

# Equity, Opportunity, And Sustainability In The Central Puget Sound Region

Geography Of Opportunity In The Central Puget Sound Region

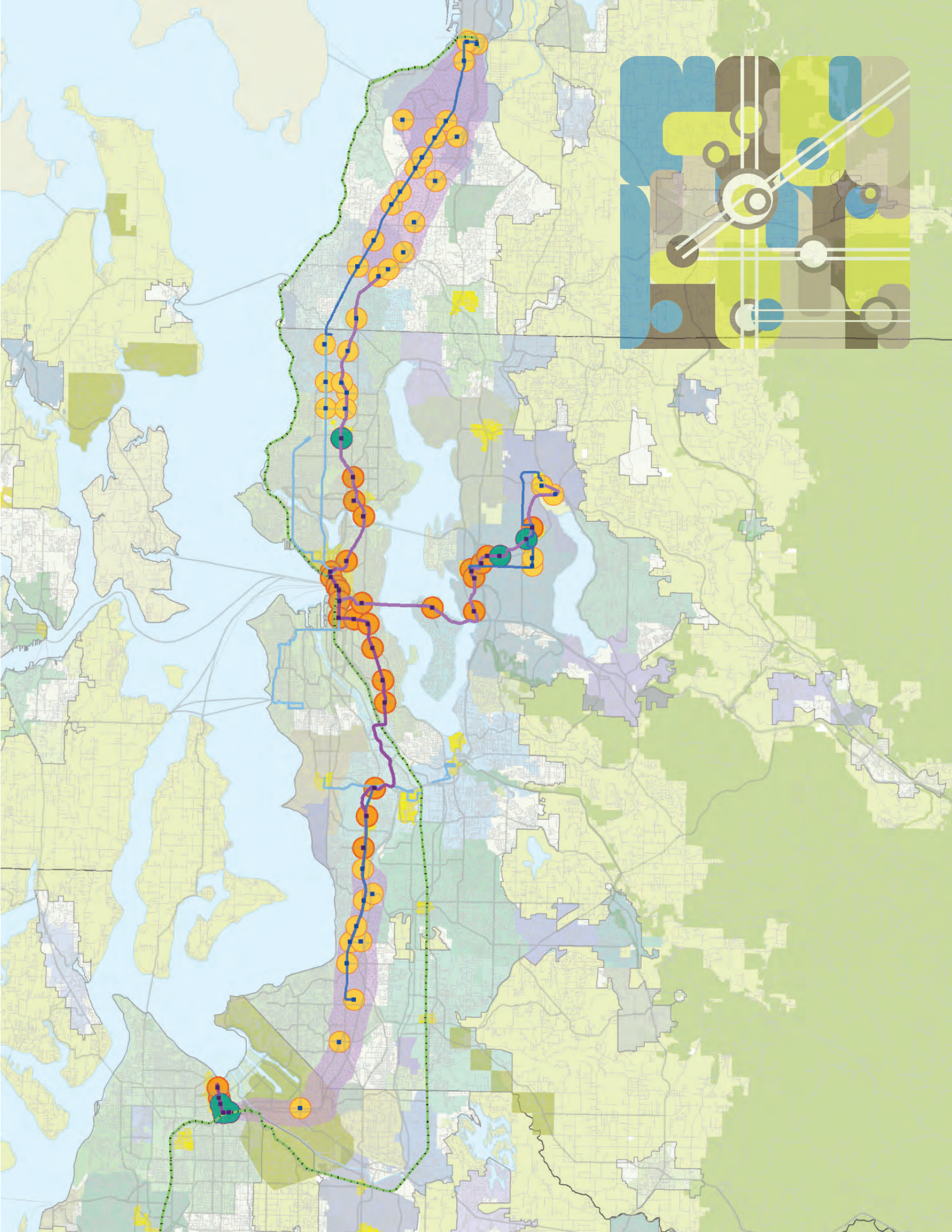


**Growing Transit  
Communities**



**Kirwan Institute**  
Many Differences **One Destiny**

Puget Sound Regional Council  
**PSRC**



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## Geography Of Opportunity In The Central Puget Sound Region



**Kirwan Institute**  
Many Differences **One Destiny**

**About Kirwan:** The Kirwan Institute for the Study of Race and Ethnicity at The Ohio State University is a university-wide, interdisciplinary research institute. Our work is dedicated to understanding of the causes of — and solutions to — racial and ethnic disparities worldwide and to bring about a society that is fair and just for all people.

Puget Sound Regional Council  


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# 1. Introduction



## Geography Of Opportunity In The Central Puget Sound Region

*This report presents a geographic analysis of opportunity in the central Puget Sound region as part of the Growing Transit Communities partnership, analyzing factors such as housing and neighborhood quality, education, jobs, transportation, and health. A series of maps illustrate where opportunity-rich communities exist, assess who has access to these neighborhoods, and help to understand what needs to be remedied in opportunity-poor neighborhoods.*



## The Sustainable Communities Initiative

In 2010 and 2011, the U.S. Department of Housing and Urban Development (HUD) awarded approximately \$196 million in grants through the Sustainable Communities Initiative, with the potential to reach 133 million Americans in communities across the U.S. This groundbreaking program seeks to better coordinate regional planning for housing and transportation while supporting more sustainable and equitable decisions on land use, infrastructure, and zoning. Through regional consortiums, the Sustainable Communities Initiative grants will be used to plan for and align billions of dollars in capital investments to revitalize some of the nation's most distressed neighborhoods, support healthy, livable communities, and broaden access to opportunity-rich areas for all residents in a region.

The Kirwan Institute for the Study of Race and Ethnicity is a technical advisory provider for the Sustainable Communities Initiative, employing Kirwan's Opportunity Communities approach and maps to supporting Sustainable Communities Initiative work in the central Puget Sound region, the Mississippi Gulf Coast, and other areas around the U.S.

## Puget Sound Regional Council (PSRC) Growing Transit Communities Partnership

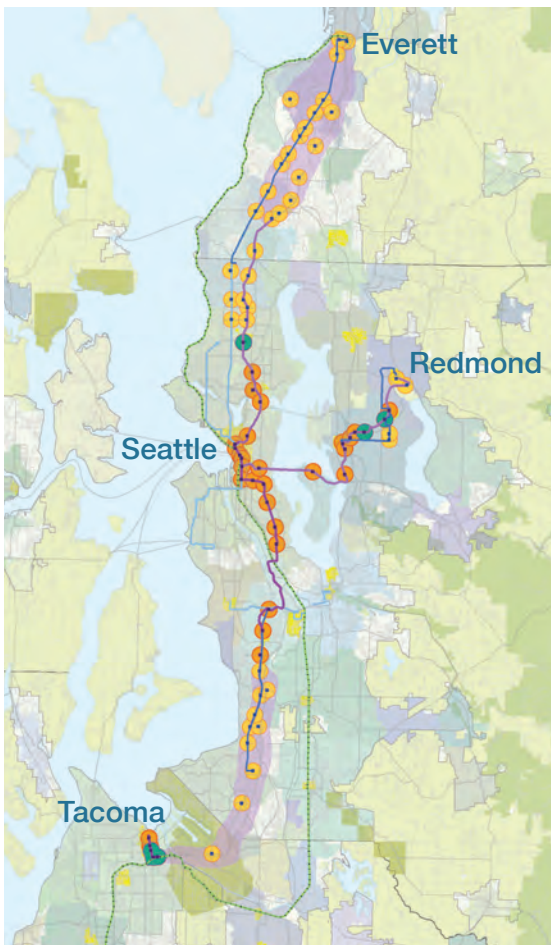
In the coming decades, the central Puget Sound region will make a once-in-a-lifetime investment in transportation infrastructure, including an expansion of light rail and bus rapid transit. This regional commitment provides an opportunity to capitalize on transit investments by growing and strengthening communities around transit stations. To take advantage of this opportunity, the Puget Sound Regional Council and people throughout the region jointly developed Growing Transit Communities, funded through the Sustainable Communities Initiative, to shape communities in ways that benefit current and future residents, local businesses, and the wider region. Guided by VISION 2040, the region's plan for a more sustainable future, Growing Transit Communities will bring new voices to the table to better enable the creation of vibrant, diverse, and inclusive communities for all people.

The Growing Transit Communities Partnership work program is organized into four connected parts: Corridor Action Strategies, a Regional Equity Network, a Regional Affordable Housing Strategy, and Innovative Projects and Tools.

## Goals Of Growing Transit Communities

- *Actively engaging and empowering people to shape their communities.*
- *More transportation choices within neighborhoods, and better connections between neighborhoods.*
- *More housing choices for people of all ages, incomes, abilities, races, and ethnicities.*
- *Greater economic vitality, achieved by growing existing businesses and attracting new ones, improving resident access to jobs, education, and opportunity, and giving employers access to talent.*
- *Sustaining existing communities and cultures through preservation and growth directed to meet diverse needs.*
- *Enhancing the return on transit and other public investments by creating complete and vibrant communities that attract growth and transit ridership.*

**Figure 1. Growing Transit Communities Corridors And Station Areas**



## Corridor Action Strategies

This planning will focus on three regional transit corridors: Seattle to Everett, Redmond and Tacoma. Efforts will engage residents and more than 20 jurisdictions with over 50 transit station areas to: (1) report on existing conditions, (2) create action plans for corridors and station areas, and (3) establish compacts with local jurisdictions to set expectations for future development.

## Regional Equity Network

The Network will ensure that an equity framework is used in all aspects of the Growing Transit Communities program and that low-income communities and communities of color have a real voice in decision-making and planning along the transit corridors. The Network will administer small grants to community organizations for outreach and organizing efforts and data collection, which will equip people to fully engage in community building over the long-term. The Network is organized by Impact Capital with the Community Development Collaborative.

## Affordable Housing Strategy

The Affordable Housing Strategy will include a regionwide assessment of fair housing access and provide technical assistance to local jurisdictions on affordable housing policy development. Policy work will include research on new tools to support affordable housing preservation and development, especially around transit stations. The development of financing tools and regional assessment of Fair Housing and Equity will be overseen by the Affordable Housing Steering Committee, composed of affordable housing advocates, funders, developers, and others from around the region.

## Innovative Projects And Tools

Catalyst demonstration projects will focus on making inclusive successful transit communities a reality. Projects in Tacoma's South Downtown area and Seattle's Northgate will test tools and serve as laboratories for the rest of the region. The University of Washington's Runstad Center is developing Decision Commons, a computer-based visioning tool to help illustrate real-time social, environmental and economic impacts of different planning scenarios. The test case for Decision Commons will be the Bellevue–Redmond Corridor.

The opportunity maps in this report will help to inform regional housing policy and decisions on where to direct resources. While opportunity maps were developed intentionally to serve as a tool for fair housing advocates, the report’s analysis and recommendations will apply to each of the four major components of the Growing Transit Communities partnership. A regional assessment of access to opportunity is a requirement of the HUD Sustainable Communities Initiative program, and the work in this report will be incorporated into the broader Fair Housing and Equity Assessment (FHEA). (More information on how the analysis from this report might influence the Corridor Action Strategies, Affordable Housing Strategy, and other efforts from the Growing Transit Communities partnership can be found in Section 5, Applications and Next Steps, under “How to Use the Maps.”)

## 2. Equity And Sustainability



### Challenges Of Equitable Regional Development

Distressed communities, displacement, fragmented open space, damaged ecosystems, and racial disparities in health, education and jobs are all challenges that can result from unsustainable development patterns and policies. The HUD sustainability grants require that regions give traditionally marginalized communities a more proactive role in the planning process, with real decision-making authority. Looking forward, regions adopting truly sustainable new models of planning and development — integrated and systemic approaches that balance equity, the economy, and the environment — will benefit by building healthy, economically vibrant communities.

The HUD Sustainable Communities Initiative represents a new paradigm of regional development with which some practitioners and sustainability consortiums have limited experience. There is a real need in the planning field for understanding how to bring equity to the table from the outset and incorporate equity into regional planning. Planners should invest in building relationships with communities and engaging marginalized groups and advocacy organizations as decision makers, not just as consultants or “advisors.” Too often, the planning process is a very hierarchical, top-down undertaking. Equity in regional planning is about building capacity at all levels, connecting the “tree tops” with the “grass roots.” Capacity must be built in regional planning consortiums, disadvantaged communities, and community organizations alike. Together, these efforts can catalyze the regional planning process, expand the capacity of community organizations, and increase regional sustainability.

### Defining Equity

The Regional Equity Network brings together community organizations, public health advocates, and advocates for social equity. The Equity Network has developed a working definition for a social equity framework:

**Social equity** means that all people, regardless of where they live, have access to the resources and opportunities that improve their quality of life and let them reach their full potential. Social equity also requires that low-income communities, communities of color and other historically

underrepresented populations are active participants in planning and policy making by having the knowledge and other tools required for full participation. A social equity framework:

- Ensures that current residents, businesses and other community members benefit as their communities change and grow, rather than being displaced to areas that offer fewer opportunities.
- Seeks to ensure that new growth and development create housing choices affordable to socially and economically diverse populations, as well as opportunities for community businesses and institutions to thrive, and employment opportunities that pay a living wage.
- Empowers communities to actively participate in planning and policy-making processes and structures planning processes for meaningful community engagement.

## **Why Equity Matters For Regional Sustainable Development In The Central Puget Sound Region**

The Regional Equity Network and Affordable Housing Steering Committee are working to create an assessment of fair housing and equity in the region. This work will help guide investments across the region and within light rail station areas. The Fair Housing and Equity Assessment (FHEA) will provide an analysis of segregation, racial and ethnic concentrations of poverty, access to opportunity, equity of planned and recent infrastructure investments, and other regulatory and private market barriers to fair housing choice. Recommendations for regional fair housing planning will be included in the report after equity and affordable housing stakeholders discuss the implications of the analysis. The neighborhood-level analysis of access to opportunity across the region provided in this report will be an important part of the total regional picture concerning equity and fair housing.

The Growing Transit Communities Partnership strives to include traditionally underrepresented groups at every step of the analysis and planning work. Community development corporations, neighborhood organizations, business associations, and groups representing the interests of racial and ethnic minorities have helped to define opportunity in the central Puget Sound region and have received funding through small grants that help to supplement this analysis and benefit local communities. The presence of these groups is vital to ensuring equitable outcomes and, ultimately, in planning and building equitable, transit-oriented communities. Understanding where opportunity communities exist and who has access to them is the first step in ensuring equitable neighborhood investments that enhance fair housing choice and improve conditions in education, health, the local economy, housing and neighborhood quality, mobility and transportation, and the environment.

The central Puget Sound region anticipates continued population and job growth through 2040. In 2006 it was estimated that the region will grow by 1.7 million people between 2000 and 2040 (VISION 2040). The region is becoming increasingly diverse. Recent census data show that the minority populations in the region have doubled since 1990 (15% in 1990 and 31% in 2010). It is anticipated that this trend will continue in the state (from the year 2000 to 2030 minorities will increase from one in five to one in three) and likely in the region.

The region's prosperity depends on integrating all residents into the economy, including those who have too often been left behind. Recent studies suggest that inequality hinders growth, while greater racial and social inclusion corresponds with more robust economic growth (*America's Tomorrow: Equity Is the Superior Growth Model*, PolicyLink, 2011). Closing the racial gap in educational attainment is also essential to building a strong workforce.



Without an intentional focus on equity and meaningful community engagement, the results of growth and transportation investments can adversely affect or displace low-income, minority, and limited-English proficient residents. Equitable development requires deliberate consideration of equity impacts at the front end of political processes and implementation of strategies to make certain that disadvantaged communities participate in, and benefit from, decisions that determine the course of development in their neighborhoods, communities, and regions.

### 3. Opportunity Matters: Space, Place, And Success



#### What Is Opportunity Mapping, And Why Is It Done?

Decades of social science research have demonstrated that neighborhood conditions and access to opportunity play a significant role in life outcomes. The challenges facing marginalized communities are long-term, multifaceted, and interrelated, and the disparities facing marginalized communities have been widening. These inequalities are further exacerbated by the economic downturn and the fallout from the housing and economic crisis. Sustainable growth that is sensitive to the needs of marginalized populations requires multifaceted solutions.

Many advocates are coming to understand that no single negative factor leads to the creation of a marginalized community. Rather, a range of factors — including high rates of incarceration, neighborhood disinvestment, housing barriers, educational and early childhood challenges, and labor market discrimination — act in combination, restricting marginalized groups from access to opportunities and severely limiting the individual and collective ability to build assets.

More often than not, these multiple factors work together in a particular place. Patterns of racial and spatial isolation are often the result of historic policies and practices, some of which were overtly racist. Policies like mortgage redlining and suburban highway investment often created an inequitable and segregated social landscape, resulting in uneven opportunities and burdens that persist in the present day.

The Kirwan Institute's Communities of Opportunity framework is a model of opportunity that considers housing, education, jobs, transportation, health, and engagement in one's life and community, among other factors. This approach is based on two premises: (1) All people should have fair access to the critical opportunity structures and the necessary social infrastructure to succeed in life. (2) Connecting people to opportunity creates positive, transformative change in communities. The Communities of Opportunity model advocates for a fair investment in all people and neighborhoods, to improve life outcomes for all citizens, and to improve the health of entire regions. The Kirwan Institute's opportunity maps have been utilized in policy advocacy, litigation, applied research, community organizing, and coalition building, and to inform service delivery.

#### Central Puget Sound Opportunity Mapping: Research Overview And Areas Of Focus

Opportunity maps are based on variables indicative of high and low opportunity, where a clear connection has been demonstrated between the indicator and opportunity. "Opportunity" is defined as "a situation or condition that places individuals in a position to be more likely to succeed and excel." Indicators could be either impediments to opportunity (which are analyzed as negative neighborhood factors, e.g., high neighborhood poverty) or conduits to opportunity (which are analyzed as positive

factors, e.g., an abundance of jobs). High opportunity indicators include high-performing schools, the availability of sustainable employment, stable neighborhoods and a safe environment. These multiple indicators of opportunity are then assessed at the same geographic scale, enabling the production of a comprehensive opportunity map for the region. Demographic data are then laid over the opportunity map to see whether patterns of segregation by age, class, gender, race, ethnicity, disability, language, or nativity correlate with areas of higher or lower opportunity.

Because the Puget Sound region is so large and the built environment so diverse, the mapping in this report focuses solely on the areas within the urbanized area (a.k.a. within the urban growth boundaries). Rural areas tend to lack quality data and are generally lower opportunity within this context because of the nature of the categories considered. In addition, the categories and indicators of opportunity in the report are more likely to occur in urbanized areas (e.g., transit service). The opportunity maps and the index showing the entire region are available upon request.

## 4. Opportunity In The Central Puget Sound

### Developing The Regional Opportunity Index

Living in low-opportunity neighborhoods can make it harder to achieve healthier and more sustainable outcomes for individuals, families, and communities, and the presence of such neighborhoods can be an impediment to a healthy, sustainable region. Food deserts (areas lacking access to a supermarket or large grocery store), poor job prospects, unsafe outdoor play areas, struggling schools, and residential and commercial asset depreciation all can characterize low opportunity clusters. Sustainability advocates should work to strengthen the opportunity webs in these neighborhoods and to open up other neighborhoods rife with community assets and private investment to more families.

A variety of stakeholders and advocates throughout the region have already contributed to this process by participating in the development of the local opportunity index. The following is a timeline of the input and participation in the development of the opportunity index and analysis:



This process resulted in a set of opportunity indicators representing five key elements of neighborhood opportunity: Education, Economic Health, Housing and Neighborhood Quality, Mobility and Transportation, and Health and Environment.

