

Appendix A: Goals, Objectives, and Criteria

Project Purpose: Improve the visitor experience at Washington Park and its attractions by enhancing access, circulation, and parking at the Park.

Definitions: The following definitions inform the use of the terms *goal*, *objective*, and *criteria* throughout the remainder of this document.

- **Goals** represent the vision statements for what transportation success will look like at Washington Park. Goals are broad and encompassing, and are closely aligned with the project purpose (above) and the general problem areas identified by the Washington Park Alliance member organizations throughout the planning process.
- **Objectives** are the means for achieving the vision of transportation success outlined in the goals definition. Objectives are action-oriented by nature; however, they do not describe the conditions that define whether an objective has been met.
- **Criteria** identify the conditions under which an objective has been met. They are therefore declarative by nature, and provide a guidepost for assessing the successful implementation of a given objective.

Access

Goal 1. Improve overall user experience of visitors entering the Park.

Objective 1.1 Improve wayfinding from outside the Park for all modes.

Criterion 1.1.1 Signage is coordinated and consistent.

Criterion 1.1.2 Signage provides clear directions.

Criterion 1.1.3 Signage effectively assists in route decision-making.

Objective 1.2 Enhance aesthetic experience of visitors entering the Park.

Criterion 1.2.1 Park entrances are clear and improve the sense of place.

Criterion 1.2.2 Park entrances are aesthetically pleasing and welcoming.

Objective 1.3 Improve availability and quality of travel information for visitors.

Criterion 1.3.1 Comprehensive travel information is available online and at regional information outlets to assist in travel decision making.

Goal 2. Increase sustainability of travel to the Park.

Objective 2.1 Improve transit access for Park visitors.

Criterion 2.1.1 All park destinations are accessible by transit.

Criterion 2.1.2 Transit is an attractive mode choice for all users with respect to convenience, comfort, and quality of service.

Criterion 2.1.3 Transit is a cost-competitive mode choice for all users.

Objective 2.2 Identify and improve bicycle and pedestrian connections to the Park.

Criterion 2.2.1 Park entrances visibly connect to bicycle and pedestrian routes.

Criterion 2.2.2 Bicycle connections to park access and egress points are safe and comfortable.

Criterion 2.2.3 Pedestrian connections to park access and egress points are safe and comfortable.

Circulation

Goal 3. Improve experience of visitors traveling within the Park.

Objective 3.1 Movement on the park's internal roadways is logical and efficient.

Criterion 3.1.1 Increase opportunities for two-way connections on internal roads.

Objective 3.2 Improve internal facilities to support use by bicycles.

Criterion 3.2.1 Bicycle infrastructure and safety measures are present and commensurate with road and traffic conditions.

Objective 3.3 Identify opportunities to improve internal circulation on trails.

Criterion 3.3.1 Trails offer safe, efficient connections between attractions.

Criterion 3.3.2 Trail quality supports expected usage.

Criterion 3.3.3 Trail quality protects natural areas.

Objective 3.4 Improve internal wayfinding for all modes between access points, trails, transit, parking, and attractions.

Criterion 3.4.1 Connections between attractions are logical, safe, and efficient for all modes.

Criterion 3.4.2 Connections between attractions, including appropriate wayfinding information, are visible at key decision points for all modes.

Criterion 3.4.3 Internal wayfinding signage, markers, and markings are clear and consistent.

Objective 3.5 Identify opportunities to enhance internal transit specific to Park needs.

Criterion 3.5.1 Internal transit enhances park experience.

Criterion 3.5.2 Internal transit offers logical and efficient connections between attractions.

Goal 4. Improve safety for travelers within the Park.

Objective 4.1 Reduce conflicts between trail users and vehicular traffic.

Criterion 4.1.1 Measures are taken to ensure safe interaction of trail users and vehicular traffic.

Objective 4.2 Improve safety of pedestrians at attraction access points.

Criterion 4.2.1 Pedestrians have walkways and safe crossings at all attractions.

Criterion 4.2.2 Pedestrians are visible to all other modes at the entrances of all attractions.

Objective 4.3 Reduce conflicts among all modes on circulatory roadways.

Criterion 4.3.1 Separation of users by mode is commensurate with road and traffic conditions on circulatory roadways.

Parking

Goal 5. Identify measures that improve the efficiency of constrained parking.

Objective 5.1 Improve traveler information to enable efficient use of the Park's many lots and on-street parking areas.

Criterion 5.1.1 Real-time parking information is available before the user starts their trip.

Criterion 5.1.2 Current parking information is available upon arrival and within the park.

Criterion 5.1.3 Ensure parking is adequately managed with pricing.

Objective 5.2 Identify opportunities to improve the use of off-site parking.

Criterion 5.2.1 Off-site parking arrangements are formalized.

Criterion 5.2.1 Off-site parking is cost-effective.

Objective 5.3 Improve accommodation of pick-up and drop-off at attractions.

Criterion 5.3.1 Pick-up/drop-off information is available before the user starts their trip.

Criterion 5.3.2 Pick-up/drop-off information is available upon arrival and within the park.

Criterion 5.3.3 Pick-up/drop-off areas are safe and convenient for all Park user groups.

Criterion 5.3.4 Pick-up/drop-off activities do not create nuisances from idling.

Objective 5.4 Reduce or eliminate illegal parking on internal roads and neighborhood streets.

Criterion 5.4.1 Parking overflow onto neighborhood streets is discouraged.

Criterion 5.4.2 Legal and illegal parking areas within the Park are clearly identifiable.

Goal 6. Improve connections between parking and attractions.

Objective 6.1 Enhance the experience of users moving between off-site parking and the Park.

Criterion 6.1.1 Travel between off-site parking and the Park is convenient and efficient.

Criterion 6.1.2 Travel between off-site parking and the Park enhances the user experience.

Criterion 6.1.3 Travel between off-site parking and the Park is cost-effective.

Objective 6.2 Improve pedestrian movement within on-site parking.

Criterion 6.2.1 Pedestrian movement within on-site parking is safe.

Criterion 6.2.2 Pedestrian pathways within parking lots are logically and efficiently laid out.

Appendix B: Interviews

Washington Park Contacts

- Tony Vecchio, Director, Oregon Zoo, February 16, 2009: Transportation concerns, issues, and ideas; past efforts
- Dennis Spidal, Director of Operations and Exhibits, Children's Museum, February 24, 2009: Transportation concerns, issues, and ideas; past efforts
- Maureen Porter and Cheryl Ching, Executive Assistant and Acting Executive Director, Japanese Garden, February 26, 2009: Transportation concerns, issues, and ideas; past efforts
- Terri Davis and Bryan Aptekar, West Service Zone Manager and West Service Zone Coordinator, Portland Parks and Recreation, March 4, 2009: Transportation concerns, issues, and ideas; past efforts
- Mark Reed, Operations Director, World Forestry Center, March 5, 2009: Transportation concerns, issues, and ideas; past efforts
- Robert Painter-Johnson and Dan Moeller, Hoyt Arboretum and Natural Area West Supervisor, City Nature, Portland Parks and Recreation, March 20, 2009: Transportation concerns, issues, and ideas; past efforts
- Bob Stillson, David White, Harry Landers, International Rose Test Garden - Portland Parks & Recreation, April 3, 2009: Transportation concerns, issues, and ideas; past efforts
- Dan Lorenzen, Head of Oregon Zoo Security, April 10, 2009: Parking lot and transportation issues, crime and security, special events

Stakeholders and Experts

- Rick Williams, Rick Williams Consulting, February 18, 2009: Parking management and transportation demand management
- Cynthia Johnson Haruyama, Chinese Gardens, Former Japanese Garden Director, February 23, 2009: Formation of the Washington Park Alliance; organizational and historic context; past transportation efforts
- Tom Mills, Service Planning and Scheduling, TriMet, February 27, 2009: Transit service
- Patricia McCaig, Political Consultant, March 3, 2009: Parking issues; the recent Zoo bond measure
- Drew Blevins, Director of Marketing, TriMet, April 6, 2009: Transit marketing and incentives
- Tom Strader, Senior Research Analyst/Marketing, April 16, 2009: Transit ticketing

Appendix C: Public Involvement

The public was involved in the process through three methods: neighborhood outreach efforts, an Open House, and two focus groups. These efforts were targeted at informing those with a stake in any actions taken by the Alliance and eliciting input on possible solutions and recommendations.

Neighborhood Outreach. The project team contacted the neighborhood associations representing residents in the surrounding neighborhoods. These neighborhoods are Southwest Hills, Arlington Heights, Sylvan Highlands, and Goose Hollow. During March and April, members from the project team attended three neighborhood association meetings to briefly explain the project, invite them to the Open House, and take their comments. The Sylvan Highlands Neighborhood Association did not hold a meeting during the project's timeline, but the association was informed of the nature of the project via email.

March 18, 2009 | Southwest Hills Neighborhood Association meeting
March 19, 2009 | Goose Hollow Neighborhood Association meeting
April 13, 2009 | Arlington Heights Neighborhood Association meeting

Open House. Park users, neighbors, employees of Washington Park attractions, and the general public were invited to an Open House on April 21, 2009. The Open House was structured to present initial findings, illustrate problem areas, and elicit recommendations for the future of the Park's transportation efforts.

Focus Groups. Two focus groups were convened to consider and help refine alternatives for recommendation. Both of the focus groups discussed potential parking alternatives and internal transit/shuttle options. In addition, the groups focused on either Bicycle/Pedestrian Circulation & Wayfinding or Traveler Information & Transit Incentives. Participants were recruited from the Open House, the online user survey, and through contact with the adjacent neighborhood associations.

May 12, 2009 | Bicycle/Pedestrian Circulation & Wayfinding Focus Group
May 13, 2009 | Traveler Information & Transit Incentives Focus Group

Open House Feedback

Comment Cards

- MAX is expensive for me. I come to the park at least once a week all year long and go to both the zoo and the JG. Getting between the two especially in winter requires driving. How about a shuttle on Kingston like the JG uses on their hill? I don't want more parking!
- Bike path – old roadbed west of soccer field – new bike bridge over sunset near soccer field. Bike path on south side of sunset – to viaduct at zoo. Create a rideable path from Rose Garden area to zoo area, at a reasonable grade.
- MORE paved, ADA-compliant trails wherever possible. Much of the park is not at all friendly to people with mobility limitation.
- For more bus service – TriMet #20 terminates about ½ of the buses at 24th and Burnside, resulting in a LONG layover. Take ½ of #20 buses up Tichner Drive to layover at Rose Garden/Japanese Garden – better transit access to park.
- Expand shuttle lot at Sylvan and run the shuttle all the way to the Rose Garden every 10-15 minutes.

- Yes, we need more parking. Yes, we need more offsite parking. Yes, we need better, more frequent shuttle service in Washington Park.
- Immediate solution to parking AND shuttle. Charge \$3-5 per day to park. Parking fees pay to maintain year-round WP shuttle from RG area to Sylvan parking lot. Eliminates const to TriMet and park institutions – people who drive to the park pay for free shuttle service around the park.
- Straightest possible path across park – start a Vietnam Memorial parking – go up stairway to paved path across park – down stairway and path to rose garden – put lights along entire trail. Include ADA trails where needed to get around stairways.

Access

Mode	Problems	Solutions
Car	Parking at Rose Garden There is no parking	A shuttle lot somewhere close to the R. Garden More internal shuttles Parking structure N of MAX station – charge for parking if necessary to pay for it
MAX	Getting to the Rose Garden/J G Same Same	Shuttle service Shuttle service all year – a smaller bus that ran often on the direct road from the Zoo to the Garden would be great Extend proposed Burnside streetcar into Washington Park – close to Rose Garden
Bus	The infrequency of buses Last bus too early Don't want to take bus after dark Lack of frequency	More bus service More bus service Ditto (every ½ hr on weekends)
Bicycling	I am concerned about safety Getting up the hill to the Zoo	More bike parking and lanes A reasonable-grade trail from Rose Garden to Zoo along Sunset freeway
Walking	N/A	N/A

Circulation

Identifying problem points:

- Poor pedestrian connections on Canyon Ct. between Washington Park and Sylvan parking lots.
- Can't get between Zoo and JG and not much parking at JG – maybe Zoo Train could be utilized for transport.
- Need “straightest possible trail” from Vet Memorial to Rose Garden Visitor Center – paved and lit

Getting around the park:

- The park lacks transit service – 4 marks
- WP needs more signs to direct me around the Park – 1
- The signs at Washington Park are not clear in providing directions – 1
- Getting between park attractions is not family-friendly – 1
- There aren't enough sidewalks in Washington Park – 1

Parking

- A year-round shuttle to connect parking spaces to destinations – 4 gold, 3 silver
- A better walking environment between parking areas and attractions – 1 gold, 2 silver
- A place to drop off my family while I look for parking – 1 gold, 2 silver
- Information about parking availability on the web – 1 gold, 1 silver
- “Off-site overflow near JG and RG with shuttle service to park attractions” – 1 silver

Innovative Solutions

- Electric shuttle tram
- Expand Sylvan shuttle parking – run shuttle as far as Rose Garden
- Day use parking fee all over park – use it to pay for more parking (structures/underground) and other trail/transit improvements (\$5 per day, all day)
- moving sidewalk
- Zip line
- Funicular

