Monitoring Framework

July 23, 2020 – Steering Committee Review

Overview

The final piece of the Thurston Climate Mitigation Plan is a monitoring framework to gauge accountability and track progress toward achieving the regional greenhouse gas emission targets.

Methodology

The monitoring framework includes three components:

- A Greenhouse Gas Emissions Inventory – The emissions inventory uses local data to estimate the relative contribution of emissions from different sectors, including energy in buildings, transportation, agriculture, and solid waste. Since 2010, the Thurston Climate Action Team (TCAT) has estimated annual community-wide greenhouse gas emissions within Thurston County using a nationally recognized protocol developed by the International Council of Local Environmental Initiatives (ICLEI). TCAT's 2018 Inventory was used as the information foundation for the scenario analysis.

- Key Performance Indicators – quantitative metrics that indicate progress towards the goals and strategies of the plan. The key performance indicators include inputs to the Greenhouse Gas Emissions Inventory (ex., kilowatt hours of residential energy consumption), outputs from the Greenhouse Gas Emissions Inventory (ex., tons of greenhouse gas emissions from residential energy use), and supplemental indicators that address factors outside the emissions inventory (ex., number of public electric vehicle charging stations). Each indicator has a baseline value for the year 2010, and will have target values for 2030 and 2050 that can be used to track progress.

- Action Progress – qualitative updates on the status of individual actions included in the plan.

Reporting

One of the guiding principles identified at the start of the planning process was:

> ***Adaptive.*** *Consider both the short- and long-term impacts of climate change, regularly report on progress, and review and revise targets and approaches as needed to address emerging information about the timing and severity of climate impacts or the effectiveness of policies;*

As part of the Implementation of the Thurston Climate Mitigation Plan, reporting and revisions are recommended on the following schedule:

Annually

- Greenhouse Gas Emissions Inventory
- Key Performance Indicators – note: some indicators may be updated less frequently depending on data availability, aiming for every 3-5 years at a minimum.
- Priority Actions

Every 2 Years

- Minor updates to actions; set priority actions for next two-year cycle

Every 4-5 Years

- Substantial updates to strategies and actions

Every 8-10 Years

- Full review and update of the Thurston Climate Mitigation Plan

The Monitoring Program is anticipated to be managed by Thurston Regional Planning Council, or other entity identified in a Phase 3 Interlocal Agreement, with support from participating jurisdictions. Monitoring progress reports are anticipated to be presented to a future iteration of the Steering Committee, or other entity identified in a Phase 3 Interlocal Agreement, and communicated through an online dashboard viewable to the public.

Attachment:

- Draft Key Performance Indicators

Reporting Year (enter the current year):	2020

Focus Area	Strategies	KPI ID	KPI	Category
Agriculture & Forests	Manage forests to sequester carbon.	AF1	Annual tree sequestration (MTCO2e)	Supplemental
Agriculture & Forests	Reduce emissions from agricultural practices.	AF2	Land fertilization (acres)	GHG Inventory Input
Agriculture & Forests	Reduce emissions from agricultural practices.	AF3	Animal farming (# of heads)	GHG Inventory Input
Agriculture & Forests	Reduce emissions from agricultural practices.	AF4	Agriculture GHG emissions (MTCO2e)	GHG Inventory Output
Agriculture & Forests	Reduce emissions from the urban landscape.	AF5	Percent tree canopy cover	Supplemental
Buildings & Energy	Convert to cleaner fuel sources.	BE1	Total residential natural gas consumption (MMBtu)	GHG Inventory Input
Buildings & Energy	Convert to cleaner fuel sources.	BE2	Per-household residential natural gas consumption (MMBtu/household)	GHG Inventory Input
Buildings & Energy	Convert to cleaner fuel sources.	BE2	Residential fuel oil consumption (households)	GHG Inventory Input
Buildings & Energy	Convert to cleaner fuel sources.	BE4	Residential LPG consumption (households)	GHG Inventory Input
Buildings & Energy	Convert to cleaner fuel sources.	BE5	Residential wood consumption (households)	GHG Inventory Input
Buildings & Energy	Convert to cleaner fuel sources.	BE6	Industrial natural gas consumption (MMBtu)	GHG Inventory Input
Buildings & Energy	Convert to cleaner fuel sources.	BE7	Commercial natural gas consumption (MMBtu)	GHG Inventory Input
Buildings & Energy	Convert to cleaner fuel sources.	BE8	Commercial natural gas GHG emissions (MTCO2e)	GHG Inventory Output
Buildings & Energy	Convert to cleaner fuel sources.	BE9	Industrial natural gas GHG emissions (MTCO2e)	GHG Inventory Output
Buildings & Energy	Convert to cleaner fuel sources.	BE10	Residential electricity GHG emissions (MTCO2e)	GHG Inventory Output
Buildings & Energy	Convert to cleaner fuel sources.	BE11	Residential natural gas GHG emissions	GHG Inventory Output
Buildings & Energy	Convert to cleaner fuel sources.	BE12	Residential fuel oil GHG emissions (MTCO2e)	GHG Inventory Output
Buildings & Energy	Convert to cleaner fuel sources.	BE13	Residential LPG GHG emissions (MTCO2e)	GHG Inventory Output
Buildings & Energy	Convert to cleaner fuel sources.	BE14	Residential wood GHG emissions (MTCO2e)	GHG Inventory Output
Buildings & Energy	Convert to cleaner fuel sources.	BE15	Total natural gas consumption (MMBtu)	GHG Inventory Input
Buildings & Energy	Convert to cleaner fuel sources.	BE16	Proportion of housing units with electric heating (%)	Supplemental
Buildings & Energy	Convert to cleaner fuel sources.	BE17	Total building energy GHG emissions (MTCO2e)	GHG Inventory Output
Buildings & Energy	Convert to cleaner fuel sources.	BE18	Electricity emissions factor (MTCO2e/MWh)	GHG Inventory Input
Buildings & Energy	Convert to cleaner fuel sources.	BE19	Local green power purchases (kWh)	Supplemental
Buildings & Energy	Increase the production of local renewable energy.	BE20	Renewable electricity (% of total)	Supplemental
Buildings & Energy	Increase the production of local renewable energy.	BE21	Grid-supplied renewable electricity (MWh)	Supplemental
Buildings & Energy	Increase the production of local renewable energy.	BE22	Estimated local solar installations (#)	Supplemental
Buildings & Energy	Reduce energy use across building types.	BE23	Commercial electricity consumption (kWh)	GHG Inventory Input
Buildings & Energy	Reduce energy use across building types.	BE24	Per-sf commercial electricity consumption (kWh/sf)	GHG Inventory Input
Buildings & Energy	Reduce energy use across building types.	BE25	Commercial electricity GHG emissions (MTCO2e)	GHG Inventory Output
Buildings & Energy	Reduce energy use across building types.	BE26	Industrial electricity consumption (MWh)	GHG Inventory Input
Buildings & Energy	Reduce energy use across building types.	BE27	Industrial electricity GHG emissions (MTCO2e)	GHG Inventory Output
Buildings & Energy	Reduce energy use across building types.	BE28	Total energy consumption (MMBtu)	GHG Inventory Input
Buildings & Energy	Reduce energy use across building types.	BE29	Per-sf commercial energy use (MMBtu/sf)	GHG Inventory Input
Buildings & Energy	Reduce energy use across building types.	BE30	Energy-efficient buildings (# LEED certified)	Supplemental
Buildings & Energy	Reduce energy use across building types.	BE31	Percent of population with disproportionate energy/housing costs as a percentage of household income	
Buildings & Energy	Reduce energy use in residential buildings.	BE32	Residential electricity consumption (KWh/household)	GHG Inventory Input
Buildings & Energy	Reduce energy use in residential buildings.	BE33	Residential energy use per capita (MMBtu/household)	GHG Inventory Input
Cross-Cutting	Conduct education and outreach across climate mitigation areas.	CC1	Community participation in TCMP events (# attendees)	Supplemental
Cross-Cutting	Enhance monitoring and evaluation of climate mitigation measures and outcomes.	CC2	Percent of actions that are completed or underway	Supplemental