Education	Economic Health	Housing and Neighborhood Quality	Mobility and Transportation	Health and Environment
<ul style="list-style-type: none"> <li>• math test scores</li> <li>• reading test scores</li> <li>• student poverty</li> <li>• teacher qualification</li> <li>• graduation rates</li> </ul>	<ul style="list-style-type: none"> <li>• access to living wage jobs</li> <li>• job growth trends, 2000–2010</li> <li>• unemployment rate</li> </ul>	<ul style="list-style-type: none"> <li>• vacancy rate</li> <li>• foreclosure rate</li> <li>• high cost loan rate</li> <li>• housing stock condition</li> <li>• crime index</li> </ul>	<ul style="list-style-type: none"> <li>• cost per commute</li> <li>• proximity to express bus stops</li> <li>• average transit fare</li> <li>• percent of commuters who walk</li> </ul>	<ul style="list-style-type: none"> <li>• distance to nearest park or open space</li> <li>• proximity to toxic waste release</li> <li>• percent of area that is within a food desert</li> </ul>

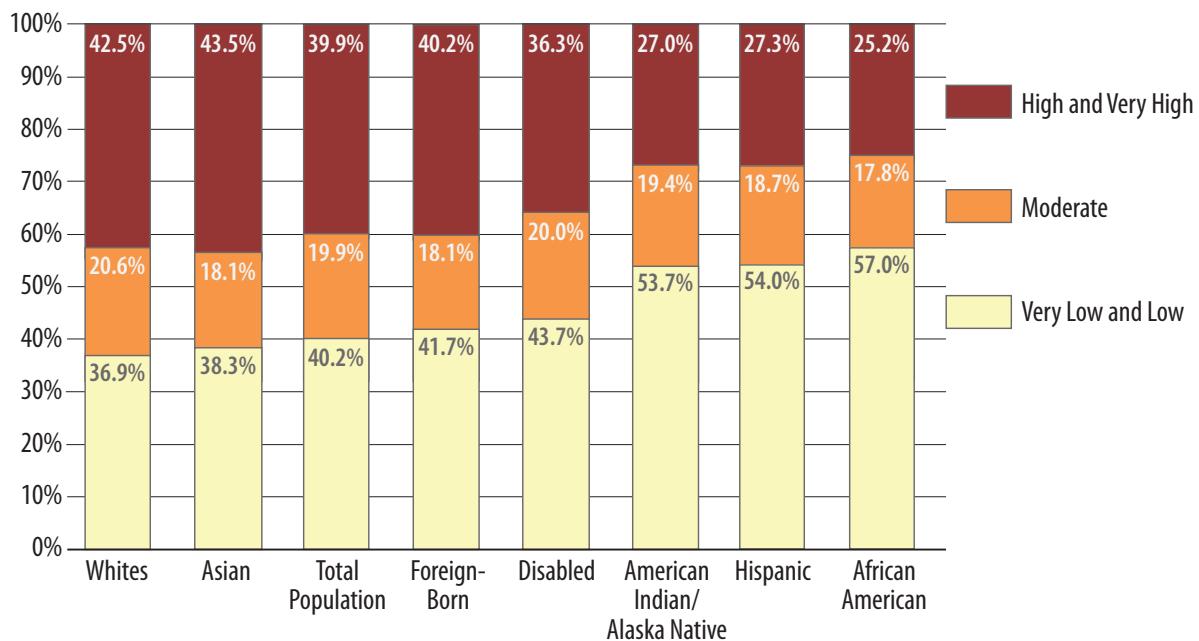
The data from these five opportunity indicators were compiled into a comprehensive index of opportunity for all census tracts within the urbanized growth area of the region. (For a detailed methodology on how the opportunity index is calculated using statistical methods, see the appendix of this report.)

*Map Series 1* shows how each neighborhood (defined as a census tract) performed in each opportunity category, as well as the overall opportunity index. Based on analysis among indicators, categories, and the composite opportunity scores, the category of indicators that had the most significant correlation with the comprehensive scores was **Education**. Puget Sound stakeholders requested an analysis of opportunity distribution with respect to race, nativity, disability, poverty, public assistance, retailers that accept Special Supplemental Nutrition Program for Women, Infants, and Children (WIC) payment, HUD housing (including Section 8 vouchers), cost-burdened households, and disadvantaged businesses. The following sections highlight these topics.

### Opportunity Overlay Analysis

The total population, disabled population, and the foreign-born population are more or less evenly distributed across the opportunity spectrum. Whites and Asians are the most likely to live in high opportunity areas, while African Americans, Latinos, and American/Alaskan Natives are the most likely to live in low opportunity areas. *Map Series 2* shows the geographic distribution of each group in relation to the opportunity index, while *Figure 1* provides a statistical summary of how they are distributed across the regional opportunity spectrum. These findings show that opportunity is spatial and racial.

**Figure 1. Opportunity Distribution By Demographic Group**



## Housing

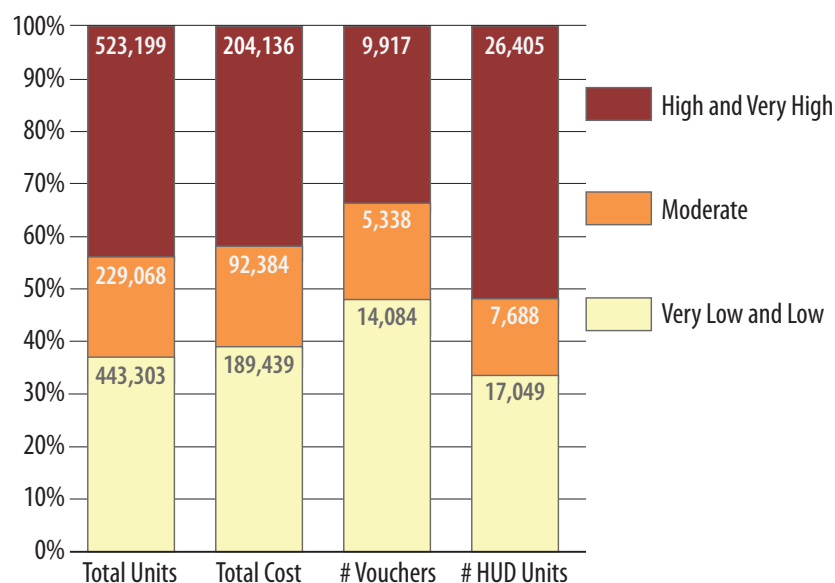
Subsidized housing can be a key public mechanism to help disadvantaged families access opportunities such as grocery stores with fresh, affordable produce or high-performing schools.

Total housing units, cost-burdened households, and HUD units are all distributed fairly evenly across the opportunity spectrum. In fact, while 44% of all housing units in the region are in high or very high opportunity areas, 46% of HUD site-based units are in areas of high opportunity. However, the analysis reveals differences when it comes to the distribution of Section 8 vouchers, as over half of voucher holders are located in areas of low or very low opportunity. The voucher program was designed to provide flexibility for residents to locate in areas of choice, but the fact that voucher holders are more likely to live in low or very low opportunity areas runs counter to the program's intent. *Map Series 3* and *Figure 2* illustrate the geographic distribution of these housing options in relation to the opportunity index.

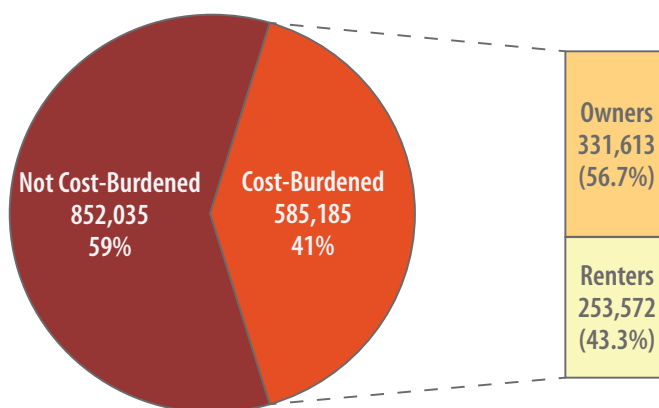
As mentioned above, cost-burdened households (those which spend 30% or more of household income on housing costs) are similarly distributed throughout the region as non-cost-burdened households. *Map 3.1* illustrates where cost-burdened households (only those with household income under \$75,000 annually — this removes those who may choose, and can afford to pay more than 30% of income on housing) are situated in the geography of opportunity. Supplemental to this geographic footprint, the following analysis examines other characteristics of cost-burdened households, providing further context to the map.

When people are constrained by their housing costs, they have less money for other life needs, such as medical care, child care, and food. *Figure 3* shows that 41% of the region's households are cost-burdened. Of those cost-burdened households, 56.7% own their homes, while the other 43.3% rent. Although

**Figure 2. Opportunity Distribution And Housing Affordability**



**Figure 3. Cost-Burdened Housing Overview**

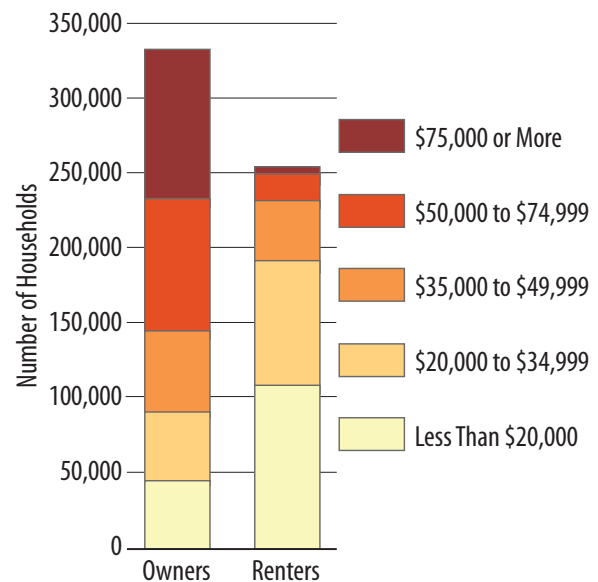


**Table 1. Income Of Cost-Burdened Households By Tenure**

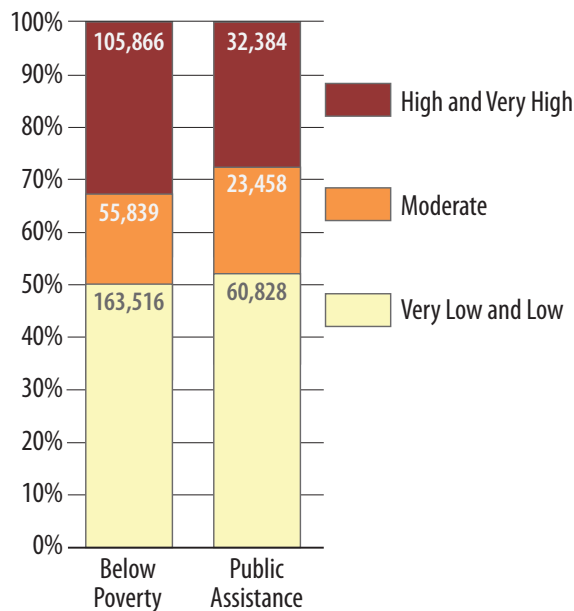
HOUSEHOLD INCOME	OWNERS	RENTERS	TOTAL	PERCENT OF TOTAL
Less Than \$20,000	45,757	108,244	154,001	26.3%
\$20,000 to \$34,999	45,154	84,563	129,717	22.2%
\$35,000 to \$49,999	54,335	38,917	93,252	15.9%
\$50,000 to \$74,999	88,099	18,156	106,255	18.2%
\$75,000 or More	98,268	3,692	101,960	17.4%
Total	331,613	253,572	585,185	
Percent of Total	56.7%	43.3%	40.7%	

63.6% of the region’s housing units are owner-occupied, only 57% of cost-burdened households are owner-occupied, meaning that renters are more likely to be cost-burdened than owners. Additionally, *Table 1* and *Figure 4* provide a breakdown of cost-burdened households by income level. These figures reveal the income differences between cost-burdened owners and renters, as 56% of cost-burdened owners have a household income of \$50,000 or more, while 76% of cost-burdened renters have a household income of \$35,000 or less. This suggests that conditions for most cost-burdened renters are more challenging than those faced by the majority of cost-burdened owners.

**Figure 4. Cost-Burdened Households, Income, And Tenure**



**Figure 5. Opportunity And Poverty**



**Poverty And Public Assistance**

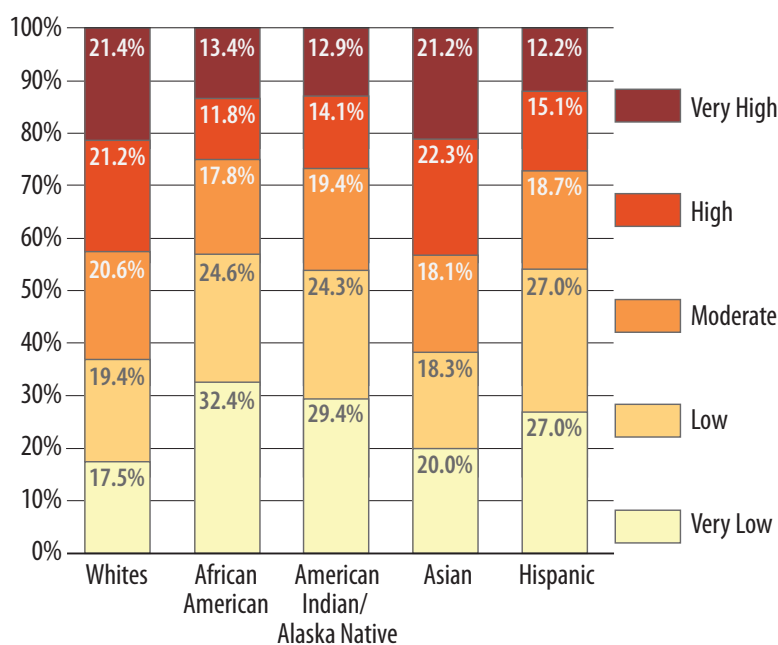
Approximately half of all people living in poverty and households receiving some form of public assistance are located in areas of low or very low opportunity. *Map Series 4* and *Figure 5* illustrate the opportunity geography of poverty and public assistance in the region. These groups are more concentrated in low opportunity areas than the regional average. A slightly larger share of people in poverty live in high opportunity areas than do households receiving assistance, and this is most likely related to poverty around the University of

Washington. *Map 4.1* illustrates the concentration of poverty around the University. While many college students in this area fall below the poverty line due to a lack of income, they are nevertheless connected to a strong network of opportunity and are likely not receiving public assistance.

Another potential factor in the geographic differences between poverty and public assistance is that eligibility for public assistance is based not solely upon income, but also includes elderly and disabled populations who may or may not be in poverty. People in poverty are faced with layers of economic barriers, yet many who receive public assistance may be dealing with the challenges of age or disability in addition to the economic barriers of poverty. A standard characterization of low opportunity areas is that they represent places where multiple layers of disadvantage and vulnerability exist. This may also help explain why more households receiving public assistance are

located in low opportunity areas than are people in poverty.

**Figure 6. Opportunity By Poverty And Race**



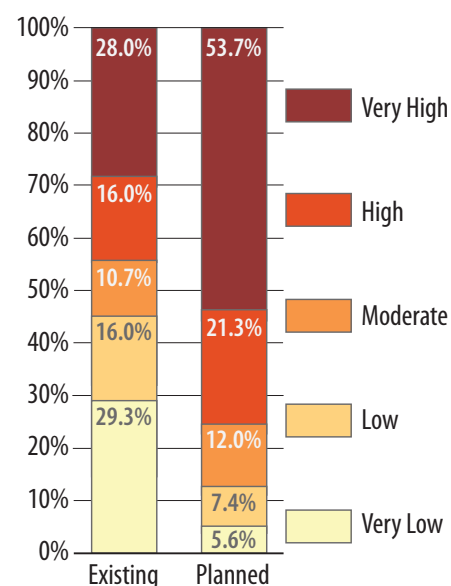
A more in-depth analysis of poverty, race, and opportunity provides further insight into the nature of poverty in the region.

*Figure 6* shows how, even within the population living in poverty, differences exist among racial groups. The chart illustrates how Asians and Whites living in poverty are still more likely to live in areas of high opportunity than other groups in poverty.

### Light Rail

As outlined in the introduction, one of the primary applications of this opportunity mapping and analysis is to help guide future sustainability investments within communities across the region. One way to use the opportunity framework in this context is to analyze the Link light rail system in relation to the geography of opportunity. An analysis of current and proposed light rail stations shows that, while approximately one-third of existing stations are in areas of low or very low opportunity, fewer than 10% of planned stations are slated for such areas. Moreover, more than half of all planned stations will go to very high opportunity areas. *Map Series 5* and *Figure 7* illustrate the relationship between light rail service and the geography of opportunity.

**Figure 7. Opportunity And Link Light Rail Stations**

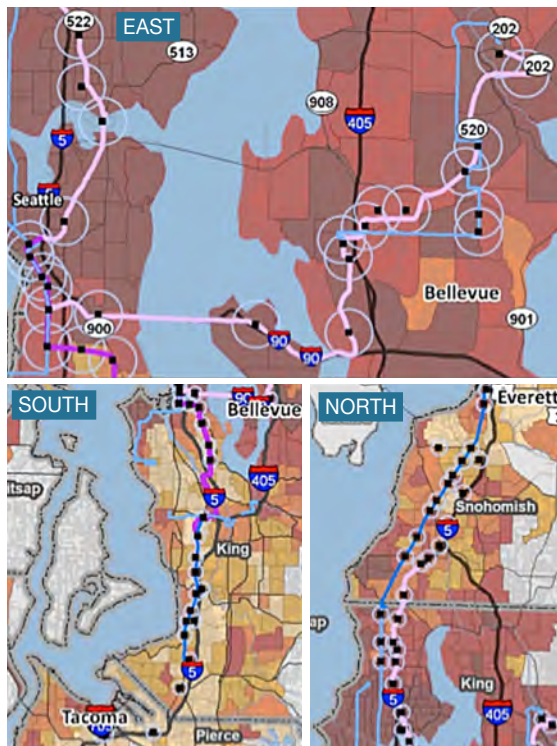


These findings may be understood from two separate perspectives, both of which have meaning for future investments in regional opportunity. On the one hand, there is disparity between the neighborhoods that are served by existing and planned light rail routes. Yet while this may represent matters of equity and justice in need of strong consideration, it may also represent one way in which regional investment is being directed toward creating better linkages between low opportunity communities and more opportunity-rich places. An emphasis must be made on connecting low opportunity communities to educational resources, career training resources, healthy sources of food, and living-wage jobs as the planned stations and routes become operational. If planning efforts are directed in this way, the investments made in the light rail system will represent one of the significant aspects of improving access to opportunity. As previously described, investing in opportunity is a matter of both mobility and place-based strategies, and both are required to develop an opportunity-rich region from which all communities can benefit.

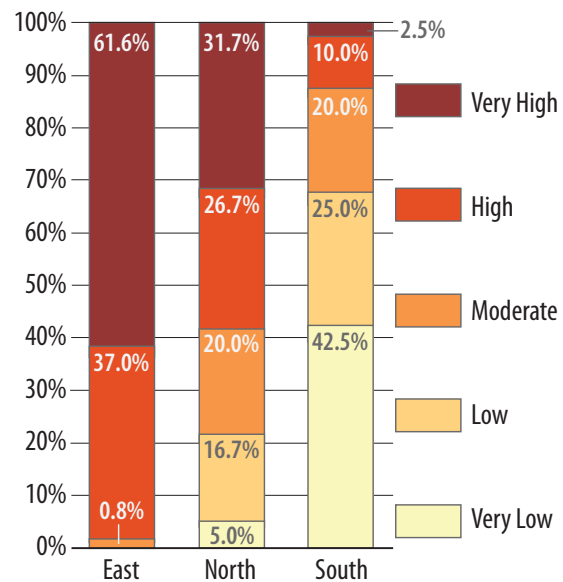
### Light Rail Corridor Analysis

In addition to examining the opportunity landscape across the region, a closer look at the three light rail corridors extending from central Seattle provides valuable insights for planning efforts. *Figure 8* illustrates these corridors and their station locations with respect to opportunity.

**Figure 8. Light Rail Corridors**



**Figure 9. Light Rail Corridor Opportunity Analysis**



The overlay analysis quantifies the differences in proximity to opportunity among the corridors. The data in *Figure 9* show that the east corridor is almost entirely comprised by areas of high or very high opportunity, while most areas in the south corridor have low or very low opportunity. The north corridor is characterized by the most even distribution of different levels of opportunity.

Though there are clear differences across the opportunity landscapes of these corridors, the light rail system should be viewed as one of the region's key assets for linking people to places of opportunity. The differences seen in the corridors can help to isolate specific areas where targeted efforts to improve educational, health or other outcomes can improve opportunity locally, while other efforts can capitalize on the potential for the light rail system to close the opportunity gap across the region and bring parity to the neighborhoods within the corridors.

## 5. Applications And Next Steps



### Kirwan Institute's Recommendations On How To Use The Opportunity Maps

The opportunity framework is a catalyst for community discussion. The opportunity map is designed to bring stakeholders together under a common understanding of the region's strengths and challenges and what it will take to make opportunity accessible to all. The analysis presented in this report represents the Kirwan Institute's preliminary analysis and suggests how this tool can be used for community learning, engagement, and strategy building. Findings from this research and all subsequent analysis will help pave the way for a more equitable and sustainable future in the region. The following recommendations highlight the most significant findings of this stage of the analysis and suggest some next steps for improving the quality of life for all communities in the central Puget Sound region.

