

GATEWAY ECODISTRICT ASSESSMENT

14 October 2011



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GROWING GATEWAY

EVOLVING OUR SUCCESS

The Gateway EcoDistrict is a community-driven initiative to organize, identify, and implement projects, which will lead to a more sustainable neighborhood where people want to live and work. It includes residents, small businesses, property owners, and institutions that are committed to improving the environment while meeting long-standing neighborhood needs such as jobs, safety, and affordability.

EXECUTIVE SUMMARY

DISTRICT ASSESSMENT

An EcoDistrict is a neighborhood committed to sustainability. The Portland Sustainability Institute's EcoDistricts Initiative is a strategy to launch EcoDistricts throughout the Portland metropolitan region. Five pilot EcoDistricts (Gateway, Foster Green, South of Market, South Waterfront, and Lloyd District) have each committed to advance environmental innovations, drive economic prosperity, and empower their communities in the process towards becoming an EcoDistrict.

The Portland Development Commission (PDC) and the Portland Sustainability Institute (PoSI) have joined together to begin the process of EcoDistrict formation in Portland. Each pilot district is planned to progress through a series of steps:

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

A Consultant Team comprised of SERA, Brightworks, and Puttman Infrastructure was hired to perform a District Assessment for the Gateway EcoDistrict pilot neighborhood. The purpose of this exercise was two-fold; 1) to establish a performance baseline and develop district-wide sustainability recommendations; and 2) to test-drive the *Assessment Methods* tool and gauge the effectiveness of this method to inform an EcoDistrict Assessment.¹

The Gateway EcoDistrict Assessment was completed over the course of four months, dating from May through July, 2011.

To become an EcoDistrict, it is essential to understand existing district performance so that district-wide strategies and project recommendations are both catered to their place and applicable to current conditions. EcoDistrict Performance Areas are informed by best practices in sustainable district development, international rating systems, and local expertise. They serve as standards to help determine and inform a district's physical, environmental, and social performance.

There are nine Performance Areas:

- Energy
- Air Quality
- Water
- Access & Mobility

¹ *EcoDistrict Assessment Methods*, Version 1.0. Mithun. 10/22/2010.

EXECUTIVE SUMMARY

- Placemaking
- Social Cohesion
- Habitat & Ecosystem Function
- Materials Management
- Equitable Development

Each Performance Area includes the following structure and content, as defined by PoSI:

- Vision - Aspiration for performance
- Goals - More specific objectives for performance in major areas of opportunity

Each Performance Area includes the following structure and content provided by the Consultant Team during the course of this project:

- Baseline - Existing dataset(s) showing how a district is presently performing in a given area
- Metric - Indicators by which the Performance Area may be measured
- Target Goal - Specific, measurable objective and associated time frame for a given performance metric
- Incremental Target - Standard of incremental success by which the target goal is measured
- Strategy - A plan, or method, to achieve a specific goal or result

The Consultant Team determined a set of recommended strategies for each Performance Area that were developed and vetted with the assistance of the PoSI project palette, a menu of best practice strategies/projects for each Performance Area that deploy effectively at a neighborhood scale, and a correlation matrix, a qualitative comparison tool that identified synergies and revealed which strategies meet the most goals.

Recommended strategies address a mixture of 'software' systems (ecological, economic, social and cultural flows and interactions that animate EcoDistrict life) and 'hardware' systems (the pipes, streets, buildings, and other elements of physical infrastructure which house the software).

A summary of the metrics and recommended strategies developed during the course of the EcoDistrict Assessment process are provided on the following page.

ENERGY

Metrics: Energy demand considered building energy demand (electricity and natural gas) and infrastructure energy demand (electricity demand from street lights). Ideally, energy demand would be based on actual metered data (provided by a local utility like PGE, PacifiCorp or NW Natural Gas) however, this type of data was not available due to utility privacy requirement. As such, energy demand was estimated based on the following available data:

- Land Use – Total property area by land use type (i.e., X acres of SFR)
- Building Area – Total building area by land use type (i.e., X SF per SFR)
- Population – Total population
- Street Lights – Total number of street lights

Assumed energy demand factors were utilized to estimate building energy demand (based on a blended demand of land use, building area and population) and infrastructure energy demand (based on number of street lights).

Strategies: REDUCE, GENERATE, and OFFSET

To achieve the energy vision of net-zero energy usage annually, energy recommendations for Gateway take the form of three primary actions: Reduce, Generate and Offset. Reduce the amount of energy demand through conservation efforts, generate energy locally through renewable sources, and offset what cannot be conserved or generated on-site.

The Consultant Team recommends the following strategies:

- Energy Conservation and Solar PV Retrofits
- Create a District Energy System
- Create District Dashboard and Education/Competition Campaigns

AIR QUALITY AND CARBON

Metrics: Air quality related data, such as diesel and benzene emissions, are available for the district. Sources of these types of particulates, known as fine particles, include combustion producers such as motor vehicles, power plants, residential wood burning and some industrial processes. It is difficult to identify the sources of these emissions, but for Gateway most likely they are a product of adjacent highways.

Carbon emissions were assumed to include building energy demand related carbon emissions (electricity and natural gas) and infrastructure energy demand related carbon emissions (street lights).

Strategies: ENHANCE, REDUCE, SEQUESTER, and OFFSET

To achieve the goal of carbon neutrality, it is necessary to implement all the strategies recommended within the energy performance focus area. In addition, create a district carbon challenge to further engage local residents and businesses to take action to reduce their carbon footprints.

Improving air quality will be difficult. Outdoor air quality might be improved with strategies

ENERGY

Performance Area Vision:
Net-zero energy usage annually

Performance Area Goals:

1. Reduce loads by minimizing demand & maximizing conservation
2. Optimize infrastructure efficiencies at all scales
3. Use renewable energy

AIR QUALITY AND CARBON

Performance Area Vision:
Beyond carbon neutrality & healthy air quality

Performance Area Goals:

1. Minimize CO₂ emissions
2. Maximize CO₂ sequestration
3. Improve indoor and outdoor air quality

EXECUTIVE SUMMARY

WATER

Performance Area Vision: Water, in all forms, meets both natural and human needs

Performance Area Goals:

- 1.Reduce water consumption through conservation
2. Reuse and recycle water resources, using potable water only for potable needs
3. Manage stormwater and building water discharge within the district
4. Maintain availability, reliability, and affordability of water

ACCESS AND MOBILITY

Performance Area Vision: Healthy, clean, and affordable transportation options

Performance Area Goals:

1. Prioritize active transportation
2. Reduce vehicle miles traveled
3. Achieve clean, low-carbon transportation access
4. Meet goals affordably

recommended in the Access and Mobility and Habitat and Ecosystem Function Performance Areas. Improvements in indoor air quality should be organized through a district indoor air quality improvement campaign.

The Consultant Team recommends the following strategies:

- Retrofit street lighting to LED
- Organize district indoor air quality improvement campaign
- Organize district carbon challenge

WATER

Metrics: Annual water demand data are available for the district. Based on additional available data such as land use, building area and population, demand distribution estimates are feasible.

Stormwater runoff was assumed to include annual runoff from private property (pervious and impervious area) and public property (pervious and impervious area). A basic runoff calculation, based on contributing area specific runoff coefficients and annual rainfall, was used to estimate annual runoff volumes per square feet of contributing area.

Strategies: REDUCE, REUSE, RECONNECT, and OFFSET

To achieve the water goals stated above, water recommendations for Gateway take the form of three primary actions: Reduce, Reuse and Reconnect. Reduce the amount of water consumption through conservation efforts. Reuse wastewater and rainwater to further minimize water consumption. Reconnect hydrologic functionality to improve watershed conditions.

The Consultant Team recommends the following strategies:

- Water Conservation and Reuse Retrofits
- District Green Infrastructure Strategy

ACCESS AND MOBILITY

Metrics: Despite being a well-connected transit community, Gateway is not an easily walkable or bikeable district. Gateway lacks safe bikeways and is largely comprised of oversized blocks that do not foster a quality pedestrian environment. Perhaps, as a result, the average Gateway resident drives 27 miles per day on average. To address these challenges, metrics relating to block size, roads with bikeways, bicycle commuting, driving alone, and pedestrian travel time to basic services were analyzed in hopes of impacting change over time.

Strategies: SHIFT, SHARE, and MANAGE

Strategy recommendations relating to improved pedestrian and bikeway connectivity will have the most success achieving the goals of this Performance Area and will positively impact numerous other Performance Areas as well.

The Consultant Team recommends the following strategies:

- Improve pedestrian connectivity and the overall pedestrian environment (both public & private).
- Implement and/or improve bicycle facilities that serve retail and employment centers, transit centers, institutions, and destinations.
- Accommodate more bicycle parking that is safe & secure.
- Implement incentive programs to promote and support commuter alternatives such as rail and bus travel, biking, and walking.

While improving streetscapes and bikeways will draw people from their cars, other strategies may need to be considered to further promote and support alternative commuting.

PLACEMAKING

Metrics: A neighborhood is defined by the relationship between its social and physical elements and how they combine to establish a unique community identity and sense of place. The urban form of an EcoDistrict, largely comprised of the sustainable infrastructure capable of achieving Performance Area goals, includes the ‘hardware’ (the physical development and infrastructural systems) that foster a walkable and bikeable community with desirable places / destinations. The ‘software’ (the culture, local economics, and resource flows) are the social elements that provide vitality, uniqueness, and a sense of identity, or ‘place’, to this form. Developing quantifiable metrics that measure the quality or vitality of place is very challenging. To create a baseline of placemaking attributes that currently exist in the district, it would be necessary to engage community residents in determining the district’s most valued places. Answers may lead towards an ability to map and determine existing places within the district that are considered important to residents and contribute to neighborhood identity.

Strategies: IDENTIFY and FORM

Strategies that fall under the ‘Identify’ category provide opportunities for Gateway to define its identity or brand as an EcoDistrict. Gateway is already a neighborhood known for its affordability and diversity. As the community continues to work toward EcoDistrict goals, it will be further identified with sustainability, livability, walkability, energy efficiencies, innovative technologies, local economies, etc. These sustainable district attributes will begin to attract people from the Portland region and beyond interested in opening businesses or settling into a community with a shared vision and goals. Strategies categorized by ‘Form’ provide opportunities for the district to work towards the physical infrastructure and development necessary to achieve EcoDistrict Performance Area goals.

The Consultant Team recommends the following strategies:

- Create a Gateway EcoDistrict identity ‘brand’ or neighborhood character that associates with a livable, affordable, diverse, and sustainably-minded community unique to the Portland Metro region
- Create signature parks / open space of city-wide or regional significance
- Create more high-quality public (or quasi-public) spaces and parks
- Enhance the community with green infrastructure

PLACEMAKING

Performance Area Vision:

District form and physical infrastructure supports community functionality, resilience, and identity

Performance Area Goals:

1. Create functional and accessible places that promote interaction
2. Design projects and social systems to be flexible and adaptable
3. Employ strategies that foster cohesive neighborhood identity and brand
4. Promote human health and well-being through the natural, social, and built environments

SOCIAL COHESION

Performance Area Vision: Social infrastructure fosters community connection, inclusion, and self governance

Performance Area Goals:

1. Ensure that the perspective of all ethnicities and income levels inform project
2. Use EcoDistricts as a positive way for different interest groups to come together around shared neighborhood priorities

HABITAT AND ECOSYSTEM FUNCTION

Performance Area Vision: Integrate built and natural environments for healthy urban ecosystems

Performance Area Goals:

1. Advance current and emerging watershed goals
2. Protect, regenerate, and manage habitat and ecosystem function at all scales
3. Prioritize native and structurally diverse vegetation
4. Create habitat connectivity within and beyond the district

SOCIAL COHESION

Metrics: Similar to Placemaking, there are not extent datasets that can provide an existing baseline of social cohesion within the Gateway EcoDistrict. This is a highly qualitative Performance Area that will rely on community stakeholders to evaluate where the existing gaps and future possibilities lie. Metrics such as range/number/participation in social organizations that cater to community needs, range/number/participation in community events (street fairs, bike rides, block parties), etc. may be considered a start to documenting current social cohesion.

Strategies: INSTIGATE and INTERACT

Strategies for social cohesion fell into the ‘Instigate’ or ‘Interact’ categories. Active community builders, such as those that participate in the Gateway EcoDistrict Steering Committee, for example, are essential for instigating local activities and facilitating community interaction. Recommended strategies are those that can happen immediately, or in the short term with limited funding. The success of the Social Cohesion Performance Area goals are entirely dependent on the local community.

The Consultant Team recommends the following strategies:

- Develop / implement communication systems to engage community interaction
- Engage in capacity-building activities to develop social capitol
- Organize public events: bike rides, movie nights, street fairs, block parties, etc.
- Create a district dashboard

HABITAT AND ECOSYSTEM FUNCTION

Metrics: The urban forest plays a critical role in the health of our urban environment providing significant ecological, aesthetic and economic value for the city. Increasing tree and shrub coverage can result in measurable improvements, such as increased habitat and corridor connectivity for avian and small mammal species, stormwater treatment, reducing urban heat islands, carbon sequestration, and increased land values. To address the Performance Area’s goals, metrics relating to tree canopy coverage, the protection of existing native functional habitat and habitat connectivity were analyzed in hopes of increasing vegetation and enabling functioning ecosystems within the district over time.

Strategies: ENHANCE, CONNECT, and RESTORE

Strategy recommendations to increase vegetation diversity and coverage, create wildlife connectivity within corridors, and provide resident environmental education will help to achieve all five Performance Area goals and the goals of other performance areas, namely Air Quality and Carbon, Placemaking and Equitable Development.

The Consultant Team recommends the following strategies:

- Plant a diversity of trees, shrubs and groundcover

- Strategically increase vegetation within a designated wildlife corridor(s)
- Instill a stewardship ethic within the district

MATERIALS MANAGEMENT

Metrics: The Materials Management Performance Area aims to influence every step of the material life-cycle from production and point of purchase to end of life by targeting consumer behavior around purchasing decisions and reducing waste streams. To date, recovery rates are the only metric tracked by Metro that is related to this Performance Area and therefore serves as the initial step toward establishing targets and measuring progress over time. The Gateway EcoDistrict generates 25,000 tons of material annually after applying Metro’s 2008 recovery rate of 56.8%. Commercial (retail, healthcare and restaurants) and residential uses contribute the largest volume and offer the greatest opportunity for the district to achieve all five Performance Area goals. Metro and the Oregon Department of Environmental Quality report that one of the most significant areas of improvement in material recovery rates can be achieved by diverting food scraps and wood from the waste stream. As such, metrics relating to materials as well as organic / compostable recovery rates were analyzed to assess where Gateway can strategically decrease waste volumes over time.

Strategies: REDUCE, REUSE, and RECYCLE

Gateway has the opportunity to reduce waste volumes beyond the current Metro goal (currently 64%). Methods to accomplish waste reduction specifically target commercial and residential sectors offering opportunities to initiate new materials management programs, or supporting existing programs, in the healthcare industry and the salvaged and used materials market. Waste to energy programs also present opportunities. Synergies between this Performance Area and others are limited; however, these strategies do offer the potential to contribute to Equitable Development goals relating to job creation.

The Consultant Team recommends the following strategies:

- Implement programs that reduce material and product use particularly for non-recyclable and toxic items (Demand Management)
- Build commodity market for used materials (Demand Management)
- Support the Columbia Biogas Project

5. Avoid human-made hazards to wildlife and promote nature friendly urban design

MATERIALS MANAGEMENT

Performance Area Vision:
Zero waste and optimized materials management

Performance Area Goals:

1. Eliminate practices that produce waste wherever possible
2. Minimize use of virgin materials, and minimize toxic chemicals in new products purchased
3. Optimize material reuse and salvage, and encourage use of regionally manufactured products or parts
4. Where opportunities for waste prevention are limited, maximize use of products made with recycled content
5. Capture greatest residual value of organic wastes (including food) through energy recovery and/or composting

EQUITABLE DEVELOPMENT

Performance Area

Vision: Fair distribution of investment burdens and benefits

Performance Area Goals:

1. Provide neighborhood job opportunities through EcoDistrict projects
2. Enable both property renters and owners to invest in new development
3. Ensure that the perspective of all ethnicities and income levels inform project priorities
4. Promote equity and opportunity through all EcoDistrict activities

EQUITABLE DEVELOPMENT

Metrics: Job growth predictions in Gateway vary greatly possibly due to modeling assumptions and projected market fluctuations. The City of Portland projects 5,000 additional jobs in Gateway by 2035, whereas Metro predicts upwards of 28,000 to 40,000 jobs. Nevertheless, it is the hope that the focus and rigor offered by the Initiative will help to accelerate the potential for job creation in the district by contributing an additional 1000 jobs by 2035, 20% above the city's target. Aside from Goal 1, data specific to the Performance Area goals 2 through 4, currently do not exist. As such, a more readily available dataset, Portland Public Schools free and reduced lunch program enrollment, was utilized as an indicator of community wellbeing. Currently 70.6% of children attending the six Gateway schools enrolled in the program qualify for assistance, nearly 25% more than the state average of 44.5%. A reduction in enrollment may indicate a decrease in poverty rates in Gateway.

Strategies: ACCESS TO JOBS AND QUALITY HOUSING, EQUAL REPRESENTATION AND OPPORTUNITIES

Strategy recommendations focus on increasing the livability, wealth creation, and community engagement for all underserved peoples in Gateway. If implemented appropriately, the strategies can help to achieve all four Performance Area goals. Green housing synergizes with most other Performance Area goals and in general, the strategies of this Performance Area also leverage those in Placemaking and Social Cohesion.

The Consultant Team recommends the following strategies:

- Develop quality green housing
- Create EcoDistrict Jobs
- Support pathways to opportunities, culturally appropriate employment

NEXT STEPS

With Performance Area baselines established and recommended strategies outlined, it is now up to the Gateway EcoDistrict Steering Committee to determine the next steps. The Steering Committee will further refine the strategy list, determine which strategies are most applicable to focus on in the short and long terms, and develop a work plan to move forward with project implementation.

PROJECT BACKGROUND & DESCRIPTION

The Assessment Methods serve as a framework for the EcoDistrict assessment process.¹ The intent of the Assessment Methods are to provide a standard process to better understand existing neighborhood performance, set targets, and develop strategy recommendations in pursuit of district-wide sustainability. By taking this broad and integrated perspective across scales and Performance Areas, it is easier to identify the strategies with the greatest impact in a particular neighborhood.

The Methods are organized by the nine EcoDistrict Performance Areas to support a more rigorous approach to understanding integrated sustainability impacts. The assessment process includes a combination of data and engagement driven analysis. The process further consists of ten inter-related steps, which together inform decisions (by individuals, neighborhoods, cities, utilities, and developers) that lead to project implementation and ongoing monitoring that supports sustainability improvements over time.

The Assessment Methods are comprised of the following steps:

- 1. Gather information and create baseline*
- 2. Set targets*
- 3. Match EcoDistrict character with unique opportunities*
- 4. Screen menu of strategies*
- 5. Assess screened strategies with detailed questions for further vetting*
- 6. Compare assessed strategies that remain and establish EcoDistrict Strategy Framework*
- 7. Identify projects that support final strategies*
- 8. Conduct feasibility study on projects where possible*
- 9. Confirm EcoDistrict projects with phasing plan and implement*
- 10. Monitor projects' effect on sustainable targets, and gather additional information as needed*

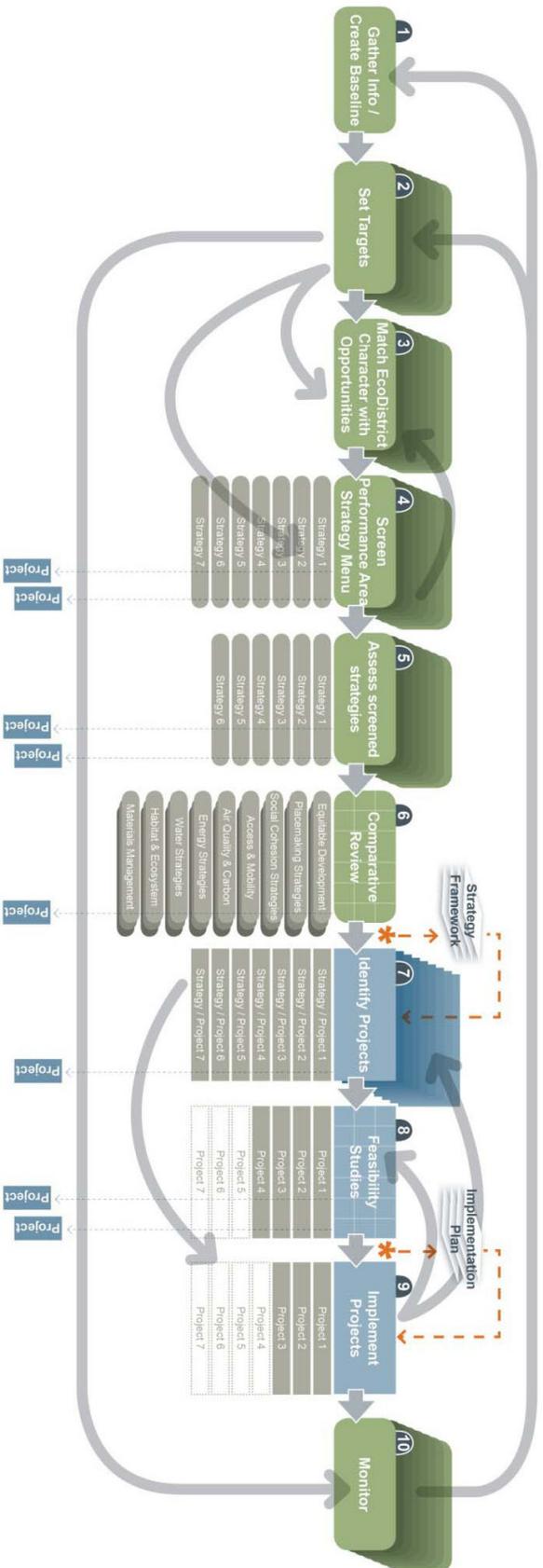
While these steps are presented in an intentional order, to achieve maximum benefits, an integrated approach is necessary and the process is iterative.

This tool is considered to be version 1.0 and will be tested and refined as it is applied to the Gateway and Foster Green EcoDistricts. For the purpose of this project, the Consultant Team worked through step 6 of the methodology (and these steps have been highlighted above). Feasibility studies and project implementation will be occurring in time when funds and resources become available.

¹ EcoDistricts Assessment Methods, Version 1.0. Mithun, 2010.

PROJECT BACKGROUND

Assessment Methods



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|---|--|---|--|---|---|--|---|---|---|
| 1a. GATHER <ul style="list-style-type: none"> Characteristics Quantitative data (e.g. total acreage, etc) Qualitative characteristics Gather data Begin program or initiative to gather data if not available | 2. SET TARGETS <ul style="list-style-type: none"> Review goals Use Recommended Targets Targets for each Performance Area Performance Area unique to a Performance Area Targets Over Time | 3. MATCH ECODISTRICT CHARACTERISTICS WITH OPPORTUNITIES <ul style="list-style-type: none"> Review for each Performance Area Use Maps and Database Reports Consider unique opportunities Identify opportunities | 4. SCREEN PERFORMANCE AREA STRATEGY MENU <ul style="list-style-type: none"> Review Initial Strategy Menu for each Performance Area Apply initial screening Questions and answers specific strategies | 5. ASSESS SCREENED STRATEGIES <ul style="list-style-type: none"> Review Yielded strategies with detailed questions Seek Expertise if Needed | 6. COMPARATIVE REVIEW <ul style="list-style-type: none"> Compare strategies across Performance Areas for: <ul style="list-style-type: none"> Synergies, Conflicts Community Priorities and Goals Identify recommended strategies Consider: <ul style="list-style-type: none"> order of magnitude financial feasibility policy implications | 7. IDENTIFY PROJECTS <ul style="list-style-type: none"> From Recommended Strategies Specific Implementation Opportunities; Site, Partners, etc. Refer to maps and Database reports | 8. FEASIBILITY STUDIES <ul style="list-style-type: none"> Funding Structure Economic Viability Confirm Projects | 9. IMPLEMENT PROJECTS <ul style="list-style-type: none"> Predevelopment Development and Implementation | 10. MONITOR <ul style="list-style-type: none"> Metrics Progress Over Time Each Performance Area in Ecodistrict Revisit Targets Periodically |
|---|--|---|--|---|---|--|---|---|---|

* Assessment Methods process and flowchart were developed in joint collaboration by PoSi, Portland State University, the Portland Bureau of Planning and Sustainability, and Mithun.

Using the Assessment Methodology as a guide, the Consultant Team worked through the following steps:

1) Gather Info / Create Baseline

Baseline quantitative data were collected from a variety of sources, including the City of Portland Bureau of Planning and Sustainability, Metro, the Portland Police Bureau, and Portland State University, and applied to the Gateway EcoDistrict study area. Baseline data were analyzed and manipulated in order to develop applicable metrics that could be used as indicators by which performance may be measured over time. The development of suitable metrics was limited due to the datasets that were currently available.

It was difficult to develop quantitative metrics for Performance Areas relating to the social aspects of EcoDistricts (Placemaking, Social Equity, and Equitable Development) as extent, meaningful data are either very limited or do not exist. Qualitative datasets may be more appropriate for these Performance Areas; however, this information also proved largely unavailable for the district and the project duration and budget did not allow for the collection and/or development of additional datasets.

2) Set Targets

Target goals were determined by the Performance Area goals and informed by baseline metrics and growth projections. Each Performance Area metric has a target goal and incremental targets put in place to measure the success of the target goal over time. Each Performance Area includes the following structure and content:

- Baseline - Existing dataset(s) showing how a district is performing in a given area
- Metric - Indicators by which the Performance area may be measured
- Target Goal - Specific, measurable objective and associated time frame for a given performance metric
- Incremental Target - Standard of incremental success by which the target goal is measured

It should be noted that while the Gateway EcoDistrict Steering Committee values the measurement of performance over time, they were not in favor of assigning actual dates to incremental targets.

3) Match EcoDistrict Character with Opportunities

In order to determine applicable metrics for each Performance Area, the Team performed a review of initial assessment questions to define community character and opportunities during step 1 of the methodology. The resulting baseline information, in addition to feedback from the Gateway EcoDistrict Steering Committee, and conversations with PoSI and PDC, further helped to identify potential strategies for the district at this step in the assessment process.

4) Performance Area Strategy Menu

A menu of potential strategies (or opportunities) was developed for each Performance Area. Strategies vary in scale and may be led by developers, local businesses or non-profits, city organizations, utilities, and/or community members. Initially, each strategy identified potential barriers (or constraints), applicable metrics,

PROJECT DESCRIPTION

perceived degree of difficulty (in terms of time/cost/complexity), specific assessment questions, and potential expertise necessary. These categories were revised through the screening process (step 5).

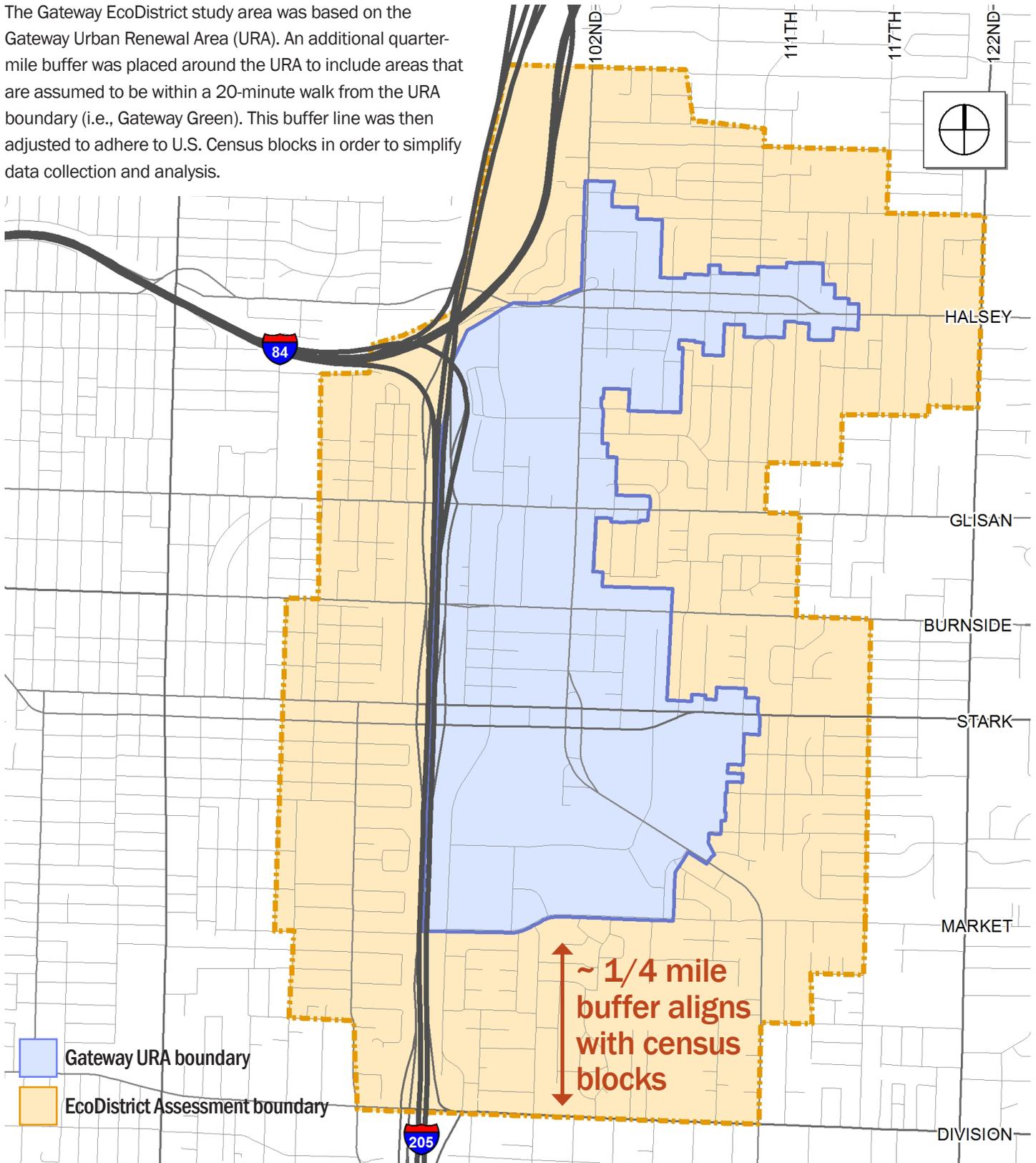
5) Assess Screened Strategies

Initial strategies were screened by the Consultant Team, PoSI, and PDC. The 'assessment questions' and 'expertise necessary' categories were combined and revised to include 'next steps' implementation suggestions. Strategies were further divided into 'software' systems (the web of ecological, economic, social and cultural flows and interactions that animate community life) or 'hardware' systems (the pipes, streets, buildings, and other elements of physical infrastructures which house the software).

