Riverfront Park Master Plan
Traffic Impact Analysis & Design Study

MORRISON-MAIERLE, INC.

RIVERFRONT PARK MASTER PLAN
TRAFFIC IMPACT ANALYSIS & DESIGN STUDY

SUBMITTED TO:

CITY OF SPOKANE

AUGUST 2015

PREPARED BY:

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MMI PROJECT #: 5447.001

EXECUTIVE SUMMARY

City of Spokane voters have supported the Spokane Parks Department by approving a $64.3-million bond to provide substantial capital improvements for Riverfront Park; projected for completion within 3 to 5 years (by year 2020). These capital improvements are anticipated to nearly double park attendance throughout the year. However, special event attendance will almost triple due to the number and density of events.

According to the Riverfront Park Master Plan 2014, improvements are anticipated to increase Park activities from 45 to 50 current, major events per year to over 120 major events by year 2020. Event attendance is projected to increase from just fewer than 220,000 to nearly 600,000 persons per year with the addition of these events. The following Table highlights statistical event characteristics for the existing Park (year 2014) and as projected by year 2020, as derived from attendance information provided the Master Plan and City Parks Department officials.

Riverfront Park Attendance Characteristics, Current and Projected Year 2020			
Attendance Characteristic	Existing Attendance (Year 2014)	Projected Attendance (Year 2020)	Percent Change (Yr 2014 to Yr 2020)
Total Event Attendance	218,750	598,550	173.62%
Maximum Attendance Event	55,000 (Bloomsday)	60,000 (Independence Day)	9.09%
85th Percentile Attendance Event	10,800 (5 times per year)	25,000 (8 times per year)	131.48% (Add 3 events per year)
Average Event Attendance	8,750 (6 times per year)	11,300 (up to 18 times per year)	29.14% (Add 12 events per year)
Median Event Attendance	5,000 (13 times per year)	5,000 (31 times per year)	No Change (Add 18 events per year)
Source Data: Derived from Riverfront Park Master Plan 2014			

The information is provided primarily on an attendance per event basis, but it should be noted that major events can span days. It should also be noted that maximum, 85th percentile, average, and median event statistics are not mutually exclusive, meaning smaller events are reflected in larger event statics. Finally, maximum, 85th percentile, average, and median is terminology used to describe statistical determination based on event attendances throughout the year, and are not a function of total or even maximum attendances.

As shown, the 85th percentile attendance condition will include 25,000 persons occurring 8 times per year by year 2020. The projected average attendance condition is anticipated to reach 11,300 attendees occurring 18 times per year. These events are highlighted because this transportation study focuses on addressing traffic conditions during these timeframes. Of these, the "average" attendance condition was addressed primarily throughout the report as it regards traffic and parking. This is because, while the 11,300 attendees are statistically relevant as "average" out of the 120 events projected by year 2020, this is closer to an 85th percentile condition on the basis of attendance compared with 365 days of park activities during the year.

Thus it is more appropriate and relevant that traffic analyses addresses this more typical condition throughout the year.

The 85th percentile statistical condition with 25,000 persons was used to guide the review of pedestrian and bicycle facilities because the comfort and safety of citizens is of significant concern to City officials. Thus, even though this attendance condition is less frequent, this was appropriate and relevant in the recommendation of ped./bike facilities.

This traffic impact analysis (TIA) and design study was developed to review future year 2020 traffic conditions assuming full development of Riverfront Park. More specifically, this study was developed to review peak generator hour traffic impacts, pedestrian activity, and parking conditions assuming a special event condition anticipated to occur with some frequency throughout the year; specifically, the average and 85th percentile attendance conditions highlighted above.

TIA/Traffic Conditions and Recommendations

The scope for the traffic impact analysis (TIA) was established in coordination with staff from City Transportation Department. Per direction, the study reviews traffic and transportation impacts for nine intersections located along roadways fronting or providing access to Riverfront Park, including Spokane Falls Boulevard, Washington Street, Stevens Street, Post Street/Lincoln Street, Boone Avenue, Mallon Avenue, Cataldo Avenue, and North River Drive. Traffic counts were collected during the weekday AM and PM peak/commute rush hours of these intersections.

The operational/capacity analysis was performed based on PM peak hour traffic volumes of a typical weekday as they well exceed those identified for the AM peak hour (i.e. evening "rush hour" volumes exceed those of the morning). Also, the impacts of the Park are anticipated to be most significant in the afternoon versus morning, thus further supporting the use of a PM peak hour analysis. Finally, as traffic volumes during the weekday PM peak hour exceed those hourly volumes typically experienced during weekends within the City central business district (CBD), this study should be sufficient for addressing traffic conditions throughout the majority of a typical week.

Year 2020 traffic forecasts were developed from counts assuming a 10 percent baseline growth rate (reflecting non-development growth) combined with trips generated by Riverfront Park. The TIA concludes the Park is projected to generate a total of 1,423 peak generator hour trips during the statistical average attendance and 85th percentile frequency activity day. Again, this represents trip generation for the 11,300 attendees projected during the "average" condition of the 120 events projected by year 2020, but is statistically relevant as the 85th percentile event condition when compared to 365 attendance days of the year.

A summary of trip generation totals is shown below. This represents the trip generation of active and passive park activities. Active activities include those generated by special event activities, as derived/predicted from resources available from the Spokane Regional Transportation Council, Spokane Transit Authority, and Visit Spokane. Passive activities include general park activities occurring every day for Riverfront Park, as determined with the Trip Generation Manual (ITE, 2012). Note that attendance and trip generation was segregated into three specific areas of the Riverfront Park. This is because the Park is large enough to generate different traffic impacts upon City streets, depending upon where activities occur.

Year 2020 Trip Generation for River Front Park - Statistical Average Peak Generator Hour				
	North Bank	Central Park	South Bank	Totals
Proposed Daily Trip Generation	2,500	4,405	1,985	8,890
Peak Generator Hour (16% of day) (45% inbound versus 55% outbound)	400 (180 in/220 out)	705 (317 in/388 out)	318 (143 in/175 out)	1,423 (640 in/783 out)

Approximately 55 percent of trips are anticipated to approach and 45 percent depart the Park during this timeframe. Overall via City arterials, 29 percent of Park trips are anticipated to/from the north of Mission Avenue; 16 percent to/from the south of Interstate 90; 22 percent to/from the west of the Maple/Ash couplet, and 33 percent to/from the east of the Division/Ruby couplet.

The resulting traffic forecasts are considered conservative for two primary reasons. First, traffic growth within the CBD has been minimal throughout the last 10 years. Thus, the application of the 10 percent growth rate is high in context to negative traffic growth trends, but was assumed given the redevelopment and revitalization that has occurred within the CBD over the last few years. Second, counts already reflect some park activity as they were collected in the field on typical weekdays when Riverfront Park was in operation. Thus, there is some "double" counting of trips as the entire 1,423 peak generator trips were assigned to study intersections for the TIA.

Operations/Capacity Analysis. A TIA evaluates roadway capacity primarily through an examination of intersection operations. Congestion and increased vehicle delays are experienced more rapidly at intersections versus road segments (between intersections) due to the number and frequency of conflicts (i.e. turning vehicles and stopping or slowing movements). This study quantified traffic operations and capacity based on a review of level-of-service (LOS) methodologies of the *Highway Capacity Manual* (Transportation Research Board, 2010). The *Highway Capacity Manual* (HCM) is a nationally recognized and locally accepted method of measuring traffic flow and congestion for intersections. Criteria range from LOS A, indicating free-flow conditions with minimal vehicle delays, to LOS F, indicating congestion with significant vehicle delays (and operational failures).

The analysis was developed based on geometric and traffic control conditions noted in the field (i.e. number of lanes, turn lane location, speeds, signals versus stop-signs, etc.); also using Synchro data (traffic analysis files) provided by City staff which reflect signal timing and phasing information currently used for these intersections. LOS D standard is desired for signalized intersections and LOS E for unsignalized intersections within the Spokane CBD. As shown by the following Table, forecast traffic operations are acceptable during the forecast year 2020 weekday PM peak hour as no intersection is projected to function below minimum acceptable standards. This indicates that no roadway improvements are warranted on the basis of traffic operations or capacity need.

Year 2020 LOS and Delay - PM Peak Hour		
Intersection	LOS[1]	Delay
Washington St/Boone Ave	B	14.4
Washington St/Cataldo Ave	D	25.7
Washington St/North River Rd	B	18.9
Washington St/Spokane Falls Blvd	C	33.9
Stevens St/Spokane Falls Blvd	B	18.1
Post St/Spokane Falls Blvd	D	38.4
Lincoln St/Mallon Ave	B	15.3
Lincoln St/Broadway Ave	B	11.9
Howard Street/Boone Ave	B	11.6
[1] LOS = Levels-of-Service		

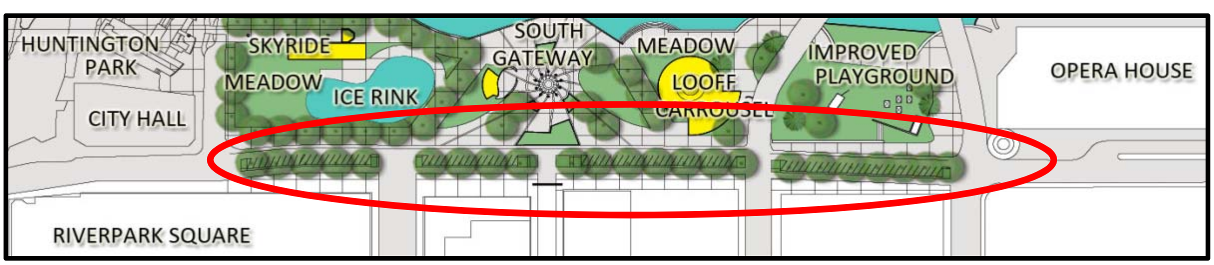
With that said, two roadway improvements/modifications were examined as they were highlighted by the Riverfront Park Master site plan, including:

1) The reduction of a through lane on Spokane Falls Boulevard to allow for a landscape median and 45 degree parking between Washington Street and Post Street.
2) The vacation of Cataldo Avenue for approximately 600 from Howard Street to just short of Washington Street reduce through traffic and promote site plan objectives.

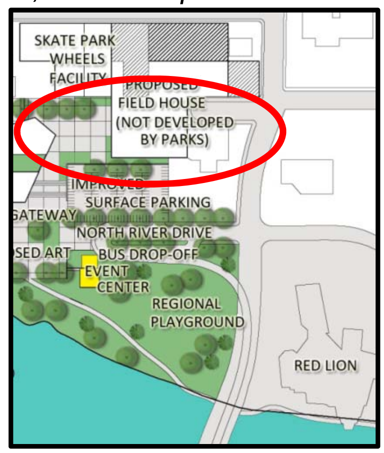
An operations/capacity analysis concludes that these improvements/modifications would have minimal impact upon traffic conditions noted in the Table above, with measures-of-effectiveness (MOE) still within acceptable tolerances. In fact, as a recommendation of this report, the vacation of Cataldo Avenue concept was expanded upon to incorporate a connection south to the signalized Washington Street/North River Drive intersection in order to address a safety issue noted in the field for special event conditions of Riverfront Park and the Spokane Arena for the Cataldo Avenue/Washington Street intersection.

The recommended improvements are further described as follows.

Spokane Falls Boulevard - This improvement includes a quasi-boulevard street concept between Washington Street and Post Street along Spokane Falls Boulevard. The proposal would reduce a westbound lane and parking lane from the arterial and construct a landscape median with 45 degree/angle parking fronting Riverfront Park; leaving two westbound lanes separated by the landscape median. The concept illustrated within the Riverfront Park Master Plan 2014 is shown below.



Cataldo Vacation - The improvement includes the vacation of Cataldo Street eastward from Howard Street to approxiamtely 150 feet west of Washington Street to reduce through vehilce access and promote site development and parking objectives of Park officials. This improvement could shift traffic to Dean Avenue and Boone Avenue (aligned to the north); however, this could provide an opprotunity for Parks Department officials to tie Park traffic and other existing vehilce trips into the Washington Street/North River Drive intersection via public or private approaches that extend south and then east to tie into this signal. This could promote a vehilce "entery feature" for the Park. A screencapture of the traffic model for this improvement is shown left with the Riverfront Park Master Plan 2014 concept shown right.



PEDESTRIAN/TRANSIT CONDITIONS AND RECOMMENDATIONS

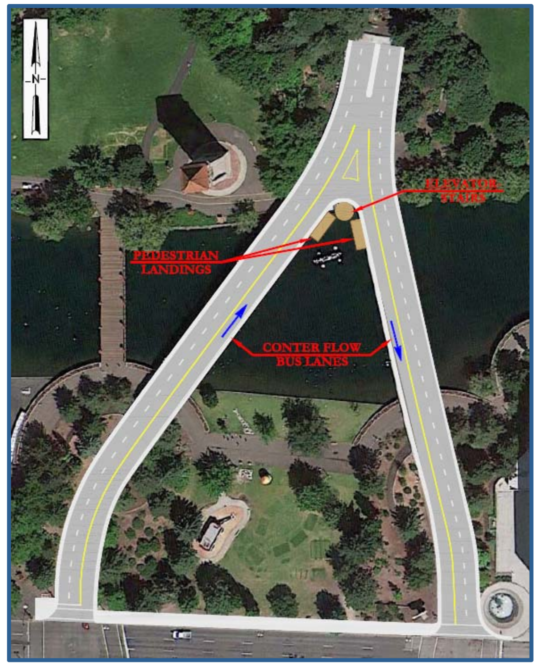
An analysis of pedestrian conditions was performed principally to help with the design of primary walkways that provide access to/from and through the Park. Pedestrian analyses was performed based upon 15-minute peak demands projected for the 85th percentile attendance day of the Park, which exceeds the average attendance day noted for traffic. The higher standard was used because pedestrian comfort and mobility is crucial for a successful Park venture. With that said, the pedestrian volumes predicted are only anticipated to occur with up to 8 events each year; thus, the conclusions derived this review is conservative throughout the majority of the year. A 15-minute demand was reviewed because pedestrian densities are most significant shortly following the release of a special event.

The analysis concluded that 15-minute demand up to10,500 pedestrian trips during the 85th percentile attendance day. 29 percent of these pedestrians are anticipate to frequent event facilities along the north bank of the park, 49 percent within the center of the Park, and 22 percent along the south bank. These pedestrians were distributed to access principally parking surrounding Riverfront Park, with the general walkway width conclusions as follows:

- Howard Bridge South should have a 50 to 55 foot effective and total width
- Howard Bridge north should have an effective minimum width of 35 feet
- Major access and travel corridors should have an effective width of 30 feet, with a total width of up to 45 feet where vendor activities are anticipated.
- Minor access and travel corridors should have an effective width of 15 feet with a total width of up to 20 feet where sightseeing or similar activities are anticipated.
- Suspension bridges are adequate at a width of 10 feet; assume no construction of additional obstructions.

The pedestrian analysis also concludes that there are sufficient, controlled crossings providing access to Riverfront Park across adjacent City arterials. This determination is made because there is ¼ mile spacing or less between crossings on the primary pedestrian fronts of Riverfront Park (to/from the CBD and north bank of the Spokane River).

There are no changes to transit warranted by this study. Spokane Transit Authority (STA) officials confirm they will respond to any additional transit and shuttle needs on a case-by-case basis. There are improvement options to enhance STA bus access to the Park that should receive some additional consideration in the future. First, bus pullout lanes or turnaround should be considered on the north and south entryways to the Park off Spokane Falls Boulevard and North River Drive, respectively. These should be reduced cost enhancements that can be implemented if and when Park officials elect to construct recommended improvements.



Second STA officials have examined the potential for a transit drop-off and pickup area to be situated between the northbound and southbound arterials of the Washington/Stevens Couplet. This would convert underutilized traffic vehicle lanes into contra-flow transit lanes that could drop pedestrians unto a "landing" constructed on the Spokane River Bridge of the couplet, just north of Spokane Falls Boulevard. An elevator and/or stairway would extend to pedestrian facilities below the bridge, providing access to the Park. This improvement does improve centralized access to the Park, but would be costly and would require structural and environmental studies to support feasibility. Thus, this is a long-term improvement option. However, geometrically it does appear the improvement is feasible as shown to the right.

Parking Conditions and Recommendations

Parking demands were developed for Riverfront Park based on the "average" attendance conditions. For parking, it is important that sufficient parking can be established for the majority of the year and for not the high attendance event conditions, less there be an abundance of unused parking in the region. Parking generation was established from resources available from the Spokane Regional Transportation Council, Spokane Transit Authority, and Visit Spokane

A parking generation of 1,685 vehicles is anticipated for the average attendance or 85th percentile frequency activity day of the Park with 700 parking stalls in demand north of Spokane River and 985 vehicles to the south. Parking generation on the basis of the focus areas discussed previously is summarized below. Note parking demands for the Central Park area is split between the north and south banks; reconciling the statement two sentences prior.

Year 2020 Parking Generation for River Front Park - Statistical Average Attendance Day				
	North Bank	Central Park	South Bank	Totals
Total Parking Demands/Generation	475	835	375	1,685

Through field observation it was determined there are approximately 7,335 parking stalls projected within 73 parking lots and ramps within a ¼ mile radius of Riverfront Park (including 700 parking stalls in designated Park lots). Through a review of parking utilization counts performed for three weekdays and two Saturdays it was determined that parking is 49 percent and 33 percent utilized for weekdays and Saturdays, respectively. There are 1,370 stalls typically available north of Spokane River and 2,340 souths during the typical weekday, with 1,765 available north and 3,150 south during a typical Saturday.

The parking analysis confirmed adequate parking supply was available to accommodate demands from Riverfront Park during the average attendance and 85th percentile frequency day event. This indicates no additional parking facilities are needed immediately based on the conclusions of this study.

SUMMARY AND CONCLUSIONS

The TIA and design study confirms that Riverfront Park can develop as proposed without significantly impacting traffic, pedestrian, parking, and transit conditions as this study has identified no transportation deficiencies. As such, the improvements and strategies recommended are not mitigating measures; rather they have been highlighted to further advance mobility and safety within the Spokane CBD. City Parks and Transportation can work to determine what, if any, of these recommendations can be implemented or if they should be disregarded due to right-of-way issues, cost, etc.

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1 INTRODUCTION

This report summarizes the traffic impact analysis (TIA) and design study prepared on behalf of the Riverfront Park revitalization project in Spokane, Washington. The report provides a summary of traffic, pedestrian/bicycle, and transit evaluations; recommending improvements, strategies, and designs to assure the safe mobility of patrons as they access and travel throughout the Park. The traffic/design study has been established based on the Riverfront Park Master Plan 2014 prepared by City of Spokane Parks and Recreation department staff in coordination with a significant stakeholder and consultant committee. This Master Plan is intended to guide the redevelopment and expansion of the Park throughout the next 3 to 5 years (completion anticipated by year 2020).

The TIA and design study was performed to support development and building permitting processes for all phases of the park, and to help address State Environmental Policy Act (SEPA) application and certification processes. The City of Spokane is the lead agency for this project, with this project being reviewed internally by the Engineering Services and Planning departments. Key secondary agencies and stakeholders include, but are not necessarily limited to, the Washington State Department of Transportation (WSDOT), Spokane Transit Authority (STA), and the Spokane Regional Transportation Council (SRTC).

1.1 PROJECT DESCRIPTION

Riverfront Park is a 100 acre community event center that, as described by the Master Plan is "*central to the history of Spokane and its Park system*". The park is historically significant for a number of reasons. Native Americans gathered within the park area to fish at the falls. Pioneers settled here and started the City of Spokane in the 1800s. The park area became a hub of commerce via rail activity through the early half of the 1900s. Finally, rail yards were removed and the site and river cleaned up so the property could be substantially redeveloped to host 1974 World Fair and Exposition. There have been a number of modifications and changes made to the Park over the last 40 years, but nothing as significant as what is being programmed currently by the Spokane Parks Department.

The Riverfront Park Master Plan 2014 highlights $100 million of capital improvements to expand, revitalize, and enrich Riverfront Park. The first financial initiative was secured by Spokane Parks Department officials by way of a $64.3 million bond approved by Spokane voters in November 2014. This study principally addresses those park improvements assured with the bond approved by voters with the associated attendance projections provided in a following section; although some long term recommendations may ultimately confirm longer range project priorities highlighted by the Master Plan as "Tier Two and Three" improvements (such as a parking garage). These are ultimately latter priorities as the City of Spokane is approximately $35.7 million short of total funding needed for the entire Master Plan.

Summarily, the $64.3 million bond was approved to help support the following capital improvements and enhancements; identified as Tier one projects/priorities via the Master Plan:

- Two new pedestrian/bicycle promenades, newly designated cycling lanes, and one promenade with improved fire and truck access;
- Two new plazas for events;
- Four new grass meadows;
- Two upgraded playgrounds;
- A new 1.5 acre regional playground;
- A new park tour train;
- New public art;
- Four improved river overlook terraces with picnic tables and benches;
- Redevelopment of the Pavilion to include an event center, stage, and seating for nearly 3,000 people;
- Additional Pavilion enhancements would include lighting, interactive media and storytelling installations, energy efficiency, and public art;

- Upgraded and expanded facility to better house the historical Park Carrousel,
- Upgrades and improvements to the Park Administration building;
- New and improved concessions and revenue-generating gift shops,
- A centrally located Park Visitors Center;
- A new outdoor ice rink with arena-style seating that can be used as a plaza during warmer months;
- Financial support for the south river channel bridge replacement;
- Improved ticketing, skate rental, and locker facilities for Sky Ride and Ice arena;
- New leasable shelters to replace existing shelters throughout Park (for year round use);
- Improved ADA access throughout the Park;
- Improved landscaping, paving, gateways, signage, and park furnishing;
- Power, irrigation, and water service upgrades throughout the Park;
- Improved and more efficient heating and cooling systems in older Park facilities;
- Increasing secure access on a 12 month basis;
- New lighting, security cameras, and emergency phones to improve safety throughout Park;
- Two improved and re-paved parking lots;
- Improved vehicle and transit drop-off/pick-up zones;
- Improved access to parking facilities.

Attached Figure 1 shows the location of Riverfront Park. Figure 2 provides the current site shown from the Riverfront Park Master Plan 2014.

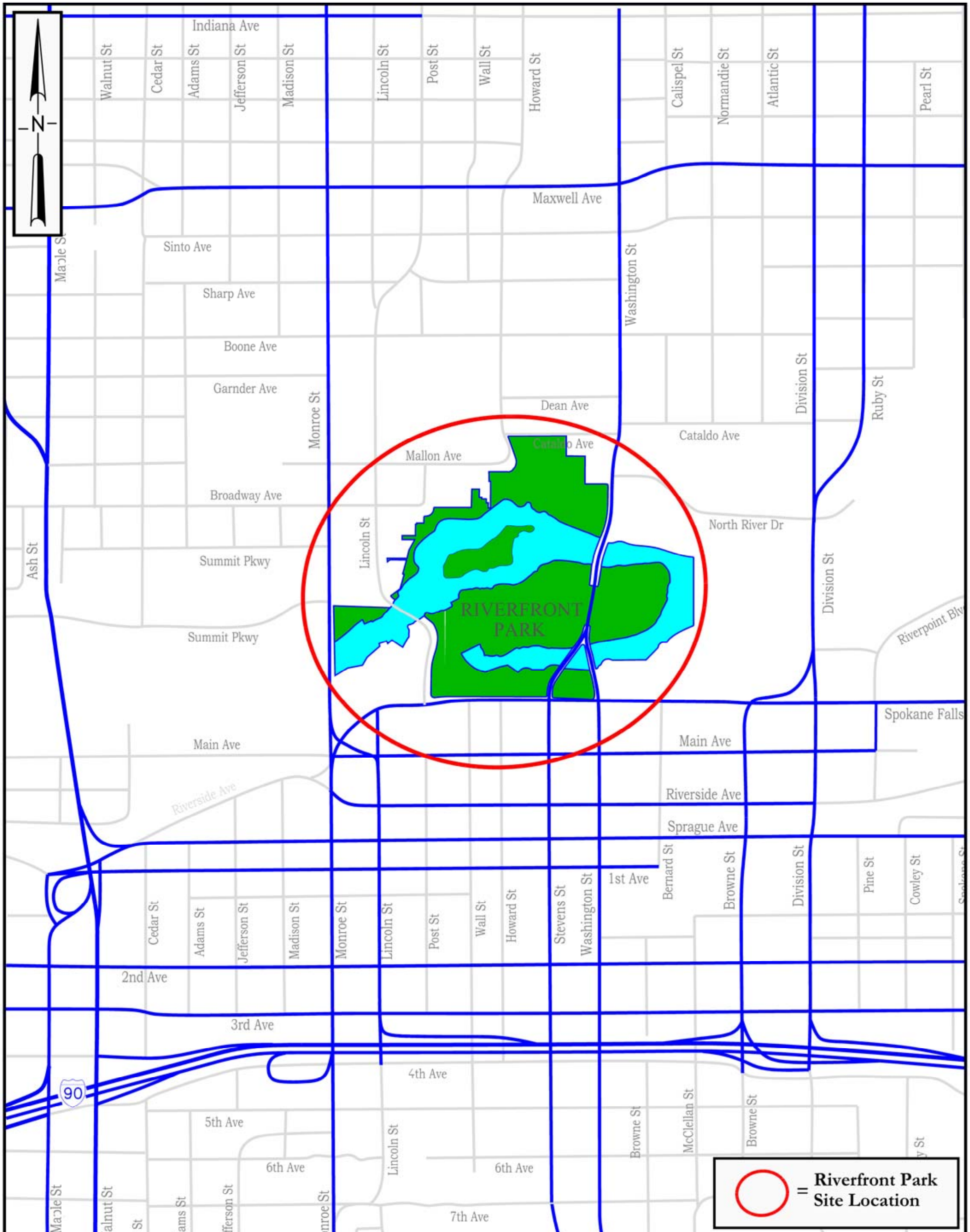
1.2 ATTENDANCE

There are over 2.2 million visitors to Riverfront Park each year. Park improvements will better serve and grow this base, with annual attendance anticipated to nearly double over the next 5 years. This will occur as a result of improved passive park recreational areas such as playground, picnic and gathering center, and open areas. However a focus of the project is to improve facilities in order to attract a higher number of event activities, both at the local level and as a destination center for the Northwest. This will occur through the improvement of more active generation centers such as attractions, rides, and the provision of new and/or improved event and large gathering centers.

According to the Master Plan, improvements are anticipated to increase Park activities from 45 to 50 current, major events per year to over 120 major events by year 2020. Event attendance is projected to increase from just fewer than 220,000 to nearly 600,000 persons per year with the addition of these events. These events will create the highest traffic, pedestrian and parking demand scenarios for Riverfront Park because of high attendance projections. As such, this traffic study focuses in particular on transportation conditions during special events.

The Riverfront Park Master Plan provides event attendance projections following the Tier One improvements highlighted above. Table 1 highlights statistical event characteristics for the Park (year 2014) and as projected by year 2020 from the Master Plan. The information is provided on an attendance per event basis, but it should be noted that major events can span days. For instance, the maximum and 85th percentile events normally occur over two to four days with such events including Bloomsday (3 days), Artfest (2 days), and the Independence Day Celebration (2 days). The average and median events can occur over one to two days, with representative activities including First Night, the Color Run, and the Royal Fireworks Concert.

It should also be noted that maximum, 85th percentile, average, and median event statistics are not mutually exclusive, meaning the 85th percentile and maximum includes average and median events. The maximum event includes the 85th percentile, average, and median, etc. Also, maximum, 85th percentile, average, and median is terminology used to describe statistical determination based on attendances noted/projected from all event conditions throughout the year, and are not a function of total or even maximum attendances.



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APPR. BY: CJR
DATE: 3/13/15

RIVERFRONT PARK TRAFFIC AND DESIGN STUDY

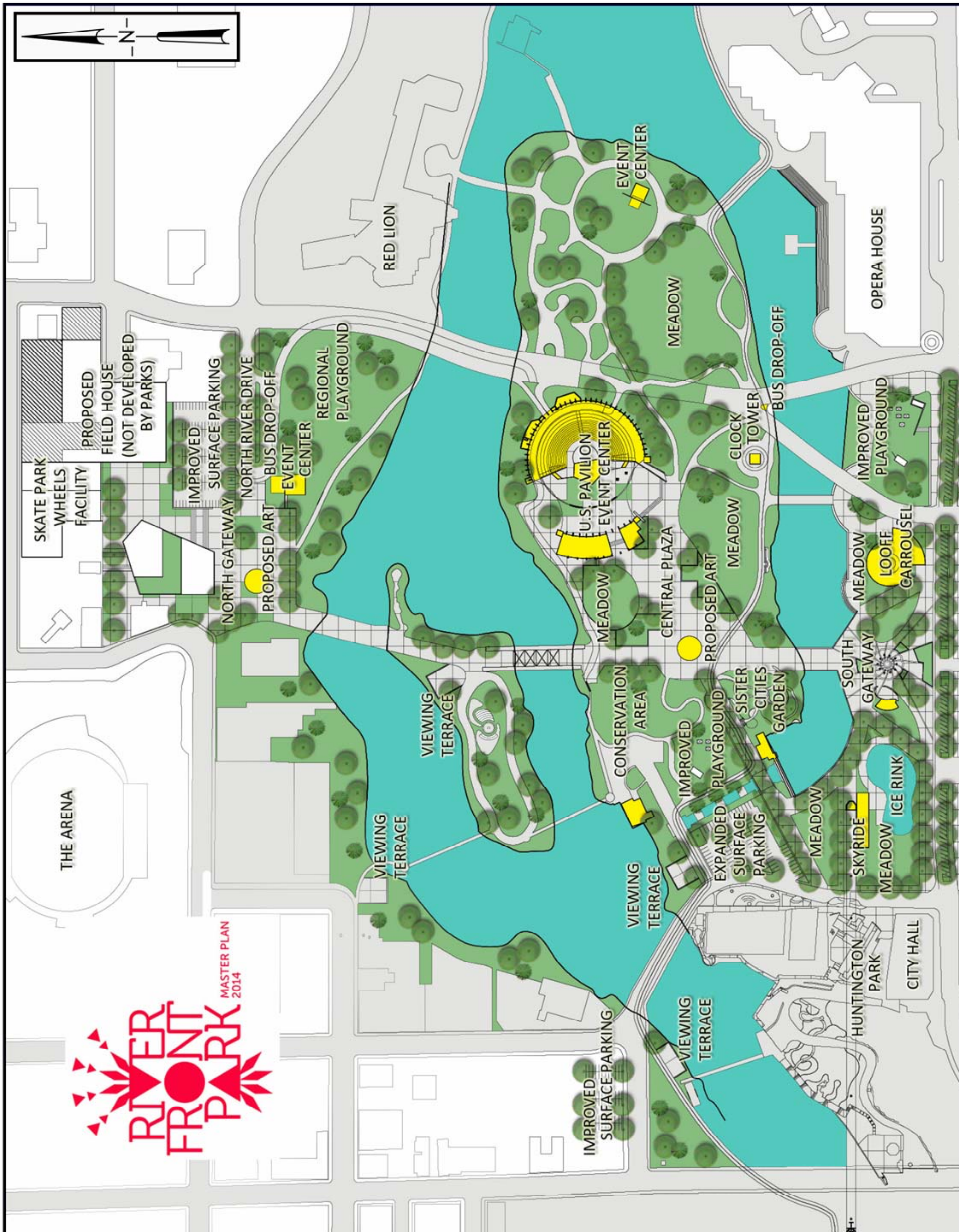
SPOKANE WA

SITE LOCATION

PROJECT NO.
5447.001

FIGURE NUMBER
F1

Plotted by bill white on Jul/18/2015



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	CHK'D. BY: CJR	SPOKANE	WA	
	APPR. BY: CJR	RIVERFRONT PARK MASTER PLAN 2014		FIGURE NUMBER F2
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Table 1. Riverfront Park Attendance Characteristics, Current and Projected Year 2020			
Attendance Characteristic	Existing Attendance (Year 2014)	Projected Attendance (Year 2020)	Percent Change (Yr 2014 to Yr 2020)
Total Event Attendance	218,750	598,550	173.62%
Maximum Attendance Event	55,000 (Bloomsday)	60,000 (Independence Day)	9.09%
85th Percentile Attendance Event	10,800 (5 times per year)	25,000 (8 times per year)	131.48% (Add 3 events per year)
Average Event Attendance	8,750 (6 times per year)	11,300 (up to 18 times per year)	29.14% (Add 12 events per year)
Median Event Attendance	5,000 (13 times per year)	5,000 (31 times per year)	No Change (Add 18 events per year)
Source Data: Derived from Riverfront Park Master Plan 2014			

As shown, there are maximum and 85th percentile conditions with 10,800 or more attendees that currently occur 5 times per year spanning two or three days. The 85th percentile attendance condition will increase to 25,000 persons occurring 8 times by year 2020; also anticipated to span two or three days during respective major events. The current average attendance condition statistically has an attendance of 8,750 persons, as occurring over one to two days 6 times per year. The projected average attendance condition is anticipated to reach 11,300 attendees occurring over one to two days 18 times per year. Both the current and projected median attendance is at 5,000 persons. Currently there are 13 median events per year, projected to increase to 31 events by year 2020. Median events typically occur over a day.

The 85th percentile, average, and median attendances shown are again statistically significant within the context of attendees/persons recorded or projected at major events, and not within the context of the number of events that occur each year. In terms of event frequency, the 85th percentile event is expected to occur only 8 times out of 120 projected major events per year. Thus, this actually represents close to a 95th percentile condition in terms of frequency as 112 events would have attendance less than 25,000 persons. The average event is projected to occur 18 out of the 120 total major events per year. This represents an 85th percentile condition in terms of frequency, as the remaining 102 events per year would have attendance of less than 11,300 persons. Finally, the median would actually be a 75th percentile event as it occurs 31 out of 120 total major event times each year, with 89 of the remaining events having attendance of less than 5,000 persons.

1.2.1 Primary Attendance Scenario

The purpose of a traffic study is to conservatively, but reasonably, address the demands of a development proposal on transportation infrastructure; determining the improvements and strategies needed to safely and effectively promote traffic, pedestrian/bicycle, and transit mobility without providing excessive and underutilized capacity. This typically results in an analysis of the commute peak hour (i.e. the peak hour of the work commute) or the peak generator hour (i.e. hour of highest trip generation for a development) of a typical weekday. The analysis of such conditions promotes capital infrastructure that addresses high/conservative travel demands, but within the context of a typical weekday; precluding the construction of excessive improvements which are costly and require significant right-of-way.

The forecast "average" event conditions provides the balance sought for this transportation analysis, similar to that of the condition analyzed for a typical traffic study. This event would have 11,300 persons occurring up to 18 times per year for Riverfront Park, which is an 85th percentile event on the basis of event days. Thus, this is a statistically relevant approach for addressing traffic conditions as it does not result in excessive and infrequent demand travel demand scenarios.

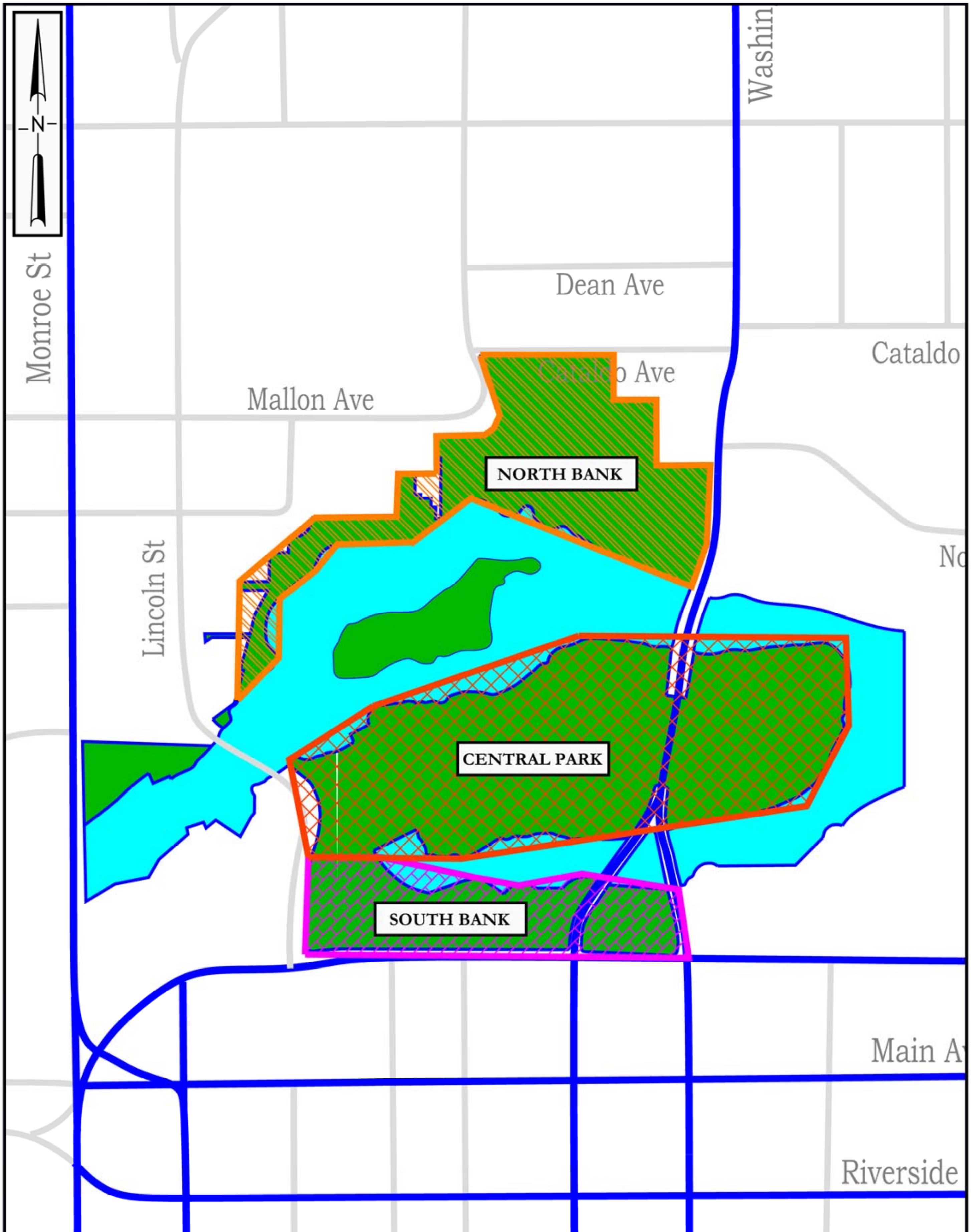
Conversely, the maximum and 85th percentile events are projected to occur 8 times per year only and would result in abnormally high travel demands. The promotion of transportation infrastructure to accommodate attendance scenarios of 25,000 persons (or greater) would result in costly capacity improvements with expansive right-of-way footprints; underutilized for the majority of the year (even spread out over two to four days). Thus, it is reasonable to plan for the more moderated event condition highlighted above for the majority of this study; leaving 85th percentile attendance as a secondary basis for reviewing pedestrian and parking design only.

Average Event/85th Percentile Day Condition. The study was principally developed to address the travel demands of a one-day event scenario of 11,300 attendees for Riverfront Park, reflecting use of both active and passive attraction areas. This could be a substantial one day event were the majority of facilities were used throughout the Park or could represent some combination of events occurring in one day. In terms of frequency, this analysis would be an 85th percentile day analysis that would address at least 102 out of 120 total major events conditions anticipated throughout the year.

1.2.2 Assignment Areas

Transportation characteristics and impacts can vary depending upon the location of an event in Riverfront Park. To address this, traffic generation, pedestrian trips, and parking assignment projections were developed for a combined event condition that reflects activities occurring in three different major areas or zones of the Park during a typical activity day. These separate distribution and assignment zones are distinguished because traffic, transit, and pedestrian/bicycles approach and departure activities are distinct, impacting different transportation facilities, due to the size of the Park.

City Parks Department staff identified three primary zones for the Park including the north bank, central park, and south bank. Essential facilities within the north bank include an event center, picnic/congregation areas, and the regional playground. The central area includes the Pavilion with an amphitheater, an event center, picnic/congregation areas, a large playground, and substantial open space for congregating, temporary pavilions/exhibits, and other activities. The south bank includes the Sky Ride, ice rink, carrousel, a large playground, and gateway water features. Likely attendance was determined for each activity center within the north, central, and south trip zones in coordination with Park Department staff. The results are shown on Table 2, intended as a one day attendance projection using all distribution/assignment zones for the Park in year 2020. These distribution/assignment zones are also illustrated on Figure 3.



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RIVERFRONT PARK TRAFFIC AND DESIGN STUDY

SPOKANE WA

TRIP DISTRIBUTION/ASSIGNMENT ZONES

PROJECT NO. 5447.001

FIGURE NUMBER F3

Plotted by bill white on Jul/18/2015

Table 2. Year 2020 One Day Attendance (Per Trip Distribution/Assignment Zone)	
Zone/Area	Attendance
North Bank	
- Event Center (Large Event)	1,500
- Regional Playground	1,500
- Picnic/Congregation (Two small events)	600
Subtotal North Bank	3,300
Central Park	
- Large Event (Open Areas)	2,000
- Concert Series	3,000
- Playground	500
Subtotal Central Park	5,500
South Bank	
- Carrousel	1,000
- Skate Rink/Sky Ride (seasonally)	800
- Playground & Water Feature	700
Subtotal South Bank	2,500
Total Day Attendance	11,300

As shown, the north bank would have an attendance of 3,300 persons, central park 5,500 persons, and the south bank 2,500 persons during this attendance day; totaling a park-wide attendance of 11,300. Again, this attendance was reflected for both active and passive attraction areas projecting a number of event activities occurring throughout the Park for a typical activity day. However, this could very well be a single day attendance for a large event hosted in which the majority of Park facilities were used; resulting in very similar impacts.

1.3 OVERVIEW

This report is organized into six principal sections. The first, this section, provides an overview of this project and describes the underlying attendance assumptions. Section two provides a summary of existing traffic conditions within the Park vicinity. Sections three through five describe the methodologies, analyses, and conclusions for traffic, pedestrian, and parking analysis. The final section provides a summary of results and conclusions, developed to a level of detail sufficient enough to distribute as a stand-alone document and executive summary of this report.

