
Economic Impact and Opportunity Analysis

For the Santiam Canyon communities
from the 2020 Wildfires

DRAFT

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Prepared for: Marion County



Preliminary Draft Report

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Executive Summary

On Labor Day 2020, hot, dry, and extremely windy conditions lead to extreme fire conditions that burned more area of the Oregon Cascades than had burned in the previous 36 years combined. The Santiam Canyon communities were severely impacted by two fires that accelerated and spread throughout the built and natural environments. The Beachie Creek and Lionshead Fires caused unimaginable damage to tight-knit communities already dealing with unique development challenges in the Santiam Canyon.

As affected residents and businesses are beginning to understand the scale of their losses and weigh their options, this Economic Impact and Opportunities Analysis is needed to assemble a complete view of the economy both past and present: what was lost, what remains to build on, and what opportunities and resources exist for recovery.

The purpose of this report is to provide decision makers in Marion County and in the Santiam Canyon communities with information to understand what the magnitude and shape of economic recovery may look like, and to identify opportunities to minimize economic hardship and accelerate economic recovery as defined and envisioned by the Santiam communities.

What did the economy look like before the fire?

The economy of the Santiam Canyon was heavily connected to and dependent on the larger regional economy. Employment was primarily supported by several manufacturing businesses linked to the timber industry, government services, and services related to tourism and recreation. In the upper part of the Canyon over a third of the population is retired, higher than Marion County and the state. More people commute out of the Canyon for work than live there. Median household income among is lower on average than the state of Oregon and Marion County. Economic growth, particularly related to the tourism and recreation sector, has been hampered for some time by lack of sewer and other infrastructure development.

The economy of the Santiam Canyon is largely linked to the region's natural resources. Timber and agriculture continue to support employment in the Santiam Canyon. Recreation-related tourism has been an area of economic opportunity that has generally been increasing in recent years. However, declining water levels at Detroit Lake have adversely impacted the largest source of income from recreational tourism. Ongoing uncertainty around the U.S. Army Corps of Engineers' management of Detroit Lake and Dam, diminishing investments in recreation on federal lands, as well as the lack of a solution for managing wastewater, has limited investments in recreation-related services that could capture tourism and recreation spending in the Canyon communities.

What were the impacts of the fires on the economy?

The fire damaged or destroyed resources that supported economic activity and quality of life in the Santiam Canyon communities. Loss of natural and human-built capital is most visible, but significant impacts to human and social capital also occurred and will influence the shape of economic recovery.

The fire affected or destroyed a total of 1,067 properties in Marion County and 100 in Linn County. The total improvement value lost was over \$250 million.

Exhibit ES-1. Affected and Destroyed Property Improvement Value and Square Feet

	Total Properties Affected	Total Improvement Value Lost	Square Feet Affected or Destroyed
Marion County	1,067	\$142,587,740	753,797
Detroit		\$39,777,270	200,690
Gates		\$10,725,360	71,730
Mill City		\$3,135,000	26,861
Other Areas		\$44,475,055	454,516
Linn County	100	\$12,003,001	N/A
Total	1,167	\$252,703,426	N/A

Source: ECONorthwest with information from Marion and Linn County Assessors

Marion County, Linn County, the state of Oregon, private individuals and businesses, and non-profit organizations have rallied to rebuild, strategize, and support the Canyon communities. Recovery actions linked to cleanup, clearing, and construction produces economic activity for a short time that helps offset some losses in economic activity (e.g., tourism and recreation) that has temporarily declined due to fire damage. Recreation-related visitation rebounded somewhat during the summer of 2021 but remains lower than the recent trend and the COVID-19-related historic peak during summer 2020. Rebuilding and investing in new infrastructure replaces damaged capital with new capital that supports long-term economic productivity. The recent installation of fiber optic lines for more accessible broadband internet is an example of how the fire created an opportunity for new infrastructure investment with long-term benefits for economic activity.

However, economic activity remains lower than what would be expected post-fire, even with offsets from recovery-related activities, such as logging and construction (Figure ES-2). Some losses are COVID-19 related (e.g., in education and government) and may come back sooner than losses related to fire damage, depending on how the pandemic response evolves. Lower demand for services from population loss and diminished recreation activity could persist for longer but can be accelerated through investments in recovery.

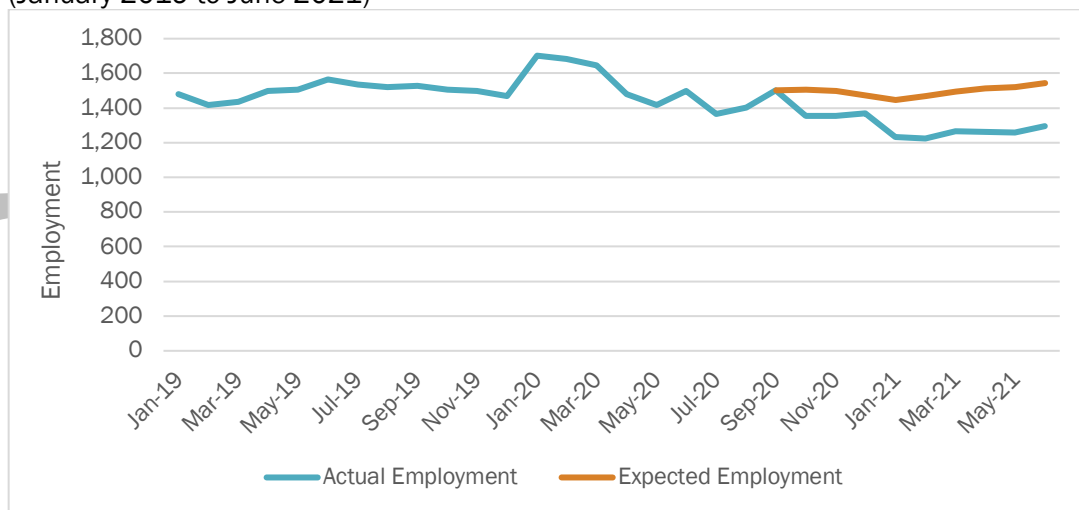
As of June 2021 (the most recent data month available) that **there are approximately 250 fewer jobs in the Santiam Canyon than there would be if the fire did not occur.** This is likely an underestimate because it does not include job losses among self-employed people.

Approximately \$4.4 million in income has not occurred in the Santiam Canyon due to

reductions in employment from October 2020 to June 2021. This value is equivalent to an average of \$484,000 in income per month.

Comparing pre-fire trends to post-fire employment values suggests that **the impact of the fire was most severe for Detroit/Idanha and Mill City.** Gates has the lowest employment and did not have discernable changes in employment levels. Gates has a high percentage of people employed in the logging and construction industries, which have been more heavily engaged in cleanup and recovery efforts. Mill City and Detroit appear to have the largest impacts to businesses, which is supported by information on the business closures due to the fires which have occurred in these two towns.

Figure ES-2 Actual and Expected Employment in the Santiam Canyon (January 2019 to June 2021)



Source: Calculated by ECONorthwest using Oregon Employment Department, Quarterly Census of Employment and Wages.

Lack of sewer and septic cost/complication represents the largest barrier to rebuilding of residential, commercial, and industrial infrastructure, particularly in the upper Canyon. Recreation sites not dependent on sewer face bureaucratic and funding challenges, as well as diminished natural capital that could lead to lower recreation value and site substitution for the medium to long term. These challenges, if not addressed quickly and effectively, will present long-term challenges to recovery.

What are the opportunities for accelerating economic recovery?

The pathway toward a robustly healthy economy in the Santiam Canyon is steep. The fire damage was significant. Prior to the fire, considerable challenges were already hampering investment and preventing the Santiam Canyon communities from experiencing their full economic potential. A full solution to the wastewater management challenge is technically and financially uncertain. If the sewer issue is not addressed in a way that supports affordable development, economic recovery is unlikely to progress at a meaningful scale in the near future.

That said, there are some bright spots that represent actionable opportunities for the Santiam Canyon communities to accelerate recovery. Despite the fire damage, the Santiam Canyon holds significant potential for continuing to be a beautiful place where people want to live and visit. The forest will recover, and some areas remain largely undamaged. Social capital—the bonds of community and relationship—can grow stronger through disruption and provide new energy for solving complex problems. The region is also eligible for financial resources that could put it at an advantage for making strategic investments that will pay off for decades to come.

