

## 8.0 Agency Coordination

### ***King County Metro Transit***

The Seattle Metropolitan area relies heavily on transit services. Any major reduction to the capacity of SR 99 and the Viaduct would have a significant direct impact on service and will create a greater demand for transit service in both the short and long term. SDOT Action Plans include initial contact with King County Metro to alert them of an incident. In the event of long-term closure of the all or part of SR 99 and Alaskan Way, King County Metro staff will be a part of the Incident Oversight Team and the Traffic Recovery Team. If it is determined that the Viaduct is not available for traffic, SDOT will work with King County Metro to implement bus lanes and other key access routes to provide reliability for displaced Metro service.

Opportunities to enhance bus, rail, carpool, and vanpool services should all be pursued in the wake of a transportation emergency. There are various ways to supply the increased demand for transit services. Improvements could include:

- Additional transit service should be considered to increase service levels and capacity on routes affected by the Viaduct closure. The addition of new routes should be considered.
- Temporary Park and Ride leased-lots should be established. Possible locations are church parking lots, malls, the King County Airport, large businesses, and publicly owned lands.

A closure of the viaduct will increase congestion on local arterials. Because bus service will be in greater demand, efforts to improve transit speed and reliability should be implemented. Options include: additional bus-only lanes where appropriate; parking restrictions to better utilize curb lanes; installation of transit signal priority, and ramp metering where feasible; traffic signal optimization; and bus stop consolidation. A combination of these and other priority treatments would likely improve transit system performance.

The Alaskan Way Viaduct has for many years been a key transit corridor providing a reliable, express connection between downtown Seattle and West Seattle. Most southbound Metro trips access the Viaduct from Columbia Street or Western Avenue and head South to West Seattle. Most northbound Metro trips exit at Seneca Street. After the 2001 Nisqually earthquake, Metro bus routes were temporarily diverted off the Viaduct to parallel arterials.

Full or partial loss of the Viaduct for Metro service would affect the following Metro bus routes, requiring reroutes to 1<sup>st</sup> Avenue South between West Seattle and downtown Seattle. Affected routes would include: 20, 21 Express, 37 Express, 54, 55, 56 Express, 113, 130 Express, 132 Express, 137 Express and 950. These routes operate over 480 daily bus trips, carrying over 13,000 daily passengers.

### **Temporary Surface Street Routing**

After a major event and loss of the Viaduct facility, SDOT would implement bus lanes on 1<sup>st</sup> Avenue South to provide reliability for displaced Metro service. To implement bus lanes on 1<sup>st</sup>

Avenue South would require revised striping and likely loss of the current center turn lane, to give sufficient width in the curb lane for bus operation. This would require parking removal, including through the Pioneer Square district, where the second lane for bus service would be very important. In addition to revised striping, signal modifications on 1<sup>st</sup> Avenue South would be implemented to prioritize transit.

The City of Seattle does not currently restrict First Avenue South on-street parking in Pioneer Square during the p.m. peak period. In the event of a longer-term emergency closure of the Viaduct, this situation may need to be re-visited.

### ***WSDOT Ferry Services***

Currently, Washington State Ferries (WSF) serve downtown Seattle through Pier 52 (Colman dock), which is located near the intersection of Marion Street and Alaskan Way. These ferries serve Bainbridge Island, Vashon Island, and Bremerton. The current holding area for vehicles waiting for the ferries is under the Alaskan Way Viaduct. During busy periods such as holiday weekends the vehicle queue extends beyond the holding area onto Alaskan Way and down past South Royal Brougham Way. SDOT Action Plans include notification of WSDOT in the event of an emergency closure of Alaskan Way Viaduct and surface Alaskan Way. WSDOT protocol includes communication with WSF regarding availability of the Alaskan Way facilities. WSF operations are flexible to reroute to alternate docks in the event of emergency.

### **Scenario II or III Operations: Viaduct Closed - Alaskan Way Open**

If the Alaskan Way Viaduct were damaged to the point that vehicles could not park under the structure, it would be necessary to find a different holding area. With the closure of the Viaduct an increased demand for both trucks and cars would be placed on Alaskan Way. Storing vehicles on this roadway would cause severe congestion and restrict access to the area once served by the Viaduct.

Washington State Ferries will work with the City of Seattle and other agencies to determine how best to resolve this issue. One option might be the implementation of remote holding sites, such as:

- Streets or shoulders south of Pier 52 (not Alaskan Way)
- Parking lots in the area such as those used for stadium parking, Port parking, and general paid parking
- The non-elevated portions of Alaskan Way south of Pier 52

The City of Seattle will also work with the Washington State Ferries to ensure expeditious loading and off-loading at the Colman Dock.

