# DRAFT ACTIONS

## BELLEVUE ENVIRONMENTAL STEWARDSHIP PLAN

## INTRODUCTION

This document summarizes the current list of proposed actions for the Environmental Stewardship Plan which advance Comprehensive Plan land use policies, for review by the Planning Commission. These actions have been developed by a team of city staff and consultants and build on the City's work to date to implement relevant policies of the Comprehensive Plan.

The Environmental Stewardship Plan will include actions to be implemented over a five-year period, in the following five focus areas: climate change, mobility and land use, waste, natural systems, and energy. These actions are either new efforts, or expand upon existing initiatives designed to advance progress toward achieving the following goals and targets:

| Focus Area | Goal | 2030 Target | 2050 Target |
|---|---|---|---|
| **Climate Change** | Reduce Bellevue's greenhouse gas emissions and prepare and adapt to ongoing climate change impacts. | • Reduce Bellevue's communitywide greenhouse gas emissions **50**% by 2030, compared to a 2011 baseline. | • Reduce Bellevue's communitywide greenhouse gas emissions **80%** by 2050, compared to a 2011 baseline. |
| **Mobility and Land Use** | Minimize the environmental impacts of transportation and development in Bellevue by focusing development in growth centers and providing all residents with access to a variety of mobility options. | • Achieve a **65**% commute-trip drive-alone rate for residents and people working in Bellevue by 2030.<br>• Strive to have **25**% electric vehicles registered in Bellevue by 2030.<br>• Reduce per capita vehicle miles travelled (VMT) by at least **20**% by 2030, compared to a 2011 baseline.<br>• Support transit oriented development and strive to achieve **70**% of jobs | • Achieve a **45%** commute-trip drive-alone rate for residents and people working in Bellevue by 2050.<br>• Strive to have **100%** electric vehicles registered in Bellevue by 2050.<br>• Reduce per capita vehicle miles travelled (VMT) by **50%** by 2050, compared to a 2011 baseline.<br>• Support transit oriented development and strive to achieve **85%** of jobs and **65%** of housing located with a ¼ mile of a frequent |

| Focus Area | Goal | 2030 Target | 2050 Target |
|---|---|---|---|
| | | and **50**% of housing located with a ¼ mile of a frequent transit network stop (15-minute headway or less) by 2030. | transit network stop (15-minute headway or less) by 2050. |
| **Waste** | Reduce the negative impacts from consumption and waste practices and strive towards Zero Waste of Resources. | • Achieve a **50%** recycling rate by 2030. | • Achieve **Zero Waste** of Resources by 2050. |
| **Natural Systems** | Improve and preserve the integrity and health of Bellevue's natural systems and ensure all of Bellevue's residents have access to Bellevue's abundant natural resources. | • Achieve a rating of **"fair"** health for all streams in Bellevue, using the BIBI Index by 2030.<br>• Achieve a **38**% citywide tree canopy by 2030.<br>• Ensure that **80**% of Bellevue's residents live within 1/3 of a mile to a park, open space, or trail by 2030. | • Maintain a rating of **"fair"** health for all streams in Bellevue, using the BIBI Index by 2050.<br>• Achieve a **40%** citywide tree canopy by 2050.<br>• Ensure that **100%**[1] of Bellevue's residents live within 1/3 of a mile to a park, open space, or trail by 2050. |
| **Energy** | Ensure long-term access to clean energy while reducing the fiscal and environmental impacts of consumption. | • Achieve **80**% renewable electricity by 2030.[2]<br>• Reduce energy use by **10**% by 2030, compared to a 2011 baseline. | • Achieve **100%** renewable electricity by 2045.<br>• Reduce energy use by **30%** by 2050, compared to a 2011 baseline. |

[1] Staff originally recommended that 90% of residents live within a 1/3 of a mile of a park, open space, or trail head at the November 12, 2019 Council presentation. However, based on direction from Council to consider increasing some targets to "leading edge", staff now recommend a 100% target.

[2] This would involve PSE replacing all coal-fired generation with renewable generation by 2030. The Washington Clean Energy Transformation Act calls for carbon neutral electricity by 2030, which can be achieved through renewable generation and renewable energy credits.

# DRAFT ACTIONS

This section provides a brief description of the scope and intent of each of the actions currently proposed for the Environmental Stewardship Plan, which relate to land use and could potentially involve future Comprehensive Plan policy updates or updates to the land use code.

## Climate Change

1. **Sustainable District**: **Explore creating a sustainable district, such as an EcoDistrict, in downtown, BelRed, or Wilburton, to encourage district-scale sustainability. Establish district-scale sustainability goals with partner organizations.**

   Several models of sustainable districts exist, which have been used to accelerate local sustainability within a neighborhood. These models are typically used in downtown or mixed-use districts and are public-private partnerships between the property owners, tenants, local government, and other organizations. The districts set districtwide environmental goals, which could mirror the city's goals, and collaborate on actions to achieve the goals. Sustainable districts typically include some form of organizing body, technical assistance to property owners for activities such as energy conservation, and incentives for green building or other environmental amenities. Several neighborhoods in Bellevue could be potential candidates for a sustainable district. Further outreach and engagement of potential partners and champions, along with an analysis of various program models would occur to further assess the viability and impact of this approach.

2. **Climate Vulnerability Assessment**: **Perform a climate vulnerability assessment to understand long-term risks and vulnerabilities associated with climate change and identify next steps in terms of enhancing resiliency.**

   The intent of a climate vulnerability assessment is to identify specific strategies intended to support Bellevue's residents, businesses, and operations most impacted by acute and chronic climate change and public health-related impacts. Strategies are focused on both the reduction in the severity of impacts and increasing the speed of recovery to mitigate major disruptions in community operations.