#### **Build Upon The Success Of HUD Site-Based Affordable Housing**

One of the most intriguing findings is that much of the HUD site-based affordable housing in the region places residents close to opportunity within the region. While in many other parts of the country similar analyses have shown a concentration of HUD housing in low opportunity areas, nearly half of the central Puget Sound's HUD housing stock is located in areas of high or very high opportunity. This represents a strength that the region should leverage to improve mobilization toward opportunity for low income residents. The key to capitalizing on the opportunity context of these housing units is to make sure that current residents are actually accessing the local opportunity structures and moving to even better housing options, enabling more residents to leverage these units and continue the pattern of upward mobility. By targeting resources, programming, and partnerships around this asset, the social and economic sustainability of the region will grow stronger.

#### **Use The Map To Help Voucher Holders Move To Opportunity**

While some of the region's subsidized housing was found to be concentrated in areas of high opportunity, voucher holders appear to be disproportionately (52%) located in areas of low and very low opportunity. Because the voucher program is designed to encourage flexibility and mobility in housing choice, this finding shows that the opportunity map could become a resource to help voucher holders identify options which would provide them with greater access to opportunity in the region. Housing counseling programs could make the map available to voucher holders, and community engagement around the opportunity framework could empower residents to take advantages of the resources in the region. King County Housing Authority is considering a change to this policy at the time of writing this report and may serve as a model policy for other regional housing authorities.



## **Emphasize Linkages To Opportunity As The Sound Transit Regional Transit Plans (ST2) Are Implemented**

Overlay analysis in this study also revealed that planned phases of the Link light rail system are directed toward areas of high opportunity, which can inform the region's equity strategy in a number of ways. The existing Central Link light rail already serves areas of low opportunity. On the one hand, the analysis can serve to initiate discussion about disparities that may become exacerbated as a result of these plans. However, it can also be viewed as a way to improve the existing connections between areas of low opportunity and areas of high opportunity. In this way, the emphasis in the planned extensions of the system can be on connecting the residents of low opportunity areas to jobs and resources throughout the region.

## **Invest In The Fundamentals Of Opportunity**

The Communities of Opportunity Model is based on a combination of mobility and in-place strategies for improving regional access to opportunity. Improving opportunity through increased transit access is by nature a more mobility-based strategy. However, a comprehensive and robust investment in the regional opportunity landscape must also include in-place strategies which target resources to core elements of opportunity in areas of need. In-place strategies require an assessment of the educational, job training, and affordable housing challenges in low opportunity areas, followed by directed investment and collaborative solutions to overcome those challenges.

## **Specific Applications For Opportunity Maps In The Central Puget Sound Region**

The Puget Sound Regional Council has identified and is working with partners to implement the following action strategies in regards to the maps.

### **Fair Housing:** *Results Will Be Incorporated Into The Fair Housing And Equity Assessment (FHEA)*

The regional opportunity maps will help to analyze the barriers to fair housing for various protected classes of people. Access to opportunity in the region will be compared to areas of racially and ethnically concentrated poverty as well as racial and economic segregation and other measures. The analysis and recommendations from this report will inform the regional fair housing strategy and will lead to specific recommendations for regional stakeholders. (For an example of how opportunity maps can influence strategies and recommendations, see "Fair Housing," below.)

### **Affordable Housing:** *Tool For Affordable Housing Developers And Funders*

Affordable housing developers and providers could use the maps to direct investments to areas of higher opportunity. In other words, the primary outcome of the maps should ensure that subsidized housing and housing voucher program investments are made equitably across the region. Housing authorities across the region have shown interest in changing policy and working with voucher holders to prioritize use of vouchers in higher opportunity neighborhoods. Affordable housing funders are another important group with whom to share the information, to help focus their investments equitably across the region.

### **Growing Transit Communities Partnership:** *Incorporated Into Corridor Existing Conditions Report And Action Strategies*

The opportunity assessment for neighborhoods near light rail stations will be incorporated into the existing conditions report. Action strategies may include increasing access to light rail station areas of high opportunity, investing in lower opportunity neighborhoods along the corridor, and making

equitable investments in higher opportunity neighborhoods. The opportunity maps will be used to ensure that equity is a factor when station areas are grouped together by types or “redevelopment readiness.” For example, if a group is trying to prioritize investments along a corridor, it should factor in the opportunity score in addition to infrastructure like sidewalks, sewers, water, roads, etc. The best ideas for how to use the maps will come from those involved in corridor, affordable housing, and equity planning in the region.

**Regional Transportation Planning:** *Use Opportunity Maps As Part Of The “Fairness” Measure To Prioritize Investments Within The Long-Range Transportation Plan*

PSRC is gearing up to update the central Puget Sound region’s Metropolitan Transportation Plan (Transportation 2040). As part of that effort, a project prioritization process is being developed to evaluate the transportation projects in the long-range plan. One of the nine key evaluation criteria categories is equity. PSRC boards will be considering a proposal in which projects that improve mobility in low opportunity neighborhoods, or that connect low opportunity neighborhoods, receive the highest priority in the plan. Projects connecting low to high opportunity neighborhoods would be ranked next, with projects connecting high to high opportunity receiving a lesser score.

**Regional Transportation Planning:** *Tool For Developing Regional Bicycle And Pedestrian Network*

PSRC is working with stakeholders in each county to update the regional bicycle network. Maps used for planning purposes target inter-connecting urban centers and regional transit locations. The equity elements of the opportunity mapping were used as a reference when designing this network.

**Philanthropy:** *Inform Investments In Transit Station Areas And Neighborhoods*

The Puget Sound Funders Partnership for Sustainable Communities, made up of private, corporate, family, and community foundations, was formed by groups with a common vision. That vision is, as outlined in an April 2012 concept paper, “a region where everyone participates and prospers, and the natural environment we cherish is nurtured and replenished.” The group seeks to utilize the opportunity maps to aid in making investment decisions across the region.

## **Monitoring Opportunity In The Central Puget Sound Region**

The maps provide a view of opportunity defined during a specific time period (data included in the maps were collected between 2006 and 2010). However, this type of data should continue to be collected and improved. Monitoring the changes in access to opportunity can be tracked using the same data sources in the future. Refinements and updates to the map would allow users to track the equity of investments over time.

PSRC is considering a methodology for using data to project changes in access to opportunity in the future. For example, using the regional travel model scenario (that projects full build-out of transportation network improvements as identified in Transportation 2040) and employment projections, the maps could be updated to show how access to regional employment will change by 2040. This future analysis would add another dimension to the usefulness of opportunity maps by estimating impacts of investments today on equity in the future.

## Conclusion

The opportunity maps are available and useful to a variety of groups and are a resource to understand the geography of opportunity in the central Puget Sound region. With a regionally accepted methodology and set of indicators, this analysis can serve as a basis for furthering the conversation about equity in the region. Also, the maps and findings should be considered more widely in other regional and local planning efforts.

## 6. Appendix



### Summary Of Methods And Notes

The following presents the methodology and indicators for the central Puget Sound urbanized area opportunity analysis. If you plan to map the regional opportunity index (database available at [psrc.org](http://psrc.org)) or are a more advanced technical user, the “Puget Sound Opportunity Indicators Metadata” is available at [psrc.org](http://psrc.org).

Spatial distribution of opportunity and subsequent analysis were based on a number of indicators categorized under five subareas of opportunity — education, economic health, housing and neighborhood quality, mobility and transportation, and health and environment — comprising 20 indicators for which data were collected from public (e.g., U.S. Census, Department of Education, Environmental Protection Agency) and private (e.g., ESRI) data sources. The analysis was conducted using census tracts as geographic representations of neighborhoods. The comprehensive opportunity map represents a combined score based on these five categories.

To map opportunity in the region, we used variables that are indicative of high and low opportunity. A central requirement of indicator selection is a clear connection between the indicator and opportunity. Opportunity is defined as environmental conditions or resources that are conducive to healthier, vibrant communities and are more likely to be conducive to helping residents in a community succeed. Indicators could either be impediments to opportunity (which are analyzed as negative neighborhood factors, such as high neighborhood poverty) or conduits to opportunity (which are analyzed as positive factors, such as an abundance of jobs). High opportunity indicators include high-performing schools, the availability of sustainable employment, stable neighborhoods and a safe environment.

#### A. Education

These indicators represent the quality of local schools and educational resources. Each of the indicators in this category is based on the location of the three nearest schools within the school district of each census tract. Therefore, a series of steps was taken in order to attribute data to the tracts. It should be noted that the figures attributed to each tract are the average of the rates or scores of the three nearest primary schools from the center of each tract. *Table 2* illustrates the description, source, and date(s) for each indicator.

**Table 2. Education**

DATA ITEM	DESCRIPTION	SOURCE	DATES
WASL scores (reading)	The school proficiency rate on the 4th-grade reading exam	Washington State Report Card, Office of Superintendent of Public Instruction (OSPI)	2010-2011
WASL scores (math)	The school proficiency rate on the 4th-grade reading exam	Washington State Report Card, Office of Superintendent of Public Instruction (OSPI)	2010-2011
Student poverty rates	Percent of primary school students receiving free or reduced price lunches	Washington State Report Card, Office of Superintendent of Public Instruction (OSPI)	2010-2011
Teacher qualifications	The percentage of teachers who have obtained a master's degree or more	Washington State Report Card, Office of Superintendent of Public Instruction (OSPI)	2010-2011
Graduation rate	The percentage of students who graduated from high school on time	Washington State Report Card, Office of Superintendent of Public Instruction (OSPI)	2010-2011

**B. Economic Health**

These indicators represent proximity to, and participation in, the labor market. Data for each indicator in this category are available for census tracts; therefore, no geoprocessing was necessary in order to adjust the data to the tracts. *Table 3* illustrates the description, source, and date(s) for each indicator.

**Table 3. Economic Health**

DATA ITEM	DESCRIPTION	SOURCE	DATES
Living wage jobs within 15 minutes auto, 30 minutes transit	The percentage of all regional jobs that provide living wages within 15 minutes of travel time by automobile and 30 minutes via public transit	Puget Sound Regional Council Travel Model (Traffic Analysis Zone (TAZ)) and Covered Employment Estimates. "Searching For Work That Pays", Report from Alliance for a Just Society	2008-2010
Job growth trends, percent change in jobs from 2000-2010	The change in number of jobs between 2000 and 2010	Puget Sound Regional Council	2000-2010 annually
Unemployment rate	Percent of residents who reported being unemployed	Census (ACS)	2006-2010

**Living wage jobs** are defined as jobs within firms that have an average of \$45,489.60 annual salary or higher. The annual salary threshold comes from the "Searching for Work That Pays" report from Alliance for a Just Society [http://nwfco.org/wp-content/uploads/2010/12/2010-1209\\_2010-Job-Gap.pdf](http://nwfco.org/wp-content/uploads/2010/12/2010-1209_2010-Job-Gap.pdf). The jobs are deemed living wage for single adult households with a school-age child (age 6-8). Living wage hourly rates for workers in the central Puget Sound region were defined in the report as: King County, \$22.90; Kitsap County, \$20.62; Pierce County, \$21.36; Snohomish County, \$22.58; and the regional average, \$21.87. This is based on 2080 work hours in a year.

**\$21.87 (Regional Average) x 2080 (work hours in a year) = \$45,489.60 (living wage salary in region)**

### C. Housing And Neighborhood Quality

These indicators represent the health of neighborhoods and their housing markets. Data for each indicator in this category are available for census tracts; however, data for the Crime Index are available only for 2000 Census tracts. Therefore, data were translated to 2010 equivalency through the parent-child relationship of the tract names, and the areal proportion of the 2010 children to the 2000 parent. *Table 4* illustrates the description, source, and date(s) for each indicator.

**Table 4. Housing And Neighborhood Quality**

DATA ITEM	DESCRIPTION	SOURCE	DATES
Housing vacancy rates	The percent of all housing units which are vacant	U.S. Census	2010
Foreclosure rate	The estimated foreclosure rate	HUD User	2nd Quarter, 2010
High cost loan rate	The percentage of high cost loan which homes is financed by a subprime mortgage related loan	HUD User	2010
Housing stock condition	The percentage of all households that are in poor condition (have 1.01 or more occupants per room with complete plumbing facilities or that are lacking complete plumbing facilities)	American Community Survey (ACS)	2006-2010 5-year estimates
Crime index	An estimated index based on all personal and property crimes relative to total population	Tetrad Computer Applications, Inc. PCensus Dbx	2010

### D. Mobility And Transportation

These indicators represent resident mobility. For some indicators in this category, geoprocessing methods were used to adjust the data to census tract geography.

*Table 5* illustrates the description, source, and date(s) for each indicator, and precedes a description of the methodology for those indicators that were not collected by tract.

**Table 5. Mobility And Transportation**

DATA ITEM	DESCRIPTION	SOURCE	DATES
Transportation cost; cost per commute at \$0.50/mile	The cost of the average commute to work at \$0.50 per mile	Puget Sound Regional Council model (Traffic Analysis Zone (TAZ))	2008
Access to transit; percent of tract within 1/4-mile of express bus stop	The percentage of the total area that is within 1/4-mile of an express bus stop	Puget Sound Regional Council	2010
Average transit fare cost	The cost of the average transit fare	Puget Sound Regional Council model (Traffic Analysis Zone (TAZ))	2008
Walkability; percent of commutes by walking	The percentage of all commuters who walk to work	American Community Survey (ACS)	2006-2010 5-year estimates

**For transportation cost and average transit fare cost**, each tract was assigned a value based on the traffic analysis zones whose centroids are within the tract's boundaries.

**To capture transit access**, a 0.25-mile buffer of express bus stops was created and spatially joined to the census tract.

### E. Health And Environment

These indicators represent proximity to park/open space/recreation area and healthy food, as well as amount of toxic release emitted from toxic waste sites. For some indicators in this category, geoprocessing methods were employed in order to adjust the data to census tract geography.

**Table 6** illustrates the description, source, and date(s) for each indicator, and precedes a description of the methodology for those indicators which were not collected by tract.

**Table 6. Health And Environment**

DATA ITEM	DESCRIPTION	SOURCE	DATES
Distance to nearest park/ open space/recreation area	The distance to the nearest park or open space	Puget Sound Regional Council	2006
Toxic waste; pounds/ square foot of toxic re- lease from sites less than or equal to 2 miles away	Pounds of toxic release emitted from toxic waste sites	Environmental Protection Agency (EPA)	2010
Access to healthy food; percent of tract in food desert	Percentage of tract that is within a food desert	Puget Sound Regional Council, Regional Food Policy Council and University of Washington (Ident- ifying Food Deserts Access to Healthy Food in the Puget Sound Region: Puget Sound Food System Assessment)	June 2011

**Distance to the nearest park or open space** was measured from the tract's centroid.

**Toxic waste** was based on the proportion of each site's toxic release within a two-mile area. Tracts received a value if they were within two miles of at least one toxic release site.

**Access to healthy food** is based on the percentage of tract area that is within a qualified food desert as defined in *Identifying Food Deserts Access to Healthy Food in the Puget Sound Region: Puget Sound Food System Assessment, a report prepared by University of Washington students in June 2011* ([http://courses.washington.edu/studio67/psrcfood/Food\\_studio\\_docs/Vol05\\_Food\\_Deserts.pdf](http://courses.washington.edu/studio67/psrcfood/Food_studio_docs/Vol05_Food_Deserts.pdf)).

### Calculating The Opportunity Index

The various opportunity indicators were analyzed relative to the other census tracts within the region by standardizing through the use of "Z-scores." A Z-score is a statistical measure that quantifies the distance (measured in standard deviations) a data point is from the mean of a data set. The use of Z-scores allows data for a census tract to be measured based on its relative distance

from the regional average. The Z-score method allows indicators to be either “negative” or “positive” in relation to opportunity. For example, proximity to toxic waste release sites is a negative indicator of opportunity. The final opportunity index for each census tract is based on the average Z-score for all indicators by category. The corresponding level of opportunity (very low, low, moderate, high, very high) is determined by sorting all census tracts into quintiles based on their opportunity index scores. Thus, the census tracts identified as “very high” opportunity represent the top 20% of scores among census tracts. Conversely, census tracts identified as “very low” opportunity represent the lowest-scoring 20% of census tracts.

### Example Z-Score Calculations

The formula for the Z-scores is included in *Table 7* (“x” — distribution mean/distribution standard deviation). In the case of negative indicators, such as poverty or unemployment, this formula must be multiplied by “-1” in order to make all indicator scores compatible. The following table shows an example of unemployment data and Z-score calculations for a subset of tracts. Using the full distribution mean of **10.2432** and standard deviation of **7.6887**, one can see how the Z-score for each tract is calculated.

**Table 7. Z-Score Calculations**

FIPS	TOTAL LABOR FORCE	UNEMPLOYED	UNEMPLOYMENT RATE	Z-SCORE
53001950200	399.2	0	0	((D2-MEAN)/STDEV)*-1
53005012000	200	0	0	1.332240821
53007961301	256.7	0	0	1.332240821
53025010901	370.1	0	0	1.332240821
53059950100	181.8	0	0	1.332240821
53071920400	26.7	0	0	1.332240821
53033032601	413.7	1.6	0.386753686	1.28193925
53033006800	389.9	1.7	0.436009233	1.275533025
53063011500	441.8	2.2	0.497962879	1.267475272
53033022901	406.1	2.3	0.566362965	1.258579088

Z-scores are helpful in the interpretation of raw score performance, since they take into account both the mean of the distribution and the amount of variability (or the standard deviation). The Z-score indicates how far the raw score is from the mean, either above or below it, in standard deviation units. A positive Z-score is always above the mean (upper 50%). A negative Z-score is always below the mean (lower 50%) and a Z-score of zero is always exactly on the mean or equal to 50% of the cases. Thus, when trying to understand the overall comparative performance of different groups with respect to a certain variable, we can assess how a certain group (of individuals, tracts, etc.) is performing with respect to the mean performance for the certain variable. No weighting was applied to the various indicators; all indicators were treated as equal in importance.