A summary of sections from this report are as follows:

- Section 1. Introduction
- Section 2. Existing Conditions
- Section 3. Future 2020 Traffic Conditions
- Section 4. Pedestrian & Transit
- Section 5. Parking Conditions & Analysis
- Section 6. Summary and Conclusions

2 EXISTING CONDITIONS

This section describes existing traffic conditions within the project study area. Described are study roadways, current traffic volumes, existing operations and capacity conditions, pedestrian facilities, and transit routes within the study area.

2.1 ROADWAY NETWORK

The scope for the TIA was developed in coordination with City Transportation department staff. Per coordination, the study reviews traffic conditions for Spokane Falls Boulevard, Washington Street, Stevens Street, Post Street/Lincoln Street, Boone Avenue, Mallon Avenue, Cataldo Avenue, and North River Drive, focusing on traffic operations for nine intersections located within a quarter mile of the Park. These roads and intersections provide primary approach and departure routes to/from the Park and experience the highest impact of site generated trips.

All City roadways have a legal and posted speed limit of 30 mph. There is sidewalk aligned along one or both sides of these roadways. Further description of these arterials is as follows:

- **Spokane Falls Boulevard.** This is a one-way *principal arterial* with three westbound travel lanes extending between Division Street and Monroe Street. The road supports between 7,500 and 9,500 average daily traffic (ADT) within the project vicinity.
- **Washington Street.** This is a *principal arterial* within the study area. North of the Stevens Street merge, Washington Street is a two-way arterial with a four lane cross section supporting 18,100 ADT. South of the merge, Washington Street is the three-lane northbound arterial of the Washington/Stevens couplet that supports 12,200 ADT. Adjacent street parking is aligned along both sides of the roadway south of Spokane Falls Boulevard.
- **Stevens Street.** This is the southbound arterial of the Washington/Stevens couplet. Designated as a *principal arterial*, the roadway has a three lane cross section and supports up to 10,300 ADT.
- **North River Drive.** This is a two-lane and two-way roadway between Washington Street and Division Street with no street parking. The roadway supports 10,200 ADT and is classified as a *principal arterial*.
- **Post Street/Lincoln Street.** Post Street is one-way *minor arterial* that supports up to 3,600 ADT north of Spokane Falls Boulevard. The roadway has been modified to support 45 degree, angled parking adjacent to City hall with 90 degree, parallel parking aligned along the opposite curb line. The roadway converts to Lincoln Street north of Bridge Avenue; extending as a north-south four lane roadway with no street parking.
- **Boone Avenue.** This two-way *minor arterial* supports between 8,500 and 9,200 ADT within the project study area. The roadway is either comprised of four travel lanes for eastbound and westbound traffic or five travel lanes (including a center turn lane) west of Washington Street. There is no street parking aligned along the roadway.
- **Mallon Avenue.** This is a three lane *minor arterial* (with a center turn lane). Adjacent street parking is aligned along both sides of the roadway and supports 2,100 ADT.
- **Howard Street.** A *collector arterial*, two-way roadway has a three lane cross section (with a center turn lane). There is no street parking and the road supports 2,600 ADT.

- **Cataldo Avenue.** This is local street without an arterial designation. The two lane, two direction roadway has adjacent street parking. And although there is a reduced arterial designation, the roadway supports high levels of approach and departure traffic before and after events for Riverfront Park and the Spokane Arena.

As indicated, City Transportation staff requested that nine intersections be examined by this study. A summary of existing intersection turn lane locations and traffic control conditions (signal, one-way, two-way, or all way stops) is provided on Table 3. Shown are different traffic movements at intersections and whether a turn lane is provided. Also indicated are traffic control conditions for the intersection. Controls and lanes are denoted with an "X". A "2" indicates where a second shared or designated turn lane is aligned at an intersection.

Table 3. Existing Intersection Geometrics and Traffic Controls

	Traffic Control				Intersection Geometrics							
Intersection	Traffic Signal	One-Way Stop	Two-Way Stop	All-Way Stop	NB Left Turn Lane	NB Right Turn Lane	SB Left Turn Lane	SB Right Turn Lane	WB Left Turn Lane	WB Right Turn Lane	EB Left Turn Lane	EB Right Turn Lane
Washington St/Boone Ave	X	-	-	-	X	-	X	-	X	-	X	-
Washington St/Cataldo Ave	-	-	X[1]	-	-	-	-	-	-	-	-	-
Washington St/North River Rd	X	-	-	-	-	-	X	-	-	X	-	-
Washington St/Spokane Falls Blvd	X	-	-	-	2[2]	-	-	-	-	-	-	-
Stevens St/Spokane Falls Blvd	X	-	-	-	-	-	-	-	X	-	-	-
Post St/Spokane Falls Blvd	X	-	-	-	-	-	-	X	-	-	-	-
Lincoln St/Mallon Ave	X	-	-	-	X	-	-	-	X	-	X	-
Lincoln St/Broadway Ave	X	-	-	-	X	-	-	-	X	-	X	-
Howard Street/Boone Ave	X	-	-	-	X	-	X	-	X	-	X	-

1. Offset intersection counted and analyzed as one intersection by this study to generate conservative analyses.
2. Indicates double left-turn lane. Second lane can either be exclusive or as a shared through/left.

2.2 TRAFFIC COUNTS

Traffic counts were collected specifically for this study on Wednesday May 6, 2015. Per the direction of staff, counts were performed in the morning between 7:15 to 8:45 AM and in the afternoon/evening between 4:15 PM to 5:45 PM in order to identify the AM and PM peak hours of commute traffic activity for each intersection. The resulting AM peak hour was noted to occur with some variance in count timeframes at study intersections. However, the PM peak hour was noted to occur with most frequency between 4:30 and 5:30 PM.

Total entering volumes (TEVs) were compared between the AM and PM peak hours. The comparison confirms that TEV are higher in the PM versus AM peak hour at all study intersections. A summary of AM versus PM peak hour TEV is shown on Figure 4.

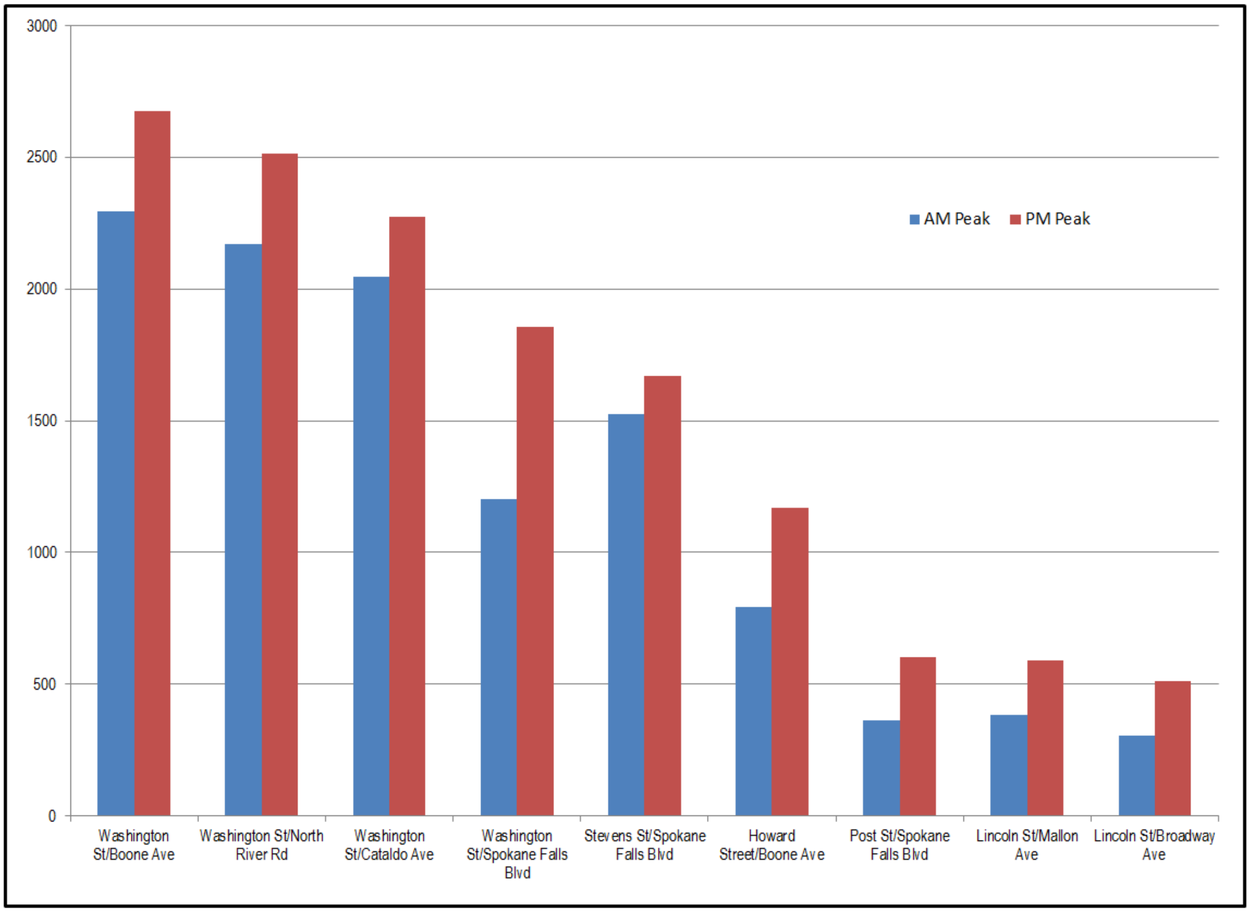


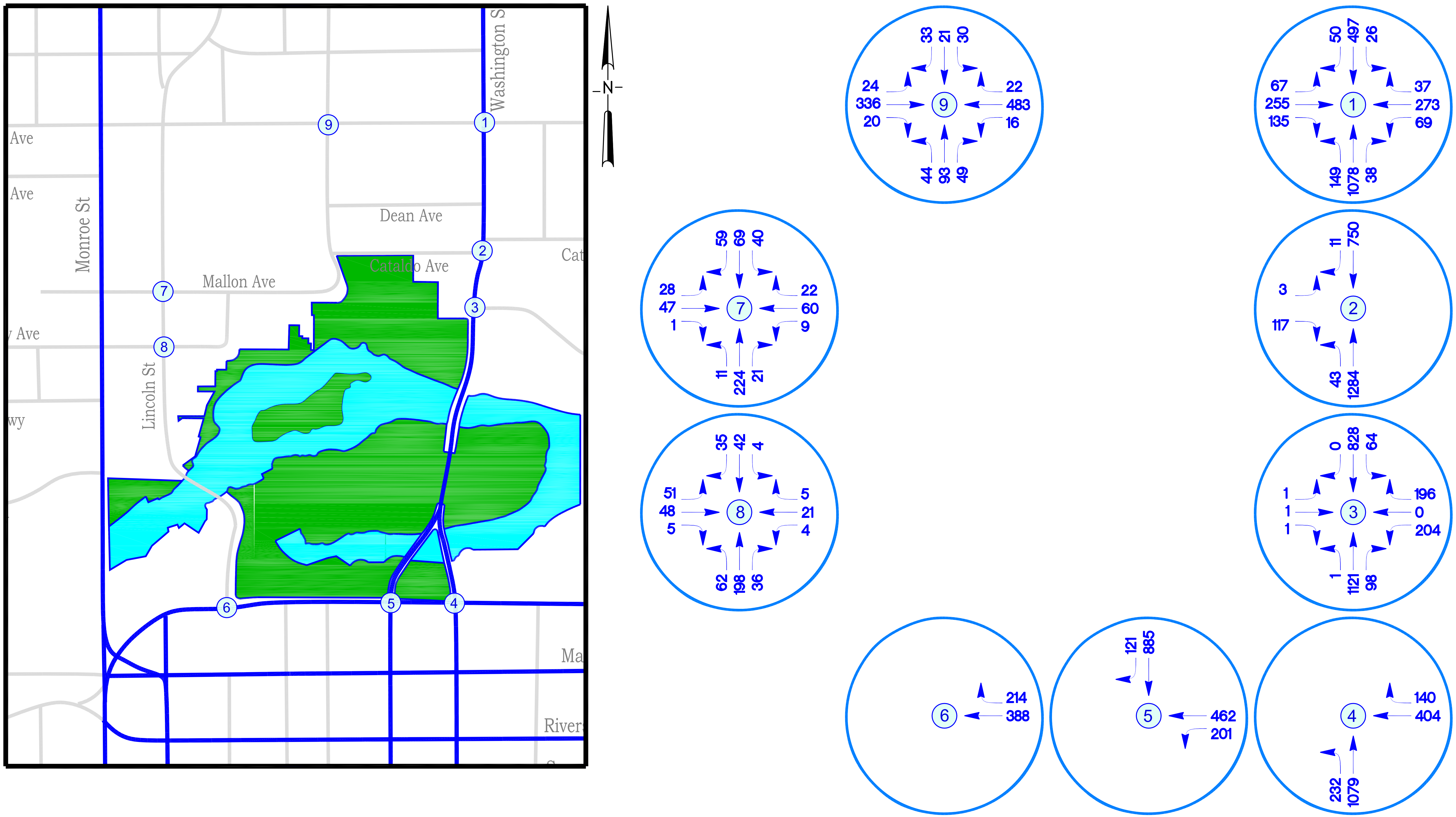
Figure 4. Comparison of TEV for Study Intersections

As discussed in the next section, this study focuses on transportation conditions during a peak generator hour of the Park. From the comparison above, it was determine that a review of the generator hour versus PM peak hour traffic volumes would assure a conservative analysis of operations and capacity conditions. Figure 5 provides a summary of PM peak hour turn movement counts for study intersections. Original count worksheets are provided in Technical Appendix B.

Also, it should be noted that weekday volumes typically exceed traffic volumes on Saturdays and Sundays within the Spokane Central Business District (CBD). As such, an evaluation of the Park peak generator hour versus PM peak hour counts should be sufficient to address peak operations/capacity demands versus any other hour of a typical week.

2.3 TRAFFIC OPERATIONS

A TIA evaluates roadway capacity primarily through an examination of intersection operations. Congestion and increased vehicle delays are experienced more rapidly at intersections versus road segments (between intersections) due to the number and frequency of conflicts (i.e. turning vehicles and stopping or slowing movements). As indicated, per direction of City staff, this study quantifies traffic operations and capacity based on a review of level of-service (LOS) performed for the following intersections:



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DATE: XX/XXXX

RIVERFRONT PARK TRAFFIC AND DESIGN STUDY

SPOKANE WA

EXISTING TRAFFIC VOLUMES
DESIGN PM PEAK HOUR

PROJECT NO.
5447.001

FIGURE NUMBER
FIG. 10

C:\Users\bwhite\Documents\MMI Projects\5447001 - RiverFrontPark\CAD\RiverfrontPark_June2015.dwg Plotted by bill white on Jul/18/2015

- Washington Street/Boone Avenue
- Washington Street/Cataldo Avenue
- Washington Street/North River Road
- Washington Street/Spokane Falls Blvd
- Stevens Street/Spokane Falls Boulevard
- Post Street/Spokane Falls Boulevard
- Lincoln Street/Mallon Avenue
- Lincoln Street/Broadway Avenue
- Howard Street/Boone Avenue

Again, the analysis was performed for the PM peak/commute hours of the typical weekday, which is the highest hour of capacity demand on the local roadway network anticipated throughout a typical week.

2.3.1 Methodology - Intersection Operations

Intersection capacity was evaluated using the level-of-service (LOS) methodologies of the *Highway Capacity Manual* (Transportation Research Board, 2010). The *Highway Capacity Manual* (HCM) is a nationally recognized and locally accepted method of measuring traffic flow and congestion for intersections. Criteria range from LOS A, indicating free-flow conditions with minimal vehicle delays, to LOS F, indicating congestion with significant vehicle delays (and operational failures).

LOS for a signalized intersection is defined in terms of the average control delay experienced by all vehicles at the intersection, as measured over a specific time period such as a peak hour. LOS for a one or two-way stop controlled intersection or driveway is the function of average control delays experienced by vehicles in a particular approach or approach movement over a timeframe such as a peak hour. Typically, the stopped approach or movement experiencing the worst LOS is reported. Finally, LOS at an all-way stop-controlled intersection is defined by the average control delays experienced by all vehicles at the intersection, as with signals, but the LOS thresholds are associated with delays for unsignalized intersections.

Table 4 outlines the LOS criteria for signalized and unsignalized intersections from the *Highway Capacity Manual*. As shown, LOS thresholds, as a function of delay, vary between signalized and unsignalized intersections. This is because driver tolerances for delay have been documented to be much higher at signalized versus unsignalized intersections.

Table 4. Intersection Level of Service Criteria

Level of Service	Signalized: Control Delay (sec/veh)	Unsignalized: Control Delay (sec/veh)
A	≤10	≤10
B	>10 – 20	>10 - 15
C	>20 – 35	>15 - 25
D	>35 – 55	>25 - 35
E	>55 – 80	>35 - 50
F	> 80	>50

Source: *Highway Capacity Manual* (TRB, 2010)

LOS was determined for this study using Synchro Version 9.0, (Trafficware, 2015). This software tool can apply the analysis methodologies of HCM 2010 and is a standard industry software application that is accepted by the City for use. LOS D is the typical threshold for signalized intersections within the City. LOS E is allowed at unsignalized driveways and intersections. Signalized intersections exceeding LOS D and unsignalized intersections exceeding LOS E may require mitigation to maintain or improve intersection operation.

2.3.2 Intersection Operations – Levels of Service

The LOS and capacity analyses were performed based on a review of the traffic volumes summarized in Section 2.2 and the geometric conditions described in Section 2.1. Table 5 provides a summary of LOS for the PM peak hour. Also shown are average control vehicle delays for each intersection. Note again, LOS and control delays for stop controlled intersections are the function of the worse approach or movement. Traffic signal settings for study intersections were provided in Synchro files by City officials. These files include phase splits, all-red and yellow times, pedestrian timing data, additional vehicle passage and gaps, etc.

Table 5. Existing LOS and Delay - PM Peak Hour

Intersection	LOS[1]	Delay
Washington St/Boone Ave	B	12.8
Washington St/Cataldo Ave	B	14.2
Washington St/North River Rd	B	10.3
Washington St/Spokane Falls Blvd	C	21.3
Stevens St/Spokane Falls Blvd	B	14.6
Post St/Spokane Falls Blvd	A	9.9
Lincoln St/Mallon Ave	A	9.5
Lincoln St/Broadway Ave	B	11.4
Howard Street/Boone Ave	A	9.5

[1] LOS = Levels-of-Service

As shown, all study intersections currently function within acceptable LOS ranges. This indicates that no capacity improvements would be warranted on the basis of existing traffic operations, as there is sufficient roadway capacity. LOS summary worksheets are provided in Section C of the Technical Appendix.

2.4 Pedestrians

There are a number of pedestrian access points to/from the Park, as aligned across adjacent roadways. Figure 6 shows the crossings highlighted above in relation to the Park. A summary of marked crosswalks and pedestrian crossings are located at the following locations:

- Mallon Avenue Crossing at Post Street (marked crossing, no controls),
- Mallon Avenue midblock Crossing (marked crossing, no controls),
- Mallon Avenue Crossing at Howard Street (marked crossing, no controls),
- Washington Street/North River Road intersection (marked and signalized crossing),
- Washington Street/Spokane Falls Blvd intersection (marked and signalized crossing),
- Stevens Street/Spokane Falls Blvd intersection (marked and signalized crossing),

- Howard Street/Spokane Falls Boulevard intersection (marked and signalized crossing),
- Wall Street/Spokane Falls Boulevard intersection (marked and signalized crossing),
- Post Street/Spokane Falls Boulevard intersection (marked and signalized crossing),
- Post Street midblock 250 north of Spokane Falls (marked crossing, no controls),
- Lincoln Street/Bridge Avenue intersection (marked crossing, no controls), and
- Lincoln Street/Broadway Avenue (marked and signalized crossing).

Pedestrian counts were performed for the nine study intersections identified above. These counts were performed to gain a sense of pedestrian and bicycle activity surrounding Riverfront Park. A summary of total crossing counts for study intersections is provided in Table 6 for the AM and PM peak hours.

Table 6. Summary Pedestrian Intersection Counts

Intersection	AM Peak Hour	PM Peak Hour
Washington St/Boone Ave	23	48
Washington St/Cataldo Ave	12	26
Washington St/North River Rd	30	44
Washington St/Spokane Falls Blvd	39	117
Stevens St/Spokane Falls Blvd	72	228
Post St/Spokane Falls Blvd	76	289
Lincoln St/Mallon Ave	40	53
Lincoln St/Broadway Ave	9	41
Howard Street/Boone Ave	56	66
Total Pedestrians Counted	357	912

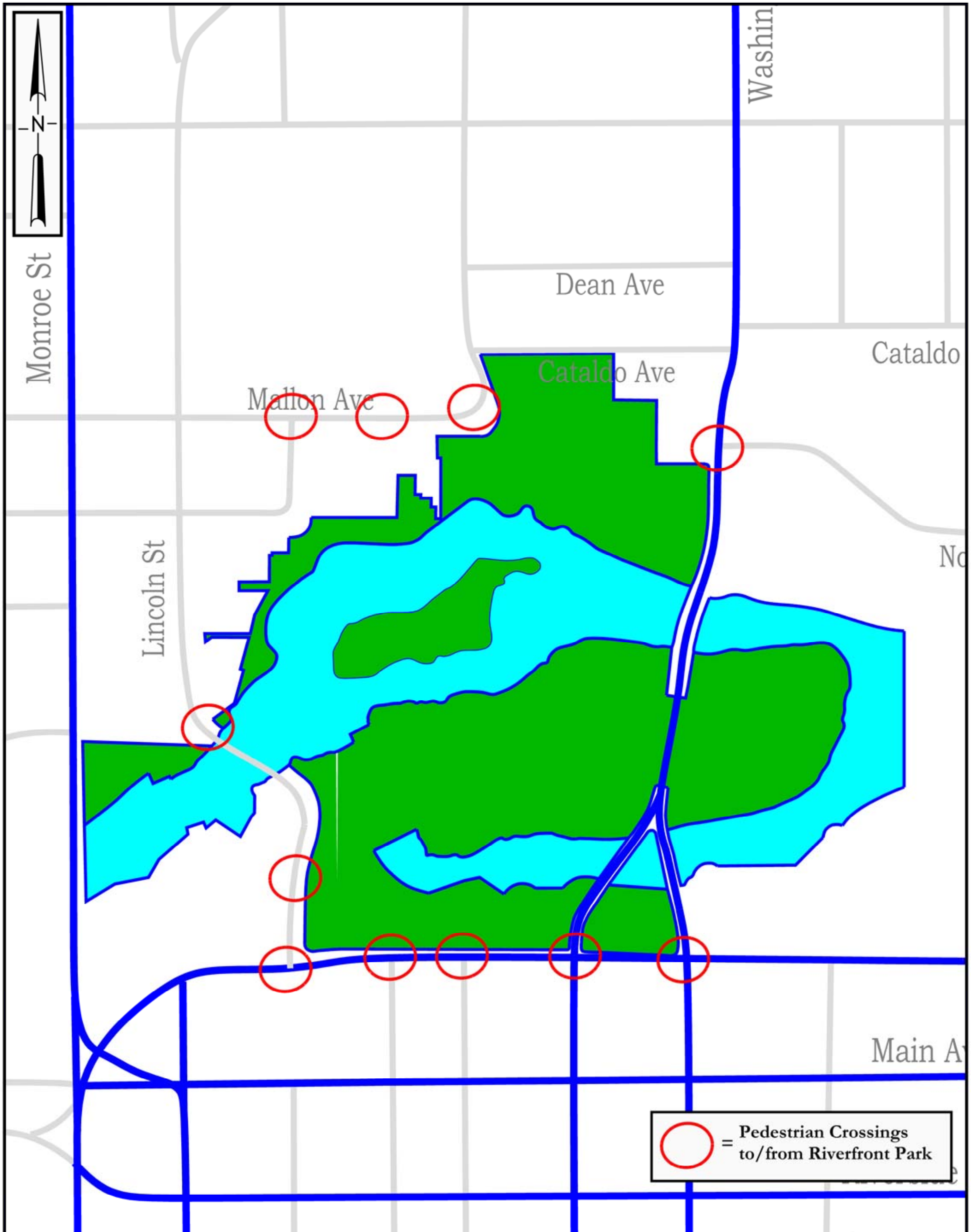
[1] LOS = Levels-of-Service

As shown, a total of 357 pedestrians were counted at study intersections during the AM peak hour with 912 during the PM peak hour. Pedestrian activity in the PM peak hour is therefore approximately 2.5 times that of activities noted during the AM peak hour. This confirms the priority of reviewing PM over Am peak hour conditions on the basis of pedestrian counts as well.

2.5 TRANSIT

Spokane Transit Authority (STA) operates public transit within Spokane. There are a number of transit stops located within direct vicinity of Riverfront Park (within an approximate 1/8 mile walking distance). Figure 7 highlights these 23 stop locations (neglecting the plaza), and also the bus route and direction of bus travel. Based upon information provided by STA staff, there are 1,480 persons that board and depart buses at these stops on a typical day.

The routes noted from Figure 7 provide expansive access throughout the City of Spokane. All routes access the Spokane STA Bus Plaza. Thus, access to the remaining areas of Spokane and the region can be achieved through the Bus Plaza. A summary of information for bus routes operating and accessing 1/8 mile bus stops, including primary stops, routes of operation, times of operation, and headway (rotation/cycle) information is summarized as follows:



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APPR. BY:	CJR
DATE:	3/13/15

RIVERFRONT PARK TRAFFIC AND DESIGN STUDY

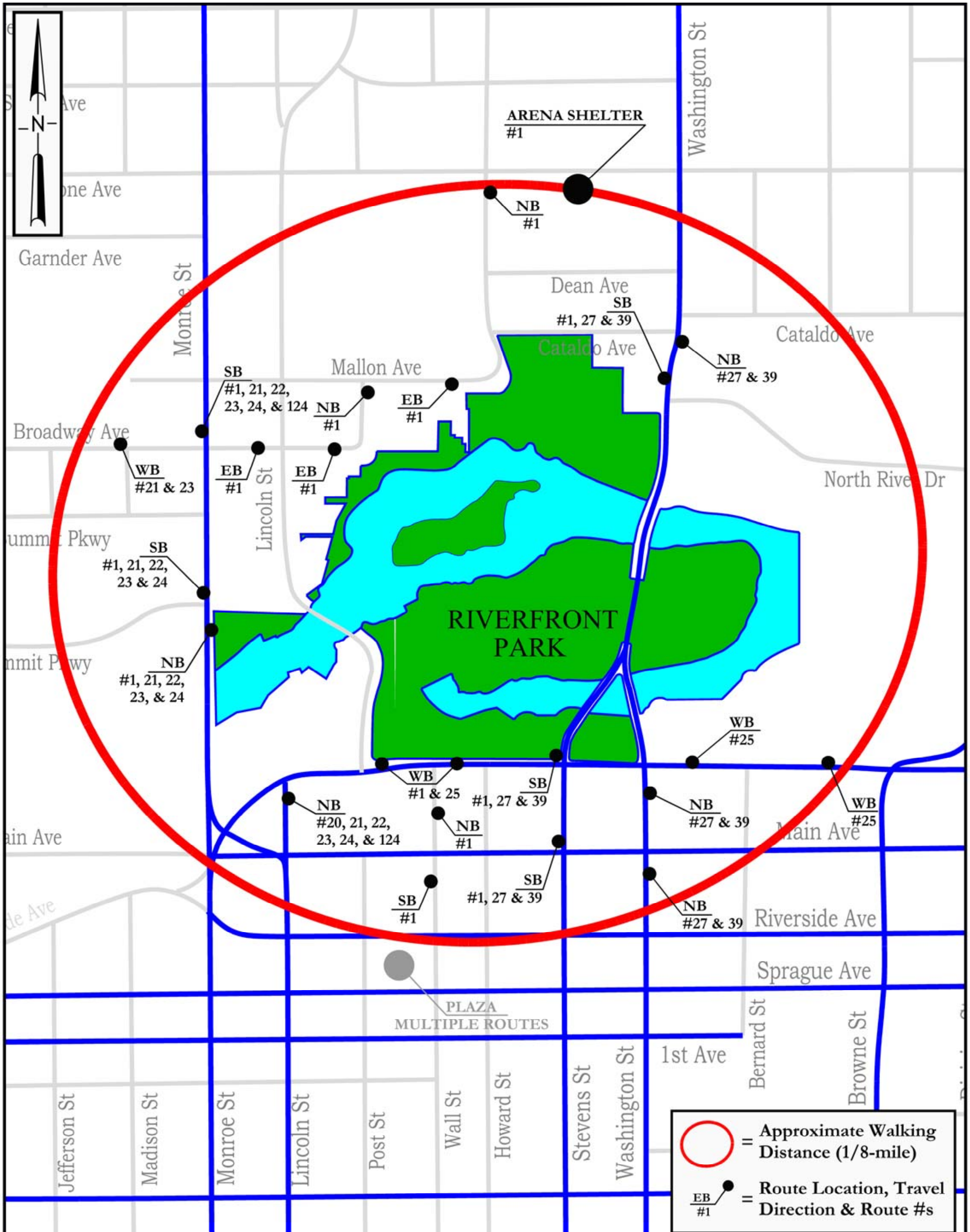
SPOKANE WA

TRIP DISTRIBUTION/ASSIGNMENT ZONES

PROJECT NO. 5447.001

FIGURE NUMBER F6

Plotted by bill white on Jul/18/2015



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APPR. BY: CJR
DATE: 3/13/15

RIVERFRONT PARK TRAFFIC AND DESIGN STUDY
SPOKANE WA

TRANSIT STOPS & ROUTES
WITHIN WAKING DISTANCE (APPROX. 1/8 MILE)

PROJECT NO.
5447.001

FIGURE NUMBER
F7

Plotted by bill white on Jul/18/2015

- **Route 01 - Plaza/Shuttle.** This route circulates between the downtown STA Plaza, the Spokane Public Library, Spokane County Courthouse, the Spokane Arena, the Flour Mill, and Civic Theater via Wall Street, Spokane Falls Boulevard, Monroe Street, Mallon Avenue, and Boon Avenue. The route operates between approximately 5:30 AM and 7:30 PM on a 15 to 20 minute rotation/cycle.
- **Route 21 - West Broadway.** This route circulates between the STA Plaza, the Public Health building, the Spokane County Courthouse (area), Ogden Hall, and West Central Community Center principally via Monroe Street, Broadway Avenue, A Street, and Mission Avenue. The route operates between approximately 6:00 AM and 7:30 PM on an hour rotation/cycle.
- **Route 22 - NW Blvd.** This route circulates between the STA Plaza, the Public Health Building, Spokane County Courthouse (area), the VA Medical Center, Dwight Merkel Sports, Salk Middle School, and the 5-Mile Park and Ride principally via Monroe Street, the Maple/Ash Couplet, Northwest Boulevard G Street, Wellesley Avenue, Rowand Avenue, and Francis Avenue. The route operates between approximately 6:00 AM and 7:30 PM on a 30 minute rotation/cycle.
- **Route 23 - Maple/Ash.** This route circulates between STA Plaza, the Public Health building, Spokane County Courthouse (Area), Shadle High School Salk Middle School, the 5-Mile Park and Ride, and the Indian Trail “end of line” principally via the Maple/Ash Couplet and Indian Trail Road. The route operates between approximately 6:00 AM and 8:00 PM on a 30 to 60 minute rotation/cycle.
- **Route 24 - Monroe.** This route circulates between STA Plaza, the Public Health building, Havermale School, and the 5-Mile Park and Ride principally via Monroe Street and Francis Avenue. The route operates between approximately 6:00 AM and 10:00 PM on a 30 to 60 minute rotation/cycle.
- **Route 25 - Division.** This route circulates between STA Plaza, Clark Park, Franklin Mark Mall, Northtown Mall, Holy Family hospital (area), Northpointe Shopping Center, Whitworth University, and the Hastings Park & Ride via Spokane Falls Boulevard, Riverside Avenue, Division Street, and SR 395. The route operates between approximately 6:00 AM and 10:30 PM on a 15 to 30 minute rotation/cycle.
- **Route 27 - Hillyard.** This route circulates between STA Plaza, Spokane Arena, North Central High School Northeast Community Center, Shaw Middle School and the 5-Mile Park & Ride principally via Washington Street, Indiana Avenue, Perry Street, Crestline Street, Market Street, Rowand Avenue, and Francis Avenue. The route operates between approximately 6:30 AM and 10:30 PM on a 30 to 60 minute rotation/cycle.
- **Route 39 - Mission.** This route circulates between STA Plaza, the Spokane Arena, North Central High School, Gonzaga University, Mission Park, Chief Garry Park, Spokane Falls Community College, and Minnehaha Park via Washington Street, Mission Avenue, and Green Street. The route operates between approximately 6:00 AM and 9:30 PM on a 30 to 60 minute rotation/cycle.
- **Route 124 - North Express.** This route circulates between the STA Plaza, the Public Health building, Spokane County Courthouse, the Country Homes Park & Ride, Whitworth University, Fairwood Shopping Center & Park & Ride, Mead High School, and the Hastings Park and Ride principally via Monroe Street, Wall Street, and Waikikie Road. The route operates between approximately 5:30 AM and 9:00 AM, and between 4:00 PM and 6:30 PM on a 30 minute rotation/cycle.

3 FUTURE 2020 TRAFFIC CONDITIONS

This section summarizes year 2020 future traffic conditions anticipated following the completion of Riverfront Park improvements. Described are future traffic volumes, forecast traffic operations and capacity, and reviews two improvement options/alternatives being considered with the Park. Forecast pedestrian, transit, and parking conditions are summarized in Section 4 and 5.

3.1 TRAFFIC FORECASTS

Year 2020 traffic forecasts were comprised of a baseline growth rate and the trips generated by the proposed development. Baseline traffic growth was determined through a comparison of average daily traffic (ADT) for count locations located along Washington Street, Stevens Street, Spokane Falls Boulevard, Monroe Street, Lincoln/Post Street, Howard Street, Mallon Avenue, and Boone Avenue. This data was available from historical count maps provided from the City of Spokane Street department. Historical counts are available on a bi-annual basis between 1998 and year 2012. A summary of this comparison is provided on Figure 8.

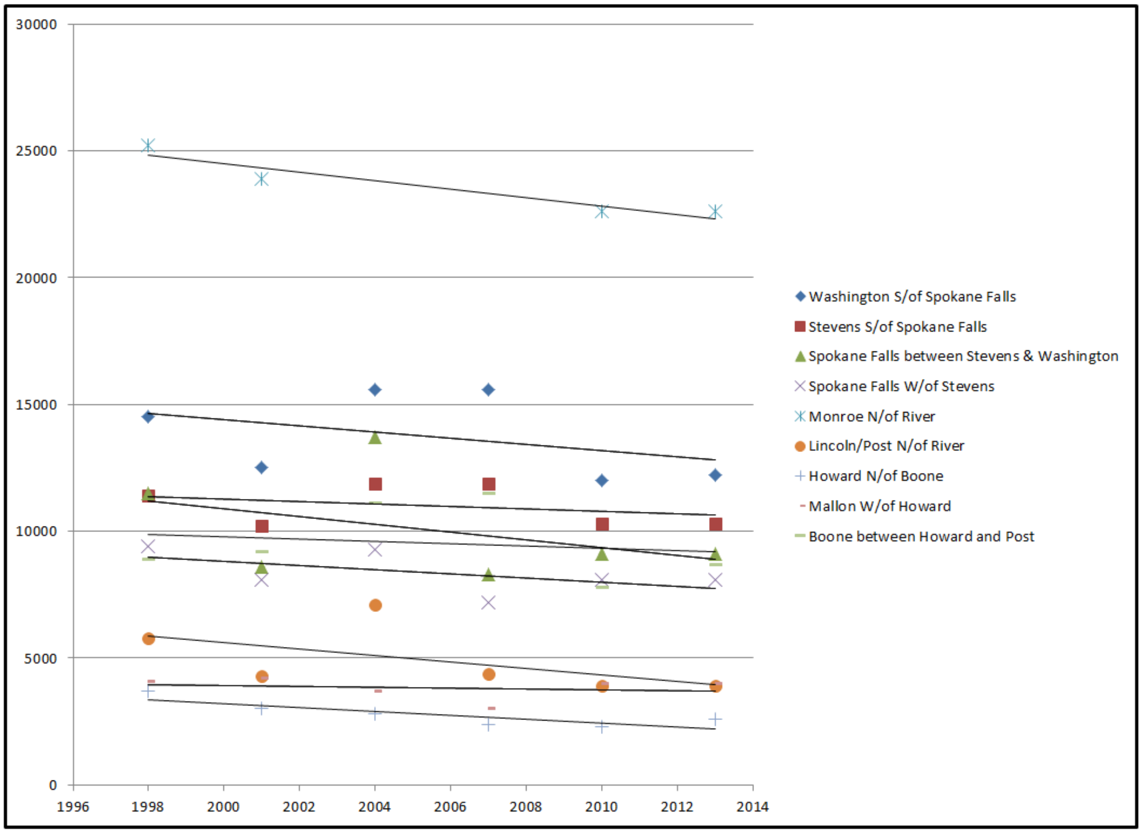


Figure 8. Comparison of Average Daily Traffic (ADT) Counts for City Roadways

A trend-line analysis was provided for all of the locations identified above. As shown above, the trend-lines indicate a negative growth trend over the 12 year analysis/review timeframe. This suggests traffic growth should be minimal over the next five years. Despite this, a 10 percent growth rate was used to forecast baseline year 2020 traffic volumes for the PM peak hour of the typical weekday. The growth was assumed given the redevelopment and revitalization that has occurred within the CBD over the last few years, suggesting growth is likely to occur, and also to assure a conservative analysis of forecast traffic volumes.

3.1.1 Trip Generation

National resources such as the Institute of Transportation Engineers (ITE) *Trip Generation Manual* (9th Edition, 2012) does not contain a land use that addresses the travel traits of an activity center such as Riverfront Park. Land Use 417 does describe the travel characteristics of a “Regional Park” and, as described later, this will be used as a trip “overlay” to address passive activities of the Park. However, this does not address the varying trip generation activities of the attendees described in Table 2.

As such, trip generation was derived based on the attendance projections and travel information gathered from the SRTC, STA, and concept reports available from Parks Department staff. Specifically, the following resources were used in the development of park trip estimates:

1. Spokane and Kootenai County Regional Travel Survey (STRC/KMPO, 2005)
2. Performance Report - Passenger Facilities (STA, 2014)
3. Visit Spokane 2012 Tourism Research Study (RTM, 2012)

Using these reports (referenced throughout), the process used in estimating trip generation is described in the following sections for the statistical average attendance day.

Travel Mode Split

Attendees are anticipated to access the park by transit, walking and biking, shuttles or taxi, and by personal autos. Described here are mode split assumptions for the park study activity day.

Transit Trips. As indicated earlier, the STA Performance Report (Ref. 2) indicates there are 1,480 persons that board and depart buses at 23 bus stops surrounding Riverfront Park each typical day. The destinations and origins of persons at these stops can vary, but for the purpose of this study it was assumed that 50 percent of travelers would access Riverfront Park for a total of 740 entering and exiting riders. These could represent different persons, but it is more likely that the same people will depart and get back on buses in one round trip. Thus, it is expected this really calculates to approximately 370 attendees of Riverfront Park.

As indicated in Section 1.2, there are 2.2 million people that visit the Park each year, which is an average of about 6,025 people each day. The number of transit stop riders was compared with this average to estimate a 6.1 percent ridership of attendees on an average attendance day. However, as this study proposes to review a more robust day in terms of attendance, this was rounded up to assume a 10 percent ridership projection.

Note this is high compared with the Regional Travel Survey (Ref. 1) and Research Study (Ref. 3), which both indicate transit comprises 2 percent of Spokane County person trips. However, given this is a special designation center with event potential in downtown Spokane, the use of a 10 percent ridership is expected to be reasonable; especially in context to the goals of Spokane Parks Department staff to increase dependency on STA for Riverfront Park travel in the future. This assumption was corroborated with staff from STA, who indicate this could approach even 15 percent for certain event activities. Thus, a 10 percent assumption provides balance between “typical” and peak potentials during the projected attendance day.

Walking/Bicycle Trips. The Regional Travel Survey (Ref. 1) indicates that walking and bicycle activities accounts for 10 percent of typical commute travel and 25 percent of “recreational” travel within Spokane County. Residential densities within downtown are reduced, thus minimizing the application of the recreational rates. However, there are a number of businesses and hotels nearby with employees and patrons who enjoy recreational activities and attend events at the park. As such, the application of the commute rate does not seem appropriate either. Therefore, a 20 percent bike/walk rate was assumed as the balance point between the guidance provided within the Regional Travel Survey (Ref. 1).

Shuttle/Taxi. Guidance on these travel modes is limited within the references described. However, there is a high potential for shuttle and taxi activities as attendees will stay in hotels and/or choose this mode versus personal automobile to visit the Park. As such, a 5 percent Shuttle/Taxi rate was assumed for this study.

Personal Automobiles. Transit, walk/bike, and Shuttle/Taxi are projected to account for 35 percent of person trips for a study activity day. This leaves 65 percent of person trips as those performed using personal autos. The Research Study (Ref. 3) concludes there is a 63 percent "automobile only" travel rate for tourism in Spokane. While there is some ambiguity regarding a correlating "combination fly/drive" category in the report (travelers fly to Spokane and then drive, shuttle, taxi, or transit to hotels or to events), the fact this number correlates well with the 65 percent assumption highlighted above does provide some support and justification for its use.

Person Trips

Person trip totals reflect the number of times an attendee is expected to access Riverfront Park during a typical event day. Person trips were determined by applying a factor of 2.5 to attendance numbers for the travel modes identified above. This includes one inbound and one outbound trip per attendee, with a 25 percent margin to account for inbound/outbound trips associated with employees, deliveries, lunch-runs, etc.

