

# Pilot Report: **Lloyd EcoDistrict Development**

Fiscal year 2010-2011



image: flickr user BalRutilant



image: flickr user Steve Rawley

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# Introduction

## Lloyd at a glance

- Total Area: 368 acres

### Population

- Total Population: 1,369
- % White: 82.1%
- Median Age: 44.3
- Total Employees: 16,424
- Per Capita Income: \$35,282

### Built Environment

- Total Area of Buildings: 4,349,195 SF
- % Residential: 5%
- % Commercial: 61%
- % Institutional: 16%
- # LEED certified buildings: 3

## District Overview

The Lloyd District is located just east of Portland's central business district across the Willamette River. The area includes over 300 acres and more than 16,000 employees, most of whom live outside the district. The district consists primarily of commercial and institutional buildings (including the Oregon Convention Center, Lloyd Center, and the Rose Quarter) with the majority of people traveling to this district for shopping, conferences, sporting and other entertainment events. Residential land use is limited (the district averages one person per acre) while vacant parcels, surface parking lots and right of way round out the remaining land uses in the district. While the district is well served by public transit, highways and major roads serve as a major boundary between the Lloyd District and surrounding neighborhoods.

## EcoDistricts Overview

The Portland Sustainability Institute (PoSI) created EcoDistricts™, a five-phase, comprehensive approach for accelerating sustainable neighborhood development:

1. District Organization
2. District Assessment
3. Project Feasibility
4. Project Development
5. District Monitoring

This report provides a summary of work to date in the Lloyd EcoDistrict pilot in each of the five phases of implementation. It was written by the Portland Sustainability Institute and represents PoSI's opinion, not necessarily that of the City of Portland or district stakeholders.

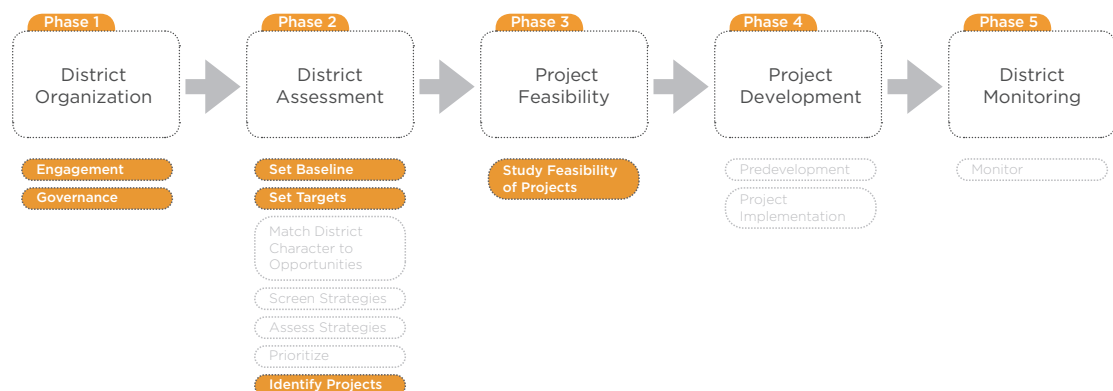






image: flickr user SP8254 - Catching Up

## District Organization

### The Value Proposition

#### Stakeholder Benefits

- Think like a district
- Get ahead of policy and change
- Maintain competitive advantage
- Create brand and attract investment
- Minimize risk with long-term utility contracts
- Reduce operating costs

#### Three Leading Questions

- Will the nature of development change in the next 5-7 years?
- Will sustainability drive that change?
- If yes to 1 and 2, will we be more effective working as a district than individual properties?

To become an EcoDistrict, a neighborhood—in partnership with the city and other public agencies—must create a shared vision and governance structure to ensure that it has the capacity and resources to implement an EcoDistrict. This phase includes the creation of a neighborhood governing entity with the explicit charge to manage district sustainability, and the next steps of EcoDistrict formation, over time.

## Engagement

### EcoDistrict Working Group

Early in 2009, the Lloyd EcoDistrict formation process was identified as an opportunity for an Oregon Solutions partnership. Oregon Solutions is an initiative of the governor that aims to develop solutions to community-based problems that support economic, environmental and community objectives through collaborative efforts of business, government and nonprofit organizations.

