
PLANNING COMMISSION

Regular Meeting Agenda

Council Chambers- Mercer Island City Hall
9611 SE 36TH STREET | MERCER ISLAND, WA 98040
PHONE: 206.275.7605 | www.mercergov.org



Wednesday, May 1, 2019

Planning Commissioners

Carolyn Boatsman

Tiffin Goodman, Vice Chair

Daniel Hubbell, Chair

Jennifer Mechem

Lucia Pirzio-Biroli

Craig Reynolds

Ted Weinberg

CALL TO ORDER & ROLL CALL

7:00 PM

APPROVAL OF MINUTES

April 3, 2019

REGULAR BUSINESS

7:15 PM

Agenda Item #1: 2019 Comprehensive Plan Amendments

Introduction and preliminary discussion regarding the 2019 Comprehensive Plan Amendments.

Agenda Item #2: Critical Areas Accompany Recommendations

Discussion regarding whether the Planning Commission would like to make additional recommendations related to Critical Areas.

OTHER BUSINESS

Directors Report

Planned Absences for Future Meetings

Next Regularly Scheduled Meeting: May 15, 2019

ADJOURN

8:30 PM

PLANNING COMMISSION

MEETING MINUTES



Wednesday, April 3, 2019

CALL TO ORDER

The Planning Commission was called to order by Chair Hubbell at 6:05pm in the City Hall Council Chambers at 9611 SE 36th Street, Mercer Island, Washington.

ROLL CALL

Chair Daniel Hubbell, Vice Chair Tiffin Goodman, Commissioners, Carolyn Boatsman, Jennifer Mechem, Lucia Pirzio-Biroli, Craig Reynolds, and Ted Weinberg were present.

STAFF PRESENT

Evan Maxim, CPD Director, Andrea Larson, Senior Administrative Assistant, Robin Proebsting, Senior Planner, and Bio Park, Assistant City Attorney were present.

MEETING MINUTES APPROVAL

It was moved by Weinberg; seconded by Goodman to:

Approved the March 20, 2019 minutes

Passed as amended 7-0, scriveners' errors

REGULAR BUSINESS

Agenda Item #1: ZTR18-002 Critical Areas and Shoreline Master Program Code Amendments.

Robin Proebsting, Senior Planner, provided a presentation on the Critical Areas and Shoreline Master Program code amendments.

The PC continued their discussion of the motion that was made on March 6, 2019.

It was moved by Boatsman; seconded by Weinberg to:

Replace the term and definition fish use or used by fish with Fish Habitat

Passed 7-0

It was moved by Reynolds; seconded by Boatsman to:

Replace page 16, lines 34 – 37 with "Wetlands shall be identified, and their boundaries delineated in accordance with the approved federal delineation manual and applicable regional supplements described in WAS 173-22-035. Wetlands shall be rated according to the Washington State Rating System..."

Passed 7-0

It was moved by Boatsman; seconded by Weinberg to:

Replace, page 17 line 7, "ordinary high water" with "wetland boundary" per the Department of

Ecology recommendation.

Passed 7-0

It was moved by Boatsman; seconded by Reynolds to:

Replace, page 18 lines 30-38, to read per the Department of Ecology recommendation

Passed 7-0

It was moved by Pirzio-Biroli; seconded by Boatsman to:

Replace, page 20 line 33, to read per the Department of Ecology recommendation.

Passed 7-0

It was moved by Weinberg; seconded by Reynolds to:

Adopt Figures A & B of examples of buffer averaging and buffer setbacks as presented by Robin Proebsting, Senior Planner on pages 17 & 18 of the draft code.

Passed 7-0

It was moved by Boatsman; seconded by Weinberg to:

Adopt the comment made by ecology on page 19 of 22 line 8, to delete the remainder of the sentence after the word “measures”

It was moved by Reynolds; seconded by Boatsman to:

Development proposals shall incorporate the following measures unless the applicant can demonstrate that they will result in no net environmental benefit or they are environmentally infeasible.

Passed 6-1

Passed as amended 6-1

It was moved by Boatsman; seconded by Weinberg to:

Amend page 9 of 22 line 2-3, to delete the words after the word watercourse.

Motion was withdrawn

It was moved by Boatsman; seconded by Weinberg to:

Amend page 9 of 22 line 1 to read “if the existing legally established structure is located within a watercourse or buffer, the addition must be outside of the buffer.

Motion was withdrawn

It was moved by Reynolds; seconded by Weinberg to:

Maintain the existing language in C, and add at the end, must also be no closer to the wetland or watercourse than the existing structure.

Passed 4-3

The commission took a break until 7:41pm

It was moved by Boatsman; seconded by Weinberg to:

Insert, page 8 of 28 of CB April 3, 2019, the words significant with large or exceptional

7-0

It was moved by Boatsman; seconded by Pirzio-Biroli to:

Delete, 19.07.160, page 10 of 28 in CB April 3, 2019, frequently flooded areas

Passed 7-0

It was moved by Boatsman; seconded by Weinberg to:

Delete 19.07.180, critical aquifer recharge areas.

Passed 7-0

It was moved by Boatsman; seconded by Weinberg to:
Amend section A as presented on page 2 of 28 in CB April 3, 2019.
Passed 7-0

It was moved by Boatsman; seconded by Pirzio-Biroli to:
Replace 19.07.190, with the language proposed on page 13-14 of 28 in CB April 3, 2019, to amend to delete C2-4 of proposed language and to delete the word possible from B1f
Passed 7-0

It was moved by Boatsman; seconded by Reynolds to:
15 of 28 in CB April 3, 2019 19.07.200
Motion was withdrawn

It was moved by Boatsman; seconded by Weinberg to:
Insert a definition for biodiversity areas read "Publicly owned lands that contain habitat that is valuable to fish and wildlife and are mostly comprised of native vegetation."
Passed 7-0

It was moved by Boatsman; seconded by Reynolds to:
Change the definition of fish and wildlife habitat areas to proposed language on page 25 of 28 in CB April 3, 2019
Passed 7-0

The Commission discussed the effective date of the ordinances.

The main motion passed as amended 7-0

PLANNED ABSENCES FOR FUTURE MEETINGS

There are no planned absences.

OTHER BUSINESS

Evan Maxim, CPD Director, discussed the PSRC update

ANNOUNCEMENTS AND COMMUNICATIONS

The next Planning Commission meeting is on April 17, 2019 at 6:00PM.

ADJOURNMENT

The meeting was adjourned at 10:08pm

CITY OF MERCER ISLAND

COMMUNITY PLANNING & DEVELOPMENT

9611 SE 36TH STREET | MERCER ISLAND, WA 98040

PHONE: 206.275.7605 | www.mercergov.org



PLANNING COMMISSION

To: Planning Commission

From: Robin Proebsting, Senior Planner

Date: April 25, 2019

RE: Comprehensive Plan Amendments 2019

SUMMARY

The City Council has directed the Planning Commission to analyze, study, and make a recommendation on the Comprehensive Plan Amendments advanced in Resolution No. 1554. At its May 1, 2019 meeting, the Planning Commission will discuss this item and have the opportunity to further develop proposed policies.