Vehicle Occupancy

Vehicle trips were projected next for shuttle/taxi service and for personal automobiles, as determined following the determination of vehicle occupancy rates. Transit operates on fixed routes currently reflected in traffic counts. Thus, the person trips associated with this travel is simply absorbed into the system with no gain in traffic anticipated. Note it is possible that future operations at Riverfront Park may alter or even increase transit service to the area, but this is something that will be vetted through the traffic/design study in coordination with STA staff. Regardless, any such changes would be the diversion or gain of a few trips per hour and would not really impact the trip generation conclusions of this memorandum.

Similar to transit, pedestrian trips would not result in a gain in traffic as these would include walkers and bikers traveling between the park and downtown residences, businesses, hotels, or nearby shopping centers (such as Riverpark Square). While ultimately some vehicle trips may be associated with these pedestrian person trips, such as vehicle trips to/from the land use describe above, access to the park is not the primary purpose and therefore is not counted as positive trip generation. Rather, they are vehicle trips generated by the downtown residences, businesses, hotels, or shopping center described above.

Shuttle/Taxi. Again, guidance regarding vehicle occupancy rates for shuttles and taxis is limited within the references described. A taxi may have typical vehicle occupancy rates of two or three persons for events, whereas a shuttle may have occupancy rates of up to six persons for the same event. As such, a 4 person vehicle occupancy average was assumed for Shuttle/Taxi services for this study (besides the driver).

Personal Automobiles. The Research Study (Ref. 3) indicates the following information:

- 78.80 percent of visitors have an average party size of 2.17 adults without children.
- There is an average of 2.21 children traveling with 21.20 percent of visitors to Spokane.

The statistical average of this results in an average party size of 2.64 persons (calculation: 0.788 * 2.17 + 0.212 * [2.17+2.21]). This party size was used as the vehicle occupancy rate for personal automobiles of Riverfront Park. Granted, this is a rate for "tourism" activities, but it equates very identically to activities associated with the park. Be it a visitor from out of town or a local, the pattern of visitation for the park is that typically of adult parties and/or families looking to frequent venues, events, and activities. Thus, this was determined to be a reasonable automobile occupancy rate for this study.

Passive Trip Totals

The procedure described so far has been focused on the activity centers highlighted throughout the park on a typical event day (i.e. event centers, playground, concerts, Sky Ride, carrousel, etc.). These have been labeled "active" event activities previously in this study for the Park. However, there are also a number of passive activities expected during a typical event day. These would include people attracted to the park for walks, picnic activities, feeding ducks, etc. outside of the event center. This has been labeled previously as "passive" activities.

The day trip total for passive activities was developed based on rates provided within the ITE *Trip Generation Manual*. Land Use 417 describes the travel characteristics of a "Regional Park" and the trips identified for a 100 acre Park for the top generation day, which was a Sunday based on rates from the Manual, was "overlaid" onto attendance trips to round out total trip generation. The rate specified was 6.44 vehicle trips per acre, which equals about 650 daily trips. About 15 percent of these trips were assigned to the north bank, 60 percent central park, and 25 percent south bank based on a rough comparison of acreage for these areas.

Daily Trip Generation

The steps for developing daily trip totals for this project, from the information provided previously, is summarized as follows:

- A mode split of 10 percent transit, 20 percent pedestrian and bicycle, 5 percent shuttle and taxi, and then 65 percent personal automobile was determined for the 11,300 event attendees projected for the average event day in year 2020.
- A 2.5 factor was applied to mode-separated attendees to determine person trip totals for transit, pedestrian/bicycle, shuttle/taxi, and personal automobile trip types.
- Vehicle occupancy rates were then used to estimate trip totals for the average event day, assuming 4 persons per shuttle/taxi and 2.6 persons from person trip totals.
- The trips estimated from the ITE were included to reflect passive trip totals for the different distribution/assignment zones of the park.
- Finally, as it is "best practice" to moderately overestimate trips (versus under), as to assure traffic issues are appropriately vetted, a 10 percent safety factor was applied to develop the final recommended trip totals for the traffic/design study.

Trip generation was projected for the event day based on the process described. A summary of process calculations and the resulting trip totals proposed with the traffic/design study for each zone/area of Riverfront Park is summarized on <u>Table 7</u>.

Table 7. Year 2020 Trip Generation for Riverfront Park - Statistical Average Attendance Day	North Bank	Central Park	South Bank	Totals
1. Travel Mode Split				
- 10 Percent Transit	330	550	250	1,130
- 20 Percent Walk/Bike	660	1,100	500	2,260
- 5 Percent Shuttle/Taxi	165	275	125	565
- 65 Percent Automobile	2,145	3,575	1,625	7,345
Attendance Totals	3,300	5,500	2,500	11,300
2. Person Trips (Multiply by 2.5)				
- Transit	825	1,375	625	2,825
- Walk/Bike	1,650	2,750	1,250	5,650
- Shuttle/Taxi	415	690	315	1,420
- Automobile	5,365	8,940	4,065	18,370
Person Trip Totals	8,255	13,755	6,255	28,265
3. Vehicle Occupancy[1]				
- Transit, NA Addressed in Routes	NA	NA	NA	NA
- Walk/Bike, NA No Gas Vehicles	NA	NA	NA	NA
- Shuttle/Taxi (Assume 4 per vehicle)	105	175	80	360
- Automobile (Assume 2.6 per vehicle)	2,065	3,440	1,565	7,070
Raw Vehicle Trip Totals	2,170	3,615	1,645	7,430
4. Passive Trip Totals (ITE 100 Acre Park)	100	390	160	650
5. Safety Factor (10 percent increase)	230	400	180	810
Total Weekday Trip Generation	2,500	4,405	1,985	8,890

As shown, a total of nearly 8,890 trips would be generated by Riverfront Park on the statistical, average attendance day. This would represent 85th percentile trip generation on the basis of frequency.

Peak Generator Hour Trip Generation

A peak generator hour is the timeframe of highest trip generation for a land use. The Regional Travel Survey (Ref. 1) indicates peak generation for outdoor activities is typically 14 percent during a typical weekday. A review of ITE information for Land Use 417 indicates this can be as high as 16 percent. Thus, to generate a conservative analysis of forecast traffic, the peak generator hour was anticipated to experience 16 percent of activity day trips.

A review of inbound and outbound distribution data for ITE Land Use 417 indicates a moderate emphasis on outbound versus inbound trips during the peak generator hour. Thus, a 45 percent inbound and 55 percent outbound distribution was assumed for the peak generator hour. A summary of peak generator hour trips is provided on Table 8 for the three park analysis zones.

Table 8. Year 2020 Trip Generation for River Front Park - Statistical Average Peak Generator Hour	North Bank	Central Park	South Bank	Totals
Proposed Daily Trip Generation	2,500	4,405	1,985	8,890
Peak Generator Hour (16% of day) (45% inbound versus 55% outbound)	400 (180 in/220 out)	705 (317 in/388 out)	318 (143 in/175 out)	1,423 (640 in/783 out)

As shown, the park is projected to generate a total of 1,423 peak generator hour trips during the statistical average attendance and 85th percentile frequency activity day.

3.1.2 Trip Distribution & Assignment

As indicated, a total of 8,890 daily trips and 1,423 peak generator trips would be generated during the statistical average attendance and 85th percentile frequency activity day of the Riverfront Park. The distribution and assignment of trips was estimated as an initial impact assessment to help identify where volume changes may occur on arterial and highway approach routes to/from Riverfront Park.

To predict trip distributions, an imaginary cordon or screen line was assumed around the area approximately one mile from the site intersecting the arterials of:

To/From North

- Maple Street/Walnut Street couplet,
- Lincoln Street/Monroe Street couplet,
- Stevens Street/Washington Street couplet,
- Division Street/Browne Street couplet,

To/From East

- Mission Avenue,
- Sharp Avenue,
- Spokane Falls Boulevard,
- Martin Luther King Way,
- Sprague Avenue,
- 2nd Avenue/3rd Avenue.

To/From North

- Maple Street/Ash Street couplet,
- Monroe Street,
- Lincoln Street & Post Street,
- Howard Street,
- Washington Street,

To/From West

- Division Street/Ruby Street couplet,
- Maxwell Avenue
- Riverside Avenue,
- 2nd Avenue/3rd Avenue,
- Interstate 90.

Individual average daily traffic (ADT) counts, as obtained from City of Spokane 2012-2013 traffic flow map, were compared along this cordon line to gain a sense of how commuters are approaching, departing, and traveling through the study area (as defined via volume densities).

Trip distributions were initially proportioned to primary approach routes based on the comparison of ADT volumes. Some adjustments (rounding) were performed and the trip projections were compared with distributions to forecast trip assignments throughout the Spokane CBD. The resulting distributions and trip assignments are shown on Table 9 for the activity day and peak generator hour.

As discussed earlier, Riverfront Park is large enough to have three principal origin and attraction zones, defined early as the north bank, central park, and south bank. Thus, the overall distributions identified by Table 9 will be routes such that 28 percent of project trips will approach and depart the north bank, 50 percent central park, and 22 percent the south bank.

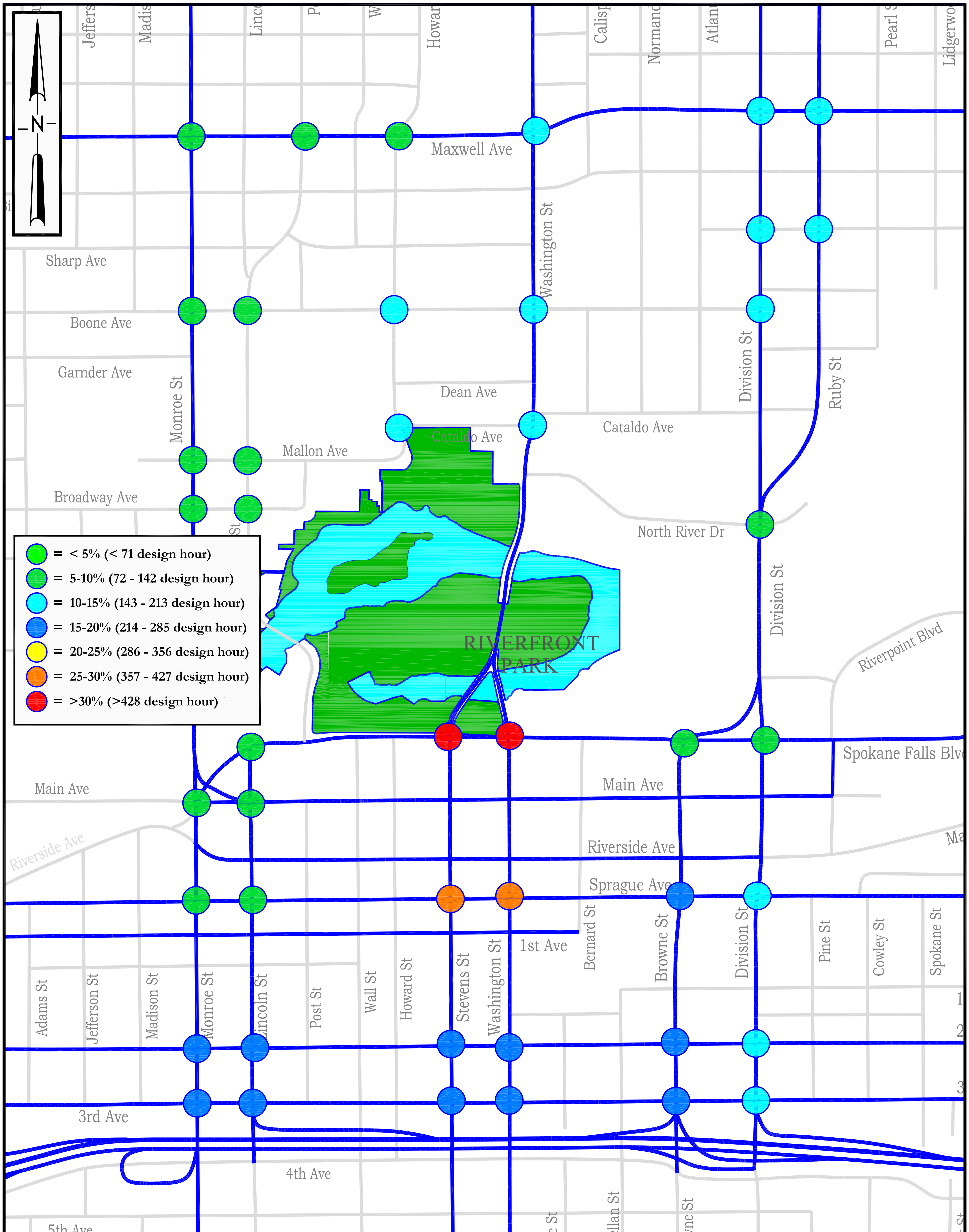
Note that project distributions and assignments were essentially assumed directly to/from Riverfront Park to assure the highest impact of site trips on study intersections. However, trip assignments will likely taper off as drivers find parking facilities to divert to/from in-route to the Park. This full assignment assures a conservative analysis of traffic impacts as full assignments are being reviewed within the study area.

Table 9. Trip Distribution and Average Assignment Summaries				
Location	ADT Volumes	Distribution (Rounded)	Assignments Daily	Assignments Peak Total
To/From North (S. of Mission Ave)				
Maple St/Ash St Couplet	48,700	10%	890	142
Monroe St	19,700	4%	355	57
Lincoln St & Post St	5,000	1%	90	14
Howard St	2,400	1%	90	14
Washington St	14,200	3%	265	43
Division St/Ruby St	50,300	10%	890	142
To/From North Totals	140,300	29%	2,580	412
To/From South (S. of I-90)				
Maple St/Walnut St	21,300	4%	355	57
Lincoln St/Monroe St	14,500	3%	265	43
Stevens St/Washington St	25,300	5%	445	71
Division St/Browne St	17,200	4%	355	57
To/From East Totals	78,300	16%	1,420	228
To/From West (of Maple/Ash & Maple/Walnut)				
Maxwell Ave	5,100	1%	90	14
Riverside Ave	2,500	1%	90	14
2nd Ave/3rd Ave	15,600	3%	265	43
Interstate 90	80,000	17%	1,510	242
To/From South Totals	103,200	22%	1,955	313
To/From East (Division/Brown & Division/Ruby)				
Mission Ave	14,500	3%	265	43
Sharp Ave	7,900	2%	180	27
Spokane Falls Blvd	4,200	1%	90	14
Martin Luther King Junior Wy	4,000	1%	90	14
Sprague Ave	11,700	2%	175	43
2nd Ave/3rd Ave	19,200	4%	355	57
Interstate 90	100,000	20%	1,780	285
To/From West Totals	142,300	33%	2,935	440
Totals on ADT/Cordon Line	464,100	100%	8,890	1,423

The information summarized on Table 9 reflects the distribution of trips throughout Spokane CBD. The relative distribution and impact of project trips within the CBD is shown on Figure 9. The magnitude of these impacts have been color-coded, ranging in density from less than a 5 percent trip distribution (with assignment of less than 71 generator trips) to greater than a 30 percent distribution (with assignment of over 428 generator trips) to a major CBD intersection

As indicated, the City requested that this study specifically address project impacts at nine intersections located within the vicinity the Park. Specific project assignments were developed for these intersections with the resulting assignments shown on Figure 10 for the PM Peak hour. Assignments per analysis zone are shown separately in Section D of the Technical Appendix.

Project trip assignments were then combined with baseline forecasts (again developed from counts using a 10 percent growth rate) to generate year 2020 traffic volumes, as shown on Figure 11 for the PM peak hour. Note there are existing daily activities at Riverfront Park, occurring while counts were performed. As such, some "double counting" of traffic is expected as assignments were combined with counts that already reflect Park activities; thus, assuring a conservative analysis of forecast traffic conditions.



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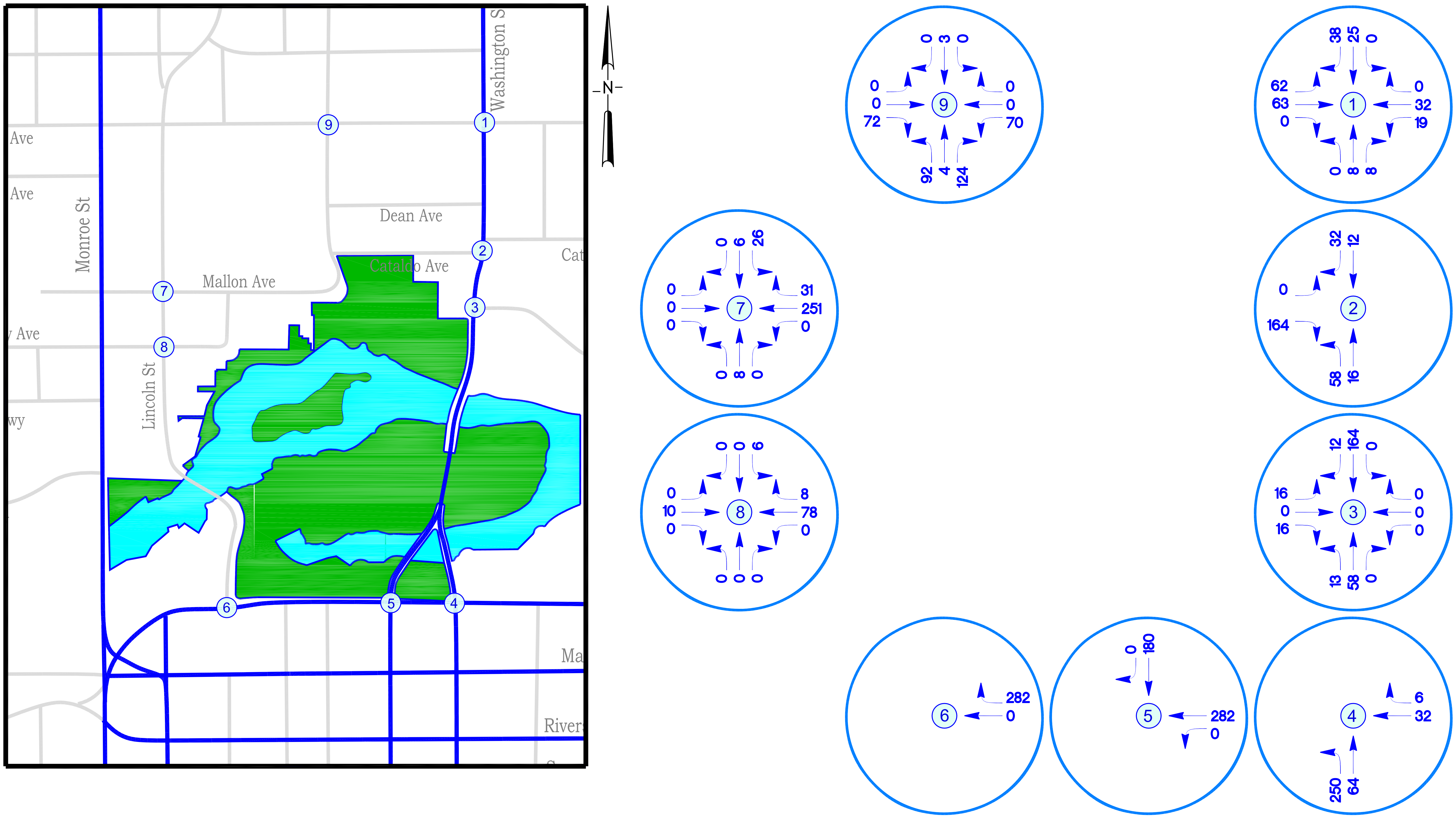
RIVERFRONT PARK TRAFFIC AND DESIGN STUDY
SPOKANE WA

INTERSECTION

PROJECT NO. 5447.001

FIGURE NUMBER F9

Plotted by bill white on Jul/18/2015



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RIVERFRONT PARK TRAFFIC AND DESIGN STUDY

SPOKANE WA

EXISTING TRAFFIC VOLUMES
DESIGN PM PEAK HOUR

PROJECT NO. 5447.001

FIGURE NUMBER

FIG. 10

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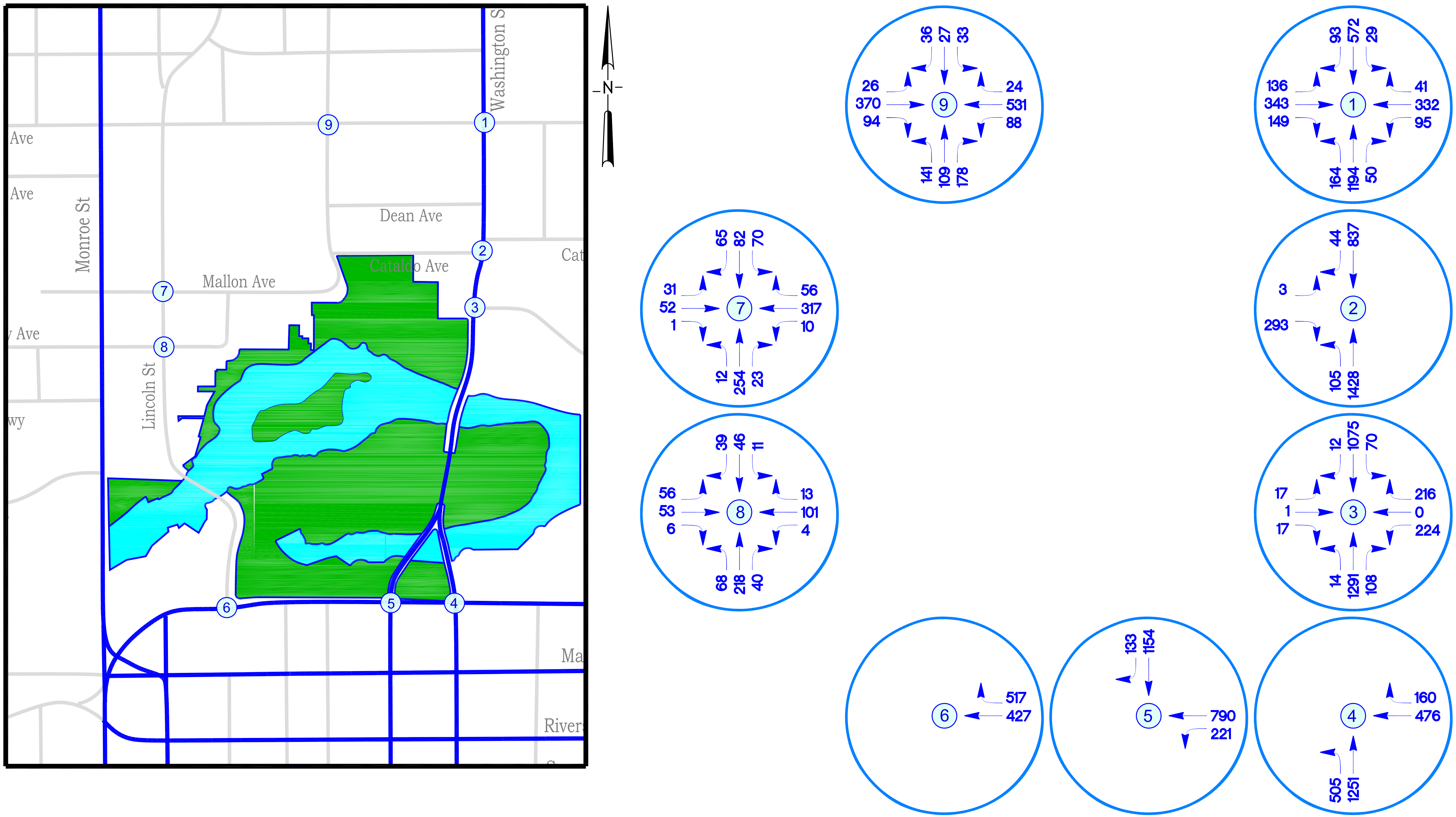

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RIVERFRONT PARK TRAFFIC AND DESIGN STUDY

SPOKANE WA

FUTURE 2020 TRAFFIC VOLUMES
DESIGN PM PEAK HOUR

PROJECT NO.
5447.001

FIGURE NUMBER
FIG. 11

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3.2 TRAFFIC OPERATIONS

LOS and capacity analyses were performed based on a review of traffic forecasts, as summarized in Section 3.1. As no major roadway improvements or significant signal modifications are proposed initially within the study area, these traffic forecasts were compared with the road geometrics and traffic control conditions described in Section 2.1. Table 10 provides a summary of resulting future with project LOS and control delays for the PM peak hour (including peak generator hour trips).

Table 10. Year 2020 LOS and Delay - PM Peak Hour

Intersection	LOS[1]	Delay
Washington St/Boone Ave	B	14.4
Washington St/Cataldo Ave	D	25.7
Washington St/North River Rd	B	18.9
Washington St/Spokane Falls Blvd	C	33.9
Stevens St/Spokane Falls Blvd	B	18.1
Post St/Spokane Falls Blvd	D	38.4
Lincoln St/Mallon Ave	B	15.3
Lincoln St/Broadway Ave	B	11.9
Howard Street/Boone Ave	B	11.6

[1] LOS = Levels-of-Service

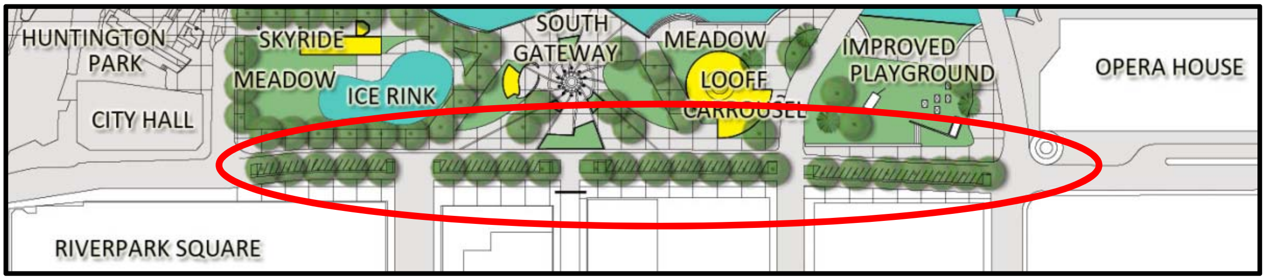
As indicated, a minimum LOS D standard is desired for signalized intersections and LOS E for unsignalized intersections within the Spokane CBD. As shown, the assignment of peak generator hour trips would not unacceptably impact traffic operations. No intersection is expected to function below minimum acceptable standards, with project trips and baseline traffic growth causing only a moderate increase of average control delays. This indicates that no roadway improvements are warranted on the basis of traffic operations or capacity need.

3.3 IMPROVEMENT OPTIONS

Spokane Parks and Recreation Department staff requested that two specific roadway improvement/modification options be reviewed as a function/extension of Park development.

Spokane Falls Boulevard

The first improvement would essentially create a quasi-boulevard street concept between Washington Street and Post Street along Spokane Falls Boulevard. The proposal is to reduce a westbound lane and parking lane from the arterial and construct a landscape median with 45 degree/angle parking fronting Riverfront Park. The improvement would potentially require some modification of traffic signals at the intersections of Spokane Falls Boulevard with Washington Street, Stevens Street, Howard Street, Wall Street, and Post Street to accommodate the proposal (essentially realignment or reduction of luminaries); potentially with diverge and merge approach extending between the Washington Street/Spokane Falls Boulevard and Post Street/Spokane Falls Boulevard to accommodate the proposal. The concept from the Riverfront Park Master Plan site plan is highlighted below.



Operational/Capacity Impact. The improvement proposal is not expected to signifcantly alter travel patterns for Riverfront Park. As such, the improvement/modification was reviewed in Synchro assuming the reduction of a through/westbound travel lane with the majority of through volumes operating on two lanes; albeit separated by the landscape median. The best approximation of the separted lane in Synchro was to reduce Spokane Falls Boulvard to two through lanes between Washington Street and Stevens Street, and then add a fifth apporach to the Stevens Street and Post Street intersections to approximate lane speration. A summary of revised LOS for impacted intersections is provided on Table 11.

Table 11. Year 2020 LOS/Delay w/Spokane Falls Two Lane Modification - PM Peak Hour

Intersection	LOS[1]	Delay
Washington St/Spokane Falls Blvd	C	34.0
Stevens St/Spokane Falls Blvd	B	19.9
Post St/Spokane Falls Blvd	D	38.6

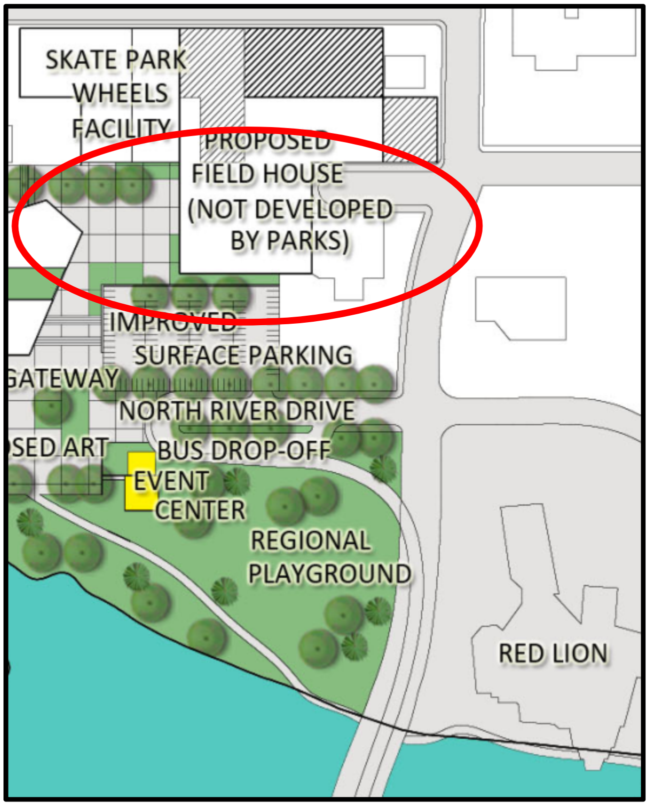
[1] LOS = Levels-of-Service

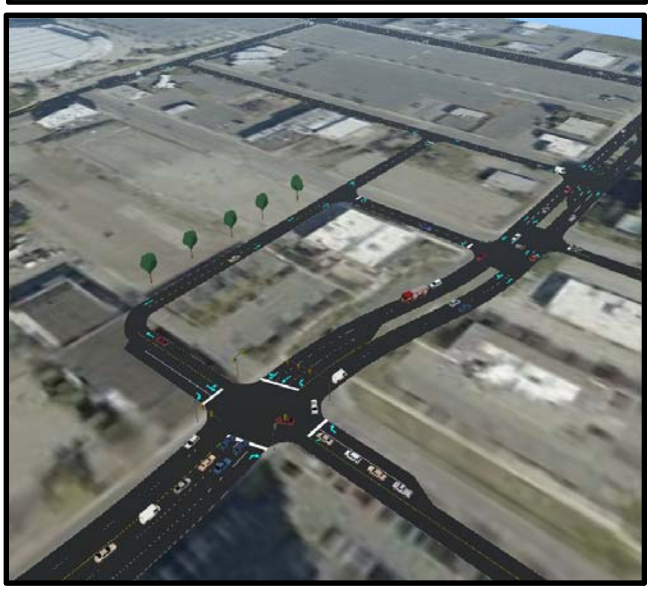
As shown, acceptable LOS can still be maintained at impacted study intersections with the street proposal. The Post Street/Spokane Falls intersection is projected to degrade to LOS D with the proposed modification without signal cycle or phase adjustements (using current City signal settings). However, the use of signal cycle/phase optmization would improve operations back to LOS C, which minimizes the impact of the improvement/modification proopsal.

As a secondary comparison, a transportation planning industry guideline is a through lane on a City principal arterial has a practical capacity of between 700 to 1,000 vehicles in an hour. This proposal reduces Spokane Falls Boulevard from three to two lanes which has a practical capacity of between 1,400 to 2,000 vehilces in an hour according to planning practices. There is just over 800 PM peak hourly trips projected on Spokane Falls Boulvard by year 2020. Thus, the cross section proposal should be sufficent to accommodate forecast traffic volumes throuhgout the majority of a typical year.

Cataldo Avenue Vacation

The second improvement option includes the vacation of Cataldo Street eastward from Howard Street to approxiamtely 150 feet west of Washington Street to reduce through vehicle access and promote site development and parking objectives of Park officials. This improvement could shift traffic to Dean Avenue and Boone Avenue (aligned to the north); however, this could provide an opprotunity for Parks Department officials to tie Park traffic and other existing vehilce trips into the Washington Street/North River Drive intersection via public or private approaches that extend south and then east to tie into this signal.





As indicated, the intersection currently functions at LOS B and is projected to function near LOS C by year 2020 during the PM peak hour following Park development. This is a typical PM peak hour condition that demonstrates adquate LOS despite forecast traffic growth. However, this intersection experiences significant traffic congestion prior to and following special events for Riverfront Park and the Spokane Arena. Queues have been noted to extend well west by citizens of the community with vehicle delays and wait times that can last several minutes prior to turning onto Washington Street. In addition, the west leg of the Washington Street/Cataldo Avenue intersesction is offset from the east leg such that there is a conflict of head-to-head left turns entering Washington Street from Cataldo Avenue.   This reprsents a safety issue during a typical weekday, let alone during special events.

Therefore, it is recommended Spokane Parks and Recreation department officials continue their intitative to vacate the identified section of Cataldo Avenue. This would address the safety issue and shift traffic to other intersections. Secondly, it is recommended that Park officials work to adapt the site's internal private or public approach network such that traffic can access the North River Drive traffic signal on Washington Street.

A summary of the current proposal from the Riverfront Park Master Plan site plan is shown top left. A simulation of the modified proposal is shown bottom left, as modeled in Synchro. The buildings and trees are simulated facilties and enhancements available from Synchro 3-D modeling.

With this proposal, it is anticipated the majority of west Cataldo Avenue traffic would shift to North River Drive. An analysis with combined traffic volumes indicates Washington Street/North River Drive would function within the LOS D range with 51.6 seconds of average control/vehilce delay during the high attendance scenario. This assumes no signal cycle or phase optimization.

4 PEDESTRIAN & TRANSIT

This section provides a summary of pedestrian analysis and transit discussions in relation to the proposed development of Riverfront Park. Described is the pedestrian capacity methodology used for this study followed by trip generation and assignment projections and then discussion on recommended parkway widths. An assessment of crossing adequacy is provided followed by a discussion of transit conditions for Riverfront Park.

4.1 PEDESTRIAN CAPACITY

Pedestrian capacity refers to the number of persons that can pass a specific point (or through a specified area), typically within a defined timeframe such as a minute, hour, day, etc. Effective walkway width refers to the unobstructed area for pedestrian travel. This is not to be confused with total walkway width, as effective width can be compromised with obstructions such as vendor booths, designated bike areas, benches, trees, light standards/poles, and garbage cans; all of which serve to narrow a clear walkway area.

Pedestrian capacity was principally determined based on methodologies outlined within the Highway Capacity Manual (HCM); which relates space occupied, flow rate, or walking speed to various levels-of-service thresholds. In the context of this discussion, LOS is a term used to quantify the quality of pedestrian mobility; referring ability of pedestrians to comfortably, successfully, and safely travel sidewalk and pathway routes as the measure of capacity.

Pedestrian capacity criterial range from LOS A to LOS F. The Highway Capacity Manual (HCM) refers to these grades as follows:

LOS A. Ability to move in desired path, no need to alter movement

LOS B. Occasional need to adjust path to avoid conflicts

LOS C. Frequent need to adjust path to avoid conflicts

LOS D. Speed and ability to pass slower pedestrians restricted

LOS E. Speed restricted, very limited ability to pass slower pedestrians.

LOS F. Speed severely restricted, frequent contact with other users.

While LOS A or B sounds “ideal”, it is actually quite restrictive in highly utilized destination and/or event centers. This is because an extensive effective width of facilities would have to be promoted in order to maintain these high LOS grades. This results in costly improvements with pedestrian facilities (sidewalks and pathways) that occupy high levels of right-of-way, detrimental especially to a regional park where open space, landscape, and view corridors should be preserved. Conversely, LOS E or F is not desired throughout the majority of a year because comfort and enjoyment is significantly deteriorated to the point of frustration for the typical pedestrian over congested facilities.

Therefore, it is typical and recommended that a LOS C or D standard be promoted for Riverfront Park. This provides a balance between excessive facility development and the pedestrian congestion and frustration associated with oversaturated walkways. However, it is NOT suggested this be a standard applied unilaterally for the entire year; rather it only be applicable for more typical and even moderately higher attendance conditions. The provision of sidewalk and pathway facilities to meet a LOS C/D standard during peak event conditions such as

Bloomsday, the Independence Day celebration, or "Pig Out" in the park again results in the construction of pedestrian routes with excessive and costly right-of-way widths that ultimately are underutilized throughout the majority of the year. People understand and anticipate the quality of mobility will diminish during these peak activities, and are therefore more apt to tolerate such conditions and will continue to frequent the Park, so long as such conditions do not prevail throughout the year.

LOS Criteria. Table 23-1 of the HCM defines base average flow LOS criteria for walkways, presenting LOS ranges based on average space per person, flow rate per person per minute, and average walking speed of travel. The criteria used for this report was adapted from Table 23-1 in order to present LOS C and D thresholds in terms of pedestrians per effective walkway widths and person-flow within a 15-minute timeframe. Pedestrians per effective width were provided as a means for helping to confirm cross section of sidewalk and pathways. The 15-minute flow rate is used to review peak event approach and departure volumes for the primary pedestrian access points and through ways.

Some of the assumptions used in adapting this HCM Table 23-1 to the resulting Riverfront Park LOS criteria are as follows:

- A forward spatial bubble of 6 feet (between pedestrians) was assumed in converting pedestrian space thresholds to the number of pedestrians per effective width section. This spatial bubble represents the typical following distance of persons before or following special event activities, as was based on information provided within a Guide for the Planning, Design, and Operation of Pedestrian Facilities (ASSHTO, 2004).
- The LOS space-per-person thresholds from HCM Table 23-1 was divided by the forward spatial assumption above; resulting in a comfortable average lateral spacing of 4 feet between persons and objects for the LOS C range and 2.5 feet for the LOS D range. For instance, one person would have a shoulder to shoulder average lateral spacing of 2.5 feet with a forward special bubble of nearly 6 feet to maintain a pedestrian LOS D standard.
- A body ellipse of 2 feet wide by 1.5 feet long was assumed for a typical pedestrian, per the HCM. This factor was considered important in establishing effective width sections in coordination with the lateral spacing LOS information identified above.
- Finally, "ideal" LOS A conditions and the associated pedestrian flow rate were based on a minimum walking speed of 4.25 feet per second. This represents travel on unimpeded pedestrian routes, which is less realistic for Riverfront Park. This average walking speed will be inhibited by a population of directional conflict (people walking toward each other), the slower walk of elderly pedestrians and youth, stopped or meandering sightseers and recreational pedestrians, bicycle and skateboarder conflicts, street exhibitions (entertainers), and other similar obstructions. It is therefore anticipated that flow rates would be less than the ideal scenario presented in HCM Table 23-1, and a 40 percent reduction was applied to generate more realistic flow rates for a park with distractions and obstructions.

The resulting LOS C and LOS thresholds for Riverfront Park pedestrian facilities are highlighted in Table 12. These thresholds are presented in terms of persons that can be accommodated for various effective walkway widths for the LOS C and LOC D thresholds. They are also presented in terms of 15-minute flow widths for various effective walkway widths.

Table 12. Pedestrian LOS For Riverfront Park				
	LOS C		LOS D	
Effective Width	Persons	15 Min Ped Flow	Persons	15-minute Flow
5 Feet	2	270	2	380
10 Feet	2	540	2	770
15 Feet	3	800	3	1150
20 Feet	3	1070	4	1530
25 Feet	4	1340	6	1910
30 Feet	5	1610	7	2300
35 Feet	6	1870	8	2680
40 Feet	7	2140	9	3060
45 Feet	8	2410	10	3440
50 Feet	8	2680	11	3830
55 Feet	9	2950	12	4210
60 Feet	10	3210	13	4590
65 Feet	11	3480	14	4970
70 Feet	12	3750	16	5360
75 Feet	13	4020	17	5740
80 Feet	13	4280	18	6120
Source: Adapted from Table 23-1 of *Highway Capacity Manual* (TRB, 2010)				

There are objects that limit effective width along pedestrian routes. Light poles, park benches, garbage cans, sign poles, trees, and fire hydrants all restrict the effective width of the walkway, beyond what one would typically think, as pedestrians tend to give wide berth to these objects (due to comfort and special bubbles). Parks department officials must consider the impact of these objects upon effective walkway widths, as they will compromise pedestrian LOS and capacity, and these impacts should be minimized or walkway widths widened to accommodate. A summary of various and typical objects within a regional park are summarized on Table 13.

Table 13. Spatial Impacts of Typical Park Objects on Effective Widths	
Light Pole	2.5 to 3.0 feet
Sign Pole	2.0 to 2.5 feet
Fire Hydrant	2.5 to 3.0 feet
Wastebaskets	3.0 to 4.0 feet
Trees	2.0 to 4.0 feet
Planter Boxes	4.0 to 6.0 feet
Vending Stands	7.0 to 15.0 feet
Bike Lane	Approx. 5.0 feet

4.2 PEDESTRIAN TRIP GENERATION

Nearly all attendees will be pedestrian trips of Riverfront Park despite the means/mode of approaching and departing travel. Pedestrians must walk to/from transit or parking facilities to access the park. The majority of transit stops and parking lots are on the periphery of the park and, as such, there will be significant demand put on admitting sidewalks and trails.

Pedestrian trips were projected in two steps similar to that used for vehicle trips. Attendance was multiplied by 2.5 person trips to reflect one primary inbound and primary outbound trip with an additional half trip associated with employees, deliveries, lunch-runs, etc. A factor of safety was then also applied to assure an adequate and relevant number of pedestrians were projected. A 50 percent factor of safety was used (versus the 10 percent factor used previously) because these trips are recreational in nature (potential for wandering, etc). A summary of the resulting trip totals are shown on Table 14 weekday. Again 16 percent of these trips were assumed for the peak generator hour, as described previously.