An Oregon Solutions team made up of experts in collaborative governance was assembled, in partnership with PoSI, to create a Lloyd EcoDistrict. Oregon Solutions created a task force chaired by Mayor Sam Adams, Multnomah County Commission Chair Jeff Cogen and Metro President David Bragdon. The task force also included Lloyd District stakeholders, City of Portland bureaus, and Metro to draft goals and objectives, prioritize possible projects for the EcoDistrict and create a set of baseline metrics. The task force met several times to work on these issues.

Simultaneously, Oregon Solutions staff worked on governance options and began investigating district-wide funding options. The co-conveners and major partners were regularly briefed during this process to insure that they understood the direction the project was taking. The object of these conversations and partnerships was to organize the Lloyd District stakeholders in support of the EcoDistricts Initiative and to formalize an agreement among them and with the public sector partnerships.

### District Stakeholders

- Ashforth Pacific
- Bonneville Power Administration
- The Left Bank
- Liberty NW Insurance
- Lloyd TMA
- Oregon Convention Center
- Pacific Power
- Portland Trail Blazers
- Metro
- Portland Development Commission (PDC)

## Declaration of Cooperation (DOC)

The Oregon Solutions process ended with the creation of a Declaration of Cooperation (DOC) — a written document outlining the commitments of District stakeholders. The overall intent of the DOC is to fund and organize around a three-year EcoDistricts formation process. The signed DOC includes commitments from public sector partners, including the City of Portland Bureau of Environmental Services (BES) and Bureau of Planning and Sustainability (BPS), Portland Development Commission (PDC), Metro and PoSI. All public partners committed resources towards sustainability assessment. District stakeholders committed funding towards professional staffing (a district sustainability director).

The DOC recommended several key actions:

- Hiring a Lloyd sustainability director
- Completing a performance baseline
- Conducting feasibility studies for priority projects
- Implementing the priority projects

## Governance

### Lloyd Transportation Management Association

In 1994, property owners and businesses within the district initiated a partnership with the City of Portland and TriMet to effect significant changes in commute mode choices over a twenty-year period. The result is a Transportation Management Association (TMA) focused on demand management. Critical to the success of the TMA are the private-sector stakeholders who came forward in partnership with time, dollars and enthusiasm. The TMA is comprised of a 17-member board of directors and 85 member businesses, representing nearly 10,000 employees.

### Lloyd Business Improvement District

In 2001, property owners established a Business Improvement District (BID) to provide transportation, public safety and economic development projects and programs for the district. The BID maintains a nine-member board of directors and assesses more than 100 properties located in the district. Through the BID and public-sector funding matches, the TMA employs staff who provide transit, bicycling, walking, ridesharing, and advocacy programs and services to Lloyd employers and employees. The BID also provides funding to TriMet for Fareless Square, Multnomah County for a district-based district attorney and public safety coordination as well as funds for the Lloyd Executive Partnership for economic development planning and advocacy.

## Lloyd EcoDistrict Resource Council

The EcoDistrict engagement process formed the Lloyd EcoDistrict Resource Council. It is the governance group established through the DOC that will operate (in the near term) as a high-level program of the BID and report to the BID Board of Directors. The Lloyd Business Improvement District is the legal entity with the ability to administer funds for the Lloyd EcoDistrict. The EcoDistrict Resource Council may make decisions about how to use the funds now harbored in the BID bank account and public sector funds committed through the DOC to EcoDistrict actions and projects. All signing members of the DOC have one seat on this resource council, though expansion of the council is likely to occur as formation evolves.

The first action of the Lloyd EcoDistrict Resource Council was to hire a Lloyd sustainability director to lead the formation process. The director will be contracted through the BID and report to the EcoDistrict resource council. The resource council and the sustainability director will determine if this governance structure is effective for ongoing EcoDistrict operations.