6) Comparative Review

Using the Correlation Matrix, a qualitative comparison tool developed by Mithun, the Consultant Team compared strategies with the Performance Area goals defined by PoSI. The matrix identified synergies and revealed which strategies meet the most goals. Using the Correlation Matrix, a preliminary assessment of feasibility and cost, and input from the Gateway Steering Committee, the Consultant Team then determined a set of Recommended Strategies.

The Gateway EcoDistrict study area was based on the Gateway Urban Renewal Area (URA). An additional quarter-mile buffer was placed around the URA to include areas that are assumed to be within a 20-minute walk from the URA boundary (i.e., Gateway Green). This buffer line was then adjusted to adhere to U.S. Census blocks in order to simplify data collection and analysis.



PERFORMANCE AREAS



Image courtesy of PoSI



*East Portland Community Center (EPCC)
The first aquatic center to receive LEED Platinum certification.*

ENERGY

VISION: Net-zero energy usage annually

PERFORMANCE GOALS:

1. Reduce energy loads by minimizing demand and maximizing conservation
2. Optimize infrastructure efficiencies at all scales
3. Use renewable energy

METRIC: Annual energy demand (kilowatt hours per year - kWh/year)

TARGET GOAL: 100% energy demand reduction in Gateway by 2050 (net-zero)

BASELINE: 0% energy demand reduction in Gateway (2010)

INCREMENTAL TARGETS:

*25% energy demand reduction in Gateway by 2020**

*50% energy demand reduction in Gateway by 2030**

*75% energy demand reduction in Gateway by 2040**

**incremental target dates should be considered as recommendations by the Consultant Team, not established policies*

Energy demand for this metric is assumed to include building energy demand (electricity and natural gas) and infrastructure energy demand (electricity demand from street lights). Ideally, energy demand would be based on actual metered data (provided by a local utility such as PGE, PacifiCorp or NW Natural Gas), however, this type of data was unavailable. As such, energy demand was estimated using these available datasets:

- Land Use: Total property area by land use type (i.e., X acres of single-family residential)¹
- Building Area: Total building area by land use type (i.e., X square feet per single-family residential)²
- Population: Total population (refer to Appendix 1 for a 2010 census summary)³
- Street Lights: Total number of street lights⁴

Assumed energy demand factors were utilized to estimate building energy demand (based on a blended demand of land use, building area, and population) and infrastructure energy demand (based on number of street lights). As such, the following energy metric was selected:

- Annual Energy Demand = kWh/year = Building (kWh/year) + Infrastructure (kWh/year)

Current and future baselines were assumed to be 2010 and 2050, respectively. Annual energy demand for the district was estimated at ten-year intervals beginning at 2010 (current) and ending at 2050 (future). Energy demand would likely increase over this time frame based on increased development within the district. To estimate this increase, development projections could be established based on allowable zoning or market-based assumptions, however, neither of these growth projections were available for this assessment. As such, annual energy demand growth was assumed at 10% per year. The following energy demands were estimated for the district:

¹ Data derived from the Metro RLIS GIS shapefile: taxlots

² Data derived from the Metro RLIS GIS shapefile: taxlots

³ Data derived from 2010 Census profile

⁴ Data derived from the Portland Bureau of Planning and Sustainability 2011 shapefile: street_lights_pbot

- 2010 = 243M kWh/year
- 2020 = 268M kWh/year
- 2030 = 292M kWh/year
- 2040 = 317M kWh/year
- 2050 = 341M kWh/year

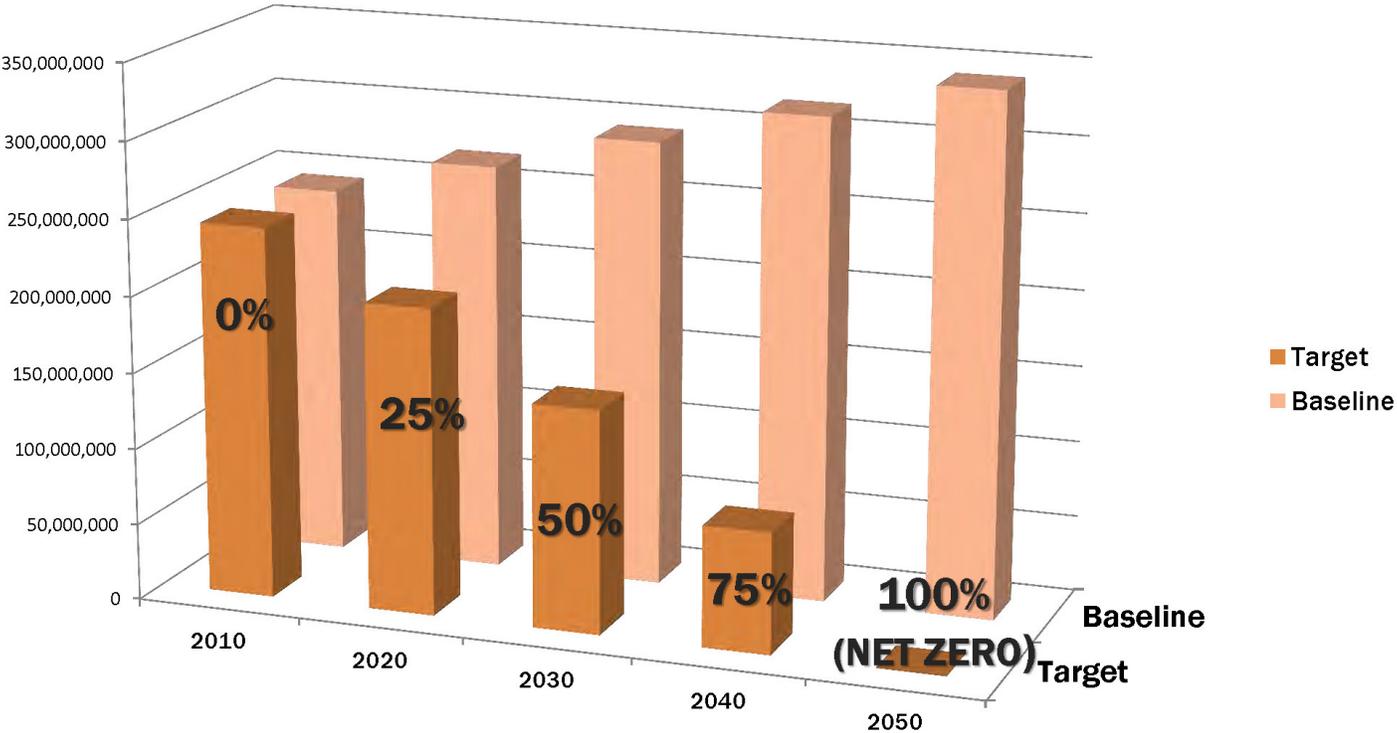
Baseline energy demand distribution estimates would be possible based on land use and building area. Per capita energy demand would also be possible to estimate.

Based on the Performance Area vision, metric (kWh/year) and baseline intervals (2010, 2020, 2030, 2040 and 2050) targets will be expressed in terms of the percent reduction of annual energy demand (% reduction/year). Since the Performance Area vision is “net-zero” energy, the energy demand reduction by 2050 is assumed to be 100%. Twenty-five percent interval demand reductions were also assumed. The following energy demand reduction targets were thus established:

- 2010 = 243M kWh/year (0% reduction)
- 2020 = 201M kWh/year (25% reduction)
- 2030 = 146M kWh/year (50% reduction)
- 2040 = 79M kWh/year (75% reduction)
- 2050 = 0 kWh/year (100% reduction)

It was assumed that no energy demand reduction projects (i.e., energy conservation, renewables, etc.) have been implemented within the district therefore the energy demand reduction assumed for 2010 was 0%.

Energy Demand (kilowatt hours per year)



ENERGY: STRATEGY PALETTE

| Performance Area | Potential Strategies (Opportunities) | Barriers (Constraints) | Metric | Degree of Difficulty TIME/COST/ COMPLEXITY (no barriers = 1 /barriers = 5) | Next Steps | Recommended Strategies | | | |
|------------------|--------------------------------------|---|--|---|------------|---|---|---|---|
| Energy | REDUCE | | | | | | * | | |
| | HARDWARE | Set minimum performance requirements for new construction (ie, LEED, Earth Advantage, etc.) | <ul style="list-style-type: none"> Potential negative perception from developers and land owners | Energy | 2 | <ul style="list-style-type: none"> Explore relevant case studies to demonstrate strategy benefits and negative perceptions. Identify refinements to development standards to set min. energy performance. | | | |
| | | Establish energy conservation retrofit program (including residential, commercial, etc.) | <ul style="list-style-type: none"> Upfront capital cost Lack of existing district-level retrofit programs lack of coordination / education of existing programs | Energy | 2 | <ul style="list-style-type: none"> Estimate potential energy conservation retrofit project benefits (ie, energy savings). Identify existing programs through the Energy Trust of Oregon and/or Clean Energy Works. Create program launch strategy for district. | | | |
| | | Retrofit street lighting to LED | <ul style="list-style-type: none"> Acceptable of LED technology by City of Portland | Energy | 2 | <ul style="list-style-type: none"> Estimate potential energy savings. Work with City of Portland to explore implementation opportunities. | | | |
| | SOFTWARE | Organize district energy conservation challenge | <ul style="list-style-type: none"> District organization and outreach effectiveness | Energy | 1 | <ul style="list-style-type: none"> Create district steering committee. Identify conservation actions, potential benefits and other program elements. Create program launch strategy. | | | |
| | | Create district dashboard | <ul style="list-style-type: none"> Upfront capital cost | Energy | 2 | <ul style="list-style-type: none"> Explore existing technologies to determine best fit. Identify site locations (ie, public space kiosk, buildings, homes, businesses). Estimate system cost and potential performance/ education benefits. Refer to existing programs like EarthAid | | | |
| | GENERATE | | | | | | | * | |
| | HARDWARE | Create district energy system | <ul style="list-style-type: none"> Upfront capital cost Lack of business strategy for potential 3rd party district energy providers | Energy | 5 | <ul style="list-style-type: none"> Conduct district energy feasibility evaluation (including district and sub-district systems). Identify 3rd Party district energy providers to potential partner with. Create business strategy for district energy system. Evaluation potential for sub-district systems (eg, a shared combined heat and power facility at or around Fred Meyer) | | | |
| | | Establish solar energy implementation program (including residential, commercial, etc.) | <ul style="list-style-type: none"> Upfront capital cost Available programs for deployment at district scale | Energy | 3 | <ul style="list-style-type: none"> Explore existing solar programs through the Energy Trust of Oregon or 3rd Party Providers (ie, SolarWorld). Identify bulk purchasing savings, if possible. Create program launch strategy. | | | |
| | SOFTWARE | Organize district energy conservation challenge | <ul style="list-style-type: none"> District organization and outreach effectiveness | Energy | 1 | <ul style="list-style-type: none"> Create district steering committee. Identify conservation actions, potential benefits and other program elements. Create program launch strategy. | | | |
| | | Create district dashboard | <ul style="list-style-type: none"> Upfront capital cost | Energy | 2 | <ul style="list-style-type: none"> Explore existing technologies to determine best fit. Identify site locations (ie, public space kiosk, buildings, homes, businesses). Estimate system cost and potential performance/ education benefits. | | | |
| | OFFSET | | | | | | | | * |
| | SOFTWARE | Purchase green energy offsets | <ul style="list-style-type: none"> Upfront capital cost | Energy | 2 | <ul style="list-style-type: none"> Estimate offset requirements. Explore availability and costs from existing green tag programs from PGE and PacifiCorp. Explore bulk purchasing to reduce cost. Market offsets to district and purchase. | | | |

Strategy recommendations include:

- Energy Conservation and Solar PV Retrofits
- Create a District Energy System
- Create District Dashboard and Education/Competition Campaigns

To achieve the energy vision of net-zero energy usage annually, energy recommendations for Gateway take the form of three primary actions: Reduce, Generate and Offset. Reduce the amount of energy demand through conservation efforts, generate energy locally through renewable sources, and offset what cannot be conserved or generated on-site.

Existing energy conservation retrofit programs such as Clean Energy Work Oregon should be utilized to maximize conservation retrofits. Encourage the installation of solar PV and solar hot water through existing programs such as Solarize Southeast – consider creating Solarize Gateway. Conservation and solar PV retrofit packages should be developed for single-family and multi-family residential as well as commercial. Convert all street lights (street lights and signals) to high efficient LEDs. Develop Gateway specific outreach and education campaigns for the program to drive action. Energy conservation and solar PV efforts should be tracked and communicated with the District Dashboard.

Implement a district energy system to supply energy to the entire district. District energy systems generate energy locally, utilizing fuel sources such as natural gas or biomass, creating significant benefits such as minimal energy loss through transmission, reduced energy demand through shared thermal (heating and cooling), and reduced GHG emission – all at market competitive rates. Do to the size of the district, explore the use of sub-district energy systems to supply energy including shared thermal (heating and cooling) at appropriate nodes (e.g. Fred Meyer, Adventise Medical Center).

DISTRICT DASHBOARD SYSTEMS

District dashboard systems can be used to monitor and communicate the performance of numerous EcoDistrict Performance Area goals and metrics. The information conveyed through a dashboard may impact individual decision making, drive local community efforts, and inform public policy. The dashboard can be made accessible at both the site scale (home computer or business display) and district scale (kiosks in public space such as the transit station or park).



For example, a dashboard system will increase awareness of energy consumption, monitor district energy performance, and drive energy reduction actions. A dashboard has the ability to display district and site-scaled performance data including energy consumption and energy reduction impacts from implemented projects. Creating healthy competitions or district energy challenges between residents and businesses may further drive energy reduction efforts.

Implementing district dashboards to convey real-time information and drive sustainability efforts will benefit numerous EcoDistrict Performance Area goals.



AIR QUALITY & CARBON

VISION: Beyond carbon neutrality & healthy air quality

GOALS:

1. Minimize CO₂ emissions
2. Maximize CO₂ sequestration
3. Reduce exposure to air pollutants
4. Improve indoor and outdoor air quality

METRIC: Annual diesel emissions (micrograms per cubic meter per year - ug/m³/year)

TARGET GOAL: 50% diesel emissions reduction in Gateway by 2050

BASELINE: 0% diesel emissions reduction in Gateway (2010)

INCREMENTAL TARGETS:

*25% diesel emissions reduction in Gateway by 2020**

*50% diesel emissions reduction in Gateway by 2030**

*50% diesel emissions reduction in Gateway by 2040**

**incremental target dates should be considered as recommendations by the Consultant Team, not established policies*

Air quality related data such as diesel and benzene emissions are available for the district.¹ The actual diesel data are based on units of PM 2.5. PM 2.5 includes particulate matter (PM) less than 2.5 micrometers in diameter. Sources of these types of particulates, known as fine particles, include all types of combustion producers such as motor vehicles, power plants, residential wood burning and some industrial processes. It is difficult to identify the sources of these emissions but for Gateway most likely they are a product of adjacent highways. Diesel emissions were selected for the air quality metric:

- Annual Diesel Emissions = ug/m³/year

Current and future baselines were assumed to be 2010 and 2050, respectively. Annual diesel emissions for the district were estimated at ten-year intervals beginning at 2010 (current) and ending at 2050 (future). It was assumed that diesel emissions would not increase over this time frame. The following energy demands were estimated for the district:

- 2010 = 2.4 ug/m³/year
- 2020 = 2.4 ug/m³/year
- 2030 = 2.4 ug/m³/year
- 2040 = 2.4 ug/m³/year
- 2050 = 2.4 ug/m³/year

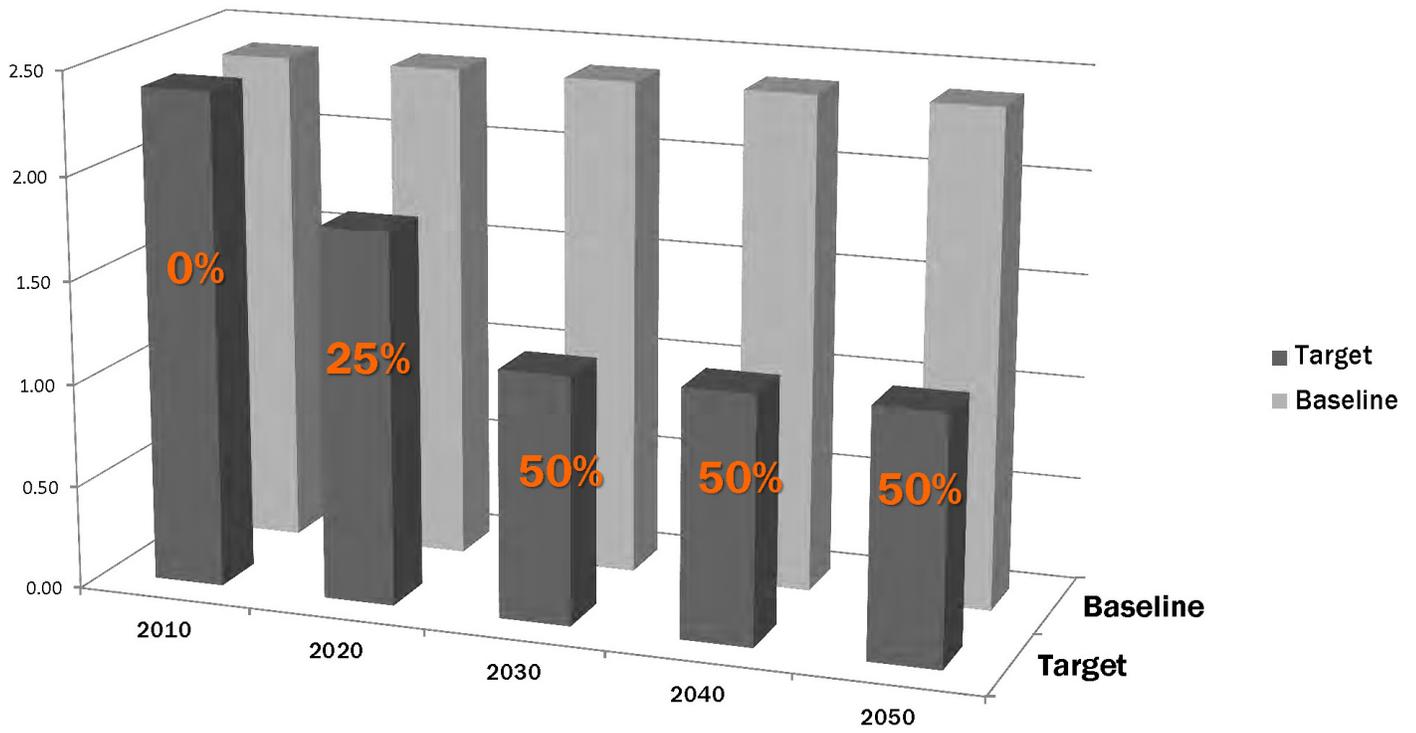
Based on the Performance Area vision, and using the metric (ug/m³/year) and target intervals (2010, 2020, 2030, 2040 and 2050), incremental targets will be expressed in terms of the percent reduction of annual diesel emissions (% reduction/year). It has been difficult to quantify the vision of this Performance Area, “healthy air quality”, but the following reduction assumptions have been made:

¹ Data derived from Portland State University 2010 shapefile: air_quality_08052010

AIR QUALITY & CARBON: BASELINE & TARGETS

- 2010 = 2.4 ug/m³/year (0% reduction)
- 2020 = 1.8 ug/m³/year (25% reduction)
- 2030 = 1.2 ug/m³/year (50% reduction)
- 2040 = 1.2 ug/m³/year (50% reduction)
- 2050 = 1.2 ug/m³/year (50% reduction)

Diesel Emissions (micrograms per cubic meter per year)



METRIC: Annual carbon emissions (tons of carbon dioxide per year - CO₂/year)

TARGET GOAL: 100% carbon emissions reduction in Gateway by 2050 (net-zero)

BASELINE: 0% carbon emissions reduction in Gateway (2010)

INCREMENTAL TARGETS:

*25% carbon emissions reduction in Gateway by 2020**

*50% carbon emissions reduction in Gateway by 2030**

*75% carbon emissions reduction in Gateway by 2040**

**incremental target dates should be considered as recommendations by the Consultant Team, not established policies*

Carbon emissions for this metric will be assumed to include carbon emissions related to building energy demand (electricity and natural gas) and infrastructure energy demand (street lights).^{1,2} Ideally, carbon emissions would be estimated from actual energy demand meter data (provided by a local utility like PGE, PacifiCorp, or NW Natural Gas) and emission assumptions by energy source (coal, hydro, wind, gas, etc.); metered data, unfortunately, were not available.

Emission assumptions by energy source are available from local energy providers.³ Therefore, annual carbon emissions may be estimated by multiplying these emission assumptions by building energy and infrastructure energy demands. As such, the following carbon metric was selected:

- Annual Carbon Emissions = tCO₂/year = Building Carbon + Infrastructure Carbon

Current and future baselines were assumed to be 2010 and 2050 respectively. Annual carbon emissions for the district were estimated at ten-year intervals beginning at 2010 (current) and ending at 2050 (future). As energy demand would likely increase over this time frame based on increased development within the district, so too would carbon emissions. To estimate this increase in energy demand, development projections could be established based on allowable zoning or market-based assumptions. Neither of these growth projections were available for this assessment however. As such, annual carbon emissions growth was assumed at 10% per year. The following carbon emissions were estimated for the district:

- 2010 = 170k tCO₂/year
- 2020 = 187k tCO₂/year
- 2030 = 204k tCO₂/year
- 2040 = 221k tCO₂/year
- 2050 = 239k tCO₂/year

¹ Data derived from the Metro RLIS GIS shapefile: taxlots

² Data derived from the Portland Bureau of Planning and Sustainability 2011 shapefile: street_lights_pbot

³ Data derived from the PGE and PacifiCorp websites

AIR QUALITY & CARBON: BASELINE & TARGETS

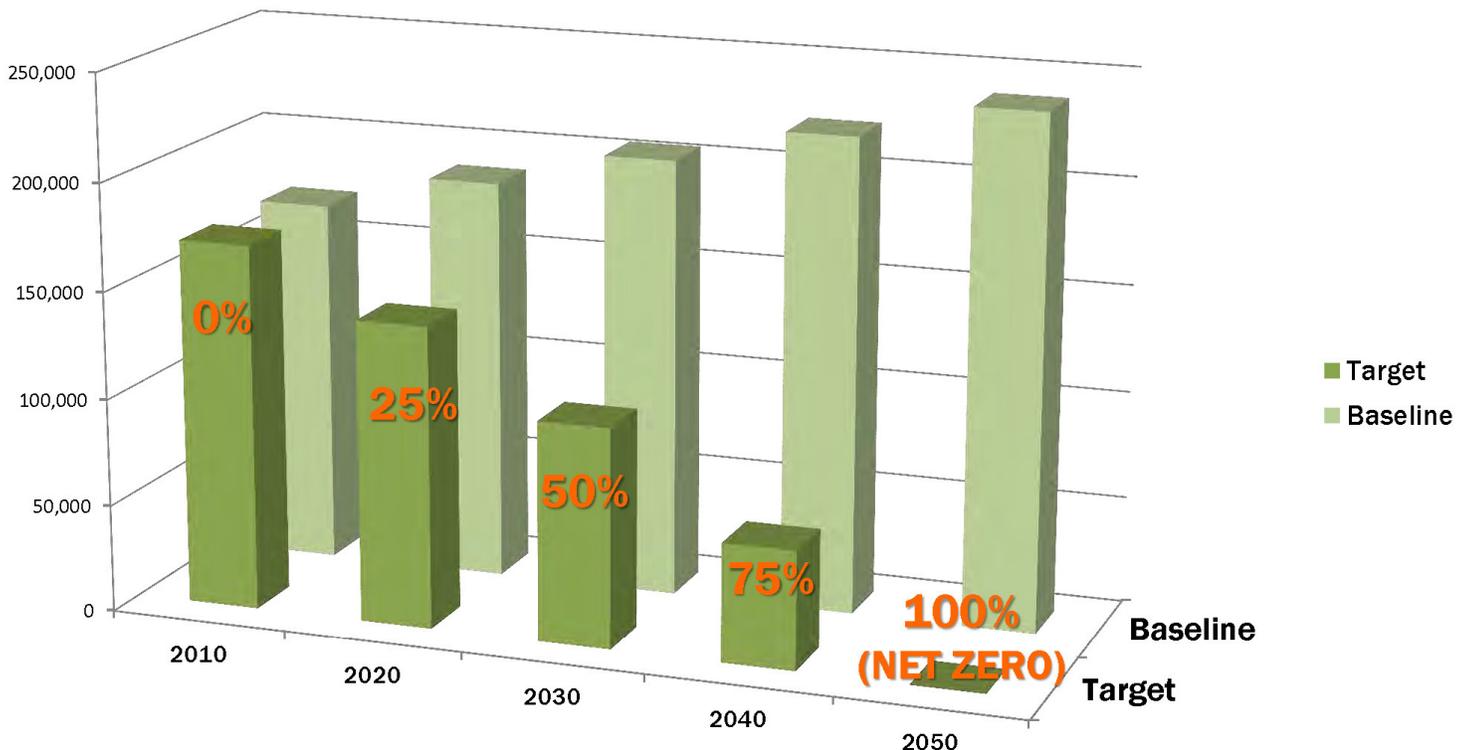
It should be noted that electricity is provided to the district from both PGE and PacifiCorp, each of which generates energy from various sources such as hydro, natural gas, wind and coal. (Refer to Appendix 2 for a service provider map). The mix of generation sources for each utility creates unique carbon emission footprints. To account for this reality for Gateway's overall energy related carbon emissions, utility specific carbon emission factors were applied to property energy demands to estimate property related carbon emissions.

Based on the Performance Area vision, metric (tCO₂/year) and baseline intervals (2010, 2020, 2030, 2040 and 2050), targets will be expressed in terms of the percent reduction of annual carbon emissions (% reduction/year). Since the Performance Area vision is "beyond carbon neutrality," the carbon emissions reduction by 2050 is assumed to be 100%. Twenty five percent interval demand reductions were also assumed. The following carbon emissions reduction targets were assumed:

- 2010 = 170k tCO₂/year (0% reduction)
- 2020 = 140k tCO₂/year (25% reduction)
- 2030 = 102k tCO₂/year (50% reduction)
- 2040 = 55k tCO₂/year (75% reduction)
- 2050 = 0 tCO₂/year (100% reduction)

It was assumed that no energy demand reduction projects (i.e., energy conservation, renewables, etc.) or carbon sequestration programs (i.e., tree canopy improvements) have been implemented within the district; therefore carbon emissions reduction assumed for 2010 was 0%. Further exploration will be needed to determine how to achieve the "beyond carbon neutrality" vision (i.e., enhanced carbon sequestration

Carbon Emissions (tons of carbon dioxide per year)



AIR QUALITY & CARBON: STRATEGY PALETTE

| Performance Area | Potential Strategies (Opportunities) | Barriers (Constraints) | Metric | Degree of Difficulty <small>TIME/COST/COMPLEXITY (no barriers = 1 /barriers = 5)</small> | Next Steps | Recommended Strategies | |
|------------------------|--------------------------------------|--|---|---|------------|--|---|
| Air Quality and Carbon | ENHANCE | | | | | | |
| | HARDWARE | Increase tree canopy and vegetation | <ul style="list-style-type: none"> Upfront capital cost | Air Quality | 2 | <ul style="list-style-type: none"> Identify potential areas to increase canopy and vegetation. Estimate benefits and costs. | |
| | REDUCE | | | | | | |
| | HARDWARE | Increase tree canopy and vegetation | <ul style="list-style-type: none"> Upfront capital cost | Carbon | 2 | <ul style="list-style-type: none"> Identify potential areas to increase canopy and vegetation. Estimate benefits and costs. | |
| | | Set minimum performance requirements for new construction (ie, LEED, Earth Advantage, etc.) | <ul style="list-style-type: none"> Potential negative perception from developers and land owners | Carbon, Air Quality | 2 | <ul style="list-style-type: none"> Explore relevant case studies to demonstrate strategy benefits and negative perceptions. Identify refinements to development standards to set min. energy performance. | |
| | | Establish energy conservation retrofit program (including residential, commercial, etc.) | <ul style="list-style-type: none"> Upfront capital cost Lack of existing retrofit | Carbon | 2 | <ul style="list-style-type: none"> Estimate potential energy conservation retrofit project benefits (ie, carbon savings). Identify existing programs through the Energy Trust of Oregon and/or Clean Energy Works. Create program launch strategy for district. | |
| | | Retrofit street lighting to LED | <ul style="list-style-type: none"> Acceptable of LED technology by City of Portland | Carbon | 2 | <ul style="list-style-type: none"> Estimate potential energy/carbon savings. Work with City of Portland to explore implementation opportunities. | * |
| | SOFTWARE | Organize district indoor air quality improvement campaign | <ul style="list-style-type: none"> District organization and outreach effectiveness | Air Quality | | <ul style="list-style-type: none"> Create education opportunities for the district focusing on how to improve indoor air quality (including green cleaning and green building best practices - non-toxic cleaning materials, low VOC paints, carpets, etc.) | * |
| | | Organize district carbon challenge | <ul style="list-style-type: none"> District organization and outreach effectiveness | Carbon | 1 | <ul style="list-style-type: none"> Create district steering committee. Identify conservation actions, potential benefits and other program elements. Create program launch strategy. | * |
| | | Create district dashboard | <ul style="list-style-type: none"> Upfront capital cost | Carbon | 2 | <ul style="list-style-type: none"> Explore existing technologies to determine best fit. Identify site locations (ie, public space kiosk, buildings, homes, businesses). Estimate system cost and potential performance/ education benefits. | * |
| | | Create Air Quality Awareness Dashboards - Internal of District and at key locations along highways | <ul style="list-style-type: none"> Upfront capital cost Examples of effectiveness of similar efforts. | Air Quality | 2 | <ul style="list-style-type: none"> Explore existing technologies to determine best fit. Identify site locations (ie, on/off ramps, major traffic areas, etc). Estimate system cost and potential performance/ education benefits. | |
| | | Reduce truck and vehicle idling | <ul style="list-style-type: none"> Lack of existing incentives/regulations | Air Quality | 3 | <ul style="list-style-type: none"> Explore relevant case studies to demonstrate strategy benefits. | |
| | | Reduce woodstove use | <ul style="list-style-type: none"> People like to burn wood | Air Quality | 3 | | |
| | | | | | | | |
| | SEQUESTER | | | | | | |
| | HARDWARE | Increase tree canopy and vegetation | <ul style="list-style-type: none"> Upfront capital cost | Carbon | 2 | <ul style="list-style-type: none"> Identify potential areas to increase canopy and vegetation. Estimate benefits and costs. | |
| | OFFSET | | | | | | |
| | SOFTWARE | Purchase carbon offsets | <ul style="list-style-type: none"> Upfront capital cost | Carbon | 2 | <ul style="list-style-type: none"> Estimate offset requirements. Explore availability and costs from existing carbon offset providers such as 3 Degrees. Explore bulk purchasing to reduce cost. Market offsets to district and purchase. | |

AIR QUALITY & CARBON: RECOMMENDED STRATEGIES

Strategy recommendations include:

- Retrofit street lighting to LED
- Organize district indoor air quality improvement campaign
- Organize district carbon challenge

To achieve the goal of carbon neutrality, implement all the strategies recommended within the energy performance focus area. In addition, create a district carbon challenge to further engage local residents and businesses to take action to reduce their carbon footprints. Improving air quality will be difficult. Outdoor air quality might be improved with strategies recommended in the access & mobility as well as habitat & ecosystem function performance areas. Improvements in indoor air quality should be organized through a district indoor air quality improvement campaign. The campaign would focus on educating resident and business on how to improve indoor air quality (including green cleaning and green building and products).



