Property Assets: Water Avenue – Regional Access
Carol Gossett

Site Overview
Mr. Stephens and Dr. McLaughlin
In 1869 Railroad service open – East Portland
Planned and Developed by Benjamin (Ben) Holladay
Site History
Troy Doss

Central City Master Plan
Central City Master Plans

Central City Master Plans are intended to establish a clear development strategy for significant redevelopment sites in Portland’s Central City.

These plans will establish an urban design framework and layout for the subject sites as a whole that:

- Demonstrates a strong orientation towards transit and multimodal transportation alternatives
- Provide a safe, vibrant, and activated public realm
- Orient building height and massing to protect public views, allow light and air penetration, and to activate the public realm and significant features, such as the Willamette River, publicly accessible open space areas, and transit stations
Master Plan: Requirements

Central City Master Plans are required to identify:

- Existing structures to remain on site
- Location and size of future building pads
- Existing and proposed land uses
- Pedestrian, bicycle, and vehicle circulation
- Public right-of-way to be vacated or dedicated
- Parking locations and access to parking facilities
- Open space features
- A three dimensional massing diagram demonstrating the ultimate building envelop associated with each building pad
- Sections, sectional elevations, and perspectives that illustrate how new development relates to the surrounding urban form of the area outside of the master plan boundary.
CC2035: Requirements

The new Central City 2035 Plan also includes the following new development standards that will influence the master plan development:

- **Ecoroof:** Ecoroofs are now required on all buildings with a net building area of at least 20,000 sq. ft.

- **Bird-Safe Exterior Glazing:** Bird-safe glazing is required for the first 60 feet of height.

- **Low-Carbon Buildings:** New buildings with a net building area of at least 50,000 sq. ft. are required to register for a green building certification program.

- **Willamette River Setback:** New development along the Willamette River must be setback at least 50’ from top-of-bank (unless the use meets the definition of a “River Dependent” or “River Related” use.)
OMSI Master Plan

1. WHAT DOES IT MEAN TO BE AN INNOVATION DISTRICT?
   - CHARTS & GRAPHS: GROWING CREATIVE INDUSTRIES
   - NEW DEVELOPMENT
   - INNOVATION: SMART SITES
   - AUTOMATION: TECHNOLOGY

2. UNIQUE & SAFE CAMPS
   - ROOFTOP & DECK SPACE
   - HARRIS PARK
   - ADDITIONAL SPACE
   - PUBLIC PARKING

3. CELEBRATE & ENHANCE THE RIVER
   - OUTDOOR STAGE SPACE
   - KIOSK: WATER INTERACTIVE
   - INTERIOR INCUBATOR
   - EXHIBITION SPACE
   - WATER-RELATED ACTIVITIES
   - GARDENS: FOOD, FLOWERS

4. PLACES GATHERED IN EDUCATION
   - OUTDOOR SCIENCE PATIO
   - PARKING: BUSES, CARS
   - IMPROVE ACCESSIBILITY
   - DESIGNS TO KEEP TRANSPORT IN MIND
   - EXHIBITION SPACE
   - WATER-RELATED ACTIVITIES

5. TRANSPORT SHARED COMMUNITY
   - MULTIMODAL, DAILY LIFES, SMART
   - PARKING, BIKE, TRUCKS
   - IMPROVE ACCESSIBILITY
   - DESIGNS TO KEEP TRANSPORT IN MIND
   - EXHIBITION SPACE

WASHOUGAL COMMUNITY
- ROOFTOP & DECK SPACE
- HARRIS PARK
- ADDITIONAL SPACE
- PUBLIC PARKING
- OUTDOOR STAGE SPACE
- KIOSK: WATER INTERACTIVE
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- WATER-RELATED ACTIVITIES
- GARDENS: FOOD, FLOWERS
Master Plan

The OMSI Master Plan achieves the goals of the Central City 2035 Plan by:

- Considering the OMSI Station Area as a Transit Oriented Development (TOD) site and proposing development concepts that maximize land use and value
- Implementing a strategy that creates a safe and vibrant public realm, supported by active ground floor uses, open space areas and gathering spaces
- Studying building heights, massing and orientations that protect public views and preserve light and air in the public realm
- Proposing buildings and uses oriented to activate public gathering spaces, including public open spaces, transit stations and the Willamette River
Phase 1

Total Area: 807,167 sq. feet (18.53 acres)
Constrained Non-Buildable Area: 430,855 sq. feet

Buildable Site Area: 376,312 sq. feet
Public Space (Parks / Shared Streets / Plazas): 115,917 sq. feet (within build-able area) (31%)
Development Area: 260,395 sq. feet (69%)

Maintains SE Water Avenue's existing alignment
Creates Tracts B, C and E by creating a new loop street providing access to OMSI loading
Tracts B and C divided by pedestrian accessways allowing for the creation of parcels of various sizes
Parcels suitable for a variety of uses
Phase 2

Additional Area:
118,483 sq. feet (2.72 acres)

Realign SE Water Avenue adjacent to railroad ROW

Incorporate three new tracks to the west of the realigned street fronting a new internal street

Tracts vary in size and shape and are defined by east-west pedestrian accessways

Independent of completion of the initial phase
Development Plan

Total Phase 1 Site Area:
807,167 Square Feet (18.53 acres)

Total Development @ 2:1 FAR:
1,614,334 Square Feet

Existing Buildings to Remain:
244,000 Square Feet

Net New Development @ 2:1 FAR:
1,370,334 Square Feet

Riverfront Open Space Bonus 41,091 SF
Open Space @ 3:1:
123,273 Square Feet

Base New Development + OS Bonus:
1,490,607 Square Feet or 2.15 FAR

Total Phase 2 Site Area:
Total Tract X & Y Site Area:
118,483 Square Feet (2.72 acres)
Massing Studies
Approximate Site FAR of 3.0
FAR Allocations
Height

With adoption of a master plan, maximum building height within the OMSI Central City Master Plan area is 250 feet

OMSI Master Plan Proposes:

- Retaining the 250’ maximum adjacent to MAX and Streetcar platforms
- Building massing to gradually step down towards north of site, reducing maximum heights
- Provides building setback adjacent to the Greenway & OMSI
Proposed Pedestrian Network
Proposed Bike Network
Transit Connections

Legend
- Portland Streetcar
- Proposed Location for Central Eastside Shuttle
- Tilikum Crossing
  - MAX Orange Line
  - Portland Streetcar
  - TriMet Line 9
  - TriMet Line 17
  - Cyclists
  - Pedestrians

Primary Pedestrian Pathways to OMSI from Transit
A Center for Sustainability

Guiding Principles: Design as a center for public education through demonstrations; use of innovative appropriate technologies to solve problems; and opportunities for public dialog on science policy

Objectives:
- Strive towards a carbon-neutral campus
- Improve water quality and watershed health
- Facilitate achievement of Zero Waste

Conceptual Strategies:
- Require buildings to meet Passive House or Net Zero Emissions building standards
- Integrate green infrastructure across public realm for stormwater management
- Create solid waste management plan

Key Performance Indicators:
- Estimate annual CO2 emissions per square foot and comparison to Portland average
- MW of on-site renewable energy capacity
- Number of species attracted/supported
- Colony forming units per 100 mL in Willamette River
- Percentage reduction in stormwater runoff
- Waste diversion rate from landfills