Focus Group Feedback - May 12-13, 2009

Parking	Day
Adding more parking is not a solution that we support.	T
Additional (limited) parking would be considered after exhausting other options	T
More parking means less open space	T
On-site structure at main lot?	T
Pricing parking would encourage people to use neighborhood streets	T
Shouldn't encourage the zoo's use to grow 15,000 to 20,000 because you start impacting the user experience	T
Japanese Garden has started scheduling events during the "off-season"	T
Are the problems and demand concentrated on weekends?	T
Off-site parking in ... Gresham?	T
Integrate any new parking structure with transit and shuttles	T
Paid parking issues: visitor parking?	T
Cost of building a structure may be prohibitive	T
How do you get off-site parking users from the zoo lot to Japanese Garden area?	T
Don't want more parking	W
Before adding parking, need to make most out of alternatives	W
ADA spaces	W
Population is growing, need more parking because other options don't work for everyone	W
Not room for more parking	W
Shuttle lot with shuttle service	W
Underground structure?	W
Make transit work	W
Don't plan for peak parking needs	W

Shuttle Options	Day
Zoo train	T
Improvements to the rose garden station -> access improvements	T
Would this encourage parking near the rose garden/Japanese Garden?	T
If this could work, there is strong support. Could be fun, could enhance the park user experience.	T
Would this require an elevator?	T
Zoo train could connect, but there are many challenges: tracks, stairs, maintenance	W
POVA's free map (with tourism) is a "crime against cartography"*	T
Washington Park Shuttle	T
Support for year round service.	T
Does extending the shuttle to King's Hill start to replace the 63?	T
Could parking fees be used to pay for shuttle expansion/extended service and pedestrian improvements?	T
What works for the disabled usually works for everyone (i.e. moms with strollers, etc)	W
Transit/shuttle should have luggage/storage space	W
More frequent 63 service	W
Shuttles can be used for other routes when not needed	W
Get a sponsor, do fundraising	W
Direct service between two ends of park	W
Market shuttle (people don't know about it)	W
Have shuttle run year round all hours	W
Better directions	W
Pricing Options	Day
Concern over pricing out certain users	T
But it's an incentive to use other modes, so not so concerned over pricing.	T
Tax breaks for alternative fuel shuttles?*	T
Shuttle service can't just be funded through parking fees; expense needs to be incorporated into operations budget	T
Visitors might be better served by non TriMet shuttle drivers*	T
Price according to demand/seasonally/etc	T
Weekend zoo rate from nearby MAX stations to Zoo*	T
Parking price does not equal transit cost	W
Two dollars does not sound like a lot of money	W
Cost of attraction is more of a put-off than the price of parking	W
Discount = price of transit fare	W
More MAX service, more 63 service, more shuttle service	W
Cost of parking means I don't want to drive here	W
Bike & Pedestrian Access	Day
Could use sidewalks on Fairview, people walk in road park on shoulders	T
Lots of rd walkers have parked on street	T

Would prefer sidewalk even if reduced parking	T
Would like sidewalk on Kingston	T
Close Kingston on weekends to cars or close one-way, or shuttle/bikes/pedestrians	T
Crossing Burnside from Wildwood DANGEROUS, need pedestrian bridge or at least a light/sign/stripping/island	T
Public stairway by amphitheater from "peanut meadow" needs lights/drainage/less slick surface	T

Signage & Wayfinding	Day
Signs don't show distances/destinations - need detail	T
Mark pedestrian entrances to park	T
Maps need to help people get to nearby city areas	T
Info kiosk - where to put if located outside park? Who's the audience?	T
Handout fold up map - better	T
Forks and trails not marked/vandalized	T
Maybe info kiosks at main attractions but maybe too much detail	T
Arrows, distances, "board here" or next destination... simple	T
Concrete way posts signs - helpful but not obtrusive	T
Maybe walk times instead of distance	T
Need to make Lewis & Clark memorial a signed entrance	T
Big maps at major destinations and parking lots, small signs throughout	T
Make entrances gateways label nearest destination	T
Label shuttle stops with nearest destinations	T
Friendly, helpful shuttle drivers	T
Signs at entrances telling pedestrians when park closed, neighbors have to break law to walk home	T
Direct path from main lot to Japanese Garden/Rose Garden?	T
Put path on railroad grade	T
Need to be wide, visible, paved, lighted, ramp by-passes to stairs	T
Would shorten trip	T
Mountain bikers cruising through park, no enforcement	T
Alliance form enforcement organization	T
Designating connection routes?	T
Couldn't hurt	T
Would be good to know direct routes	T
Could do direct route along Kingston (and cut off "thumb loop" or connect to Wildwood near archery field)	T

Traveler information	Day
Always take train	W
Is it accessible, can I get there?	W
Announcements (radio)	W
Sunset TC on weekends	W
Events on weekends instead of peak weekdays	W

More prominent online information	W
Information in advertisements (options)	W
Let people know the parking lot will fill up	W
Management plans for large events	W
Publicity and shuttle service	W
Transit incentives	Day
Name on TriMet ticket/enter drawing	W
Depends on many factors - what are you carrying with you	W
Concerns about being alone in the underground station (3 people expressed this)	W
Depends where you live	W
Difficult to change habits	W
TMA - full-time people to promote and market, force issues, negotiate with TriMet	W
More frequency, chicken and egg of service cuts and ridership loss	W
Increasing awareness	W
Issues with Most Importance	Day
Shuttle : overflow to zoo to JG	T
Dollars parking -> pay for shuttle run by WP	T
Free shuttle (dollars parking ok)	T
Need easy way to get here from Kings Hill/18th	T
Pedestrian bridge over Burnside (wildwood trail)	T
Shuttle: (even if not free)	T
Transit: Make cheap/easy to pay, pair with membership, incentives for members to not drive	T
Better overflow shuttle/not school bus	W
Charge enough (parking pricing) to encourage mass transit	W
Interconnection of shuttle service	W
Advertise/increase awareness of shuttle	W
Credit transit more (increase discount for transit users)	W
Unified branding of park transit	W
Simplify transit	W
Internal shuttle	W
TMA model	W
People paid full-time to think creatively about mode split	W
Finding ways for it to work financially for TriMet	W
More translated language/symbols to make more accessible to all user+	W
Two-way shuttle+	W

Appendix D: Survey and Inventory Instruments

Intercept Survey Instrument

Online Survey Instrument


Facilities Inventory Instrument

Trails Inventory Instrument

Washington Park Travel Survey

As part of a class project, Portland State University students are examining transportation at Washington Park. Your participation in this survey is important to us. Thank you for your time!

1. How did you get here today? (check one)

- ☐ Drove 
☐ Rode MAX
☐ Rode the bus
☐ Walked
☐ Biked
☐ Was dropped off
☐ Other: _____

If you drove:

1(a) Where did you park? (check one)

- | | |
|--|--|
| <input type="checkbox"/> Main visitor lot
(in front of the Zoo) | <input type="checkbox"/> Street parking in the park |
| <input type="checkbox"/> Shuttle lot
(off of the Sylvan exit) | <input type="checkbox"/> Street parking in a nearby neighborhood |
| <input type="checkbox"/> Japanese Garden/Rose Garden lots | <input type="checkbox"/> Other: _____ |

2. How are you getting between park attractions? (check all that apply)

- ☐ Car ☐ Biking ☐ N/A
☐ Walking ☐ Bus
☐ Shuttle ☐ Other: _____

1(b) Why did you choose not to take MAX? (check all that apply)

- | | |
|--|---|
| <input type="checkbox"/> Costs you too much | <input type="checkbox"/> Didn't know about it |
| <input type="checkbox"/> No station near my home | <input type="checkbox"/> Takes too much time/inconvenient |
| <input type="checkbox"/> Safety concerns | <input type="checkbox"/> Other: _____ |

3. Which park attractions are you visiting today? (check all that apply)

- | | |
|--|---|
| <input type="checkbox"/> World Forestry Center | <input type="checkbox"/> International Rose Test Garden |
| <input type="checkbox"/> Oregon Zoo | <input type="checkbox"/> Portland Japanese Garden |
| <input type="checkbox"/> Play areas | <input type="checkbox"/> Holocaust Memorial |
| <input type="checkbox"/> Hoyt Arboretum | <input type="checkbox"/> Portland Children's Museum |
| <input type="checkbox"/> Vietnam Memorial | <input type="checkbox"/> Trails and other open spaces |

4. If you are using the recreational trails, what are your reasons? (check all that apply)

- ☐ To get between destinations within the park
☐ For recreation – I'm exploring and enjoying the park
☐ My primary purpose is to get exercise
☐ Other: _____
☐ N/A

5. Please indicate how much you agree with the following statements about your trip TODAY.

Strongly Agree Agree Neutral Disagree Strongly Disagree N/A

(a) Getting here took longer than I expected.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(b) The park was easy to find.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(c) Getting here (gas money, transit fare, etc.) was expensive.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(d) Finding parking was a hassle.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(e) The price of parking was reasonable.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(f) It was easy to find my way around Washington Park.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(g) Getting from one park attraction to another was inconvenient (i.e. from the Zoo to the Rose Garden).	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(h) The park's hills and size are manageable.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

6. Not counting yourself, how many people came with you to the park today?

7. What was your age on your last birthday?

8. What is your zip code?

Additional comments:

Thank you for your time!

Washington Park Transportation Survey

Please share your experiences and opinions about transportation issues at Washington Park. This survey is part of a Washington Park Access and Circulation Plan being conducted by Portland State University graduate students in partnership with the Washington Park Alliance. Your feedback will help us begin to generate solutions and identify potential future planning efforts at Washington Park.

If you have questions about this survey or about the Washington Park Access and Circulation Plan, please contact Brendon Haggerty at haggerty@pdx.edu.

For these first few questions, think back to the last time you visited Washington Park.

1. Please select the most recent month and year that you visited the park?

2. How did you get to the park that day?

I drove	I biked	I was dropped off
I carpooled	I rode MAX	I don't know / I don't remember
I walked	I rode a bus	Other (please specify)

3. Which attraction(s) did you visit that day? Check all that apply.

Oregon Zoo	Hoyt Arboretum	International Rose Test
Portland Children's Museum	Portland Japanese Garden	Garden
World Forestry Center	Trails & Open Space	Other (please specify)

4. If you went to more than one attraction, how did you get between them? Check all that apply.

I drove	I rode the 63 bus	I don't know / I don't remember
I walked	I rode the summer shuttle bus	N/A - I only went to one attraction
I biked	Someone dropped me off	

5(a). If you drove that day, where did you park?

Main visitor lot (near Zoo, World Forestry Center, & Children's Museum)	Street parking within the park
Shuttle lot (near the Sylvan exit off of Hwy 26)	Street parking in a nearby neighborhood
Japanese garden/Rose garden lot	I parked in multiple locations that day
Hoyt Arboretum lot	Other
	I don't know / I don't remember

5(b). How much did you pay to park?

\$0 \$1 \$2 \$3 \$4 \$5 or more I don't know / I don't remember

5(c). Why did you not take MAX? Check all that apply.

No station near my house	Takes too much time / inconvenient	Didn't know about it
Costs too much	Safety concerns	Other (please specify)

5(a). You indicated that you rode transit to the park on your last visit. When you rode transit to the park, did you make any transfers?

No, I did not make any transfers. Yes, 1. Yes, 2. Yes, 3 or more. I don't know / I don't remember.

5(b). Why did you choose to take transit to the park that day? *Check all that apply.*

I didn't have a car	Less of a hassle than parking	For fun
I don't drive	For the environment	Other (please specify)
Less expensive than driving	I have a transit pass	

Now, please think about visiting Washington Park in general.

6. In the last 12 months, how often have you visited the park?

Once A few times Every two months Monthly Twice a month or more I don't know

7. When do you visit Washington Park the most? *Check all that apply.*

Fall Winter Spring Summer I have only been to the park once. I visit the park equally throughout the year.

8. When visiting Washington Park, have you ever used the off-site parking lots?

(Note: Off-site parking lots are available on busy days and are located off of the Sylvan exit on Highway 26)

Yes No I don't know

9. When you use trails in Washington Park, what is your primary purpose?

Recreation - exploring and enjoying the park	Exercise
Transportation - getting from one attraction to another	N/A - I do not use the trails

10. Which of the following factors have the greatest influence on how you get to Washington Park (whether to go by car, MAX, bike, etc.)? *Check up to three.*

Car availability	Time of day	Weather
Cost - gas, transit fare, parking, etc.	Day of week	Events at the park
Ease of finding a parking spot	# of people traveling with you	Route difficulty / Slope
Time it takes to get to the park	traveling with children	Other (please specify)

11. Please tell us any other factors you consider when choosing how to get to Washington Park (whether to go by car, MAX, bike, etc.).

Please indicate how much you agree with the following statements:

12. Washington Park is easy to find.

Strongly Agree Agree Neutral Disagree Strongly Disagree I don't know

13. It is usually easy to find a parking spot when I visit Washington Park.

Strongly Agree Agree Neutral Disagree Strongly Disagree I don't know

Please provide your opinion on general transportation issues at Washington Park.

