

Arboretum: Traffic Management

Introduction

How was traffic management in the Arboretum addressed in the preferred alternative?

As part of ESSB 6392, both the Washington State Department of Transportation (WSDOT) and the Seattle Department of Transportation (SDOT) have been working with the Arboretum and Botanical Garden Committee (ABGC) to evaluate measures that would reduce the total number of automobile trips along Lake Washington Boulevard through the Arboretum. While traffic management in the Arboretum is not directly addressed in the preferred alternative for the SR 520 I-5 to Medina project, efforts are underway to evaluate options that may reduce traffic in the Arboretum and to develop a comprehensive traffic management plan for the Arboretum.

What comments were received?

WSDOT and SDOT received comments from ABGC stating their desire to reduce the volume of vehicular traffic travelling through the Arboretum, specifically traffic using the Arboretum to access SR 520. ABGC feels strongly that Lake Washington Boulevard should not function as a typical City arterial, but rather as a park boulevard. Lake Washington Boulevard has a dual City of Seattle roadway classification, as both a minor arterial and a park boulevard.

ABGC supports a traffic management approach that strongly discourages, or prohibits, “non-local” traffic from using Lake Washington Boulevard to access SR 520. Though the Preferred Alternative removes the ramps that currently connect directly to and from Lake Washington Boulevard, traffic may still access SR 520 via Lake Washington Boulevard by continuing to the Montlake interchange. Additionally, vehicles exiting SR 520 still have the option of accessing Lake Washington Boulevard via 24th Avenue.

Addressing the problem

How did we identify possible solutions?

Before identifying possible solutions to traffic management, the Technical Coordination Team established a preliminary list of goals for traffic management and traffic calming in the Arboretum. WSDOT and SDOT presented these goals to ABGC and conducted several brainstorming sessions to refine the list of goals. The goals fall into four categories: managing traffic, increasing safety, increasing visitor use, and maintaining the character of the Arboretum. On August 18, ABGC confirmed the following list of goals:

- Reduce the total number of vehicle trips through the Arboretum.
- Reduce vehicle speeds through the Arboretum.
- Increase vehicle, bicycle, and pedestrian safety.
- Increase bicycle and pedestrian use in the Arboretum.
- Increase visitor use in the park.

- Maintain existing character of the Arboretum.
- Reduce vehicle-generated noise on Lake Washington Boulevard in the Arboretum area.
- Reduce pollution and improve air quality.
- Reduce queue lengths in the Arboretum.

To inform the evaluation of traffic management techniques, WSDOT provided the following information to ABGC and SDOT. Historical average daily trip (ADT) data available from the City of Seattle for 23rd Avenue and Lake Washington Boulevard was charted for the years 1996 to 2008. There was no data for the year 2007, so that has been estimated for the chart shown in exhibit 1. This chart illustrates a substantial decrease in traffic on Lake Washington Boulevard in 2006 that was accompanied by an increase in traffic on 23rd Avenue. The current traffic volume on Lake Washington Boulevard through the Arboretum is approximately 18,000 ADT. Approximately 50% of these trips are vehicles that cross Lake Washington via SR 520 and 10% are accessing SR 520 westbound to I-5. The remaining 40%, or about 7,000 vehicles, are local trips not accessing SR 520.

