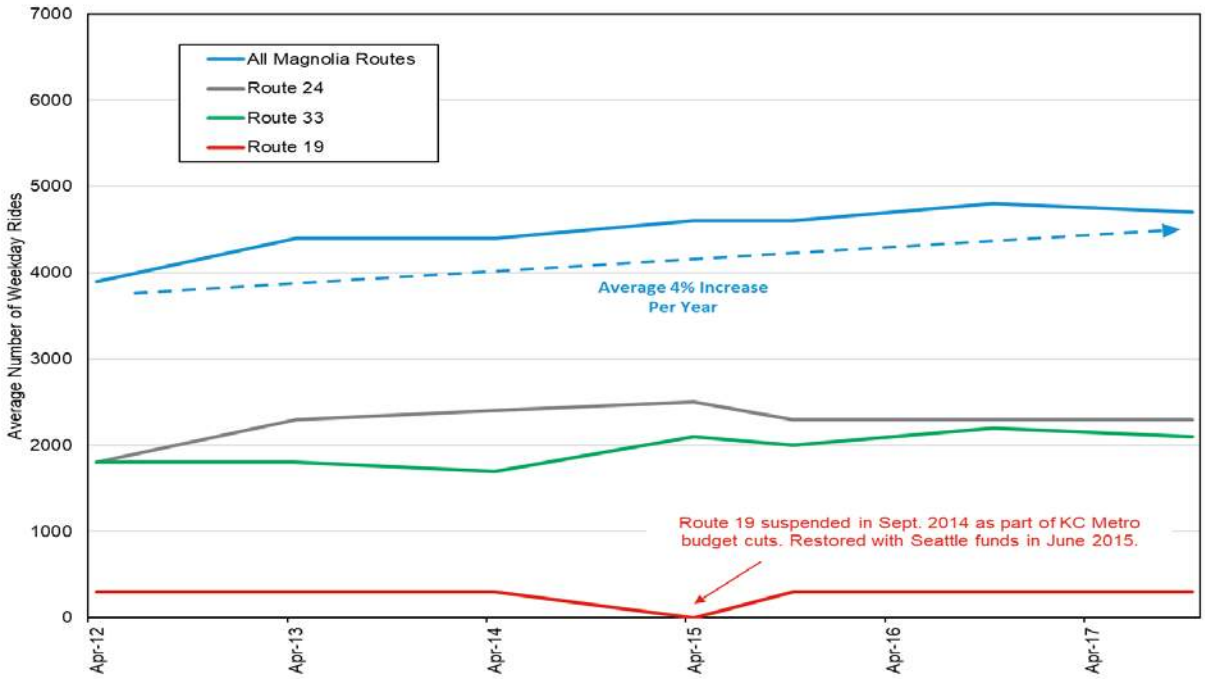
[4] Seattle Department of Transportation (SDOT), April 2014. Figure 2-1 Downtown Bicycling Trends in the City.
[5] King County Metro, all reports from *2013 Service Guidelines Report* to *2018 System Evaluation*, 2013 through 2018

trends and additional factors described below, it is not unreasonable to expect the 4 percent annual growth trend to continue.

The growth in transit ridership could be fueled further by the construction of higher density developments and increases in transit service. Metro reports that routes 24 and 33 regularly experience crowding during the peak commute periods and would like to add more buses to these routes. *Metro Connects*,[6] Metro's long-range plan, shows that Metro hopes to increase the number of buses that utilize the Magnolia Bridge and add additional frequent bus service along W Dravus St.

Sound Transit is currently in the early planning stages for the Ballard Link light rail extension, which will bring light rail through Interbay in 2035. The new line will travel on dedicated right-of-way and trains will depart every 6 minutes during peak commuter periods. In October 2018, Sound Transit presented the three Interbay alignments that will move forward for further analysis; these three routes are shown in Figure 7. As shown, all three routes include stations near the Expedia campus (Smith Cove station) and the intersection of W Bertona St and 17th Ave W (Interbay station). The new Ballard line is expected to generate significant ridership and will likely result in significant changes to the bus network in Magnolia. Metro will revise their network to improve integration with the new light rail line, but they will not announce any plans until the line is close to opening.

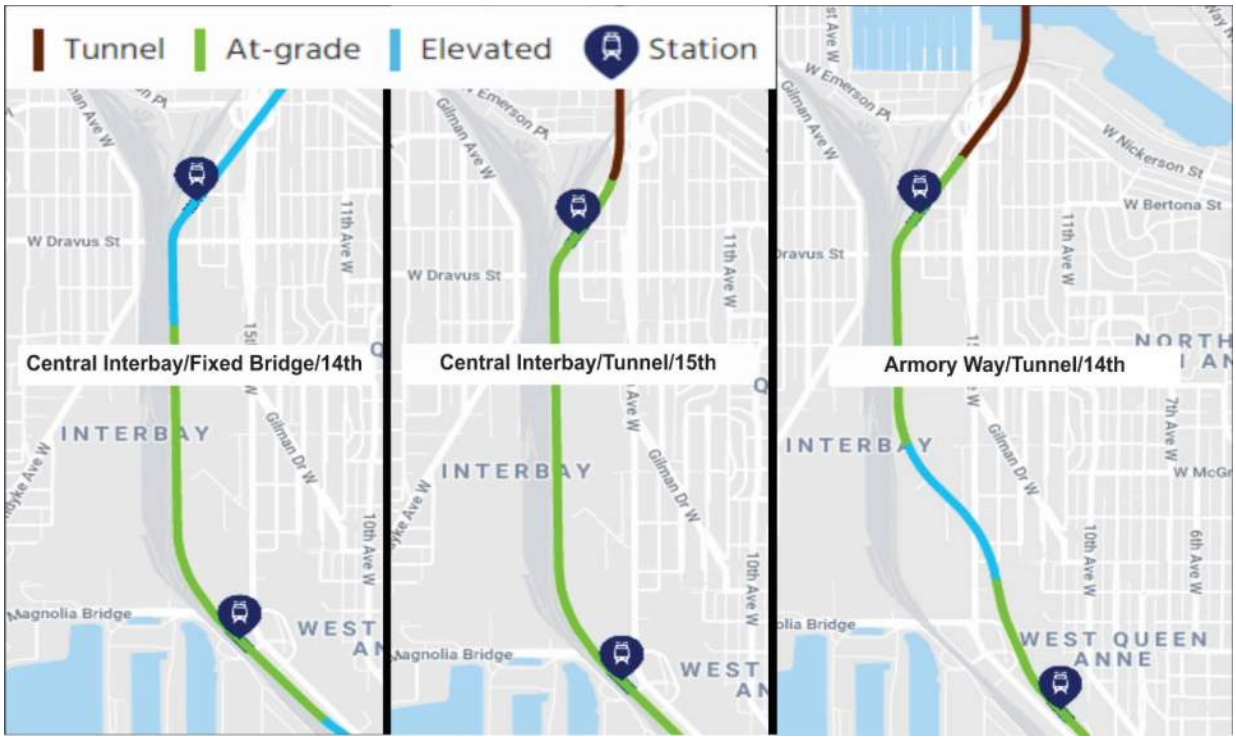
Figure 6. Average Weekday Ridership (Both Directions) – Magnolia Routes 2012 to 2017



Source: King County Metro, October 2018.
Note: Route 31 is excluded because the majority of the boardings and alightings occur outside of Magnolia. Route 994 is excluded because it is a custom bus route primarily serving private school students.

6 King County Metro, *Metro Connects*, January 2017

Figure 7. Sound Transit Ballard Light Rail – Possible Interbay Alignments (Level 2 Screening)



Source: Sound Transit and Google, 2018.

3. Impact of Magnolia Bridge Replacement Alternatives

Analysis was performed for four replacement alternatives. This includes the "In-Kind Replacement" that was identified in the 2007/2008 study. It also assesses three additional "lower cost" alternatives that were the primary focus of the current study. The four alternatives are briefly described below and Alternative 1, 2, and 3 are shown on Figure 8.

3.1. Alternative Descriptions

In-Kind (1:1) Replacement Alternative would construct a new bridge immediately south of the existing Magnolia Bridge. It would have similar connections to 15th Ave W and 23rd Ave W as exists today. The existing "center ramps" to Terminal 91 would be eliminated. The new bridge would feature a non-motorized, multi-use path on the south side with a width of 10 feet.

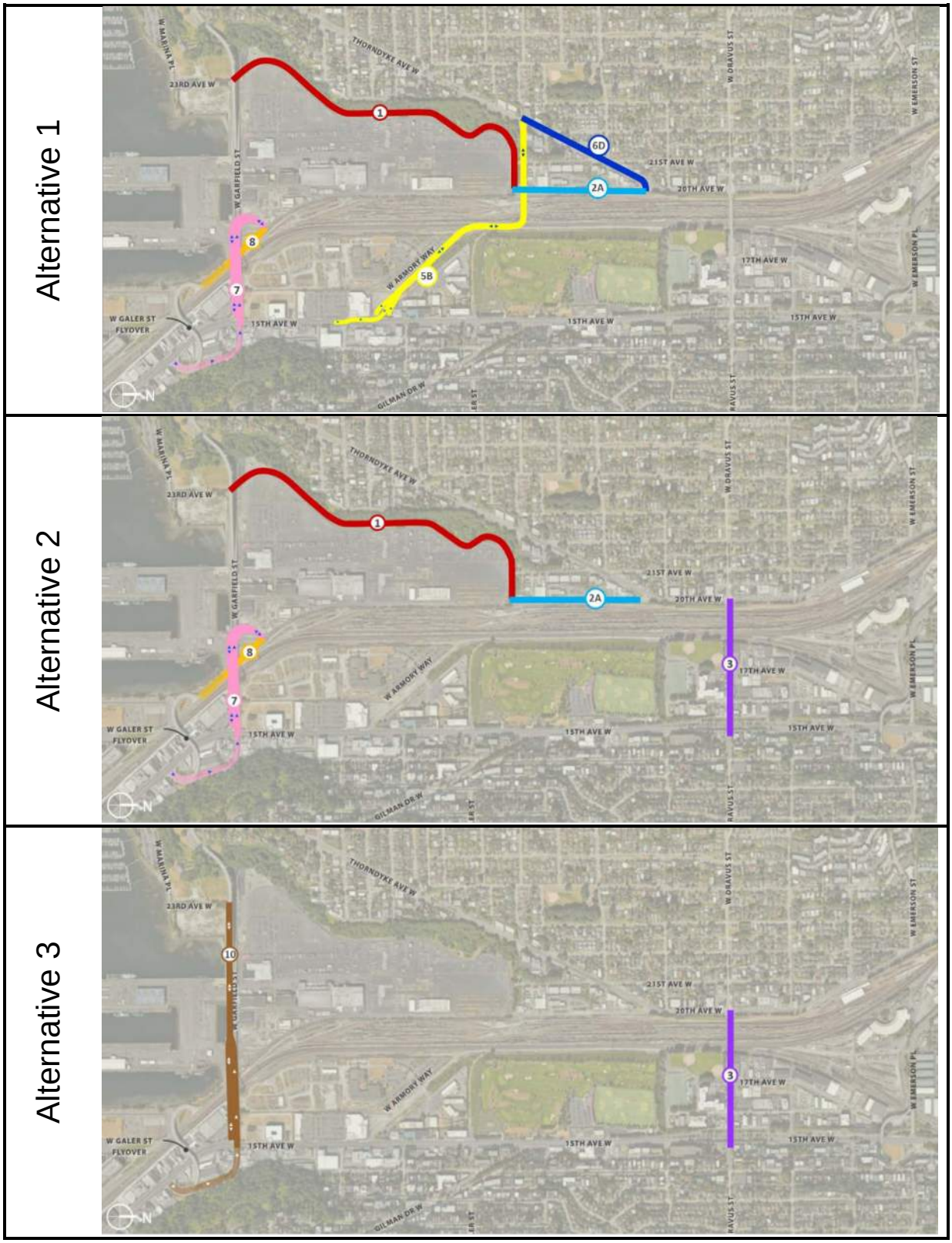
Alternative 1 (*Components 1, 2A, 5B, 6D, 7 & 8*) would remove the existing Magnolia Bridge between the BNSF Railroad tracks and the top of the bluff at Thorndyke Ave W. It would build a new bridge over the railroad tracks plus a roadway that connects the 15th Ave W/W Armory Way intersection to Thorndyke Ave W just south of W Raye St. Smith Cove and the Elliott Bay Marina would be accessed via a new surface road built along the western edge of Terminal 91 (T-91) that would connect to Thorndyke Ave W at 20th Ave W. It would also rebuild and extend the W Garfield St connection west over the railroad tracks and extend Alaskan Way north to serve both T-91 and Expedia. The new Armory Way bridge would include a non-motorized, mixed-use path on the south side.

Alternative 2 (*Components 1, 2A, 3, 7 & 8*) has many of the same components as Alternative 1 except that instead of the W Armory Way railroad crossing it would substantially improve the W Dravus Street corridor. This alternative would replace the existing tight-diamond ramp configuration at the 15th Ave W/W Dravus St intersection with a modified single-point urban interchange (SPUI). It would also upgrade and widen the railroad bridge between 17th Ave W and 20th Ave W.

Alternative 3 (*Components 3 and 10*) would have the same upgrades in the W Dravus St corridor as Alternative 2, but none of the other components. The W Garfield St section would instead be reconfigured to include a new bridge that connects 15th Ave W to 23rd Ave W. This new structure would provide access to Smith Cove, the Elliott Bay Marina, and portions of T-91. The new bridge would include a sidewalk.

No Action Alternative assumes that no improvements are constructed, and the existing Magnolia Bridge deteriorates to the point of being closed to all traffic. This condition was evaluated in order to quantify the full benefits of the action alternatives.

Figure 8. Magnolia Bridge Replacement Alternatives



Source: SCJ Alliance, July 2018.

3.2. Pedestrian and Bicycle Impacts

Although the Magnolia Bridge provides the shortest travel route between the south end of Magnolia and Interbay, intersection count data show that few pedestrians and even fewer bicyclists use the existing bridge. Non-motorized users favor W Thorndyke and 20th Ave W and its connections to the Elliott Bay Trail and W Dravus St, as well as W Emerson Pl, which connects to the Ship Canal Trail and Ballard Bridge. For all four of the replacement alternatives, it is likely that this paradigm will remain.

Although the In-Kind Replacement Alternative would have substantially improved non-motorized facilities, it has no planned connections to the Elliott Bay Trail. For trips returning to Magnolia, it would also continue to be a steeper climb than the existing route via Thorndyke Ave W. It is expected that the Magnolia Bridge would attract relatively small increases in bicycle and pedestrian traffic destined to downtown or local employment destinations such as at Expedia or Terminal 91, as well as the future Sound Transit Link Station at Smith Cove. However, trips destined to areas north such as Ballard or Fremont, as well as trips to the future Interbay Link Station, would continue to use existing travel routes to the non-motorized trails and W Dravus St.

Alternative 1 would provide a new route choice across the railroad tracks, with improved connections to the Elliott Bay Trail via 20th Ave W. It would likely attract use similar to the existing Magnolia Bridge for trips destined to commercial areas along 15th Ave W (e.g., Whole Foods). As with the In-Kind Replacement, trips to the north and east as well as to the Link Station would use other routes. The small number of trips that now use the Magnolia Bridge would likely shift to the new Armory St Bridge.

Alternatives 2 and 3 would improve facilities along W Dravus St. This would improve connections to local commercial areas and the future Interbay Link Station. Since W Dravus Street is quite distant from the existing Magnolia Bridge, any pedestrians that now use the Magnolia Bridge may shift to other modes of travel. Bicyclists could use the existing route to the Elliott Bay Trail via Thorndyke and 20th Ave W.

Overall, there is little difference among the four Alternatives to pedestrian and bicycle mobility. Existing travel routes are expected to be used regardless of the alternative chosen. The small number of pedestrians and bicyclists who now use Magnolia Bridge would need to divert elsewhere with any of the other alternatives.

3.3. Transit Impacts

The Magnolia Bridge is a critical part of the existing Magnolia transit network, providing the fastest and most reliable connection between Magnolia and Downtown Seattle. However, once the Ballard light rail extension opens, it is possible that Metro will divert buses that now connect Magnolia and Downtown Seattle to local routes that provide more frequent service to the Link stations.

Until Link Service begins, Alternatives 1, 2 or 3 would increase the travel times along routes that now use the Magnolia Bridge. Travel time analysis performed as part of the *Magnolia Bridge Long-Term Replacement Study, Traffic Analysis: Future Traffic Forecasts and Operation*[7] estimated the change in travel time due to the various alternatives. Transit trips will differ from vehicle trips due to the advantage provided by the transit lanes on the 15th /Elliott Ave corridor. For trips into downtown in the morning, Alternative 1 is estimated to increase travel times by about 10 minutes during the AM peak hour compared to the In-Kind Replacement; Alternative 2 would increase travel time by 10 minutes, and Alternative 3 would increase travel time by 27 minutes. In the afternoon, the return trips are estimated to increase by 4 minutes for Alternative 1, 8 minutes for Alternative 2, and 7 minutes for Alternative 3.

[7] Heffron Transportation, Inc., October 23, 2018.

These travel times assume the existing business access & transit (BAT) lanes remain on Elliott/15th Ave W in the future analysis year.

After Sound Transit's Link Service begins, the new alternatives could provide better local transit connections between Magnolia and new station locations. Alternatives 2 and 3 could enhance bus connections to the future Interbay Station, expected to be located north of W Dravus Street.

3.4. Impact Summary

Table 3 provides a qualitative evaluation and comparison of each alternative based on several pedestrian, bicycle, and transit performance metrics.

Table 3.Evaluation of Non-Motorized and Transit Performance by Alternative

Bicycles and Pedestrians	In-kind (1:1)	Alternative 1	Alternative 2	Alternative 3
Non-motorized connection between upper-Magnolia and Elliott/15th Ave W corridor	●	◐	◔	◔
Integration with existing non-motorized infrastructure (trails and PBL facilities)	◔	●	●	◐
Non-motorized connection between Elliott/15th Ave W Corridor and Smith Cove	●	◐	◔	●
Transit				
Bus connection between upper-Magnolia and Downtown Seattle	●	◐	◔	◔
Bus connection between upper-Magnolia and Smith Cove light rail station	●	◐	◔	◔
Bus connection between upper-Magnolia and Interbay light rail station	◐	◐	●	●
Bus connection between upper-Magnolia and Interbay shopping area with Whole Foods	◐	●	◔	◔
Bus service near T-91 and Smith Cove Marina	●	◔	◔	◔

● *Good Performance* ◐ *Average Performance* ◔ *Poor Performance*

RHF/MCH

MBRS - Transit and Non-motorized Tech Memo-FINAL 021519.docx

Appendix E

Cost Estimate Summary Memo

SCJ ALLIANCE
CONSULTING SERVICES

Technical Memo

To	Wes Ducey/SDOT Kit Loo/SDOT
From:	Lisa Reid/SCJ Alliance
Date:	March 25, 2019
Project:	Magnolia Bridge Planning Study
Subject	Cost Estimate Summary

The purpose of this memo is to briefly document the methodology used to prepare cost estimates for the Magnolia Bridge Planning Study Alternatives, including:

- Alternative 1 - Armory Way Bridge
- Alternative 2 - Dravus Street Upgrade
- Alternative 3 - Lower Magnolia Bridge
- Alternative 4 – In-Kind Replacement

1. Construction Costs

1.1. Alternative 4 – In-Kind Replacement

HNTB completed a 30% design of the in-kind bridge replacement in along with an engineer's estimate of cost based on the 30% quantities. The construction-only portion of this estimate totaled $98.4M in 2006 dollars. Ott-Sakai's construction management expert reviewed the HNTB estimate for both thoroughness and to update unit costs to 2018 dollars.

The review indicated that two bid items were missing for traffic control and shaft excavation – unforeseen conditions. The latter is significant given the depth of the shafts and the existing soil conditions. Both items were added, and all unit costs were escalated to 2018 dollars to be consistent with the other component-level cost estimates developed and discussed below. This resulted in an escalation of the construction-only portion of the estimate to $197.8M including two component-level costs as shown in Table 1.

Table 1. Construction Costs for Alternative 4 - In-Kind Replacement

			Alternative 4
Summary Cost Item Description	**Unit**	**Unit Price**	**Estimated Cost**
HNTB Replacement Cost 2018$	LS	$ 191,123,000	$ 191,123,000
Magnolia Bridge Demolition	LS	$ 6,674,000	$ 6,674,000
Construction Cost Total			**$ 197,797,000**

1.2. Alternatives 1-3

A planning level cost estimate was prepared for each of the components and then these costs were combined with the costs described above to calculate the cost of each of the alternatives.

1.2.1. Component Cost Estimates

To be consistent with Alternative 4, HNTB's escalated cost estimate was used to calculate construction costs for Component 10 by isolating the bid items applicable to that portion of the construction. In addition, the escalated HNTB Magnolia Bridge demolition cost calculated for Alternative 4 was used for all alternatives.

The planning level cost estimates for components 1B, 2A, 3, 5B, 6D, 7 and 8 were based on conceptual layouts of each of these components. These layouts include horizontal linework showing lanes, sidewalks, and edge of pavement and vertical profiles for each of the components. Profiles are based on Google Earth™ data that is publicly available. No 3D models were developed; therefore wall and bridge locations were based on the conceptual profiles.

Planning level component cost estimates were based on the following:

- Major earthwork, removals, paving, and wall quantities were calculated based on the conceptual profiles and 2018 unit bid item costs were applied to get item costs.
- Illumination, utility, and drainage systems were estimated based on the length of the project.
- Bridge costs were estimated based on the per sf cost based on structure depth/type.
- Other significant items were estimated as a percentage of the length of the project or as a percentage of the overall cost of the other components.
- The planning level estimates included 10% allowance for miscellaneous items.

Individual component construction costs were calculated as shown in Table 2

Table 2. Construction Cost per Component

Summary Cost Item Description	Unit	Unit Price
Component 1B Construction Cost	LS	$ 13,396,000
Component 2A Construction Cost	LS	$ 1,004,000
Component 3 Construction Cost	LS	$ 44,712,000
Component 5B Construction Cost	LS	$ 45,411,000
Component 6D Construction Cost	LS	$ 2,792,000
Component 7 Construction Cost	LS	$ 43,544,000
Component 8 Construction Cost	LS	$ 1,576,000
Component 10 Construction Cost	LS	$ 67,063,000
HNTB Replacement Cost 2018$	LS	$ 191,123,000
Magnolia Bridge Demolition	LS	$ 6,674,000

1.2.1. Alternative Cost Estimates

The component level cost estimates were combined to get construction cost estimates for each of the alternatives as shown in Table 3.

Table 3. Construction Costs per Alternative

		Alternative 1	Alternative 2	Alternative 3
Summary Cost Item Description	**Unit**	**Estimated Cost**	**Estimated Cost**	**Estimated Cost**
Component 1B Construction Cost	LS	$ 13,396,000	$ 13,396,000	
Component 2A Construction Cost	LS	$ 1,004,000	$ 1,004,000	
Component 3 Construction Cost	LS		$ 44,712,000	$ 44,712,000
Component 5B Construction Cost	LS	$ 45,411,000		
Component 6D Construction Cost	LS	$ 2,792,000		
Component 7 Construction Cost	LS	$ 43,544,000	$ 43,544,000	
Component 8 Construction Cost	LS	$ 1,576,000	$ 1,576,000	
Component 10 Construction Cost	LS			$ 67,063,000
Magnolia Bridge Demolition	LS	$ 6,674,000	$ 6,674,000	$ 6,674,000
Construction Cost Total		**$ 114,397,000**	**$ 110,906,000**	**$ 118,449,000**

2. Right-of-Way Costs

Right-of-way (ROW) costs in the Puget Sound region are changing quickly and are very difficult to estimate. In addition, much of the ROW needed for this project is owned by the Port of Seattle and little data exists for valuation purposes. Right-of-way takes were calculated per SF for each component as noted below:

- Component 1B: ROW width was based on SDOT's typical ROW sections per *Streets Illustrated* (50').
- Components 2A and 6D: Improvements fit within the City's existing ROW and no take is needed.
- Component 3: A ROW take for SPUI improvements that did not fit within the City's 15th Ave W and Dravus ROW was calculated.
- Component 5B: A ROW take for improvements that did not fit within the City's Armory Way ROW was calculated.
- Component 7: The relative ROW take from HNTB's 30% design was used and added to additional ROW needed for the loop ramp to provide SDOT's typical ROW section per *Streets Illustrated* (50').
- Component 8: A ROW take for improvements that did not fit within the City's Magnolia Street Bridge ROW was calculated.
- Component 10: The relative ROW take from HNTB's 30% design was used.

The per SF cost used to calculate ROW cost was based on HNTB's 2006 estimate. We escalated the ROW cost based on the same escalation in King County Parcel Values for adjacent commercial property's escalations over the period from 2006 to 2018. When escalated, the cost of ROW including acquisition and costs to cure was $125/SF resulting in the ROW costs per component shown in Table 4.

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Table 4. Right-of-Way Costs Per Component

Summary Cost Item Description	Unit	Unit Price
Component 1B ROW Cost	LS	$ 29,480,000
Component 2A ROW Cost	LS	$ 0
Component 3 ROW Cost	LS	$ 3,406,800
Component 5B ROW Cost	LS	$ 5,847,000
Component 6D ROW Cost	LS	$ 0
Component 7 ROW Cost	LS	$ 4,176,000
Component 8 ROW Cost	LS	$ 5,093,000
Component 10 ROW Cost	LS	$ 41,000,000
HNTB Replacement Cost 2018$ ROW	LS	$ 48,544,000

In addition to these ROW costs, the potential exists to “exchange” ROW along the existing Magnolia Bridge when it is replaced and offset the costs of the new ROW that is not reflected in the cost estimates. The estimated cost of an equivalent exchange of ROW is up to $14.5M.

Total Cost Projection Estimates - Projects in Initiation or Options Analysis

Project Name: Magnolia Bridge Planning Study
Project ID: 2017-021
Project Phase: Conceptual Planning
Cost Estimator(s): Forrest Dill - adjusted by Wes Ducey [SDOT]
Estimate Reviewer(s) Lisa Reid - reviewed by Kit Loo [SDOT]
Date: December 19, 2018

Assumptions for all options and each major item are documented in the Basis of Estimate document

				Alternative 1	Alternative 2	Alternative 3	In-kind Replacement	Alternative 1	Alternative 2	Alternative 3	In-kind Replacement
#	**Summary Cost Item Description**	**Unit**	**Unit Price**	**Quantity**	**Quantity**	**Quantity**	**Quantity**	**Estimated Cost**	**Estimated Cost**	**Estimated Cost**	**Estimated Cost**
1	Component 1B Construction Cost	LS	$ 13,396,000	1	1			$ 13,396,000	$ 13,396,000	$ -	$ -
2A	Component 2A Construction Cost	LS	$ 1,004,000	1	1			$ 1,004,000	$ 1,004,000	$ -	$ -
3	Component 3 Construction Cost	LS	$ 44,712,000		1	1		$ -	$ 44,712,000	$ 44,712,000	$ -
5B	Component 5B Construction Cost	LS	$ 45,411,000	1				$ 45,411,000	$ -	$ -	$ -
6D	Component 6D Construction Cost	LS	$ 2,792,000	1				$ 2,792,000	$ -	$ -	$ -
7	Component 7 Construction Cost	LS	$ 43,544,000	1	1			$ 43,544,000	$ 43,544,000	$ -	$ -
8	Component 8 Construction Cost	LS	$ 1,576,000	1	1			$ 1,576,000	$ 1,576,000	$ -	$ -
10	Component 10 Construction Cost	LS	$ 67,063,000			1		$ -	$ -	$ 67,063,000	$ -
Repl	HNTB Replacement Cost 2018$	LS	$ 191,123,000				1	$ -	$ -	$ -	$ 191,123,000
Demo	Magnolia Bridge Demolition	LS	$ 6,674,000	1	1	1	1	$ 6,674,000	$ 6,674,000	$ 6,674,000	$ 6,674,000
							Construction Cost Total	**$ 114,397,000**	**$ 110,906,000**	**$ 118,449,000**	**$ 197,797,000**
							Soft Cost % *	40%	40%	40%	30%
							Soft Cost	$ 45,758,800	$ 44,362,400	$ 47,379,600	$ 59,339,100
							Property Acquisition Costs	$ 44,596,000	$ 42,155,800	$ 44,406,800	$ 48,544,000
							TOTAL BASE COST	$ 204,751,800	$ 197,424,200	$ 210,235,400	$ 305,680,100
							Project Contingency (30%)*	$ 61,000,000	$ 59,000,000	$ 63,000,000	$ 92,000,000
							2018 TOTAL COST**	$ 266,000,000	$ 256,000,000	$ 273,000,000	$ 398,000,000
							2018 ESTIMATED COST RANGE	**$200-$350M**	**$190-$310M**	**$210-$360M**	**$340-$420M**

**Soft Cost and Contingency % based on SDOT standards for a project's design level*

***Total Cost adjusted to Estimated Cost Range based on American Association of Cost Engineering (AACE) Standards for projects in different stages of definition and design*

Appendix F

Construction Duration and Impact Summary Memo

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Technical Memo

To	Wes Ducey/SDOT Kit Loo/SDOT
From:	Lisa Reid/SCJ Alliance
Date:	March 25, 2019
Project:	Magnolia Bridge Planning Study
Subject	Construction Durations and Impacts Summary

The purpose of this memo is to briefly document the methodology used to calculate comparative construction durations and impacts for the Magnolia Bridge Planning Study Alternatives, including:

- Alternative 1 - Armory Way Bridge
- Alternative 2 - Dravus Street Upgrade
- Alternative 3 - Lower Magnolia Bridge
- Alternative 4 – In-Kind Replacement

1. Construction Durations

Construction durations are simply the number of months included in the construction schedule for each alternative. These durations were calculated as noted below:

- Alternatives 1-3: High-level schedules were prepared for Alternatives 1 through 3 based on the components to be constructed and the estimated cost of each component (as a basis of construction durations). The schedules were developed to ensure that there was always one access point to the Port of Seattle and to Magnolia that wasn't under significant construction.
- Alternative 4: HNTB included a construction schedule in the Type Size & Location (TS&L) study they prepared in 2005, while they were completing the 30% design. That schedule was reviewed for completeness and our construction management expert concurred with the schedule logic and durations.

Each of those schedules is attached to this memo and is summarized in Table 1.

Table 1. Schedule Durations by Alternative

Alternative	Schedule Duration
Alternative 1	29 months
Alternative 2	29 months
Alternative 3	35 months
Alternative 4	31 months

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2. Construction Impacts

Construction impacts were defined as the number of months that the public would experience impacts resulting from capacity constraining work occurring on existing roadways. The attached schedules show blue highlighted bars across the months where these impacts would be experienced, and they are summarized in Table 2. The notes below further explain the assumptions made for each alternative.

- Alternative 1: Work on Components 1 and 2 will not affect existing roadways and was not considered when calculating months of construction impacts. In addition, most of the work on Component 5B will not significantly impact the capacity of existing roadways and was excluded. The work on Components 7 and 8 will affect existing roadways significantly and was included in the calculation of months of construction impacts.
- Alternative 2: Nearly all work on Components 3, 7 and 8 will result in significant impacts to existing roadways and was included in the calculation of months of construction impacts.
- Alternative 3: Nearly all of the work on Components 3 and 10 will result in significant impacts to existing roadways and was included in the calculation of months of construction impacts.
- Alternative 4: The work on the In-Kind replacement is significant and is occurring along the existing Magnolia Bridge throughout this Alternative. We assumed the same number of months as Alternative 3 would be excluded from calculation of months of construction impacts (4 months) for consistency.

Table 2. Construction Impacts by Alternative

Alternative	Schedule Impacts
Alternative 1	14 months
Alternative 2	26 months
Alternative 3	31 months
Alternative 4	27 months

SDOT - Magnolia Bridge Planning Study
Alternative Schedules

Forrest Dill - Ott-Sakai 18 10 09, REVISED by Lisa Reid 18 10 31

Construction Impacting Capacity = 14 mon
Construction Duration = 29 mon

Alternative 1

		UM	Quantity	Months 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36
1	**Component 1**																																						
2	Mob and Subm/Appr	LS	1																																				
3	TESC / Clear and Grub	LF	4,073																																				
4	Survey, Demo and Grading	LF	4,073																																				
5	Roadway Excavation	CY	5,677																																				
6	Select Borrow	CY	2,817																																				
7	Slope Stabilization Walls	SF	12,000																																				
8	MSE Retaining Walls	SF	5,400																																				
9	Utilities	LS	1																																				
10	Illumination	EA	24																																				
11	Pavement and Striping	LF	4,073																																				
12	Landscaping	SF	8,000																																				
13	Closeout	LS	1																																				
14	**Component 2A**																																						
15	Mob and Subm/Appr	LS	1																																				
16	TESC / Clear and Grub	LF	1,389																																				
17	Survey, Demo and Grading	LF	1,389																																				
18	Roadway Excavation	CY	347																																				
19	Select Borrow	CY	3,286																																				
20	Utilities	LS	1																																				
21	Illumination	EA	4																																				
22	Flatwork, Pavement, and Striping	LF	1,389																																				
23	Landscaping	SF	400																																				
24	Closeout	LS	1																																				
25	**Component 5B**																																						
26	Mob and Subm/Appr	LS	1																																				
27	TESC / Clear and Grub	LF	4,263																																				
28	Survey, Demo and Grading	LF	4,263																																				
29	Roadway and Structure Excavation	CY	2,099																																				
30	Select Borrow	CY	64,246																																				
31	MSE Retaining Walls	SF	49,300																																				
32	Armory Bridge over 15th and Armory	SF	30,800																																				
33	Armory Bridge over BNSF and 20th	SF	32,550																																				
34	Utilities	LS	1																																				
35	Illumination	EA	12																																				
36	Flatwork, Pavement, and Striping	LF	4,263																																				
37	Landscaping	SF	813																																				
38	Closeout	LS	1																																				
39	**Component 6D**																																						
40	Mob and Subm/Appr	LS	1																																				
41	**Phase 1**																																						
42	Traffic Switch	LS	1																																				
43	TESC / Clear and Grub	LF	1,389																																				
44	Survey, Demo and Grading	LF	1,389																																				
45	Remove Flatwork, Pavement, and Storm	LF	3,450																																				
46	Select Borrow	CY	697																																				
47	Utilities	LS	1																																				
48	Signal - Thorndyke and Armory	EA	1																																				
49	Signal Modifications - 15th and Armory	EA	1																																				
50	Illumination	EA	2																																				
51	Flatwork, Pavement, and Striping	LF	1,389																																				
52	**Phase 2**																																						
53	TESC / Clear and Grub	LF	1,389																																				
54	Survey, Demo and Grading	LF	1,389																																				

Alternative 1

		UM	Quantity	Months 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36
55	Remove Flatwork, Pavement, and Storm	LF	3,450																																				
56	Select Borrow	CY	697																																				
57	Utilities	LS	1																																				
58	Signal - Thorndyke and Armory	EA	1																																				
59	Signal Modifications - 15th and Armory	EA	1																																				
60	Illumination	EA	2																																				
61	Flatwork, Pavement, and Striping	LF	1,389																																				
62	Traffic Signal Startup	EA	2																																				
63	Landscaping	SF	1,160																																				
64	Closeout	LS	1																																				
65	**Component 7**																																						
66	Mob and Subm/Appr	LS	1																																				
67	Bridge Girder Fabrication	LS	1																																				
68	Demolish Existing Magnolia Bridge	LS	1																																				
69	TESC / Clear and Grub	LF	1,000																																				
70	Survey, Demo and Grading	LF	1,000																																				
71	Structure Excavation	CY	280																																				
72	Select Borrow	CY	5,940																																				
73	MSE Retaining Walls	SF	36,000																																				
74	Replacement Magnolia over BNSF only	SF	77,825																																				
75	Signal Modifications - 15th and Garfield	EA	1																																				
76	Utilities	LS	1																																				
77	Illumination	EA	6																																				
78	Flatwork, Pavement, and Striping	LF	4,263																																				
79	Landscaping	SF	928																																				
80	Closeout	LS	1																																				
81																																							
82	**Component 8**																																						
83	Mob and Subm/Appr	LS	1																																				
84	TESC / Clear and Grub	LF	779															Demo Bridge																					
85	Survey, Demo and Grading	LF	779																																				
86	Utilities	LS	1																																				
87	Illumination	EA	4																																				
88	Flatwork, Pavement, and Striping	LF	779																																				
89	Closeout	LS	1																																				
		Month		**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**	**21**	**22**	**23**	**24**	**25**	**26**	**27**	**28**	**29**	**30**	**31**	**32**	**33**	**34**	**35**	**36**

Alternative 1 Total

Schedule Assumptions

1 The construction contract work days start 21 calendar days after contract execution. The Bid/Award/Contract Execution process duration is about 3 months.
2 The Closeout activity includes punchlist and opening the project to traffic. The contract paperwork completion is not included.
3 Weather constraints are not included. Winter weather will constrain HMA Paving, Landscaping, and other work contrained by wet and/or cold weather.
4 Railroad restrictions like Christmas Holiday closures are not included in this schedule.
5 The schedule activities are shown as Early Start
6 Moved Demo of Component 7 to start after Component 5B is operational.

SDOT - Magnolia Bridge Planning Study
Alternative Schedules

Forrest Dill - Ott-Sakai 18 10 09, REVISED by Lisa Reid 18 10 31

Construction Impacting Capacity = 26 mos

Construction Duration = 29 mon

Alternative 2

		UM	Quantity	Months 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36
1	**Component 1**																																						
2	Mob and Subm/Appr	LS	1																																				
3	TESC / Clear and Grub	LF	4,073																																				
4	Survey, Demo and Grading	LF	4,073																																				
5	Roadway Excavation	CY	5,677																																				
6	Select Borrow	CY	2,817																																				
7	Slope Stabilization Walls	SF	12,000																																				
8	MSE Retaining Walls	SF	5,400																																				
9	Utilities	LS	1																																				
10	Illumination	EA	24																																				
11	Pavement and Striping	LF	4,073																																				
12	Landscaping	SF	8,000																																				
13	Closeout	LS	1																																				
14																																						
15	**Component 2A**																																						
16	Mob and Subm/Appr	LS	1																																				
17	TESC / Clear and Grub	LF	1,389																																				
18	Survey, Demo and Grading	LF	1,389																																				
19	Roadway Excavation	CY	347																																				
20	Select Borrow	CY	3,286																																				
21	Utilities	LS	1																																				
22	Illumination	EA	4																																				
23	Flatwork, Pavement, and Striping	LF	1,389																																				
24	Landscaping	SF	400																																				
25	Closeout	LS	1																																				
26																																						
27	**Component 3**																																						
28	Mob and Subm/Appr	LS	1																																				
29	TESC / Clear and Grub	LF	4,263																																				
30	Survey, Demo and Grading	LF	4,263																																				
31	Roadway and Structure Excavation	CY	9,810																																				
32	Select Borrow	CY	3,286																																				
33	MSE Retaining Walls	SF	45,084																																				
34	Widen Dravus Bridge over BNSF	SF	23,180																																				
35	Widen Dravus Bridge at 15th SPUI	SF	45,500																																				
36	Utilities	LS	1																																				
37	Signal - 15th and Dravus SPUI	EA	1																																				
38	Signal Modifications - 20th and Dravus	EA	1																																				
39	Remove Signal - 15th and Dravus	EA	2																																				
40	Temporary Signal - 15th and Dravus	EA	1																																				
41	Illumination	EA	12																																				
42	Flatwork, Pavement, and Striping	LF	4,263																																				
43	Landscaping	SF	11,692																																				
44	Closeout	LS	1																																				
45																																						
46	**Component 7**																																						
47	Mob and Subm/Appr	LS	1																																				
48	Bridge Girder Fabrication	LS	1																																				
49	Demolish Existing Magnolia Bridge	LS	1																																				
50	TESC / Clear and Grub	LF	1,000																																				
51	Survey, Demo and Grading	LF	1,000																																				
52	Structure Excavation	CY	280																																				
53	Select Borrow	CY	5,940																																				
54	MSE Retaining Walls	SF	36,000																																				

Alternative 2

		UM	Quantity	Months																																	
				1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36
55	Replacement Magnolia over BNSF only	SF	77,825																																		
56	Signal Modifications - 15th and Garfield	EA	1																																		
57	Utilities	LS	1																																		
58	Illumination	EA	6																																		
59	Flatwork, Pavement, and Striping	LF	4,263																																		
60	Landscaping	SF	928																																		
61	Closeout	LS	1																																		
62																																					
63	**Component 8**																																				
64	Mob and Subm/Appr	LS	1																																		
65	TESC / Clear and Grub	LF	779														Demo Bridge								Complete New Bridge												
66	Survey, Demo and Grading	LF	779																																		
67	Utilities	LS	1																																		
68	Illumination	EA	4																																		
69	Flatwork, Pavement, and Striping	LF	779																																		
70	Closeout	LS	1																																		
			Month	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36

Alternative 2 Total

Schedule Assumptions

1 The construction contract work days start 21 calendar days after contract execution. The Bid/Award/Contract Execution process duration is about 3 months.
2 The Closeout activity includes punchlist and opening the project to traffic. The contract paperwork completion is not included.
3 Weather constraints are not included. Winter weather will constrain HMA Paving, Landscaping, and other work contrained by wet and/or cold weather.
4 Railroad restrictions like Christmas Holiday closures are not included in this schedule.
5 The schedule activities are shown as Early Start
6 Moved Demo of Component 7 to start after Component 3 is operational.

SDOT - Magnolia Bridge Planning Study
Alternative Schedules

Forrest Dill - Ott-Sakai 18 10 09, REVISED by Lisa Reid 18 10 31

Construction Impacting Capacity = 31 mon
Construction Duration = 35 mon

Alternative 3

Months

		UM	Quantity	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36
1	**Component 3**																																						
2	Mob and Subm/Appr	LS	1																																				
3	TESC / Clear and Grub	LF	4,263																																				
4	Survey, Demo and Grading	LF	4,263																																				
5	Roadway and Structure Excavation	CY	9,810																																				
6	Select Borrow	CY	3,286																																				
7	MSE Retaining Walls	SF	45,084																																				
8	Widen Dravus Bridge over BNSF	SF	23,180																																				
9	Widen Dravus Bridge at 15th SPUI	SF	45,500																																				
10	Utilities	LS	1																																				
11	Signal - 15th and Dravus SPUI	EA	1																																				
12	Signal Modifications - 20th and Dravus	EA	1																																				
13	Remove Signal - 15th and Dravus	EA	2																																				
14	Temporary Signal - 15th and Dravus	EA	1																																				
15	Illumination	EA	12																																				
16	Flatwork, Pavement, and Striping	LF	4,263																																				
17	Landscaping	SF	11,692																																				
18	Closeout	LS	1																																				
19																																							
20	**Component 10**																																						
21	Mob and Subm/Appr	LS	1																																				
22	Bridge Girder Fabrication	LS	1																																				
23	Demolish Existing Magnolia Bridge	LS	1																																				
24	TESC / Clear and Grub	LF	1,000																																				
25	Survey, Demo and Grading	LF	1,000																																				
26	Structure Excavation	CY	340																																				
27	Select Borrow	CY	1,557																																				
28	MSE Retaining Walls	SF	24,000																																				
29	Replacement Magnolia over BNSF only	SF	119,220																																				
30	Utilities	LS	1																																				
31	Signal Modifications - 15th and Garfield	EA	1																																				
32	Illumination	EA	6																																				
33	Flatwork, Pavement, and Striping	LF	3,500																																				
34	Landscaping	SF	928																																				
35	Closeout	LS	1																																				
		Month		**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**	**21**	**22**	**23**	**24**	**25**	**26**	**27**	**28**	**29**	**30**	**31**	**32**	**33**	**34**	**35**	**36**

Alternative 3 Total

Schedule Assumptions

1 The construction contract work days start 21 calendar days after contract execution. The Bid/Award/Contract Execution process duration is about 3 months.
2 The Closeout activity includes punchlist and opening the project to traffic. The contract paperwork completion is not included.
3 Weather constraints are not included. Winter weather will constrain HMA Paving, Landscaping, and other work contrained by wet and/or cold weather.
4 Railroad restrictions like Christmas Holiday closures are not included in this schedule.
5 The schedule activities are shown as Early Start
6 Moved Demo of Component 10 to start after Component 3 is operational.