## Organization Recommended Actions for Fiscal Year 2011-2012

1. **Establish and Formalize Resource Council:** The sustainability director and initial council members will need to establish near-term goals and objectives, define “EcoDistrict” for Lloyd, review research and planning needs and develop a focused agenda for communications and outreach.
2. **EcoDistrict Development Roadmap:** Create a three-year EcoDistrict roadmap that includes assessment, priority projects and expected outcomes.
3. **Enhanced Engagement:** Determine mechanism for expanding awareness of EcoDistrict process and organization to the broader Lloyd District community, including small businesses, residents, owners of existing properties, new development opportunities and external partners (public and private)
4. **Fundraising:** Determine finance strategy to create ongoing source of revenue to fund EcoDistrict organizational and project needs



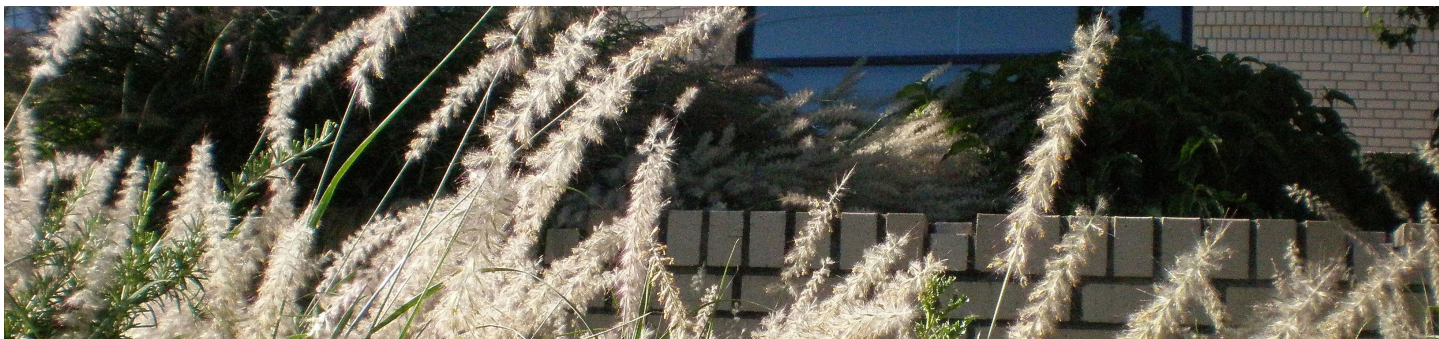


image: flickr user tracie7779

## District Assessment

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To achieve the ambitious goals for each performance area, a neighborhood assessment is essential to determine the most effective project priorities for a unique district. An assessment enables districts to determine strategies of greatest impact and prioritize their most appropriate projects.

### EcoDistrict Assessment Method™

PoSI has developed a ten-step EcoDistrict Assessment Method to guide project selection and prioritization. This method is currently being applied in the Gateway and Foster Green EcoDistrict pilots. PoSI recommends applying this tool in the Lloyd EcoDistrict to identify project priorities and create a long-term EcoDistrict plan.

The EcoDistrict sustainability director and the resource council will have the time and opportunity to review this concept within the context of its priorities and process.

The Assessment Method includes ten interrelated steps:

1. Gathering information to understand the district conditions and develop a performance baseline
2. Setting specific performance targets
3. Identifying strategy opportunities based on the unique characteristics of the district
4. Screening a menu of potential EcoDistrict projects to identify those appropriate for the district
5. Assessing potential projects to determine ease of implementation
6. Comparing assessed projects across performance areas
7. Prioritizing projects for implementation
8. Conducting feasibility studies on priority projects
9. Implementing projects
10. Monitoring projects against established performance metrics



## LLOYD PROJECTS



## Other Assessment

Strategy-specific assessment has been completed in the following areas:

- District Energy Technical and Business Case Strategy
- District Water Technical and Business Case Screen
- District Solar Site Analysis

See “Project Feasibility” section for details.

