



Impacts to Oregon's Wine Industry: Covid-19 and the 2020 Wildfires

September 2021

Summary

IPRE included questions asking businesses to provide information about impacts from the 2020 wildfires and the COVID-19 pandemic on grape and wine production in 2020. The results are not intended to provide a definitive analysis of impacts from the two crises; they do provide context for interpreting the results of the 2020 Vineyard and Winery Report which found that grape production (measured in tons harvested) was down 29 percent and tons of grapes crushed was down 23.1 percent.

Wildfire Impacts

- **Sixty-two percent of growers reported impacts from the 2020 wildfires.** Key impacts noted by growers included grapes with a layer of ash on the skins, unhealthy air quality delaying harvest operations, and diminished sunlight affecting cluster size. Several businesses reported direct fire damage to their operation.
- **Eighteen percent of the state's wineries estimated to be impacted stated that they detected the taste of ash in their 2020 vintage.** The majority of red varieties, affected by smoke, particularly Pinot Noir, were dumped by producers, or were not harvested.
- **The industry is learning to adapt to wildfires.** Oregon producers cited lessons learned from their colleagues in Napa Valley, implementing chemical and physical mitigation measures, including:
 - Chemically mitigating the phenols associated with smoke impact
 - Handpicking and washing grapes to minimize the ash introduced into fermentation
 - Pivoting to different styles of wine that extract less flavor from the skin, either focusing on whites (which respondents report picks up less flavor from the smoke), or creating styles that involve a lighter pressing

COVID-19 Pandemic Impacts

- **Respondents stated that the COVID-19 pandemic impacted about 35% of vineyards and 45% of wineries in Oregon, posing a series of challenges for their businesses. Responses included:**
 - The virus drove labor shortages as workers either got ill or avoided working altogether
 - Increased costs due to supply constraints and having to invest in health and safety measures
 - Decreased revenue due to occupancy limitations (to comply with social distancing) and stay-at-home orders shuttering restaurants and tasting rooms
- **Businesses quickly adapted to the COVID-19 pandemic.** Key adaptations noted by respondents included:
 - Pivoting to online sales, including wine club memberships and virtual tastings
 - Cutting back on production, including foregoing production of a 2020 vintage altogether
 - Supplementing a tight labor supply by relying on volunteers or family and increasingly, in automating as much as the process as possible
 - Following health and safety protocols by instituting social distancing, outdoor dining, PPE and enhanced sanitization protocols (particularly investing in new utility access points) to comply with requirements

Intent of this Paper

As part of its research mandate, the Oregon Wine Board (OWB) commissions an annual Oregon Vineyard and Winery Report. These studies were historically conducted by the U.S. Department of Agriculture. Between 2012 and 2016, the Southern Oregon University Research Center (SOURCE) produced the reports. Since 2017, the Oregon Wine Board has contracted the University of Oregon's Institute for Policy Research and Engagement (IPRE) to prepare the report.

The purpose of this supplement to the 2020 Vineyard and Winery Report is to provide context for how the COVID-19 pandemic and 2020 Oregon wildfires impacted grape harvest and wine production. We added several questions to the 2020 report anticipating that the industry would be interested in better understanding the impacts of the combined disasters of 2020. The approach was simple: we asked businesses to indicate whether or not COVID-19 or the wildfires had impacted their operations. If they responded affirmatively, we asked them to provide details in an open-ended format. This paper summarizes our findings. This paper is based on data on the 2020 vintage provided by 486 businesses in Oregon.

Findings

The one-two punch of the COVID-19 pandemic and the severe 2020 wildfire season in Oregon is driving firms in Oregon's wine industry to avoid, adapt or perish. The 2020 Vineyard and Winery report is a small step for the industry to come together and share learning, rapidly catalyzing a new era of best practices to keep pace with the increasing impacts of climate change on the state.

Impacts from the 2020 Oregon Wildfires

The 2020 wildfire season was one of the most destructive on record for Oregon and states through the Western U.S. In Oregon, wildfires killed 11 people, burned more than one million acres, and destroyed several thousand homes. The impacts were unevenly experienced across the state. Fires raged across the state, causing grave harm to firms operating within the north and south Willamette valley, as well as those in the Umpqua and Rogue Valley regions – with the Beachie Creek, Holiday Farm and Almeda Drive fires being the most destructive to life and property.