Table 14. Year 2020 Pedestrian Generation for Riverfront Park - Statistical Average Attendance Day

	North Bank	Central Park	South Bank	Totals
Attendance Totals	3,300	5,500	2,500	11,300
1. Person Trips (Multiply by 2.5)	8,255	13,755	6,255	28,265
2. Safety Factor (50 percent increase)	4,125	6,875	3,125	14,125
Weekday Pedestrian Generation	12,380	20,630	9,380	42,390
Peak Generator Hour (45% inbound & 55% outbound)	1,980 (890 in/1,090 out)	3,300 (1,485 in/1,815 out)	1,500 (675 in/825 out)	6,780 (3,050 in/3,730 out)

As shown, the park is projected to generate a total of 42,360 pedestrian trips during the weekday. There are 6,780 peak generator hour trips generated during the statistical average attendance or 85th percentile frequency activity day of Riverfront Park.

4.2.1 Pedestrians - 85th Percentile Attendance

As indicated, traffic conditions were developed based off average attendance projections, which is the 85th percentile attendance day of the Park. As this section is intended to guide in the design of pedestrian facilities, it was also determined appropriate that some consideration also be given to the 85th percentile attendance projections. As discussed in Section 1.2, 85th percentile statistical attendance days are anticipated to occur 8 times per year with approximately 25,000 attendees projected.

85th percentile pedestrian forecasts were developed in steps similar to those identified previously. A summary of resulting trip totals is shown on Table 15 for the weekday and PM peak hour. As shown, a total of 93,750 pedestrian trips would be generated during the 85th percentile attendance day with 15,000 pedestrians generated during the peak generator hour. This indicates each attendee would result in approximately 6.25 pedestrian trips throughout the Park on a typical weekday.

Table 15. Year 2020 Pedestrian Generation for River Front Park - 85th Percentile Attendance Day				
	North Bank	Central Park	South Bank	Totals
Attendance Totals	7,300	12,200	5,500	25,000
1. Person Trips (Multiply by 2.5)	18,250	30,500	13,750	62,500
2. Safety Factor (50 percent increase)	9,125	15,250	6,875	31,250
Weekday Pedestrian Generation	27,375	45,750	20,625	93,750
Peak Generator Hour (45% inbound & 55% outbound)	4,380 (1,970 in/2,410 out)	7,320 (3,295 in/4,025 out)	3,300 (1,485 in/1,815 out)	15,000 (6,750 in/8,250 out)

4.2.2 15-Minute Projections

Tables 12 and 13 summarize average/85th percentile analysis day and 85th percentile statistical attendance day projections for a peak generator hour. However, projections need to be modified in order to be consistent with the 15-minute flow rates provided on Table 13. Peak event activities will occur within a condensed timeframe as pedestrian approach or depart special events. Thus, it is assumed that 70 percent of peak hour pedestrians will be condensed within a 15-minute timeframe for event activities. A summary of resulting 15-minute pedestrian demands for the average/85th percentile analysis day and 85th percentile statistical attendance days are summarized on Table 16.

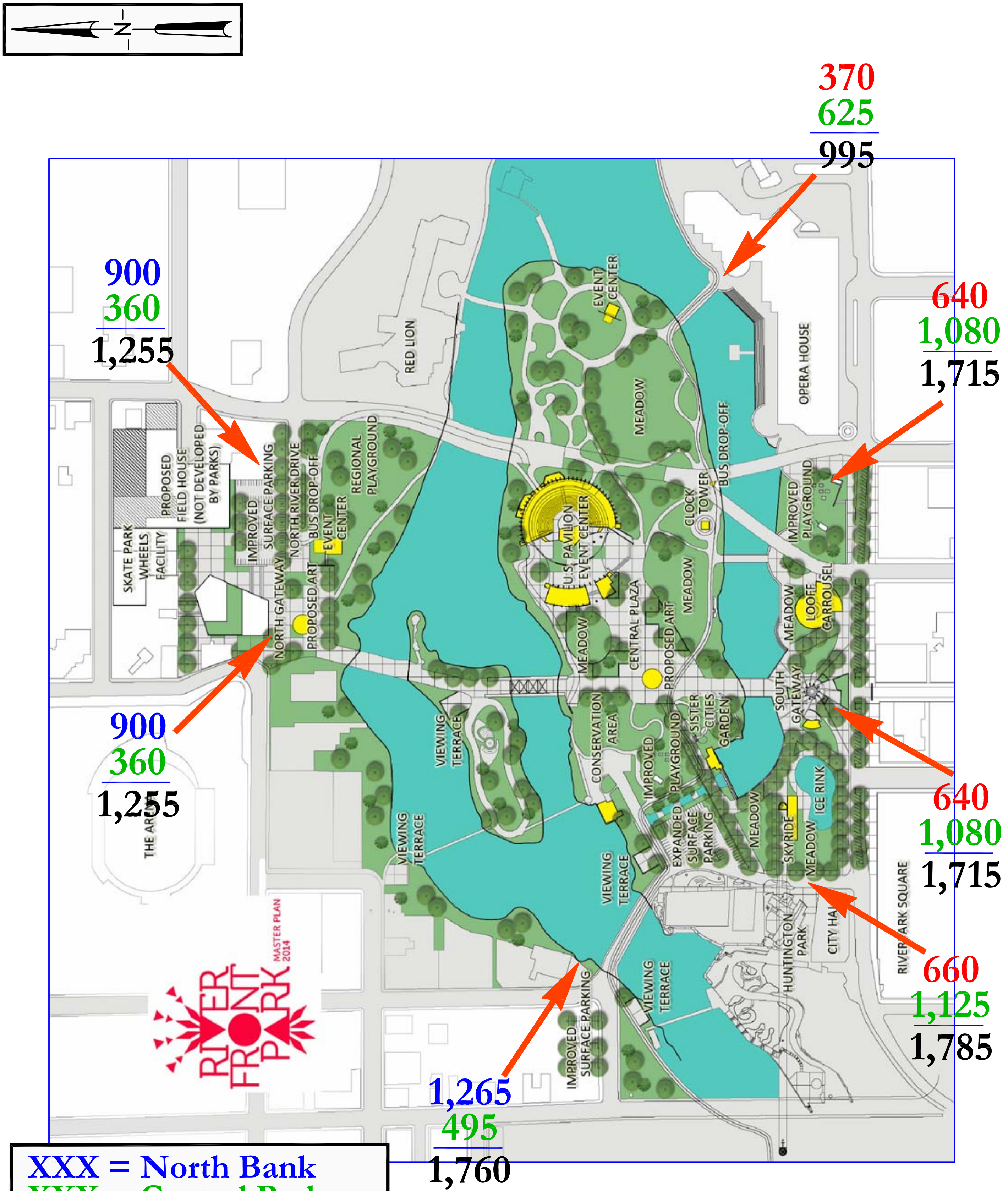
Table 16. 15-Minute Pedestrian Demands – Average and 85th Percentile Attendance Days				
	North Bank	Central Park	South Bank	Totals
Average Attendance Day (45% inbound & 55% outbound)	1,385 (625 in/760 out)	2,310 (1,040 in/1,270 out)	1,050 (475 in/575 out)	4,745 (2,140 in/2,605 out)
85th Percentile Attendance Day (45% inbound & 55% outbound)	3,065 (1,380 in/1,685 out)	5,125 (2,305 in/2,820out)	2,310 (1,040 in/1,270 out)	10,500 (4,725 in/5,775out)

As shown, there is an average attendance, 15-minute pedestrian demand of 4,745 pedestrian trips during the peak generator hour. This elevates to 10,500 pedestrian trips during the 85th percentile attendance day.

4.3 Pedestrian Approach & Departure Assignments

The approach and departure totals of pedestrians were approximated for Riverfront Park. The totals provide the basis for estimating or confirming the width/capacity of major pedestrian thoroughfares. The distribution and assignments of pedestrians was developed based on a review of available parking within the area. The stall count noted in the field for separate areas surrounding Riverfront Park was tallied and then compared, resulting in area distributions. Figure 12 summarizes the assignment of pedestrian trips for the 15-minute demand timeframe for the 85th percentile condition; providing a conservative analysis of pedestrian demands.

For the north bank, pedestrian distribution was segregated into three primary areas as based on a review of available parking. The resulting distributions of approximately 42 percent, 29



XXX = North Bank
XXX = Central Park
XXX = South Park
XXX = Approach Total

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RIVERFRONT PARK TRAFFIC AND DESIGN STUDY
SPOKANE WA

APPROXIMATE 15 MINUTE PEDESTRIAN ASSIGNMENTS

PROJECT NO. 5447.001

FIGURE NUMBER F12

Plotted by bill white on Jul/20/2015

percent, and 29 percent were established from this comparison for the areas north of the Spokane River. Thus the respective 1,385 and 3,065 15-minute demands from Table were then assigned based on these distributions. 85th percentile demands are again shown on Figure 12.

There are four primary distribution areas anticipated for the south bank, with distributions of 29 percent, 28 percent, 28 percent, and 15 percent calculated from parking areas/tallies south of the Spokane River. The 15-minute 1,050 and 2,310 pedestrians demands for the south bank were then compared with these distributions to generate the assignments shown in red.

Finally, pedestrians for central park area are anticipated from all parking lots surrounding Riverfront Park (north and south of the Spokane River). The distributions calculated from these parking lots include 22 percent, 21 percent, 21 percent, 12 percent, 10 percent, 7 percent, and 7 percent. The 15-minute 2,310 and 5,125 pedestrians demands generated by the central park were compared with distributions, resulting in the assignments shown in green on Figure 12.

4.4 Primary Walkway Width Recommendations

The purpose of the 15-minute pedestrian demands shown on Figure 12 was to provide a basis for recommending walkway approach/departure effective widths for the Park, as based on the criteria summarized on Table 12. This comparison has led to the following recommendations.

Howard Street Bridge (South Park Entrance). As shown, it is anticipated that 1,415 pedestrians would use the Howard Street Bridge on an average attendance day. A comparison with Table 12 suggests an effective walkway width of between 25 to 30 feet should be sufficient to accommodate pedestrian traffic for the majority of the year to maintain a LOS C standard; allowing for between 4 pedestrians to travel laterally with some level of comfort across the bridge (pedestrian range depends on LOS standard desired). However, this is an effective walkway width that would not accommodate additional activities outside of pedestrian activities.

A 15-minute demand of 3,135 pedestrians is anticipated on the 85th percentile attendance day, which indicates a 50 to 55 foot wide bridge should be developed to maintain the LOS C standard during these higher attendance conditions. This would provide space for vendor, entertainment, and sightseeing activities, and allow for a dedicated bike lane during the majority of the year. However, during 85th percentile statistical attendance or greater attendance activities, vendor and bike activities can be restricted to provide for pedestrian activity only with the recommended effective walkway width. This would allow for 8 to 9 persons to travel laterally with some level of comfort across the bridge. Note the bridge has current width of 65 feet.

Howard Street Bridge (North Park Entrance). An 85th percentile attendance, 15-minute demand of 1,100 pedestrians is noted along the Howards Street north bridge. This suggests a minimum effective walkway width of 25 feet to maintain a LOS C standard. However, this bridge provides many opportunities for sight-seeing, bike activities, entertainment, etc. As such, a minimum width of 35 feet is recommended for the bridge. If vendor activities are anticipated, then a greater minimum width should be maintained for the bridge. The northern section of this bridge currently has a width of 55 feet, with a width of nearly 40 feet along the southern section.

Major Access Corridors. There are a number of major access corridors for Riverfront Park that will accommodate a high number of entering and exiting pedestrians from the adjacent street system, and will support high levels of pedestrian activity throughout the Park. Sidewalks fronting Spokane Falls Boulevard, the corridors proposed around the south gateway and water fountain, and routes proposed with vendor activity are examples of major access corridors.

These routes are anticipated to support up to 1,570 pedestrians in 15-minutes during the 85th percentile attendance conditions, dictating a minimum effective walkway width of 30 feet to maintain a LOS C standard. However, the corridors with vendor activity should be widened to a minimum width of 45 feet to accommodate vendor stands and booths. In addition, special attention should be given to the effective walkway impacts summarized on Table 13, as total widths should be widened accordingly to accommodate objects such as light poles, trees, wastebaskets, etc.; or widened accordingly to accommodate a 5 foot bike lane.

Minor Access Corridors. There are a number of minor access corridors connecting into and extending through the Park. These corridors are anticipated to support less than 800 pedestrians in 15-minutes during the 85th percentile attendance conditions. This is an effective walkway width of 15 feet technically; however, this is not entirely practical in many instances for park access. As such, minor access corridors are recommended to have a 30 foot width unless some form of right-of-way or obstruction is an issue. Again, the impact of objects and bike lanes should be considered, per the width adjustments summarized via Table 13.

Narrow Suspension Bridge. There are two narrow suspension bridges aligned from the north bank extended into central park with a total width of 10 feet. These bridges are anticipated to support less than 500 pedestrians in 15-minutes during an 85th percentile attendance day. This corresponds to an effective width recommendation of 10 feet to maintain a LOS C standard. Thus, no modification to the bridge is necessary; however, no objects should be placed to compromise the effective walking width of these bridges.

4.5 PEDESTRIAN CROSSINGS

A *Guide for the Planning, Design, and Operation of Pedestrian Facilities* (AASHTO, 2004) indicates "the majority of pedestrian trips are 0.25 miles or less". Therefore ¼ mile was considered the ideal spacing for pedestrian crossings that access Park frontage areas.

As summarized on Figure 6, crosswalks are aligned every 350 to 400 feet along Spokane Falls Boulevard. The distance between the Post Street/Spokane Falls Boulevard and Lincoln Street/Bridge Avenue intersection crossings is 1,000 feet. The distance between the Lincoln Street/Bridge Avenue and Lincoln Street/Broadway Avenue intersection crossings is 700 feet. The distance between the Lincoln Street/Broadway Avenue and Post Street/Mallon Avenue intersection (along blocks) is only 700 feet. And, the spacing between crossings along Mallon Avenue is 300 feet. All of these distances are well within the ¼ mile spacing target.

The longest crossing distances for Riverfront Park extends between the east Mallon Avenue crossing and Washington Street/North River Drive intersection at 1,450 feet, and between Washington Street/North River Drive and Spokane Falls Boulevard/Stevens Street intersections at 1,850 feet. However, neither of these adjacent roadways front and therefore provide readily available access to Riverfront Park. As such, the lack of pedestrian crossings is not an issue as no real pedestrian access could be gained to/from the Park along this stretch of Washington Street. It is therefore concluded that there is sufficient pedestrian crossings and access across arterials fronting the Park, with no recommended improvements.

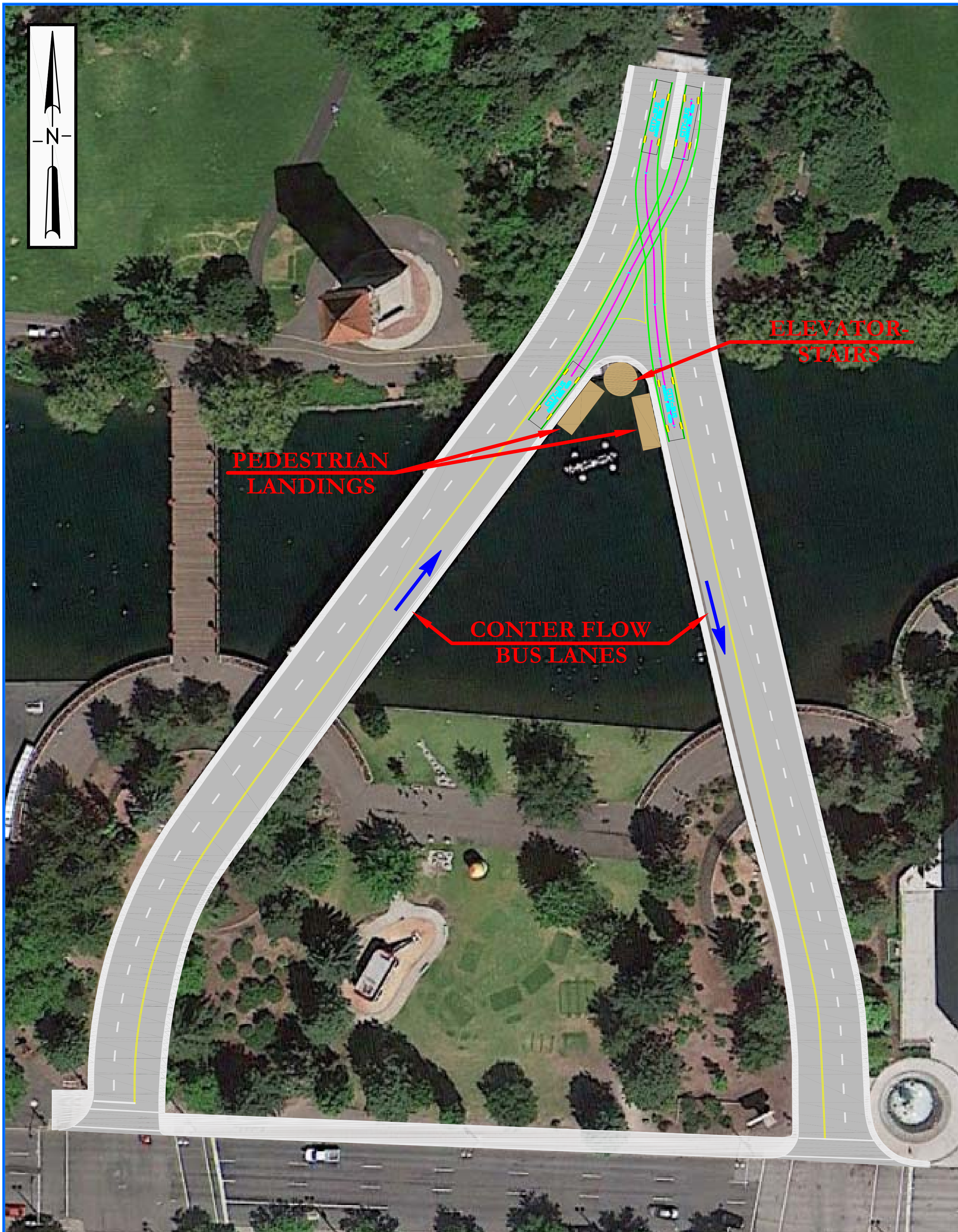
4.6 Transit Accommodation

As discussed in Section 2.5, STA operates nine transit routes which can be easily access by visitors of Riverfront Park. This calculates to about 150 buses circulating within an 1/8 mile walk of the Park over 10 hours of typical Park visitation hours. These buses have a capacity of 60 seats per bus, which calculates to a person seating capacity of 9,000 over the ten hours.

As indicated by Section 3.1.1, up to 1,130 persons are forecast to use transit on the statistical average attendance day up to 18 times a year. A meeting was held with STA officials as a part of this project and it was confirmed that ridership demands of this level would not be sufficient to warrant the increase or significant modification of current fixed routes, especially given the low number of occurrences in a standard year. This is evidenced and supported by the comparison provided in the previous paragraph. As such, STA will respond to larger events of Riverfront Park on an event basis; providing additional transit or shuttle services, as needed.

With that said, STA officials did indicate a desire to improve transit access to/from Riverfront Park. Specifically, they indicate a more central hub or center for the loading and unloading of passengers would be of benefit to both STA and the Park. Three concepts were explored for achieving more central access to the Park, which are summarized as follows:

- **Howard Street Alignment.** This concept would bring transit through the center of the Park along the historic Howard Street alignment that exists between Spokane Falls Boulevard and Mallon Avenue. Dedicated entirely to Park activities, there is a fountain, concessions, and two pedestrian bridges along the alignment. The improvements needed to relocate amenities, provide for a structurally sound roadway base, plus assure bridges could support weight the size of STA buses would ultimately be cost prohibitive. Plus, this would result in the less predictable interaction of buses and pedestrians within a core activity center of the Park. As such, this concept was dismissed as unviable.
- **Frontage Enhancements.** The two improvements identified in Section 3.3 provide an opportunity to for dedicated STA drop off areas to be constructed within primary north and south pedestrian approaches to/from the Park. Specifically, some form of bus lane or pull-out could be developed along Spokane Falls along the proposed boulevard area, and a transit pull-out or turnaround could be developed or promoted along the proposed North River Drive access. Although not central to the Park, these are reasonable and constructible options, even if short term, to better provide STA access over current curbside and in-street drop off areas.
- **Washington/Stevens Transit Landing.** STA officials have proposed a transit landing between Stevens Street and Washington Street north of Spokane Falls Boulevard. Both Stevens Street and Washington Street have three lanes extending between the Park underpass and Spokane Falls. The underutilized east southbound and west northbound lanes would be converted to transit lanes which would be operated contra-flow so buses could drop passengers at landings, which would be retro-fitted to the bridge. A stairway and/or pedestrian elevator would drop students to a landing constructed below, central to the park. Figure 13 highlights this concept, demonstrating that it is feasible, although likely to be costly. As such, this may be a better long-range improvement option for the Park and STA. Note although this is shown to be feasible from a concept geometric perspective, structural analyses and river environmental impact analysis would have to be performed to further advance the viability of the improvement as an option. However, it does seem STA officials have found an innovative way to enhance transit access.



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DATE: 3/13/15

RIVERFRONT PARK TRAFFIC AND DESIGN STUDY

SPOKANE WA

WASHINGTON/STEVENS
TRANSIT LANDING

PROJECT NO.
5447.001

FIGURE NUMBER
F13

Plotted by bill white on Aug/28/2015

5 PARKING CONDITIONS & ANALYSIS

This section outlines a summary parking analysis prepared for Riverfront Park. The intent of the analysis is to confirm whether or not there is relevant parking adequacy to accommodate demands for the average attendance and 85th percentile event day of the Park during the peak generator hour. And while this study was based upon observed field data, further data should be collected and analyzed in the event any outside party wanted to extrapolate this data to confirm parking adequacies within the Spokane CBD overall.

Described in this section is discussion on parking generation followed by a comparison of these demands with available parking within a ¼ mile vicinity of Riverfront Park.

5.1 PARKING GENERATION

Parking demands will vary throughout the attendance weekday of Riverfront Park with peak demand expected during the generator hour. As discussed earlier within this study, it would be an improbable task to accommodate traffic and by an extension parking for the maximum attendance event. It is therefore a more reasonable expectation to plan parking facilities for the average frequency condition of the Park, which is again the 85th percentile attendance day.

Parking generation was forecast from the peak automobile trip generation totals highlighted from Tables 7 and 8, plus a 10 percent trip generation factor of safety. Note that taxi and shuttle trips are neglected as they will frequent drop off zones and will not require parking.

As indicated previously, the peak generator hour will comprise 16 percent of weekday trips. However, parking accumulation spans a longer timeframe than just the generator hour. For the purpose of this study, a typical parking space was assumed to be occupied for two hours, on average. That means Park demands comprise two hours of accumulation during a typical weekday. The secondary hour of this study was assumed to comprise/include 14 percent of weekday totals (whereas the first again comprises 16 percent). Thus, total parking demand includes the combination of the peak and secondary generation hours, comprising 30 percent of weekday totals.

These trips are directional, meaning they reflect both inbound and outbound trip totals. As such, the forecasts must be factored/reduced to address directional distribution. As indicated previously, a 55 percent inbound versus 45 percent outbound directional distribution was assumed for the peak generator hour. However, this may vary somewhat with the secondary hour. As such, 60 percent of totals were assumed to define raw parking generation for the Park.

Finally, before desired supply can be predicted, an additional 10 percent safety factor is applied to raw demand. This factor of safety compensates for a number of issues, but principally addresses lost time as patrons search for available parking. A summary of the resulting peak generator timeframe parking demand is summarized on Table 17 for Riverfront Park, as organized into the attendance/analysis zones.

Table 17. Year 2020 Parking Generation for River Front Park - Statistical Average Attendance Day				
	North Bank	Central Park	South Bank	Totals
1. Total Vehicle Trips				
- Base Vehicle Trip Total	2,065	3,440	1,565	7,070
- Passive Trip Totals	100	390	160	650
- 10 Percent Safety Factor	215	385	175	775
Total Weekday Trip Totals	2,380	4,215	1,900	8,495
2. Accumulation (Two Hours)				
- Peak Generator Hour (16 percent day)	380	675	305	1,360
- Secondary Hour(14 percent day)	335	590	265	1,190
Peak Accumulation	715	1,265	570	2,550
4. Directional Adjustment (60 percent of Total)	430	760	340	1,530
4. Safety Factor (10 percent increase)	45	75	35	155
Total Parking Demands/Generation	475	835	375	1,685

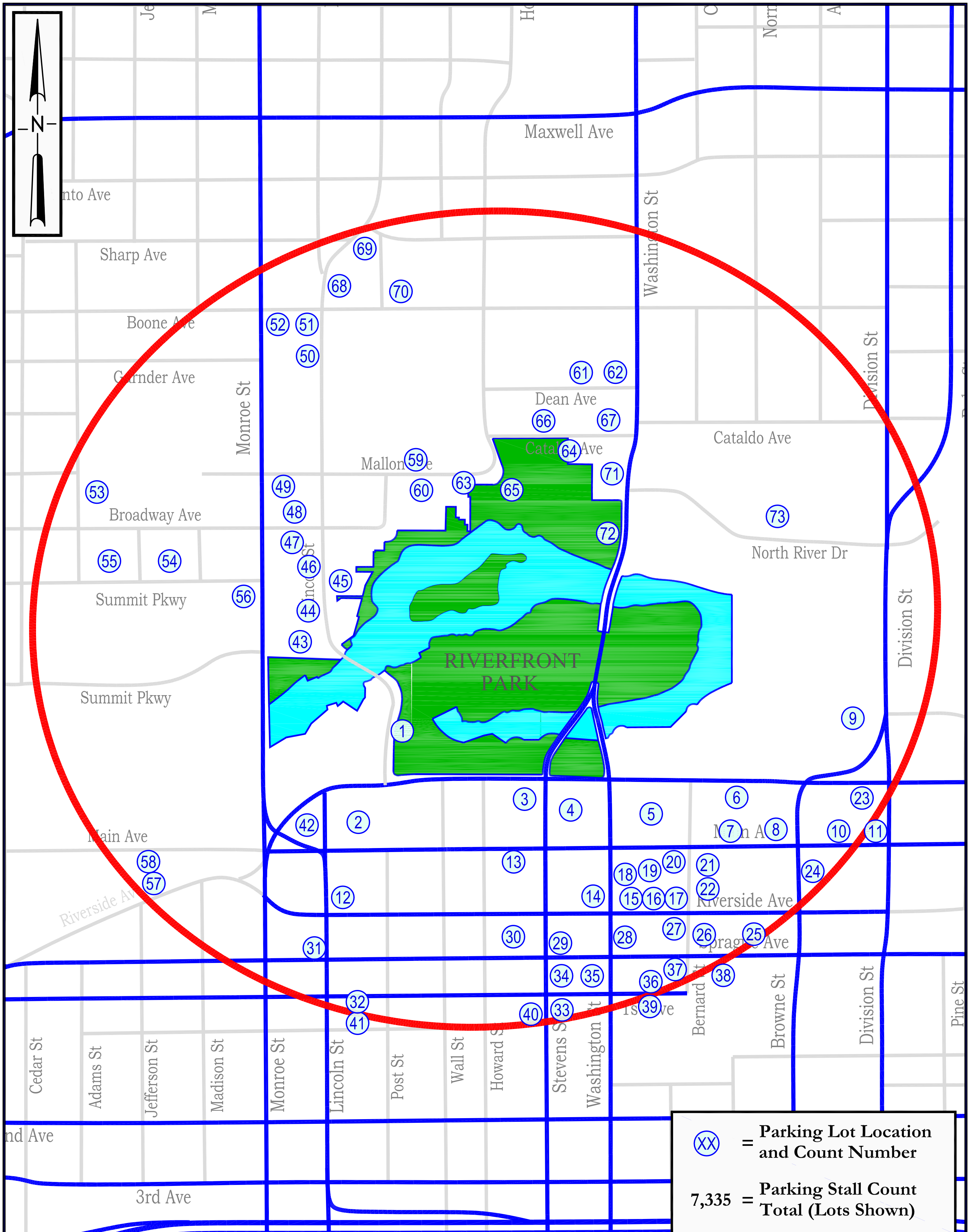
As shown, parking generation of 1,685 vehicles would be associated with the statistical average attendance or 85th percentile frequency activity day of Riverfront Park. This means this parking capacity or adequacy/supply would be needed to address parking demands during the study weekday by year 2020.

For purposes of comparison within the next section, this parking demand was estimated for areas north and south of the Park and Spokane River. As indicated by Table 17, a demand of 475 parking stalls is anticipated by attendees of the north bank and 375 from the south bank. Thus, these would utilize parking north and south of the Spokane River, respectively. Based on the distribution comparisons/methodologies described for pedestrians (based on a comparison of available parking), it is estimated that approximately 27 percent of parking demands for central park would occur for areas north of the River (total of 225) versus 73 percent for parking areas south of the River (total of 610). Thus, the total demands north and south of Spokane River is as follows:

- North of Spokane River Parking Demands - 700 Parking Stalls
- South of Spokane River Parking Demands - 985 Parking Stalls

5.2 FIELD DEMANDS

These demand totals do NOT imply that officials with Riverfront Park must supply parking facilities to address this need. To the contrary, there are approximately 7,335 parking stalls projected within 73 parking lots and ramps located within a ¼ mile radius of the Park (including 700 parking stalls provided by Spokane Parks and Recreation Department officials). One quarter mile is a typical and acceptable walking distance of most patrons of a recreational facility such as a city park. This tally does not include adjacent street parking and the new "Grand" hotel garage. Rather this reflects pay-lots only, which are predominantly surface street parking lots and select garages, open daily to the public such as the Riverpark Square, the Parkade, the Spokane Library, City Park, Fast Park, etc. A map of parking lot locations is shown on Figure 13 in relation to Riverfront Park and the relative ¼ mile walking area. Parking stall counts and totals are provided in Technical Appendix E.



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RIVERFRONT PARK TRAFFIC AND DESIGN STUDY

SPOKANE WA

PARKING LOT LOCATION
WITHIN WAKING DISTANCE (APPROX. 1/4 MILE)

PROJECT NO.
5447.001

FIGURE NUMBER
F14

Plotted by bill white on Jul/19/2015

Current parking demands were reviewed for the 73 parking facilities shown on Figure 13, including counts at three different times on weekdays and two Saturdays. The focus for weekdays was in the afternoon between 1 PM and 6 PM, as this is when parking demands peak due to the workforce. The focus on Saturday was midday between 11 AM and 3 PM as this is activities for a regional park typically peak (Saturday midday). A summary of count days and times is as follows:

- Saturday May 16 - 1 PM to 3 PM
- Monday May 18 - 3 PM to 5 PM
- Tuesday May 19 - 4 PM to 6 PM
- Saturday May 23 - 11 AM to 1 PM
- Tuesday May 26 - 2 PM to 4 PM

To generate a conservative analysis, the peak count for each individual lot was identified and used in demand tallies. A summary of parking demands and available capacity is summarized on Table 18 for the weekday and Saturday, as distinguished for areas north and south of the Spokane River. Also shown are Riverfront Park demands identified from the previous section.

Table 18. Comparison of Parking Adequacy/Supply Versus Riverfront Park Demands
(For Lots North and South of Spokane River within ¼ Mile of Riverfront Park)

	North River	South River	Totals
Total Parking Stalls (Pay Lots and Garages)	2,300	5,035	7,335
Weekday Peak Demands (Noted from lots on per lot basis)	930 (40% of Supply)	2,695 (54% of Supply)	3,625 (49% of Supply)
Saturday Peak Demands (Noted from lots on per lot basis)	535 (23% of Supply)	1885 (37% of Supply)	2,420 (33% of Supply)
Available Parking - Weekday (Capacity available on typical weekday)	1,370 (60% Available)	2,340 (46% Available)	3,710 (51% Available)
Available Parking - Saturday (Capacity available on typical weekday)	1,765 (77% Available)	3,150 (63% Available)	4,915 (67% Available)
Riverfront Parking Demands	700	985	1,685

As shown overall, there is a typical peak weekday demand of 3,625 stalls with 2,420 noted for the peak Saturday timeframe, with 49 percent and 33 percent utilization noted for weekdays and Saturdays, respectively. This leaves available adequacy/supply of 3,710 stalls on the weekday and 4,915 on Saturday. As indicated, there is a peak generator hour demand of 1,685 vehicles for Riverfront Park. Available supply well exceeds peak demands for Riverfront Park.

This conclusion can be derived overall, and for parking north and south of Spokane River. Specifically, Riverfront Park facilities would not be sufficient to address average event or 85th percentile event day parking demands. However, the availability of pay parking lots within ¼ mile of the Park would accommodate this overflow. Thus, no additional parking is recommended at this time.

6 SUMMARY AND CONCLUSIONS

City of Spokane voters have supported the Spokane Parks Department by approving a $64.3 million bond to provide substantial capital improvements for Riverfront Park; projected for completion within 3 to 5 years (by year 2020). These capital improvements are anticipated to nearly double park attendance throughout the year. However, special event attendance will almost triple due to the number and density of events. This TIA and design study was developed to review future year 2020 traffic conditions assuming full development of Riverfront Park. However, more specifically this study was developed to review peak generator hour traffic impacts, pedestrian activity, and parking conditions assuming a special event condition anticipated to occur with some frequency throughout the year.

The analysis condition turned out to be an "average" event attendee condition anticipated to support up to 11,300 persons on a single day (or as a single day attendance of an event spread out over a number of days). Even though this is an "average" in terms of the statistical accounting of attendees (via an accounting/analysis of low versus maximum attendance conditions), this event actually represents an 85^{th} percentile condition in terms of frequency as this level of attendance could occur up to 18 times out of 120 events anticipated throughout a typical year. Stated another way, attendance would potentially exceed 11,300 only 18 times out of 120 event days (thus an 85^{th} percentile day). As any event day activities and attendance would exceed that of a typical park day, it could therefore be concluded that this level of attendance and traffic, pedestrian, and parking impacts would occur 18 times out of 365 days of the year. Thus, this actually represents an approximate 95^{th} percentile impact for Riverfront Park for a typical year.

6.1 TIA/TRAFFIC CONDITIONS AND RECOMMENDATIONS

The scope for the traffic impact analysis (TIA) was established in coordination with staff from City Transportation Department. Per direction, the study review traffic and transportation impacts for nine intersections located along roadways fronting or providing access to Riverfront Park, including Spokane Falls Boulevard, Washington Street, Stevens Street, Post Street/Lincoln Street, Boone Avenue, Mallon Avenue, Cataldo Avenue, and North River Drive. Traffic counts were collected during the weekday AM and PM peak/commute rush hours of these intersections.

The ensuing operational/capacity analysis was performed based on PM peak hour traffic volumes as they well exceed those identified for the AM peak hour. Also, the impacts of the Park are anticipated to be most significant in the afternoon versus morning. As traffic volumes during the weekday PM peak hour exceed those hourly volumes typically experienced during weekends within the City central business district (CBD), the PM peak hour was also considered the "design" hour for comparison with peak generation volumes anticipated following improvements of Riverfront Park. Thus, this study is anticipated to be conservative as the peak volumes of adjacent street traffic were compared with peak generator volumes anticipated on the average attendance or 85^{th} percentile event day for the Park.

Year 2020 traffic forecasts were developed from counts assuming a 10 percent baseline growth rate (reflecting non-development growth) combined with trips generated by Riverfront Park. The TIA concludes the Park is projected to generate a total of 1,423 peak generator hour trips during the statistical average attendance and 85th percentile frequency activity day. Approximately 55 percent of these trips are anticipated to approach and 45 percent depart the Park during this timeframe. Overall via City arterials, 29 percent of Park trips are anticipated to/from the north of Mission Avenue; 16 percent to/from the south of Interstate 90; 22 percent to/from the west of the Maple/Ash couplet, and 33 percent to/from the east of the Division/Ruby couplet.

The resulting traffic forecasts are considered conservative for two primary reasons. First, traffic growth within the CBD has been minimal throughout the last 10 years. Thus, the application of the 10 percent growth rate is high in context to negative traffic growth trends, but was assumed given the redevelopment and revitalization that has occurred within the CBD over the last few years. Second, counts already reflect some park activity as they were collected in the field on typical weekdays when Riverfront Park was in operation. Thus, there is some “double” counting of trips as the entire 1,423 peak generator trips were assigned to study intersections for the TIA.

Operations/Capacity Analysis. An operations analysis was developed based on geometric and traffic control conditions noted in the field (i.e. number of lanes, turn lane location, speeds, signals versus stop-signs, etc.); also using Synchro (traffic analysis files) provided by City staff which reflect signal timing and phasing information currently used for these intersections. The analysis concludes that there would be no unacceptable impacts within the TIA study area as analyses measures-of-effectiveness (MOE’s) fall within acceptable tolerances prescribed by the City. Moreover, the project trips appear to have only a minimal impact upon the operation of City streets. As such, there are no improvements recommended as operations/capacity mitigation as acceptable conditions were projected within the CBD.

With that said, two roadway improvements/modifications were examined as they were highlighted by the Riverfront Park Master site plan, including:

3) The reduction of a through lane on Spokane Falls Boulevard to allow for a landscape median and 45 degree parking between Washington Street and Post Street.
4) The vacation of Cataldo Avenue for approximately 600 from Howard Street to just short of Washington Street reduce through traffic and promote site plan objectives.

An operations/capacity analysis concludes that these improvements/modifications would have minimal impact upon traffic conditions, with MOE’s still within acceptable tolerances. In fact, the vacation of Cataldo Avenue concept was expanded upon to incorporate a connection to the signalized Washington Street/North River Drive intersection in order to address a safety issue noted in the field for special event conditions of Riverfront Park and the Spokane Arena.

6.2 PEDESTRIAN/TRANSIT CONDITIONS AND RECOMMENDATIONS

An analysis of pedestrian conditions was performed principally to help with the design of primary walkways that provide access to/from and through the Park. Pedestrian analyses was performed based upon 15-minute peak demands projected for the 85th percentile attendance day of the Park, which exceeds the average attendance day noted for traffic. The higher standard was used because pedestrian comfort and mobility is crucial for a successful Park venture. With that said, the pedestrian volumes predicted are only anticipated to occur with up to 8 events each year; thus, the conclusions derived this review is conservative throughout the majority of the year.

The analysis concluded that 15-minute demand up to10,500 pedestrian trips during the 85th percentile attendance day. 29 percent of these pedestrians are anticipate to frequent event facilities along the north bank of the park, 49 percent within the center of the Park, and 22 percent along the south bank. These pedestrians were distributed to access principally parking surrounding Riverfront Park, with the general walkway width conclusions as follows:

- Howard Bridge South should have a 50 to 55 foot effective and total width
- Howard Bridge north should have an effective minimum width of 35 feet
- Major access and travel corridors should have an effective width of 30 feet, with a total width of up to 45 feet where vendor activities are anticipated.
- Minor access and travel corridors should have an effective width of 15 feet with a total width of up to 20 feet where sightseeing or similar activities are anticipated.
- Suspension bridges are adequate at a width of 10 feet, assume no construction of additional obstructions.

The pedestrian analysis also concludes that there are sufficient, controlled crossings providing access to Riverfront Park across adjacent City arterials.

There are no changes to transit warranted by this study. STA officials confirm they will respond to any additional transit and shuttle needs on a case-by-case basis. There are improvement options to enhance STA bus access to the Park that should receive some additional consideration in the future. First, bus pullout lanes or turnaround should be considered on the north and south entryways to the Park off Spokane Falls Boulevard and North River Drive, respectively, as developed with the improvement recommendations highlighted in Sections 3.3 and 6.1. These should be reduced cost enhancements that can be implemented if and when Park officials elect to construct recommended improvements.

Second STA officials have examined the potential for a transit drop-off and pickup area to be situated between the northbound and southbound arterials of the Washington/Stevens Couplet. This would convert underutilized traffic vehicle lanes into contra-flow transit lanes that could drop pedestrians unto a “landing” constructed on the Spokane River bridge of the couplet, just north of Spokane Falls Boulevard. An elevator and/or stairway would then extend to pedestrian facilities below the bridge, providing access to the Park. This improvement does improve centralized access to the Park, but would be costly and would require structural and environmental studies to support feasibility. Thus, this is a long-term improvement option. However, geometrically it does appear the improvement is feasible as shown in Figure 13 previously.

6.3 PARKING CONDITIONS AND RECOMMENDATIONS

Parking demands were developed for Riverfront Park. A parking generation of 1,685 vehicles is anticipated for the average attendance or 85th percentile frequency activity day of the Park with 700 parking stalls in demand north of Spokane River and 985 vehicles to the south.

Through field observation it was determined there are approximately 7,335 parking stalls projected within 73 parking lots within a ¼ mile radius of Riverfront Park Park (including 700 parking stalls in designated Park lots). Through a review of parking lot utilization counts performed for three weekdays and two Saturdays it was determined that parking is 49 percent and 33 percent utilized for weekdays and Saturdays, respectively. There are 1,370 stalls typically available north of Spokane River and 2,340 south during the typical weekday, with

1,765 available north and 3,150 south during a typical Saturday. The parking analysis confirmed adequate parking supply was available to accommodate demands from Riverfront Park during the average attendance and 85th percentile frequency day event. This indicates no additional parking facilities are needed immediately based on the conclusions of this study.

6.4 Summary and Conclusions

This TIA and design study confirms that Riverfront Park can develop as proposed without significantly impacting traffic, pedestrian, parking, and transit conditions as this study has identified no transportation deficiencies. As such, the improvements and strategies recommended are not mitigating measures; rather they have been highlighted to further advance mobility and safety within the Spokane CBD. City Parks and Transportation can work to determine what, if any, of these recommendations can be implemented or if they should be disregarded due to right-of-way issues, cost, etc.

Here ends the Riverfront Park Master Plan TIA and design study prior to the appendix.

