WASHINGTON PARK SOUTH ENTRY VISION
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INTRODUCTION

This South Entry Vision report was commissioned by Metro and Portland Parks & Recreation (PP&R), on behalf of the Washington Park Alliance (WPA), to further develop the WPA’s Washington Park South Entry & Parking Vision Study, dated April 20, 2011.

The scope of the original 2011 vision was to look at how to enhance the character, clarify circulation, create a common green open space by replacing surface parking with a parking structure and improve pedestrian safety in the entire Washington Park south entry and parking area. A conceptual scheme was developed that met the WPA’s goals to create a common green that enhanced the arrival experience into the park and met the collective needs of all the cultural institutions in the park.

This South Entry Vision report builds on the 2011 Study to define a long-term solution for this active part of Washington Park. The main parking lot, used heavily by Oregon Zoo, Portland Children’s Museum, World Forestry Center visitors, as well as by the neighboring WPA institutions and general park visitors, is owned and managed by Portland Parks & Recreation. The original conceptual scheme was tested further and found not to be feasible due to challenging geotechnical conditions. Multiple options were assessed and a better solution was found. The new scheme:

» Enhances the entire visitor entry experience into Washington Park with a gracious roadway system and expanded park landscaping, clarifying visitor options for drop-off and small parking zones.

» Makes the entrance to each WPA institution more notable with attractive green space, drop-off zones and parking.

» Improves aesthetics, pedestrian connections, bike paths and way-finding from the TriMet station to each WPA institution;

» Creates a new entrance alignment and features, including stormwater, to work with the proposed new drop-off and pick-up at the Oregon Zoo’s proposed new Conservation Discovery Zone (CDZ).

» Consolidates most of the parking in a new structure built above grade, north of the TriMet station, to allow for more usable green, park space between the institutions; and

» Provides a preliminary strategy for phasing and estimated project costs.

» PP&R intends to incorporate this report into a future update of the Washington Park Master Plan.

The role of the WPA in this study was to provide information about each institution’s access and parking needs as well as provide feedback to the consultant team throughout the course of the design process. Metro and PP&R staff managed the study process, consultant team and the public outreach to neighborhood associations.
Washington Park is one of Portland’s oldest and most visited park. It is part of Portland’s identity, located directly west of downtown, and is home to the International Test Rose Garden, Oregon Zoo, Portland Children’s Museum, Hoyt Arboretum, the World Forestry Center, Vietnam Veterans of Oregon Memorial, and the Japanese Garden, among other public attractions.
Like many older, large parks, Washington Park accommodates vehicles within and throughout the park.
The original layout of the road system was based on the idea of a “parkway,” following the landform with graceful curves, allowing for a scenic drive through the park at much slower speeds than today’s automobiles.
The south entrance off Highway 26 was designed later in response to new institutions at the south end of the park. The roadway into the park is structured with a series of straight tangents and tighter curves. Multiple confusing decision points make it difficult for the visitor to navigate upon arrival. Visitors are inadvertently guided to the large parking lot before locating their destination, adding to the confusion.
In working with the Washington Park Alliance in 2011, the design team was charged with creating a dramatic new vision for the South Entry area. Plans for an underground parking structure covered by open space were proposed. The park space provided open linkages between the venues. The road was to be clarified, simplified, and lowered to provide uninterrupted access to the new garage and into the park.
The 2011 Vision created a common green, a significant new element in Washington Park, comprising up to four acres, hiding the cars and providing a pleasant and safe pedestrian connection to all the surrounding cultural institutions. It provided open space, public art, programmable space, interpretive landscaping and an iconic Washington Park destination.
Initially, geotechnical investigations suggested that a parking structure could improve the subsurface conditions associated with the ancient landslide that underlies the area. Further study found that the measures necessary to excavate for underground parking would require significant structural elements at a cost inappropriate for a parking facility. However, it was found that an above grade structure is viable assuming that all excavation is limited to 5-feet. This limitation is a guideline pending further geotechnical investigation and design.
The design team then explored multiple options for an above grade structure located in the main lot. However, regardless of the configuration, an above grade structure in this location would dominate the open space and block any visual connection between the venues. In addition, any green roof or park facility on top of the structure would be difficult to access and be hidden from view. A new strategy became necessary.
Instead, by locating an efficient above-grade structure in the upper lot, immediately north of the TriMet station, parking needs could be accommodated while providing a large central open space between the institutions.

