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## Grounded Solutions for Growing Clean Air – Turning Smoke into Soil: An Open Burn Alternative Strategy Breathe Easy, Ellensburg



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# Grounded Solutions for Growing Clean Air – Turning Smoke into Soil: An Open Burn Alternative Strategy

## Breathe Easy, Ellensburg

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# Grounded Solutions for Growing Clean Air – Turning Smoke into Soil: An Open Burn Alternative Strategy

BREATHE EASY, ELLENSBURG

Providing Solutions to Reduce Criteria Air Pollutants and Improve Community Health by Reducing Residential and Agricultural Burning of Organic Wastes

Location: Ellensburg, Washington.

## Overview

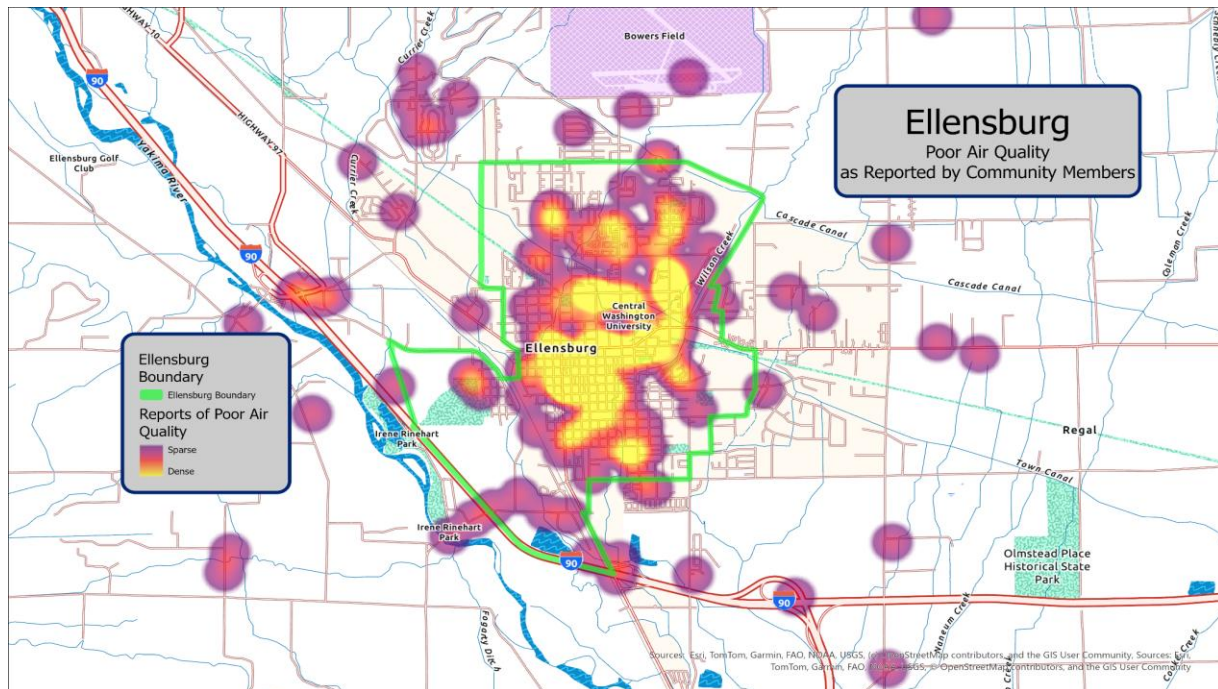
**Program Goal:** Grounded Solutions for Growing Clean Air provides the Ellensburg community with practical, sustainable alternatives to open burning of organic waste, reducing criteria air pollution and improving public health.

Through composting, yard debris collection, and public education, this initiative aims to reduce emissions, improve soil health, and foster a cleaner, more resilient environment. The strategy advances environmental justice by addressing the disproportionate environmental and health impacts faced by overburdened communities, ensuring equitable solutions for all.

**Problem:** Residents of Ellensburg and surrounding Kittitas County communities have long relied on burning agricultural and yard debris as a low-cost disposal method.

While culturally ingrained and convenient, these practices, whether residential or agricultural, release high concentrations of fine particulate matter and nitrogen oxides that degrade air quality and negatively impact public health, particularly during peak burning seasons when large volumes of debris are burned.