   The step-by-step process for this effort includes gathering community data (including input through an inclusive outreach and engagement effort), existing and projected climate data, conducting a prioritization exercise to determine shocks and stressors with the highest-level of impact (particularly to individuals most impacted by climate change), and the drafting of measurable policies to mitigate those impacts. This effort would help to inform the next periodic Comprehensive Plan update and continue to advance Bellevue's resiliency.

3. **Climate Equity. Prioritize climate mitigation and adaptation investments in historically underserved and underrepresented communities.**

   As part of the citywide Diversity Advantage Plan implementation, staff will work to develop and implement an equity lens for all climate and sustainability projects, to help engage with the community and prioritize and design projects to support Bellevue's communities of color. The City would provide resources to support community members in developing environmental plans alongside City officials to address the priorities and concerns of the neighborhood. The City would provide resources to support community members in developing action plans alongside City officials to address the priorities and concerns of the neighborhood.

4. **Environmental Equity Assessment. Perform an environmental equity assessment to identify environmental risks to communities of color in Bellevue and equitable access to environmental resources, and develop recommendations for policies and programs to continue to advance equity and reduce environmental burdens.**

   Environmental justice is the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income, with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies. This assessment will evaluate environmental justice concerns and look at access to environmental resources and benefits in Bellevue, to help identify priority areas for further planning, policy development, and programs.

5. **Air Quality. Incorporate air quality information in planning for major rezonings and pilot air quality monitoring sensors.**

   As directed by the regional growth management strategy Vision 2050, Bellevue's growth over the next 30 years will be directed to the city's growth center and mixed-use areas. These targeted growth areas, including downtown, BelRed, Eastgate, and Wilburton, are all located in proximity to major freeways. Bellevue has limited air quality data for the city, and better air quality data will help to support land use planning and development to prevent negative public health impacts for residential development in proximity to major transportation corridors.

   Piloting air quality monitoring sensors will help to determine the need for a more robust air quality monitoring program in Bellevue, particularly in high-priority locations undergoing development in proximity to freeways. This action will also involve consideration for policy and land use code updates to account for environmental justice

and air quality issues, to ensure that housing is sited in a safe distance when near major transportation emissions sources.

## Mobility & Land Use

6. **Growth Center Parking Study: Study the impact of light rail on the demand for commuter and residential parking in buildings near transit stations and consider modifying the minimum parking requirements to let the market determine the appropriate amount of parking needed for new development.**

   As parking demand will evolve with the opening of East Link light rail and potential increases in telecommuting rates in the coming years, the demand for parking should be evaluated. Bellevue currently has minimum and maximum parking requirements for all new development, including commercial and multi-family residential buildings. Underground parking is a major cost in new construction, and in order to both increase affordability and encourage use of alternative mobility options, transitioning to a more market driven approach to determining parking needs could help achieve citywide goals for reducing vehicle trips, promoting housing affordability and commercial space affordability for small businesses.

7. **Leverage Frequent Transit Network Service**: **Identify locations along the frequent transit network to consider for additional housing, employment, and recreation opportunities.**

   In order to achieve the Environmental Stewardship Plan goal to have the majority of households and jobs within a ¼ mile of the frequent transit network, the majority of all growth will be directed to the city's growth centers. The periodic Comprehensive Plan update would also consider the need and opportunities for additional growth in targeted areas along the frequent transit network, to continue to support transit oriented development in other parts of the city which are well-served by transit.

## Materials Management and Waste

8. **Recycling Space Requirements: Consider updates to space and access code requirements for recycling services in multi-family, commercial, and mixed-use buildings, to ensure new buildings have adequate space for three waste streams.**

   As job and population growth continues to increase within Bellevue, access to recycling services in multi-family, commercial, and mixed-use buildings will become increasingly

important to increase Bellevue's recycling rate. This action will strengthen existing space requirements to align with King County and neighboring cities' code and evaluate new space and access code requirements to continue increasing recycling rates within Bellevue.

## Natural Systems

9. **Tree preservation code. Introduce stricter code requirements for tree preservation, including tree retention, protection, replacement, and possible impact fees for tree removal, bonds for tree protection during and post-construction, and considerations for exceptional trees.**

   Residents have voiced their interest in updating Bellevue's codes related to trees, to prevent further tree loss and to ensure sufficient replacement requirements are in place. This action would entail a comprehensive review of the code and requirements related to trees and updates to the code to support tree preservation, retention, replacement, and protection during construction, including considerations for exceptional trees and tree maintenance. This code update will also consider tree replacement requirements for city capital projects that exceed the code requirements, to lead by example.

10. **Integrated Design and Site Selection: Identify and acquire sites whose preservation as open space would confer multiple environmental benefits.**

    Open space preservation can serve multiple functions in supporting a resilient city. This action would work toward several natural systems communitywide goals in the Environmental Stewardship Plan: land set aside to protect habitat and stream health, provide tree canopy, and absorb stormwater can also serve as a recreational amenity for residents through careful planning and site design. Layering functions and benefits on a single site, where possible, is an efficient and responsible use of land and resources in urban environments where such opportunities may be scarce. This action requires a longer timeframe because it involves both the identification and acquisition of open space sites, which can take many years. Various planning efforts will inform this action, including the upcoming update to the Parks and Open Space System Plan, the Watershed Management Plan, and guidance around tree canopy enhancement. Other neighborhood- or district-level planning efforts may identify site locations which could support both public open space and other environmental benefits, including work as part of the Wilburton land use initiative and the BelRed Look Back.