## Assessment Recommended Actions for Fiscal Year 2011-2012

The following District Assessment action is recommended for FY 11-12:

1. **EcoDistrict Assessment:** Apply EcoDistrict Assessment Method in Lloyd to identify priority projects





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## Project Feasibility

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Once the key project opportunities are identified through assessment, they require deeper feasibility to determine overall viability and cumulative impact. In the Project Feasibility phase, the Lloyd EcoDistrict Resource Council conducts business and technical analysis, and develops an implementation and funding strategy for priority projects in the areas of buildings, infrastructure and behavior.

### District Utilities

The feasibility work in the Lloyd EcoDistrict has focused primarily on district utilities with screening to identify opportunities for district energy and water systems. The goal of the screening was to identify, structure and prioritize projects within the Lloyd EcoDistrict that may merit a more detailed analysis. General considerations in the screening include technical feasibility, ease of implementation, possible economic viability and environmental benefits. The screening involved several steps:

- Establishing clear boundaries for the EcoDistrict screening
- Gathering information on cost drivers, capacity or operating constraints, and environmental footprint of existing central utility systems
- Gathering information on current and projected building area, utility demands, costs and environmental footprint
- Identifying nodes of growth within the EcoDistrict that could act as a starting point for the development of shared utility systems
- Identifying and screening specific opportunities for collective systems based on factors such as technical feasibility, ease of implementation, economic viability and environmental benefits

## District Water Screen (Infrastructure)

The district water screen suggests some opportunity for district water, though it might not be driven by a business case, given the low cost of municipal water service in Portland. The recommendation of the report is for further study of a district water strategy at the Convention District and Rose Quarter to consider opportunities for shared stormwater management, gray water collection and use, and local wastewater treatment. The study would seek to optimize different shared systems to minimize water use (in particular, peak summer use), maximize local environmental and placemaking benefits (linkages to local green space and the proposed green street), minimize costs (incremental operating and capital costs for regional infrastructure) and maximize resource recovery from wastewater treatment.

**Funding:** To be determined

**Performance Areas:** Water, Habitat & Ecosystem Function

## District Energy Strategy (Infrastructure)

The district energy study indicates an excellent business case for a district energy system anchored at the Rose Quarter and Convention District. There is currently an active discussion about establishing a district energy system that would initially serve two or more of the event spaces (Rose Garden Arena, Veterans Memorial Coliseum and Oregon Convention Center). A focused feasibility study will be undertaken in the coming months to determine the viability of a system that would initially provide heating and cooling at the west end of the EcoDistrict. This proposed follow-up study would confirm core system boundaries, loads, expansion opportunities and strategies, distribution system requirements and costs, alternative energy sources (including use of local and imported food waste, as well as co-generation) and potential opportunities for a microgrid to leverage reliability benefits if combined heat and power is among the viable energy sources.

**Funding:** Interested district energy provider to fund next level of technical feasibility with expectation of future business opportunity to develop it

**Performance Areas:** Air Quality & Carbon, Energy

## Commercial Building Energy Efficiency Program (Buildings)

PoSI, with public and private partners, is pursuing a large-scale, commercial, energy efficiency retrofit program to be piloted in the Lloyd District. The concept, which is still being refined, envisions aggregating demand for energy efficiency services from several buildings and using that purchasing power to reduce the cost of audits.

**Funding/Business Case:** Private financing would be supported by public funds from sources including Clean Energy Works Oregon (CEWO), Energy Trust of Oregon (ETO), Northwest Energy Efficiency Alliance (NEEA) and the Lloyd District URA, thereby allowing participating buildings to achieve deeper energy savings than are economically possible using only private finance. In addition, PDC has commercial building energy efficiency program expected to launch in 2012.

**Performance Areas:** Air Quality & Carbon, Energy

## Ride Share Program (Infrastructure/Behavior)

PoSI, along with regional alternative transportation experts and a ride share technology company, is working to raise funds for a pilot project in the Lloyd EcoDistrict to test the efficacy “real-time rideshare matching” technology. This system allows private car owners to “turn their car into a bus” and pick up pre-screened riders along their route to work, collecting a modest fare each time they pick up a rider. PoSI and partners are pursuing funding for a pilot project involving commuters to the Lloyd District.