BACKGROUND

Resolution No. 1554 lists topics and general policy statements for which the Planning Commission has been directed to make its recommendation on comprehensive plan amendments. New comprehensive plan policies must be consistent with existing policies and should avoid being duplicative. To assist with the process of determining the consistency between existing and proposed policies, a compilation of existing policies related to the topics listed in Resolution No. 1554 is included in Exhibit 1 to this memo.

Item 1, which proposes to remove specific Town Center subarea designations from the Land Use Element, is a straightforward technical change and would not create conflict or duplication with policies in the comprehensive plan. Staff anticipate that this item will not require much discussion on May 1st.

Item 2, pertaining to preventing and/or mitigating the impacts of climate change is a wide-ranging topic. During the Planning Commission's discussion on May 1, 2019, staff recommend focusing the scope of the comprehensive plan amendment by 1) deciding which aspect(s) of climate change the Commission would like to address (i.e. reduction of carbon emissions, adaptation to the effects of climate change etc.) and 2) how to address the selected focus. For example, the Planning Commission might choose to develop policies that would encourage land use patterns and transportation systems that generate lower carbon emissions. Alternately, the Commission might decide to focus on development patterns that encourage adaptation to a changing climate.

Item 3 is a placeholder amendment recommended by staff. The City is currently working on an assessment of economic development strategies with a student team from the University of Washington. This effort has so far not generated recommendations that would require a comprehensive plan amendment.

Item 4 is a proposal to add policy language supporting multimodal levels of service (MMLOS), a system for measuring and evaluating facilities for multiple modes of transportation. Such a system would expand the existing levels of service adopted in the comprehensive plan for automobile traffic. Staff suggest developing policies to not only support adoption of MMLOS but describe the reasons behind adopting it and the outcome the Planning Commission hopes will be achieved.

The comprehensive plan amendment should also provide policy guidance that can serve as the basis for future MMLOS standards. For example, if the primary reason for measuring multimodal transportation facilities is to identify where improvements are needed so that Island students can get to school using their transportation mode of choice, the Commission may wish to adopt a policy of prioritizing high levels of service for multiple modes around schools. If the primary reason is to encourage a shift in transportation mode away from automobiles and toward other modes in order to alleviate traffic congestion, then policies supporting a MMLOS system that prioritizes setting higher levels of service in high-congestion areas might be the preferred policy direction.

In addition to a discussion about policy development, staff will introduce a proposed approach to public participation for the Planning Commission's review at the May 1, 2019 meeting.

NEXT STEPS

Please come to the May 1, 2019 meeting prepared to discuss:

- Ideas for comprehensive plan policy direction for Items 2 and 4; and
- Information requests, if any, needed by the Planning Commission for developing policies.

EXHIBITS

1. Selected Comprehensive Plan Policies Relating to 2019 Preliminary Comprehensive Plan Docket

Selected Comprehensive Plan Policies Relating to 2019 Preliminary Comprehensive Plan Docket

Item No.2

Proposal:

Establish goals and policies to prevent and/or mitigate the impacts of climate change

Policies directly relating to proposal:

Transportation Policy 5.6: Comply with state initiatives and directives related to climate change and greenhouse gas reduction. Identify implementable actions that improve air quality, reduce air pollutants and promote clean transportation technologies.

Related policies, supporting:

1. Land Use Policy 1.1: A walkable mixed-use core should be located adjacent to a regional transit facility and be of sufficient size and intensity to create a focus for Mercer Island.
2. Land use Goal 8: Be pedestrian-friendly, with amenities, tree-lined streetscapes, wide sidewalks, storefronts with canopies, and cross-block connections that make it easy to walk around.
3. Land use policy 8.1: Provide convenient opportunities to walk throughout Town Center.
4. Land use policy 8.2: Create safe pedestrian routes that break-up larger city blocks.
5. Land Use Policy 9.2: Encourage improved access to transit, bicycle, pedestrian and shared parking facilities to reduce trip generation and provide transportation alternatives, particularly for secondary trips once users reach the Town Center.
6. Land Use Goal 10: Prioritize Town Center transportation investments that promote multi-modal access to regional transit facilities.
7. Land Use Goal 11: Promote the development of pedestrian linkages between public and private development and transit in and adjacent to the Town Center.
8. Land Use Goal 13: Town Center buildings should meet a high standard of energy efficiency and sustainable construction practices as well as exhibiting other innovative green features, above and beyond what is required by the existing Construction Code.
9. Land Use Goal 16: Achieve additional residential capacity in single family zones through flexible land use techniques and land use entitlement regulations.
10. Land Use Policy 18.9: Outreach campaigns and educational initiatives should inform residents of the collective impact of their actions on local, county, and state greenhouse gas emissions reduction goals.

11. Land Use Goal 21 and associated policies: Support of Green Building
12. Transportation Goal 3: Minimize negative transportation impacts on the environment.
13. Transportation policy 4.5: Encourage site and building design that promotes pedestrian activity, ridesharing opportunities, and the use of transit.
14. Transportation policy 4.6: Promote the development of pedestrian linkages between public and private development and transit in the Town Center District.
15. Transportation policy 6.8: Encourage transit, bicycle and pedestrian principles in the design of projects including:
 - locating structures on the site in order to facilitate transit and non-motorized travel modes;
 - placing and managing on-site parking to encourage travel by modes other than single occupant vehicles;
 - provision of convenient and attractive facilities for pedestrians and bicyclists; and
 - provision of public easements for access and linkages to pedestrian, bicycle and transit facilities.
16. Transportation policy 8.3: Work with WSDOT, King County Metro, and Sound Transit to ensure the provision of adequate Park and Ride capacity for Island residents.
Transportation goal 12 and associated policies
17. Utility Element, Electricity policy 6.7: The City shall support conservation programs undertaken by the electricity provider, and shall encourage the provider to inform residents about these programs.
18. Utility Element, Natural gas policy 7.1: The City shall promote and support conservation and emergency preparedness programs undertaken by PSE, or the current provider, and shall encourage PSE to inform residents about these programs.

Related policies, mixed bag:

1. Land Use Goal 6: Be convenient and accessible to people of all ages and abilities, including pedestrians, bicyclists, transit users and motorists.
2. Land Use policy 20.3: View preservation actions should be balanced with the efforts to preserve the community's natural vegetation and tree cover.
3. Land Use policy 4.3:
4. Support opportunities to facilitate transfers between different travel modes through strategies such as:
 - providing small park and ride facilities throughout the Island; and

- improving pedestrian access to transit with on and off road pedestrian improvements.
5. Transportation policy 9.3: Provide facilities for pedestrians and bicyclists designed in keeping with individual neighborhood characteristics.

