

Greenhouse Gas Inventory Experience in Jefferson County

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Overview

- Inventory:
 - Scope of Inventory
 - Inventory Components
 - Process
 - Inventory Work and Timing
 - Lessons Learned
 - Thoughts on Consultant/Volunteer Model
- A few Climate Action Committee (CAC) items to share

Jefferson County Inventory Background

- City (PT) and County authorized its first GHG Inventory Team in 2007 (base year 2005)
- In Feb 2019, City and County authorized CAC to conduct a second GHG Inventory (base year 2018) and approved purchase of ICLEI Software
- Inventory effort ran March 2019 – March 2020
- ICLEI Software has two tracks – Community and Government
 - Community-wide
 - Government (organizations)
- ICLEI – International Council for Local Environmental Initiatives
- CAC – Climate Action Committee
- Clearpath – ICLEI software for inventory

Jefferson County Inventory Scope

- Jeff Co doing county-wide, as well as detailed analyses (“government track” of all CAC organizations (city, county, hospital, Jefferson Transit, Port, PUD, Port Townsend Paper Corp)
 - Fort Worden (not part of CAC) asked to participate to provide a baseline, and provided electricity data only
- 2005 Scope: The 2005 inventory included Residential, Commercial, Industrial, Transportation and Solid Waste
- 2018 Scope: In addition to the above, we chose to include agriculture, forestry, and a consumption based inventory
- Took a bit of work to include these. In speaking with ICLEI, including these is rare, and they were impressed by our scope!
 - “Not many communities, especially of a relatively small population size, are taking on an inventory so ambitious, to quantify gov’t operations, community, forest and consumption emissions and compare those to a baseline.” – Kale Roberts, ICLEI



GHG Inventory Team – All Volunteers

- Cindy Jayne – CAC & Team Leader/Doer
- Bill Wise – Inventory Data Entry
- Marion Huxtable – Solid Waste & Transportation, and Messaging
- Karen Steinmaus – Agriculture and Forestry
- Diane McDade (CAC) – Messaging, Rollout
- Richard Jahnke – Consumption Approach



GHG Inventory Components

- ICLEI's Clearpath Software
- GHG Inventory Raw Data – Base Year 2005
- Request Forms for Base Year 2018 Data Collection
 - Community track and Governments tracks
 - Request spreadsheets tailored to each entity
- GHG Inventory Team coordinated through Google Drive to share data reporting and team progress
 - Used Google Drive as repository for all process documents, data inputs, spreadsheet analysis, source documents/links
 - Draft and final reports shared to coordinate editing/updates
 - All files/reports will form repository for next GHG Inventory Team

Community Track Data

- Electricity use broken down into residential, commercial and industrial
 - From Jefferson, Mason, Grays Harbor PUD's
- Fossil fuel usage (gasoline, diesel, fuel oil, propane, etc.)
 - From census data
- Information regarding total waste generated and characterization, and details related to the landfill methane capture and handling, etc.
 - From Jefferson County, and Republic Services (Roosevelt Landfill)
- Details of electricity and fossil fuels used and generated in the handling of wastewater.
 - City and PUD

Community Track Data

- Vehicle Miles Traveled
 - From WSDOT
- Electricity used by water agencies in Jefferson County, and population served, related to extraction, treatment and distribution of potable water
- Agricultural data limited to livestock type and numbers (farming not currently included in Clearpath, for crops or aquaculture)
- Forestry: recently added to Clearpath, but guidance documents still in work. Researched other efforts, and identified two US Forest Service (USFS) efforts that were able to do Jefferson County analysis, utilizing the USFS Forest Inventory and Analysis data. However, not sufficient data to provide statistically significant results at the county level.
 - Did include in the report the total amount of forested lands in the county, based on GIS data

Government Track Data

- Electricity use, per building
- Gasoline, diesel, propane, biodiesel, ethanol, natural gas or other fuel types, usage by organization
- Fleet vehicle information (types of vehicles, fuel types and quantities used, miles traveled)
- Employee Commute data (voluntary survey)
 - Done as google survey, can share