**Funding/Business Case:** This program would be funded in part by the Oregon Department of Transportation’s (ODOT) Office of Innovative Partnerships and Alternative Funding, and in part by private funds.

**Performance Areas:** Social Cohesion, Air Quality & Carbon, Energy, Access & Mobility



Image: Flickr user ken hays

## EcoDistrict Bike-Sharing (Infrastructure)

A proposed bike-sharing system would create a network of hundreds of high-tech, GPS-enabled bicycles distributed at docking stations throughout the central city, for free use (after paying a hefty security deposit upon joining as a member) for short trips around town. Working closely with the Portland Bureau of Transportation (PBoT), PoSI has been working to raise \$5 million in private funds to cover the operating gap for such a system for a five-year period.

Multiple EcoDistrict stakeholders are enthusiastic supporters of PoSI's effort to establish a public bike-sharing system in the central city. A number of private companies have expressed interest in sponsorship, and one has verbally committed to being the "presenting sponsor" and to recruiting other companies as "supporting sponsors." PBoT is writing a request for proposals that will solicit companies or teams to design, implement, operate and help fund a city-wide bike-share program.

**Funding/Business Case:** This program's \$4 million in initial capital costs will likely come from federal grants; \$1.4 million per year in operating funds will come from a combination of user fees and corporate sponsorships.

**Performance Areas:** Placemaking, Social Cohesion, Air Quality & Carbon, Access & Mobility

## Stormwater Master Plan and Holladay Green Street (Infrastructure)

One of the projects identified in the Lloyd DOC is a green street. BES, in partnership with PDC, has committed to lead a feasibility study. The green street will be the first step in an integrated district stormwater strategy for Lloyd. The study will begin in the summer of 2011 and be overseen by the district sustainability director.

**Funding:** Portland Bureau of Environmental Services and Portland Development Commission

**Performance Areas:** Placemaking, Air Quality & Carbon, Water, Habitat & Ecosystem Function



## Waste Management (Infrastructure)

Another project identified in the DOC is a district waste strategy. Stakedholders are specifically interested in a composting strategy to take advantage of the large amount of food waste generated in the district. Early conversations between PoSI, PDC and local experts identify opportunities for district waste in Lloyd, but more thinking around this strategy is required. The strategy should address a broader district materials management strategy before assuming that district composting is the priority. The Lloyd district sustainability director and PoSI will work with Metro and the resource council to develop an approach to the feasibility. Metro staff will conduct the feasibility as committed in the DOC.

**Funding:** Covered through DOC contribution from Metro

**Performance Areas:** Air Quality & Carbon, Materials Management

## Solar Site Analysis (Building/Infrastructure)

As part of the Solar America cities program, the National Renewable Energy Laboratory provided technical assistance (through BPS) to identify the solar energy potential for Portland's EcoDistricts. Potential locations within the districts were determined through a site visit and Google Earth analysis. Energy generation potential was then determined for solar hot water and photovoltaics.

The study determined that there is significant potential for both photovoltaics and solar hot-water technologies to offset a sizeable amount of energy needs in each of the five pilot EcoDistricts. The Lloyd EcoDistrict has 17,737,603 square feet of usable solar rooftop area. Assuming half the area is used for solar electric and half for solar hot water, the potential production is estimated at 5,749,487 kWh and 246,577 Therms. The study recommends economic analysis be used to determine the most cost-effective installation size for each building, depending on electric and hot water use. For details, refer to Portland EcoDistrict Solar Site Assessment, March 2010.

**Funding:** To be determined

**Performance Areas:** Air Quality & Carbon, Energy

## Project Feasibility Recommended Actions for Fiscal Year 2011-2012

1. **Rose Quarter District Infrastructure Plan:** Based on project recommendations from EcoDistrict assessment, create district infrastructure strategy, anchored at Rose Quarter; plan to include energy, water, waste and transportation with related business case; coordinate in-kind investments of Metro, PDC, BES and BPS assessment resources to inform plan
2. **Bike Sharing:** Complete system design and business plan



Image: flickr user mhirani



image: flickr user npGREENWAY

## Project Development

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This phase includes development and implementation of high impact projects. It includes alignment and coordination between district stakeholders, public agencies and utilities to develop and finance projects at a scale that has meaningful impact. It also involves predevelopment planning, financing, partnership building and regulatory engagement.