## Energy

11. **Advanced Green Building Pilot Program. Develop a pilot program to incentivize advanced green building, such as the Living Building Challenge or net zero energy.**

    This action would seek to incentivize advanced green building projects, such as the Living Building Challenge, through various types of incentives, to accelerate net zero energy projects in Bellevue. The program would be a pilot program initially, designed to incentivize and permit high-performing deep green buildings and support the navigation of any challenging design and permitting situations to ensure successful completion.

12. **Green Building Incentives. Review effectiveness of existing green building land use incentives and consider options for increasing their impact and making them more consistent across neighborhoods which are undergoing rezonings.**

    Bellevue provides land use incentives for green building in the downtown neighborhood and BelRed by allowing for additional development area (floor area ratio) for projects achieving higher levels of green building performance. This action would review the effectiveness of those existing incentives, consider adjustments to the incentives to make them more effective, and recommend green building incentives for other relevant neighborhoods.

13. **Green Affordable Housing. Evaluate opportunities to incentivize green affordable housing more broadly, and for projects with City funding, consider requiring green building beyond the Evergreen green building standard.**

    Preserving and increasing the affordable housing supply are top priorities in Bellevue. This action will evaluate opportunities for incentives for projects which include both affordable housing and green building, to help ensure long-term affordability through reduced energy costs in affordable housing buildings. This action will consider opportunities for advancing green affordable housing through:

    - Land use or permitting incentives for projects which provide both green building and affordable housing.
    - Identifying possible demonstration sites in Bellevue for green affordable housing.
    - Requirements for green building that exceed the Evergreen green building standard for affordable housing, for any affordable housing developed on city-owned property.

### Implementation

14. **<u>Environmental Stewardship Plan as a Comprehensive Plan Functional Plan</u>. Update the Comprehensive Plan to reflect the Environmental Stewardship Plan as a functional plan, rather than a program.**

    The Comprehensive Plan currently lists the Environmental Stewardship Initiative as a program to support the implementation of the Environmental Element of the Comprehensive Plan. This could be updated to define the Environmental Stewardship Plan as a functional plan that is updated every five years. This will provide more clear policy direction for the ongoing use and updates to the Environmental Stewardship Plan.

## IMPACT ANALYSIS

This document estimates variables and outcomes associated with identified actions in the Environmental Stewardship Plan. Essentially, the analysis assessed the potential of ESI Strategic Plan implementation to meet established targets. This estimation is visualized in a "wedge analysis" that depicts a high-level estimate of how much the actions will collectively contribute towards meeting the city's communitywide goals and targets.

This section includes a wedge analysis for the following targets:

**Climate Change**
- Total greenhouse gas emissions ($MTCO_2e$)

**Mobility & Land Use**
- Vehicle miles traveled (VMT) (per capita)

**Materials Management & Waste**
- Waste diversion (%)

**Natural Systems**
- Tree canopy cover (%)

**Energy**
- Total communitywide energy use (MMBTU)

## METHODOLOGY

This analysis assessed the following four primary scenarios:

1. **Business-As-Usual (BAU):** An estimate of how the metric would change over time without the influence of external or internal policies or programs. Population and job growth are the key drivers of business-as-usual projections.
2. **External Factors:** The influence of policies external to Bellevue—such as state renewable portfolio standards and federal / state fuel efficiency standards—on Bellevue's projected GHG emissions. These are denoted in **solid** in the wedge graphics.
3. **ESP Actions:** The estimated impact of priority actions slated for inclusion in the Environmental Stewardship Plan. These are denoted in **patterned** in the wedge graphics.
4. **Additional Needed Actions:** The estimated impact of additional actions that would be needed to meet the ESP's long-term targets. These are denoted in **grey** in the wedge graphics.

The analysis was conducted to 2050—the long-term target year for communitywide sustainability goals, including the greenhouse gas emission reduction target.

## CONSIDERATIONS

Considerations when outlining assumptions for a carbon wedge analysis include:

- **Data availability:** You may have heard the phrase, "garbage in, garbage out." This phrase is true for wedge analyses. The outputs of the model are only as precise and accurate as its inputs. This means that, where possible, the use of locally precise and accurate data is preferred. However, in many cases, local data are not available. In that case, data from the national level or from other regions are considered in combination with input from local experts.

- **Uncertainty:** Modeling strategy and action potential can be challenged by uncertainty in the cause-effect relationship of actions. For example, what is the emission reduction outcome of an action that calls for the introduction of a rebate for home energy audits? This value is contingent on many factors:
  - Outreach: How many households will know about the program?
  - Buy-in: Of those households that know about the program, how many will sign up?
  - Behavior Change: Of those that sign up, how many will install efficiency measures?
  - Measure Efficacy: Of those that install measures, what measures will they install? How effective will those measures be?

This wedge analysis does not attempt to assign answers to each of these questions. Instead, this analysis is meant to provide a high-level estimate of potential outcomes from ESP

implementation. It is assumed that more detailed action evaluation would be performed upon implementation of the action.