As described in the Incorporation of Community Input section, the community identified areas of Air Quality Concern. This data is illustrated below in Figure 1, which maps community-reported poor air quality. Yellow areas represent denser clusters of poor air quality reports, while purple areas represent fewer, more dispersed reports.



*Figure 1. Ellensburg | Poor Air Quality as Reported by Community Members. Reports of poor air quality were collected through community engagement activities and mapped to illustrate spatial trends in perception. Denser clusters of reports of poor air quality appear in yellow, while sparser reports are shown in purple. Map created by Community System Solutions – 2025. A dynamic version of this map is available at <https://arcg.is/0WTm540>*

**Solution:** The proposed solution is to expand the use of the Kittitas County Solid Waste Compost facility through no-cost days for curbside yard waste pickup and yard waste drop-off, particularly during early spring, late fall and winter when residential and agricultural burning activity is at its highest.

Located at the Ellensburg Transfer Station, Kittitas County Solid Waste Compost facility was originally funded by a grant from the Washington Department of Ecology & County Solid Waste reserves. The facility accepts yard waste, clean lumber, straw bedding, and green waste, transforming these materials into compost products for public sale. It operates under rigorous environmental compliance and inspection protocols to prevent contamination, nuisances, and vector issues.

The proposed program would also include a pilot agricultural organic waste drop-off initiative to determine whether composting can provide a viable alternative to agricultural waste burning. Because initial composting equipment can be high, smaller agricultural operations may find this program an accessible alternative to self-managed composting. Community education, technical support, and equipment access are key components for ensuring success.

If adopted widely, this program could yield significant public health improvements. However, the apple maggot larvae quarantine area—restricting the transport of organic



waste out of quarantined zones to protect commercial fruit crops—may limit the amount of agricultural waste collected under this strategy.