### Project Development Recommended Actions Fiscal Year 2011-2012

1. **Infrastructure Implementation** - Begin implementation of Rose Quarter district infrastructure plan with emphasis on district energy; district wide projects include networked transportation such as bike sharing, ride sharing and peer-to-peer car sharing

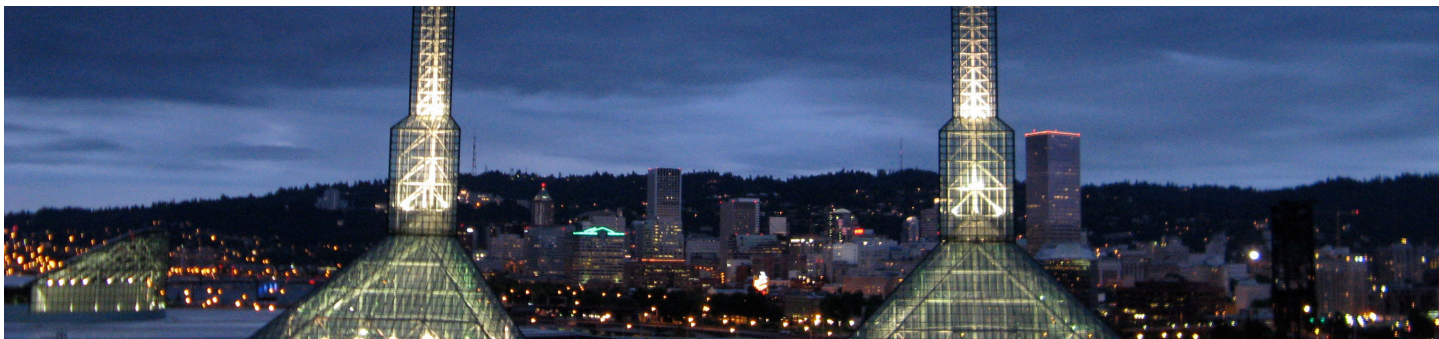


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## District Monitoring

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As EcoDistrict projects are planned and built, ongoing monitoring is essential to understand the full range of social, economic and environmental impacts. EcoDistrict performance standards can be used to regularly collect data to show the overall value of particular project interventions. In addition, qualitative documentation and lessons learned about EcoDistrict implementation will be essential to refining the EcoDistricts approach.

The EcoDistrict Assessment Method includes a corresponding database with two metrics per most EcoDistrict performance areas. This creates a baseline of present performance to be used to track performance improvements over time.

In addition, Lloyd has a more detailed baseline created by the Bureau of Planning and Sustainability during the Oregon Solutions Process. This provides a more refined baseline than the current version of the EcoDistrict database.

### Monitoring Recommended Next Steps Fiscal Year 2011-2012

1. None

# Summary

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## Recommended Actions for Fiscal Year 2011-2012

### District Organization

1. **Establish and Formalize Resource Council:** The sustainability director and initial council members will need to establish near term goals and objectives, define “EcoDistrict” for Lloyd, review research and planning needs, and develop a focused agenda for communications and outreach
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4. **Fundraising:** Determine finance strategy to create ongoing source of revenue to fund EcoDistrict organizational and project needs

### District Assessment

5. **EcoDistrict Assessment:** Apply EcoDistrict Assessment Method in Lloyd to identify priority projects

### Project Feasibility

6. **Rose Quarter District Infrastructure Plan:** Based on project recommendations from EcoDistrict assessment, create district infrastructure plan, anchored at Rose Quarter; plan to include energy, water, waste and transportation with related business case; coordinate in-kind investments of Metro, PDC, BES and BPS assessment resources to inform plan
7. **Bike Sharing:** Complete system design and business plan