14. How satisfied are you with the following features of Washington Park?

	Very satisfied	Somewhat satisfied	Neither satisfied nor dissatisfied	Somewhat dissatisfied	Very dissatisfied	N/A
Transit to the park	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Bicycle routes to the park	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Bicycle routes within the park	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Roadways to the park	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Roadways within the park	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Parking within the park	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Trails within the park	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Pedestrian routes to the park	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Pedestrian routes within the park	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

15. How would you rate your overall experience getting to Washington Park?

Very Good Good Fair Poor Very Poor

16. What is the most difficult part of coming to Washington Park?

17. What is the most difficult part of getting around Washington Park?

18. Please rank the following transportation improvements in Washington Park in the order you would most like to see them made.

Additional parking on site	Increased transit service WITHIN the park
Additional parking off site	Better bicycle routes TO the park
More sidewalks and pedestrian crossings	Better bicycle routes WITHIN the park
Higher quality trails	Better signage
Increased transit service TO the park	I don't know

Please tell us about yourself:

19. How many people are in your household?

20. How many automobiles does your household own?

21. Are there children under the age of 18 in your household?

22. To which of the following Washington Park attractions do you or your family currently hold a membership?
Check all that apply.

Oregon Zoo	Portland Japanese Garden
Portland Children's Museum	I am not a member of any Washington Park attractions
World Forestry Center	I don't know
Hoyt Arboretum	

23. Do you currently reside within one of the following neighborhoods?

Arlington Heights	Sylvan-Highlands
Goose Hollow	No, I do not live in these neighborhoods
Southwest Hills	I don't know

24. What is your age?

25. Are you: Male Female

26. What is your zip code?

27. What is your household income before taxes?

Less than \$30,000	\$50,000 - \$59,999	\$100,000 - \$149,999	\$500,000 or more
\$30,000 - \$39,999	\$60,000 - \$74,999	\$150,000 - \$249,999	I don't know / I'd rather
\$40,000 - \$49,999	\$75,000 - \$99,999	\$250,000 - \$499,999	not say

28. Where did you hear about this survey?

Neighborhood	attraction	Blog
newsletter or email	Park attraction website	Word of mouth
Email from a park	Flier	Other (please specify)

Do you have more to say about transportation issues at Washington Park?

If you would be willing to participate in a focus group on transportation, please enter your contact information below. Your information will not be shared and will only be used to contact you for participation in the focus group.

Thank you for taking the time to participate in this survey! If you have questions about this survey or about the Washington Park Access and Circulation Plan, please contact Brendon Haggerty at haggerty@pdx.edu.

Washington Park Transportation Facilities Inventory

Map #: _____

Initials: _____

Roadways

1. For each roadway, indicate the number of lanes (if clear) and directionality on your map.
2. Take photos of any significant roadway sections (poor conditions, blind turns, etc)

Sidewalks

1. Where present, sketch the presence and length of all sidewalks on your map
(if there are several, mark them with ID numbers)

2. Describe each section of sidewalk present:

Section ID (#)	Width (ft)	Curbed? (y/n)	Quality (text)	Other Comments (text)

- 3(a). Where sidewalks meet intersections/crossings indicate if they appear to be ADA compliant (ramp, yellow bumps, etc) with: ○

- 3(b). Where these do not appear compliant, mark your map with a ⊗ and make any notes below.

Notes: _____

4. Take photos of any significant sidewalks (or gaps in sidewalks), conditions, sidewalks at intersections, etc.

Pedestrian Crossings

1. Record a waypoint for any pedestrian crossings in your map area (write the waypoint number):

2. Describe each crossing:

Crossing Waypt.	Marked? (painted, raised, none)	Comments (text)

3. Take photos of crossings, missing crossings, and markings.

Bikeways

1. Where present, sketch the presence and length of any bike lanes on your map.

2. Describe each bikeway:

Bikeway	Type (lane, etc)	Signed? (y/n and description)	Comments (text)

3. Take photos of any significant bikeways.

Transit stops (Bus, MAX, Summer Shuttle)

1. For any transit stops in your map area, mark the location on your map with ●

2. Write the ID for each stop on your map (if there is no TriMet ID, create one).

3(a). For each stop identified above, is there a:

3(b). *Describe / Comments*

Platform	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Bench	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Shelter	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Route info	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Other Amenities	<input type="checkbox"/> Yes	<input type="checkbox"/> No

4. For all station stops identified above, take pictures of station stop and any significant amenities.

Miscellaneous Waypoints

1. Enter waypoints for each of the following items, and provide descriptions for each.

Decision points	
-----------------	--

Pick-up and drop-off locations	
--------------------------------	--

Access/egress points by mode	
------------------------------	--

Public restrooms	
------------------	--

Vehicle turn-around locations	
-------------------------------	--

Signage – pedestrian crossing	
-------------------------------	--

Signage – street names	
------------------------	--

Signage -- maps	
-----------------	--

Signage -- directional	
------------------------	--

Signage – bike	
----------------	--

Bike parking locations	
------------------------	--

Street furniture (waste/recycling bins, benches)	
--	--

Other	
-------	--

Washington Park Trails Inventory

Name: _____ Group: _____

A trail segment is a path between decision points. For each of the trail segments you are observing, assign a segment number (write this on your map) and record the surface observed for the majority of that section. Briefly describe any structural deficiencies, such as potholes, washouts, or crumbling pavement.

Trail Segment	Trail Surface (circle one)						Structural Deficiencies?	Overall Segment Condition (circle one)		
	Mud	Hard-pack soil	Partial gravel	Gravel	Pavement	Other: _____		Good	Fair	Poor
	Mud	Hard-pack soil	Partial gravel	Gravel	Pavement	Other: _____		Good	Fair	Poor
	Mud	Hard-pack soil	Partial gravel	Gravel	Pavement	Other: _____		Good	Fair	Poor
	Mud	Hard-pack soil	Partial gravel	Gravel	Pavement	Other: _____		Good	Fair	Poor
	Mud	Hard-pack soil	Partial gravel	Gravel	Pavement	Other: _____		Good	Fair	Poor
	Mud	Hard-pack soil	Partial gravel	Gravel	Pavement	Other: _____		Good	Fair	Poor
	Mud	Hard-pack soil	Partial gravel	Gravel	Pavement	Other: _____		Good	Fair	Poor
	Mud	Hard-pack soil	Partial gravel	Gravel	Pavement	Other: _____		Good	Fair	Poor
	Mud	Hard-pack soil	Partial gravel	Gravel	Pavement	Other: _____		Good	Fair	Poor

A decision point is any point where a traveler must decide between two or more directions. Number each decision point on your map. For each decision point, record the wayfinding signage using the following code: 1=no signs, 2=some directions signed, 3=all directions signed

Decision Point #	Signed? (1,2,3)	Sign Description (example: Wildwood Trail →)

If you encounter signage that is not at a decision point, please indicate the trail segment and provide a brief description

Trail segment	Description (example: Interpretive sign – plant life)

If you encounter trails, roads, or intersections/decision points that do not appear on the map, please mark & label them on your map.

Finally, please comment on your overall trails experience below:

Appendix E: Qualitative and Quantitative Data Analysis

The creation of *Transportation Solutions for Washington Park* entailed a great deal of data collection and analysis in a relatively short period of time. The results of this analysis informed the recommendations, and they are presented here in order to continue enlightening the dialogue about transportation in the park. Data that is too detailed or extensive to be summarized in this appendix is included in electronic form accompanying this report.

Background Research Syntheses (Policies, Best Practices, Other Examples)

Intercept Survey Report

Online Survey Report

Facilities inventory

Trails Inventory

Parking Inventory

Overflow Shuttle Observation

MAX Ridership Report

Tri-Met Washington Park Shuttle Report

Background Research Syntheses (Policies, Best Practices, Other Examples)

A literature review was carried out to determine the starting point for data collection and analysis. Three areas of research were addressed: past planning efforts in Washington Park, similar plans from other attractions, and best practices in demand management. A synthesis of this research is presented below.

Past Planning Efforts in Washington Park

Planning efforts for Washington Park have taken shape over many years and have been undertaken by many different actors. New Leaf Planning located planning documents and analyzed them for relevance to the three main problem areas considered in this plan: access, circulation, and parking. The following documents are included:

- Washington Park Master Plan Study (1980) (WPMP)
- Metro Washington Park Zoo Transportation Master Plan (1997), with Addendum (1997) (Zoo TMP)
- Washington Park Bond Project and Issues (1998)
- The Oregon Zoo Transportation Demand Management Plan Implementation (2005) (Zoo TDM Plan Implementation)
- Conditions of Approval for the Oregon Zoo (1997)
- Correspondence between Metro, the Oregon Zoo, and local neighborhood associations (1997-99)

Access

The Washington Park Master Plan of 1980 includes key recommendations that, while not yet realized, continue to be relevant to issues of access. The plan encourages expanded transit service, and demand management strategies during special events. It also recommends improved definition of landscaping at entrances to delineate the park from the neighborhood.

Similarly, the 1997 Zoo Transportation Master Plan incorporates suggestions that are relevant to access, some of which continue to be implemented. Discounted entry for cyclists and provision of bicycle infrastructure was included in the plan. Also, promoting transit use through information availability received attention, citing a goal of 20% transit mode share. A later Zoo Transportation Demand Management Plan in 2005 called for only 10% transit mode share for zoo visitors.

Circulation

Circulation measures recommended in the Washington Park Master Plan of 1980 include several that have been realized, such as improved bicycle and pedestrian paths. The plan also points to the potential of the Zoo Railway as a means of circulation throughout the park. As in other reports, the need for directional signage is expressed both at entrances and throughout the park. The 1998 Washington Park Bond Project and Issues report echoes this need. It also calls for conversion of some one-way roads to two-way circulation, such as Sherwood Boulevard and Kenneth Terrace. An alternative that has since been realized is the idea of striping Kenneth Terrace for on-street parking.

Parking

Development of drop-off areas near attractions at the southern end of the park is an aspiration dating to the 1980 plan. The Transportation Master Plan of 1997 was much more ambitious, recommending a time-variable parking fee at the main parking lot and a system of vehicle queues to accommodate peak demand. It also urges the reconfiguration of the Rose Garden lot to better serve buses and circulating traffic.

Planning efforts of similar attractions

In contrast to the exercise of incorporating historical documents into current planning efforts, this literature review is intended to illustrate the state of the practice in transportation planning for similar agglomerations of attractions in parks. The plans of three other parks are assembled here in brief case studies, followed by a list of lessons learned. The three cases considered are those of Franklin Park in Boston, Golden Gate Park in San Francisco, and Forest Park in St. Louis.

Franklin Park, Boston

Boston Parks and Recreation has contracted with Howard/Stein-Hudson Associates to complete the Franklin Park Transportation and Access Study. This 2008 planning effort provides recommendations on pedestrian and vehicular movement to, within, and through the park. The methodology includes analysis of intersection traffic volumes, as well as pedestrian and bicycle counts. The effort was informed by a public process including a steering group, the Franklin Park Coalition, two joint public/steering group meetings, and public comments. Access locations were mapped with corresponding tables that include information on signage, crosswalks, historic elements, and accessibility. As part of a safety audit, planners inventoried sight distances. Public transportation in and around the park was mapped, as were parking spaces throughout the park. The final recommendations include standardized, themed wayfinding signage and clear curb-use regulations to designate where parking is allowed and to accommodate handicapped parking.

Golden Gate Park, San Francisco

The Golden Gate Concourse Authority released a Transportation Improvement Plan in 2005. A key part of this plan was coordinating the removal of old parking in conjunction with the park's new parking garage becoming operational. It encourages collaboration with the De Young Museum to promote the use of MUNI, San Francisco's municipal transit service, to access the park. Also included in the plan is a goal of creating a "cultural shuttle".

Forest Park, St. Louis

Forest Park's Access, Circulation, and Parking Study was created to evaluate the improvements that have already been implemented since the creation of the park master plan. The methodology included traffic counts, parking surveys, walkability and bike-ability audits, transit studies, in-park user surveys, and demographic reviews. Stakeholder interviews with neighborhood groups and institutions also informed the study. A notable existing condition in the park is that only 40% of the park's parking capacity is used on peak days, but the lots nearest to the most popular attractions are often congested.

The study recommendations include a park-wide events calendar, curb bump-outs, additional pedestrian safety measures, transit improvements, wayfinding improvements, and a construction of a 600 space parking structure. The report concludes by highlighting the top four park needs: comprehensive wayfinding, park-wide event coordination, a Forest Park shuttle, and a complete dual path trail system.

Lessons learned

Use structure of these documents to organize this planning process and create an accessible final report.

Use GIS to map Park access points, roadways and paths, and transit.

Inventory curb-use regulations and related signage.

Inventory parking by location and map using GIS.

Evaluate opportunities for sponsorship of an improved shuttle service.

Create a document that clearly presents the project goals.

Generate final recommendations that highlight the top park needs and then follow-up with remaining recommendations.

Best Practices in Demand Management

Transportation Demand Management (TDM) is an approach to reducing automobile travel demand by dispersing travel to other modes or times. TDM programs are often employed as a package of strategies that improve transportation options, manage transportation resources, and communicate with the traveling public. More specifically, TDM measures can be physical, legal, economic, and/or informational/educational. The following literature review summarizes key concepts and best practices in TDM.