Appendix A

Glossary of Terms

This section of the Technical Appendix provides a glossary of terms. The *Highway Capacity Manual* (TRB, 2010) and the *Transportation Impact Analyses for Site Development* (ITE, 2005) were used to help with the development of the following definitions:

- **Access point** – An intersection, driveway, or opening on a roadway that provides access to a land use or facility.
- **All-way stop-controlled** – An intersection with stop signs located on all approaches.
- **Arterial** – (General Definition) A signalized street that primarily serves through-traffic and secondarily provides access to abutting properties.
- **Average daily traffic (ADT)** – The average 24 hour traffic volume at a given location on a roadway.
- **Capacity** – The number of vehicles or persons that can be accommodated on a roadway, roadway section, or at an intersection over a specified period of time. Capacity is also a term used to define limits for transit, pedestrian, and bicycle facilities. Concept typically expressed as vehicles per hour, vehicles per day, or persons per hour or per day.
- **Collector street** – (General Definition) A surface street providing land access and traffic circulation within residential, commercial, and industrial areas.
- **Cycle** – A complete sequence of cycle indicators.
- **Cycle length** – The total time for a signal to complete one cycle.
- **Delay** – The additional travel time experienced by a driver, passenger, or pedestrian.
- **Demand** – The number of users desiring service on a highway system or street over a specified time period. Concept typically expressed as vehicles per hour, vehicles per day, or persons per hour or per day.
- **Departing sight distance** – The length of road required for a vehicle to turn from a stopped position at an intersection (or driveway) and accelerate to travel speed.
- **Downstream** – The direction of traffic flow.
- **Functional class** – A transportation facility defined by the traffic service it provides.
- **Growth factor** – A percentage increase applied to current traffic demands or counts to estimate future demands/volumes.
- **Level of Service** – The standard used to evaluate traffic operating conditions of the transportation system. This is a qualitative assessment of the quantitative effect of factors such as speed, volume of traffic, geometric features, traffic interruptions, delays and freedom to maneuver. Operating conditions are categorized as LOS A through LOS "F". LOS A generally represents the most favorable driving conditions and LOS F represents the least favorable conditions.
- **Mainline** – The primary through roadway as distinct from ramps, auxiliary lanes, and collector-distributor roads.
- **Major Street** – The street not controlled by stop signs at a two-way stop-controlled intersection.
- **Minor arterial** – (General Definition) A functional category of a street allowing trips of moderate length within a relatively small geographical area.
- **Operational analysis** – A use of capacity analysis to determine the level of service on an existing or projected facility, with known or projected traffic, roadway, and control conditions.

- **Peak Generator Hour** – The single hour (or hours) in a day during which trip generation for a development or land use is highest.
- **Peak hour** – Single hour (or hours) in a day during which the maximum traffic volume occurs on a given facility (roadway, intersection, etc.). Typically the peak hour is known as the "rush" hour that occurs during the AM or PM work commutes of the typical weekday. The absolute peak hour of the day can also be referred to as the design hour.
- **Peak Generator Hour** – The peak hourly volume generated by a particular development or land use. In the context of traffic reports, the generator hour can occur in the morning and afternoon, described as AM and PM peak generator hours, respectively.
- **Peak hour factor** – The hourly volume during the maximum-volume hour of the day divided by the peak 15-minute flow rate within the peak hour; a measure of traffic demand fluctuation within the peak hour.
- **Principal Arterial** - (General Definition) A major surface street with relatively long trips between major points, and with through-trips entering, leaving, and passing through the urban area.
- **Queue** – A line of vehicles, bicycles, or persons waiting to be served by the system in which the flow rate from the front of the queue determines the average speed within the queue. Slower moving vehicles or people joining the rear of the queue are usually considered a part of the queue.
- **Roadside obstruction** – An object or barrier along a roadside or median that affects traffic flow, whether continuous (e.g., a retaining wall) or not continuous (e.g., light supports or a bridge abutment).
- **Road characteristic** – A geometric characteristic of a street or highway, including the type of facility, number and width of lanes, shoulder widths and lateral clearances, design speed, and horizontal and vertical alignment.
- **Roundabout** – An unsignalized intersection with a circulatory roadway around a central island with all entering vehicles yielding to the circulating traffic.
- **Shoulder** – A portion of the roadway contiguous with the traveled way for accommodation of stopped vehicles, emergency use, and lateral support of the subbase, base, and surface courses.
- **Stopping sight distance** – The length of road needed for a moving vehicle to come to a complete stop prior to an obstruction sighted on the road.
- **Traffic conditions** – A characteristic of traffic flow, including distribution of vehicle types in the traffic stream, directional distribution of traffic, lane use distribution of traffic, and type of driver population on a given facility.
- **Travel speed** – The average speed, in miles per hour, of a traffic computed as the length of roadway segment divided by the average travel time of the vehicles traversing the segment.
- **Travel time** – The average time spent by vehicles traversing a highway segment, including control delay, in seconds per vehicle of minutes per vehicle.
- **Trip Distribution and Assignment** – The predicted travel patterns of vehicle trips as they approach and depart a land use. Distribution refers to the travel pattern, usually defined in percentages or fractions, and assignment refers to vehicle trip ends.

- **Traffic forecast** – The predicted traffic volume of the analysis horizon year or time period. Most typically predicted for the weekday, AM peak hour, PM peak hour, or AM or PM peak generator hours of the typical weekday.
- **Traffic impact analysis** – A *traffic impact analysis* (TIA) is an engineering and planning study that forecasts the potential traffic and transportation impacts of a proposed development on an area, neighborhood, or community. Reports can also be referred to as a traffic impact study (TIS).
- **Trip generation** – The number of vehicle trips generated by a development or land use. Most typically predicted for the weekday, AM peak hour, PM peak hour, or AM or PM peak generator hours of the typical weekday.
- **Two-way left-turn lane** – A lane in the median area that extends continuously along a street or highway and is marked to provide a deceleration and storage area, out of the through-traffic stream, for vehicles traveling in either direction to use in marking left turns at intersections and driveways.
- **Two-way stop-controlled** – The type of traffic control at an intersection where drivers on the minor street or driver turning left from the major street wait for a gap in the major-street traffic to complete a maneuver. Typically the minor approaches are stop-controlled.
- **Unsignalized intersection** – An intersection not controlled by traffic signals.
- **Upstream** – The direction from which traffic is flowing.
- **Volume** – The number of persons or vehicles passing a point on a lane, roadway, or other traffic-way during some time interval, often one hour, expressed in vehicles, bicycles, or persons per hour.
- **Volume-to-capacity ratio** – The ratio of flow rate to capacity for a transportation facility.
- **Walkway** – A facility provided for pedestrian movement and segregated from vehicle traffic by a curb, or provide for on a separate right-of-way.

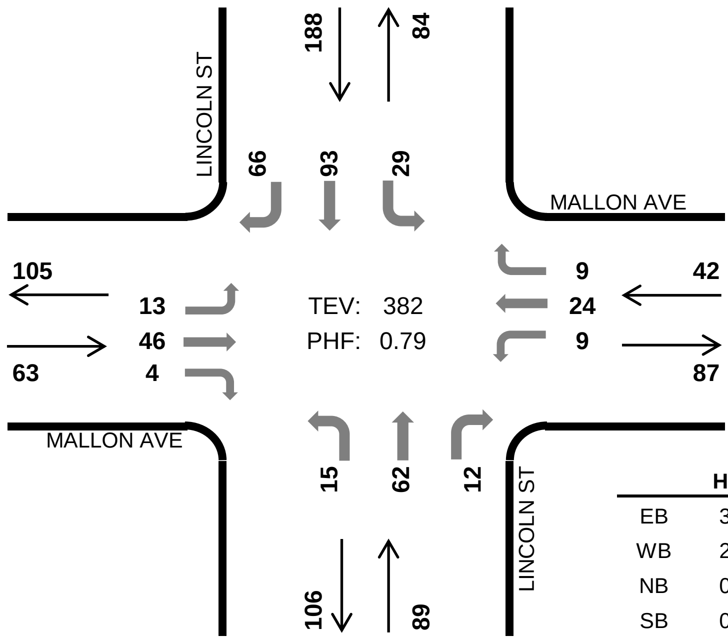
Appendix B

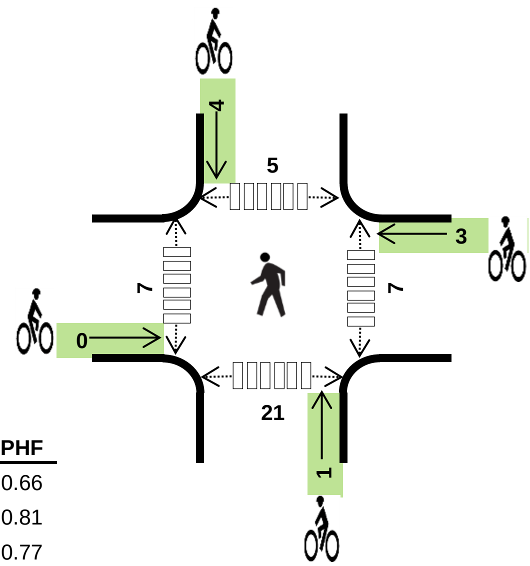
Summary Traffic Counts

LINCOLN ST
MALLON AVE

Date: Wed, May 06, 2015
Count Period: 7:15 AM to 8:45 AM
Peak Hour: 7:30 AM to 8:30 AM

Peak Hour





	HV %:	PHF
EB	3.2%	0.66
WB	2.4%	0.81
NB	0.0%	0.77
SB	0.5%	0.76
TOTAL	1.0%	0.79

Two-Hour Count Summaries

Interval Start	MALLON AVE Eastbound LT	TH	RT	MALLON AVE Westbound LT	TH	RT	LINCOLN ST Northbound LT	TH	RT	LINCOLN ST Southbound LT	TH	RT	15-min Total	Rolling One Hour
7:15 AM	2	9	1	0	3	1	1	9	2	3	15	12	58	
7:30 AM	**0**	**8**	**0**	**1**	**3**	**3**	**3**	**10**	**1**	**8**	**22**	**17**	**76**	
7:45 AM	**4**	**15**	**2**	**3**	**5**	**5**	**3**	**20**	**2**	**7**	**36**	**19**	**121**	
8:00 AM	**6**	**17**	**1**	**0**	**11**	**1**	**3**	**21**	**5**	**12**	**20**	**19**	**116**	371
8:15 AM	**3**	**6**	**1**	**5**	**5**	**0**	**6**	**11**	**4**	**2**	**15**	**11**	**69**	**382**
8:30 AM	1	11	2	1	4	2	4	16	0	1	22	7	71	377
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	256
9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	140
Count Total	16	66	7	10	31	12	20	87	14	33	130	85	511	
Peak Hr	**13**	**46**	**4**	**9**	**24**	**9**	**15**	**62**	**12**	**29**	**93**	**66**	**382**	

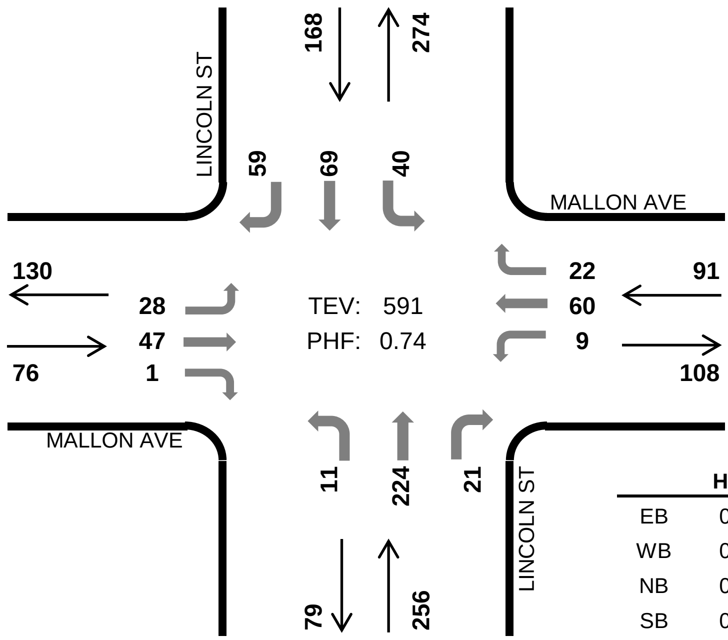
Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

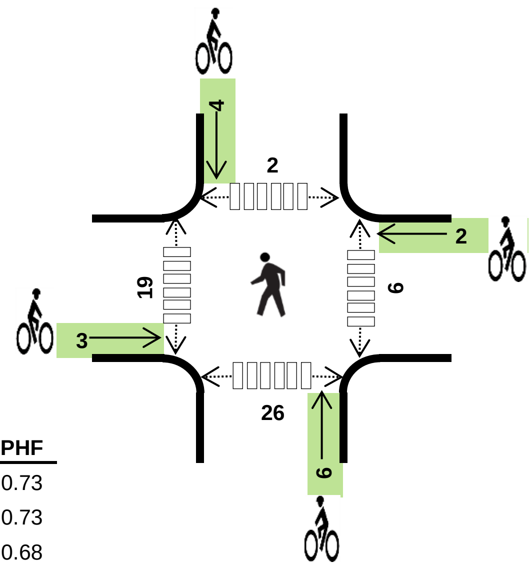
Interval Start	Heavy Vehicle Totals EB	WB	NB	SB	Total	Bicycles EB	WB	NB	SB	Total	Pedestrians (Crossing Leg) East	West	North	South	Total
7:15 AM	0	0	0	0	*0*	0	0	0	1	*1*	0	1	0	4	*5*
7:30 AM	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**2**	***2***	**1**	**3**	**1**	**6**	***11***
7:45 AM	**1**	**1**	**0**	**1**	***3***	**0**	**0**	**0**	**0**	***0***	**5**	**2**	**2**	**5**	***14***
8:00 AM	**1**	**0**	**0**	**0**	***1***	**0**	**1**	**0**	**1**	***2***	**0**	**1**	**1**	**4**	***6***
8:15 AM	**0**	**0**	**0**	**0**	***0***	**0**	**2**	**1**	**1**	***4***	**1**	**1**	**1**	**6**	***9***
8:30 AM	0	0	0	0	*0*	1	0	1	0	*2*	0	2	6	4	*12*
8:45 AM	0	0	0	0	*0*	0	0	0	0	*0*	0	0	0	0	*0*
9:00 AM	0	0	0	0	*0*	0	0	0	0	*0*	0	0	0	0	*0*
Count Total	2	1	0	1	*4*	1	3	2	5	*11*	7	10	11	29	*57*
Peak Hr	**2**	**1**	**0**	**1**	***4***	**0**	**3**	**1**	**4**	***8***	**7**	**7**	**5**	**21**	***40***

LINCOLN ST
MALLON AVE

Date: Wed, May 06, 2015
Count Period: 4:15 PM to 5:45 PM
Peak Hour: 4:30 PM to 5:30 PM

Peak Hour





	HV %:	PHF
EB	0.0%	0.73
WB	0.0%	0.73
NB	0.0%	0.68
SB	0.6%	0.84
TOTAL	0.2%	0.74

Two-Hour Count Summaries

Interval Start	MALLON AVE Eastbound LT	TH	RT	MALLON AVE Westbound LT	TH	RT	LINCOLN ST Northbound LT	TH	RT	LINCOLN ST Southbound LT	TH	RT	15-min Total	Rolling One Hour
4:15 PM	3	10	1	1	17	4	2	40	5	2	13	12	110	
4:30 PM	**10**	**9**	**0**	**1**	**16**	**3**	**2**	**54**	**6**	**6**	**18**	**17**	**142**	
4:45 PM	**6**	**10**	**0**	**1**	**11**	**10**	**3**	**45**	**4**	**12**	**23**	**10**	**135**	
5:00 PM	**8**	**17**	**1**	**5**	**21**	**5**	**4**	**81**	**9**	**16**	**16**	**18**	**201**	588
5:15 PM	**4**	**11**	**0**	**2**	**12**	**4**	**2**	**44**	**2**	**6**	**12**	**14**	**113**	**591**
5:30 PM	0	5	0	1	11	0	2	24	5	6	6	17	77	526
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	391
6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	190
Count Total	31	62	2	11	88	26	15	288	31	48	88	88	778	
Peak Hr	**28**	**47**	**1**	**9**	**60**	**22**	**11**	**224**	**21**	**40**	**69**	**59**	**591**	

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals EB	WB	NB	SB	Total	Bicycles EB	WB	NB	SB	Total	Pedestrians (Crossing Leg) East	West	North	South	Total
4:15 PM	0	0	0	0	*0*	1	0	0	1	*2*	0	1	0	6	*7*
4:30 PM	**0**	**0**	**0**	**1**	***1***	**0**	**0**	**0**	**1**	***1***	**2**	**3**	**0**	**9**	***14***
4:45 PM	**0**	**0**	**0**	**0**	***0***	**2**	**1**	**2**	**2**	***7***	**0**	**3**	**0**	**1**	***4***
5:00 PM	**0**	**0**	**0**	**0**	***0***	**0**	**1**	**3**	**1**	***5***	**2**	**11**	**2**	**12**	***27***
5:15 PM	**0**	**0**	**0**	**0**	***0***	**1**	**0**	**1**	**0**	***2***	**2**	**2**	**0**	**4**	***8***
5:30 PM	0	0	1	0	*1*	0	0	1	1	*2*	0	5	3	6	*14*
5:45 PM	0	0	0	0	*0*	0	0	0	0	*0*	0	0	0	0	*0*
6:00 PM	0	0	0	0	*0*	0	0	0	0	*0*	0	0	0	0	*0*
Count Total	0	0	1	1	*2*	4	2	7	6	*19*	6	25	5	38	*74*
Peak Hr	**0**	**0**	**0**	**1**	***1***	**3**	**2**	**6**	**4**	***15***	**6**	**19**	**2**	**26**	***53***

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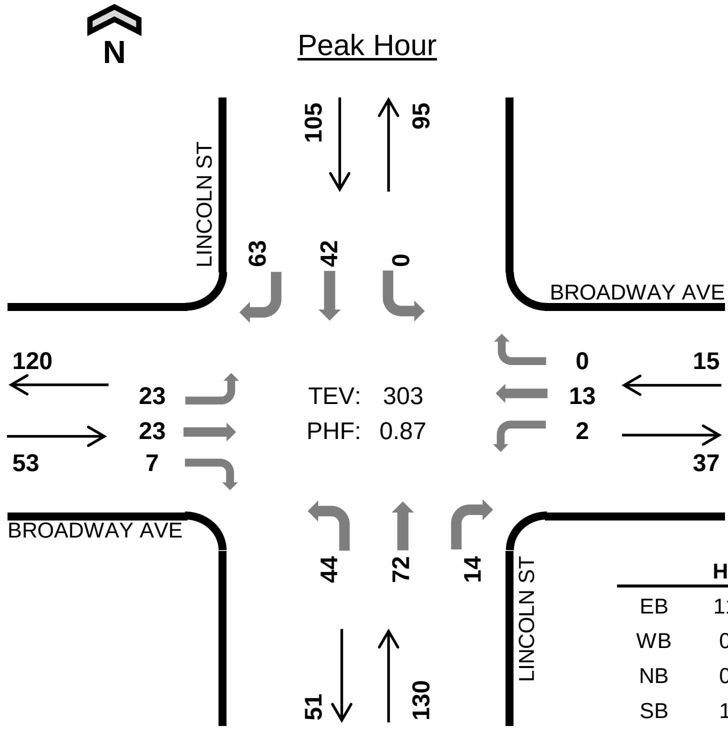
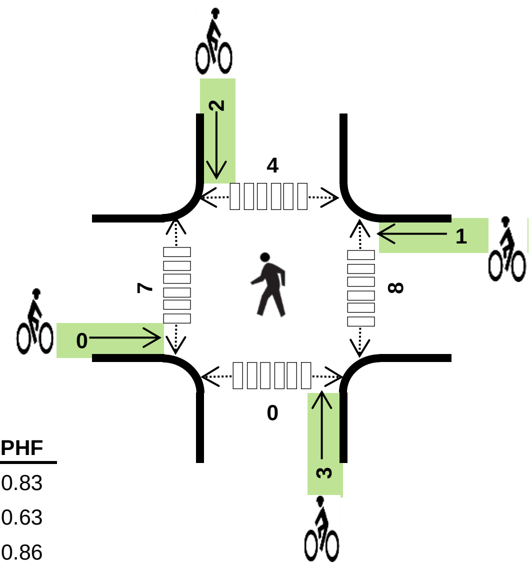
LINCOLN ST
BROADWAY AVE

Date: Wed, May 06, 2015
Count Period: 7:15 AM to 8:45 AM
Peak Hour: 7:45 AM to 8:45 AM



	HV %:	PHF
EB	11.3%	0.83
WB	0.0%	0.63
NB	0.8%	0.86
SB	1.0%	0.67
TOTAL	2.6%	0.87



Two-Hour Count Summaries

Interval Start	BROADWAY AVE Eastbound			BROADWAY AVE Westbound			LINCOLN ST Northbound			LINCOLN ST Southbound			15-min Total	Rolling One Hour
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
7:15 AM	4	8	0	0	1	0	3	8	2	0	9	7	42	
7:30 AM	1	3	2	1	2	0	3	13	2	0	14	9	50	
7:45 AM	**2**	**7**	**3**	**0**	**3**	**0**	**6**	**22**	**5**	**0**	**18**	**21**	**87**	
8:00 AM	**6**	**6**	**1**	**1**	**5**	**0**	**11**	**24**	**3**	**0**	**6**	**14**	**77**	256
8:15 AM	**8**	**6**	**2**	**0**	**2**	**0**	**15**	**14**	**2**	**0**	**6**	**14**	**69**	283
8:30 AM	**7**	**4**	**1**	**1**	**3**	**0**	**12**	**12**	**4**	**0**	**12**	**14**	**70**	**303**
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	216
9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	139
Count Total	28	34	9	3	16	0	50	93	18	0	65	79	395	
Peak Hr	**23**	**23**	**7**	**2**	**13**	**0**	**44**	**72**	**14**	**0**	**42**	**63**	**303**	

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
7:15 AM	2	0	0	0	*2*	0	0	0	1	*1*	0	1	0	0	*1*
7:30 AM	1	0	0	0	*1*	3	0	0	1	*4*	0	0	0	2	*2*
7:45 AM	**2**	**0**	**0**	**1**	***3***	**0**	**1**	**1**	**0**	***2***	**3**	**4**	**0**	**0**	***7***
8:00 AM	**1**	**0**	**0**	**0**	***1***	**0**	**0**	**0**	**1**	***1***	**1**	**0**	**0**	**0**	***1***
8:15 AM	**2**	**0**	**0**	**0**	***2***	**0**	**0**	**1**	**1**	***2***	**3**	**1**	**2**	**0**	***6***
8:30 AM	**1**	**0**	**1**	**0**	***2***	**0**	**0**	**1**	**0**	***1***	**1**	**2**	**2**	**0**	***5***
8:45 AM	0	0	0	0	*0*	0	0	0	0	*0*	0	0	0	0	*0*
9:00 AM	0	0	0	0	*0*	0	0	0	0	*0*	0	0	0	0	*0*
Count Total	9	0	1	1	*11*	3	1	3	4	*11*	8	8	4	2	*22*
Peak Hr	**6**	**0**	**1**	**1**	***8***	**0**	**1**	**3**	**2**	**6**	**8**	**7**	**4**	**0**	***19***

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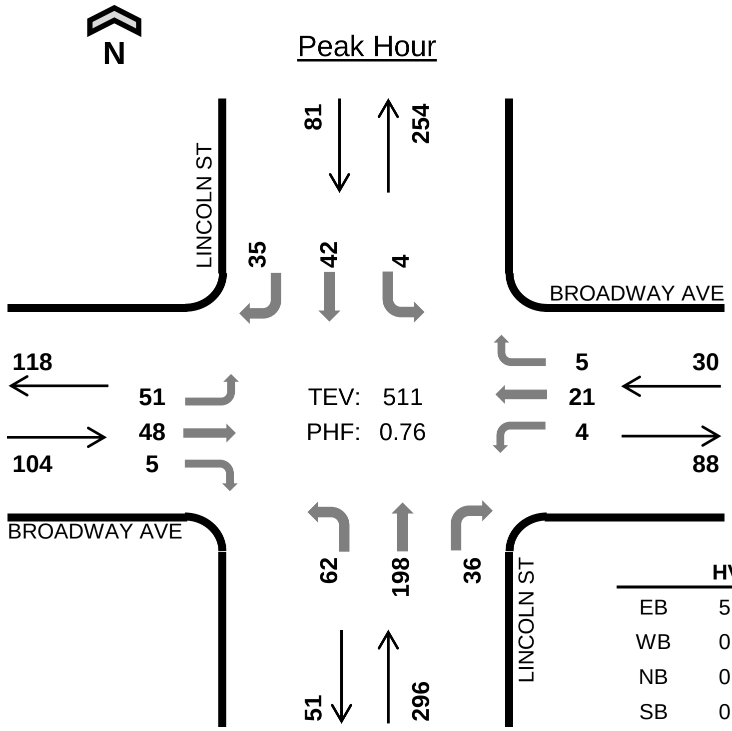
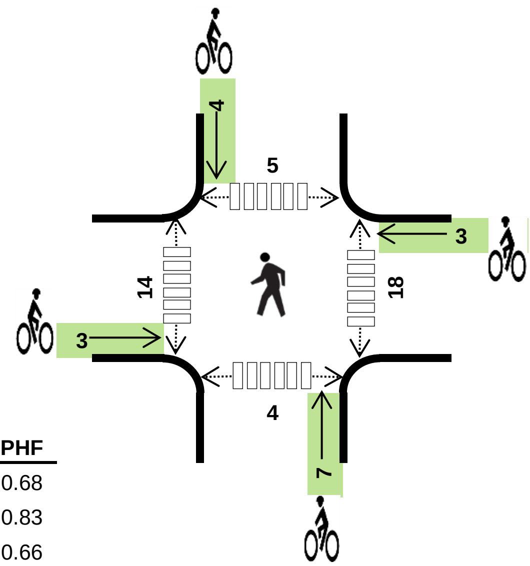
LINCOLN ST
BROADWAY AVE

Date: Wed, May 06, 2015
Count Period: 4:15 PM to 5:45 PM
Peak Hour: 4:15 PM to 5:15 PM

Peak Hour





	HV %:	PHF
EB	5.8%	0.68
WB	0.0%	0.83
NB	0.0%	0.66
SB	0.0%	0.84
TOTAL	1.2%	0.76

Two-Hour Count Summaries

Interval Start	BROADWAY AVE			BROADWAY AVE			LINCOLN ST			LINCOLN ST			15-min Total	Rolling One Hour
	Eastbound			Westbound			Northbound			Southbound				
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
4:15 PM	**9**	**10**	**3**	**1**	**2**	**1**	**12**	**37**	**9**	**1**	**7**	**7**	**99**	
4:30 PM	**7**	**9**	**1**	**2**	**5**	**2**	**16**	**54**	**7**	**2**	**9**	**9**	**123**	
4:45 PM	**18**	**19**	**1**	**1**	**7**	**1**	**10**	**32**	**7**	**0**	**12**	**12**	**120**	
5:00 PM	**17**	**10**	**0**	**0**	**7**	**1**	**24**	**75**	**13**	**1**	**14**	**7**	**169**	**511**
5:15 PM	7	11	1	0	5	0	13	40	2	1	8	6	94	506
5:30 PM	2	10	0	0	3	0	12	29	4	0	2	5	67	450
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	330
6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	161
Count Total	60	69	6	4	29	5	87	267	42	5	52	46	672	
Peak Hr	**51**	**48**	**5**	**4**	**21**	**5**	**62**	**198**	**36**	**4**	**42**	**35**	**511**	

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
4:15 PM	**2**	**0**	**0**	**0**	***2***	**0**	**1**	**0**	**1**	***2***	**1**	**0**	**0**	**1**	***2***
4:30 PM	**1**	**0**	**0**	**0**	***1***	**0**	**0**	**2**	**1**	***3***	**4**	**2**	**1**	**0**	***7***
4:45 PM	**2**	**0**	**0**	**0**	***2***	**1**	**2**	**2**	**1**	***6***	**9**	**8**	**4**	**1**	***22***
5:00 PM	**1**	**0**	**0**	**0**	***1***	**2**	**0**	**3**	**1**	***6***	**4**	**4**	**0**	**2**	***10***
5:15 PM	2	0	0	0	*2*	1	0	1	0	*2*	2	2	0	1	*5*
5:30 PM	2	0	0	0	*2*	0	0	1	0	*1*	5	2	0	1	*8*
5:45 PM	0	0	0	0	*0*	0	0	0	0	*0*	0	0	0	0	*0*
6:00 PM	0	0	0	0	*0*	0	0	0	0	*0*	0	0	0	0	*0*
Count Total	10	0	0	0	*10*	4	3	9	4	*20*	25	18	5	6	*54*
Peak Hr	**6**	**0**	**0**	**0**	***6***	**3**	**3**	**7**	**4**	***17***	**18**	**14**	**5**	**4**	***41***

Mark Skaggs: 425 - 250 - 0777
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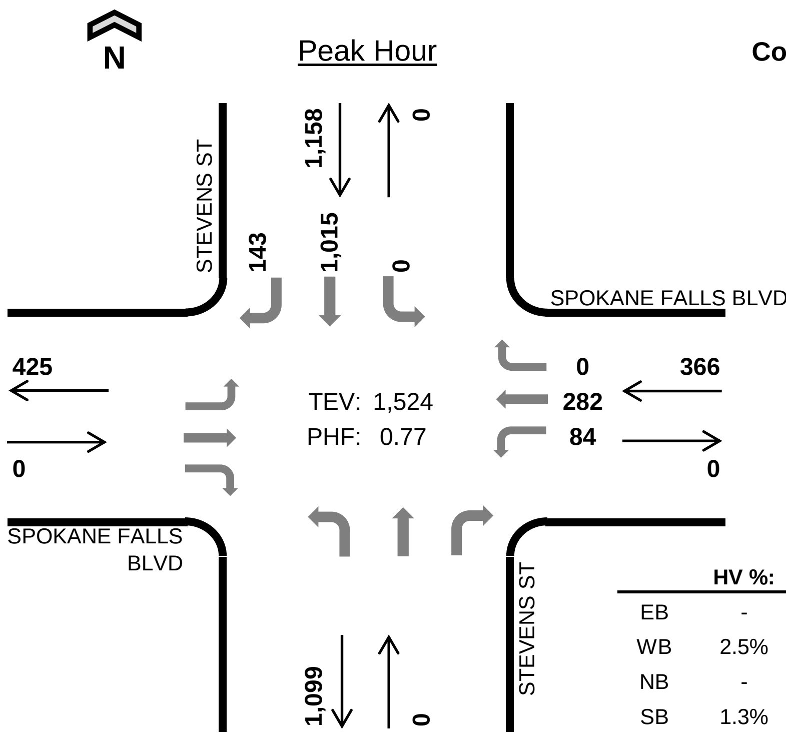
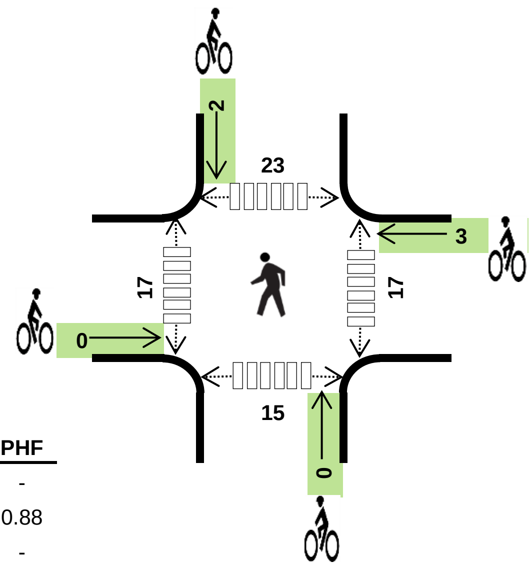
STEVENS ST
SPOKANE FALLS BLVD

Date: Wed, May 06, 2015
Count Period: 7:15 AM to 8:45 AM
Peak Hour: 7:15 AM to 8:15 AM

Peak Hour



	HV %:	PHF
EB	-	-
WB	2.5%	0.88
NB	-	-
SB	1.3%	0.73
TOTAL	1.6%	0.77



Two-Hour Count Summaries

Interval Start	SPOKANE FALLS BLVD Eastbound			SPOKANE FALLS BLVD Westbound			STEVENS ST Northbound			STEVENS ST Southbound			15-min Total	Rolling One Hour
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
7:15 AM	**0**	**0**	**0**	**26**	**59**	**0**	**0**	**0**	**0**	**0**	**192**	**25**	**302**	
7:30 AM	**0**	**0**	**0**	**19**	**58**	**0**	**0**	**0**	**0**	**0**	**251**	**33**	**361**	
7:45 AM	**0**	**0**	**0**	**20**	**80**	**0**	**0**	**0**	**0**	**0**	**346**	**50**	**496**	
8:00 AM	**0**	**0**	**0**	**19**	**85**	**0**	**0**	**0**	**0**	**0**	**226**	**35**	**365**	**1,524**
8:15 AM	0	0	0	28	74	0	0	0	0	0	169	26	297	1,519
8:30 AM	0	0	0	26	74	0	0	0	0	0	163	24	287	1,445
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	949
9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	584
Count Total	0	0	0	138	430	0	0	0	0	0	1,347	193	2,108	
Peak Hr	**0**	**0**	**0**	**84**	**282**	**0**	**0**	**0**	**0**	**0**	**1,015**	**143**	**1,524**	

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
7:15 AM	**0**	**1**	**0**	**4**	***5***	**0**	**0**	**0**	**0**	***0***	**5**	**5**	**6**	**3**	***19***
7:30 AM	**0**	**4**	**0**	**6**	***10***	**0**	**0**	**0**	**0**	***0***	**0**	**4**	**2**	**1**	***7***
7:45 AM	**0**	**1**	**0**	**2**	***3***	**0**	**0**	**0**	**2**	***2***	**12**	**6**	**13**	**6**	***37***
8:00 AM	**0**	**3**	**0**	**3**	***6***	**0**	**3**	**0**	**0**	***3***	**0**	**2**	**2**	**5**	***9***
8:15 AM	0	2	0	2	*4*	0	0	0	0	*0*	7	2	16	1	*26*
8:30 AM	0	1	0	3	*4*	0	0	0	0	*0*	1	0	3	1	*5*
8:45 AM	0	0	0	0	*0*	0	0	0	0	*0*	0	0	0	0	*0*
9:00 AM	0	0	0	0	*0*	0	0	0	0	*0*	0	0	0	0	*0*
Count Total	0	12	0	20	*32*	0	3	0	2	*5*	25	19	42	17	*103*
Peak Hr	**0**	**9**	**0**	**15**	***24***	**0**	**3**	**0**	**2**	***5***	**17**	**17**	**23**	**15**	***72***

Mark Skaggs: 425 - 250 - 0777

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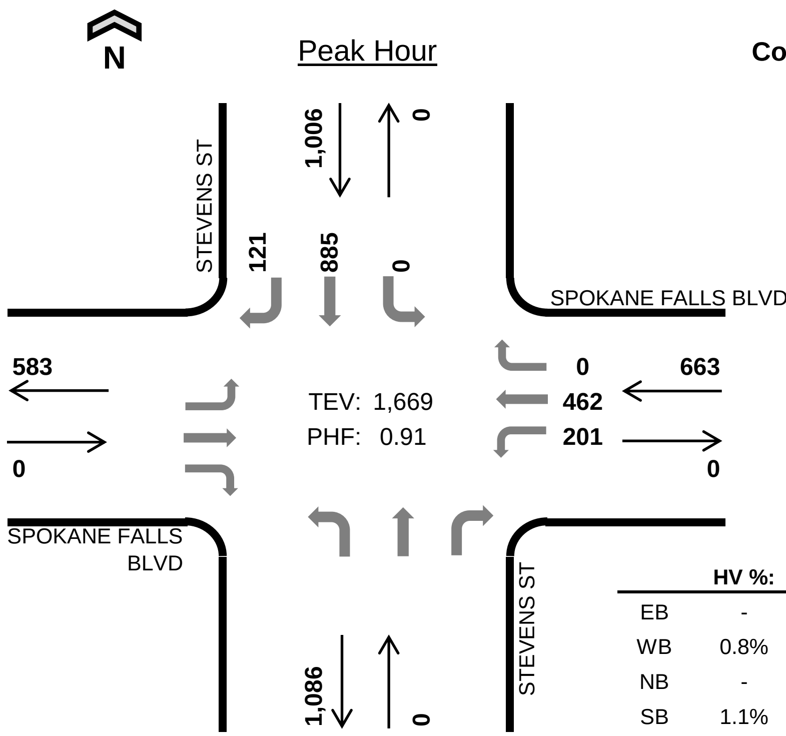
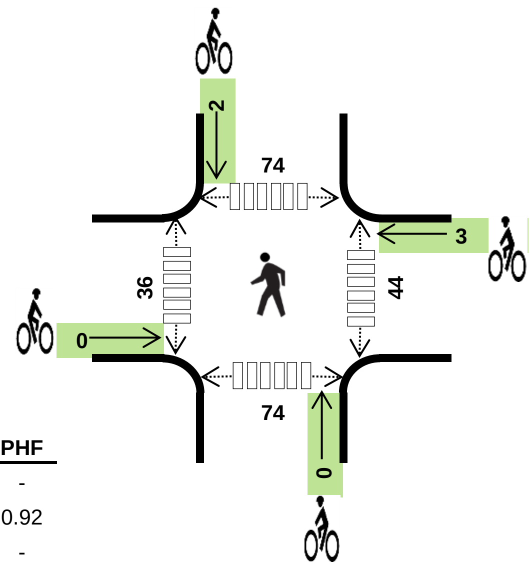
STEVENS ST
SPOKANE FALLS BLVD

Date:	Wed, May 06, 2015
Count Period:	4:15 PM to 5:45 PM
Peak Hour:	4:30 PM to 5:30 PM



	HV %:	PHF
EB	-	-
WB	0.8%	0.92
NB	-	-
SB	1.1%	0.90
TOTAL	1.0%	0.91



Two-Hour Count Summaries

Interval Start	SPOKANE FALLS BLVD Eastbound			SPOKANE FALLS BLVD Westbound			STEVENS ST Northbound			STEVENS ST Southbound			15-min Total	Rolling One Hour
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
4:15 PM	0	0	0	40	102	0	0	0	0	0	197	28	367	
4:30 PM	**0**	**0**	**0**	**63**	**118**	**0**	**0**	**0**	**0**	**0**	**177**	**30**	**388**	
4:45 PM	**0**	**0**	**0**	**28**	**102**	**0**	**0**	**0**	**0**	**0**	**210**	**29**	**369**	
5:00 PM	**0**	**0**	**0**	**55**	**118**	**0**	**0**	**0**	**0**	**0**	**250**	**29**	**452**	1,576
5:15 PM	**0**	**0**	**0**	**55**	**124**	**0**	**0**	**0**	**0**	**0**	**248**	**33**	**460**	**1,669**
5:30 PM	0	0	0	39	91	0	0	0	0	0	187	24	341	1,622
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1,253
6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	801
Count Total	0	0	0	280	655	0	0	0	0	0	1,269	173	2,377	
Peak Hr	**0**	**0**	**0**	**201**	**462**	**0**	**0**	**0**	**0**	**0**	**885**	**121**	**1,669**	

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
4:15 PM	0	0	0	4	*4*	0	0	0	1	*1*	11	4	9	3	*27*
4:30 PM	**0**	**2**	**0**	**2**	***4***	**0**	**0**	**0**	**0**	***0***	**12**	**17**	**15**	**6**	***50***
4:45 PM	**0**	**1**	**0**	**2**	***3***	**0**	**0**	**0**	**1**	***1***	**6**	**13**	**13**	**16**	***48***
5:00 PM	**0**	**1**	**0**	**4**	***5***	**0**	**0**	**0**	**1**	***1***	**16**	**3**	**18**	**25**	***62***
5:15 PM	**0**	**1**	**0**	**3**	***4***	**0**	**3**	**0**	**0**	***3***	**10**	**3**	**28**	**27**	***68***
5:30 PM	0	1	0	2	*3*	0	0	0	1	*1*	9	8	14	26	*57*
5:45 PM	0	0	0	0	*0*	0	0	0	0	*0*	0	0	0	0	*0*
6:00 PM	0	0	0	0	*0*	0	0	0	0	*0*	0	0	0	0	*0*
Count Total	0	6	0	17	*23*	0	3	0	4	*7*	64	48	97	103	*312*
Peak Hr	**0**	**5**	**0**	**11**	***16***	**0**	**3**	**0**	**2**	***5***	**44**	**36**	**74**	**74**	***228***

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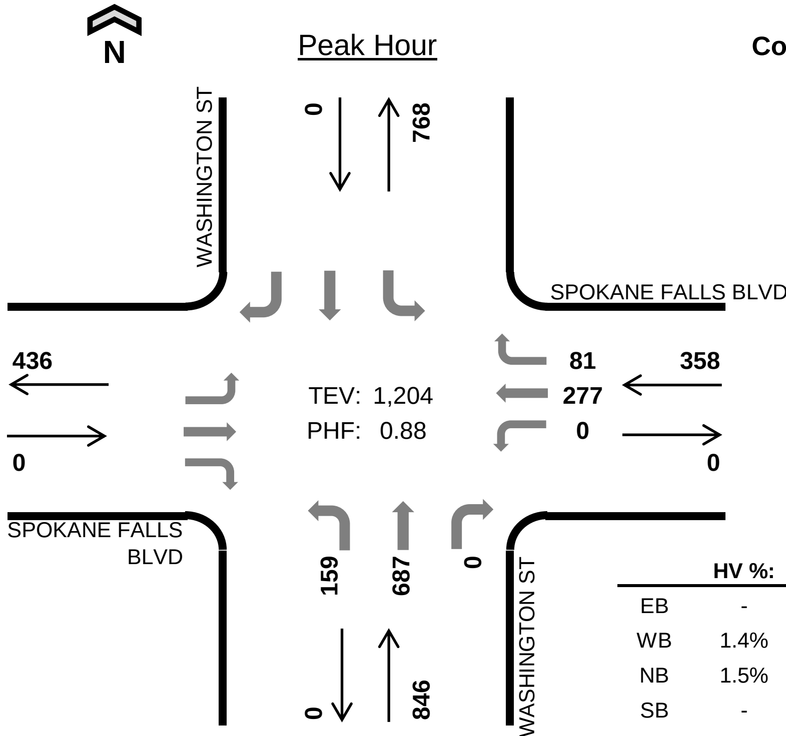
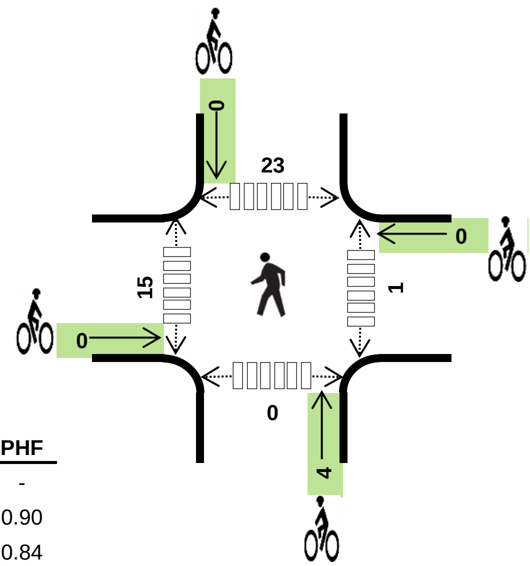
WASHINGTON ST
SPOKANE FALLS BLVD