### Project Development

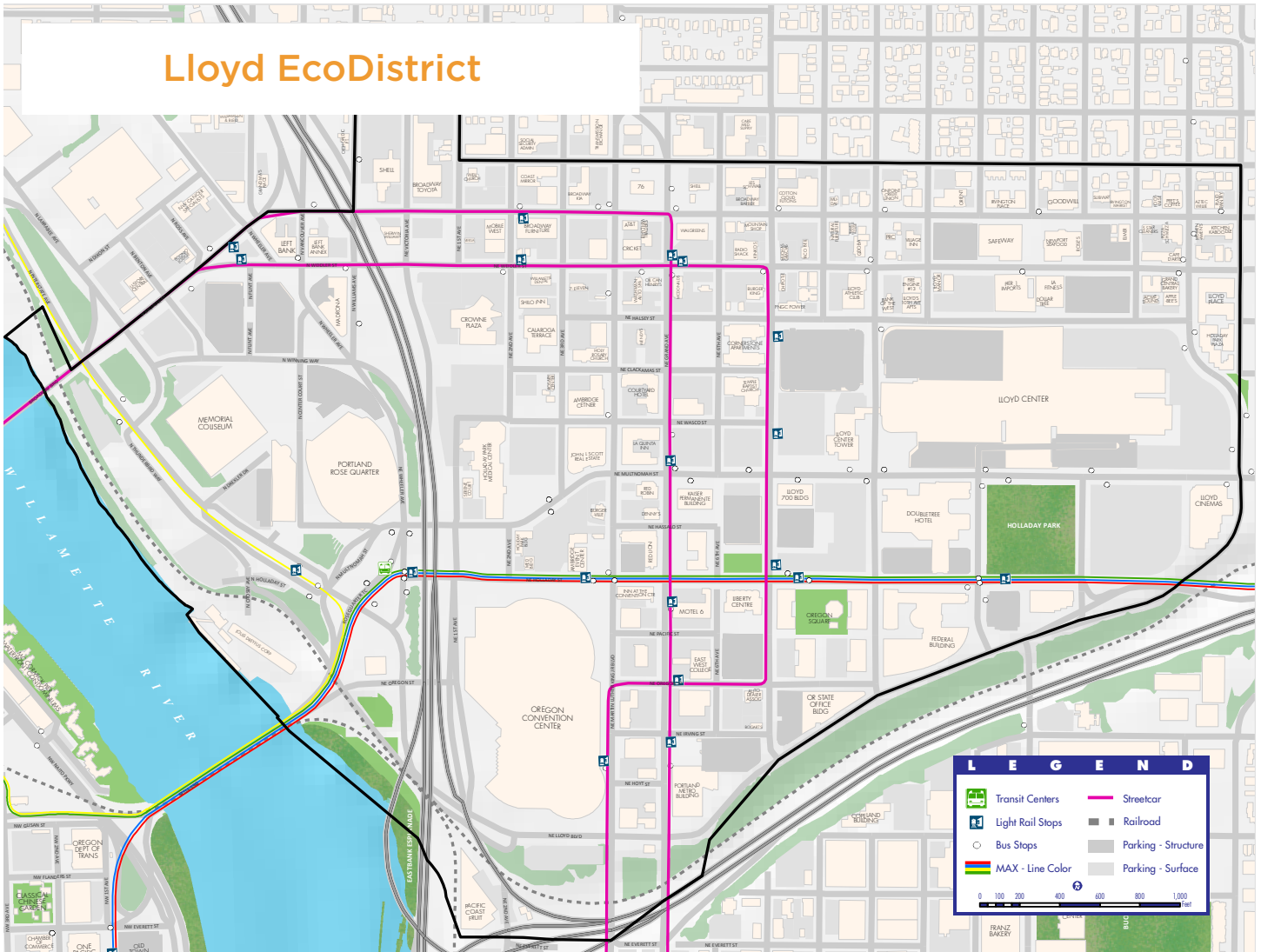
8. **Infrastructure Implementation:** Begin implementation of Rose Quarter district infrastructure plan with emphasis on district energy; district wide projects include networked transportation such as bike sharing, ride sharing and peer-to-peer car sharing

### District Monitoring

9. **None**



# Lloyd EcoDistrict





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