Here are the key opportunities for economic recovery in the Santiam Canyon:

Fast track sewer investment throughout Canyon

- Lack of affordable wastewater management hampered economic opportunity prior to the fire. The problem is worse today as people try to rebuild. Any positive economic growth trajectory must include an affordable and effective solution to the sewer.
- Affordability depends on ambitious capital grant funding that must come from outside of the region: securing state and federal funds is key.
- Temporary solutions for wastewater management **must** incentivize future sewer connection to ensure long-term affordability for all.

Enhance and diversify recreation amenities

- Prioritize reopening recreation facilities, including campgrounds, hiking trails, day-use areas, and river access.
- Use recovery dollars to invest in new recreation infrastructure that diversifies opportunities and responds to areas of recreation demand growth. These include mountain biking, hiking and camping, whitewater and river paddling, and equestrian use.
- Make recreation investments that benefit both visitors and residents, including recreation facilities (trails and day use areas) in communities that bring visitors into commercial areas and enhance residential quality of life
- Maintaining recreation activity in Detroit Lake is important to existing businesses, but ongoing uncertain around lake management and long-term climate trends will limit the growth potential of motorized boating. Consider opportunities to enhance water-based recreation opportunities along the entire North Santiam River.
- Engage people in forest recovery, turning fire-damaged landscapes into laboratories and education opportunities, to the extent that safety and ecological sensitivity allow.

Plan for retail centers that capture more visitor spending

- Even before the fire, past and current services captured only a small amount of potential visitor spending. Tourism can support more economic activity if visitors are drawn into the city centers.

- Focus on services that make people want to stop and spend time and money, including restaurants, coffee and snack spots, day use amenities, EV charging stations, and restrooms.
- These types of amenities will capture more out-of-region dollars and support employment opportunities while enhancing resident quality of life.

Plan workforce housing that meets multiple needs

- To equitably recover human capital in the Canyon (i.e., meet people's needs in ways they want and can afford), housing availability and affordability must be considered. This is a key strategy for addressing the long-term well-being of current and displaced residents.
- Housing policy should acknowledge and work toward addressing the equity gaps arising from wealth loss among existing and displaced residents impacted by the fire.
- Identify opportunities to serve a seasonal workforce associated with a growing recreation economy.

Emphasize economic and social connectivity throughout the Canyon

- Acknowledge that there were residents who experienced wealth losses due to the fire that they may not be able to fully recoup. Because of the differences in impacts to wealth, the post-fire composition of the population that remains in the Santiam Canyon may be different. Programs to offer low interest loans and affordable housing will help address these impacts and should be continued.
- Economic productivity is enhanced by investments in all four forms of capital, including human and social capital. Invest in strengthening relationships among private and public entities within the Canyon and supporting local capacity for creative entrepreneurship, visioning, and problem solving.
- Identify and support opportunities for Canyon businesses and organizations to support each other and provide goods and services locally.
- Engage in placemaking that highlights the rich historic and cultural value that Canyon ecosystems provide, from regional water supply and recreation to timber and mineral resources.

1 Introduction and Framework

1.1 Background

On Labor Day 2020, hot, dry, and extremely windy conditions lead to fire starts and spreads that burned more area of the Oregon Cascades than had burned in the previous 36 years combined.¹ The Santiam Canyon communities were severely impacted by two fires that accelerated and spread throughout the built and natural environments. The Beachie Creek Fire affected 193,556 acres, including the communities in the Santiam Canyon from Lyons to Detroit. The Lionshead Fire spread over 204,469 acres, including the communities of Detroit and Idanha. The two fires ultimately merged for a total of approximately 398,000 acres. References to “the fire” in this report refer to both the Beachie Creek and Lionshead fires.

The 2020 Beachie Creek and Lionshead Fires caused unimaginable damage to tight-knit communities already dealing with unique development challenges in the Santiam Canyon. While affected residents and businesses are beginning to understand the scale of their losses and weigh their options, the Economic Impact and Opportunities Analysis is needed to assemble a complete view of the economy going forward—what was lost, what remains to build on, and what opportunities and resources exist for recovery.

Recovery actions began almost as soon as the fire emergency was over (the fire would not be completely extinguished until late fall 2020). Over the last year, community leaders, organizations, and individuals have redirected resources to clear debris; remove damaged trees; rebuild critical infrastructure, homes, and businesses; attend to people’s physical and mental well-being; and take stock of opportunities for transformation. Federal, state, local, and private financial resources are supporting many of these efforts.

All of this effort has occurred in the context of a larger local and global health and economic emergency with the COVID-19 pandemic. The interrelationship between these concurrent disasters has added to the complexity of recovery planning in the Santiam communities.

1.2 Purpose and Organization of This Report

The purpose of this report is to provide decision makers in Marion County and in the Santiam Canyon communities with information to understand what the magnitude and shape of economic recovery may look like, and to identify opportunities to minimize economic hardship and accelerate economic recovery as defined and envisioned by the Santiam communities.

This report is organized around three areas of inquiry:

¹ Abatzoglou, J. T., Rupp, D. E., O’Neill, L. W., & Sadegh, M. (2021). Compound extremes drive the western Oregon wildfires of September 2020. *Geophysical Research Letters*, 48(8), e2021GL092520.

1. **Section 2** describes and quantifies what the economy of the Santiam Canyon communities looked like before the fire.
2. **Section 3** describes and quantifies what the economy of the Santiam Canyon communities looks like post-fire.
3. **Section 4** identifies the barriers to and opportunities for economic recovery and provides recommendations for post-fire economic strategies to accelerate economic recovery.

This report is complementary to at least two other pieces of research that were underway concurrently. The consultancy *Better City* worked closely with the communities of Gates and Detroit to develop a vision and strategic plan for each community. This work draws from the stakeholder engagement and visioning completed through that project. The economic recovery strategies presented here—covering the entire Santiam Canyon—align with the Gates and Detroit vision and strategic plans. Separately, researchers from OSU investigated the human health impacts of the fires and provided insights that inform discussions of human and social capital in this report. Another investigation of the fiscal impacts of the fires is forthcoming, so that topic was not a central focus of this economic study.

1.3 Study Area

This analysis considers the economy of the entire Santiam Canyon area. There are five incorporated communities within the Santiam Canyon that the fires impacted, both in Marion and Linn Counties. From west to east, this includes Lyons, Mill City, Gates, Detroit, and Idanha. In addition to the incorporated communities there are people who live in the unincorporated areas, including Mehama, Niagara, and Elkhorn. In addition to the organized communities there are also recreation sites and businesses located throughout the Santiam Canyon that are included as the focus of this report.

The economic data in this report are presented at different spatial extents due to variations in data availability. The three spatial extents that are used to define the Santiam Canyon are:

- **Incorporated Cities:** The five incorporated cities are Lyons, Mill City, Gates, Detroit, and Idanha. This spatial extent does not include any unincorporated areas.
- **Zip Codes:** The five zip codes in the Santiam Canyon are 97358, 97360, 97346, 97342, 97350. This spatial extent is used for the real estate and employment analyses.
- **Census Tracts:** The two census tracts in the Santiam Canyon are 10600 (in Marion County) and 30200 (Linn County). This spatial extent is primarily used for displaying socioeconomic and demographic data.

Figure 1 shows the spatial extent of the five zip codes in relation to the incorporated cities and the fire perimeter. Figure 2 shows the spatial extent of the two census tracts in relation to the incorporated cities, two counties, and the fire perimeter.