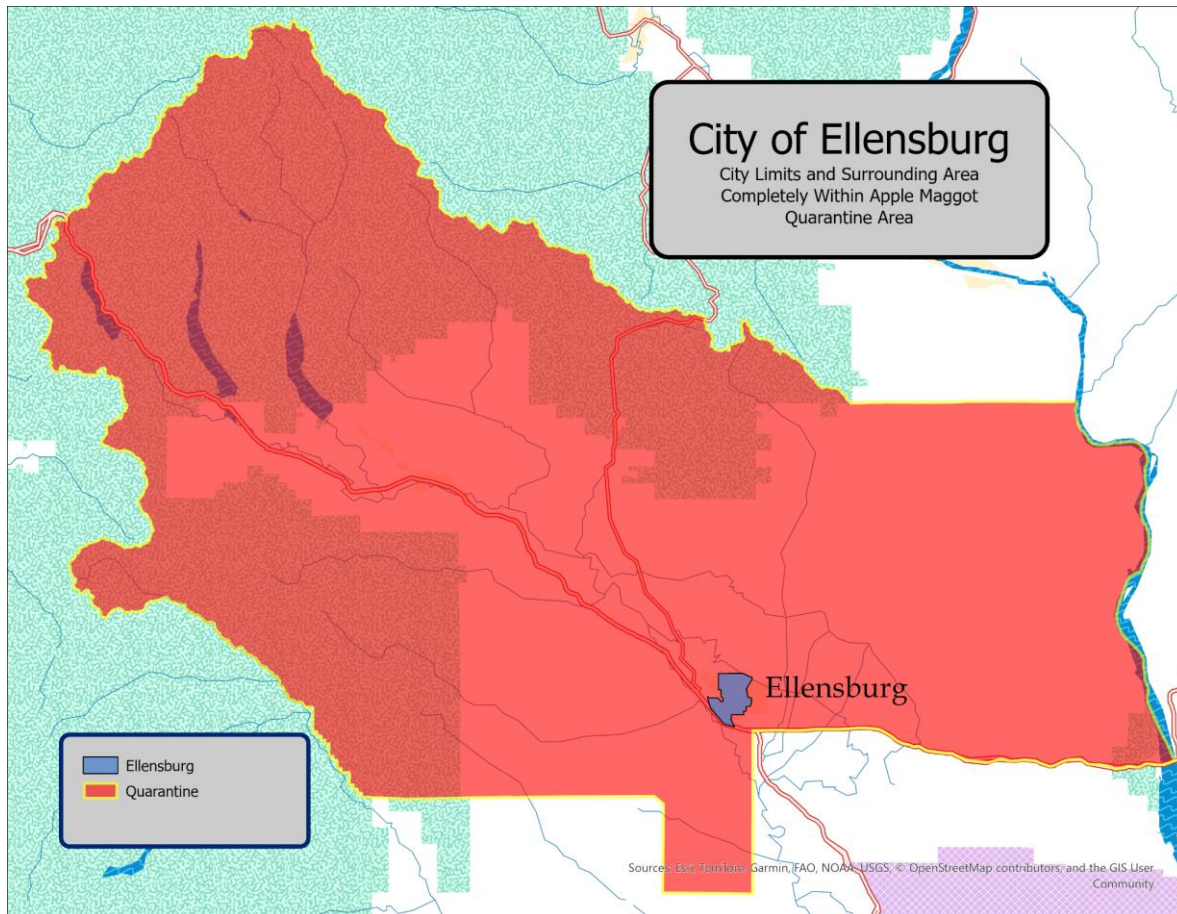


Figure 2. City of Ellensburg City Limits and Surrounding Area Completely Within Apple Maggot Quarantine Area. Map prepared by Community System Solutions – 2025. A dynamic version of this map is available at <https://arcg.is/0WTm540>

## Key Project Components

- **Community Education and Engagement:** To identify Grounded Solutions Strategy locations and build community participation, outreach will focus on inclusive participation through community listening sessions and partnerships with local nonprofits. Public engagement will include accessible in-person meetings with simultaneous Zoom options, ensuring participation for those with mobility challenges. All venues will be wheelchair accessible, and all materials and presentations available in both English and Spanish, with interpreters available to ensure full inclusion. Digital tools such as ArcGIS Hubs will make the process transparent and allow community members to share feedback easily.
- **Expand Green Waste Collection Services:** Add free curbside pickup and drop-off days.

- **Promote Composting and Chipping Access:** Offer no-cost days at composting and chipping facilities to encourage alternatives to burning.
- **Education and Outreach Campaign:** Develop an educational campaign highlighting alternative methods to residential and agricultural burning.
- **Composting Workshops and Free Residential Composters:** Expand composting workshops and distribute free composters for residents to support behavior change.
- **Technical support:** Provide hands-on technical assistance and resources to help residents and agricultural operators adopt sustainable disposal and composting practices.

## Criteria Air Pollution Reductions

### Criteria Air Pollutants to Be Reduced

- Particulate matter (PM<sub>2.5</sub> and PM<sub>10</sub>)
- Carbon monoxide
- Nitrogen dioxide
- Sulfur dioxide

Burning wood waste releases particulate matter (PM<sub>2.5</sub> and PM<sub>10</sub>), carbon monoxide, nitrogen oxides, and sulfur dioxide (SO<sub>2</sub>). All of these pollutants are linked to significant health risks and environmental degradation.

### Methods for Reducing Criteria Air Pollutants

Free pickup and drop-off days for residential yard and agricultural waste will directly reduce the volume of limbs, leaves, and other organic materials that would otherwise be burned. Instead of going up in smoke, this material will be composted—directly cutting down on open burning in and around Ellensburg.

Figure 3 shows the composting process, where organic materials are converted into nutrient-rich compost rather than burned, helping improve air quality and soil health.



*Figure 3. Composting operations convert organic waste such as leaves, straw, and branches into nutrient-rich, valuable compost products, helping reduce the need for open burning and the smoke from it.*

The reduction in residential and agricultural burning activities will directly lower criteria air pollutants in Ellensburg, an overburdened community already impacted by smoke and particulate emissions. Composting not only avoids the release of fine particulate matter from burning but also transforms organic materials into a stable soil amendment that improves water retention and supports local gardening and agriculture.

This process keeps the air cleaner and the community healthier.

## Estimated Impacts

### Impact versus Cost: High Impact vs. Moderate Cost

At the current drop-off rate of approximately \$90 per ton for residential yard waste, this strategy would prevent an estimated 5,500 tons of organic waste from being burned annually—significantly improving air quality and reducing smoke-related health impacts in the Ellensburg area. Moderate to high public health improvement if adopted widely. As this is an expansion of an existing program, only moderate setup and operational costs are expected.