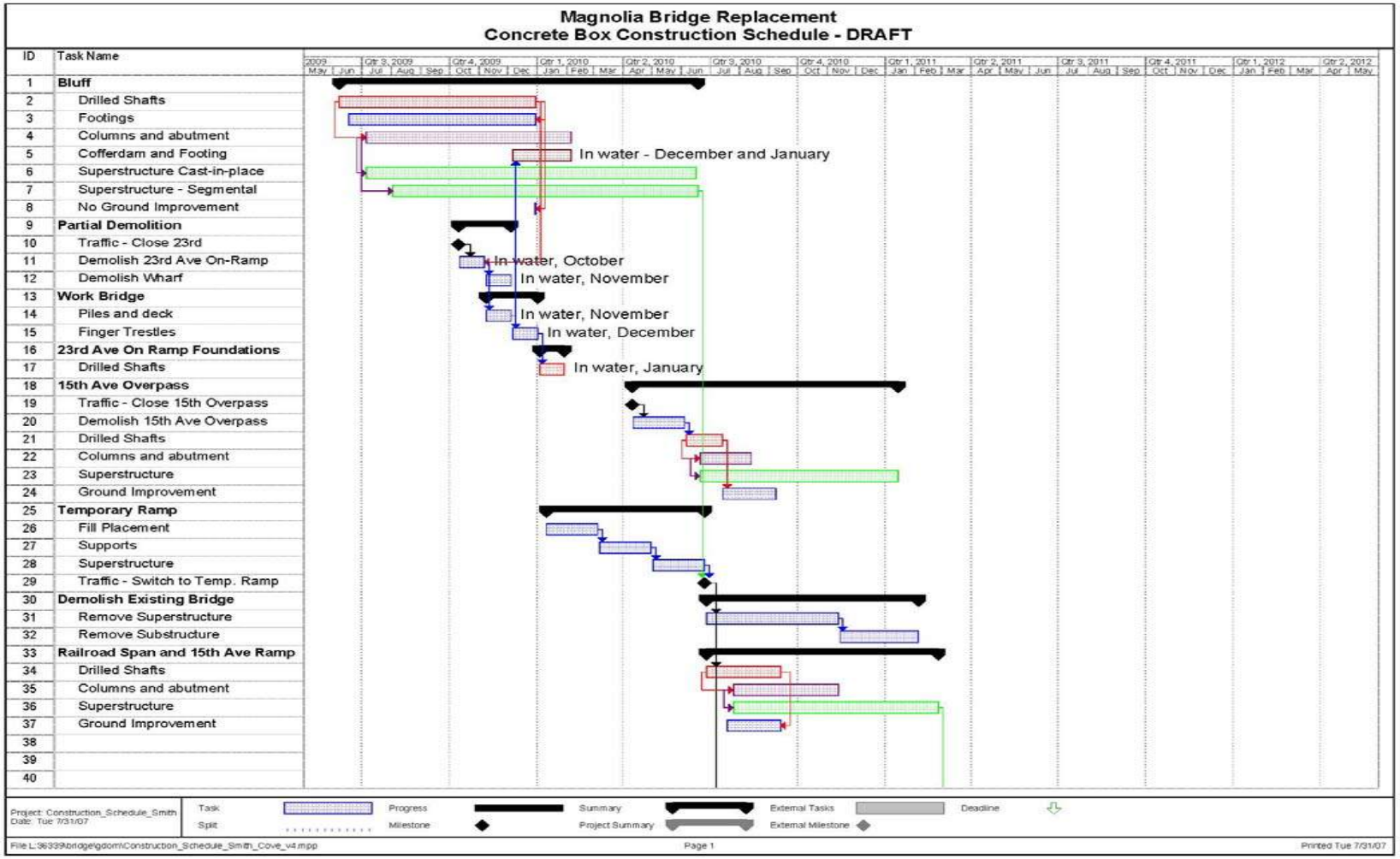


Figure 76
Concrete Box Construction Schedule

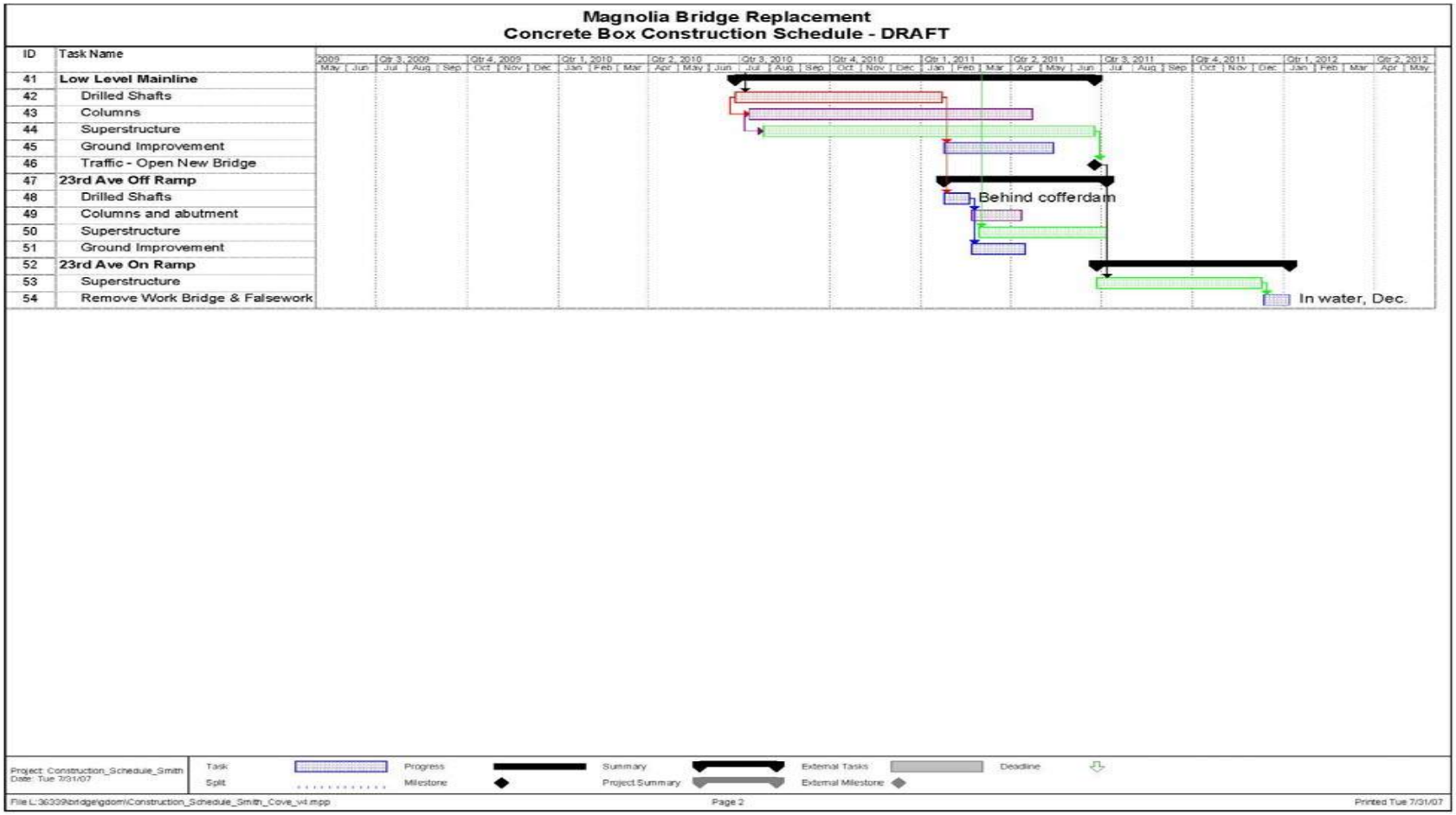


Figure 77
Concrete Box Construction Schedule

Appendix G

Outreach Summary Report

Seattle Department of Transportation

MAGNOLIA BRIDGE PLANNING STUDY

OUTREACH SUMMARY REPORT

JULY 2018

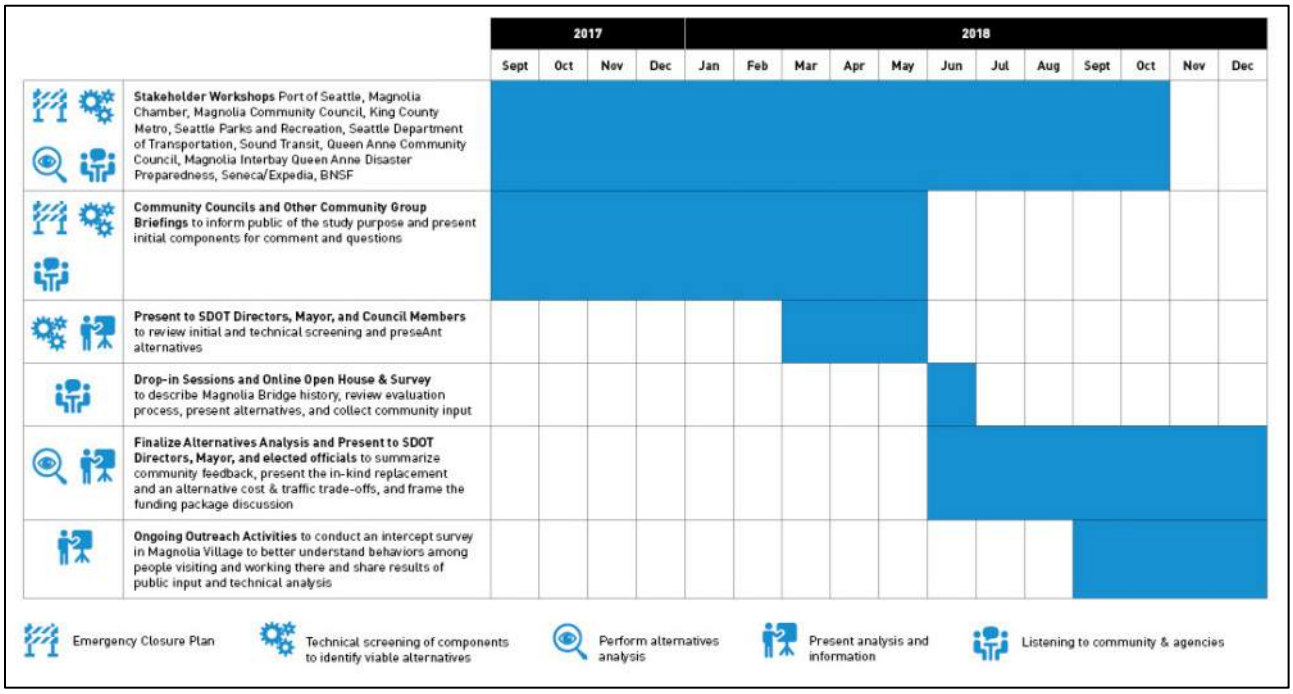
700 Fifth Avenue, Suite 3800 | PO Box 34996 | Seattle, WA 98124-4996 | T 206.684.ROAD (7623) | www.seattle.gov/transportation

Contents

STUDY PURPOSE

Environmental impacts have weathered the Magnolia Bridge. We perform regular maintenance and frequent inspections on the bridge to ensure it is safe to use. However, in the long-term, we'll need a replacement. In 2002, we identified more than 20 options. Ultimately, the community's desire drove the decision for an in-kind replacement south of the existing bridge. Unfortunately, we haven't obtained funding to complete the design and construct it. The Levy to Move Seattle included funding to use the recommendations from the 2002 replacement study as a basis for identifying a lower-cost alternative that maintains a similar level of service similar for current traffic conditions and to draft a Magnolia Bridge Planning Study (planning study).

Once a lower-cost alternative is identified, it will be presented alongside the cost and traffic analysis of the in-kind replacement selected through the 2002 Magnolia Bridge Study. This study creates a foundation for making decisions on next steps for funding and design.



Outreach Overview

Outreach prior to June helped inform an Emergency Transportation Response Plan should one or more bridges to Magnolia be closed and identify possible lower-cost replacement alternatives. This summary focuses on June outreach to help rank the resulting 3 lower-cost alternatives and related components and to inform the planning study. The planning study will also update cost estimates and traffic data for the in-kind replacement.

Our outreach objective was to work closely with the Magnolia community to understand their mobility needs as we move forward in determining the best alternative solution for the aging Magnolia Bridge. In June 2018, we hosted 4 drop-in sessions to share the history of the bridge, provide information about the planning study, introduce the three possible lower-cost alternatives, introduce the components that make up each of the three alternatives, and gather feedback on the community's most and least preferred alternative and most and least preferred component. We also handed out comment cards and a link to the project email address to attendees for open-ended feedback.

In addition to the 4 drop-in sessions, we also launched an online open house and survey from June 13 – July 1, 2018. The online open house provided the same information as the drop-in sessions. The survey asked for demographic information to help us assess how inclusive our outreach was, participants travel habits, and alternatives and components rankings. The survey also provided an opportunity for open-ended feedback.

We promoted the events through local news sources and blogs including Queen Anne & Magnolia News, Seattle Times, the Magnolia Community Council (MCC), the project listserv, and the project webpage. We posted flyers throughout the community and shared information through the SDOT and MCC Facebook pages, respectively. For a full list of notifications and locations, please see Appendix A.

The information gathered from these outreach events will be used in the alternatives analysis phase. Participant feedback is summarized in the following sections of this report. For a complete list of comments received, please see Appendices C-F.

DROP-IN SESSIONS

On June 12 and June 21, 2018, we hosted drop-in sessions for the Magnolia Bridge Planning Study project at Uptown Espresso (3223 W McGraw St) in Magnolia. The meetings were from 8 AM to 10 AM.

On June 14 and June 20, 2018, we hosted evening drop-in sessions at Magnolia Park Parking Lot (1461 Magnolia Blvd W) in Magnolia. The meetings were from 5 PM to 7 PM.

We selected event locations for high visibility, and we held events over a period of two weeks to encourage as much participation as possible.

Stations

The materials associated with each station are listed below. (The full display boards, handouts, project business cards, and comment cards are listed in Appendix B.)

- SDOT sign-in table
    - Welcome board – sign-in sheets, handouts, project business cards, comment cards
- SDOT Magnolia Bridge Planning Study boards
    - History of Magnolia Bridge board – history and background of the Magnolia Bridge
    - Description of the 3 alternatives board – graphical representations of each alternative and the components in each
    - Description of the 10 components board – graphical representations and descriptions of each component
    - Traffic analysis board – travel time analysis of current conditions versus each proposed alternative
    - Comparison chart board – criteria for alternatives analysis along with preliminary results of the 3 alternatives
    - Alternatives feedback activity board – graphical representation of the 3 alternatives with space for participants to rank them using their green and red dots
    - Components feedback activity board - graphical representation of the components with space for participants to rank them using their green and red dots
- Aerial map table – Magnolia neighborhood aerial map for reference

Attendance

A total of 277 people signed in at the 4 drop-in sessions. Registration totals for each session are outlined as follows:

- June 12, Uptown Espresso: 74
- June 14, Magnolia Park Parking Lot: 110
- June 20, Magnolia Park Parking Lot: 42
- June 21, Uptown Espresso: 51

Photographs

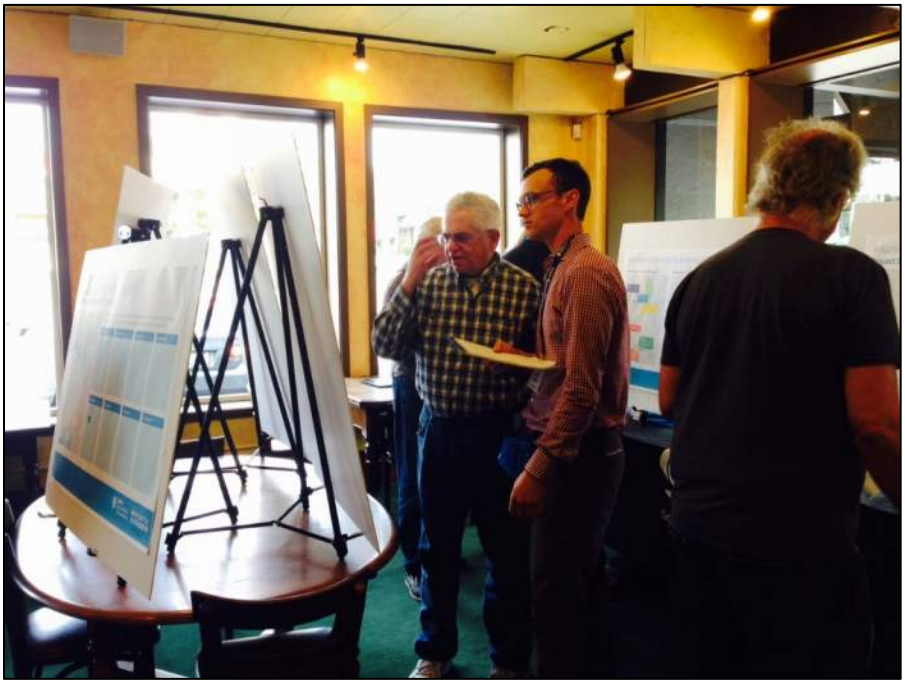


FIGURE 1: PROJECT MANAGER WES DUCEY ANSWERS QUESTIONS AT THE ALTERNATIVES TABLE

FIGURE 2 - CONSULTANT LISA REID ANSWERS TECHNICAL QUESTIONS ABOUT THE ALTERNATIVES

Feedback Boards

Each drop-in session featured feedback boards with space for participants to rank the alternatives and components using colored dots: green for most important and red for least important. Photos of these boards as well as summary tables are available in Appendix C. The comparison of rankings among the lower-cost alternatives are in the "Results" section.

ONLINE OPEN HOUSE AND SURVEY

On June 13, 2018 an online open house and survey launched at magnoliabridge.participate.online. The survey closed Sunday, July 1, 2018 and included 3 sections:

- About You – travel and commute habits
- Alternatives Survey – ranking most and least important alternative and component(s)
- Demographic Survey – open-ended comments and participant demographic information

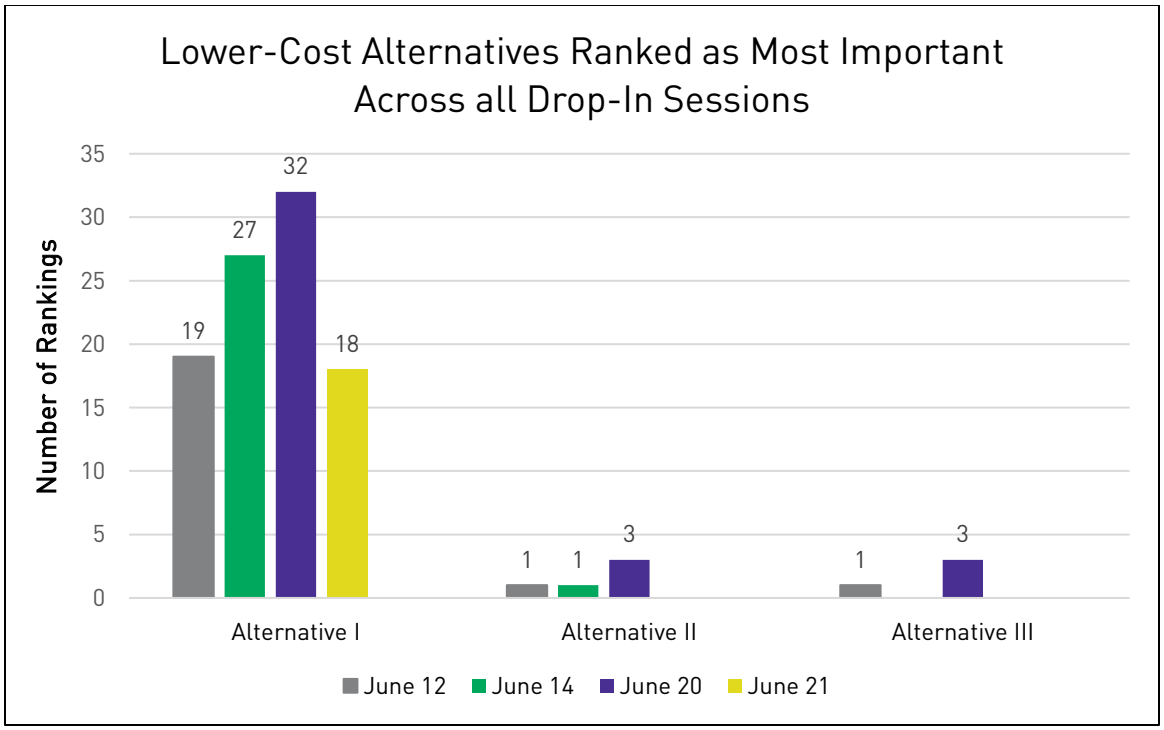
186 respondents took the survey. The full questions and results for each of these sections are available in Appendix F. A summary of responses is included below in the "Results" section.

RESULTS

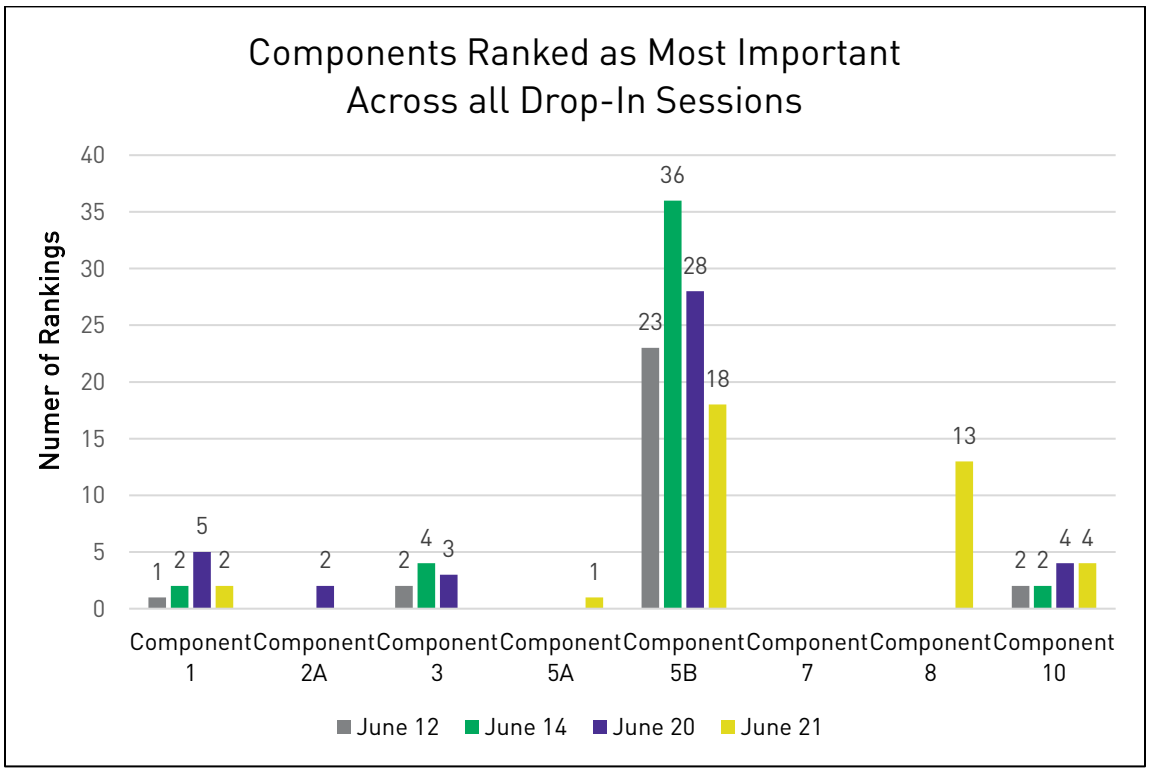
Both the drop-in sessions and online survey solicited feedback on the lower-cost alternatives and components. While the focus of outreach was to get feedback on possible lower-cost replacement alternatives, most participants made it clear their preferred alternative was an in-kind replacement. Many hesitated to rank the alternatives because they did not want feedback to be construed as support for a lower-cost one. Staff requested feedback on their preferred alternative via comment cards and the open-ended comment box on the online survey. Staff also encouraged participants to learn more about the other options to help better inform the final planning study. For those willing to participate, Alternative 1: Armory Bridge, etc. and Component 5B: W Armory Way Bridge ranked the highest of the 3 lower-cost options. Those living along Thorndyke and near the intersection of Halliday and Thorndyke, areas directly adjacent to Alternative 1 and Component 5B, shared concerns centered around quality of life and property investments.

Drop-In Sessions

As noted above, we asked participants to rank the lower-cost alternatives as most important and least important. The total number of stickers (votes) for most important (green) and least important (red) were totaled for each drop-in session and are shown in the graph below.



Attendees ranked Alternative 1 highest among the lower-cost alternatives with a total of 96 votes.

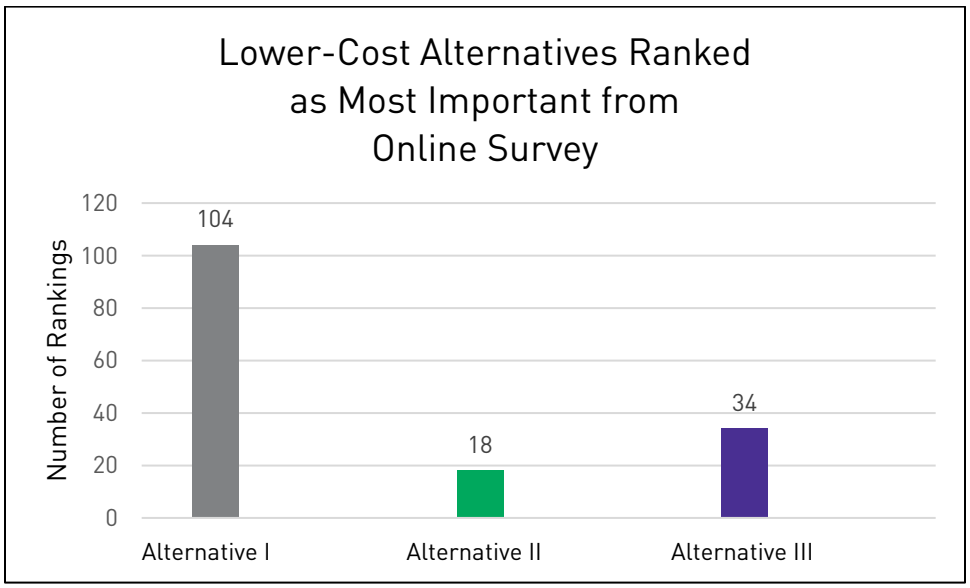


Attendees ranked Component 5B as most important with a total of 105 votes.

NOTE: Component 5A was mislabeled on the display board and therefore received only one vote.

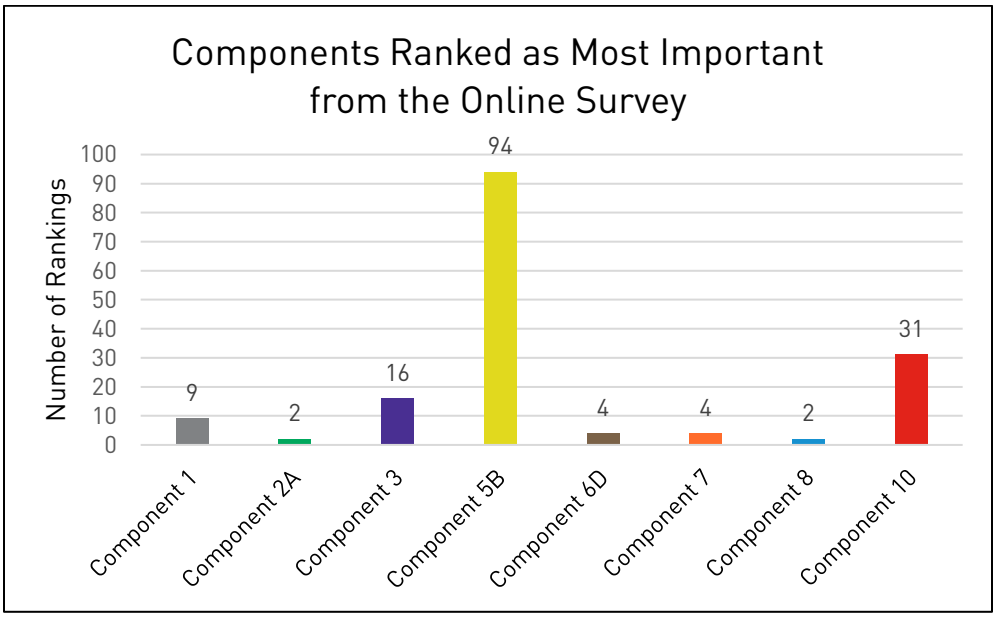
Online Survey

Results of the online survey varied slightly from the feedback activity presented at the 4 drop-in sessions. We asked participants of the survey to rank the alternatives and components from most important to least important.



Survey respondents ranked Alternative 1 highest among the lower-cost alternatives with a total of 104 votes.

The graph below shows the components survey respondents ranked as most important.



Survey respondents ranked Component 5B ranked as most important with a total of 94 votes.

What We Heard

Below are key themes and questions from the comments we received. We received written comments through drop-in sessions, through the online survey, and via email can be found in their entirety in Appendix D, E and G. Personal information has been removed.

- The majority of the Magnolia community who participated want the in-kind replacement of the Magnolia Bridge
- Alternative I and Component 5B ranked highest
- There is concern that implementing Component 5B W Armory Way Bridge would reduce parking and access to nearby residences, as well as increase light and noise pollution
- Based on current conditions and experiences, many participants did not feel W Dravus St could be improved to a level that would support the additional trips
- Many believed emergency response times would be slowed with the 3 lower-cost alternatives
- Some felt we did not fully understand the diminished accessibility of Magnolia during inclement weather, and they were not clear that the alternatives could provide secure access during these times
- Some participants asked if we'd considered a Local Improvement District (LID) or tolling to secure funding

The Magnolia Community Council created a community survey to solicit feedback from the community. This survey was not City or SDOT-led. The results of this survey in Appendix H.

Appendix A: Notifications

Flyer

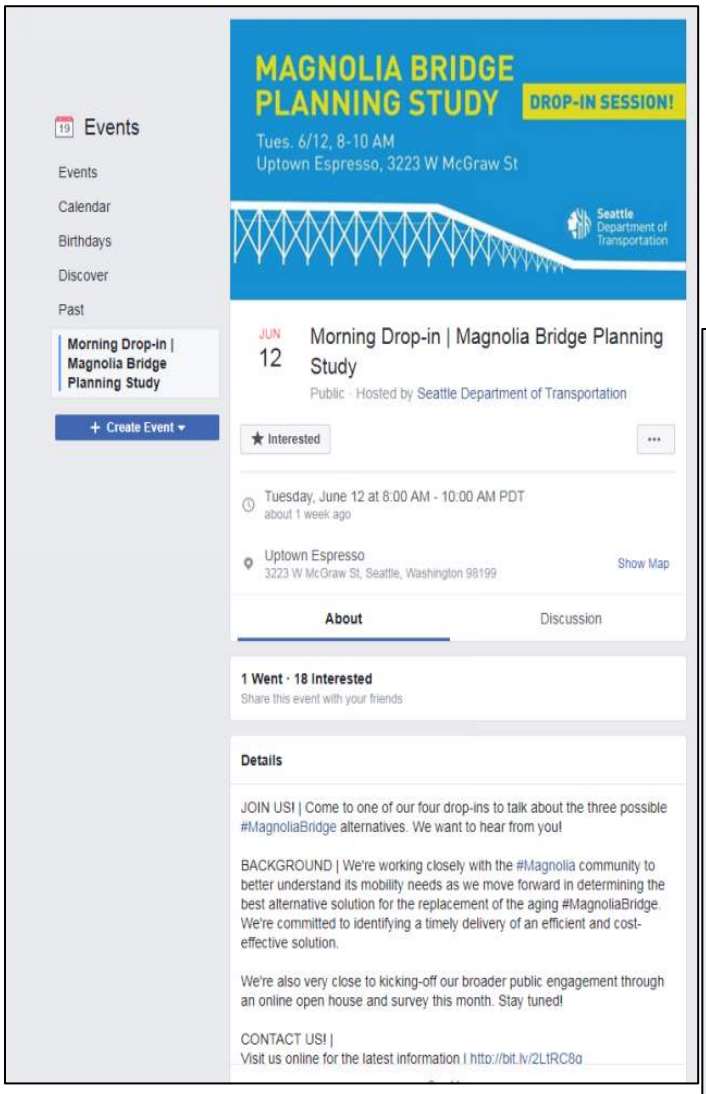
Distributed to the following locations on June 7, 2018

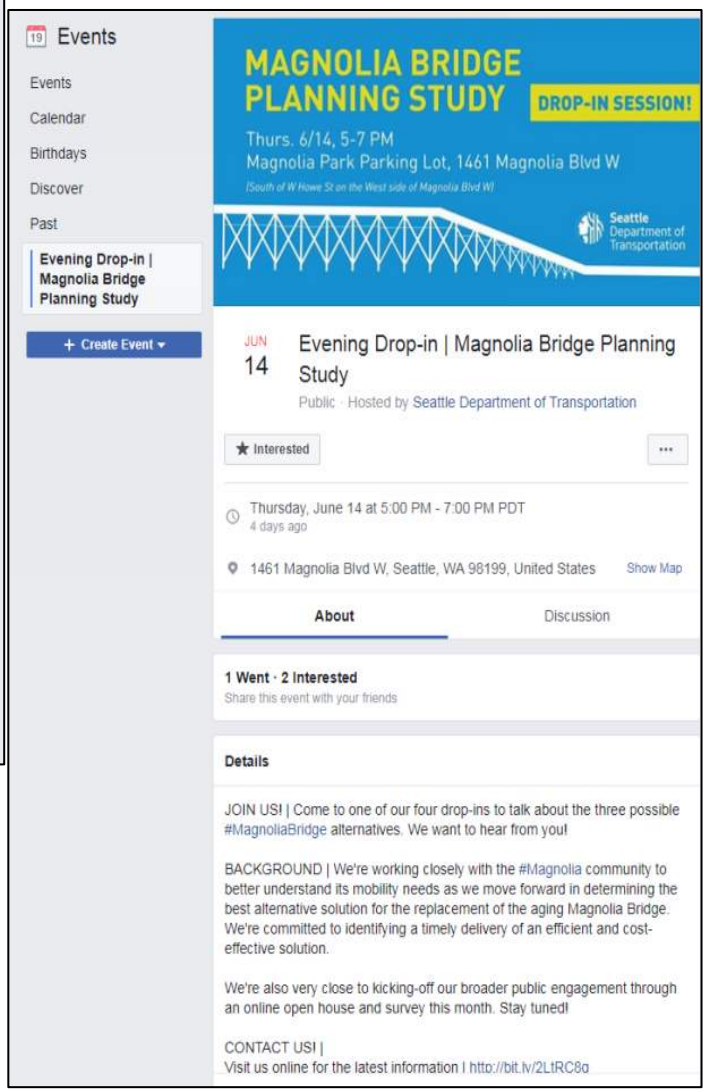
- Uptown Espresso, 3223 W McGraw St
- Magnolia Community Center, 2550 34th Ave W
- Seattle Public Library - Magnolia Branch, 2801 34th Ave W
- Metropolitan Market, 3830 34th Ave W
- QFC, 1600 W Dravus St
- Alberstons, 2550 32nd Ave W
- Niko's Gyros, 2231 32nd Ave W
- Serendipity Café, 3222A W McGraw St
- Our Lady of Fatima Parrish, 3218 W Barrett St
- Our Lady of Fatima Parrish School, 3301 W Dravus St

Distributed to the following organizations on June 4, 2018

- *Queen Anne & Magnolia News*
- *Magnolia Voice*
- Magnolia Community Council

Facebook Posts






Events
Events
Calendar
Birthdays
Discover
Evening Drop-in | Magnolia Bridge Planning Study
Past
+ Create Event
MAGNOLIA BRIDGE PLANNING STUDY
DROP-IN SESSION!
Wed. 6/20, 5-7 PM
Magnolia Park Parking Lot, 1461 Magnolia Blvd W
(South of W Howe St on the West side of Magnolia Blvd W)
Seattle Department of Transportation
JUN 20
Evening Drop-in | Magnolia Bridge Planning Study
Public · Hosted by Seattle Department of Transportation
Interested
Invite
Wednesday, June 20 at 5:00 PM - 7:00 PM PDT
Tomorrow · 14–28° Partly Cloudy
1461 Magnolia Blvd W, Seattle, WA 98199, United States
Show Map
About
Discussion
0 Going · 0 Interested
Share this event with your friends
Invite
Details
JOIN US! | Come to one of our four drop-ins to talk about the three possible #MagnoliaBridge alternatives. We want to hear from you!
BACKGROUND | We're working closely with the #Magnolia community to better understand its mobility needs as we move forward in determining the best alternative solution for the replacement of the aging Magnolia Bridge. We're committed to identifying a timely delivery of an efficient and cost-effective solution.
We're also very close to kicking-off our broader public engagement through an online open house and survey this month. Stay tuned!
CONTACT US! |
Visit us online for the latest information | http://bit.ly/2LtRC8g


Events
Events
Calendar
Birthdays
Discover
Morning Drop-in | Magnolia Bridge Planning Study
Past
+ Create Event
MAGNOLIA BRIDGE PLANNING STUDY
DROP-IN SESSION!
Thurs. 6/21, 8-10 AM
Uptown Espresso, 3223 W McGraw St
Seattle Department of Transportation
JUN 21
Morning Drop-in | Magnolia Bridge Planning Study
Public · Hosted by Seattle Department of Transportation
Interested
Invite
Thursday, June 21 at 8:00 AM - 10:00 AM PDT
2 days from now · 13–23° Scattered Clouds
Uptown Espresso
3223 W McGraw St, Seattle, Washington 98199
Show Map
About
Discussion
0 Going · 3 Interested
Share this event with your friends
Invite
Details
JOIN US! | Come to one of our four drop-ins to talk about the three possible #MagnoliaBridge alternatives. We want to hear from you!
BACKGROUND | We're working closely with the #Magnolia community to better understand its mobility needs as we move forward in determining the best alternative solution for the replacement of the aging #MagnoliaBridge. We're committed to identifying a timely delivery of an efficient and cost-effective solution.
CONTACT US! |
Visit us online for the latest information | http://bit.ly/2LtRC8g
Wes Ducey, 206-684-7033, MagnoliaBridge@seattle.gov

Listserv Update

MAGNOLIA BRIDGE PLANNING STUDY June 2018

What's happening now?

The Seattle Department of Transportation (SDOT) is working closely with the Magnolia community to better understand its mobility needs as the department moves forward in determining the best alternative solution for the replacement of the aging Magnolia Bridge.

SDOT understands community concerns around the need to maintain sufficient access and mobility, which is why we are committed to proactively identifying and delivering the most efficient, cost effective solution in a timely manner.

In the meantime, SDOT will continue to maintain the integrity of the bridge, which is currently safe for traffic. Beginning June 12, SDOT will host five drop-in sessions to share more information about the 3 alternatives and get information from community members on their travel and mobility behaviors. Information at each event will be the same, so pick the time most convenient for you.

Mornings: 8AM – 10AM

- June 12th: Uptown Espresso, 3223 W McGraw St
- June 21st: Uptown Espresso, 3223 W McGraw St

Evenings: 5PM – 7PM

- June 14th: Magnolia Park Parking Lot, 1461 Magnolia Blvd W (South of W Howe St on West side of Magnolia Blvd)
- June 20th: Magnolia Park Parking Lot, 1461 Magnolia Blvd W (South of W Howe St on West side of Magnolia Blvd)

We are also very close to kicking off our broader public engagement through an online open house and survey this month. Stay tuned!

Resources

We hear and understand the community's concerns as this planning study investigates permanent alternatives that don't include replacing the existing Magnolia Bridge in-kind. Some available resources online that may help answer your questions and concerns include:

- Project webpage
- Frequently Asked Questions by Councilmember Bagshaw
- 3 Draft Alternatives Stakeholder Presentation

Next Steps

As we gather more community input, we'll continue to coordinate with key stakeholders in this area including Port of Seattle, BNSF Railway, Sound Transit, and King County Metro. We'll be using the feedback we receive to inform our recommendation to the City's leadership.

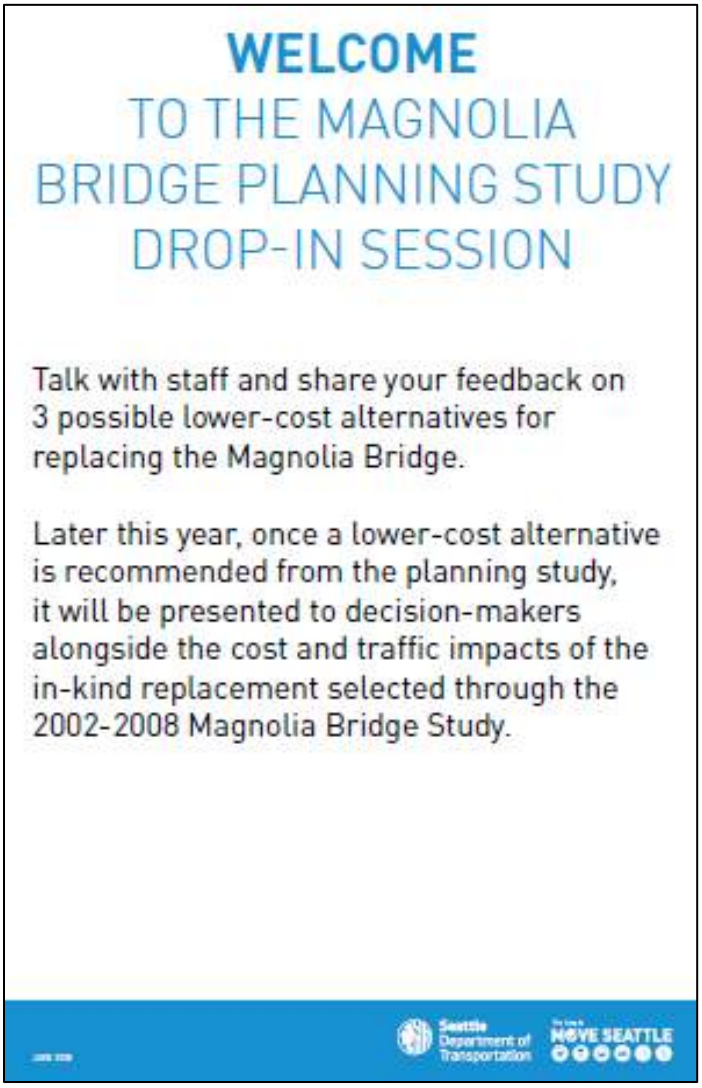
Please email us with questions or concerns at magnoliabridge@seattle.gov

Best,
Wes Ducey

This listserv was sent to all emails subscribed to the project listserv on June 1, 2018. Subscribe here.

Appendix B: Drop-In Session Materials

Display Boards



HISTORY OF MAGNOLIA BRIDGE

1887
Seattle, Lake Shore & Eastern built railroad in Interbay to move timber, coal, and connect with Canada.

1893
Great Northern Railway constructed railroad to Seattle through Interbay. Great Northern built a depot at Smith Cove and piers into the cove to handle cargo from Asia.

1926
The W Wheeler St trestle, one of three major routes to Magnolia, burned down due to a train passing underneath and throwing a spark that started a devastating fire.

1928
West Garfield St Bridge was constructed between 15th Ave W and Dartmouth Ave W. The new concrete bridge replaced a timber trestle that ran from 15th Ave W to 23rd Ave W. A Local Improvement District (LID) was formed assessing Magnolians for a little over 50% of the costs. The remaining 50% of the costs were shared between the railroad companies and the City.

1931
Dravus St Bridge was opened to traffic.

1962
A wood trestle that connected the W Garfield St bridge to 23rd Ave W was removed.

1967
A new structure over 15th Ave W on the east end of the bridge was constructed.

1969
Bridge was renamed as Magnolia Bridge.

1981
West half of the bridge was strengthened by installing steel cross bracing on piers and trusses under deck.

1986
East half of bridge was strengthened similar to west half.

1989
Concrete barriers added to both sides of roadway.

1991
New ramps were added to serve Elliot Bay Marina.

1997
Landslide damaged piers on west end of bridge requiring closure until repaired.

2001
The Nisqually earthquake damaged nearly half of the original concrete lateral bracing requiring closure until replaced with tubular steel bracing.

2001
W Baker St Flyover was constructed.

2010
Admiral's House situated near the west end of the Magnolia Bridge was designated a Seattle Landmark.

2015
Start of construction of King County's Magnolia Wet Weather Storage Facility at Smith Cove.

Photos courtesy of Seattle Municipal Archives

JUNE 2018

Seattle Department of Transportation

MOVE SEATTLE

MAGNOLIA BRIDGE PLANNING STUDY

Alternative I - Armory Bridge, etc.

Alternative II - Dravus, etc.

Alternative III - Dravus & Garfield Bridge

JUNE 2018

Seattle Department of Transportation

MOVE SEATTLE

MAGNOLIA BRIDGE PLANNING STUDY

Project Components

Component 1: West Uplands Perimeter Road
- Component 1 provides more direct access between Magnolia and the Smith Cove Waterfront and Elliott Bay Marina.
- It will parallel the alignment of the existing Elliott Bay Trail but may deviate at certain points to provide a more direct route.
- The Elliot Bay Trail will be maintained.
- This component must be combined with component 2A at a minimum to provide access to Smith Cove Waterfront.

Component 2A: 20th Ave W Improvements
- Component 2A is required to provide access between Magnolia and the Smith Cove Waterfront via the West Uplands Perimeter Road (1).
- 20th Ave W is preferred over 21st Ave W because it better accommodates traffic both geometrically and operationally.
- This component must be combined with component 1 at a minimum to provide access to Smith Cove Waterfront.

Component 3: W Dravus St Improvements
- Component 3 would increase capacity along W Dravus St, an existing access point to Magnolia, by widening the roadway and making intersection improvements at 15th Ave W and 20th Ave W.
- The 15th Ave W interchange would be re-designed to a Single Point Urban Interchange (SPUI) providing significant additional capacity.
- This component provides access to and from Magnolia independent of other components.

Component 5B: W Armory Way Bridge
- Component 5B would create a new access point to Magnolia via an elevated bridge structure from 15th Ave W along Armory Way W, crossing perpendicularly over the BNSF railroad, and connecting to Thorndyke Ave W at W Halladay St.
- The structure will have a northbound, on-ramp from 15th Ave W designed to allow grade-separated free-flow access to the bridge.
- This component provides access to and from Magnolia independent of other components.

Component 6D: Thorndyke Ave W Improvements
- Component 6D provides access between the new Armory Way Bridge and the Smith Cove Waterfront via 20th Ave W (2A) and the West Uplands Perimeter Road (1).
- It would include improvements to the intersection of Thorndyke Ave W and 20th Ave W to accommodate turns for freight vehicles and buses.
- This component must be combined with components 2A and 1 to provide access to Smith Cove Waterfront via the new Armory Way Bridge.

Component 7: W Garfield St Flyover
- New bridge is important for future traffic on 15th Ave W. It provides Southbound traffic on 15th Ave W a right turn option to access Elliott Bay over the BNSF tracks.
- It also relieves future traffic demands on the Galer Street Flyover.
- It has been designed to accommodate freight vehicles due to it's proximity to the Port property.
- This component must be combined with component 8 to provide maximum traffic benefits to 15th Ave W.

Component 8: Alaskan Way W Extension
- Provides connection between Garfield St Flyover (7) and existing Galer St Flyover via an extension of Alaskan Way W
- Provides access between the Garfield Street Flyover and Galer St Flyover
- Relieves pressure on the Galer St Flyover
- This component must be combined with component 7 to provide any traffic benefits to 15th Ave W.

Component 10: W Garfield St Bridge to 23rd Ave W
- New bridge provides access to 23rd Ave W (Smith Cove Waterfront & western Port property) over the BNSF tracks and the Port's Terminal 91 operations.
- Does not provide access to Magnolia.
- Particularly important to marina and freight traffic
- This component provides access to and from Smith Cove Waterfront area independent of other components.

JUNE 2018

Seattle Department of Transportation

MOVE SEATTLE

MAGNOLIA BRIDGE PLANNING STUDY

Remaining Components Ranking

Please rank the components as most important or least important using your red or green dots. Use green for the most important component and red for the least important.

Component 1	Component 2A	Component 3	Component 5A

Component 5B	Component 7	Component 8	Component 10

JUNE 2018

Seattle Department of Transportation

MOVE SEATTLE

MAGNOLIA BRIDGE PLANNING STUDY
Alternatives Analysis Preliminary Results

Relatively Bad → Relatively Good

● ● ● ● ●

● = Evaluation In Progress

	Alternative I	Alternative II	Alternative III
COST (30%)			
Estimated Cost (2018$)	$250,000,000	$237,000,000	$216,000,000
MOBILITY AND CONNECTIVITY (25%)			
Access to and from Magnolia Village	●	●	●
Access between Smith Cove/Marina and 15th Ave W	●	●	●
Access between Smith Cove/Marina and Magnolia	●	●	●
Access to and from T-91 and Alaskan Way W	●	●	●
Traffic Flow on 15th Ave	●	●	●
Pedestrian and Bicycle Connectivity	●	●	●
Freight Access	●	●	●
Transit Access	●	●	●
★ COMMUNITY INPUT (15%)			
Public Input	●	●	●
Agency Input	●	●	●
ENVIRONMENTAL IMPACT (15%)			
Adjacent Land Use	●	●	●
Sensitive Areas	●	●	●
Natural Hazards	●	●	●
IMPLEMENTATION CHARACTERISTICS (15%)			
Construction Duration	●	●	●
Construction Impacts	●	●	●
Construction Phasing	●	●	●

We are here

Tell us what you think!

JUNE 2018

Seattle Department of Transportation

The Levy to MOVE SEATTLE

MAGNOLIA BRIDGE PLANNING STUDY
Travel Time Routes

Existing Conditions

Alternative I - Armory Bridge, etc.

Alternative II - Dravus, etc.

Alternative III - Dravus & Garfield St Bridge

JUNE 2018

Seattle Department of Transportation

The Levy to MOVE SEATTLE

MAGNOLIA BRIDGE PLANNING STUDY

Alternatives Ranking

Alternative I - Armory Bridge, etc.

Alternative II - Dravus, etc.

Alternative III - Dravus & Garfield Bridge

Please rank the alternatives as most important or least important using your red or green dots. Use green for the most important alternative and red for the least important.