The parking structure would not appear overly large considering the scale of the existing TriMet station and plaza. Further articulation of the façade will also reduce the scale.
The proposal is for a delta shaped, open air parking structure, providing light and ventilation through the core. The floor plates would be mostly level, allowing flexible use for events, or potential infill considering the panoramic views that will be available from the upper floors. Essentially, the concept is to create a structure with flexible use of space that when not used for parking, could be rented for a variety of events in this beautiful park setting. Though the target design was to maintain the existing number of spaces, parking capacity could vary up or down by adding or deleting a floor. More detailed drawings can be found in Appendix A.
Careful consideration should be given to views from all the surrounding uses with particular sensitivity to the Vietnam Veterans of Oregon Memorial. In order to minimize impacts, proactively planting new trees to screen a future building is recommended and encouraged at the earliest possible timeframe.
The design team studied several circulation options through this area, with the basic intent of restoring the graceful curves of the historic park roads. Yet vehicular drop-off and pedestrian access to each of the institutions remained awkward, and the primary new central green open space isolated.
Through continued study of the original layout of Washington Park, the design team shifted SW Knights Blvd more to the center of the open area and discovered an interesting rhythm of open spaces and facilities appearing on either side of the road as one moves through the park. This approach became the basis for the design as a new concept emerged.
This bird’s-eye view of the vision for Washington Park shows new road alignments, more gracious front doors with generous open space to each of the institutions, stormwater treatment at the entrance of the park, and a parking structure beyond the Tri-Met station to replace most of the surface parking. For orientation, the World Forestry Center is on the left, the Oregon Zoo is on the right and the Portland Children’s Museum is on the lower portion of the rendering.
The new vision maintains a traditional serpentine road, although less circuitous, to slow traffic and preserve the character of the classic parkway road system found throughout Washington Park. Clear left or right turns off the roadway provide easy access to each institution and their drop-off areas and shuttle stops. The design intent is to clarify visitor circulation through the park by always treating secondary drives or service driveways as subordinate to the main road. Traditionally shared with bicycles, the main road will have bike lane designations. Providing a clear and consistent road system vocabulary is important to address in the future Washington Park Master Plan.
Most parking is transferred from surface lots to the proposed garage. A limited amount of surface parking is proposed to be maintained, primarily to provide accessibility for persons with disabilities, and also to allow short term drop-off for children’s classes and camps, and to serve as premium parking for events.
The bulk of the parking demand would be accommodated in a new parking structure. As Washington Park is Portland's flagship park, the structure is envisioned as an interesting, perhaps iconic, programmable building, designed in context with the surrounding landscape. Access from the garage should engage the rarely used plaza spaces associated with the TriMet station. The parking structure is proposed to be constructed in Phase 2a to maintain parking counts before the main lot is removed.
Existing entry areas for each institution would be enhanced, enlarged, and more graciously connected to the greater park environment. New furnishings, such as benches and lighting, will be designed for consistency within the park as a whole during the Washington Park Master Planning process.
The venues and open spaces would be linked by a series of paths, boardwalks, and promenades with minimal and safe street crossings. All sidewalk and crossing locations will be studied in greater depth to optimize use and safety.
A new major entry is proposed at the southern tip of Washington Park, directly off Hwy 26 and Canyon Ct, adjacent to the Oregon Zoo’s proposed Conservation Discovery Zone (CDZ). The new entry will include a ‘park gateway,’ which will be defined in the future Washington Park Master Plan. Proposed as Phase 1 Improvements are new landscaping, signage, wayfinding, and pedestrian connections and a large new vegetated stormwater feature. The feature provides a dramatic grand entry into Washington Park and the Oregon Zoo, Portland Children’s Museum and World Forestry Center, doubling as the primary stormwater filtration system for the area. A new drop-off loop, subordinate to the main roadway, clarifies circulation, and provides limited access to the CDZ and associated surface parking. Detailed drawings are included in Appendix B.
A meadow adjacent to the Portland Children’s Museum expands the entry zone and provides opportunities for interactive nature play. More detailed planning for how this space will be programmed will occur in a future phase.
The upper terrace of the World Forestry Center looks over the meadow through a canopy of new trees. The meadow space is level, allowing for various programs and events.
The central space associated with the Oregon Zoo and the MAX station becomes a formal terraced landscape capable of supporting larger events or to gather large groups as they load or unload from the bus loop.
The entire area is connected by naturally flowing stormwater filtration and conveyance. Most of the conveyance is located adjacent to the road, providing a physical buffer between vehicles and pedestrians.
The final vision of the Washington Park South Entry improvements.
PHASING AND COST