WATER

VISION: Water, in all forms, meets both natural and human needs

GOALS:

1. Reduce water consumption through conservation
2. Reuse and recycle water resources, using potable water only for potable needs
3. Manage stormwater and building water discharge within the district
4. Maintain availability, reliability, and affordability of water

METRIC: Annual water demand (gallons per year - gal/year)

TARGET GOAL: 100% water demand reduction in Gateway by 2050 (net-zero)

BASELINE: 0% water demand reduction in Gateway (2010)

INCREMENTAL TARGETS:

*25% water demand reduction in Gateway by 2020**

*50% water demand reduction in Gateway by 2030**

*75% water demand reduction in Gateway by 2040**

**incremental target dates should be considered as recommendations by the Consultant Team, not established policies*

Metric Selection

Annual water demand data are available for the district.¹ As such, the following water metric was selected:

- Annual Water Demand = gal/year = Building Water + Infrastructure Water

It should be noted that water data are only available at the district scale. Based on additional available data such as land use, building area, and population, demand distributions and per capita water demand estimates are feasible.

Current and future baselines were assumed to be 2010 and 2050, respectively. Annual water demand for the district was estimated at ten-year intervals beginning at 2010 (current) and ending at 2050 (future). Water demand would likely increase over this time frame based on increased development within the district. To estimate this increase, development projections could be established based on allowable zoning or market-based assumptions. Neither of these growth projections were available for this assessment however. As such, annual water demand growth was assumed at 10% per year. The following water demands were estimated for the district:

- 2010 = 520M gal/year
- 2020 = 573M gal/year
- 2030 = 625M gal/year
- 2040 = 677M gal/year
- 2050 = 729M gal/year

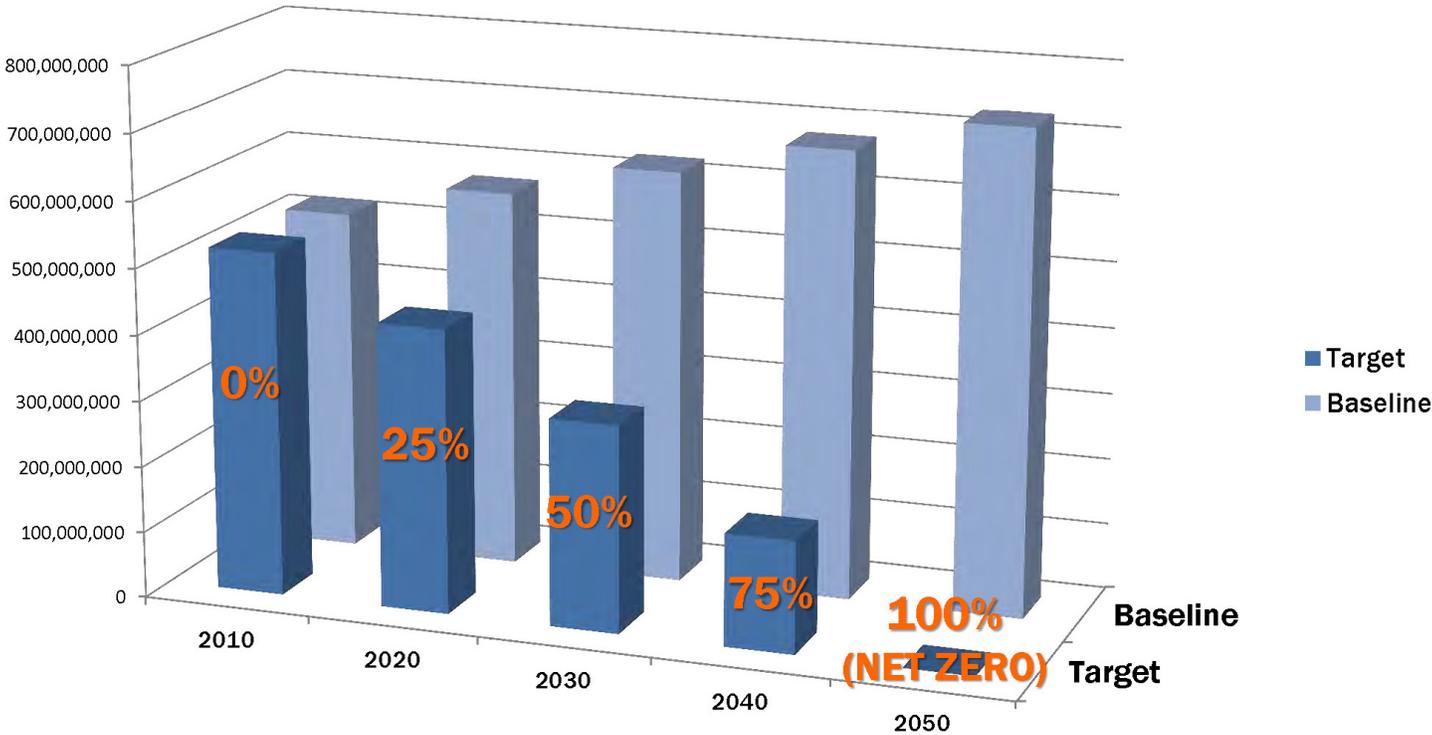
Based on the Performance Area vision, metric (gal/year) and baseline intervals (2010, 2020, 2030, 2040 and 2050), targets will be expressed in terms of the percent reduction of annual water demand (% reduction/year). Since the Performance Area vision is “net-zero” water, the water demand reduction by 2050 is assumed to be 100%. The following water demand reduction targets were assumed:

¹ Data derived from the Portland State University 2005 shapefile: water_usage_2005

- 2010 = 520M gal/year (0% reduction)
- 2020 = 439M gal/year (25% reduction)
- 2030 = 312M gal/year (50% reduction)
- 2040 = 169M gal/year (75% reduction)
- 2050 = 0 gal/year (100% reduction)

It was assumed that no water demand reduction projects (i.e., water conservation, rainwater harvesting, etc.) have been implemented within the district therefore water demand reduction assumed for 2010 was 0%.

Water Demand (gallons per year)



METRIC: Annual stormwater runoff (gallons per year - gal/year)

TARGET GOAL: 100% stormwater runoff reduction in Gateway by 2050 (net-zero)

BASELINE: 0% stormwater runoff reduction in Gateway (2010)

INCREMENTAL TARGETS:

*25% stormwater runoff reduction in Gateway by 2020**

*50% stormwater runoff reduction in Gateway by 2030**

*75% stormwater runoff reduction in Gateway by 2040**

*100% stormwater runoff reduction in Gateway by 2050**

**incremental target dates should be considered as recommendations by the Consultant Team, not established policies*

Metric Selection

Stormwater runoff for this metric will be assumed to include annual runoff from private property (pervious and impervious area) and public property (pervious and impervious area). Data are available for pervious (landscape) and impervious (roof, parking, street) areas throughout the district.¹ A basic runoff calculation, based on contributing area specific runoff coefficients and annual rainfall, was used to estimate annual runoff volumes per SF of contributing area.² As such, the following stormwater runoff metric was selected:

- Annual Stormwater Runoff = gal/year = Public Runoff + Private Runoff

Current and future baselines were assumed to be 2010 and 2050 respectively. Annual stormwater runoff for the district was estimated at ten-year intervals beginning at 2010 (current) and ending at 2050 (future). It was assumed that stormwater runoff would not increase over this time frame. The following stormwater runoff volumes were estimated in billions of gallons per year, (B) for the district:

- 2010 = 1.2B gal/year
- 2020 = 1.2B gal/year
- 2030 = 1.2B gal/year
- 2040 = 1.2B gal/year
- 2050 = 1.2B gal/year

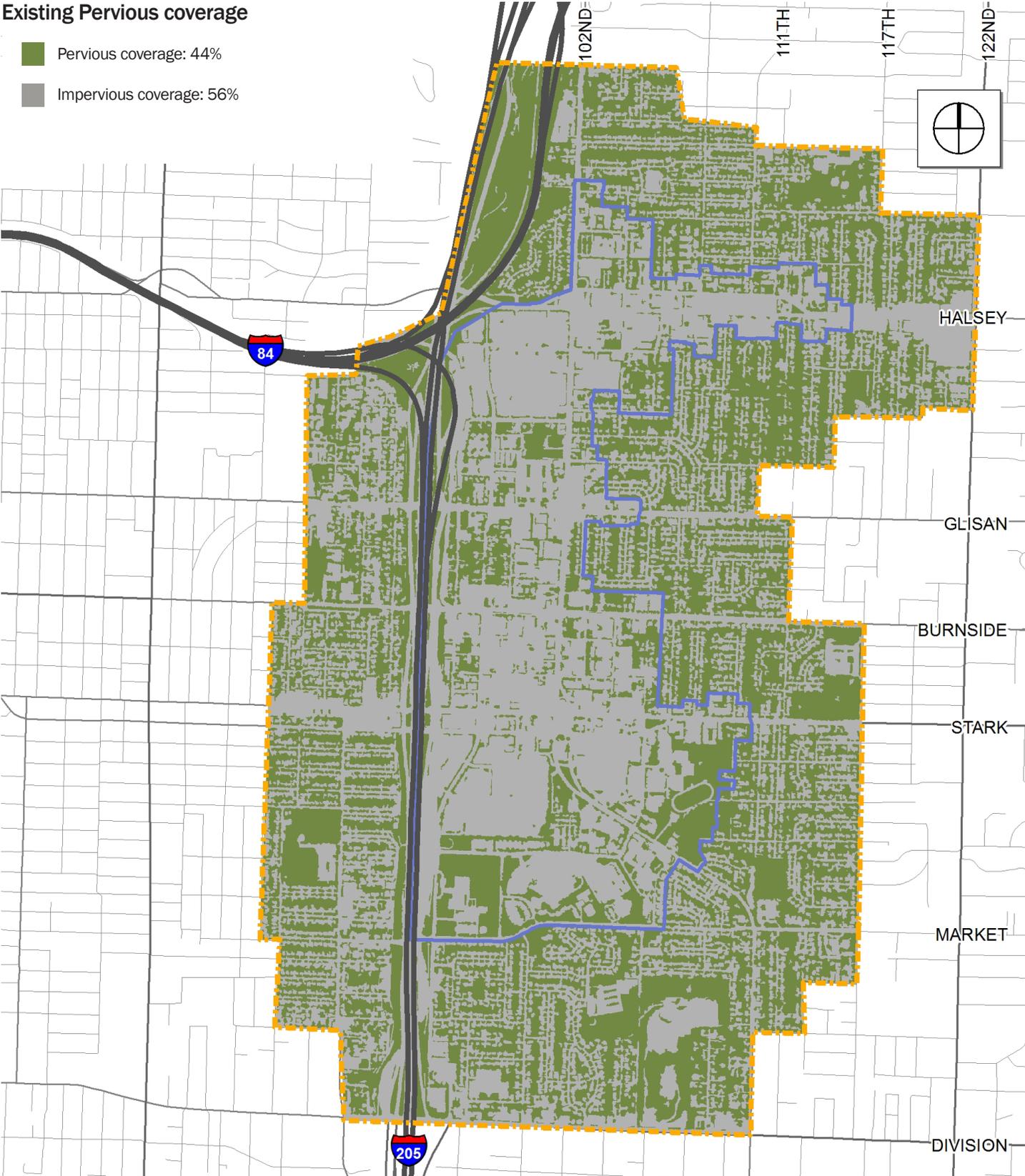
Based on the Performance Area vision, metric (gal/year) and baseline intervals (2010, 2020, 2030, 2040 and 2050), targets will be expressed in terms of the percent reduction of annual stormwater runoff (% reduction/year). Since the Performance Area vision is “net-zero” stormwater runoff, the stormwater runoff reduction by 2050 is assumed to be 100%. The following stormwater runoff reduction targets were assumed:

¹ Data derived from Metro's GIS raster file: High Structure Vegetation, 2009.

² Rainfall data derived from City of Portland Bureau of Environmental Services website

Existing Pervious coverage

- Pervious coverage: 44%
- Impervious coverage: 56%

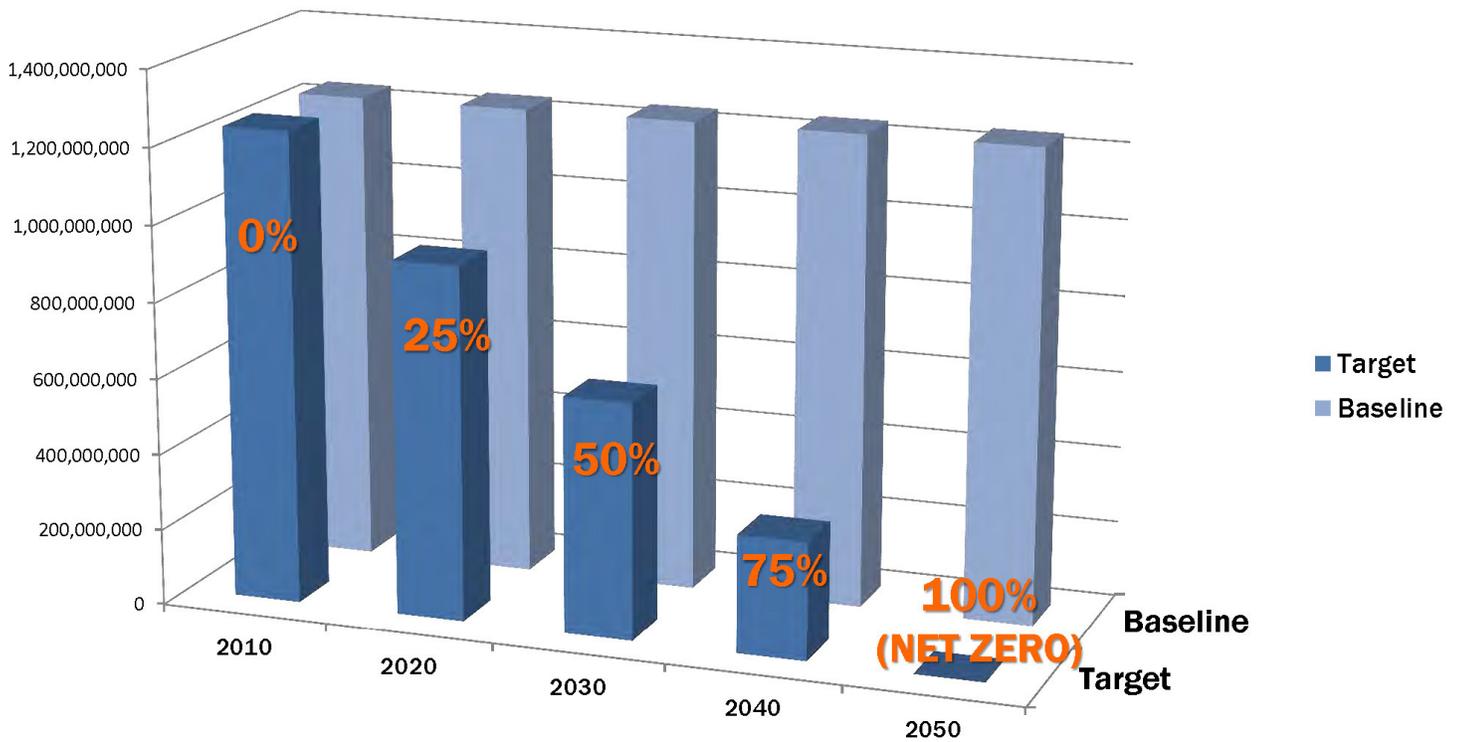


WATER: BASELINE & TARGETS

- 2010 = 1.2B gal/year (0% reduction)
- 2020 = 0.9B gal/year (25% reduction)
- 2030 = 0.6B gal/year (50% reduction)
- 2040 = 0.3B gal/year (75% reduction)
- 2050 = 0 gal/year (100% reduction)

It should be noted that a number of stormwater facilities have been constructed within the district. However, the resulting runoff reduction as compared to overall district runoff is negligible.

Stormwater Runoff (gallons per year)



| Performance Area | Potential Strategies (Opportunities) | Barriers (Constraints) | Metric | Degree of Difficulty <small>TIME/COST/COMPLEXITY (no barriers = 1 / barriers = 5)</small> | Next Steps | Recommended Strategies | |
|------------------|--------------------------------------|---|---|--|--|---|---|
| Water | REDUCE | | | | | | |
| | HARDWARE | Set minimum performance requirements for new construction (ie, LEED, Earth Advantage, etc.) | <ul style="list-style-type: none"> Potential negative perception from developers and land owners | Water & Stormwater | 2 | <ul style="list-style-type: none"> Explore relevant case studies to demonstrate strategy benefits and negative perceptions. Identify refinements to development standards to set min. water / stormwater performance. | |
| | | Establish water conservation retrofit program (including residential, commercial, etc.) | <ul style="list-style-type: none"> Upfront capital cost Lack of existing retrofit programs | Water | 1 | <ul style="list-style-type: none"> Estimate potential water conservation retrofit project benefits (ie, water savings). Identify existing programs through the Portland Water Bureau. Create program launch strategy for district. | * |
| | | Avoid irrigating streetscapes through drought tolerant landscaping. | <ul style="list-style-type: none"> Estimate impact Upfront capital cost Should develop a district scale program to reduce cost and streamline implementation | Water | 2 | <ul style="list-style-type: none"> Estimate potential water conservation benefits. Identify existing programs through the Portland Bureau of Transportation to reduce streetscape irrigation. Create project list to retrofit landscaping. | |
| | SOFTWARE | Organize district water conservation challenge | <ul style="list-style-type: none"> District organization and outreach effectiveness | Water | 1 | <ul style="list-style-type: none"> Create district steering committee. Identify conservation actions, potential benefits and other program elements. Create program launch strategy. | |
| | | Organize district stormwater challenge | <ul style="list-style-type: none"> District organization and outreach effectiveness | Stormwater | 1 | <ul style="list-style-type: none"> Create district steering committee. Identify conservation actions, potential benefits and other program elements. Create program launch strategy. | |
| | | Create district dashboard | <ul style="list-style-type: none"> Upfront capital cost | Water/ Stormwater | 2 | <ul style="list-style-type: none"> Explore existing technologies to determine best fit. Identify site locations (ie, public space kiosks, buildings, homes, businesses). Estimate system cost and potential performance/education benefits. | * |
| | REUSE | | | | | | |
| | HARDWARE | Promote property scale (ie, residential, commercial, etc.) rainwater harvesting | <ul style="list-style-type: none"> Upfront capital cost Regulatory constraints | Water | 3 | <ul style="list-style-type: none"> Estimate potential of property scale systems. Explore existing programs that focus on promoting rainwater harvesting (ie, BES, BWW). | |
| | | Implement district scale stormwater management facilities | <ul style="list-style-type: none"> Upfront capital cost Land acquisition within Gateway Green area | Water | 3 | <ul style="list-style-type: none"> Conduct feasibility assessment of daylighting 1205 storm sewer to manage stormwater at Gateway Green. Explore funding opportunity with ODOT and City of Portland. | * |
| | | Implement district/sub-district scale rainwater harvesting system | <ul style="list-style-type: none"> Upfront capital cost Regulatory constraints | Water | 4 | <ul style="list-style-type: none"> Conduct district scale feasibility assessment to quantify benefits and identify implementation issues. | |
| | | Implement district/sub-district scale wastewater treatment and reuse | <ul style="list-style-type: none"> Upfront capital cost Regulatory constraints | Water | 4 | <ul style="list-style-type: none"> Conduct district scale feasibility assessment to quantify benefits and identify implementation issues. | |
| | SOFTWARE | Organize district rainwater harvesting challenge | <ul style="list-style-type: none"> District organization and outreach effectiveness | Water/ Stormwater | 1 | <ul style="list-style-type: none"> Create district steering committee. Identify conservation actions, potential benefits and other program elements. Create program launch strategy. | |
| | | Create district dashboard | <ul style="list-style-type: none"> Upfront capital cost | Water/ Stormwater | 2 | <ul style="list-style-type: none"> Explore existing technologies to determine best fit. Identify site locations (ie, public space kiosks, buildings, homes, businesses). Estimate system cost and potential performance/ education benefits. | * |
| | RECONNECT | | | | | | |
| | HARDWARE | Set minimum performance requirements for new construction (ie, LEED, Earth Advantage, etc.) | <ul style="list-style-type: none"> Potential negative perception from developers and land owners | Stormwater | 2 | <ul style="list-style-type: none"> Explore relevant case studies to demonstrate strategy benefits and negative perceptions. Identify refinements to development standards to set min. stormwater performance. | |
| | | Establish stormwater retrofit program (including residential, commercial, etc.) | <ul style="list-style-type: none"> Upfront capital cost | Stormwater | 2 | <ul style="list-style-type: none"> Estimate potential stormwater retrofit project benefits (ie, stormwater reduction). Identify existing programs through the Portland Bureau of Environmental Services and Metro's Nature in Neighborhood group. Create program launch strategy for district. | |
| | | Retrofit streets into greenstreets | <ul style="list-style-type: none"> Upfront capital cost | Stormwater | 3 | <ul style="list-style-type: none"> Estimate potential stormwater retrofit project benefits (ie, stormwater reduction). Identify project opportunities with Portland's Bureau of Environmental Services and Bureau of Transportation. Create program launch strategy for district. | |
| | SOFTWARE | Organize district stormwater challenge | <ul style="list-style-type: none"> District organization and outreach effectiveness | Stormwater | 1 | <ul style="list-style-type: none"> Create district steering committee. Identify conservation actions, potential benefits and other program elements. Create program launch strategy. | |
| | | Create district dashboard | <ul style="list-style-type: none"> Upfront capital cost | Stormwater | 2 | <ul style="list-style-type: none"> Explore existing technologies to determine best fit. Identify site locations (ie, public space kiosks, buildings, homes, businesses). Estimate system cost and potential performance/ education | * |
| | OFFSET | | | | | | |
| SOFTWARE | Purchase water credits | <ul style="list-style-type: none"> Create district scale offset program and finance strategy | Water | 1 | <ul style="list-style-type: none"> Estimate water offset needs to achieve goals. Identify existing programs (ie, Bonneville Environmental Foundation) and potential cost of offsets. | | |

WATER: RECOMMENDED STRATEGIES

Strategy recommendations include:

- Water Conservation and Reuse Retrofits
- District Green Infrastructure Strategy

To achieve the water goals of this Performance Area, water recommendations for Gateway take the form of three primary actions: Reduce, Reuse and Reconnect. Reduce the amount of water consumption through conservation efforts. Reuse wastewater and rainwater to further minimize water consumption. Reconnect hydrologic functionality to improve watershed conditions.

Partnering with the Portland Water Bureau, create a district-scale water conservation and reuse program. The program should focus on simple water conservation efforts such as efficient fixtures and appliances as well as efficient irrigation. Moreover, the program should include small, building scale rainwater harvesting systems to reuse rainwater for non-potable uses.

Through the use of nature-based stormwater facilities (rain gardens, stormwater planters, ecoroofs) and landscaping (trees, street trees, native vegetation), green infrastructure not only recreates lost hydrologic function but enhances district placemaking goals. The district green infrastructure strategy should focus on three scales of action.

- Scale 1 (Site / Property) – Existing green infrastructure retrofit programs and incentives should be utilized (including Metro’s Nature in Neighborhoods program, Portland’s Grey to Green program, and Portland’s numerous stormwater discount and incentive programs).
- Scale 2 (Street) – The Gateway Greenstreet Master Plan should be utilized as a guide for greenstreet retrofits.
- Scale 3 (District) – A large stormwater management facility should be cited within the Gateway Green recreation park to manage untreated runoff from I-205 and I-84. Potential funding and incentives should be explored through a partnership with ODOT and PBOT.



Gateway Transit Center

ACCESS & MOBILITY

VISION: Healthy, clean, and affordable transportation options

GOALS:

1. Prioritize active transportation
2. Reduce vehicle miles traveled
3. Achieve clean, low-carbon transportation access
4. Meet goals affordably

METRIC: Mode-split: drive alone

TARGET GOAL: 23% of Gateway residents drive alone by 2050

BASELINE: 64% of Gateway residents drive alone

INCREMENTAL TARGETS:

*30% of Gateway residents drive alone by 2030**

**incremental target dates should be considered as recommendations by the Consultant Team, not established policies*

As of 2005, the average daily vehicle-miles traveled (VMT) per person in the Gateway area was 26.7 miles.¹ VMT measures the total amount driven in a determined area. Daily VMT serves as an indicator of how reliant people are on vehicles to meet their mobility needs. Reducing VMT while maintaining mobility and accessibility throughout the Portland Metro region will require Gateway residents to depend significantly more on walking, bicycling, and public transit. Benefits of this shift will not only positively impact air quality, but will potentially increase disposable household income. (The average Portland household spends roughly 20% of their yearly income on transportation.)²

The Climate Action Plan (2009) aims for per capita VMT to decline by roughly 30% by 2030.³ To verify if this goal could be reasonably applied to Gateway, it was necessary to determine what percentage of Gateway study area residents currently drive alone. Using mode-split data within the US Census tracts that most closely align with the Gateway study area, it was estimated that currently 64% of residents in the area are driving alone.^{4,5} The percentage of Portland per capita residents driving alone is 66%, so the Climate Action Plan goal was deemed applicable to inform the incremental targets for this metric.⁶ With a baseline of 64% and a decrease to 30% by 2030, 23% by 2050 seemed to be an appropriately ambitious goal for a well-connected transit community like Gateway.

¹ City of Portland Bureau of Planning and Sustainability & Multnomah County Sustainability Program. *Climate Action Plan 2009*. p.44.

² City of Portland Bureau of Planning and Sustainability & Multnomah County Sustainability Program. *Climate Action Plan 2009*. p.42.

³ City of Portland Bureau of Planning and Sustainability & Multnomah County Sustainability Program. *Climate Action Plan 2009*. p.42.

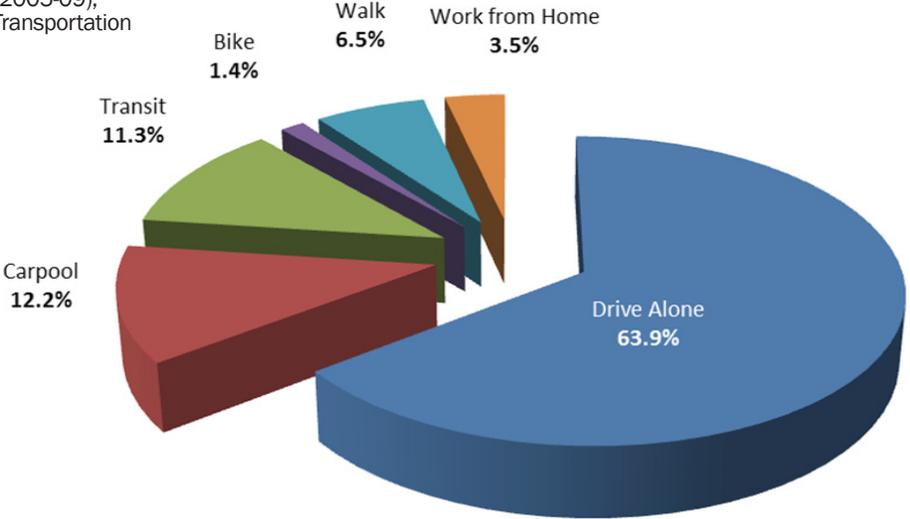
⁴ *Mode-split data derived from the City of Portland's Bureau of Transportation.*

⁵ *Census Tract data derived from the US Census Tract GIS shapefile (2005 - 2009).*

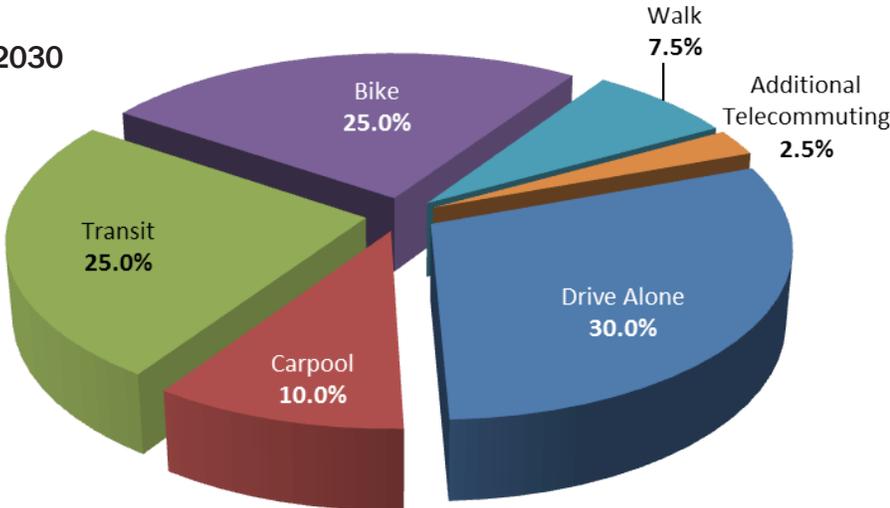
⁶ City of Portland Bureau of Planning and Sustainability & Multnomah County Sustainability Program. *Climate Action Plan 2009*. p.42.