Process

- Climate Action Committee partnered with Local 20/20 to gather volunteer team, and effort was run by that group
- Recruited volunteers
- County purchased ICLEI Membership (funded by city and county)
- Access to the ICLEI software was approved by a county employee (all volunteers had access, but only 2 used it heavily.)
- Wrote letter of Support to PUD, WSDOT, WSU, Republic Services, etc., outlining type of data that we would be requesting, and who the volunteers were
 - From Climate Action Committee, signed by Mayor and County Commissioner, and CAC Chair

Jefferson County Inventory Work

- Volunteers spent 3 months defining exactly what data we wanted (March 2019 – June 2019)
 - ICLEI has lots of possible calculators, we reviewed all and decided which ones were relevant to us
 - See Tracking Spreadsheet
- Sent out requests for data in mid June, asked back by end of August
- Inputted Raw Data from the 2005 GHG Inventory
 - for comparison with 2018 Inventory
- Designed a commute survey form matching ICLEI inputs
- Organizational effort is primarily for government track – gathering data noted in that track. Can be scaled up or down. For ex, we asked for building sq footage, not hours of occupancy, etc. And commute survey is optional but useful.

Jefferson County Inventory Work

- Another set of work was related to identifying various factors:
 - Electricity emissions factor
 - Vehicle emissions by vehicle type (gas passenger, light truck, diesel, etc.)
 - Understanding different IPCC Assessment models (due to 2005 comparison)
- Data gathering:
 - WSDOT data
 - USDA agriculture data, census data (households, population, etc.)
- Quality control: one person entered data received from organizations into software, another reviewed it and source forms (did not review organizational sources)
- Software has lots of flexibility to do what makes sense for you – scope, etc., can be defined, software will allow just basics or more complete

Jefferson County Inventory Work

- Collected data over summer (June - Sept), reviewed it as it came in, sent reminders for data not received.
- Entered data in the Fall (Sept – Nov)
- Reviewed data, analyzed, refined (Nov – Dec)
- Wrote report (Dec – Feb)
 - Report writing was a lot of work, partly due to 2005 comparison, and provided a lot of detail. Base ICLEI report template has just charts from Clearpath, likely much faster
 - Writing report triggered more data refinement

Total effort on the order of ~600 hours?

Inventory - Jeff Co Lessons

- Clearpath is weak for Agriculture Sector. One must hand-do calculations following examples from ICLEI, and only covers livestock.
- Clearpath does not currently have any capability for assessing green house gas emissions for forested lands.
- Clearpath is a sector based model, not a consumption based model. (There is some ability to do consumption, but need detailed data not available in Jefferson County). We included an alternative discussion on Community consumption using the University of California, Berkeley CoolClimate Network, which has estimated the household emissions inventories for every zip code in the United States
 - Consumption based inventory is a different beast, and could easily be done as a separate effort

Inventory - Jeff Co Lessons

- Once inventory is done, ICLEI Software has ability to define projections, and then model various reduction strategies built into the software. So may want to plan on multi-year ICLEI membership.
- Define report charts early (use ICLEI's or not, and define format for them)
- Clearpath doesn't have a way to assign different privileges to different people – all can access all records
- It always takes a little longer than you think

Thoughts on Consultant/Volunteer Model

- Consultant could be project manager, and primary report writer
- Volunteers could be assigned to different focus areas
 - Transportation, Energy, Forestry, Agriculture, Solid Waste worked well
 - Commute Survey work is a standalone piece
 - Messaging and Rollout out is another key piece
 - Data entry
 - Data review
- Data is generally not anything confidential (electricity and fuel use of city is likely public record; WSDOT data, USDA data all public)
 - Most of data gathered will be in the report and appendices, so will be public
 - Commute survey may require special care, but google form made responses confidential

CAC – Other Items to Share

- Developed Decision Matrix for evaluating climate impacts for projects and/or plans
 - Sent to Emma and Ben
- Provided recommendations to city/county re increasing level of flood-proofing buildings to > Base Flood Elevation + 1'. Assn of Flood Plain Managers noted savings in insurance from doing so. PT adopted BFE + 2'.
 - Have more detail on this if interested



Discussion





Thank you!