Related policies, competing:

1. Land Use Goal 9: Have ample parking, both on-street and off, and the ability to park once and walk to a variety of retail shops.
2. Land Use Policy 9.3 Consider a range of regulatory and incentive approaches that can increase the supply of public parking in conjunction with development proposals.
3. Land Use Goal 15: Mercer Island should remain principally a low density, single family residential community.
4. Land Use Goal 17: With the exception of allowing residential development, commercial designations and permitted uses under current zoning will not change.
5. Transportation policy 6.9: Require adequate parking and other automobile facilities to meet anticipated demand generated by new development.

Gaps/potential topic areas for new policies:

1. Policy promoting a mixed of land uses, so that use of transportation modes other than driving are options
2. Policy promoting increased residential density near transit or non-motorized transportation facilities
3. Policy promoting smaller dwelling unit sizes, reducing energy needs
4. Encouraging tree retention + cover, reducing impervious surface (e.g. to increase slope stability in more extreme weather events)

Item No.3

Proposal:

Placeholder for the development of goals and policies supporting economic development on Mercer Island.

Policies directly relating to proposal:

1. Land Use Goal 14: Continue to encourage vitality through the support of economic development activities in the Town Center.
2. Land Use policy 14.1: Establish the Town Center as an active and attractive commercial node, including the use of gateways, wayfinding and signage, and links to transit.
3. Land Use policy 14.2: Maintain a diversity of downtown land uses.
4. Land Use policy 14.3: Support economic growth that accommodates Mercer Island's share of the regional employment growth target of 1,228 new jobs from 2006-2035, by maintaining adequate zoning capacity, infrastructure, and supportive economic development policies.
5. Land Use policy 14.4: Investigate formation of a business improvement area (BIA), or other mechanism authorized by state law, to help promote Island businesses, to support Town Center activities, and to finance improvements and amenities. Identify a staff person who will help coordinate economic development activities.
6. Land Use policy 14.5: Support public and private investment in existing properties, infrastructure, and marketing to help maintain longstanding businesses and attract new ones.
7. Land Use policy 14.6: Create a healthy economic environment where Town Center businesses can serve the needs of Mercer Island residents as well as draw upon broader retail and commercial market areas.

Item No.4

Proposal:

Establish goals and policies supporting the review and possible establishment of non-motorized and/or multi-modal transportation level of service.

Related policies, supporting:

Transportation policy 8.3: Work with WSDOT, King County Metro, and Sound Transit to ensure the provision of adequate Park and Ride capacity for Island residents.

Related policies, mixed bag:

Transportation policy 4.7: Promote the mobility of people and goods through a multi-modal transportation system consistent with the Pedestrian and Bicycle Facilities Plan.

Gaps/potential topic areas for new policies:

Policy to encourage shifting trip modes over time, away from SOV to non-motorized and transit

Exhibits submitted by Island Vision

MERCER ISLAND COMMUNITY CLIMATE ACTION

The City of Mercer Island began sustainability work with Resolution #1389 in 2007, which set a greenhouse gas (GHG) reduction target of 80% by 2050 in 2007. Since that time, the City has developed an inventory of GHG emissions and became a partner in the King County-Cities Climate Collaboration (K4C). Significant efforts have been made by the City to reduce fleet emissions, reduce energy use in facilities and lighting, move to green power, and manage waste more sustainably. However, there is more that we as individuals and a community can do to reduce our “carbon footprint.” We can build on what the City has begun and develop and implement our very own community wide climate action plan.

IslandVision is a non-profit 501(c)3 organization that encourages and supports sustainable practices on Mercer Island within our community, city and schools. We recently contracted with a GHG consultant, Lightstone Consulting, LLC, to provide a technical analysis to complement the government efforts in climate action planning. This effort is in alignment with IslandVision’s mission, was coordinated with City staff, and is helpful for establishing a foundation for community climate action planning.

The consultant reviewed our community greenhouse gas (GHG) emissions data and trends, made recommendations to improve the utility of the emission inventory, and suggested ways we can work together to reduce carbon and become a more sustainable community.

Key Take-Aways

- Vehicle Miles Traveled (VMT), mainly passenger vehicles, is our major GHG emission source
- Another major source of GHG emissions is energy use, electricity and gas, in homes and other buildings.
- Only 4% of emissions are from solid waste, but the tonnage of emissions is huge.
- Only 2% of emissions come from City operations; 98% come from the community of Mercer Island.

Opportunities for Improvement

- Help the City enter and track the emissions data and document the process for the carbon inventory.
- Simply and meaningfully track community emissions, costs and benefits of reduction, and assess community member adoption.
- Implement a top-down approach to measuring GHG emissions from passenger vehicles, to help in setting reduction targets and tracking our performance. For example, measure gasoline sales and electric vehicle purchases.
- Implement an inventory of building types and square footage to use in tracking energy performance with standard databases for commercial and residential energy consumption.
- Make better use of emission factors that more closely represent our actual Mercer Island energy mix.