Baseline Mode Split

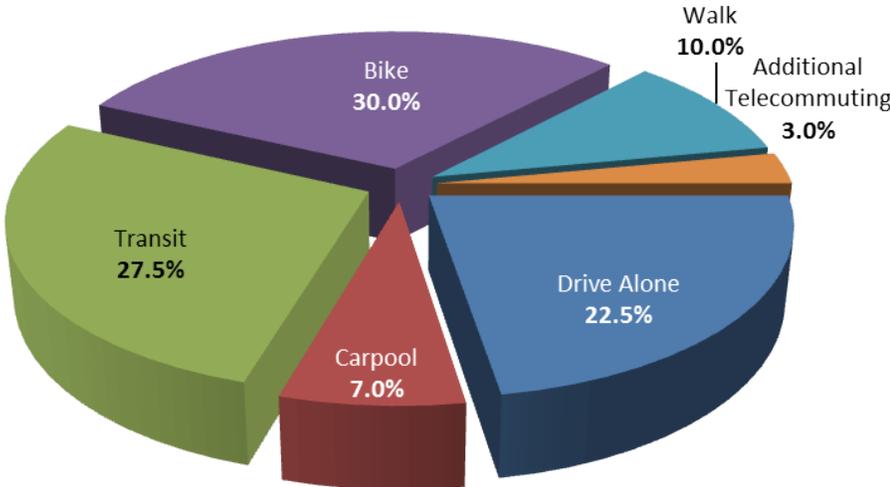
Source: US Census (2005-09),
Portland Bureau of Transportation



**City of Portland Climate
Action Plan Targets for 2030**



**Gateway EcoDistrict
Goal for 2030**



METRIC: Mode-split: Bicycle commuting

TARGET GOAL: 30% of Gateway residents commute by bicycle by 2050

BASELINE: 1% of Gateway residents commute by bicycle

INCREMENTAL TARGETS:

*25% of Gateway residents commute by bicycle by 2030**

**Incremental target dates should be considered as recommendations by the Consultant Team, not established policies*

To complement a reduction in the percentage of commuters driving alone, the Consultant Team posits an increase in the percentage of Gateway residents commuting by bicycle. Portland has the highest bicycling 'commute to work' rate of any major US city and currently has 300 miles of bicycle network that is proposed to expand to over 900 miles by 2030.^{1,2} Achieving a greater bicycle mode-split for the district will also help reduce pollution from particulates and other air toxins produced by automobiles.³

Using mode-split data within the US Census tracts that most closely align with the Gateway study area, it was determined that the current proportion of bicycle commuting is only 1% compared to 8% of bike commuters currently throughout the city of Portland.^{4,5} In keeping with the City of Portland's aggressive goals for increased bike commuting, the incremental 2030 target goal for bike commuters in Gateway EcoDistrict is 25%, with the ultimate goal of 30% of Gateway residents commuting by bike by 2050.

¹ City of Portland Bureau of Transportation. *Portland Bicycle Plan for 2030*, 2011. p.89.

² City of Portland Bureau of Transportation. *Portland Bicycle Plan for 2030*, 2011. p.42.

³ City of Portland Bureau of Transportation. *Portland Bicycle Plan for 2030*, 2011. p.4.

⁴ *Mode-split data derived from the City of Portland's Bureau of Transportation.*

⁵ City of Portland Bureau of Transportation. *Portland Bicycle Plan for 2030*, 2011. p.42.

METRIC: % Roads with Bikeways**TARGET GOAL: 60% of roads within Gateway have bike facilities by 2050****BASELINE: 17% of the roads within Gateway have bike facilities****INCREMENTAL TARGETS:***30% of the roads within Gateway have bike facilities by 2030****Incremental target dates should be considered as recommendations by the Consultant Team, not established policies*

Half of all trips made in Portland are three miles or less.¹ This is a manageable distance for traveling by bike and for localized trips within a neighborhood. Bicycling creates safer streets, serves as an affordable and equitable transportation option, and promotes more dynamic and lively streetscapes.^{2,3} In order for the Gateway EcoDistrict to meet bike commuting goals, improve access and connectivity, and enhance neighborhood livability, it is necessary to expand the area's bicycle network. Progressing towards a finer-grained bikeway network, with access to common destinations and increased crossings of I-205 and I-84, will allow bicyclists to identify routes that best fit their transportation needs, as well as comfort and skill levels. (Refer to Appendix 3 for the Portland Bureau of Transportation's Bicycle Plan for 2030 for East Portland).

By analyzing bikeway data, it was determined that 17% of the roads (11.8 miles) throughout the Gateway study area are classified as existing or planned (and funded) bikeways (with bike lanes or bike boulevard treatments, or an off-street path). Five % of all Gateway roads (3.2 miles) are existing, "family-friendly" bikeways designed to appeal to "interested but concerned" riders.⁴ It should be noted, however, that the majority of the "family-friendly" bikeway mileage is the I-205 bike path, which is an off-street path that runs north and south through the study area and does not provide significant access and/or connectivity within the district.

In order to increase bicycle ridership and connectivity throughout the study area, the goal is to expand the bike network to 60% of the roads by 2050, with an incremental target of 30% by 2030. It is also recommended that a significant portion of these bikeways be designed as "family-friendly."

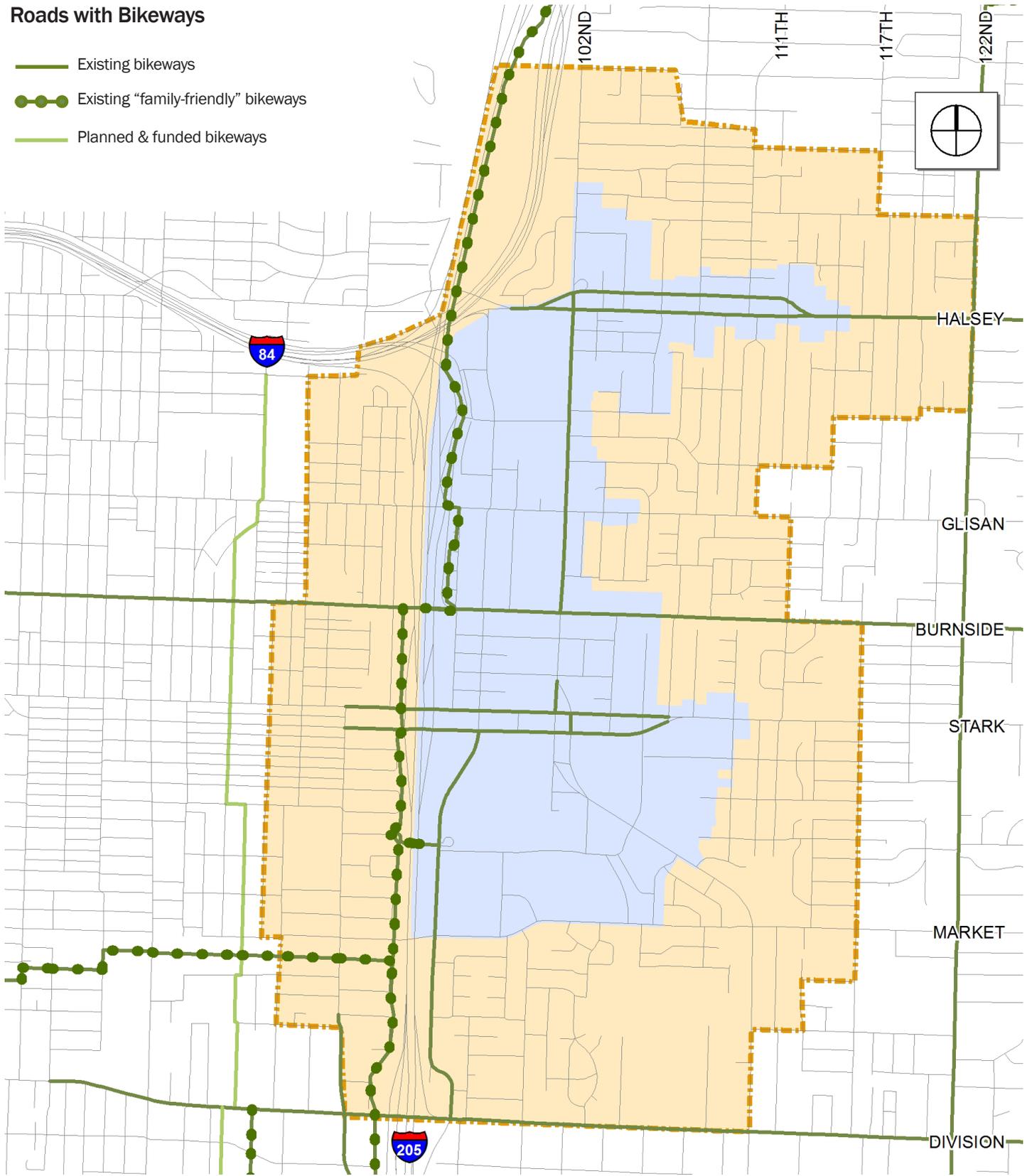
¹ City of Portland Bureau of Transportation. *Portland Bicycle Plan for 2030*, 2011. p.3.

² Marshall, Wesley E. and Norman W. Garrick, "Evidence on Why Bike-Friendly Cities Are Safer for All Road Users," *Environmental Practice* 13 (1), March 2011, p. 16-27.

³ City of Portland Bureau of Transportation. *Portland Bicycle Plan for 2030*, 2011. p.5.

⁴ Data derived from City of Portland Bureau of Transportation bicycle network GIS data (2011).

ACCESS & MOBILITY: BASELINE & TARGETS



METRIC: Pedestrian travel time to basic services

TARGET GOAL: 20-minute walk to basic services within Gateway

BASELINE: 10 - 25 minute walk to some services within Gateway

Portland residents are interested in living in '20-minute neighborhoods,' places in which residents can walk from their homes to numerous desirable destinations and services that are used on a daily basis, including restaurants, grocery stores, transit stops, parks, schools, etc. The 20-minute neighborhood concept is an alternate way to describe a human-scaled neighborhood that is vibrant, walkable, and bikeable.¹ In 2009, the City of Portland Bureau of Planning and Sustainability created a 20-minute Complete Neighborhood Concept map (refer to page 58) that designated the neighborhoods within and surrounding the Gateway URA as moderately accessible and requiring room for improvement, interspersed with small pockets of 'best' accessibility.²

In order to better understand where the Gateway study area is succeeding and/or failing to serve as a 20-minute neighborhood, it was necessary to investigate the distances to some key services. A GIS raster-based distance analysis of the public right-of-way was performed in order to measure pedestrian travel time along the district's streets (rather than through parking lots, yards, etc.).³ The distances were then compared to walk times, assuming an average walk time of 4 feet per second.

A distance analysis to bus and rail transit stops was performed, revealing that the average distance to a transit stop (bus or light rail) is less than a half mile, or roughly an 11-minute walk from anywhere within the study area. This analysis shows that Gateway does live up to its reputation as being a well-connected, transit community.

¹ City of Portland Bureau of Planning and Sustainability & Multnomah County Sustainability Program. *Climate Action Plan 2009*. p.40.

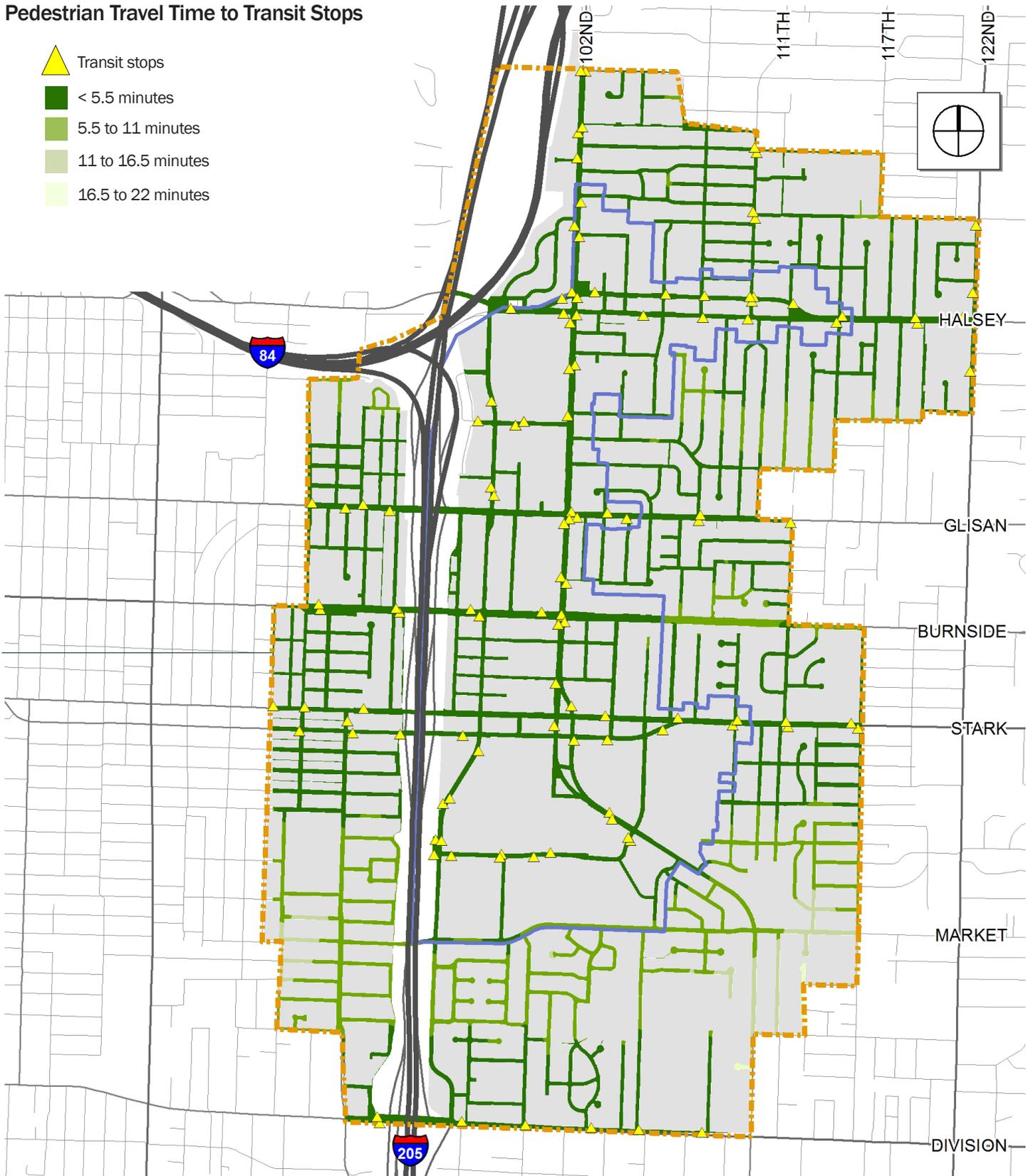
² City of Portland Bureau of Planning and Sustainability & Multnomah County Sustainability Program. *Climate Action Plan 2009*. p.41.

³ Data derived from Metro's GIS raster file: *High Structure Vegetation, 2009*.

ACCESS & MOBILITY: BASELINE & TARGETS

Pedestrian Travel Time to Transit Stops

- ▲ Transit stops
- < 5.5 minutes
- 5.5 to 11 minutes
- 11 to 16.5 minutes
- 16.5 to 22 minutes



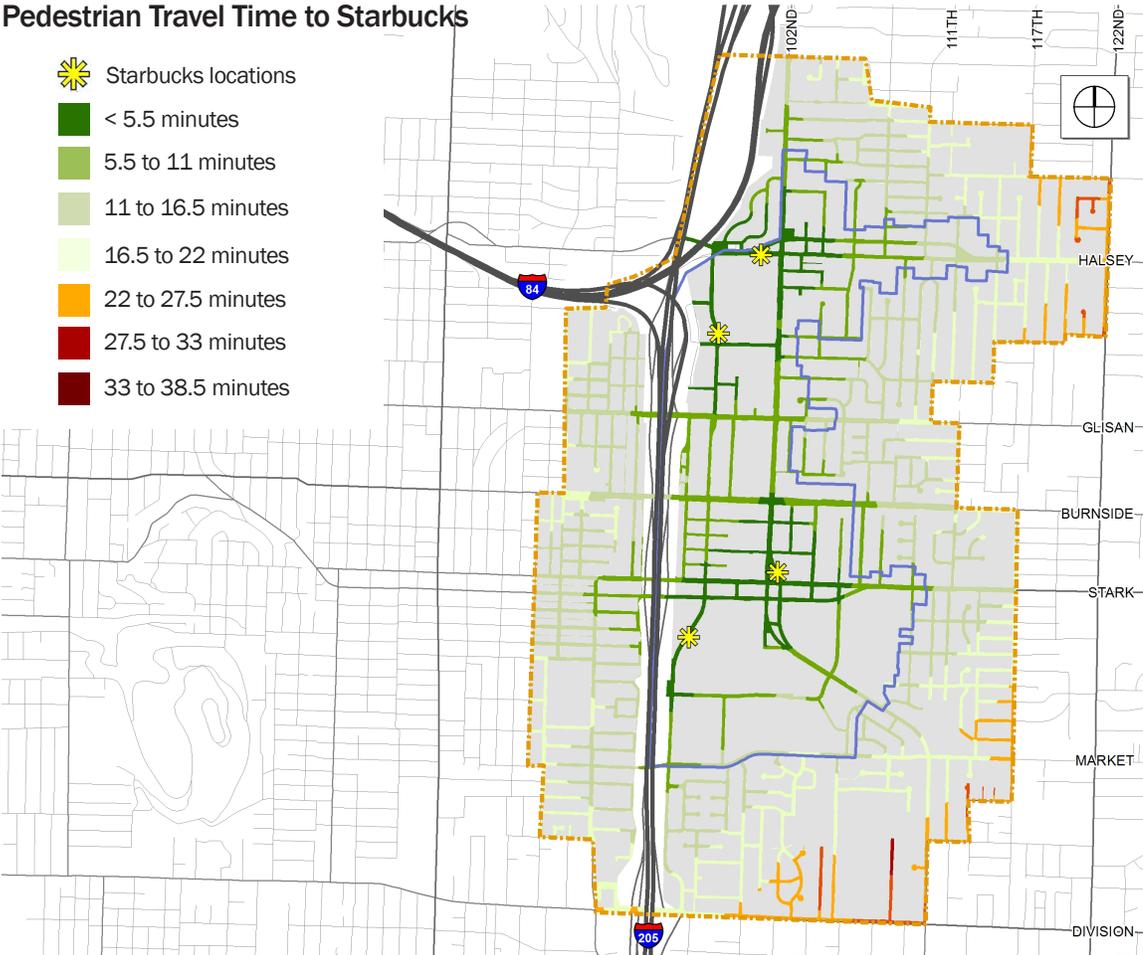
ACCESS & MOBILITY: BASELINE & TARGETS

The next distance analysis performed was for Starbucks locations. Starbucks was considered a proxy for a commercial amenity that might serve as a desirable destination for EcoDistrict residents. The average distance to the four Starbucks locations within the study area is 0.6 miles or less than a 15 minute walk from anywhere within the boundary. Both the NE Weidler/Halsey and the SE Stark/Washington couplets were within less than a five minute walk to Starbucks locations, illustrating that the current commercial centers have good walkability from almost everywhere within the study area.

The final distance analysis was performed on the numerous vehicular and pedestrian access points to the area where the East Portland Community Center (EPCC), Floyd Light City Park, and the Floyd Light Middle School are located. The average distance to EPCC is 0.9 miles or a ~22 minute walk from most places within the study area. The furthest points to EPCC (greater than a ~44 minute walk) were on street locations that were either culs-de-sac or dead end streets, highlighting areas of poor connectivity within the study area.

While the Gateway study area is generally walkable in distance, a necessary analysis, not easily transferable to a quantitative metric, is the quality of the pedestrian environment. Sidewalks, curb ramps, street crossings, and the overall “feel” of the streetscape greatly influence residents’ walking safety and experience. While increased connectivity and general availability of services within a 20-minute walk should continue to be a goal for the EcoDistrict, so should improving the quality of the streetscape environment.

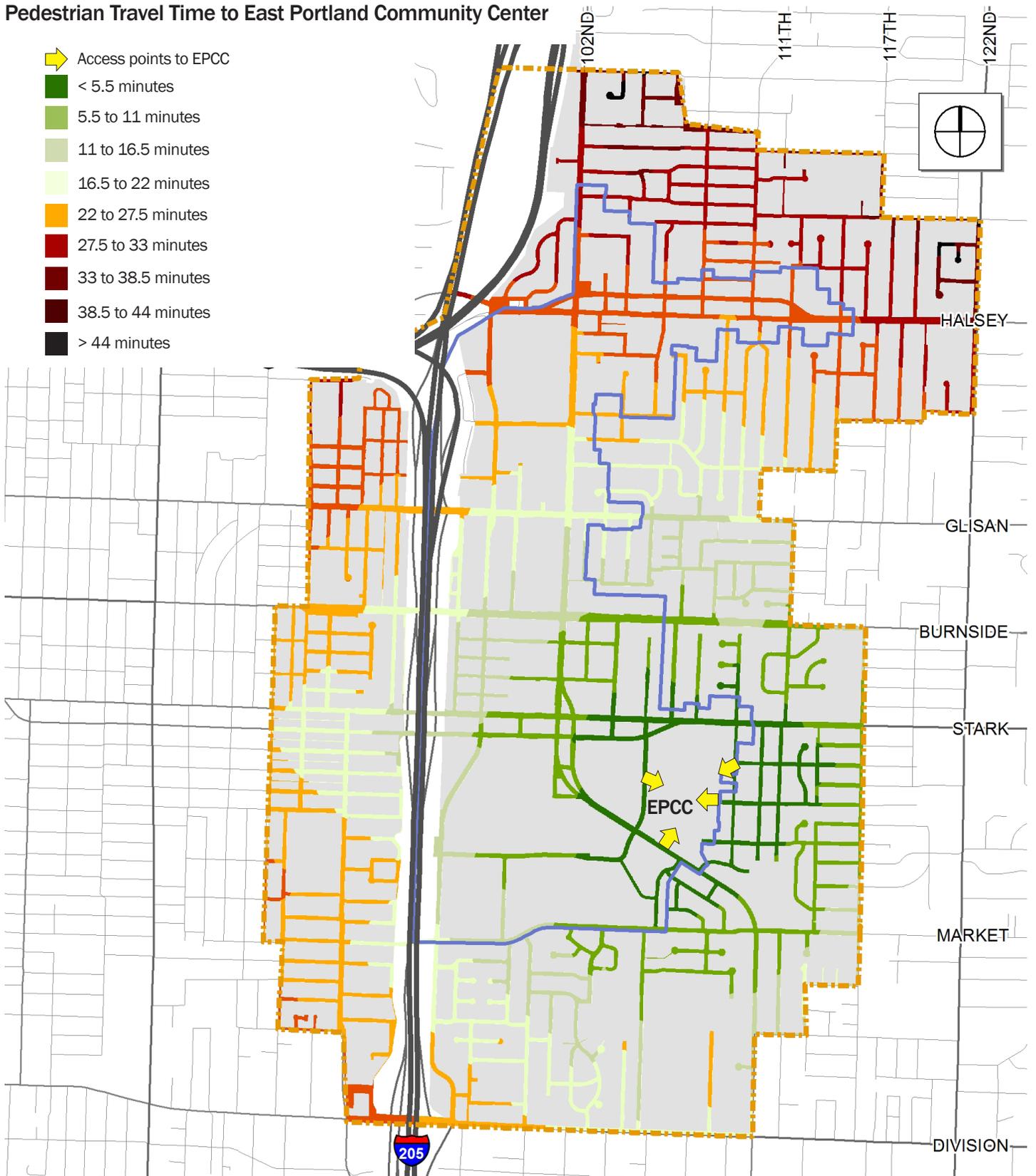
Pedestrian Travel Time to Starbucks



ACCESS & MOBILITY: BASELINE & TARGETS

Pedestrian Travel Time to East Portland Community Center

-  Access points to EPCC
-  < 5.5 minutes
-  5.5 to 11 minutes
-  11 to 16.5 minutes
-  16.5 to 22 minutes
-  22 to 27.5 minutes
-  27.5 to 33 minutes
-  33 to 38.5 minutes
-  38.5 to 44 minutes
-  > 44 minutes



METRIC: Block size

TARGET GOAL: 100% of blocks in Gateway are less than 150,000 square feet

BASELINE: 46% of blocks in Gateway are less than 150,000 square feet

INCREMENTAL TARGETS:

*80% of blocks in Gateway are less than 150,000 square feet by 2030**

**incremental target dates should be considered as recommendations by the Consultant Team, not established policies*

Smaller block sizes provide better street connectivity and create more accessible, walkable neighborhoods. The Gateway study area, specifically the area east of I-205, has deviated significantly from the tight-grid pattern of commercial and residential neighborhoods that define much of Portland. A GIS analysis was performed on the blocks east of I-205 to better understand the quantity and size of the 177 blocks that comprise the Gateway study area in an attempt to improve overall connectivity throughout the EcoDistrict.

Currently the Gateway study area has 82 blocks (out of 177) that range from 50,000 to 150,000 square feet. These blocks generally adhere to the grid pattern and are well-connected by local streets. This range of block sizes is comparable to walkable downtown areas such as those found in Seattle, San Francisco, and Vancouver, BC, and pedestrian-friendly Portland neighborhoods like NW 23rd, Sellwood, and the Alberta Arts District. These block sizes are generally found throughout some of the residential pockets within the study area, as well as the NE Weidler/Halsey and the SE Stark/Washington couplets.

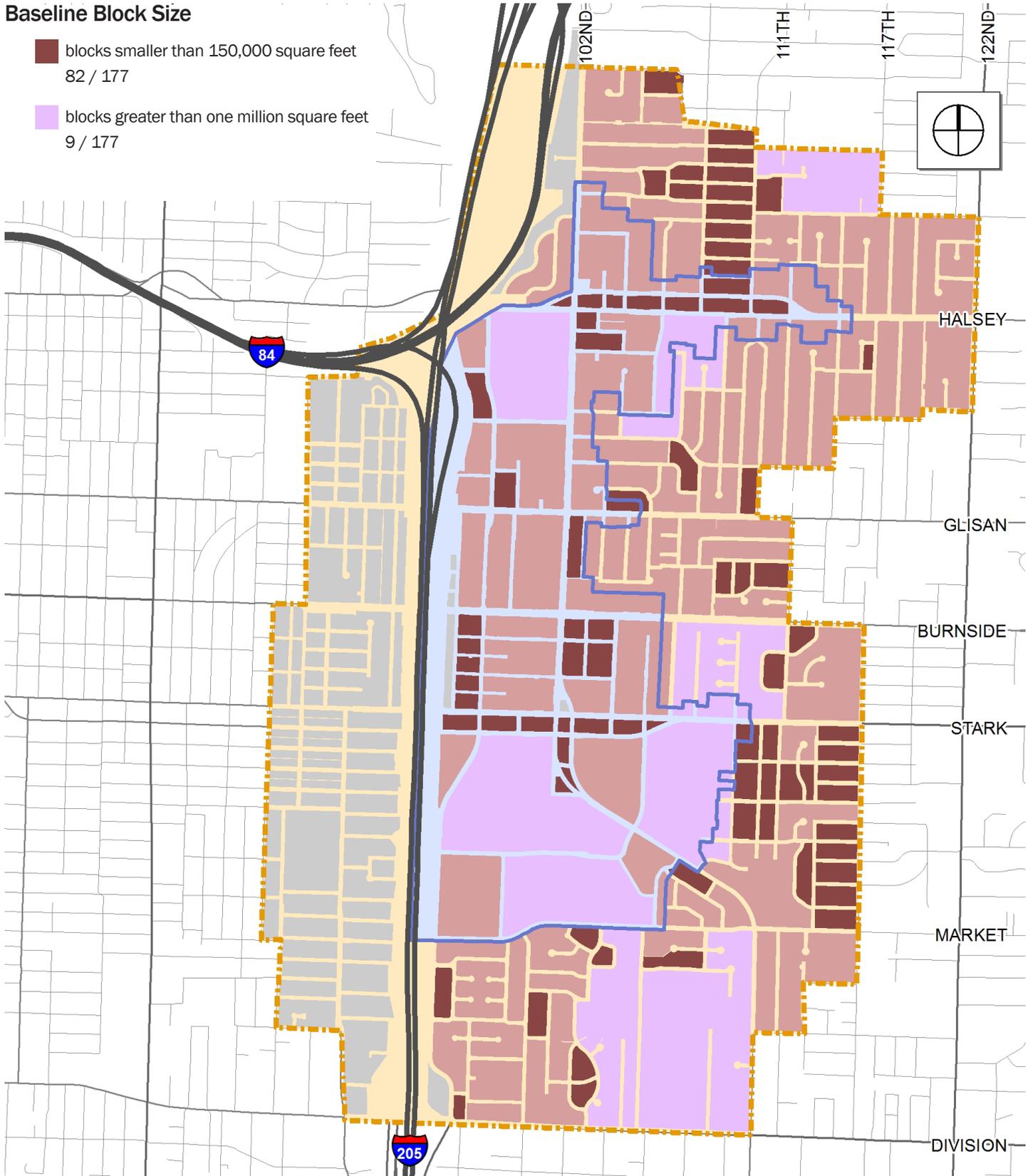
The remaining 95 blocks (out of 177) within the study area boundary range in size from greater than 150,000 SF to superblocks that are more than one million square feet in size. The superblocks are typically defined more by street hierarchy than the traditional grid and are surrounded on all sides by widely spaced, high-speed arterials or circulating routes rather than local streets. Their interiors are typically served by cul-de-sac or dead end streets. In the case of the study area, superblocks are generally home to large-scale commercial, educational, institutional, or medical uses. The Gateway study area has nine superblocks over one million square feet in size, and these dominate a significant portion area within the study boundary.

Re-shaping the block sizes in the study area will provide the necessary structure for walkable, pedestrian-friendly neighborhoods. While re-structuring blocks is not easily done, given substantial barriers such as land ownership and existing buildings, it is necessary to begin the process of acquiring land and easements that provide future connective opportunities.