Date: Wed, May 06, 2015
Count Period: 7:15 AM to 8:45 AM
Peak Hour: 7:45 AM to 8:45 AM



	HV %:	PHF
EB	-	-
WB	1.4%	0.90
NB	1.5%	0.84
SB	-	-
TOTAL	1.5%	0.88



Two-Hour Count Summaries

Interval Start	SPOKANE FALLS BLVD Eastbound LT	TH	RT	SPOKANE FALLS BLVD Westbound LT	TH	RT	WASHINGTON ST Northbound LT	TH	RT	WASHINGTON ST Southbound LT	TH	RT	15-min Total	Rolling One Hour
7:15 AM	0	0	0	0	59	20	26	164	0	0	0	0	269	
7:30 AM	0	0	0	0	68	17	27	167	0	0	0	0	279	
7:45 AM	**0**	**0**	**0**	**0**	**69**	**19**	**48**	**205**	**0**	**0**	**0**	**0**	**341**	
8:00 AM	**0**	**0**	**0**	**0**	**73**	**26**	**37**	**155**	**0**	**0**	**0**	**0**	**291**	1,180
8:15 AM	**0**	**0**	**0**	**0**	**67**	**14**	**37**	**170**	**0**	**0**	**0**	**0**	**288**	1,199
8:30 AM	**0**	**0**	**0**	**0**	**68**	**22**	**37**	**157**	**0**	**0**	**0**	**0**	**284**	**1,204**
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	863
9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	572
Count Total	0	0	0	0	404	118	212	1,018	0	0	0	0	1,752	
Peak Hr	**0**	**0**	**0**	**0**	**277**	**81**	**159**	**687**	**0**	**0**	**0**	**0**	**1,204**	

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals EB	WB	NB	SB	Total	Bicycles EB	WB	NB	SB	Total	Pedestrians (Crossing Leg) East	West	North	South	Total
7:15 AM	0	1	2	0	*3*	0	0	0	0	*0*	0	3	2	0	*5*
7:30 AM	0	5	3	0	*8*	0	0	0	0	*0*	0	5	8	0	*13*
7:45 AM	**0**	**0**	**3**	**0**	***3***	**0**	**0**	**0**	**0**	***0***	**1**	**3**	**2**	**0**	***6***
8:00 AM	**0**	**2**	**3**	**0**	***5***	**0**	**0**	**4**	**0**	***4***	**0**	**5**	**9**	**0**	***14***
8:15 AM	**0**	**2**	**6**	**0**	***8***	**0**	**0**	**0**	**0**	***0***	**0**	**1**	**7**	**0**	***8***
8:30 AM	**0**	**1**	**1**	**0**	***2***	**0**	**0**	**0**	**0**	***0***	**0**	**6**	**5**	**0**	***11***
8:45 AM	0	0	0	0	*0*	0	0	0	0	*0*	0	0	0	0	*0*
9:00 AM	0	0	0	0	*0*	0	0	0	0	*0*	0	0	0	0	*0*
Count Total	0	11	18	0	*29*	0	0	4	0	*4*	1	23	33	0	*57*
Peak Hr	**0**	**5**	**13**	**0**	***18***	**0**	**0**	**4**	**0**	***4***	**1**	**15**	**23**	**0**	***39***

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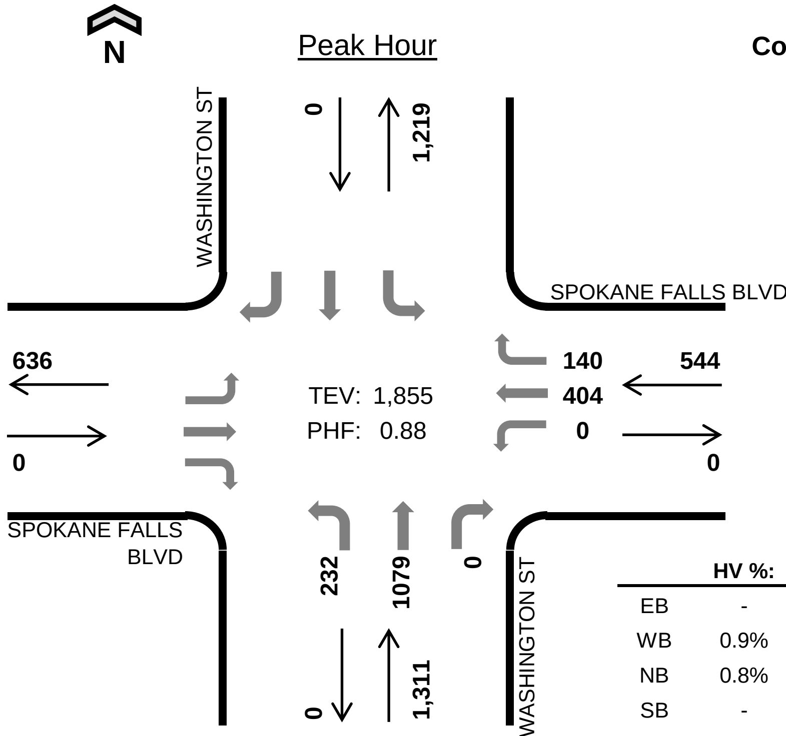
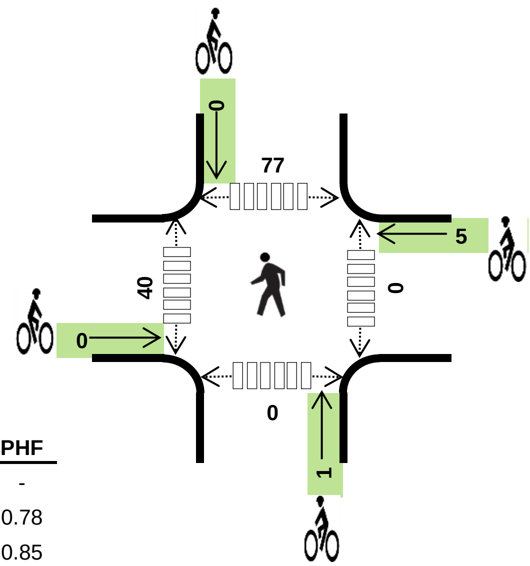
WASHINGTON ST
SPOKANE FALLS BLVD

Date: Wed, May 06, 2015
Count Period: 4:15 PM to 5:45 PM
Peak Hour: 4:30 PM to 5:30 PM



	HV %:	PHF
EB	-	-
WB	0.9%	0.78
NB	0.8%	0.85
SB	-	-
TOTAL	0.8%	0.88



Two-Hour Count Summaries

Interval Start	SPOKANE FALLS BLVD Eastbound LT	TH	RT	SPOKANE FALLS BLVD Westbound LT	TH	RT	WASHINGTON ST Northbound LT	TH	RT	WASHINGTON ST Southbound LT	TH	RT	15-min Total	Rolling One Hour
4:15 PM	0	0	0	0	89	30	62	247	0	0	0	0	428	
4:30 PM	**0**	**0**	**0**	**0**	**92**	**30**	**84**	**293**	**0**	**0**	**0**	**0**	**499**	
4:45 PM	**0**	**0**	**0**	**0**	**81**	**23**	**37**	**209**	**0**	**0**	**0**	**0**	**350**	
5:00 PM	**0**	**0**	**0**	**0**	**104**	**39**	**70**	**314**	**0**	**0**	**0**	**0**	**527**	1,804
5:15 PM	**0**	**0**	**0**	**0**	**127**	**48**	**41**	**263**	**0**	**0**	**0**	**0**	**479**	**1,855**
5:30 PM	0	0	0	0	90	29	32	224	0	0	0	0	375	1,731
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1,381
6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	854
Count Total	0	0	0	0	583	199	326	1,550	0	0	0	0	2,658	
Peak Hr	**0**	**0**	**0**	**0**	**404**	**140**	**232**	**1,079**	**0**	**0**	**0**	**0**	**1,855**	

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals EB	WB	NB	SB	Total	Bicycles EB	WB	NB	SB	Total	Pedestrians (Crossing Leg) East	West	North	South	Total
4:15 PM	0	0	3	0	*3*	0	0	0	0	*0*	2	7	5	2	*16*
4:30 PM	**0**	**2**	**3**	**0**	***5***	**0**	**0**	**0**	**0**	***0***	**0**	**7**	**11**	**0**	***18***
4:45 PM	**0**	**2**	**1**	**0**	***3***	**0**	**2**	**1**	**0**	***3***	**0**	**23**	**15**	**0**	***38***
5:00 PM	**0**	**0**	**2**	**0**	***2***	**0**	**0**	**0**	**0**	***0***	**0**	**4**	**26**	**0**	***30***
5:15 PM	**0**	**1**	**4**	**0**	***5***	**0**	**3**	**0**	**0**	***3***	**0**	**6**	**25**	**0**	***31***
5:30 PM	0	1	2	0	*3*	0	0	0	0	*0*	0	25	28	0	*53*
5:45 PM	0	0	0	0	*0*	0	0	0	0	*0*	0	0	0	0	*0*
6:00 PM	0	0	0	0	*0*	0	0	0	0	*0*	0	0	0	0	*0*
Count Total	0	6	15	0	*21*	0	5	1	0	*6*	2	72	110	2	*186*
Peak Hr	**0**	**5**	**10**	**0**	***15***	**0**	**5**	**1**	**0**	***6***	**0**	**40**	**77**	**0**	***117***

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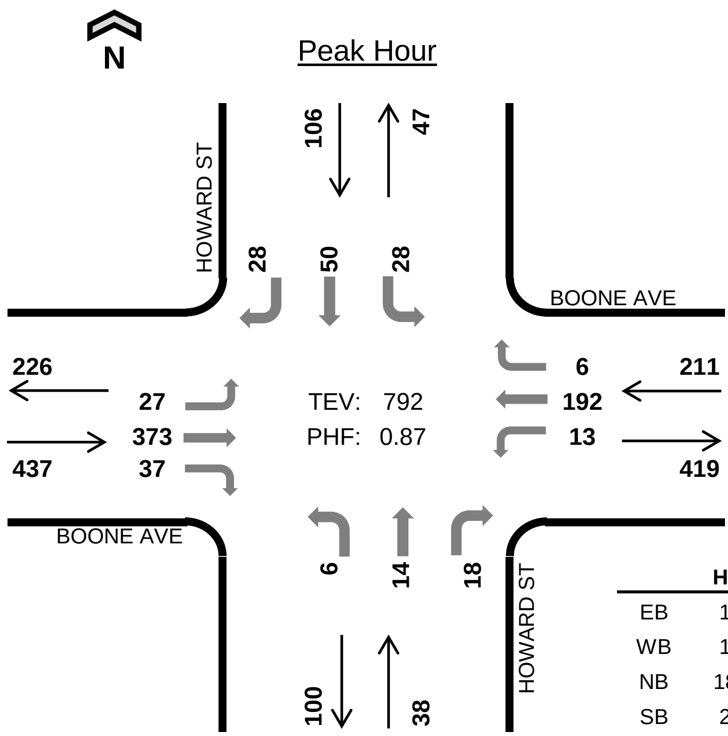
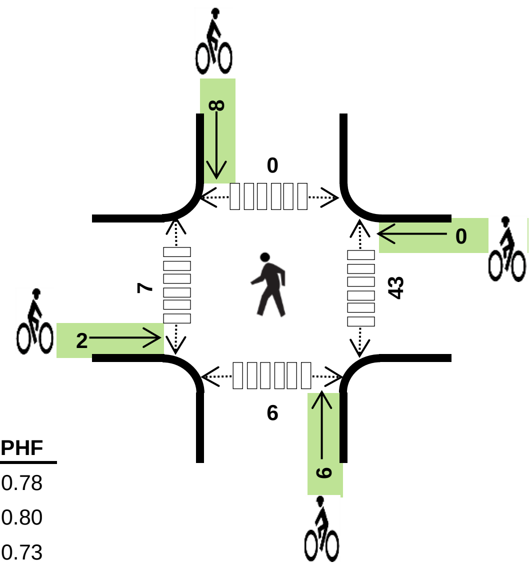
HOWARD ST
BOONE AVE

Date: Wed, May 06, 2015
Count Period: 7:15 AM to 8:45 AM
Peak Hour: 7:30 AM to 8:30 AM



	HV %:	PHF
EB	1.1%	0.78
WB	1.9%	0.80
NB	18.4%	0.73
SB	2.8%	0.76
TOTAL	2.4%	0.87



Two-Hour Count Summaries

Interval Start	BOONE AVE Eastbound			BOONE AVE Westbound			HOWARD ST Northbound			HOWARD ST Southbound			15-min Total	Rolling One Hour
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
7:15 AM	3	79	6	1	27	3	0	2	7	4	3	7	142	
7:30 AM	**6**	**90**	**13**	**1**	**45**	**3**	**0**	**1**	**3**	**9**	**10**	**8**	**189**	
7:45 AM	**9**	**118**	**13**	**5**	**38**	**1**	**1**	**4**	**5**	**11**	**12**	**3**	**220**	
8:00 AM	**9**	**101**	**4**	**4**	**62**	**0**	**3**	**6**	**4**	**7**	**16**	**12**	**228**	779
8:15 AM	**3**	**64**	**7**	**3**	**47**	**2**	**2**	**3**	**6**	**1**	**12**	**5**	**155**	**792**
8:30 AM	6	77	9	0	47	3	2	2	1	3	7	3	160	763
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	543
9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	315
Count Total	36	529	52	14	266	12	8	18	26	35	60	38	1,094	
Peak Hr	**27**	**373**	**37**	**13**	**192**	**6**	**6**	**14**	**18**	**28**	**50**	**28**	**792**	

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
7:15 AM	0	0	2	0	*2*	0	1	1	3	*5*	6	5	0	2	*13*
7:30 AM	**3**	**0**	**1**	**1**	***5***	**1**	**0**	**1**	**4**	***6***	**3**	**3**	**0**	**3**	***9***
7:45 AM	**0**	**1**	**2**	**1**	***4***	**0**	**0**	**2**	**3**	***5***	**4**	**1**	**0**	**1**	***6***
8:00 AM	**1**	**1**	**1**	**1**	***4***	**1**	**0**	**3**	**1**	***5***	**0**	**2**	**0**	**2**	***4***
8:15 AM	**1**	**2**	**3**	**0**	***6***	**0**	**0**	**0**	**0**	***0***	**36**	**1**	**0**	**0**	***37***
8:30 AM	0	1	2	0	*3*	0	1	0	4	*5*	4	1	1	0	*6*
8:45 AM	0	0	0	0	*0*	0	0	0	0	*0*	0	0	0	0	*0*
9:00 AM	0	0	0	0	*0*	0	0	0	0	*0*	0	0	0	0	*0*
Count Total	5	5	11	3	*24*	2	2	7	15	*26*	53	13	1	8	*75*
Peak Hr	**5**	**4**	**7**	**3**	***19***	**2**	**0**	**6**	**8**	***16***	**43**	**7**	**0**	**6**	***56***

Mark Skaggs: 425 - 250 - 0777
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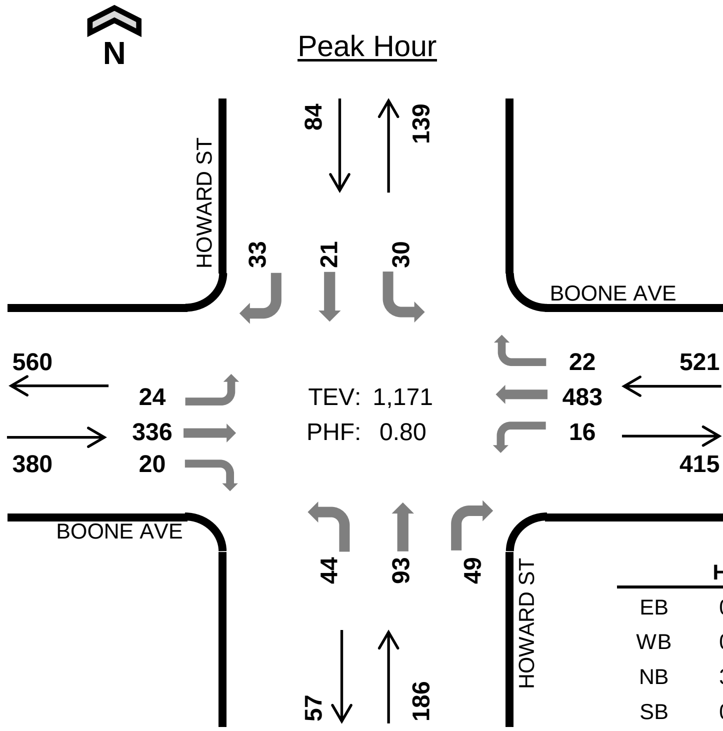
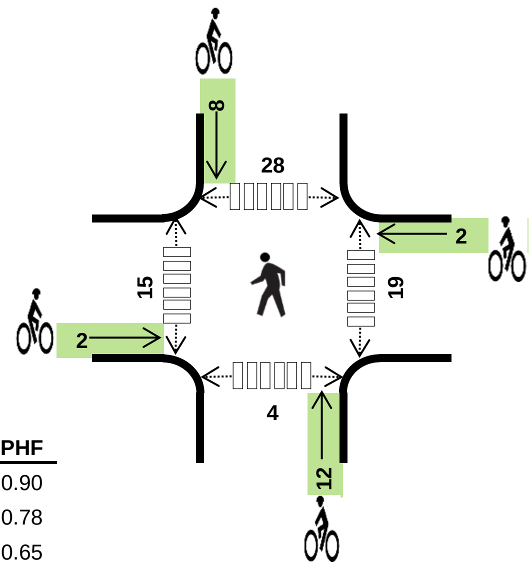
HOWARD ST
BOONE AVE

Date: Wed, May 06, 2015
Count Period: 4:15 PM to 5:45 PM
Peak Hour: 4:15 PM to 5:15 PM



	HV %:	PHF
EB	0.5%	0.90
WB	0.2%	0.78
NB	3.2%	0.65
SB	0.0%	0.75
TOTAL	0.8%	0.80



Two-Hour Count Summaries

Interval Start	BOONE AVE Eastbound LT	TH	RT	BOONE AVE Westbound LT	TH	RT	HOWARD ST Northbound LT	TH	RT	HOWARD ST Southbound LT	TH	RT	15-min Total	Rolling One Hour
4:15 PM	**6**	**79**	**6**	**3**	**98**	**4**	**11**	**16**	**14**	**7**	**7**	**7**	**258**	
4:30 PM	**5**	**80**	**6**	**3**	**120**	**4**	**8**	**16**	**5**	**9**	**5**	**14**	**275**	
4:45 PM	**7**	**80**	**6**	**4**	**114**	**3**	**10**	**21**	**13**	**5**	**5**	**4**	**272**	
5:00 PM	**6**	**97**	**2**	**6**	**151**	**11**	**15**	**40**	**17**	**9**	**4**	**8**	**366**	**1,171**
5:15 PM	4	87	2	4	93	3	5	19	14	8	5	10	254	1,167
5:30 PM	5	52	3	1	84	3	11	10	4	7	5	7	192	1,084
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	812
6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	446
Count Total	33	475	25	21	660	28	60	122	67	45	31	50	1,617	
Peak Hr	**24**	**336**	**20**	**16**	**483**	**22**	**44**	**93**	**49**	**30**	**21**	**33**	**1,171**	

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals EB	WB	NB	SB	Total	Bicycles EB	WB	NB	SB	Total	Pedestrians (Crossing Leg) East	West	North	South	Total
4:15 PM	**2**	**0**	**2**	**0**	***4***	**1**	**0**	**2**	**3**	***6***	**5**	**4**	**5**	**2**	***16***
4:30 PM	**0**	**1**	**1**	**0**	***2***	**0**	**0**	**2**	**1**	***3***	**4**	**1**	**16**	**0**	***21***
4:45 PM	**0**	**0**	**1**	**0**	***1***	**1**	**0**	**3**	**2**	***6***	**9**	**3**	**6**	**1**	***19***
5:00 PM	**0**	**0**	**2**	**0**	***2***	**0**	**2**	**5**	**2**	***9***	**1**	**7**	**1**	**1**	***10***
5:15 PM	0	0	2	0	*2*	0	1	0	2	*3*	5	1	0	3	*9*
5:30 PM	0	0	1	1	*2*	0	0	3	1	*4*	37	1	0	3	*41*
5:45 PM	0	0	0	0	*0*	0	0	0	0	*0*	0	0	0	0	*0*
6:00 PM	0	0	0	0	*0*	0	0	0	0	*0*	0	0	0	0	*0*
Count Total	2	1	9	1	*13*	2	3	15	11	*31*	61	17	28	10	*116*
Peak Hr	**2**	**1**	**6**	**0**	***9***	**2**	**2**	**12**	**8**	***24***	**19**	**15**	**28**	**4**	***66***

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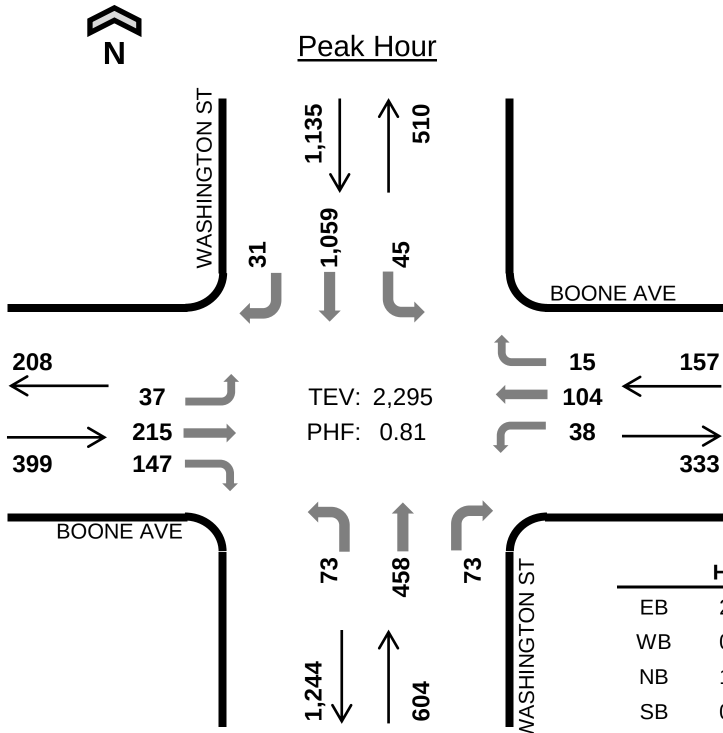
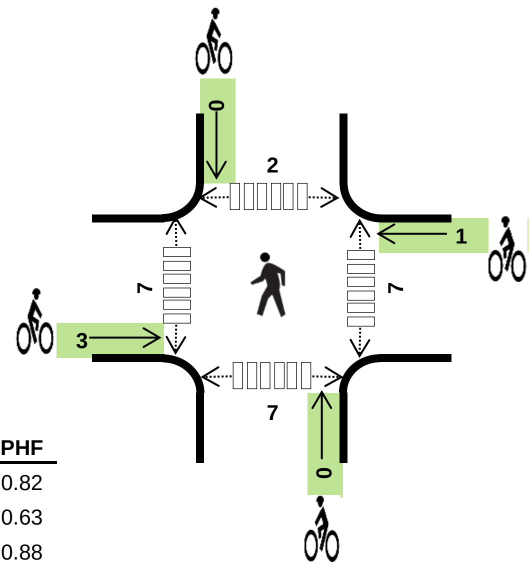
WASHINGTON ST
BOONE AVE

Date: Wed, May 06, 2015
Count Period: 7:15 AM to 8:45 AM
Peak Hour: 7:15 AM to 8:15 AM



	HV %:	PHF
EB	2.3%	0.82
WB	0.6%	0.63
NB	1.5%	0.88
SB	0.6%	0.73
TOTAL	1.1%	0.81



Two-Hour Count Summaries

Interval Start	BOONE AVE Eastbound LT	TH	RT	BOONE AVE Westbound LT	TH	RT	WASHINGTON ST Northbound LT	TH	RT	WASHINGTON ST Southbound LT	TH	RT	15-min Total	Rolling One Hour
7:15 AM	**5**	**50**	**27**	**8**	**14**	**0**	**12**	**107**	**17**	**5**	**189**	**5**	**439**	
7:30 AM	**11**	**43**	**39**	**11**	**27**	**5**	**16**	**119**	**16**	**12**	**260**	**11**	**570**	
7:45 AM	**6**	**68**	**48**	**8**	**18**	**4**	**23**	**124**	**25**	**19**	**361**	**8**	**712**	
8:00 AM	**15**	**54**	**33**	**11**	**45**	**6**	**22**	**108**	**15**	**9**	**249**	**7**	**574**	**2,295**
8:15 AM	10	33	29	2	30	3	19	93	15	2	167	9	412	2,268
8:30 AM	5	36	28	1	25	5	17	120	17	15	159	9	437	2,135
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1,423
9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	849
Count Total	52	284	204	41	159	23	109	671	105	62	1,385	49	3,144	
Peak Hr	**37**	**215**	**147**	**38**	**104**	**15**	**73**	**458**	**73**	**45**	**1,059**	**31**	**2,295**	

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals EB	WB	NB	SB	Total	Bicycles EB	WB	NB	SB	Total	Pedestrians (Crossing Leg) East	West	North	South	Total
7:15 AM	**2**	**0**	**2**	**4**	***8***	**0**	**1**	**0**	**0**	***1***	**3**	**4**	**0**	**0**	***7***
7:30 AM	**3**	**0**	**2**	**1**	***6***	**1**	**0**	**0**	**0**	***1***	**1**	**2**	**1**	**2**	***6***
7:45 AM	**2**	**0**	**3**	**1**	***6***	**0**	**0**	**0**	**0**	***0***	**2**	**1**	**1**	**3**	***7***
8:00 AM	**2**	**1**	**2**	**1**	***6***	**2**	**0**	**0**	**0**	***2***	**1**	**0**	**0**	**2**	***3***
8:15 AM	4	0	5	1	*10*	0	0	0	0	*0*	1	1	1	0	*3*
8:30 AM	1	1	2	1	*5*	0	0	0	0	*0*	0	0	0	0	*0*
8:45 AM	0	0	0	0	*0*	0	0	0	0	*0*	0	0	0	0	*0*
9:00 AM	0	0	0	0	*0*	0	0	0	0	*0*	0	0	0	0	*0*
Count Total	14	2	16	9	*41*	3	1	0	0	*4*	8	8	3	7	*26*
Peak Hr	**9**	**1**	**9**	**7**	***26***	**3**	**1**	**0**	**0**	***4***	**7**	**7**	**2**	**7**	***23***

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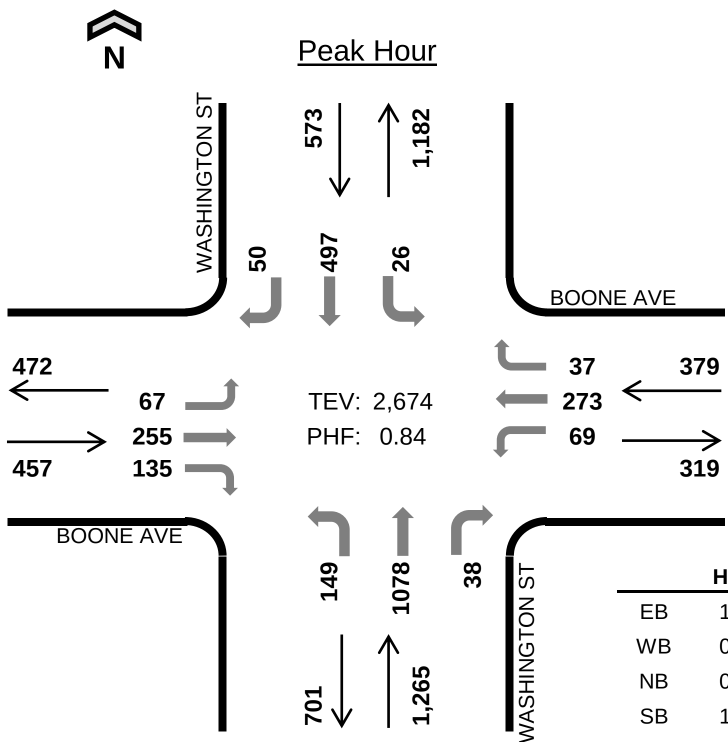
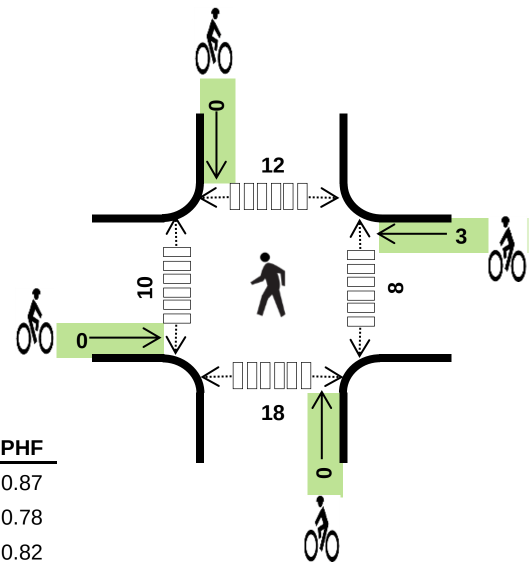
WASHINGTON ST
BOONE AVE

Date: Wed, May 06, 2015
Count Period: 4:15 PM to 5:45 PM
Peak Hour: 4:30 PM to 5:30 PM





	HV %:	PHF
EB	1.3%	0.87
WB	0.0%	0.78
NB	0.7%	0.82
SB	1.0%	0.90
TOTAL	0.8%	0.84

Two-Hour Count Summaries

Interval Start	BOONE AVE Eastbound			BOONE AVE Westbound			WASHINGTON ST Northbound			WASHINGTON ST Southbound			15-min Total	Rolling One Hour
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
4:15 PM	21	64	25	14	54	6	40	243	16	3	117	12	615	
4:30 PM	**12**	**53**	**30**	**15**	**77**	**8**	**22**	**259**	**14**	**4**	**111**	**16**	**621**	
4:45 PM	**8**	**70**	**27**	**13**	**60**	**8**	**44**	**225**	**6**	**5**	**129**	**9**	**604**	
5:00 PM	**19**	**71**	**42**	**19**	**89**	**13**	**49**	**325**	**10**	**7**	**135**	**18**	**797**	2,637
5:15 PM	**28**	**61**	**36**	**22**	**47**	**8**	**34**	**269**	**8**	**10**	**122**	**7**	**652**	**2,674**
5:30 PM	13	36	15	19	43	5	34	229	8	1	100	10	513	2,566
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1,962
6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1,165
Count Total	101	355	175	102	370	48	223	1,550	62	30	714	72	3,802	
Peak Hr	**67**	**255**	**135**	**69**	**273**	**37**	**149**	**1,078**	**38**	**26**	**497**	**50**	**2,674**	

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
4:15 PM	4	0	3	1	*8*	0	0	1	0	*1*	3	1	3	8	*15*
4:30 PM	**1**	**0**	**4**	**2**	***7***	**0**	**1**	**0**	**0**	***1***	**0**	**2**	**4**	**4**	***10***
4:45 PM	**2**	**0**	**1**	**1**	***4***	**0**	**0**	**0**	**0**	***0***	**3**	**4**	**4**	**7**	***18***
5:00 PM	**1**	**0**	**2**	**2**	***5***	**0**	**2**	**0**	**0**	***2***	**5**	**1**	**2**	**5**	***13***
5:15 PM	**2**	**0**	**2**	**1**	***5***	**0**	**0**	**0**	**0**	***0***	**0**	**3**	**2**	**2**	***7***
5:30 PM	1	0	3	1	*5*	0	0	0	0	*0*	0	2	2	1	*5*
5:45 PM	0	0	0	0	*0*	0	0	0	0	*0*	0	0	0	0	*0*
6:00 PM	0	0	0	0	*0*	0	0	0	0	*0*	0	0	0	0	*0*
Count Total	11	0	15	8	*34*	0	3	1	0	*4*	11	13	17	27	*68*
Peak Hr	**6**	**0**	**9**	**6**	***21***	**0**	**3**	**0**	**0**	***3***	**8**	**10**	**12**	**18**	***48***

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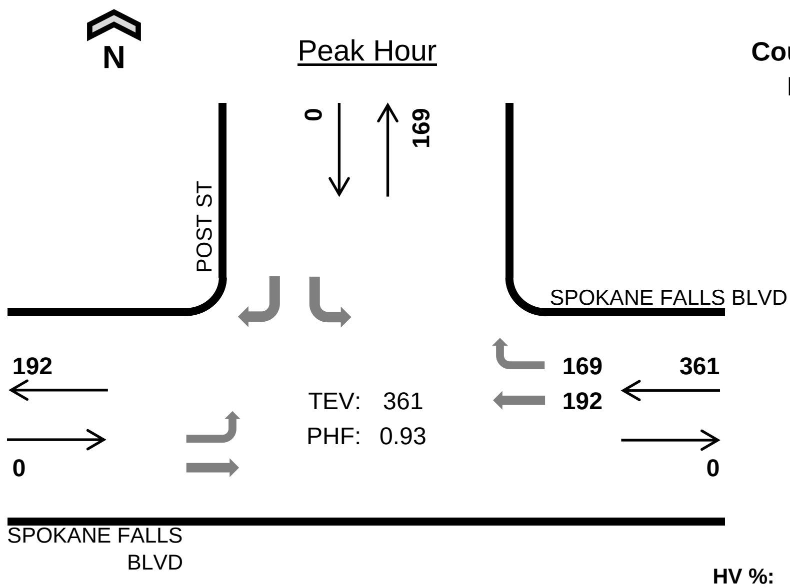
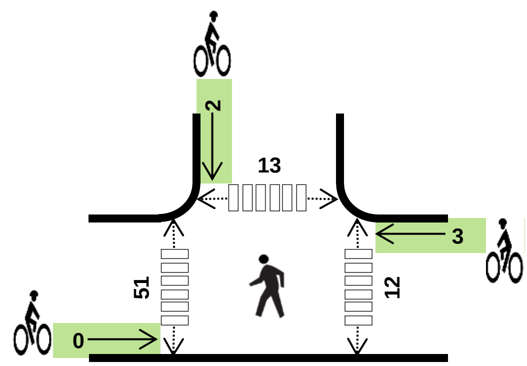
POST ST
SPOKANE FALLS BLVD

Date: Wed, May 06, 2015
Count Period: 7:15 AM to 8:45 AM
Peak Hour: 7:45 AM to 8:45 AM





	HV %:	PHF
EB	-	-
WB	4.2%	0.93
SB	-	-
TOTAL	4.2%	0.93

Two-Hour Count Summaries

Interval Start	SPOKANE FALLS BLVD Eastbound LT	TH	RT	SPOKANE FALLS BLVD Westbound LT	TH	RT	POST ST Northbound LT	TH	RT	POST ST Southbound LT	TH	RT	15-min Total	Rolling One Hour
7:15 AM	0	0	0	0	35	22	0	0	0	0	0	0	57	
7:30 AM	0	0	0	0	44	22	0	0	0	0	0	0	66	
7:45 AM	**0**	**0**	**0**	**0**	**42**	**55**	**0**	**0**	**0**	**0**	**0**	**0**	**97**	
8:00 AM	**0**	**0**	**0**	**0**	**49**	**43**	**0**	**0**	**0**	**0**	**0**	**0**	**92**	312
8:15 AM	**0**	**0**	**0**	**0**	**52**	**40**	**0**	**0**	**0**	**0**	**0**	**0**	**92**	347
8:30 AM	**0**	**0**	**0**	**0**	**49**	**31**	**0**	**0**	**0**	**0**	**0**	**0**	**80**	**361**
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	264
9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	172
Count Total	0	0	0	0	271	213	0	0	0	0	0	0	484	
Peak Hr	**0**	**0**	**0**	**0**	**192**	**169**	**0**	**0**	**0**	**0**	**0**	**0**	**361**	

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals EB	WB	NB	SB	Total	Bicycles EB	WB	NB	SB	Total	Pedestrians (Crossing Leg) East	West	North	South	Total
7:15 AM	0	3	0	0	*3*	0	0	0	1	*1*	5	4	4	0	*13*
7:30 AM	0	4	0	0	*4*	0	0	0	1	*1*	2	14	5	0	*21*
7:45 AM	**0**	**2**	**0**	**0**	***2***	**0**	**1**	**0**	**0**	***1***	**2**	**18**	**4**	**0**	***24***
8:00 AM	**0**	**6**	**0**	**0**	***6***	**0**	**0**	**0**	**0**	***0***	**4**	**14**	**2**	**0**	***20***
8:15 AM	**0**	**3**	**0**	**0**	***3***	**0**	**0**	**1**	**1**	***2***	**3**	**9**	**4**	**0**	***16***
8:30 AM	**0**	**4**	**0**	**0**	***4***	**0**	**2**	**0**	**1**	***3***	**3**	**10**	**3**	**0**	***16***
8:45 AM	0	0	0	0	*0*	0	0	0	0	*0*	0	0	0	0	*0*
9:00 AM	0	0	0	0	*0*	0	0	0	0	*0*	0	0	0	0	*0*
Count Total	0	22	0	0	*22*	0	3	1	4	*8*	19	69	22	0	*110*
Peak Hr	**0**	**15**	**0**	**0**	***15***	**0**	**3**	**1**	**2**	***6***	**12**	**51**	**13**	**0**	***76***

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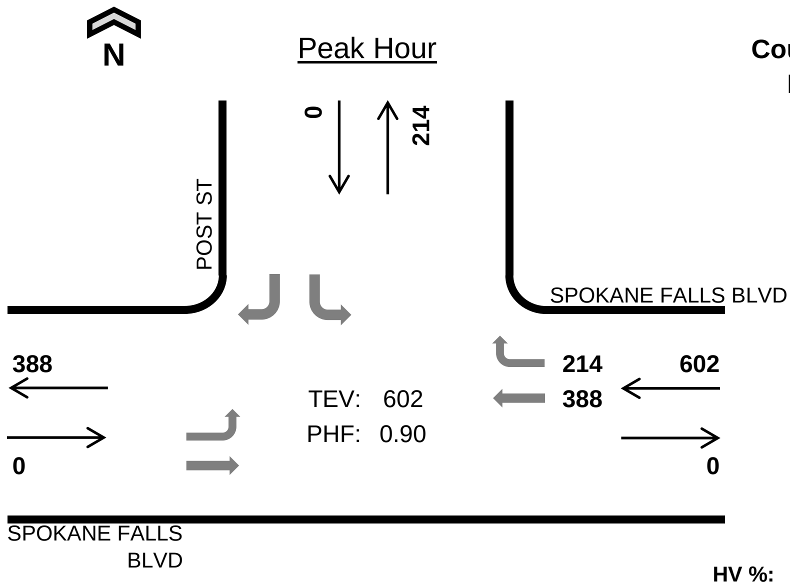
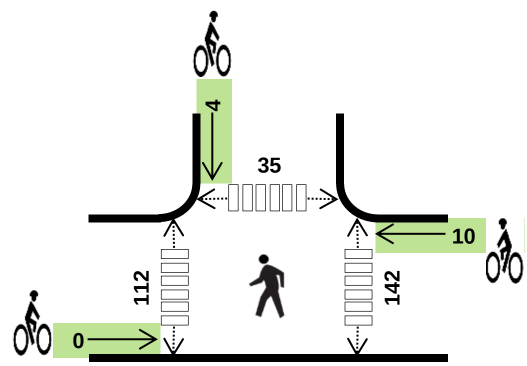
POST ST
SPOKANE FALLS BLVD

Date: Wed, May 06, 2015
Count Period: 4:15 PM to 5:45 PM
Peak Hour: 4:30 PM to 5:30 PM





	HV %:	PHF
EB	-	-
WB	1.8%	0.90
SB	-	-
TOTAL	1.8%	0.90

Two-Hour Count Summaries

Interval Start	SPOKANE FALLS BLVD Eastbound LT	TH	RT	SPOKANE FALLS BLVD Westbound LT	TH	RT	POST ST Northbound LT	TH	RT	POST ST Southbound LT	TH	RT	15-min Total	Rolling One Hour
4:15 PM	0	0	0	0	83	51	0	0	0	0	0	0	134	
4:30 PM	**0**	**0**	**0**	**0**	**87**	**56**	**0**	**0**	**0**	**0**	**0**	**0**	**143**	
4:45 PM	**0**	**0**	**0**	**0**	**98**	**39**	**0**	**0**	**0**	**0**	**0**	**0**	**137**	
5:00 PM	**0**	**0**	**0**	**0**	**98**	**70**	**0**	**0**	**0**	**0**	**0**	**0**	**168**	582
5:15 PM	**0**	**0**	**0**	**0**	**105**	**49**	**0**	**0**	**0**	**0**	**0**	**0**	**154**	**602**
5:30 PM	0	0	0	0	82	38	0	0	0	0	0	0	120	579
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	442
6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	274
Count Total	0	0	0	0	553	303	0	0	0	0	0	0	856	
Peak Hr	**0**	**0**	**0**	**0**	**388**	**214**	**0**	**0**	**0**	**0**	**0**	**0**	**602**	