Cross-Cutting	Enhance monitoring and evaluation of climate mitigation measures and outcomes.	CC3	New, local green jobs created, by demographic group (% or # , by demographic)	
Transportation & Land Use	Increase adoption of electric vehicles.	TL1	Proportion of passenger vehicles that are electric (%)	GHG Inventory Input
Transportation & Land Use	Increase adoption of electric vehicles.	TL2	Electric vehicles (# registered)	GHG Inventory Input
Transportation & Land Use	Increase adoption of electric vehicles.	TL3	Number of public EV charging spots (#)	Supplemental
Transportation & Land Use	Increase efficiency of the transportation system.	TL4	Passenger/light duty vehicle carbon intensity (gCO_2e/mi)	GHG Inventory Input
Transportation & Land Use	Increase efficiency of the transportation system.	TL5	Passenger/light duty vehicle GHG emissions ($MTCO_2e$)	GHG Inventory Output
Transportation & Land Use	Increase efficiency of the transportation system.	TL6	Medium- & heavy-duty truck emission intensity (gCO_2e/mi)	GHG Inventory Input
Transportation & Land Use	Increase efficiency of the transportation system.	TL7	Medium- & heavy-duty truck GHG emissions ($MTCO_2e$)	GHG Inventory Output
Transportation & Land Use	Increase efficiency of the transportation system.	TL8	Transportation GHG emissions ($MTCO_2e$)	GHG Inventory Output
Transportation & Land Use	Increase the use of public transit.	TL9	Percent of population within 1/2 mile of transit	
Transportation & Land Use	Increase the use of public transit.	TL10	Public transit ridership (passenger boardings)	Supplemental
Transportation & Land Use	Increase the use of public transit.	TL11	AllTransit Performance Score	Supplemental
Transportation & Land Use	Increase the use of public transit.	TL12	Percent of residents who live within 1/2 mile of public transit	Supplemental
Transportation & Land Use	Increase use of active forms of travel and more efficient commute modes.	TL13	Median household transportation costs as a percentage of median household income	Supplemental
Transportation & Land Use	Increase use of active forms of travel and more efficient commute modes.	TL14	Bike lanes (miles)	Supplemental
Transportation & Land Use	Increase use of active forms of travel and more efficient commute modes.	TL15	Sidewalks (miles)	Supplemental
Transportation & Land Use	Increase use of active forms of travel and more efficient commute modes.	TL16	Number of personal vehicles per capita	Supplemental
Transportation & Land Use	Increase use of active forms of travel and more efficient commute modes.	TL17	Percent of residents who commute to work by bike	Supplemental
Transportation & Land Use	Increase use of active forms of travel and more efficient commute modes.	TL18	Average Walk Score in Thurston County (out of 100)	Supplemental
Transportation & Land Use	Increase use of active forms of travel and more efficient commute modes.	TL19	Average Bike Score in Thurston County (out of 100)	Supplemental
Transportation & Land Use	Set land use policies that support increased density and efficient transportation networks.	TL20	Passenger/light-duty vehicle use (VMT)	GHG Inventory Input
Transportation & Land Use	Set land use policies that support increased density and efficient transportation networks.	TL21	Medium- & heavy-duty truck use (VMT)	GHG Inventory Input
Transportation & Land Use	Set land use policies that support increased density and efficient transportation networks.	TL22	Total vehicle miles traveled (VMT) in Thurston	GHG Inventory Input
Water & Waste	Divert more solid waste from landfills.	WW1	Per-capita solid waste generation (wet tons/capita)	Supplemental
Water & Waste	Divert more solid waste from landfills.	WW2	Solid waste GHG emissions ($MTCO_2e$)	GHG Inventory Output
Water & Waste	Divert more solid waste from landfills.	WW3	Total tons of waste disposed to landfill (wet tons)	GHG Inventory Input
Water & Waste	Divert more solid waste from landfills.	WW4	Organic waste disposed to landfill (wet tons)	GHG Inventory Input
Water & Waste	Divert more solid waste from landfills.	WW5	Waste diversion rate (weight of recycled and composted waste/total weight of waste	Supplemental
Water & Waste	Divert more solid waste from landfills.	WW6	Proportion of disposed waste that is compostable (%, by weight)	GHG Inventory Input
Water & Waste	Reduce emissions from wastewater treatment operations.	WW7	Wastewater GHG emissions ($MTCO_2e$)	GHG Inventory Output
Water & Waste	Reduce emissions from wastewater treatment operations.	WW8	Septic tank GHG emissions ($MTCO_2e$)	GHG Inventory Output