The Lionshead Fire, a 200,000-acre conflagration of fires in the Santiam and Breitenbush regions, spread across Clackamas, Linn and Marion counties was caused by lightning and historically high winds in September 2021.¹ Smoke from the fires blanketed wine areas throughout the North Willamette Valley for over 10 days. By the time the fire was put out in September 2020, there were at least 4 confirmed deaths and over 1,300 lost structures.²

The same wind conditions that created the Lionshead Fire sparked the Holiday Farm fire (~175,000 acres) as sparks from a faulty transmission line blew flames from McKenzie Bridge down through the McKenzie River valley, prompting evacuation notices as far east as the Thurston neighborhood of Springfield, OR.

¹ KOIN.com. "4 Dead, 10 Missing in Beachie Creek Fire," September 11, 2020. <https://www.koin.com/local/marion-county/marion-county-wildfires-beachie-creek-santiam-lionshead-fire-evacuations-09112020/>.

² Ibid.

This fire claimed at least one life³ and over 700 structures destroyed, including the unincorporated communities of Blue River and Rainbow.⁴

Jackson County experienced some of the most severe impacts; the Almeda Drive fire impacted more than 2,750 structures and resulted in three deaths.⁵ Unlike many other Oregon fires, the Almeda Drive fire was human-caused and possibly the result of arson. The South Obenchain fire Northeast of the City of Eagle Point started from an unknown cause, burned more than 32,000 acres and destroyed 89 structures in mostly rural areas of the county.⁷ Creating more pollution in the already smoke-prone Rogue Valley, and contributing to the haze over Umpqua Valley vineyards.

Table 1 shows the estimated number of vineyards that experienced impacts from the 2020 wildfires. The results show that a majority of growers in the Willamette Valley and other Oregon regions experienced impacts of some type.

Table 1: Estimated number of vineyards that experienced impacts from the 2020 Oregon wildfires

| Region | Number of Vineyards | % Impacted by Fire | Number Impacted by Fire |
|-------------------------|---------------------|--------------------|-------------------------|
| North Willamette Valley | 808 | 75% | 609 |
| South Willamette Valley | 123 | 82% | 100 |
| Umpqua Valley | 82 | 44% | 36 |
| Rogue Valley | 205 | 29% | 60 |
| Columbia River | 135 | 20% | 27 |
| Other Oregon | 17 | 71% | 12 |
| Total | 1,370 | 62% | 844 |

Respondents throughout the state reported at least some smoke damage, with the greatest effects being concentrated in the Willamette and Umpqua valleys. Operators reported severe growing conditions. One grower in the SWV region reporting as much as a ¼ inch of ash accumulating on their vineyard by the time the smoke began to clear in mid-September. Similarly, thick smoke cover from the Santiam and Holiday Farm fires, in

Reacting to wildfires

This comment from a grower/vintner typifies the industry’s response to the fire:

We did not harvest much of our estate Pinot noir acreage, instead we claimed crop insurance. We did harvest all of the acreage we contracted for but negotiated price reductions on those grapes with the growers. For the grapes we did harvest we used smoke protocols in vinification to mitigate smoke effect in the resulting wines

Like this operator, many indicated that they:

1. Suffered decreases in the quality/value of their product
2. Left red varieties on the vine and claimed insurance
3. Reacted by implementing smoke protocols to mitigate phenoms in the final product, by handpicking/washing grapes to avoid excess ash from entering fermentation, and/or by pressing lighter, thereby adding costs and altering the final product

³ Oregonian/OregonLive, Shane Dixon Kavanaugh | The. “Oregon Man Killed in Holiday Farm Fire Identified as Vida Plumber, 59.” oregonlive, September 21, 2020. <https://www.oregonlive.com/wildfires/2020/09/person-killed-in-holiday-farm-fire-identified-as-vida-man-59.html>.

⁴ KEZI News. “Number of Structures Lost in Holiday Farm Fire up to 723.” Accessed August 30, 2021.

<https://www.kezi.com/content/news/Number-of-structures-lost-in-Holiday-Farm-Fire-up-to-723-572447041.html>.

⁵ <https://jcgis.maps.arcgis.com/apps/opsdashboard/index.html#/9c9c796ff7ff44c0b1e5d21f2d71c9fb>

⁶ https://en.wikipedia.org/wiki/2020_Oregon_wildfires

⁷ <https://inciweb.nwcg.gov/incident/7185/>

the experience of one respondent, created “dusk for ten days” while dropping the temperature 20 degrees.