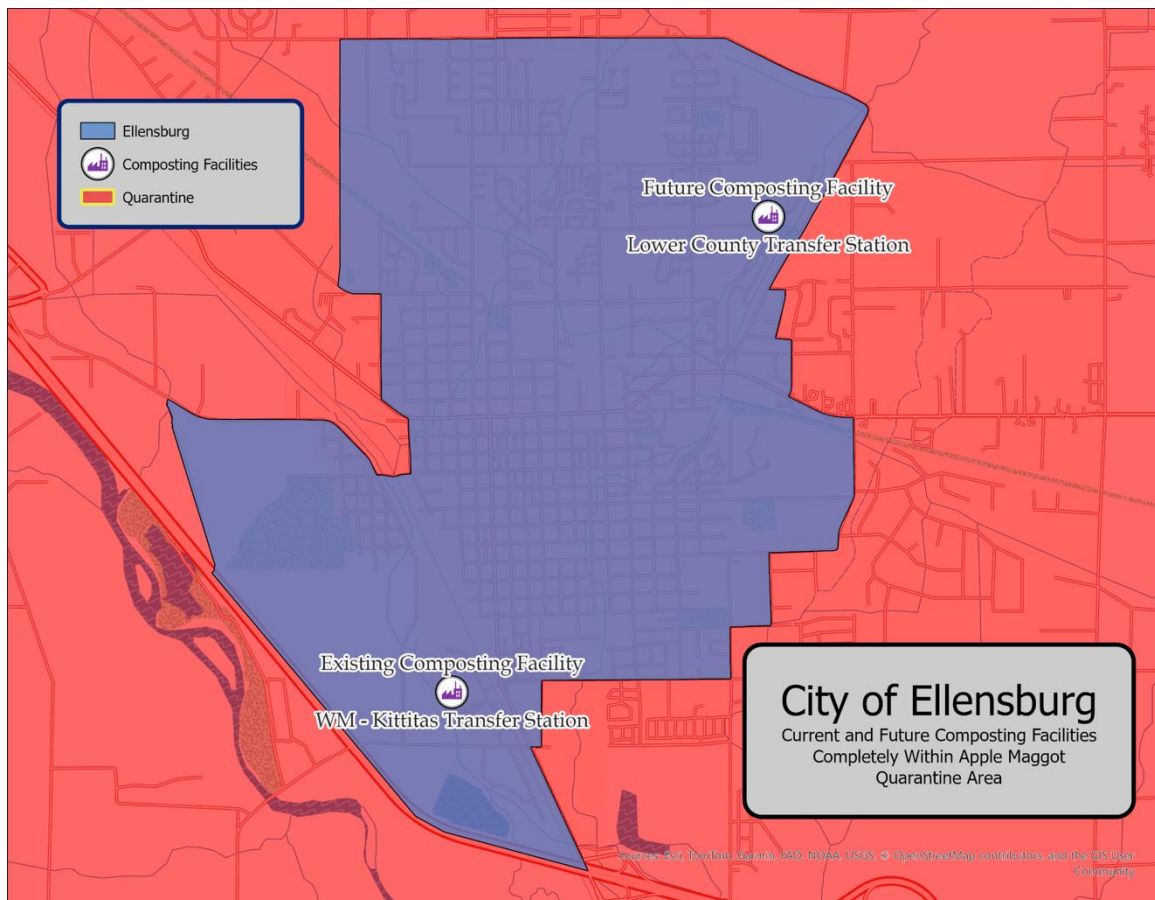


**Health Benefits:** Significantly reduces smoke-related emissions, improves local air quality, and lowers respiratory and cardiovascular health risk associated with smoke exposure.

**Co-benefits:** Produces a nutrient-rich soil conditioner for use in yards, gardens, and agricultural applications, closing the loop between waste reduction and soil health.

## Geographic Area of Air Quality Impact

Ellensburg and surrounding Kittitas County communities will experience the greatest benefits from this strategy. These areas include both residential neighborhoods and agricultural zones where open burning of yard and field debris is most common. Composting facilities sites shown in Figure 4, below.



*Figure 4. City of Ellensburg Current and Future Composting Facilities Completely Within Apple Maggot Quarantine Area. Map created by Community System Solutions – 2025. A dynamic version of this map is available at <https://arcg.is/0WTm540>*

Reductions in open burning will improve local air quality, particularly during fall and winter months when inversions trap smoke close to the ground.