Benefits of TDM and Keys to Success

According to Garling and Schuitema, three keys for successful TDM programs are reducing the attractiveness of car use, activating car-use reduction goals, and facilitating goal attainment. Litman presents three somewhat different principles: choice, incentives, and equity. It is important that TDM not be construed as a “travel diet”; the goal is to change travel behavior, not reduce travel (Hendricks). TDM programs benefit both users and society. Users benefit from personal cost savings and quality of life enhancements while society benefits from reduction in vehicular use (VMT) and improved air quality (Ungemah and Dusza). According to Meyer, a comprehensive TDM package in 1993 could reduce VMT to 1990 levels by 2000 with a subsequent 10% reduction by 2010 (1993).

Changing travel behavior

In the research of Garling and Schuitema, TDM measures are split into coercive and non-coercive measures, although the line between the two can be somewhat subjective. For each individual, their ability to avoid behavior change will determine the coerciveness of the measure and their individual norms will depend on the extent to which they are aware of negative consequences. As a standard, coercive measures are more effective in changing travel behavior, but are often less politically palatable. The researchers assert that coercive measures work best when paired with non-coercive measures.

Garling and Schuitema go further to assert that automobile use reduction goals are essential to the success of TDM strategies. They suggest that specific individual goals are more effective in changing behavior than vague “do your best” objectives. Further, they state that the availability of transportation alternatives is key to goal attainment.

According to Meyer, an incentive or disincentive must be present to change behavior. Like many transportation planning researchers and practitioners, Meyer stresses the importance of making travel costs transparent to the user, in other words, providing a disincentive to driving. He goes further to say that the most effective actions are those that will likely increase the cost of SOV travel. Moreover, TDM is more acceptable and perceived to be more effective if individuals are compensated for possible negative effects (i.e. reduced taxes as opposed to more public funds) (Garling and Schuitema). Meyer suggests that direct subsidies are the most publicly palatable incentives.

Relevant TDM measures and models

Parking Measures

An important part of TDM is managing parking supply and demand. Many studies have been conducted and books written about parking management. The fundamental problem, which Broaddus asserts, is that free parking incentivizes people to keep driving around until they find a spot. According to Broaddus, a study of

street parking in San Francisco found very low elasticity for on street parking in SF CBD (-.1); a 50% change yielded a 5% reduction in demand. Filosa states that common measures of parking demand are heavily flawed. Litman suggests that TDM strategies, such as shared parking, transit benefits, parking regulations, remote parking, and improved pricing programs can decrease parking requirements by 10 to 30%.

The Resort Model

Resort communities have common characteristics that make them ideal for TDM: high environmental and experiential values, geographic isolation, a large volume of staff and visitors, distinct and predictable trip types, concentrated activities, and visitors accustomed to paying for transport services, such as bike rentals, shuttles, and parking (Litman).

The Special Events Model

The special event TDM model is very appropriate for recreation areas, TMAs, local or regional governments, and urban environments (VTPI). Special events TDM strategies include: transit/shuttle/express bus services, ride matching, shared parking, off-site parking, vehicle restrictions, marketing, HOV and service-vehicle priority, multi-modal access guides, car-free event packages (admission, transportation, and meals), traveler information (web, broadcasts, print, etc.), wayfinding, and one-way reversible travel lanes.

Applying TDM at Washington Park

Below are a list of relevant lessons, models, and best practices for implementing TDM strategies at Washington Park (See Appendix F for sources):

- Create a package of strategies (Meyer)
- Pair coercive and non-coercive measures (Garling & Schuitema)
- Make coercive measures/auto restrictions understandable, predictable, and accompanied by alternatives. (Litman)
- Provide subsidies where possible (Meyer)
- Make costs of SOV travel apparent (parking, etc) (Meyer)
- Make benefits of TDM/alternative modes apparent (Ungemah & Dusza)
- Highlight impacts of TDM measures once introduced (i.e. increased transit use) (Garling & Schuitema)
- Encourage travelers to set specific goals (Garling & Schuitema)
- Identify travel markets and adjust measures accordingly for each group (Meyer)
- Make parking scarce and expensive at the center, and cheap and abundant at the edge (Litman)
- Base parking pricing on demand, such that 15% of spaces are in turnover (available) (Broaddus)
- Incorporate elements of the resort community model of TDM: transit (that also acts as entertainment), ridesharing, bicycling, walking, land use coordination, establishment of a TMA, freight delivery coordination (Litman)
- Incorporate elements of the special event model of TDM: shuttle/express bus services, ridematching, off-site parking, vehicle restrictions, marketing, multi-modal access guides, car-free event packages (include admission, transportation, & maybe meal), traveler information, wayfinding/guiding (VTPI)
- Use a wide variety of marketing and outreach methods: email solicitation, site visits, presentations, websites, employer marketing, commute fairs, ads, and mail (Ungemah & Dusza)

Washington Park Intercept Survey on Transportation: Key Findings

Background & Method

One of the first steps in assessing the scope of transportation problems in Washington Park is determining how people access the park. To accomplish this, New Leaf Planning conducted an intercept survey, directly approaching individuals at various points throughout the park. Additional data was collected on travel habits, parking, and perceptions of problems within the park.

The survey was scheduled to coincide with the spring break schedule for local public schools in order to capture peak demand conditions. Responses were solicited primarily at 6 locations: the Oregon Zoo, the World Forestry Center, the Portland Children's Museum, the Japanese Garden, the Hoyt Arboretum, and on trails within the park. Planning students collected responses for a period of two hours on weekend peak days, ranging from 10am to 4pm. In the case of the World Forestry Center and the Hoyt Arboretum, students returned to the sites one week after the originally scheduled times to collect additional responses. In total, 244 responses were collected.

Findings

Findings from the survey are presented below in three categories: access, circulation, and parking. These categories correspond to the three transportation problem areas addressed by New Leaf Planning in the Washington Park Access and Circulation Plan. Abbreviations are used where necessary to refer to attractions listed above.

Access

Table 1. Mode split by destination

Destination*	n	Drove	Rode MAX	Rode the bus	Walked	Biked	Dropped off	Other
Park-wide	224	83.4%	11.4%	0.3%	0.9%	0.1%	3.2%	0.7%
WFC	21	84.0%	16.0%	0.0%	0.0%	0.0%	0.0%	0.0%
CM	47	87.0%	11.1%	0.0%	0.0%	0.0%	1.9%	0.0%
JG	42	87.5%	4.2%	2.1%	4.2%	2.1%	0.0%	0.0%
ZOO	66	81.5%	12.3%	0.0%	0.0%	0.0%	4.9%	1.2%
HOYT	48	82.8%	8.6%	1.7%	6.9%	0.0%	0.0%	0.0%

*responses not citing any of these destinations were not included.

The responses were weighted by the attendance of each attraction during the month of March 2008. Overall, about 87% of visitors are coming to Washington Park by car and 12% by transit.

The attractions at the southern end (WFC, CM, & Zoo) have much higher MAX mode shares, while the northern attractions (JG, Hoyt) see more bus traffic. Southern attractions are more dependent on MAX than the northern attractions are on buses.

A small but important portion (5%) of zoo visitors were dropped off. This suggests that a) visitors are open to drop-off arrangements as a parking solution, and b) accommodating the pick-up/drop-off mode should be a consideration in planning efforts.

The reported average vehicle occupancy, 3.6 persons/vehicle, is quite high (assuming a single vehicle per party). This is three times the occupancy commonly used for commute trips, which is in the range of 1.2. This indicates that extensive carpooling is already taking place, which underscores the need to consider parking lots to be operating at or above capacity on peak days. An average carload would pay a minimum of \$7.20 in MAX fares one-way (assuming all passengers are over 7 years old).

Table 2. Party Size by Mode

Party Size			
Mode	Mean	N	Std. Deviation
Drove	3.6	204	1.81
Rode MAX	2.9	20	1.33
Rode the bus	2	2	1.41
Walked	2	5	0.71
Biked	2	1	
Was dropped off	2.5	4	0.58
Other	3	1	
Total	3.4	237	1.77

As shown in table 2, MAX riders also traveled with a relatively large party, indicating that the number of people in a party isn't necessarily a barrier to riding transit. Anecdotally and in theory, there is evidence that the age of the party members is more important than the number. This is supported by the open field comments left by respondents.

Other barriers to transit are shown the table 3. The column labeled "coded %" incorporates comments from the open field that were judged to fit within one of the defined categories. Clearly, the primary reason respondents chose not to take MAX was the distance to a station from their home. Cost is notably not a concern.

The number of people who didn't know about MAX may be taken as evidence that the process of deciding how to make a trip to Washington Park currently does not include what mode to take. That is to say, some people do not consider whether to take MAX, but instead automatically drive for all trips.

Table 3. Barriers to transit (MAX)

Reason	Percent	Coded %
No station near home	28%	28%
Other	23%	23%
Inconvenient	12%	14%
Didn't know	5%	8%
Cost	2%	2%

Table 3.1. Coded comments from "other" (percent of entire sample)

From Out of Town	4%
Party size/children	3%
Dog	2.50%
Didn't know/didn't occur to me	2%
Trip Chaining	1%

Respondents to this survey do not seem to perceive access as particularly problematic. Most (65%) said that getting to the park did not take longer than expected, which is indicative of reliable travel times to the park. 93% view the park as easy to find, and only 9% thought that the journey was expensive.

Table 4. Perceptions of access problems

	<i>Strongly Agree</i>	<i>Agree</i>	<i>Neutral</i>	<i>Disagree</i>	<i>Strongly Disagree</i>
Getting here took longer than I expected.	3%	8%	25%	39%	26%
The park was easy to find.	48%	45%	3%	1%	1%
Getting here (gas money, transit fare, etc.) was expensive.	0%	9%	36%	40%	16%

Circulation

It appears that trails are not widely used for transportation within the park. Only 9.5% of trail users reported their primary purpose was transportation. The vast majority of trail users (88.1%) said they were using the trails for recreation.

The internal mode split shown in table 5 was calculated only for those respondents who indicated that they were visiting more than one attraction in Washington Park. Of the 244 respondents, 28% (68) met this criterion.

Table 5. Internal mode split

Car	Walk	Shuttle	Bike	Bus	Other
13%	82%	2%	0%	0%	0%

It should be noted that the way this question was phrased, respondents could have chosen multiple modes for getting between attractions. However, it appears that none of the respondents who visited more than one attraction chose more than one mode.

According to the responses summarized in table 6, internal wayfinding does not seem to be a perceived problem in the park, nor does the topography of the park pose a barrier to mobility. A substantial portion of the respondents (18%) find getting between attractions in the park to be inconvenient.

Table 6. Perceptions of circulation problems

	<i>Strongly Agree</i>	<i>Agree</i>	<i>Neutral</i>	<i>Disagree</i>	<i>Strongly Disagree</i>
It was easy to find my way around Washington Park.	29%	52%	15%	2%	0%
Getting from one park attraction to another was inconvenient (i.e. from the Zoo to the Rose Garden).	8%	10%	25%	44%	13%
The park's hills and size are manageable.	33%	49%	14%	3%	1%

Parking

Respondents diverge on the question of how difficult parking was to find. Fully 25% of respondents found parking to be “a hassle”. When the responses are broken down by the location of parking (see table 8), it is clear that there are higher levels of frustration at the two primary nodes in the park: the main visitor lot and the Japanese garden/rose garden lot.

Table 7. Perceptions of parking problems

	<i>Strongly Agree</i>	<i>Agree</i>	<i>Neutral</i>	<i>Disagree</i>	<i>Strongly Disagree</i>
Finding parking was a hassle.	12%	13%	16%	42%	18%
The price of parking was reasonable.	29%	37%	27%	3%	4%

Table 8. “Finding parking was a hassle” by parking location

	<i>n</i>	<i>Strongly Agree</i>	<i>Agree</i>	<i>Neutral</i>	<i>Disagree</i>	<i>Strongly Disagree</i>
Main Visitor Lot (Zoo, CM, & WFC)	100	19%	37%	14%	17%	13%
Shuttle Lot	5	20%	20%	0%	20%	40%
JG/RG Lot	36	25%	50%	17%	6%	3%
Street parking within the park	19	11%	58%	16%	5%	11%
Street parking in neighborhood	8	0%	13%	13%	50%	25%
Other	25	8%	48%	20%	8%	16%

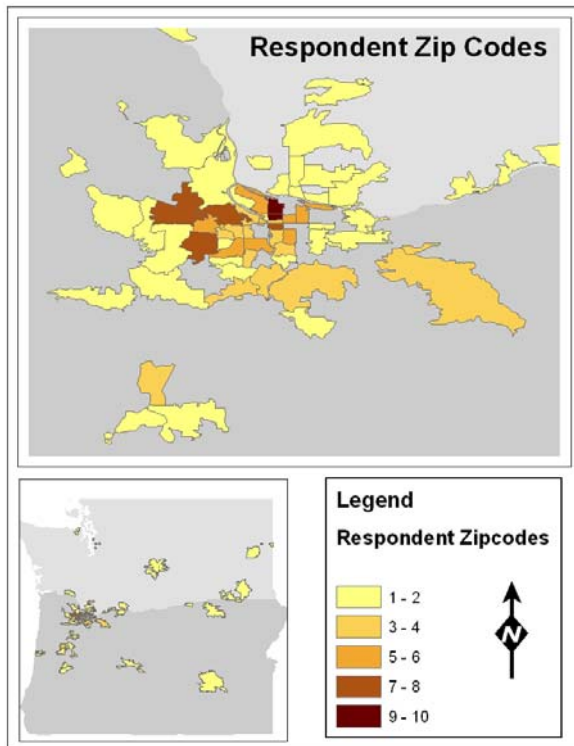
A large number of respondents reported “other” as their parking location. More than half (13) of these people parked at the Hoyt Arboretum parking lot and another six parked in the “auxiliary” lot. The latter lot name seems to have been a source of confusion in administering the survey and may be partially incorrect. One respondent parked in an employee area, and one parked at the Sunset Transit Center.