ACCESS & MOBILITY: BASELINE & TARGETS

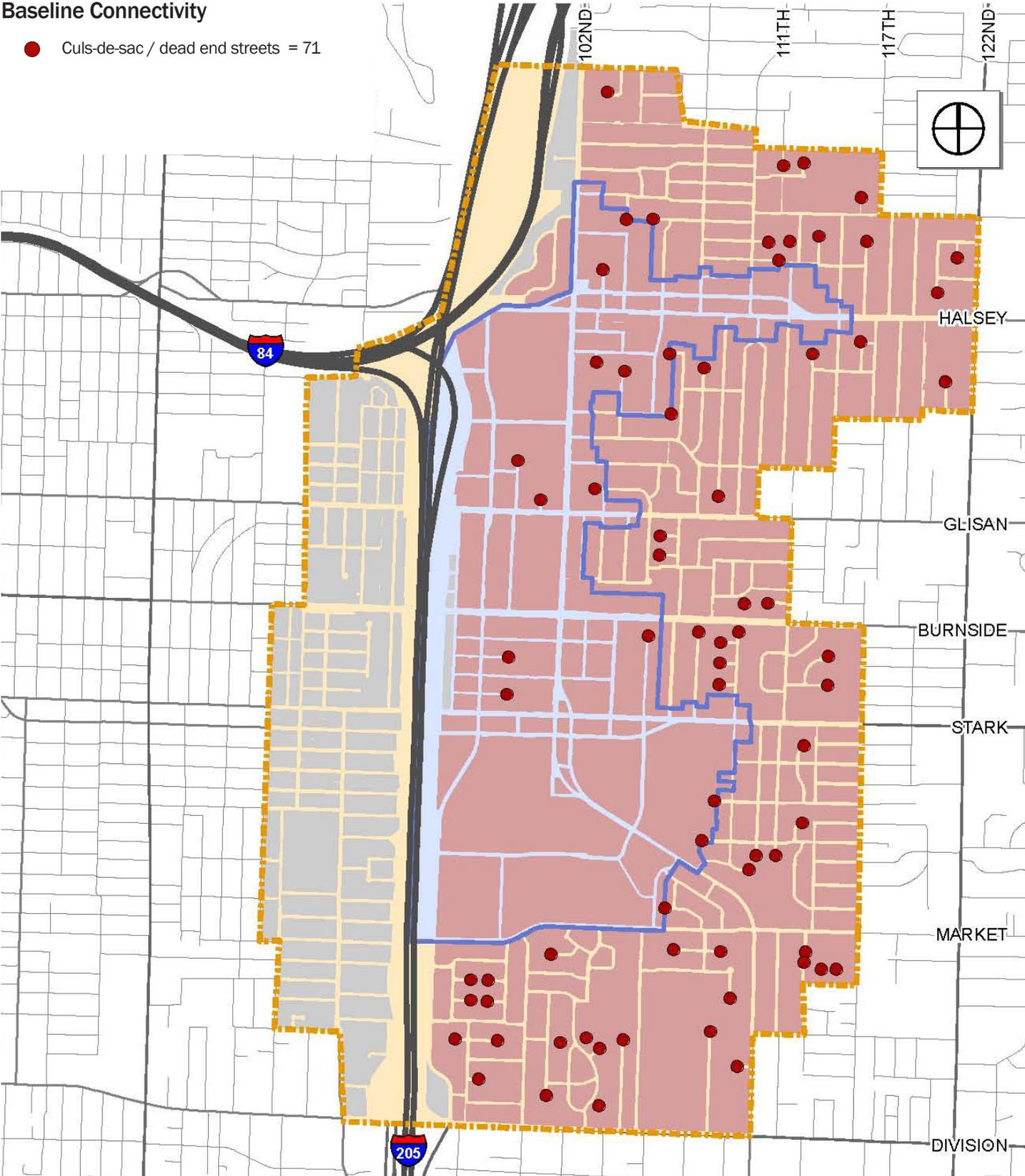
Baseline Block Size

- blocks smaller than 150,000 square feet
82 / 177
- blocks greater than one million square feet
9 / 177



Baseline Connectivity

● Culs-de-sac / dead end streets = 71



ACCESS & MOBILITY: STRATEGY PALETTE

| Performance Area | Potential Strategies (Opportunities) | Barriers (Constraints) | Metric | Degree of Difficulty TIME/COST/ COMPLEXITY (no barriers = 1 /barriers = 5) | Next Steps | Recommended Strategies | |
|--|--|---|--|---|--|---|---|
| SHIFT | | | | | | | |
| Access & Mobility | HARDWARE | implement and/or improve bicycle facilities that serve retail and employment centers, transit centers, institutions, and destinations | <ul style="list-style-type: none"> cost / maintenance of additional and improved infrastructure priorities of other modes (TSP) access / availability of paths that have low-volume traffic or are car-free safety and accessibility | Mode split, % Roads with bikeways | 3 | <ul style="list-style-type: none"> accommodate 'Bicycle Districts' or dense areas w/ mixed-use, where streets are all designed to function well for bicyclists implement a system of low-stress bikeways for more concerned riders increase frequency & improve quality of bike routes over I205 and I84 improve high-frequency bike routes for commuters | * |
| | | accommodate more bicycle parking that is safe and secure | <ul style="list-style-type: none"> bicycle parking costs ensuring safety | Mode split | 2 | <ul style="list-style-type: none"> include more parking at transit center, rail platforms, high-demand bus stops encourage private companies to sponsor bike racks include more covered and secure parking in employment districts develop metric around bike parking spaces and utilization | * |
| | | improve pedestrian connectivity and the overall pedestrian environment (both public & private) | <ul style="list-style-type: none"> funding resources maintenance / safety of infrastructure quality of environments utilization of the pedestrian realm | N/A | 3 | <ul style="list-style-type: none"> ensure access to sidewalks, safe street crossings, street lighting, curb extensions, benches, etc. design for pedestrian encounter zones, wide sidewalks, commercial areas with low or slow moving traffic, plazas, etc. | * |
| | | deter motor vehicle use within the district (and for commuting purposes) | <ul style="list-style-type: none"> increased costs may not deter commuters / vehicle drivers | Mode split | 3 | <ul style="list-style-type: none"> increase parking costs in employment centers and downtown Portland meter parking in Gateway commercial areas limit the ability to 'park' in the 'park and ride' program implement residential parking permits if necessary develop metrics around ADT and VMT | * |
| | SOFTWARE | implement incentive programs to promote and support commuter alternatives such as rail and bus travel, biking, and walking | <ul style="list-style-type: none"> employer motivation / cooperation / expense district-wide motivation / cooperation / expense availability of incentives employee / district member participation | Mode split | 3 | <ul style="list-style-type: none"> encourage employer / employee incentives - financial or other and / or encourage district-wide incentive program - financial or other participate in "commuter challenge" events install shower facilities at work places for bicycle commuters | * |
| | | create district dashboard | <ul style="list-style-type: none"> Upfront capital cost | Mode split | 2 | <ul style="list-style-type: none"> Explore existing technologies to determine best fit. Identify site locations (i.e. public space kiosks, buildings, homes, businesses). Estimate system cost and potential performance/ education benefits. | * |
| | | increase telecommuting | <ul style="list-style-type: none"> feasibility for employer / employee potential impacts on business operations & productivity | Mode split | 3 | | |
| | | increase multilingual bicycle education materials / opportunities | <ul style="list-style-type: none"> funding educational programs / materials community interest ability to teach multilingual courses / publish materials ability to reach out to non-english speaking community | Mode split | 1 | <ul style="list-style-type: none"> provide multilingual bike maps and commute option materials provide multilingual bicycle training opportunities for novice riders | |
| | SHARE | | | | | | |
| | HARDWARE | facilitate formal car & bicycle sharing programs and fleets | <ul style="list-style-type: none"> cost / maintenance of programs expected return / effectiveness of programs? | Mode split | 3 | <ul style="list-style-type: none"> prepare a market study for car and bike share programs that would be effective / useful for Gateway residents site car/bike share parking spaces or distribution points within Gateway, include the Transit Center prioritize electric & hybrid vehicles | |
| facilitate informal / community-based car & bicycle sharing programs | | <ul style="list-style-type: none"> organization & operation community participation access to volunteered, donated, or purchased cars / bicycles | Mode split | 2 | <ul style="list-style-type: none"> community members volunteer shared-use of cars / bikes facilitate / organize through community group determine opportunities that may exist for carpool rides to and from regional employment centers prioritize electric & hybrid vehicles | | |
| MANAGE | | | | | | | |
| HARDWARE | maintain safety & affordability of public transit options and bike facilities | <ul style="list-style-type: none"> cost / maintenance of public transit and bike infrastructure | Mode split | 2 | <ul style="list-style-type: none"> ensure people of all income levels have ability to afford public transit ensure all areas throughout the district have equal access to bike facilities ensure transit centers, bus stops, bike facilities, etc., are well-lit and safe. | | |
| | examine alternative transportation programs routinely to ensure they are effectively reducing single occupancy vehicle use | <ul style="list-style-type: none"> effectiveness of programs cost of increased transit frequency cost of increased modes of | Mode split | 2 | <ul style="list-style-type: none"> increase bus/rail transit frequency if necessary examine park and ride programs & parking capacity improve capacity for bicycles on rail and buses during peak commuter hours | | |
| SOFTWARE | improve coordination of the numerous East Portland groups focused on transit | <ul style="list-style-type: none"> poor communication duplication of efforts lack of effectiveness | Mode split | 2 | <ul style="list-style-type: none"> determine a communication method that relays goals and actions of each group determine areas where working collaboratively may provide | | |

Strategy recommendations include:

- Improve pedestrian connectivity and the overall pedestrian environment (both public & private).
- Implement and/or improve bicycle facilities that serve retail and employment centers, transit centers, institutions, and destinations.
- Accommodate more bicycle parking that is safe & secure.
- Implement incentive programs to promote and support commuter alternatives such as rail and bus travel, biking, and walking.
- Create a district dashboard.

Strategy recommendations relating to improved pedestrian and bikeway connectivity will have the most success achieving the goals of this Performance Area and will positively impact numerous others (Air Quality & Carbon, Placemaking, and Social Cohesion). Improving access and mobility for walkers and cyclists will begin a slow, but inevitable shift that will help define the physical form of this EcoDistrict, as well as pose innumerable benefits for the health and well-being of community residents.

Improving the pedestrian environment and bicycle facilities that connect to the district's retail, employment, and transit centers will likely activate streetscapes, spur business development, and increase bike and bus commute trips. More pedestrian use of and 'eyes on' the streets will hopefully deter bike theft, which is prevalent throughout Gateway. Accommodating more bicycle parking that is safe and secure throughout the district will also help and would be an easy strategy to implement immediately.

Decreasing the amount of daily vehicle miles traveled within the district and to employment centers throughout the Portland metro region should also be a district priority. Improving streetscapes and bikeways will draw people from their cars, but another strategy to consider is encouraging incentive programs that promote and support alternative commuting modes. These programs could be initiated by employers or through more district-wide efforts.

Increasing awareness of vehicle miles traveled and mode split within the district may also work to deter single occupancy vehicle travel. District dashboards could be used to report mode split statistics and perhaps encourage and incentivize district residents to reduce vehicle trips.



PLACEMAKING

VISION: District form and physical infrastructure supports community functionality, resilience, and identity

GOALS:

1. Create functional and accessible places that promote interaction
2. Design projects and social systems to be flexible and adaptable
3. Employ strategies that foster cohesive neighborhood identity and brand
4. Promote human health and well-being through the natural, social, and built environments

A neighborhood is defined by the relationship between its social and physical elements and how they combine to establish a unique community identity and sense of place. The urban form of an EcoDistrict, largely comprised of the sustainable infrastructure and buildings capable of achieving Performance Area goals, includes the 'hardware' (the physical development and infrastructural systems) that foster a walkable and bikeable community with desirable places / destinations. The 'software' (the cultural, local economics, and resource flows) are the social elements that provide vitality, uniqueness, and a sense of identity, or 'place', to this form.

There is no formula, or tried and true method for 'placemaking'. Through its Portland Plan efforts and other initiatives, the City of Portland is working towards creating more 20-minute neighborhoods. A 20-minute neighborhood analysis could be considered a 'placemaking' tool that prioritizes convenient, safe, and pedestrian-oriented access to the places people need to go and the services people use nearly every day: transit, shopping, quality food stores, schools, parks, etc.

The City of Portland's GIS analysis of 20-minute neighborhoods determined pockets of 'best accessibility' near the Gateway Transit Center and the NE Weidler/Halsey couplet.¹ Much of the area within the EcoDistrict boundary, however, is designated as requiring 'room for improvement'. Accessibility and connectivity would be greatly improved with smaller block sizes, allowing for more pedestrian permeability throughout the neighborhood. As determined in the block size metric previously described, breaking down block sizes to be 150,000 square feet or smaller will provide a more walkable urban form. It is also necessary to design for and implement quality places that community members value and desire and that contribute to the character of the Gateway EcoDistrict.

Developing quantifiable metrics that measure the quality or vitality of place is very challenging; these were not attainable during the course of this project. To create a baseline of placemaking attributes that currently exist in the district, it would be necessary to engage community residents in determining the answers to the following (example) questions: What is the quality of the parks and public spaces? What is the quality of the pedestrian environment? What are the quality of businesses that are accessible within 20-minutes? Are these businesses and retail centers places that residents use? What are the district's most valued places? Why? How do they contribute to the Gateway EcoDistrict character? Answers to these qualitative questions may lead towards an ability to map and determine existing places within the district that are considered important to residents and contribute to neighborhood identity.

Here is a short list of metrics that may be useful for future placemaking assessments:

Potential Metrics:

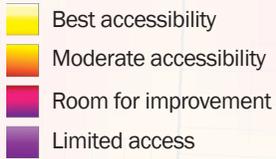
- General quality of the built environment
- Quality and appearance of building stock (including architecture and maintenance)
- Number, size, location, and quality of parks and public spaces
- Quality of the pedestrian-scaled streetscape
- Mix of desirable land uses

Placemaking also increases the perception of safety in neighborhoods by creating vital public spaces and

¹ Data and map derived from Portland Bureau of Sustainability's 20-Minute Neighborhood Analysis

PLACEMAKING: BASELINE & TARGETS

20-minute Neighborhood



Input layers

Destinations:

- Grocery stores
- Neighborhood-oriented commercial: restaurants, pubs, drug stores, convenient stores, laundromats
- Transit stops
- Parks
- Schools

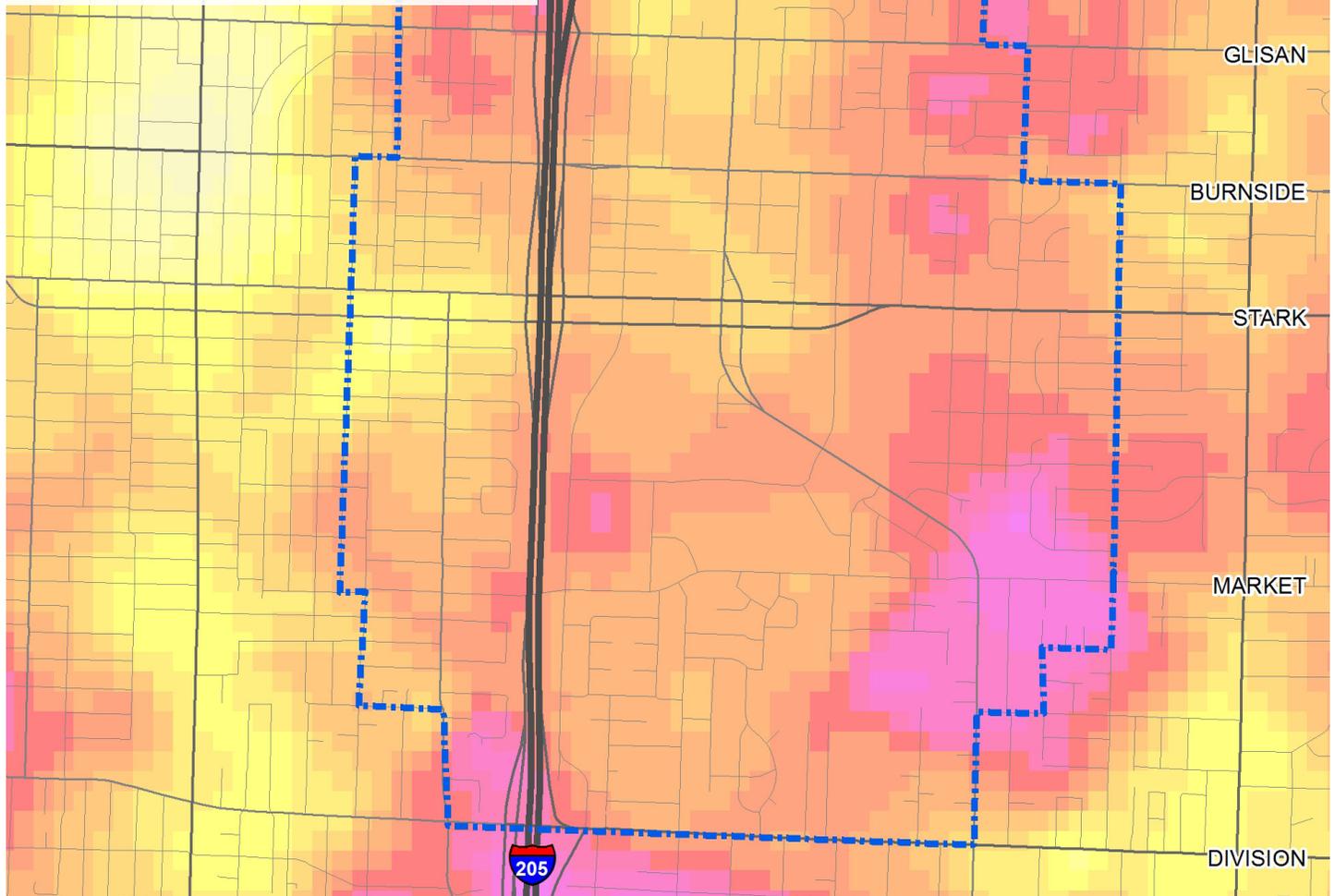
Distance:

- 1/4- mile, 1/2 mile, 1 mile gradient to destinations

Walk Quality:

- Sidewalks (presence or absence of)
- Intersection density
- Slope

Source: Portland Bureau of Planning & Sustainability, 2010



strengthening the local economy. Developing a quantifiable metric that addressed perceived safety or crime within the district proved difficult and indeterminate. Crime data for the study area was provided by the Portland Police Bureau and was compared to the City of Portland as a whole to better understand the challenges that the community faces. (Please see the appendix for further information on this data).

PLACEMAKING: STRATEGY PALETTE

| Performance Area | Potential Strategies (Opportunities) | Barriers (Constraints) | Metric | Degree of Difficulty TIME/COST/ COMPLEXITY (no barriers = 1 /barriers = 5) | Next Steps | Recommended Strategies | |
|------------------|--------------------------------------|--|--|--|------------|---|--|
| Placemaking | IDENTIFY | | | | | | |
| | HARDWARE | design and implement a physical landmark or signature building that identifies the Gateway EcoDistrict | <ul style="list-style-type: none"> funding resources community consensus | N/A | 4 | <ul style="list-style-type: none"> determine what kind physical or structural element would serve as a defining 'gateway' to Gateway | |
| | | create a Gateway EcoDistrict visual / physical 'brand' defined by sustainable community form and infrastructure | <ul style="list-style-type: none"> funding resources community consensus time / development | N/A | 4 | <ul style="list-style-type: none"> create/install Gateway-specific signage, banners, and art pieces that express EcoDistrict character & identity work towards implementing EcoDistrict performance area strategies that facilitate sustainable form over time | |
| | | create signature parks / open space of city-wide or regional significance | <ul style="list-style-type: none"> funding resources interest of community & beyond | N/A | 3 | <ul style="list-style-type: none"> work with the City and/or Metro to determine funding potential for a regional destination park (Gateway Green) | * |
| | | develop community businesses and/or venues that cater towards local ethnic services and goods | <ul style="list-style-type: none"> funding resources interest of community & beyond | N/A | 3 | <ul style="list-style-type: none"> identify potential local businesses or venue sites that would demonstrate community identity and provide a regional draw, i.e. an international food / craft market, ethnic groceries, ethnic restaurants | * |
| | SOFTWARE | create a Gateway EcoDistrict identity 'brand' or neighborhood character, that associates with a livable, affordable, diverse, sustainably-minded community unique to the Portland Metro region | <ul style="list-style-type: none"> policy support funding resources community engagement business, developer, institutional engagement job creation | N/A | 2 | <ul style="list-style-type: none"> work towards defining an EcoDistrict marketing brand to recruit businesses, developers, housing operators, and institutions employ this neighborhood identity to attract new residents interested in living in an EcoDistrict community celebrate the ethnic & cultural diversity within Gateway | * |
| | | improve (perception of) community safety | <ul style="list-style-type: none"> funding resources providing more 'eyes' on public areas & community amenities | safety | 3 | <ul style="list-style-type: none"> establish community programs that work towards improving community safety | |
| | FORM | | | | | | |
| | HARDWARE | design building and site form to ensure safety and security | <ul style="list-style-type: none"> ability to redesign existing buildings & public or quasi-public space | safety | | <ul style="list-style-type: none"> determine which areas within the community require more security determine methods that would improve safety | |
| | | implement a safe and accessible bikeway network throughout the community | <ul style="list-style-type: none"> cost / maintenance of additional and improved infrastructure priorities of other modes (TSP) access / availability of paths that have low-volume traffic or are car-free | % Roads with bikeways | 2 | <ul style="list-style-type: none"> plan bike routes to commercial, employment, transit centers, schools, parks, etc. plan family friendly bike routes to engage more concerned riders | |
| | | provide basic services & public amenities within a 20-minute walk from most residents | <ul style="list-style-type: none"> market condition for commercial businesses quality of pedestrian environment quality of businesses / retail existing land use / zoning existing buildings land ownership / easements availability of city funding to increase / improve public amenities in the district | block size | 4 | <ul style="list-style-type: none"> increase the amount of streets and/or paths throughout the district to reduce overall block size and allow improved connectivity encourage / incentivize placement of quality commercial / retail business that better serve the district work with the City to locate necessary public amenities incentivize residents to frequent services within their 20-minute neighborhood develop and implement business recruitment strategy develop additional metrics as | |
| | | create more high-quality public (or quasi-public) spaces and parks | <ul style="list-style-type: none"> funding for both capital and operating expenses land availability | N/A | 3 | <ul style="list-style-type: none"> work with the City to determine funding potential for more local parks and public spaces work to improve existing public spaces with programming suited | * |
| | | enhance the community with green infrastructure | <ul style="list-style-type: none"> funding resources maintenance ecological integrity | N/A | 2 | <ul style="list-style-type: none"> plant street trees to reduce urban heat island effect, provide habitat connectivity, and improve community character add green streets and swales where appropriate for on-site stormwater mitigation add appropriate landscaping to planting strips, commercial areas, leftover spaces, etc. encourage residents to have 'beautify your yard' contests | |
| | | SOFTWARE | support "third-places" as places to build community & foster community collaboration | <ul style="list-style-type: none"> funding resources community interest / participation availability of space | N/A | 1 | <ul style="list-style-type: none"> designate coffee shops, churches, pubs, diners, social clubs, community gardens, community centers, IRCO, etc. as third-places |

Strategy recommendations include:

- Create a Gateway EcoDistrict identity ‘brand’ or neighborhood character that associates with a livable, affordable, diverse, and sustainably-minded community unique to the Portland Metro region
- Create signature parks / open space of city-wide or regional significance
- Create more high-quality public (or quasi-public) spaces and parks
- Enhance the community with green infrastructure

Strategies for the Placemaking Performance Area were divided into two main action categories: ‘Identify’ and ‘Form’. Strategies that fell under the ‘Identify’ category provide opportunities for Gateway to define its identity, or brand, as an EcoDistrict, and as a unique neighborhood within the Portland Metro region. Gateway is already a neighborhood known for its affordability and diversity. As the community continues to work toward EcoDistrict goals, it will be further identified with sustainability, livability, walkability, energy efficiencies, innovative technologies, local economies, etc. These sustainable district attributes will begin to attract people from the Portland region and beyond interested in opening businesses or settling into a community with shared vision and goals.

Strategies categorized by ‘Form’ provide opportunities for the district to work towards the physical infrastructure and development necessary to achieve EcoDistrict Performance Area goals. The urban form of an EcoDistrict will help to define Gateway as a sustainable and livable neighborhood. One strategy that will have immediate impact on community form and character is the implementation of more high-quality public spaces and parks. Creating more parks and open space will greatly benefit this park deficient community and have tremendous impact on all Performance Area goals. The district would additionally benefit from designing and implementing regionally significant parks that would engage the larger Portland community. Efforts to turn Gateway Green into a regional destination park are already underway.

To further define EcoDistrict form, increased green infrastructure will benefit stormwater mitigation, enhance neighborhood aesthetic, and impact numerous EcoDistrict Performance Area goals related to air quality, water, and habitat. Improving the neighborhood streetscapes and public spaces with green infrastructure will inevitably lead to more active use of these spaces and possibly an increased perception of neighborhood safety.



Sunday Parkways, East Portland

SOCIAL COHESION

VISION: Social infrastructure fosters community connection, inclusion and self governance

GOALS:

1. Ensure that the perspective of all ethnicities and income levels inform project
2. Use EcoDistricts as a positive way for different interest groups to come together around shared neighborhood priorities

A cohesive community network is integral to the success of an EcoDistrict. Communication, shared goals and values, strong leadership, and active participation by residents, employers, and employees are required for the achievement and function of all nine Performance Area goals.

Similar to Placemaking, there are not extent datasets that can provide an existing baseline of social cohesion within the Gateway EcoDistrict. This is a highly qualitative Performance Area that will rely on community stakeholders to evaluate where the existing gaps and future possibilities lie. The following metrics may be considered a start to documenting current social cohesion.

Potential Metrics:

- Range/number/participation in social organizations that cater to community needs (fraternal organizations, scouts, etc).
- Range/number/participation in religious organizations that serve the community.
- Range/number/participation in community service groups (neighborhood associations, EcoDistrict Steering Committee, etc).
- Range/number/participation in community events (street fairs, bike rides, block parties).

SOCIAL COHESION: STRATEGY PALETTE

| Performance Area | Potential Strategies (Opportunities) | Barriers (Constraints) | Metric | Degree of Difficulty TIME/COST/ COMPLEXITY (no barriers =1 /barriers = 5) | Examples | Recommended Strategies | |
|------------------|--------------------------------------|---|---|--|----------|--|---|
| Social Cohesion | INSTIGATE | | | | | | |
| | HARDWARE | establish a community based/focused non-profit clearing house for local, sustainability-driven community groups and non-profits | <ul style="list-style-type: none"> business development interest physical space / location funding resources | N/A | 3 | <ul style="list-style-type: none"> Nonprofit Network of SW WA Metrowest Non-Profit Network | |
| | | form EcoDistrict or sustainability-focused local business cooperatives | <ul style="list-style-type: none"> leadership interest physical space / location funding resources | N/A | 3 | | |
| | | form a collaborative consumption hub for sharing / bartering within the community | <ul style="list-style-type: none"> community interest availability of space | N/A | 3 | <ul style="list-style-type: none"> resource sharing, i.e. tools, seeds, clothes, bikes, etc. bulk purchasing Gateway GreenBacks! | |
| | SOFTWARE | engage in local governance board | <ul style="list-style-type: none"> leadership interest | N/A | 2 | <ul style="list-style-type: none"> EcoDistrict SMA | |
| | | develop / implement communication systems to engage community interaction | <ul style="list-style-type: none"> leadership interest knowledge of communication systems | N/A | 2 | <ul style="list-style-type: none"> community interest boards Google Groups Gateway EcoDistrict Newsletter website Facebook / Twitter flyers | * |
| | | engage in capacity-building activities to develop local social capital | <ul style="list-style-type: none"> leadership interest participation interest | N/A | 3 | <ul style="list-style-type: none"> cultural event venue support underserved communities by encouraging engagement & representation in community gover engage youth in all facets of community buildingnance and events church youth groups tutoring programs at local schools community events that allow for children to interact | * |
| | | organize public events: bike rides, movie nights, street fairs, block parties, etc. | <ul style="list-style-type: none"> leadership interest public interest funding venue availability | N/A | 2 | <ul style="list-style-type: none"> Fun-o-rama Movies-in-the-Park Concerts-in-the-Park Events that celebrate cultural diversity, ethnic & religious cultural holidays, etc. | * |
| | INTERACT | | | | | | |
| | SOFTWARE | join a neighborhood service committee / event | <ul style="list-style-type: none"> community interest availability of meeting place | N/A | 2 | <ul style="list-style-type: none"> neighborhood watch program neighborhood maintenance program litter pick-up events beautify the neighborhood events | |
| | | increase community garden sharing or a fruit/nut tree planting program | <ul style="list-style-type: none"> community interest garden space maintenance | N/A | 2 | <ul style="list-style-type: none"> Portland fruit tree project community gardens harvest celebrations | |
| | | engage the community in collaborative consumption | <ul style="list-style-type: none"> community interest resources to share | N/A | 2 | <ul style="list-style-type: none"> resource sharing, i.e. tools, seeds, clothes, etc. bulk purchasing | |
| | | Create district dashboard | <ul style="list-style-type: none"> Upfront capital cost | N/A | 2 | <ul style="list-style-type: none"> Explore existing technologies to determine best fit. Identify site locations (ie, public space kiosk, buildings, homes, businesses). Estimate system cost and potential performance/ education benefits. | * |

SOCIAL COHESION: RECOMMENDED STRATEGIES

Strategy recommendations include:

- Develop / implement communication systems to engage community interaction
- Engage in capacity-building activities to develop social capital
- Organize public events: bike rides, movie nights, street fairs, block parties, etc.
- Create a district dashboard

Strategies for social cohesion fell into the 'Instigate' or 'Interact' categories. Active community builders, such as those that participate in the Gateway EcoDistrict Steering Committee, for example, are essential for instigating local activities and facilitating community interaction. Recommended strategies are those that can happen immediately, or in the short term with limited funding. The success of the Social Cohesion Performance Area goals are entirely dependent on the local community. The strategies reflect many efforts that the Gateway community is already engaged in, such as establishing communication systems and organizing public events.

This Performance Area prioritizes Gateway EcoDistrict's continued efforts in developing a deep sense of community that is specific to this place. Working together, this neighborhood should continue to celebrate its diverse and dynamic culture and define and own their social sustainability.



HABITAT & ECOSYSTEM FUNCTION

VISION: Integrate built and natural environments for healthy urban ecosystems

GOALS:

1. Advance current and emerging watershed goals
2. Protect, regenerate, and manage habitat & ecosystem function at all scales
3. Prioritize native and structurally diverse vegetation
4. Create habitat connectivity within and beyond the district
5. Avoid human-made hazards to wildlife and promote nature friendly design

METRIC: % Canopy Coverage

TARGET GOAL: 35% canopy coverage in Gateway by 2050

BASELINE: 20% canopy coverage in Gateway

INCREMENTAL TARGETS:

*25% canopy coverage in Gateway by 2025**

*30% canopy coverage in Gateway by 2040**

**incremental target dates should be considered as recommendations by the Consultant Team, not established policies*

Canopy cover is defined as the proportion of an area, when viewed from above, that is occupied by tree crowns. Canopy cover is an overall indicator of forest health and quantity.¹ Urban tree canopy provides significant ecological, aesthetic, and economic value for the city. Increasing canopy coverage can result in measurable improvements, such as increased corridor connectivity for avian species, habitat, stormwater treatment, urban heat island effect reduction, carbon sequestration, and increased land values.² The urban forest also has numerous qualitative benefits, such as positively impacting a neighborhood's sense of place, and providing psychological benefits for people.

The City of Portland values the benefits of increased canopy coverage and is striving to increase the current 26% canopy coverage (including Forest Park) to a minimum of 33% coverage in all of Portland's neighborhoods.^{3,4} The Gateway study area is predominately covered in hard or impervious surfaces (56%), so in line with the City of Portland's goals, the Gateway EcoDistrict should aim to achieve 35% canopy coverage by 2050.

Using a GIS raster file that illustrates canopy, groundcover, and impermeable surface coverage, it was determined that the Gateway study area currently has 20% canopy coverage.⁵ In hopes to achieve 35% coverage by 2050, incremental targets were set to increase canopy coverage 25% by 2025, and 30% by 2040.