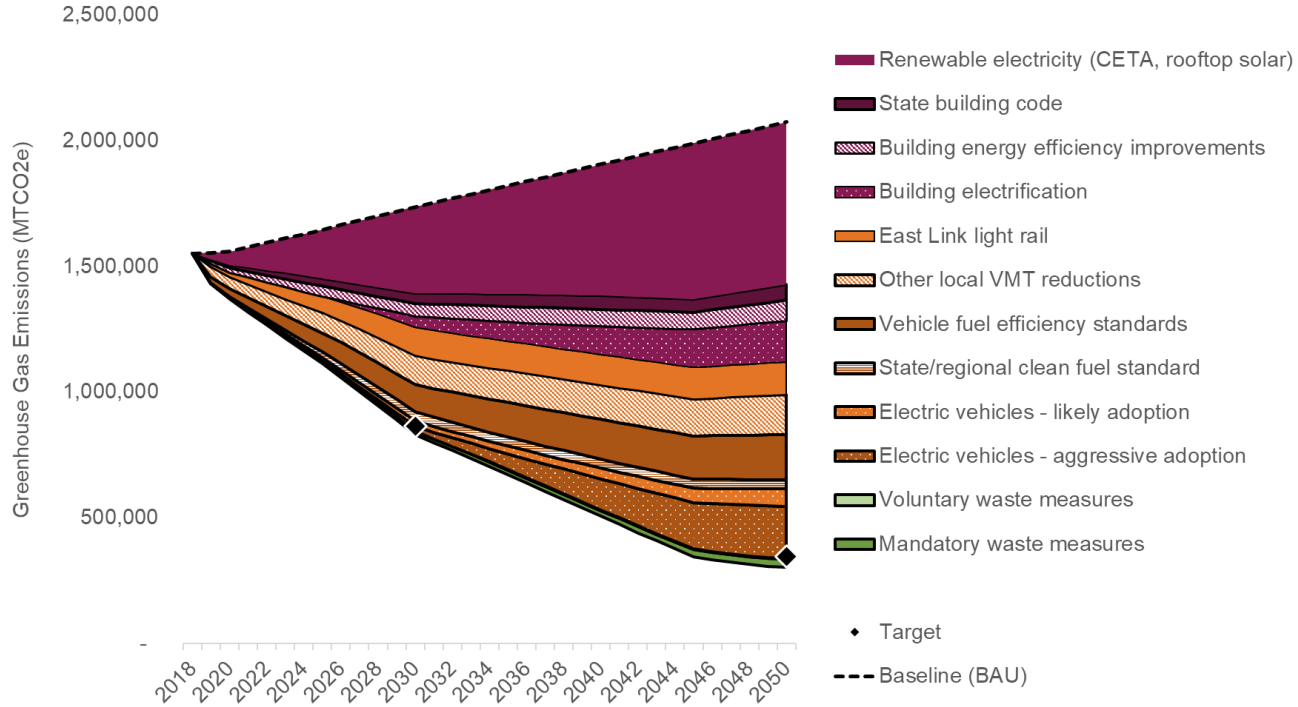
# FINDINGS OVERVIEW

## Climate Change

| | Communitywide GHG Emissions ($MTCO_2e$) | |
|---|---|---|
| | **2030** | **2050** |
| **Target (diamonds)** | 865,425 (50% reduction) | 346,170 (80% reduction) |
| **Planned** | 956,758 (45% reduction) | 501,357 (71% reduction) |

The following graph illustrates the impact of primarily buildings and transportation / land use related strategies for reducing greenhouse gas emissions.

**Figure 1: Community Greenhouse Gas Emissions Pathways**




This initial draft of the wedge analysis illustrates that clean energy, energy efficiency, fuel economy, electric vehicles, clean fuels, and VMT reductions will be essential for meeting the

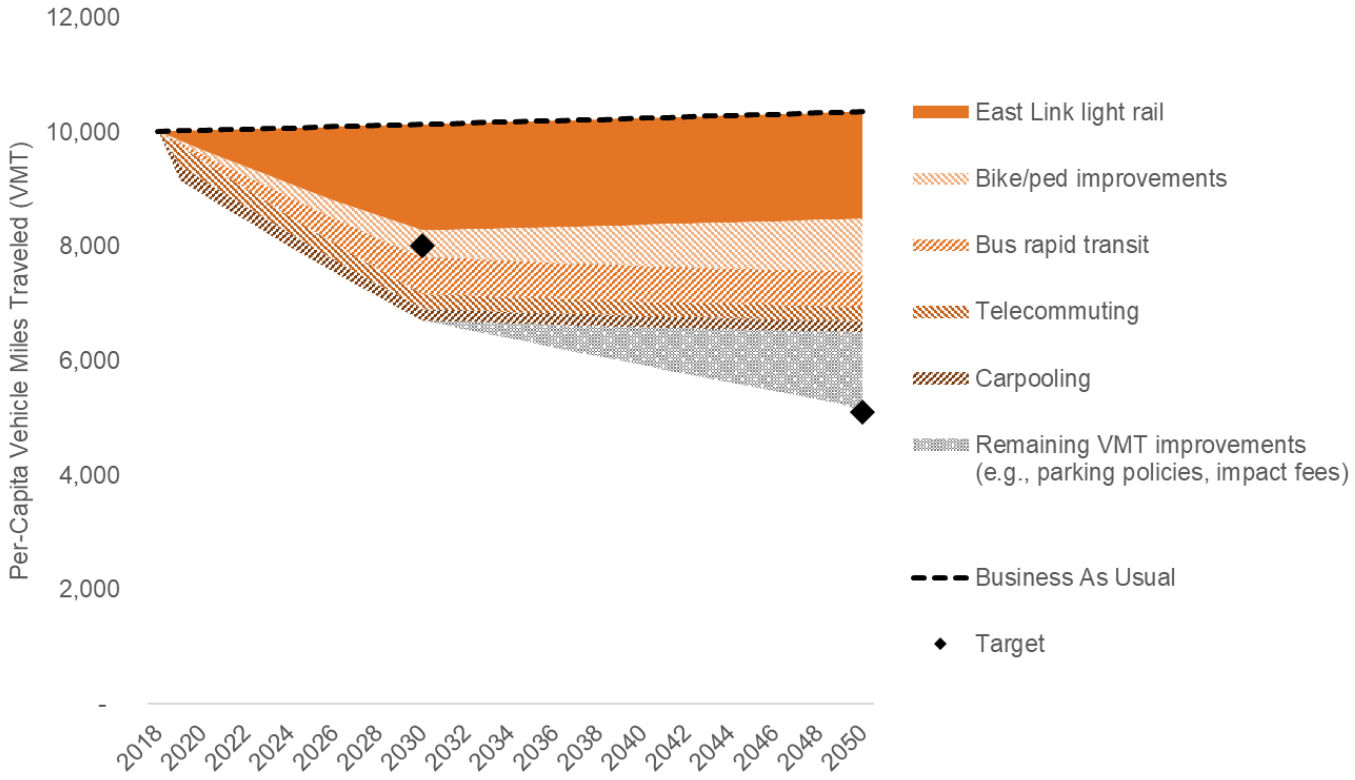
proposed emissions reduction targets. Further analysis is needed to identify additional actions for achieving the 2030 and 2050 goals. The actions outlined for this 2020 Environmental Stewardship Plan will help to lay the foundation, but these strategies will need to be expanded or built upon in order to achieve the short and long-term reduction goals.