Alternative I - Armory Bridge, etc.	Alternative II - Dravus, etc.	Alternative III - Dravus & Garfield Bridge

JUNE 2018

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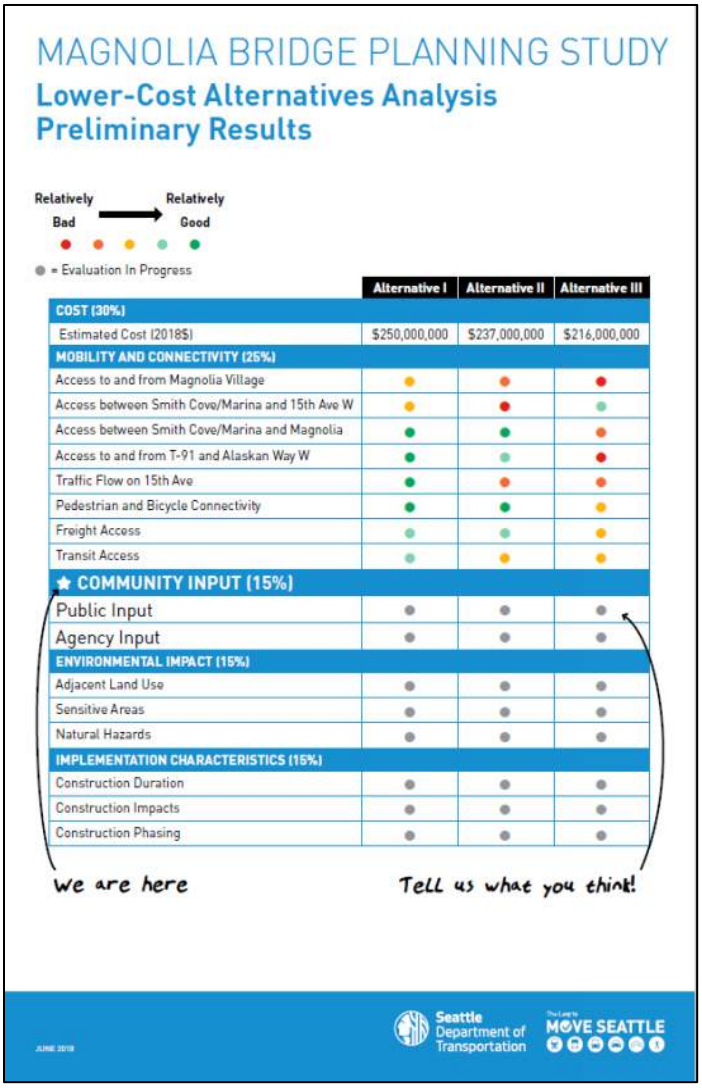
The Levy to MOVE SEATTLE

Handouts



MAGNOLIA BRIDGE PLANNING STUDY

Lower-Cost Alternatives Analysis
Preliminary Results

Relatively Bad → Relatively Good

● = Evaluation In Progress

	Alternative I	Alternative II	Alternative III
COST (30%)			
Estimated Cost (2018$)	$250,000,000	$237,000,000	$216,000,000
MOBILITY AND CONNECTIVITY (25%)			
Access to and from Magnolia Village	●	●	●
Access between Smith Cove/Marina and 15th Ave W	●	●	●
Access between Smith Cove/Marina and Magnolia	●	●	●
Access to and from T-91 and Alaskan Way W	●	●	●
Traffic Flow on 15th Ave	●	●	●
Pedestrian and Bicycle Connectivity	●	●	●
Freight Access	●	●	●
Transit Access	●	●	●
★ COMMUNITY INPUT (15%)			
Public Input	●	●	●
Agency Input	●	●	●
ENVIRONMENTAL IMPACT (15%)			
Adjacent Land Use	●	●	●
Sensitive Areas	●	●	●
Natural Hazards	●	●	●
IMPLEMENTATION CHARACTERISTICS (15%)			
Construction Duration	●	●	●
Construction Impacts	●	●	●
Construction Phasing	●	●	●

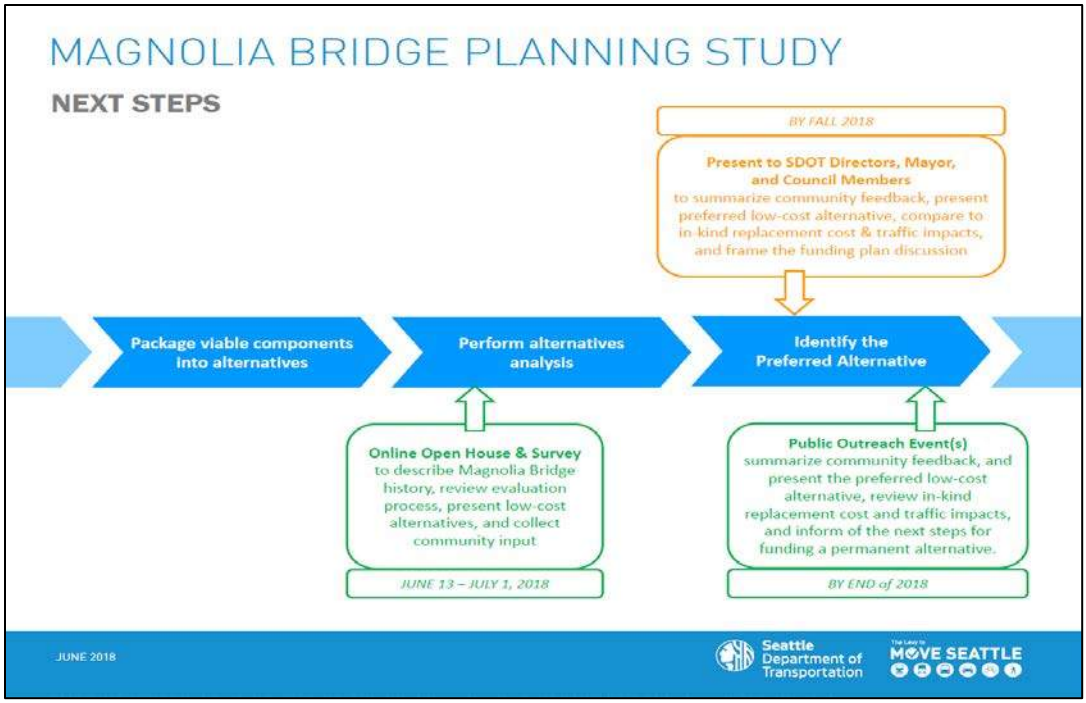
We are here

Tell us what you think!

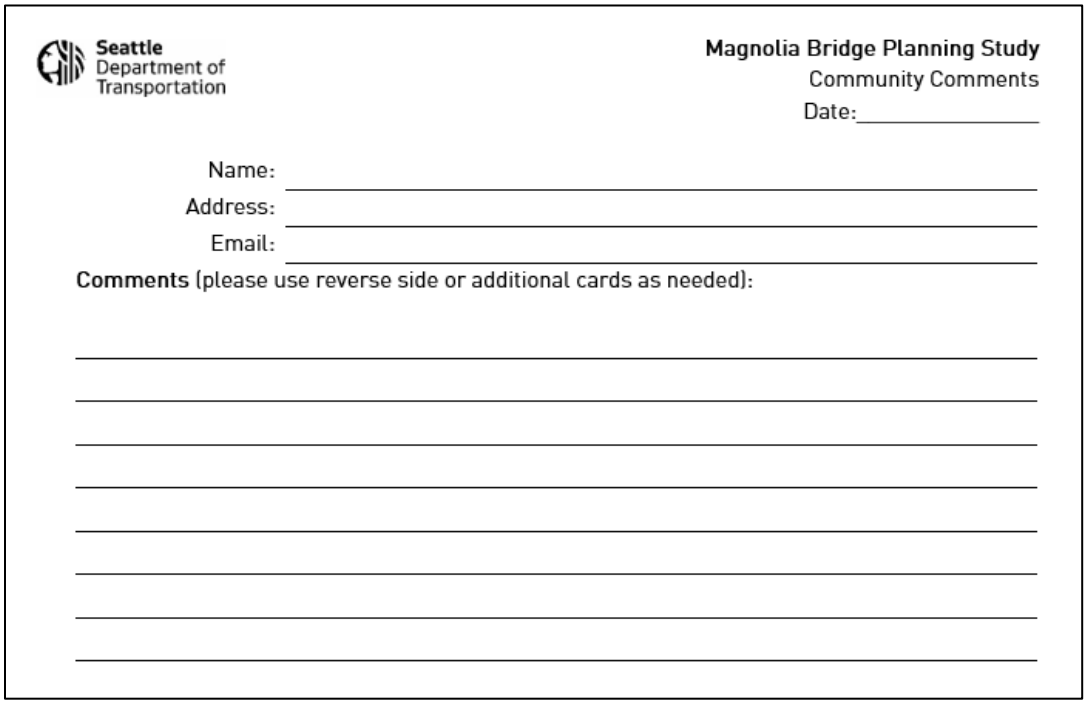
JUNE 2018

Seattle Department of Transportation

MOVE SEATTLE


MAGNOLIA BRIDGE PLANNING STUDY
NEXT STEPS
BY FALL 2018
Present to SDOT Directors, Mayor, and Council Members
to summarize community feedback, present preferred low-cost alternative, compare to in-kind replacement cost & traffic impacts, and frame the funding plan discussion
Package viable components into alternatives
Perform alternatives analysis
Identify the Preferred Alternative
Online Open House & Survey
to describe Magnolia Bridge history, review evaluation process, present low-cost alternatives, and collect community input
JUNE 13 – JULY 1, 2018
Public Outreach Event(s)
summarize community feedback, and present the preferred low-cost alternative, review in-kind replacement cost and traffic impacts, and inform of the next steps for funding a permanent alternative.
BY END of 2018
JUNE 2018
Seattle Department of Transportation
MOVE SEATTLE

Comment Cards



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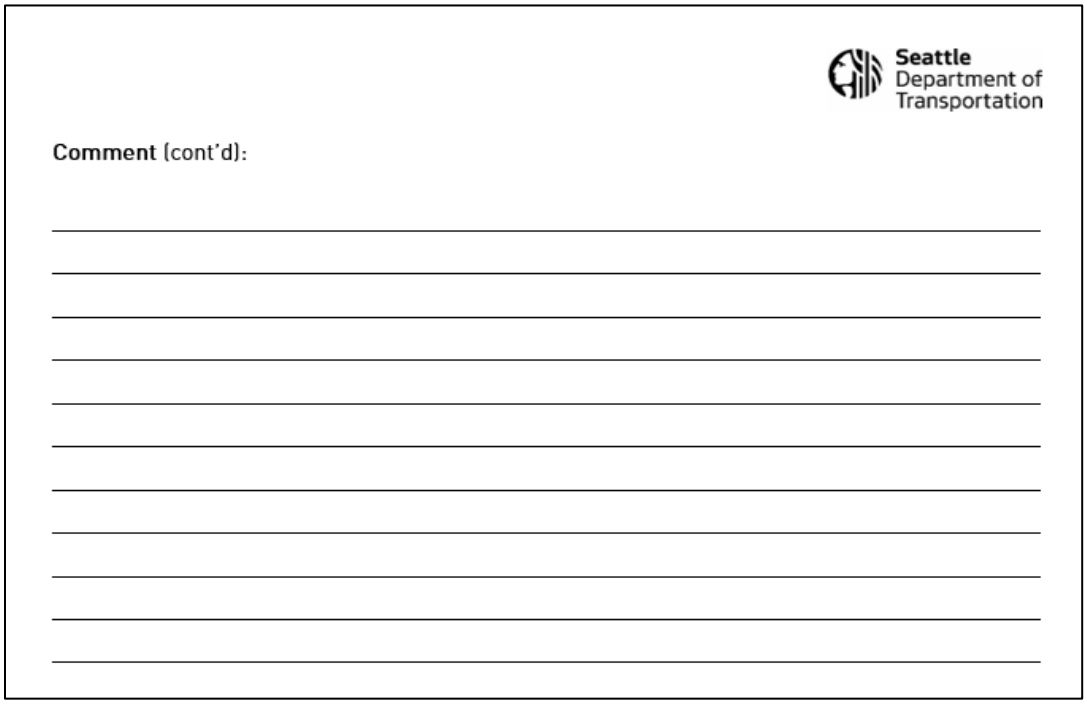
Magnolia Bridge Planning Study
Community Comments
Date:_____

Name: _____
Address: _____
Email: _____

Comments (please use reverse side or additional cards as needed):



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Comment (cont'd):

Appendix C: Feedback Boards

Components Ranking

FIGURE 1 - FEEDBACK BOARD FOR REMAINING COMPONENTS, JUNE 12

FIGURE 2 - FEEDBACK BOARD FOR REMAINING COMPONENTS, JUNE 14

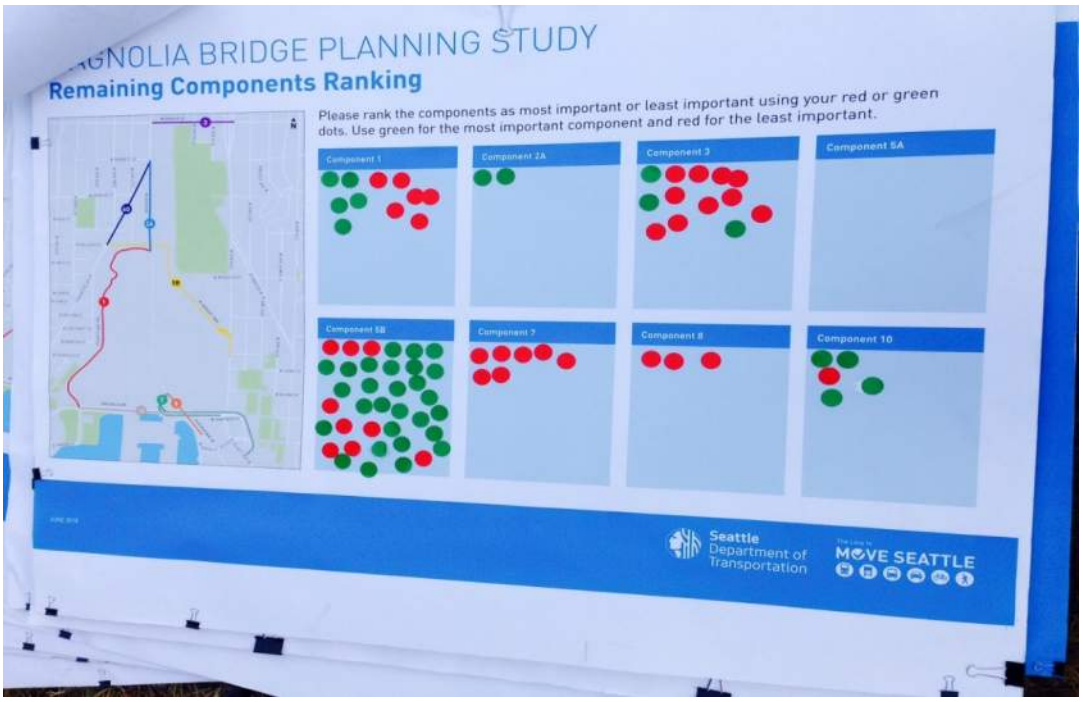


FIGURE 3 - FEEDBACK BOARD FOR REMAINING COMPONENTS, JUNE 20

FIGURE 4 - FEEDBACK BOARD FOR REMAINING COMPONENTS, JUNE 21

[Note: The same feedback board was used for June 20 and June 21. The votes were recorded independently.]

Date	Components Ranked as Most Important Across all Drop-In Sessions							
	1	2A	3	5A	5B	7	8	10
June 12	1	0	2	0	23	0	0	2
June 14	2	0	4	0	36	0	0	2
June 20	5	2	3	0	28	0	0	4
June 21	2	0	0	1	18	0	13	4
TOTAL	**10**	**0**	**9**	**1**	**105**	**0**	**13**	**12**

Component 5B, which is included in Alternative I and provides a new access point, was most important (105 total votes) among all 4 drop-in sessions.

Date	Components Ranked as Least Important Across all Drop-In Sessions							
	1	2A	3	5A	5B	7	8	10
June 12	5	0	7	0	0	3	0	5
June 14	9	0	39	0	5	3	1	4
June 20	6	0	10	0	9	7	3	1
June 21	10	0	0	1	4	4	2	2
TOTAL	**30**	**0**	**56**	**1**	**18**	**17**	**6**	**12**

Component 3 (56 total votes) was the least important over the 4 drop-in sessions.

Alternatives Ranking

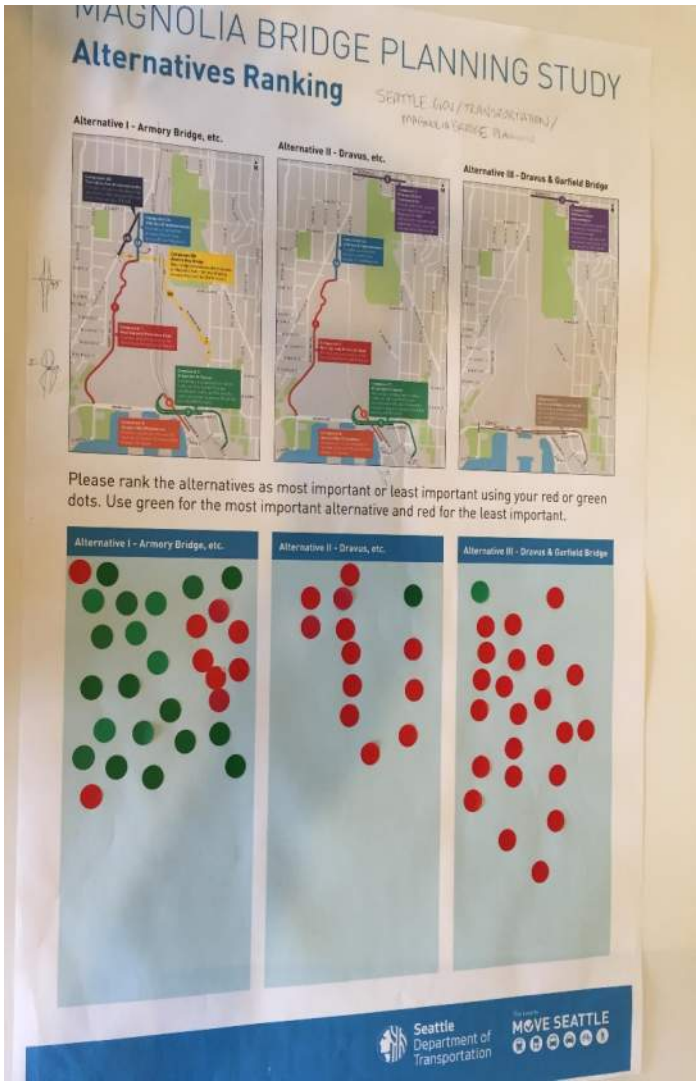


FIGURE 5 - FEEDBACK BOARD FOR ALTERNATIVES RANKING, JUNE 12

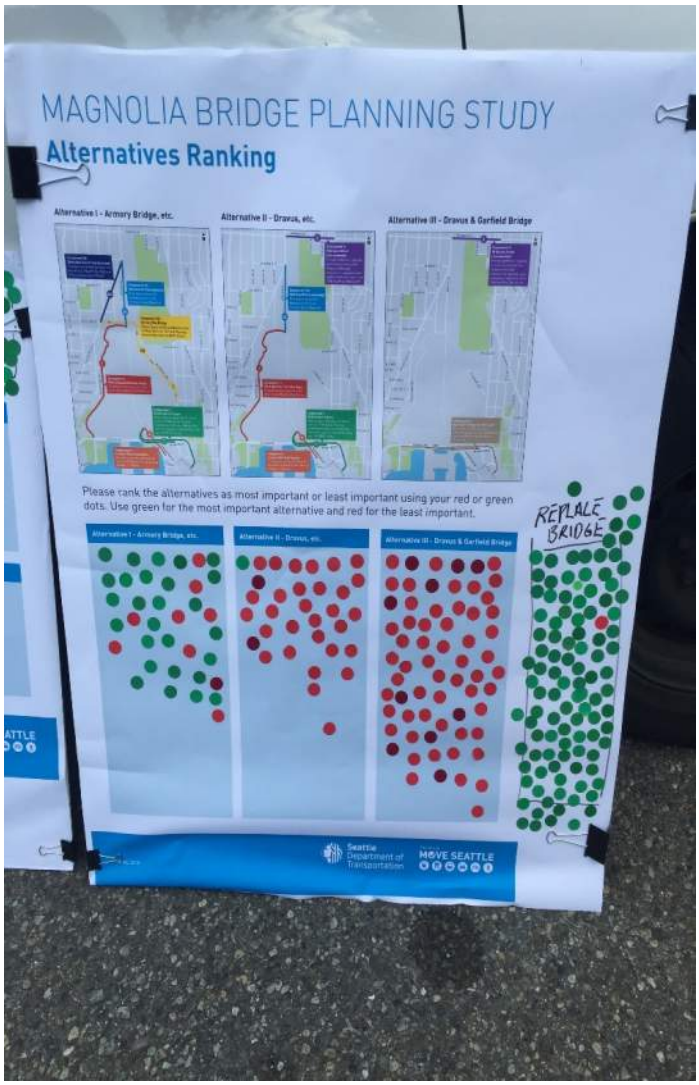


FIGURE 6 – FEEDBACK BOARDS FOR ALTERNATIVES RANKING, JUNE 14

FIGURE 7– FEEDBACK BOARDS FOR ALTERNATIVES RANKING, JUNE 20

FIGURE 8 - FEEDBACK BOARDS OF ALTERNATIVES RANKING, JUNE 21

Date	Alternative I		Alternative II		Alternative III	
	Most Important	Least Important	Most Important	Least Important	Most Important	Least Important
June 12	19	9	1	12	1	21
June 14	27	9	1	32	0	65
June 20	32	16	3	23	3	35
June 21	18	2	0	21	0	19
TOTAL	**96**	**36**	**5**	**88**	**4**	**140**

Based on all 4 drop-in sessions, Alternative I (96 total votes) was most important and Alternative III was least important.

Appendix D: Comment Cards – Full Comments

Note: We provide all comments as submitted/written. We did not edit comments for content or clarity. All personally-identifying information has been removed.

DATE	COMMENT	QUESTIONS
June 12	Why is the 1:1 bridge repe. being abandoned? If there's a scheme for bridge access to the marina & cruise ship docks, why not think of extending this to rest of the way at a later time? Spread out the cost? Where is our political representation? SDOT just continues to temporize on this issue...	Why is the 1:1 bridge repe. being abandoned? If there's a scheme for bridge access to the marina & cruise ship docks, why not think of extending this to rest of the way at a later time? Spread out the cost? Where is our political representation?
	We need better access between Mag Village (Our commerce area) and Downtown. Dravus is already over-extended, as is 15th/Elliot Ave. You will never alleviate the traffic between Ballard & Downtown, only exacerbate it. The Armour St. bridge is a step in right direction as it is closer to Village.	
	Replace existing bridge - only connect option	
	None of the 3 alternatives are accaple. We need the Bridge as now in place to be replace. The three alternatives will harm this community and totally grid-hock 15th.	
	Want Magnolia Bridges to be replaced!	
	- What would the configuration of Thorndyke Ave be for any of the alternatives - If city doesn't maintain median on Thorndyke, then take it out & convert to traffic lane - New bike land and parking alignment is unsafe for residents exiting driveways	What would the configuration of Thorndyke Ave be for any of the alternatives
	Widening Dravus for 5 blocks in one direction does NOTHING to alleviate morning rush hour traffic. As it stands now it can take 30-45 min to get from 28th Ave W. to 15th Ave W. in rush hour. A few yrs. ago when the Emerson St. overpass was "fixed" traffic to/from Magnolia was UNBEARABLE!! Please review the impact that had on traffic to this neighborhood!	
	The bridge needs to be rebuilt. It moves traffic in a much more efficient manner than surface streets. It is already difficult to get on and off Magnolia at peak times. Lets	

	learn from all the mistakes the transportation department has made repeatedly all over the city to date. Time to really stop and think and use the taxpayers dollars wiser. My taxes pay to maintain the Ballard Bridge, Freemont Bridge, Aurora Bridge, Montlake Bridge, the University Bridge, etc. I am not OK with the city saying they save no money to maintain and rebuild the Magnolia Bridge. This is not acceptable.	
	Only 1 choice: replace the bridge! With continued development on 15th, the idea that 1 bridge can be exchanged with a spaghetti bowl of roads all connecting to 15th is developing a larger problem. I'm concerned about emergency access, busy (metro + school bus) access + endless traffic back ups all along 15th. Have you all been in Magnolia in the past years! It's not your mother's Magnolia or Interbay anymore! 15th is being developed at a rapid rate. What will happen when light rail comes? Develop a plan for funding + building a new bridge + stop wasting taxpayer money on subterfuge that won't work in the long run. No alternatives!	What will happen when light rail comes?
June 14	I just want to be congruent we get a raise in taxes every year and the government + sdt wants to avoid replacing the bridge. Magnolia traffic + ways of exit would become miserable if you remove the bridge. We want a 1 to 1 replacement. Or a hefty reduction of taxes to compensate for the loss of quality of the neighborhood	
	Magnolia is growing, we need more capacity not less as we increase density, add schools and house more people in the neighborhood. You have already reduced capacity between nickerson/emerson and the 20th dravus intersection. Please rebuild the bridge capacity and increase the flow at the intersections you have chocked down. Don't sell us a bill of goods by "cost optimizing" at a reduced capacity that we will have to pay to increase shortly.	
	As a Magnolia resident, I strongly urge the decision makers to choose a 1:1 bridge replacement. I use the Magnolia bridge multiple times a day. In addition, I worry about the safety and access to the Magnolica community without it. Dravus is constantly backed up (and this has been made worse by the bike lanes) and widening it is not enough to absorb the traffic of residents and and others who daily visit (work, transit, etc.) the Magnolia community. Please decide on a 1:1 replacement – it is	

	the only thing that makes sense. By the way, I would vote for a LID if that was what it took.	
	Replace the bridge –	
	We must proceed with a 1:1 replacement of the Magnolia bridge. The alternatives proposed are not viable options for access to the Magnolia Village and our community. The Armory bridge alternative will create unacceptable congestion on 15th Ave Northbound as all vehicles traveling to Magnolia will need to cross over 15th Ave, which is already substantially congested without this major blocker. Similarly, improvements to Dravus will not offset the increased flow if we no longer have the Magnolia bridge. This is disconcerting across the board for the safety and livelihood of our community. There are concerns on so many levels it is just appalling to think that the city is even considering going down a path of not providing basic infrastructure needs to our community. Replace the bridge.	
	My family has lived in Magnolia the past 13 years and we have used the Magnolia bridge as our primary entry + exit to the neighborhood this entire time. It does not matter the time of day. Dravus is always backed up + cannot handle to load of becoming one of two ways in/out. The addition of bike lanes to the Emerson/Nickerson exit has also limited traffic flow + its ability to handle an increased flow. I worry about access of emergency vehicles + fire trucks to/from the neighborhood as well. From where I live, going Dravus to head downtown adds 3-5 mins without traffic and that is an unacceptable addition should one of my family members or neighbors be rushing to a hospital or a fire truck to my home.	
	How will fire trucks, specifically the ladder trucks from Ballard of 4th ave get to Magnolia in an emergency? Also redo the study on drains. Magnolia has already been hosed on the tunnel & Sound transit, DO NOT close us on this too! Replace the bridge. Take the tax money this area (zip code) pays for sound transit & put it towards paying for the Bridge (As is) replacement. Thanks.	How will fire trucks, specifically the ladder trucks from Ballard of 4th Ave get to Magnolia in an emergency?
	Only 1:1 replacement is acceptable to the community	
	All alternatives decrease access to interior of Magnolia – BAD Not enough info provided – travel times, EMT/police times	

	Cost to improve port access should not be included	
	1-1 Replacement! There are no alternatives for Magnolia. 100 million more to replace an awesome bridge is so little.	
	Please fund a 1:1 Replacement. It is imperative for the region. Losing the Bridge will create utter chaos & backups on Elliot & 15th & the Ballard Bridge. Be creative Seattle! There are so many taxes & levies – Make it work!	
	Will Expedia and Port of Seattle pay for repl. bridge shown in Alt I and Alt II? They are the beneficiaries. Everything I have seen from SDOT shows 1:1 replacement from 15th West. What is the cost of the new bridge section from Expedia exit, not just a number for the entire repl. Answering the survey showing only the alternatives, not including 1:1 replacement skews the results so alternates get better ratings. This is a biased survey. Our neighborhood streets won't support the increased traffic as people try to find alternative routes Magnolia village businesses depend on easy access. Congestion on 15th Ave West as a result of diversion from the Hwy99 tunnel, Expedia traffic and population growth will approach gridlock.	Will Expedia and Port of Seattle pay for repl. bridge shown in Alt I and Alt II?
	Thank you for meeting with us today. My questions are: How much will it cost to remove the bridge? How much will it cost to build bridge from Port exit to the top of Magnolia (end of bridge) It is important to get feed back from people who live north of Magnolia who sue 15th Ave. They will be impacted by the back-up. Armory Street is too small to handle traffic. Thorndyke was not designed to handle the additional traffic. Our neighbor street twill not support the additional traffic. I am worried about the businesses in the village. People from outside Magnolia will not want to deal with the traffic.	How much will it cost to remove the bridge? How much will it cost to build bridge from Port exit to the top of Magnolia (end of bridge)
	None of the alternatives are preferred! You have been able to find money for bike lanes that have congested the Emerson egress so now that is not a viable entrance/exit. The Magnolia Bridge is the most traveled + easiest route on + off Magnolia. You found money for 1st Ave trolley that is designed only for tourists. You can find money for the bridge to be repaired or replaced. Expedia isn't even in	

	yet + that will bring 2,000 more people onto Elliott Ave + possibly use of the Magnolia Bridge if the employees move to Magnolia.	
	There is no viable alternative to replacement of the high rise part of the bridge. $250 M replaces the low rise part of the bridge. Another $100M to replace the entire bridge.	
	Bike lanes @ Emerson + Gilman have clogged thot entry to Magnolia by eliminating left turn lanes at Gilman + again in front of Café Appassionato... why do bikes need 2 lanes & gilman? If they stop their 1 lane would be fine + left turn lane could come back. At Café Appassionato merge bikes onto sidewalk 40 west + left turn lane + That intersection would still be there. Before you shift Magnolia again fix your other mess ups for our access to our homes	why do bikes need 2 lanes & gilman?
	Wrong format for a "meeting" – not right!! No one wants alternative!! Put a toll on Bridge to pay extra costs	
	This forum is not accessible for wheelchairs/ moms w/ babies due to location of boards and crowd, so I am unable to place dots. Please email me the alternatives.	
	The alternatives are unacceptable. They lead to more through traffic in the neighborhood on streets not designed for that capacity; more drive time (what about the negative impacts of carbon emission son the environment)? People who live in south part of Magnolia, including the business district, will have to drive longer, circuitous routes. Not to mention EMTs, school busses, etc. You need an EIS of NOT replacing the bridge. Also, what is being required of Expedia as a corporate citizen to contribute to easing the traffic congestion?	what about the negative impacts of carbon emissions on the environment
	Too many problems with all the alternatives Alt. 1 is best but I am very concerned about the width of Armory Way to carry all the current traffic + expected density increases. The intensification of Halladay W. in Thorndyke is poorly conceived. It will not handle the volume of traffic + will impede existing traffic moving N + South on Thorndyke. The Viaduct is the best alternative.	
	Alternatives are bad and don't save much. Replace bridge	
	Scope/Schedule/Budget!! Infrastructure investment is pretty straightforward. If Seattle wants to be a 21st century city, we must invest in infrastructure. Having	

	socialist technologists make these decisions is complete waste of resources! Layout on the alternatives with costs/benefits expected useful life of each, then debate the merits of each. It is apparent that required due diligence has not been conducted. SDOT is a massively failed entity with a trunk record of missed objectives/deadlines/budget overruns.	
	IN KIND TLDR FREE MAGNOLIA NO BRDIGE WE SECEDE	
	Replace with a new bridge!	
	To check if Dravus only will work, shut the bridge for a day and have 911 vehicles attempt to get in & out to south end of Magnolia during the day Other options using Thorndyke would mean removal of the bikes lanes to walk. What a waste of money How about replacing the bridge + tax drivers like the 520 We should probably also consider replacing the entire city council who don't have the population of Seattle as a priority. They are very short sighted about spending the tax payers money Basically none of the options I have been shown would work	How about replacing the bridge + tax drivers like the 520
June 20	Reducing access points from 3 to 2 should not even be under consideration. Magnolia Bridge is the only reliable way in and out of Magnolia – Dravus and Emerson were not as easy even before the additional development + bike lanes made them more congested. Armory Way bridge is best of presented alternatives but there is no easy way for traffic to flow once it gets across bridge – look at a map, no streets south of the proposed bridge connect to 28th and are also offset at 28th – will turn Boston into defacto arterial b/c it is the first street way that actually connects. Will also drive more traffic onto Dravus, which is already problematic as arterial, and the section at 30th Ave W between Dravus and Barrett CANNOT handle additional traffic (I have no idea why it was ever designated an arterial in the first place). In short, I'm not opposed to a new bridge in a different location but the street grid and geography/topography in Magnolia makes any proposed alternate route VERY problematic!	

	We need a 3rd entry point to Magnolia. Alternative 1 would do this I think.	
	Are you really interested in feedback? If so, NONE of these alternatives is acceptable. The new bridges lead to small residential streets. There are no connections to arterials. Solution: Replace the Magnolia Bridge at its current location. Nothing currently proposed makes sense.	Are you really interested in feedback?
	I understand the large bridge up the hill may not be rebuilt. I believe that is a serious mistake to not connect component 1 and 10 so people can get to the Magnolia Bridge. A better way to say this would be Alternative 2 with component 10.	
	Verify date of traffic data Why no improvement to Emerson bridge? Capacity of Emerson has been reduced due to bike lanes (bike lanes = good) Why not build a more "small bridge" that is only sized for (2 lanes) cars (no trucks, busses) Save old bridge for bikes & pedestrian only	Why no improvement to Emerson bridge? Why not build a more "small bridge" that is only sized for (2 lanes) cars (no trucks, busses)
	The Armory Bridge will decrease property values, add noise and other pollution. The traffic on Dravis is already terrible with the new bike lanes and new condos. No matter what else is done Dravis needs to be expended. Preference is to replace the Magnolia Bridge. Without replacing Magnolia Bridge property values will go down drastically and businesses will be discouraged to move/stay in Magnolia.	
	What solutions will be given to everyone who has suffered lowering of property values? - What have you been doing the last decade+? How have you not found a way to replace the bridge from one of your biggest tax bases?	What solutions will be given to everyone who has suffered lowering of property values? What have you been doing the last decade+? How have you not found a way to replace the bridge from one of your biggest tax bases?
	Thank you for hosting this meeting. I wish some of my neighbors were more polite.	
	Factor in Emergency Response time frames for each option. Combine option – Galer + Armory.	

	Don't see any given options practical solution, therefore I would love to see total replacement of the Magnolia Bridge. Understand it would be more expensive, but it would be much longer sustained solution to the fast growing city. Thanks	
	Alternative 3 Concern Dravus is not steep and not safe when snow falls - existing bridge is not as steep & well sanded/salted so safer	
June 21	Only viable option is a 1:1 replacement. Think long term. Cheaper solutions aren't acceptable and won't serve the community. Thank you!	
	One of the alternatives presented should have been the 1:1 replacement. It was very clear at the Magnolia Community Mtg on May 21st. That was one preferred alternative to those living + working in Magnolia. Not having the 1:1 replacement as an option to vote on was ridiculous! None of the other alternatives are acceptable as they would create conjestion to Magnolia streets, such as Thorndyke + they cannot handle that amount of traffic. The Magnolia Bridge 1:1 replacement is my vote. It's the "only" direct route to Magnolia without a lot of conjestion. Dravus + Emerson are baked up every day. The added bike lanes to Emerson have ruined that access point. If cost is an issue, consider this = adding a toll, getting Federal $, only replacing slope of bridge that seismically needs it - ← one part. Kit Loo was in a discussion on this option w/ an architect who attended.	
	Please consider the following: In-kind replacement is what Magnolians prefer. Consider just replacing the west rise up to Magnolia if that is where the major issues are. Do we need to replace entire span? With Armory Alt. consider all infrastructure improvements to Magnolia; the bikes lanes added to Thorndyke + Emerson have really backed up traffic on Dravus + Emerson. Emerson is highly impacted by Ballard Bridge as well. Think about merge from Emerson to 15th Consider the return – left turn to Armory – this will back up 15th. North bound + block turning into whole foods shopping center.	Do we need to replace entire span?

	Southbound. Armory will back up considerably for a red light controlled intersection. Include a merge (no light) lane on to 15th. - Consider impact to residences on – Condon Thorndyke - Consider impact to businesses Animal shelter Whole Foods	
	1 to 1 replacement is required. None of the available options are sufficient. SDOT took away 1 lane for 1 block over Emerson street at the railroad tracks. Now we have 30 minute back ups regularly. No one of these options will work to replace 1) The main access to the Village – the economic center + life of the community 2) 2 unmetered lanes leading into Magnolia. The traffic data is old + needs to be redone now that access over Emerson is restricted, Expedia is moving in + opening in 2019 + more Amazon people move closer in + want a short commute from a "less expensive" community than downtown. 1 to 1 or <u>all</u> options.	
	I support a 1/1 replacement of the existing Mg Bridge. Allocate for time/efforts in IDing the funding sources and present any deficit to the community – seek funding options/alternatives and replace the existing bridge!	
	Replace the bridge when it cannot be repaired.	

Appendix E: Verbal Comments

- Magnolia Bridge is a good way off the hill when it snows
- Community has concerns about how emergency response will be impacted without Magnolia Bridge
- Bike lanes slow down travel on Emerson, making it an undesirable access point
- W Dravus St is congested and messy
- 15th Ave W would be highly congested without a ramp from 15th Ave W to access Component 5B
- Consider an alternative that combines Component 10 to Component 1, allowing earlier access from northbound 15th Ave W to Thorndyke Ave W toward Magnolia Village
- Northern access points would increase Ballard Bridge traffic, making these access points unappealing
- Magnolia Bridge serves as a relief valve, reducing traffic and congestion along 15th Ave W. The 3 alternatives would remove this relief, increasing congestion and impacting Queen Anne and Ballard residents.
- Some residents are concerned the Port wants a smaller structure (component 7) so they can redevelop property
- Staff were encouraged to drive 15th Ave W during PM commute peak hours
- Overall, people understood the City's dilemma, however, it did not change the belief that an in-kind replacement is the only solution
- Has the increase in traffic from parents from Queen Anne taking students to the renovation of Magnolia Elementary School on 28th Ave W and W Smith St been considered as part of the traffic analyses?
- Has a value engineering been conducted for the in-kind replacement? Would a bridge similar in size as the existing bridge be less expensive?
- Have improvements to Thorndyke Ave W or other streets affected by the 3 different alternatives been considered as part of the study?
- Why isn't the number of people per trip rather than the number of vehicles being considered as part of the traffic analysis? For example, even though the vehicles per day along Magnolia Bridge is low, there are 3 routes currently utilizing the bridge and those buses usually have 40+ transit riders. Even if a bus is equivalent in length as 5 cars, it carries 10 times more people.
- Why isn't the City getting financial commitments from Port of Seattle, Expedia, BNSF, etc., to fund the in-kind replacement?
- W Dravus St is challenging or impossible to traverse up or down during snow days. Alternatives 2 and 3 rely heavily on W Dravus St, which is problematic during inclement weather.
- One resident had conversations with Metro, and suggested Metro was opposed to the idea of the Single Point Urban Interchange (SPUI) at W Dravus St because it does not accommodate Bus Rapid Transit (BRT) along 15th Ave W.

- Most people do not believe that improvements at Dravus would be sufficient to handle all of the traffic moving to Dravus if the Magnolia Bridge is removed
- W Dravus St west of 20th Ave W is too narrow to accommodate increased traffic for alternatives 2 and 3, which would add to the existing congestion
- Would the configuration of Thorndyke under any of the northern options, new bike lane, parking and median could be reconfigured to accommodate the added traffic? How would transit affect traffic in the uphill direction if it couldn't pull out of the through lane?
- Community members request more details on the preferred alternative from the 2002-2008 study
- One attendee summarized 2 main concerns of Magnolians:
    - 1) Getting off the hill – Magnolia Bridge is a better grade than W Dravus St coming down from 28th Ave W especially in the snow
    - 2) Avoiding stops or "choke points"—currently Magnolia Bridge flows well because it does not have stops or lights between 15th Ave W an Clise Pl W
- Some Magnolians are interested in a Local Improvement District (LID) to help fund the desired solution
- The cost analysis should include costs amortized over time
- People are concerned about local neighborhood impacts from shifting traffic to Thorndyke Ave W—increased noise, lights and traffic, as well as potential reductions in parking access.
- How will the demolition of the viaduct impact Magnolia?
- Want the free northbound right at the signal located at 20th Ave W and W Dravus St to be allowed
- What past funding avenues were explored?

Appendix F: Online Survey

Survey Questions

Magnolia Bridge Planning Study
Online Open House Survey

About You

1. Do you currently reside in Magnolia?
    a. Yes
    b. No
2. What are your nearest cross streets?
3. Do you commute regularly in and out of Magnolia for work?
    a. Yes
    b. No
4. How often do you make this commute?
    a. 1-2 days/week
    b. 3-4 days/week
    c. 5-7 days/week
5. Which mode of transportation do you use most often when leaving/entering Magnolia?
    a. Drive perosonal vehicle alone
    b. Drive personal vehicle with family
    c. carpool
    d. ride transit
    e. rideshare/taxi
    f. bicycle
    g. walk
    h. other
6. Which route do you most often take when leaving/entering Magnolia?
    a. W Fort St
    b. W Emerson Pl
    c. W Dravus St
    d. W Garfield St (Magnolia Bridge)

Alternatives Survey

1. Please rank the following alternatives, in order from most (1) to least (3) preferred?
    a. Alternative I – Armory Bridge, etc.
    b. Alternative II – Dravus + Garfield Bridge
    c. Alternative III – Dravus, etc.
2. Please rank the three most important components to you (1 as most important)
    a. Component 1
    b. Component 2A
    c. Component 3
    d. Component 5B
    e. Component 6D
    f. Component 7
    g. Component 8
    h. Component 10
3. Please rank the three least important components to you (1 as least important)
    a. Component 1
    b. Component 2A
    c. Component 3
    d. Component 5B
    e. Component 6D
    f. Component 7
    g. Component 8
    h. Component 10

Demographics Survey

1. Do you have any additional comments you would like to share?
2. What is your age?
    a. 2-=24
    b. 25-34
    c. 35-44
    d. 45-54
    e. 44-64
    f. 65 or older
    g. I would rather not say
3. Do you have a disability?
    a. Mobility
    b. vision
    c. hearing
    d. none
    e. other
4. What race/ethnicity best describes you? (check all that apply)
    a. American Indian or Alaska Native
    b. Asian or Pacific Islander
    c. Black or African-American
    d. Hispanic or Latino
    e. White or Caucasian
    f. I'd rather not say
    g. other

Survey Results – About You

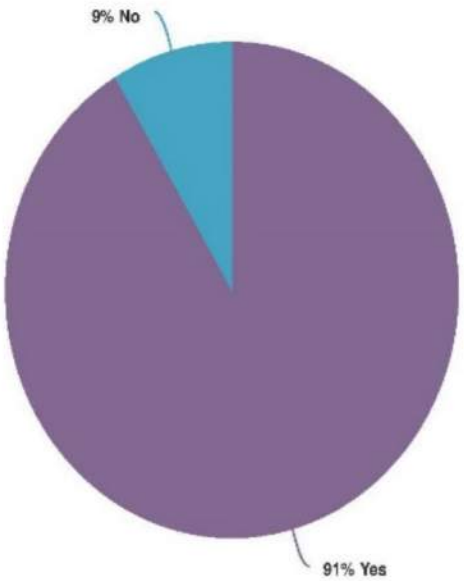
Magnolia Bridge Online Open House - About You survey report

Response Counts

Completion Rate:	100%	
	Complete	1,104

Totals: 1,104

1. Do you currently reside in Magnolia?

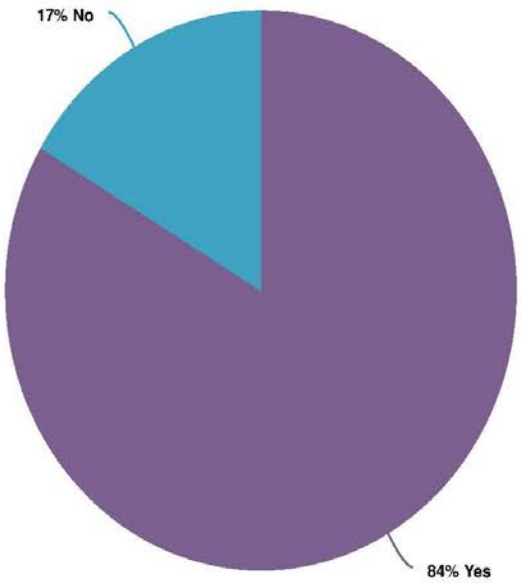


Value		Percent	Responses
Yes		91.4%	1,005
No		8.6%	95

Totals: 1,100

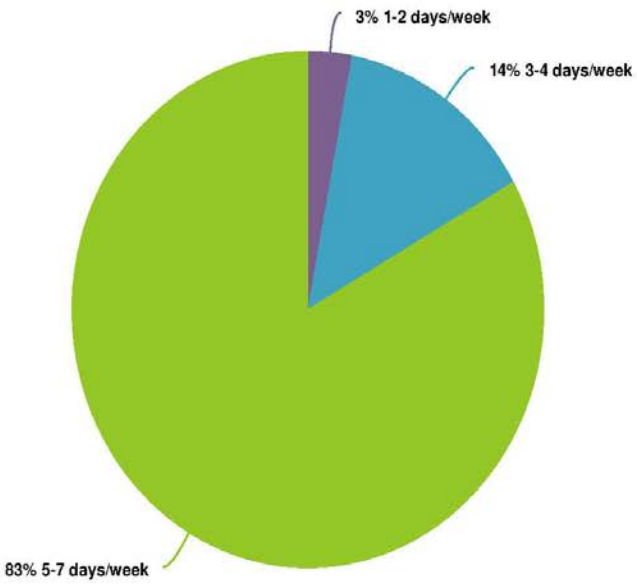
2. What are your nearest cross streets?

3. Do you commute regularly in and out of Magnolia for work?



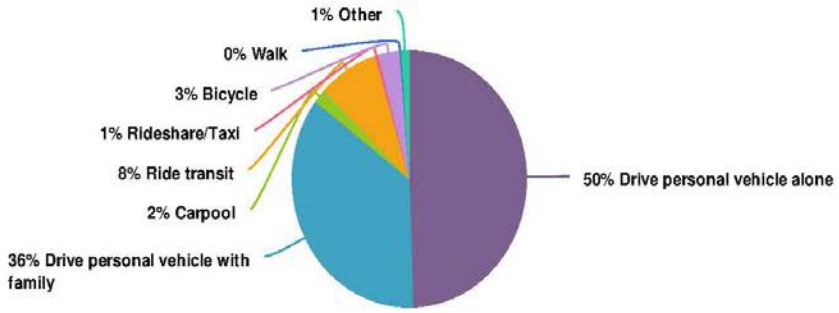
Value	Percent	Responses
Yes	83.5%	913
No	16.5%	181
	Totals: 1,094	

4. How often do you make this commute?



Value	Percent	Responses
1-2 days/week	3.0%	27
3-4 days/week	13.8%	126
5-7 days/week	83.2%	758
	Totals: 911	

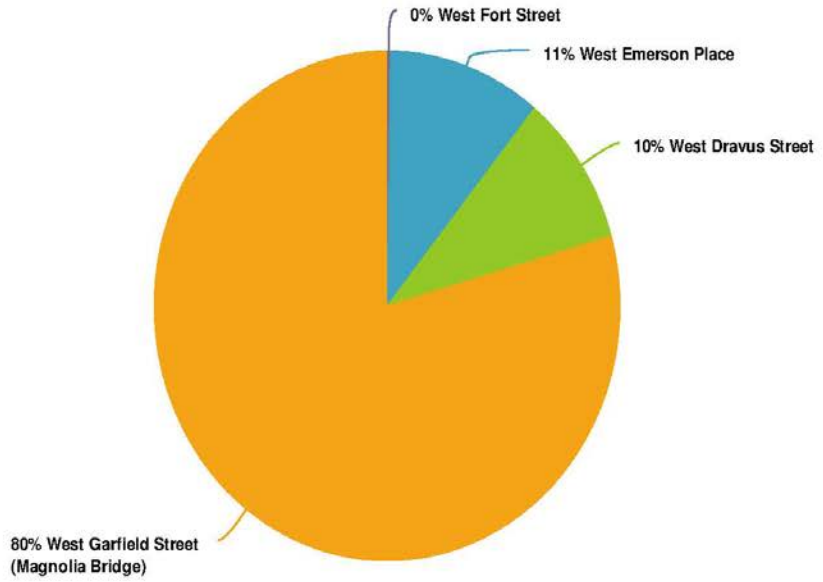
5. Which mode of transportation do you use most often when leaving/entering Magnolia?