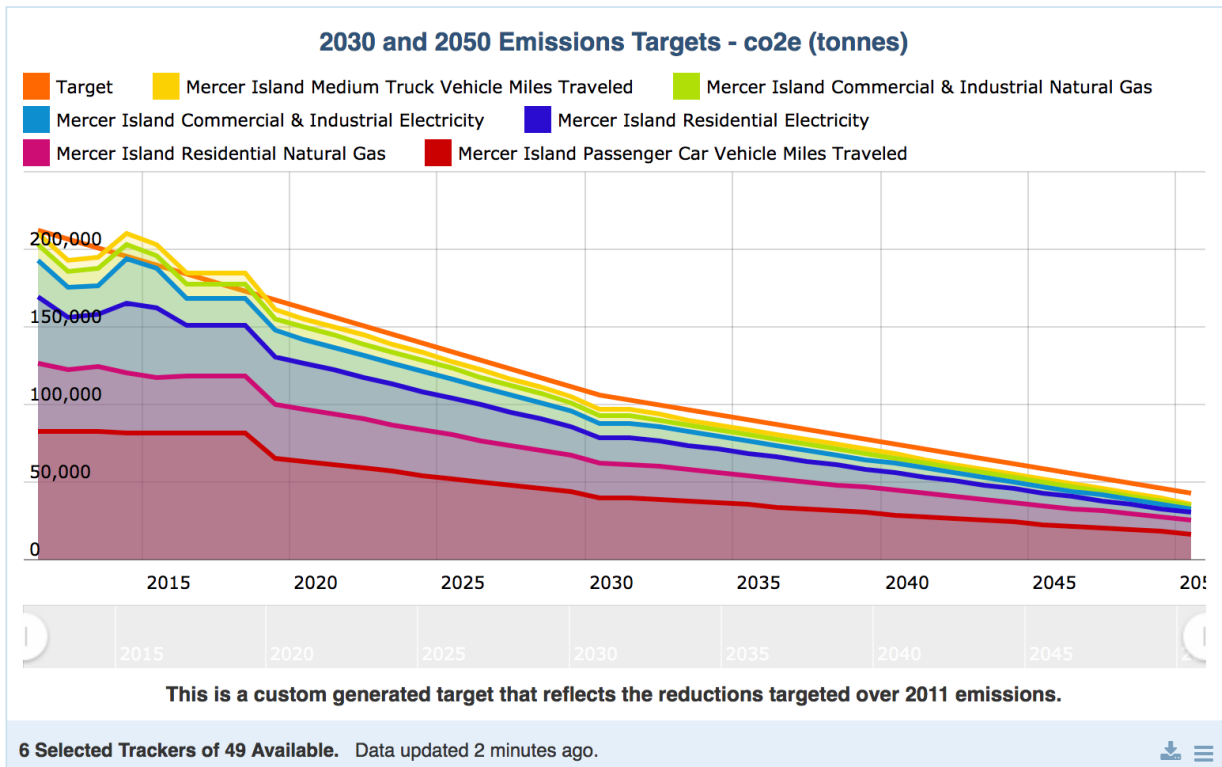
Recommendations for Carbon Reduction

- Develop standards for analyzing and tools for assessing carbon reductions to help make decisions.
- Engage and encourage community members and stakeholders to inspire projects and GHG reduction.
- Reduce emissions from passenger vehicles through multiple modes of transport, including EVs.
- Replace natural gas and oil heat with hybrid heating systems where possible; work with regional partners to end coal as a source of electricity.
- Provide input to the PSE integrated resource planning process, support the adoption of renewable energy sources and take local action including solar projects and home energy audits.
- Partner with local grocery stores, restaurants on a small-scale community bio-digester to convert organic waste into electricity and fertilizer.
- Make better use of the Scope 5 tool to manage carbon emissions for the community with scenario planning and models to forecast emission reductions.

A Carbon Reduction Pathway for Mercer Island

The chart below shows our cumulative carbon from the 6 major community emission sources. The orange “Target” line is the reduction target using 2011 as the base year. To meet the reduction goals, our cumulative emissions, or total from all these sources, should be 42,440 MtCO₂e or less by 2050, down from 203,028 in 2016.

Mercer Island 2030/50 Targets - Aspirational



Combined Report to Island Vision

GHG Emissions:
A Mercer Island Community Verification Report

And

Carbon Reduction Pathways

Gary (Wolf) Lichtenstein
Principal, Lightstone Consulting, LLC

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Introduction

As sole proprietor of Lightstone Consulting, LLC, a Washington State company, I am pleased to present this greenhouse gas (GHG) emissions and carbon reduction pathway report for Island Vision of Mercer Island. This work is conducted in response to Island Vision accepting the July 23, 2018 proposal (Appendix A).

This report addresses two areas of inquiry; an assessment of the community GHG report and a set of recommendations for focus areas, processes and activities that will be effective in reducing the Mercer Island community carbon footprint. International standards, community guidance documents and reports informed this work, as well as discussions with the Island Vision Board of Directors.

The assessment and recommendations contained in this report is to support the achievement of Mercer Island goals for carbon emission reductions. Data from the official King County benchmark of 2007 is not available. Our benchmark, or “base year” for this report is 2011. The City of Mercer Island goal, as expressed in City Resolution No. 1389 (May 7, 2007), is to reduce Mercer Island GHG Emissions by 80% in 2050.

While the 2017 values are not yet available, the 2016 emissions for the Mercer Island Community are estimated to be 203,028 MtCO₂e¹. This includes direct emissions from the combustion of natural gas, and petroleum based fuels used for transportation, and indirect emissions from electricity use on the island. Understanding the emission sources as contributors to the community’s carbon footprint, recommendations are then directed to address emission reductions from these identified sources.

Part 1 of this report is on the verification of the Mercer Island community’s carbon footprint. This includes the verification criteria, boundary assessment, scope of the verification, analysis, findings and outcomes.

Part 2 addresses recommendations for community carbon reduction.

¹ Metric tons of greenhouse gases, measured in equivalency to CO₂.

Part 1: Verification

Verification Summary

Independent third party GHG verification is a standard industry practice for GHG reporting. Verification may be mandated, or simply preferred by a GHG reporting program. A reporter interested in having greater assurance in the reported emissions also may request independent third party verification. In this circumstance, Island Vision is requesting the verification and not the reporting entity, the City of Mercer Island (City). The City voluntarily report GHG emissions in its participation with the King County Cities Climate Collaboration² (K4C). The GHG emissions from city operations and from the community at large are included in this public disclosure³. The City data is housed in the Scope 5 software service, with its publically accessible dashboard.

The typical rigor involved in third party verification requires a detailed review of records, reporting processes and in-person assessments of the reporting entity's operations. Given the resources available for this effort, it was not possible to directly interview and assess the data and processes used by the City for its GHG report. However, access was given to the data account, allowing for a limited data review and strategic assessment. The sources of data were provided, while the data records were not. Data records can include reports, invoices or other documents used to build the annual GHG emissions report.

Sufficient information is available to conduct a high level assessment of the GHG sources that contribute to the community's carbon footprint. It was found that the major GHG emissions contributors are the Vehicle Miles Traveled (VMT) attributed to Mercer Island, and the emissions from energy use in the homes and businesses located on the island. Minor sources of emissions and the savings in emissions from sustainable activities also are considered as part of the technical review.

Verification Criteria

- Global Protocol for Community-Scale Greenhouse Gas Emissions Inventories: An Accounting and Reporting Standard for Cities⁴ (2014) by the Greenhouse Gas Protocol

This guidance document results from a collaboration between the World Resources Institute, C40 Cities Climate Leadership Group, and ICLEI – Local Governments for Sustainability. It provides guidance on boundaries, calculation methodologies and many other areas of consideration for a community-wide GHG emissions report. Other standards and references include:

- The International Standards Organization (ISO) 14064 part 3: Specification with guidance for the validation and verification of greenhouse gas assertions

² <https://www.kingcounty.gov/services/environment/climate/strategies/k4c.aspx>

³ <https://k4c.scope5.com/dashboards/11>

⁴ <https://ghgprotocol.org/greenhouse-gas-protocol-accounting-reporting-standard-cities>

- The King County 2015 Strategic Climate Action Plan (SCAP) and its update, the King County Strategic Climate Action Plan 2017 Biennial Report (June 2018)

Technical Review

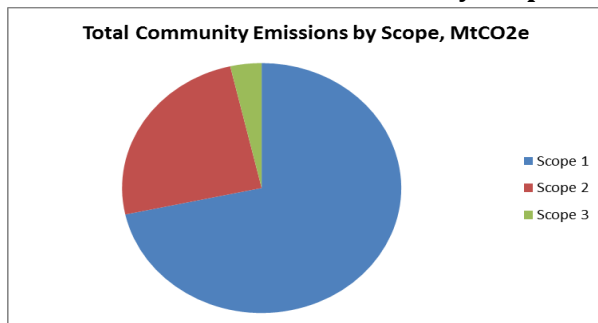
The analysis of the data shows that the major GHG emission sources from the Mercer Island community are Vehicle Miles Traveled (VMT), mainly passenger vehicles. The other major sources are from electricity and natural gas use in residential and commercial buildings. Four percent of the total emissions reported for the Mercer Island community are from activities outside the physical boundary of Mercer Island.