## Expansion of Compost Facility

Kittitas County Solid Waste is currently constructing a new Lower County Transfer Station, which will include an expanded and modernized composting operation. Located at 2603 Green Avenue in Ellensburg, this 39-acre site is designed to increase capacity and streamline services for the community. Completion is anticipated by January 2026.

## Incorporation of Community Input

This strategy is built on direct community feedback gathered through listening sessions, school-based outreach, tabling and city surveys. Engagement efforts prioritized accessibility by offering wheelchair-accessible venues and providing simultaneous Zoom participation for those unable to attend in person. To ensure full inclusion, all materials and presentations were offered in both English and Spanish, with interpreters available at every event.

Community System Solutions used a combination of outreach methods to collect meaningful, locally informed data about air quality in Ellensburg. Two community surveys were conducted to understand both perceptions and potential solutions. The first survey, completed by 106 respondents, explored how residents view local air quality, which pollution sources they find most concerning, and who in the community is being affected. The second survey, with 16 participants, focused on residents' awareness of and support for proposed air quality improvement projects, while also gathering additional insights on housing and health factors.

Community feedback from Ellensburg meetings and surveys identified residential burning as a major contributor to poor air quality, especially during the spring and fall.

At a presentation at the Independent Order of the Odd Fellows, participants noted that yard waste burning has increased since the local dump began charging for drop-off, discouraging proper disposal. Many attendees emphasized that reinstating free yard waste drop-off could help reduce illegal burns.

At the June 28, 2025, Ellensburg Farmers Market, residents shared firsthand concerns, including the need to close windows due to nearby burning. These concerns are reflected in survey results:

- 18% of respondents identified residential outdoor burning as a top concern.
- 63% reported air quality concerns in their own neighborhoods.
- 87.5% of respondents supported Alternative Open Burn projects.

Agricultural burn piles were also cited as a recurring source of smoke and air quality concerns. This feedback highlights the community's strong support for accessible,

affordable alternatives to burning, such as free yard waste drop-off, expanded composting programs, and education efforts to reduce smoke-related health impacts.

Elements of this project align with the Kittitas County Solid Waste Plan, which includes expansion of the Ellensburg compost facility.

## Execution Plan

The proposed initiative expands the number of no-cost days for curbside yard-waste pickup and yard-waste drop-off, particularly during periods of peak residential burning. The strategy also includes a community education component to increase awareness of free yard-waste services and the benefits of reducing residential burning practices.

### Key Project Components

- **Community Education and Engagement**
  - Host community listening sessions to identify areas of need and interest.
  - Ensure Spanish-language access and culturally responsive engagement to meaningfully include the community.
  - Partner with local schools at all levels, for student-led research, hands-on learning, and stewardship projects connected to this strategy.
  - Collaborate with local yard service and green waste hauling companies to identify opportunities to maximize participation.
- **Expand green waste collection** services by adding a once-a-month free pickup and drop-off day.
- **Promote access to composting and chipping facilities** through designated free days.
- **Expand existing educational campaigns** focused on alternatives to residential burning.
- **Offer composting workshops** and provide free composters for residential use.
- **Distribute free yard-waste bags** as part of the program. These heavy-duty post-consumer paper bags—already available for purchase at Ace Hardware and Fred Meyer, countywide—are accepted at transfer stations and replace plastic bags, which are not allowed in compost piles.
- **Provide technical support** for residents interested in participating in free pickup days or composting workshops.

## Ellensburg - Current Program



Figure 5 Image of the current Kittitas County Solid Waste Compost facility.

The success of this strategy builds upon the current agricultural organic pickup and compost program in Ellensburg. The Kittitas County Solid Waste Compost facility, shown in Figure 5, located at the Ellensburg Transfer Station (1001 Industrial Way, Ellensburg), currently accepts yard waste at \$86.40 per ton with an \$8.00 minimum charge.

Yard waste must be separated from garbage materials. Contaminated waste is charged at the Municipal Solid Waste (MSW) rate of \$158.00 will be charged the MSW fee, which is \$158.00 per ton or a \$10.00 minimum.

Program success depends on public cooperation in keeping yard and wood waste free from plastic or other debris, which can damage equipment and reduce compost quality. The processed yard waste is converted into compost and mulch, which are sold back to the public as a sustainable, locally produced soil amendment.