Value	Percent	Responses
Drive personal vehicle alone	49.5%	543
Drive personal vehicle with family	35.8%	393
Carpool	1.8%	20
Ride transit	8.2%	90
Rideshare/Taxi	0.5%	5
Bicycle	2.9%	32
Walk	0.2%	2
Other	1.1%	12

Totals: 1,097

6. Which route do you take most often when leaving/entering Magnolia?



Value	Percent	Responses
West Fort Street	0.2%	2
West Emerson Place	10.7%	117
West Dravus Street	9.7%	106
West Garfield Street (Magnolia Bridge)	79.5%	871

Totals: 1,096

Survey Results – Alternatives

Magnolia Bridge Online Open House - Alternatives survey report

Response Counts

Completion Rate:	**100%**	
	Complete	186

Totals: 186

1. Please rank the following alternatives, in order from most (1) to least (3) preferred

Item	Overall Rank	Rank Distribution	Score	No. of Rankings
Alternative I – Armory Bridge, etc.	1		395	158
Alternative III – Dravus + Garfield Bridge	2		271	145
Alternative II – Dravus, etc.	3		244	149

2. Please rank the three most important components to you (1 as most important)

Item	Overall Rank	Rank Distribution	Score	No. of Rankings
Component 5B – Armory Way Bridge	1		335	124
Component 3 – W Dravus Street Improvements	2		151	87
Component 10 - Garfield St Bridge to 23rd Ave W	3		127	54
Component 6D – Thorndyke Ave W Improvements	4		102	63
Component 1 – West Uplands Perimeter Road	5		78	42
Component 7 – Garfield St Flyover	6		62	37
Component 2A – 20th Ave W Improvements	7		39	27
Component 8 – Alaskan Way W Extension	8		28	17

3. Please rank the three least important components to you (1 as least important)

Item	Overall Rank	Rank Distribution	Score	No. of Rankings
Component 8 – Alaskan Way W Extension	1		221	101
Component 1 – West Uplands Perimeter Road	2		170	75
Component 7 – Garfield St Flyover	3		140	72
Component 2A – 20th Ave W Improvements	4		94	52
Component 10 - Garfield St Bridge to 23rd Ave W	5		89	48
Component 6D – Thorndyke Ave W Improvements	6		63	36
Component 3 – W Dravus Street Improvements	7		53	25
Component 5B – Armory Way Bridge	8		50	24

Survey Results – Demographics Results

Note: All personally-identifying information has been removed from the comments included in this survey.

1. Do you have any additional comments you would like to share?

ResponseID	Response
3	So, SDOT can afford a $250 million car focused project for a low density neighborhood and they can't afford to build a bike lane in downtown.....
5	Built a tunnel straight to discovery park please
6	I appreciate the cities dialogue on this, but want to ensure the city understands the absolute necessity the bridge, or a structure similar in use, is the vitality of Magnolia. Magnolia is a true in city suburb, with easy access to downtown, providing an ideal setting for its residents. Removing the bridge, with no similar replacement, will hamstring much of the neighborhood, as that will push traffic to Dravus. It also is a key feature of the neighborhoods history, allowing residents views of the city and ocean every day.
8	If you take one access point away from Magnolia, it's vital to increase the capacity of all remaining access points. Already with the Magnolia Bridge in use, the traffic backup at Dravus and Emerson every single day is terrible. Take the bridge away, and these access points need to be expanded, redesigned, and/or rebuilt in order to accommodate the increase of traffic, forecasted out beyond what we see today.

ResponseID	Response
9	Bridge replacement is the only alternative- we live in a earthquake vulnerable city. To decide that it is too expensive to fund one of TWO bridges that access Magnolia is to set us up for failure, as any emergency response vehicles have to come from OUTSIDE Magnolia...as our local response consists of a single vehicle and four fire-department personnel. You can fix/replace/amend the bridge...or I suppose you can add to Magnolia (and it may be cheaper, but given this interesting city, i doubt it)EMS trucks, additional response personnel, a hook and ladder truck, additional SFD personnel, and perhaps put a hard-slab heli-pad for post-disaster additional casevac/medevac. You could also consider establishing a FEMA region 10 facility up at Fort Lawton, with the additional crash/fire/rescue/helipad on site...instead of housing the homeless there and it could also serve to mitigate the obvious risk.
10	Thank you for reaching out and accepting input. I am concerned about the incivility if some of my neighbors, and appreciate your patience.
11	Don't ask me to rank my favorite "alternative". Focus instead on partnering with legislators and securing funding for the preferred 1:1 replacement previously identified as the appropriate choice! Repair relations with our federal government and negotiate partial funding. Use LID funding if absolutely necessary. It's difficult to understand how our overbudget and expensive bike lanes and the Lander Street bridge can be funded while 1:1 Magnolia bridge replacement cannot. Must we the voters and taxpayers really pursue a referendum on this as well?
12	Place a Toll both for Magnolians to pay for new bridge.
13	I think you need to be planning for the future. Development of T-91 and the Armory site is inevitable. I'm willing to forego the 1:1 replacement in favor of a bridge at Armory Way IF the cost savings are directed toward greater mobility in and out of Magnolia and along 15th. Otherwise we're just spending money to maintain the status quo.
15	this whole presentation seems geared to the idea that 1:1 replacement is not on the table, even though the SDOT Representative at May 21 meeting repeatedly stated the 1: option is still being considered. the section asking where I heard about the project will only let me choose one option. I have gotten information from numerous sources.
16	I am not concerned with an in-kind replacement. I am more interested in creative solutions to access Magnolia. The Village is not a destination, rather a place Magnolia residents visit from their homes, so bridge access it not a priority, in my opinion. I would much rather see multiple entry points to Magnolia be improved rather than just one bridge replaced. Thank you for all of your work on this!

ResponseID	Response
20	The notes people make are valid comments but they are apparently discarded. The survey basically says "these are all great, which do you like best?" There is no option for not sure or Don't know ot none of the Above. Magnolia needs a functional 1:1 replacement, access to Magnolia Village is vital for the businesses there. Revenue declined considerably when the bridge was closed. Component 9 is a non starter. Combining 1 and 10 will be expensive and requires by-in from the Port and Seattle Parks. Any road expansion will have to dig into the hillside (Magnolia Greenbelt) and/or take Port property. 6D and 2A don't provide good access to Magnolia Village. If Alternative 3 is adopted when do you plan to do the major re-build of Dravus over 15th Ave and over the railroad? Before or after Magnolia Bridge is declared unsafe? Either way it will mean the loss of one or two access points to Magnolia. The spui plan looks pretty but will be chaos. You do know that Dravus west of 20th Ave W is very steep and is often closed in bad weather? How did you hear about this project, click all that apply - except that doesn't work, clicking a second option cancels out ht first one - brilliant! I would click every option except employer and Twitter.
21	In terms of paying for a portion of the cost of the bridge replacement, I would suggest that the city of Seattle impose a Local Improvement District tax on the residents of Magnolia to pay for the new bridge. After all it will mostly only benefit the residents of Magnolia
22	I'm disappointed that Seattle managed their money so poorly that they did not have the foresight to save for the replacement of the Magnolia Bridge.
23	Recent road work has resulted in increased bottlenecks around the city...I90, I5, Emerson bike lanes. It appears traffic patterns have NOT been used in decision making. I hope that is not the case for this project.
24	Is it possible to build rebuild an exact replacement that is cheaper because it can only accommodate light consumer vehicles up to SUVs and pickup trucks, but not heavy trucks and vehicles?
27	I think this survey is short-sighted for not including residents in Queen Anne and Ballard who will be severely impacted by the loss of Magnolia Bridge. There is already a bottle-neck daily from Garfield to Emerson overpass due to the volumes from the north. Adding yet another exit which is blocks away from the existing exits (Dravus and Emerson) does not make sense with current traffic volumes.This is NOT just a Magnolia problem. Friends and family members who live north of Magnolia no longer choose to go into the city due to the backup they experience when they commute to work via bus and car. Please consider the residual effect on ALL neighborhoods impacted by the loss of Magnolia Bridge.

ResponseID	Response
28	I want a replacement for the magnolia bridge.
29	The idea that the Dravus bridge will accommodate all the traffic from Magnolia is a flawed assumption and dangerous option for public safety (ie, ambulances, fire, emergency access, etc.) Clearly none of the people studying the problem have spent time awaiting a green light to get onto Elliott or 15th Avenue, and that is WITH the current Magnolia Bridge carrying the majority of the traffic. The Armory access option MUST be considered along with significant improvements to Thorndyke and Dravus bridge/hill.
30	This survey is very flawed. - Doesn't allow for comments about any of the access options you've asked us to rate. Doesn't allow for specific issues with each one. In other words, asking us to rate something we can't explain why doesn't really give you anything of substance in terms of a survey. Just ranking top 3 in either category only gives you votes for scenarios and without understanding how they work together, how they can be improved or what the issues are for each access point. Not only that, no way of capturing a holistic view of the problem getting in and out of Magnolia. - There are no traffic volume statistics or qualitative understanding in how the current Magnolia bridge works in terms of serving the village, how it allows for truck delivery and movement, how it works with the two other bridge entry points. For example, your stats might show car usage is lower on the bridge than Emerson and Dravus, but seemingly no understanding of why that is, who uses it at what time of day, and the purpose it serves in helping take pressure off the other entry points. - There's also very little given in stats in how backed up Dravus and Emerson get at rush hour now...and what role EMT's and first responders use the Magnolia Bridge because they can't use these other very clogged arteries. You're just assuming you can take down the Magnolia bridge, make a few adjustments and then we get to deal with the ramifications. - Where's the ability to give feedback on the green, yellow and red dot analysis? Not a feature here. - Why isn't the 1:1 Bridge replacement an option here? Who decided there's no funding? Someone at SDOT? Frank Chopp? Who? Elected leaders must be responsible to taxpayers in answering this question before SDOT just makes blanket assumptions.

ResponseID	Response
32	I'd suggest this lower cost option which wasn't considered: USE THE 32ND STREET RAVINE AS THE NEW ENTRANCE: Maintain the Magnolia Bridge Segment over the RR tracks for 15th ave access the port and Smith cove/Palisades/Marina area. That segment connects to marina drive at the bottom of the bluff. Widen Marina drive and create a new road segment along the water on the southern end of the magnolia park to connect to West Galer at 32nd ave W. Then come up 32nd ave west to the magnolia village. I suspect that this would be a lower cost and more desirable option. This effort would require some road widening, but the upside is that 32nd ave West (which comes up through the ravine) has just been widened for the wastewater project. Can you let me know if any exploration was done on this option? Thanks so much, [redacted]
35	It is unfortunate that the City did not/ does not have the expertise to plan projects and properly use funds. I've lived in Mongolia for over 25 years and the Magnolia Bridge has been a constant topic. The decision had been made to replace the Magnolia Bridge. The City needs to keep this commitment. Rather than 're-evaluate' options (none of which are acceptable), the City should re-evaluate its overall transportation budget, and find the funds to replace the bridge. Like the rest of the city, Magnolia is increasingly become more dense. This density will increase significantly when part of Discovery Park is rezoned for low income housing. Has this been considered in the 'bridge study'? The area has no grocery, medical services, social services, transit, etc. that is needed to support low income housing. The businesses will need to be added at Discovery Park, significantly increasing traffic at Emerson and Dravus. The following is related to access to Magnolia. It is logical to assume that new businesses will not be attracted to the low-income area because of traffic and remote location. This conclusion stems from the fact that King County is unable to hire employees for well-paying jobs the sewage plant because of traffic and remote location. It is cruel to low-income residents to be in a location that has no services. It is cruel to low-income residents to hinder access to these services (the 3 alternatives will just make more of a traffic mess). As many low-income residents are minority, it perpetuates the City's systemic race discrimination. Please add race and social justice metrics.
36	Please prioritize pedestrian and public transit connections into/out of Magnolia as part of this study. Its hard to imagine how public transit connections and service are equally maintained without the Garfield bridge. Also consider resiliency and redundancy in terms having the most of the number of connections to the neighborhood in case of natural disasters. Further, perhaps as part of this study investigate if there is potential to have the Ballard ST3 extension run along the Western side of the rail tracks to better mitigate the loss of the bridge and atleast align the stations with any future bridge connections.

ResponseID	Response
37	I'm most concerned about how this would affect mass transit. So many people rely on the buses to get to work, which rely on the Magnolia Bridge. Increasing travel times may put even more people in cars ... not what anyone wants. How will you mitigate bus travel times so that commutes are not extended? Will you (when the time comes) provide easy access to the future Interbay light rail station (preferably by foot)?
38	We need full replacement of the Magnolia Bridge to maintain public health and security. With no emergency medical facilities (emergency room) and police station in the neighborhood, the Magnolia Bridge provides unencumbered traffic flow and access to emergency medical and police services. With increasing citywide population density and congestion at the Dravus St and Emerson Pl access points, it is imperative that the City plan on full replacement of the Magnolia Bridge.
39	I walk, bike and drive to work. I run down the Pier 91 trail regularly to the marina. I also live and work in Magnolia and Ballard and have for more than a decade. There are few restaurants, no gyms, and two actual grocery stores in Magnolia for 25,000 people. People travel for these things leaving Magnolia (Interbay is not Magnolia). It frequently takes 50 minutes to get to Ballard by car, so we don't go that way after 6 PM on weekdays. I'm not going to say anything about the new bike path. I will say the bike lanes are different/inconsistent all over the city which is confusing for drivers, cyclists and pedestrians/walkers. Look at why people don't bike not why they do. If you watch traffic even for a month you'll see lots of patterns at the three entrances/exits for the neighborhood. Why live in a neighborhood you can't easily get in and out of or has few resources?
40	Thank you for reaching out to the magnolia community.
41	Please do not even consider limiting access to Magnolia to only 2 access points. Dravus is already a pain to navigate, there is no way that "improvements" to Dravus could accommodate double the traffic. If the Magnolia bridge can not be replaced, then the Armory bridge is the only real possibility that should be considered. I also hope that SDOT will consider a flyover from 15th to Armory to reduce the negative impact on the flow of traffic on 15th and improve the travel time to magnolia as opposed to limiting northbound traffic to a turn signal.
43	We need a bridge, we cannot just improve Dravus. It will be a traffic nightmare. Dravus already gets backed up. Please include a flyover from 15th to Armory. A turn signal will back up 15th and make the commute to Magnolia worse.
44	This is a fast growing community - full of tax paying citizens. Please maintian or improve our access in and out of our community. As Expedia occupies their new space the congestion will get dramatically worse.

ResponseID	Response
45	How can you say that a direct replacement is too expensive when you haven't got an estimate?
47	We should be replacing the Magnolia Bridge. We have paid for projects in other parts of the city and state and now we need the money to come this way. We've paid for ferry improvements, for a tunnel (without a downtown exit!), and for the 520 bridge. It's time for the State to help pay for this bridge for our growing neighborhood.
49	So what is this? I want a new bridge not a cheap alternative that further congests our streets and creates more angry drivers than we have now.
55	If you had the capability of improving the traffic flows of 2 of the alternative access points (that is, Dravus and W Emerson) then why did you denigrate them with your bike lane designs? One of your criteria in seeking a replacement for the Magnolia Bridge should be to handle the existing traffic plus the additional traffic generated by projected growth and the diminished capacity of Dravus and Emerson. Emerson is now gridlocked more often so I find myself frequently needing to use the Magnolia Bridge.
56	Tearing down the Magnolia bridge is a terrible idea and will isolate the community. Access to Magnolia is weak and this kind of neglect will make it worse.
57	If the city can place a levy for 600 million for new and epanded services while ignoring its charter responsibilities such as our transportation infrastructure, you have to laugh. The budget will have to be cut because of declining construction revenue. The new zoning plan would add up to 65,000 new residents to Magnolia while access will be diminished. SDOT has little credibility left in the community and it can begin restoring it by hiring a bridge design firm to investigate whether new technology an design opens new replacement options. Maybe it can be designed as a bike bridge with four lanes of bus, ambulance, school bus, truck and vehicle lanes as a extra.
60	As a cyclist, I am acutely aware of the lack of common sense our planner's seem to demonstrate about the larger effects of changes to roads and routes. The Gilman bike lanes are elaborate, and welcome, but there seems to have been no thought at all about how we're supposed to get to the lane, or the effect on traffic at the Gilman/Emerson junction. If you shut off access at the south end of Magnolia, the knock-on effects on the roads feeding into the remaining access points will be far more significant than implied by a bit of widening of the Dravus bridge, and the cost of dealing with roads already crumbling from age and lack of maintenance will be high, and should be factored into your budget.

ResponseID	Response
61	Replace the Magnolia Bridge. It will be cost less in the end than all of these other plans. There is no other way to move traffic efficiently. Thank you.
62	I want the bridge replaced as it is currently configured. All the options you have listed are not satisfactory. They do not give us good access to downtown Magnolia combined with easy access to Smith Cove. In addition, I commonly use the Magnolia Bridge to get home to avoid traveling extensively on 15th Ave, which is a disaster since the bus lanes were put in. If you can spend 20 million for every mile of bike lane, you can replace our bridge.
63	This plan should include connection from W Marina Place to Galer to allow people to move along the southern portion of Magnolia. The current alternatives all put additional traffic along the western side of Magnolia hill rather than bringing people around the south (which is what current Magnolia Bridge does). In addition, this plan does not consider the experience/views that you get traveling up to the top of the bluff and then along Magnolia Blvd - it is fantastic and beautiful. All these alternatives bring you into the neighborhood via Thorndyke and along the tracks - this is simply not as nice and would detract from quality of life for Magnolians.
64	It is imperative that the Magnolia Bridge be replaced in its current form. It is the main access to Magnolia from downtown and alleviates extra traffic on 15th Ave W during morning commutes as well as the post work rush. Additionally, the buses use it, adding more buses on 15th will simply exacerbate the already dense, stop and go traffic during rush hours.
65	How is it possible that we live in a city that has expanded its budget by 45.4% since 2010 yet does not have money for an issue that has persisted since well before that timeframe? As you continue to shift a larger burden on your taxpayers, with very little progress to show for it, I urge you to sharpen your pencils for once and find a solution in our existing annual budgets. These budgets will undoubtedly continue to expand year after year as you continue to grovel for more tax dollars. I would venture to guess if bike lanes didn't cost 1500% more than what was proposed to taxpayers, we wouldn't be watching the city try to ram yet another unpopular idea down its citizens throats. Candidly, there is no other solution that exists that will satisfy your constituents if the solution isn't for the city to get out of its own way, learn how to negotiate construction contracts, hold itself accountable to its promises/projections, and PROVES its ability to take on any of these projects. Otherwise, the solution should be to identify competent leadership at SDOT and in the City Council. Stop wasting our money and start being accountable for your failures.

ResponseID	Response
66	Find the funding for the IN-Kind replacement! How is it that our city has the Let's Move funds to overpay for bikelanes and destroy downtown streets, (which by UW's study only 4% of commuters use) but is unable to have enough funds to replace the bridge, which has worked successfully taking both vehicles, bikers, and transit riders to work for the past century? Have any one of you driven North on Thorndyke, South of Halladay from the Village? Do you really think the condition of the road could take any increased flow of traffic? This portion of the roadway on Thorndyke is not accounted for anywhere in the funds. Another case of bullying by the city bureaucrats aimed at isolating the middle class. I wonder if because a large part of the resident population around the proposed Armory Bridge are renters, their opinions give little weight. If Alternative 1 is approved, it threatens the greenbelt running parallel to Thorndyke, ending at Halladay, I should note, there is a Eagle's nest on the tower directly west of Thorndyke and Halladay. Moreover the proposed Armory bridge, has issues concerning the parking garage at 2551 Thorndyke which exits directly onto Halladay St. Are you really proposing making this parking garage obsolete? Sounds like a takings issue. Has the city found funds to compensate those residents? If not, is the city prepared to have these residence block/flood into the intersection in order to gain access to their residence? Has the city looked at its parking/driveway codes from the consequences of adding a bridge. Has the city done a study of the greenhouse gas emissions from idiling cars at the additional stoplights? My guess is probably not considering their latest track record. The residents are fed up!
67	This analysis omits the main option, which is replacement of the existing bridge. These options will result in major loss of access to Magnolia and unforeseen traffic impacts to many neighborhoods and commercial areas. Bridge replacement in kind must be the first choice option, and not ruled out based on an arbitrary cost limit.
68	The current plans are woefully inadequate for our community. The appropriate plan is a 1:1 replacement for magnolia bridge. Additional considerations, outside of cost, including mobility, impact on other transit systems, and the tax burden on magnolia residents that has not been adequately reinvested in the community make this plan outrageous. SDOT is mismanaging funds and the magnolia residents should not face the burden of SDOTs mismanagement. Put the 1:1 replacement on the table as an alternative.
69	This is a high traffic area, likely to have even greater traffic volumes in the near future with the development of the Expedia campus along Elliott. The other access points further north in Magnolia are already congested, especially at rush hour when the backup to/from Ballard is at its worst. Not replacing the bridge would be short-sighted and would augment existing traffic problems getting in and out of Magnolia.

ResponseID	Response
70	I really think all the alternatives do not best serve the Magnolia community. There needs to be a replacement bridge built. You can not shift all incoming traffic into magnolia to Thorndyke and essentially Dravus. Dravus gets backed up all times of the day as it is. Adding more cars driving in that direction, which they will given that Dravus is the best access to the whole of Magnolia with the bridge gone, will cause severe traffic congestion and safety issues all along Dravus, Thorndyke, and the surrounding streets. We pay very high property taxes and deserve to have sufficient access in and out of our neighborhood. This is unacceptable that we are not discussing out to pay for a replacement bridge. There are ways to do that without making the whole of the city pay for it. You need to go back and figure this out. Your alternatives are obviously being drawn up by people who do not live here and do not understand the traffic coming and going from Magnolia. I also found your survey short sighted in that you did not ask about parent carpools. There are thousands of kids living in Magnolia that need to leave the neighborhood for their sporting events and practices. We count too when considering commute times and routes. It's not only the people who work outside the neighborhood that count. Those of us who do not want to spend hours commuting to our kids events need a good solution to getting to and from the neighborhood.
71	Please replace the Magnolia Brid
73	There is no mention of a "rebuild the Magnolia Bridge" choice. I was not given that choice. I choose to have the Magnolia Bridge rebuilt for obvious reasons...to span physical obstacles; water, and train tracks, that enable one to drive, walk, ride bike into and out of Magnolia efficiently. By rebuilding the Magnolia Bridge, a third vital access to Seattle and environs will be maintained. Only the more than 50,000 commuters daily in and out of Magnolia can truly understand. Listen to the people of Magnolia. A healthy, vibrant, high tax paying community of Seattle. Listen to the people of Magnolia who contribute greatly in many ways to the economy of Seattle. Listen to the people of Magnolia who have lived on this peninsula for over 60 yrs. LISTEN TO THE PEOPLE OF MAGNOLIA. Seattle's local government must look into the eyes and hearts of the people of Magnolia they are there to serve. Listen, be engaged with us, show us good political judgement. Rebuild the Magnolia Bridge.
74	It's vital to maintain easy access to the Magnolia Village businesses, Smith Cove and the Marina. Dravus and Nickerson are already crowded and cannot take more vehicle traffic. There must be an alternative that serves the South end of Magnolia without forcing them to drive all the way North to Dravus.

ResponseID	Response
75	If an in-kind replacement cannot be achieved, the city needs to look into creating a westbound lane of traffic that cuts through the neighborhood so it doesn't result in a convoluted path just to get to the village and points west (assuming Alternative 1 or 3 is approved). Even Dravus doesn't provide a direct path westward as it curves around and ultimately becomes Barrett.
76	I am a business owner in Magnolia. We are a retail and a wholesale business. We rely on easy access to the Hill. Our business has recently been negatively affected financially by the addition of the bike lanes on West Emerson Street. We are witnessing constant back-ups and horn honking due to the congestion those lanes have caused. And that congestion is why customers are not stopping in for purchases; affecting our bottom line. We were never told in writing what the SDOT was planning regarding the addition of bike lanes and lane closures. No communication whatsoever. It reminds me about a couple of years ago when all of a sudden the 15th. Avenue West overpass closure happened. SDOT did communicate to business owners a week before the closure. Thanks a lot! There has been much written about the foolish spending going on in City Hall. Likewise, much has been written about inflated city budgets with no clear reason why and where the money is going. It is clear that SDOT is out of control with spending with no boundaries and no accountability. This bridge is vital for the lively hood of our retail core and taxpayer access to their homes. For the city to say they have not enough money to fix the bridge is ludicrous thinking at best. The management of SDOT needs to held accountable for their actions. Does the right hand know what the left hand is doing? Is the City Department of Finances aware of whet SDOT is spending? No is the answer. Revenue flushing into the city coffers has never been so much. Prioritize your spending. Hold individuals who are signing contracts accountable. FIX THIS BRIDGE! [redacted]
77	As a Magnolia resident, I'm very concerned about the future of the Magnolia Bridge, since that's the only way my family and I get to and from our house, often several times per day. Everyone in Seattle is feeling the pinch of the increasingly difficult traffic situation. My husband and I both worry that this is going to make that even worse for us and our community. We've talked about selling our house and moving out of Magnolia, a community we love and have called home for almost 10 years because we're worried about what this will do to our quality of life and home value. I'm glad to see there are alternative options, but along with many others, I hope there's a way to save the Magnolia Bridge.

ResponseID	Response
78	The Magnolia Bridge needs to be replaced. Traffic back ups at Emerson and Dravus are causing longer and longer commuting times, amplified by the Ballard Bridge if you're going in that direction. The Magnolia Bridge allows for another option to "get off the island", especially if going downtown or beyond. Additionally, if Fort Lawton becomes a housing development, the infrastructure problems that exist today will be amplified. A tear down is not the solution - rebuilding provides the infrastructure to keep up
83	Please clarify whether "low" traffic numbers on Magnolia Bridge considered only number of vehicles or also accounted for Metro ridership numbers (3 of the 4 bus routes to Magnolia use the bridge). Reducing access points from 3 to 2 shouldn't even be under consideration. Even with improvements (which are desperately needed in any event), the other two bridges aren't an acceptable solution. Major issues with Armory Way on the Magnolia side: has anyone actually looked at a map of the streets in SE Magnolia or personally walked/driven in the area? Most of the streets don't connect between Thorndike and 28th Ave W, and are offset as they cross 28th. Creating additional traffic through this area will be dangerous (residential streets becoming de facto arterials, increase in left turns at 28th, etc) and won't adequately accomplish the goal of providing access to south and west Magnolia. Nothing short of using eminent domain to create a new east-west arterial on one of the streets in SE Magnolia could alleviate this issue. Increased use of Dravus as arterials is seriously problematic, as it is a very steep hill and likely to close in the winter due to bad weather. Also, the section of 30th Ave W between Dravus and Barrett is already unsafe and will become more so if it has to handle more traffic (I still don't understand how it was ever designated an arterial in the first place). All the components in your presentation deal with how to get people across the railroad tracks and to the marina, it none of them come close to dealing with the equally important issue of moving people in and around the neighborhood. Aside from the Garfield/Galer/Magnolia Boulevard route, there simply aren't any workable options and I'm not seeing any consideration of that here. It's not just about replacing the bridge, it's about replacing it with something that creates a safe, workable traffic flow in the neighborhood and NOT ONE of the options presented does that. The failure to provide a better southern option to/from Magnolia will affect traffic in multiple neighborhoods—most notably Belltown and the waterfront, Queen Anne, Ballard, and Fremont. Whatever the ultimate decision is, it must address the mess that is 15th Ave W, particularly in light of the fact that Sound Transit seems to be set on making 15th even worse than it already is with its light rail proposals. The "how did you hear about this" section at the end says pick all that apply but only allows you to choose a single option.

ResponseID	Response
86	Why would you do this when all that will happen is create congestion on Magnolia, and abandon a historic neighborhood? Because they allegedly "can't find the funds"? We have a housing problem in Seattle and abandoning an entire neighborhood will not help us.
88	Replace the Magnolia Bridge...no alternatives acceptable. Replace!
90	The Magnolia Bridge is essential to residents, business owners and services alike. Considering the continued population growth to our city, renovating the bridge is essential. Magnolia residents have a right to maintain this bridge which is a primary route for people traveliing in and out of the town. It provides residents a direct route to the downtown area. The growing number of families living in Magnolia need the bridge. It does not make sense to remove 'ease of access' to the workplace for a growing community that is contributing to the economy and well-being of Seattle.
91	It does not appear that any consideration has been given that magnolia residents will have no southbound access due to the tunnel and removal of the viaduct. None of the alternatives give equivalent access as the Magnolia, repair or replace the bridge!
92	Replace the Magnolia Bridge as is, not another bridge at another location. One for one. [redacted] Magnolia resident
93	Please disclose why you are catering to the Port and cruise ships, and the intent to put in a hotel where the Magnolia Bridge currently is.
94	You've had well over a decade figure out how to fund this. You only need $100 million more than what seems to be your best alternative option. How about making up for your gross ineptitude of our tax dollars over the last 17 years and find a way to replace the bridge!? I don't care how you do it. JUST GET IT DONE!!!!!
95	Replace the Magnolia Bridge!!
96	Replace the Magnolia bridge. ALL of the alternatives are expensive, contrived and will help very little. Replacing the bridge might cost a little more but its value will be huge. I remember after Nisqually how difficult it was getting on and off Magnolia, and the population was much lower, and there were no weather-related Dravus closures. btw even this site is of little use. Pick all - but only allows one choice. No where to explain other choices. frustrated with this all.

ResponseID	Response
97	This is impenetrable. You have designed a completely stacked survey, you've made it difficult if not impossible to understand, and your claims of transparency are false. You don't adequately address the Magnolia community's needs. You've consistently reached out to the media in such a way as to portray the community as a villain. You ask more questions about racial and identity politics than about what transit options WOULD actually meet the needs of the residents of Magnolia. For example: Many residents of Magnolia are families who need to travel in and out of the neighborhood several times a day. We are commuters to Bellevue and Kirkland as well as Downtown. We are multigenerational families with parents who need to access First Hill hospitals regularly. We are working parents who need to get to get back from work in time to pick up kids from school and then take them to activities out of the neighborhood and in Shoreline or Capitol Hill. We are high school students who must get to school on public buses that force us to transfer at 3rd and Pike (the sex and drug trafficking center of Seattle). We are diverse even if all you see is that our skin is a shade of white. Adding even 10 minutes to our daily entrance and exit for Magnolia can actually cost us 60-80 minutes in the course of a day. While you may not care, that time has a very real impact on our lives and our workplaces and schools.
98	I favor option 1 as it allows a third way out of Magnolia. Emerson is always busy with commercial traffic, expanding Dravus will still leave us backed up multiple light cycles and new on and off ramps will not change the traffic flow to that point. The option of another bridge crossing the rail yard allows traffic that uses the Magnolia bridge another way to access 15th going both left and right. This is truly needed and though it makes it harder to reach the village a light to allow people to turn left moving people through the existing roads that lead to the village does accomplish the goal. Magnolia has multiple years to deal with difficult traffic issues before the bridge comes down. The reroute to move south will be hard before Alaskan Way is ready to be used. Mercer needs to have all street parking removed to help move toward the new tunnel. The time line seems to be Alaskan Way finally opens as viaduct is taken down About the time the Magnolia bridge comes down then the lane reductions on 15th for the long awaited light rail service go into effect. As a family that works in Tukwila and worships there, as well as frequent trips to the airport we seem to have an extremely long period of tine that moving out of the Magnolia area will be difficult. Please make sure we have the third bridge to carry our traffic, a limit of two will be an extreme hardship. Our family understands that a one on one replacement is not affordable to replace the existing bridge but don't take a third bride option away. Dravus option would cost about the same as the Armour bridge or even more. Thank you!

ResponseID	Response
99	Replace the Magnolia Bridge ! As many people have inquired, please describe what youve determined about replacing the bridge in phases: What is the cost to replace the portion most urgently needing replacement? What is the cost to replace the portion that doesn't have as urgent if need of replacement? Worse case:replace the bridge in two phases. Not replacing the bridge is NOT an option! You're thinking that way, prevents you from being innovative and creative with total replacement ideas. Stop isolating yourselves into a closed minded dark box!
102	To would say that the current infrastructure for magnolia is barely sufficient, I can't imagine being able to keep my family in magnolia if this major thoroughfare and connection to 15th goes away. Also, if one of the bridge alternatives is implemented, it is imperative that there is a exit an overpass over 15th to get people off of 15th easily. Otherwise 15th will be backed up so terribly and impact traffic both from the north and the south on the significant Corridor
103	Magnolia needs three bridges. Full stop, nothing else will work. Armory St Bridge MUST be built. Even if you think that even with Dravus St improvements, you can make Magnolia work with only two bridges, you are kidding yourself. Seriously, time to sell and leave the community if you do that.
105	The bike lanes and stop light changes have already created congestion on Dravus and Emerson. Dravus is NOT the solution. We need a third bridge besides these two.
106	I am really dumb. I was not able to run through your very easy survey to be able to tell that after living in magnolia for 38 years , being able to drive to downtown in 15 minutes at 8.00 am to this morning spending 40 minutes . The inability to traverse streets in winter , streets that will be the only access to go to town to pay my property taxes. Since building hotels and access roads to offices is the prime city priority let not my empty head stop you from fulfilling the priority. Let us 60 year old not stop you from destroying the major accessway to magnolia village.
108	If the bridge doesn't get replaced you're setting Magnolians up for an emergency disaster. And you're setting up Magnolia and all close neighborhoods for a traffic disaster.
109	I do not support any of the alternatives. Replacement of the Magnolia Bridge is the only safe option for emergency reasons since we very little police presence, no medic one aid car and no hospital facilities in Magnolia.
111	Support the removal of the Magnolia bridge.

ResponseID	Response
115	The alternatives that reduce the number of entry points into Magnolia from 3 to 2 are simply not viable. These options will create traffic nightmares. Traffic will back up on 15th Avenue and will impact everyone trying to go north on 15th. For an additional $13 million dollars (a small amount relative to the overall project cost) we can at least add another bridge that maintains 3 entry points into Magnolia. While everyone in Magnolia prefers a 1 to 1 replacement, the Armory Bridge option at least will address the major concern of dramatically reduced capacity into and out of Magnolia.
116	The only acceptable plan is to replace the bridge. It is obvious that anything else would be a traffic nightmare. You don't need to spend time and money to study that. Just try to drive to Ballard High at 8:20 a.m. on Dravus or Emerson and you will see how bad it is even with the bridge open. It gets very backed up on Emerson and Dravus now. Don't waste money ranking unacceptable alternatives.
117	We live in one of the most technologically advanced cities in the country. SEATTLE!!! And we can't replace 1 bridge? Shame. Replace the bridge. Find the funds. Just do it. Anything else is ridiculous, and embarrassing.
118	When Gilman Dravus, or the Magnolia Bridge is closed, it is very difficult to get off of Magnolia. The traffic backs up in all outlets. This was proven when the bridge was being worked when we had the mudslides. Magnolia is a community unlike no other area and it is surprising that we have enough money to pay $12M per mile for bike lanes and the worst of all is the veto of the voters for the replacement of the Alaskan Way Viaduct, which has gone way over budget. Now is the time to take action and replace or fix the bridge. No vetos and no excuses.
121	A 1:1 replacement is greatly preferred.
122	If we can find an extra $12million per square mile for the bike lanes... we can fix the Magnolia bridge.
123	The magnolia bridge is very important to our quality of life here in magnolia. The bridge provides one of three exits and is the primary exit going downtown. Not being able to take the bridge adds significant time to my commute. Any solution that routes traffic near Dravus will just add congestion and reduce our emergency exits effectively to 2. With the addition of Expedia the south entrance is very important. From the point of view of my commute I would be less worried about it if the Light Rail station was anywhere near completion but it isn't.

ResponseID	Response
125	By not putting money towards this project, you are completely ignoring a neighborhood in Seattle.
127	Please replace the bridge. The neighborhood is already bottlenecked. Anything short of a full bridge replacement is going to have detrimental effects to this (and other) neighborhoods.
128	Please include a new bridge option, the Armour St at this point. Dravus just cannot support the traffic of the expanding Magnolia, even with improvements.
129	Component 10; it doesn't give access to Magnolia, only goes to Marina. Leaving Magnolians with only 2 access points. No improvement on Emerson?! Component 7; doesn't give any access to Magnolia.
130	What is the value of the resources (money, staff time, community citizen time, etc) spent avoiding following through on the selection made by the taxpayers to replace the magnolia bridge? Why are we abandoning the original decision because we believe funding is unlikely as we continue to spend money to research alternatives? Poor public leadership. Where is the financial accountability and/or frugality being demonstrated for the taxpayers contributions to this city? I refuse to rank partial options only to have this input used as a statistic to support alternatives that never should have been pursued.
131	What happens when a big emergency such as an earthquake occurs? Do you have an evacuation plan?? Leaving Magnolians with only 2 access points. No improvement on Emerson is mentioned!?!? Emerson is such a mess after the change of the bike lane. Only 1 lane coming back to Magnolia has made traffic backed up all the way down to fisherman's tarminal and more. It's even worse going to Ballard/Fremont when Ballard Bridge is up! We can be stuck for 20mins easily, not able to get out of Magnolia. These plans are only going to make things worse. Unacceptable! Only having Emerson and Dravus exits could create such a mess during the rush hours and every time Ballard Bridge is up. We need AT LEAST 3 access points. Magnolia IS an island, only connected by the railroad which is inaccessible by car/bicycle/foot.
132	I would like a full replacement of the Magnolia bridge

ResponseID	Response
133	Armory Way Bridge Having a third access point into and out of Magnolia via Armour Way and a Bridge over the tracks is an important safety outlet desperately needed by the Magnolia Community. In the case of an emergency, the additional access point would allow emergency personnel to reach The community quickly and could give residents some relief during rush hour traffic headed into Ballard. However, I am concerned about the left turn from 15th Ave onto Armory Way. The congestion already in that area that would only worsen with the hundreds of cars lining up to cross traffic at peak times. Previous Magnolia residents dealt with that very issue already! They had enough with the left turns onto the Magnolia Bridge and resulting back-ups and long delays, and they built the overpass as a solution. Will this project include some kind of overpass to get onto Armory Way from 15th Ave? Dravus Expansion Dravus St. between 15th and Thorndyke is frustratingly congested at rush hour—morning and evening. It's gotten especially worse with the recent addition of the bike lane and signals at the Dravus/Thorndyke intersection, as well as West Emerson. Can enough capacity be added to Dravus to meet increased number of Magnolia residents and freight traffic that are displaced from the Magnolia Bridge? Will both the width and number of lanes increase on both overpasses on Dravus?
135	This city is ridiculous. We voted for monorails three times. Nothing. You take forever to study study study things and guess what -- property values and costs go up and suddenly the best alternative is unaffordable. You push to increase density while skinnying roads and rejecting/removing transit options. What is the overarching plan for how we (taxpayers) will move within and through the city??? How many more bait-and-switches? How much more squandering of public funds? How many Republicans do you aim to create??
136	I find it absolutely insane that after all these years of meeting citizen engagement on the bridge study with wishy washy promises, the city of Seattle decides it would rather let our bridge decay and choke our two remaining ways out of the neighborhood than do what it said it would. If the city hadn't wasted millions of dollars on all those studies, we wouldn't have to have this conversation. The city seems content with taxing the living daylights out of the families of this neighborhood and doesn't seem to feel like it owes us anything. Well, we have certainly had enough. Thank you, city government, for making our home unlivable.
137	Replace the Magnolia bridge. I avoid Dravus Because of the back ups and forget about Emerson, it's worse now that it's only one lane. The Magnolia bridge is the only way to get to the business center.
140	Thanks for doing this! I live on 25th and Bertona and I would like to both be able to drive down 15th without insane traffic, and take a bus to downtown 5 days a week for work. Those are my priorities.

ResponseID	Response
142	I think the majority of magnolians are open to a LID to fund an in kind replacement, especially those of us on the south end of the peninsula. Alternative 1 is moderately acceptable, alternative 2 is bad, and alternative 3 is laughable. I'm an engineering student, I understand the kind of pressures your group is under and I want to help the process in all the limited ways I can. But I expect magnolia's population to continue to rise, our business impact to grow and the general demand to grow. As of now, in the afternoon it takes me roughly 5 minutes to get between thorndyke and 15th on Dravus. It takes about 1 minute on the magnolia bridge, anything besides 3 full access routes is simply unacceptable. Lastly, just as the railroad contributed in 1929, many residents fully expect BNSF and The Port of Seattle to pull their weight in this project as their activities are essentially what requires the access to be in bridge form. ps: the last question is "check all that apply" but only one can be selected.
144	I can't afford a car. I support improvements that make biking (mostly important to me), transit, and walking (I am least able to walk) safe and convenient. I ride with a bike trailer or baby seat so need pathways that are wide enough to accommodate that and have curb cuts as I cannot lift the bike up. I want a safe route that does not gain unnecessary elevation.
148	The already existing ramps at Garfield MUST be integrated into access to Magnolia from northbound Elliott. It's the only way for that many cars at evening rush to efficiently turn left and begin the path to Magnolia - making them all turn left at 15th and Armory would be a disaster, and will be even worse when capacity is lost to the train. Once on the west side of 15th, the flyover could continue as it does now, but return to ground level and turn north after passing the railroad. Re-purposing some of that area now used as parking to become a road would be far cheaper than building a bridge at Armory, not to mention widening Dravus where new apartments have just been built.
151	The only right alternative is an in-kind one-for-one replacement. You already knew that the number of years ago and it wasn't funded then. You need to figure out how to get that funded.
152	Replacing the Magnolia Bridge is the #1 preference. Please focus there as this is most logical!

ResponseID	Response
154	The Garfield Street Magnolia Bridge is a critical part of Seattle infrastructure and should be rebuilt. Seattle is the fastest growing city in the US and needs more infrastructure investment, not less, inorder to prepare for the future. Lower cost alternatives do not fully value the cost to the neighborhood of disruption and changes in traffic flows through local streets. Magnolia has the West Point Treatment plant on one side and Balmer BNP railway yard on the other side. Replacing the Magnolia bridge is the best option for the future of Seattle and maintaining quality of community life.
155	There must be a third access point to Magnolia in the south part of the community. Traffic will not be manageable if it is directed to two northern access points.
157	Replace the bridge. If the city/county can afford free community college and also give $190M to the billionaires who own the Mariners, we should be able to finance basic infrastructure.
158	The Garfield Street Magnolia Bridge must be rebuilt. This is the only equitable solution to maintain key infrastructure for the city and to respect this neighborhood, which accommodates both the regional West Point Treatment plant on one side and the Balmer BNSP rail yard on the other. Low cost options do not fully value the cost to the community of traffic flows through local streets and disruption to the neighborhood. Over the lifetime of the replacement options, these community costs could significantly level differences between the costs of rebuilding the bridge as compared with other options. Seattle is the fastest growing city in the US and should be looking at increasing tinfrastructure, and investing in replacement of the Garfield Street Magnolia bridge.
160	We need a ONE to ONE replacement of the bridge. I've attended many of the community meetings and drop in session and it's clear that SDOT and the city is trying to push an agenda even though your own study found that a one to one replacement was the preferred alternative. In the drop in session MANY people asked why we could not vote on the bridge replacement, but instead only on the alternatives and representatives there said that they were trying to "stack votes" for the alternatives to show that the neighborhood likes these instead of the bridge replacement. We're not fooled. This online survey is exactly the same, a farce. You are wasting more money and time chasing non-viable options to push on us citizens that could instead be put into the one to one replacement that your study of just 3 years ago revealed was the best option. This is wasteful. It is deceitful. Stop playing games with us, our livelihoods and our lives. ONE to ONE replacement is the only option.

ResponseID	Response
162	This is madness. Typical of Seattle, YEARS and MILLIONS OF DOLLARS have been totally wasted studying bizarre "solutions" to not repair/replace Garfield Bridge. I invite any and all of you "studying" your alternatives to come over here, any time of day, and try to get off Magnolia via Dravus and/or Emerson. My socio-economic status has absolutely no bearing on replacing the bridge. Quit throwing money away (which you may or may not have) and fix the bridge!! P.S. "Pick all that apply" only allows one box to be chosen. Nice.
163	REPLACE THE CURRENT BRIDGE!!!!
164	Not being able to provide something that increases capacity, or is considered an improvement is somewhat understanding, but basically providing a solution that is significantly worse than what it is now (eliminating a key bridge connecting a large neighborhood) is ridiculous. This is particularly true, in a booming city. The amount of revenue (taxes) being generated from the construction boom, increased property taxes, and other tax increases should allow planning for projects like this in a certain time period. The management and efficient use of all of the revenue that is available is lacking. I'm pretty sure all of the increases in property taxes in Magnolia over the past several years alone would be a good starting point toward financing for a bridge replacement.
165	I heard about this through a local Yahoo group. Please send postcards about this survey to Magnolia residents.
166	Are there any public transport options? How does this benefit those living in west Mag/Viewmont area -- current bridge allowed folks to circumvent the traffic through central magnolia and stay on the perimeter of the neighborhood. Are there any bolder options -- water taxi from the marina, fernicular to light rail connection, gondola connection to bus depot? 'Futuristic,' bold, public transport options seem to have a longer staying power as Seattle grows. Should help mitigate traffic as well. Why the conservatism? Why no bold options? Many Seattlites are forward thinking, bold, 'futurists' -- why is the city council not the same?
167	Wish this type of survey was available before the city took action on the bike lane upgrades along Gillman and 20th. I bike to downtown from the North side of Magnolia as often as possible. The upgrade was unnecessary and has visibly increased traffic coming in and out of Magnolia along the Dravis an Emmerson intersections. It's hard to imagine that a traffic study would have gleaned the updates as cost effective relative to commute times. The backups along Dravis alone are worse now then they were when the Nickerson loop was closed for maintenance a dew years back.,

ResponseID	Response
168	Improvements on Dravus alone do nothing to alleviate traffic as you add more cars on the road but create bottlenecks into the residential streets once you're into Magnolia. I'd submit that these alternatives do not replace in kind what we already have. The bridge is the most straight forward southbound exit from Magnolia - the alternatives has us snaking all through the town taking more time and reducing overall traffic safety through residential streets. This survey is only designed to compare alternatives whereas a majority of Magnolia residents want the bridge rebuilt. The port paid for a portion of the construction originally because it was in their interest - where is their involvement this time in terms of funding? This is one of Seattle's largest communities - where is the city's support in maintaining our infrustructure considering the tax base that livers here?? Let's spend more money to change the plans that were already decided on for something that creates more problems than it solves - ridiculous.
170	Good analysis and information. Clearly the only viable path forward is the replace the current bridge with a new one in its place.
171	REPLACE THE BRIDGE!!! The money for the bridge has been used for less important projects. We pay very high taxes on Magnolia and we need to get something in return. Any alternatives to not cut it!!!