Greenhouse gas emissions are categorized by Scope. Scope 1 accounts for direct emissions from combustion or other sources within the reporting boundary. Scope 2 emissions are indirect, resulting from the consumption of electricity generated by combustion of fossil fuels outside the reporting boundary. Scope 3 emissions are from activities outside the Mercer Island reporting boundary, such as waste treatment by King County. Table and Chart 1 show the contributions to the total community footprint by Scope.

Table 1. Emissions Contribution by Scope (2016)

<u>GHG Scope</u>	<u>MtCO2e</u>	<u>%</u>
Scope 1	145,377	72%
Scope 2	50,300	25%
Scope 3	7,351	4%
Total GHG	203,028	

Chart 1. Emissions Contribution by Scope

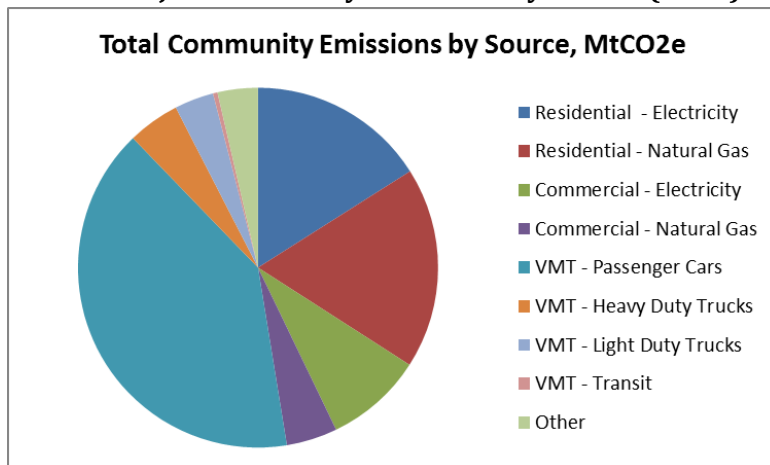


To further visualize the emissions profile, Table 2 and Chart 2 shows the totals from the major community GHG emission sources.

Table 2. Emissions Contribution by Source (2016)

Source	Scope	MtCO2e	% Total
Residential - Electricity	2	32,500	16%
Residential - Natural Gas	1	36,700	18%
Commercial - Electricity	2	17,800	9%
Commercial - Natural Gas	1	9,310	5%
Vehicle Miles Traveled (VMT) - Passenger Cars	1	81,900	40%
VMT - Heavy Duty Trucks	1	9,490	5%
VMT - Medium Duty Trucks	1	7,140	4%
VMT - Transit	1	837	0%
Other	3	7,351	4%
Total		203,028	

Chart 2. Major Community Emissions by Source (2016)



The major GHG contributions are from passenger car travel and from building energy consumption. These reported emissions are of the most concern, as the largest overall contributors.

The Mercer Island Community data is telling, as it indicates relative amounts of emissions that results from specific types of activities. Yet, full access to data and the responsible personnel are required when conducting third party verification. This was not available for the technical review. The sources of data are provided by the City of Mercer Island and those sources are reasonable. There is no reason to doubt the accuracy of the Mercer Island Community reported emission values. There are also references and resources listed in Scope 5 that are informative and are helpful with this limited analysis. Given the general criteria for verification, including a review of at least

some raw data (invoices, etc.), ISO 14064 part 3 requires other specific verification activities that should be conducted for this assessment. These include the verification of the following:

- management of the GHG data and information
- processes for collecting, processing, consolidating and reporting GHG data and information
- systems and processes that ensure the accuracy of the GHG data and information
- design and maintenance of the GHG information system
- systems and processes that support the GHG information system

A methodology or guidance⁵ document employed by the City to report the community emissions was not in evidence. This together with no access to key City personnel in order to conduct interviews, it is not possible to assess the completeness of the GHG inventory.

An example of an unverified concern is home heating oil use. This potential emission source is not accounted for in the inventory. It is unclear if this is an oversight, or older home oil furnaces are no longer in use on the island. Despite that verification cannot be completed at this time, recommendations to strengthen the emissions report are provided as Opportunities for Improvement (OFI).

Verification Recommendations

OFI 1:

- a. It is recommended that the methodology used to determine the Vehicle Miles Traveled (VMT) be well documented, including the identification of a peer review/oversite process by City of Mercer Island. The VMT data source is shown to be “via City Bellevue”, and there is no evidence of an oversight process conducted by the City of Mercer Island. The Puget Sound Regional Council (PSRC) Models and Modeling⁶ is referenced in Scope 5. The PSRC website on VMT⁷ has limited data aggregated at the county level. It is unclear how the VMT data set is developed and how it has been apportioned to Mercer Island. It is recommended by the GHG Protocol⁸ that the ASIF framework be employed for VMT estimates.
- b. It is recommended that a complementary, top-down approach using fuel consumption (via gas station records) as a proxy for travel behavior be implemented. In the top-down approach, emissions will be the result of the amount of fuel purchased on the island, multiplied by the GHG emission factors for each fuel type (gasoline and diesel). This can be a transparent and quantitatively verifiable approach. This top-down approach will serve to

⁵ A GHG management system is a set of procedures that a reporter uses to guide GHG reporting, supporting year to year consistency.

⁶ <https://www.psrc.org/whats-happening/topic/models-and-modeling>

⁷ <https://www.psrc.org/vehicle-miles-traveled>

⁸ Global Protocol for Community-Scale Greenhouse Gas Emission Inventories; section 7 Calculation on-road transportation emissions

confirm the bottom-up approach of the ASIF framework or any other modeling methodology employed to calculate VMT. The top-down approach is recommended by the GHG protocol⁹.