# Map 1.1 Comprehensive Opportunity Map

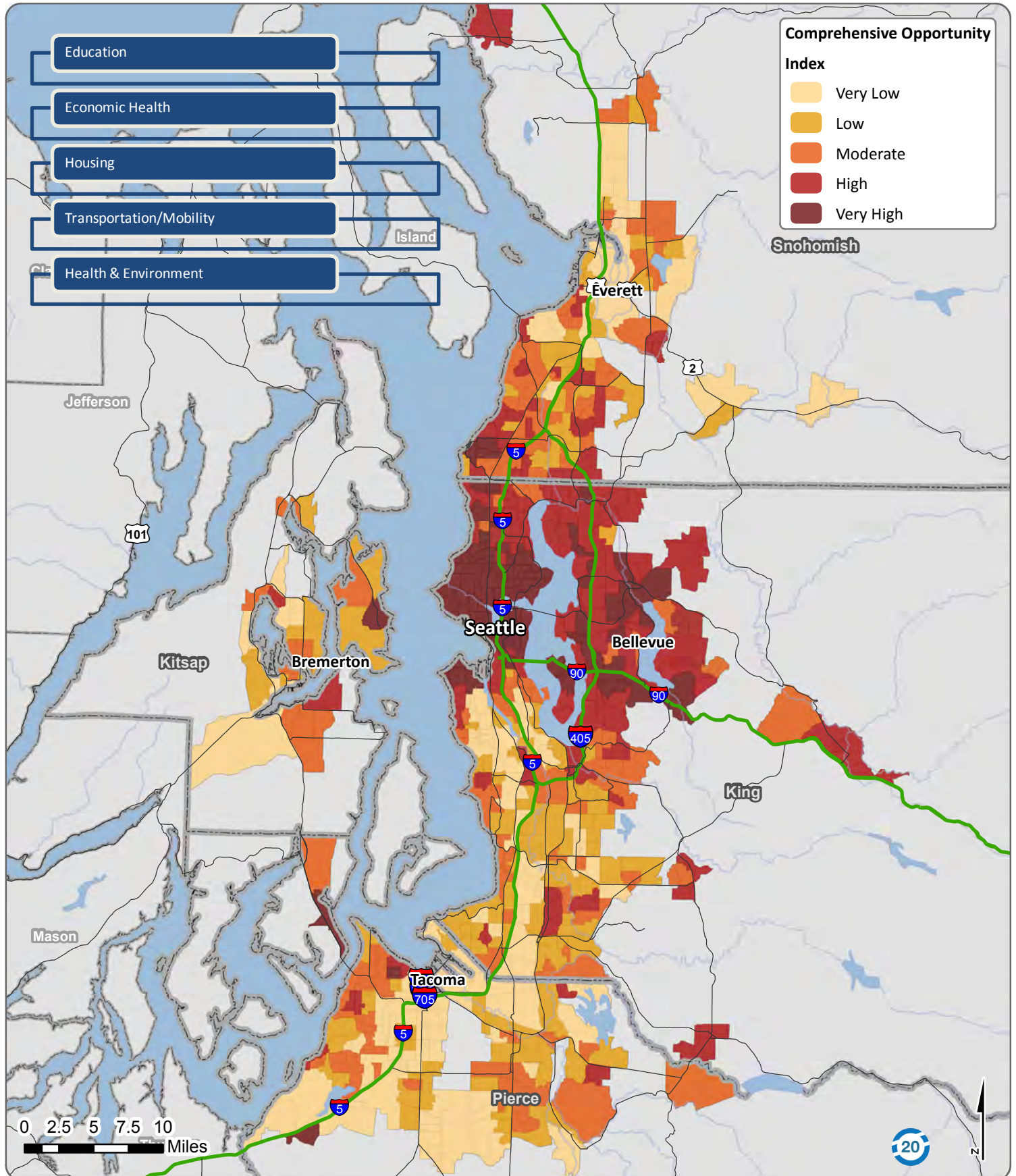
## Puget Sound Urbanized Area



Kirwan Institute

Many Differences **One Destiny**

Sources: Puget Sound Regional Council, 2011; Environmental Protection Agency, 2010; Washington Dept. of Ecology, 2011; ESRI Business Analyst, 2010; American Community Survey, 2006-2010; U.S. Census, 2010; Tetrad, Inc. PCensus Dbx, 2010; Washington State Report Card, 2010-2011





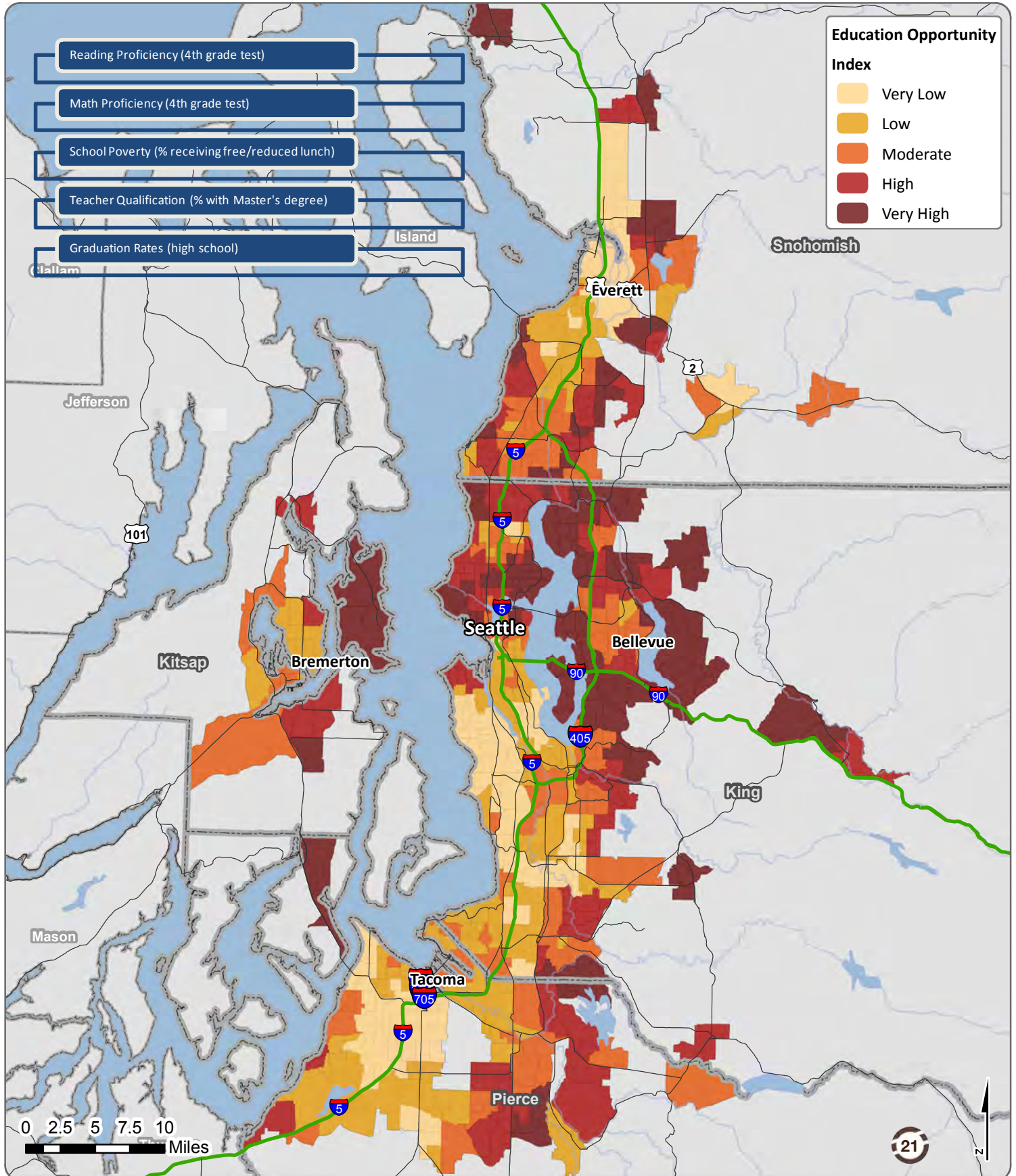
# Map 1.2 Education Opportunity Map

## Puget Sound Urbanized Area



Kirwan Institute  
Many Differences **One Destiny**

Sources: American Community Survey, 2005-2009; Washington State Report Card, 2010-2011

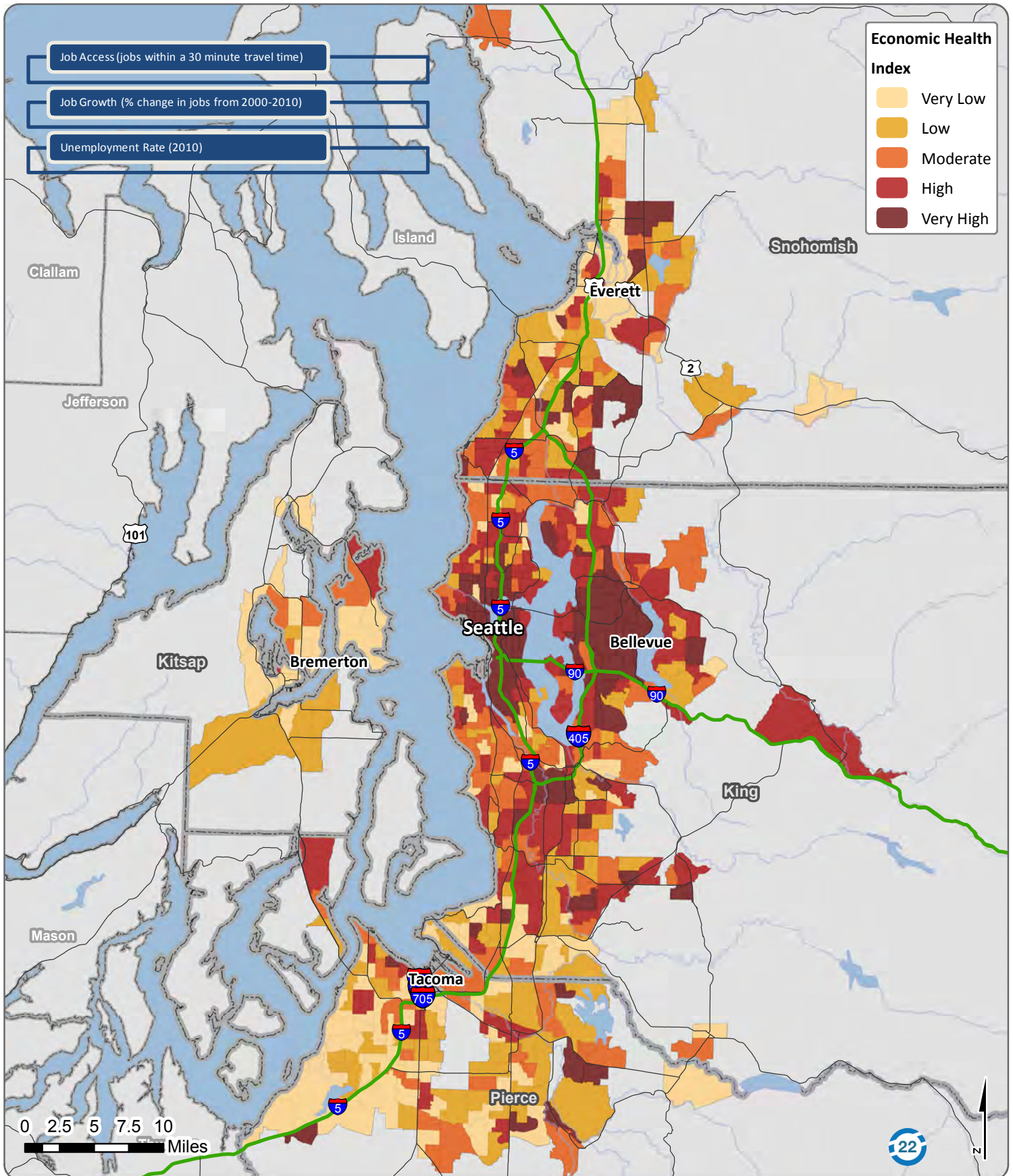


# Map 1.3 Economic Health Opportunity

## Puget Sound Urbanized Area



Sources: Puget Sound Regional Council, 2011; U.S. Census, 2010

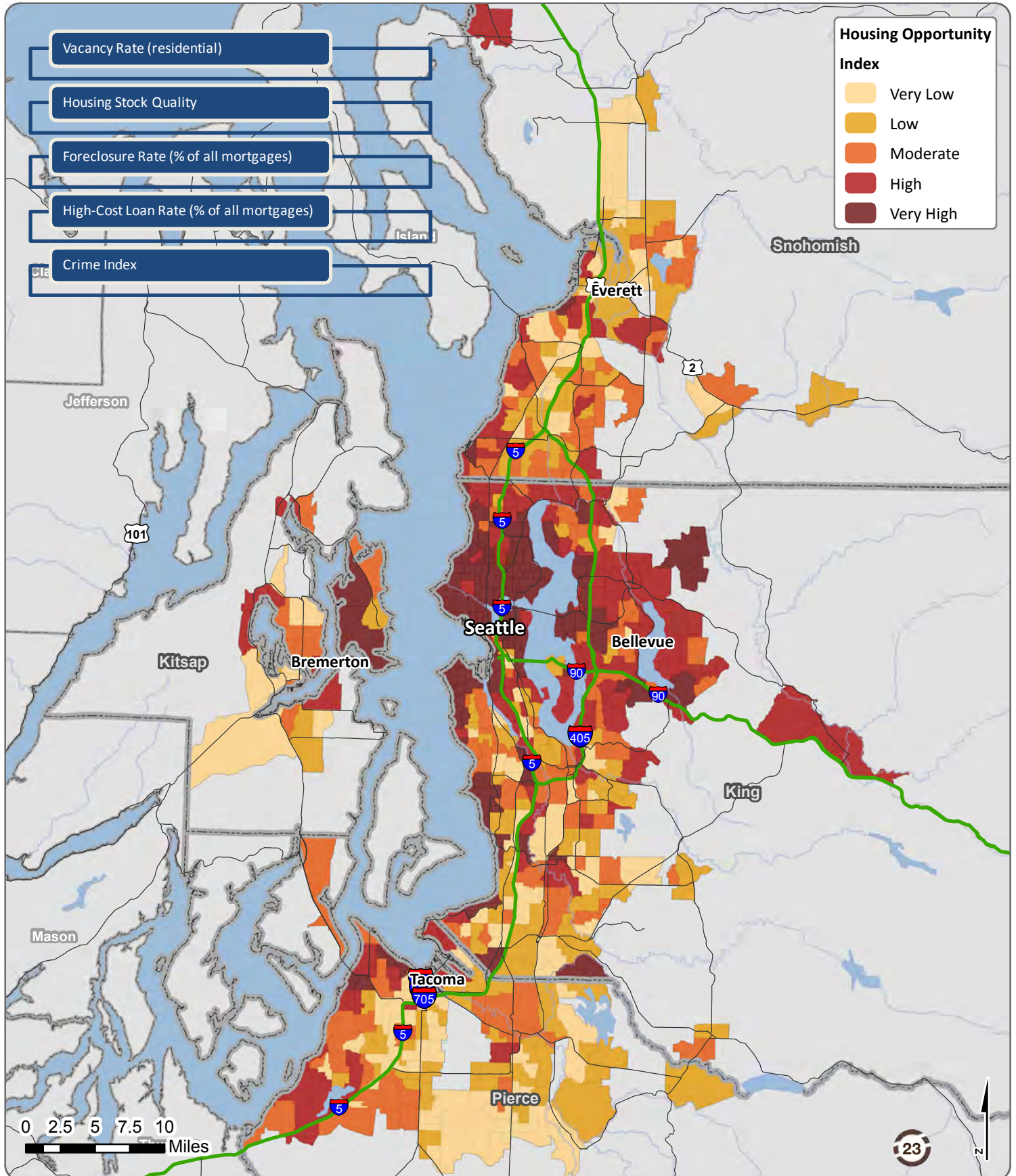


# Map 1.4 Housing & Neighborhood Quality Opportunity

## Puget Sound Urbanized Area



Sources: U.S. Census, 2010; American Community Survey, 2006-2010; HUD User, 2010



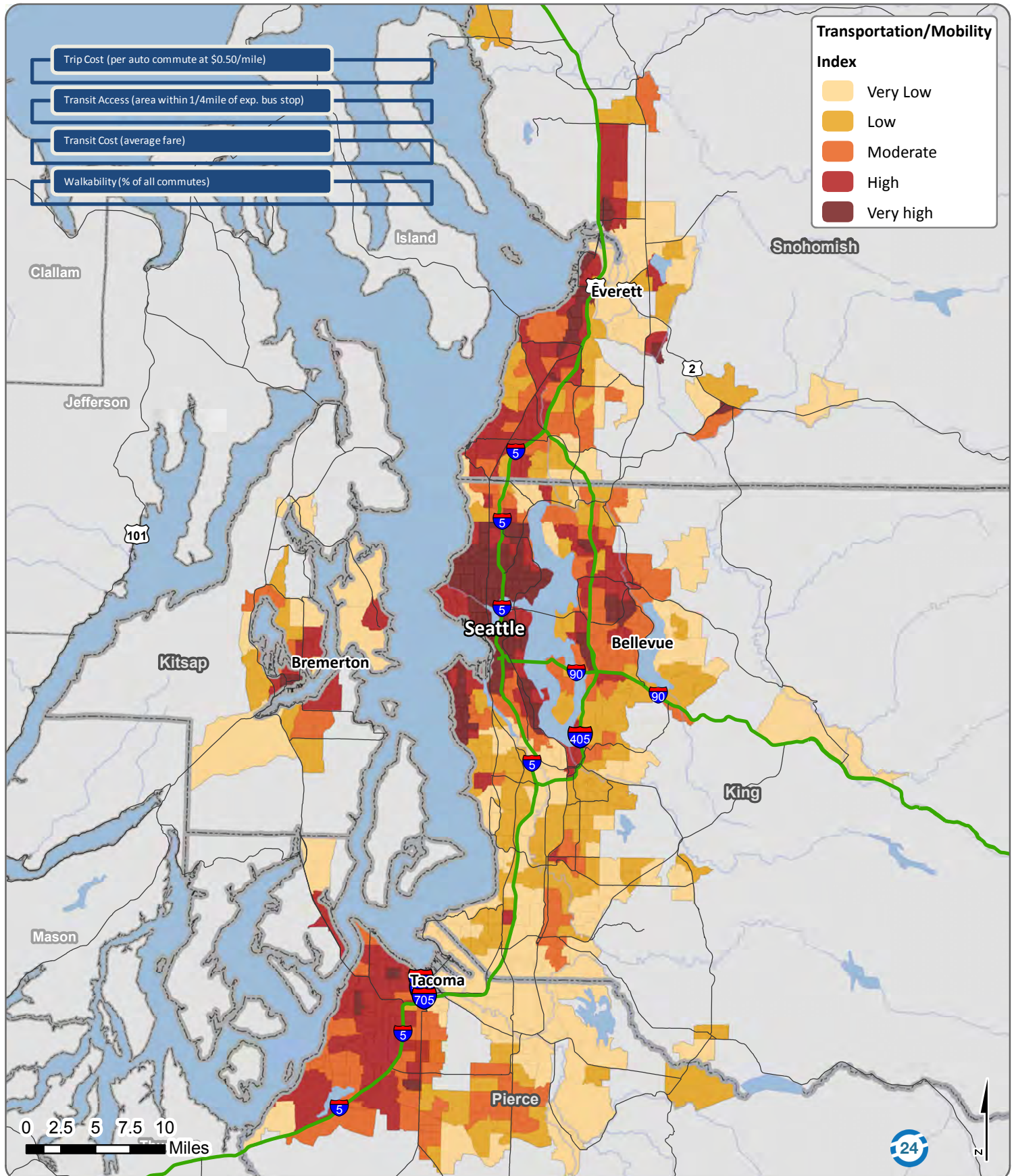
# Map 1.5 Transportation/Mobility Opportunity

## Puget Sound Urbanized Area



Kirwan Institute  
Many Differences **One Destiny**

Sources: Puget Sound Regional Council, 2010; American Community Survey, 2005-2009

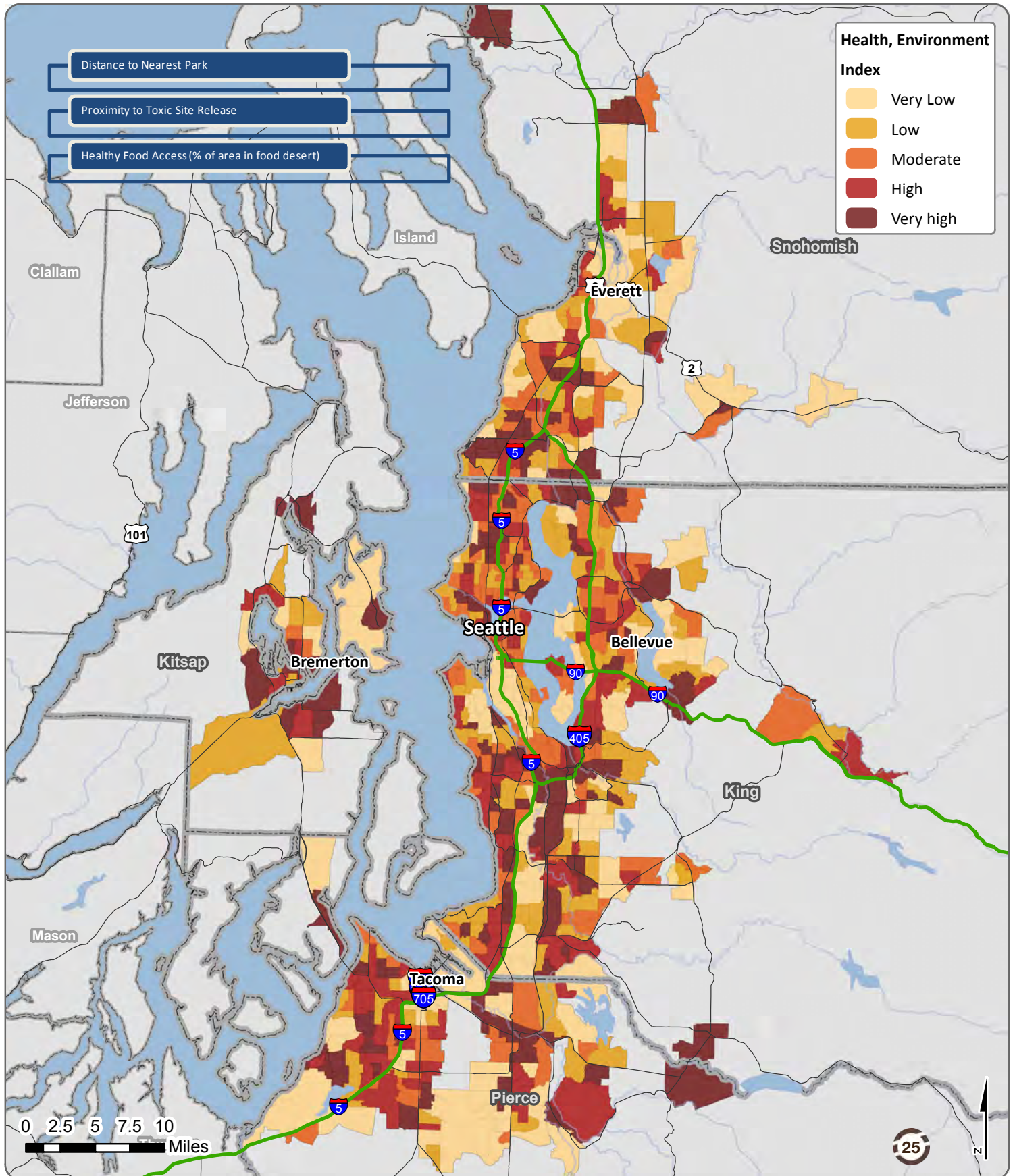


# Map 1.6 Health & Environment Opportunity Puget Sound Urbanized Area



Kirwan Institute  
Many Differences **One Destiny**

Sources: ESRI, 2010; Environmental Protection Agency, 2010; Puget Sound Regional Council, 2010; Tetrad, Inc. 2010