To further inform the canopy coverage analysis, the Gateway study area was divided into land use categories to determine what land use types would provide the greatest opportunities for canopy coverage increase. Using the performance goal metrics from the City of Portland's Urban Forest Management Plan

¹ Portland Parks & Recreation & Urban Forestry Management Plan Technical Advisory Committee. *The Urban Forestry Management Plan*. March, 2004, Appendix 5.

² Portland Parks & Recreation & Urban Forestry Management Plan Technical Advisory Committee. *The Urban Forestry Management Plan*. March, 2004, p.22.

³ Portland Parks & Recreation & Urban Forestry Management Plan Technical Advisory Committee. *The Urban Forestry Management Plan*. March, 2004, p.18.

⁴ Personal communication with Jennifer Karps, City of Portland Canopy Coordinator, June 16, 2011.

⁵ Data derived from Metro's GIS raster file: *High Structure Vegetation*, 2009.

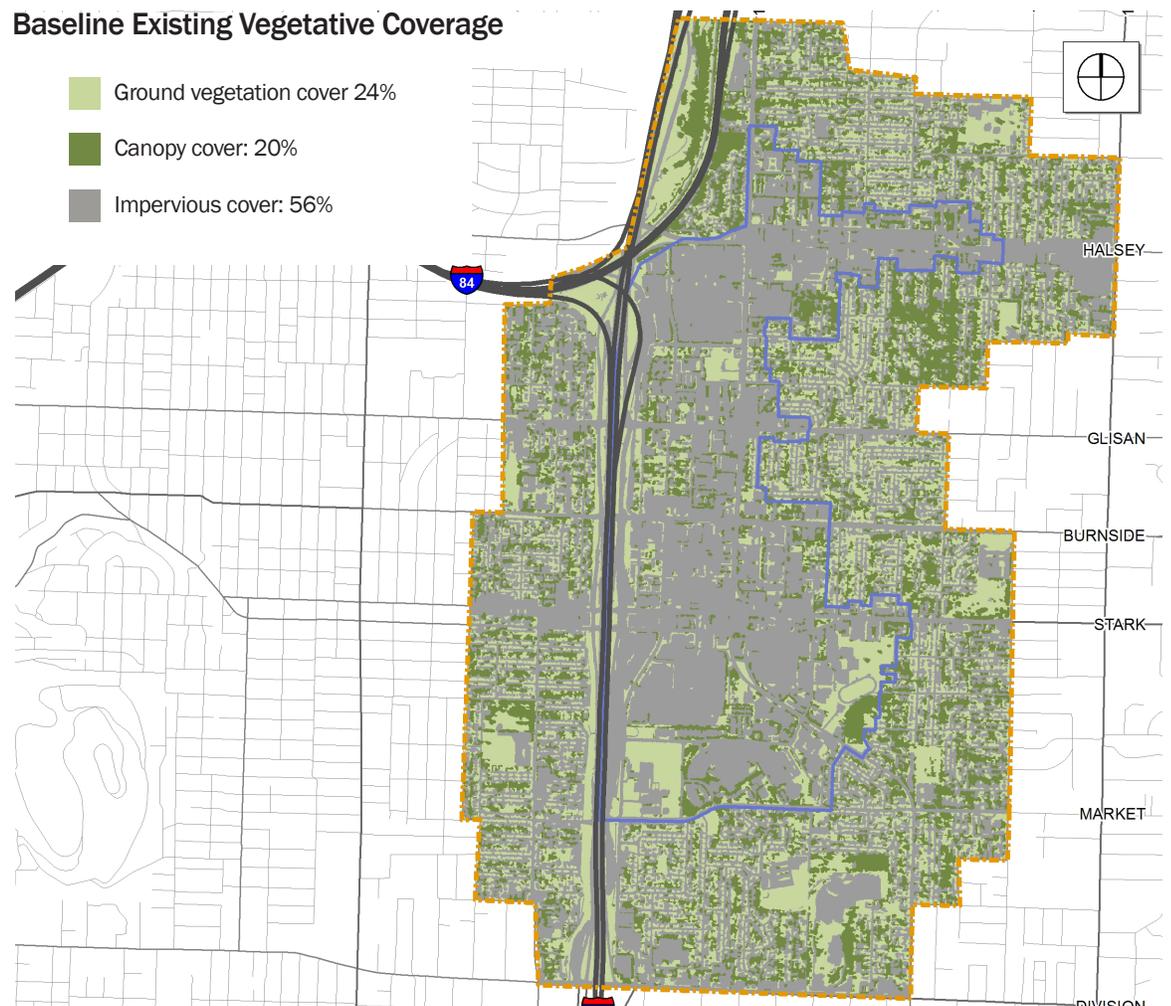
HABITAT & ECOSYSTEM FUNCTION: BASELINE & TARGETS

as a guide, incremental targets for canopy coverage by land use type were determined.⁶ The targets are as follows:

| | Existing Baseline | 2030 Target | 2050 Goal |
|--|-------------------|-------------|-----------|
| Single-family / Multi-family Residential | 30% | 35% | 40% |
| Commercial / Industrial / Institutional | 11% | 13% | 15% |
| Local Right-of-Way | 11% | 23% | 35% |

In addition to canopy coverage, an equally important aspect of this target is to increase the vegetative coverage and the plant diversity within the district. Existing ground vegetation within the district is 24%, similar to that of existing canopy cover.⁷ Increasing species diversity will also help build the measurability of other targets such as animal population counts and new functional habitat, for which no metrics currently exist. This approach will improve the integrity of habitat and ecosystem function within the district and more meaningfully meet the targets stated in the EcoDistrict Performance Area.

Baseline Existing Vegetative Coverage



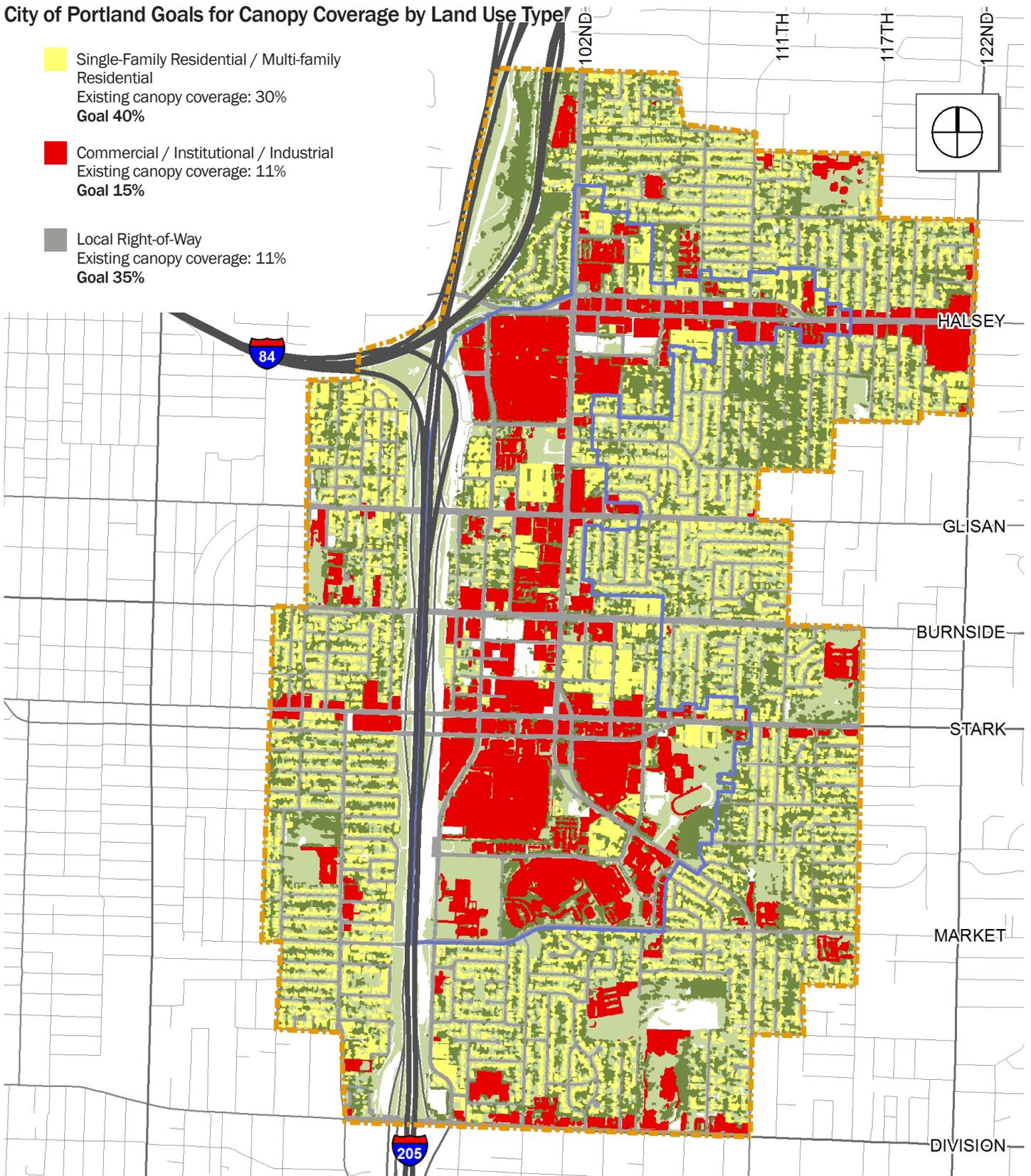
⁶ Portland Parks & Recreation & Urban Forestry Management Plan Technical Advisory Committee. *The Urban Forestry Management Plan*. March, 2004, p.61,66,78.

⁷ Data derived from Metro's GIS raster file: *High Structure Vegetation*, 2009.

HABITAT & ECOSYSTEM FUNCTION: BASELINE & TARGETS

City of Portland Goals for Canopy Coverage by Land Use Type

- Single-Family Residential / Multi-family Residential
 Existing canopy coverage: 30%
 Goal 40%
- Commercial / Institutional / Industrial
 Existing canopy coverage: 11%
 Goal 15%
- Local Right-of-Way
 Existing canopy coverage: 11%
 Goal 35%



HABITAT & ECOSYSTEM FUNCTION: BASELINE & TARGETS

METRIC: % Functional Native Habitat Protected

TARGET GOAL: Protect 100% of existing functional habitat in Gateway (19 acres total)

BASELINE: 0% of existing functional habitat in Gateway

Protecting existing functional native habitat is a foundational step toward building ecological integrity in the district. Functional habitat provides many services that humans benefit from such as soil infiltration, air and water filtration, climate regulation, aesthetic beauty, and habitat availability. Existing habitat also provides a lens into what an area looked like and how it functioned predevelopment, so the protection of these areas offers insight into how to build functional habitat that fits in with the native ecology of the area.

The City of Portland's Bureau of Planning and Sustainability 2009 Natural Resource Inventory (NRI) Update project identifies the location and relative functional value of native riparian and wildlife habitat within the City.¹ Within Gateway, NRI mapping showcases three vegetated patches and all three are small and isolated forested areas of low wildlife value. Although these patches are of low functional value, they comprise the remaining significant natural area within Gateway and therefore should be protected and restored. NRI mapped vegetated patches to be protected within the Gateway district include:

| Vegetated Patch Location | Approximate Size (acres) |
|---------------------------------|---------------------------------|
| Gateway Green | 9 |
| Woodland Park Neighborhood | 4 |
| Floyd Light Park | 6 |

Protecting these three patches poses a significant step toward achieving EcoDistrict Habitat and Ecosystem Function Goals 1 to 3. Protection validates the City's commitment to conserve its natural resources (Goal 1) and prioritizes resource protection and work toward regenerating and managing the district's native habitat (Goals 2 and 3).

¹ Data derived from the Portland Bureau of Planning and Sustainability GIS file: Natural Resource Inventory Update GIS Model and Vegetation Mapping Project.

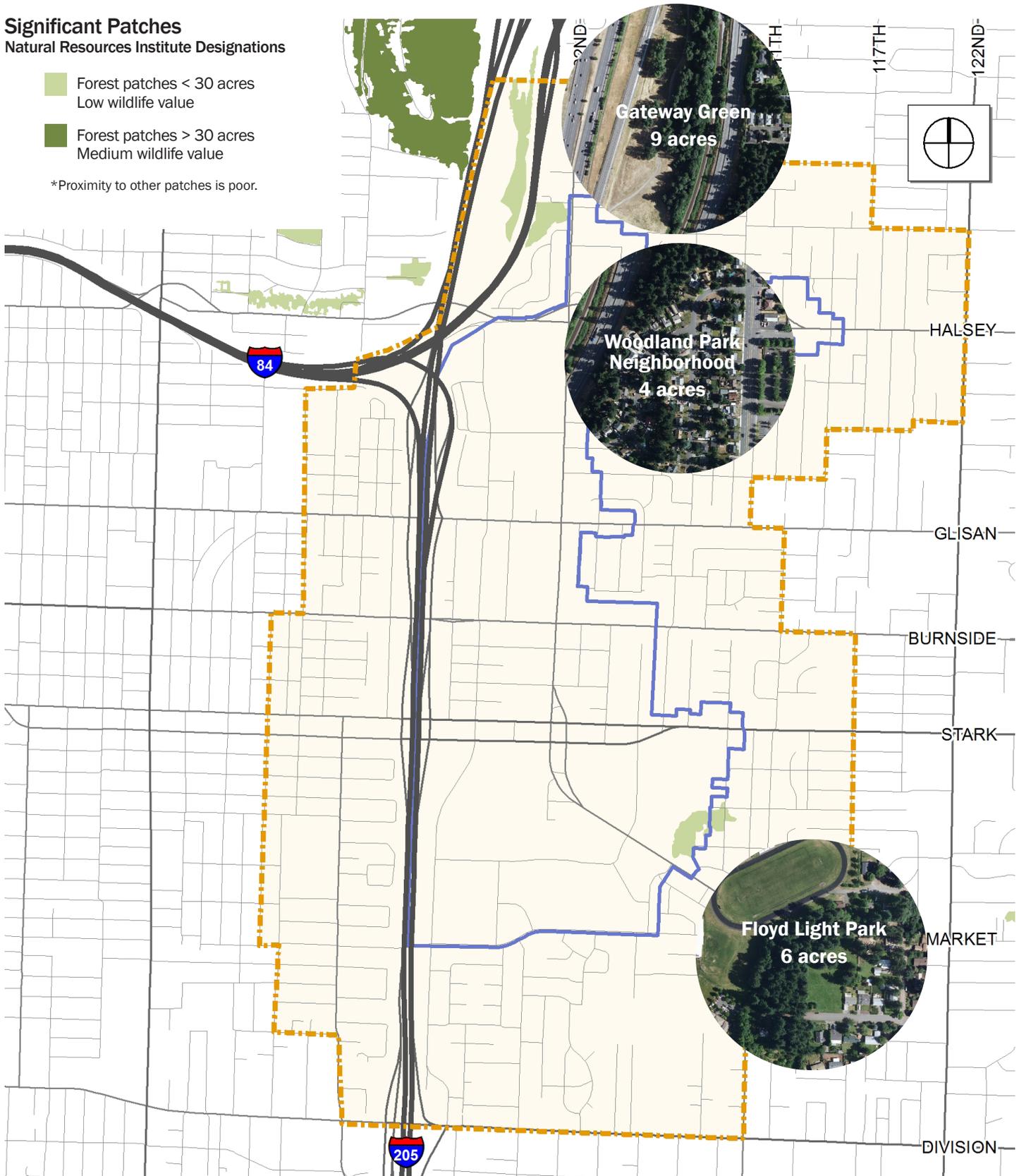
HABITAT & ECOSYSTEM FUNCTION: BASELINE & TARGETS

Significant Patches

Natural Resources Institute Designations

- Forest patches < 30 acres
Low wildlife value
- Forest patches > 30 acres
Medium wildlife value

*Proximity to other patches is poor.



METRIC: Habitat Connectivity in Gateway

TARGET GOAL: At least one wildlife corridor transecting Gateway

BASELINE: 20% canopy coverage across Gateway

INCREMENTAL TARGETS:

*35% tree and shrub coverage (where feasible) within the designated wildlife corridor by 2025**

*50% tree and shrub coverage (where feasible) within the designated wildlife corridor by 2040**

**incremental target dates should be considered as recommendations by the Consultant Team, not established policies*

Connectivity is the degree to which the landscape facilitates or impedes the movement of organisms among patches.¹ In Gateway, urban development has largely marginalized habitat to three forested patches. The patches are small, isolated and provide low habitat value and as such, it is reasonable to assume that little habitat connectivity currently exists in Gateway. According to Lori Hennings, Metro Senior Natural Resource Scientist, a general method to measure connectivity currently does not exist because it is animal species dependent.² This makes measuring connectivity especially hard in Gateway where intense levels of development have created conditions where it is presumed no keystone or indicator wildlife species currently exist. Keystone or indicator wildlife species are typically those animals targeted for measurement because their abundance is correlated to an area's overall ecosystem health. Without enough habitat to support the movement of wildlife across Gateway, measuring habitat connectivity within the district becomes a challenging task.

Although Gateway does not offer enough natural area to sufficiently support wildlife needs, neo-tropical long range and short range migratory birds species do pass through it onto larger, more intact natural areas nearby such as the surrounding buttes and Columbia River. Their passage can be facilitated via well designed wildlife corridors. Wildlife corridors are key landscape elements that serve to provide and increase connectivity between habitat patches.³ Focusing a diversity of (preferably) native trees and shrubs within a selected swath through the district will attract increasing numbers of birds overtime. Relative connectivity can be measured by conducting seasonal migratory and native resident bird counts.

Hennings recommends a north/south oriented corridor to better connect the Columbia River with Kelly and Rocky Buttes.⁴ Within Gateway, the corridor should encompass existing NRI patches, other patches, and significant trees. More specific wildlife corridor design strategies and implementation steps can be found in Metro's 2010 literature review on the subject titled: *Wildlife Corridors and Permeability*. The document is part of the larger Wildlife Habitat Corridors Mapping effort that is being integrated into their Regional Conservation Strategy. The Conservation Strategy is a joint effort with local, state, federal and non-profit

¹ Metro Regional Government. *Wildlife Corridors and Permeability: A Literature Review*. April 2010, p.30.

² Personal communication with Lori Hennings, Metro Senior Natural Resource Scientist, June 16, 2011.

³ Metro Regional Government. *Wildlife Corridors and Permeability: A Literature Review*. April 2010, p.30.

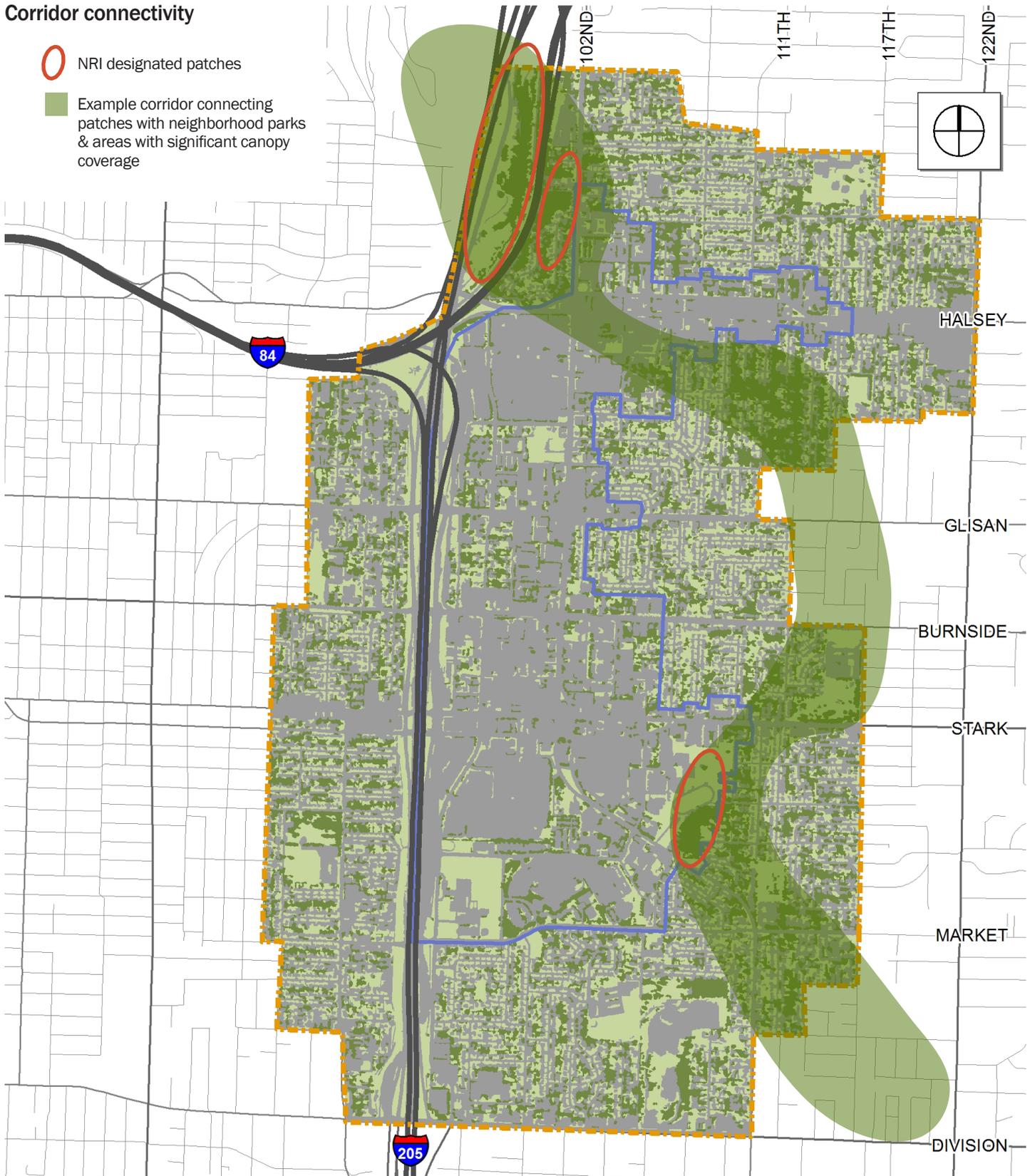
⁴ Personal communication with Lori Hennings, Metro Senior Natural Resource Scientist, June 16, 2011.

⁵ Metro Regional Government. *Wildlife Corridors and Permeability: A Literature Review*. April 2010, p.30.

HABITAT & ECOSYSTEM FUNCTION: BASELINE & TARGETS

Corridor connectivity

-  NRI designated patches
-  Example corridor connecting patches with neighborhood parks & areas with significant canopy coverage



HABITAT & ECOSYSTEM FUNCTION: BASELINE & TARGETS

partners and is one of the primary conservation initiatives of The Intertwine Alliance.⁵

To begin the wildlife corridor planning process, Portland State University raster data showing existing vegetation coverage was layered with NRI vegetation patches to show visual connectivity across the district.⁶ Metro raster data on existing parks and open space was also overlaid to visually highlight opportunities for community connectivity and access to nature for wildlife viewing and educational value.⁷

To show connectivity overtime, target tree and shrub coverage percentages were elevated above those established for the canopy coverage metric and concentrated within the future designated wildlife corridor. Birds are attracted to higher concentrations of trees and shrubs, so increasing vegetation within the wildlife corridor and conducting regular annual bird counts will help to demonstrate increasing levels of connectivity over time. In addition to trees and shrubs, green building strategies such as low level exterior lighting, ledges, eco-roofs and low reflective glazing can help to build connectivity for birds especially where there is little opportunity to increase coverage. These strategies will also help the district achieve incremental connectivity targets while newly planted trees mature.

⁵ The Intertwine Alliance. *2009-2010 Annual Report*. April 9, 2010, p. 14.

⁶ *Data derived from the Portland Bureau of Planning and Sustainability GIS file: Natural Resource Inventory Update GIS Model and Vegetation Mapping Project; Portland State University GIS raster file: Vegetation Coverage.*

⁷ *Data derived from Metro RLIS GIS file: Trails; Portland Bureau of Planning and Sustainability GIS file: Parks; Portland Bureau of Planning and Sustainability GIS file: Heritage Trees.*

HABITAT & ECOSYSTEM FUNCTION: STRATEGY PALETTE

| Performance Area | Potential Strategies (Opportunities) | Barriers (Constraints) | Metric | Degree of Difficulty <small>TIME/COST/COMPLEXITY (no barriers = 1 /barriers = 5)</small> | Next Steps | Recommended Strategies | |
|--------------------------------|--------------------------------------|--|--|---|------------|---|---|
| Habitat and Ecosystem Function | ENHANCE | | | | | | |
| | HARDWARE | Plant a diversity of trees, shrubs and groundcover | <ul style="list-style-type: none"> Land use conflicts Difficulty planting groundcover/shrubs over trees Planting, monitoring and maintenance costs Difficulty planting natives or ornamentals | Canopy Coverage | 2 | <ul style="list-style-type: none"> Prioritize native species, particularly in areas that can accommodate large native species, i.e. parks, schools, etc. Identify working groups to conduct inventories, mapping, and target projects Produce plans/policies that allow for more and native vegetation to be planted Engage Friends of Trees, Portland Urban Forestry Program | * |
| | | Increase building integrated naturescape (eco-roofs, swales, window selection, exterior lighting, perches) | <ul style="list-style-type: none"> Developer commitment Buy-in Retrofitting existing development Cost | Canopy Coverage Connectivity | 4 | <ul style="list-style-type: none"> Create an opportunity map (rooftops, planned development and renovations) Excite the development community Engage Metro's Nature in the Neighborhood program | |
| | SOFTWARE | Increase the number of programs for the community to contribute | <ul style="list-style-type: none"> Needs a champion Difficulty garnering continued commitment Difficulty prioritizing and managing disparate community | Canopy Coverage | 2 | <ul style="list-style-type: none"> Increase awareness of when and where vegetation is planted Hold community plant-a-thons and competitions Educate on importance of natives | |
| | CONNECT | | | | | | |
| | HARDWARE | Strategically increase native vegetation within a designated wildlife corridor(s) | <ul style="list-style-type: none"> Establish partnerships across land use types Difficulty planting groundcover/shrubs over trees planting, monitoring and maintenance costs Difficulty planting natives over ornamentals | Connectivity | 3 | <ul style="list-style-type: none"> Identify working groups Identify participants residing within the targeted corridor Produce a feasibility study Produce plans/policies that allow for corridor development Engage Portland Audubon, Metro's Nature in the Neighborhoods program, Metro Wildlife Corridor Mapping project , The Intertwine | * |
| | | Increase corridor urban integrated naturescape opportunities (eco-roofs, swales, building exterior, exterior lighting) | <ul style="list-style-type: none"> Developer and neighborhood commitment and buy-in Retrofitting existing development Cost | Canopy Coverage Connectivity | 4 | <ul style="list-style-type: none"> Research various wildlife adaptations in urban environments Map opportunity areas. Map areas targeted for development and renovation Engage | |
| | SOFTWARE | Create a database of district and corridor migrant and native bird activity | <ul style="list-style-type: none"> Requires a champion Engagement and commitment | Connectivity | 2 | <ul style="list-style-type: none"> Collect pre-existing bird counts List migrant and native bird species that may use the targeted corridor Identify champion birders Conduct seasonal bird counts Engage Portland Audubon | |
| | | Instill a stewardship ethic within the district | <ul style="list-style-type: none"> Requires a champion Engagement and commitment | Connectivity | 2 | <ul style="list-style-type: none"> Host environmental outings / events to showcase local ecology Allow people to share how different cultures value nature | * |
| | RESTORE | | | | | | |
| | HARDWARE | Permanently protect NRCS mapped Natural Resource Inventory patches and in general protect existing district trees | <ul style="list-style-type: none"> Establish partnerships within/around patches Protecting existing trees Planting, monitoring and maintenance costs Difficulty planting natives over ornamentals Cultural barriers | Functional Habitat | 4 | <ul style="list-style-type: none"> Identify working groups Create plans and policies that protect patches Inventory health of existing patches/surrounding uses and potential developments Engage Portland's Urban Forestry Program , Oregon Department of Fish and Wildlife, Metro Nature in the Neighborhoods program | |
| | | Enhance ecological health of patches and expand patch size and wildlife habitat value | <ul style="list-style-type: none"> Establishing partnerships within/around patches Difficulty planting groundcover/shrubs over trees Planting/monitoring and maintenance costs Difficulty planting natives over more popular ornamentals | Functional Habitat | 3 | <ul style="list-style-type: none"> Target native and diverse vegetation within the NRI patches Engage Portland's Urban Forestry Program and Oregon Department of Fish and Wildlife Conduct expansion feasibility study | |
| | SOFTWARE | Educate on the value of urban trees | <ul style="list-style-type: none"> Requires a champion Engagement and commitment | Functional Habitat | 2 | <ul style="list-style-type: none"> Host environmental outings / events Conduct stewardship trainings | |

HABITAT & ECOSYSTEM FUNCTION: RECOMMENDED STRATEGIES

Strategy recommendations include:

- Plant a diversity of trees, shrubs and groundcover
- Strategically increase native vegetation within a designated wildlife corridor
- Instill a stewardship ethic within the district

The Gateway district has limited green space and is highly impervious at about 70%, artificially raising temperatures through the urban heat island effect.¹ Increasing vegetation coverage will provide shade and cool impervious surfaces such as parking lots and roadways, in addition to providing stormwater infiltration, wildlife habitat, and improved air quality. The resulting benefits will improve ecosystem function within the district and advance all five Performance Area goals. Urban fauna such as birds and small mammals especially prefer trees and shrubs and it is recommended that native species be planted where feasible as they typically require less water and nutrients than ornamental species. The district should also focus on preserving existing vegetation wherever possible and in particular, protecting remaining forested patches at Gateway Green, Floyd Light Park, and forested tracks and street trees within the Woodland Park Neighborhood. Identify opportunities to plant vegetation and coordinate with Friends of Trees, Portland Audubon, and Metro's Nature in the Neighborhood program for grant funding, work assistance, and planting recommendations.

In addition to increasing the total vegetation coverage wherever possible within Gateway, focused plantings within a designated corridor will also help to advance all five Performance Area goals, with special focus on Goal 4 (connectivity). The general scientific consensus is that connective habitat fragments are crucial to the persistence of many species and populations, and that well designed wildlife corridors can play a key role in maintaining ecosystem function.² Metro's 2010 Wildlife Corridors and Permeability literature review provides recommendations on the design and implementation. Lori Hennings, a Natural Resource Scientist at Metro, is currently helping to lead a region-wide corridor mapping project and can lend expert assistance.^{3,4} Include forested patches within Gateway and design the corridor to extend north/south toward the direction of significant habitat features outside of the district such as the Willamette River and Rocky Butte. Coordinate with Portland Audubon and The Intertwine to connect the corridor with area trails and parks for wildlife viewing.