Figure 1. Zip Codes and Incorporated Cities in the Santiam Canyon
 Source: Created by ECONorthwest

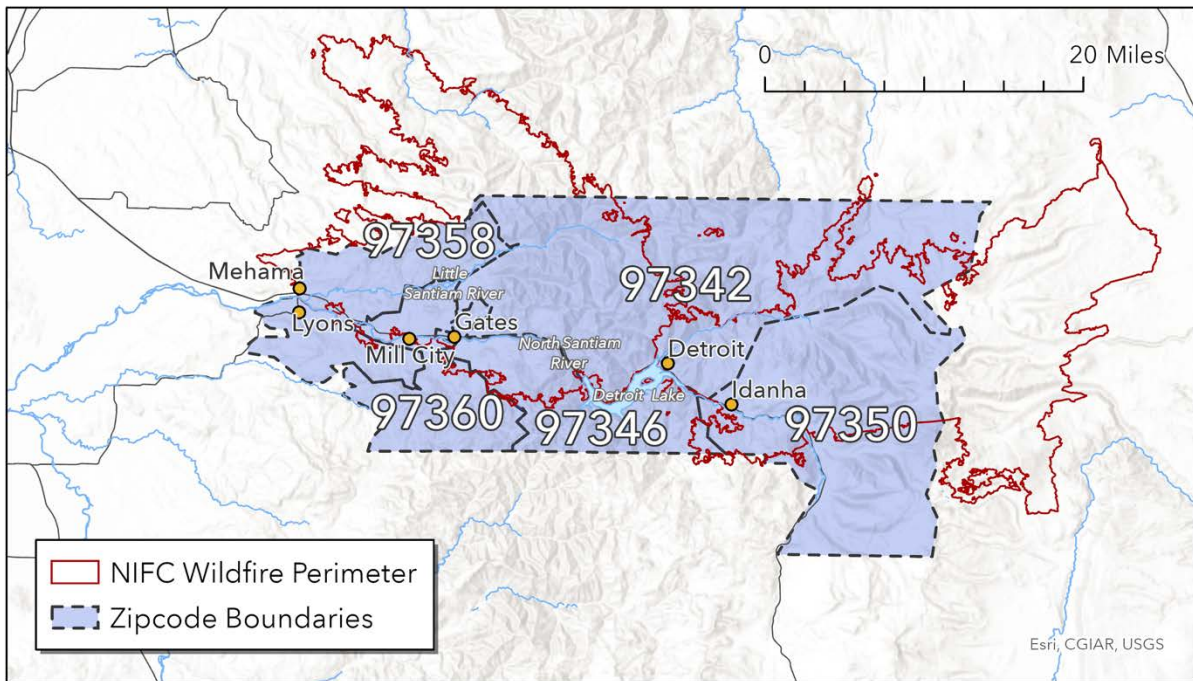
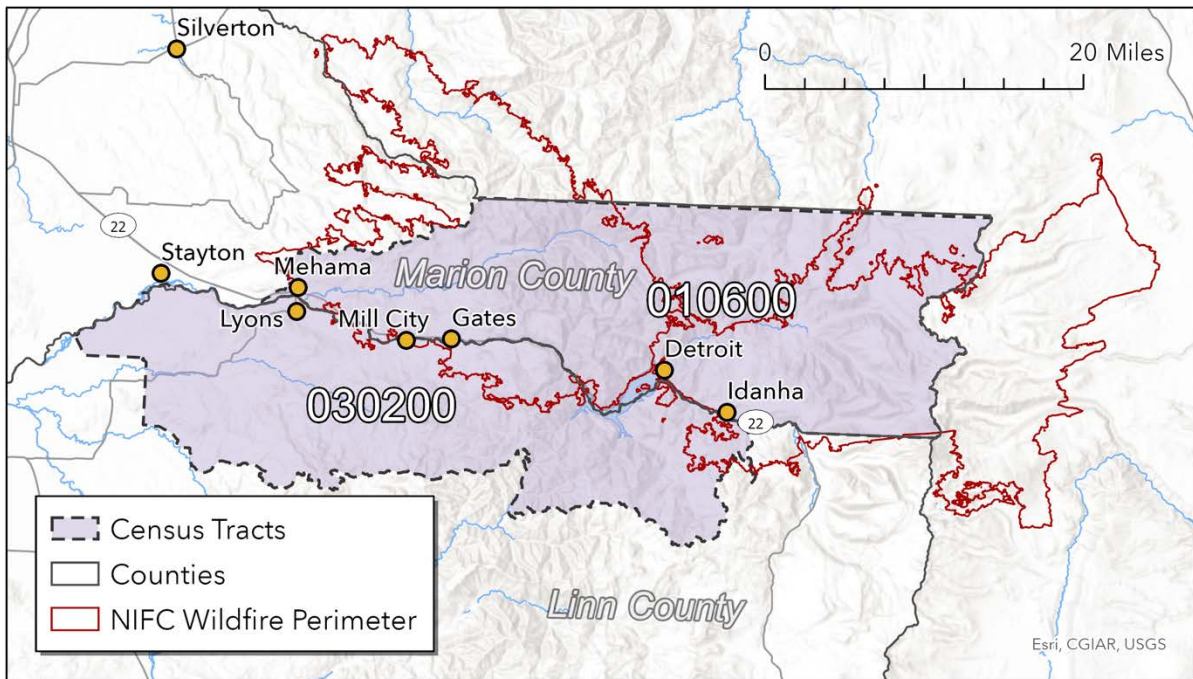


Figure 2. Census Tracts, Counties, and Incorporated Cities in the Santiam Canyon
 Source: Created by ECONorthwest



1.4 Methodology

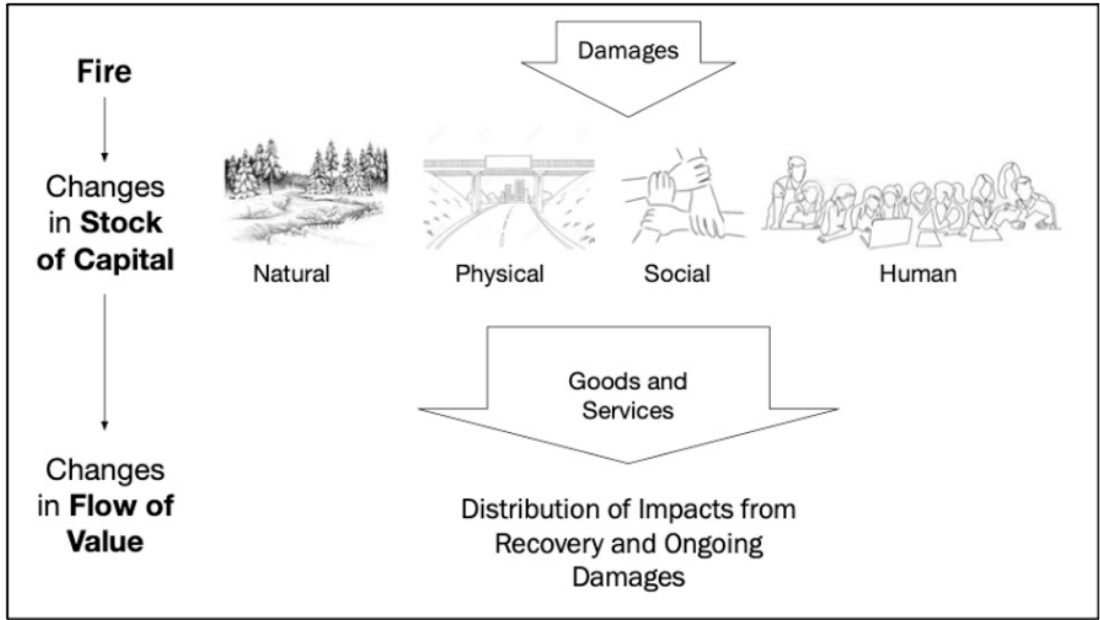
1.4.1 Conceptual Framework

“The economy” is made up of a set of resources that economists often group into four categories known as “capital” Figure 3. Natural capital and human-built physical capital broadly represent physical infrastructure. Human capital is people: their knowledge, skills, and abilities. Social capital are the laws, institutions, relationships, and shared values that bind people together. The stock of capital produces a flow of goods and services over time that people value.² This value can be measured in several ways, including through the economic activity (employment and income) the flow of goods and services support.

A shock to the stock of capital leads to changes in the flow of goods and services and associated economic activity. As Figure 3 shows, the fires destroyed natural and physical capital and significantly impacted human and social capital. The data presented in this report are used to describe the change in the stock of capital (e.g., number of properties burned, number of people displaced) as well as the change in flow of value (e.g., change in visits to recreation facilities, number of jobs lost).

Figure 3. Four Accounts of Capital Framework for Invest

Source: Adapted by ECONorthwest from Goodwin (2003)³



² Costanza, R., & Daly, H. E. (1992). Natural capital and sustainable development. *Conservation Biology*, 6(1), 37-46.

³ Goodwin, N. R. (2003). *Five kinds of capital: Useful concepts for sustainable development*. Global Development and Environment Institute Working Paper No. 03-07.