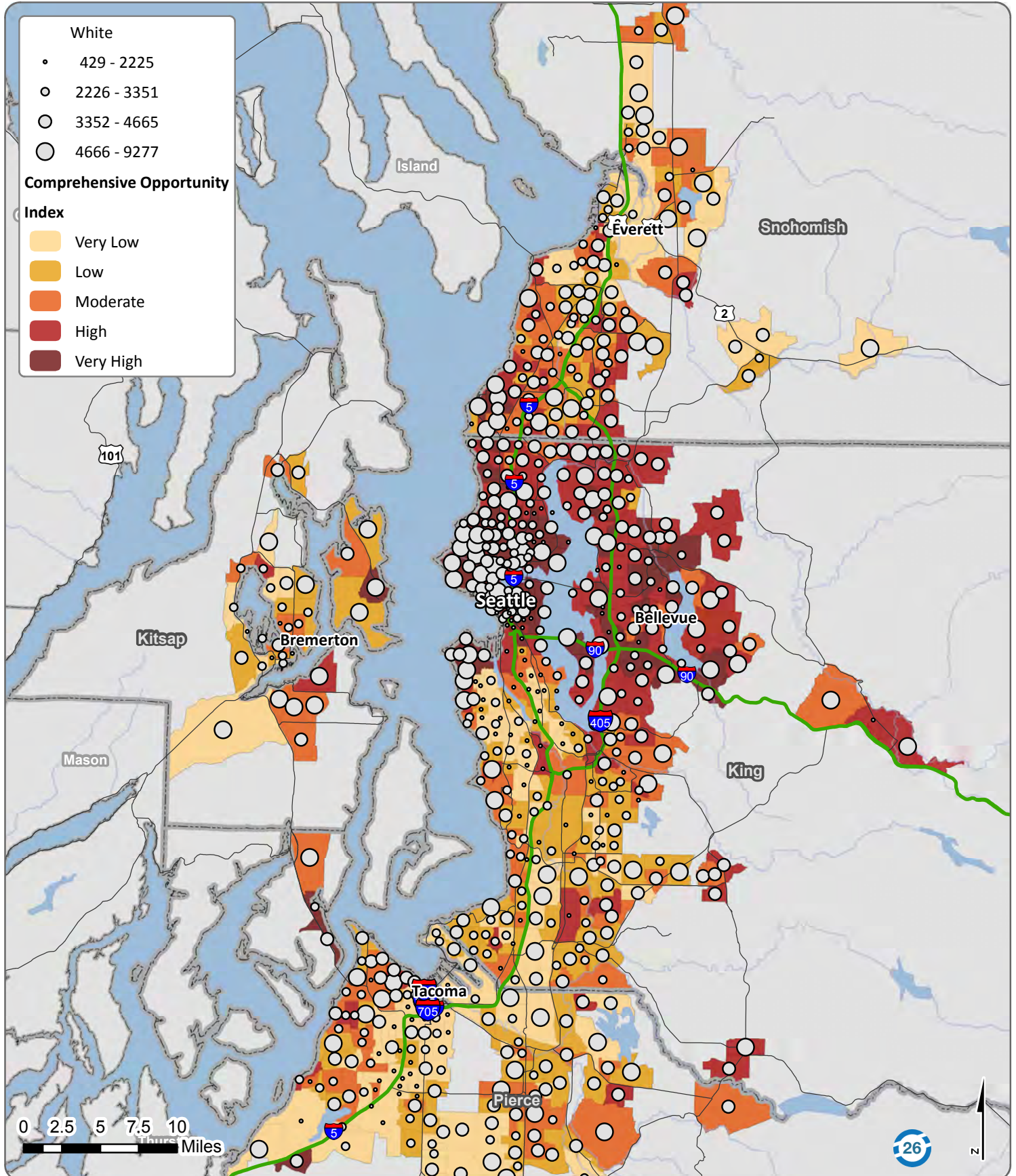


# Map 2.1 Demographic Overlays (Whites)

## Puget Sound Urbanized Area



Sources: Puget Sound Regional Council, 2011; Environmental Protection Agency, 2010; Washington Dept. of Ecology, 2011; ESRI Business Analyst, 2010; American Community Survey, 2006-2010; U.S. Census, 2010; Tetrad, Inc. PCensus Dbx, 2010; Washington State Report Card, 2010-2011; HUD User, 2008

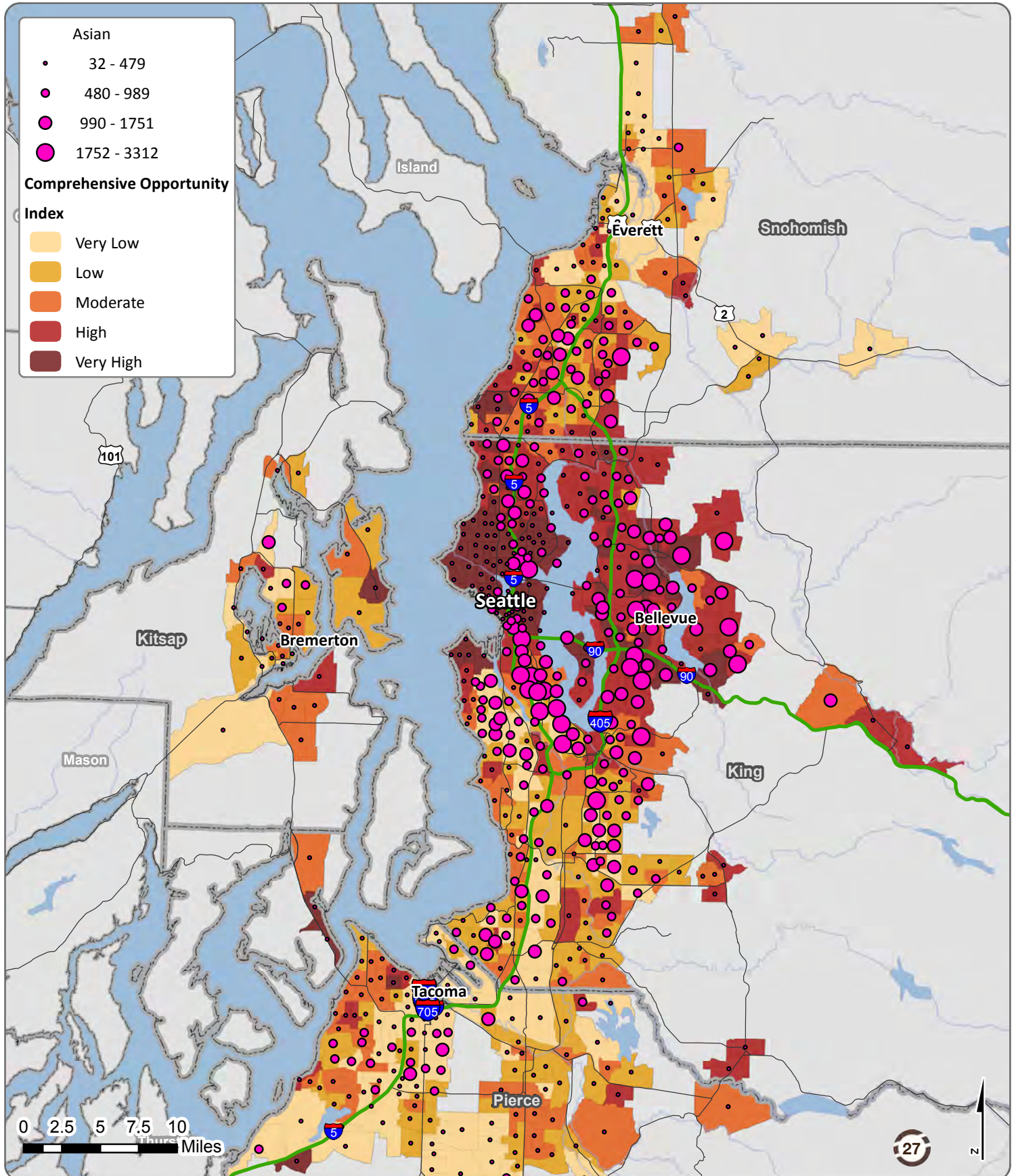


# Map 2.2 Demographic Overlays (Asians)



## Puget Sound Urbanized Area

Sources: Puget Sound Regional Council, 2011; Environmental Protection Agency, 2010; Washington Dept. of Ecology, 2011; ESRI Business Analyst, 2010; American Community Survey, 2006-2010; U.S. Census, 2010; Tetrad, Inc. PCensus Dbx, 2010; Washington State Report Card, 2010-2011; HUD User, 2008

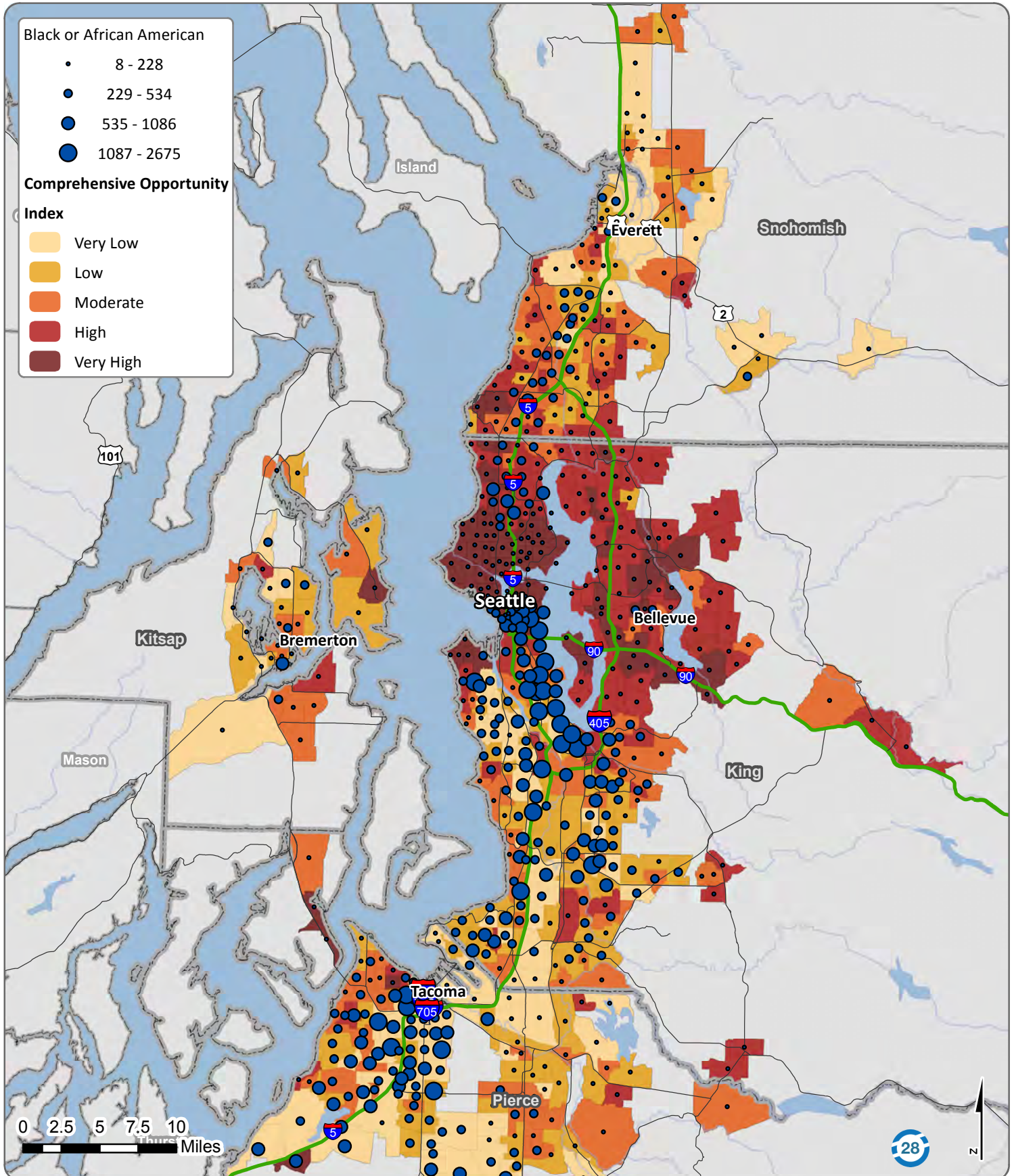


# Map 2.3 Demographic Overlays (African Americans)



## Puget Sound Urbanized Area

Sources: Puget Sound Regional Council, 2011; Environmental Protection Agency, 2010; Washington Dept. of Ecology, 2011; ESRI Business Analyst, 2010; American Community Survey, 2006-2010; U.S. Census, 2010; Tetrad, Inc. PCensus Dbx, 2010; Washington State Report Card, 2010-2011; HUD User, 2008



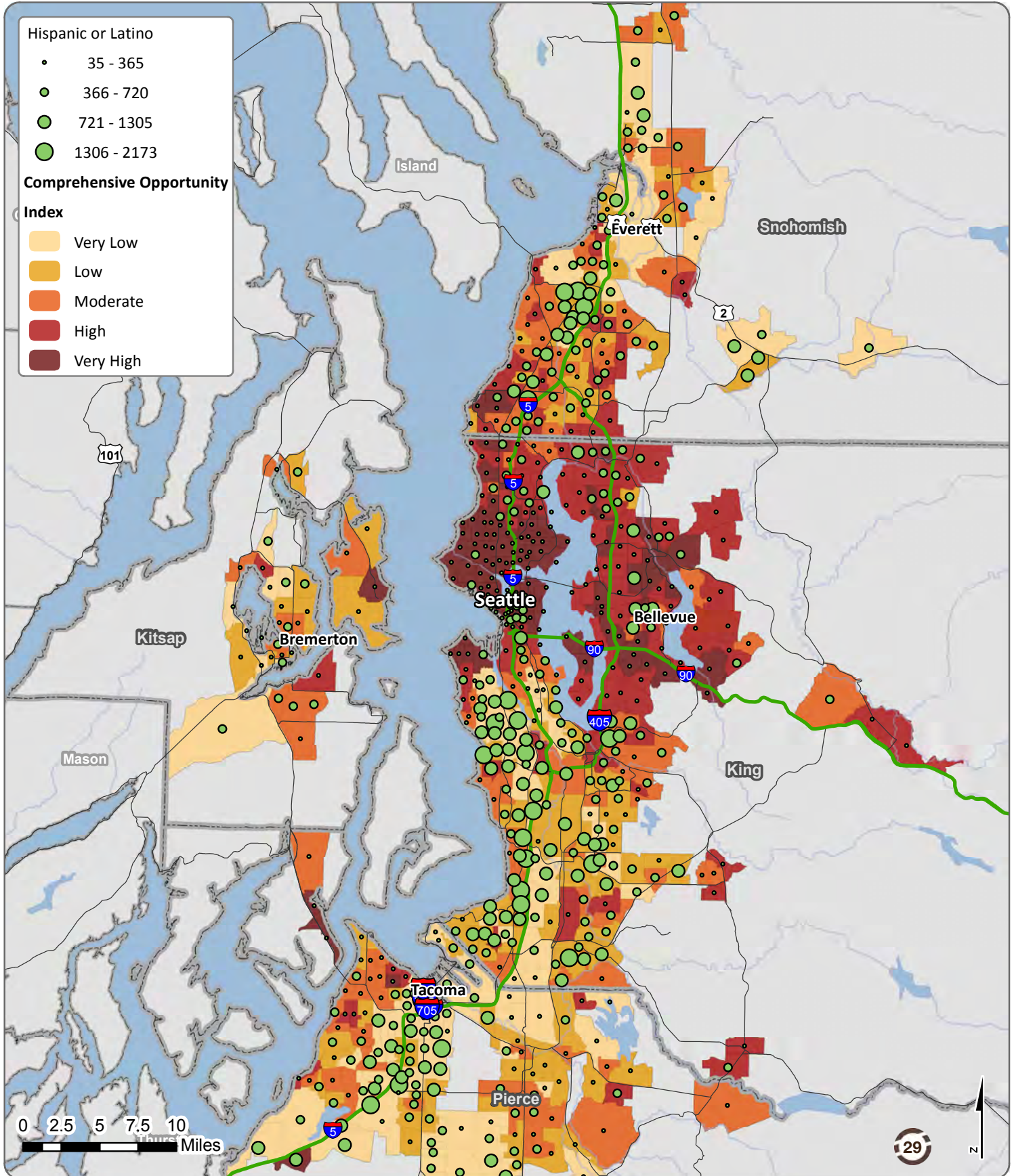


# Map 2.4 Demographic Overlays (Hispanics)



## Puget Sound Urbanized Area

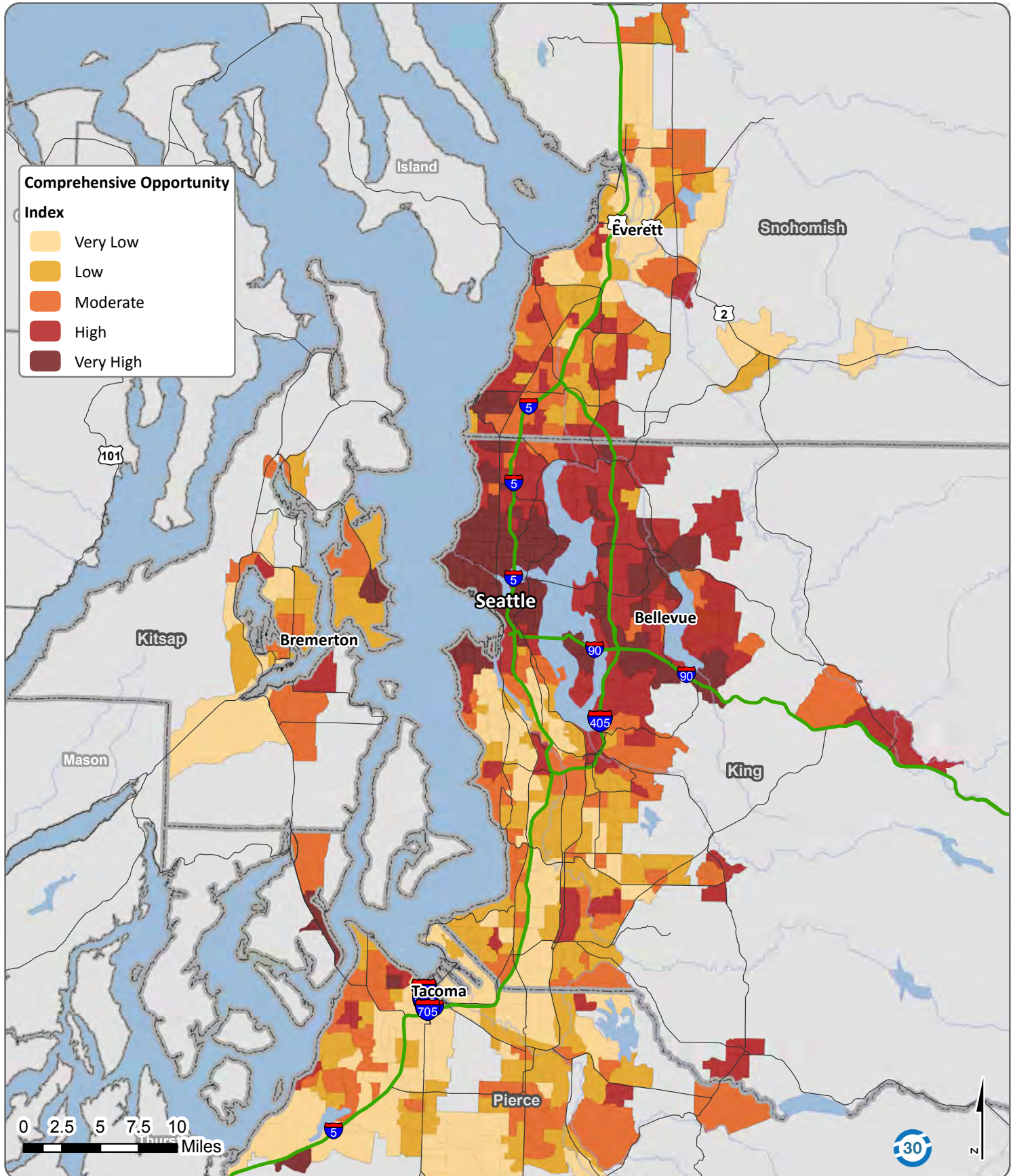
Sources: Puget Sound Regional Council, 2011; Environmental Protection Agency, 2010; Washington Dept. of Ecology, 2011; ESRI Business Analyst, 2010; American Community Survey, 2006-2010; U.S. Census, 2010; Tetrad, Inc. PCensus Dbx, 2010; Washington State Report Card, 2010-2011; HUD User, 2008