Table 9. Parking locations

Lot	Frequency	Percent
Main visitor lot	101	52%
Shuttle lot	5	3%
JG/RG lot	37	19%
Street parking in park	19	10%
Street parking in neighborhood	8	4%
other	26	13%
Total	196	

Respondents

Extensive segmentation was not an objective of this survey, therefore a relatively small amount of data was collected on individual respondents. The following map shows the geographic distribution of respondents. The age distribution is shown in the table to the right.



Respondent age categories:

Age Category	Frequency	Percent
under 20	5	2
20-34	91	37
35-49	99	41
50-64	37	15
65+	12	5
Total	244	

Age: Min: 11, Max: 84, Mean: 38

Methodology Problems

It is likely that respondents misread the question about how many people were in their party, including themselves, rather than excluding themselves from the total number as requested. Therefore, actual party sizes may be smaller than the data reflects.

The fact that children under 7 do not pay fares on TriMet has implications for comparisons between the cost of transit and the cost of driving. The survey did not include whether the respondents had young children in their party, but this data would improve the analysis.

Very few respondents reported using internal trails for transportation, although the internal mode split shows that 82% of respondents reported walking between attractions. It is likely that this question was misinterpreted and captured travel patterns between exhibits within attractions, such as the trip from the penguin exhibit to the elephant house within the Zoo.

Conclusions

This survey met a key objective in capturing the overall mode split in Washington Park. Fully 88% of visitors arrive by car, and differences can be seen based on the attractions visited. Very few respondents reported using internal trails for transportation. Visitors did not perceive wayfinding issues or the monetary cost of transportation as major concerns. The responses are evidence that extensive carpooling is already taking place, which is not surprising given the family orientation of many of the attractions. It is notable, however, that the average party size of respondents arriving by MAX is also fairly large, within one party member of those arriving by car. Finally, it appears that there are diverging perceptions of the convenience of finding a parking space, which is consistent with the mixed response found in focus groups and the online survey.

Washington Park Transportation Regional Online Survey: Key Findings

Background & Method

This survey was conducted with the intent of achieving the following objectives:

- assess user perception of problems
- gauge user attitudes towards improvements and demand management measures
- collect data on travel habits
- recruit participants for focus groups.

This survey was launched online on April 6, 2008, and closed on May 6, 2008. The survey was publicized widely in blogs, newsletters, and on WPA member organization websites. The bulk of the responses came from announcements sent out to membership email lists made available by the WPA organizations. New Leaf Planning acknowledges that this is not a random or statistically significant sample, but the data is nonetheless highly useful in evaluating problem areas and attitudes toward solutions. In total, there were 797 responses. An additional 33 responses were received after the closing of the survey. These responses are not included in the analysis, but the data is included on the CD accompanying this report.

Findings

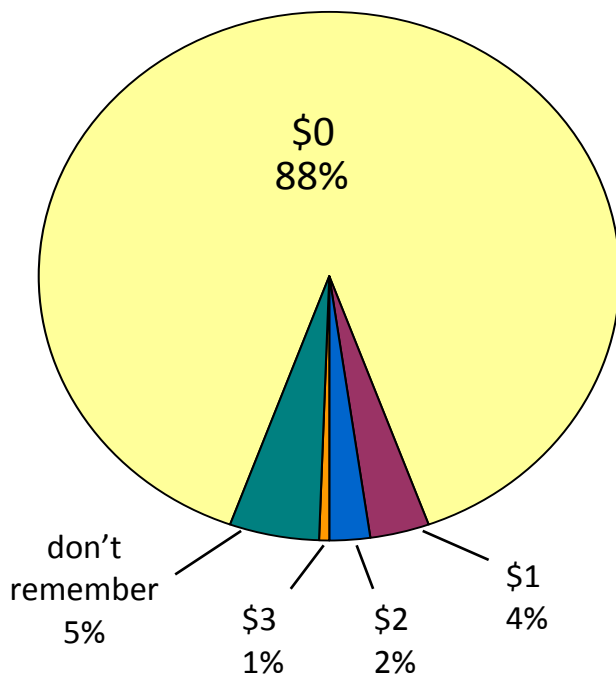
The findings of the survey are organized according to the objectives of the survey and are described below in separate sections for perceptions, attitudes, and habits.

Perceptions

The following chart shows how much respondents recall paying for parking (excluding members). Despite the fact that parking in the main lot costs \$2, only 2% of those who should have paid recall paying that amount. It is possible that some of the visitors' most recent visit was so far in the past that the price was lower. Because members are not charged for parking, and only visitors parking in the main lot are charged, the chart below reflects the portion of the sample, approximately 25%, who a) are not members of the three organizations granting free parking, b) drove to the park, and c) parked in the main lot. There are 196 responses meeting these criteria.

Although the reported payment is low, it is likely that some respondents who reported that they did not pay did in fact pay for parking, given the revenues that have been collected by various organizations. This suggests that the relatively low price is not a strong enough price signal to register with users.

Figure 1. Price paid for parking in Washington Park's main visitor lot



Respondents were asked how satisfied they were with various features of the park related to transportation on a scale of one to five. Table 1 shows the results by the average rating, with lower numbers indicating dissatisfaction and higher ones indicating satisfaction.

Table 1. Satisfaction with transportation in Washington Park

Feature	Mean	Std. Deviation	n
Parking within the park	3.09	1.21	708
Bike routes within the park	3.23	1.06	320
Bike routes to the park	3.25	1.06	314
Pedestrian routes to the park	3.58	1.14	474
Transit to the park	3.73	1.19	652
Pedestrian routes within the park	3.98	1.04	625
Roadways within the park	4.00	0.93	259
Roadways to the park	4.11	0.86	723
Trails within the park	4.40	0.80	589

Respondents were least satisfied with parking, although the average rating of all respondents could be considered “neutral”. A follow up question confirms the neutrality of the average sentiment. When asked whether they agree with the statement “it is usually easy to find a parking spot when I visit Washington Park”, 30% responded that they disagree. A somewhat greater proportion, 36% responded that they agree, and 24% gave a neutral response.

Respondents were also not enthusiastic about the bike routes. Relatively few respondents answered the question, suggesting that bicycle routes are of lesser importance to most respondents.

Table 2. Mean satisfaction rating for transportation features of Washington Park, by season of most frequent visits and attractions visited

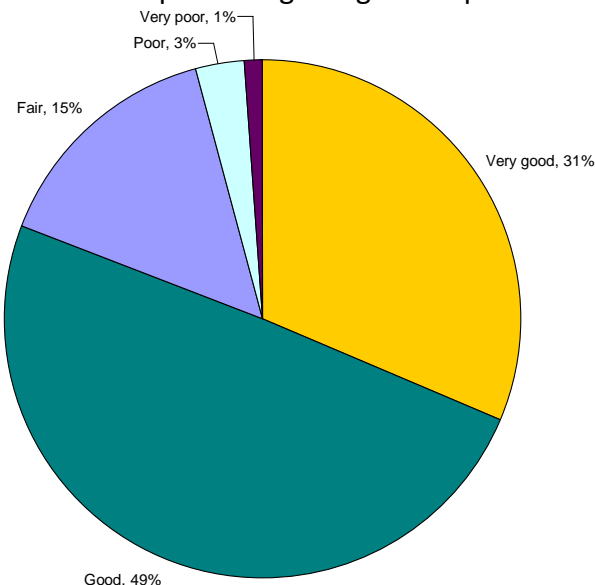
	Transit to the park	Bike routes to the park	Bike routes within the park	Roadways to the park	Roadways within the park	Parking within the park	Trails within the park	Pedestrian routes to the park	Pedestrian routes within the park	n
Equal	3.63	3.30	3.16	4.14	4.06	3.00	4.48	3.57	3.96	339
Winter	3.78	3.79	3.77	4.19	4.08	3.02	4.36	3.56	3.98	55
Summer	3.81	3.14	3.13	4.10	3.96	3.05	4.35	3.53	3.96	351
Spring	3.76	3.34	3.39	4.16	4.06	3.16	4.42	3.71	4.06	286
Once	4.33	4.00	3.50	3.89	3.67	3.22	4.20	4.00	3.83	13
Fall	3.74	3.31	3.40	4.19	4.16	3.24	4.48	3.63	4.08	231
CM	4.02	3.20	2.96	4.12	3.62	2.68	4.22	2.98	3.38	79
WFC	3.90	3.63	3.00	3.87	3.90	2.83	4.19	3.27	3.54	32
Zoo	4.04	3.18	3.33	4.10	3.91	2.88	4.24	3.36	3.88	282
Trails	3.74	3.15	3.14	4.04	4.02	3.22	4.59	3.66	4.19	173
JG	3.40	3.29	3.29	4.16	4.15	3.24	4.46	3.68	4.03	352
RG	3.62	3.12	3.04	4.06	4.15	3.27	4.51	3.72	4.01	164
Hoyt	3.62	3.31	3.24	3.97	4.00	3.31	4.61	3.87	4.32	109
Other	3.63	3.55	3.32	4.22	3.94	3.35	4.50	4.08	4.17	40

A one-way analysis of variance indicates that there are not significant differences in satisfaction of users who most frequently visit the park, suggesting that peak conditions do not influence satisfaction. For visitors to the three attractions near the MAX station, parking was a source of dissatisfaction. Whereas most of the other features were rated in the neutral to satisfactory range, parking registers on the unsatisfactory side of the continuum for visitors to these three attractions. It is also notable that the visitors to these attractions were more satisfied with transit to the park, in contrast to the attractions further from the MAX station.

Respondents do not see wayfinding to the park as problematic. When asked if they agree with the statement “Washington Park is easy to find”, 84% responded “agree” or “strongly agree”.

Finally, respondents rated their overall experience getting to Washington Park, shown below in figure 2. Fully 80% of visitors had a decidedly favorable impression, and only 4% expressed dissatisfaction.

Figure 2. Ratings of respondents’ overall experience getting to the park

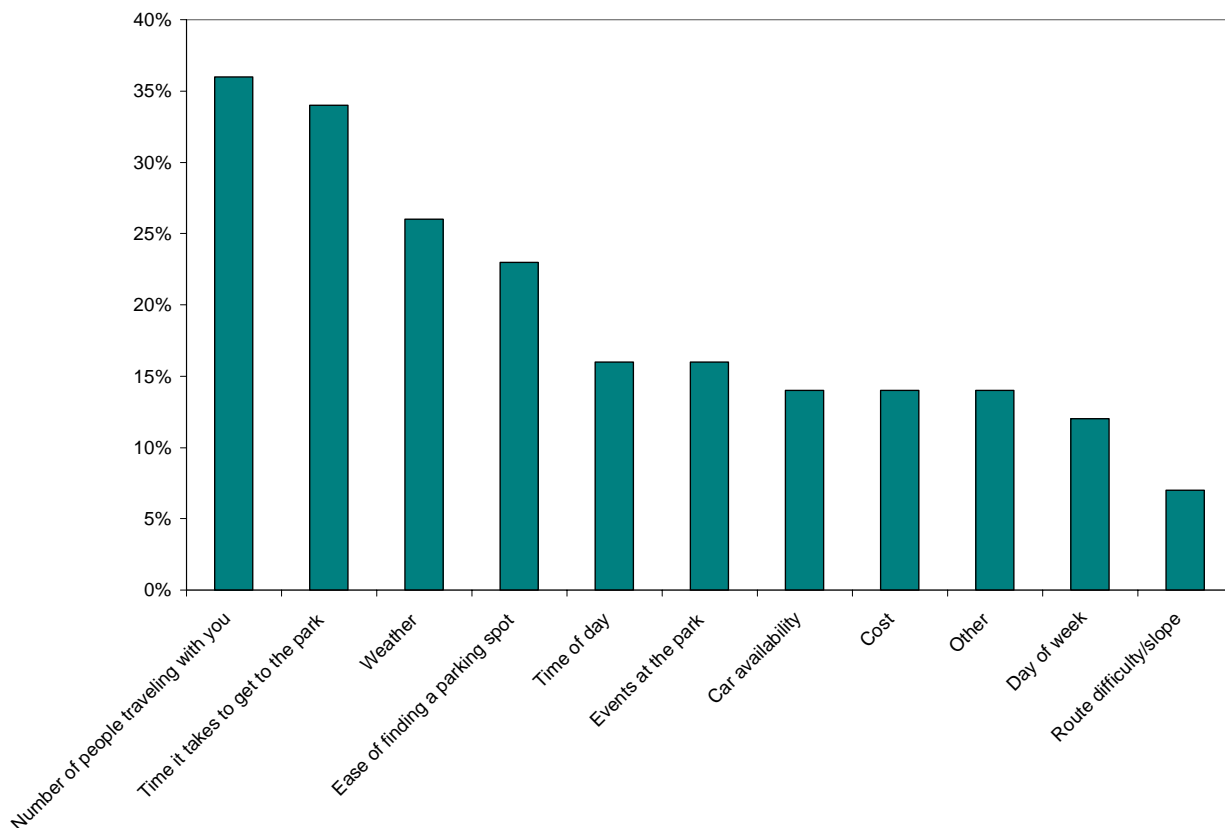


Attitudes

Four factors appear to have the most influence on mode choice (>20% citing as top three factors). They are the number of people in the party/traveling with children, time it takes to get to the park, weather, and the ease of finding a parking spot. Cost and day of the week are notably unimportant concerns. The factors are ranked in figure 3 below.