ResponseID	Response
172	All of these alternatives force Magnolia residents to choose between a series of bad options, and none of them are acceptable alternatives to a bridge replacement. More importantly, all of these alternatives will radically increase traffic both on Magnolia's side streets and on Elliot Ave. W. and 15th Ave during peak traffic congestion. I am flabbergasted that the City has not already sought State and/or Federal funding for a full bridge replacement. Given the configuration of Magnolia, a full bridge replacement is the only feasible option that will not drastically worsen traffic influx and outflow. During construction, for example, Magnolia residents will only be left with two bad options--Dravus St. and W. Emerson Ave. Both of those roads cannot handle the increased traffic diverted from the Magnolia Bridge closure, and will inevitably lead to massive traffic delays, backups, and increased rates of accidents on Elliot Ave. and 15th. Ave. Each of these bridges is also very old and probably not designed to handle the increased traffic capacity that the City is proposing. Additionally, all of the alternatives dump diverted traffic into already worsening traffic congestion locations. With all of the new apartment building construction at Dravus, I am not sure how the City plans to expand that street any further in a meaningful way to accommodate the additional increase in traffic from those buildings. Most importantly, the Magnolia Bridge is the only free, unencumbered entry point into the "island," and the only quick, safe way in and out for emergency vehicles. I dread the thought of what would happen if there ever needed to be a mass evacuation from Magnolia with any of these traffic alternatives. Further, eliminating a full bridge replacement will isolate residents living on the south side of Magnolia and drastically increase their commute. I strongly believe that Magnolia residents would do what it takes to ensure funding for a new, full bridge replacement, including accepting higher levies. Given the amount of money that has already been spent on just coming up with these alternatives--and the fact that nobody has apparently even looked into federal or state funding for a full replacement--I do not believe the City is taking this problem seriously. We need a new Magnolia Bridge! Please don't force residents to choose between a series of terrible alternatives and do what you can to secure funding any way possible!
175	REPLACE THE MAGNOLIA BRIDGE
177	We need to replace the Magnolia Bridge, not look at these alternatives

ResponseID	Response
178	Although I have prioritized the improvements as requested, I don't see any of these alternatives providing any where near the same access as the in-kind replacement option. I also question whether these 'low cost' alternative components accurately reflect the real costs that will be involved once the full effect of right of way, environmental permitting, new bridge spans, and the multiple project components are fully understood. All of the low cost alternatives reflect a cobbled together system that seem destined for cost overruns and are unlikely to perform well either for Magnolia residents or for traffic between Ballard, Queen Anne, and downtown along 15th.
179	There IS no "recommended alternative." SDOT simply cannot be blind to the reality of how this isn't just a one bridge issue, but has impact for the entire region. No viaduct and the Nickerson "diet" have only added to the problems already in place with the limited egress from Magnolia and the growing impact of accelerated housing and Expedia-like employment along 15th. You cannot keep making isolated mistake after mistake and expect no impact. This brings us to the breaking point!
180	Replace the Magnolia Bridge
181	The above options don't seem sufficient to provide easy access to Magnolia. A replacement bridge should be on the list.

ResponseID	Response
182	I went to the Magonlia park open house and that very efficient, just sad it was not talked about till day of. I put in a comment card there as well but here is more/repeated my points: - how will the emergency responders be impacted getting to magnolia if Davis is the only way other than Nickerson. If the Ballard bridge is up our responders come from downtown. Also with the way that 15th is already backup every night the emergency vehicles already have a hard time getting through and that is only going to get worse when the viaduct comes down. - the bridge needs to be replaced as is. We have already been screwed on the tunnel and sound transit... don't throw more salt in the wound that's just rude. - originally the bridge was partially paid for by the residents, take the money 98199 zip code is paying for sound transit (that we will not see in our neighborhood in this lifetime) on our tabs and put that towards the bridge that actually will be used by 95% of magnolia residents. - also the number of people who use the bridge has changed dramatically even in the last 6 months because of the changes made to Davis and nickerson bridges. - my family has been in magnolia since the 20's and so we have been through all of the issues and not having that bridge is a nightmare. One final thought, 3 weeks ago on a Friday when there was an accident on the Aurora bridge, it took me 45 mins to drive to 67th and dibble in Ballard. I was pissed that day because that is ridiculous and my husband left at the same time from mukilteo and beat me there. However I am now left with guilt because that was the last family dinner with my sudo grandpa. I don't tell this to make you sad just want you to understand that the major quality of life issues your decisions will make. Thank you for time.

ResponseID	Response
183	My preferred component was not included in this planning study, a one to one Magnolia bridge replacement. What are the current total Magnolia Bridge maintenance costs (from 2006 to June 2018) since the decision for a one to one replacement was decided on in 2006? Those costs could have been put towards the the cost of the new Magnolia bridge. The 3 leading Magnolia Bridge Project alternatives A,C,D from 11/2005 were all bridge replacements and the final alternative chosen after years of studying, city, Port, and community input, and environmental review was option A, a one to one replacement. Why did you review and rescreen the 25 original alignments from the 2002-2008 Magnolia Bridge Study when this work was already done? We could have used this time and money for the bridge replacement. The city has and will continue to increase population in Interbay and Magnolia with apartments on Dravus and the Fort Lawton Redevelopment. That, coupled with increased congestion on Elliot/15th with Expedia in 2019, the Ballard Bridge, access to Discovery Park and West Point Treatment Plant, and bike lanes that are rarely used, supports a one to one replacement. As a long time resident, worker, and taxpayer of this city, I am furious with the lack of financial responsibility and accountability of the Mayor and City Council. I do not know any other jobs where extreme overspending on a project (bike lanes) would be overlooked. Why did you not stop after the first mile of bike lanes and say wait a second, this is way over the budget and we have multiple other projects that are more important than this, affect more people than this, are critical to public safety and safe transportation? Do you want to be the next Minneapolis, Minnesota (I-35W Bridge collapse killing 13 injuring 145)? Not even an apology that yep we screwed up, we hired someone who had no financial or investment background to manage the city and taxpayer money and things did not go as planned and we overspent in areas we should not have. Maybe this time you can do the responsible thing and build upon the work and money that was already spent from 2002-2008 and complete the one to one Magnolia Bridge Replacement. While I do support bikes are cars and believe that bike lanes make it safer for both cyclists and motorists, bikes and those who ride their bikes are not part of basic traffic infrastructure, a bridge is. This bridge has been here for almost 90 years. It is clearly an important part of the city's and Magnolia's (one of the largest neighborhoods in Seattle) infrastructure. The one to one replacement from 2006 has room for bikes, cars, and pedestrians! I was at the May meeting in Magnolia and all the representatives from SDOT, the city, etc were asked how they got to the meeting that night. Every person took the Magnolia Bridge....
186	Replace the existing Magnolia Bridge. It is clearly the best solution.

ResponseID	Response
189	My husband and I both fully support a 1:1 Bridge Replacement! The fact that the city already undertook a multi million dollar study that clearly recommended a 1:1 replacement and that the City has flagrantly ignored this expensive and detailed study citing budgetary constraints is preposterous! What are we paying property taxes for? We are outraged! It is insane to imagine you are actually seriously deliberating alternatives that are in no way equal or sufficient. Blue tarp solution to a failed roof indeed!
190	Please replace the bridge. It is ridiculous that this would not be done when so many other tax dollars are being wasted.
191	I would like to see the bridge replaced. The alternative routes you are considering do not take into account the traffic on 15th ave w. as is or would be in the future. Heading north on 15th I currently take a right turn to access the current bridge thus relieving traffic volume on a very busy 15th ave at rush hour time. Adding yet another left turn line up to access a new bridge would add considerably to the afternoon congestion on 15th. There is no illustration in this presentation regarding Sound Transit plans for their rail line. This would be helpful info.
192	A bridge replacement is necessary. Please replace the bridge and abandon these alternatives.
194	A 1:1 replacement of the bridge is needed. What funding alternatives have been explored to cover the cost difference between a 1:1 replacement and the alternatives? Have you approached the state legislature? Have you updated traffic studies that are supposedly needed for federal funding? What about an LID? What is being asked of Expedia as a corporate citizen to help mitigate the impacts of its move into the area?
195	I can't rank the alternatives because I don't really understand how they would work. I ask all public officials involved in this decision to go into Magnolia and to drive north on 15th at 8:00am on a weekday. I ask all public officials to try to leave Magnolia via Emerson at 5:00pm on a weekday, preferably when the bridge is up. You will see how long the back ups are. I think this will give you a better perspective of why we are saying we need this bridge to be fixed. I realize it is incredibly costly. I had a customer who is located in Southpark and that bridge was closed for years. Magnolia is basically an island cut off by water and the railroad. More multi-family housing is being built in Magnolia, Interbay and Ballard. Light Rail is a long way off, it is not feasible to think that the bridge cannot be replaced.

ResponseID	Response
196	The Armory Way Bridge would negatively affect the residential neighborhood on Thorndyke Ave W (extra traffic, noise, less parking, etc). Property values would decrease more significantly there than in other parts of Magnolia, and Southeast Magnolia is already the least-affluent part of Magnolia. Other options mostly affect existing routes and would likely have less impact on the surrounding neighborhoods. Has a study been done to estimate the amount of Magnolia property value that would be lost by failing to replace the Magnolia Bridge? It seems like that amount would be comparable to the extra $100 million or so it would take to simply replace the bridge rather than settling for one of the lower-cost alternatives. Surely that justifies the cost. Propose something to raise revenue for the in-kind replacement and pitch it to Magnolia homeowners as a way to maintain property values. Then everybody wins.
197	There are only 3 means of access into and out of Magnolia. These access points are allready strained as is. Getting rid of one of these three access points to save some money creates more of a funnel in and out of Magnolia even if you increase the number of lanes at the remaining 2 locations. The intersections at Gilman / Dravis and Gilman / Emerson cannot get bigger to take the increased traffic and are allready dangerous for bike riders. A 3rd access point into Magnolia is needed weather you replace the existing bridge or not. It also doesn't help that you give priority to any boat going under the Ballard bridge which backs traffic all the way back into Magnola rendering Emerson useless leaving Dravus the only remaining road out when the bridge is up.
198	The Magnolia Bridge MUST be replaced! The other alternatives are not alternatives. Even consider a LID to replace
201	We would ideally like to save the bridge we have now.
203	The survey is improperly designed. none of the components address access into Magnolia. They address access to the Port of Seattle properties. The scope of the project and analysis are improperly defined and therefore your cost estimates are under budget and do not reflect the true cost of removing the Magnolia bridge.

ResponseID	Response
204	1. Study presents an alternate means of going to and from Magnolia, but does not indicate what happens once one arrives at Thorndyke Avenue W. The information being presented is incomplete. 2. The results of the traffic flow model for the entirely of Magnolia should be included in the presentation materials. The traffic model will provide needed information for Stakeholders to provide informed comments. Show the Stakeholders which routes will bear the brunt of the redistributed traffic flow in Magnolia. 3. Is W Dravus St, west of Thorndyke a City-prescribed alternative for handling increased traffic in that part of Magnolia? If this is the case, aside from the geometrics of that road as it scales up and down the steep hill, the City and the licensed authorities that would justify a plan to route traffic here (on the Dravus hill) will become open to liability for increased accidents (property damage and injuries) resulting from the intentional routing additional traffic to this steep roadway. 4. Increased traffic flow on 15th Avenue W in both directions will exasperate the already jammed flow of traffic in the PM peak. 5. There is limited capacity at both W Emerson Street between Gilman Avenue W and 15th Avenue NW, and on W Dravus Street between Thorndyke Avenue W and 15th Avenue W. Particularly limiting is the northbound 15th Avenue W traffic and the resultant backup of all traffic on to eastbound W Dravus Street. 6. Please replace the existing Magnolia Bridge adjacent to its existing location. Thank you
205	Before something happens to the Magnolia Bridge, complete all the proposed roadway improvements AND build the Armour Street Bridge. No one alternative would seem to be able to handle the traffic increase from the loss of the bridge, in addition to all the new housing coming in InterBay and the proposed housing next to Discovery Park. Seattle is growing city-wide and the sewage from the City is processed at West Point. As the population continues to grow, more trucks hauling sewage sludge will add to the traffic. The Magnolia Bridge works and replacement may be less expensive than multiple alternatives. The study from 2002-2008 concluded 1:1 replacement was the best option. Perhaps it could be replaced in sections, as was done in the past for significant upgrades. Perhaps the people in Magnolia could help pay for the work as was done when the Bridge was first built. It would seem there may be other sources of revenue than just the City and residents as happened in the past when the railroads participated. Please don't just tell us after all these years we get only what would amount to a temporary fix, even if you call it a "permanent" one. Time would show any one proposed alternative would need to be enhanced in the long run and cost even more money. Thank you for reading this.
206	Replace our bridge 1 for 1
207	Full replacement of the bridge is the best option for mobility

ResponseID	Response
208	I vote for replacing the existing bridge and continuing the conversation on how to pay for it vs. being told that I need to vote for an option that I don't agree with. The dismissive manner in which this has been handled so far is unnerving. Why have we not worked on financing when we knew it needed to be replaced and why were the costs so far off? Who is being held accountable?
209	This survey isn't asking the right questions - I cannot judge one toxic "solution" in comparison to another equally toxic and insufficient proposal. Most of these alternative components were eliminated from consideration early in the 2002-2006 study for good reason: they did not serve the community affected, and made traffic worse. None of these alternatives really help Magnolia at all. A 1:1 Replacement is what we need. It is outrageous that we, the public, only count 15%, when the Magnolia Bridge = at least 33% of our access. Dravus expansion or Dravus signal improvements will handle capacity AND/OR address travel times in a positive way are a pipe dream. It is outrageous to contemplate spending taxpayer dollars on Galer/Alaskan Way and viaduct replacement that only leads to a PRIVATE marina, since both only benefit private companies, and do nothing to provide access to and from Magnolia. PS Your last questions says "pick all that apply" but it only allows one answer.
210	Could there be an option to focus on the combination of Dravus improvements and Armory bridge?
212	Spend the extra hundred million and replace the bridge. Also improve dravus. There is a ton of development going on and you need to plan for the future. The city has planned for the "now" time and again and only makes incremental improvements that barely get us by. Make an investment. Also, it looks like the port just wants a private road and facility for themselves. How about have them pay something for a new bridge? Plus this is a weird survey. This should be based on traffic and use and not which gender you identify with. Also, the bus works only to go downtown and barely that. It just takes too long to ride it anywhere else.
214	Your survey will give you skewed results since most Magnolia residents do not support any of the alternatives to replacing the bridge. I, for one, feel betrayed by city representatives who have led us to believe for many years that progress was being made in replacing the bridge. Those of us who have lived through 2 closures of the bridge (due to a landslide and then an earthquake) know how much this will impact the neighborhood. Businesses will be hurt and residents will be dealing with poor traffic flow and even more limited bus services. This is not acceptable.

ResponseID	Response
216	Funding is a choice. The city is CHOOSING not to find the funds for the bridge. I am wondering why it has always been (and per your planning so far, will continue to be) so difficult for Magnolia residents to access Smith Cove.? With the new park improvements, there's even more reason to go there - can we fix that? The businesses down there could hugely benefit from better access. We have spent millions of dollars on work to date for feasibility, etc. Why are SDOT, the Port and the city not collaborating more effectively with each other and with Magnolia residents to find a solution that works for all? Are there vested interests that we don't know about? It is CRAZY to notify our community at the 11th hour that you are choosing not to replace the bridge.
217	I don't understand why you didn't include a one-to-one replacement of the Magnolia Bridge as one of the choices. That is my first, and only, choice. Your data will be misleading without including it. All of the other choices will cause traffic congestion with resulting time delays, air pollution, and noise. It's particularly unfair to direct traffic up and down Thorndyke, where many of Magnolia's poorest (and most racially diverse) children live. Replace the bridge. Also, your "Pick all that apply" button on the last question on this page is broken. I can only pick one, but every paper I read and every local group I belong to is discussing this issue. No one can understand why you are acting irresponsibly toward Seattle citizens.
218	Like many in the Magnolia community the Garfield Bridge is the lifeline to our neighborhood. This entire process has been poorly handled by SDOT in particular. The only resolution that makes sense in any even financially is a 1:1 replacement. Many of you should take the time to drive on Dravus and Emerson St. during rush hours to get a sense of what it is really like. Pretty easy to set our your markers and make your determinations yet those that live in this community have to suffer the consequences for you ineptitude. The Magnolia Bridge serves bus routes and emergency vehicle routes that are not assessable by Dravus or Emerson. Adding a bridge at Armory only means the widening of streets at Thorndyke and Blaine, etc. It means more drivers will use the side streets to assess the Magnolia Village. There is zero common sense in any other solution than a replacement 1:1. It is the only rational solution.
219	Not replacing the Magnolia Bridge would be disastrous for our community of 20,000 people. Dravus is already gridlocked at busy times of day. Same with West Nickerson by Fishermen's Terminal, esp after the bike lane haircut. Speaking of which, I think the bike lane is great except that it was really short-sighted if the City was not planning on replacing the bridge! At busy times, I've already seen traffic backed up so far that it blocks the right hand soutbound lane of the Ballard Bridge. Already, it can take 30 minutes to feed from Government Way past Fishermen's Terminal and onto the Ballard Bridge northbound. There is absolutely no acceptable alternative to a 1:1 bridge replacement!

ResponseID	Response
220	The survey does not include replacing the Magnolia Bridge or any other southern access to the entire land mass of Magnolia. The drive along the bluff is the most beautiful in the City and leads to the City's grand Discovery Park. Any of the alternatives would make these important attractions difficult to locate. If low cost is all that matters, why is the ravine not being considered? The survey has an error: the last question says to pick all that apply and only allows one bullet.
221	This is crazy. Funding to replace the bridge was secured years ago. I would like to know where that money went. Millions were also spent on a feasibility study which recommended replacing the bridge. Why was all of that money wasted and a new study done? If the bridge would have been replaced in a timely fashion years ago when the money was secured and the original study done, we wouldn't be in this mess. Every year, I pay thousands of dollars more in property taxes on my one-bedroom home. I would like to know where this money is going. There is absolutely no accountability in Seattle's government agencies.
223	I am responding to this survey, yet I worry that the city doesn't really care what Magnolia residents think about the bridge proposal. Once the city decides what it wants, off you go. Council member Sally Bagshaw hailed the "dialogue" we had regarding the proposed low-income housing at Lawton and adjacent to Discovery Park as a model for community engagement (http://bagshaw.seattle.gov/2018/01/30/building-a-pathway-home-at-fort-lawton/) yet, at the first meeting, the city representatives unplugged the microphone after their opening comments (which were to the effect that our neighborhood was not a "welcoming environment", that it was not diverse enough and that our homes were too high priced, as if somehow, this was our fault). Angry residents took control of the audio equipment and started voicing their concerns. The 2nd meeting was stacked with stakeholders (nonprofits and others who stand to receive funds from the city for their services in connection with the low-income housing project) and so-called Social Democrats who don't live in Magnolia. I attended the meeting for 2.5 hours and never heard a single Magnolia resident speak as all of the slots to speak had been filled hours before any of us thought we had to be at the church. The threat from the City was clearly delivered - the Lawton site could hold as many homes as Holly Park; you're lucky that is not the proposal on the table. Now, we come to the so-called dialogue on the Magnolia Bridge, but we only get to talk about the lower cost alternatives (I ranked those at an in-person meeting so have not completed the on-line survey on those alternatives), not replacing the bridge with another bridge, which is what we all want. What have we done in Magnolia to attract such ire from city government? The Social Democrats at the 2nd meeting on the Lawton housing project shouted insults at us: "white, wealthy Magnolia-ites hoarding their private park." When did we become the bad guys? We're liberal democrats here - we care about the direction of the city and all of its inhabitants, including the homeless. We contribute time to community activities and money

ResponseID	Response
	to charitable causes, we educate ourselves about the issues, and we open our pocketbooks (repeatedly) to the city's requests for money: for the homeless, for schools, for parks, etc. Property values in Magnolia have skyrocketed - not because of anything residents here did. While view and waterfront properties here are owned mostly by the wealthy, that is the case in all Seattle neighborhoods where there are views or properties on the water. All around the interior of Magnolia, however, homes are more modest, and people are just trying to keep those houses as they watch their property taxes skyrocket through no fault of their own. Where is our light rail? Where is our improved bus service? What we have are 3 roads in and out to one of the busiest thoroughfares (15th) in the city. Thousands of employees and cars coming to Expedia and increased high density housing development at Interbay and along the 15th Avenue corridor, will make matters worse. Each day, workers pour in and out of the Salmon Bay/Fisherman's Terminal business area, creating huge traffic jams at Emerson. The reduction of Emerson to only 1 lane each direction to accommodate a bike lane has further choked that corridor. People trying to avoid Emerson can go down to Dravus, where increased housing density at 15th has ballooned traffic there as well. When the Ballard Bridge goes up (6:00 pm like clockwork), traffic backs up both directions, to the South past Dravus. What is left is the always reliable route up or down the Magnolia Bridge. When you come from downtown in the rush hour, you can tell if traffic is backed up past Dravus and jump onto the bridge. When Emerson and Dravus are stacked going to downtown, you can travel across the top of Magnolia to the Magnolia Bridge. If that route is gone, all traffic will be compressed into 2 already clogged routes. The Magnolia bridge serves as the delivery route for commercial traffic to Magnolia Village. That bridge allows emergency vehicles to access Magnolia quickly. That bridge allows residents all over Magnolia to go North and South. That bridge is currently the only route for bus service to downtown Seattle. That bridge provides the most scenic route for the thousands of tourists and local residents who visit the city's largest park - Discovery Park - a park that is there for everyone to enjoy, not just Magnolia residents. I reviewed the proposed replacement bridge design. Surely there are ways to reduce the cost of that bridge - we don't need a tajma-bridge. We need a reasonably priced replacement. No one is going to bike up that bridge so skip the bike lane (my primary mode of transportation from Magnolia is by bike, so I don't speak from bike-spite). We don't need more lanes; just replace what we have. At one of the public meetings in the Village, I heard a local resident make a good suggestion: city representatives charged with making the determination about this situation should be required to drive from downtown Seattle to Magnolia during the rush hour – they should be required to drive from the Salmon Bay area at 5:00 pm to downtown via 15th, just to get a feel for the traffic at that hour. We are told now that the city just doesn't have the money for a new bridge and that the population density (or lack thereof?) in Magnolia doesn't justify this expenditure of funds. How do you think that sounds to a neighborhood paying its fair share of the cost of light rail it can't access, a bus tunnel it can't access (and the loss of the route we now have to go South), and Metro service that runs only every half hour and takes an hour to go 6 miles to downtown during the rush hour? It

ResponseID	Response
	sounds penal and vindictive. We're a community; we are in this together. Whatever happens, Magnolia residents need to feel like they have been heard, that their concerns have been addressed, and that the reasons for the decision are fair, thoroughly explained and well-reasoned.
224	Please implement the 1:1 bridge replacement. The current bridge serves the community well.
225	My name is [redacted]. I am an 11-year homeowner at [redacted]. Prior to purchasing my condo I was a renter on Thorndyke Avenue for 4 years. I cannot urge you strongly enough to abandon the Armory Way Bridge/Halladay street alternative. The construction of this bridge will radically change the quality of life at and near this location. Residents will be impacted by high traffic volume, noise, excessive light, reduced air quality, loss of on-street parking, decreased safety for drivers, pedestrians and bicyclists, and a radically reduced proper value. As it stands this proposal would likely influence my property value to the extent that I could only sell it for far less than I currently still owe on my mortgage (and potentially could still owe at the time of the completion of this bridge). The Armory Way Bridge/Halladay street proposal as it now appears is unfeasible. There will be massive traffic impacts on 15th Avenue where drivers would have to turn left onto Armory Way. This will back up traffic south on 15th Avenue and Western Avenue, onto Denny Way and downtown. The current plan calls for one lane each way on this bridge, which is not enough to handle the traffic volume. The current plan does not call for a widening of Thorndyke Avenue or the building of a dedicated left-turn lane onto Halladay Street from Thorndyke Avenue. This plan also cuts off all of Magnolia south of Halladay Street, and would require an extensive rerouting of traffic from South and West Magnolia onto narrow residential streets not constructed to withstand the weight and impact of traffic of this volume. The lack of direct access to South and West Magnolia will impact property values and will damage businesses in beloved Magnolia Village. Magnolia's population is increasing, and it is facing increased rents and impacts from the homelessness problem. While we weather these changes well, the failure of the City to provide a one-to-one replacement of the existing Magnolia bridge will have a negative impact on the community for generations to come. Please make every effort to provide a one-to-one replacement of the current bridge. If that replacement remains unfeasible, I beg you to abandon the Armory Way Bridge/Halladay Street alternative (Alternative 1). Thank you very much.

ResponseID	Response
226	Re-channeling traffic from the Magnolia Bridge to the Dravus bridge would be foolhardy and dangerous. The sharp left turn and steep descent at the top of Dravus Street (at 30th) is already a dangerous route with many near head-on collisions at the top. Particularly during inclement weather (not just snow and ice, but even rain), many cars have difficulty negotiating 1) the steep stretch of Dravus between 20th and 30th, 2) making the sharp left turn and steep descent from 30th to Barrett, and 3) climbing 30th from Barrett to Dravus. Increasing the traffic along this stretch is guaranteed to result in an increase in accidents. Cars coming down the steep section of 30th from Dravus to Barrett have 1) sometimes missed the corner and run into the planting strip, 2) clipped cars parked along Barrett, or 3) ignored the stop signs and sped along 30th heading south. All of these streets are narrow, residential, and full of families with children. Additionally, 30th is often lined with parked cars on both sides of the street due to the lack of garages and off-street parking in the area. What you are proposing by eliminating the Magnolia Bridge will result in traffic being re-routed to Dravus. As I noted above, this will result in an increase in dangerous traffic scenarios as well as making life in Magnolia just that much less bearable.
227	It seems unfathomable to have a population of approximately 17,000 people without terrific access to their area of Seattle. There are, clearly, many transportation issues springing up in the city and also, clearly, many poor decisions being made that are not solving problems adequately. The traffic towards Ballard will only increase dramatically with Expedia's 3,000 person campus opening soon and any additional decisions made that would increase the demand for portions of 15th could be a nightmare for everyone involved and result in even more costly retro-fixes in the future. Also, the economic sustainability of Magnolia restaurants and shops will be very adversely affected and may result in closures for our already underserved community. I understand the push for a one-to-one replacement solution, and I agree it is the only fair outcome. That said, the Armory bridge is clearly the second best solution if the funding doesn't provide a new Magnolia bridge replacement.
228	We need the bridge replaced This community needs all 3 access routes Adding public housing to magnolia and reducing access is not in the best interest of the community I am not ready to give up on funding a bridge replacement The city has some basic problems with funding/passing bonds/levies and over promising what will be included. They are obligated to work for funding what they got support from the public for. Just saying sorry guess we can't do what we voted for isn't good enough. Time for fiscal responsibility
229	We need the 1:1 replacement bridge, regardless if it's the most expensive option. A 1:1 replacement is the best way to access lower Magnolia, including Magnolia Village. Please don't harm our businesses by insisting on saving the most money.

ResponseID	Response
230	I echo many people who support the option that is not shown in this survey.... 1:1 replacement of Magnolia Bridge. I will quote one of Magnolia resident's comment here because I think it is worth considering. "I believe a realistic cost reduction approach for the Magnolia bridge would be a repair ,replace scenario done in the same location as the current structure. The east bridge portion does not need immediate replacement (up to the mid bridge exits,ie the the low portion over the BNSF ROW can remain) .However ,this lower bridge replacement cost is included in the current SDOT 1:1 estimate.This section could also possibly be remediated once more for seismic issues ,using current technology. The lower bridge section can be replaced at a later date,under a separate budget request. The high portion of the bridge could be replaced while operating the current structure,for most of the project schedule. Auger cast piles and caps can be installed between the existing towers.New concrete towers (columns) can be formed and concrete placed to the underside of the existing deck,while the current structure continues to operate. The deck could then be demolished in sections and replaced using both the existing and new support towers for the installation of the falsework and formwork. The existing bridge towers could then be demolished and removed. This is not as easy or quick as blowing up the existing bridge,but a lot less expensive as the exits and east and west approachs can remain in the same locations at the same elevations. The SDOT project engineer informed me at an information session that the lower bridge portions are not in danger of imminent collapse in a seismic event.SDOT believes a complete structure replacement should be done due to convenience and funding issues, (Funding I surmise so they don't ask for money twice.) The engineer stated the lower replacement was a" while we are here item". Which, discounting funding issues makes sense. Even if the current high bridge were totally demolished in one phase and out of service for 18 to 24 months ,reinstalling the high portion only in the same location will save many millions. Cheers, [redacted]"

ResponseID	Response
231	There is only 1 viable solution- replace the bridge. All your other proposals are short-sighted and will cause significant traffic back-ups and will impede reliable accessibility to our homes and businesses. Frankly, we don't trust the SDOT and the data/alternative plans they are proposing. Read the Seattle Times editorial again- Magnolia should not be permanently victimized by SDOT's lack of financial planning. The SDOT and the City Council have buried their collective heads in the sand about this issue for far too many years. Meanwhile hundreds of millions of dollars have been wasted on traffic proposals and projects that have failed to deliver any benefit to Seattle residents. Traffic is a nightmare. Your alternative proposals will be a colossal failure, too. It's a lot easier to build a new bridge alongside the old one instead of disrupting the already congested 15th Ave traffic during construction of the proposed Dravus interchange. The city council has lost all credibility in their financial management, decision-making, and in their ability to govern. We will be politically engaged in replacing every one of them. And also in demanding the replacement of one of the city's major bridges.
232	The only feasible alternative replacement is a 1 to 1 replacement. This was indicated in earlier studies and we were told we did have the money for a 1 to 1 replacement. We would like to know what happened to that money. We want to know how we can afford hundreds of millions of dollars on the homeless, with no transparency or accountability, and spend $12,000,000 per mile for bike lanes that are hardly used yet we can't afford to replace a bridge that provides the major access point, 1 of only 3 access points, to a community of 20,000 that has seen their property taxes increase substantially over the last few years. The entire community is extremely frustrated by the lack of transparency in this process in terms of not being consulted when SDOT determined the bridge wouldn't be replaced when earlier studies indicated that a 1 to 1 replacement was the only option.
233	None of the alternatives make sense . A 1:1 replacement of magnolia bridge is needed

ResponseID	Response
234	Anything other than a 1:1 replacement of the Magnolia Bridge will eventually result in a much smaller Magnolia VIllage business community and will negatively impact the quality of life for the citizens of Magnolia. However, it must also be noted, that for many of us who are older, own our homes and are facing incredible rises in our property taxes, closing the bridge and making Magnolia less accessible might be a blessing. Our property values and taxes would decrease and we could live out our remaining years in relative quiet. I would most likely be in the minority with that opinion, just to be fair. It seems that the City of Seattle is abrogating a contract between the citizens of Magnolia and the city. We pay taxes and fees to support the operations of the City (our end of the bargain), but when the bill comes due for maintaining a vital connection between our community and the rest of our City, the City has mismanaged the dues collected from us over the years, and doesn't have the funds necessary to uphold its end of the bargain. Not having a sinking fund to repair the inevitable replacement costs of all the bridges in our City is passive mismanagement of the worst kind. No one gets voted out of office for it, indeed, no one even notices until something like this comes along. And the current City Council did not create the problem, they inherited it. Mind well, the current CC has an execrable reputation for fiscal mismanagement, but they didn't create the problem. So, I have a suggestion. Total all the costs of doing the most basic replacement alternatives and pledge those funds towards the cost of a new 1:1 replacement bridge. Take the remaining costs for the new bridge and fund that portion with an LID on the citizens of Magnolia, the Port of Seattle and the Railroads. Magnolians are wealthy enough to pay something extra for a vital piece of infrastructure, and for the privilege of living in a beautiful space in this world. If you divide $200MM by 10,000 households, that would be a burden of $20,000 per household. 5000 households would be $40,000 per... Spread it over 20 years and it would be doable. This is not a popular idea, but would hold the feet to the fire of those who insist (as I do) on the vital nature of a 1:1 replacement. Thanks for reading and listening.
235	Concern for the businesses located in the village if the bridge is not replaced. Concerned about cars driving on narrow residential streets trying to get to the village and west Magnolia.

ResponseID	Response
236	The best option, and the one overwhelmingly needed by the people affected by this project, is to replaced the bridge in its current location. The full replacement option was eliminated for the political reason that it is too expensive. However, it is only too expensive based on a politically-determined maximum allowable cost, which is unsupportable at a time when the city is paying $12-million per mile for bike lanes, which compared to this bridge, are an unnecessary luxury. Eliminating the bridge will route thousands of cars, buses, and trucks through residential neighborhoods, with many safety, economic, and environmental impacts. A full EIS should be completed on all the options, including full replacement of the bridge, before eliminating any options.
237	It is critical that the Magnolia bridge be replaced 1:1, and none of the options you have provided be considered. Not only will the environmental impact with thousands of cars sitting in severe traffic be terrible, but access to the largest city park will be impacted along with traffic on 15th, Queen Anne, Elliott and Ballard. It is irresponsible to leave 25,000 Magnolia residents along with all of those that visit or work in Magnolia with poor options for transportation to and from. It's the city's duty to maintan infastructure and providing these options is not ok. In reality this is a $100M issue, not $400M. As a home and business owner, and someone that invests hevily in the community I ask you to please do the right thing. There is certainly money that can be used here, especially with the bridge not coming down for 5 years. This is a problem that should and can be solved with fiscal responsibility from the city and SDOT. How can we as a city do so much to protect our environment and then plan to dump so much more CO2 into the air? Will there be a sign asking people to turn off their engines as they wait (ie Ballard Bridge)? The last time Magnolia had two bridges to use there was a 35-40 minute commute from 28th to 15th via Dravus. And this was without the massive number of apartment and condo units that have developed on 15th. Not to mention Dravus shuts down at the first sign of ice. Magnoliacontinues to grow at a rapid pace and handicapping one of the three access points is unacceptable and short sighted.
238	I work in Magnolia and removing one of three access points is unacceptable. From a safety, emergency and environmental POV it is not ok to cut off an entire city neighborhood. Not only will residents and visitors be sitting in traffic for extended periods, hurting our green and clean environment, but people will not be able to esily visit the best park in the city. Please be reponsible as city leaders with future planning and replace the bridge.

ResponseID	Response
239	None of the proposals are an acceptable replacement for the current bridge. As a voter that has willingly voted for taxes, infrastructure spending and other levies necessary to keep our city functional, I find this particular failure in leadership and foresight completely unacceptable. Severing a crucial artery needed to alleviate the already choked access points will have a number of obvious negative impacts. Bus riders will be further inconvenienced by yet longer commutes and less incentive to ride. Bikers on Dravus with be put at risk with a huge uptick in drivers (and frustrated angry ones at that). Park visitors and other Discovery park residents will be forced to navigate the already reduced lanes around the Emerson entry point, only now with a pile of new cars. How are Magnolia businesses going to appreciate the drop in patrons when the access to their stores becomes unbearable? How about School Busses that now use Dravus to take the Magnolia middle school students to McClure in the heart of rushhour. God forbid you have a loved one that needs medical assistance or police support. Driving up and around to access the south end of Magnolia isn't getting any easier... and when every minute counts, you're now putting actual human lives at risk. It's insane for a city of Seattle's compassion and innovation to even be having these conversations. Let's talk about increased pollution from the thousands of additional cars now crawling through Interbay with another 20 minutes each way tacked on their commute. Quick napkin math gives me 40mins x 5days/week x 50 work weeks... 10K additional minutes PER CAR!!!! Even on the short end of 10mins each way you are now adding 80 hrs of NEW CO2 PER CAR a year to the environment. It's outrageous and irresponsible, and the people deserve better. Finally, as none of the above projects are free, I suggest we begin talking about these alternative costs by focusing more specifically on the delta between their cost and a replacement, as that is the true cost of a new Magnolia bridge. Also, I find it ridiculous to be framed as merely an inconveniece to Magnolia residents when neighbors from Ballard, Queen Anne, Belltown, etc. will all be adversely affected by this failure. If you made it this far, I appreciate you taking the time to read my comments. I hope it gives you a few minutes of additional perspective on how wide ranging the impact of this is. I assume there will be future studies that better articulate one persons common sense observations, and I hope we pursue those before making a decision like this that alters so many lives in a blatantly negative way.
240	Why do these proposed routes all stop on the east edge of magnolia? As alternatives to the current bridge, each alternative should terminate in each of the most common endpoints of magnolia bridge traffic, specifically the Village, magnolia bluff, Pop Mounger Pool, ...
241	Please replace the bridge 1:1. Traffic is already awful on Emerson/Dravus in the evenings (since the bike lanes were added). Any other option besides replacing the bridge would cause major backups along 15th so this is not just a Magnolia issue (think rush hour and people trying to get to Ballard).

ResponseID	Response
242	15th is already a nightmare on a good day. Removing the bridge would push traffic to Dravus (already congested) and Emerson where a lane has been removed to make room for a bike lane to get on to Gilmore. That intersection is becoming a mess. There needs to be a 1:1 bridge replacement.
243	Studies made for alternatives in the event of an emergency Magnolia Bridge closure were made before the recent bike lane alterations to the other two points of entry, which have caused significant bottlenecks. Getting out is increasingly affected by the increased traffic on 15th, which in turn is affected by Ballard Bridge openings. If the Magnolia Bridge is not replaced, the city must provide a new third point of entry into Magnolia. We who live here can assure you that an expansion of the Dravis exit is a terrible idea - just awful. It's bad enough and the red lights are super long as it is, plus the no turn on red at Government Way due to bikes is piling up the cars at that light. The right and best thing to do is frankly to replace the bridge, regardless of cost. We shouldn't be at the mercy of poor advance planning for what was clearly going to be required. Figure it out.
245	Dravus "improvements" are simply not an option. No amount of "improving" will be able to accommodate the current high level of use (which only continues to increase as more condos are completed in the area) as well as traffic shunted to the Dravus/15th intersection if the Magnolia Bridge closes. Additionally, because of the misguided addition of bike lanes, the Gilman/Emerson intersection has become virtually unusable at certain times of day so that the Fisherman's Terminal bridge cannot provide more ingress/egress. I also take issue with the format of the survey. What use is asking for rankings of "3 most important components" and "3 least important components" since any option must be viewed as a comprehensive whole. For example, I personally don't care at all about cruise ship access but recognize that it is an important part of the City's commerce. The Magnolia Bridge must simply be replaced. Please put to good use the millions of dollars already spent to study the issue and make it happen. Thank you.
246	1:1 Magnolia Bridge replacement is only acceptable option!
247	We need an actual bridge replacement for the Magnolia Bridge, just like we have now and using the exact plans that have been studied to replace it with a new bridge. No other option!
248	Replace the bridge! Most of these options seems to prioritize Smith Cove and the pier over residents. At least allow people to select that they prefer the bridge replacement - that wasn't even listed as an option.

ResponseID	Response
249	Given your past results: Taking away our traffic lanes to accommodate non-tax paying bike lanes thereby increasing our wait times on Emerson (opposite Fisherman's Terminal), not improving Mercer after spending a ton of money, restricting a traffic lane on Elliott Avenue, thereby causing more delays, I don't have any faith that you will do anything positive for the residents of Magnolia. There is money for the homeless, the tunnel, and other projects, but not enough for us? This is unacceptable. Re-build the Magnolia Bridge. WE are the taxpayers and WE want our bridge re-built. Your options are unacceptable. Increasing traffic along Dravus street with a huge hill to the West is not feasible. Find the money to re-build the Magnolia Bridge.
250	Magnolia Bridge replacement is the only option. The alternatives would provide way too much traffic congestion. A good point was made in a recent Seattle Times article. Three of the four buses that travel in and out of Magnolia take Magnolia bridge. Surveys count them as one vehicle. However, it is the number of people not the number of vehicles crossing the bridge. Also some of the alternate routes proposed are also more congested and more dangerous with the addition of the wide bike lanes. Seattle must figure out funding to replace the Magnolia bridge because it is the only thing that will work as a long term solution.
251	The Magnolia bridge is a necessary piece of infrastructure that has to have a 1:1 replacement.
253	I did not choose one of these options because the only option I feel is viable is the 1:1 replacement bridge.
254	The Magnolia bridge is incredibly important for residents of Magnolia and people traveling in and out of the neighborhood. It is the route I use most and the route with the least congestion even though it is busy. Also, when I take a bus out of Magnolia, it also crosses the Magnolia bridge (3 out of 4 buses do) and many people take these bus routes as an alternative to driving. There are no alternatives that will measure up. The expense is necessary and the city needs to cough up the money to restore the bridge.
255	I very strongly support a 1:1 bridge replacement. It will be the most direct route, and will avoid spilling well over 17,000 cars onto the local streets of our residents and will be the safer alternative. I also frequently take the bus, and getting to work/downtown for pleasure and home again directly and safely is very important to our family. Seattle will be shirking its responsibility to its citizens if it continues to ignore prior studies supporting the 1:1 replacement.

ResponseID	Response
257	I do not support any alternative that does not replace the Magnolia bridge. WSDOT and the city of seattle have mismanaged resources that would have provided for much needed light rail along 15th all the way north to Holman. And have further exascerbated our commutes by eliminting car travel lanes and spending exorbitant amounts of money on useless and underutilized bike lanes. As such your decision making process which lead to the weak alternatives listed here in cannot and should not be taken seriously. The city and WSDOT leadership should be called into question for lack of accountability and failure to discharge the duties of their offices in a fiscal and responsible way.
258	It's shameful and ridiculous that bridge can't be replaced. All the alternatives are lame.
259	We must have a 1:1 Magnolia Bridge replacement to maintain adequate access for Magnolia residents to other parts of the city. Clearly the city has not adequately studied the importance of this bridge and the significant congestion at other access points into Magnolia. We must have a 1:1 Magnolia Bridge replacement!
260	We need Magnolia Bridge replacement! any other option could cost more than that!
261	None of these 'alternatives' is adequate to replace the existing bridge. Nothing acknowledges the increased traffic since the traffic study was done. Nothing takes into account the increased traffic resulting when Expedia opens in 2019. Nothing takes into account the tremendous loss of business to Magnolia Village if the bridge is torn down. There is not enough room (nor has it been suggested) to improve Dravus from 15th to 34th. There is not enough room (nor has it been suggested) to widen and improve Thorndyke to 28th at the top of the hill. Has it occurred to anyone that ALL 3 bus routes travel the Magnolia Bridge? You took away one lane at Emmerson and now there are tremendous traffic back ups several times a day. Not everyone can take transit. SDOT's war on cars has to end sometime. You can spend $12M/mile on bike lanes to serve hundreds, and cannot find the $ to replace vital infrastructure that serves tens of thousands. More federal $ will be available in the next 4-5 years. Why not, when we have waited so long and the bridge is "safe until we say it is unsafe" -to quote your SDOT spokesperson, wait until more $ becomes available to decide on a course of action? Why can't you price a replacement in place? This entire process has been highly unsatisfactory, as a decision not to replace, contrary to public wishes, has been made and now you want the public to choose the least bad among three bad alternatives.

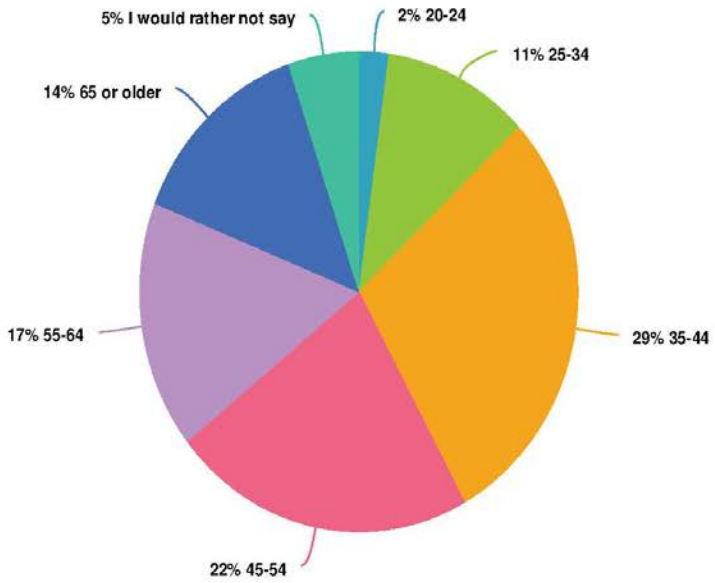
ResponseID	Response
262	The Magnolia bridge as currently routed is a vital link connecting Magnolia with Seattle and planning for and funding a 1:1 replacement (as concluded in the last round of citizen engagement) should be the priority. Given any replacement route will have some associated cost, it's disengenous to state that replacement is unlikely given estimated costs for a 1:1 replacement are $350M-400M. The cost differential for a 1:1 appears to be $100M, and it's a sad commentary about SDOT management if that number is untenable given all the years of lead time to plan during an unprecedented economic boom.
263	The bridge is a critical route out of magnolia, especially as 15th Ave becomes more congested. Already we have traffic back ups when trying to leave magnolia.
264	We need the magnolia bridge replaced
265	this is a false choice. Each alternative is weak. Replace the bridge. Use real data, including demographic changes in the neighborhood, and current traffic patterns given the recent additions of bike lanes and traffic signals on Dravus and government way/Emerson. Don't be bullied by city council's desire to socially engineer Seattle. People do in fact need cars. Not everyone can or wants to bike. Mass transit is limited to the neighborhood. The city has known for years this will be a need. They blew it. Shirking their duty now and claiming it's just too hard is shameful and lazy. Playing identity politics with infrastructure is beneath the character of this city. We can be better. Build a bridge.
266	Please read and seriously consider the comments in the recent Seattle Times editorial: https://www.seattletimes.com/opinion/editorials/city-of-seattle-cannot-abandon-critical-magnolia-bridge/
267	The city needs to find a way to fund this along with the original stakeholders. Railroads, residents, and Port of Seattle. They should also tap area businesses. Stop wasting money on unnecessary traffic lights and lanes, and cutting off sidewalks around the city for cars, transit and bikes.
268	I use the Magnolia bridge every day, and completely disagree with the decision to get rid of the bridge. I understand that repair and renovation of the bridge is costly, but so many drivers and bus riders rely on this to get to work and back. Taxes have done nothing but increased in the recent past, and our local city, county, and state governments should have been setting this money aside to pay for necessary infrastructure. The county is proposing to give $190 of tax money for a brew pub and improvements to Safeco Field, but we can't afford to renovate the Magnolia bridge? I would challenge our leaders in the city, county, and SDOT to find a way to keep the Magnolia bridge.

ResponseID	Response
270	(1) The low-cost alternatives may be adequate with current population in Magnolia. With substantial rezoning for higher-density housing, then a 1-1 replacement may become necessary. (2) Do not assume that the current predominance of single occupant vehicles will continue forever. (3) Prioritize transit over SOV. The future may include a combination of self-driving taxis and transit. (4) With better bike infrastructure, and electric-assisted bikes, more people will bike. Low-grade options would help - biking up the Magnolia bridge is hard and scary, a level path along Eliot Bay to the south end of 32nd Ave W would be easier.
272	1 to 1 replacement for the Magnolia bridge is the only solution that is acceptable. When I rushed my wife to the hospital I used the magnolia bridge. Had we been routed through Dravis street I would have never Made it to the hospital in time. It was a complicated birth and I shutter to think of what would have been late.
274	I prefer replacement of the bridge. Find the money. We should have been saving for this. It is part of the Magnolia bluff drive and vista and is a historic part of Seattle for all the share. Many people take photos of Downtown from this bridge. Four bus routes use this bridge. It is the most used access to Magnolia.

