

## 2 | Project Understanding

The City of Wilsonville, located in western Clackamas County (and partially in Washington County), is a suburb of Portland which offers residents a rural atmosphere and the conveniences of the big city. Formerly a farming community, the city's economy contains a mix of tech uses and manufacturing, with some agricultural land remaining. The impacts of climate change are becoming more evident in Wilsonville as wildfires, extreme heat, and heavy rainfall hit the city with increasing frequency and severity. To address the causes of these effects, the City has led several sustainability initiatives including participating in Portland Gas & Electric's Green Future Enterprise and Green Future Impact Programs for renewable energy sources; converting street lights to LED; participation in the Bee City program; and working with the transit authority to deploy electric buses and eliminate transit fares within the city.

Now, the City is looking to develop a Climate Action Plan (CAP) which will focus on how best to reduce the community's GHG emissions, and how these changes can also increase resilience. The planning process will begin by developing an inventory of existing community emissions, followed by an identification of actions that will quickly and significantly reduce emissions. The plan will build on existing work completed by the City, Clackamas County, and the State, such as Wilsonville's Comprehensive Plan, Bike and Pedestrian Master Plan, and the Urban Forest Management Plan, Clackamas County's CAP and GHG inventory (developed by SSG), the South Metro Area Regional Transit (SMART) Transit Master Plan; and statewide mandates such as Oregon's Clean Energy Targets, which requires energy suppliers such as Portland General Electric to reduce emissions.

Work on the CAP will include: identifying goals and outcomes; developing a community-wide GHG inventory; forecasting emissions; outlining focus areas and strategies for mitigation; and planning and facilitating equitable engagement with the City and the public.

## 3 | Approach and Methodology

### Technical Approach

**SSG will deploy Scena, our unique systems dynamics model**, to study the City's complex urban energy system and pathways to decarbonize these systems. Developed in-house, Scena tracks how and where electricity and fuels are consumed in Wilsonville, and how emissions are produced. The model is transparent, integrated, multi-fuel, multi-sector, and was built specifically for analyzing spatially-disaggregated energy systems, GHG emissions reductions, and co-benefits. **Our team will build on our existing model of Clackamas County, and update and refine this for the Wilsonville context.** This allows us to move quickly and efficiently, and ensures consistency with the County's plan.

Using data on energy supply, energy use, energy sources, and long-term trends, Scena can track and project energy sources, transitions, distribution, and end-use, as well as GHG emissions, over time and space. **Scena is GIS-based, providing visualizations that illustrate how energy use and emissions vary across sectors and neighborhoods.** The model considers conventional and renewable energy sources, ranging from gasoline, to wind, to ambient energy. Our modelers have been continuously developing, updating, and improving Scena since its 2015 launch at COP21 in Paris, ensuring we deliver the highest quality analysis. Our model and approach sets us apart from others in the following ways:

1. **A Systems Approach:** Scena is an integrated systems dynamics energy and emissions model. It simulates multiple dimensions of energy systems over time, incorporating projected population growth, the impact of planned and new policies, and feedback between sectors in space, with resolution for each priority zone in the study area. This level of detail enables us to develop investment-ready climate action strategies.
2. **Spatial Analysis:** The spatial analysis intrinsic to the modeling will enable the City of Wilsonville to explore future dynamics of transportation and land-use in a zone system that aligns with transportation planning, future growth projections, and infrastructure planning.

*Figure 2. Examples of the visual outputs possible through our modeling platform.*  
Please see original SSG proposal dated May 3, 2024 for this image

3. **Integrated:** Most models are sector-specific and forecast how emissions can be mitigated within individual

sectors, industries, or buildings. However, GHG emissions impacts are integrated among sectors, so we designed Scena to **capture feedback among policies in different sectors**. This allows us to help cities to identify the optimal approach to mitigating emissions.