1.4.2 Data Sources and Analytical Tools

The data sources and analytical tools used for this analysis include both public and non-public information. This analysis relied upon Quarterly Census of Employment and Wages (QCEW) data provided through a data agreement from Oregon Employment Department (OED). ECONorthwest performed geospatial analysis to identify firms within the five zip-code study area. The QCEW data was evaluated on an individual employer basis to validate the reasons for changes in employment and otherwise perform quality control on the data. ECONorthwest worked closely with Marion County and Linn County to obtain assessment data on fire damage and all assessment information is directly from the two agencies. Additional data sources include U.S. Census data for demographic and socioeconomic variables, Oregon Department of Transportation traffic counts, Redfin real estate data, recreational use data from recreational managers in the Santiam Canyon, and other available information deemed to be reliable.

Informational interviews with city and county officials, real estate agents, business representatives, and social service providers also informed the analysis. ECONorthwest coordinated closely with Better Cities to leverage their informational interviews and stakeholder engagement in Gates and Detroit as an additional source of information.

Impacts from the fire that are calculated by ECONorthwest were analyzed by identifying how data after Labor Day 2020 compares to pre-fire conditions. Prior year averages were used for the analysis to discern variation from multi-year trends. Because of the recreational site closures and general changes in patterns in the economy due to COVID-19, the data from March 2020 to September 2020 are not used to establish prior year recreational data trends or employment impacts.

1.5 Uncertainty

This analysis provides information to fill in some gaps in the understanding of how the fires affected the Santiam Canyon economy. It offers preliminary recommendations based on data, past trends, and experience from elsewhere about the strategies most likely to produce positive economic outcomes over the short- and medium term. However, considerable uncertainty exists surrounding both how the fires impacted the economy and how communities and individuals will respond over time. This report synthesizes data available as of publication, but new data are constantly emerging, and the story continues to evolve.

The actual shape and pace of recovery will ultimately depend on the interventions taken in the short- and medium-term and how they interact with the uncertainties listed below (offered as questions to consider and/or answer as planning unfolds). It also depends on how the regional, national, and global economies trend, which itself is a major uncertainty given the COVID-19 pandemic. Data for most of 2020 and 2021—the data informing the post-fire economic picture offered here—reflect not just the fire but also the significant shock and persistent disruption of the global social and economic crisis. This is the context within which recovery work must begin, so understanding these uncertainties is essential to effective economic recovery planning.

- **Ecological uncertainty:** What was lost, what will re-emerge, when, and in what form? What is the trajectory for regrowth of the forest and what are the subsequent ecological risks, such as insect damage, invasive weeds, and flooding? How will fire damage influence water quality? What is the risk of future fires and how are residents considering that in deciding if and how to rebuild?
- **Visitation uncertainty:** How will fire damage impact visitation preferences over time? Will people want to return and engage in recreation in this area since the landscape has changed so severely? How will patterns of recreation and visitation change as the natural landscape recovers? How are changing economic conditions influencing demand for recreation locally and regionally?
- **Financial uncertainty:** How will recovery efforts impact local fiscal conditions? For how long will state and federal resources be available to invest in fire recovery? How willing are state and local entities to fund major capital improvements? How will household economic/financial characteristics in the Canyon change as recovery progresses? How will property insurance premiums and other increased costs of wildfire risk change?
- **Regulatory uncertainty:** How might regulatory constraints governing infrastructure development and redevelopment change? How will related regulatory actions, such as those affecting operation of Detroit Dam, interact with fire impacts?
- **Equity uncertainty:** To what extent were low-income residents, particularly those without insurance coverage, disproportionately affected by the fires? Are there some residents for whom the trauma of the fires was so great that they will not be returning? How will the distribution of economic resources shift as recovery unfolds?

2 Pre-Fire Economy of the Santiam Canyon communities

This baseline assessment provides data and information about the Santiam Canyon communities' economy before the fires (September 7, 2020). These baseline conditions of economic resources and activity describe what would need to be regained for recovery to occur.

Add call-out boxes for key findings in Final Report.

2.1 Pre-Fire Landscape

The Santiam Canyon is located at the western foothills of the Cascade Mountain range in a Canyon created by the North Santiam River. There are five incorporated cities: Lyons, Mill City, Gates, Detroit, and Idanha. The Santiam Canyon communities are primarily accessed by Highway 22. This road is a primary transportation corridor that connects population centers in the Willamette Valley with those in central Oregon. The figures on the following pages show aerial photos of the pre-fire landscape for the incorporated cities as of 2019.

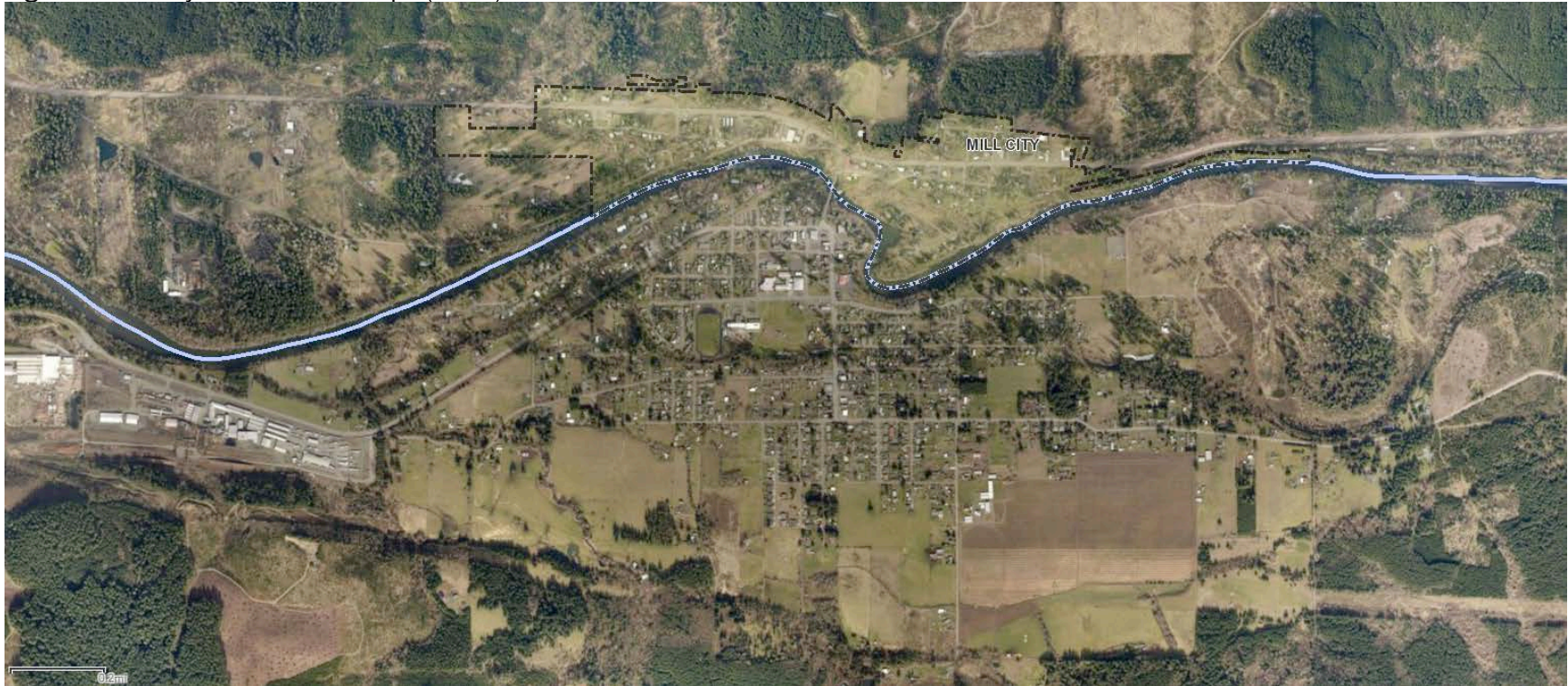
The Santiam Canyon is densely forested and includes part of the Willamette National Forest and Santiam State Forest. The western edge of the Canyon near the communities of Lyons, Mill City, and Gates is less densely forested because of the higher levels of development that have occurred over time. More intensive agriculture occurs in the western part of the Canyon, both for farmland as well as private timber production. The eastern side of the Canyon is located further from the population centers in the Willamette Valley and is less populated. The eastern part of the Canyon includes Detroit Lake, a 9-mile-long reservoir that is a popular recreational area.