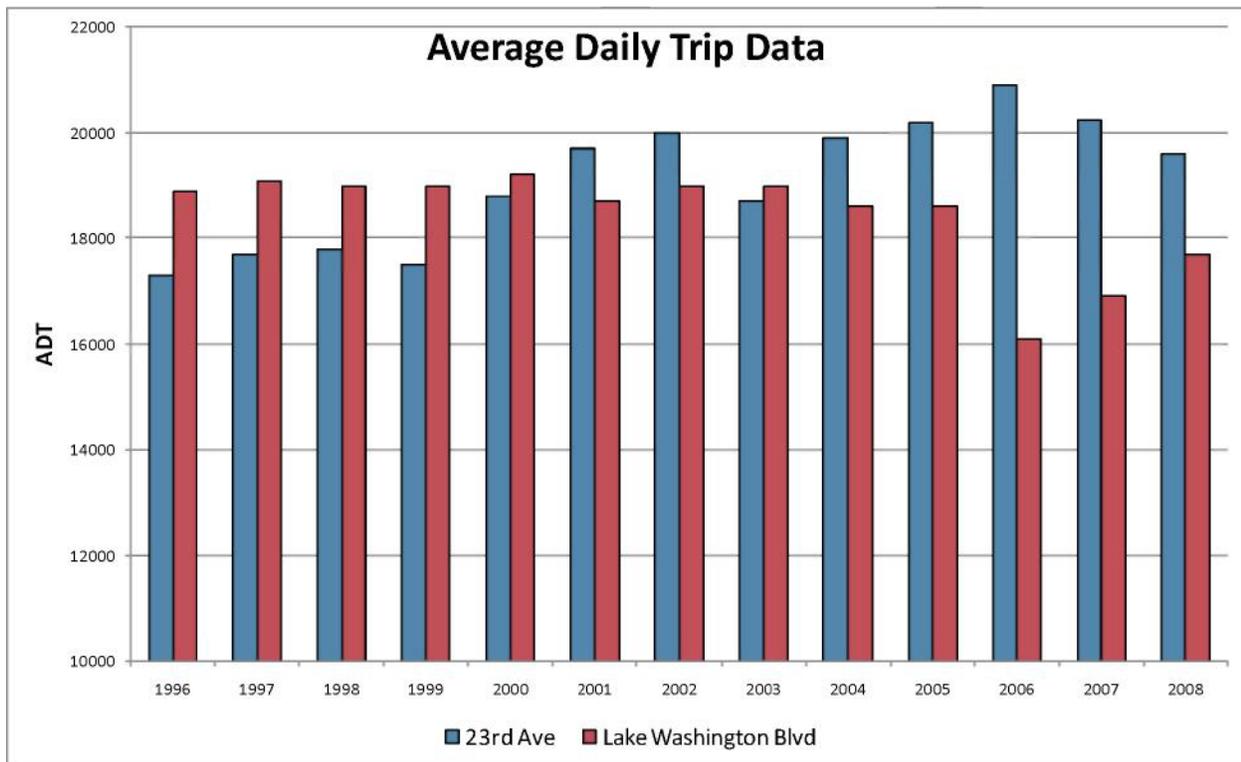


Exhibit 1. Average daily trip data for Lake Washington Boulevard and 23rd Avenue

In 2030, under the “No Build” scenario, ADT are estimated to increase to 22,500 (25%) due to population and employment growth in the area. With construction of the preferred alternative, ADT in 2030 are estimated at 20,000, which would be a 10-15% reduction over the No Build scenario.

In 2010, WSDOT conducted a license plate survey of traffic using the Lake Washington Boulevard ramps to SR 520. Review of the survey results and turning movement data illustrate that over 90% of traffic using the Lake Washington Boulevard ramps in the morning originates from the neighborhoods near the Arboretum,

with only 5 to 10% of the traffic associated with downtown Seattle. During the morning commute, 50% of vehicles using the eastbound on-ramp to SR 520 originate from neighborhoods south of Madison Park, with the next highest use (25%) from the Madison Park neighborhood.

During the evening commute the results are similar; however, the number of trips to/from downtown Seattle increase compared to the morning commute. The traffic between the SR 520 corridor and downtown Seattle increases by approximately 40 vehicles per hour (total in both directions). During the evening commute period, 50 to 65% of vehicles using the SR 520 ramps are associated with areas south of Madison Park and directly to/from Madison Park.

Recommendations

What did we consider?

WSDOT and SDOT are currently evaluating a comprehensive suite of traffic management measures intended to reduce traffic through the Arboretum, with a focus on elements that discourage vehicles from using Lake Washington Boulevard as a means to access SR 520. Below is a preliminary list of options for evaluation that has been developed in collaboration with ABGC.

Traffic management options to be considered:

- Intersection control modifications (including signal timing at Madison/23rd Avenue).
- Occupancy minimums.
- Time-based restrictions (both time of day and day of week).
- Turning restrictions.
- Signing revisions.
- Tolling.

Details regarding and evaluation of the above will be refined through continued coordination with ABGC.

Peak hour turning movement restrictions were evaluated for the intersection of 24th Ave and Lake Washington Boulevard. Effects of this option on local traffic operations were estimated using preliminary traffic forecasts from the SDEIS traffic data. Approximately 480 vehicles per hour are estimated to turn left from 24th Avenue East to East Lake Washington Boulevard during the PM peak.

If the southbound left turn movement was restricted, traffic would turn right onto Lake Washington Boulevard and then turn left onto Montlake Boulevard. The Montlake Boulevard/Lake Washington Boulevard intersection operates with a volume to capacity ratio of nearly 1.0, so the intersection could not accommodate any additional traffic. Adding traffic volume to the westbound left without adding new lanes would result in a volume to capacity ratio over 1.2, with 20% more cars at the intersection than could be accommodated at the traffic signal. Substantial congestion would result along Lake Washington Boulevard and on Montlake Boulevard, with transit travel times along Montlake Boulevard

similar to a No Build configuration (~ 45 minutes) instead of the 7 minutes estimated in the preferred alternative configuration.

To accommodate the added traffic volumes, an additional westbound left turn lane (from Lake Washington Boulevard onto Montlake Boulevard) and northbound through lane (on Montlake Boulevard) would be required. The northbound through lane would be needed to provide added capacity for the movement that is in conflict with the westbound left turn. With these lane additions, the volume to capacity ratio is near that in the Preferred Alternative. An additional 12 feet of width would be required along Lake Washington Boulevard between 24th Avenue and Montlake Boulevard, and along Montlake Boulevard between East McGraw Street and East Hamlin Street.

The workgroup recommends maintaining the left turn movement between 24th Avenue and Lake Washington Boulevard for the following reasons:

- Even with the left turn open, traffic through the Arboretum would be less than a No Build configuration.
- Widening Montlake Boulevard and Lake Washington Boulevard would introduce more affects on adjacent property.
- Further traffic management strategies could be pursued to achieve lower traffic volumes through the Arboretum.
 - Continued coordination between the City of Seattle, WSDOT, and the Arboretum and Botanical Garden Committee will be necessary to determine if time of day restrictions for the turning movement could be considered in the future.

WSDOT and SDOT support ABGC in developing traffic management strategies that reduce traffic in the Arboretum. The questions of how traffic is diverted, where diverted traffic might go, and what impacts could (if any) result from the removal of traffic from Lake Washington Boulevard will continue to be evaluated.

Final TCT recommendation

The Technical Coordination Team (TCT) supports the coordination efforts that have been made thus far between WSDOT, SDOT, and ABGC to identify traffic management strategies for the Arboretum. The TCT supports ABGC's goal to reduce traffic in the Arboretum, but is particularly concerned about adverse impacts to transit speed and reliability on 23rd Avenue and Montlake Boulevard. It is the recommendation of the TCT that WSDOT, SDOT, and ABGC continue to coordinate on the evaluation of traffic management options that will form the basis of a comprehensive traffic management plan for the Arboretum, including the TCT recommendation to maintain the left turn movement on the edge of the Montlake lid from 24th Avenue to eastbound Lake Washington Boulevard.