In this scenario the loss of the area under the Viaduct currently would not impact operation. The impact would be on the SR 99 traffic diverted to Alaskan Way and the loss of the left-turn pocket on Alaskan Way utilized for access to Pier 52. Alternatives for WSF traffic would be from 1<sup>st</sup> Avenue South or 4<sup>th</sup> Avenue South with access to the toll plaza entrance from Yesler Way. This would keep ferry-bound traffic from mixing with the northbound and southbound traffic. WSF

vehicle traffic could be allowed to enter the toll plaza from both the southbound and northbound approaches. Truck traffic would still need to access Pier 52 from the south.

Satellite holding areas have not been considered pursuant to this scenario. Currently there is enough staging provided at Pier 52; the issue is gaining access to the facility. Whether satellite holding should be considered or not creates the need to be able to pulse traffic through the corridor to gain access to Pier 52 and process the vehicles based on vessel departures.

**Scenario I Operations: Viaduct Closed and Alaskan Way Closed**

If both the Alaskan Way Viaduct and surface Alaskan Way are closed, the Colman Ferry Dock will not be operational. Ferry vessels would be routed to alternate terminals. Assuming the other terminals are open and operational, the WSF could immediately add one vessel to each of the Edmonds-Kingston and the Southworth –Vashon-Fauntleroy runs. Bus transportation would be added between Bainbridge and Kingston and Bremerton and Southworth. Pre-negotiated contracts have been set up for this bus service. Two WSF Passenger Only Ferries serve the Colman Dock, one from Bremerton and one from Bainbridge. If the Colman Dock is not operational, the service can be relocated within a few days to another location along the Seattle Waterfront.

In this scenario traffic would initially be diverted to other existing routes such as Edmonds – Kingston or Fauntleroy – Southworth.

The Seattle to Bainbridge traffic could also be diverted to Edmonds creating an Edmonds to Bainbridge route.

Bremerton traffic could be diverted to Fauntleroy creating a Fauntleroy to Bremerton route. With the limitations of the Fauntleroy Terminal this additional route would be extremely difficult to access and to operate efficiently. Customer information would also suggest that Bremerton-bound traffic use I-5 and SR 16 as an alternate route to reach the Olympic Peninsula.

Below are some other ideas, which would require a capital investment. These concepts are for discussions purposes only as the 10-year capital program does not include these as projects.

WSF has two additional passenger only ferries in mothballs at their Eagle Harbor facility. These ferries could be put back in service, but not immediately. Refurbishing, testing and sea trials would be required prior to their use carrying passengers.

Private passenger only vessels are available in Puget Sound and service could be activated relatively quickly. Argosy and Victoria Clipper vessels have expressed interest in providing service if needed.

A portable bridge could be used to span the seawall area to gain access to Pier 52. A floating structure which would be comprised of a set of wingwalls, transfer span could be constructed. This would allow the possibility of working with the Port of Seattle for pier access for vehicle staging. The floating structure could be attached to the pier structure and operations would relocate to this area.

Passenger Only service could be provided from Bainbridge and Bremerton to serve the walk-on passenger volumes.

### ***Commercial Truck Traffic***

Freight mobility would be impacted by a long-term closure of the Viaduct. In the event of such a closure, WSDOT and SDOT would immediately begin working with the Freight Mobility Advisory Committee to determine strategies to ensure adequate freight movement. It may be necessary for freight movement to be shifted by time of day, to take advantage of hours with little congestion. Typical peak commuting hours would be difficult times for moving trucks and freight.

Should the Alaskan Way Viaduct be the only roadway affected, surface Alaskan Way would likely be the primary alternate corridor for freight movement, and would be designated as a principal truck route by the City. It would be preferable during a closure not to mix truck and transit routes where possible: alternate routes besides Alaskan Way could be selected for transit. SDOT would continue to restrict deliveries on downtown streets during off-peak travel hours. SDOT would also work closely with the tourism industry and Seattle business associations to ensure safe and efficient movements for all travelers on Alaskan Way during a closure.

### ***Access Issues Within Viaduct Corridor***

A major failure of the Viaduct would likely result in widespread damage to structures, utilities, and roadways. There would be a pressing need to restore access to areas that may initially be impassible.

As first responders, emergency services would need access to the waterfront and Viaduct corridor to save injured or stranded citizens. It is expected that 1<sup>st</sup> Avenue would serve as a staging area for emergency response after a major event with significant damage to the Viaduct facility. Areas west of 1<sup>st</sup> Avenue would be cordoned off, as needed. As follow-up priority, the damaged site would have to be made accessible to allow bridge engineers to assess the damage. Then construction equipment would need access in order to stabilize and support the weakened structures. Later, work equipment would need to be brought for possible demolition and removal of rubble, while other equipment would be handling environmental containment and clean-up. Eventually, construction would be needed to rebuild facilities and structures in the damaged area.