*Figure 3. Household energy expenses in the City of Toronto in the Low-Carbon Scenario vs. in the Reference Scenario.*  
Please see original SSG proposal dated May 3, 2024 for this image

### Planning for Decarbonization

Our approach is to develop a calibrated model of the built environment in the current context, spatially representing homes, buildings and infrastructure, energy-using equipment within buildings, transportation behavior, waste generation, and water and wastewater treatment. The calibration step involves ensuring that observed energy consumption data (reported from utilities) aligns with modeled data. We then develop or use existing population and employment projections to place people in space over time, adding homes and workplaces and associated infrastructure where required—this forms the **Business as Usual (BAU) scenario**. These additional people stimulate additional vehicular, walking, transit and cycling trips. The model calculates annual VMT, energy, and GHG emissions for each zone of the City. Planned and funded policies and programs are then evaluated in a **Business as Planned (BAP) Scenario**. The engagement activities can include reviewing the results from the BAU and BAP and suggesting actions to reduce energy use and GHG emissions which can be included in the technical of a **Low-Carbon Scenario**.

*Figure 4: Reference Scenario and Low-Carbon Scenario for a community.*  
Please see original SSG proposal dated May 3, 2024 for this image

### Climate Action Analysis

SSG will create a proposed list of recommended climate mitigation measures based on the work completed for Clackamas and Tigard, and any contextual changes (e.g. legislation, executive orders) that have occurred since those Plans were completed. Priority measures will be identified that reflect strategic opportunities, needs, relevant objectives, and insights from engagement. The emission reduction potential for each climate change mitigation measure will be analyzed in detail using the model, which will determine the impact on each underlying emission source.

*Figure 5. Examples of the intersection of adaptation and mitigation actions*  
Please see original SSG proposal dated May 3, 2024 for this image

### Engagement

We believe engagement is best thought of as shared decision-making, and our approach weaves together technical and engagement streams to form a detailed and inclusive CAP. Our in-house engagement team uses the globally recognized framework developed by the International Association for Public Participation's (IAP2). We are skilled in community education and translating complex ideas into plain language for a broad audience.

Our team has extensive experience managing and coordinating diverse stakeholder groups, and convening multi-departmental and multi-sector teams. We will organize meeting agendas based on the interests and expertise of participants. In all our projects, we work collaboratively alongside the client and staff through existing structures such as boards and Councils.

Collectively, our team has decades of experience in planning, designing, and delivering a variety of engagement techniques, including open houses, surveys, workshops, and communications and outreach planning. Our team also has extensive experience deploying a variety of digital platforms including Let's Talk, Zoom, Miro (a collaborative, online whiteboard), MetroQuest, Ethelo, a variety of videoconference platforms, various online survey platforms, and websites. These methods can be used to engage the public and community groups along the IAP2 Spectrum (Figure 6) and are often effective at reaching individuals and communities traditionally left out of planning processes. Some tools and platforms may come with additional costs.

*Figure 6. The IAP2 spectrum of participation.*

Please see original SSG proposal dated May 3, 2024 for this image

## Work Plan

Our work plan addresses all the details of the RFP and adds details and considerations based on our extensive experience in preparing similar plans in Oregon and beyond. Refer to the attached schedule for a breakdown of the proposed project timeline. This schedule relies on quick turnarounds from the City, including 1 week to review and provide consolidated feedback on key deliverables.

### Phase 1: Visioning and Set-up

**1.01 Project Kick-off Meeting:** SSG will prepare an agenda and meet with City staff to review project details, invoice schedules, contacts, communications protocol. We will also confirm the work plan, deliverables, project objectives, and budget. The meeting will be celebratory, kicking off the project with energy and generating momentum. Working relationships between consulting staff and City staff will be established and the project work will begin.

**1.02 Regular Check-in Meetings:** SSG will prepare an agenda for bi-weekly (every two weeks) project meetings with senior staff in the City. Following the meetings, SSG will summarize the meeting minutes and next steps.

## Phase 2: Engagement

**2.01 Engagement Schedule and Planning:** SSG will host a meeting between SSG's engagement staff and Wilsonville's project team. The teams will work together to review and make any minor adjustments to the engagement activities proposed in this section. SSG will then document the intent, objectives, locations, dates and participants for each in a simple table, which will be shared with the Wilsonville team.