This analysis is built on research and assumptions from regional transportation emissions studies and when no regional information is available, using other national reports and studies, as noted in the following sections. The intent is to model the potential impact of various strategies, to understand the cumulative impact of the proposed actions.

## Mobility & Land Use

| | Per-Capita Vehicle Miles Travelled (VMT) | |
|---|---|---|
| | **2030** | **2050** |
| **Target (diamonds)** | 8,012 (20% reduction) | 5,113 (50% reduction) |
| **Planned** | 6,710 (33% reduction) | 6,510 (35% reduction) |

**Figure 2: Per Capita Vehicle Miles Travelled Reduction Scenarios**

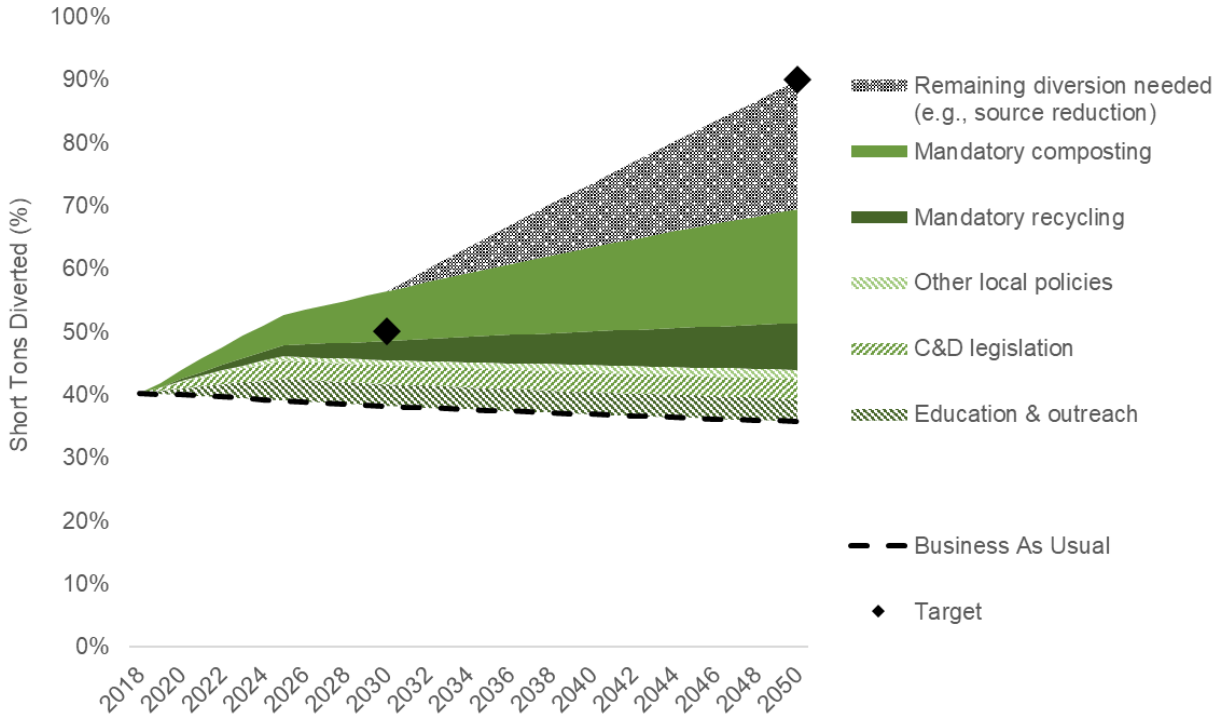


## Materials Management & Waste

The following table and graph illustrate the impact of key solid waste strategies to support the achievement of the community tons diverted goal.

| | Community Tons Diverted (short tons) | |
|---|---|---|
| | **2030** | **2050** |
| **Target (diamonds)** | 67,780 (50% diversion rate) | 141,252 (90% diversion rate) |
| **Planned** | 95,146 (70% diversion rate) | 109,245 (70% diversion rate) |