Vineyard operators trace widespread impacts from the smoke including:

- About 6.5% of buyers rejecting or renegotiating contracts at severely reduced prices, often for good reason
- Decreases in tourism and visitation during peak tasting season due to unhealthy conditions
- Many growers reporting a complete or near-complete loss of their 2020 vintage of reds, particularly Pinot Noir and especially for higher end labels, due to the smoke and related ash layer on the skin – with 45% reporting or suspecting smoke damage
- Other damages due to the wildfires including
 - Decreases in crop yields due staff not being able to harvest in unhealthy conditions
 - Delays in ripening due to lack of sunlight
 - Delays in harvesting exposing vines to bird depredation

Vineyards in the rest of the state report light to moderate smoke damage, if any at all, with losses concentrated again in red varieties. Table 2 shows that fewer wineries reported impacts from the 2020 fires than vineyards. Vintners have been adapting to the increasingly frequent wildfires by changing their methods of production and what they produce, with 12% of respondents reporting they are testing smoke-mitigation methods. Wineries have been seeking out hand-harvested grapes (attempting to sort grapes that are less smoke damaged), experimenting with fermentation processes and refocusing on pressing grapes for white and rose wines. Of the wineries that stated they were impacted, the most common refrain among respondents is a near-complete loss of their 2020 red wine vintage, if not a severe downgrading of the quality of the label.

Table 2. Estimated number of wineries that experienced impacts from the 2020 Oregon wildfires

| Region | Total Wineries | % impacted by fire | Number Impacted by Fire |
|-------------------------|----------------|--------------------|-------------------------|
| North Willamette Valley | 650 | 19% | 123 |
| South Willamette Valley | 86 | 29% | 25 |
| Umpqua Valley | 53 | 30% | 16 |
| Rogue Valley | 122 | 3% | 4 |
| Columbia River | 64 | 17% | 11 |
| Other Oregon | 20 | 0% | 0 |
| Total | 995 | 18% | 179 |

Table 3 summarizes the impacts of the 2020 wildfire season on the Oregon wine industry.

Table 3. Comparing Respondents’ Experiences of the 2020 Oregon wildfires on Vineyards and Wineries

| Indicator | Vineyard Fire Impacts | | Winery Fire Impacts | |
|--|-----------------------|-----------|---------------------|-----------|
| | Vineyard Count | V % total | W Count | W % Total |
| Suspected or experienced smoke impacts in product | 615 | 44.9% | 431 | 43.3% |
| Other damage related to wildfire season ⁸ | 12 | 0.9% | 86 | 8.6% |
| Reported changing production in response to smoke impacts ⁹ | 25 | 1.8% | 119 | 11.9% |
| Cancelled contracts | 50 | 3.6% | 68 | 6.8% |

Impacts from the COVID-19 Pandemic

The response to the COVID-19 pandemic and associated stay-at-home orders led to skyrocketing unemployment and other health and social impacts in Oregon and across the country. The impacts have been felt unequally across the economy, with many sectors thriving during the pandemic while others—particularly leisure and hospitality—experiencing widespread job losses. According to the Oregon office of Economic Analysis,¹⁰ service industry employment still lags beyond pre-pandemic levels by 5%.

We were unable to operate our tasting room, distribution sales suffered from restaurant closures, and overall sales decreases. – Vineyard operator summarizing the impacts of COVID-19

Oregon acted proactively during the pandemic, joining a compact of western states implementing aggressive public health interventions. Interventions include:

- Managing service industry activity by curtailing operations through capacity requirements, outdoor operating requirements or “shutting down” in-person services all together. Relevant to the Oregon wine industry, this included tasting rooms, tasting events and in-person dining, all important sources of revenue and exposure for firms.
- Health and safety regulations, including mandating personal protective equipment, social distancing, and new sanitization procedures
- American workers, including those eligible in the wine industry, received stimulus checks meant to keep families solvent during the crisis from the federal government worth thousands of dollars. This may have disincentivized workers to expose themselves to the risks of COVID-19, as they felt temporary financial security.

⁸ Includes bird depredation due to delays in harvesting, changes in light levels and water supply impacting cluster size and quality; and early harvesting to avoid smoke impacts

⁹ Includes pressing lighter, employing processes to mitigate the compounds related to smoke impact and other strategies to address the harm wildfires have caused the final product.