Figure 4. Lyons/Mehama Pre-Fire Landscape (2019)



Source: Marion County, *Wildfire Before and After Imagery – Internal*. Available at:
<https://marioncounty.maps.arcgis.com/apps/webappviewer/index.html?id=326b8aeedcff4822b921f580774db7d7>

Figure 5. Mill City Pre-Fire Landscape (2019)



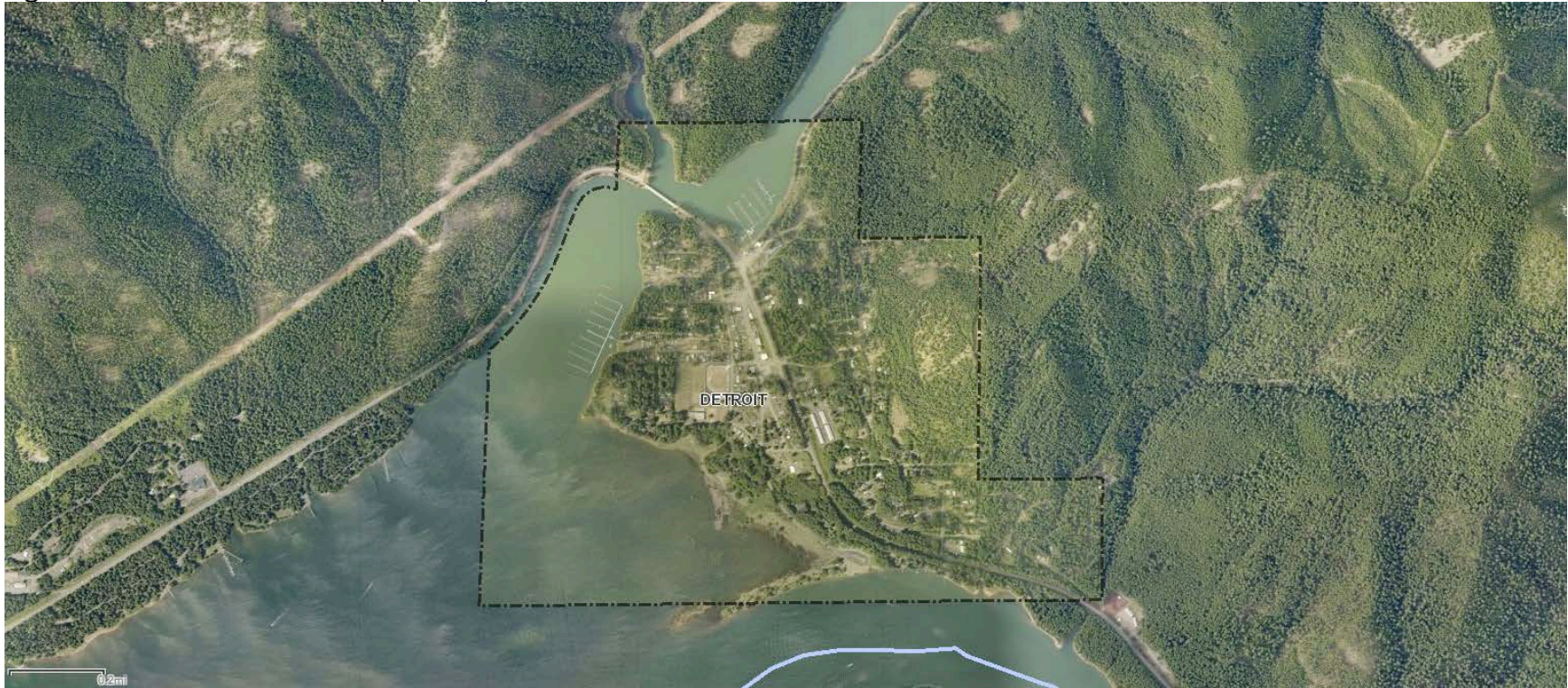
Source: Marion County, *Wildfire Before and After Imagery - Internal*. Available at: <https://marioncounty.maps.arcgis.com/apps/webappviewer/index.html?id=326b8aeedcff4822b921f580774db7d7>

Figure 6. Gates Pre-Fire Landscape (2019)



Source: Marion County, *Wildfire Before and After Imagery – Internal*. Available at: <https://marioncounty.maps.arcgis.com/apps/webappviewer/index.html?id=326b8aeedcff4822b921f580774db7d7>

Figure 7. Detroit Pre-Fire Landscape (2019)



Source: Marion County, *Wildfire Before and After Imagery - Internal*. Available at:
<https://marioncounty.maps.arcgis.com/apps/webappviewer/index.html?id=326b8aeedcff4822b921f580774db7d7>

Figure 8. Idanha Pre-Fire Landscape (2019)



Source: Marion County, *Wildfire Before and After Imagery - Internal*. Available at: <https://marioncounty.maps.arcgis.com/apps/webappviewer/index.html?id=326b8aeedcff4822b921f580774db7d7>

2.2 Population

2.2.1 Population Estimates and Forecasts

The combined population of the incorporated areas in the Santiam Canyon communities was 3,823 as of 2020 (before the fire) (Table 1). In addition, people live in the unincorporated areas of Mehama, Niagara, and beyond. The two census tracts have a combined population of 8,932 (this area does include people living east of Mehama but does not include Stayton or Scio, see Figure 2). Not included in these population estimates are the people who have second homes in the Santiam Canyon. The populations are expected to increase over time through 2050. Except for the City of Gates, the rate of increase is anticipated to be higher for all Canyon communities compared to the Linn and Marion County averages.

Table 1. Population Forecast, Cities in Santiam Canyon, Linn and Marion Counties, 2010-2050

	Population Estimates		Population Forecast			Forecasted Change 2020 to 2050		
	2010	2020	2030	2040	2050	Number	Percent	Avg. Annual Growth Rate
Lyons/Mehama	1,161	1,248	1,403	1,518	1,674	374	28%	0.94%
Mill City	1,855	2,110	2,503	2,760	3,009	899	38%	1.27%
Gates	471	543	553	558	554	11	2%	0.07%
Detroit	202	205	219	253	285	80	40%	1.32%
Idanha	134	155	208	267	334	179	99%	3.31%
Total Incorporated	3,823	4,261	4,886	5,356	5,856	1,543	36%	1.38%
Linn County	116,672	127,320	139,090	146,130	152,500	25,180	19%	0.63%
Marion County	315,335	349,121	385,366	407,818	424,996	75,875	21%	0.68%

Source: ECONorthwest, with data from Portland State University Population Research Center, *Certified Population Estimates and Forecasts*, available at: <https://www.pdx.edu/population-research/>

2.2.2 Population Demographics

The population of the Santiam Canyon communities are older on average than the larger areas of Linn County and Marion County (Table 2, Figure 9). The Santiam Canyon communities are generally less racially/ethnically diverse compared to the larger regional areas, however there is significant variation within the various communities (Figure 10). Mill City is the most racially/ethnically diverse of the Santiam Canyon communities. The areas in and around Mill City have higher household sizes compared to other Santiam Canyon communities, on average, with sizes about the same as the larger regional geographies.

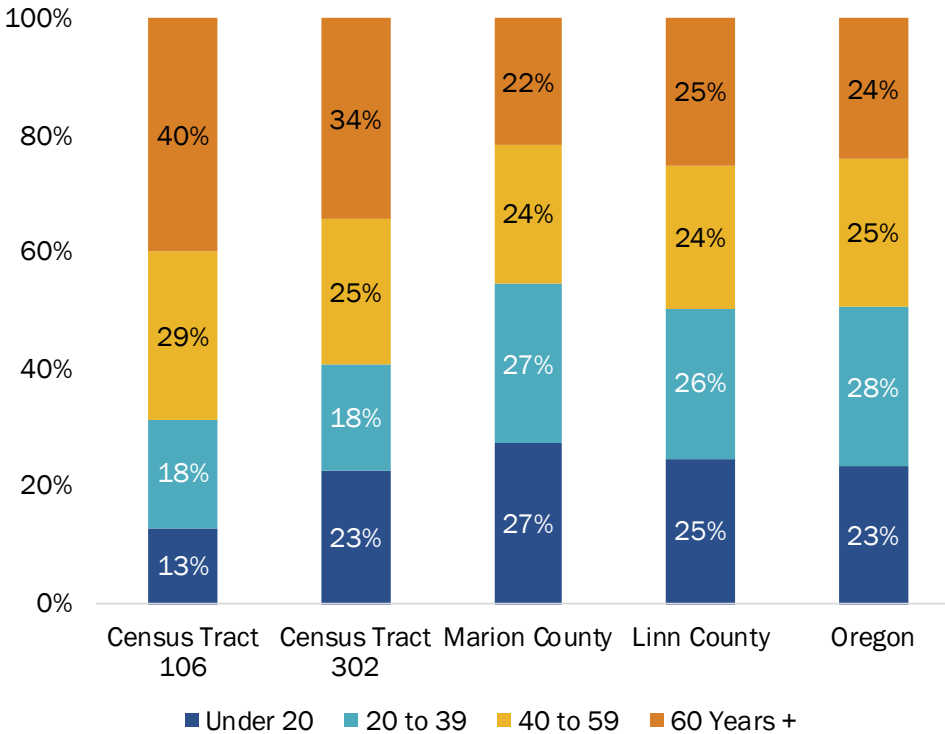
Table 2. Demographic Characteristics in the Santiam Canyon