**Figure 3: Recycling Rate Strategy Analysis**



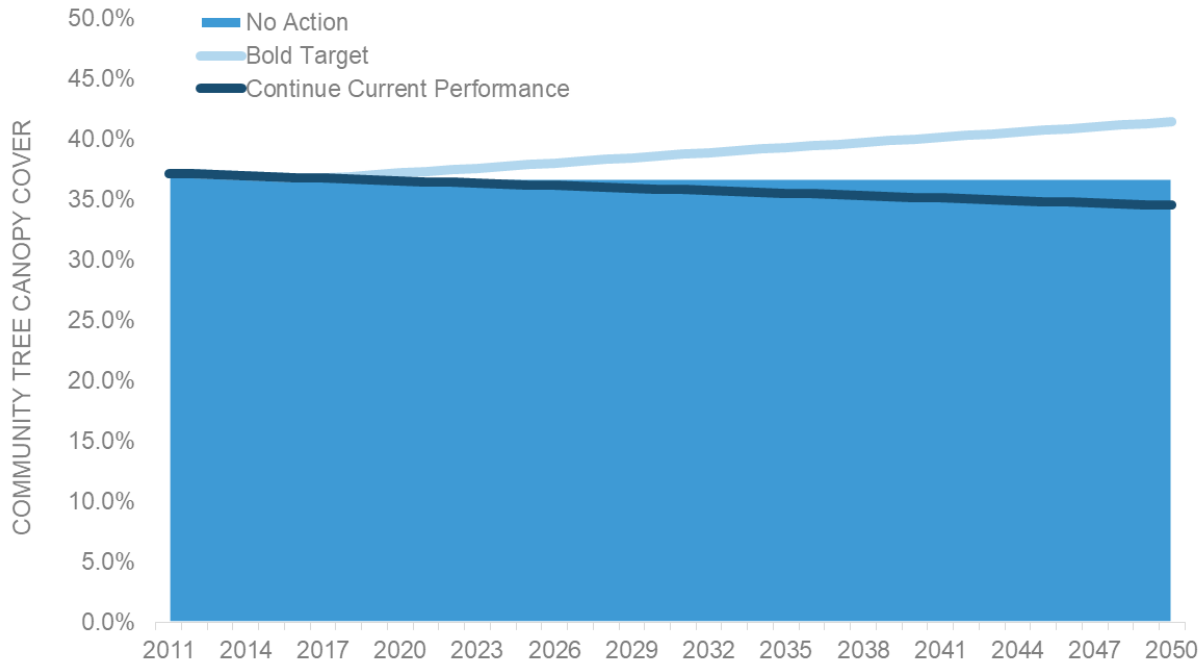

This graph illustrates that waste measures such as increased education and outreach, single-use plastics ban, and construction and demolition waste reduction will have some impact on the tons of waste diverted. Additional strategies will need to be considered to reach the 2030 and 2050 waste diversion rate goals.

## Natural Systems

| | Tree Canopy Cover (% of land use) | |
|---|---|---|
| | **2030** | **2050** |
| **Target (diamonds)** | 38% | 40% |
| **Estimated Trees to plant** | 25,000 | 75,000 |

Based on an analysis performed by Tree Solutions, Inc, to achieve the 40% tree canopy goal, approximately 75,000 trees will need to be planted throughout Bellevue over the next 30 years. This estimate is assuming no net loss of tree canopy, which would require an update to Bellevue's tree codes, to ensure sufficient tree retention and replacement for properties undergoing development.

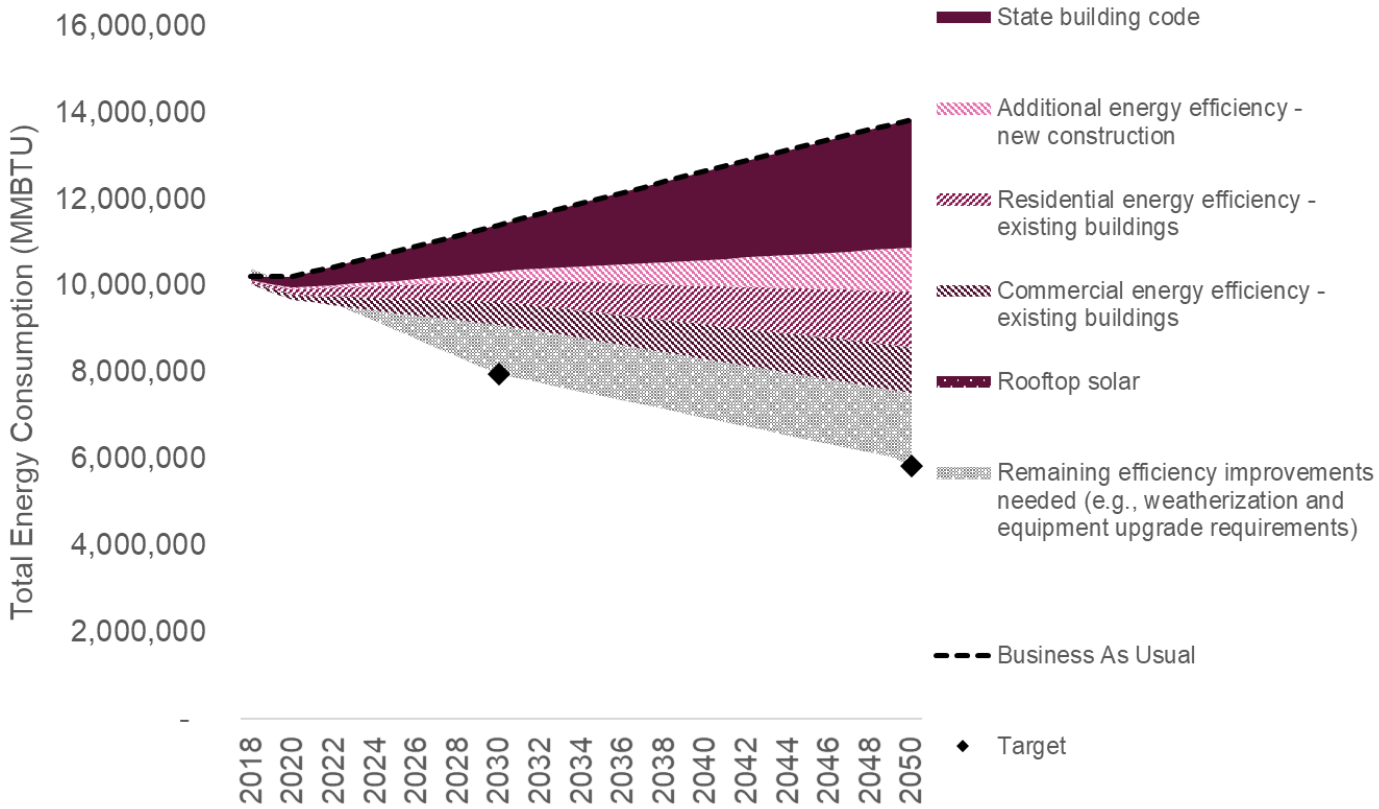
**Figure 4: Tree Canopy Trends and Target**