ResponseID	Response
275	I have lived in Magnolia for 20 years and experienced the bridge closedown because of natural causes. It was difficult but understandable. Permanent closing of Magnolia Bridge (MB) is foolish and will have a major negative impact on the city. 1. Magnolia population will increase significantly in the near future. In the short term Expedia's move to Interbay will bring several thousand new people to the area. They will need housing and the logical area for them is along or near 15th Ave. W. from Magnolia north. Much of Magnolia east of 34th Ave W will be rezoned for multifamily apartment/condos. Land values for this area are low enough that developers will push rezoning. Also the city will encourage higher density in close-in areas such as Magnolia. Most of the new residents will work downtown or in Interbay and need to get to their jobs quickly. 2. The alternative replacement exits from Magnolia do not work. When MB was closed in 2001 these exits were congested. Today they are worse even though the bridge is open. Bike lanes leading to Dravis and Emerson have slowed down traffic considerably. More residents and shifting cars and buses from MB will lead to full-time congestion. In addition traffic from the Ballard bridge is growing. Together with frequent openings, 15th Ave is a mess. For example, cars trying to get to Nickerson St or go south on 15th Ave are blocked. Alternative options such as Dravus St are also blocked. Opening another exit south of these streets will not solve the problem. 3. The closing of the viaduct will add to all the other issues. Cars and trucks that used to access the viaduct from the 15th St corridor will be diverted to Mercer St in order to access the tunnel. Even now, without the viaduct shutdown Mercer St is incapable of moving traffic quickly. For example, the part of Mercer St from 15th Ave to Queen Anne Ave is narrow and restricted. It will get much worse in the future. This will back up to 15th Ave and intensify congestion back to Dravis and Emerson streets. Add in the growing number of cruise ships and the problem gets even greater. Hopefully, the city's leadership will realize that permanant closing of MB is short sighted. It may save some money today but will be more expensive in the future when it becomes obvious that a bridge is needed for Magnolia.
276	1. Apologies for the rude behavior of some Magnolia residents at the recent public meeting where speakers from public agencies were shouted down and we therefore did not have the opportunity to hear what they had to tell us.
278	We need a 1:1 replacement of the bridge. Anything else will cost more money than it is worth. The city will do studies that drain funds for new sites to enter Magnolia and will end up not having enough for those projects either. Save the money and the traffic with a 1:1 replacement.

ResponseID	Response
280	These options aren't adequate to handle the flow of traffic and easily get us to & from our home. It is imperative that we have a new bridge to expedite our commute in the fast growing city we live in. Our taxes continue to go up, traffic flow is constricted due to less lanes for cars and more bike/bus lanes created. We are spending an exorbitant amount of money on bike lanes for a very low percentage of commuters. Due to the city's lack of action since 2007 on an approved plan that took in all forms of feedback to create the best option (replacing the existing Magnolia bridge), the city needs to find the funding path for the proposal that has already been offered and approved. The fact that the city is coming back 10 years later to change their mind is unacceptable. While I have ranked the options, they do not include my first choice of building a new bridge.
281	I'm shocked, frustrated and disheartened that the work did over 10 years ago is being essentially thrown out. The City and the Community came together and agreed on a plan that worked for all of us to replace/update the Magnolia Bridge. The landscape has not changed, the housing has not changed, yes the Port had changed but that should not result in a scraping of what has already been determined to be THE BEST PLAN. The Seattle Community approved a significant Levy years ago that could have helped to offset a large portion of this cost, yet the City had other legitimate priorities. However, that does not invalidate the APPROVED plan. The City chose how to spend the Extra money we tax payers gave them - but that does not mean other projects are now dismissed. The side roads in Magnolia simply cannot handle the traffic that any of these options would create. Cars typically must be parked on the street due to nature of older homes so often only 1 car can get past at a time. That interferes with peoples lives and the ability for their children to play outside. Who would send their kid to play in traffic? Our neighborhood, local businesses, bus routes, trash routes - everything is built around the Magnolia Bridge as the main path in/out of our special neighborhood. All of that traffic simply cannot be absorbed in a reasonable & responsible way by making a connector to what is currently a side street. Essentially, you're taking away I-5 and saying HWY 99 will pick up the traffic if we put more lights in. C'mon you guys, think about it. I'm not asking for more than what was committed to by the City in partnership with the Community. Is your first goal not to serve the citizens and to live up to the commitments you made? It's the right thing to do and all of us, City & Community, know it. Let's work together to get creative but let's keep the Magnolia Bridge up and serving the tax paying citizens of Magnolia.

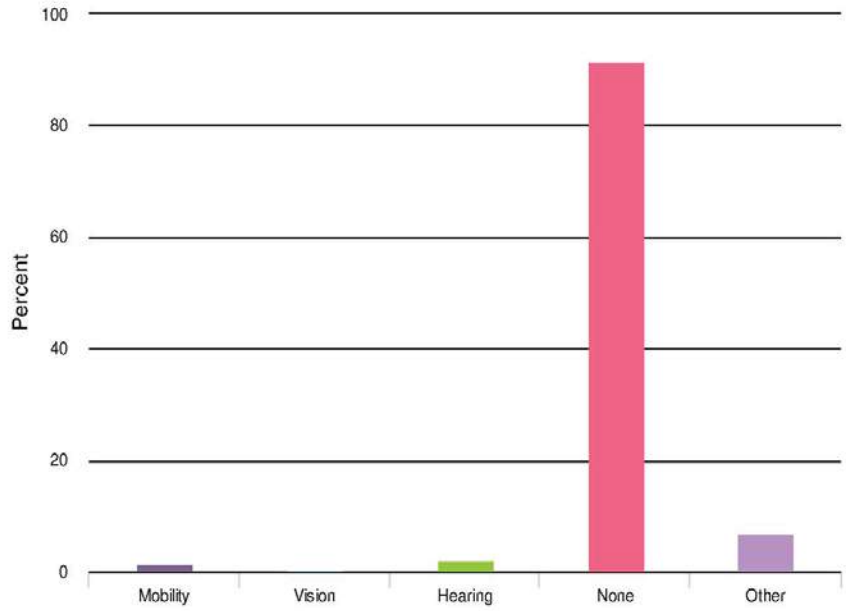
2. What is your age?



Value	Percent	Responses
20-24	2.2%	6
25-34	10.8%	29
35-44	29.0%	78
45-54	22.3%	60
55-64	16.7%	45
65 or older	13.8%	37
I would rather not say	5.2%	14

Totals: 269

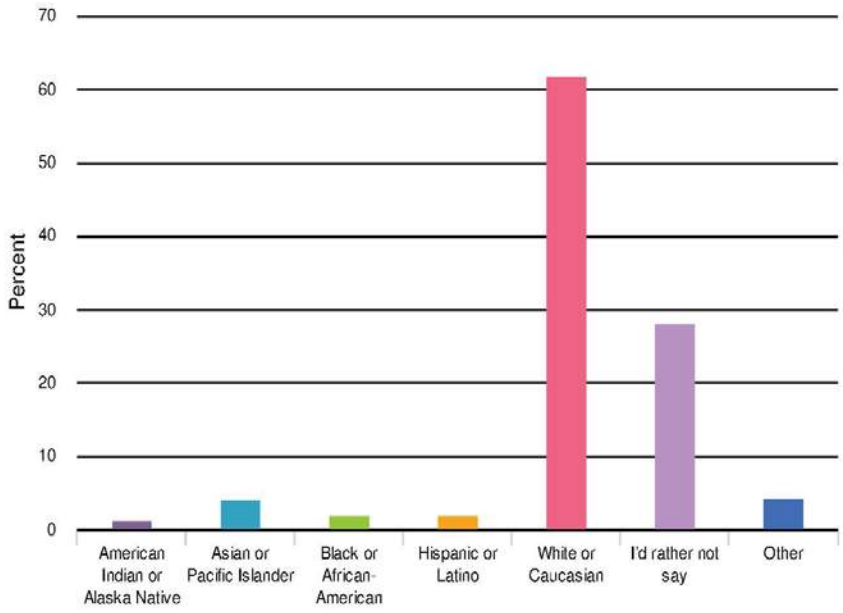
3. Do you have a disability? (check all that apply)



Value	Percent	Responses
Mobility	1.3%	3
Vision	0.4%	1
Hearing	2.1%	5
None	91.5%	214
Other	6.8%	16

Other	Count
Native Seattlite	1
Old and getting older.	1
Why is this relevant?	1
psychological, learning	1
Totals	4

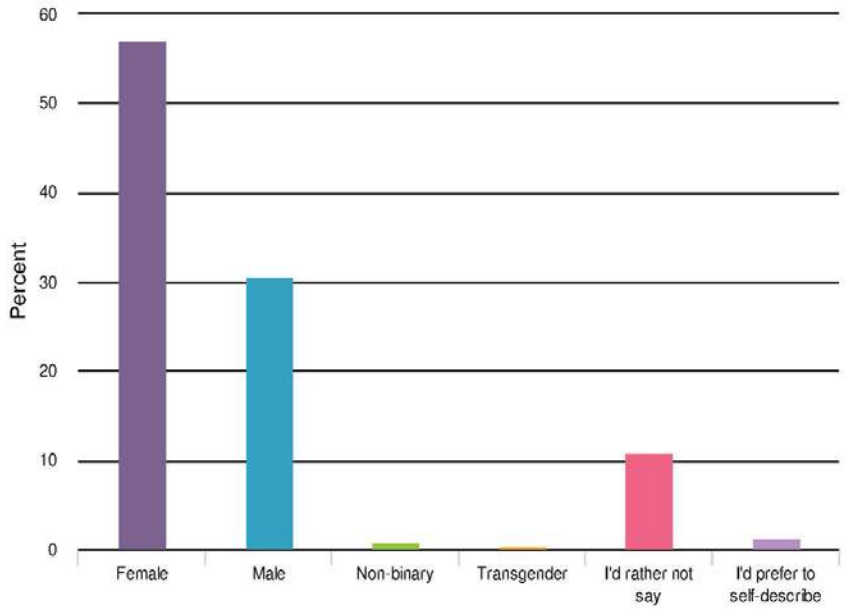
4. What race/ethnicity best describes you? (check all that apply)



Value	Percent	Responses
American Indian or Alaska Native	1.2%	3
Asian or Pacific Islander	4.0%	10
Black or African-American	2.0%	5
Hispanic or Latino	2.0%	5
White or Caucasian	61.7%	156
I'd rather not say	28.1%	71
Other	4.3%	11

Other	Count
Caucasian/African mix	1
Does it really matter?	1
Human	1
Mixed Korean and Jewish	1
What does this have to do with the 1:1 replacement	1
Totals	5

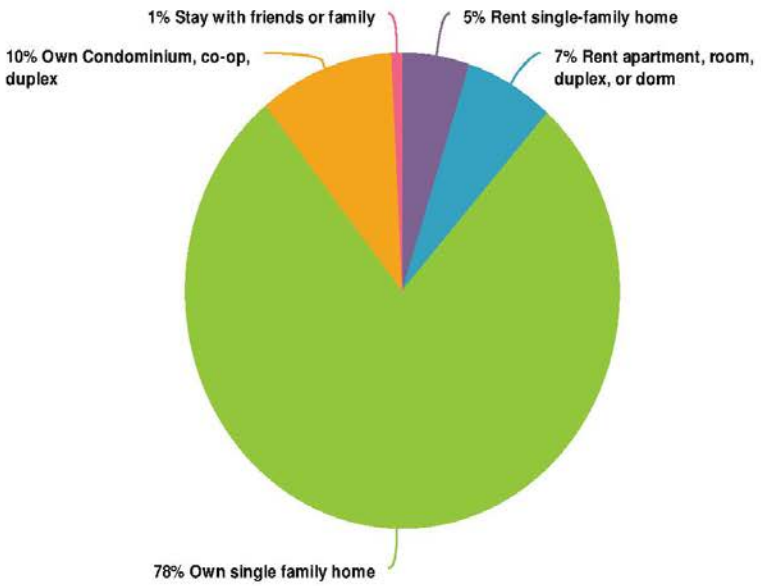
5. What gender do you most identify with? (check all that apply)



Value	Percent	Responses
Female	57.0%	147
Male	30.6%	79
Non-binary	0.8%	2
Transgender	0.4%	1
I'd rather not say	10.9%	28
I'd prefer to self-describe	1.2%	3

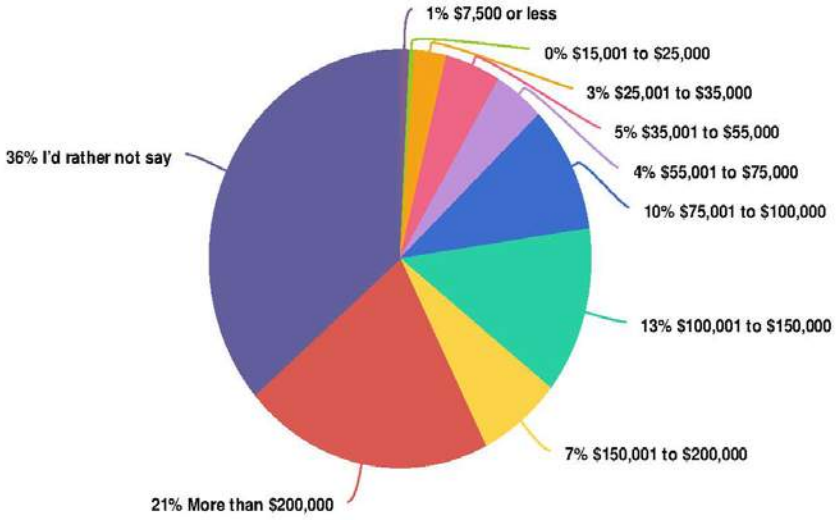
I'd prefer to self-describe	Count
Human	1
WTF- oh, Seattle.	1
Totals	2

6. What is your current household situation?



Value	Percent	Responses
Rent single-family home	5.0%	13
Rent apartment, room, duplex, or dorm	6.6%	17
Own single family home	77.6%	201
Own Condominium, co-op, duplex	10.0%	26
Stay with friends or family	0.8%	2
	Totals: 259	

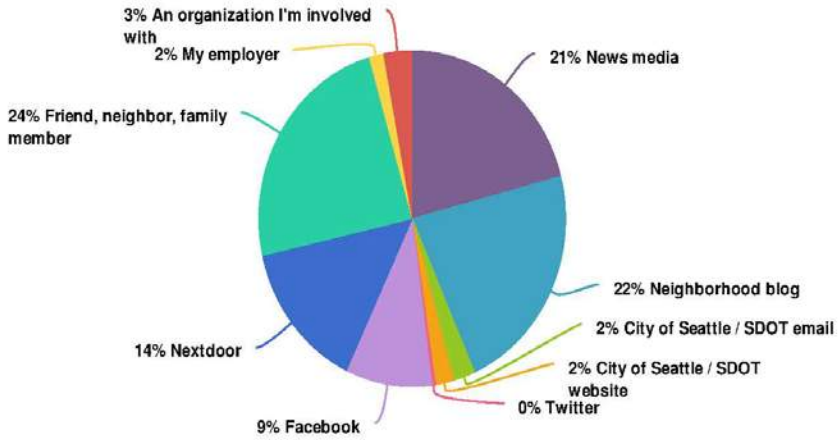
7. What is your annual household income?



Value	Percent	Responses
$7,500 or less	0.8%	2
$15,001 to $25,000	0.4%	1
$25,001 to $35,000	2.7%	7
$35,001 to $55,000	4.7%	12
$55,001 to $75,000	4.3%	11
$75,001 to $100,000	9.8%	25
$100,001 to $150,000	12.9%	33
$150,001 to $200,000	7.0%	18
More than $200,000	21.1%	54
I'd rather not say	36.3%	93

Totals: 256

8. How did you hear about this project? (pick all that apply)



Value	Percent	Responses
News media	20.9%	55
Neighborhood blog	22.4%	59
City of Seattle / SDOT email	2.3%	6
City of Seattle / SDOT website	1.9%	5
Twitter	0.4%	1
Facebook	9.1%	24
Nextdoor	14.4%	38
Friend, neighbor, family member	24.0%	63
My employer	1.5%	4
An organization I'm involved with	3.0%	8
	Totals: 263	

Appendix G: Email & Mailed Comments

Note: We provide all comments as they were submitted. We did not edit for content or clarity.
All personally-identifying information has been removed.

Email Comments

Date	Comment
June 13, 2018	(No body text; Subject line only) What about putting weight restrictions on Magnolia bridge? Wouldn't that help to make it last longer?
June 14, 2018	Hello: I'd like to know if any particular section of the existing bridge is worse than another. Why? Financially, it would be wise to consider full, in-kind replacement of the 'sloped' (west-most) portion first, if the 'level' portion (east-most) portion is considered sufficient as-is, (and then do the east-most section later, when required). Of course, the reverse argument would be made if the 'level' section needed updating before the 'sloped' section.
	Dear Dawn and Wes, The significant and large neighborhood, and island, of Magnolia cannot lose four congestion-less lanes of traffic in/out. I work in downtown Seattle 6-7 days a week, and often drive several times back and forth to my home in Magnolia each day. I cannot ride a bike to work because I carry heavy equipment to and from my job consistently. The suggestion that Magnolia does not need the Magnolia bridge is like saying Ballard does not need their bridge. Further the "traffic modifications" on Thorndyke at Dravus and Emerson- both juggernauts into Magnolia- are substantially worse traffic sites at all times now. We purchased a modest home in Magnolia because it was so well designed for commuters going to downtown Seattle. That includes our bus routes! If the Magnolia bridge is torn down and not replaced 1-1, we will sell and move out of Seattle and stop paying taxes into the disaster of non-improvements made to all of Seattle traffic and our beloved peaceful, quiet Magnolia neighborhood.

	Dear Dawn and Wes, I just attended an informational meeting in Magnolia to look at the "cheaper" bridge replacement options for our huge community. What a tragic sick joke the city is playing on the 6th largest neighborhood in the city- not to mention an island. It's such an insult and unacceptable to be told 360million is too much to replace a perfectly functioning traffic corridor- one of the only in Seattle now. We need Town Halls with Mayor Durkan and Sally Bagshaw hearing from every single resident of Magnolia that a 1-1 replacement is the only option. (Also, Please forward this to your employers and the people deciding on "cheaper" Magnolia Bridge solutions. They are wasting your time and putting you in an awful predicament with our whole Magnolia community. They should be ashamed.)
	Only acceptable solution is replacement of Magnolia Bridge 1:1. Think positive and get it done for Magnolia!
June 18, 2018	I would like to see a detailed cost study explaining why a replacement Magnolia Bridge would cost $400 million. Where is that publicly available for free? If not already publicly available, I am requesting that you make it publicly available for free.
	I would like to see a practical study done on the effect of the Magnolia Bridge removal and the role it plays on the Seattle city traffic flow all hours of the day .this can be done simply enough Shut the bridge down for two day's for a solid 24 hours mid Business week on a Tuesday and Wednesday or for a solid seven days even better so we can study the effect it would have on none Business days. as a 60 year resident of the Magnolia district (not one of the affluent mind you merely raised in a Boeing family) i remember after the Nisqaully quake and how bad traffic was trying to get back into Magnolia at 7pm in the evening at Dravus or Emerson.and considering the recent influx of people at 1,100 people per week for the last few years . i can not imagine it be any better .But lets not imagine Shut Bridge Down for a week 24-7 and lets see Dravus and Emerson handle influx of day to day traffic.
June 21, 2018	I attended the Magnolia Bridge meeting in the park last week and have a few comments. Of the three routes in and out of Magnolia, the bridge is the only one that maintains a good flow of traffic. This is the route I take back and forth daily. Neither Emerson nor Dravus could absorb the Magnolia Bridge traffic. Emerson street: heading out of Magnolia gets very back up by the Ballard Bridge

	traffic. It is especially frustrating trying to get to Nickerson. Emerson street: heading in to Magnolia backs way up because the car right turn lane was removed for a bike lane. (Bad move). Should perhaps build a bike bridge and get us our right turn lane back. Dravus Street: heading out of Magnolia gets backed up per which appears to be very poor timing of the lights with the new bike lane. Dravus Street: heading into Magnolia gets backed up because you can no longer turn right on a red per the new bike lane. When pedestrians are using the crosswalk when you finally get a green light makes the situation even worse. Dravus Street: when all of those new apartments on both sides of Dravus and 15thare filled with renters, I can't even imagine how bad the traffic is going to be. The best solution is for the city/state to come up with the money to rebuild the bridge. It not only provides great access for residents to their homes, it also provides good access to the Village shops and restaurants and to Discovery Park. I know you had an alternative third route into Magnolia which at least would not dump everyone onto the other two routes. I just wanted to mention the farther you move North on Elliot Avenue/15thAvenue towards the Ballard Bridge the more traffic gets backed up and when the Bridge is open, which is quite often, it is even worse. That is a big advantage to having an entry into Magnolia at the current location. Also, the new third route into Magnolia does not lend it self as an easy route into the commercial area of Magnolia. Thanks for taking my comments.
	These are the facts: Magnolia is/has been a community forgotten, overlooked and reportedly all residents are wealthy. In the 1950's residents promised a high school in Interbay.... instead we got a garbage dump. The pool was ours in the 1970's but went to QA instead. Oh and please remember Magnolia got the sewage treatment plant with 25-40 trucks leaving the area daily. And now the bridge REALLY? Can I stop paying the majority of our house taxes? Did West Seattle get a bridge? Find a way to get this done and refurbish the bridge and stop allowing Magnolia residents to be short changed!
	Hello! I was not able to make the sessions, but I am a resident in Magnolia (outside of the Village) and wanted to provide a few pieces of input below. One general question, have these options been vetted through the lens of Expedia moving their headquarters to Interbay next year (bringing thousands of new commuters onto 15th right by the Magnolia bridge)? **What options are there to include the Dravus improvements in Alternative I? ** As someone who takes this road in and out of Magnolia almost daily, the traffic has become increasingly bad given the number of new apartments in

	Interbay. Without exaggeration, it can take up to 10-15 minutes (on an off traffic time) to go from 20th to 15th Street. If you're going to funnel more traffic on this road, it needs to be improved regardless of which alternative. I would heavily prioritize Alternatives I and III. The specific reason is the bridge off of 15th. No matter the time of day, the current bridge is the only sure fire way to get into Magnolia (coming northbound) without backing up traffic onto 15th. It is helpful because it pulls cars out of 15th vs. backing them all up at Dravus (where it already gets congested per prior comment). Given Expedia's new HQ in Interbay opening next year, we should prioritize pulling people off of 15th, not stacking cars on it. Thanks for the consideration!
	Replace the Magnolia Bridge. New bridge same place.
	I live in Magnolia and use the bridge daily and if you tear it down and do not replace it, how are we supposed to get on off the hill ? Dravus ? No Way We need a bridge.
June 22, 2018	I live at [redacted] so will be greatly affected by this decision. I believe that the ways the alternatives were presented, only the W Armory Bridge would provide any relief. The 2 Dravus alternatives would have made getting onto Magnolia impossible. There has been so much building on Dravus, at least 4 apartment buildings either completed or in the process of being built, within the past year so data is already out of date. In addition there has been increased building around Emerson that is not reflected in any of your data. I feel that the presentations were stacked so that only the W Armory Bridge would be chosen. If the W Armory Bridge is built how will you mitigate the noise? How will you mitigate the light that will come straight into our units? How will you mitigate the air pollution? Will we still have safe access to our parking lot? What improvements on Thorndyke Ave W will you make? The presentations did not show any except a light at Halladay. Do you plan turn lanes? The SDOT consult at the June 20 presentation said the bridge would be about 35 feet in width, is that really the width? What will happen to the bike lanes on Thorndyke?

	What will happen to the off street parking? I wonder if we will be able to even use our decks or open our windows. What about our property values over the next 6 years. It appears that you won't even try to get funding until 2024. Who will buy an unit in a building that has the potential to be right next to a bridge? There was a Magnolia resident at the June 20 presentation who put his house up for sale the day before the Seattle Times article about the bridge and he has gotten one offer, not even a low ball one. I feel that we are left out to hang for the next 6 years. None of the above was covered in your presentations. What about added cost to mitigate these problems? Does the $250 million cover any of these issues? I think the port should pay to replace the part of the Magnolia Bridge that services the port and then you would have the money to replace the bridge. Was this even considered? If you are going to build the W Armory Bridge I suggest that the bridge comes up further south, in between Hallady and 23rd Ave. It would impact fewer people living on Thorndyke and provide better access to the southern part of Magnolia. I realize this might cost more but it would provide better service for Magnolia. A very upset Magnolia resident
	Hi. Noticed that your survey is conspicuously missing entering/leaving Magnolia by foot/bike via the Elliott Bay Trail as it intersects with 21st Ave W and again at 20th Ave W/Thorndyke Ave W. You might want to fix that as right now it's completely ruining your data for cyclists and pedestrians coming from the south. That being said, I've taken those routes and ended up taking the bridge instead (via the sidewalk) by bike as it's by far the least unpleasant route for me to get up into Magnolia on a bike.
June 23, 2018	Dear Seattle Department of Transportation, Please put the Magnolia Bridge replacement plan at the top of your infrastructure agenda!
June 25, 2018	Seems like it would be the right time to go back to the State shoreline Board, this time with some money for the groups via a settlement. Can we do that? I'd like to see more solutions before this southern magnolia community loses its access in/out. There are only SEVEN houses between the beach and the marina (most in complete disrepair). Given the costs of replacing the bridge, perhaps we can buy them all out and get our access.
	[redacted] called CSB on 6/8/18 regarding a number of transportation issues. Murphy said for the past two days one of the exit lanes from I-5 at Seneca had

	been blocked off with cones with no notice or signs requiring drivers to merge and causing traffic back ups. Murphy said he believes the lane was closed due to a repaving project on 6th Ave. Murphy is unhappy the city does not plan to replace the Magnolia Bridge and he disagrees with putting a rapid ride bus lane on Denny Way.
	Dear SDOT, I FULLY SUPPORT A 1:1 MAGNOLIA BRIDGE REPLACEMENT. As a longtime resident of Magnolia, I have been attending the presentations put forward by SDOT. I strongly support a direct replacement of the Magnolia bridge over the many other options the study is considering. It is also apparent that there has not been enough direct collaboration by the agency employed by SDOT with Light Rail and Metro. The recent additions of the bike lane to W. Emerson near the Fisherman's terminal, and the new signal configurations on Dravus have had the opposite effect of mitigating traffic on both of these access points into and out of Magnolia. This makes the use of the bridge even more important. I encourage SDOT to consider increasing the frequency of the left turn signal at the base of the bridge to run more often. This would allow residents to turn north on 15th Ave. West in a timely manner, and would alleviate some of the outbound traffic on the other two roadways during peak travel times.
June 26, 2018	Wes, thank's for getting back to me on the subject of the Magnolia bridge.i read somewhere numbers from a city traffic study suggesting Dravus street has a higher volume of traffic usage daily than the Magnolia Bridge ?even Emerson street show's more volume of traffic than the Magnolia Bridge? if this is example what your traffic analyses yeild's. i suggest you or one of your staff take drive into Magnolia and over to commodore way at 4thirty pm today and try leaving Magnolia using Emerson street.and then tomorrow try the same experiment using Dravus and the following day try the same experiment using the Magnolia Bridge and repeat once a week for a month and throw in trying leave Magnolia at the same time on Saturday at the same time from emerson ,Dravus And the Magnolia bridge.then you'll have a realistic traffic analyses .i'am curious since the Magnolia Bridge is on Port of Seattle property why is the city involved and considering in the late 1920's when the bridge was built after the fire on the west wheeler trestle.the cost of the bridge was paid for by an assement of the Magnolians covering 50% of the cost and the railroad paid for over 25% bridge building cost as the property the bridge is on now then was rail road property then and since they the Rail road created the fire on the Wheeler street trestle and the city of Seattle covering less than a quarter of the bridge building cost.what changed why is the bridge a city of Seattle issue? my understanding the port of Seattle and City of Seattle are separate from each their own? if that is true then isn't the bridge the ports problem? i'll say this ever since the Marina at Smith cove opened and the people with the Boats moored in that marina coming down the Magnolia Bridge and

	making illegal u-turns to get to their boats i have wondered when something would change. thank you.
June 28, 2018	For each of the alternatives under consideration, please retain an independent third party, such as Salmon-Seattle, to evaluate the design vis-à-vis fish friendly. Thank you,
June 29, 2018	To Project Management of the Magnolia Bridge Planning Study: I am writing to express my concern regarding the upcoming demolition of the Magnolia Bridge and the three options that are being given to the community. I feel strongly that none of these options are viable options. One has to live in Magnolia to understand what the impact will be. It is necessary to replace the Magnolia bridge in kind. It is the only access point to West Magnolia. I live at Monterra of Magnolia condominiums, 2551 Thorndyke Ave West, which is at the intersection of Thorndyke and Halladay, where it is proposed that the Armory Street Bridge would end. If option 1 were chosen, it appears that the entrance to the garage of our building would be in the middle of the intersection of the Armory Street Bridge and Thorndyke Ave West. It would also have a huge negative impact on our residential neighborhood. Noise, pollution, and traffic would be increased as well as lights. The additional traffic would create pedestrian safety issues. The addition of the bridge would also take away parking at the intersection of Halladay and Thorndyke and I believe the end result would be decreased property values. After attending one of the sessions that you offered to the community, I understand that the city needs to look at alternatives and that the city could possibly obtain money from other sources to fund smaller projects, however, if property values decrease, the city should be taking into consideration that as property values decrease taxes on property decrease. Therefore, the additional cost of replacing the Magnolia bridge in kind may end up being a financial wash. On a slightly different note, the city needs to do more advance planning regarding roads and infrastructure. There have been and are in the process of building multiple high density apartment and/or condominium buildings along 15th Street near Dravis. This currently has a very negative impact on traffic build up on both Dravis and 15th. No matter what fixes are done in place of the Magnolia Bridge, Dravis Street needs improvements as well as 15th Street. The city needs to be charging developers for infrastructure improvements prior to approving building permits. As far as the Project Management of the Magnolia Bridge Planning Study is concerned, I advocate for the replacement of the current Magnolia bridge. I hope that SDOT and the City Council will take my concerns seriously.

Our property tax is outrageous, our streets are a disaster and the most important, we need safe transportation over our Magnolia Bridge. Magnolia families are not the only people that drive our bridge. Tour busses, delivery trucks, visitors,etc. enough BIKE LANES, we need a new Magnolia Bridge for the Safety of our community!!
This is a message to state my strong support for a Mafnolia Bridge one for one replacement. No alternative comes close to serving the community's needs. The alternativeS would require longer drive times, particularly by public transit and lead to more pollution, more wasted time, and ultimately few savings. If necessary, the community might be willing to contribute a small amount toward the completion of the bridge.
We have lived in Magnolia since 1987 and can't image not having the Magnolia bridge as a vital transportation link to downtown Seattle and about. My husband has always used and depended upon public transportation to get to his job in downtown Seattle. His 96 y.o mother lives in downtown Seattle and it is the quickest way for us to see and help her with doctor's appointments and grocery shopping. The bridge is also vital for us locals should a disaster like an earthquake occur. We need this bridge and not having the foresight to keep it would be foolish. Stop studying it and fix it! We never miss a vote!!! Do the right thing and replace it!!!!!
To Whom It May Concern: The attached letters are from the Monterra at Magnolia Condominium and the Holly Terrace Condominiums, bearing the signatures of homeowners and residents of both condominiums. The homeowners and residents of the Monterra at Magnolia Condominium and the Holly Terrace Condominiums have reviewed the three Magnolia Bridge Replacement Plan proposals. We believe that an in-kind replacement of the Magnolia Bridge remains the only viable option. Of the alternatives, we believe that Alternative #1, building the Armory Way Bridge to connect to Thorndyke Avenue at Halladay Street, would have the most negative impacgt to the surrounding residential neighborhood. Thorndyke Avenue would become a main route between Downtown and Magnolia, serving up to 17,000 vehicles per day that previously used the Magnolia Bridge. The neighborhood would suffer increased noise, pollution, and traffic; and reduce property values along Thorndyke Avenue, and by extension, Magnolia as a whole. We believe that lost property value should be added to the cost of the alternatives, and we haven't seen this addressed in the cost estimates. Our property values would be impacted particularly significantly, as they are positioned at the corner of Thorndyke Avenue and Halladay Street--directly adjacent to the intersection at the end of the proposed Armory Bridge. We appreciate your consideration of our concerns, and we hope you will join us in

	advocating for replacement of the existing Magnolia Bridge. The attachment bears the signatures of homeowners and residents of both Condominiums.
June 30, 2018	Subject line: I support a 1:1 replacement Thanks
	I am a lifetime Magnolia resident 58 years.I only support a 1:1 replacement of the Magnolia bridge.The other alternatives are almost as costly and are traffic and emergency vehicles nightmares. I lived here when the bridge was closed for repairs.The traffic was horrible.Since then the traffic has tripled in the area.Also two of the remaining routes have been diminished by bike lanes.The only logical answer is a 1:1 replacement of the bridge.
	The idea of not replacing the Magnolia bridge, and significantly isolating thousands of homes, just as you have a giant business like Expedia move into the area is absolutely ridiculous. I support a 1:1 replacement of the Magnolia bridge.
	I am a life long Magnolia resident and home owner who attended the Magnolia Bridge Survey information session ran by SDOT. It was very informative but also brought up many more questions and concerns for me regarding the long-term planning for dealing with the Magnolia Bridge. It is my understanding that the city is now treating the fixing of or replacement of the Magnolia Bridge when the need arises is the "preferred" option by most. The alternatives that are being "shopped" do not provide a reasonable option for entry/exit for Magnolia in lieu of the Magnolia Bridge for numerous reasons. Reduced emergency response times will put residents' safety and security at risk, particularly because we don't have our own police station. It will also put all the residents at increased risk in the event there is a natural disaster. Dispersed entry/exit across the width of the neighborhood is very important to the overall flow of traffic. When there is a back up or change to one route, there is a notable change to the other routes. It is clear that the city does not have an accurate understanding of traffic patterns at the Dravis and Emerson routes since recent bike lane and traffic light changes have created major delays. Dravis and Emerson are no longer viable options for many commuters and would only get worse with the removal of the bridge. Changing demographics from individual or dual retiree home owners to two professionals with young kids will exponentially increase the number of cars and commuters using the various entry/exit points during peak traffic on any given day.

It does not appear that this was taken into consideration during the traffic pattern analysis.

The Armory Street bridge option is not a comparable alternative to the Magnolia bridge because it basically funnels the traffic to the same part of the neighborhood as the Dravis route.

Although the fixing or replacement of the Magnolia Bridge is the most expensive, it is also the best option so I would be curious how the city weighs the cost difference against the benefits of the most viable option. The city has no problem spending money on bike lanes that do not serve an essential function like the bridge but claim that they can't find the money to support critical infrastructure like the bridge. This is unacceptable.

I would be happy to participate in any further discussion on this matter. Please continue to seek neighborhood feedback.

Dear Mr. Ducey:

I am writing to express my concern regarding the upcoming demolition of the Magnolia Bridge and the three options that are being given to the community. I feel strongly that none of these options are viable options. One has to live in Magnolia to understand what the impact will be. It is necessary to replace the Magnolia bridge in kind. It is the only access point to West Magnolia.

I live at Monterra of Magnolia condominiums, 2551 Thorndyke Ave West, which is at the intersection of Thorndyke and Halladay, where it is proposed that the Armory Street Bridge would end. If option 1 were chosen, it appears that the entrance to the garage of our building would be in the middle of the intersection of the Armory Street Bridge and Thorndyke Ave West. It would also have a huge negative impact on our residential neighborhood. Noise, pollution, and traffic would be increased as well as lights. The additional traffic would create pedestrian safety issues. The addition of the bridge would also take away parking at the intersection of Halladay and Thorndyke and I believe the end result would be decreased property values.

After attending one of the sessions that you offered to the community, I understand that the city needs to look at alternatives and that the city could possibly obtain money from other sources to fund smaller projects, however, if property values decrease, the city should be taking into consideration that as property values decrease taxes on property decrease. Therefore, the additional cost of replacing the Magnolia bridge in kind may end up being a financial wash.

On a slightly different note, the city needs to do more advance planning regarding roads and infrastructure. There have been and are in the process of building multiple high density apartment and/or condominium buildings along 15th Street

	near Dravis. This currently has a very negative impact on traffic build up on both Dravis and 15th. No matter what fixes are done in place of the Magnolia Bridge, Dravis Street needs improvements as well as 15th Street. The city needs to be charging developers for infrastructure improvements prior to approving building permits. As far as the Project Management of the Magnolia Bridge Planning Study is concerned, I advocate for the replacement of the current Magnolia bridge. I hope that SDOT and the City Council will take my concerns seriously.
	Hello, As a citizen and home owner in of Magnolia I am amazed that in reviewing the DOT Magnolia online Open House that the cost of the Bridge replacement is ranked as being twice as important as Community Input. Considering the property taxes we pay (which continues to go up drastically) I would think that the needs of those being affected by your reducing access to their homes and businesses should be weighted higher. As a taxpayer I understood that the purpose of city agencies was to protect and to serve the constituents. I guess that is a no longer a reality. I may be misinterpreting the Washington State Constitution, but it is my understanding that if a citizen is deprived of the major access to his property (by a government entity) which existed at the time the property was purchased, that the citizen is appropriately compensated. Since many people in Magnolia commute regularly using the Magnolia Bridge, that might be a large compensation. Is that your understanding? Please replace the bridge. It is in the best interest of the Magnolia Community.
July 1, 2018	As a longtime resident of Magnolia, I am one of thousands of Seattle citizens who depend on the Magnolia Bridge for access to the rest of the city. Magnolia has only 3 access points, all of which are heavily used on a daily (hourly!) basis. To alter the bridge to something other than a 1:1 replacement is foolish and irresponsible. The other 2 access points into Magnolia are at full capacity and have become more choked in the past year by bike lanes. The backups at Dravus and Emerson have increased dramatically because of the addition of bike lanes (and loss of car lanes). The option of a 1:1 bridge replacement MUST be included in the city's review of the Magnolia Bridge replacement.
	Replacement Bridge is the only way to keep traffic moving...will also limit traffic issues for Interbay, Queen Anne, Ballard areas! Forward thinking at its best. Thank you for supporting us!
July 2, 2018	To: MagnoliaBridge@Seattle.gov Please accept these comments to your on-line open house via email, to support a format that is more readable for you. (Dawn, thank you for offering us an extension to early this week.) Best, [redacted], Port of Seattle

Survey questions

Currently reside in Magnolia? *yes, some port employees do, as well as at Elliott Bay Marina*

Commute regularly in and out of Magnolia for work? *No, but to T-91.*

Which mode of transportation? *Varies*

Which route do you take when leaving/entering? *Varies, often Magnolia Bridge for T-91 activities*

Overarching Comments:

- We believe it's not possible to make a choice among alternatives, nor to rank the components without further information on traffic and component costs.
- What costs are included by component? The alternatives' cost estimates seemed to be too optimistically low ($216K - $250K).
- We have heard the community's concerns about the full bridge replacement, and believe that all alternatives should be compared against the full bridge replacement (presumably after some value engineering of the last bridge design & cost estimate). Please ensure that the costs of the replacement and the alternatives are comparable when presented – construction only, or including design & mobilization, etc.
- Further, we agree that coordination and compatibility with ST3 West Seattle & Ballard Link extension is critical.

Specific Component Comments:

COMPONENT 1:

a) Design: Wouldn't this trail have to be widened to be able to accommodate the traffic volume that this study is meant to address and handle? How many lanes is this road way and how is the replacement bike path designed (AASHTO standards?)
b) Costs: What's the cost of acquiring extra land/space needed for widening and reconfiguring the space up there? Currently there are marshalling yard and a few yard leases on the west side of T91 uplands. Relocation and dislocation costs? Cost of mitigation traffic impact to T91 upland area (vs. now – only a bike path)? Do the costs include new fence line to secure the terminal? How was the cost estimate for slope stabilization and Port property value performed?
c) MMNO (port maintenance building) will be separated from the rest of the Terminal with a public road. How do we mitigate that? Costs?
d) Would the same road be serving cruise traffic into the cruise parking lot too? Traffic control? Safety?

COMPONENT 2A: same question as above regarding terminal security/fencing.

COMPONENT 5B:

a) Design: how many lanes? How will this accommodate oversized loads and large project cargo? Will large vehicles need to use alternate routing, requiring improvements to 22nd Ave or another street north of Thorndyke to make 90 degree turns into the terminal (5B <-> 6D or 6D <-> 2A)?
b) Costs: what costs have been captured?
c) Feasibility: what is the likelihood BNSF will support this alternative? What is their response to date?

COMPONENT 7:

a) We heard City staff say that this component is needed to "maintain access to the Port." If there is insufficient capacity on Galer for the variety of users anticipated, please consider a flyover farther south of Galer.
b) Design: We have a meeting set up to understand how North/South terminal traffic currently using this area can be accommodated, including single and double wide trailers. We cannot weigh in on this open house prior to that information.
c) Costs: What costs are included for this component? How was the cost estimate for Port property value performed?
d) Construction: What is the construction impact on port activities?

COMPONENT 8:

a) Traffic: How much traffic is expected on this route, and what is the origin/destination?
b) Design: We have a meeting set up to understand how North/South terminal traffic currently using this area can be accommodated, including single and double wide trailers. We cannot weigh in on this open house prior to that information. How does the footprint of this component impact the T-91 East Entrance gate, Alaskan Way W, the bike path and access to the sub-station? Is the pedestrian bridge and replacement staircase included?
c) Costs: What costs are included for this component?
d) Construction: What is the construction impact on port activities?

COMPONENT 10:

a) Design: Can this component be designed for a future extension if additional funding is available to connect to the top of Magnolia? Can other access points be explored? Does it maintain existing center ramps to main gate and access to Anthony's?
b) Costs: What costs are included for this component? Is a bike/pedestrian path included?
c) Traffic: How much traffic is expected on this route to access the Marina, commercial uses there, wastewater plant, park, etc?
d) Construction: What is the construction impact on port activities?

<u>Additional Alternative:</u>

Please consider an alternative that constructs Components (3), (5B), (7-in location farther south), & (10)? Would that meet all needs and still come in less than 1:1 rebuild?

Benefits of this are that it would:

a. Improve Dravus – Component 3
b. Provide a third, south end access to Magnolia and the Village – Component 5B
c. Accommodate future traffic expectations for Alaskan Way – Component 7 (in location farther south) – Or, could Component 10 incorporate a left exit lane that could fly over or under eastbound traffic onto Alaskan Way to accomplish same without expense of another route over the tracks?

Maintain T-91 West gate access, main gate access and good access to Smith Cove Park and the Marina – Component 10

Mailed Comments

Date	Comment
June 22	I use the Magnolia Bridge Monday thru Firdy to come in from the south and leave to go home south. The Dravus traffic will add an additional 10-25 minutes to my commute. Replace or repair the bridge.
June 25	I personally use the Magnolia Bridge every day, morning & evening, Monday through Friday going to & from work. I choose this route because Dravus Street is already so congested. The City of Seattle would do a great disservice to the public if the Magnolia Bridge is removed. Why does commercial real estate always win over the common good of the public… just like the removal of the Alaska Way Viaduct.
June 28	To whom it may concern: The removal and not rebuilding of the Magnolia bridge would be an utter catastrophe for residents and businesses. The traffic is already severely impacted by the $12 MILLION DOLLAR bike lanes that have been added. Not to mention safety vehicles would not be able to access during heavy traffic times. I can't imagine aside from financial gain why ANYONE would feel this was in the best interest of the people. It's to line the pockets of those with financial interest ALWAYS. Follow the money and it's always to only help a few and hurt the masses.
	Dear Ms. Schellenberger: I am writing this letter to express my concern regarding the upcoming demolition of the Magnolia Bride and the three options that are being given to the community. None of these options are viable options. One has to live in Magnolia to understand what the impact will be. It is necessary to replace the Magnolia bridge. It is the only access point to West Magnolia. Also, all of the buses into Magnolia take this route. Traffic is already bad in rush hour, so if buses took Dravis Street, commute times would e extended and the desirability of living close in would diminish. If the Armory Bridge was constructed buses, as well as anyone, whould have to take a long circuitous route to enter Magnolia. I liver at the intersection of Thorndyke and Halladay, where it is proposed that the Armory Street Bridge would end. If option 1 were chosen, the entrance to the garage of our luxury condominium building would be in the middle of the intersection of the bridge if built. Construction of the Armory street bridge would add noise and environmental pollution to the area as well as additional traffic and light, eliminate parking, create safely issues and reduce our property values. I understand that the city needs to look at alternatives and there may be money from additional sources by having smaller projects, but if property values decrease, in essence, the cost of bridge construction increases. One cancels out the other.

	The city needs to do more advance planning regarding roads and infrastructure. There have been or are in the process of building multiple high density apartment or condominium buildings along 156h Street causing 15th Street to back-up terribly. This makes the traffic on Dravis very bad in rush hour. No matter what fixes are done in place of the Magnolia Bridge, Dravis Street needs improvements as well as 15th. The city could be charging developers for infrastructure improvements in order to help with the costs of improving infrastructure. My vote is for replacement of the Magnolia Bridge with the Magnolia Bridge. Sincerely, [redacted]
June 29	The magnolia Bridge must be repaired or replaced. Traffic in & out of the Magnolia area is already clogged w/ delays. This will be a major problem for everyone working & living in the Magnolia/Interbay area. Something must be done!
	SDOT – Thank you for letting me express an opinion on the replacement of the Magnolia Bridge. Frankly I would like to see the bridge replaced with a new one. The costs could be shared with the Port of Seattle who needs to access Pier 90/91. Also maybe "good to go" passes could be added to the bridge to help pay for a new one. My vote is for a new bridge. Not any of the other options. Thank you, [redacted]
	To Whom It May Concern: The homeowners and residents of the Monterra at Magnolia Condominium and Holly Terrace Condominiums have reviewed the three Magnolia Bridge Replacement Plan proposals. We believe that an in-kind replacement of the Magnolia Bridge remains the only viable option. Of the alternatives, we believe that Alternative #1, building the Armory Way Bridge to connect to Thorndyke Avenue at Halladay Street, would have the most negative impact to the surrounding residential neighborhood. Thorndyke Avenue would become a main route between Downtown and Magnolia, serving up to 17,000 vehicles per day that previously used the Magnolia Bridge. The neighborhood would suffer increased noise, pollution, and traffic; and reduced parking and pedestrian safety. These negative factors are likely to reduce property values along Thorndyke Avenue, and, by extension, Magnolia as a whole. We believe that lost property value should be added to the cost of the alternatives, and we haven't seen this addressed in the cost estimates. Our properties would be impacted particularly significantly, as they are positioned at the corner of Throndyke Avenue and Halladay Street – directly adjacent to the intersection at the end of the proposed Armory Way Bridge. We appreciate your consideration of our concerns, and we hope you will join us in advocating for replacement of the existing Magnolia Bridge.

Signed,
[From: Residents of Monterra at Magnolia]

To Whom It May Concern:

The homeowners and residents of the Monterra at Magnolia Condominium and Holly Terrace Condominiums have reviewed the three Magnolia Bridge Replacement Plan proposals. We believe that an in-kind replacement of the Magnolia Bridge remains the only viable option.

Of the alternatives, we believe that Alternative #1, building the Armory Way Bridge to connect to Thorndyke Avenue at Halladay Street, would have the most negative impact to the surrounding residential neighborhood. Thorndyke Avenue would become a main route between Downtown and Magnolia, serving up to 17,000 vehicles per day that previously used the Magnolia Bridge. The neighborhood would suffer increased noise, pollution, and traffic; and reduced parking and pedestrian safety. These negative factors are likely to reduce property values along Thorndyke Avenue, and, by extension, Magnolia as a whole. We believe that lost property value should be added to the cost of the alternatives, and we haven't seen this addressed in the cost estimates.

Our properties would be impacted particularly significantly, as they are positioned at the corner of Throndyke Avenue and Halladay Street – directly adjacent to the intersection at the end of the proposed Armory Way Bridge.

We appreciate your consideration of our concerns, and we hope you will join us in advocating for replacement of the existing Magnolia Bridge.