OFI 2:

It is recommended that along with the data sources identified as “By request from PSE” be available for review, additional information on the size of the built environment (total building square ft.) be gathered. An aggregation of the energy use by building type, and square footage can provide valuable information. The inventory of building types and square footage on Mercer Island can be compared with standard databases, such as CBECS¹⁰ for commercial buildings and RECS¹¹ for residential space energy consumption.

OFI 3:

It is recommended that a market-based electricity value be reported by the City, along with the location-based value that is currently being reported. The details on the current recommended reporting for electricity can be found in the GHG Protocol guidance document for Scope 2. The location-based reporting properly uses the EPA eGrid emission factor for our region. The market-based value will make use of the provider specific emission factor that more closely represents the actual energy mix (coal, natural gas, RE)¹² used to generate the electricity consumed on Mercer Island.

Part 2: Carbon Reduction Strategies

The carbon reduction strategy is in two sections; summary and analysis of part 1, and recommendations for carbon reduction.

Summary and Analysis of Part 1

The technical review has identified that the sources of concern are Vehicle Miles Traveled (VMT), Electricity and Natural Gas. The largest source is VMT, with passenger cars owning the lion’s share of those mobile GHG emissions. Commercial and residential electricity, and natural gas usage on the Island are also major contributors. Puget Sound Energy (PSE) supplies all the electricity and natural gas to the island.

The technical review identified weaknesses in the data. OFI 1 identified weakness in the VMT data, as the methodology is not transparent. An example of one such weakness, is in the calculation of Heavy Trucks. Given that there are no significant warehouse or shipping (fueling) operations originating on Mercer Island, and pass-through trips are not typically included in VMT calculations,

⁹ Ibid

¹⁰ <https://www.eia.gov/consumption/commercial/>

¹¹ <https://www.eia.gov/consumption/residential/>

¹² Global Protocol for Community-Scale Greenhouse Gas Emissions Inventories; section 6.5.1 Location-based and market-based calculation methods

it is unclear how VMT from heavy trucks are determined, aside medium duty trucks that are used for local delivery on the island. The priority and majority sources addressed in this report include:

- Residential - Electricity
- Residential - Natural Gas
- Commercial - Electricity
- Commercial - Natural Gas
- VMT - Passenger Cars
- VMT - Medium Duty Trucks

The goal stated by the City of Mercer Island is a reduction in community GHG emissions of 50% by 2030, and a further reduction to 80% of the 2007 base year¹³. This means reducing fossil fuel use in VMT, natural gas and in the electricity supply correspondingly as much. The required reductions from 2011 through 2050 are visualized in Chart 3, a wedge chart showing comparable emission reductions across these six major sources. The first year with data, 2011, is the de facto base year, when emissions reporting started.

Chart 3: Carbon Reduction Pathway for the Mercer Island Community

Mercer Island 2030/50 Targets - Aspirational

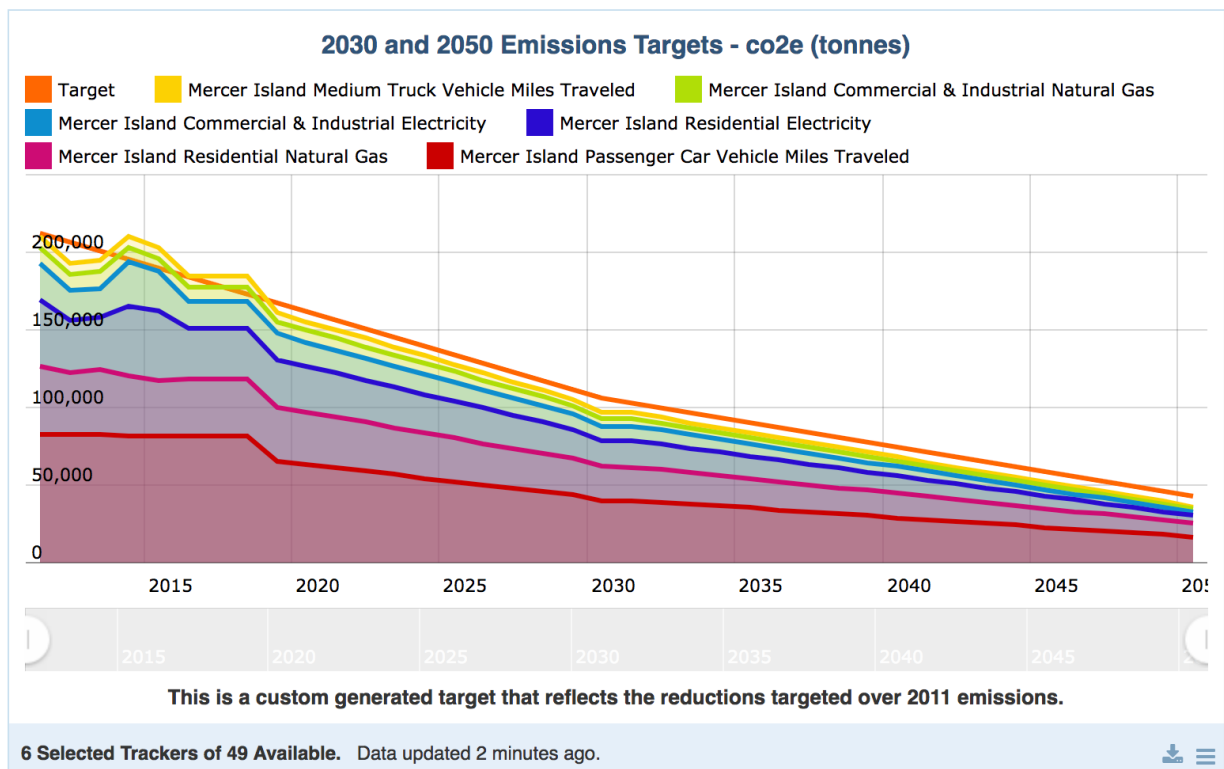


Chart 3 stacks each emission type on the next for each source type using 2011 as the base year. The x-axis shows dates from 2011 through 2050, and the y-axis as MtCO₂e. The Target line in

¹³ City of Mercer Island Resolution No. 1389 (May, 7, 2007)

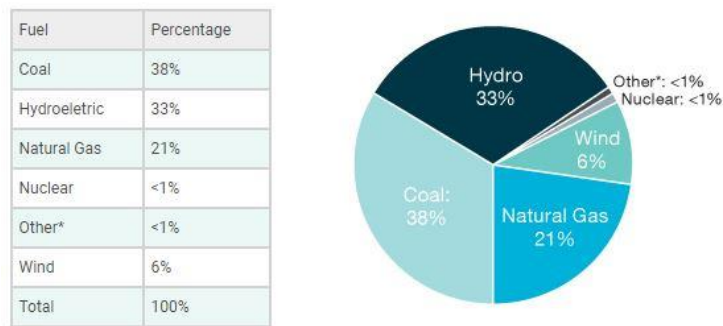
represents the cumulative reduction target the six major community emission sources. The area underneath any one line indicates that sources contribution to the total. By 2050 the total of all these sources should be 42,440 MtCO₂e to meet the King County goal. This pathway to 80% reductions are to be monitored against the actual reported emissions over time through 2050.