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals EB	WB	NB	SB	Total	Bicycles EB	WB	NB	SB	Total	Pedestrians (Crossing Leg) East	West	North	South	Total
4:15 PM	0	2	0	0	*2*	0	3	0	2	*5*	23	17	8	0	*48*
4:30 PM	**0**	**3**	**0**	**0**	***3***	**0**	**1**	**2**	**0**	***3***	**27**	**38**	**10**	**0**	***75***
4:45 PM	**0**	**3**	**0**	**0**	***3***	**0**	**0**	**1**	**2**	***3***	**30**	**27**	**7**	**0**	***64***
5:00 PM	**0**	**3**	**0**	**0**	***3***	**0**	**4**	**2**	**1**	***7***	**54**	**31**	**5**	**0**	***90***
5:15 PM	**0**	**2**	**0**	**0**	***2***	**0**	**5**	**0**	**1**	***6***	**31**	**16**	**13**	**0**	***60***
5:30 PM	0	2	0	0	*2*	0	0	1	0	*1*	24	17	3	0	*44*
5:45 PM	0	0	0	0	*0*	0	0	0	0	*0*	0	0	0	0	*0*
6:00 PM	0	0	0	0	*0*	0	0	0	0	*0*	0	0	0	0	*0*
Count Total	0	15	0	0	*15*	0	13	6	6	*25*	189	146	46	0	*381*
Peak Hr	**0**	**11**	**0**	**0**	***11***	**0**	**10**	**5**	**4**	***19***	**142**	**112**	**35**	**0**	***289***

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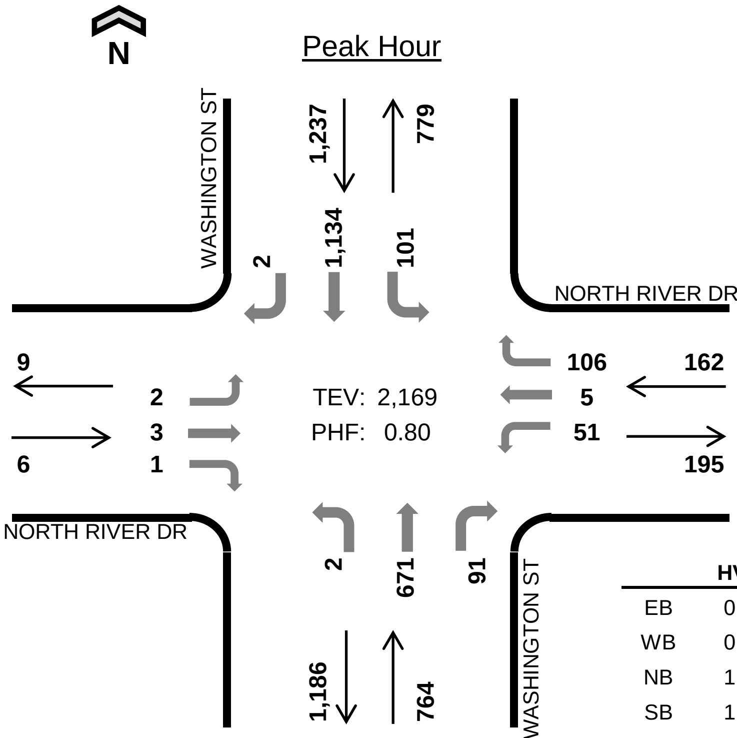
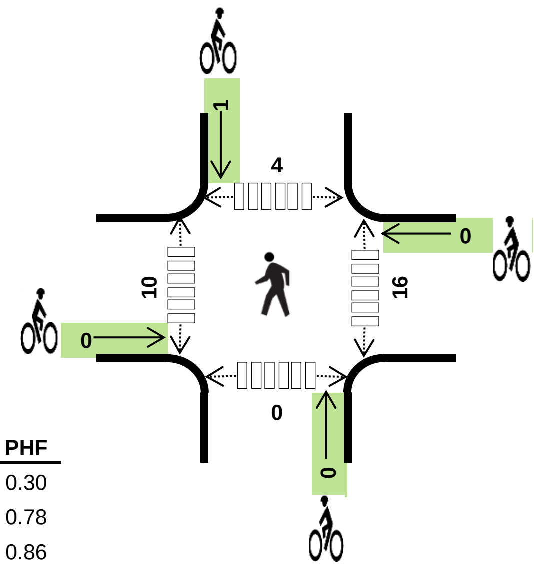
WASHINGTON ST
NORTH RIVER DR

Date: Wed, May 06, 2015
Count Period: 7:15 AM to 8:45 AM
Peak Hour: 7:15 AM to 8:15 AM

Peak Hour



	HV %:	PHF
EB	0.0%	0.30
WB	0.6%	0.78
NB	1.3%	0.86
SB	1.1%	0.76
TOTAL	1.1%	0.80



Two-Hour Count Summaries

Interval Start	NORTH RIVER DR Eastbound LT	TH	RT	NORTH RIVER DR Westbound LT	TH	RT	WASHINGTON ST Northbound LT	TH	RT	WASHINGTON ST Southbound LT	TH	RT	15-min Total	Rolling One Hour
7:15 AM	**0**	**0**	**0**	**12**	**2**	**17**	**1**	**159**	**20**	**17**	**219**	**0**	**447**	
7:30 AM	**1**	**3**	**1**	**13**	**1**	**28**	**0**	**169**	**14**	**19**	**302**	**1**	**552**	
7:45 AM	**0**	**0**	**0**	**17**	**0**	**35**	**0**	**186**	**36**	**41**	**366**	**1**	**682**	
8:00 AM	**1**	**0**	**0**	**9**	**2**	**26**	**1**	**157**	**21**	**24**	**247**	**0**	**488**	**2,169**
8:15 AM	0	1	1	21	0	29	0	154	22	20	164	1	413	2,135
8:30 AM	0	0	1	19	0	29	2	163	14	11	187	0	426	2,009
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1,327
9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	839
Count Total	2	4	3	91	5	164	4	988	127	132	1,485	3	3,008	
Peak Hr	**2**	**3**	**1**	**51**	**5**	**106**	**2**	**671**	**91**	**101**	**1,134**	**2**	**2,169**	

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals EB	WB	NB	SB	Total	Bicycles EB	WB	NB	SB	Total	Pedestrians (Crossing Leg) East	West	North	South	Total
7:15 AM	**0**	**1**	**2**	**5**	***8***	**0**	**0**	**0**	**0**	***0***	**4**	**2**	**1**	**0**	***7***
7:30 AM	**0**	**0**	**3**	**4**	***7***	**0**	**0**	**0**	**0**	***0***	**4**	**2**	**1**	**0**	***7***
7:45 AM	**0**	**0**	**2**	**2**	***4***	**0**	**0**	**0**	**1**	***1***	**3**	**2**	**1**	**0**	***6***
8:00 AM	**0**	**0**	**3**	**2**	***5***	**0**	**0**	**0**	**0**	***0***	**5**	**4**	**1**	**0**	***10***
8:15 AM	0	0	6	3	*9*	0	0	0	0	*0*	3	6	0	2	*11*
8:30 AM	0	0	1	3	*4*	0	0	0	0	*0*	2	1	0	1	*4*
8:45 AM	0	0	0	0	*0*	0	0	0	0	*0*	0	0	0	0	*0*
9:00 AM	0	0	0	0	*0*	0	0	0	0	*0*	0	0	0	0	*0*
Count Total	0	1	17	19	*37*	0	0	0	1	*1*	21	17	4	3	*45*
Peak Hr	**0**	**1**	**10**	**13**	***24***	**0**	**0**	**0**	**1**	***1***	**16**	**10**	**4**	**0**	***30***

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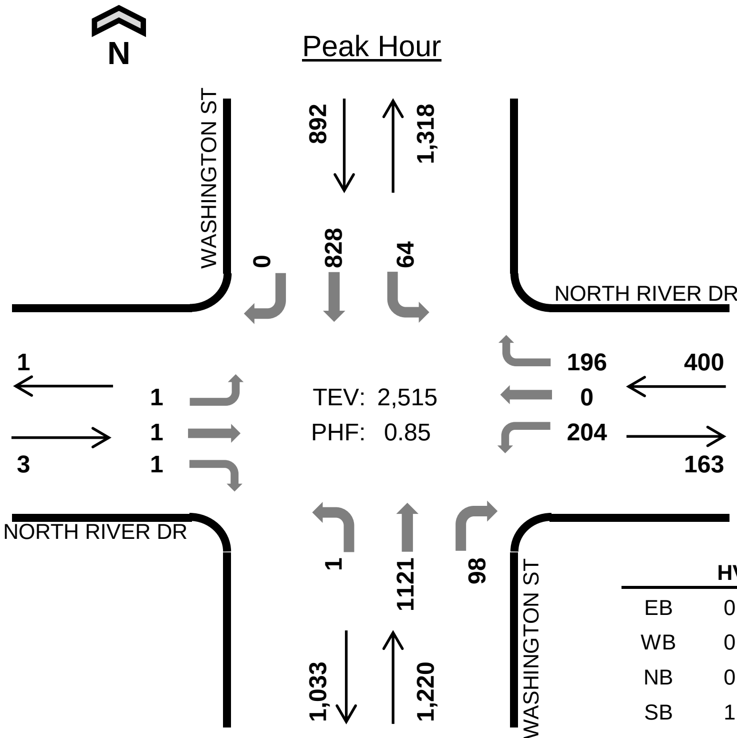
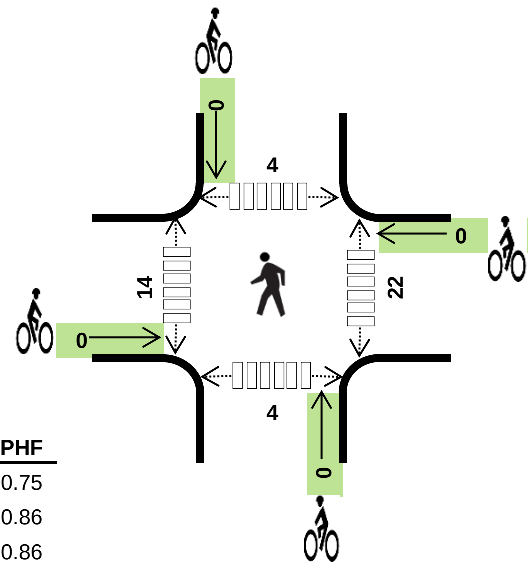
WASHINGTON ST
NORTH RIVER DR

Date: Wed, May 06, 2015
Count Period: 4:15 PM to 5:45 PM
Peak Hour: 4:30 PM to 5:30 PM





	HV %:	PHF
EB	0.0%	0.75
WB	0.3%	0.86
NB	0.8%	0.86
SB	1.2%	0.80
TOTAL	0.9%	0.85

Two-Hour Count Summaries

Interval Start	NORTH RIVER DR Eastbound			NORTH RIVER DR Westbound			WASHINGTON ST Northbound			WASHINGTON ST Southbound			15-min Total	Rolling One Hour
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
4:15 PM	0	2	1	41	0	46	0	252	15	20	165	1	543	
4:30 PM	**0**	**0**	**1**	**42**	**0**	**47**	**0**	**305**	**19**	**10**	**179**	**0**	**603**	
4:45 PM	**0**	**0**	**0**	**61**	**0**	**55**	**0**	**214**	**20**	**17**	**186**	**0**	**553**	
5:00 PM	**0**	**1**	**0**	**44**	**0**	**59**	**1**	**324**	**28**	**17**	**263**	**0**	**737**	2,436
5:15 PM	**1**	**0**	**0**	**57**	**0**	**35**	**0**	**278**	**31**	**20**	**200**	**0**	**622**	**2,515**
5:30 PM	0	0	0	39	0	41	0	229	21	5	149	0	484	2,396
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1,843
6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1,106
Count Total	1	3	2	284	0	283	1	1,602	134	89	1,142	1	3,542	
Peak Hr	**1**	**1**	**1**	**204**	**0**	**196**	**1**	**1,121**	**98**	**64**	**828**	**0**	**2,515**	

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
4:15 PM	0	0	3	3	*6*	0	0	0	0	*0*	5	0	0	0	*5*
4:30 PM	**0**	**1**	**3**	**2**	***6***	**0**	**0**	**0**	**0**	***0***	**3**	**0**	**1**	**0**	***4***
4:45 PM	**0**	**0**	**1**	**3**	***4***	**0**	**0**	**0**	**0**	***0***	**10**	**2**	**0**	**1**	***13***
5:00 PM	**0**	**0**	**2**	**4**	***6***	**0**	**0**	**0**	**0**	***0***	**6**	**8**	**0**	**1**	***15***
5:15 PM	**0**	**0**	**4**	**2**	***6***	**0**	**0**	**0**	**0**	***0***	**3**	**4**	**3**	**2**	***12***
5:30 PM	0	0	2	2	*4*	0	0	0	0	*0*	3	0	1	1	*5*
5:45 PM	0	0	0	0	*0*	0	0	0	0	*0*	0	0	0	0	*0*
6:00 PM	0	0	0	0	*0*	0	0	0	0	*0*	0	0	0	0	*0*
Count Total	0	1	15	16	*32*	0	0	0	0	*0*	30	14	5	5	*54*
Peak Hr	**0**	**1**	**10**	**11**	***22***	**0**	**0**	**0**	**0**	***0***	**22**	**14**	**4**	**4**	***44***

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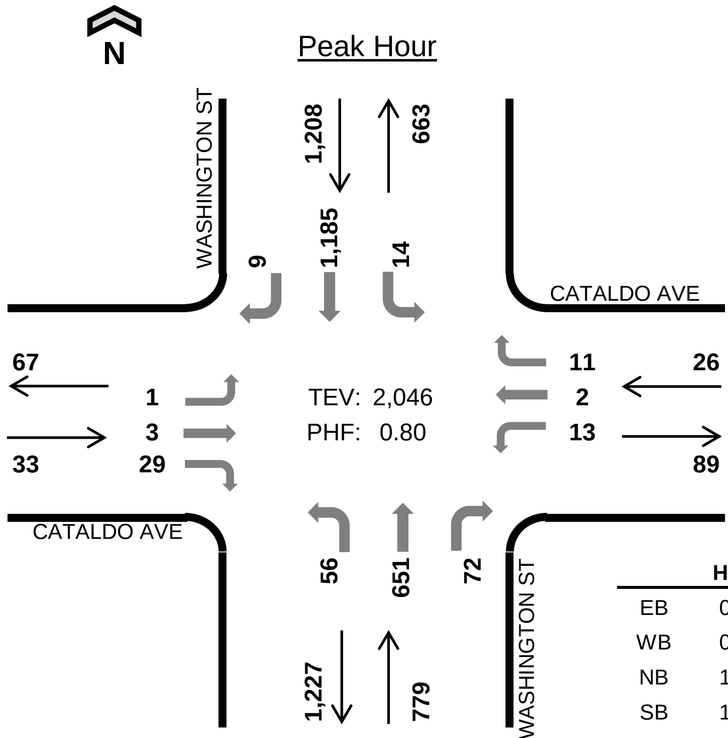
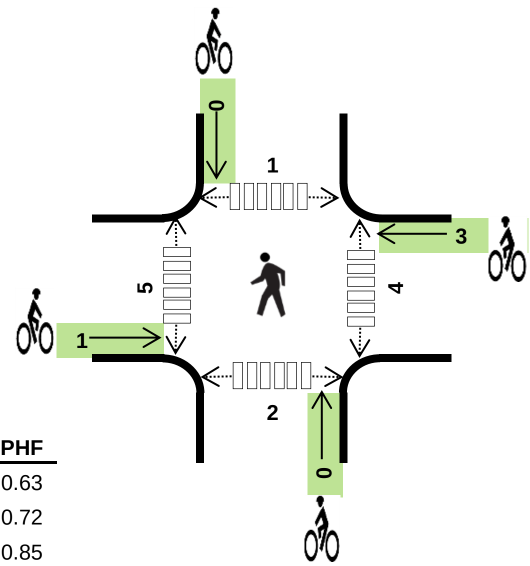
WASHINGTON ST
CATALDO AVE

Date: Wed, May 06, 2015
Count Period: 7:15 AM to 8:45 AM
Peak Hour: 7:15 AM to 8:15 AM



	HV %:	PHF
EB	0.0%	0.63
WB	0.0%	0.72
NB	1.2%	0.85
SB	1.2%	0.76
TOTAL	1.1%	0.80



Two-Hour Count Summaries

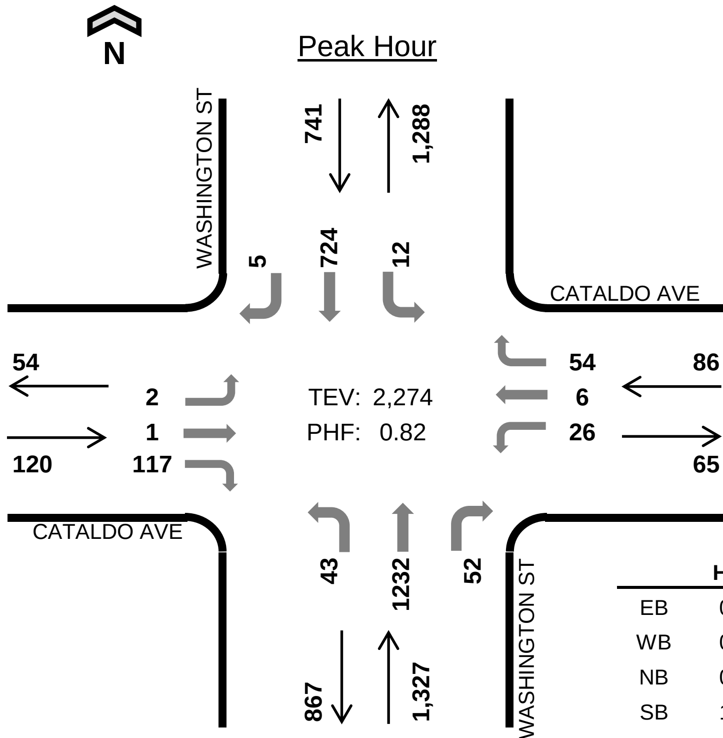
Interval Start	CATALDO AVE Eastbound LT	TH	RT	CATALDO AVE Westbound LT	TH	RT	WASHINGTON ST Northbound LT	TH	RT	WASHINGTON ST Southbound LT	TH	RT	15-min Total	Rolling One Hour
7:15 AM	**0**	**0**	**5**	**5**	**1**	**3**	**11**	**152**	**10**	**3**	**225**	**0**	**415**	
7:30 AM	**0**	**2**	**3**	**3**	**0**	**3**	**12**	**160**	**24**	**6**	**305**	**1**	**519**	
7:45 AM	**0**	**0**	**10**	**2**	**0**	**2**	**12**	**195**	**22**	**4**	**390**	**5**	**642**	
8:00 AM	**1**	**1**	**11**	**3**	**1**	**3**	**21**	**144**	**16**	**1**	**265**	**3**	**470**	**2,046**
8:15 AM	1	0	3	8	3	5	10	140	22	7	182	2	383	2,014
8:30 AM	0	2	6	4	3	2	14	158	10	1	182	2	384	1,879
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1,237
9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	767
Count Total	2	5	38	25	8	18	80	949	104	22	1,549	13	2,813	
Peak Hr	**1**	**3**	**29**	**13**	**2**	**11**	**56**	**651**	**72**	**14**	**1,185**	**9**	**2,046**	

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

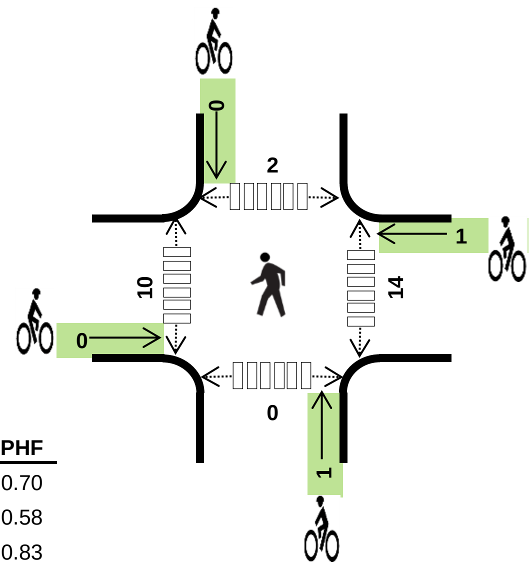
Interval Start	Heavy Vehicle Totals EB	WB	NB	SB	Total	Bicycles EB	WB	NB	SB	Total	Pedestrians (Crossing Leg) East	West	North	South	Total
7:15 AM	**0**	**0**	**2**	**6**	***8***	**0**	**0**	**0**	**0**	***0***	**1**	**2**	**1**	**0**	***4***
7:30 AM	**0**	**0**	**3**	**3**	***6***	**0**	**1**	**0**	**0**	***1***	**1**	**2**	**0**	**2**	***5***
7:45 AM	**0**	**0**	**2**	**3**	***5***	**1**	**2**	**0**	**0**	***3***	**0**	**0**	**0**	**0**	***0***
8:00 AM	**0**	**0**	**2**	**2**	***4***	**0**	**0**	**0**	**0**	***0***	**2**	**1**	**0**	**0**	***3***
8:15 AM	0	0	6	3	*9*	0	0	0	1	*1*	1	4	1	1	*7*
8:30 AM	1	0	2	2	*5*	0	0	0	0	*0*	1	0	1	0	*2*
8:45 AM	0	0	0	0	*0*	0	0	0	0	*0*	0	0	0	0	*0*
9:00 AM	0	0	0	0	*0*	0	0	0	0	*0*	0	0	0	0	*0*
Count Total	1	0	17	19	*37*	1	3	0	1	*5*	6	9	3	3	*21*
Peak Hr	**0**	**0**	**9**	**14**	***23***	**1**	**3**	**0**	**0**	***4***	**4**	**5**	**1**	**2**	***12***

WASHINGTON ST
CATALDO AVE

Date: Wed, May 06, 2015
Count Period: 4:15 PM to 5:45 PM
Peak Hour: 4:30 PM to 5:30 PM



	HV %:	PHF
EB	0.0%	0.70
WB	0.0%	0.58
NB	0.8%	0.83
SB	1.6%	0.87
TOTAL	1.0%	0.82



Two-Hour Count Summaries

Interval Start	CATALDO AVE Eastbound LT	TH	RT	CATALDO AVE Westbound LT	TH	RT	WASHINGTON ST Northbound LT	TH	RT	WASHINGTON ST Southbound LT	TH	RT	15-min Total	Rolling One Hour
4:15 PM	1	0	24	10	0	8	13	285	6	4	160	1	512	
4:30 PM	**0**	**0**	**21**	**6**	**0**	**7**	**12**	**304**	**11**	**4**	**157**	**3**	**525**	
4:45 PM	**2**	**0**	**24**	**6**	**0**	**13**	**9**	**259**	**12**	**1**	**173**	**1**	**500**	
5:00 PM	**0**	**0**	**43**	**8**	**5**	**24**	**9**	**379**	**11**	**5**	**208**	**1**	**693**	2,230
5:15 PM	**0**	**1**	**29**	**6**	**1**	**10**	**13**	**290**	**18**	**2**	**186**	**0**	**556**	**2,274**
5:30 PM	1	1	17	8	2	9	3	258	9	1	135	1	445	2,194
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1,694
6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1,001
Count Total	4	2	158	44	8	71	59	1,775	67	17	1,019	7	3,231	
Peak Hr	**2**	**1**	**117**	**26**	**6**	**54**	**43**	**1,232**	**52**	**12**	**724**	**5**	**2,274**	

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals EB	WB	NB	SB	Total	Bicycles EB	WB	NB	SB	Total	Pedestrians (Crossing Leg) East	West	North	South	Total
4:15 PM	0	0	3	3	*6*	0	0	0	0	*0*	2	0	0	0	*2*
4:30 PM	**0**	**0**	**4**	**3**	***7***	**0**	**0**	**0**	**0**	***0***	**1**	**1**	**0**	**0**	***2***
4:45 PM	**0**	**0**	**1**	**3**	***4***	**0**	**0**	**0**	**0**	***0***	**5**	**3**	**1**	**0**	***9***
5:00 PM	**0**	**0**	**2**	**4**	***6***	**0**	**0**	**1**	**0**	***1***	**4**	**6**	**0**	**0**	***10***
5:15 PM	**0**	**0**	**4**	**2**	***6***	**0**	**1**	**0**	**0**	***1***	**4**	**0**	**1**	**0**	***5***
5:30 PM	0	0	1	2	*3*	0	0	0	0	*0*	4	1	2	2	*9*
5:45 PM	0	0	0	0	*0*	0	0	0	0	*0*	0	0	0	0	*0*
6:00 PM	0	0	0	0	*0*	0	0	0	0	*0*	0	0	0	0	*0*
Count Total	0	0	15	17	*32*	0	1	1	0	*2*	20	11	4	2	*37*
Peak Hr	**0**	**0**	**11**	**12**	***23***	**0**	**1**	**1**	**0**	***2***	**14**	**10**	**2**	**0**	***26***

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Appendix C

LOS Summary Worksheets

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	67	255	135	69	273	37	149	1078	38	26	497	50
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Total Lost time (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	0.99		1.00	1.00		1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.95		1.00	0.98		1.00	0.99		1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1707	3065		1704	3211		1625	3338		1709	3280	
Flt Permitted	0.48	1.00		0.40	1.00		0.36	1.00		0.12	1.00	
Satd. Flow (perm)	854	3065		716	3211		621	3338		222	3280	
Peak-hour factor, PHF	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Adj. Flow (vph)	80	304	161	82	325	44	177	1283	45	31	592	60
RTOR Reduction (vph)	0	99	0	0	15	0	0	3	0	0	11	0
Lane Group Flow (vph)	80	366	0	82	354	0	177	1325	0	31	641	0
Confl. Peds. (#/hr)	3		7	7		3	6		5	5		6
Confl. Bikes (#/hr)			1			1			1			1
Heavy Vehicles (%)	0%	3%	9%	0%	5%	0%	5%	1%	3%	0%	2%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	4	0	0	4	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			4			2			2	
Permitted Phases	4			4			2			2		
Actuated Green, G (s)	22.4	22.4		22.4	22.4		38.4	38.4		38.4	38.4	
Effective Green, g (s)	24.0	24.0		24.0	24.0		40.0	40.0		40.0	40.0	
Actuated g/C Ratio	0.34	0.34		0.34	0.34		0.57	0.57		0.57	0.57	
Clearance Time (s)	4.6	4.6		4.6	4.6		4.6	4.6		4.6	4.6	
Lane Grp Cap (vph)	292	1050		245	1100		354	1907		126	1874	
v/s Ratio Prot		c0.12			0.11			c0.40			0.20	
v/s Ratio Perm	0.09			0.11			0.29			0.14		
v/c Ratio	0.27	0.35		0.33	0.32		0.50	0.69		0.25	0.34	
Uniform Delay, d1	16.7	17.2		17.1	17.0		9.0	10.7		7.5	8.0	
Progression Factor	1.18	1.33		1.00	1.00		0.60	0.67		1.00	1.00	
Incremental Delay, d2	2.3	0.9		3.7	0.8		4.4	1.9		4.6	0.5	
Delay (s)	21.9	23.8		20.7	17.8		9.8	9.0		12.1	8.5	
Level of Service	C	C		C	B		A	A		B	A	
Approach Delay (s)		23.5			18.3			9.1			8.7	
Approach LOS		C			B			A			A	

Intersection Summary			
HCM 2000 Control Delay	12.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	95.2%	ICU Level of Service	F
Analysis Period (min)	15		
Description: Northwest TSA			
c Critical Lane Group			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	3	117	43	1284	750	11
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85
Hourly flow rate (vph)	4	138	51	1511	882	13
Pedestrians	14			14	14	
Lane Width (ft)	12.0			12.0	12.0	
Walking Speed (ft/s)	4.0			4.0	4.0	
Percent Blockage	1			1	1	
Right turn flare (veh)		2				
Median type				None	None	
Median storage veh)						
Upstream signal (ft)				365	795	
pX, platoon unblocked	0.80	0.98	0.98			
vC, conflicting volume	1773	476	909			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1330	416	860			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	97	75	93			
cM capacity (veh/h)	106	559	750			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	141	554	1007	588	307
Volume Left	4	51	0	0	0
Volume Right	138	0	0	0	13
cSH	573	750	1700	1700	1700
Volume to Capacity	0.25	0.07	0.59	0.35	0.18
Queue Length 95th (ft)	24	5	0	0	0
Control Delay (s)	14.2	1.8	0.0	0.0	0.0
Lane LOS	B	A			
Approach Delay (s)	14.2	0.6		0.0	
Approach LOS	B				

Intersection Summary			
Average Delay	1.2		
Intersection Capacity Utilization	78.1%	ICU Level of Service	D
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	204	196	1121	98	64	828
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Total Lost time (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Util. Factor	1.00	1.00	0.95	1.00	1.00	0.95
Frpb, ped/bikes	1.00	0.98	1.00	0.93	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1693	1479	3359	1415	1704	3326
Flt Permitted	0.95	1.00	1.00	1.00	0.16	1.00
Satd. Flow (perm)	1693	1479	3359	1415	283	3326
Peak-hour factor, PHF	0.95	0.95	0.84	0.84	0.87	0.87
Adj. Flow (vph)	215	206	1335	117	74	952
RTOR Reduction (vph)	0	29	0	37	0	0
Lane Group Flow (vph)	215	177	1335	80	74	952
Confl. Peds. (#/hr)	16	9		27	15	
Confl. Bikes (#/hr)		3		1		
Heavy Vehicles (%)	1%	1%	1%	0%	0%	2%
Bus Blockages (#/hr)	0	0	4	0	0	4
Turn Type	Prot	Perm	NA	Perm	Perm	NA
Protected Phases	4		2			2
Permitted Phases		4		2	2	
Actuated Green, G (s)	14.4	14.4	46.4	46.4	46.4	46.4
Effective Green, g (s)	16.0	16.0	48.0	48.0	48.0	48.0
Actuated g/C Ratio	0.23	0.23	0.69	0.69	0.69	0.69
Clearance Time (s)	4.6	4.6	4.6	4.6	4.6	4.6
Vehicle Extension (s)	3.0	3.0	0.2	0.2	0.2	0.2
Lane Grp Cap (vph)	386	338	2303	970	194	2280
v/s Ratio Prot	c0.13		c0.40			0.29
v/s Ratio Perm		0.12		0.06	0.26	
v/c Ratio	0.56	0.52	0.58	0.08	0.38	0.42
Uniform Delay, d1	23.9	23.7	5.7	3.7	4.7	4.8
Progression Factor	1.00	1.00	1.00	1.00	1.65	1.75
Incremental Delay, d2	1.7	1.5	1.1	0.2	5.5	0.6
Delay (s)	25.6	25.1	6.8	3.8	13.2	9.0
Level of Service	C	C	A	A	B	A
Approach Delay (s)	25.4		6.6			9.3
Approach LOS	C		A			A

Intersection Summary			
HCM 2000 Control Delay	10.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	70.2%	ICU Level of Service	C
Analysis Period (min)	15		
Description: Downtown TSA			
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	0	404	140	232	1079	0	0	0	0
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Total Lost time (s)					3.0		3.0	3.0				
Lane Util. Factor					0.91		1.00	0.95				
Frpb, ped/bikes					0.97		1.00	1.00				
Flpb, ped/bikes					1.00		0.95	1.00				
Frt					0.96		1.00	1.00				
Flt Protected					1.00		0.95	1.00				
Satd. Flow (prot)					4037		1256	2763				
Flt Permitted					1.00		0.95	1.00				
Satd. Flow (perm)					4037		1256	2763				
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	0	439	152	252	1173	0	0	0	0
RTOR Reduction (vph)	0	0	0	0	24	0	129	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	567	0	123	1173	0	0	0	0
Confl. Peds. (#/hr)						77	40					
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	5%	5%	5%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	4	0	0	4	0	0	0	0
Parking (#/hr)							0	0				
Turn Type					NA		Perm	NA				
Protected Phases					4			2				
Permitted Phases							2					
Actuated Green, G (s)					33.4		37.4	37.4				
Effective Green, g (s)					35.0		39.0	39.0				
Actuated g/C Ratio					0.44		0.49	0.49				
Clearance Time (s)					4.6		4.6	4.6				
Lane Grp Cap (vph)					1766		612	1346				
v/s Ratio Prot					c0.14			c0.42				
v/s Ratio Perm							0.10					
v/c Ratio					0.32		0.20	0.87				
Uniform Delay, d1					14.7		11.6	18.3				
Progression Factor					1.00		1.00	1.00				
Incremental Delay, d2					0.5		0.7	8.0				
Delay (s)					15.2		12.4	26.2				
Level of Service					B		B	C				
Approach Delay (s)		0.0			15.2			23.8			0.0	
Approach LOS		A			B			C			A	

Intersection Summary			
HCM 2000 Control Delay	21.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	58.3%	ICU Level of Service	B
Analysis Period (min)	15		
Description: Downtown TSA			
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	201	462	0	0	0	0	0	885	121
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Total Lost time (s)				3.0	3.0						3.0	
Lane Util. Factor				0.86	0.86						0.91	
Frpb, ped/bikes				1.00	1.00						0.99	
Flpb, ped/bikes				0.91	0.99						1.00	
Frt				1.00	1.00						0.98	
Flt Protected				0.95	1.00						1.00	
Satd. Flow (prot)				1176	4029						4086	
Flt Permitted				0.95	1.00						1.00	
Satd. Flow (perm)				1176	4029						4086	
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	0	0	0	221	508	0	0	0	0	0	973	133
RTOR Reduction (vph)	0	0	0	22	12	0	0	0	0	0	22	0
Lane Group Flow (vph)	0	0	0	155	540	0	0	0	0	0	1084	0
Confl. Peds. (#/hr)				74						74		36
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	5%	5%	5%
Bus Blockages (#/hr)	0	0	0	0	4	0	0	0	0	0	4	0
Turn Type				Perm	NA						NA	
Protected Phases					4						2	
Permitted Phases				4								
Actuated Green, G (s)				35.4	35.4						35.4	
Effective Green, g (s)				37.0	37.0						37.0	
Actuated g/C Ratio				0.46	0.46						0.46	
Clearance Time (s)				4.6	4.6						4.6	
Lane Grp Cap (vph)				543	1863						1889	
v/s Ratio Prot											c0.27	
v/s Ratio Perm				0.13	0.13							
v/c Ratio				0.29	0.29						0.57	
Uniform Delay, d1				13.3	13.3						15.7	
Progression Factor				0.75	0.79						1.00	
Incremental Delay, d2				1.3	0.4						1.3	
Delay (s)				11.3	10.9						17.0	
Level of Service				B	B						B	
Approach Delay (s)		0.0			11.0			0.0			17.0	
Approach LOS		A			B			A			B	

Intersection Summary			
HCM 2000 Control Delay	14.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.43		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	58.3%	ICU Level of Service	B
Analysis Period (min)	15		
Description: Downtown TSA			
c Critical Lane Group			

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	0	0	388	214	0	0
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width	12	12	13	13	15	15
Total Lost time (s)			4.0			
Lane Util. Factor			0.91			
Frpb, ped/bikes			0.98			
Flpb, ped/bikes			1.00			
Frt			0.95			
Flt Protected			1.00			
Satd. Flow (prot)			4614			
Flt Permitted			1.00			
Satd. Flow (perm)			4614			
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	0	431	238	0	0
RTOR Reduction (vph)	0	0	110	0	0	0
Lane Group Flow (vph)	0	0	559	0	0	0
Confl. Bikes (#/hr)				35		
Bus Blockages (#/hr)	0	0	4	0	0	0
Turn Type			NA			
Protected Phases			4			
Permitted Phases						
Actuated Green, G (s)			42.4			
Effective Green, g (s)			43.0			
Actuated g/C Ratio			0.54			
Clearance Time (s)			4.6			
Lane Grp Cap (vph)			2480			
v/s Ratio Prot			c0.12			
v/s Ratio Perm						
v/c Ratio			0.23			
Uniform Delay, d1			9.7			
Progression Factor			1.00			
Incremental Delay, d2			0.2			
Delay (s)			9.9			
Level of Service			A			
Approach Delay (s)		0.0	9.9		0.0	
Approach LOS		A	A		A	

Intersection Summary			
HCM 2000 Control Delay	9.9	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.14		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	8.6
Intersection Capacity Utilization	19.2%	ICU Level of Service	A
Analysis Period (min)	15		
Description: Count Date 8/17/09			
Downtown TSA			
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	28	47	1	9	60	22	11	224	21	40	69	59
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width	12	12	12	12	12	12	10	10	10	11	11	11
Total Lost time (s)	3.0	3.0		3.0	3.0		3.0	3.0			3.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95			0.95	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00			0.98	
Flpb, ped/bikes	1.00	1.00		0.98	1.00		0.98	1.00			1.00	
Frt	1.00	1.00		1.00	0.96		1.00	0.99			0.95	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00			0.99	
Satd. Flow (prot)	1707	1740		1671	1708		1559	3114			3032	
Flt Permitted	0.69	1.00		0.71	1.00		0.61	1.00			0.83	
Satd. Flow (perm)	1232	1740		1257	1708		1001	3114			2557	
Peak-hour factor, PHF	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74
Adj. Flow (vph)	38	64	1	12	81	30	15	303	28	54	93	80
RTOR Reduction (vph)	0	1	0	0	18	0	0	10	0	0	39	0
Lane Group Flow (vph)	38	64	0	12	93	0	15	321	0	0	188	0
Confl. Peds. (#/hr)	2		26	26		2	19		6	6		19
Confl. Bikes (#/hr)			1			1			4			3
Heavy Vehicles (%)	0%	3%	11%	0%	1%	0%	0%	1%	0%	0%	0%	0%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			4			2			2	
Permitted Phases	4			4			2			2		
Actuated Green, G (s)	26.4	26.4		26.4	26.4		34.4	34.4			34.4	
Effective Green, g (s)	28.0	28.0		28.0	28.0		36.0	36.0			36.0	
Actuated g/C Ratio	0.40	0.40		0.40	0.40		0.51	0.51			0.51	
Clearance Time (s)	4.6	4.6		4.6	4.6		4.6	4.6			4.6	
Lane Grp Cap (vph)	492	696		502	683		514	1601			1315	
v/s Ratio Prot		0.04			c0.05			c0.10				
v/s Ratio Perm	0.03			0.01			0.01				0.07	
v/c Ratio	0.08	0.09		0.02	0.14		0.03	0.20			0.14	
Uniform Delay, d1	13.0	13.1		12.7	13.3		8.4	9.2			8.9	
Progression Factor	1.00	1.00		1.08	1.11		0.77	0.70			1.00	
Incremental Delay, d2	0.3	0.3		0.1	0.4		0.1	0.3			0.2	
Delay (s)	13.3	13.3		13.9	15.2		6.6	6.7			9.1	
Level of Service	B	B		B	B		A	A			A	
Approach Delay (s)		13.3			15.0			6.7			9.1	
Approach LOS		B			B			A			A	

Intersection Summary			
HCM 2000 Control Delay	9.5	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.17		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	63.1%	ICU Level of Service	B
Analysis Period (min)	15		
Description: Count Date 6/4/09			
Downtown TSA			
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	51	48	5	4	21	5	62	198	36	4	42	35
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width	11	14	12	12	14	14	12	12	12	10	12	10
Total Lost time (s)	4.0	4.0			4.0		4.3	4.3		4.0	4.0	
Lane Util. Factor	1.00	1.00			1.00		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00			1.00		1.00	0.99		1.00	0.98	
Flpb, ped/bikes	0.99	1.00			1.00		0.97	1.00		0.98	1.00	
Frt	1.00	0.99			0.98		1.00	0.98		1.00	0.93	
Flt Protected	0.95	1.00			0.99		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1612	1635			1793		1631	1728		1563	1601	
Flt Permitted	0.73	1.00			0.98		0.70	1.00		0.53	1.00	
Satd. Flow (perm)	1247	1635			1772		1196	1728		879	1601	
Peak-hour factor, PHF	0.73	0.73	0.73	0.89	0.89	0.89	0.79	0.79	0.79	0.83	0.83	0.83
Adj. Flow (vph)	70	66	7	4	24	6	78	251	46	5	51	42
RTOR Reduction (vph)	0	4	0	0	4	0	0	10	0	0	21	0
Lane Group Flow (vph)	70	69	0	0	30	0	78	287	0	5	72	0
Confl. Peds. (#/hr)	5		4	4		5	14		18	18		14
Confl. Bikes (#/hr)			7			1			6			3
Heavy Vehicles (%)	2%	17%	0%	0%	0%	20%	2%	1%	0%	0%	1%	4%
Turn Type	Perm	NA		Perm	NA		Perm	NA		D.Pm	NA	
Protected Phases		4			4			2			6	
Permitted Phases	4			4			2			2		
Actuated Green, G (s)	26.4	26.4			26.4		34.7	34.7		34.7	35.0	
Effective Green, g (s)	27.0	27.0			27.0		34.7	34.7		35.0	35.0	
Actuated g/C Ratio	0.39	0.39			0.39		0.50	0.50		0.50	0.50	
Clearance Time (s)	4.6	4.6			4.6		4.3	4.3		4.3	4.0	
Lane Grp Cap (vph)	480	630			683		592	856		439	800	
v/s Ratio Prot		0.04						c0.17			0.04	
v/s Ratio Perm	c0.06				0.02		0.07			0.01		
v/c Ratio	0.15	0.11			0.04		0.13	0.34		0.01	0.09	
Uniform Delay, d1	14.0	13.8			13.4		9.5	10.7		8.8	9.2	
Progression Factor	1.00	1.00			1.06		1.00	1.00		0.77	0.61	
Incremental Delay, d2	0.6	0.3			0.1		0.5	1.1		0.0	0.2	
Delay (s)	14.6	14.1			14.4		10.0	11.7		6.8	5.8	
Level of Service	B	B			B		A	B		A	A	
Approach Delay (s)		14.4			14.4			11.4			5.8	
Approach LOS		B			B			B			A	