### Compost Products for Sale:

- Residential vehicles: \$75.00 per ton (\$4.00 minimum)
- Contractors, farms, nurseries, and landscapers: \$55.00 per ton.
- Mulch: \$40.00 per ton (\$4.00 minimum)

## Execution Steps and Educational Information Campaign

### Educational Information Messages



Figure 6 Wood waste and yard debris, free from contamination, ensures undamaged processing equipment and viable compost material once processed.

The success of the yard waste program depends largely on public cooperation in providing clean yard and wood waste that is free from garbage and contaminants, as depicted above in Figure 6. Common sources of contamination at transfer stations include aluminum cans, metals, hoses, and—most problematically--plastic bags. Yard waste littered with plastic and other debris cannot be turned into a marketable compost product and can severely damage processing equipment.

Yard waste brought to the transfer station that contains debris or garbage will be charged the full MSW garbage rate.

### Implementation Plan

1. **Coordinate Program Operations:** Work with Kittitas County Solid Waste Program, the Ellensburg Transfer Station and the contracted waste hauler to plan and implement the free yard-waste pickup and drop-off days.
  - Identify the best free pickup and drop-off days to align with current operations.
  - Ensure adequate staffing to manage the increased workload.
  - Order and distribute sufficient quantities of free yard-waste bags to support the program.
  - Make yard-waste bags available at convenient community locations (e.g. transfer stations, hardware stores).
  - Add composting workshops and ensure availability of residential composters as needed.



2. **Launch Educational Information Campaign:** Target both residential and agricultural audiences to promote participation and awareness.

- Publicize the free pickup and drop-off days.
- Publicize where residents can obtain free yard-waste bags, shown in Figure 7.
- Reinforce that clean yard and wood waste is essential to maintaining a successful composting program.
- Remind residents that yard waste containing debris or garbage will be charged at the full garbage rate.
- Promote the composting workshops and distribute free composters for at-home use.



Figure 7. A heavy-duty post-consumer paper yard-waste bag

3. **Provide Technical Support:** Offer technical assistance to residents and agricultural producers who wish to access free pickup days, one shown below in Figure 8, or to participate in composting workshops. Provide guidance on proper separation, composting techniques, and available local resources.



Figure 8. Free yard-waste pickup day: green waste and wood waste is gathered to be processed into nutrient-rich compost material.

## Budget

Program Element	Cost
Free Pickup Days	\$250,000
Free Drop-Off Days	\$250,000
Free Yard Bags	\$5,000
Educational Materials	\$5,000
Contracts	\$15,000
Staff Time	\$25,000
Equipment	\$250,000
<b>TOTAL</b>	<b>\$800,000</b>

## Timeline

Months	Key Project Components:
<b>M1-M36</b>	<b>Community Education and Engagement</b>
	Host community listening sessions and neighborhood walks to identify areas of need and interest.
	Ensure Spanish-language access and culturally responsive engagement to ensure meaningful inclusion of the community.
	Engagement efforts should prioritize accessibility by offering wheelchair-accessible venues and providing simultaneous Zoom participation for those unable to attend in person.
	Partner with local schools at all levels, for student-led research, hands-on learning, and stewardship projects connected to the forest plantings. Include local yard service companies and green waste hauling services.
<b>M1-M3</b>	<b>Create Digital Tools</b>
	Launch an ArcGIS Hub platform dedicated to the Open Burn Alternative Strategy.
	Use interactive maps to show Strategy elements so residents can help shape the work.

	Include embedded surveys, event calendars, volunteer sign-ups, and feedback tools so residents can help shape the work.
	Share stories from community members where appropriate.
<b>M1–M36</b>	<b>Expand green waste collection services through adding a once-a-month free pickup and drop-off day.</b>
	Work with green waste collection services to add free pickup and drop-off days during the month.
	If needed, schedule a couple of different free pickup dates through the month for different communities if one day does not suffice.
<b>M1–M36</b>	<b>Promote access to composting / chipping facilities through free days.</b>
	Connect with communities to advertise chipping and composting facilities access during their free collection day.
	Create content to spread awareness to the community about this service to take advantage of.
	Work with composting and chipping facilities to ensure they are open during the free collection day(s).
<b>M1–M36</b>	<b>Expand the current educational campaigns on alternatives to burning.</b>
	Host community sessions to educate people on alternatives to open burning.
	Create documentation and flyers to hand out explaining open burn alternatives.
	Post on social media with educational content to promote awareness on burning alternatives.
<b>M1–M36</b>	<b>Expansion of the composting workshops and offer free composters for residential use.</b>
	Host composting workshops to teach the community on proper ways to compost.
	Bring in leaders of the composting facilities to explain to the community why to compost along with best practices.
	Offer free composters for residential use, either at the workshops, or have them available for pickup during free drop-off dates.
<b>M1–M36</b>	<b>Offer free yard waste bags as part of the program.</b>
	The County has bags, which are constructed of heavy-duty post-consumer paper designed to take the place of the plastic bags.
	These bags are for sale at Ace Hardware and Fred Meyer for consumers to purchase should the county run out.