If there were no passable roads into the waterfront, the initial off-loading of equipment and personnel could be done by water. Later, there would need to be access roads developed for hauling material and debris.

Consideration could need to be given to restoring some east-west connections under the Viaduct. Whether the entire structure were to collapse, or if the Viaduct were to remain standing but in a weakened condition, a best route should be established to the waterfront. Depending on the degree of damage, the east-west connection would involve clearing rubble for at-grade access, or supporting the weakened structure in order to establish safe passage under it.

The waterfront also is home to a variety of businesses, cruise ship terminals, and residential condominiums. The circumstances and access needs for each will differ. The City of Seattle would work with all stakeholders to resolve what accommodations are workable and needed to ensure reasonable access into their properties.

### ***Perimeter Fencing***

The damage area along the waterfront and Viaduct would require a detailed safety examination to determine what areas are safe for pedestrian access. Many of the piers and boardwalks could suffer damage during a major seismic event, while the Viaduct itself could pose a large risk (from concrete pieces spalling away from fractured faces.) Perimeter fencing would be needed to restrict access into hazard areas, until inspection deems them safe. Some safe passage may be needed for pedestrians under the Viaduct. The passageway could take the form of a reinforced tunnel to shield pedestrian from falling debris hazards.

### ***Parking***

If the Viaduct were closed, the local business community would be concerned about access and patronage. Making enhancements to parking could help mitigate some of these concerns. Special priority/free HOV parking could be established on some streets and in City-controlled garages. Other HOV parking arrangements could be worked out with private lots. In areas where parking is restricted and a parking lane is converted to a travel lane, regular parking enforcement may be required to help improve traffic flow in the corridor.

### ***HOV Freeway Lane Revisions***

WSDOT, through computer modeling, estimates that if the Viaduct were no longer usable due to an earthquake, travel time through downtown Seattle area could double. The gridlock formed on downtown streets could back up onto I-5 ramps, and reduce I-5 travel speeds through downtown Seattle from 20-25 miles/hour to 10-15 miles/hour during the afternoon rush hour.

In the event of a major event, SDOT would work with WSDOT HOV Policy Group that is established to initiate changes related to the HOV system. This group would convene to discuss possible changes to the network. An increase in vehicle occupancy from 2+ to 3+ would be considered for some segments of I-5. 3-plus HOV lanes would give better service to emergency vehicles and incident response.

There is a data collection team continually measuring the performance of the HOV system. In the aftermath of an earthquake, this team would be directed to concentrate their efforts in the effected transportation areas.

### ***Incident Response***

Incidents during rush hours can cause significant traffic congestion. For every one minute of delay caused by a stalled motorist, there is a corresponding 8 minutes of related congestion for everyone upstream from the blocking vehicle. WSDOT uses service patrols to clear incidents quickly and reduce incident-related congestion. SDOT has proposed implementing traffic incident response on City streets using Street Maintenance vehicles and staff, in conjunction with Traffic Management Center operation of the traffic signal system.

With a long-term closure of the Viaduct, peak hour congestion would spread. Also, streets that didn't previously experience congestion would become congested. For service patrols the following could be considered:

- WSDOT could expand service patrol hours on I-5 to provide service the entire day throughout the week.
- Communication capabilities could be enhanced within the incident response truck fleet. The accuracy of the on-site information could be improved if the fleet were equipped with GPS location equipment and snap-shot wireless video imaging to the dispatch center.
- Additional Washington State Patrol staff could be transferred from other districts such as Tacoma and Marysville to work the Seattle downtown area.
- The City of Seattle could begin or contract for service patrols to operate on the major arterials impacted from the closure. Arterials might include the West Seattle Bridge, Alaskan Way, and other city streets.
- King County Transit Police would continue to assisting transit-related situations.

### ***Enhanced Real-time Driver Information***

Given the expected increased regional congestion, there will be much greater need for accurate and comprehensive information on roadway conditions to help drivers either defer a trip or choose a less crowded route.

One of the most powerful and heavily-used information resources is the WSDOT regional flow map which presents real-time freeway conditions and camera images. The proven success and large audience for this website is strong testimony to the usefulness of web-based driver information. System improvement and continuing investment should be made to further expand and enhance the coverage for the flow map and camera imagine. There are freeway sections within a 15-20 mile radius of downtown that still are without active color cells on the web traffic flow map. For instance, a northbound or southbound motorist would be better informed to make a routing decision if live imaging and congestion levels were included on SR 509 and SR 99 near the 1<sup>st</sup> Avenue South Bridge. Likewise, some joint agreements for funding support and information sharing should be developed with Seattle, to include the West Seattle Bridge within the WSDOT flow map.