These responses are enlightening in the sense that they give an idea of what visitors will be most responsive to. For example, the fact that the number of people in the party, especially children, influences mode choice suggests that working to make transit family-friendly would be a good demand management strategy. Alternately, this could suggest that there is more value in carpooling than in taking transit. Conversely, measures to cut costs of transit may be less effective. It is notable that the WPA can only directly affect one of the top four factors: ease of finding a parking spot. However, when considering potential strategies, it should be emphasized that these responses represent attitudes about *how* to get to the park, not whether to make the trip. The importance of finding a parking spot, therefore, may be indicative of a pattern of changing mode choice due to parking congestion.

Figure 3. Factors most important in deciding how to get to Washington Park



When asked to prioritize transportation improvements in Washington Park, there are really two priorities among respondents: parking and transit. The results, which are displayed in Table 3, are somewhat different from those expressed in focus groups. Although focus groups strongly supported increased transit service, they expressed opposition to additional on-site parking. Whereas additional parking received the most top priority votes, increased transit service within the park received the most overall votes, somewhat more than increased transit *to* the park. This may be reflective of the high number of responses received from visitors to the Portland Japanese Garden.

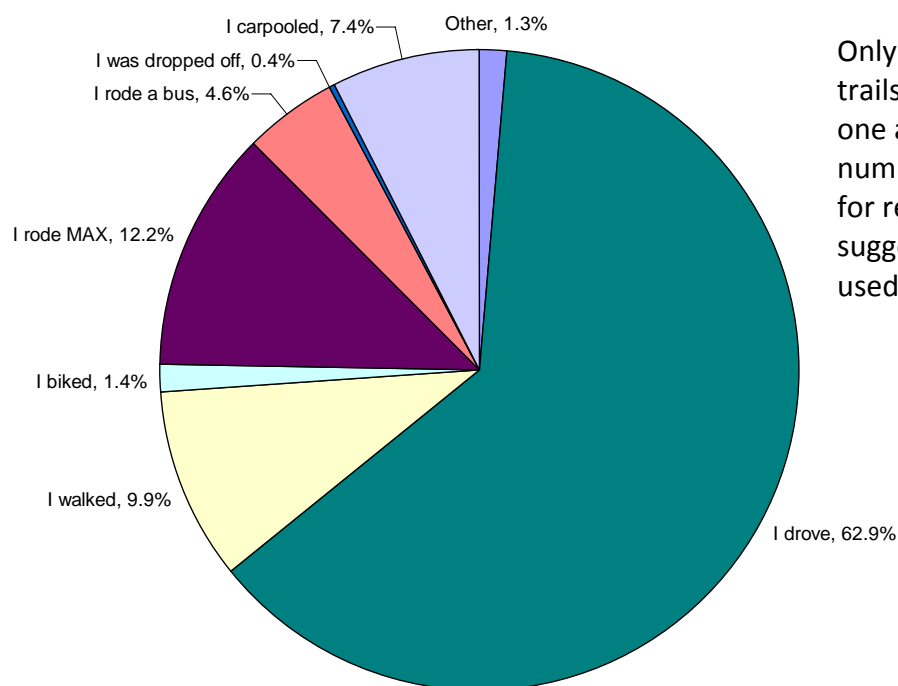
Table 3. Improvements most desired by respondents

Improvement	Percent of total votes	Top priority votes
Increased transit service WITHIN the park	16%	115
Additional parking on site	16%	241
Increased transit service TO the park	15%	168
More sidewalks and pedestrian crossings	13%	62
Better signage	12%	62
I don't know	7%	37
Higher quality trails	6%	30
Additional parking off site	5%	8
Better bicycle routes WITHIN the park	5%	22
Better bicycle routes TO the park	5%	26

Habits

Without weighting the mode split by attendance, it appears that only about 70% of trips to the park are by car. The actual auto mode share is likely higher due to the large number of families with children attracted by the zoo and children's museum. This is corroborated by the findings of the intercept survey, which show that the weighted mode share for automobiles is closer to 88%.

Figure 4. Access modes to Washington Park



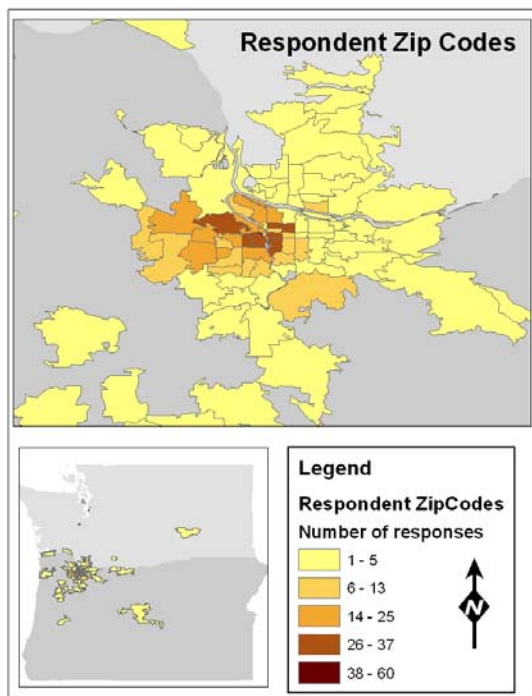
Only 5% of respondents reported using trails for transportation – to get from one attraction to another. Much greater numbers of respondents use the trails for recreation (57%) and exercise (25%), suggesting that the trails are not widely used for internal circulation.

A substantial portion of respondents (38%) visited multiple attractions in one trip, totaling 1231 attraction visits. The breakdown of attraction visits is shown below in table 4.

Table 4. Attractions visited by respondents

Attraction	Visits	% of respondents visiting this attraction	% of all attraction visits
WFC	32	4%	3%
Children's Museum	79	10%	6%
Japanese Garden	352	44%	29%
Zoo	282	35%	23%
Hoyt Arboretum	109	14%	9%
Rose Garden	164	21%	13%
Trails/open space	173	22%	14%
Other	40	5%	3%

Respondents



The average age of respondents is 47, 72% of whom are female. It appears that the sample is strongly skewed to older respondents and females. Seventy-one percent are members of at least one park attraction, indicating a large portion of regular park users responded to the survey. Thirty-nine percent of respondents reported having children under the age of 18 in the household. The average household size is 1.6 people and the average number of vehicles is also 1.6. The explanation for the relatively high average age and large portion of female respondents is unclear, but it was likely influenced by the placement of survey links on blogs such as urbanmamas.com. Average household size is also quite small, though the standard deviation of 1.27 indicates a broad variation in household size.

Geographically, responses were concentrated in inner Portland and are generally commensurate with the population distribution of the region (see map). The four neighborhoods adjacent to the park were well represented, with responses from these neighborhoods making up 15% of the entire sample.

Seventy-one percent of respondents are members of at least one park attraction, indicating that a large portion of regular park users responded to the survey. The breakdown of respondents holding memberships to the attractions in Washington Park are displayed in table 5. As indicated in the table, the Oregon Zoo and Japanese Garden are well represented in the sample. Whereas the proportion of respondents with zoo membership is commensurate with actual attendance, there is a wide disparity in the same numbers for the Japanese Garden. Japanese garden members therefore have a strong influence in aggregated survey responses. The skew associated with membership is not problematic; rather, it helps illustrate the travel habits of the park's most regular users.

Table 5. Respondents holding attraction memberships

Attraction	Number of respondents with memberships	Percent of sample	Percent of March '09 attraction visits
Zoo	362	45%	56%
WFC	24	3%	5%
CM	128	16%	24%
JG	388	49%	5%
Hoyt	40	5%	10%*
All	568	71%	--

*Seasonally adjusted estimate based on annual total.

March attraction visits do not include visits to trails, open space, or the rose garden

Methodology Problems

Responses were collected through a single link to the survey, which any person could access as many times as they wished to take the survey. In theory, one could skew the survey results by repeatedly answering the same. Based on the IP addresses associated with each response, many computers accessed the survey multiple times. In most cases, however, the answers were different, suggesting that a different person in the household or business took the survey for each response.

The definition of Washington Park may not have been clear to all respondents. In some of the open field comments, respondents reported visiting attractions that were not in the park, such as Pittock Mansion and Leif Eriksson Drive.

Conclusions

In general, survey results show that user perceptions of transportation problems indicate overall satisfaction with the transportation features of Washington Park. Certain features emerge as areas for improvement, specifically parking and transit. Visitors to attractions at the southern end of the park expressed lower levels of satisfaction with parking, while visitors to the northern attraction expressed lower levels of satisfaction with transit. It is also clear that the current price of parking is too weak to send an effective price signal.

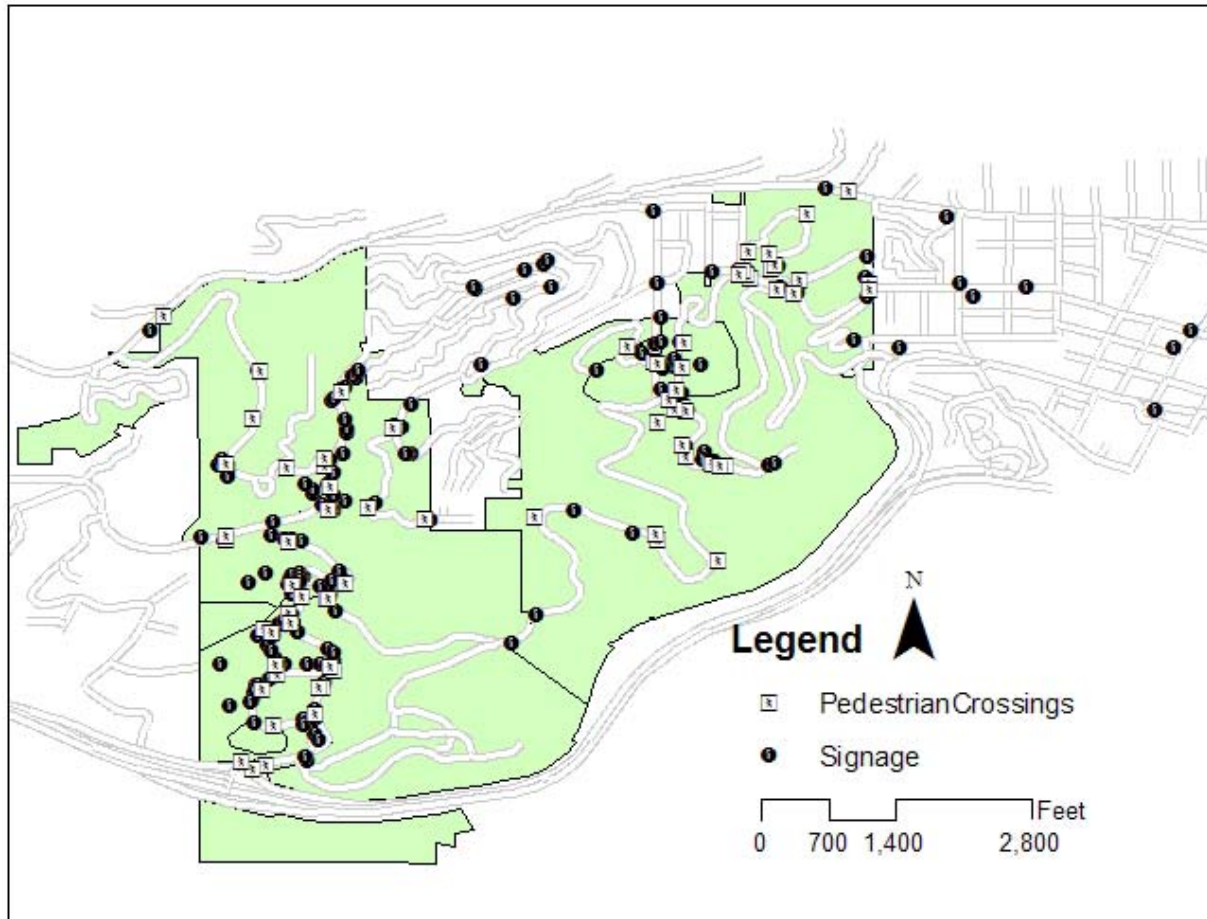
In terms of perceptions, respondents cited the number of people in their party, travel time, weather, and ease of finding parking as the most important factors in their mode choice. Increased transit service and additional parking are the two most desired improvements, followed by pedestrian improvements and wayfinding.

The vast majority of respondents are arriving at Washington Park by car, and very few use the trails for transportation. This is consistent with findings from the intercept survey also conducted during this planning process.