	Median Age	Average Household Size	Percent White (Non-Hispanic)	Percent Hispanic	Percent People of Color (Non-Hispanic)	Percent Under Age 18	Percent Over Age 65
Lyons/Mehama	40.2	2.78	82.0	3.3	14.7	23.9	18.7
Mill City	39.9	2.76	73.6	10.4	16.0	26.3	17.1
Gates	54.6	2.21	83.0	5.0	12.0	13.2	31.7
Detroit	58.7	1.80	97.6	0	2.4	3.6	32.5
Idanha	61.2	2.19	90.7	7.4	1.9	6.8	37.0
Census Tract 106 (North)	58.0	2.22	91.2	1.6	7.2	11.3	26.1
Census Tract 302 (South)	49.7	2.74	81.4	7.2	11.3	21.1	25.7
Linn County	39.6	2.59	84.9	9.1	6.0	22.2	18.3
Marion County	36.6	2.79	65.4	26.6	8.0	24.9	15.4

Source: U.S. Census Bureau, 2015-2019 ACS Data, available from: <https://data.census.gov/>

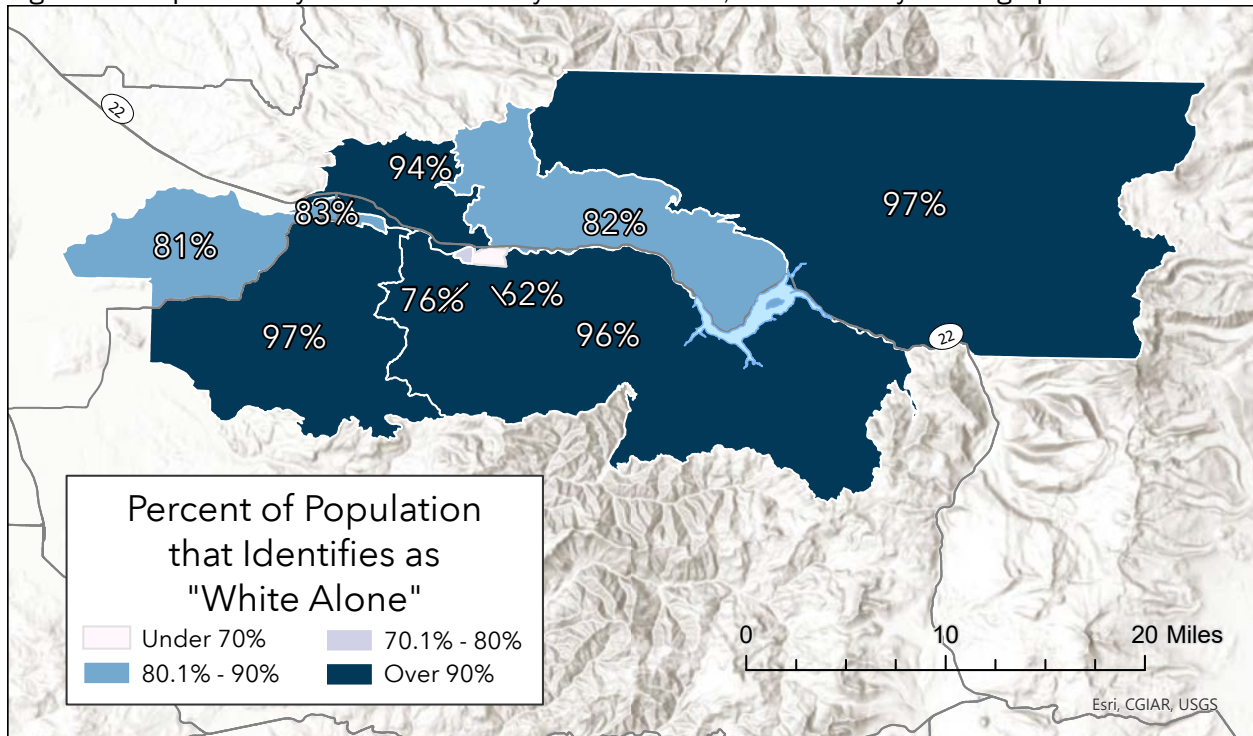
Note: See Figures 1 and 2 for a map of Census Tracts

Figure 9. Population by Age, Santiam Canyon Geographies



Source: U.S. Census Bureau, 2015-2019 ACS Data, available from: <https://data.census.gov/>. Table S1901.

Figure 10. Population by Race and Ethnicity “White Alone”, Santiam Canyon Geographies



Source: U.S. Census Bureau, 2015-2019 ACS Data, available from: <https://data.census.gov/>.

2.2.3 Population Socioeconomics

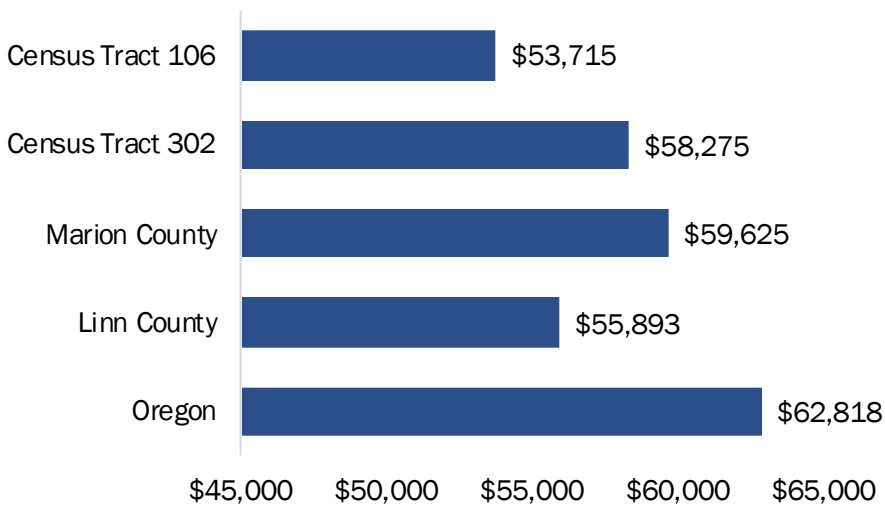
Median household incomes in the Santiam Canyon are lower than for Marion County on average (Figure 11). The area north of the North Santiam River, Census Tract 106, has a lower median household income on average than Marion County, Linn County, and Oregon overall. The Santiam Canyon communities have fewer people in the highest household income levels compared with the regional averages (Figure 12).

Table 3. Socioeconomic Characteristics of Santiam Canyon communities and Counties

	Median Household Income	Per Capita Income	Percent Earning a Bachelor's Degree or Higher (age over 25)	Percent Below Federal Poverty Line
Lyons/Mehama	\$66,485	\$27,168	10.0%	14.2%
Mill City	\$53,243	\$19,672	13.2%	12.7%
Gates	\$42,250	\$24,385	11.5%	18.4%
Detroit	\$41,250	\$44,078	38.5%	8.4%
Idanha	\$43,500	\$25,854	4.3%	8.8%
Census Tract 106 (North)	\$53,715	\$31,876	20.9%	10.3%
Census Tract 302 (South)	\$58,275	\$24,852	13.3%	11.7%
Linn County	\$55,893	\$27,345	19.3%	13.3%
Marion County	\$59,625	\$27,338	23.5%	14.2%