Signed,
[From: Residents of Holly Terrace Condominiums]

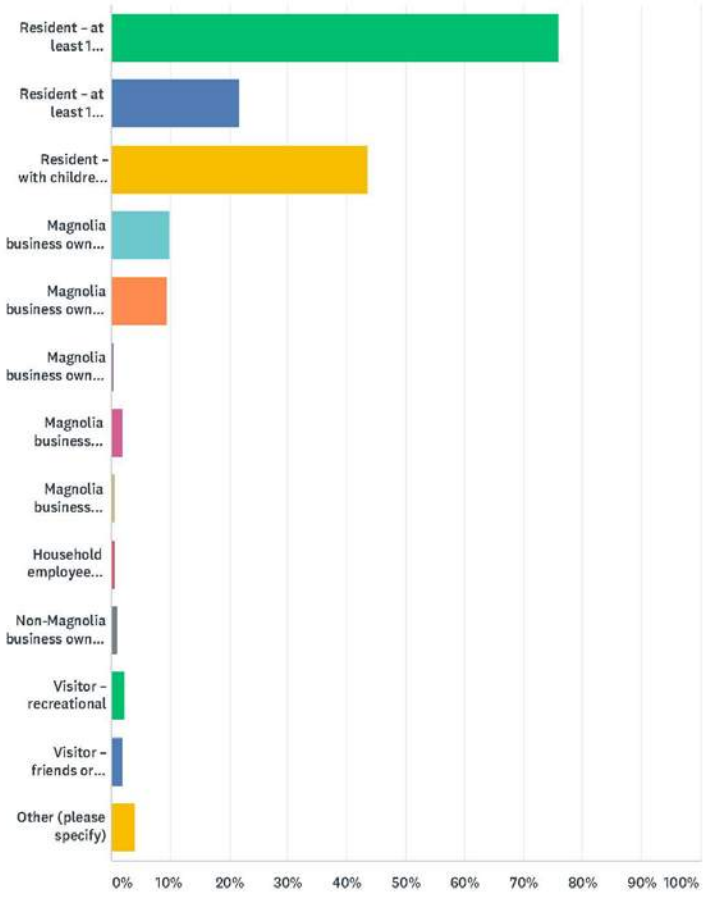
Appendix H: Magnolia Community Council Survey Results

Note: These results are included upon request from the Magnolia Community Council and only include certain questions.

Magnolia Bridge Community Conversation Survey

Q1 Describe your connection to Magnolia (check all that apply)

Answered: 308 Skipped: 1



ANSWER CHOICES	RESPONSES	
Resident – at least 1 household member working	75.97%	234
Resident – at least 1 household member retired	21.75%	67
Resident – with children living at home	43.51%	134
Magnolia business owner – solo/home office	9.74%	30
Magnolia business owner – small business	9.42%	29
Magnolia business owner – large business	0.32%	1

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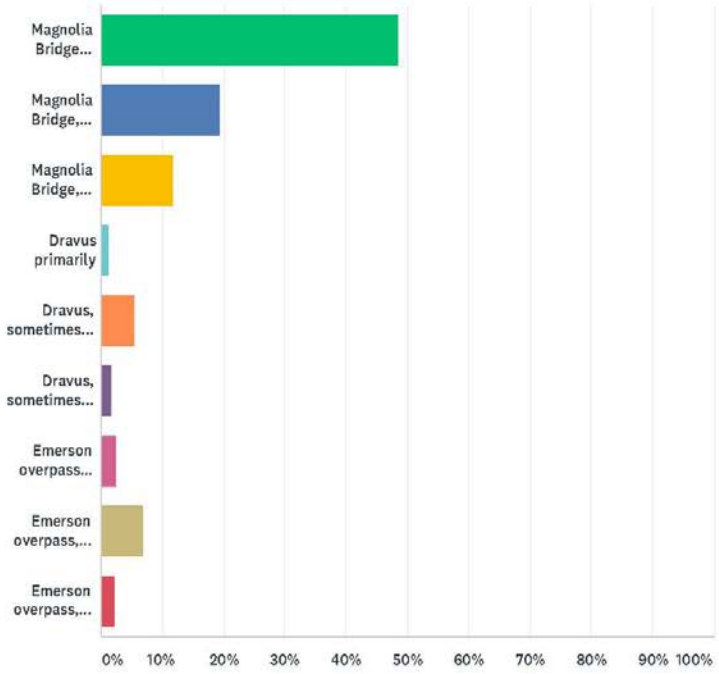
Magnolia business employee – small business	1.95%	6
Magnolia business employee – large business	0.65%	2
Household employee (nanny, etc.)	0.65%	2
Non-Magnolia business owner doing business in Magnolia (contractor, etc.)	0.97%	3
Visitor – recreational	2.27%	7
Visitor – friends or family	1.95%	6
Other (please specify)	3.90%	12
Total Respondents: 308		

Q6 How do you usually enter or leave Magnolia?

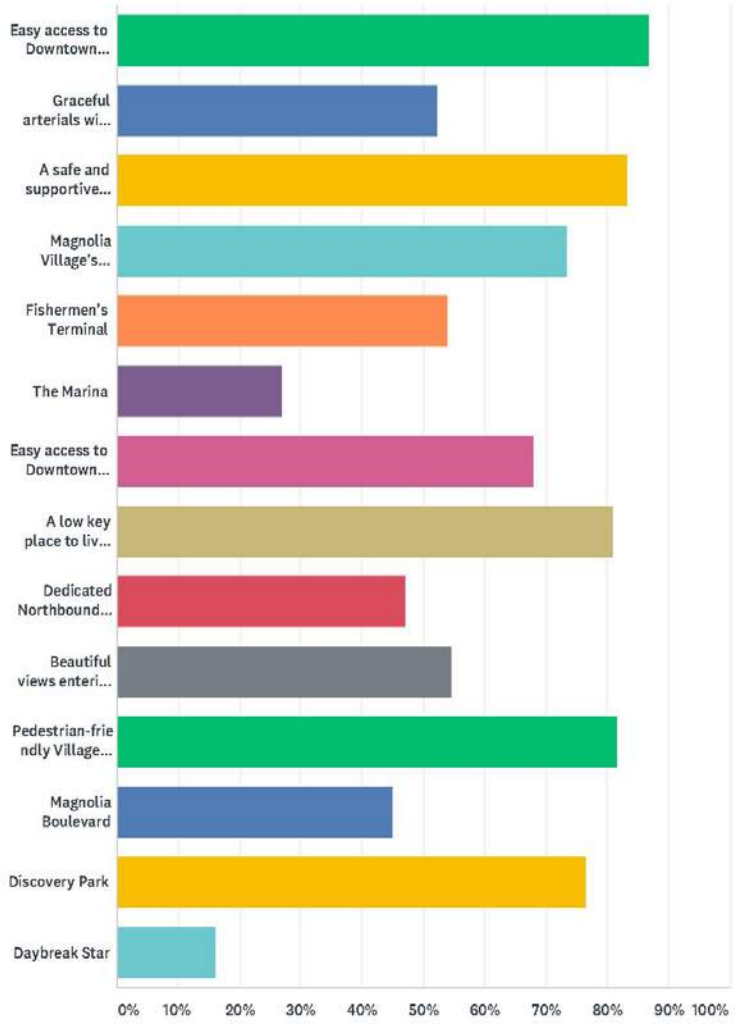
Answered: 307 Skipped: 2



ANSWER CHOICES	RESPONSES	
Magnolia Bridge primarily	48.53%	149
Magnolia Bridge, sometimes Dravus	19.54%	60
Magnolia Bridge, sometimes Emerson	11.73%	36
Dravus primarily	1.30%	4
Dravus, sometimes Magnolia Bridge	5.54%	17
Dravus, sometimes Emerson	1.63%	5
Emerson overpass primarily	2.61%	8
Emerson overpass, sometimes Magnolia Bridge	6.84%	21
Emerson overpass, sometimes Dravus	2.28%	7
TOTAL		307

Q7 What attributes of the Magnolia Community are important to you? Check all that apply.

Answered: 304 Skipped: 5

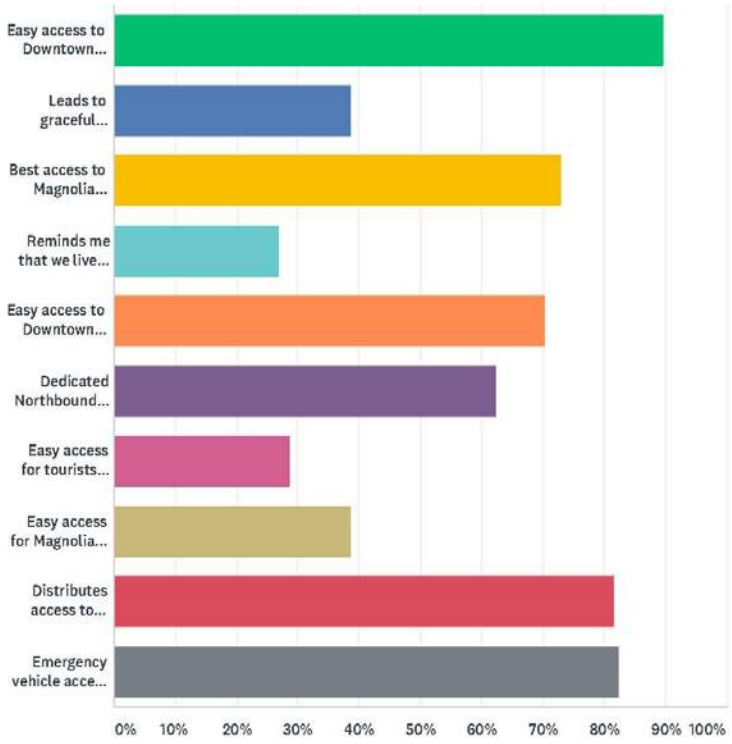


ANSWER CHOICES	RESPONSES	
Easy access to Downtown (driving)	86.84%	264
Graceful arterials with water/mountain/city view corridors	52.30%	159
A safe and supportive community for families	83.22%	253
Magnolia Village's attributes and community activities	73.36%	223

Fishermen's Terminal	53.95%	164
The Marina	26.97%	82
Easy access to Downtown (public transportation)	68.09%	207
A low key place to live close to downtown	80.92%	246
Dedicated Northbound traffic lane from Mercer Place to Magnolia Bridge overpass	47.04%	143
Beautiful views entering and leaving Magnolia from Magnolia Bridge	54.61%	166
Pedestrian-friendly Village and manageable traffic on residential streets	81.58%	248
Magnolia Boulevard	45.07%	137
Discovery Park	76.64%	233
Daybreak Star	16.12%	49
Total Respondents: 304		

Q8 What attributes of today's Magnolia Bridge are important to you? Check all that apply.

Answered: 300 Skipped: 9



ANSWER CHOICES	RESPONSES	
Easy access to Downtown (driving)	89.67%	269
Leads to graceful arterials with water/mountain/city view corridors in both directions	38.67%	116
Best access to Magnolia Village businesses and amenities	73.00%	219
Reminds me that we live near a thriving maritime industry	27.00%	81
Easy access to Downtown (public transportation)	70.33%	211
Dedicated Northbound traffic lane from Mercer Place to Magnolia Bridge overpass - eases traffic for other northbound traffic	62.33%	187
Easy access for tourists to visit Magnolia Boulevard vistas	28.67%	86
Easy access for Magnolia's new elementary school and buses	38.67%	116
Distributes access to Magnolia for southbound residents and businesses	81.67%	245
Emergency vehicle access to and from Magnolia	82.33%	247

Magnolia Bridge Community Conversation Survey

Total Respondents: 300

Q3 What are the impacts for Magnolia, pros and cons of the presentation by SDOT (Seattle Department of Transportation)? Please include any ideas or suggestions you have. Presentation can be reviewed here: https://www.seattle.gov/Documents/Departments/SDOT/BridgeStairsProgram/bridges/2(

Answered: 171 Skipped: 138

#	RESPONSES	DATE
1	This is a stupid survey. You should ask for questions to specifics.	6/19/2018 8:51 AM
2	Loss of the Magnolia Bridge would create a major impact on traffic, commerce, public access to parks, emergency vehicles and disaster relief in the event of an earthquake.	6/15/2018 11:17 AM
3	What is the cost to stabilize the current bridge? We should be entitled to see SDOT's analysis. Why would SDOT make a presentation about 3 options with data associated with each, but not include in their presentation the "updated" cost data for 1:1 replacement - "smoke and mirrors" comes to mind.	6/14/2018 8:36 PM
4	Traffic is already heavy with the bridge!! Removal of the bridge will create an ongoing snarled mess. No one will want to come onto Magnolia who doesn't live here. Bad news for Magnolia business!!	6/14/2018 8:06 PM
5	Regardless of which option, we will have longer access times. Option 1 is probably the best here as well.	6/14/2018 6:19 PM
6	The current bridge is a proven route, the alternatives are not proven and their impact on the community may be greater than SDoT suggests. Any solution has to include a bridge.	6/14/2018 5:14 PM
7	We really need to improve traffic flow into and out of Magnolia, not restrict it further. An actual 1:1 replacement bridge is the only option. Furthermore, the changes to Dravus and Emerson need to be undone or altered.	6/14/2018 4:27 PM
8	SDOT has little regard for residents' need to have more than two access points to our "island". Dravus is already a congestion nightmare and Emerson has been reduced to one lane either way due to the mostly vacant bike lane. Traffic on Emerson commonly backs up to Fisherman's Terminal. Adding the additional traffic to these two access points will be a disaster. Thorndyke is not capable of handling all the traffic currently managed by the Magnolia Bridge.	6/14/2018 3:20 PM
9	Pros: not really seeing any Cons: reduced access to southern Magnolia and the village. Residential streets between Thorndike and 28th and Garfield to Dravus will see increased traffic they're not equipped to handle, particularly as most of them aren't straight or are broken up by stairways, medians, etc. Also, with Dravus as an increased arterial, the section of 30th Ave W between Dravus and Barrett will see increased traffic which is NOT SAFE. That section of road is already completely inadequate for the volume it currently handles. Moreover, Dravus itself is a really problematic option, both because the lights at the Interbay section cause backups, the bridge isn't sufficient for the traffic volume it carries, and the street past Gilman is at a steep grade that isn't conducive to bus/truck traffic (and it closes during winter if we get snow/ice). In short, the layout of streets in Southeast Magnolia makes the traffic flow implications of the Armory bridge really dicey and the options of no additional bridge aren't even worth the paper they're written on.	6/14/2018 11:18 AM
10	Go with Alternative I and also consider adding a new bridge north of Davis across the yard	6/14/2018 9:59 AM
11	None of the presentations as alternatives to the Magnolia Bridge are feasible as presented. All will take some reconstruction to accommodate the amount of vehicles that currently use the existing bridge. I believe two sections of the bridge were retrofitted when last closed. Only the middle span was left to bring up to earth quake code. Please review this point. Also follow the dollar on how previously allocated funds set aside for infrastructure were used. Did the Mercer corridor , trolly line and Allentown take these funds ?	6/14/2018 8:10 AM
12	Without bridge: property values down, longer commute, quality of life goes down With bridge: quality of life does not continue to deteriorate in Magnolia. It has already gone down substantially.	6/14/2018 7:29 AM
13	Removal of the Magnolia bridge without replacing it in the Galer St. corridor would have horrific impact on the Magnolia Village business community. 10,000 to 25,000 vehicles a day year round currently pass within one block or less of the Magnolia Village. Loss of the traffic flow through these surrounding streets and arterials will result in loss of the customers, income, ability of employees to get to their places of employment, ability to supply the stores and, finally, the death of the small business community. The Magnolia Village has grown to serve not only local residents but more importantly the Seattle residents who come to enjoy the view of downtown Seattle, to visit Seattle's largest park, to play on the city owned ball fields, to swim at one of the city's two owned outdoor pools, to dine at one of the many restaurants that have been built to serve this incoming group of people, to work in the surrounding neighborhood or who come to the places in their home neighborhood. These are the people who visit the establishments of the Magnolia Village. Perhaps if SDOT included the loss to the people using the bridge or the costs to the business community and their employees they might see how expensive not replacing the bridge in at least a similar configuration would be for Seattle. Further, the studies that examined the traffic flows seem to understate the existing traffic congested points and consequently how adding additional traffic into those locations will greatly exacerbate the existing situations. Future additions of traffic from the elimination of the Alaskan Way Viaduct will compound the traffic flows on 15th Ave. W. and Elliot Ave as traffic seeks more north/south routes. Trying to incorporate more left turns across 15th for Northbound traffic trying to get into Magnolia will add significantly to slow downs for the 15th Ave. corridor. Leaving the overpass to Magnolia via the existing bridge would seem to be the most logical solution to mitigating all of these problems.	6/13/2018 11:41 PM
14	There are no pros for Magnolia in the SDOT presentation	6/12/2018 12:00 AM
15	Same as above	6/11/2018 7:37 PM
16	The same as 2.	6/11/2018 6:07 PM
17	There were no pros. Any option other than maintaining or rebuilding the bridge is an absurdity.	6/9/2018 7:02 PM
18	The SDOT representative seemed unfamiliar with the points of view being presented by other SDOT representatives just a few years ago. Why the dramatic change in approach?	6/9/2018 7:14 AM

19	The SDOT rep did not answer questions about the bridge life span when asked by multiple people. I know bridge engineers are able to determine this. It's not a wild guessing game. It's part of their work. Seattle Times presented that info: 2024. Six years from now. That was the most important piece. It lets people know what they need to do. Sell, move, consider other places for business. It gives people a deadline to see the urgency in getting a 3rd bridge up. With this news about the bridge, the upzone plan needs to halt. It takes us about at least 20 minute to clear the Emerson overpass onto the Ballard bridge in the afternoon. There are a lot of people trying to leave Magnolia from the industrial area, Fisherman Terminal and the railroad yard. It means when the Magnolia bridge is gone, the bike lane needs to be removed to improve traffic flow. Add the crosswalks which were removed near the bus stops back. (This is such an egregious oversight w/ the new bike lane that it puts pedestrians at risk - especially in the fall and winter when we have shorter daylight hours.) I'm open to a 3rd bridge at a different site, but it has to be able to handle high volume, including trucks and buses easily. Right now, we see trucks getting stuck on the Dravus and Emerson bridges quite often. The telephone poles, curbs and STOP signs are constantly getting hit by trucks making tight turn at these access points. All of these things waste time, cause traffic snarls, cost money and make things unsafe. We don't ride bikes to work because our work requires travelling great distances and riding a bike is not a practical option. Pretty much for the same reason why all the presenters drove or took an Uber to the meeting. We do like to ride for fun, but in the mountains and in less traffic. Our QA neighbors are following the bridge issue closely. They already see traffic jam spillage onto their neighborhood - from folks to the north and west trying to get to/from downtown. With the demise of the viaduct, QA knows traffic will get much worse.	6/8/2018 10:01 PM
20	How can you remove a big access point and not build another one? What happens in case of an emergency?	6/8/2018 9:44 PM
21	All cons to losing bridge	6/8/2018 7:48 PM
22	The impact of removing the Magnolia Bridge affects our public safety for emergency vehicles and will cause congestion. The impact of Expedia moving in and construction from Sound Transit etc also stresses our roads. Our money has been used in an irresponsible manner. The 17 year delay in fixing the Magnolia Bridge has escalated the cost --perhaps that money was used to create bike lane infrastructure etc. The needs of the people are secondary to the desires of the leadership and their political aspirations. We are one of the first neighborhoods tapped for our tax dollars but we don't even have our basic roadways repaired--bridges, potholes, etc.	6/8/2018 6:41 PM
23	SDOT gave a totally inadequate, dated presentation offering no real information. I feel the city should license bike riders to pay for bike lanes. Bike lanes are clogging the only access roads in and out of the neighborhood with no replacements. The idea that bikes will force the elderly or families with children out of their cars is ridiculous. SDOT should offer bus routes to Ballard and Queen Anne if they want to reduce traffic. SDOT needs to guarantee that emergency police and ambulances can get into the neighborhood in a specific amount of time. Ethical planning would include emergency response instead of less access.	6/8/2018 6:35 PM
24	we need the Magnolia Bridge!!!!	6/8/2018 10:00 AM
25	The QA/Magnolia community needs to understand SDOT's priorities and funding plans for all traffic management projects contemplated for the next 20 years.	6/7/2018 12:12 PM
26	There are no pros. Cons: Bus service to/from Magnolia will be impacted and will further clog Dravus and Emerson. Travel times will be increased for all modes of transportation. Businesses will be impacted with fewer non-residents visiting. Cruise terminal and Marina will be impacted as S. Magnolia residents will no longer be able to access those areas and businesses directly.	6/7/2018 8:12 AM
27	SDOT, provided nothing other than budget cost for the removal of the current bridge....which was at best a estimate which was based upon no fact or facts.	6/6/2018 10:17 AM
28	It has recently come to light that the city and SDOT determined in 2015 that the only viable option to address the aging Magnolia bridge is a 1:1 replacement of the bridge. This decision was based on what was best for the environment, the community, traffic flow etc. During the May 21 meeting, the SDOT rep (who we now know was involved in the 2015 1:1 bridge replacement recommendation) did an about -face and claimed that 1:1 bridge replacement was not an option. Clearly there are political forces at play now that have significantly de-prioritized the environmental impact and the Magnolia community. It seems that SDOT and the Port are working together to push their new agenda of bridge removal through.	6/6/2018 9:28 AM
29	As a resident who currently commutes into the city, I travel across the Magnolia bridge a minimum of two times a day. This bridge is by far the best access into and out of our neighborhood, and one of the greatest draws to living in Magnolia is that you feel you are a world away but in reality can get downtown in as little as 10 minutes depending on the time of day. This will change if we do not have the current traffic pattern that the bridge offers. Further, I've been exploring opening a business in the Village and the challenges that this would present to visitors coming into our community make me legitimately concerned about the viability of a business within our neighborhood. We must have the bridge to maintain the state we are in today. The currently proposed solutions are unacceptable as they will increase congestion and travel time into and out of our neighborhood.	6/5/2018 8:15 AM
30	We need a 1:1 replacement bridge. No other alternative is acceptable to those of us who live here. I heard the speakers at the May 21st meeting, but it seems the decisions have essentially been made and the voices of the residents are almost unwelcome at this point. I've paid property taxes in this city for 25 years and now I'm told there's no money to replace a major thoroughfare that allows me to interact/connect with the rest of the city. Why? Replacing the Magnolia Bridge has been on the city's radar since the Nisqually quake in 2001 and as I recall, it was to be replaced (in kind) by now, so what happened to the anticipated funds?	6/5/2018 10:55 PM
31	A complete bottleneck for Magnolia residents.	6/5/2018 8:40 PM
32	All Cons	6/5/2018 7:33 PM
33	So many audience members demonstrated an unwillingness to listen that the presentations were rendered moot because the rest of us couldn't hear. The meeting planners were evidently surprised by the turnout and did not plan accordingly. The meeting was chaotic and discouraging.	6/5/2018 6:03 PM
34	Same question as above? Current SDOT presentations do not contain enough information about the alternatives for intelligent, practical decision making.	6/5/2018 4:15 PM
35	the plans presented by the city seem very reasonable, especially given they have selected an alternate access point that will be less of a burden to tax payers and still provide direct access to Magnolia.	6/5/2018 2:53 PM
36	Person who presented was not a decision maker, nor well enough informed about the subject matter. We need all options being considered to be presented in a very simple, very clear manner - with pros, cons and estimated costs for each alternative. Seems that impact studies were quite old and didn't anticipate future growth in traffic.	6/5/2018 2:34 PM

37	We need a 1:1 replacement of the Magnolia Bridge. We spent years determining this after the earthquake. I am furious that the city would consider throwing all of that work and community input aside. Your plans might work for an ADDITIONAL or EMERGENCY access point, but will be completely wrong and detrimental as a "replacement." Include the 1:1 replacement in your analysis. Or look at an at-grade connection from the marina up the hill.	6/5/2018 1:44 PM
38	I prefer replacement of Garfield bridge and widening Dravus. Property taxes from this neighborhood should be adequate	6/2/2018 9:53 AM
39	Impacts include many loud locals unhappy about the right thing being done.	6/1/2018 12:09 AM
40	Traffic backup on Thorndyke approaching Dravus to make a right turn is already horrible since the bike lane went in place. Take 3-4 light changes to turn on Dravus during rush hour. They took away an entire right turn lane for the few, the bike riders	5/31/2018 11:21 AM
41	Cons: I really do not like anything that brings increased traffic on Thorndyke and anything that could jeopardize the stellar bike infrastructure and new bike lane leading up to that street. Additionally, this gets in the way of the 31 and 33 bus routes that use that street. Bikes, buses and pedestrians should be given right of way. Pros: Improving Dravus intersection not a terrible idea.	5/31/2018 9:30 AM
42	SDOT assumed a bridge is impossible financially. But having all traffic go through Dravus and the north route will be insane. SDOT person was unwilling to think of how many different actors—state, city, port, businesses, railroad, etc could all put in funding. He said an LID is impossible, but a low one might be possible.	5/30/2018 10:34 PM
43	As long as Magnolia gets a new bridge to replace the high Magnolia bridge. I feel the area will remain accessible.	5/30/2018 9:57 PM
44	Pro - update the Magnolia Bridge! Pro - light rail on 15th ave! Con - lack of transparency of implementing affordable housing	5/30/2018 2:12 PM
45	1) Obviously, cost is a limiting and crucial factor, but it is not the only factor. This is a transportation project: the most important consideration needs to be how people--in cars, in buses, on bikes, on foot--can move into and out of Magnolia. Lowest cost does not necessarily mean greatest value. 2) Please plan for growth. If Emerson and Dravus, with current traffic loads and a third alternative access point, already are congested, how awful will they be as the population increases if the third access point is removed? There is only so much capacity that can be added to those routes, and rerouting traffic that otherwise would have used the bridge will add congestion to 15th (also already congested) and surface streets within Magnolia. 3) It isn't just about cars: Do the current traffic counts include buses? The numbers for the bridge seemed quite low. Plus, what about pedestrians walking to the waterfront? If we do build a new bridge, I would request a direct route for pedestrians between Magnolia and Smith Cove/Elliott Bay Park/Myrtle Edwards Park, rather than having to cross the tracks and then cross back. 4) But it is about cars, too: Magnolia is a very hilly home to many seniors and families who simply cannot walk half a mile uphill to get to the bus or bike to three different schools. Many people in Magnolia need to use a vehicle, whether SDOT likes it or not.	5/30/2018 12:01 AM
46	remove bike lane from Emerson and widen Dravus	5/29/2018 12:20 PM
47	See above	5/29/2018 11:11 AM
48	Despite assurances, SDOT is not taking into consideration the current traffic constraints of the Dravus and Government Way entrance/exit points from Magnolia - they are already backed up/insufficient. Removing the bridge will only make issues catastrophic. This will also only get worse with Expedia moving in	5/29/2018 9:24 AM
49	Not acceptable to have an alternative that dumps cars, buses and trucks on the east side of Magnolia where the roads are not equipped for the amount of traffic. This is not a Functional alternative.	5/29/2018 8:31 AM
50	SDOT doesn't seem to understand that the Thorndyke and Dravus routes are severely negative in their impact to our community.	5/28/2018 11:51 PM
51	See above comments	5/28/2018 10:46 PM
52	Failure to replace the bridge will create congestion and safety issues as entering and exiting Magnolia will become a serious challenge.	5/28/2018 9:03 PM
53	The presentation failed to take into account the actual impact removing the bridge without a replacement would have on the community.	5/28/2018 8:14 PM
54	Cons: -Traffic traffic traffic (especially after bike lanes!) -Evacuation, no way 'alternative routes' will help support an evacuation off of magnolia -Emergency Vehicles, most use the bridge to get to areas in magnolia quickly. No police station in magnolia, so this is important for Magnolians. Especially with the rise of theft, break-ins etc No Pros	5/28/2018 5:16 PM
55	This is not a solution - this is a laughable excuse for not allocating the proper resources to help maintain the wonderful neighborhood as it grows to more and more new household owners.	5/28/2018 4:57 PM
56	Demolish the bridge and build something else at armour	5/28/2018 3:12 PM
57	Northerly proposals would dramatically increase our commuting time to downtown.	5/28/2018 12:48 PM
58	see above	5/26/2018 11:41 AM
59	Good document. Did not see, but resident discussion indicates the needs of the port seem to vastly outweigh the needs of residents. The solution should take into consideration growth for moving people and goods multi-modally.	5/26/2018 9:46 AM
60	SDoT makes heir minds up before scheduled meetings. Seattle residence do not have say in their future.	5/26/2018 9:25 AM
61	Cons: end result only 2 ways out and into Magnolia. 3 car lanes each way	5/25/2018 11:49 PM
62	I would like to see viable solutions.	5/25/2018 10:54 PM
63	The Magnolia bridge must be fixed. Otherwise, we only have two ways off Magnolia and the traffic will be horrible.	5/25/2018 8:14 PM

64	The pros of the SDOT presentation is that they are considering alternatives looking at the costs, which seems to be something that s. Is not particularly good at, witness there 12 million dollar a mile bike pads. Having said that their communication strategy is horrendous because it is left everyone with the impression that they will not be doing the one-to-one replacement of the bridge that they have already spent significant money determining is the right choice. They did not have costs paid for in the past when they made that decision so now knowing the cost or higher but still not funded shouldn't really necessarily change the outcome particularly when in the interim the other two alternative inlets have become less viable, witness removal of lanes on the other bridge at the top of Magnolia to provide dual direction bike lanes that even the 3% of the population who are bikers don't always use, eliminating traffic capacity on that route. The other cons of the SDOT presentation include that the only person available has no idea about the project. It was such a clear and offensive dodge of the issue. As with many things SDOT does, completely embarrassing and incompetent.	5/25/2018 7:41 PM
65	The problem with the presentation is that they did not present information on impacts. As a resident I'm concerned about traffic flow, negative impact to our businesses, and impact on property owners (and renters) of new traffic routes.	5/25/2018 7:19 PM
66	Impacts of the SDOT presentation? It made me understand that the City of Seattle is clearly considering not replacing the Magnolia Bridge at all and is seriously considering a lower cost alternative that will significantly hurt the Magnolia community. The only "pro" was to understand the SDOT's position on this matter. The only "con" was that no one who actually has decision-making authority on bridge replacement was present. Not sure if this was because the meeting planners did not invite the right people or if the SDOT just sent someone they knew would provide basic information.	5/25/2018 5:40 PM
67	Since P of S mentioned their plan to develop land it appears they want the bridge removed for better land use. However this will create problem for access by residents and emergency vehicles. The will also affect business and other commercial ventures.	5/25/2018 4:39 PM
68	Lack of any responsibility for preventing ious commitments, ability to deliver on time/on budget, elimination of the one unencumbered way to magnolia (no bike lanes, left hand turns)	5/25/2018 2:38 PM
69	There is no preliminary analysis of the financial and traffic flow impacts of the differing plans between the various alternatives, thus making the analysis not much better than useless. We need to understand rough costs and rough peak/norm and expected traffic flow expectations.	5/25/2018 1:55 PM
70	They have a limited amount of options and money...I like Wheeler Bridge option and improve other exits and entrances I am not convinced the bridge has to go to the village...the bridge is there has been for over 80 years and Village has waxed and waned regardless..changed from services to retail and back....Magnolias have to support the Village. Think of a non confrontational way to get information when SDOT has done with its work...not sure past meeting was a good venue for information sharing really.	5/25/2018 1:17 PM
71	See above	5/25/2018 12:35 PM
72	Magnolia would be quieter and less like a suburb.	5/25/2018 12:06 PM
73	We pay high property taxes, are basically on an island, and have minimal services. The quality of life here is changing at an incredibly rapid pace -- and not for the better.	5/25/2018 11:39 AM
74	The presentation doesn't appear to consider commute and ingress/egress TIMES to/from Magnolia. Ensuring commute times are not increased should be a key consideration.	5/25/2018 11:34 AM
75	Should have started with why we need to replace yteh bridge. Status/safety/risks/etc. More details about the specifics and impacts of each segment proposal would be have been helpful. Also, impact of not replacing Magnolia bridge.	5/25/2018 10:37 AM
76	The Magnolia Bridge is the KEY way to get to Magnolia. The other routes are used but due to new apartments, Dravus is over-used and with the new bike lanes, Emerson is totally congested.	5/25/2018 10:26 AM
77	Again, I see only negative impacts because of increased commute times and traffic congestion. There will also likely be a negative impact on housing prices. Magnolia is wonderfully situated right now with easy access to the city. Anything that affects that affects the desirability of the neighborhood. It might not be felt in a boom market now, but will have significant consequences once this bubble bursts. Further, making it harder to leave Magnolia or enter Magnolia could have negative ramifications in a natural disaster or emergency as people either try to leave or try to get back in to their children, families, pets, etc.	5/25/2018 10:10 AM
78	No good option except to replace Magnolia Bridge is acceptable	5/25/2018 9:49 AM
79	Will there be upgrades to Thorndyke and Gilman to handle increased traffic for both cars and business vehicles? Funneling all bus traffic to Magnolia through Dravus St.will certainly add to congestion. Will there be shuttles from Magnolia and Queen Anne to carry train riders to the light rail stations?	5/25/2018 9:49 AM
80	The presentation by SDOT was completely lacking in detail or explanation. The answers to many questions were "I don't know" or "look at the website." The presenter admitted SDOT is relying on information and survey results 10+ years old. Such a big decision needs current information and thoughtful investigation.	5/25/2018 9:25 AM
81	PROS - having a meeting. CONS - insufficient data presented regarding bridge options, insufficient data on traffic demands with a lost bridge, insufficient data and assumptions on impact to Thorndyke, Dravus and Emerson, insufficient data on peak usage and commute times in and out of Magnolia, no mention of risks from delayed time for Emergency Services not being able to use the Magnolia Bridge, lack of understanding in funding options and costs, no top leadership from SDOT present that had authority, no one present from SDOT that seemed to have a sense of historical issues and problems created by the 2001 bridge shut down. Moreover, the SDOT rep basically didn't want to hear any comments about funding a full bridge replacement. There seemed to be no or very little coordination with lawmakers and a vision. Really poor presentation and lack of leadership by SDOT.	5/25/2018 9:23 AM
82	at one point years ago there was consideration to run a street on marina place and connect into 32nd ave west via West Galer st, there is only a tiny portion of the road missing (actually there is a path there) this is not even a consideration from what I can see but why can't it be?	5/25/2018 9:13 AM
83	Take the money set aside for transportation and figure this out. I'm sure there's a way engineers can figure out a way to retrofit thus thing. How much was spent on the retrofit that didn't work? Sue that contractor and take the money to help replace the bridge. I can't believe this is even up for discussion.	5/25/2018 8:36 AM
84	has an alternative route of surface past Elliott Bay marina to 32nd Ave and come up to the village without a bridge at all?	5/25/2018 8:18 AM

85	I have not seen or heard any comparatives of the various alternatives - that is all of the 6 (?) alternatives that are neither Dravus nor existing replacement. They are laid out and described, but otherwise seem not to be considered	5/25/2018 8:05 AM
86	SDOT is correct in their comment that the City doesn't have the funds to replace the bridge in its present place. Ms. Bagshaw was in a meeting at Magnolia Lutheran a few years ago and told us (under direct questioning from Bruce Carter) that the City's plan at that time was "no plan to replace the bridge"... and Bruce added "until it falls down?" to which Ms. Bagshaw had no reply, but reluctantly admitted that such a scenario would be the most likely way to get Federal funds to make a replacement happen. From that point onward, I've viewed SDOT comments about the Mag Bridge as "dissembling, misdirection and lies", as they never address the replacement issue. Also, the bridge engineers who attended the Bagshaw meeting (SDOT) maintained that it was and continues to be "adequate and safe" except in the event of an earthquake.	5/25/2018 6:57 AM
87	Same as above	5/25/2018 6:15 AM
88	No help or understanding provided	5/25/2018 6:10 AM
89	Very significant although the presentation lacked any real details, alternatives, costs and the leader of the project. This aspect was extremely poorly handled.	5/25/2018 5:03 AM
90	See above statement	5/25/2018 5:28 AM
91	SDOT does not have a feasible plan. 'Cost-effective' is an oxymoron in the context of their plans. Nothing proposed will be an 'effective' replacement or substitute for the bridge.	5/24/2018 11:25 PM
92	Presentation was poor and facility to show slides was severely inadequate. The engineer was thrown to the wolves by his management. None of their options are as good as bridge replacement - however even if bridge is replaced other option may be needed during period bridge is replaced unless a way is found to build parallel bridge -- no discussion about what the possibilities are. Other than one-for-one Bridge replacement, only an option with a bridge over railroad from Armory to Thorndyke is even a compromise. Dravus and Emerson/Gilman improvements are needed (especially after the disaster bike lanes recently added) but will still be insufficient especially for those on Southern side of Magnolia.	5/24/2018 11:11 PM
93	It is going to cause so many traffic backups and make magnolia even more secluded.	5/24/2018 11:00 PM
94	Bad roads, bad traffic, wastes money , reduces access and they do not have any responsibility for the welfare of magnolia. No bridge is blackmail .	5/24/2018 10:37 PM
95	Pros: none Cons: massive traffic congestion	5/24/2018 10:34 PM
96	We need the bridge	5/24/2018 10:27 PM
97	Charge Magnolia home owners a percentage to rebuild the bridge. We cannot lose access to downtown Seattle via the entire south side of Magnolia.	5/24/2018 3:21 PM
98	none	5/24/2018 8:46 AM
99	It's hard to say - the lack of SDOT's planning means we don't really know what our options are. The bridge needs to be replaced. Or some south end equivalent access point needs to be established.	5/24/2018 8:18 AM
100	It is unacceptable that the leader of the project was not at the meeting. But his substitute did as well as he could considering the topic. Every decision by the current City Council and SDOT was proved disastrous for our city. I'm outraged that this project has been "on the books" for 17 years, obviously placed at the bottom rung of priorities. SDOT and the Council seem biased in their apparent choice to not replace the bridge. Alternate access points only benefit the Port. There is no viable alternative to replacing the bridge that will manage the traffic flow into Magnolia. And I don't see where these alternate routes extend well into the heart of Magnolia. Thorndyke and Government Way cannot take on all of Magnolia's traffic! Once again, SDOT and their governing body- the Seattle City Council- are blantantly ignoring the best interests of Seattle residents.	5/24/2018 7:57 AM
101	Safety Health Access Property value	5/23/2018 9:17 PM
102	Looks like they have already made up their decision to tear down the bridge and not replace it. This is going to be a boondoggle for Magnolia.	5/23/2018 8:50 PM
103	The biggest impact is the impact to safety, commute times and a decline in our property values	5/23/2018 7:44 PM
104	This city needs to be audited. Where is all the millions and millions of dollars being spent?	5/23/2018 6:42 PM
105	Uncertainty, worry for residents since no questions were answered.	5/23/2018 5:48 PM
106	You guys already know the answer to this. And the residents have been loudly reminding you repeatedly!	5/23/2018 3:42 PM
107	We need some way of connecting the South end of Magnolia to the city. When the bridge comes down, will they be able to put in a roads or something that can guide the 1/3 of the neighborhood off the bluff without diverting them to Dravus. I would ask that SDOT take a new survey, the data they used was several years old. I would also ask that Sally Bagshaw and members of SDOT attempt to leave Magnolia and drive south on 15th during the morning rush hour. I would ask that Sally Bagshaw and SDOT attempt to leave Magnolia going north over the bridge via Emerson at 4pm on a weekday, and hopefully they could experience the back up when the bridge is up. We should also take a look at how the bridge going up and down continuously affects traffic. Would there be a way to limit it to certain times, like on the hour, or every 30 minutes? Additionally I do not know if the light rail will be effective if we cannot get the residents off of Magnolia to use the light rail.	5/23/2018 2:14 PM
108	Any alternative that reduces the number of incoming lanes into Magnolia is unacceptable. We've already had 20% of incoming lanes removed by the bike lane on Emerson.	5/23/2018 1:58 PM
109	Improving Dravus could help with traffic flow, but the real issue is often the Ballard Bridge. There needs to be a tunnel build under the waterway to alleviate the backups caused by ships.	5/23/2018 12:18 PM
110	Traffic/Access	5/23/2018 12:13 PM
111	There was a failure to communicate. SDOT failed to address the community concerns: we need access that is at least as good as we have now and considering one land has been removed from the Fishermen's terminal access to Magnolia we probably need improved access. They failed to explain how options other than 1 to 1 replacement can meet the community needs. New access needs to be in place before the bridge is taken out of service. I think the community can understand the cost issues but we need to be assured we will have access.	5/23/2018 11:35 AM
112	This would greatly increase commute time for thousands of residents and workers.	5/23/2018 11:05 AM
113	the lack of concern for the need to rebuild the bridge	5/23/2018 10:42 AM

114	Repair or rebuild the current bridge, as traffic is only increasing everywhere in Seattle. The Village would become isolated and desolate being so removed from the rest of the city.	5/23/2018 10:23 AM
115	Cons - increased traffic congestion and travel times will hurt current residents/businesses and deter future residents/businesses from the area.	5/23/2018 10:18 AM
116	Re-routing traffic onto already-strained Dravus and Emerson will be a mess.	5/23/2018 9:51 AM
117	Na	5/23/2018 8:44 AM
118	Con is not replacing the bridge when we pay huge taxes to live here	5/23/2018 8:04 AM
119	Same pros and cons as of port presentation. Overall cons o presentation was that there was no perspective for Magnolia itself ... was off SDOT and Pier but not the community	5/23/2018 7:28 AM
120	Presentation focused too much on SDOT's processes, not so much on neighborhood impacts. The presenter's knowledge was too limited. Too many questions could not be answered, or they were dodged.	5/23/2018 7:26 AM
121	Access to/from Magnolia	5/23/2018 7:16 AM
122	I feel Magnolia has been let down by SDOT and the city council. My only suggestion is do not remove the Magnolia Bridge.	5/22/2018 10:57 PM
123	Not replacing the Mag bridge would be a terrible mistake. This neighborhood has tens of thousands of residents that would be left with only 2 ways to get into the neighborhood. One is extremely busy (Dravus) with the new apartments. The other has recently been made worse (Emerson) with the reassignment of one lane to a bike lane. Unacceptable!!!	5/22/2018 10:56 PM
124	The presentation did a decent job of over-viewing the study being conducted but it took some questions to make clear that the study is to find potential alternatives to a 1:1 replacement and that the 1:1 plan is still on the table.	5/22/2018 10:46 PM
125	We experienced untold delays and traffic back ups when the bridge was out of service after the Nisqually Earthquake. To live our lives this way with no end in sight is beyond just being a burden. We deserve access to our homes.	5/22/2018 10:45 PM
126	Hard to say when there was nothing presented that would give any idea of what is in the works. The gentleman from SDOT spoke a lot but said nothing.	5/22/2018 10:33 PM
127	Pros: total bridge replacement is still one of the alternatives Cons: cost of bridge replacement They haven't looked at other resources for money for bridge, ie federal government like they did for West Seattle Magnolia residents not represented in planning committee or final vote of bridge replacement. They have spent too much money on bike lanes that are used by less of a population than Magnolia Bridge They studied bridge replacement in 2001 and 2007 and didn't do anything about it Presenter couldn't answer specific questions about the project Bureaucracy is holding up movement on project Mayor and city council not in attendance at meeting. Why did we come? Alternatives were not reviewed at meeting - not a clear picture of alternatives on the table Widening Dravus is not feasible. Apartments are being built there and Dravus is not a direct route to magnolia village and bluff. Not a good alternative They already messed up Emerson with bike lanes. Traffic is backed up more now all the time. Thorndyke is not a good option for bridge to go to as it's not direct to rest of Magnolia. It will conjest side streets None of the people making the decision about the bridge drive it daily They didn't consider it's the main way for emergency to get to Magnolia (SPD, ambulances, Fire etc) There are only 3 ways to get to and from Magnolia. The bridge has 1/3 of the traffic. They didn't seem to understand that affecting the bridge negatively will significantly impact traffic flow	5/22/2018 10:15 PM
128	They didn't tell us anything. The options were not presented.	5/22/2018 9:59 PM
129	I don't think SDOT addresses the issue.	5/22/2018 9:58 PM
130	There were no concrete answers. Now I'm be in power attended our representative and mayor were absent. We have not heard from fire, medical and other emergency services as to how this will impact response time. Fire and police response times should be evaluated. Including the impact the new apartment and Expedia headquarters will bring to our neighborhood.	5/22/2018 9:49 PM
131	Nothing less than a total Seattle City Council replacement will be acceptable.	5/22/2018 9:49 PM
132	Poorly presented. Presenter had little information or answers to questions.	5/22/2018 9:41 PM
133	Didn't get any answers.	5/22/2018 9:33 PM
134	They really talked around the issue but seemed to be saying they can't afford a 1:1 replacement for our bridge. That is totally unacceptable. When any accident occurs, or the Ballard Bridge breaks down, traffic backs up south of Dravus and is grid-locked. If we don't have the Magnolia Bridge, there is no way in or out. This is a serious quality of life issue as well as a safety issue for getting emergency vehicles in and out. Not acceptable.	5/22/2018 9:04 PM
135	Big impact on the Village, none of the alternatives provide clear access to the Village. Also bus routes, though I think Metro's long term plan is to move the routes to Dravus to tie in with light rail. I'd like to see better access to Smith Cove and Marina. Cons - increased congestion at Dravus will get worse with light rail. The plan is to totally rebuild Dravus bridges over 15th and over rail tracks - not clear if SDOT plans to do that before the bridge is declared unsafe. Could mean Magnolia down to only one access point.	5/22/2018 8:56 PM
136	It will decrease home values and limit accessibility for emergency service vehicles	5/22/2018 8:54 PM
137	SDOT needs to show their cards - particularly given that on more than one occasion since the 2001 Nisqually Earthquake event making the Magnolia Bridge imminently in need of demolition, POS has made public presentations about T-91 Uplands redevelopment proposals. It is clear that Seattle (Mayor, SDOT, Council) are playing a waiting game, at Magnolia's expense - and want to leverage POS redevelopment of T-91 Uplands by requiring significant POS financial participation in replacement of the Magnolia Bridge.	5/22/2018 8:10 PM
138	No indication of a fix for the Magnolia bridge until the bridge is deemed obsolete, which will not only negatively effect public transportation but all transportation in and out of Magnolia, not limited to driving transportation but pedestrian and bicycles. I would suggest that steps are taken to repair or replace the bridge before the bridge fails an inspection like the presentation implies.	5/22/2018 7:52 PM
139	Same as above.	5/22/2018 7:51 PM
140	Given the number of residents living in Magnolia, it's in reasonable to imagine Dravus and Emerson being able to accommodate all traffic. It already takes upwards of 45+ min some days to enter/exit Magnolia (travel 3 blocks) via those routes.	5/22/2018 7:49 PM
141	Having a bridge leading to the south side of Magnolia is crucial since the other entries/exits are already congested throughout the day.	5/22/2018 7:28 PM