The strategy for phasing and the estimated project costs are summarized here. Phase 1 Schematic Drawings and Parking Structure Drawings can be found in Appendix B.

SCOPE

PROJECT ESTIMATES*

Phase 1 Improvements $1.5 million
Includes road improvement to clarify circulation, new drop-off/pick-up entry to the Oregon Zoo’s Conservation Discovery Zone (CDZ), stormwater treatment, new landscaping, signage, wayfinding and pedestrian linkages. It immediately begins the South Entry transformation with both aesthetic and functional improvements. This work ideally would occur concurrent with the completion of construction of the CDZ, the education building planned as part of the Zoo Bond, expected to be completed by 2015.

Phase 2a
Parking Structure Building and related sitework $45.6 million
Includes the 7-story, 840 parking space parking structure with associated site work and landscaping.

Phase 2b
Open Space and Site Improvements $8.4 million
Includes the remainder of the new road alignment with bike path, two smaller on-grade parking lots (approx. 80 cars each) to provide ADA access and short term parking, and landscaping zones in front of each of the institutions, safe pedestrian paths and crossings, and stormwater treatment.

TOTAL PROJECT ESTIMATE* $55.5 million

*All estimates are in 2012 rates for direct construction and include General Conditions, Bonds and Insurance, Overhead and Profit, and a 15% Design Contingency. The estimates also include an additional 35% for indirect costs, such as permitting, financing, management, and design services. Escalation is not included.

NEXT STEPS


2. Prepare an implementation strategy to achieve Phase 1 and Phase 2 components.

3. Incorporate the South Entry Vision into the Washington Park Master Plan process, anticipated in 3-5 years.
PARTICIPANTS

Thank you to the following participants for their time and commitment to this study.

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APPENDIX

A  WASHINGTON PARK SOUTH ENTRY PARKING GARAGE CONCEPT

B  PHASE 1 ENTRY IMPROVEMENTS SCHEMATIC DESIGN DRAWINGS
APPENDIX A  WASHINGTON PARK SOUTH ENTRY PARKING GARAGE CONCEPT

WASHINGTON PARK PARKING VISION STUDY  
JUNE 2012
PARKING GARAGE: ARCHITECTURAL NARRATIVE  
SRG PARTNERSHIP

GENERAL CONCEPT
THE PROPOSAL IS FOR A DELTA SHAPED, OPEN AIR STRUCTURE, PROVIDING LIGHT AND VENTILATION THROUGH THE CORE. THE FLOOR PLATES ARE LEVEL, ALLOWING FLEXIBLE USE FOR EVENTS, OR POTENTIAL INFILL CONSIDERING THE PANORAMIC VIEWS THAT WILL BE AVAILABLE FROM THE UPPER FLOORS. FLAT FLOOR PLATES ALSO ALLOW FOR MORE FLEXIBILITY AND OPPORTUNITY FOR EVENTUAL ADAPTIVE RE-USE. THE STRUCTURE IS 6 AND A HALF FLOORS, WITH 850 SPACES. IT IS FULLY SPRINKLERED.