# Map 2.5 Demographic Overlays (American Indian/Alaska Natives) Puget Sound Urbanized Area



Sources: Puget Sound Regional Council, 2011; Environmental Protection Agency, 2010; Washington Dept. of Ecology, 2011; ESRI Business Analyst, 2010; American Community Survey, 2006-2010; U.S. Census, 2010; Tetrad, Inc. PCensus Dbx, 2010; Washington State Report Card, 2010-2011; HUD User, 2008

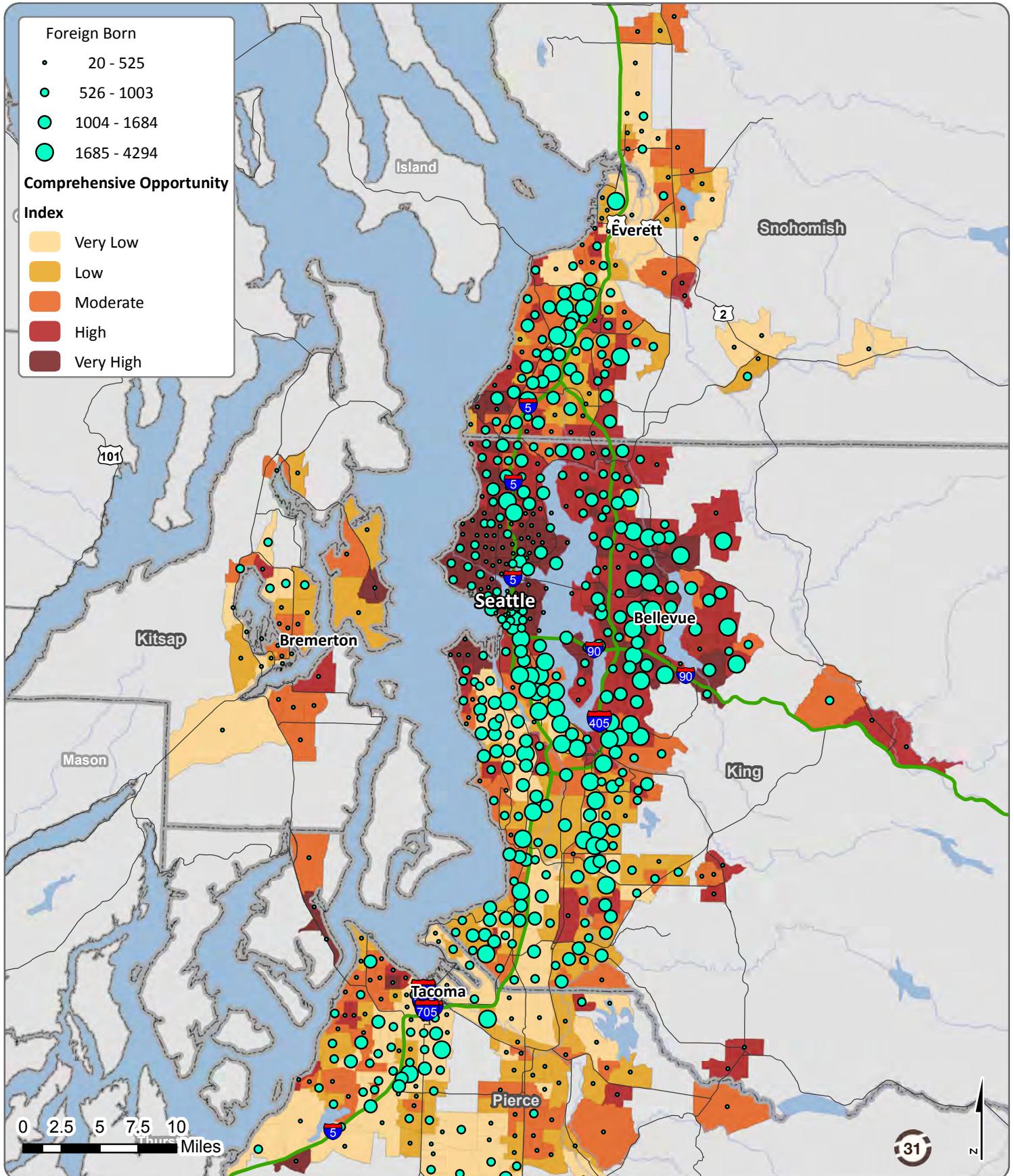


# Map 2.6 Demographic Overlays (Foreign Born)



## Puget Sound Urbanized Area

Sources: Puget Sound Regional Council, 2011; Environmental Protection Agency, 2010; Washington Dept. of Ecology, 2011; ESRI Business Analyst, 2010; American Community Survey, 2006-2010; U.S. Census, 2010; Tetrad, Inc. PCensus Dbx, 2010; Washington State Report Card, 2010-2011; HUD User, 2008

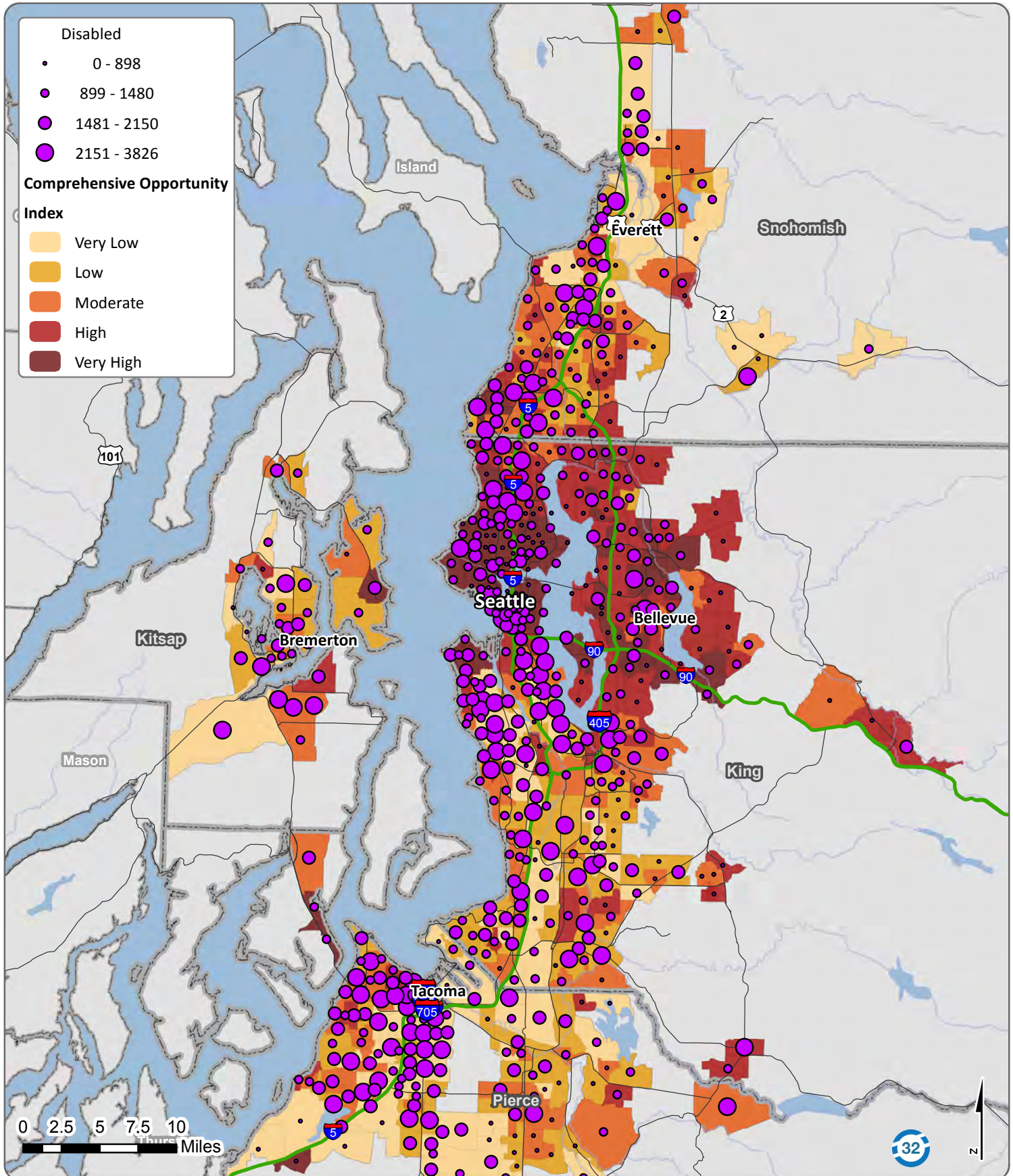


# Map 2.7 Demographic Overlays (Disabled)



## Puget Sound Urbanized Area

Sources: Puget Sound Regional Council, 2011; Environmental Protection Agency, 2010; Washington Dept. of Ecology, 2011; ESRI Business Analyst, 2010; American Community Survey, 2006-2010; U.S. Census, 2010; Tetrad, Inc. PCensus Dbx, 2010; Washington State Report Card, 2010-2011; HUD User, 2008

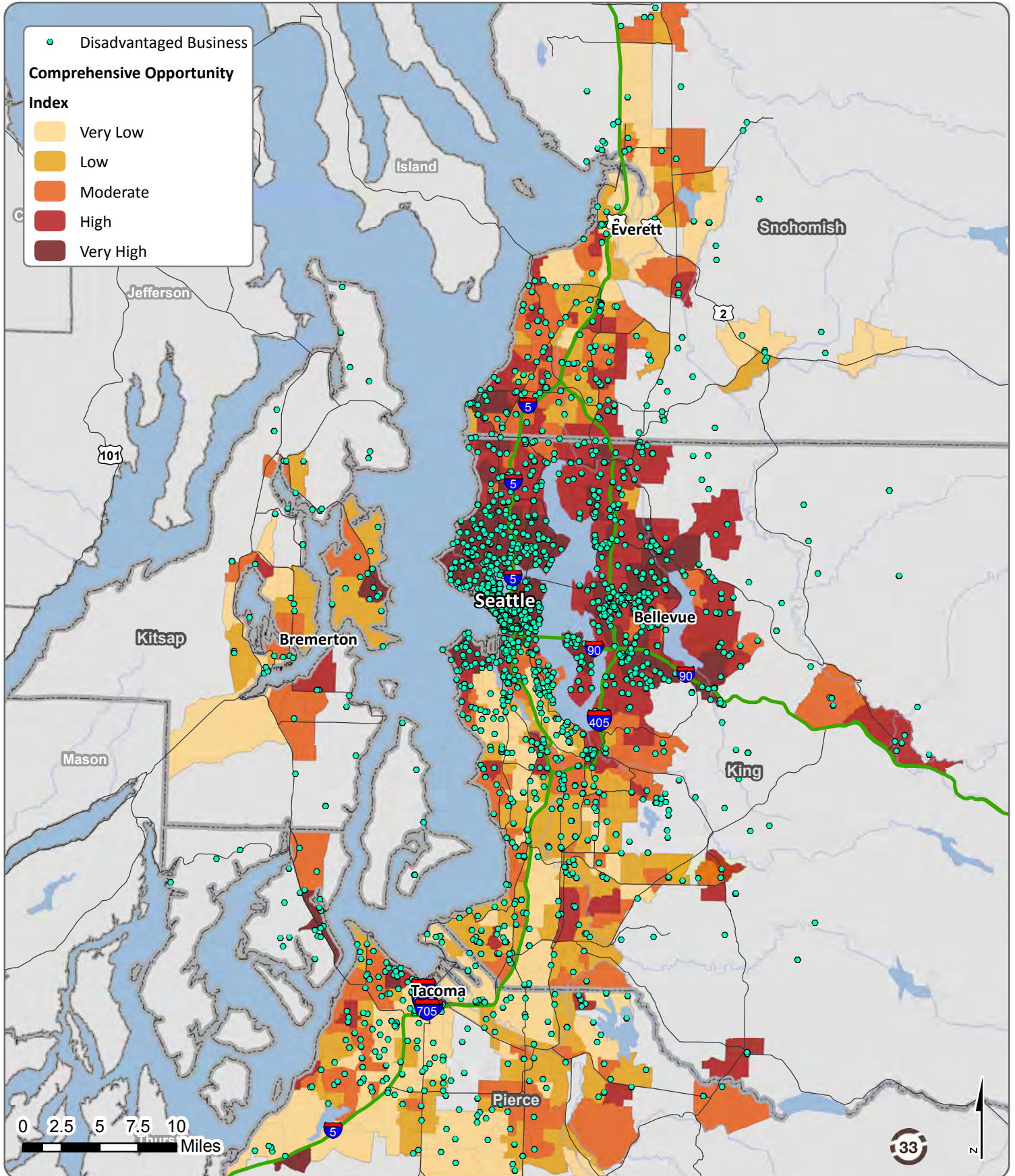


# Map 2.8 Disadvantaged Businesses Overlays



## Puget Sound Urbanized Area

Sources: Puget Sound Regional Council, 2011; Environmental Protection Agency, 2010; Washington Dept. of Ecology, 2011; ESRI Business Analyst, 2010; American Community Survey, 2006-2010; U.S. Census, 2010; Tetrad, Inc. PCensus Dbx, 2010; Washington State Report Card, 2010-2011; HUD User, 2008

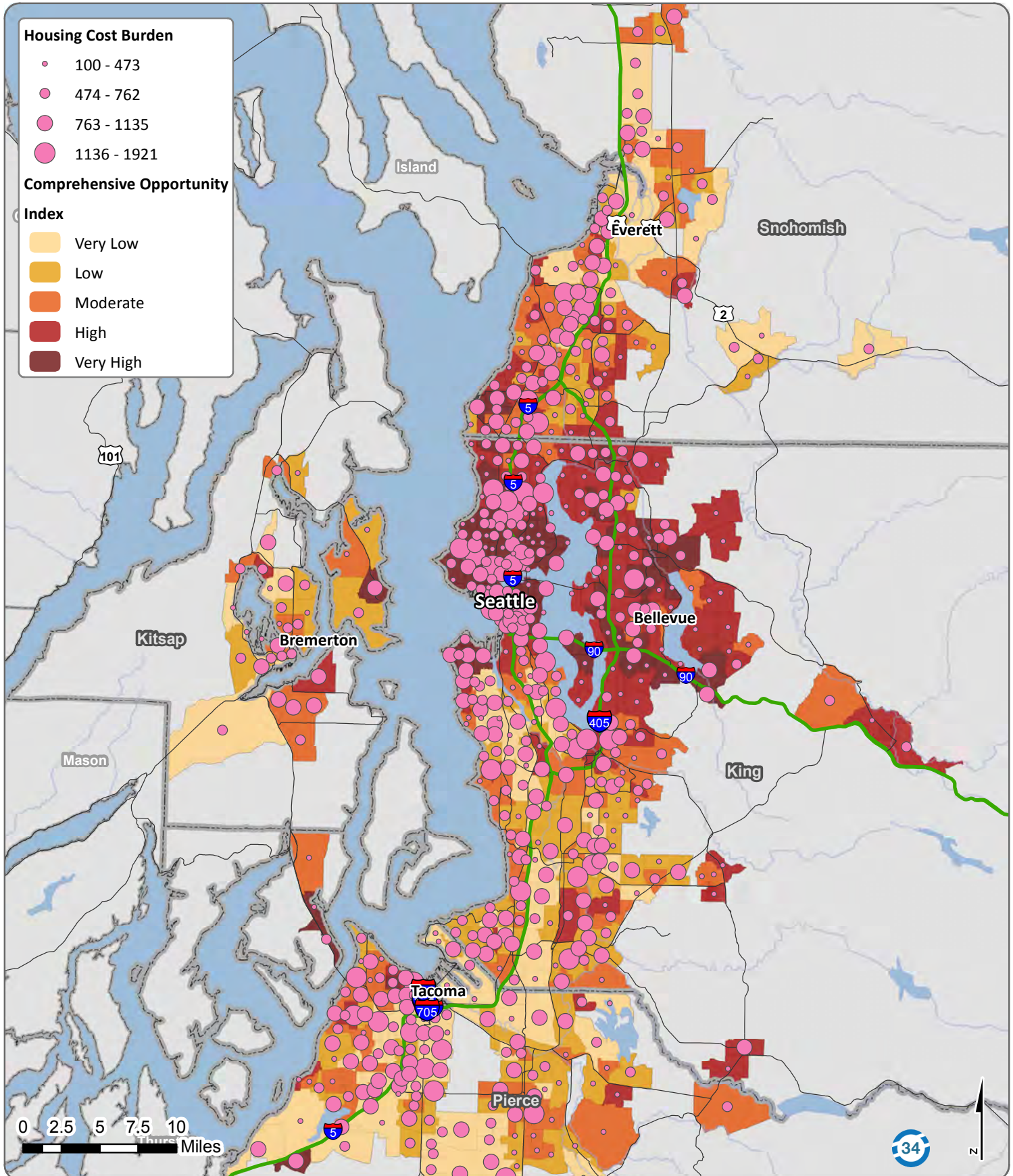


# Map 3.1 Affordable Housing Overlays (Cost-Burdened Households <\$75K Income)



## Puget Sound Urbanized Area

Sources: Puget Sound Regional Council, 2011; Environmental Protection Agency, 2010; Washington Dept. of Ecology, 2011; ESRI Business Analyst, 2010; American Community Survey, 2006-2010; U.S. Census, 2010; Tetrad, Inc. PCensus Dbx, 2010; Washington State Report Card, 2010-2011; HUD User, 2008