**2.02 Communications Materials:** SSG will provide communications content to the City for use in the Boones Ferry Messenger, the City's social media, and the municipal website. This will include up to four graphics for use on the various platforms. These materials will be provided in a standard graphics format that will allow them to also be used on posters or handouts at public events, etc.

**2.03 Engagement with Existing Boards:** We will host two virtual sessions with the City's existing boards such as City Council and the Planning Commission. Sessions will introduce the CAP process and collect input on local priorities and concerns, as well as potential climate actions.

**2.04 Engagement with Staff:** SSG will host up to three virtual sessions that will focus on educating staff about climate action, and integrating this work and the climate impacts of their decisions into their city roles. It will provide feedback opportunities using tools such as Mentimeter, and will use light facilitation.

**2.05 Community Survey:** City staff on the project will create a questionnaire for local residents (potentially re-using the questions from the Clackamas County Climate Action Plan) to gather a sense of their current levels of support for Wilsonville to take action on climate change. SSG can conduct a high-level review of the survey to ensure the accuracy of the content and to provide communications-related feedback. The survey can be published using the 'Let's Talk Wilsonville' platform and advertised using City tools. The City can use this information to provide evidence of support in the community, and can share analysis of the results with SSG for integration into the Climate Action Plan.

**2.06 Public Event:** SSG will facilitate one public event. This could either be five telephone or Zoom interviews with members of the public, or a 'Town Hall' meeting focused on increasing awareness among the public about the Climate Action Plan's development. The Town Hall meeting would provide basic opportunities for feedback. Each approach has benefits: The five interviews would provide good content to integrate into the final Climate Action Plan; whereas the Town Hall meeting would be a more effective way to raise awareness in the community..

**2.07 Engagement Summary:** SSG will summarize the results of the engagement activities, the input received, and how it will be used in the CAP. This will be provided in a brief report to the City and can be included as an appendix to the CAP if required.

## Phase 3: Technical Analysis

**3.01 Context Review:** We will review up to four existing strategic documents identified by Wilsonville to understand the City's planning strategy and existing work on climate change such as Wilsonville's Comprehensive Plan, Bicycle and Pedestrian Master Plan, and the Urban Forest Management Plan. The team will request the City's guidance on identifying the most important four documents. The team will also draw on its knowledge of the State and Counties' Executive Orders, legislation and climate plans. The results of this review will be shared as a brief presentation or slidedeck for feedback.

**3.02 Data Request & GHG Inventory:** A major benefit to working with SSG on this project is that we can use our previously-completed Clackamas GHG inventory to develop a community-wide emissions inventory for Wilsonville. Using Clackamas' inventory as a starting point, SSG will extract and update Wilsonville's data as required based on population growth. SSG will work with Wilsonville staff to create estimates for areas of the City that are in Washington County, as they will not be included in the Clackamas County data. Additional sectors or individual industrial facilities will be considered for addition if the required data is readily available in a usable format from Wilsonville staff. The inventory will include the City's corporate emissions, but they will be combined with the community's emissions within each sector (buildings, transportation, etc.). The work will not include a separate corporate GHG emissions inventory.



**3.02 Model Calibration:** SSG will review the Clackamas modeling in light of any significant changes that have occurred legislatively or demographically since that modeling was completed. Based on the results of this review, SSG will either use the existing calibrated Clackamas data, extracting the zones that constitute Wilsonville and estimating for the zones in Washington County, or SSG will redo the calibration with adjustments as required to provide an accurate baseline year of Wilsonville's energy use and emissions. The calibration differs from a GHG inventory in that it identifies the activities producing GHG emissions by sector (e.g. vehicular trips, number of buildings, building energy performance, livestock, etc.). This allows us to target emission reduction measures to specific activities.

**3.03 BAU & BAP Reference Scenarios:** A Business-As-Usual (BAU) Scenario of community emissions will effect the GHG emissions impacts of **current** population projections, land-use policies, transportation trends, state and federal policies, building codes, fuel efficiency standards, etc. The BAU Scenario forecast will provide Wilsonville with the annual energy consumption and emissions out to 2050 by traffic zones and neighborhoods across the city. This can be used to show the spatial impact of current practices on specific areas (and populations) and sectors within the city. A Business-As-Planned (BAP) scenario will also be provided. It will reflect the additional impact (i.e. on energy use and emissions) of key, **approved** county, state and federal policies and programs.