OMSI Master Planning Strategies/Priorities:
- Consider becoming an EcoDistrict
- Design district energy systems (including district heating and electric microgrid) that integrate smart technologies for demand management and renewable energy sources
- Conduct technical and economic feasibility study for shared energy systems with neighboring facilities
- Install electric vehicle charging stations
- Plant vegetation along high-density travel areas
- Integrate ecological monitoring system
- Reintroduce habitat to the site
- Recycle greywater to meet non-potable water demands; conduct feasibility for on-site black water system
- Site a natural decentralized wastewater treatment system that uses natural processes involving or mimicking wetland vegetation, soils, and their associated microbial assemblages to improve water quality
- Senor Nodes link physical world to internet for precise monitoring
- Create solid waste management plan that considers district-scale anaerobic for organics and automated waste collection to transport waste using underground tubes
- Install district-scale anaerobic digester as part of an organics program

Conceptual Development Requirements:
- Require development on-site to meet half of their energy needs through on-site renewable energy
- Provide energy usage information to occupants, feedback through a system of meters and sensors
- Integrate stormwater capture and water reuse capabilities at the building scale to support non-potable water demand
- Require building design elements that make organics separation and recycling easy
Sustainability Strategies

Primary Strategies
Greenroofs
Green Infrastructure
Sensor Nodes
Smart Meters
Engagement Opportunities

Recommended Strategies
Anaerobic Digestion
Natural Wastewater Treatment and Reuse
District Heating and Cooling
Photovoltaics
Microgrid
Batteries
Sustainability: Strategies & Infrastructure

Natural Wastewater Treatment & Reuse

Engagement Opportunities

Photovoltaics & Green Roofs

Sensor Nodes & Smart Meters
Resiliency: BEECN Sites
Derrick Harris

Microgrid System – OMSI Property
Service Area

- Stephens Substation
- Non-Standard Substation
- Aging Equipment
- Non-Standard Voltage
- Environmental Concerns
- Not Set up for Integrated Grid Strategy
- PGE/PacifiCorp Integrated Facilities

Courtesy of Mr. Harris
Service Area

[Map showing the service area with labeled locations: OMSI, Stephens Substation, PGE Harrison Substation.]

Courtesy of Mr. Harris
Service Area

- PGE Harrison Substation
  - Rebuilt in 2016
  - Standard Configuration and Equipment
  - Gas-Insulated Switchgear
  - Can Accommodate Load Growth
  - Integrated Grid-Ready

Courtesy of Mr. Harris
Next Steps

- **Harrison Substation Transformer Addition**
  - 2019

- **Stephens Substation Decommission 11kV Equipment**
  - 2021

- **Stephens Substation Environmental Cleanup**
  - TBD

- **Voltage Conversion Project**
  - 2019-2021

- **Stephens Substation Decommission 57kV Equipment**
  - TBD

*Courtesy of Mr. Harris*
PGE Strategy

- DELIVER Exceptional Customer Experiences
- INVEST in a Reliable and Clean Energy Future
- BUILD a Smarter, More Resilient Grid
- PURSUE Excellence in our Work
Smarter More Resilient Grid

- **Leverage Distributed Energy Resources**
  - Standby Generation
  - Photovoltaics
  - Storage
  - Demand Response

- **Advanced Communications**
  - AMI Meters
  - Radio Bandwidth
  - Customer Interface

- **Automated System**
  - Distribution Automation
  - Smart Fuses
  - CVR

- **Advanced Analytics**
  - Forecasting
  - Dispatching
  - State Estimation
  - Optimal Controls

*Courtesy of Mr. Harris*
Futureproofing Development in the OMSI District

AGENDA

Tuesday, March 6, 2018 - 1:30 - 4:30 pm - OMSI Campus

This workshop will explore the strategies the Oregon Museum of Science and Industry (OMSI) should adopt to "future-proof" development in the OMSI District, which is within Portland's Innovation Quadrant.

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<td>History of Infrastructure in the Central Eastside</td>
<td>Dr. Carl Abbott, Professor of Urban Studies and Planning, Emeritus, Portland State University</td>
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<td>Derrick Harris, Supervisor, Distribution Planning, Portland General Electric</td>
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"Thank you for your participation."
Thank you