142	We were upset that no one was present that could answer any questions.	5/22/2018 7:17 PM
143	See above.	5/22/2018 7:06 PM
144	The impact are significant for Magnolia. I saw only cons. The only pro was better access to Magnolia village.	5/22/2018 5:43 PM
145	The presentation was very disappointing. There was a lack of knowledge as well as commitment to sharing ideas with the group, and a lack of engagement during the design process with Magnolia residents. Money was presented as the decision-maker but quality of life and community voice seemed low on the list. Extremely enraging. Solutions should be explored to pay for the bridge creatively.	5/22/2018 5:49 PM
146	If the bridge is taken down there would be no southern entrance into the neighborhood for Emergency response vehicles. This puts the lives of our kids who attend the public and parochial schools at a greater risk. It also increases traffic for public transportation vehicles forced into the remaining two entrances. W Dravus is already at overcapacity and is about to get worse with increased housing density on W Dravus slated to open soon. W Emerson is also a full capacity prior to losing another lane to the new bike lane. A new bridge is the only real solution unless the city plans to re connect W Mariner Place with W Galer and expand it to 4 lanes we would lose if the bridge is closed.	5/22/2018 5:26 PM
147	He did a very poor job describing the options and getting us all on the same page. See my end comments for ideas.	5/22/2018 5:17 PM
148	SDOT needs to go back and figure out why they've changed their approach since 2007. We voted in good faith for the levy in 2015 and that money has been squandered. Send your executive next time. It was unfair of you to send a PM in knowing how contentious this is. If we need to have tough conversations show up and have them.	5/22/2018 4:07 PM
149	Few answers.	5/22/2018 4:06 PM
150	There will be a tremendous negative impact, to businesses, traffic, commute times, safety, Home prices, and more. It's not acceptable to not replace the bridge. We have voted for taxes for this.	5/22/2018 3:53 PM
151	There will be a tremendous negative impact, to businesses, traffic, commute times, safety, Home prices, and more. It's not acceptable to not replace the bridge. We have voted for taxes for this.	5/22/2018 3:53 PM
152	As stated above, you have already reduced the traffic lanes on the other point of egress from Magnolia from three lanes to two, now you plan to not replace the bridge. It is madness and will create a huge traffic flow issue. The bridge needs to be repaired and/or rebuilt!	5/22/2018 3:49 PM
153	Total disaster. No bridge, say goodbye to village commerce. Increase in traffic on to 2 other roads to Magnolia. What are costs of the other options? None given.	5/22/2018 3:28 PM
154	I suggest they find the fund to replace the current bridge. Their ideas will negatively impact our lives and property values.	5/22/2018 3:00 PM
155	SDOT did not "use their words" to explain the options shown on the difficult-to-see slides, which led me to believe that Mr. Lee was not entirely familiar with them.. A combined map/photo with the Port areas, proposed access routes and light rail possibilities would be helpful.	5/22/2018 2:48 PM
156	When the Ballard bridge is up, traffic backs up onto 15th Ave W choking off all access into the neighborhood from the south. How will emergency vehicles get into our neighborhood? The clearest impact of the SDOT presentation is that Magnolia has been a low rung priority for the funding available for the last 17 years. This was made abundantly clear by sending a representative that could only vaguely answer questions and kept asking people to refer to the website that we wanted him to explain to us! I felt bad for the guy- he was thrown under a bus by his higher ups that had no choice but to avoid the citizens of Magnolia that are rightly angry for being so poorly served by their city employees. Put more effort into finding the funds necessary to replace the existing bridge in like kind. Quit wasting our tax dollars on studies of options that everyone knows will not meet the needs of the community. Access to Magnolia from the southern part of the neighborhood is critical.	5/22/2018 2:45 PM
157	PROS: increasing ease of access to Magnolia (and to other roads). CONS: I imagine a multi-component idea would be quite pricey.	5/22/2018 2:44 PM
158	One hesitates to change anything! I'd like to see the bridge replaced exactly where it is.	5/22/2018 2:37 PM
159	No pros only cons seen if bridge not replaced. Replace bridge with turn lanes to access Elliott Bay Marina. So much more density occurring in neighborhood need to maintain at least the access we have.	5/22/2018 2:03 PM
160	Not enough information, we need a bridge	5/22/2018 2:03 PM
161	Dravus and Emerson st. are already at capacity (and beyond) during rush hour. Going from 28th ave. W to 15th ave. W can take over a half hour. The addition of hundreds of new apartments at 15th and Dravus will only exacerbate this problem. In addition, the only buses that come into Magnolia currently use Emerson (#31) and the Magnolia bridge exclusively. Adding those 4 (?) routes to Dravus and Emerson will only make traffic worse.	5/22/2018 1:09 PM
162	Nope, just nope. Rebuild the bridge and stop spending money on bike lanes	5/22/2018 11:57 AM
163	Where will the bus route be with the bridge. It will be a traffic nightmare getting in and out of magnolia. Dravus already has traffic all the way up the hill.	5/22/2018 10:56 AM
164	Can't comment since I wasn't there.	5/22/2018 9:54 AM
165	Traffic congestion, uncomfortable living circumstances, limiting speed of receiving emergency help, lack of exits in case of earthquakes.	5/22/2018 9:46 AM
166	Presentation difficult for layperson to understand. Most options are deemed infeasible. If I am reading correctly the only option still on the table is to "Widen" Dravus Street for residents and fix the lower portion of the bridge for the Port. Appears there is no replacement option on the table any longer.	5/22/2018 6:28 AM
167	Ever since the 2001 Nisqually quake, the community has given a clear and consistent message: the bridge needs an in-kind replacement. Alternative funding sources such as Federal, State, LID, tolling, bonds/levies need to be revisited. It is unacceptable that 15+ years have elapsed and we have no replacement bridge or funded plan to show for it.	5/22/2018 12:57 AM

168	SDOT is wasting more time and money on redundant studies and repeating work that has already been completed. The work completed in 2007 concluded that the Magnolia Bridge replacement parallel to the existing bridge is the best and most cost-effective solution. The work has already been done. The only thing left to plan is the budget and source of funding. The Port, BNSF, the State, and the Federal Government, must all contribute heavily to the funding, especially from the 15th Ave exit and flyover to the Smith Cove exit. The City and perhaps a LID for Magnolia should contribute to the final Magnolia connection section.	5/21/2018 11:31 PM
169	We don't care about sound transit! We want our bridge!	5/21/2018 11:03 PM
170	The impact of removing the bridge is that traffic Leaving and returning to Magnolia will be slower and more convoluted than it is. The bridge leads to three main arterials for the neighborhood with no stop lights; no other route provides this. I recommend replacing the bridge.	5/21/2018 10:43 PM
171	Before removing the bridge, build the alternative or the new bridge. If that is not possible, meet with the city and ask them to put a hold on densification if the area. I worry most that Magnolia has one police officer to help out in emergencies. The time it takes for emergency vehicles to get to those in emergency situations is fairly long. When you take away that access to Magnolia, you are putting residents as risk.	5/21/2018 9:13 PM

Q9 Please use this space to share your ideas or solutions

Answered: 146 Skipped: 163

#	RESPONSES	DATE
1	Revisit access via 32nd. I am a working mom and I commute to elementary schools, preschools, after-school activities, and a full day of work downtown. Literally, if traffic is worsened in/out of Magnolia it will directly impact my career as I will not be able to spend as many hours at work and also take care of my kids. I'm trying to do both currently and the only way that works is because I can get to/from downtown relatively quickly. My primary goals are that there are easy ways in/out of Magnolia during rush hours.	6/19/2018 10:22 PM
2	Replacement of the Magnolia bridge is paramount. Distributing traffic to other entry points is unacceptable.	6/18/2018 12:40 PM
3	We need accurate comparison data for the FOUR options on the table that includes 1:1 replacement.	6/14/2018 8:36 PM
4	Build a replacement bridge... in the end whatever it costs it won't be as much as the overruns will cost for all the things the city, SDoT etc will need to change in order to accommodate another solution. Any alternative solution will become a money sink as various entities grab large chunks of money to decide to reinvent the wheel, simply because the city did not think this through and fund a bridge, thus saving itself more money than any cost the bridge replacement will incur.	6/14/2018 5:14 PM
5	Direct replacement of the Magnolia Bridge is the only acceptable option.	6/14/2018 3:20 PM
6	Replacing Magnolia Bridge 1:1 is clearly best solution. If Armory Way option is chosen, should be routed to let traffic off as far south as possible on Thorndike, but this would likely make Boston into a de facto arterial (even though Blaine/Condon would probably be the designated arterial). Armour is another possible arterial but the median on 27th would need to be removed. The misalignment of all streets crossing 28th will lead to more left turns and likely more accidents. A thorough study of traffic impacts ACROSS THE NEIGHBORHOOD must be done, as studying just the streets closest to the bridge entrances is wholly inadequate.	6/14/2018 11:18 AM
7	Alternative I is fine. But what would be ever better is to add new bridges at Bertona and Barrett by lidding that part of the rail yard. Adding a lid would allow for two new entrances to Magnolia and add space for a new city park for Interbay or land for a new Junior/High school which will be needed as the population continues to grow.	6/14/2018 9:59 AM
8	Don't remove what can be fixed . Modify but don't cut access. More frequent smaller bus shuttles might ease transportation to and from the Rapid Ride Bus Routes.	6/14/2018 8:10 AM
9	Replace existing bridge 1:1	6/14/2018 7:29 AM
10	the only option is rebuild the bridge	6/14/2018 6:59 AM
11	Replace or repair existing Magnolia Bridge. Look at other bridges in nearby towns and similar locations that have been recently for much less money than has been proposed for this project. There are numerous examples of structures that share similar challenges yet have been built for as little as 1/4 the cost. Also new techniques are now available that may significantly reduce the cost to repair the existing structure resulting in a bridge less expensive than the currently proposed alternatives.	6/13/2018 11:41 PM
12	No comment	6/11/2018 7:37 PM
13	my biggest concern is the inefficiency of bus routes and increased traffic that will occur if the bridge becomes decommissioned. I'm also concerned about reduced access to an already cut off corner of Seattle.	6/10/2018 10:54 AM
14	Hold SDOT responsible to work with the state, feds and the port to stop wasting money on absurd alternatives and to figure out how to build the bridge. Even a toll may work.	6/9/2018 7:02 PM
15	Replace the bridge Add more lanes for car traffic and better access Bike lane this year have compromised traffic significantly	6/9/2018 11:51 AM

16	We need three ways to enter and leave Magnolia. Whenever we are limited to just two (because of construction) there is a dramatic impact on our quality of life.	6/9/2018 7:14 AM
17	I can't afford a LID. We all pay very high taxes for all kinds of projects and very expensive infrastructure for downtown, Pike/Pine, ID, U District, lower QA growth. SDOT and City Council didn't proposed a LID specific to these areas. It should not do so here.	6/8/2018 10:01 PM
18	I trust a suitable, safe and comparable replacement will be built for Magnolia residents. We definitely need the bridge to be replaced in some shape or form. Ideally in a cost effective manner. And in the location of the current bridge.	6/8/2018 9:49 PM
19	Need to have a replacement bridge. It would feel too isolated and not make magnolia very livable	6/8/2018 9:44 PM
20	keeping/improving all 3 access in and out of Magnolia	6/8/2018 10:00 AM
21	The Magnolia community is a significant tax source for the city. It is unconscionable that SDOT has not appropriately planned for a bridge replacement. Instead we are stuck with bike lanes that no one wanted and few from the neighborhood use. Seattle seems to treat our neighborhood as if it weren't really part of the city. They take our tax money and then reduce or eliminate services. (i.e. No bridge replacement, threat of kids going to Lincoln instead of Ballard High School, no monorail, no Westside access to new SR99 tunnel, etc.) The bridge takedown will also negatively impact the planned low income housing at Fort Lawton. You can't add lots of new housing and then fail to provide infrastructure. The only solution is to replace the Magnolia Bridge.	6/7/2018 8:12 AM
22	The solution is simple.....simply replace the bridge by a new bridge....	6/6/2018 10:17 AM
23	Could you also keep us up to date on Carla Skoglund's request for a full audit of how the city used the transportation money that was supposedly earmarked for our community in the last levy? I think it was a reasonable request and one that may convince the city they need to be accountable and they need to come to the bargaining table. Right now, other than public pressure, there is nothing that can make them come to the bargaining table and nothing holding them accountable for anything.	6/6/2018 9:28 AM
24	Rebuild the bridge. This is why we pay taxes. We live in Magnolia for many reasons and are all passionate residents who truly love and value our community. We have chosen to live there for a variety of reasons, but I would speculate that a majority of residents regularly rely on the Magnolia bridge on a daily basis. Proposing alternative solutions to this critical thruway is appalling. This will increase transit times and congestion in our community. It will make the community less appealing and will pose challenges for the viability of our businesses. As a taxpaying citizen, the fact that we are even having this conversation is appalling. Meanwhile, we're happy to spend millions of dollars on homelessness but your taxpaying citizens are not being preserved the rights to standard provisions which the city should be providing. Unacceptable.	6/6/2018 8:15 AM
25	We need a 1:1 bridge replacement. Find the money.	6/5/2018 10:55 PM
26	We have to have a replacement bridge. To move the traffic from the Magnolia bridge to Dravus and Nickerson Emerson simply will not work.	6/5/2018 8:40 PM
27	1:1 replacement is the only viable solution.I have lived in Magnolia 57 tears.A lifelong resident.	6/5/2018 7:45 PM
28	1:1 replacement is the only viable solution.I have lived in Magnolia 57 tears.A lifelong resident.	6/5/2018 7:45 PM
29	Daily, I watch fire engines, polices cars, ambulances and other emergency vehicles rapidly driving up the bridge to save people's lives. It is obviously the fastest, easiest and quickest route. It must be replaced. Thinking side streets will recreate the path of the bridge is short sided and not what is needed.	6/5/2018 6:03 PM
30	Find someobe who actually knows how to manage complex community discussions and decision-making and have that person/entity manage the process.	6/5/2018 6:03 PM
31	Make SDOT and its consultants work harder to show the community the advantages of the proposed alternatives. There really are some. Better drawings are needed for their presentations. They need to include in their presentations the expected routing of traffic to the village and elsewhere. SDOT needs to pay for these things now. Be wise. Think this through. Don't just do the same knee-jerk decision making that did not work for us in 2002-2008.	6/5/2018 4:15 PM
32	this survey seems biased towards keeping / duplicating the existing magnolia bridge -- but I value peace and quiet in the neighborhood. i do live near the bridge, but would prefer to drive further than see so much traffic flying by at high speed (since everyone seems to think it's the autobahn). centrally located access points will distribute the traffic more evenly than the current bridge, and have just as much potential to get people where they need to go quickly.	6/5/2018 2:53 PM

33	Replace bridge, connect to smith cove, widen dravus, make traffic flow better at dravus.	6/5/2018 2:34 PM
34	We should have three entry ways to Magnolia as we have 20k residents, most of whom need to get in and out of Magnolia each day. Having two entryways is not an option. We don't need the exact same bridge, but we need something comparable in and out of that area.	6/5/2018 1:37 PM
35	I am deeply concerned about safety of the Magnolia community without a major boulevard type access that the Magnolia bridge provides. The time it would take for ALS vehicles and police vehicles with the choked up Dravus and Emmerson routes and a circuitous narrower alternative it not acceptable. We already have high property crime, there have been numerous bank robberies where the school children have had to shelter in place. Imagine a school shooting! a multi home fire! I can foresee lawsuits regarding unnecessary loss of life or property to run into the many millions, making 300-400 million for a Magnolia bridge replacement seem well spent	6/2/2018 9:53 AM
36	Build a new bridge as per the original plan. Could the bridge be a historical structure??? Magnolia should be designated as a historical neighborhood.	6/1/2018 1:47 PM
37	Stop being annoying, be a decent person and stop posting these.	6/1/2018 12:09 AM
38	already have. thank you	5/31/2018 11:21 AM
39	Although I love the Bridge, it's a bridge primarily used for rich people in multi-million dollar homes. It's freeway design is totally unsafe and unnecessary. I think it should be preserved via tolling and bus/bike access should be significantly improved.	5/31/2018 9:30 AM
40	Nothing specific	5/30/2018 9:57 PM
41	Please update & replace the Magnolia Bridge! Please support light rail on 15th ave!	5/30/2018 2:12 PM
42	Don't bother rebuilding the bridge.	5/30/2018 12:22 PM
43	We need a third access point at the southern end--whether that is a one-to-one replacement for the bridge or something else! Thank you to everyone who cares about Magnolia and has worked hard to make our voices heard :)	5/30/2018 12:01 AM
44	Replace the existing Bridge with a Functional alternative that does not dump existing traffic on surface streets on east side of Magnolia where there is only one lane each way and with proposed Sound Transit rail stop.	5/29/2018 8:31 AM
45	This neighborhood is filled with young families and retirees. Many of the people who have to come and go by car are driving to activities not related to work that are outside of the neighborhood, and that public transportation doesn't serve effectively. Dr appointments, kid pickups, errands, etc.	5/29/2018 7:37 AM
46	We need to have a cost-blind approach to what would be best for the community. Only then can we balance all our options and come up with something that makes sense for all. We need to be thinking for the next 100 years; the current bridge will last 100 years by the time it's done and we owe the future the same care.	5/28/2018 11:51 PM
47	The Magnolia Bridge is an essential part of this community. All of Seattle is growing in population density and that includes Magnolia. Which means the bridge presence will be more important in the years ahead. The Village business district could become a vital area for residents outside of Magnolia but only if the bridge stays as an access point. Also, the access via the north near fisherman's terminal has been decreased by one lane for bikes. Magnolia does not have that many bikers to warrant this decrease or expense. It is upsetting the city would prioritize bike access over bridge repair or replacement.	5/28/2018 9:28 PM
48	Solution: 1. Replace the bridge. Consider the tax revenue that comes from the Magnolia community and do what's right. 2. Come up with tour best alternative, consider the cost, then replace the Magnolia bridge with a temporary toll to make up the difference in cost.	5/28/2018 9:03 PM
49	Federal or state funding, redo City and County budget to account for money spent across all departments to increase funding options for a replacement bridge or significant repairs	5/28/2018 8:14 PM
50	Magnolians need that bridge.	5/28/2018 5:16 PM
51	If there's no bridge replacement, add a lightrail station on the way to Ballard to help alleviate the driving need to get downtown.	5/28/2018 4:57 PM
52	The focus on the needs of Magnolia citizens was missing from the "Magnolia Bridge Community Conversation". My takeaway from the meeting is none of the presenters know what they are doing and none of them care about the citizens of Magnolia.	5/28/2018 2:35 PM
53	Replace the bridge with at least as many lanes as it has.	5/27/2018 7:41 AM

54	I don't know what the structural considerations are - seismic, truck and traffic loads, volume, other? My hope is that the bridge is re-purposed for pedestrian and bicycle (including e-bike) use and possibly bus/light rail.	5/26/2018 9:46 AM
55	A mix of city transportation funds and LID for magnolia, Queen Anne, interbay and potentially Ballard. All of these neighborhoods will be impacted by congestion if there is no bridge replacement.	5/25/2018 10:54 PM
56	Government...do not veto. The Magnolia bridge must be fixed. For ant of you that were in the city when we had the mudslides and part of the bridge was damaged, you know the inconvenience this caused Magnolia. Imagine if it was taken away. Not a good idea. Listen to Magnolia residence.	5/25/2018 8:14 PM
57	The bridge must be replaced. If it takes an l i d and some combination of City funds particularly since the citizens of Magnolia pay an inordinate amount for police and fire protection that goes to all the rest of the city but very little to us, and most particularly if the homeless housing in Fort Lawton passes such that there is even further burden on the Northern portions of Magnolia Inlet and Outlet in order to provide the services that that population will most desperately need, we simply cannot afford to lose this. In fact if that passes one would think that some of the homeless Levy should go to repairing the bridge to ensure that they can get in and out.	5/25/2018 7:41 PM
58	I'd like to see an audit and have an explanation to why there is no money to fix/replace the bridge.	5/25/2018 6:47 PM
59	The bridge needs to be replaced or a 3rd southern access road must be created.	5/25/2018 4:39 PM
60	We need a magnolia address city council candidate who can win district 7 in fall of '19	5/25/2018 2:38 PM
61	We enter from Dravus, Emerson and Mag Bridge not one of the options. Not sure how relevant the last question is to transportation issues facing us today or what you are really trying to ask.	5/25/2018 1:17 PM
62	See above	5/25/2018 12:35 PM
63	A safe bridge would be extremely expensive soni think it's fair to remove it	5/25/2018 12:06 PM
64	I am extremely worried about access for emergency services.	5/25/2018 11:39 AM
65	Account for the money. Replace the bridge with a solution that maintains the status quo for commute and transit times.	5/25/2018 11:34 AM
66	We are one of the 7 Hills that make up Seattle. The Bridge is the main arterial to our neighborhood. Our tax base for the Seattle Budget should dictate that there IS money to replace this connection to our neighborhood. Simply saying there is no money is not acceptable. This money should come from the MOVE SEATTLE Budget!	5/25/2018 10:26 AM
67	Stabilize the bridge. Or leave it alone. I'd rather take my chances than not have it.	5/25/2018 10:10 AM
68	Replace bridge	5/25/2018 9:49 AM
69	We used to shop at QFC and often drove Dravus St. Due to increased traffic in that area we try to avoid it.	5/25/2018 9:49 AM
70	No one seems to be talking about the ramifications of the Magnolia Bridge going away and building some small overpasses and narrow access roads instead. Traffic volumes on the bridge now. Commute times out of Magnolia at peak morning rush hour is already backed up thanks to SDOT adding bus only lanes. Impact to clogging Thorndyke and making turns onto small roads - buses, semi trucks, emergency vehicles. Clogging Dravus and Emerson (already messed up by SDOT for taking lanes away for bikes). What all this would do to commuters going to Ballard up and down 15th Ave West, which is already bad during peak am and pm drive times. On a higher level, where are lawmakers on any of this? Why aren't they at these meetings? Who is leading this conversation? Who should it be? MCC? A coalition?	5/25/2018 9:23 AM
71	W Marine place to W galer st - 32nd ave west	5/25/2018 9:13 AM
72	Stop the stupid bike lanes that hardly anyone can use and put the money towards maintaining our streets and bridges. Magnolia, Quem Anne and Ballard residents have already paid for this bridge!	5/25/2018 8:36 AM
73	Don't let money impact long term traffic and access issues to the Magnolia neighborhood	5/25/2018 8:18 AM
74	Fix or replace the bridge immediately; we have been taxed for it; funds diverted and wasted	5/25/2018 6:10 AM

75	There is plenty of money to replace the Magnolia Bridge if the money the City Council has would only use it in ways to serve all the people of Seattle. Too much is wasted away. We pay a lot in taxes, more than some neighborhoods, and deserve to have our bridge replaced. Emerson is a nightmare now with a bike lane that didn't to be built as it was and Dravus is backed up because of the No Turn. With single family housing disappearing, can congestion will only get worse. Solution? Rebuild the bridge. Period.	5/25/2018 5:53 AM
76	It would be extremely unsafe in an earthquake. Somebody needs to look for money to replace it.	5/25/2018 12:02 AM
77	I'm convinced that the Port is in the driver's seat and does not want to see a bridge replacement due to the impact of construction on current and future operations on the Pier 91 property. I believe the most sensible solution for maintaining a 3rd - southern - route is through the Port property. One way or another. 'Occupy the Port' as far as I'm concerned - and elect City Council People and Port commissioners who will be responsive to the needs of the citizens rather than large, international business interests.	5/24/2018 11:25 PM
78	Build the bridge again to be stronger and more supportive than it is now.	5/24/2018 11:00 PM
79	Please use our tax dollars to save the bridge. We are paying for bike lanes and homeless encampments - it's the least the city can do for hard working people.	5/24/2018 10:34 PM
80	We need to continue to distribute access to Magnolia by using three routes to keep the traffic volume in each route at a manageable level.	5/24/2018 10:27 PM
81	Do not take away this bridge	5/24/2018 10:27 PM
82	Spend the money to repair or replace the bridge for the community that pays the taxes, instead of the homeless!	5/24/2018 10:24 PM
83	I'm supportive of bike safety. But with my job, I carry heavy equipment to and from work every single day. I cannot hop on a bike or sit in unnecessary traffic every time I have to go to work- 6/7days a week downtown Seattle.	5/24/2018 3:21 PM
84	I have no alternative solution, but fear the extra heavy traffic back-up when Expedia moves in and the development of new businesses along 15th Ave. W	5/24/2018 8:46 AM
85	There must be a south Magnolia access point to keep Magnolia safe and to make it thrive. Given the amount of money Seattle is willing to spend on small populations (homeless and cyclists), there should be zero issue whatsoever in the city's ability to fund and construct a new bridge.	5/24/2018 8:18 AM
86	My only solution is to promote the bridge replacement as the only viable alternative, and to work on voting the current Council out of their offices!	5/24/2018 7:57 AM
87	Why doesn't the city ban heavy trucks from using the bridge immediately, to preserve its functional life as long as possible and provide more time for a replacement to be built???	5/23/2018 9:48 PM
88	The bridge needs to either be maintained or replaced. There is no acceptable alternative. Magnolia homeowners contribute a substantial amount of tax revenue to the city, we should not have to suffer because the city is mismanaged and cannot afford the bridge as a result.	5/23/2018 9:27 PM
89	We need a new city council and a new mayor	5/23/2018 8:50 PM
90	We have paid and they mispent our money. They owe us a new bridge! I would be willing to toll the bridge to help pay.	5/23/2018 8:42 PM
91	replace the Magnolia Bridge	5/23/2018 6:42 PM
92	REPLACE THE MAGNOLIA BRIDGE!!!! YOU KNOW IT IS UNSAFE AND IT DISGUSTS ALL OF US THAT THE CITY DOESNT CARE! REPLACE THE MAGNOLIA BRIDGE AND QUIT WASTING EVERYONES TIME WITH THIS DEBATE!!!!	5/23/2018 3:42 PM
93	I know that Magnolia residents have been criticized for not wanting more development. However we do pay taxes, and area already feeling pressured by only have 3 access points into /out of the neighborhood.	5/23/2018 2:14 PM
94	No roadway in the city of Seattle should be taken away, especially with the current unoptimization of traffic. Either expand the two other existing entrances significantly and reduce amount of lights, rebuild the magnolia bridge, or build a new bridge at a different southern entrance.	5/23/2018 12:13 PM

95	The presenters at the meeting seemed to have no feel for the community concern. What people hear is the city will remove 1/3 of the access to the neighborhood. One lane has already been removed form the Fishermen's terminal access, Dravus is grid locked with new development, density is being encouraged. So the result is limited access to Magnolia, delay in emergency services. It seems that we pay high taxes and get increasingly limited services (1/2 a policeman at any given time, no response to calls about property crime, no street maintaince)	5/23/2018 11:35 AM
96	With growing multi-family housing in Magnolia, Queen Anne and Ballard, we need the bridge to keep access options to magnolia. Plus, with a thriving Seattle business environment, Magnolia has become a key neighborhood to support our economy (I support our high property tax--now we need to support our transportation needs for this neighborhood). Magnolia has one of the largest resident populations in Seattle, and it's critical to keep the bridge.	5/23/2018 11:05 AM
97	Please do not remove the bridge Please, it would cost some persons life due to response and delivery time to emergency services. I have made note of this comment as well with others and the City of Seattle will be held accountable when this tragic incident happens to a Magnolia resident.	5/23/2018 10:42 AM
98	Cutting off tax paying citizens is not an option.	5/23/2018 10:23 AM
99	A third access point to Magnolia is important given how much population has already moved in here and how much more is anticipated with Expedia coming. Any third access point should ideally be made in a way that mimics the existing bridge by keeping traffic flow moving and not creating additional congestion on other streets or entrances to Magnolia.	5/23/2018 9:51 AM
100	The impact of removing or restricting traffic flow at the area where the Magnolia Bridge is currently would be massive. And it would affect neighborhoods all the way from Bell Town to Crown Hill. We need to find and allot money to repair or rebuild the bridge.	5/23/2018 9:41 AM
101	Please keep/maintain the Magnolia Bridge!!! We would seriously consider moving out of the neighborhood if Dravus - and the already clogged up Emerson route - were our only option.	5/23/2018 8:07 AM
102	We are new to this city and neighborhood yet this is the first we heard about the bridge going away. It's interesting that the quake occurred 17 years ago. If the bridge is unsafe why have Magnolia residents/visitors and/or business patrons been allowed to use this bridge all along. Why tear it down (& not replace it!!) now?	5/23/2018 7:28 AM
103	The property tax on our house has increased 60% over the same period the bridge replacement cost has increased 41%. And the city says it doesn't have the money?	5/23/2018 7:26 AM
104	Our family really likes the idea of eliminating access from the bridge to distribute the traffic over several other access points - will feel less like a freeway there. Perhaps make an aerial park similar to NY's High Line!	5/23/2018 7:16 AM
105	This is an essential piece of infrastructure in a growing region. Replacing the Magnolia bridge goes hand in hand with increasing urban density and access to public transportation. Thank you for your consideration.	5/23/2018 4:52 AM
106	Keep the bridge. Not doing so would be very detrimental to traffic on I-15 and entry/exit to and from Magnolia. Dravus and Nickerson are traffic nightmares already.	5/22/2018 10:57 PM
107	Not replacing the Mag bridge would be a terrible mistake. This neighborhood has tens of thousands of residents that would be left with only 2 ways to get into the neighborhood. One is extremely busy (Dravus) with the new apartments. The other has recently been made worse (Emerson) with the reassignment of one lane to a bike lane. Unacceptable!!! I can't believe that the city is spending millions on bike lanes and not supporting the current infrastructure that exists for the tax paying residents of the city.	5/22/2018 10:56 PM
108	I have no idea of the feasibility, but I know the area well. Here is my basic concept: It is not separate ideas, but a whole interconnected plan. (Assuming there will not be a total bridge replacement) #1- Port needs to give up some land. Period. #2 Elliot Bay trail gets replaced with a north south road. (heretofore called Road X) #3 - Remove the high part of the bridge, keep the lower part and create an exit to connect with Road X #4 Open up two or 3 of the east west streets that now dead end around or below Thorndyke. (ie: Boston, crockett, or Newton and have them connect with Road X #5- Add a new smaller bridge to Connect 15th Ave W to Road X, but farther north, by opening up either Wheeler, or Barrett or ? It would cross over the railroad tracks. It would need a new stoplight along 15th which will also serve to slow it down (a good thing). This Newly opened up road/overpass, will also connect to Road X.	5/22/2018 10:33 PM
109	Replace the bridge in its entirety. Only acceptable option is one-on-one replacement. Anything else will severely affect traffic.	5/22/2018 10:15 PM

110	There needs to be more entrances into Magnolia, not less. The bike lanes have made traffic worse (longer lights).	5/22/2018 9:59 PM
111	Hold the City accountable Include Magnolia residents & business owners in the decision-making process Develop a plan & timeline to raise the money to implement the replacement plan already approved ~10 years ago No more meetings that don't address the real issues with speakers who are not "management" and/or cannot address the real issues or questions Elect reps who will participate	5/22/2018 9:58 PM
112	Replace the Magnolia bridge.	5/22/2018 9:49 PM
113	Nothing less than a total Seattle City Council replacement will be acceptable.	5/22/2018 9:49 PM
114	Bridge must be replaced in same or nearby location. Access to magnolia already too limited.	5/22/2018 9:41 PM
115	There's no way Dravus and Emerson can support the additional traffic from the bridge and the additional traffic from the apartments being built along 14th. Reducing the access points in and out of Magnolia from 3 to 2 seems to be a huge safety issue	5/22/2018 9:38 PM
116	We. MUST. Find a way to save or replace the bridge !!!!	5/22/2018 9:33 PM
117	I was extremely disappointed the no one in city leadership was there to take the hard questions. The gentleman from SDOT was the project manager I believe and unprepared to answer most of the questions he was asked. I displayed a huge failure of leadership in our city and I ask MCC hold them accountable and be willing to come to our neighborhood meetings.	5/22/2018 9:04 PM
118	Make sure when they are calculating cost of alternatives they factor in the value of our time and potential decrease in our property values if the bridge is not replaced	5/22/2018 8:54 PM
119	Put pressure on POS and make it clear Magnolia knows that they are the reason SDOT/Mayor/Council can't seem to come up with the money for replacement of the Magnolia Bridge. Meanwhile, Magnolia needs to start calling out SDOT/Mayor/Council for borderline bad faith in their conduct with our community.	5/22/2018 8:10 PM
120	I would love to have more public transportation options visited if the city is intending to take away one of Magnolias major access points. Perhaps speeding up the Interbay portion of the Light Rail would be good alternative to creating bike lanes that realistically wont be used most of the year and bridges for cars that would only add to the pollution and car traffic.	5/22/2018 7:52 PM
121	TOLL BRIDGE TO RAISE FUNDS TO FIX OR REPLACE BRIDGE!!!	5/22/2018 7:51 PM
122	I wish I had solutions, but if Magnolia residents were able to help pay for part of the cost of the bridge by applying for a grant or by making donations, I think they would...	5/22/2018 7:28 PM
123	I am willing to pay a tax to have a bridge.	5/22/2018 6:43 PM
124	Access to Magnolia is getting harder and harder, check out Emerson to and from Magnolia at 5pm	5/22/2018 6:39 PM
125	The simplest solutions tend to be the most effective and in the end, most economical. The bridge needs to be rebuilt. I wonder where the disaster funding that Patti Murray secured for the rebuilding of the bridge has gone, as well as why the solutions of the original task force to rebuild the bridge have been thrown out, when so much money was spent on the original study. The estimated budget was $200 million two years ago, so I don't understand why it has doubled. The new proposed solutions are all band-aid approaches that will end up costing more than the bridge in the end. The fewest components, the less cost. There will be a variety of unforseen issues due to the serious revamping of major traffic patterns that will end up costing more in the end. It's always better to do it Right the first time. Replace the bridge, no matter how long it takes.	5/22/2018 6:04 PM
126	If cost is the biggest obstacle we need to discuss creative options with the city to get this bridge to stay or be rebuilt. No other alternative is sufficient for our neighborhood.	5/22/2018 5:49 PM

127	There is a general belief in Magnolia that we pay more in taxes then we get from the City. There's also the observation that we are generally not as liberal as the rest of Seattle. Suspicion that these two are connected is leading to serious pent up anger. Our policing, roads, ball fields, and even tennis courts are way below par. We've know this city bridge needs replacement for a long time. $384 million doesn't have to come out of the city coffers all at once, but it does need to happen. Thousands of residents have bought into this community with three ways in and three ways out. Any less is grid lock. Our density is growing not declining. If Dravus can take more it should, but that won't solve the problem. If two thirds of Magnolia traffic from both hills tries to fight its way to Dravus you will have grid lock delays all through Magnolia, not just around Dravus. Forcing something up Thorndyke doesn't help much either. We need a South end exit to spread the traffic around.	5/22/2018 5:17 PM
128	Integrate with business leaders on your panels. You only have elected officials, and could use more business experts who've delivered on multiple profitable projects.	5/22/2018 4:07 PM
129	Not sure I have any ideas or solutions but feel strongly tearing down and not replacing the Magnolia bridge will have a highly negative impact on Magnolia residents and businesses. Traffic on Dravus and Emerson are already horrific at commute times and this would exacerbate that. It would make it almost prohibitive for people to get downtown or for others to visit Magnolia.	5/22/2018 4:06 PM
130	Replace the Bridge!	5/22/2018 3:53 PM
131	Replace the Bridge!	5/22/2018 3:53 PM
132	Not repairing / replacing the bridge will create a huge problem for not only Interbay and Magnolia but tourism in the city of Seattle.	5/22/2018 3:49 PM
133	Options for partnerships to fund the rebuilding of the bridge, Port, City, Federal, business.	5/22/2018 3:28 PM
134	Vote in politicians who are committed to maintaining critical infrastructure before starting new projects.	5/22/2018 3:00 PM
135	Discover the amount of sales, property, license and b&o taxes generated on our little "island" and request we receive the benefit of our fair share. It appears that other parts of town are having maintenance, repairs and safety challenges met when we can't even get interest in our serial arsonist. I feel that the city leaders (none of which reside on Magnolia) are milking us to the benefit of all the other parts of town. A collaboration between the Port and SDOT might be promising.	5/22/2018 2:48 PM
136	Please stop wasting our tax dollars trying to find an alternative to what the neighborhood clearly needs for safe access in and out of Magnolia- an in-kind replacement bridge.	5/22/2018 2:45 PM
137	Need to have the bridge with turn lanes to access marina, park and restaurants in both directions.	5/22/2018 2:03 PM
138	I understand the bridge is unsafe and it needs to be dealt with. I like the idea of extending Armory way/Williams over the train tracks because then the south side of the neighborhood has access but isn't having to drive 5 miles out of their way and sit in Ballard traffic on 15th just to get home.	5/22/2018 1:09 PM
139	Slow growth in interbay. Developers should not have priority over quality of life.	5/22/2018 10:56 AM
140	The west side of the city will be cut off from easy access to 99 when the tunnel opens, since we can no longer use Elliott and will have to use a surface street with stoplights or go across Mercer. Now you're limiting mobility even more? You would think a growing city with increased density would prioritize more routes to move people, not fewer routes. With young children who have many years of activities, school commutes to middle and high school, and other needs, we can't sit in traffic all day. The city is too congested to have the kids bike everywhere safely, so we need to drive, as the bus doesn't easily get from swimming to piano to soccer etc. My elderly disabled father needs to be able to drive around, as the bus doesn't meet his needs. Please replace the bridge. Patty Murray and our state reps need to prioritize this need.	5/22/2018 10:47 AM
141	See note above.	5/22/2018 9:54 AM
142	Does the "Port" want the bridge where it is or do they feel it is in the way? I get the feeling that the Port of Seattle wants to change the road way for their benefit with no regard to the residents. We need a 4 lane access point on the South end of the neighborhood. Feels like this project got shelved for trains and bike lanes in the city now the Magnolia residents are left out yet again.	5/22/2018 6:28 AM
143	Ever since the 2001 Nisqually quake, the community has given a clear and consistent message: the bridge needs an in-kind replacement. Alternative funding sources such as Federal, State, LID, tolling, bonds/levies need to be revisited.	5/22/2018 12:57 AM

144	The Port, BNSF, and the State need to step up to cover the costs of 3/4 of the Bridge from the 15th Ave exit and flyover, across the railroad tracks and including the exits and connections to the Marina and to Piers 90 & 91. The cruise ship access and fishing fleet support is just too important for Port revenue and for the State economy. The final connecting portion of the Bridge is the only portion that should be part of a funding discussion. The only two options that should be under discussion are to connect to Magnolia at Galer Street, just like the current Bridge, or to widen the road to the Marina and extend it all of the way to 32nd Ave W. The latter option would require an elevated bridge over a portion of Elliott Bay and the removal of several homes on lower Galer St. at 32nd Ave W. It would also require widening 32nd and revising the intersections in and around Magnolia Village.	5/21/2018 11:31 PM
145	Please rebuild the Magnolia bridge.	5/21/2018 10:43 PM
146	Please maintain three access routes to/from Magnolia.	5/21/2018 9:25 PM

Appendix H

Alternative Analysis Scoring Details

Magnolia Bridge Planning Study
Alternative Scoring

Alternative 1

New Armory Way Bridge and Magnolia Bridge Segment to Alaskan Way with new West Uplands Perimeter Road and improvements to 20th Ave W

Mobility & Connectivity

Criteria	Weight	Allocation of Total	Points	Score
Vehicular Access	**75%**	**-**	-	-
• Access to Magnolia Village		15.0%	50	7.50
• Access to Marina/Waterfront from 15th Ave W		15.0%	50	7.50
• Access to Marina/Waterfront from Magnolia		15.0%	90	13.50
• Access to Terminal 91/Alaskan Way		15.0%	90	13.50
• Along 15th Ave W		15.0%	50	7.50
Subtotal	-	*75.0%*	-	*49.50*
Multimodal Mobility	**25%**	**-**	-	-
• Pedestrian and Bicycle Access		10.0%	90	9.00
• Transit Access		10.0%	50	5.00
• Freight Access		5.0%	70	3.50
Subtotal	-	*25.0%*	-	*17.50*
Total	100%	100%	-	67.00

Environmental Impact

Criteria	Weight	Points	Score
Impacts to Adjacent Land Use	**40%**	30	12
Impacts to Sensitive Areas	**30%**	30	9
Impacts to Natural Hazards	**30%**	10	3
Total	100%	-	24.00

Cost Estimate

Criteria	Weight	Points	Score
Cost Estimate	**100%**	70	70
Total	100%	-	70.00

Implementation Characteristics

Criteria	Weight	Points	Score
Construction Duration	**40%**	70	28
Construction Impacts	**30%**	90	27
Construction Phasing	**30%**	90	27
Total	100%	-	82.00

Community Support

Criteria	Weight	Points	Score
Public Support	**50%**	30	15
Stakeholder Support	**50%**	30	15
Total	100%	-	30.00

Magnolia Bridge Planning Study
Alternative Scoring

Alternative 2

Dravus St Bridge Improvements and Magnolia Bridge Segment to Alaskan Way with new West Uplands Perimeter Road and improvements to 20th Ave W

Mobility & Connectivity

Criteria	Weight	Allocation of Total	Points	Score
Vehicular Access	**75%**	**-**	-	-
• Access to Magnolia Village		15.0%	10	1.50
• Access to Marina/Waterfront from 15th Ave W		15.0%	10	1.50
• Access to Marina/Waterfront from Magnolia		15.0%	90	13.50
• Access to Terminal 91/Alaskan Way		15.0%	90	13.50
• Along 15th Ave W		15.0%	10	1.50
Subtotal	-	*75.0%*	-	*31.50*
Multimodal Mobility	**25%**	**-**	-	-
• Pedestrian and Bicycle Access		10.0%	50	5.00
• Transit Access		10.0%	10	1.00
• Freight Access		5.0%	30	1.50
Subtotal	-	*25.0%*	-	*7.50*
Total	100%	100%	-	39.00

Environmental Impact

Criteria	Weight	Points	Score
Impacts to Adjacent Land Use	**40%**	30	12
Impacts to Sensitive Areas	**30%**	70	21
Impacts to Natural Hazards	**30%**	30	9
Total	100%	-	42.00

Cost Estimate

Criteria	Weight	Points	Score
Cost Estimate	**100%**	70	70
Total	100%	-	70.00

Implementation Characteristics

Criteria	Weight	Points	Score
Construction Duration	**40%**	70	28
Construction Impacts	**30%**	30	9
Construction Phasing	**30%**	70	21
Total	100%	-	58.00

Community Support

Criteria	Weight	Points	Score
Public Support	**50%**	10	5
Stakeholder Support	**50%**	50	25
Total	100%	-	30.00

Magnolia Bridge Planning Study
Alternative Scoring

Alternative 3

Dravus St Bridge Improvements and Magnolia Bridge Segment to 23rd Ave W

Mobility & Connectivity

Criteria	Weight	Allocation of Total	Points	Score
Vehicular Access	**75%**	**-**	-	-
• Access to Magnolia Village		15.0%	10	1.50
• Access to Marina/Waterfront from 15th Ave W		15.0%	90	13.50
• Access to Marina/Waterfront from Magnolia		15.0%	30	4.50
• Access to Terminal 91/Alaskan Way		15.0%	70	10.50
• Along 15th Ave W		15.0%	10	1.50
Subtotal	-	*75.0%*	-	*31.50*
Multimodal Mobility	**25%**	**-**	-	-
• Pedestrian and Bicycle Access		10.0%	50	5.00
• Transit Access		10.0%	10	1.00
• Freight Access		5.0%	10	0.50
Subtotal	-	*25.0%*	-	*6.50*
Total	100%	100%	-	38.00

Environmental Impact

Criteria	Weight	Points	Score
Impacts to Adjacent Land Use	**40%**	30	12
Impacts to Sensitive Areas	**30%**	90	27
Impacts to Natural Hazards	**30%**	70	21
Total	100%	-	60.00

Cost Estimate

Criteria	Weight	Points	Score
Cost Estimate	**100%**	70	70
Total	100%	-	70.00

Implementation Characteristics

Criteria	Weight	Points	Score
Construction Duration	**40%**	10	4
Construction Impacts	**30%**	10	3
Construction Phasing	**30%**	50	15
Total	100%	-	22.00

Community Support

Criteria	Weight	Points	Score
Public Support	**50%**	10	5
Stakeholder Support	**50%**	70	35
Total	100%	-	40.00

Magnolia Bridge Planning Study
Alternative Scoring

Alternative 4

In-Kind replacement of existing Magnolia Bridge.

Mobility & Connectivity

Criteria	Weight	Allocation of Total	Points	Score
Vehicular Access	**75%**	**-**	-	-
• Access to Magnolia Village		15.0%	90	13.50
• Access to Marina/Waterfront from 15th Ave W		15.0%	90	13.50
• Access to Marina/Waterfront from Magnolia		15.0%	70	10.50
• Access to Terminal 91/Alaskan Way		15.0%	90	13.50
• Along 15th Ave W		15.0%	50	7.50
Subtotal	-	*75.0%*	-	*58.50*
Multimodal Mobility	**25%**	**-**	-	-
• Pedestrian and Bicycle Access		10.0%	50	5.00
• Transit Access		10.0%	90	9.00
• Freight Access		5.0%	90	4.50
Subtotal	-	*25.0%*	-	*18.50*
Total	100%	100%	-	77.00

Environmental Impact

Criteria	Weight	Points	Score
Impacts to Adjacent Land Use	**40%**	70	28
Impacts to Sensitive Areas	**30%**	90	27
Impacts to Natural Hazards	**30%**	50	15
Total	100%	-	70.00

Cost Estimate

Criteria	Weight	Points	Score
Cost Estimate	**100%**	10	10
Total	100%	-	10.00

Implementation Characteristics

Criteria	Weight	Points	Score
Construction Duration	**40%**	50	20
Construction Impacts	**30%**	30	9
Construction Phasing	**30%**	10	3
Total	100%	-	32.00

Community Support

Criteria	Weight	Points	Score
Public Support	**50%**	90	45
Stakeholder Support	**50%**	90	45
Total	100%	-	90.00

Magnolia Bridge Planning Study
Concept Scoring

DETAILED SIDE-BY-SIDE SCORING

Mobility & Connectivity

Criteria		Allocation of Total	Alt 1	Alt 2	Alt 3	Alt 4
Vehicular Access			-	-	-	-
• Access to Magnolia		15.0%	50.00	10.00	10.00	90.00
• Access to Marina/Waterfront from 15th Ave W		15.0%	50.00	10.00	90.00	90.00
• Access to Marina/Waterfront from Magnolia		15.0%	90.00	90.00	30.00	70.00
• Access to Terminal 91		15.0%	90.00	90.00	70.00	90.00
• Along 15th Avenue W		15.0%	50.00	10.00	10.00	50.00
	Score	*75.0%*	*49.5*	*31.5*	*31.5*	*58.5*
Multimodal Mobility			-	-	-	-
• Pedestrian and Bicycle Connections		10.0%	90.00	50.00	50.00	50.00
• Transit Access		10.0%	50.00	10.00	10.00	90.00
• Freight Access		5.0%	70.00	30.00	10.00	90.00
	Score	*25.0%*	*17.5*	*7.5*	*6.5*	*18.5*
Total Mobility & Connectivity Score			67.00	39.00	38.00	77.00

Environmental Impact

Criteria	Alt 1	Alt 2	Alt 3	Alt 4
Impacts to Adjacent Land Use	12.00	12.00	12.00	28.00
Footprint of Impact to Sensitive Areas	9.00	21.00	27.00	27.00
Impact to Natural Hazards	3.00	9.00	21.00	15.00
Total Environmental Impact Score	24.00	42.00	60.00	70.00

Cost Estimate

Criteria	Alt 1	Alt 2	Alt 3	Alt 4
Cost Estimate	70.00	70.00	70.00	10.00
Total Cost Estimate Score	70.00	70.00	70.00	10.00

Implementation Characteristics

Criteria	Alt 1	Alt 2	Alt 3	Alt 4
Construction Duration	28.00	28.00	4.00	20.00
Construction Impacts	27.00	9.00	3.00	9.00
Construction Phasing	27.00	21.00	15.00	3.00
Total Implementation Characteristics Score	82.00	58.00	22.00	32.00

Community Support

Criteria	Alt 1	Alt 2	Alt 3	Alt 4
Public Support	15.00	5.00	5.00	45.00
Stakeholder Support	15.00	25.00	35.00	45.00
Total Community Support Score	30.00	30.00	40.00	90.00

	Alt 1	Alt 2	Alt 3	Alt 4
TOTAL WEIGHTED SCORE	**58.2**	**50.3**	**48.8**	**51.1**
RANK				