The different emission sources have different qualities and therefore different strategies for reduction. Natural gas usage on the island represents direct emissions as stationary combustion. VMT for passenger cars represents mobile fossil fuel (gas and diesel) combustion. Electricity, a Scope 2 emission source, is derived from diverse energy sources that include coal and natural gas. The 2017 PSE electricity report card¹⁴ shows that the majority of PSE’s electric supply is from these fossil fuels (*Fig. 1*).

2017 Electricity Fuel Mix

Diverse resources powering your home and business

The electricity generated for you uses a diverse mix of resources. The PSE fuel mix for electricity delivered to customers in 2016 is detailed in the chart and graph below



* Biomass, non-biogenic and petroleum .

Source: Published by the Washington Department of Commerce, October 2017, with data reported by PSE in August 2017.

Fig. 1 PSE emission source for electricity production shows 59% from fossil fuel sources

Successful reduction strategies will have to consider the PSE plan for fossil fuel reduction in its electricity supply. If coal and natural gas continue to be a significant contributor to electricity generation consumed on Mercer Island, then any reduction strategy that calls for increased electricity usage needs to acknowledge the fossil fuel consumption embedded in the electricity.

Recommendations for Carbon Reductions

Reduction strategies address the main emission source outlined in Chart 3. For each recommendation, a careful analysis of costs, expected reductions, likelihood of being adopted by the

¹⁴ <https://www.pse.com/pages/energy-supply/electric-supply>

community, and other relevant factors need to be considered. The recommendations below are either general strategies for community engagement, or specific tactics to lower emissions for a particular source.

Recommendation 1:

It is recommended that a standard system of vetting, analyzing and scoring carbon reduction activities be developed. Metrics used for decision-making can include potential amount of reductions, costs, technical barriers, financial barriers, social barriers (community acceptance and participation), legal requirements, organizational challenges and interactions with existing community assets. In general, decisions have to be made that considers if the carbon saved is worth the time and investment, or is there a better path to GHG reductions. The decision matrix can be applied to all six main emission source areas identified above. A standard assessment approach, using assessment tools provides for objectivity and fairness in decision-making. A matrix of potential and ongoing programs that shows program costs (projected or actual), emissions reductions, and an assessment of adoption by community members will be informative to community leadership, government, business owners and residents.

Recommendation 2:

It is recommended that community engagement be a key component to emissions reductions. Project funding, budget restraints, appropriate expertise, community and stakeholder engagement, education and employment opportunities are all likely needs and outcomes of carbon reduction projects. Formalizing the leadership teams and organizational structures will help provide the Mercer Island community with opportunities to reduce GHG emissions. The Rocky Mountain Institute (RMI) has published a valuable guidance document, the [Community Energy Resource Guide](#)¹⁵. RMI has provided guidance for the development of a planning structure, engaging leadership and community stakeholders. RMI also describes structures, tools, and shares inspiration for a variety of energy efficiency and renewable energy projects that communities can champion.

Recommendations 1 and 2 are integral to a framework of decision-making that supports the following recommendations.

Recommendation 3 (VMT reductions):

It is recommended that the Mercer Island community consider a variety of modes to reduce emissions from passenger vehicles. There is no a single strategy, but a combination of strategies that can mitigate this mobile emission source. While it is unclear how the City has calculated VMT, the activity includes travel that originates and/or terminates on Mercer Island. As shown (Chart 3), passenger vehicle travel is the main source of VMT emissions.

¹⁵ www.rmi.org/community_energy_guide

Mercer Island is a stop for Metro and Sound Transit. Local bus service is complimented with park and rides, with more options of getting on mass transit at the North end of the island. The City of Mercer Island states on their website that the full East Link route will open in 2023, connecting Mercer Island via light rail to Capitol Hill, Downtown Seattle and the University of Washington. This link will also allow for efficient transit to the fast-growing communities of Bellevue and Redmond¹⁶.

The last mile problem, the issue of getting residents to public transit, will become a more acute problem as light rail attracts ridership. Park and ride parking spots are limited resulting in the challenge of getting Mercer Island residents to mass transit. The concept of a dockless shared bike rental service already has been piloted on Mercer Island¹⁷ and there are other companies entering this space. One tactic is to fund the promotion of existing ride share options (TripPool¹⁸, rideshare online¹⁹, wheel options²⁰) and bike share options (LimeBike²¹ and Uber²²) as ways to combat climate change. It will be important to attract bike share options to Mercer Island, which will be connected to ridership. Bike trails can be promoted through maps and other local marketing efforts.

It is further recommended that a task group form with City government, transit, community, business representation and other stakeholders to study local ridership options. In an ongoing basis, the task group will monitor programs to lower VMT from passenger vehicles, and provide input on where and how to best promote low carbon options. The task group will gear up the Mercer Island community to the 2023 launch of light rail. Effective “last mile” promotion efforts will maximize the number of people getting out of their passenger cars to get around Seattle, Mercer Island and the region

***Note:** The sophistication of measuring GHGs from VMT will have to be commensurate with the changing transit modalities.*

Recommendation 4 (VMT reductions): Electric vehicles (EV) offer a low carbon intensity transportation option, dependent on the energy mix of the supplied electricity (*Fig 1*). Washington State has a goal of registering 50,000 plug-in electric vehicles by 2020²³. It is recommended that the VMT modeling for Mercer Island break out EV’s, when appropriate, as these types of vehicles do not contribute to climate change as standard fueled vehicles do. Sufficient charging stations in commercial districts and a program of neighborhood charging stations may be developed. This can support the growth of EVs (and be co-configured for electric bikes). Mercer Island can lead this effort by registering EV owners and assessing the needs of EV owners as a stakeholder group.

¹⁶ <http://www.mercergov.org/Page.asp?NavID=3036>

¹⁷ <http://www.mercergov.org/Page.asp?NavID=3274>

¹⁸ <https://kingcounty.gov/depts/transportation/metro/travel-options/rideshare/programs/trippool.aspx>

¹⁹ <https://kingcounty.gov/depts/transportation/metro/travel-options/rideshare.aspx>

²⁰ <https://www.kingcounty.gov/depts/transportation/commute-solutions/Marketingtools/Wheeloptions.aspx>

²¹ <https://www.li.me/>

²² <https://www.seattletimes.com/seattle-news/transportation/uber-launching-seattle-bike-share-monday/>

²³ <https://www.commerce.wa.gov/growing-the-economy/energy/electric-vehicles/>

Recommendation 5 (natural gas reductions): It is recommended that natural gas use for heating in residential and commercial buildings be replaced with a “hybrid heating” systems when possible. A hybrid heating system geared towards sustainability includes radiant heating panels and heat pumps. These devices rely on electricity, and not on the direct combustion of natural gas. The overall success of efficient heating by electricity will be mitigated by the fossil fuel consumption for electricity generation (*Fig. 1*). Complementary to heating system upgrades is sufficient building insulation. Getting a free home energy assessment from PSE²⁴ is a great first step.