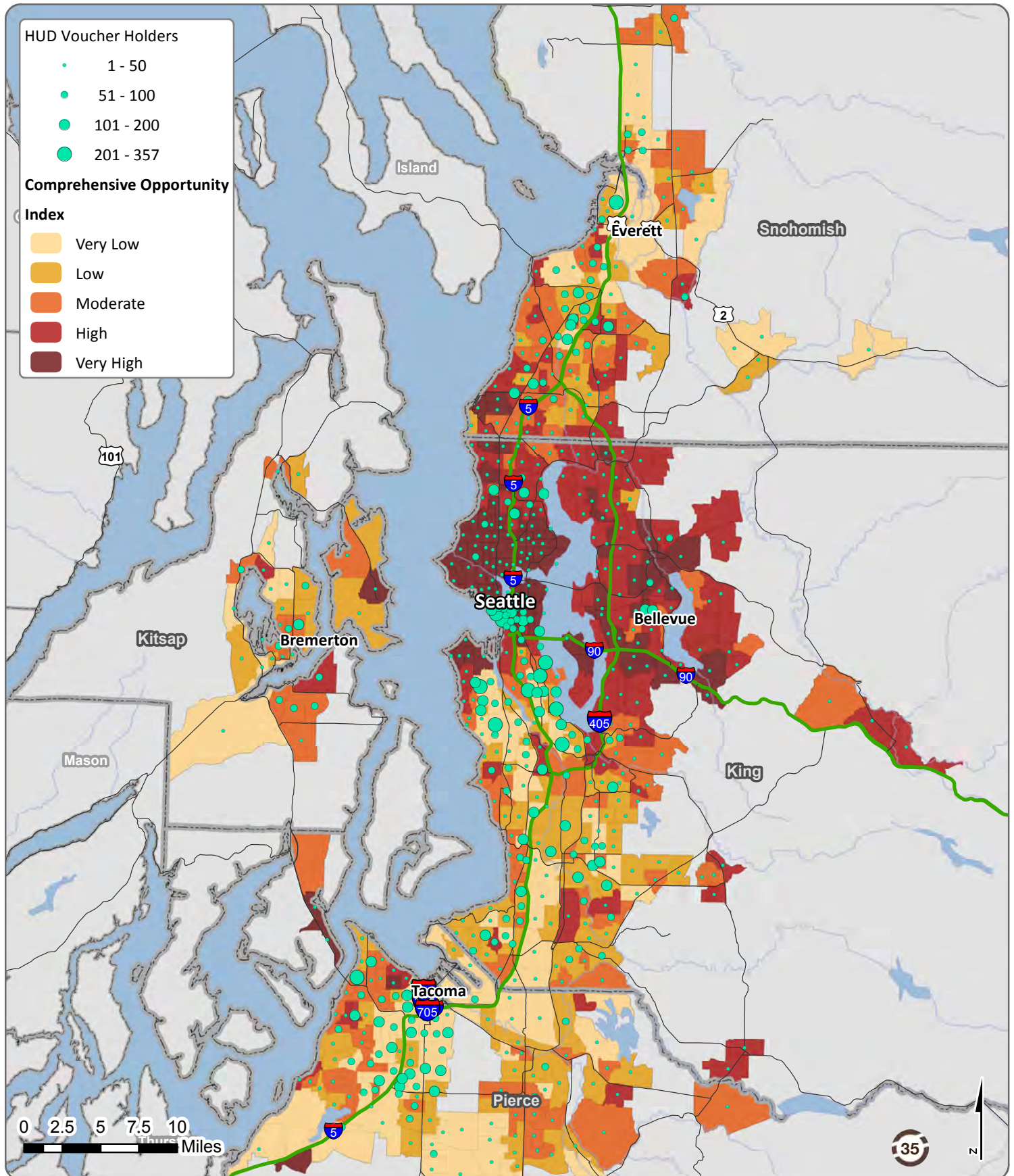


# Map 3.2 Affordable Housing Overlays (Voucher Holders)



## Puget Sound Urbanized Area

Sources: Puget Sound Regional Council, 2011; Environmental Protection Agency, 2010; Washington Dept. of Ecology, 2011; ESRI Business Analyst, 2010; American Community Survey, 2006-2010; U.S. Census, 2010; Tetrad, Inc. PCensus Dbx, 2010; Washington State Report Card, 2010-2011; HUD User, 2008

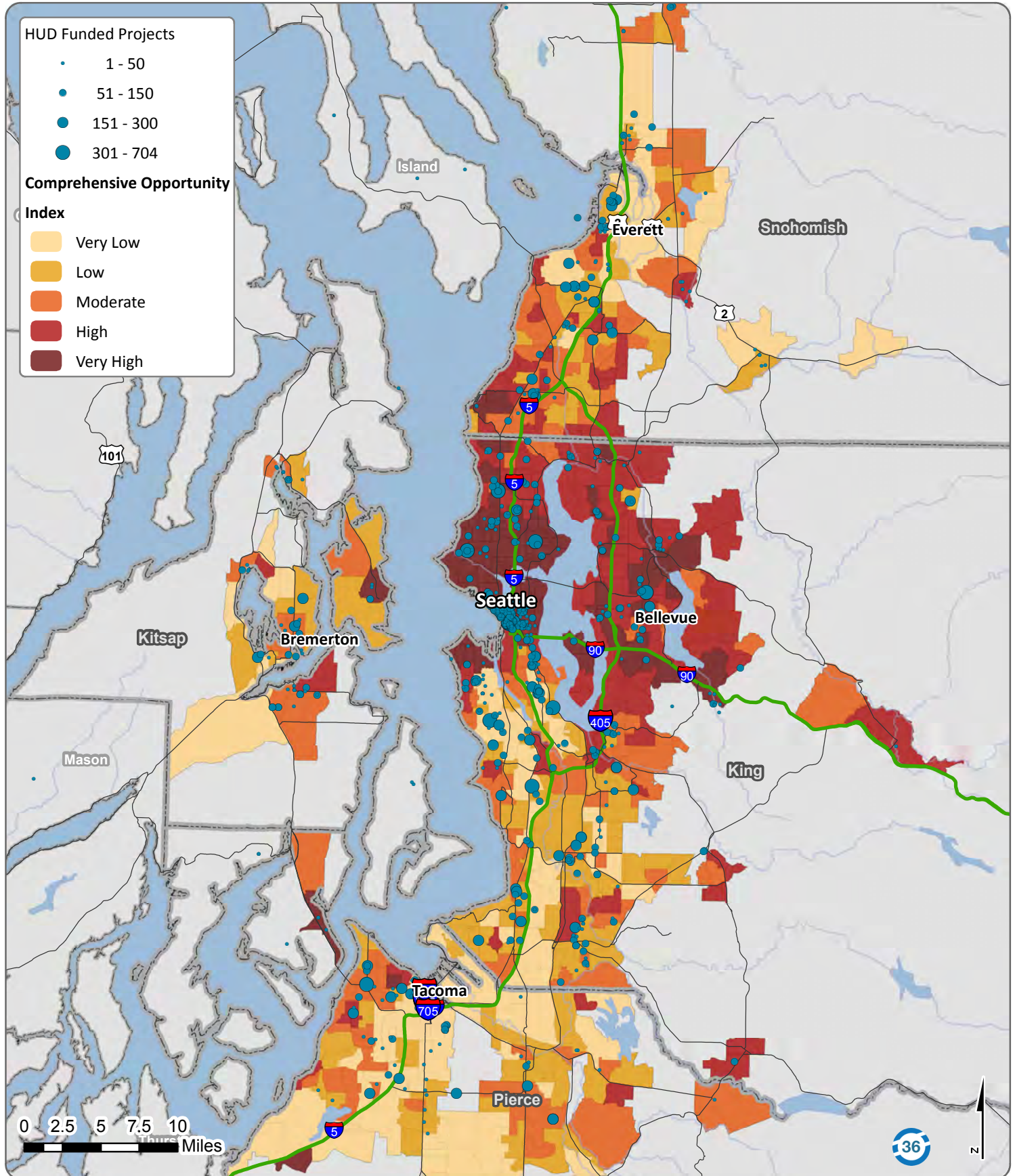


# Map 3.3 Affordable Housing Overlays (HUD Developments)



## Puget Sound Urbanized Area

Sources: Puget Sound Regional Council, 2011; Environmental Protection Agency, 2010; Washington Dept. of Ecology, 2011; ESRI Business Analyst, 2010; American Community Survey, 2006-2010; U.S. Census, 2010; Tetrad, Inc. PCensus Dbx, 2010; Washington State Report Card, 2010-2011; HUD User, 2008



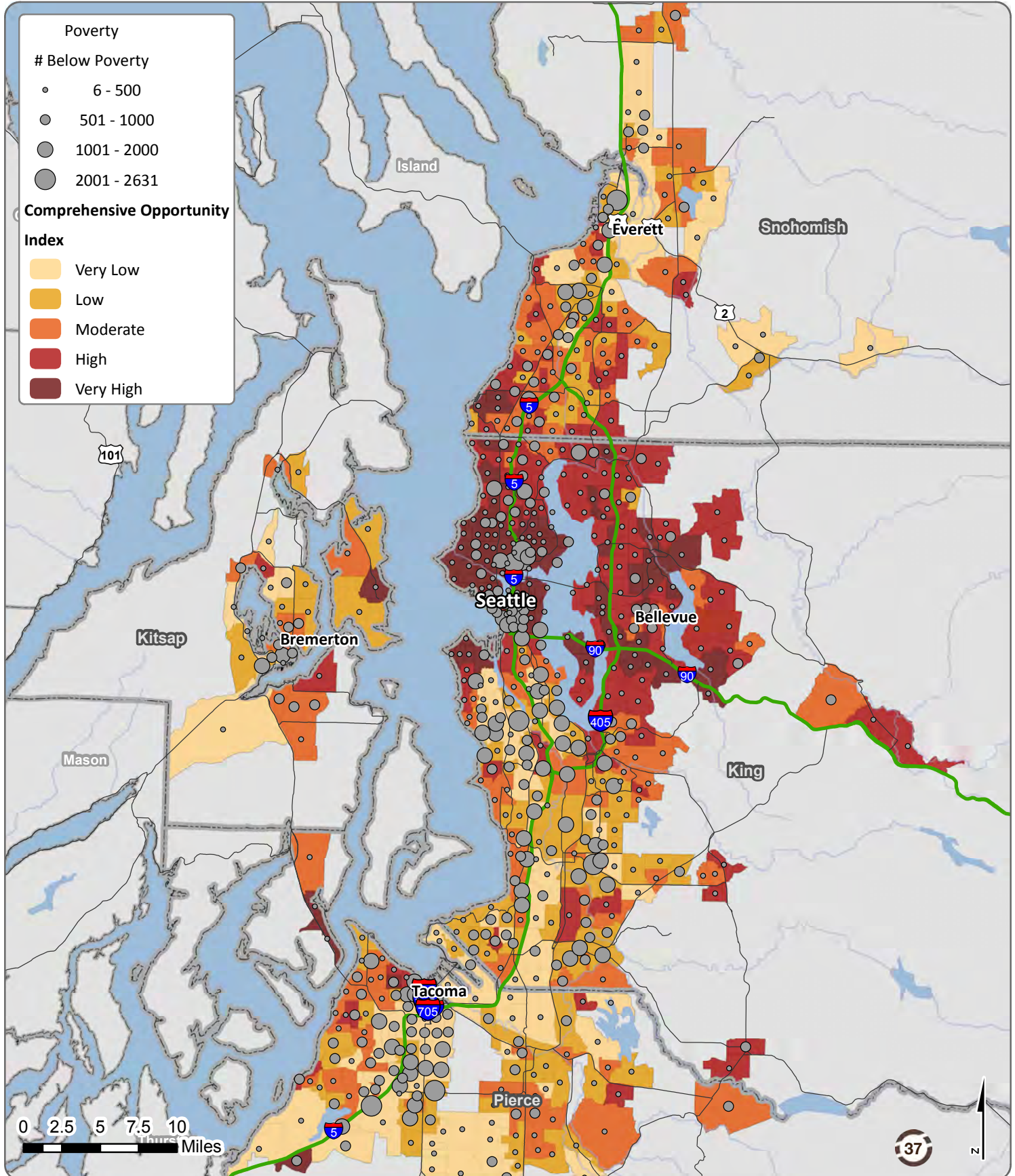


# Map 4.1 Poverty & Public Assistance Overlays (Poverty)



## Puget Sound Urbanized Area

Sources: Puget Sound Regional Council, 2011; Environmental Protection Agency, 2010; Washington Dept. of Ecology, 2011; ESRI Business Analyst, 2010; American Community Survey, 2006-2010; U.S. Census, 2010; Tetrad, Inc. PCensus Dbx, 2010; Washington State Report Card, 2010-2011; HUD User, 2008



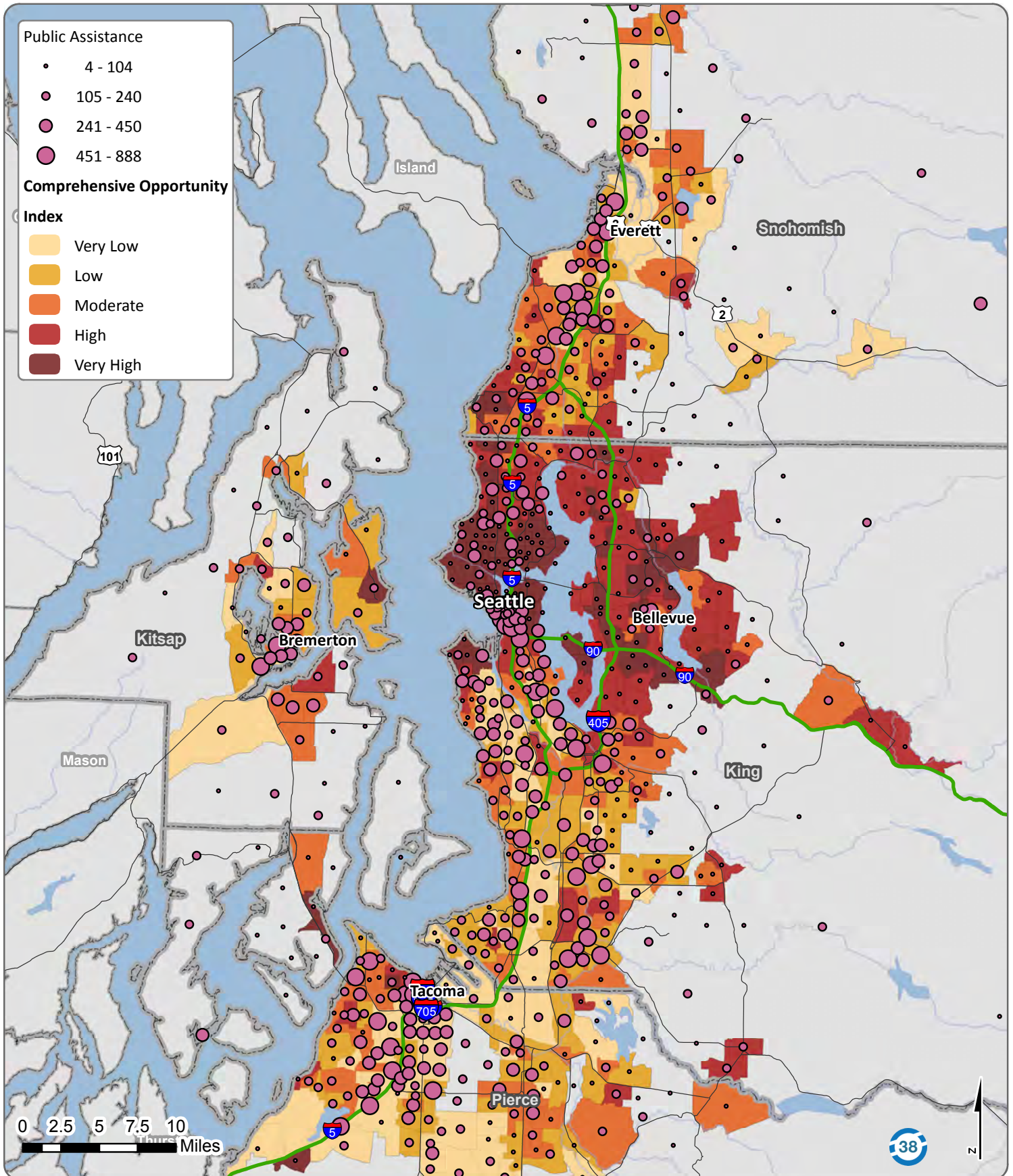
# Map 4.2 Poverty & Public Assistance Overlays



## (Public Assistance)

### Puget Sound Urbanized Area

Sources: Puget Sound Regional Council, 2011; Environmental Protection Agency, 2010; Washington Dept. of Ecology, 2011; ESRI Business Analyst, 2010; American Community Survey, 2006-2010; U.S. Census, 2010; Tetrad, Inc. PCensus Dbx, 2010; Washington State Report Card, 2010-2011; HUD User, 2008

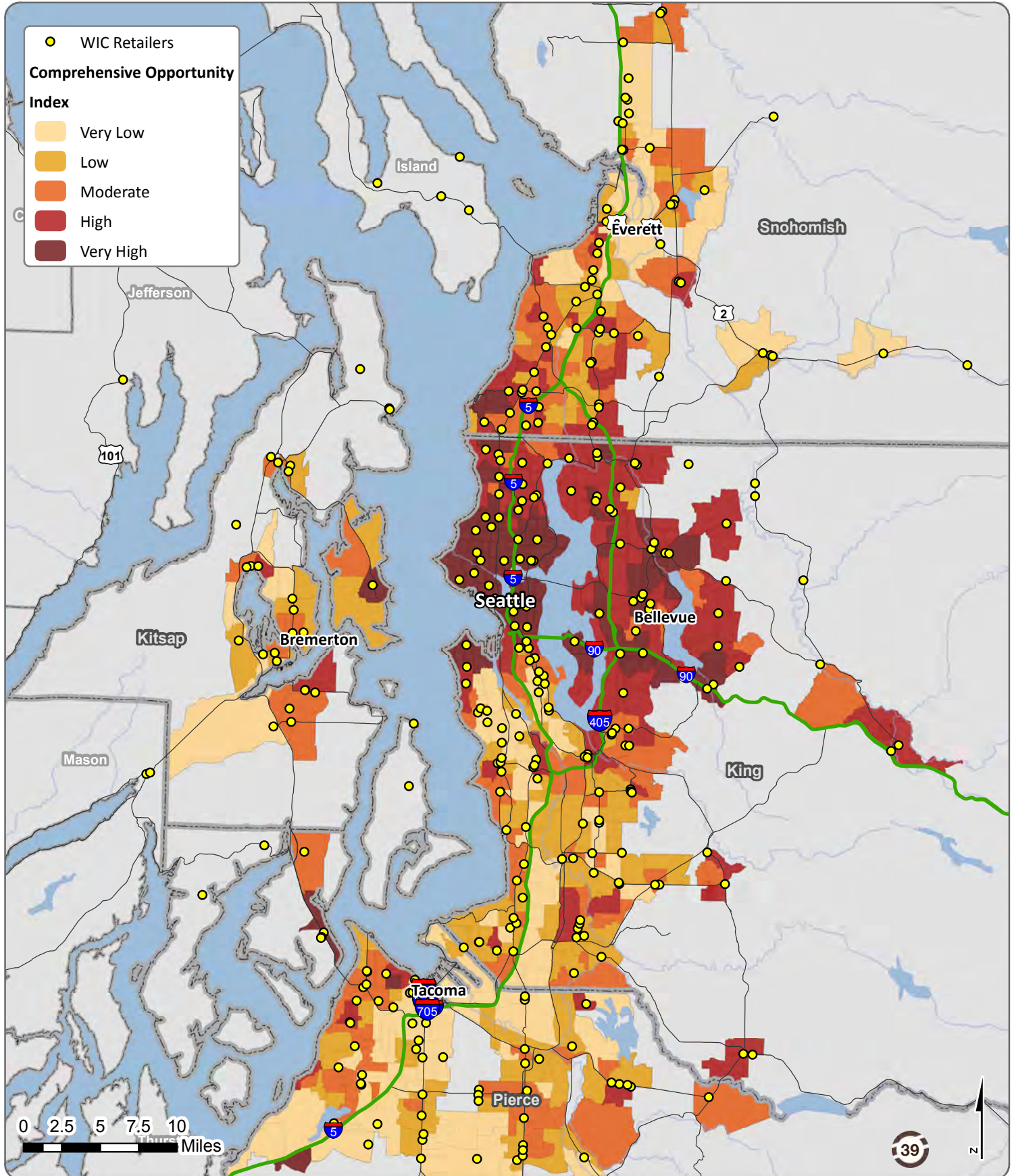


# Map 4.3 WIC Overlays



## Puget Sound Urbanized Area

Sources: Puget Sound Regional Council, 2011; Environmental Protection Agency, 2010; Washington Dept. of Ecology, 2011; ESRI Business Analyst, 2010; American Community Survey, 2006-2010; U.S. Census, 2010; Tetrad, Inc. PCensus Dbx, 2010; Washington State Report Card, 2010-2011; HUD User, 2008