## Energy

| | Total Energy Use (MMBTU) | |
|---|---|---|
| | **2030** | **2050** |
| **Target (diamonds)** | 7,960,366 (25% reduction) | 5,837,602 (45% reduction) |
| **Planned** | 9,096,315 (14% reduction) | 7,521,770 (29% reduction) |

**Figure 4: Energy Use Reduction Scenarios**



# APPENDIX: ASSUMPTIONS OVERVIEW

# FORECAST VARIABLES

## Greenhouse Gas Emissions Forecast Variables

### *Other Business-As-Usual Assumptions:*

| # | Forecast Variable | Assumptions |
|---|---|---|
| 0.1.1 | Bellevue population between 2011-2050 | • Assumes linear growth between predicted years; growth after 2035 reflects 2030-2035 annual growth.<br>• Assumes population grows at a rate anticipated by the City of Bellevue, equivalent to about a 1% increase per year (BGHGForecast-01-01 DaytimePopulation_2017_0306). |
| 0.1.2 | Number of households in Bellevue between 2011-2050 | • Assumes the number of households grow proportionally to population (that is, household size remains constant).<br>• Historical values from Washington State OFM (BGHGForecast-01-02 ofm_april1_postcensal_estimates). |
| 0.1.3 | Number of jobs in Bellevue between 2011-2050 | • Assumes population grows at a rate anticipated by the City of Bellevue, equivalent to about a 1.7% increase per year (BGHGForecast-01-01 DaytimePopulation_2017_0306).<br>• Assumes linear growth between predicted years; growth after 2035 reflects 2030-2035 annual growth (BGHGForecast-01-01 DaytimePopulation_2017_0306). |
| 0.1.4 | Commercial square footage in Bellevue between 2011-2050 | • Assumes the growth in commercial square footage mirrors anticipated job growth as predicted by the City of Bellevue, equivalent to a 1.7% increase per year. |
| 0.1.5 | Transportation trips by mode | • Assumes changes in regional VMT and trips by mode are as projected by the Puget Sound Regional Council (PSRC) (BGHGForecast-03-01 PSRC RTP Appendix K; BGHGForecast-03-02 VMT Projections for Bellevue). |
| 0.1.6 | Electric vehicle penetration to 2050 | • Assumes changes in regional EV penetration are as projected by the Puget Sound Regional Council's (PSRC) likely scenario (BGHGForecast-03-03), which predicts 20% penetration by 2040.<br>• Assumes linear growth between predicted years; growth after 2040 reflects 2018-2040 annual growth. |
| 0.1.7 | Puget Sound Energy (PSE) emissions factors for 2011-2050 | • Actual emissions factors for 2011-2017 obtained from PSE GHG inventories.<br>• Projected emissions factors for 2018-2050 based on PSE Integrated Resource Plan $CO_2$ emissions for Base portfolio. Projections provided out to 2037, linear trend assumed after 2037 (BESI-40-04). |

| # | Forecast Variable | Assumptions |
|---|---|---|
| 0.1.8 | Vehicle emissions factors, by VMT, for 2011-2050. | • Actual emissions factors for 2011-2016 obtained from PSRC and downscaled to Bellevue (BGHG-40-01).<br>• Projected emissions factors for 2017-2050 based on PSRC likely scenario (BGHGForecast-03-03), which predicts an average MPG of passenger vehicles to be 40, a 5% reduction in heavy-duty vehicle GHG, and a 10% reduction in the carbon intensity of fuels by 2040.<br>• Assumes linear growth between predicted years; growth after 2040 reflects 2018-2040 annual growth. |

## Drive-Alone Rate / per-capita VMT

### *Business As Usual Forecast/External Assumptions:*

| # | Scope | Element | Assumptions |
|---|---|---|---|
| 2.1.1 | Community | Historical trips by mode | • Resident drive alone rate data obtained from American Community Survey 5-year average (65.9% for 2011-2015, and 64.6% for 2013-2017).<br>• Worker drive alone rate data obtained from American Community Survey 5-year average (73.4% for 2011-2015, and 72.1% for 2013-2017). |
| 2.1.2 | Community | Forecasted trips by mode | • Assumes changes in regional trips per capita are as projected by the Puget Sound Regional Council (PSRC), The Regional Transportation Plan. |
| 2.1.3 | Community | Forecasted VMT by mode | • Assumes changes in VMT per capita are as projected by the Puget Sound Regional Council (PSRC), The Regional Transportation Plan. |

### *Strategy Assumptions:*

| Action | Action Description | Assumptions |
|---|---|---|
| Transportation impact fees | Consider expanding the Transportation Impact fee program to support construction of projects to improve walking and biking, in addition to increasing capacity for motorized vehicles. | **Transit Service Expansion:**<br>• East Link Light Rail expected to reduce VMT by 20% by 2030.[3] |
| Growth Center Parking study | Study the impact of light rail on the demand for commuter and residential parking in buildings near transit stations | |

[3] https://www.soundtransit.org/sites/default/files/documents/pdf/projects/eastlink/eis_2011/04_chapter3_transportation.pdf.