Recommendation 6 (reductions in emissions from electricity): It is recommended that the Mercer Island community work as a strong voice providing input to the Puget Sound Energy integrated resource planning process²⁵. The Mercer Island community can also work directly with King County and City government to join the efforts to meet the King County adopted reductions goal of supplying renewable energy for 90% of county-wide needs for all residents²⁶. The King County Renewable Electricity Transition Pathways (July 2018) emphasizes that local and voluntary actions will play an important part in achieving this King County goal.

Local action can include community solar projects, LED lighting everywhere, community organized outreach for PSA home energy audits, local “community sustainability hero” award programs, and other imaginative scenarios to raise awareness to motivate public engagement and community action.

Recommendation 7 (Community waste management): It is recommended that a partnership of local grocery stores, restaurants and residents investigate locating a small-scale community bio-digester that converts organic waste into electricity. Impact Bioenergy²⁷, a local company, provides community waste to energy solutions that can be sized to fit a community’s needs. Digesters also provide solid fertilizer and nutrient rich “Organic Compost Tea” that can be an enhancement to local gardeners or commercial produce growers. Such a device located at a school, grocery store, or other community accessible location serves multiple functions – not the least of which is education on sustainable low carbon systems.

Recommendation 8 (GHG Management for the Community): It is recommended that Mercer Island make better use of their investment in Scope 5, the Sustainability Management Software deployed to store, archive and report GHG emission measurement outcomes. Scope 5 already hosts a City of Mercer Island Sustainability Dashboard²⁸ providing information about the current Mercer Island emissions profile. Scope 5 also has the ability to model forecasts of emissions reductions and integrate scenario planning. Scenario planning includes the modeling of carbon reduction projects

²⁴ https://www.pse.com/rebates/home-energy-assessment?utm_source=sem&utm_campaign=energyassessment&utm_term=save%20energy&utm_medium=cpc&utm_content=hea&gclid=EAIaIQobChMIrY-z863k3glVohx9Ch1ObgGPEAAAYASAAEgJLyPD_BwE

²⁵ <https://www.pse.com/pages/energy-supply/resource-planning>

²⁶ [King County Renewable Electricity Transition Pathways: Prepared for King County \(July 2018\);](#)

²⁷ <http://impactbioenergy.com/>

²⁸ <https://k4c.scope5.com/dashboards/11>

against forecasts of emissions. The Mercer Island dashboard powered by Scope 5 does show A Look into the Future (Fig. 2)²⁹ which does not look promising if Business as Usual continues unimpeded.

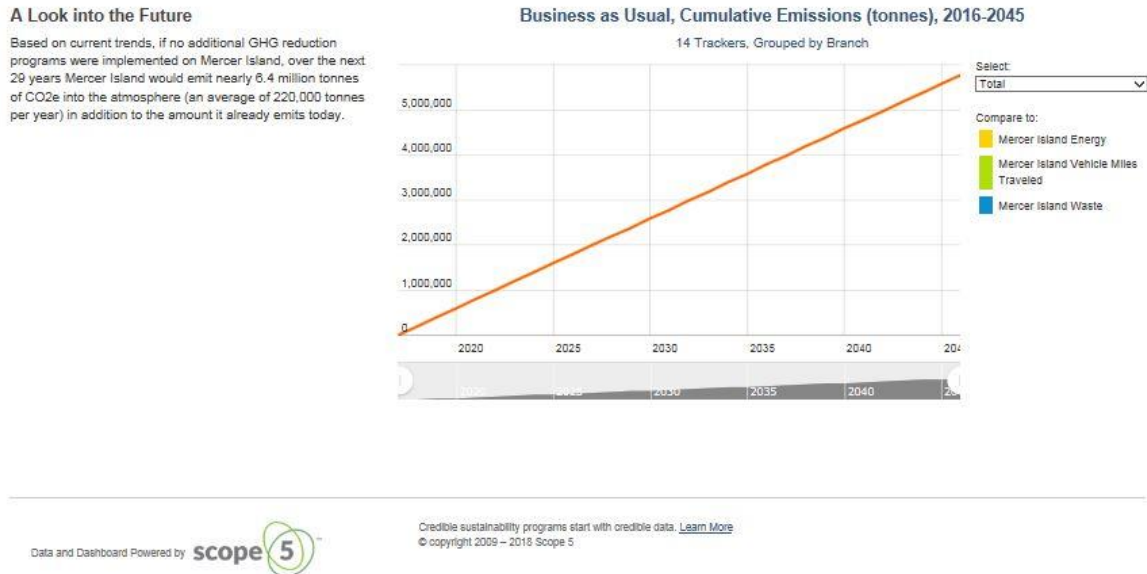


Fig. 2: Emissions Growth under Business as Usual

Conclusion:

Shown above (Fig. 2), business as usual cannot continue, if we are to meet the climate action goals set by the City and by King County. Action has to be taken voluntarily in our households and in our communities to find a new level of sustainability in our collective low-carbon future. Policy implemented at the City, County and State level is further complemented by community action. The recommendations presented here are only a sampling of potential solutions.

The foundation that Island Vision has created in holding discussions, creating community actions and working with City officials has set the stage for greater action and engagement. Recommendation 1 and 2 are the most critical of all the suggestions and analysis of this report. Formalizing the structures for change, building the container for others to enter and engage is important.

A multi-disciplined approach can be undertaken for any one recommendation to determine the cost of implementation and ownership. Cost can be accounted for in dollars and volunteer time, etc. Community engagement takes time and persistence, but a community educated on the issues, and having opportunities to participate will create the momentum necessary for real change.

²⁹ <https://k4c.scope5.com/pages/63>

"Never doubt that a small group of thoughtful, committed citizens can change the world. Indeed, it is the only thing that ever has."

-- Margaret Mead



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Wolf's Bio



Gary (Wolf) Lichtenstein is the principal of Lightstone Consulting, LLC. He is a greenhouse gas (GHG) accounting expert, developing greenhouse gas inventories, conducting third party GHG verification and helping organizations with their GHG management and mitigation efforts. Wolf is also a practitioner of community engagement, helping communities to better understand their role in GHG pollution and mitigation scenarios. With a passion for the achievement of sustainable development goals, Wolf also brokers carbon credit sales in the U.S. and internationally with carbon projects that meet these goals with his business service, Evergreen Carbon.