Environmental stewardship within the district is the foundation for achieving all five Performance Area goals. Basic environmental awareness will be necessary to gain commitment and approval from residents to retain existing vegetation and increase coverage within the district. Teach residents about the value of protecting trees and shrubs and the added benefits of planting more. Build camaraderie via social events such as nature walks, picnics, wildlife viewing and hold contests that persuade residents to retain and plant more vegetation on their property. Create a community action group for businesses and residents residing within potential wildlife corridors. Metro's Nature in the Neighborhoods program can help support a competition or similar programs via grant funding. Portland Audubon can provide trainings and workshops.

¹ DistrictLab. *Gateway EcoDistrict Pilot Study*, June 2010, pp 29-30.

² Metro. *Wildlife Corridors and Permeability: A Literature Review*. April 2010.

³ Metro. *Wildlife Corridors and Permeability: A Literature Review*. April 2010.

⁴ *Personal communication with Lori Hennings, Metro Senior Natural Resource Scientist, June 16, 2011.*



MATERIALS MANAGEMENT

VISION: Zero waste and optimized materials management

GOALS:

1. Eliminate practices that produce waste wherever possible
2. Minimize use of virgin materials and minimize toxic chemicals in new products purchased
3. Optimize material reuse and salvage, and encourage use of regionally manufactured products or parts
4. Where opportunities for waste prevention are limited, maximize use of products made with recycled content
5. Capture greatest residual value of organic wastes (including food) through energy recovery and/or composting

METRIC: Materials Recovery Rate

TARGET GOAL: 100% materials recovery by 2050 within Gateway

BASELINE: 56.8% materials recovery within Gateway

INCREMENTAL TARGETS:

*65% materials recovery within Gateway by 2015**

*80% materials recovery within Gateway by 2030**

**incremental target dates should be considered as recommendations by the Consultant Team, not established policies*

The Materials Management Performance Area aims to influence every step of the material life-cycle – from production and point-of-purchase to end-of-life – by targeting consumer behavior around purchasing decisions and reducing waste streams. From procurement policies and consumer education to materials recovery via recycling, composting, salvage, reuse or energy generation, this Performance Area focuses on redefining material value. In 2007, Metro found that the economic value for the environmental benefits of diverting 1 ton from disposal was \$154.6 million.¹ Most of this environmental benefit is derived upstream from pollution reductions in the manufacture of goods made from recycled content (instead of virgin materials) and the use of compost over petroleum-based fertilizers. Highest economic value can therefore be achieved by reducing gross generation rates and recycling and composting to increase reproduction of these materials in the manufacturing process.

Baseline metrics do not currently exist for most of this Performance Area's targets. Metro's Resource Conservation and Recycling programs provide best practices for procurement practices and influencing consumer purchasing decisions, but no metrics exist to benchmark progress over time. To date, recovery rate is the only metric tracked by Metro and therefore serves as the initial step toward assessing progress in this Performance Area.

The Metro region recovers 57% of materials from the waste stream including paper, plastic, metal, glass, rubber, organics, textiles and carpet, electronics and electrical equipment, and construction and demolition debris.² Tracked recovery methods include recycling, salvage, reuse, and composting. Metro's recovery goal for 2009 was 64%, but it is generally recognized that the goal was not achieved considering the 2008 rate and the fact that average annual diversion rates are only increasing by about 1.5% per year.³

The Gateway EcoDistrict generates approximately 25,028 tons of material annually (estimated by applying Metro's 2008 recovery rate).⁴ The most significant generators include commercial (67%) and single-family residential (24%) uses. After recycling, significant volumes of paper (14%), wood (12%), food waste (15%) and items for which there is no recycling market for (41%) remain in the waste stream.⁵ These quantities highlight a notable area of opportunity to increase material recovery.

¹ Sound Resource Management Group, Inc. Prepared for the Metro Sustainability Center. *The Environmental Value of Metro Region Recycling for 2007*. p. 1-2.

² Metro annual materials recovery rate, 2008 (most recently published data) (<http://www.oregonmetro.gov/index.cfm/go/by.web/id=24920>)

³ Metro. 2005 waste recovery data: metro_region_waste_generation_to 2005 recycling % per ton.xls.

MATERIALS MANAGEMENT: BASELINE & TARGETS

The intent of this Performance Area is to eliminate waste and optimize material management, so ultimately the goal should be 100% materials recovery. Incremental targets for 2015 and 2030 were baselined off of Metro's current recovery rate (57%) and the region's calculated annual average recovery increase of 1.5% since 1998. Although annual increases in recovery rates have trended downward over time as recovery opportunities become scarcer, the incremental targets are based on striving for 1.5% while recognizing the lag over time in market opportunities for recovery. Between 2008 and 2015, the target increase is 1% for a total recovery rate of 65% and 1% between 2015 and 2030 for a total recovery rate of 80%.

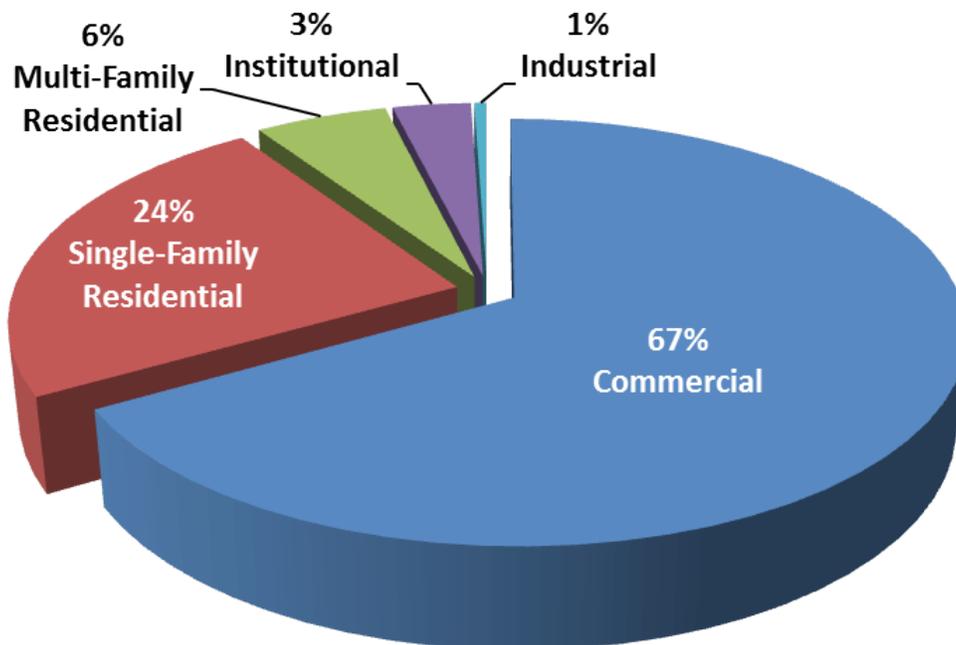
Gateway Materials Generation

Source: Metro Waste Management Program

| LANDUSE | Building (sf) | Generation tons/sf/yr | Residential Generation tons/unit/yr | Number of Units | Gross Materials Generation (tons) | METRO Recovery Rate 2008 | Net Materials Generation (tons) | Percent of Total |
|---------------------------|---------------|-----------------------|-------------------------------------|-----------------|-----------------------------------|--------------------------|---------------------------------|------------------|
| Commercial | 5,767,987 | 0.0051 | | | 29,417 | 56.8% | 16,709 | 67% |
| Single-Family Residential | 6,846,335 | | 2.232 | 4,689 | 10,466 | 56.8% | 5,945 | 24% |
| Multi-Family Residential | 2,385,417 | | 0.969 | 2,559 | 2,480 | 56.8% | 1,408 | 6% |
| Institutional | 325,858 | 0.0045 | | | 1,466 | 56.8% | 833 | 3% |
| Industrial | 31,221 | 0.0075 | | | 234 | 56.8% | 133 | 1% |
| TOTAL | | | | | | | 25,028 | 100% |

Materials Generation by Land Use

Source: California Dept. of Resources, Recycling, & Recover



⁴ Data derived by multiplying total building square-footage of land use types by typical generation in tons/square-foot/year for land use types. Land Use type and associated building square-footages were derived from Metro RLIS taxlot data. Land use type generation factors were pulled from the California Department of Resources, Recycling and Recovery program (CalRecycle) estimated solid waste generation rates for commercial, residential, multi-family, industrial and service industries. The most current generation rate data was averaged across each land use type to even out the data spread. (<http://www.calrecycle.ca.gov/wastechar/wastegenrates/Commercial.htm>).

⁵ Metro. *Regional Solid Waste Management Plan*. July 24, 2008, chapter II, Current Systems, p. 21 (<http://www.oregonmetro.gov/index.cfm/go/by.web/id=12852>).

METRIC: Compostables / organics recovery rate

TARGET GOAL: 100% materials recovery in Gateway by 2050

BASELINE: 18% materials recovery in Gateway

INCREMENTAL TARGETS:

*40% materials recovery in Gateway by 2020**

*65% materials recovery in Gateway by 2030**

*80% materials recovery in Gateway by 2040**

**incremental target dates should be considered as recommendations by the Consultant Team, not established policies*

Metro and the Oregon Department of Environmental Quality (DEQ) report that one of the most significant areas of improvement in material recovery rates can be achieved by diverting compostables and organics from the waste stream. These materials include wood and food waste that collectively account for 27% of the current waste stream after factoring in recovery rates.¹ Commercial and single-family land use types dominate the district (67% and 24% respectively, by total building square-footage) and food waste is a notable contributor to these waste streams.² Commercial targets may include restaurant, office, and healthcare uses. Gateway supports a notable number of healthcare facilities. According to waste audits conducted by Portland's Providence St. Vincent Medical Center (located outside of Gateway), compostable food and fibers account for 23% of their waste stream.³ Therefore, this is a worthy area of focus to further increase recovery rates.

Metro already has a well-established program to compost landscape debris (89% of such debris was diverted in 2005), but food scrap composting programs currently are only available to commercial businesses and very little is diverted (3%).⁴ A small-scale pilot residential composting program is underway, and a date for a full rollout to the public is set for Fall 2011.

Baseline recovery rate is 18%, with incremental targets toward a 100% recovery goal by 2050. Incremental targets were established assuming that there will be a lag in recovery until a program is created, but recovery rates will significantly increase once it becomes available. The goal is to rollout a district composting program within the next 5 years and increase composting volumes to 40% by 2020. After 2020, the target increases to 2% annually, on average, to 2050. Milestones include a 65% recovery rate by 2030 and an 80% recovery rate by 2040.

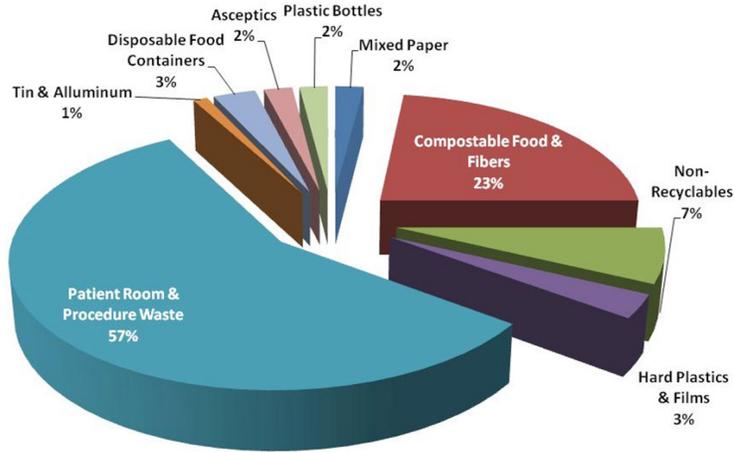
¹ Metro. *Regional Solid Waste Management Plan*. July 24, 2008, chapter II, Current Systems, p. 21 (<http://www.oregonmetro.gov/index.cfm/go/by.web/id=12852>).

² Data derived from Metro RLIS Taxlot information.

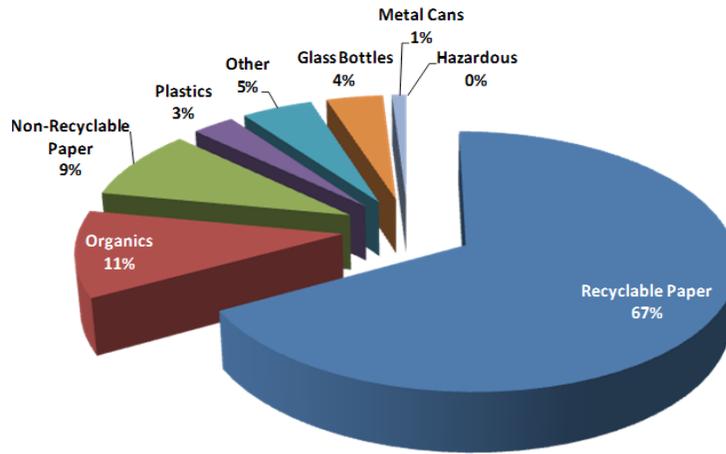
³ Waste Management at Providence St. Vincent's Medical Center, Portland Oregon. PowerPoint presentation available at: <http://www.psv.org/chapters/oregon/health-care-without-harm/sustainable-hosp-docs/111309-psv-presentation.pdf>.

⁴ Metro. 2005 waste recovery data: metro_region_waste_generation_to 2005 recycling % per ton.xls.

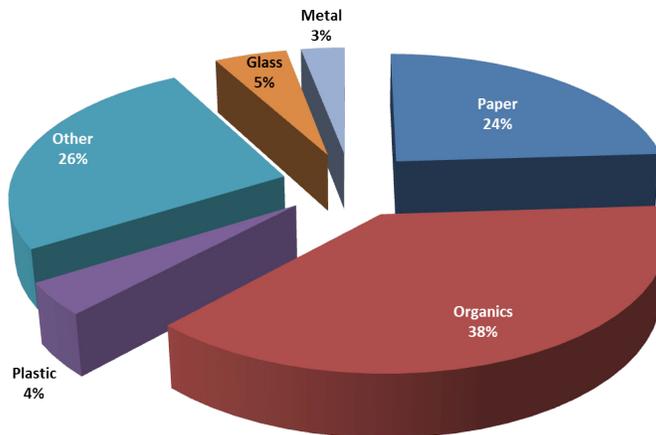
Healthcare Materials Composition (by weight)



Typical Office Materials Composition (by weight)



Typical Residential Materials Composition (by weight)



MATERIALS MANAGEMENT: STRATEGY PALETTE

| Performance Area | Potential Strategies (Opportunities) | Barriers (Constraints) | Metric | Degree of Difficulty TIME/COST/ COMPLEXITY (no barriers = 1 /barriers = 5) | Next Steps | Recommended Strategies | |
|----------------------|--------------------------------------|---|---|---|------------|---|---|
| Materials Management | REDUCE | | | | | | * |
| | SOFTWARE | Implement programs that reduce material and product use particularly for non-recyclable and toxic items (Demand Management) | <ul style="list-style-type: none"> Consumer purchasing and consumption behavior Cost (cheap to dump; expensive to change the system) Health code barriers to reusing medical waste Backlash against heavy handed, regulatory approaches | Material Recovery Rate Organic / Compostable Recovery Rate | 4 | <ul style="list-style-type: none"> Target healthcare, retail and residential sectors Reduce or eliminate the most toxic products first Reduce or eliminate pesticides, herbicides that are used in right-of-way and open space | |
| | | Increase consumer awareness | <ul style="list-style-type: none"> Program effectiveness Interest Cost | Materials Recovery Rate | 2 | <ul style="list-style-type: none"> Educate on the benefits of buying less and using less packaging. Engage Metro Guide on purchasing highly durable and "skinny" (minimal packaging) materials | |
| | REUSE | | | | | | * |
| | HARDWARE | Build commodity market for used materials (Demand Management) | <ul style="list-style-type: none"> Difficulty building consumer market for used materials Consumer perceptions of material value Cost Health code barriers to reusing medical waste | Materials Recovery Rate | 3 | <ul style="list-style-type: none"> Map all small-scale, undefined salvage yards Start a central re-use center Target construction sector Start a surplus medical supply donation program Target building materials, retail and residential churn | |
| | SOFTWARE | Increase consumer awareness | <ul style="list-style-type: none"> Program effectiveness Management Guarding against the resale of stolen goods Used product safety and ensuring quality goods make it to market Legal status of undefined | Materials Recovery Rate | 2 | <ul style="list-style-type: none"> Provide a platform for people to easily advertise and sell used goods Incentives for businesses /families that "buy used." Connect consumers with local the various small scale, undefined salvage yards in the district | |
| | RECYCLE | | | | | | * |
| | HARDWARE | Support Columbia Biogas Project | <ul style="list-style-type: none"> Volume versus demand Sorting, collecting and transportation to the facility Acceptance of residential organics | Organic / Compostable Recovery Rate | 3 | <ul style="list-style-type: none"> Work to maximize the delivery of organics from Gateway to the Columbia facility. Target healthcare and restaurants. Develop a program for all residential organics to be composted either via Metro's composting program or via the Columbia facility. | |
| | SOFTWARE | Create programs that increase material recycling | <ul style="list-style-type: none"> Cost Availability of facilities to accept new materials for recycling Value of recycled goods and market fluctuations | Material Recovery Rate Organic / Compostable Recovery Rate | 3 | <ul style="list-style-type: none"> Map the various small-scale recyclers within the district (Metro data) Connect Adventist and others with champions (e.g. Providence St. Vincent's) Enroll all commercial businesses in Portland's BlueWorks or Metro's Recycle | |
| | | Build consumer education and training | <ul style="list-style-type: none"> Program effectiveness Interest Cost | Material Recovery Rate Organic / Compostable Recovery Rate | 2 | <ul style="list-style-type: none"> Start a "train the trainer" program. Hold neighborhood competitions Create a healthcare recycling | |

MATERIALS MANAGEMENT: RECOMMENDED STRATEGIES

Strategy recommendations include:

- Implement programs that reduce material and product use particularly for non-recyclable and toxic items (Demand Management)
- Build commodity market for used materials
- Support Columbia Biogas Project

Reducing material consumption of new products, virgin products (not made from recycled content), and / or non-recyclable products will help to achieve the Materials and Management Performance Area goals 1 through 4. The district consumes 25,000 tons of material annually with 91% coming from the commercial and residential sector. A district waste audit would help to determine what products could be targeted for reduction (those with the highest volumes) and toxic products to eliminate. Audits by leading businesses in Gateway (e.g. Adventist, Oregon Clinic, Vibra, and large retailers) will uncover reoccurring consumables specific to the sector that can be targeted for reduction or elimination. The data will also help to educate smaller healthcare providers within the district on options to reduce, reuse, and recycle materials. Choose products that comprise the largest waste volumes within the district and / or products that the district or a specific sector can rally around and work to reduce or eliminate those first. For example, certain plastics in the healthcare sector, or single-use plastic bags in all retailers (Portland's new plastic bag elimination law goes into effect October 15th and only targets large retailers).

Gateway does not have a central facility to resell salvaged and reused materials. The closest reuse center for construction products is Habitat for Humanity, and for home goods, Goodwill, both located in SE Portland. There are over 30 recycling facilities within Gateway, including large central facilities such as Far West Fibers, but no central facility to sell used materials.¹ Map any small-scale resale businesses (e.g., clothing, construction, furniture, for example) and market these businesses to the district. Locate several options for a central reuse facility. Reuse centers typically target building and home improvement, but because there is such a strong healthcare industry in Gateway, surplus medical supplies may also be good to target for resale or donation to schools or humanitarian organizations. The strategy helps to achieve Performance Area goals 1 through 3, with specific focus on Goal 3 (reuse and salvage).

Columbia Biogas is in the final design stages of an innovative energy production facility in Northeast Portland located at 6849 NE Columbia Boulevard, near I-205 and I-5. Once operating, the facility will convert commercial food waste into approximately five megawatts of energy, which is equivalent to the electricity requirements of 5,000 homes. In addition, it will supply high-quality fertilizer and soil amendments, heat, and water.² Gateway can work to achieve Goal 5 by diverting as much commercial organic waste to feed the biogas facility. Residences will be able to partake in a Metro led composting program within the next year or two. The two programs will significantly reduce waste volumes in Gateway.

¹ Metro: Find a Recycler. URL: <http://www.oregonmetro.gov/index.cfm/go/by.web/id=1383>. Accessed August 24, 2011.

² Columbia Biogas Press Release. Columbia Biogas to Enter into Good Neighbor Agreement with Cully Association of Neighbors. June 13, 2011. URL: <http://farawayranch.org/aboutUs/press.html>. Accessed August 24, 2011.



EQUITABLE DEVELOPMENT

VISION: Fair distribution of investment burdens and benefits

GOALS:

1. Provide neighborhood job opportunities through EcoDistrict projects
2. Enable both property renters and owners to invest in new development
3. Ensure that the perspective of all ethnicities and income levels inform project priorities
4. Promote equity and opportunity through all EcoDistrict activities

METRIC: EcoDistrict Job Creation

TARGET GOAL: 1000 EcoDistrict-related jobs by 2035

BASELINE: 0 jobs

INCREMENTAL TARGETS:

*400 EcoDistrict-related jobs by 2020**

*800 EcoDistrict-related jobs by 2030**

**Incremental target dates should be considered as recommendations by the Consultant Team, not established policies*

Increasing the number of available jobs in Gateway is vital to attracting new residents and strengthening the district’s local economy. More jobs equates to more local dollars, improving lives and offering new opportunity for people to reach their full potential as contributing community members.

Gateway is distinguished from other areas of Portland by its greater ethnic diversity and homogeneity of households in terms of income potential and earning capacity. In comparison to other areas of the city, Gateway has far fewer households headed by higher-earning professionals. Ten percent of Gateway employed residents are in production – double that of the city as a whole (5.7%) – while only 7.4% are in occupations that require higher levels of education as compared to 11.3% for the city as a whole.¹

In 2009, there were 9,500 jobs in Gateway, with almost half of those jobs (4,800) in the education and health service sectors. Major employers are shown below.²

| | |
|---|---|
| Health Facilities | Adventist Medical Center, Oregon Clinic, Vibra Specialty Hospital |
| Retailers | Fred Meyer, Home Depot, Kohls, Target |
| Education and Social Service providers | IRCO, David Douglas School District |
| Senior Care Facilities | Cherrywood Village |

EcoDistrict projects are currently being developed as part of this initial planning effort, so no projects have yet been executed and neighborhood jobs created. However, it is expected that EcoDistrict projects will create neighborhood jobs, contributing to the City’s job creation targets for the district. EcoDistrict jobs could be created in every business sector in Gateway and even create new markets. What distinguishes an EcoDistrict-derived job versus other jobs will be the contribution of goods and services toward EcoDistrict social and environmental goals (e.g., water, energy, transportation, social cohesion, etc.). Example jobs may be the green tech components manufacturers, solar installation technicians, or recycling managers.

Several public agencies have modeled potential job growth in Gateway. The City of Portland’s 2009

¹ Applied Development Economics in association with Parametrix and Marketek. Prepared for the Portland Development Commission. *Portland Gateway Business Development Strategy, Draft Report*. January 18, 2011, p. 4.

² Applied Development Economics in association with Parametrix and Marketek. Prepared for the Portland Development Commission. *Portland Gateway Business Development Strategy, Draft Report*. January 18, 2011, p. 5.

EQUITABLE DEVELOPMENT: BASELINE & TARGETS

Economic Opportunities Analysis (EOA) estimates that Gateway will gain 5,000 additional jobs by 2035.³ The EOA estimates that an addition of approximately 1.8 million square feet of commercial and industrial space is needed to accommodate these jobs.⁴ By contrast, Metro's 2040 Growth Concept (completed in 1995) envisioned that Regional Centers, of which Gateway is one of nine in the region, will ultimately accommodate 50,000 jobs by 2040. More recently, Metro's modeling has suggested that Gateway could be the home of 28,000 jobs by 2035. Modeling assumptions and projected market fluctuations can result in varying job growth projections as indicated in the table below.

| Source | Job Growth (new jobs) | Target Year |
|--|-----------------------|-------------|
| City of Portland | 5,000 | 2035 |
| Metro | 28,000 | 2035 |
| Metro 2040 Growth Plan Regional Center Goals | 40,000 | 2040 |

It is the hope that the focus and rigor offered by the EcoDistrict Initiative will help to accelerate the potential for job creation. Therefore, incremental targets were established to assume the EcoDistrict planning effort will contribute an additional 1000 jobs targeted in Gateway by 2035 or and additional 20% above the city's EOA 5,000 job target for Gateway. Incremental targets of about 400 jobs every 10 years provide milestones to gauge improvement over time.

³ E.D. Hovee and Company, LLC. Prepared in partnership with the City of Portland Bureau of Planning and Sustainability. Economic Opportunities Analysis, Task 4 Alternative Choices. *Portland Plan Background Report Fall 2009*. June 30, 2009, p. 4

⁴ Applied Development Economics in association with Parametrix and Marketek. Prepared for the Portland Development Commission. *Portland Gateway Business Development Strategy, Draft Report*. January 18, 2011, p. 5.

METRIC: Students Eligible for Free or Reduced Lunch

TARGET GOAL: 45% Participation rate in Gateway area schools

BASELINE: 70% Participation rate in Gateway area schools

INCREMENTAL TARGETS:

10% reduction by 2030*

25% reduction by 2050*

**incremental target dates should be considered as recommendations by the Consultant Team, not established policies*

The number of students receiving free or reduced lunches in schools is an indication of child well-being and local low-income rates. Child nutrition is critical to learning potential and healthy developmental growth. The ability to increase incomes for participating households, and therefore reduce the number of students receiving subsidized lunches, increases the financial freedom for those households to (re)invest elsewhere in the community.

Average household size in Gateway was 3.2 in 2008, when there were 2,791 households in Gateway and approximately 34.7% earned less than \$30,000 annually.¹ Today, a household of four earning less than \$29,055 qualifies for free school lunches and a household size of three earning less than \$32,281 qualifies for the reduced lunch program.² There are 13 schools within the Gateway EcoDistrict study area and five receive program benefits. A list of those schools and participation levels is included in the table below. Schools within the EcoDistrict study boundary were selected over schools serving residents living within the district for ease of calculation. The general assumption is that these schools largely serve residents living within the district.

| School | Free Lunch 2010 | Reduced Lunch 2010 | % Free or Reduced Lunch | % Change Over Record Period | District | Years Recorded |
|----------------------------------|-----------------|--------------------|-------------------------|-----------------------------|---------------|----------------|
| Cherry Park Elementary | 292 | 36 | 76.1% | 35.1% | David Douglas | 1997-2010 |
| Creative Science School at Clark | 78 | 36 | 37.4% | (2.6%) | Portland | 2008-2010 |
| Eastside Education Center* | --- | --- | --- | --- | --- | 2000-2004 |
| Floyd Light Middle School | 566 | 91 | 79.4% | 29.8% | David Douglas | 1997-2010 |
| Sacramento Elementary | 275 | 61 | 77.6% | 26.2% | Parkrose | 1999-2010 |
| Ventura Elementary | 381 | 51 | 82.4% | 32.2% | David Douglas | 1997-2010 |
| Summary | 1,592 | 275 | 70.6% | 30.8%** | --- | --- |

* Not enough data

** Creative Science School excluded

¹ Applied Development Economics in association with Parametrix and Marketek. Prepared for the Portland Development Commission. Portland Gateway Business Development Strategy, Draft Report. January 18, 2011, p. 18.

² Oregon Department of Education, Child Nutrition Programs. 2011-2012 INCOME ELIGIBILITY GUIDELINES Reduced and Free Lunch Program. (<http://www.pps.k12.or.us/files/nutrition/incomeguidelines1112.pdf>).

EQUITABLE DEVELOPMENT: BASELINE & TARGETS

Student enrollment in the program has increased 31% since the late 1990's to 71% in 2010.³ By comparison, enrollment has only increased 12% in Oregon to 45% (1998-2009).⁴

The established incremental targets aim to reduce the number of students needing reduced or free lunches. The goal is not to eliminate the program, but to use this metric as a proxy to show increasing levels of wellbeing within the district from EcoDistrict projects. A big focus of the program is on child nutrition and enrollment reductions may mean students eat less healthy meals brought from home or purchased off campus. This is an important and relevant issue, but it is not the objective for selecting this metric. Research uncovered no partnerships between the City, school districts, or the Oregon Department of Education to implement economic development strategies to reduce enrollment. Therefore, incremental targets were established based on existing data, showing reductions by attaining the state's 2009 enrollment rate (45%) by 2050. This represents a gap of 27% to be closed over the next 40 years.

³ Oregon Department of Education, School Nutrition Program. Students Eligible for Free or Reduced Lunch. (<http://www.ode.state.or.us/sfda/reports/r0061Select.asp>).

⁴ Indicators Northwest. Oregon Reduced Price School Lunch Program. (<http://www.indicatorsnorthwest.org/DrawRegion.aspx?IndicatorID=24&RegionID=41000>)

EQUITABLE DEVELOPMENT: STRATEGY PALETTE

| Performance Area | Potential Strategies (Opportunities) | Barriers (Constraints) | Metric | Degree of Difficulty <small>TIME/COST/ COMPLEXITY (no barriers = 1 /barriers = 5)</small> | Next Steps | Recommended Strategies | |
|-----------------------|---|--|---|--|------------|---|---|
| Equitable Development | ACCESS to JOBS and QUALITY HOUSING | | | | | | |
| | HARDWARE | Develop quality green housing | <ul style="list-style-type: none"> • Conflicting developer interests • Rising land values • Community support • Insufficient incentives and other financing | Free & Reduced Lunches (<i>proxy for poverty rates</i>) | 4 | <ul style="list-style-type: none"> • Establish district goals for housing quality, including type, price point, ethnic preferences and possible locations • Discuss with local developers • Consider live/work housing for small businesses • Partner with IRCO (Immigrant & Refugee Community Organization) | * |
| | SOFTWARE | Create EcoDistrict Jobs | <ul style="list-style-type: none"> • job training • job numbers • gaps in local talent • timeframe for project implementation | Free and Reduced Lunches (<i>proxy for poverty rates</i>) EcoDistrict Job Creation | 4 | <ul style="list-style-type: none"> • Create a working group to track job creation • Conduct a district talent search • Conduct an employer job demand audit • Create job training and placement opportunities for underserved residents • Partner with GABA (Gateway Area Business Association) • Partner with IRCO | * |
| | | Provide green business start-up loan programs. | <ul style="list-style-type: none"> • Does not guarantee success • Requires investor group • Cost to manage program • Need for accountability measures | Free and Reduced Lunches EcoDistrict Job Creation | 4 | <ul style="list-style-type: none"> • Research program types • Seek interest from underserved communities • Identify common interests that could translate to | |
| | EQUAL REPRESENTATION and OPPORTUNITIES | | | | | | |
| | HARDWARE | Create support infrastructure for sharing | <ul style="list-style-type: none"> • Structural/organizational support • Requires technical support • Requires physical space and support staff | Free and Reduced Lunches (<i>proxy for poverty rates</i>) EcoDistrict Job Creation | 3 | <ul style="list-style-type: none"> • Determine needs (tools, computer center, skills building, books, etc.) • Create a communication platform to spread awareness • Locate sharing facilities • Identify technical support staff | |
| | SOFTWARE | Support local and green businesses | <ul style="list-style-type: none"> • Market attractiveness • Consumer interest • Business location / access • Price point of goods sold | EcoDistrict Job Creation | 3 | <ul style="list-style-type: none"> • Develop a greenbiz directory • Map businesses / activities • Advertise at various locations reaching all communities • Create a "green bucks" program to supplement food stamps or other assistance programs • Partner with GABA (Gateway Area Business Association) | |
| | | Support pathways to opportunities, culturally appropriate employment | <ul style="list-style-type: none"> • Cost to conduct outreach and audits • Local job skills may not match employer demands • Community interest • EcoDistrict support | EcoDistrict Job Creation | 3 | <ul style="list-style-type: none"> • Identify job needs/ preferences of underserved communities • Build district support of local businesses • Engage underserved, low-income communities in fun skills building challenges • Create awareness of EcoDistrict job opportunities • Partner IRCO | * |

EQUITABLE DEVELOPMENT: RECOMMENDED STRATEGIES

Strategy recommendations include:

- Develop quality green housing
- Create EcoDistrict Jobs
- Support pathways to opportunities, culturally appropriate employment

Metro Council has designated Gateway as a Regional Center – an area of mixed residential and commercial uses serving 100,000 people that is easily accessible by different forms of transportation. As stated in the district’s 2003 Housing Strategy, Gateway envisions a vibrant, mixed-income neighborhood offering rental and ownership options across the spectrum of incomes over the next 20 years.¹ Housing will act as a catalyst for job creation, commercial development, amenities, multi-modal transportation, and offer wealth creation opportunities for residents. By 2020, 2,000 additional units are expected to be built and higher quality design and building materials can enhance the area’s livability for all residents. These units should meet the district’s affordability needs and be built green. Using the Housing Strategy as a guide, establish goals for green building, housing type, quality, price point and partner with IRCO to define culturally specific needs. If implemented appropriately, the strategy can contribute toward the achievement of all four Performance Area goals.