As an extension of the freeway flow map, steps should be taken to develop real-time information for key arterials serving downtown Seattle and in surrounding hub locations.

For motorists already on the road, there is also a strong need for accurate real-time information to be conveyed to motorists that are approaching a traffic blocking incident or unusual backups. Traffic condition reports can be provided by Highway Advisory Radio and Variable Message signs. WSDOT will examine areas on the freeway system that are not well-covered with active traffic condition messages.

### ***Commuter Rail***

Sound Transit's Sounder commuter rail currently serves rail stations between Seattle, Tacoma, and Everett. Serving Tacoma, there are currently three inbound (northbound) trains in the morning, and three outbound trains in the evening. Serving Everett, there are two inbound (southbound) trains in the morning and two outbound (northbound) trains in the evening. With the loss of the Alaskan Way Viaduct, there would be a need for expanded commuter rail service. Consideration should be given to:

- adding more runs during the commute peak hours
- adjusting departure schedules to include a longer peak period
- increasing the number passenger cars for each train

If King Street Station is damaged and inoperable, a temporary train station and Park and Ride could be developed at King County Airport. The connecting transit service could be established on Airport Way leading north to 4<sup>th</sup> Avenue South and the CBD, or leading west onto South Spokane Street and north onto the E3 Busway and entering the Downtown Transit Tunnel.

### ***Expanded Ferry Service***

Commuters from West Seattle would be impacted by a long-term closure. Passenger ferry service between downtown and West Seattle could alleviate some of their delay – as in the summer months provided by the Water Taxi. Washington State Ferries could investigate contracting with local tour boat operations to serve a travel link between Fauntleroy and Colman docks.

A new vehicle ferry could run between downtown and West Seattle, Vashon, or Southworth. If such a ferry service is in operation, parking and/or bus service in West Seattle would need to be created to support it.

### ***Travel Demand Management***

An Alaskan Way Viaduct closure would have serious impact to the Seattle transportation system. Immediate action to mitigate forecasted traffic congestion would be taken to reduce drive-alone trips and help entice drivers to make non-peak hour trips into the Seattle CBD.

### **Reduce Drive-Along trips**

Three encouraging TDM measures are telecommuting, alternate flex time or compressed schedules, and alternate work locations. In the event of a long-term closure, telecommuting would need to be promoted, but in a framework that makes sense to business. The City of Seattle and WSDOT would consider contracting with the Commuter Challenge for this role. Commuter Challenge is an effective non-profit organization affiliated with Economic Development Council of Seattle and King County with partnerships established with 18 King County cities.

Greater support could be given to Commute Trip Reduction program incentives. Actions that would be considered include:

- Seek out advice of state CTR Task Force to determine what added level of funding and staff support could be best used at the state, local, and employer levels. Higher levels of funding support for alternative trip subsidies could be considered.
- Expand upon network opportunities for employee transportation coordinators, further assistance for developing parking management plans, and worksite specific trip reduction strategies.
- Offer deeply discounted (or free) train, bus, and vanpools.

### **TDM Communication**

Communications with the public will be critical so that all travelers, business owners, and freight haulers will understand what is being done during this emergency, what needs to be done, and how to best handle their transportation needs during this time. A closure of the Viaduct would affect all routes going into, through, and around Seattle. Information would need to be very broadly distributed. Those impacted by a Viaduct closure would need to know all the transportation options.

All the transit agencies have good communication mechanisms in place with large employers. These mechanisms would need to be immediately utilized.

WSDOT's web page has a large audience. This web page could provide specific Viaduct travel information. WSDOT could also utilize all necessary variable message signs and highway advisory radio to get information to the public.

Better information on Park and Ride lots could be provided. For example, as Park and Ride lots fill, bus drivers could call WSDOT to use variable messages signs to direct people to alternate parking locations.

A direct communication contact list should include, but not be limited to:

- Neighborhood communities
- All transit agencies
- Washington State Ferries
- Neighboring businesses
- Port of Seattle
- Washington Trucking Association (WTA)
- Victory Clipper

- Waterfront Merchants Association
- Railroad companies
- Mariners
- Cruise Ships
- Seattle School District
- Washington Cab Alliance
- Adjacent property owners

Providing transportation options, being able to immediately adapt and change the plan, and great communications between all agencies and with the public would ensure the greater Seattle area emerges from the crisis with as minimal impact as possible.