<b>M1–M36</b>	<b>Offer Technical support to people who want to access free pickup days or composting classes.</b>
	Host community meetings to offer technical support to those who need it.
	Show community members dates for composting classes, and what days are pickup dates.
	Create flyers/small calendars with information on what days there are composting classes, along with the free pickup dates for their neighborhood.
<b>M1–M36</b>	<b>Offer Ag Waste free drop-off pilot program. Work with Ag firms to determine likelihood of success of an expanded program.</b>
	Work with Ag firms to determine success of an expanded program and come up with a schedule to follow for drop-off dates.
	Monitor success of drop-off dates to determine if the program can expand further.

## Project Partners

### Kittitas County - Solid Waste Program

- Purpose of the partnership: The Kittitas County Solid Waste Program operates the Solid Waste Compost facility in Ellensburg. They also manage the waste hauling franchise and must approve any free or reduced program elements.
- Key contact: Jesse Cox, Environmental Manager

### Ellensburg Transfer Station - Kittitas County Solid Waste Compost facility

- Purpose of the partnership: The Ellensburg Transfer Station, located at 1001 Industrial Way, is the location of the Kittitas County Solid Waste Compost facility. It will be the location where the waste collected in this program will be processed. It will also be the location for the free drop-off days where residents will bring their materials.
- Key contact: Transfer Station Manager

### Kittitas County Solid Waste Advisory Committee

- Purpose of the partnership: The Solid Waste Advisory Committee is a committee established to assist in the development of programs and policies concerning solid waste handling and disposal and to review and comment upon proposed rules, policies, or ordinances prior to their adoption.
- Key contact: Patti Stacey, Facilities and Waste Operations Director



**City of Ellensburg, Sustainability Office**

- Purpose of the partnership: The Sustainability Office Can provide resources to enhance the reach of the educational/marketing campaign
- Key contact: Nicole Baker, Sustainability Coordinator

**Waste Management, Inc**

- Purpose of the partnership: Waste Management is the waste hauler for the Ellensburg area. Their participation is instrumental in the success of the program.
- Key contact: Local Franchise Manager

**Ace Hardware and Fred Meyer, both in Ellensburg**

- Purpose of the partnerships: Site to acquire yard waste bags
- Key contacts: Store Managers in Ellensburg

**Menastash Grange #1054, Ellensburg**

- Purpose of the partnership: The Grange includes members who are small agricultural producers and would be good candidates for this program. The grange could help enhance the reach of the educational/marketing campaign.

**Washington Family Farms**

- Purpose of the partnership: Washington Family Farms is an organization that supports 50 family farms in the Yakima Valley. Their members are small agricultural producers who would be good candidates for this program. They could help enhance the reach of the educational/marketing campaign.
- Key contact: Dan Davis, Director – Sales & Operations

**Central Washington University, Sustainability Office**

- Purpose of the partnership: The Sustainability Office will provide resources to enhance the reach of the community engagement & education elements. The office will also provide Student Sustainability Ambassadors to support key community engagement efforts on campus and in the local community.
- Key contacts: Jeff Bousson, Sustainability Director; Jordan Spradlin, Sustainability Coordinator

**WA Dept. of Ecology - Central Regional Office**

- Purpose of the partnership: The Department of Ecology can provide resources to enhance the reach of the educational/marketing campaign. The office could also provide expertise with all of the project elements.
- Key contact: Will Strand, Section Manager

**Beyond this framework of support, the partner network will be expanded throughout implementation to strengthen outreach and impact.**