LARGE FULL-HEIGHT METAL SCREENS SLANT LIKE THE TALL PINES BEHIND, AND TURN IN SLIGHTLY DIFFERENT WAYS SO THE SURFACES REFLECT VARIED LIGHT.

SITE
THE FOOTPRINT OF THE PROPOSED PARKING GARAGE SITS WITHIN THE EXISTING PARKING LOT ABOVE THE TRIMET STATION. A CIRCULAR SPEED RAMP FROM THE UPPER LEVELS OF THE GARAGE CANTILEVERS OR SPANS OVER ZOO ROAD TO THE NORTH, AND EXITS TO GRADE AT ZOO ROAD WIDENED TO ACCOMMODATE A NEW EXIT LANE.

VEHICULAR CIRCULATION
VEHICULAR CIRCULATION IS TWO-WAY, AND EACH LEVEL IS FLAT WITH ONE-WAY RAMPS CONNECTING THE LEVELS. FLAT FLOORS ARE EASIER TO NAVIGATE AND SAFER FOR THE PRIMARY USERS OF THE FACILITY. THE CIRCULAR SPEED RAMP ALLOWS FOR A SIMPLE EXIT WITHOUT CIRCULATING THROUGH THE PARKING FLOORS. BECAUSE OF EVENTS LIKE ZOO CONCERTS, THE GARAGE MUST BE ABLE TO BE QUICKLY EMTIED TO AVOID LONG WAIT TIMES FOR PEOPLE PARKED ON THE UPPER FLOORS. THE COMBINATION OF THE INTERNAL AND EXTERNAL RAMPS PUTS THE MAXIMUM ‘FLUSH RATE’ BETWEEN 1350-2150 CARS PER HOUR, OR ABOUT 24-38 MINUTES FOR THIS 850 SPACE GARAGE. FLUSH RATE LIMITING FACTORS INCLUDE THE STREET CAPACITY AND EXIT CONTROL. IT IS RECOMMENDED THAT PAYMENT OCCURS UPON ENTRY SO THERE IS NO DELAY AT A GATE, AND THAT DURING HIGH TRAFFIC TIMES THE INTERSECTION OF SW KNIGHTS BLVD AND ZOO ROAD BE MANUALLY CONTROLLED. PARKING INDICATOR LIGHTS ABOVE EACH SPACE HELP DRIVERS FIND AN OPEN SPACE QUICKLY.

ACCESSIBLE PARKING IS CONSOLIDATED AT THE LOWEST LEVEL, CLOSEST TO GRADE AND TO THE ATTRACTION WITH THE HIGHEST VISITOR VOLUME, THE OREGON ZOO. THIS LEVEL HAS ITS OWN ENTRANCE AND EXIT TO ZOO ROAD, AND IS NOT CONNECTED BY RAMP TO THE UPPER FLOORS. SIGNAGE TO ACCESSIBLE PARKING IS PROVIDED.
WASHINGTON PARK SOUTH ENTRY PARKING GARAGE CONCEPT

PEDESTRIAN CIRCULATION
PEDESTRIANS ARE NAVIGATED TO THE SOUTHERN EDGE OF THE PARKING GARAGE WHERE A THIN SLAB IS CANTILEVERED FROM THE PRIMARY STRUCTURE. PEDESTRIANS CAN WALK SAFELY ALONG THIS EDGE BETWEEN PARKED CARS AND THE FAÇADE SCREENS, TO STAIRS OR ELEVATORS AT THE EAST AND WEST ENDS. THE STAIRS, AND THE PATH AT GRADE, WILL LEAD VISITORS TO THE HEART OF AN EXISTING TERRACED PARK CENTERED BETWEEN THE MAX STATION ELEVATORS.