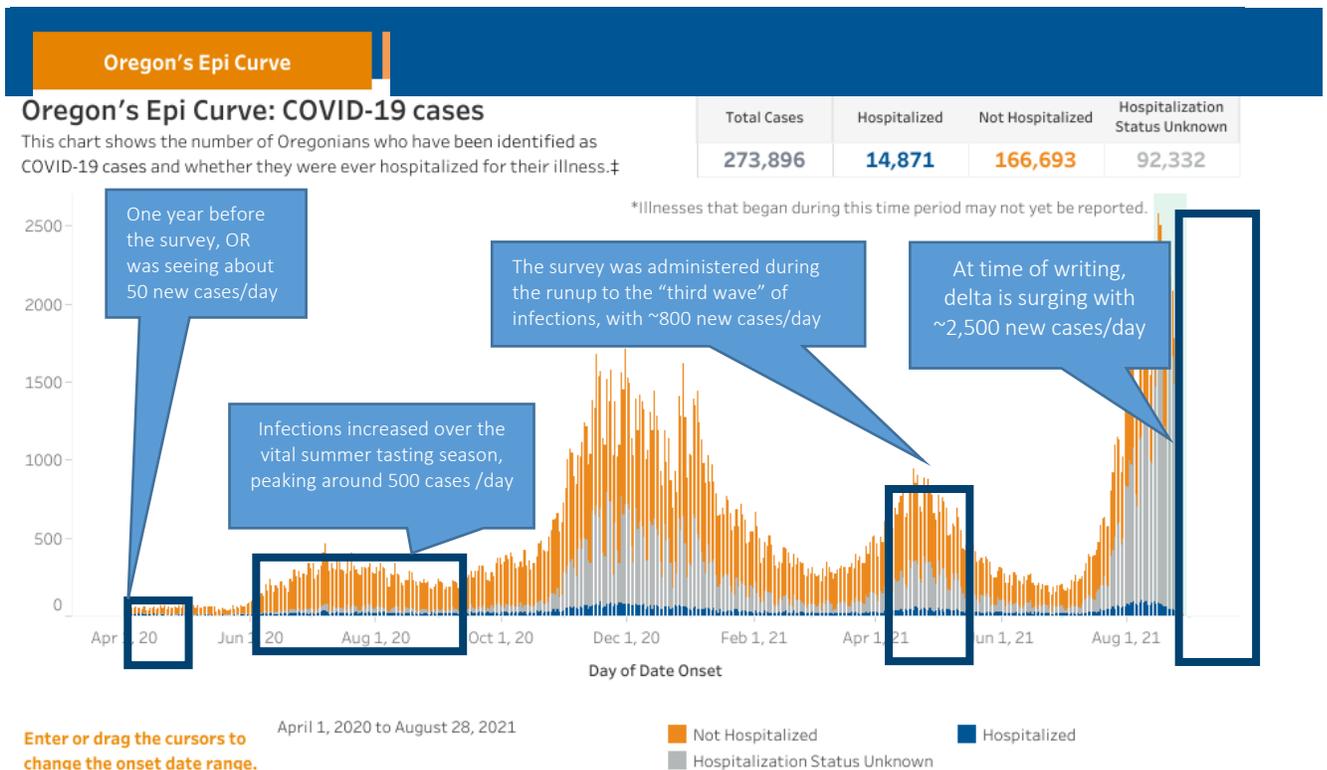
¹⁰ Coba, Katy, Mark McMullen, Josh Lehner, Kanhaiya Vaidya, and Michael Kennedy. “Oregon Economic Forecast September 2021,” n.d., 65.

Figure 1 shows the Oregon EPI Curve during the pandemic. An EPI curve is a visual display of the onset of illness among cases associated with an outbreak. The EPI curve shows:

- The outbreak's time trend, or the distribution of cases over time
- Outliers, or cases that stand apart from the overall pattern
- A general sense of the outbreak's magnitude
- Inferences about the outbreak's pattern of spread
- The most likely time period of exposure

During April 2020, approximately two weeks into the pandemic, Oregon was experiencing about 50 new cases per day, 1/5 of those requiring hospitalization. One year later as the 2020 survey period was ending, the state was seeing about 800 cases per day, with about 5% of those being sent to the hospital. At time of writing, late August 2021, the state is seeing all-time highs of over 2,500 cases per day, with about 4% requiring hospitalization due to the surging delta variant among unvaccinated persons. The emergence of the Delta Variant in summer 2021 has led to a fourth wave of infections that is significantly more serious than previous waves. This has led Governor Brown to adopt additional restrictions to slow the spread of COVID-19.