| Action | Action Description | Assumptions |
|---|---|---|
| | and consider modifying the minimum parking requirements to let the market determine the appropriate amount of parking needed for new development. | **Expanding bus rapid transit (BRT):** [4]<br>• Assume 1% increase in ridership for every 1% increase in service variable (frequency, hours, miles, etc.).<br>• Assume 50% increase in service by 2050, resulting in 50% increase in ridership.<br>• Assume % transit trips doubles (from ~25% to ~50% of commuting trips), therefore reducing drive-alone trips (passenger VMT) by about 25% (but likely less due to available literature[5], so maybe closer to 15%).<br><br>**Bike Infrastructure:**<br>• 50% increase in bicycle infrastructure by 2050 results in 15% increase in number of bike trips.<br><br>• 5% reduction in VMT by 2050[6]<br><br>**Pedestrian Improvement:**<br>50% increase in the pedestrian environment by 2050 resulting in the following passenger VMT reduction:<br>• 2% by 2030<br>• 5% by 2050[7] |
| Mobility Implementation Plan | Develop a Mobility Implementation Plan that explores opportunities to decrease per capita vehicle miles traveled through prioritization and investments to support transit and non-motorized modes. | |
| Ambitious Transportation Strategy Study | Explore ambitious transportation strategies such as speed and reliability improvements for transit, accelerated completion of the pedestrian and bicycle network (see Action #36), and curbside management, to support the availability and accessibility of mobility options. | |
| Accelerate implementation of the Pedestrian and - Bicycle Transportation Plan | Increase accessibility of travel routes for people walking and bicycling through accelerating implementation of projects identified and prioritized in the Pedestrian and Bicycle Transportation Plan and the standards and guidelines recommended in the 2017 report on Multimodal Level-of-Service Standards and Guidelines. | |
| Leverage Frequent Transit Network Service | Identify locations along the frequent transit network to consider for additional housing, employment, and recreation opportunities. | |
| Commute Trip Reduction | Continue the Commute Trip Reduction program for employers and study the impact of COVID-19 on future commuting | |

[4] A literature review commissioned by the California Air Resources Board found that a 1 percent increase in service frequency will lead to a ridership increase of approximately 0.5 percent (elasticity of 0.5); a 1 percent increase in service hours or miles increases ridership by around 0.7 percent; and a 1 percent decrease in fares will lead to a 0.4 percent increase in transit ridership. However, these elasticity estimates are dependent upon city attributes such as city size, transit type, and income of transit users. Source: https://www.arb.ca.gov/cc/sb375/policies/transitservice/transit_brief.pdf.

[5] The transit service CARB study cited above notes that increased ridership doesn't always lead to a proportionate reduction in passenger vehicle trips. For example, a study in Eugene, OR found that 16% of riders previous drove or were driven.

[6] A literature review by the California Air Resources Board found studies associating a <1% increase in bicycle commuting with additional bike infrastructure (0.35% increase in % commuting by bicycle per 1% increase in bicycle infrastructure). Promotional programs were demonstrated to have a larger impact on increasing bike share miles ranging from a 100%-445% increase after programs were implemented. https://www.arb.ca.gov/cc/sb375/policies/bicycling/bicycling_brief.pdf

[7] Bellevue's current Bike/Ped Plan calls for 90 and 20 miles of sidewalk and trail facility improvements, respectively. A literature review commissioned by the California Air Resources Board noted a study based in Portland, OR that found a 1 percent increase in the quality of the pedestrian environment was associated with a 0.19 percent decrease in VMT. Overall, improving the pedestrian environment on its own has only small effects on VMT—likely smaller than the 5-10% reduction reported based on Portland's experience, which may not transfer to Bellevue.

| Action | Action Description | Assumptions |
|---|---|---|
| | patterns and associated multi-modal mobility needs. | **Telecommuting:**<br>• Assume 50% of Bellevue passenger VMT is for commuting.[8]<br>• Assumes 30% of Bellevue commuters have jobs that allow telecommuting.<br>• Assume 25% reduction in commuting passenger VMT for those who can telecommute.<br>**Carpooling:**<br>• 3% passenger vehicle VMT reduced through carpooling. |
| EV readiness | Introduce electric vehicle charging readiness requirements for new commercial, multi-family, and single-family buildings to exceed the state building code requirement. | • "Likely" passenger EV adoption as projected by PSRC "likely" scenario, 20% by 2040 (BGHGForecast-03-03). Assumes linear growth between projected years.<br>• "Aggressive" passenger EV adoption as projected by King County (25% by 2031 and 100% by 2050).<br>• Federal vehicle fuel economy wedge reflects EIA projections "reference" case (includes CAFÉ standards, and then steady thereafter).<br>• Clean Fuels Standard assumes 10% reduction in vehicle fuel carbon intensity by 10% (other 10% assumed to be achieved through EVs—see assumptions above).<br>• Introducing charging infrastructure can increase fleet-wide electrified mileage by 8% by 2050[9] |
| EV infrastructure | Provide incentives for EV charging infrastructure for existing buildings. | |
| Clean Fuel Standard | Support a regional or statewide Clean Fuel Standard to reduce emissions from transportation fuels and support funding for clean fuels. | • Estimated based on impact of proposed state Clean Fuel Standard. |

[8] Federal Highway Administration estimates that 28% of household VMT is for commuting. Assume that Bellevue is higher than this U.S. average.

[9] Levinson, Rebecca and Todd H. West (2018). Impact of public electric vehicle charging infrastructure. Journal of *Transportation Research Part D: Transport and Environment.* https://www.sciencedirect.com/science/article/pii/S136192091630757X