Facilities Inventory

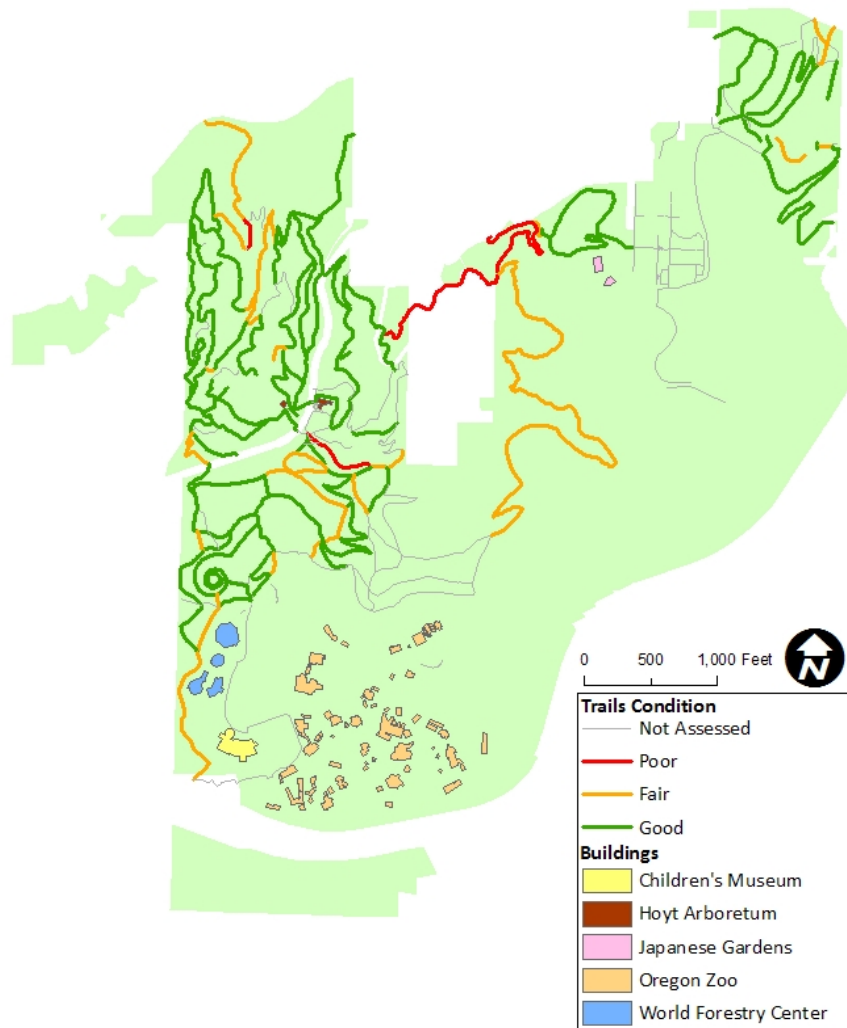
An inventory of park assets was completed in summer 2006 (?). Expanding on this data, an inventory of transportation features was completed by the New Leaf Planning team using GPS devices to mark the location of signage, crossings, decision points, transit stops, and amenities. Results were compiled into a database and mapped in using GIS. This information was used to establish problem areas and identify deficiencies. An example map displaying pedestrian crossings and signage is below.

Map: Signage and pedestrian crossings in Washington Park



Trails Inventory

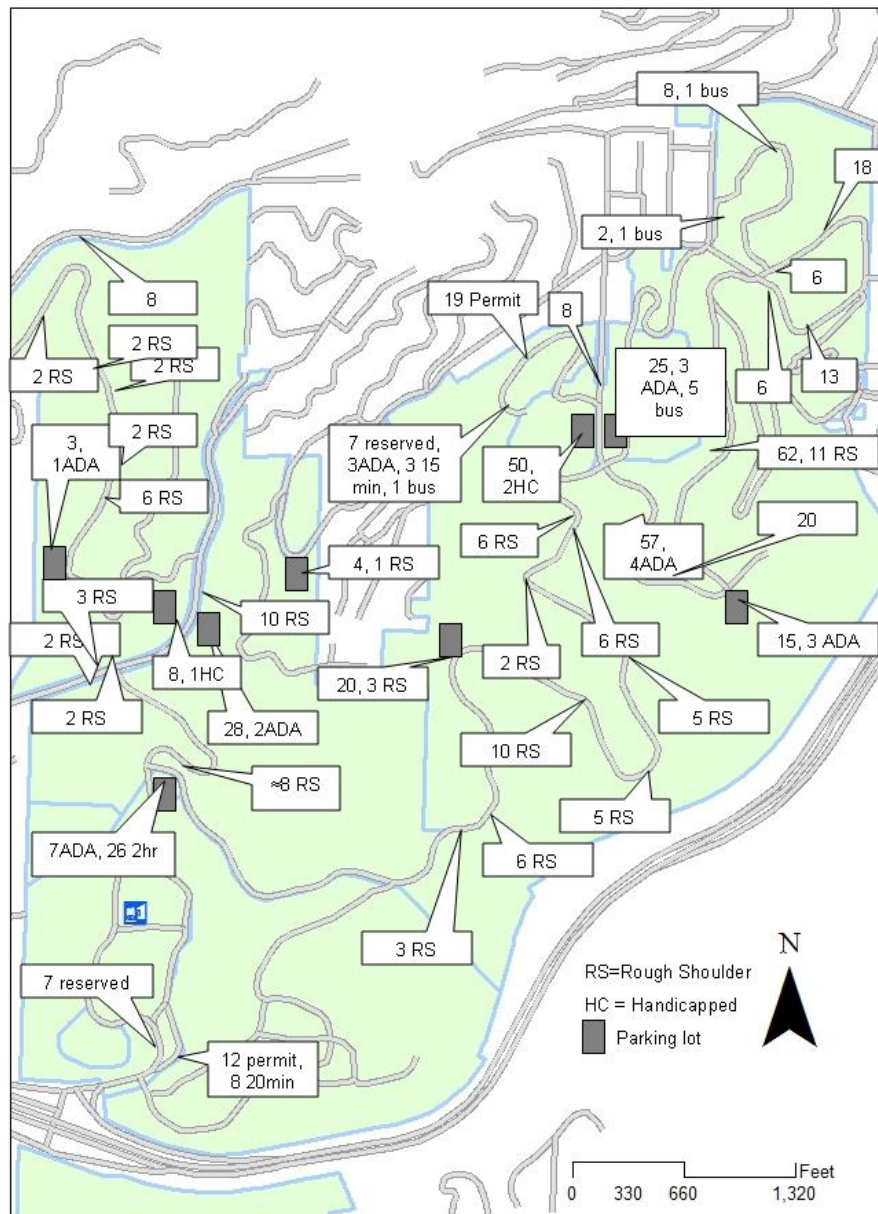
As part of a site visit to Washington Park, other PSU graduate students participated in a trail audit of Washington Park. Using trails data from Metro, pairs of students were assigned a route and asked to assess the quality of trails, as well as the wayfinding information available at decision points. The results are compiled in a spreadsheet, an electronic copy of which is included with this report. The map below summarizes trail conditions.



Prior to evaluating the trails, students were not advised as to how to classify the condition of trails; it was felt that their subjective judgments would yield useful data. As evident in the map, students found most of the trails to be in good condition. Many students reported difficulty with wayfinding, and revealed that large areas of the park have no signage at all, and that in some areas signage is oriented only to automobiles, leaving pedestrian traffic guessing as to the direction of their destination.

Parking Inventory

A parking inventory was conducted by counting the number of each type of parking space within the park, outside of the main visitor lots. Where spaces were not delineated, the approximate number of vehicles accommodated by the area is noted. The space type “rough shoulder” refers to unpaved shoulders of the right of way that appeared to be used as parking. Detailed results of the inventory are displayed in the map below.



Overflow Shuttle Observation


To gain a better understanding of peak conditions, one member of the New Leaf Planning team observed the park during the Elephantastic! event celebrating the birthday of an elephant at the Oregon Zoo. This event has historically drawn some of the largest crowds to the park, and this year was no exception. The observations are summarized below. In transit planning, “cycle time” is the time it takes one bus to complete its route, “headway” is the amount of time between bus arrivals at a stop, and “loading time” is the amount of time needed to load waiting passengers onto the bus.

Sylvan Overflow Shuttle Observation -- Saturday, April 18, 2009

Timeline of parking demand

- 10:20 AM – Main lot south of MAX station full
- 10:30 AM – Auxiliary lot full
- 10:45 AM – Main lot north of MAX station, lot at Knights and Kingston full -- Shuttle signs flipped within Washington Park, directing all vehicles out of the Park and towards the Sylvan lots.

Shuttle service

- *Vehicles.* Five school buses in operation. The first departed at 10:47 AM, half-full of passengers who had arrived early to the lot. Beginning at 11:00 AM, the first overflow lot began to fill rapidly with cars that had been turned away from the Zoo lot, and a queue of Park visitors began forming.
- *Waiting area.* People waiting for the shuttle were queuing in the wrong place at the beginning of operations. The designated stop is at the southwest corner of the Sylvan-Westgate Building, and people were crowding at the northeast corner of the building. This situation resolved itself at around 11:45 AM, when people began lining up down the east sidewalk of Westgate Drive from the correct bus stop. This sidewalk is just six feet wide, not nearly a large enough capacity for the number of people waiting.
- *Operations.* First run of buses: 

The buses loaded one at a time, taking three minutes to load about 50 passengers each. There was then a six-minute gap before bus 139 returned to the stop. Buses loaded continuously, as the boarding queue stretched to over 100 customers during the period 11:00 AM – noon.

Bus Number	Departure Time
139	11:10 AM
137	11:13 AM
COOL	11:16 AM
0	11:19 AM
124	11:22 AM

Bus Number	Arrival Time	Begin Loading	Departure Time
139	11:28 AM	11:28 AM	11:33 AM
137	11:33 AM	11:33 AM	11:36 AM
COOL	11:34 AM	11:36 AM	11:39 AM
0	11:40 AM	11:40 AM	11:44 AM
124	11:42 AM	11:44 AM	11:48 AM
139	11:48 AM	11:48 AM	11:51 AM
137	11:53 AM	11:53 AM	11:56 AM

- *Average cycle time:* 22.6 minutes
- *Average headway:* 22.6 min / 5 buses = 4 minutes, 30 seconds
- *Average loading time:* 3 minutes, 20 seconds

MAX Ridership Report

Using data from TriMet, New Leaf Planning analyzed MAX ridership to Washington Park. Total annual arrivals at the Washington Park MAX station have increased from approximately 216,000 in 2005 to over 400,000 in 2009. As expected, arrivals by month climb steadily as the year progresses, peaking in August and dropping off by nearly 40% in September. Figures 1 and 2 show that the largest portion of arrivals occur on weekends, and that almost three quarters of all arrivals are on westbound trains.

Figure 1. MAX arrivals at Washington Park by day of the week, 2005 - 2008

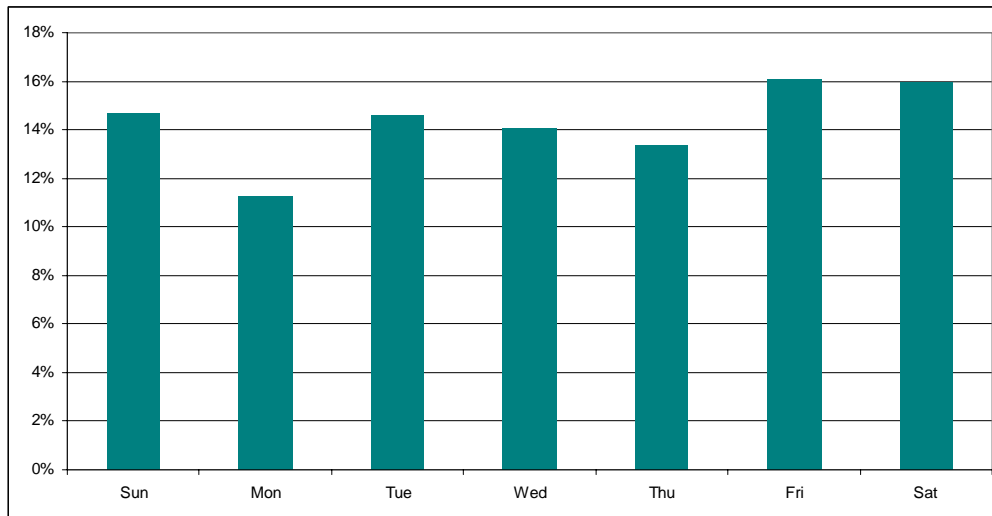
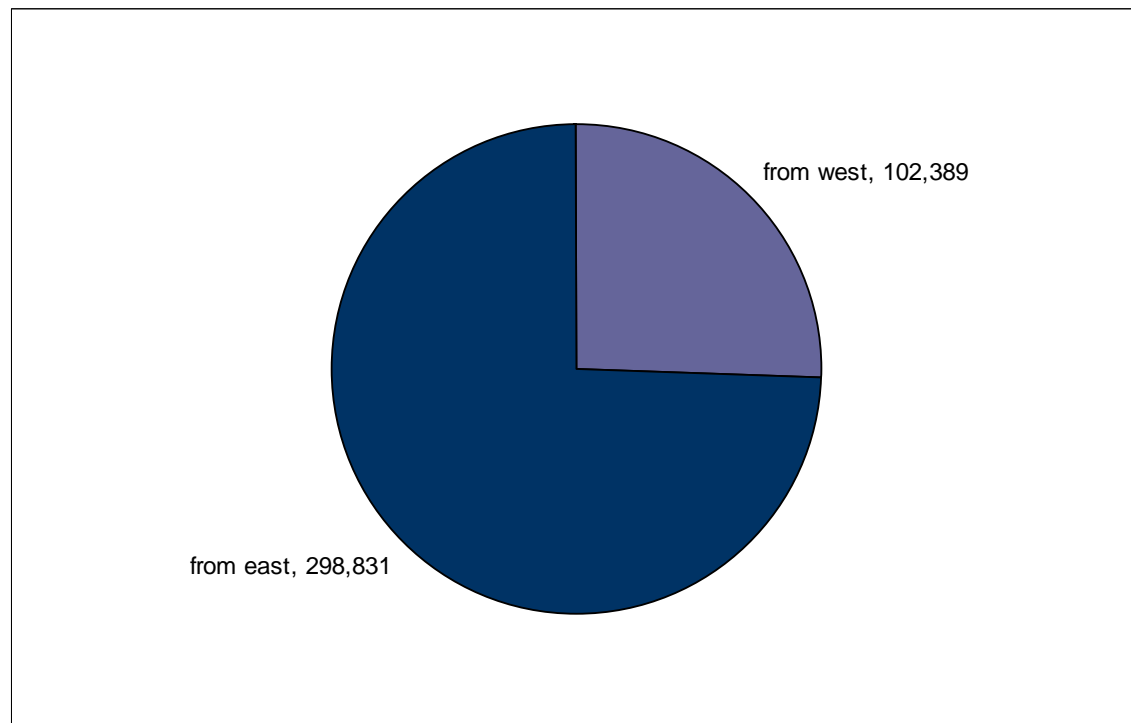