Figure 1: Oregon EPI Curve April 2020 – August 2021



Oregon Health Authority, August 30th 2021¹¹

¹¹ "Oregon Health Authority : OHA COVID-19 News and Reports : External Relations Division : State of Oregon." Accessed August 31, 2021. <https://www.oregon.gov/oha/erd/pages/covid-19-news.aspx>.

Table 4 shows the estimated number of vineyards that reported impacts from the COVID-19 pandemic. About 47% of vineyards reported impacts from the COVID-19 pandemic. Fewer growers in the Umpqua Valley (33%), Columbia River (35%) and Other Oregon (43%) regions reported impacts.

Table 4. Estimated number of vineyards that experienced impacts from the COVID-19 Pandemic

| Region | Number of Vineyards | % Impacted by COVID | Number Impacted by COVID |
|-------------------------|---------------------|---------------------|--------------------------|
| North Willamette Valley | 808 | 50% | 402 |
| South Willamette Valley | 123 | 53% | 65 |
| Umpqua Valley | 82 | 33% | 27 |
| Rogue Valley | 205 | 49% | 100 |
| Columbia River | 135 | 35% | 47 |
| Other Oregon | 17 | 43% | 7 |
| Total | 1,370 | 47% | 648 |

Vineyards reported the following difficulties related to the pandemic:

- Finding labor willing to work during the pandemic, and having those that do follow health and safety guidance
- Conforming to safety rules, securing PPE, and running new utilities to the fields to comply with sanitation requirements
- Losing sales due to closures, particularly those at onsite tasting rooms, and lack of demand for grapes due to in-person dining establishment being shuttered and leading to less demand from wholesale customers
- Vineyards were less impacted by the pandemic than wineries, due to the seasonal nature of the work, with 35% of surveyed vineyard operators were impacted directly by COVID-19 or by the public health measures compared to nearly half (48%) of wineries.
- Of those, operators had a difficult time finding workers, with ~15% reporting that labor was more difficult or expensive to hire. This led firms to pay overtime to what staff they had or seek out informal labor arrangements, like relying on volunteers or their family.
- About 18% of vineyard operators reported decreases in revenue due to public health requirements, with a particular emphasis on the 5.5% of respondents that lost sales due to tasting room and in-person dining shutdowns. Additionally, ~1% of respondents reported cases of COVID-19 in their workforce.
- One Oregon wine company’s experience typifies the impact of COVID-19 on the industry:

We were not able to open our tasting room, nor were we able to exhibit at our normal round of events. Harvest crews were hard to come by resulting in delays in harvesting of fruit. Restaurant closures severely impacted our wholesale channel sales.

Table 5 shows that about 48% of wineries reported impacts from the COVID-19 pandemic—a figure similar to vineyards. The results show some variability by region with the 67% of wineries in the Other Oregon region reporting impacts compared to 32% in the South Willamette Valley.

Table 5. Estimated number of wineries that experienced impacts from the COVID-19 pandemic

| Region | Total Wineries | % impacted by COVID | Number Impacted by COVID |
|-------------------------|----------------|---------------------|--------------------------|
| North Willamette Valley | 650 | 53% | 343 |
| South Willamette Valley | 86 | 32% | 28 |
| Umpqua Valley | 53 | 50% | 27 |
| Rogue Valley | 122 | 41% | 50 |
| Columbia River | 64 | 33% | 21 |
| Other Oregon | 20 | 67% | 13 |
| Total | 995 | 48% | 482 |

Wineries faced some challenges with COVID-19 that were similar to vineyards but found the impacts of government mandated stay-at-home orders more severe, with about 5% of respondents indicating that the pandemic had a high impact on their sales. Wineries responded to the crisis by decreasing production volumes, focusing on online sales, wine clubs, virtual wine tastings or other remote channels; and in some cases, forgoing their 2020 vintage all together. This ability to pivot to virtual operations may be why fewer wineries (as a percentage) report losses due to stay-at-home mandates (2.9% vs 5.4% of vineyards).