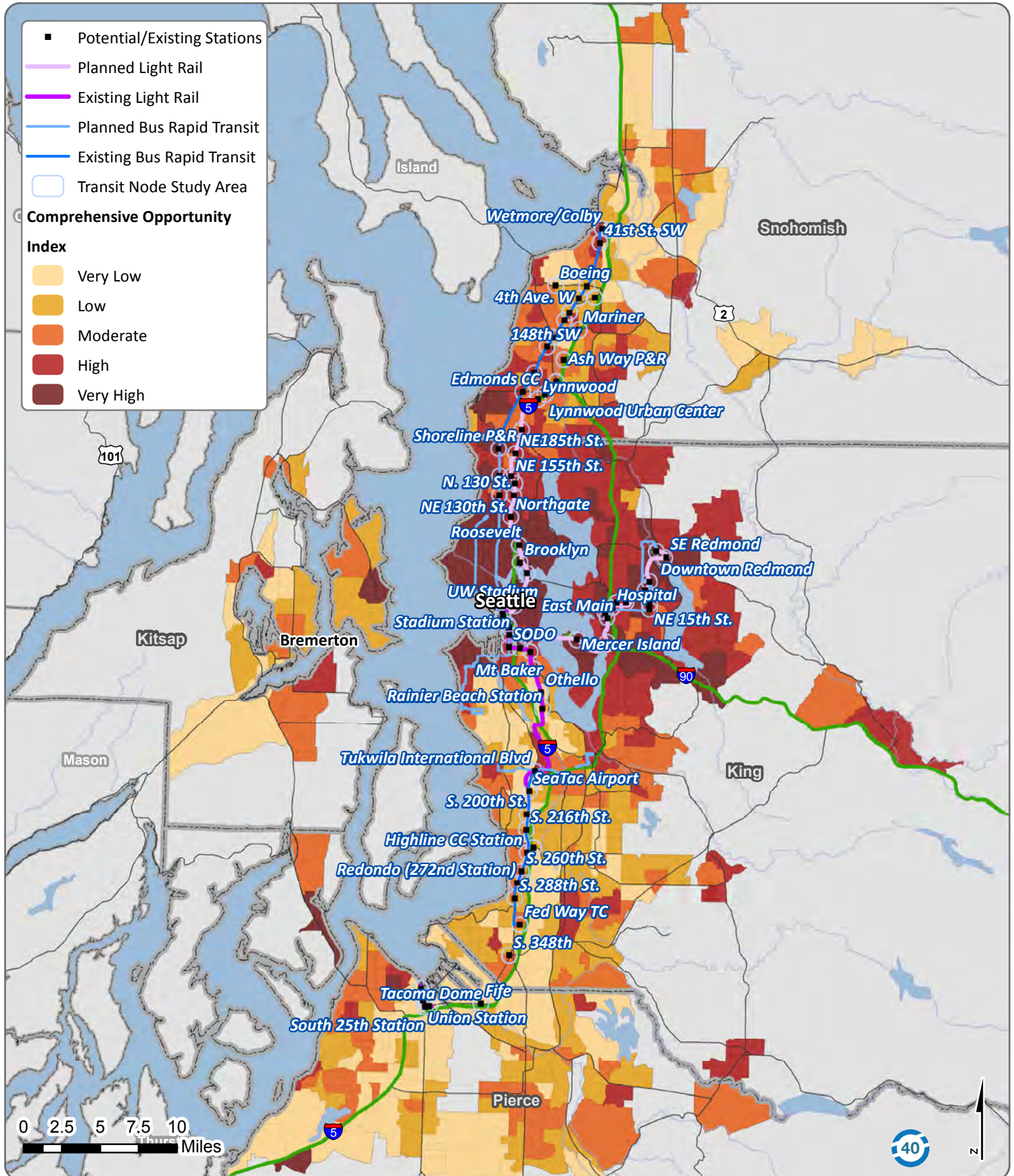


# Map 5.1 Light Rail Overlays (All)

## Puget Sound Urbanized Area



Sources: Puget Sound Regional Council, 2011; Environmental Protection Agency, 2010; Washington Dept. of Ecology, 2011; ESRI Business Analyst, 2010; American Community Survey, 2006-2010; U.S. Census, 2010; Tetrad, Inc. PCensus Dbx, 2010; Washington State Report Card, 2010-2011; HUD User, 2008

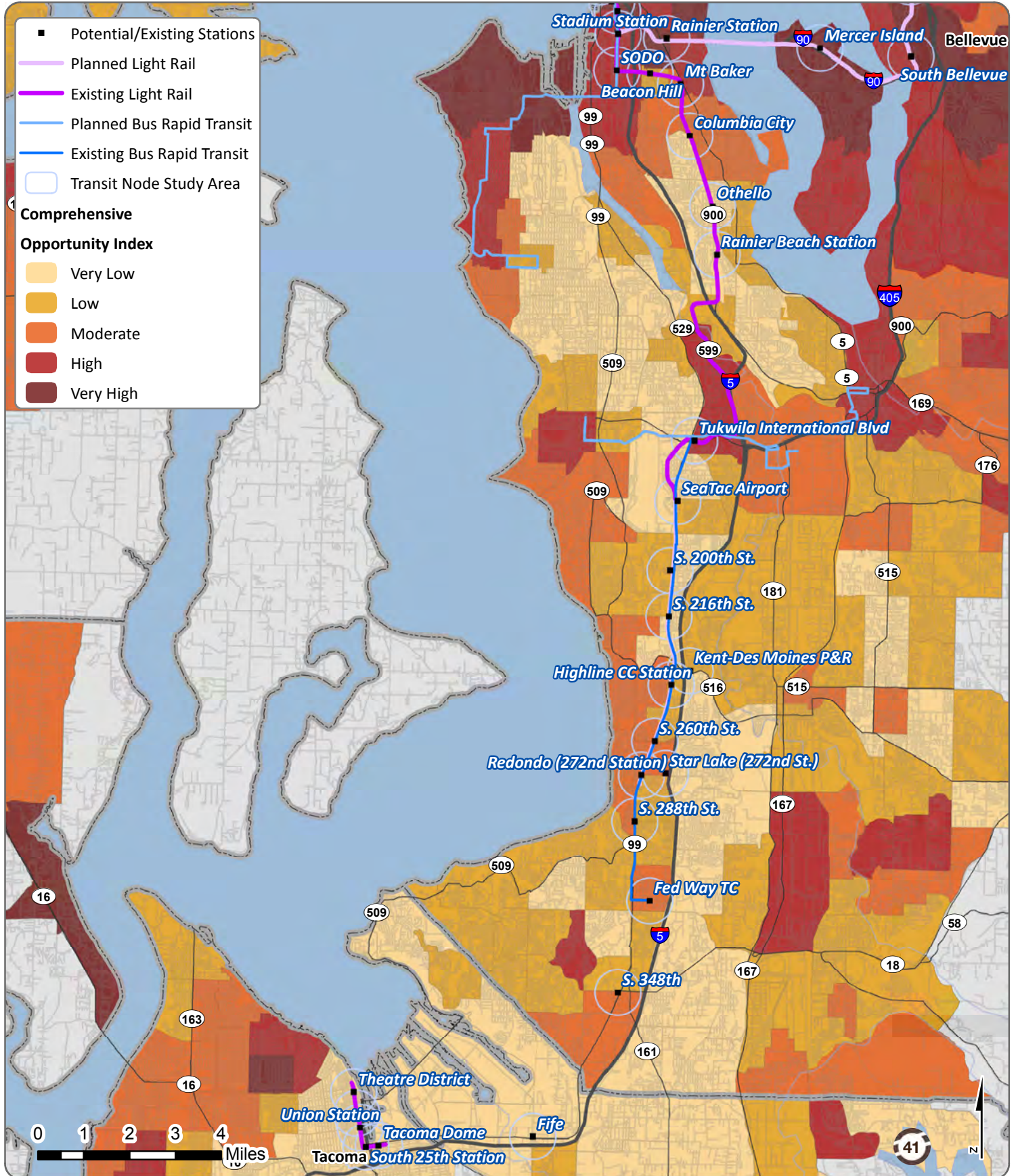


# Map 5.2 Light Rail Overlays (South Corridor)



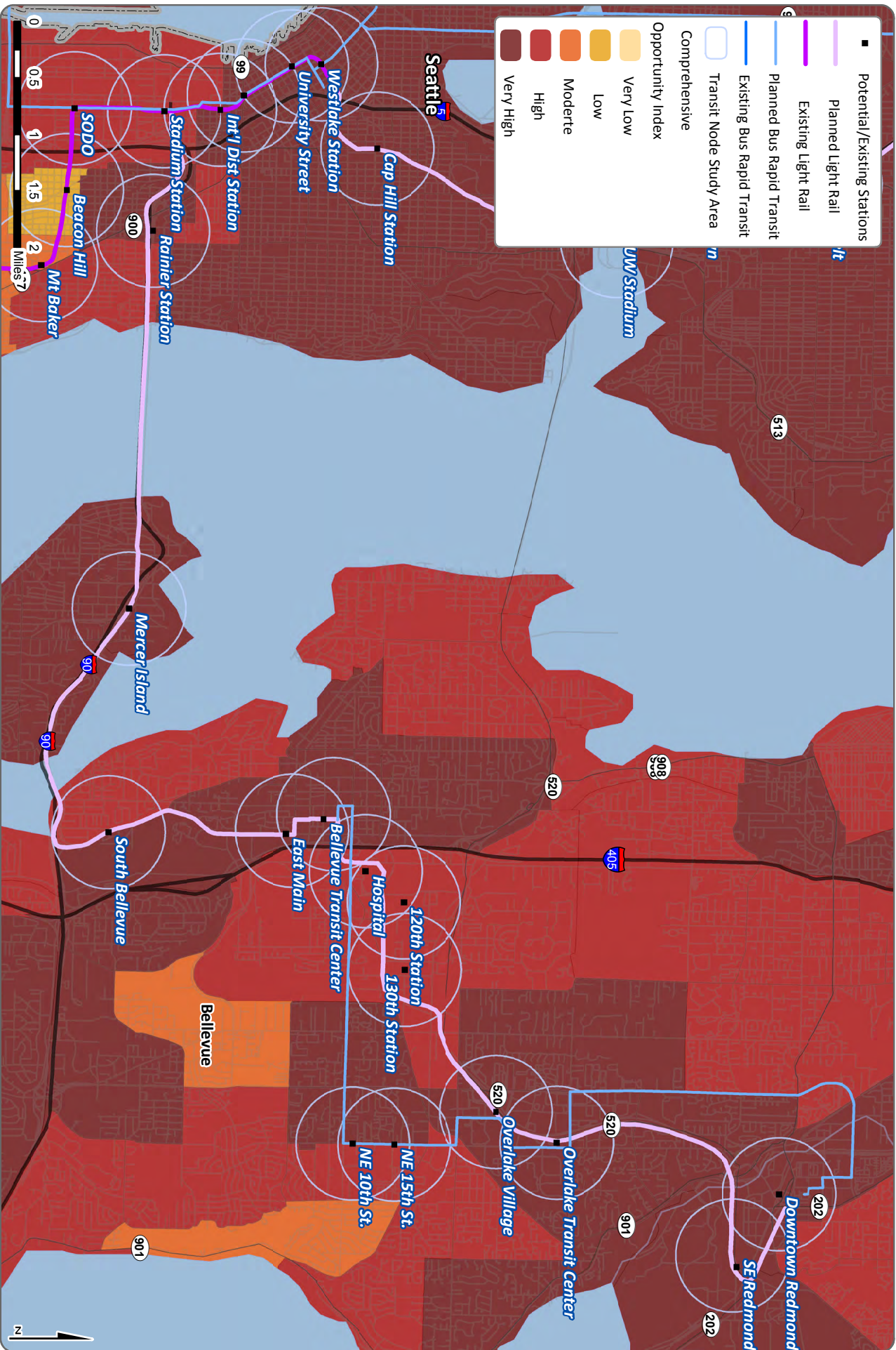
## Puget Sound Urbanized Area

Sources: Puget Sound Regional Council, 2011; Environmental Protection Agency, 2010; Washington Dept. of Ecology, 2011; ESRI Business Analyst, 2010; American Community Survey, 2006-2010; U.S. Census, 2010; Tetrad, Inc. PCensus Dbx, 2010; Washington State Report Card, 2010-2011; HUD User, 2008



# Map 5.3 Light Rail Overlays (East Corridor) Puget Sound Urbanized Area

Sources: Puget Sound Regional Council, 2011; Environmental Protection Agency, 2010; Washington Dept. of Ecology, 2011; ESRI Business Analyst, 2010; American Community Survey, 2006-2010; U.S. Census, 2010; Tetrad, Inc. Pcenus Dlx, 2010; Washington State Report Card, 2010-2011; HUD User, 2008

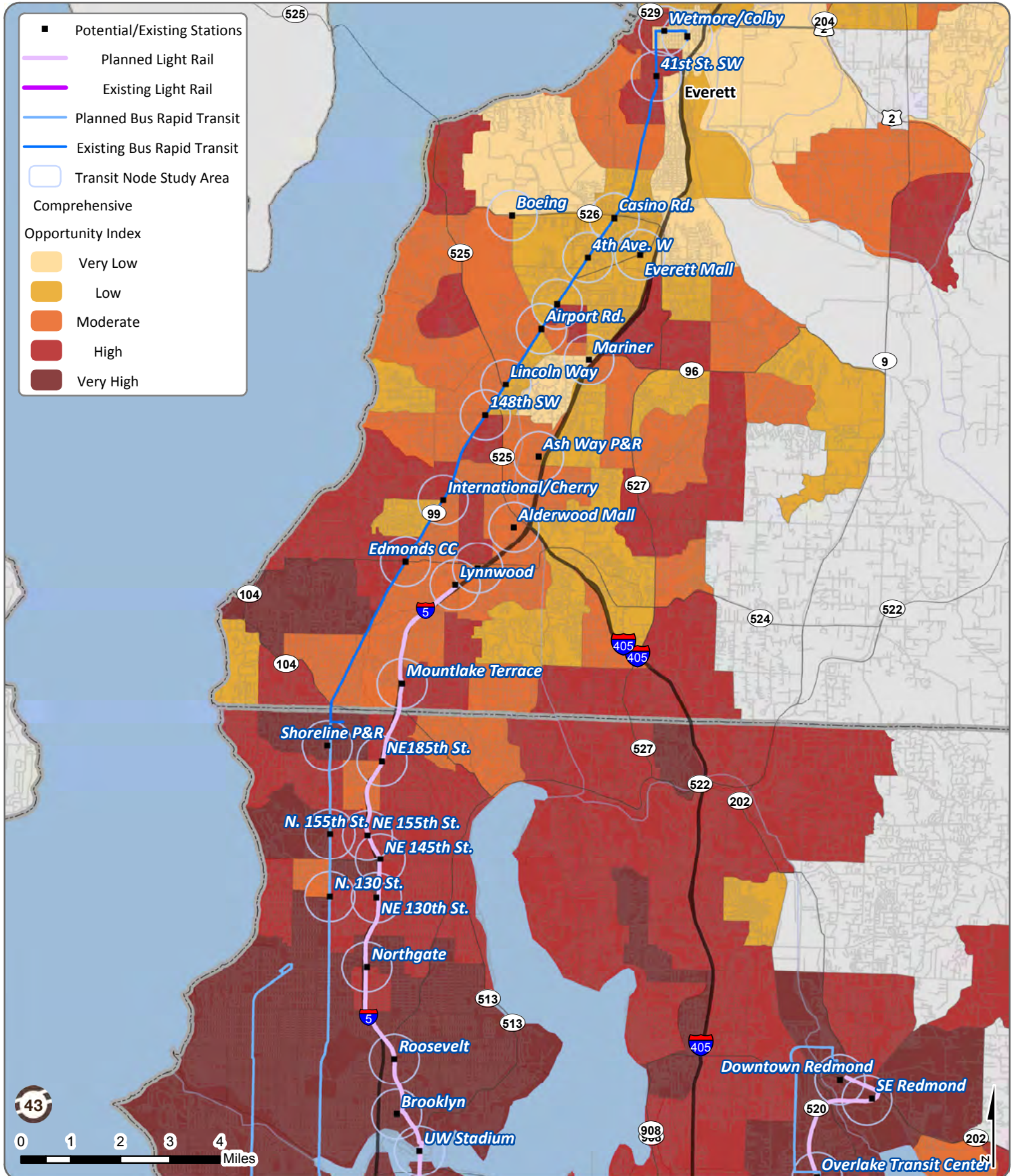


# Map 5.4 Light Rail Overlays (North Corridor)

## Puget Sound Urbanized Area



Sources: Puget Sound Regional Council, 2011; Environmental Protection Agency, 2010; Washington Dept. of Ecology, 2011; ESRI Business Analyst, 2010; American Community Survey, 2006-2010; U.S. Census, 2010; Tetrad, Inc. PCensus Dbx, 2010; Washington State Report Card, 2010-2011; HUD User, 2008



# The Impact Of Neighborhood Conditions



## — Additional Literature And Resources

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## Examples Of Crime And Safety Impacts

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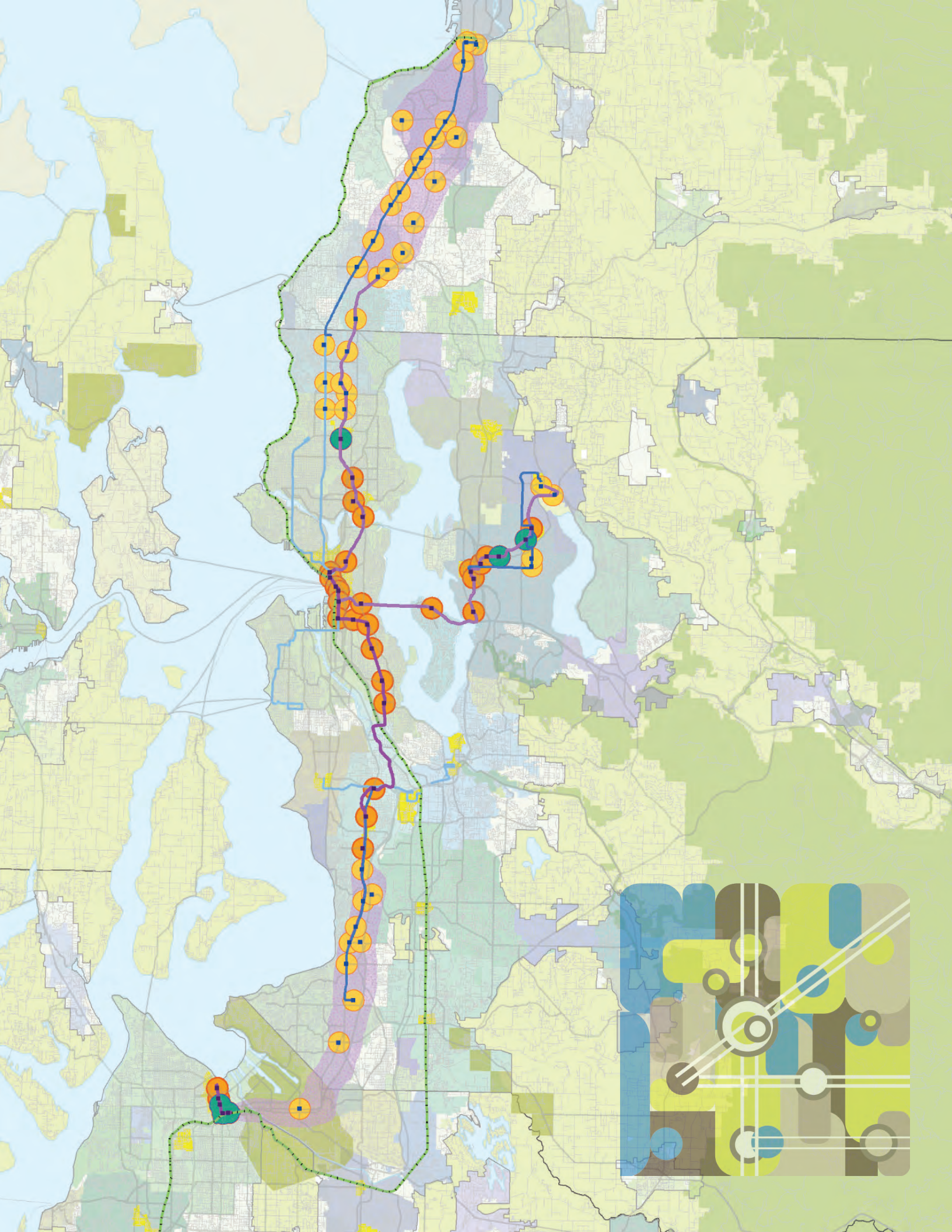
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