FLOORS

GREENERY
THE STRUCTURE’S SHAPE ALLOWS FOR AN OPEN CENTER FOR LIGHT AND GREENERY. THE LOWEST LEVEL IS CONSOLIDATED TO THE EASTERN SIDE TO ALLOW FOR PLANTING TO OCCUR UP THROUGH THE LIGHT WELL. PLANTERS ON VARIOUS LEVELS ALONG THE SOUTHERN FAÇADE COULD ALLOW GREENERY TO CLimb THE METAL SCREENS.
WASHINGTON PARK SOUTH ENTRY PARKING GARAGE CONCEPT
Washington Park Parking Vision Study

Parking Structure

Structural Design Narrative

Overview: The proposed parking structure will be a 7 level building with both an internal ramp and an exterior spiral speed ramp. The ground level will be partially below grade. The structure is proposed to be triangular in plan with a triangular opening in the middle formed by each of the three 62 foot wide parking deck sections.

Structural Framing Alternatives: Two distinct framing systems are being considered for the structure; precast concrete and structural steel. The two systems are described below:

Precast Concrete:
The typical floor structure would be comprised of 32 inch deep precast double tees spanning 62 feet with a 3 ½ inch thick concrete topping slab placed on top. The double tees would be supported by precast concrete spandrel beams at each end, with the possibility of precast light walls being used in lieu of spandrels at the inside ends of the tees. The spandrels would be supported by precast concrete columns on a 30 to 35 foot spacing interval. Lateral seismic and wind forces will be resisted by precast shearwalls at the exterior and interior, with the option of using light walls in lieu of solid walls at the interior. The shearwalls would comprise approximately 25% of the entire exterior and interior perimeters.

Structural Steel:
The typical floor structure would be framed with 30 inch deep castellated steel beams spaced at 9 to 10 feet on center, clear spanning 62 feet, supporting a 3 inch x 16 Gage G-90 vented deck with a 3 ½ inch thick concrete topping slab (total slab thickness would be 6 ½ inches). The castellated beams would be supported by steel wide flange girders and steel columns on a 30 to 35 foot spacing interval. Lateral seismic and wind forces would be resisted by steel buckling restrained braced frames (BRB) that would comprise approximately 25% of the entire exterior and interior perimeter.

Speed Ramp and Guardrails: In either framing scheme, the speed ramp will be a cast in place concrete structure supported by cast in place concrete columns. In the precast scheme, the spandrels would serve as guardrails, whereas on the steel building, a galvanized post tensioned cable rail will be used for the guardrail. The City may require headlight screening at the exterior perimeter on the steel framed structure since the guardrail would be totally open.

Foundations: Given our knowledge of the site, it is likely that the building columns and walls would be supported on pile foundations. Due to sound and vibration restrictions imposed by the Oregon Zoo, the piles would be either auger cast or augered steel, and will support pile caps tied together with a system of concrete grade beams. The slab on grade would be 5 inches thick with #5 bars at 12 inches on center typical.

Design Criteria:


Parking Live Load: 40 PSF

Snow Load (Top Level Only): 25 PSF
LOWER LEVEL 0 - (18) accessible + (12) typical = 30 spaces
LEVEL 1 - 133 Spaces

WASHINGTON PARK SOUTH ENTRY PARKING GARAGE CONCEPT
LEVEL 2 (Levels 3, 4, 5 similar) - 137 spaces
LEVEL 6 - 145 Spaces
WASHINGTON PARK SOUTH ENTRY PARKING GARAGE CONCEPT

SOUTH ELEVATION

Total 6 1/2 levels; total 850 spaces

LEVEL 0
5' - 0"

LEVEL 1
16' - 0"

LEVEL 2
27' - 0"

LEVEL 3
38' - 0"

LEVEL 4
49' - 0"

LEVEL 5
60' - 0"

LEVEL 6
71' - 0"