Figure 2. Direction of MAX arrivals, 2008



Tri-Met Washington Park Shuttle Report

The following is a reproduction of a TriMet memorandum describing the performance of the Washington Park Shuttle and the results of an on-board survey. It shows that the shuttle is increasingly popular and is serving a majority of sightseeing tourists. The findings of the survey indicate that a large majority (75%) access the shuttle by MAX, and that about one quarter of respondents would have made the trip if the shuttle were not available.

Date: September 19, 2003

To: Kim Duncan/Kathryn Coffel

From: Yvonne Lyon/Ginger Shank

Subject: Washington Park Shuttle Evaluation

The Washington Park Shuttle runs during the summer months, June through September, serving attractions throughout Washington Park. An extensive evaluation of the shuttle was conducted in its initial year of service, 1999¹. The following smaller evaluation, which took place in the shuttle's fifth year of service, is comprised of passenger counts and an on-board passenger survey. Comparisons with the 1999 survey are included where appropriate.

Passenger Counts

Using counts from Automatic Passenger Counters, ridership counts for all days of the week are up substantially from 1999 to 2003. Average rides per revenue hour have increased:

- 15% on Weekdays, to 385 rides (28.4 rides/revenue hour);
- 24% on Saturdays, to 595 rides (43.9 rides/revenue hour); and
- 7% on Sundays, to 520 rides (38.4 rides/revenue hour).

While the shuttle still has 15-minute service all days of the week, the hours of operation have decreased slightly from 1999 to present day. Originally, the shuttle ran from 10:00 am until 8:00 pm. Now it runs from 10:00 am until 7:20 pm.

The current weekday peak is from 1 pm to 4 pm, Saturday peak is from 2 pm to 4 pm, and the Sunday peak is from 1 pm to 3 pm. See Appendix 1 for further count detail and Appendix 2 for a route map.

On-Board Passenger Survey

During the third week of August, surveyors spent a total of 15.5 hours handing out surveys to passengers on-board the shuttle. This was a 27% sample per day type, consisting of 20 trips out of 74 trips total. The survey took place during the busiest hours of the day, from approximately noon until 5 pm. Of 233 passengers handed a survey, 219 completed the survey for a 94% response rate. See Appendix 3 for survey answer frequencies and Appendix 4 for a copy of the questionnaire.

Results show that riders of the Shuttle are primarily from out-of-town and are visiting the Rose Garden and Japanese Garden. They get to the shuttle primarily on MAX, and would drive if the shuttle weren't available. Saturday riders are most likely to visit more than one attraction, while Sunday visitors are more likely to visit only one. Following is the profile of passengers for each day type.

¹ Washington Park Shuttle Evaluation, August 1999, Marketing Information Department

Weekday

- Age¹: 41
- Number in party¹: 2.6
- Home zip code:
66% out of state, 25% local residents, 7% out of country, 3% other Oregon
- Trip purpose²:
69% sightseeing, 33% recreation, 6% work, 3% other, 1% meeting
- Attractions to visit²:
69% Rose Garden, 67% Japanese Garden, 7% Oregon Zoo, 7% Hoyt Arboretum; average number of attractions visited: 1.7
- Mode of Access²:
75% MAX, 11% drove, 10% walked, 8% took bus
- Trip mode of access if shuttle not available²:
30% drive, 27% bus/MAX, 25% I would not take this trip, 23% walk

Saturday

- Age¹: 40
- Number in party¹: 2.2
- Home zip code:
62% out of state, 30% local residents, 5% other Oregon, 4% out of country
- Trip purpose:
65% sightseeing, 28% recreation, 12% other, 1% work, 1% meeting
- Attractions to visit²:
79% Rose Garden, 57% Japanese Garden, 20% Oregon Zoo, 7% World Forestry Ctr; average number of attractions visited: 1.9
- Mode of Access²:
73% MAX, 22% drove, 12% walked, 2% took bus
- Trip mode of access if shuttle not available²:
41% drive, 23% walk, 19% I would not take this trip, 16% bus/MAX

Sunday

- Age¹: 42
- Number in party¹: 3.7
- Home zip code:
48% out of state, 27% local residents, 13% out of country, 13% other Oregon
- Trip purpose²:
78% sightseeing, 20% recreation, 8% other, 2% work, 2% meeting
- Attractions to visit²:
76% Rose Garden, 27% Japanese Garden, 11% Oregon Zoo, 5% Hoyt Arboretum; average number of attractions visited: 1.3.
- Mode of Access²:
58% MAX, 25% drove, 17% walked, 14% took bus
- Trip mode of access if shuttle not available²:
42% drive, 27% I would not take this trip, 22% bus/MAX, 16% walk

The top five attractions were the same from both the 2003 and 1999 studies with the top two attractions, the Rose Garden and the Japanese Garden, having far more visits than the other attractions.

Conclusion

In its five years of operation, the Washington Park Shuttle has become more popular, as evidenced by large ridership gains. The shuttle especially appears to be a hit with the tourism market. People in 2003 are visiting the same attractions in approximately the same percentages as in 1999, but the number of out-of-region visitors using the shuttle has increased from two-thirds to about three-fourths.

¹ Average

² Multiple responses accepted

Appendix F: Sample Parking Map



Appendix G: References

Washington Park Documents

Oregon Zoo DRAFT Master Plan.
Metro Washington Park Zoo "Framework for the Future" (25-Year Plan), 1991.

World Forestry Center Strategic Plan (2006).

Washington Park Master Plan Study (1980).

Metro Washington Park Zoo Transportation Master Plan (1997), with Addendum (1997).
Washington Park Bond Project and Issues (1998).

The Oregon Zoo Transportation Demand Management Plan Implementation (2005).

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Hoyt Arboretum Master Plan.

Washington Park Signage Plan.

Similar Park Practices

Franklin Park Transportation and Access Study, Draft Report. Prepared for Boston Parks and Recreation by Howard/Stein-Hudson Associates, Inc.

Transportation Improvement Plan 2004-2005, Golden Gate Park Concourse Authority.

Forest Park Access, Circulation and Parking Study. February 2008. Prepared for City of St. Louis Board of Public Service by Crawford, Bunte, Brammeier Traffic and Transportation Engineers.

Local Access Mgmt Policies

OMSI Master Plan.

Northwest Portland On-Street Parking Plan. January 2002. City of Portland Office of Transportation.

OHSU Smart District: Project Development Report. May 2003. Prepared for the OHSU SmartMeter District Project Advisory Committee by Portland Office of Transportation.

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Andrea Broadbuss. No Such Thing As A Free Spot: Pricing as a Demand Management Strategy for Parking. TRB 2009 Annual Meeting CD-ROM

Garling and Schuitema. Travel Demand Management Targeting Reduced Private Car Use: Effectiveness, Public Acceptability and Political Feasibility. Journal of Social Issues, Vol. 63, No. 1, 2007, pp. 139—153

Sara J. Hendricks. Four Challenges to Incorporating Transportation Demand Management into the Land Development Process. Transportation Research Record: Journal of the Transportation Research Board, No. 2046, Transportation Research Board of the National Academies, Washington, D.C., 2008, pp. 30–36

Michael D. Meyer. Demand management as an element of transportation policy: using carrots and sticks to influence travel behavior. Transportation Research Part A 33 (1999) 575-599

Jeffrey M. Casello, James T. LaPointe, and Brooke T. Lambert. A Framework for Suburban Parking Analysis. TRB 2009 Annual Meeting CD-ROM

David Ungemah and Casey Dusza. A transportation demand management (TDM) benchmark: results from the 2008 TDM program survey. TRB 2009 Annual Meeting CD-ROM

Victoria Transportation Policy Institute TDM encyclopedia: <http://www.vtpi.org/tdm/index.php>

Secondary Data

Zoo TDM data (includes a variety of attendance and parking figures)

Tri-Met Washington Park MAX ridership ons/off

Tri-Met aggregated 63 and shuttle ridership numbers

Washington Park Correspondence

Fax Transmission: (1/13/99) PDOT to Zoo

Re: Portland Parks & Recreation application to charge a fee for parking in the Main Visitor lot.

Memo: Jane Hartline

Re: Outlining the proposed fee structure for parking, pre-MAX station opening

Memo: (1/14/99) Mark Reed (World Forestry Center) to Fred Hansen (TriMet)

Re: MAX Station security and restroom concerns

Correspondence: Mike Burton (Metro), Sidney Alpert (Wilcox Homeowners Association), Margaret Sprinkle, Tony Vecchio (Oregon Zoo), and Knut Eie (Southwest Hills Residential League).

Re: Possible location of Park and Ride at Washington Park Main Visitor lot.

Correspondence: ODOT

Re: Applicability of the Oregon Highway Plan; slope stability concerns

Memo: (9/19/2003) Yvonne Lyon/Ginger Shank (TriMet) to Kim Duncan/Kathryn Coffel

Re: Washington Park Shuttle Evaluation

Memo: (6/7/97) Jonathan Bunker and Phil Worth (Kittelson & Associates) to Berit Stevenson (Metro)

Re: Cost estimates for subsidies and traffic control, Washington Park Zoo Master Plan

TriMet Service Cuts

TriMet System Productivity, FY2009 TIP.

TriMet Route Ridership Report, Weekdays Fall 2008, Saturdays Fall 2008, and Sundays Fall 2008.

Parking

Andrea Broaddus. No Such Thing As A Free Spot: Pricing as a Demand Management Strategy for Parking. TRB 2009 Annual Meeting CD-ROM (B)

Online TDM Encyclopedia: Parking Pricing, <http://www.vtpi.org/tdm/tdm26.htm>

Parking fees at similar cultural attractions

Woodland Park Zoo, Seattle, WA. <http://www.zoo.org/>

Oakland Zoo, Oakland, CA. <http://www.oaklandzoo.org/>

National Zoo, Washington, DC. <http://www.nationalzoo.org/>

Children's Museum of Houston, Houston, TX. <http://www.cmhouston.org/>

Boston Children's Museum, Boston, MA. <http://www.bostonkids.org/>

Children's Museum of Pittsburgh, Pittsburgh, PA. <http://www.pittsburghkids.org/>

Dallas Arboretum, Dallas, TX. <http://www.dallasarboretum.org/>

Mount Pisgah Arboretum, Eugene, OR. <http://mountpisgaharboretum.org/>

Golden Gate Park, San Francisco, CA. <http://www.nps.gov/goga/>

Photos

Disney Shuttle Sign: <http://www.flickr.com/photos/bredgur/2814602533/>

Melbourne Shuttle Sign: <http://www.flickr.com/photos/leongsoong/2428445061/>

Phlash Sign: <http://www.flickr.com/photos/39015314@N00/570394031/>

Berkeley Sign: <http://www.studiolimage.com/images/lg-bl-xg.jpg>

Stourbridge Junction People Mover: http://farm4.static.flickr.com/3076/2842601690_00fe360665.jpg

Vancouver Stanley Park Rubber-Tired Trolley: http://farm2.static.flickr.com/1215/1251722679_072666d7d7.jpg?v=0

Getty Museum Tram: <http://www.flickr.com/photos/rommelolaes/2858983494/>

Connexion Automated Park Shuttle: http://www.2getthere.eu/media/pictures/medium/48-0_parkshuttle-1_2.jpg

Portland Bicycle Map: <http://www.flickr.com/photos/dirtycrumbs/2802624251/>