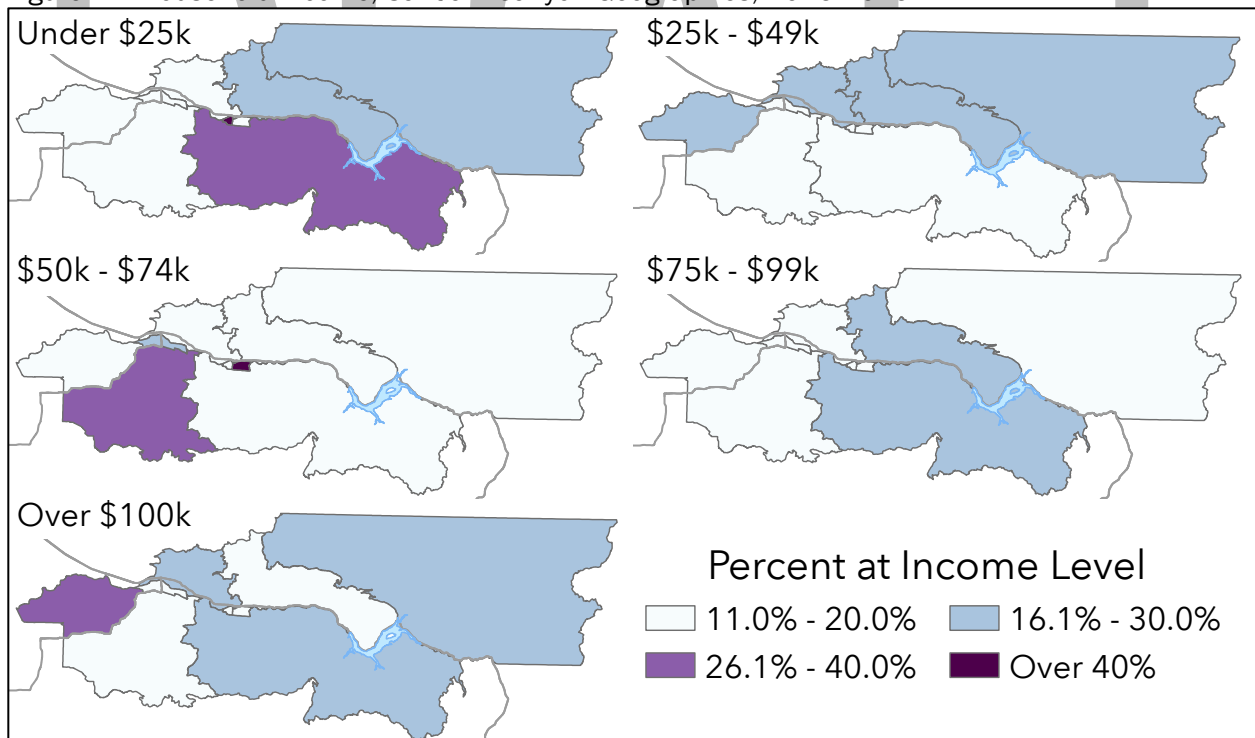
Source: U.S. Census Bureau, 2015-2019 ACS Data, available from: <https://data.census.gov/>. Table S1901
 Note: See Figures 1 and 2 for a map of Census Tracts

Figure 11. Median Household Income, Santiam Canyon Geographies, 2015-2019



Source: U.S. Census Bureau, 2015-2019 ACS Data, available from: <https://data.census.gov/>. Table S1901.
 Note: See Figures 1 and 2 for a map of Census Tracts

Figure 12. Household Income, Santiam Canyon Geographies, 2015-2019



Source: U.S. Census Bureau, 2015-2019 ACS Data, available from: <https://data.census.gov/>. Table S1901.

There are fewer renter occupied housing units in the Santiam Canyon compared to in Linn County and Marion County (Table 4). In the north part of the Canyon only approximately 18

percent of housing is occupied by renters, compared to 24 percent in the south part of the Canyon and over 35 percent in both Linn County and Marion County.

Table 4. Housing Occupancy by Owners and Renters (2019)

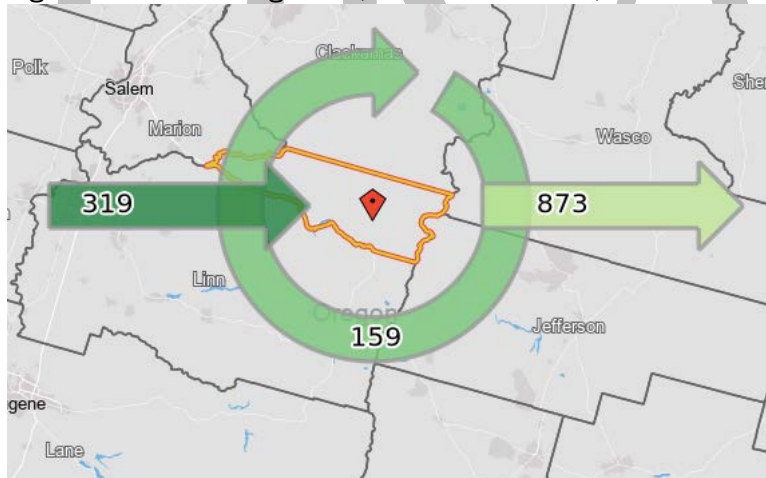
	South Canyon - Census Tract 302, Linn County, Oregon	North Canyon - Census Tract 106, Marion County, Oregon	Linn County	Marion County
Owner-Occupied Housing	1,838 (76.0%)	841 (8.19%)	64.4%	60.2%
Renter-Occupied Housing	579 (24.0%)	186 (18.1%)	35.6%	39.8%
Total	2,417 (100%)	1,027 (100%)	100%	100%

Source: U.S. Census Bureau, 2015-2019 ACS Data, available from: <https://data.census.gov/>. Table S1901.

Note: See Figures 1 and 2 for a map of Census Tracts

The Santiam Canyon communities are rural areas that are located further from population centers where there are more employment opportunities. More than 300 people commute North of Hwy-22 (Census Tract 106) for work, and more than 800 people commute out for work. Approximately 159 people live and work in the north part of the Canyon (Figure 13). These commuting patterns indicate that more than twice as many people leave the north part of the Santiam Canyon for work compared to commuting in or staying – suggesting there are limited job opportunities within the Canyon. Only one-third of the of the workers who work in this part of the Canyon also live in the same area.

Figure 13. Commuting Flows, Census Tract 106, 2018

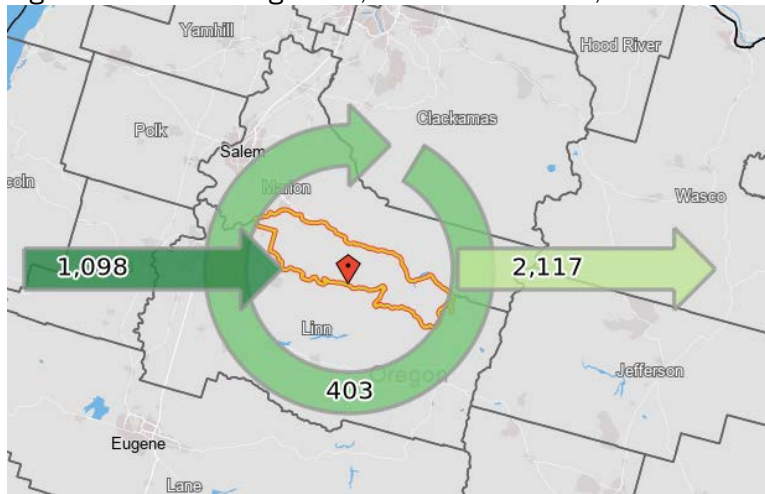


Source: U.S. Census Bureau, OnTheMap, Longitudinal Employer-Household Dynamics data, available at: <https://lehd.ces.census.gov/applications/help/onthemap.html>

More than 1,000 people commute to the western and southern portion of the Santiam Canyon (Census Tract 302) for work (Figure 14). More than 2,000 people living in this census tract commute out of the area for work. Approximately 400 people live and work in this area, representing approximately one-third of all workers in the region. Like the northern part of the Canyon, the majority of residents need to leave this area for work, but there are still many non-residents who commute into the area for their jobs as well. These facts could be indicative of a

mismatch between housing prices and availability and workforce incomes – but also driven by resident and worker preferences.

Figure 14. Commuting Flows, Census Tract 302, 2018



Source: U.S. Census Bureau, OnTheMap, Longitudinal Employer-Household Dynamics data, available at: <https://lehd.ces.census.gov/applications/help/onthemap.html>

2.3 Economic Resources

The Santiam Canyon has each of the four stocks of capital that together create the flow of goods and services that create economic value for the communities. The pre-fire natural capital, human-built physical capital, and human and social capital are described below.