EcoDistricts are a catalyst for economic development and job creation and Goal 1 of this Performance Area is specific to providing jobs to residents. For the anticipated 5,000 additional jobs projected in Gateway by 2035, the district’s goal is to add an additional 1000 jobs via EcoDistrict opportunities. Project priorities, market conditions, leadership, and funding will dictate the order EcoDistrict projects are implemented. However, a working group should be formed to track projects and connect residents of all color with work opportunities. The group should include GABA and IRCO and work objectives should parallel synergies found in the recommendations identified in the district’s 2011 Business Development Strategy and 2007 Redevelopment Strategy.^{2,3} Job creation should work to eliminate disparities in income, poverty levels and race and be culturally-specific to the district’s diverse community.

This strategy is the most comprehensive and perhaps the most culturally important to Gateway. Cultural disparities and opportunities for people of color in Portland are worse than the national level.⁴ Gateway is more culturally diverse than most districts in Portland and therefore has the potential to make significant headway toward closing the racial gap between people of color and white populations. Whereas racial diversity has increased by approximately 10% in Portland, it has increased nearly 17% in Gateway.⁵ Develop a working group with IRCO to identify job, learning and engagement preferences of underserved communities, so that all residents can become active members of the district. Use the data and recommendations in the report: *Communities of Color in Multnomah County: An Unsettling Profile* to guide decision-making and project opportunities important to Gateway.⁶

¹ Portland Development Commission. *Gateway Regional Center Urban Renewal Area Housing Strategy*. May 2003, p.iv.

² Applied Development Economics in association with Parametrix and Marketek. Prepared for the Portland Development Commission. *Portland Gateway Business Development Strategy, Draft Report*. January 18, 2011.

³ Parametrix. Prepared for the Portland Development Commission. July 2007. *Gateway Redevelopment Strategy Final Report*.

⁴ Coalition of Communities of Color and Portland State University. *Communities of Color in Multnomah County: An Unsettling Profile*. p.7.

⁵ DistrictLab. *Gateway EcoDistrict Pilot Study*, June 2010, p.11.

⁶ Coalition of Communities of Color and Portland State University. *Communities of Color in Multnomah County: An Unsettling Profile*. URL: www.coalitioncommunitiescolor.org.

CORRELATION MATRIX

The Correlation Matrix is a comparative analysis tool initially developed as part of the Assessment Methodology. It was used to compare Gateway-specific strategies developed by the Consultant Team to the EcoDistrict Performance Area goals defined by PoSI. It is important to emphasize the qualitative nature of this tool. When working to determine which strategies to prioritize and move forward, this graphic should be not be considered a tool that reveals final answers, but rather another step in the evaluative process.

The vetted, Gateway-specific strategies are listed on one side of the Matrix, and PoSI's Performance Area goals are along the other. The colored boxes highlight strategies that support a goal. Performance Area goals which have the most color are those with the most applicable strategies. For example, a quick visual analysis of this Matrix concludes that Placemaking goals are supported by a full range of strategies, while Access and Mobility goals are not. Concentrations of color occur where strategies specific to Access and Mobility meet the Access and Mobility Performance Area goals. These concentrations of color are highlighted with black boxes and show which strategies have been successful in meeting their related goals.

Both strategies and goals have columns that numerically sum the total number of goals met, as well as the total number of applicable strategies per goal. The purpose of this numerical summation is to have the ability to analyze the Matrix more simplistically and evaluate how the numbers inform which strategies will ultimately be acted upon. The strategy that met the most goals is a Placemaking strategy that suggests that more high-quality public (or quasi-public) space and parks be developed in the district. This strategy benefits every Performance Area, therefore showing the most synergy across goals and proving to be a beneficial strategy with which to move forward. The goal that had the highest number of strategies was an Equitable Development goal relating to the promotion of equity and opportunity through all EcoDistrict activities. Keeping in mind that this goal is highly qualitative, it does not provide any concrete information, but rather indicates that ideally, the strategies strive to promote equity and opportunity.

The asterisks shown on the Matrix illustrate strategies that have been recommended by the Consultant Team and vetted by PoSI, PDC, and the Gateway Steering Committee. In most cases, the recommended strategies do not necessarily correlate to the highest number of goals met, but were deemed the most important for, and most achievable in, the Gateway EcoDistrict.

APPENDIX



| Summary | Total | | Age 18 Years and Over | |
|---|--------|---------|-----------------------|---------|
| | Number | Percent | Number | Percent |
| Total Population | 18,907 | - | 14,959 | 79.1% |
| Hispanic Population | 2,262 | 12.0% | 1,395 | 61.7% |
| Population by Race | | | | |
| Total | 18,907 | 100.0% | 14,959 | 100.0% |
| Population Reporting One Race | 18,014 | 95.3% | 14,483 | 96.8% |
| White | 13,434 | 71.1% | 11,181 | 74.7% |
| Black or African American | 1,192 | 6.3% | 816 | 5.5% |
| American Indian and Alaska Native | 239 | 1.3% | 174 | 1.2% |
| Asian | 1,940 | 10.3% | 1,536 | 10.3% |
| Native Hawaiian and Other Pacific Islander | 134 | 0.7% | 98 | 0.7% |
| Some Other Race | 1,075 | 5.7% | 677 | 4.5% |
| Population Reporting Two or More Races | 893 | 4.7% | 476 | 3.2% |
| Hispanic Population by Race | | | | |
| Total | 2,262 | 100.0% | 1,395 | 100.0% |
| Hispanic Population Reporting One Race | 2,054 | 90.8% | 1,287 | 92.3% |
| White | 865 | 38.2% | 555 | 39.8% |
| Black or African American | 47 | 2.1% | 21 | 1.5% |
| American Indian and Alaska Native | 74 | 3.3% | 39 | 2.8% |
| Asian | 8 | 0.4% | 5 | 0.4% |
| Native Hawaiian and Other Pacific Islander | 5 | 0.2% | 4 | 0.3% |
| Some Other Race | 1,054 | 46.6% | 663 | 47.5% |
| Hispanic Population Reporting Two or More Races | 208 | 9.2% | 107 | 7.7% |
| Housing Units by Occupancy Status | | | | |
| Total | 8,225 | 100.0% | - | - |
| Occupied Housing Units | 7,719 | 93.8% | - | - |
| Vacant Housing Units | 506 | 6.2% | - | - |

Data Note: Population Reporting Two or More Races includes unique counts of the population who reported at least two races. Hispanic population can be of any race. Hispanic Population Reporting Two or More Races includes unique counts of the Hispanic population who reported at least two races. Detail may not sum to totals due to rounding.

Source: U.S. Census Bureau, Census 2010 Redistricting Data (P.L. 94-171).



Demographic and Income Profile

Shapefile_43

| Summary | 2000 | 2010 | 2015 | | | |
|--|-------------|--------------|-----------------|---------|-------------|---------|
| Population | 17,433 | 20,176 | 21,802 | | | |
| Households | 6,735 | 7,720 | 8,345 | | | |
| Families | 4,034 | 4,578 | 4,904 | | | |
| Average Household Size | 2.47 | 2.51 | 2.52 | | | |
| Owner Occupied Housing Units | 3,664 | 4,141 | 4,419 | | | |
| Renter Occupied Housing Units | 3,071 | 3,579 | 3,926 | | | |
| Median Age | 36.0 | 35.8 | 35.7 | | | |
| Trends: 2010 - 2015 Annual Rate | Area | State | National | | | |
| Population | 1.56% | 1.03% | 0.76% | | | |
| Households | 1.57% | 1.05% | 0.78% | | | |
| Families | 1.39% | 0.86% | 0.64% | | | |
| Owner HHs | 1.31% | 1.06% | 0.82% | | | |
| Median Household Income | 3.07% | 2.82% | 2.36% | | | |
| Households by Income | 2000 | | 2010 | | 2015 | |
| | Number | Percent | Number | Percent | Number | Percent |
| <\$15,000 | 1,027 | 15.4% | 743 | 9.6% | 598 | 7.2% |
| \$15,000 - \$24,999 | 1,027 | 15.4% | 761 | 9.9% | 662 | 7.9% |
| \$25,000 - \$34,999 | 1,119 | 16.8% | 840 | 10.9% | 688 | 8.2% |
| \$35,000 - \$49,999 | 1,225 | 18.4% | 1,356 | 17.6% | 1,178 | 14.1% |
| \$50,000 - \$74,999 | 1,478 | 22.2% | 2,053 | 26.6% | 2,557 | 30.6% |
| \$75,000 - \$99,999 | 454 | 6.8% | 1,190 | 15.4% | 1,397 | 16.7% |
| \$100,000 - \$149,999 | 250 | 3.8% | 576 | 7.5% | 948 | 11.4% |
| \$150,000 - \$199,999 | 51 | 0.8% | 144 | 1.9% | 236 | 2.8% |
| \$200,000+ | 25 | 0.4% | 57 | 0.7% | 81 | 1.0% |
| Median Household Income | \$36,568 | | \$51,790 | | \$60,241 | |
| Average Household Income | \$43,230 | | \$58,052 | | \$65,758 | |
| Per Capita Income | \$17,341 | | \$22,941 | | \$25,921 | |
| Population by Age | 2000 | | 2010 | | 2015 | |
| | Number | Percent | Number | Percent | Number | Percent |
| 0 - 4 | 1,257 | 7.2% | 1,458 | 7.2% | 1,560 | 7.2% |
| 5 - 9 | 1,097 | 6.3% | 1,302 | 6.5% | 1,403 | 6.4% |
| 10 - 14 | 1,028 | 5.9% | 1,205 | 6.0% | 1,295 | 5.9% |
| 15 - 19 | 1,139 | 6.5% | 1,238 | 6.1% | 1,293 | 5.9% |
| 20 - 24 | 1,344 | 7.7% | 1,560 | 7.7% | 1,644 | 7.5% |
| 25 - 34 | 2,593 | 14.9% | 3,105 | 15.4% | 3,515 | 16.1% |
| 35 - 44 | 2,557 | 14.7% | 2,550 | 12.6% | 2,695 | 12.4% |
| 45 - 54 | 2,096 | 12.0% | 2,657 | 13.2% | 2,590 | 11.9% |
| 55 - 64 | 1,232 | 7.1% | 2,098 | 10.4% | 2,490 | 11.4% |
| 65 - 74 | 1,207 | 6.9% | 1,180 | 5.8% | 1,607 | 7.4% |
| 75 - 84 | 1,289 | 7.4% | 1,080 | 5.4% | 995 | 4.6% |
| 85+ | 593 | 3.4% | 743 | 3.7% | 715 | 3.3% |
| Race and Ethnicity | 2000 | | 2010 | | 2015 | |
| | Number | Percent | Number | Percent | Number | Percent |
| White Alone | 13,413 | 76.9% | 14,583 | 72.3% | 15,388 | 70.6% |
| Black Alone | 616 | 3.5% | 823 | 4.1% | 923 | 4.2% |
| American Indian Alone | 185 | 1.1% | 200 | 1.0% | 212 | 1.0% |
| Asian Alone | 1,664 | 9.5% | 2,034 | 10.1% | 2,266 | 10.4% |
| Pacific Islander Alone | 47 | 0.3% | 74 | 0.4% | 79 | 0.4% |
| Some Other Race Alone | 751 | 4.3% | 1,456 | 7.2% | 1,790 | 8.2% |
| Two or More Races | 757 | 4.3% | 1,007 | 5.0% | 1,145 | 5.3% |
| Hispanic Origin (Any Race) | 1,236 | 7.1% | 2,394 | 11.9% | 3,010 | 13.8% |

Data Note: Income is expressed in current dollars

Source: U.S. Bureau of the Census, 2000 Census of Population and Housing. Esri forecasts for 2010 and 2015.

May 27, 2011

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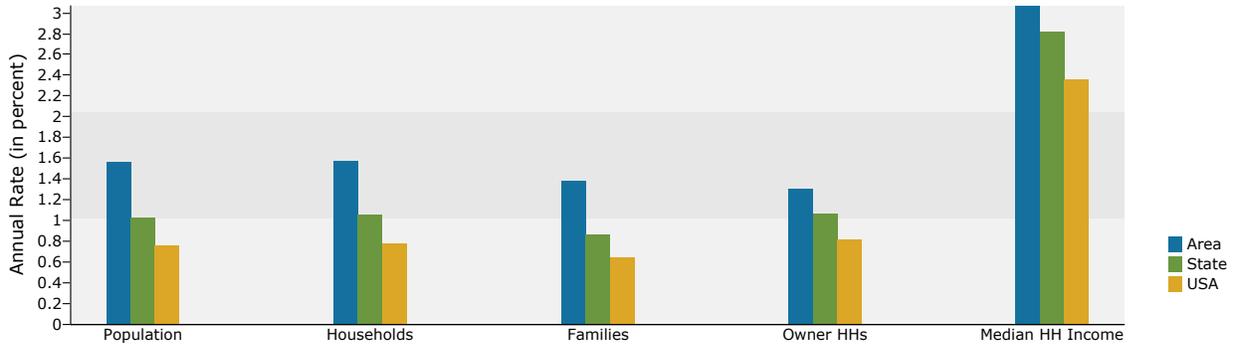
Page 1 of 2



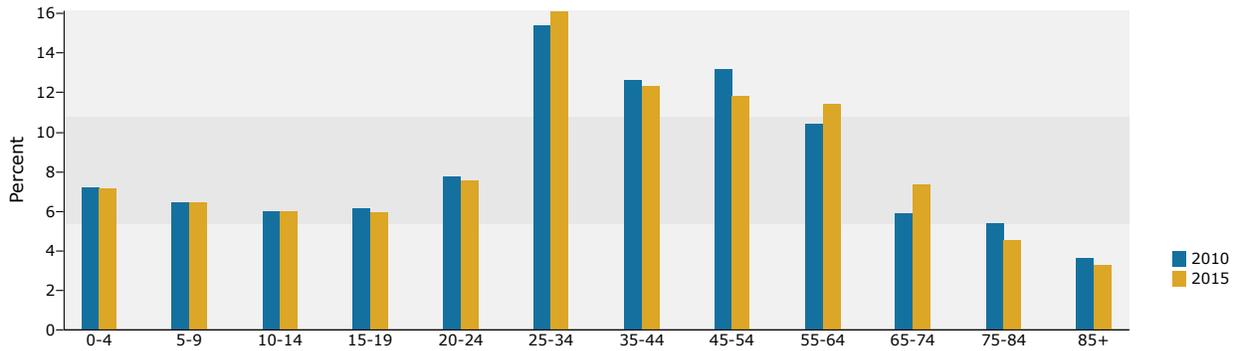
Demographic and Income Profile

Shapefile_43

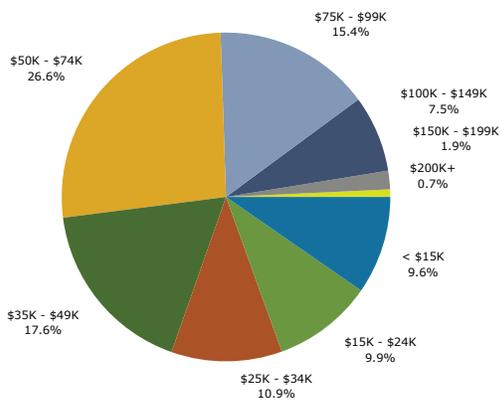
Trends 2010-2015



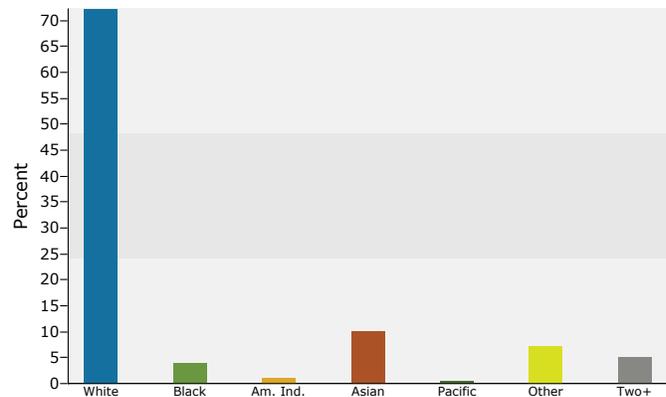
Population by Age



2010 Household Income



2010 Population by Race



2010 Percent Hispanic Origin: 11.9%

Source: U.S. Bureau of the Census, 2000 Census of Population and Housing. Esri forecasts for 2010 and 2015.



A framework for bicycling policy

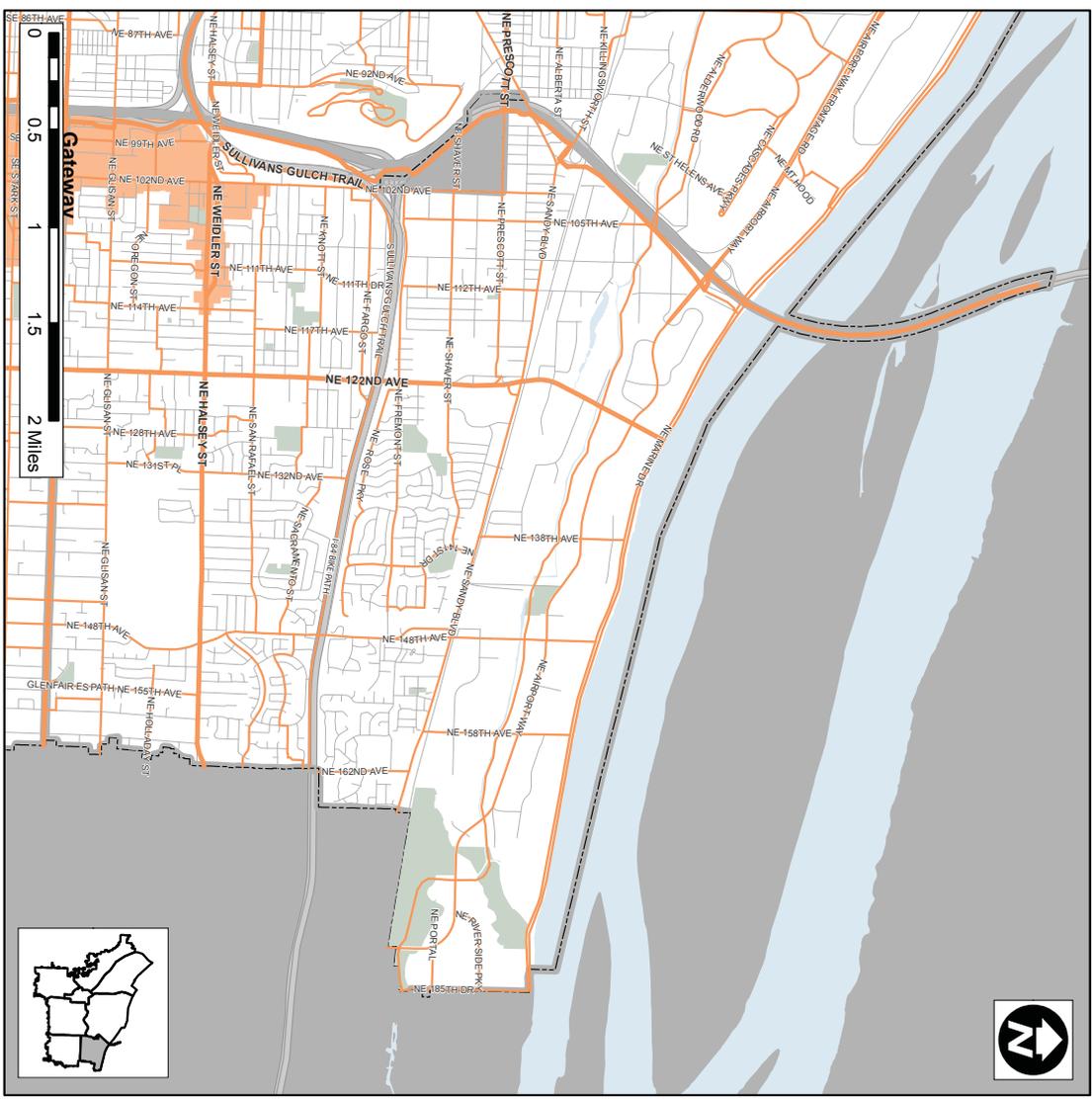
AS ADOPTED
February 11, 2010

Proposed bicycle classifications Far Northeast District

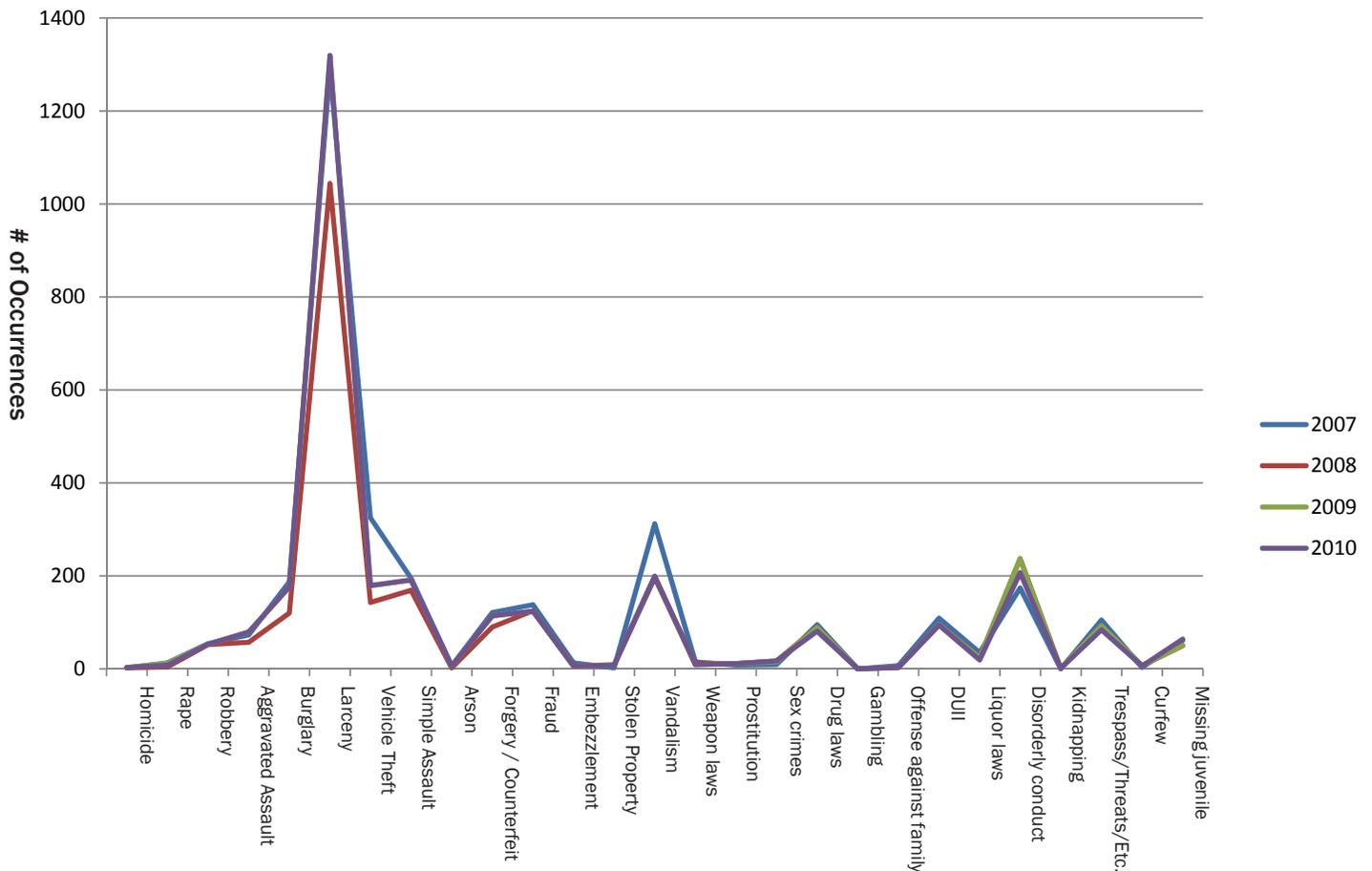
- Major City Bikeway
- City Bikeway
- Local Service Bikeway
- Proposed Bicycle District
- Transportation District Boundary
- Parks and Open Spaces
- Waterways
- City of Portland Area

This map shows 'existing' streets and trails that are already classified in the Transportation System Plan (TSP) and 'proposed' ones that are recommended to be classified when the TSP is updated. Some streets and paths are classified in the existing TSP and are proposed to be changed to a new classification.

District boundaries match delineation in the TSP.



Gateway Study Area Crime Statistics



The Portland Police Bureau provided crime statistics for the Gateway study area for the years 2007 - 2010. The graph above depicts the number of crime occurrences over the course of 4 years. Although the impact of various crime occurrences on a community should not be considered equally (violent crimes such as homicide and rape versus less offensive crimes such as gambling or loitering) they do appear as such in this graph for the purpose of analyzing crime occurrence trends over time. Larceny (the unlawful taking of property from the possession of another; includes pickpocket, pursesnatch, shoplift, bike theft, and theft from a motor vehicle) proves to have the highest rate of occurrences throughout the study area over the course of the last 3 years. Vandalism is a distant second, followed closely by disorderly conduct. Overall, crime trends are consistent over the years, with little deviation.

Using city wide statistical information from the Portland Police Bureau online resource CrimeStats (<http://www.portlandonline.com/police/crimestats/index.cfm>), Gateway crime occurrences were compared to the City of Portland's overall occurrences for the years 2007 - 2010. Larceny occurrences in Gateway made up 9% - 12% of the City's overall larceny crimes. Other crime types that comprised 10% or more of the City's overall occurrences through the years analyzed included homicide and forgery / counterfeit. For further information on the data, please refer to the following page.

Gateway Study Area Crime Statistics

| | 2007 | | 2008 | | 2009 | | 2010 | |
|------------------------|---------|-----------------|---------|-----------------|---------|-----------------|---------|-----------------|
| | Gateway | % of City Total |
| HOMICIDE | 2 | 7% | 2 | 9% | 3 | 16% | 3 | 11% |
| RAPE | 13 | 6% | 4 | 2% | 12 | 7% | 8 | 5% |
| ROBBERY | 54 | 4% | 52 | 5% | 53 | 5% | 53 | 5% |
| AGGRAVATED ASSAULT | 73 | 4% | 57 | 3% | 79 | 5% | 79 | 5% |
| BURGLARY | 187 | 4% | 120 | 3% | 176 | 5% | 176 | 4% |
| LARCENY | 1289 | 10% | 1044 | 9% | 1319 | 12% | 1319 | 12% |
| VEHICLE THEFT | 325 | 7% | 143 | 4% | 179 | 6% | 179 | 6% |
| SIMPLE ASSAULT | 195 | 4% | 169 | 4% | 191 | 5% | 191 | 5% |
| ARSON | 6 | 2% | 2 | 1% | 6 | 2% | 6 | 3% |
| FORGERY/COUNTERFEIT | 121 | 9% | 90 | 8% | 114 | 13% | 114 | 13% |
| FRAUD | 138 | 5% | 125 | 6% | 124 | 7% | 124 | 8% |
| EMBEZZLEMENT | 13 | 5% | 7 | 3% | 6 | 4% | 6 | 5% |
| STOLEN PROPERTY | 2 | 2% | 8 | 9% | 8 | 9% | 8 | 7% |
| VANDALISM | 312 | 4% | 196 | 3% | 199 | 4% | 199 | 4% |
| WEAPON LAWS | 15 | 3% | 12 | 3% | 9 | 3% | 9 | 2% |
| PROSTITUTION | 8 | 3% | 11 | 3% | 11 | 4% | 11 | 7% |
| SEX CRIMES | 9 | 2% | 17 | 4% | 15 | 3% | 17 | 7% |
| DRUG LAWS | 95 | 2% | 89 | 3% | 89 | 3% | 81 | 3% |
| GAMBLING | 0 | 0% | 0 | 0% | 0 | 0% | 0 | 0% |
| OFFENSE AGAINST FAMILY | 7 | 7% | 3 | 3% | 3 | 5% | 3 | 5% |
| DUII | 109 | 5% | 95 | 5% | 95 | 6% | 94 | 6% |
| LIQUOR LAWS | 35 | 1% | 24 | 1% | 24 | 1% | 19 | 1% |
| DISORDERLY CONDUCT | 174 | 4% | 237 | 5% | 237 | 5% | 207 | 4% |
| KIDNAPPING | 0 | 0% | 1 | 1% | 1 | 1% | 1 | 1% |
| TRESPASS/THREATS/ETC. | 105 | 2% | 93 | 2% | 93 | 2% | 84 | 2% |
| CURFEW | 3 | 1% | 7 | 3% | 7 | 3% | 6 | 5% |
| MISSING JUVENILE | 61 | 3% | 50 | 3% | 50 | 3% | 64 | 4% |