Overall, about half (48%) of Oregon’s wineries were impacted by COVID-19. Increasing costs due to labor shortages, combined with supply chain constraints for inputs and PPE made winemaking more expensive. Meanwhile, decreased demand due to stay-at-home orders hurt sales. It is not surprising then that the pandemic has touched a significant portion of the industry.

Once we realized how long our tasting room would be closed, we chose to reduce or suspend production of small lots of tasting room/club only wines.

-Winery operator’s response to pandemic policies

Examining the statements from impacted firms, wineries reported having an easier time finding labor with only about 5.5% of respondents indicating labor difficulties. This was due to shutdowns decreasing their demand for their product (and thus the inputs of their product), as well as the fact that the winemaking process requires fewer workers compared to harvesting. Three times as many vineyard operators reported issues with labor (~15%). About 14% of wineries referenced decreases in revenue or other costs associated with complying with public health measures, with ~3% finding tasting room and in-person dining closures particularly devastating. Again, about 1% of wineries reported incidents of COVID-19 in their workforce.

The table on the next page summarizes the impacts of COVID-19 on vineyards and wineries.

Table 6. Comparing Respondents’ Experiences of COVID-19 on Oregon Vineyards and Wineries

| Indicator | Vineyard COVID-19Impacts | | Winery COVID-19Impacts | |
|---|--------------------------|---------|------------------------|---------|
| | Number | Percent | Number | Percent |
| Impacted by COVID-19 | 648 | 47.3% | 482 | 48.2% |
| Greatly disrupted operations or sales ¹² | 9 | 0.7% | 53 | 5.3% |
| Labor difficulties ¹³ | 214 | 15.7% | 55 | 5.5% |
| Reported impacts of complying with health/safety protocols incl. demand for PPE or other inputs | 242 | 17.7% | 138 | 13.9% |
| Self-reported COVID-19 cases in workforce | 15 | 1.1% | 13 | 1.3% |
| Referenced losing revenue due to shutdowns ¹⁴ | 75 | 5.4% | 29 | 2.9% |

Both groups reported significant problems sourcing labor and the costs of complying with health and safety regulations. Both also reported cases of COVID-19 in their workforce at similar levels. The two diverge when considering the direct impact of the pandemic. More wineries found that the pandemic had a severe impact on their operations, as well as more wineries being impacted overall, by the decreases of demand for bottle sales due to stay-at-home policies. Fewer wineries specifically referenced tasting room and restaurant shutdowns being a cause of decreased revenue than vineyards did.

Conclusion

This report summarizes information collected from Oregon grape growers and wine producers for the 2020 vintage. The vintage was impacted by the COVID-19 pandemic and fires/smoke during September, ultimately disrupting vineyard and winery operations along with wine tourism, distribution, and sales. Additional information regarding the vintage can be found in the 2020 Vineyard and Winery Report.

¹² Defined as severe distress indicated in responses, reports of greatly increased costs and of having to dump or otherwise greatly reduce the value of their product.

¹³ Understaffing, failing to find workers, relying on overtime for current workers and recruiting volunteers/family

¹⁴ Particularly tasting rooms and restaurant bottle sales, but also other direct-to-consumer channels like tasting events.

About the Institute for Policy Research & Engagement

The Institute for Policy Research & Engagement (IPRE) is a research center affiliated with the Department of Planning, Public Policy, and Management at the University of Oregon. It is an interdisciplinary organization that assists Oregon communities by providing planning and technical assistance to help solve local issues and improve the quality of life for Oregon residents. The role of the IPRE is to link the skills, expertise, and innovation of higher education with the transportation, economic development, and environmental needs of communities and regions in the State of Oregon, thereby providing service to Oregon and learning opportunities to the students involved.

The University of Oregon Economic Development Administration University Center is a partnership between the Community Service Center, RAIN @ UO, the Lundquist Center for Entrepreneurship, the Oregon Business Consulting Group, and UO faculty. The UO Center provides technical assistance to organizations throughout Oregon, with a focus on innovation, entrepreneurship, and rural economic development. The UO Center seeks to align local strategies to community needs, specifically with regards to building understanding of the benefits of sustainable practices and providing technical training to capitalize on economic opportunities related to those practices. The EDC is partially funded through a grant from the U.S. Department of Commerce, Economic Development Administration.