To provide this information, SSG will review the Clackamas modeling in light of any significant changes that have occurred legislatively or demographically since that modeling was completed. Based on the results of this review, SSG will either use the existing calibrated Clackamas BAU and BAP modeling results, extracting the zones that constitute Wilsonville and estimating for the additional zones located in Washington County, or SSG will redo the BAU and BAP scenarios with the adjustments required to provide projections of Wilsonville's energy use and emissions that reflect the most recent regulations and context.

**3.04 List of Strategies & Actions:** Working with City staff, we will compile a list of 'low carbon' actions and policy options for consideration. The list will draw from the work done for Clackamas and Tigard, and reflect the contextual changes that have occurred since those Plans were completed. SSG will meet with Wilsonville staff to go through the actions, and refine them together. At this point, City staff will be able to identify neighborhoods most requiring improvements, or with higher concentrations of low-income and disadvantaged populations in greater need of services. The team will help Wilsonville staff lay out the selected actions to benefit these neighborhoods first, or to a greater degree, and this will be integrated into the final low carbon actions that are selected. Emission reduction actions will be expressed as quantifiable assumptions for input into the model.

**3.05 Draft Low-Carbon Scenario:** The GHG emission reduction measures selected in Task 3.05 will be modeled for their energy and emissions impacts between the baseline and target years. The scenarios will include year-over-year energy and emissions projections under implementation of the emission reduction measures. The results will demonstrate how carrying out the actions in a particular order will ensure that the changes made achieve the greatest energy conservation, emissions reduction, and resilience-enhancing benefits for the entire community, and how those benefits can be brought first to neighborhoods most requiring improvements.

**3.06 Final Low-Carbon (Best Fit) Scenario:** Based on our analysis of the modeling and input from Wilsonville staff, we will accommodate up to 20 hours of additional work to adjust and finalize the Low-Carbon Scenario. The final scenario will outline how the City can achieve its emission reduction targets in relation to existing policies, regulations, plans, and investments, and will provide a viable, sector-by-sector action pathway for reducing community emissions.

## Phase 4: Final Plan

**4.01 Draft Climate Action Plan:** The draft CAP will include descriptions of the local context, existing conditions, targets, and legislation that will constrain or stimulate climate action in Wilsonville. It will also identify key expected impacts of climate change to local conditions in coming decades. It will outline the community's projected energy use and emissions in the BAU, BAP and 'low carbon' scenarios, and will provide a clear pathway of the modeled actions, and the timeline on which they will need to be carried out to move Wilsonville towards a net-zero future. Graphics will be included that will clarify the impacts of different types of actions over time. The Plan will include a data, methods, and assumptions (DMA) appendix. The DMA will describe the scenario modeling approach, data used, and the assumptions applied for the inventory and analysis. This ensures an understanding of the modeling operation, and that the data, methods, and assumptions are transparent. A draft of the plan will be provided to Wilsonville staff for a single round of review. Wilsonville will consolidate the comments into a single document and share them with SSG.

**4.02 Final Climate Action Plan:** The draft CAP will include descriptions of the local context, existing conditions, targets, and legislation that will constrain or stimulate climate action in Wilsonville. It will also identify key expected impacts of

climate change to local conditions in Wilsonville in coming decades. It will outline the community's projected energy use and emissions in the BAU, BAP and 'low-carbon' scenario, and will provide a clear pathway of the modeled actions, and the timeline on which they will need to be carried out to move Wilsonville towards a net-zero future. Graphics will be included that will clarify the impacts of different types of actions over time.

**4.03 Council Presentation of Final CAP:** We will support staff with presenting the final CAP to Council. This can include providing images from the CAP and providing guidance and review of the presentation. We anticipate that this would be a formality for adoption, assuming the presentation of the draft Plan was favorably received. SSG will not travel to attend the Council presentation but can attend virtually if required.