Intersection Summary			
HCM 2000 Control Delay	11.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.25		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	8.3
Intersection Capacity Utilization	39.4%	ICU Level of Service	A
Analysis Period (min)	15		
Description: Downtown TSA			
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	24	336	20	16	483	22	44	93	49	30	21	33
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Total Lost time (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	0.98		1.00	0.98	
Flpb, ped/bikes	0.98	1.00		1.00	1.00		0.98	1.00		0.98	1.00	
Frt	1.00	0.99		1.00	0.99		1.00	0.95		1.00	0.91	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1678	3314		1521	3228		1684	1552		1683	1547	
Flt Permitted	0.36	1.00		0.47	1.00		0.71	1.00		0.61	1.00	
Satd. Flow (perm)	640	3314		750	3228		1265	1552		1072	1547	
Peak-hour factor, PHF	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80
Adj. Flow (vph)	30	420	25	20	604	28	55	116	61	38	26	41
RTOR Reduction (vph)	0	6	0	0	5	0	0	27	0	0	25	0
Lane Group Flow (vph)	30	439	0	20	627	0	55	150	0	38	42	0
Confl. Peds. (#/hr)	28		4	4		28	15		19	19		15
Confl. Bikes (#/hr)			1			1			24			5
Heavy Vehicles (%)	0%	2%	5%	12%	5%	3%	0%	0%	24%	0%	0%	6%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			4			2			2	
Permitted Phases	4			4			2			2		
Actuated Green, G (s)	35.4	35.4		35.4	35.4		25.4	25.4		25.4	25.4	
Effective Green, g (s)	37.0	37.0		37.0	37.0		27.0	27.0		27.0	27.0	
Actuated g/C Ratio	0.53	0.53		0.53	0.53		0.39	0.39		0.39	0.39	
Clearance Time (s)	4.6	4.6		4.6	4.6		4.6	4.6		4.6	4.6	
Lane Grp Cap (vph)	338	1751		396	1706		487	598		413	596	
v/s Ratio Prot		0.13			c0.19			c0.10			0.03	
v/s Ratio Perm	0.05			0.03			0.04			0.04		
v/c Ratio	0.09	0.25		0.05	0.37		0.11	0.25		0.09	0.07	
Uniform Delay, d1	8.2	9.0		8.0	9.7		13.8	14.6		13.7	13.6	
Progression Factor	1.00	1.00		0.81	0.71		0.93	0.91		1.00	1.00	
Incremental Delay, d2	0.5	0.3		0.2	0.6		0.5	1.0		0.4	0.2	
Delay (s)	8.7	9.3		6.7	7.4		13.3	14.2		14.1	13.8	
Level of Service	A	A		A	A		B	B		B	B	
Approach Delay (s)		9.3			7.4			14.0			13.9	
Approach LOS		A			A			B			B	

Intersection Summary			
HCM 2000 Control Delay	9.5	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.32		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	54.0%	ICU Level of Service	A
Analysis Period (min)	15		
Description: Northwest TSA			

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	136	343	149	95	332	41	164	1194	50	29	572	93
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Total Lost time (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	0.99		1.00	1.00		1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.95		1.00	0.98		1.00	0.99		1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1707	3096		1705	3215		1626	3334		1710	3257	
Flt Permitted	0.42	1.00		0.31	1.00		0.30	1.00		0.10	1.00	
Satd. Flow (perm)	746	3096		565	3215		512	3334		180	3257	
Peak-hour factor, PHF	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Adj. Flow (vph)	162	408	177	113	395	49	195	1421	60	35	681	111
RTOR Reduction (vph)	0	70	0	0	14	0	0	4	0	0	19	0
Lane Group Flow (vph)	162	515	0	113	430	0	195	1477	0	35	773	0
Confl. Peds. (#/hr)	3		7	7		3	6		5	5		6
Confl. Bikes (#/hr)			1			1			1			1
Heavy Vehicles (%)	0%	3%	9%	0%	5%	0%	5%	1%	3%	0%	2%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	4	0	0	4	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			4			2			2	
Permitted Phases	4			4			2			2		
Actuated Green, G (s)	22.4	22.4		22.4	22.4		38.4	38.4		38.4	38.4	
Effective Green, g (s)	24.0	24.0		24.0	24.0		40.0	40.0		40.0	40.0	
Actuated g/C Ratio	0.34	0.34		0.34	0.34		0.57	0.57		0.57	0.57	
Clearance Time (s)	4.6	4.6		4.6	4.6		4.6	4.6		4.6	4.6	
Lane Grp Cap (vph)	255	1061		193	1102		292	1905		102	1861	
v/s Ratio Prot		0.17			0.13			c0.44			0.24	
v/s Ratio Perm	c0.22			0.20			0.38			0.19		
v/c Ratio	0.64	0.49		0.59	0.39		0.67	0.78		0.34	0.42	
Uniform Delay, d1	19.3	18.1		18.9	17.4		10.4	11.5		8.0	8.4	
Progression Factor	1.05	1.07		1.00	1.00		0.72	0.69		1.00	1.00	
Incremental Delay, d2	10.8	1.5		12.4	1.0		8.1	2.2		8.9	0.7	
Delay (s)	31.2	20.9		31.3	18.5		15.5	10.2		16.9	9.1	
Level of Service	C	C		C	B		B	B		B	A	
Approach Delay (s)		23.2			21.1			10.8			9.4	
Approach LOS		C			C			B			A	

Intersection Summary			
HCM 2000 Control Delay	14.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	99.0%	ICU Level of Service	F
Analysis Period (min)	15		
Description: Northwest TSA			
c Critical Lane Group			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	3	293	105	1428	837	44
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85
Hourly flow rate (vph)	4	345	124	1680	985	52
Pedestrians	14			14	14	
Lane Width (ft)	12.0			12.0	12.0	
Walking Speed (ft/s)	4.0			4.0	4.0	
Percent Blockage	1			1	1	
Right turn flare (veh)		2				
Median type				None	None	
Median storage veh)						
Upstream signal (ft)				364	816	
pX, platoon unblocked	0.61	0.97	0.97			
vC, conflicting volume	2126	546	1050			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1351	470	990			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	95	33	81			
cM capacity (veh/h)	69	512	665			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	348	684	1120	656	380
Volume Left	4	124	0	0	0
Volume Right	345	0	0	0	52
cSH	517	665	1700	1700	1700
Volume to Capacity	0.67	0.19	0.66	0.39	0.22
Queue Length 95th (ft)	125	17	0	0	0
Control Delay (s)	25.7	4.7	0.0	0.0	0.0
Lane LOS	D	A			
Approach Delay (s)	25.7	1.8		0.0	
Approach LOS	D				

Intersection Summary			
Average Delay	3.8		
Intersection Capacity Utilization	87.9%	ICU Level of Service	E
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	17	1	17	224	1	216	14	1291	108	70	1075	12
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Total Lost time (s)		4.6			4.6	3.0		3.0	3.0	3.0	3.0	
Lane Util. Factor		1.00			1.00	1.00		0.95	1.00	1.00	0.95	
Frpb, ped/bikes		1.00			1.00	0.98		1.00	0.92	1.00	1.00	
Flpb, ped/bikes		1.00			0.98	1.00		1.00	1.00	1.00	1.00	
Frt		0.93			1.00	0.85		1.00	0.85	1.00	1.00	
Flt Protected		0.98			0.95	1.00		1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1449			1505	1332		3021	1274	1539	2989	
Flt Permitted		0.84			0.70	1.00		0.94	1.00	0.09	1.00	
Satd. Flow (perm)		1242			1105	1332		2837	1274	149	2989	
Peak-hour factor, PHF	0.92	0.92	0.92	0.95	0.92	0.95	0.92	0.84	0.84	0.87	0.87	0.92
Adj. Flow (vph)	18	1	18	236	1	227	15	1537	129	80	1236	13
RTOR Reduction (vph)	0	13	0	0	0	18	0	0	49	0	1	0
Lane Group Flow (vph)	0	24	0	0	237	209	0	1552	80	80	1248	0
Confl. Peds. (#/hr)				16		9			27	15		
Confl. Bikes (#/hr)						3			1			
Heavy Vehicles (%)	2%	2%	2%	1%	2%	1%	2%	1%	0%	0%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	4	0	0	4	0
Turn Type	Perm	NA		Perm	NA	Perm	Perm	NA	Perm	Perm	NA	
Protected Phases		4			4			2			2	
Permitted Phases	4			4		4	2		2	2		
Actuated Green, G (s)		19.0			19.0	19.0		41.8	41.8	41.8	41.8	
Effective Green, g (s)		19.0			19.0	20.6		43.4	43.4	43.4	43.4	
Actuated g/C Ratio		0.27			0.27	0.29		0.62	0.62	0.62	0.62	
Clearance Time (s)		4.6			4.6	4.6		4.6	4.6	4.6	4.6	
Vehicle Extension (s)		3.0			3.0	3.0		0.2	0.2	0.2	0.2	
Lane Grp Cap (vph)		337			299	391		1758	789	92	1853	
v/s Ratio Prot											0.42	
v/s Ratio Perm		0.02			c0.21	0.16		c0.55	0.06	0.54		
v/c Ratio		0.07			0.79	0.54		0.88	0.10	0.87	0.67	
Uniform Delay, d1		18.9			23.7	20.7		11.2	5.4	11.0	8.7	
Progression Factor		1.00			1.00	1.00		1.00	1.00	1.33	1.36	
Incremental Delay, d2		0.1			13.4	1.4		6.8	0.3	61.8	1.9	
Delay (s)		19.0			37.1	22.1		18.0	5.7	76.4	13.8	
Level of Service		B			D	C		B	A	E	B	
Approach Delay (s)		19.0			29.7			17.0			17.5	
Approach LOS		B			C			B			B	

Intersection Summary			
HCM 2000 Control Delay	18.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	7.6
Intersection Capacity Utilization	96.7%	ICU Level of Service	F
Analysis Period (min)	15		
Description: Downtown TSA			
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	0	476	160	505	1251	0	0	0	0
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Total Lost time (s)					3.0		3.0	3.0				
Lane Util. Factor					0.91		1.00	0.95				
Frpb, ped/bikes					0.97		1.00	1.00				
Flpb, ped/bikes					1.00		0.95	1.00				
Frt					0.96		1.00	1.00				
Flt Protected					1.00		0.95	1.00				
Satd. Flow (prot)					4043		1256	2763				
Flt Permitted					1.00		0.95	1.00				
Satd. Flow (perm)					4043		1256	2763				
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	0	517	174	549	1360	0	0	0	0
RTOR Reduction (vph)	0	0	0	0	14	0	119	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	677	0	430	1360	0	0	0	0
Confl. Peds. (#/hr)						77	40					
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	5%	5%	5%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	4	0	0	4	0	0	0	0
Parking (#/hr)							0	0				
Turn Type					NA		Perm	NA				
Protected Phases					4			2				
Permitted Phases							2					
Actuated Green, G (s)					33.4		37.4	37.4				
Effective Green, g (s)					35.0		39.0	39.0				
Actuated g/C Ratio					0.44		0.49	0.49				
Clearance Time (s)					4.6		4.6	4.6				
Lane Grp Cap (vph)					1768		612	1346				
v/s Ratio Prot					c0.17			c0.49				
v/s Ratio Perm							0.34					
v/c Ratio					0.38		0.70	1.01				
Uniform Delay, d1					15.2		16.0	20.5				
Progression Factor					1.00		1.00	1.00				
Incremental Delay, d2					0.6		6.6	27.1				
Delay (s)					15.8		22.6	47.6				
Level of Service					B		C	D				
Approach Delay (s)		0.0			15.8			40.4			0.0	
Approach LOS		A			B			D			A	

Intersection Summary			
HCM 2000 Control Delay	33.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	63.9%	ICU Level of Service	B
Analysis Period (min)	15		
Description: Downtown TSA			
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	221	790	0	0	0	0	0	1154	133
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Total Lost time (s)				3.0	3.0						3.0	
Lane Util. Factor				0.86	0.86						0.91	
Frpb, ped/bikes				1.00	1.00						0.99	
Flpb, ped/bikes				0.91	1.00						1.00	
Frt				1.00	1.00						0.98	
Flt Protected				0.95	1.00						1.00	
Satd. Flow (prot)				1176	4060						4101	
Flt Permitted				0.95	1.00						1.00	
Satd. Flow (perm)				1176	4060						4101	
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	0	0	0	243	868	0	0	0	0	0	1268	146
RTOR Reduction (vph)	0	0	0	12	12	0	0	0	0	0	18	0
Lane Group Flow (vph)	0	0	0	207	880	0	0	0	0	0	1396	0
Confl. Peds. (#/hr)				74						74		36
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	5%	5%	5%
Bus Blockages (#/hr)	0	0	0	0	4	0	0	0	0	0	4	0
Turn Type				Perm	NA						NA	
Protected Phases					4						2	
Permitted Phases				4								
Actuated Green, G (s)				35.4	35.4						35.4	
Effective Green, g (s)				37.0	37.0						37.0	
Actuated g/C Ratio				0.46	0.46						0.46	
Clearance Time (s)				4.6	4.6						4.6	
Lane Grp Cap (vph)				543	1877						1896	
v/s Ratio Prot											c0.34	
v/s Ratio Perm				0.18	0.22							
v/c Ratio				0.38	0.47						0.74	
Uniform Delay, d1				14.0	14.8						17.5	
Progression Factor				1.01	0.99						1.00	
Incremental Delay, d2				1.7	0.7						2.6	
Delay (s)				15.8	15.3						20.1	
Level of Service				B	B						C	
Approach Delay (s)		0.0			15.4			0.0			20.1	
Approach LOS		A			B			A			C	

Intersection Summary			
HCM 2000 Control Delay	18.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	63.9%	ICU Level of Service	B
Analysis Period (min)	15		
Description: Downtown TSA			

c Critical Lane Group

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	0	0	427	517	0	0
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width	12	12	13	13	15	15
Total Lost time (s)			4.0			
Lane Util. Factor			0.91			
Frpb, ped/bikes			0.98			
Flpb, ped/bikes			1.00			
Frt			0.92			
Flt Protected			1.00			
Satd. Flow (prot)			4435			
Flt Permitted			1.00			
Satd. Flow (perm)			4435			
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	0	474	574	0	0
RTOR Reduction (vph)	0	0	265	0	0	0
Lane Group Flow (vph)	0	0	783	0	0	0
Confl. Bikes (#/hr)				35		
Bus Blockages (#/hr)	0	0	4	0	0	0
Turn Type			NA			
Protected Phases			4			
Permitted Phases						
Actuated Green, G (s)			42.4			
Effective Green, g (s)			43.0			
Actuated g/C Ratio			0.54			
Clearance Time (s)			4.6			
Lane Grp Cap (vph)			2383			
v/s Ratio Prot			c0.18			
v/s Ratio Perm						
v/c Ratio			0.33			
Uniform Delay, d1			10.4			
Progression Factor			3.66			
Incremental Delay, d2			0.4			
Delay (s)			38.4			
Level of Service			D			
Approach Delay (s)		0.0	38.4		0.0	
Approach LOS		A	D		A	

Intersection Summary			
HCM 2000 Control Delay	38.4	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.20		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	8.6
Intersection Capacity Utilization	24.3%	ICU Level of Service	A
Analysis Period (min)	15		
Description: Count Date 8/17/09			
Downtown TSA			
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	31	62	1	10	317	56	12	254	23	70	82	65
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width	12	12	12	12	12	12	10	10	10	11	11	11
Total Lost time (s)	3.0	3.0		3.0	3.0		3.0	3.0			3.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95			0.95	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00			0.98	
Flpb, ped/bikes	1.00	1.00		0.98	1.00		0.98	1.00			1.00	
Frt	1.00	1.00		1.00	0.98		1.00	0.99			0.96	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00			0.98	
Satd. Flow (prot)	1709	1742		1672	1741		1563	3115			3052	
Flt Permitted	0.25	1.00		0.70	1.00		0.57	1.00			0.76	
Satd. Flow (perm)	451	1742		1235	1741		936	3115			2363	
Peak-hour factor, PHF	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74
Adj. Flow (vph)	42	84	1	14	428	76	16	343	31	95	111	88
RTOR Reduction (vph)	0	1	0	0	9	0	0	10	0	0	43	0
Lane Group Flow (vph)	42	84	0	14	495	0	16	364	0	0	251	0
Confl. Peds. (#/hr)	2		26	26		2	19		6	6		19
Confl. Bikes (#/hr)			1			1			4			3
Heavy Vehicles (%)	0%	3%	11%	0%	1%	0%	0%	1%	0%	0%	0%	0%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			4			2			2	
Permitted Phases	4			4			2			2		
Actuated Green, G (s)	26.4	26.4		26.4	26.4		34.4	34.4			34.4	
Effective Green, g (s)	28.0	28.0		28.0	28.0		36.0	36.0			36.0	
Actuated g/C Ratio	0.40	0.40		0.40	0.40		0.51	0.51			0.51	
Clearance Time (s)	4.6	4.6		4.6	4.6		4.6	4.6			4.6	
Lane Grp Cap (vph)	180	696		494	696		481	1602			1215	
v/s Ratio Prot		0.05			c0.28			c0.12				
v/s Ratio Perm	0.09			0.01			0.02				0.11	
v/c Ratio	0.23	0.12		0.03	0.71		0.03	0.23			0.21	
Uniform Delay, d1	13.9	13.2		12.7	17.6		8.4	9.4			9.2	
Progression Factor	1.00	1.00		1.10	1.09		0.79	0.73			1.00	
Incremental Delay, d2	3.0	0.4		0.1	6.1		0.1	0.3			0.4	
Delay (s)	16.9	13.6		14.1	25.2		6.8	7.1			9.6	
Level of Service	B	B		B	C		A	A			A	
Approach Delay (s)		14.7			24.9			7.1			9.6	
Approach LOS		B			C			A			A	

Intersection Summary			
HCM 2000 Control Delay	15.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.44		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	72.2%	ICU Level of Service	C
Analysis Period (min)	15		
Description: Count Date 6/4/09			
Downtown TSA			

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	56	53	6	4	101	13	68	218	40	11	46	39
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width	11	14	12	12	14	14	12	12	12	10	12	10
Total Lost time (s)	4.0	4.0			4.0		4.3	4.3		4.0	4.0	
Lane Util. Factor	1.00	1.00			1.00		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00			1.00		1.00	0.99		1.00	0.98	
Flpb, ped/bikes	1.00	1.00			1.00		0.97	1.00		0.98	1.00	
Frt	1.00	0.99			0.98		1.00	0.98		1.00	0.93	
Flt Protected	0.95	1.00			1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1614	1635			1842		1632	1728		1566	1597	
Flt Permitted	0.70	1.00			1.00		0.69	1.00		0.51	1.00	
Satd. Flow (perm)	1182	1635			1836		1187	1728		834	1597	
Peak-hour factor, PHF	0.73	0.73	0.73	0.89	0.89	0.89	0.79	0.79	0.79	0.83	0.83	0.83
Adj. Flow (vph)	77	73	8	4	113	15	86	276	51	13	55	47
RTOR Reduction (vph)	0	5	0	0	7	0	0	10	0	0	24	0
Lane Group Flow (vph)	77	76	0	0	125	0	86	317	0	13	79	0
Confl. Peds. (#/hr)	5		4	4		5	14		18	18		14
Confl. Bikes (#/hr)			7			1			6			3
Heavy Vehicles (%)	2%	17%	0%	0%	0%	20%	2%	1%	0%	0%	1%	4%
Turn Type	Perm	NA		Perm	NA		Perm	NA		D.Pm	NA	
Protected Phases		4			4			2			6	
Permitted Phases	4			4			2			2		
Actuated Green, G (s)	26.4	26.4			26.4		34.7	34.7		34.7	35.0	
Effective Green, g (s)	27.0	27.0			27.0		34.7	34.7		35.0	35.0	
Actuated g/C Ratio	0.39	0.39			0.39		0.50	0.50		0.50	0.50	
Clearance Time (s)	4.6	4.6			4.6		4.3	4.3		4.3	4.0	
Lane Grp Cap (vph)	455	630			708		588	856		417	798	
v/s Ratio Prot		0.05						c0.18			0.05	
v/s Ratio Perm	0.07				c0.07		0.07			0.02		
v/c Ratio	0.17	0.12			0.18		0.15	0.37		0.03	0.10	
Uniform Delay, d1	14.1	13.9			14.2		9.6	10.9		8.9	9.2	
Progression Factor	1.00	1.00			1.01		1.00	1.00		0.74	0.58	
Incremental Delay, d2	0.8	0.4			0.5		0.5	1.2		0.1	0.2	
Delay (s)	14.9	14.2			14.9		10.1	12.1		6.7	5.6	
Level of Service	B	B			B		B	B		A	A	
Approach Delay (s)		14.6			14.9			11.7			5.7	
Approach LOS		B			B			B			A	

Intersection Summary			
HCM 2000 Control Delay	11.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.29		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	8.3
Intersection Capacity Utilization	39.4%	ICU Level of Service	A
Analysis Period (min)	15		
Description: Downtown TSA			
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	26	370	94	88	531	24	141	109	178	33	27	36
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Total Lost time (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	0.99		1.00	1.00		1.00	0.97		1.00	0.98	
Flpb, ped/bikes	0.98	1.00		1.00	1.00		0.99	1.00		0.99	1.00	
Frt	1.00	0.97		1.00	0.99		1.00	0.91		1.00	0.91	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1681	3213		1522	3229		1685	1381		1693	1564	
Flt Permitted	0.33	1.00		0.39	1.00		0.71	1.00		0.39	1.00	
Satd. Flow (perm)	586	3213		624	3229		1251	1381		698	1564	
Peak-hour factor, PHF	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80
Adj. Flow (vph)	32	462	118	110	664	30	176	136	222	41	34	45
RTOR Reduction (vph)	0	33	0	0	5	0	0	84	0	0	28	0
Lane Group Flow (vph)	32	547	0	110	689	0	176	274	0	41	51	0
Confl. Peds. (#/hr)	28		4	4		28	15		19	19		15
Confl. Bikes (#/hr)			1			1			24			5
Heavy Vehicles (%)	0%	2%	5%	12%	5%	3%	0%	0%	24%	0%	0%	6%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			4			2			2	
Permitted Phases	4			4			2			2		
Actuated Green, G (s)	35.4	35.4		35.4	35.4		25.4	25.4		25.4	25.4	
Effective Green, g (s)	37.0	37.0		37.0	37.0		27.0	27.0		27.0	27.0	
Actuated g/C Ratio	0.53	0.53		0.53	0.53		0.39	0.39		0.39	0.39	
Clearance Time (s)	4.6	4.6		4.6	4.6		4.6	4.6		4.6	4.6	
Lane Grp Cap (vph)	309	1698		329	1706		482	532		269	603	
v/s Ratio Prot		0.17			c0.21			c0.20			0.03	
v/s Ratio Perm	0.05			0.18			0.14			0.06		
v/c Ratio	0.10	0.32		0.33	0.40		0.37	0.51		0.15	0.09	
Uniform Delay, d1	8.2	9.4		9.4	9.9		15.4	16.5		14.0	13.7	
Progression Factor	1.00	1.00		0.79	0.74		0.96	0.93		1.00	1.00	
Incremental Delay, d2	0.7	0.5		2.5	0.7		2.1	3.5		1.2	0.3	
Delay (s)	8.9	9.9		10.0	7.9		16.8	18.8		15.2	13.9	
Level of Service	A	A		A	A		B	B		B	B	
Approach Delay (s)		9.8			8.2			18.2			14.4	
Approach LOS		A			A			B			B	

Intersection Summary			
HCM 2000 Control Delay	11.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.45		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	71.2%	ICU Level of Service	C
Analysis Period (min)	15		
Description: Northwest TSA			
c Critical Lane Group			

Appendix D

Trip Assignments Per Analysis Zone

Riverfront Park TIA

Trip Assignments - North Bank

Lincoln/Post/Boone

				15	35	20				
				IN		OUT				
				0	5	10				
				SBR	SBT	SBL				
17	OUT	0	EBL		TEV =		WBR	13	IN	26
31		10	EBT		66		WBT	13		46
14	IN	4	EBR		#REF!		WBL	0	OUT	20
				NBL	NBT	NBR				
				4	7	0				
				OUT		IN				
				9	20	11				

Howard/Boone

				1	2	1				
				IN		OUT				
				0	1	0				
				SBR	SBT	SBL				
26	OUT	0	EBL		TEV =		WBR	0	IN	20
		0	EBT		103		WBT	0		55
20	IN	20	EBR		#REF!		WBL	20	OUT	35
				NBL	NBT	NBR				
				26	1	35				
				OUT		IN				
				41	103	62				

Washington/Boone

				18	37	20				
				IN		OUT				
				11	7	0				
				SBR	SBT	SBL				
20	OUT	17	EBL		TEV =		WBR	0	IN	14
55		18	EBT		72		WBT	9		34
35	IN	0	EBR		#REF!		WBL	5	OUT	20
				NBL	NBT	NBR				
				0	2	2				
				OUT		IN				
				12	17	4				

Lincoln/Post/Mallon

				9	20	11				
				IN		OUT				
				0	2	7				
				SBR	SBT	SBL				
70	OUT	0	EBL		TEV =		WBR	9	IN	79
70		0	EBT		90		WBT	70		86
0	IN	0	EBR		#REF!		WBL	0	OUT	7
				NBL	NBT	NBR				
				0	2	0				
				OUT		IN				
				2	4	2				

Washington/Cataldo

				12	17	4				
				IN		OUT				
				9	3	0				
				SBR	SBT	SBL				
25	OUT	0	EBL		TEV =		WBR	0	IN	0
71		0	EBT		79		WBT	0		0
46	IN	46	EBR		#REF!		WBL	0	OUT	0
				NBL	NBT	NBR				
				16	4	0				
				OUT		IN				
				50	70	21				

Washington/Cataldo West

				12	17	4				
				IN	4	OUT				
					12	0				
				SBR	SBT	SBL				
0	OUT		EBL		TEV =		WBR	0	IN	0
0	14		EBT		17		WBT		22	0
0	IN		EBR				WBL	0	OUT	0
				NBL	NBT	NBR				
					4	0				
				OUT	4	IN				
				12	17	4				

Lincoln/Post/Broadway

				2	4	2				
				IN		OUT				
				0	0	2				
				SBR	SBT	SBL				
22	OUT	0	EBL		TEV =		WBR	2	IN	24
22		0	EBT		26		WBT	22		26
0	IN	0	EBR		#REF!		WBL	0	OUT	2
				NBL	NBT	NBR				
				0	0	0				
				OUT		IN				
				0	0	0				

Washington/North River Drive

				50	70	21				
				IN		OUT				
				3	46	0				
				SBR	SBT	SBL				
7	OUT	4	EBL		TEV =		WBR	0	IN	0
16		0	EBT		78		WBT	0		0
9	IN	4	EBR		#REF!		WBL	0	OUT	0
				NBL	NBT	NBR				
				4	16	0				
				OUT		IN				
				51	70	20				

Washington/Cataldo East

				12	17	4				
				IN	4	OUT				
				9	3					
				SBR	SBT	SBL				
25	OUT	0	EBL		TEV =		WBR		IN	0
71	14		EBT		79		WBT		22	0
46	IN	46	EBR				WBL		OUT	0
				NBL	NBT	NBR				
				16	4					
				OUT	4	IN				
				50	70	21				

Lincoln/Post/Spokane Falls

				0	79	79				
				IN		OUT				
				0	0	0				
				SBR	SBT	SBL				
0	OUT	0	EBL		TEV =		WBR	79	IN	79
0		0	EBT		79		WBT	0		79
0	IN	0	EBR		#REF!		WBL	0	OUT	0
				NBL	NBT	NBR				
				0	0	0				
				OUT		IN				
				0	0	0				

Stevens/Spokane Falls

				51	51	0				
				IN		OUT				
				0	51	0				
				SBR	SBT	SBL				
79	OUT	0	EBL		TEV =		WBR	0	IN	79
79		0	EBT		130		WBT	79		79
0	IN	0	EBR		#REF!		WBL	0	OUT	0
				NBL	NBT	NBR				
				0	0	0				
				OUT		IN				
				51	51	0				

Washington/Spokane Fallls

				0	20	20				
				IN		OUT				
				0	0	0				
				SBR	SBT	SBL				
79	OUT	0	EBL		TEV =		WBR	2	IN	11
79		0	EBT		99		WBT	9		11
0	IN	0	EBR		#REF!		WBL	0	OUT	0
				NBL	NBT	NBR				
				70	18	0				
				OUT		IN				
				0	88	88				

Riverfront Park TIA

Trip Assignments - Central

Lincoln/Post/Boone

				27	62	35				
				IN		OUT				
				0	10	17				
				SBR	SBT	SBL				
30	OUT	0	EBL		TEV =		WBR	23	IN	46
55		18	EBT		117		WBT	23		82
25	IN	6	EBR				WBL	0	OUT	36
				NBL	NBT	NBR				
				8	12	0				
				OUT		IN				
				16	35	19				

Howard/Boone

				2	4	2				
				IN		OUT				
				0	2	0				
				SBR	SBT	SBL				
46	OUT	0	EBL		TEV =		WBR	0	IN	35
		0	EBT		182		WBT	0		97
36	IN	36	EBR				WBL	35	OUT	62
				NBL	NBT	NBR				
				46	2	62				
				OUT		IN				
				72	182	109				

Washington/Boone

				31	66	35				
				IN		OUT				
				19	12	0				
				SBR	SBT	SBL				
35	OUT	31	EBL		TEV =		WBR	0	IN	25
97		31	EBT		126		WBT	16		60
62	IN	0	EBR				WBL	10	OUT	35
				NBL	NBT	NBR				
				0	4	4				
				OUT		IN				
				22	30	8				

Lincoln/Post/Mallon

				16	35	19				
				IN		OUT				
				0	3	13				
				SBR	SBT	SBL				
124	OUT	0	EBL		TEV =		WBR	16	IN	140
124		0	EBT		159		WBT	124		152
0	IN	0	EBR				WBL	0	OUT	13
				NBL	NBT	NBR				
				0	4	0				
				OUT		IN				
				3	7	4				

Washington/Cataldo

				22	30	8				
				IN		OUT				
				16	6	0				
				SBR	SBT	SBL				
44	OUT	0	EBL		TEV =		WBR	0	IN	0
126		0	EBT		140		WBT	0		0
81	IN	81	EBR				WBL	0	OUT	0
				NBL	NBT	NBR				
				29	8	0				
				OUT		IN				
				88	124	36				

Washington/Cataldo West

				22	30	8				
				IN	4	OUT				
					22	0				
				SBR	SBT	SBL				
0	OUT		EBL		TEV =		WBR	0	IN	0
0	14		EBT		30		WBT		22	0
0	IN		EBR				WBL	0	OUT	0
				NBL	NBT	NBR				
					8	0				
				OUT	4	IN				
				22	30	8				

Lincoln/Post/Broadway

				3	7	4				
				IN		OUT				
				0	0	3				
				SBR	SBT	SBL				
39	OUT	0	EBL		TEV =		WBR	4	IN	43
39		0	EBT		46		WBT	39		46
0	IN	0	EBR				WBL	0	OUT	3
				NBL	NBT	NBR				
				0	0	0				
				OUT		IN				
				0	0	0				

Washington/North River Drive

				88	124	36				
				IN		OUT				
				6	81	0				
				SBR	SBT	SBL				
12	OUT	8	EBL		TEV =		WBR	0	IN	0
28		0	EBT		138		WBT	0		0
16	IN	8	EBR				WBL	0	OUT	0
				NBL	NBT	NBR				
				6	29	0				
				OUT		IN				
				89	124	35				

Washington/Cataldo East

				22	30	8				
				IN	4	OUT				
				16	6					
				SBR	SBT	SBL				
44	OUT	0	EBL		TEV =		WBR		IN	0
126	14		EBT		140		WBT		22	0
81	IN	81	EBR				WBL		OUT	0
				NBL	NBT	NBR				
				29	8					
				OUT	4	IN				
				88	124	36				

Lincoln/Post/Spokane Falls

				0	139	139				
				IN		OUT				
				0	0	0				
				SBR	SBT	SBL				
0	OUT	0	EBL		TEV =		WBR	139	IN	139
0		0	EBT		139		WBT	0		139
0	IN	0	EBR				WBL	0	OUT	0
				NBL	NBT	NBR				
				0	0	0				
				OUT		IN				
				0	0	0				

Stevens/Spokane Falls

				89	89	0				
				IN		OUT				
				0	89	0				
				SBR	SBT	SBL				
139	OUT	0	EBL		TEV =		WBR	0	IN	139
139		0	EBT		229		WBT	139		139
0	IN	0	EBR				WBL	0	OUT	0
				NBL	NBT	NBR				
				0	0	0				
				OUT		IN				
				89	89	0				

Washington/Spokane Fallls

				0	35	35				
				IN		OUT				
				0	0	0				
				SBR	SBT	SBL				
139	OUT	0	EBL		TEV =		WBR	3	IN	19
139		0	EBT		174		WBT	16		19
0	IN	0	EBR				WBL	0	OUT	0
				NBL	NBT	NBR				
				124	32	0				
				OUT		IN				
				0	155	155				

Riverfront Park TIA

Trip Assignments - South Bank

Lincoln/Post/Boone

				12	28	16				
				IN		OUT				
				0	4	8				
				SBR	SBT	SBL				
14	OUT	0	EBL		TEV =		WBR	11	IN	21
25		8	EBT		53		WBT	10		37
11	IN	3	EBR				WBL	0	OUT	16
				NBL	NBT	NBR				
				4	5	0				
				OUT		IN				
				7	16	9				

Howard/Boone

				1	2	1				
				IN		OUT				
				0	1	0				
				SBR	SBT	SBL				
21	OUT	0	EBL		TEV =		WBR	0	IN	16
		0	EBT		82		WBT	0		44
16	IN	16	EBR				WBL	16	OUT	28
				NBL	NBT	NBR				
				21	1	28				
				OUT		IN				
				33	82	49				

Washington/Boone

				14	30	16				
				IN		OUT				
				9	6	0				
				SBR	SBT	SBL				
16	OUT	14	EBL		TEV =		WBR	0	IN	11
44		14	EBT		57		WBT	7		27
28	IN	0	EBR				WBL	4	OUT	16
				NBL	NBT	NBR				
				0	2	2				
				OUT		IN				
				10	13	4				

Lincoln/Post/Mallon

				7	16	9				
				IN		OUT				
				0	1	6				
				SBR	SBT	SBL				
56	OUT	0	EBL		TEV =		WBR	7	IN	63
56		0	EBT		72		WBT	56		69
0	IN	0	EBR				WBL	0	OUT	6
				NBL	NBT	NBR				
				0	2	0				
				OUT		IN				
				1	3	2				

Washington/Cataldo

				10	13	4				
				IN		OUT				
				7	3	0				
				SBR	SBT	SBL				
20	OUT	0	EBL		TEV =		WBR	0	IN	0
57		0	EBT		63		WBT	0		0
37	IN	37	EBR				WBL	0	OUT	0
				NBL	NBT	NBR				
				13	4	0				
				OUT		IN				
				39	56	16				

Washington/Cataldo West

				10	13	4				
				IN	4	OUT				
					10	0				
				SBR	SBT	SBL				
0	OUT		EBL		TEV =		WBR	0	IN	0
0	14		EBT		13		WBT		22	0
0	IN		EBR				WBL	0	OUT	0
				NBL	NBT	NBR				
					4	0				
				OUT	4	IN				
				10	13	4				

Lincoln/Post/Broadway

				1	3	2				
				IN		OUT				
				0	0	1				
				SBR	SBT	SBL				
18	OUT	0	EBL		TEV =		WBR	2	IN	19
18		0	EBT		21		WBT	18		21
0	IN	0	EBR				WBL	0	OUT	1
				NBL	NBT	NBR				
				0	0	0				
				OUT		IN				
				0	0	0				

Washington/North River Drive

				39	56	16				
				IN		OUT				
				3	37	0				
				SBR	SBT	SBL				
6	OUT	4	EBL		TEV =		WBR	0	IN	0
13		0	EBT		62		WBT	0		0
7	IN	4	EBR				WBL	0	OUT	0
				NBL	NBT	NBR				
				3	13	0				
				OUT		IN				
				40	56	16				

Washington/Cataldo East

				10	13	4				
				IN	4	OUT				
				7	3					
				SBR	SBT	SBL				
20	OUT	0	EBL		TEV =		WBR		IN	0
57	14		EBT		63		WBT		22	0
37	IN	37	EBR				WBL		OUT	0
				NBL	NBT	NBR				
				13	4					
				OUT	4	IN				
				39	56	16				

Lincoln/Post/Spokane Falls

				0	63	63				
				IN		OUT				
				0	0	0				
				SBR	SBT	SBL				
0	OUT	0	EBL		TEV =		WBR	63	IN	63
0		0	EBT		63		WBT	0		63
0	IN	0	EBR				WBL	0	OUT	0
				NBL	NBT	NBR				
				0	0	0				
				OUT		IN				
				0	0	0				

Stevens/Spokane Falls

				40	40	0				
				IN		OUT				
				0	40	0				
				SBR	SBT	SBL				
63	OUT	0	EBL		TEV =		WBR	0	IN	63
63		0	EBT		103		WBT	63		63
0	IN	0	EBR				WBL	0	OUT	0
				NBL	NBT	NBR				
				0	0	0				
				OUT		IN				
				40	40	0				

Washington/Spokane Fallls

				0	16	16				
				IN		OUT				
				0	0	0				
				SBR	SBT	SBL				
63	OUT	0	EBL		TEV =		WBR	1	IN	9
63		0	EBT		79		WBT	7		9
0	IN	0	EBR				WBL	0	OUT	0
				NBL	NBT	NBR				
				56	14	0				
				OUT		IN				
				0	70	70				

Appendix E

Parking Count Summaries

		Existing Capacity	16-May Saturday 1 PM to 3 PM	18-May Monday 3 PM to 5 PM	19-May Tuesday 4 PM to 6 PM	23-May Saturday 11 AM to 1 PM	26-May Tuesday 2 PM to 4 PM
1	Riverfront (Lot 6)	40	26	28	26	22	25
2	River Park Square	1300	650	650	650	650	650
3	AMB Parking Lot	140	128	43	52	34	64
4	AMPCO Parking Lot	225	215	93	63	46	137
5	The Davenport Grand Garage						
6	S. Spokane Falls (Azteca)	85	63	24	5	10	17
7	N. Main (Foundary United)	60	54	36	5	2	17
8	NE Main/Brown (Chili's)	50	29	15	5	5	6
9	Convention Center Garage	400	100	100	100	100	100
10	Main - Main Market (East)	25	14	15	7	6	10
11	Main - Revival Market (east)	25	10	9	6	6	15
13	Parkade	840	85	400	400	85	400
14	NE Washington & Riverside	30	16	10	16	2	9
15	SE Washington & Riverside (American Legion)	25	5	14	17	1	17
16	N Riverside (Acrosss from Dania)	25	3	11	20	2	20
17	SW Washington and Bernard (Onion)	20	2	1	6	1	7
18	NE Washington & Main (S Eye Care Team)	15	4	4	5	1	8
19	S. Main (E. Eye Care Team)	95	5	40	40	2	64
20	SW Main & Berard (Suki Yaki Inn)	25	3	11	14	1	10
21	SE Main & Bernard (Luigi's)	45	9	21	14	3	5
21B		28	15	21	11	3	19
22	NE Riverside & Berard	20	11	17	12	1	14
23	NE Division & Spokane Falls (Famous Eds)	50	20	24	16	12	17
24	NE Brown & Main ("Community" Building)	30	15	13	12	1	9
25	S. Riverside (Lutheran Social Services)	85	27	43	46	16	54
26	SE Riverside & Bernard (W High Nooner)	100	19	28	45	1	52
27	SW Bernard & Riverside (Glen Dow Acadamey)	15	5	8	14	19	17
28	NE Sprague & Washington (W Dania)	115	23	77	36	3	68
29	NE Sprague & Stevens (INB Drive Through)	25	10	13	6	3	6
30	NE Sprague & Howard (Columiba Bank Bldg)	120	67	58	83	7	74
31	NW Lincoln and Sprague (Inland Mortgage)	15	7	9	6	5	5
32	S. 1st Avenue Lincoln Post	15	22	15	4	2	6
33	S. 1st Avenue Stevens & Washington (fast park)	200	40	160	160	40	160
34	NE Corner 1st Ave & Stevens (City Park)	200	40	160	160	40	160
35	NW Corner 1st Avenue & Washington Irv's)	85	29	44	22	6	43
36	N. First Ave	35	2	26	21	1	19
37	NW First & Berard (Cross from Intermodal Center)	50	9	2	40	5	43
38	NE First & Berard (Intermodal Center)	45	30	21	17	25	18
39	SW 1st & Washington (Cross from Intermodal Center)	60	7	27	7	7	36
40	SE 1st & Washington (At Rail)	80	11	56	8	8	51
41	E. of Lincoln (At Rail)	115	35	78	82	10	83
42	NW Lincoln & Main (Spokane Library)	52	5	20	20	5	20
43	NW Lincoln & Bridge (Lot 7)	200	49	108	94	52	121
44	W Of Lincoln	70	3	17	17	3	19
45	E. of Lincoln	95	3	17	31	11	37
46	W. of Lincoln	100	1	13	23	9	37
47	W. of Lincoln	10	0	7	10	0	8
48	NW Lincoln & Broadway	50	11	18	21	11	30

49	SW Lincoln & Mallon	30	5	5	19	0	17
50	W. of Lincoln	55	2	5	4	5	5
		10					
52	SE Monroe and Boone	35	8	13	19	2	21
53	NE Corrner Broadway & Adams	40	1	12	3	0	11
54	SW Corner Madison Broadway	125	6	26	22	8	27
55	NE College & Adams	105	0	35	21	0	42
56	SW College & Monroe	65	0	16	7	5	34
57	N Riverside Avenue	35	0	11	14	1	18
58	S Main Avenue	140	1	12	34	9	37
59	N Mallon	50	35	1	4	3	5
60	S Mallon	140	112	88	17	27	47
61	N Dean	25	10	4	5	3	5
61B		10	3	4	8	0	9
62	N Dean	50	3	14	13	4	14
62B			11	20	12	1	13
63	S Mallon	35	12	19	6	1	20
64	S. Cataldo (lot 5)	100	20	3	7	0	5
65	E Mallon (lot 2)	150	77	43	88	50	87
66	N Catalto	65	28	21	23	1	25
67	N Catalto (lot 3)	60	0	3	8	0	8
68	NE Lincoln & Boone	40	30	10	28	3	29
69	SW Post & Sharp	50	13	16	15	0	19
70	NE Post & Boone	35	6	12	21	2	18
71	W Washington	35	1	2	12	3	11
72	W Washington (Lot 1)	90	25	13	27	13	25
73	N. Cataldo	170	9	13	21	15	64
			2355	3046	2933	1441	3423

MORRISON-MAIERLE, INC.

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