2.3.1 Natural Capital

Natural capital refers to the natural environment, essentially including all natural resources and phenomenon that do not require human interventions to maintain. The Santiam Canyon has a rich endowment of natural capital. The natural capital is the reason why many people live, work, and visit the area. The two primary sources of natural capital in the Santiam Canyon are the water resources (North Santiam River and its tributaries and Detroit Lake), and the forest resources. Other natural resources also support economic activity, such as rock quarries.

Land Ownership

The federal government is the largest landowner in the Santiam Canyon with approximately 65 percent of the land area within the North Santiam watershed (Table 5). The U.S. Forest Service (USFS) manages most of the federal land (approximately 60 percent). Private landowners hold the next largest share, at 28 percent. Figure 15 shows the distribution of ownership by acres and percent of the land area.

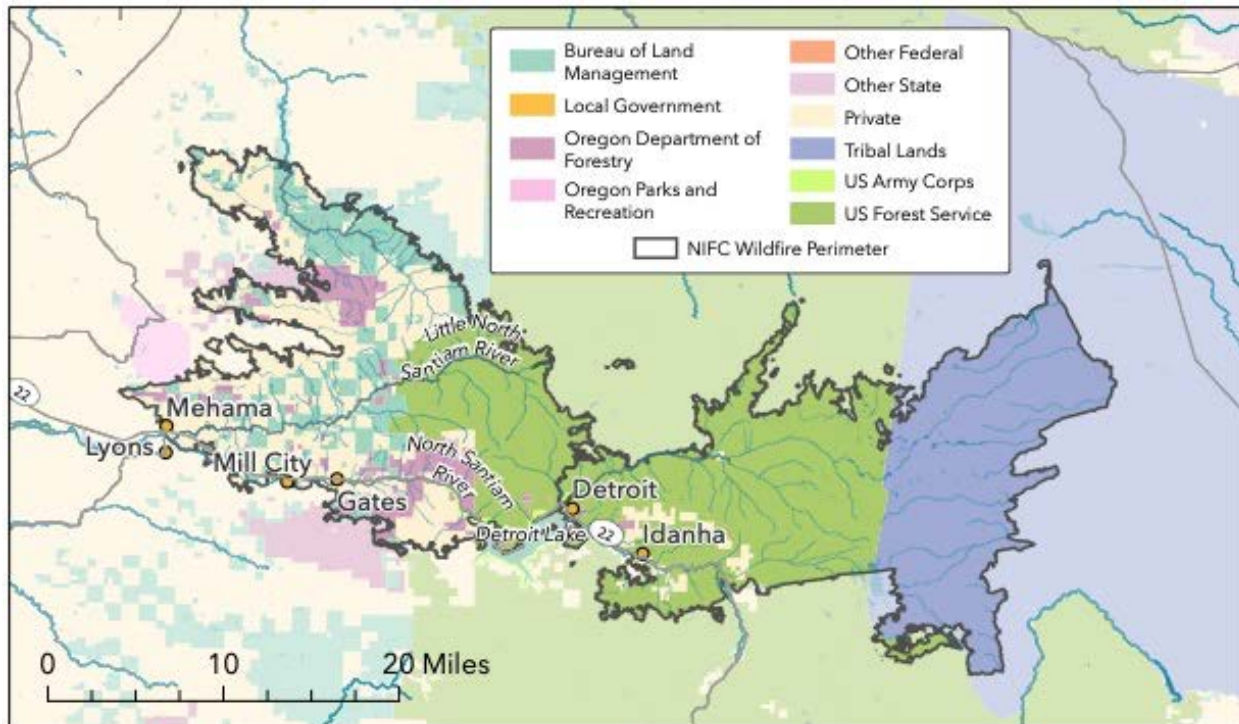
Table 5. Land Ownership in the North Santiam Watershed

Ownership	Acres	Percent of Total
Federal Government	320,677	65.6%
U.S. Forest Service	292,627	59.8%
U.S. Bureau of Land Management	20,499	4.2%
Other (BPA, U.S. Army Corps of Engineers)	7,551	1.5%
State	29,874	6.1%
Department of Forestry	29,216	6.0%
Other (State Parks, ODFW)	658	0.1%
County and Local Government	880	0.2%
Private	136,833	28.0%
Tribal	716	0.1%
Total	488,980	100.0%

Source: ECONorthwest, with data from Oregon Bureau of Land Management USDI edited by the Oregon Department of Forestry (2015).

The distribution of land management varies considerably between the eastern and western portions of the Santiam Canyon (Figure 15). Private ownership dominates land use in the western portions of the Canyon. The eastern part of the Canyon is primarily USFS land, including the Willamette National Forest and portions of the Mt. Hood National Forest. Further east, outside of the Santiam Canyon, land is managed by the Confederated Tribes of Warm Springs.

Figure 15. Land Management in the Santiam Canyon



Source: Created by ECONorthwest

Ecosystem Services

Ecosystem services refer to the goods and services provided by the natural environment that people do not need to pay for. Ecosystem services are generally categorized as provisioning, regulating, cultural, and supporting services. In the Santiam Canyon the primary ecosystems are forests, lakes, and rivers. Table 6 presents a summary of the types of ecosystem services that forests, lakes, and rivers provide across four broad categories: provisioning, regulating, cultural, and supporting services.

Table 6. Ecosystem Services from Floodplains

Provisioning Services	Regulating Services	Cultural Services
The "products" obtained from ecosystems	Benefits obtained from the regulation of ecosystem processes	Nonmaterial benefits obtained from ecosystems
Food	Flood Regulation	Recreational
Habitat	Climate Regulation	Visual & Aesthetic
Fresh Water	Water Purification	Spiritual
Raw Materials		Educational & Heritage
Supporting Services		
Services necessary for the production of all other ecosystem services		
Nutrient Cycling		
Biodiversity		
Soil Formation		
Primary Production		

Source: Created by ECONorthwest based on Millennium Ecosystem Assessment Working Group. (2005). *Ecosystems and Human Wellbeing*.

Examples from the literature inform the magnitude of full ecosystem services provided by the three ecosystem types. A meta-analysis of ecosystem service assessments concludes that the average value of rivers and lakes is \$108,361 per hectare per year (2020 dollars).^{4,5} The average value for temperate forests is \$5,383 per hectare per year (2020 dollars). These values are illustrative – we do not calculate values for each type of ecosystem service for the Santiam Canyon.

Water supply and quality regulation is one of the most valuable ecosystem services in the Santiam Canyon. The North Santiam River serves as the drinking water source for large population centers, including Salem, downstream of the Canyon. More detail on the value of

⁴ de Groot, R., Brander, R., Solomonides, S. (2020). *Update of global ecosystem service valuation database (ESVD)*. FSD report No 2020-06 Wageningen, The Netherlands.

⁵ One hectare is approximately 2.47 acres.

the ecosystem’s production of water is detailed in the analysis *The Economic Importance of Water in the North Santiam Watershed*.⁶

2.3.2 Human-Built Physical Capital

Human-built physical capital refers to the built capital that is created and maintained by people and occupies a physical space. In the Santiam Canyon this includes housing, commercial building, public and community buildings, other infrastructure, social services, and schools.

Land Use

Within the Marion County five zip-code area there are approximately 835 residential parcels in city boundaries. Forest land and federal land comprise the largest amount of land in the area. Table 7 provides a summary of parcels, lot size, and acreage for each property type. Note that area values are not available for some property types, so the total acreage is higher than the 681,617 in documented acres in Marion County.

Table 7. Property Use in the Santiam Canyon for Marion County (Five Zip-Code Area)

Property Use Type	Number of Parcels	Lot Size (Acres)
Residential, in city or UGB	835	24,330
Commercial or Industrial	118	37,215
Multi Family	6	1,840
Tract improved, in city or UGB	44	9,159
City	16	1,019
Rural land, improved	311	63,504
Federal	13	189,003
Manufactured Structure, non-rural	141	4,305
Other	37	94,337
Manufactured Structure, rural	124	6,547
Rural, land only	191	33,672
State land	10	4,380
Vacant, inside city or UGB	21	10,210
Church	4	325
Farmland	19	23,283
Forest Land	105	169,014
Recreational Land	4	N/A
County	7	9,474
Not Available	39	N/A

⁶ ECONorthwest. 2019. *The Economic Importance of Water in the North Santiam Watershed*. North Santiam Watershed Council. Available at http://northsantiam.org/wp-content/uploads/Economic-Importance-of-Water-in-NSW_FINAL_2019.pdf

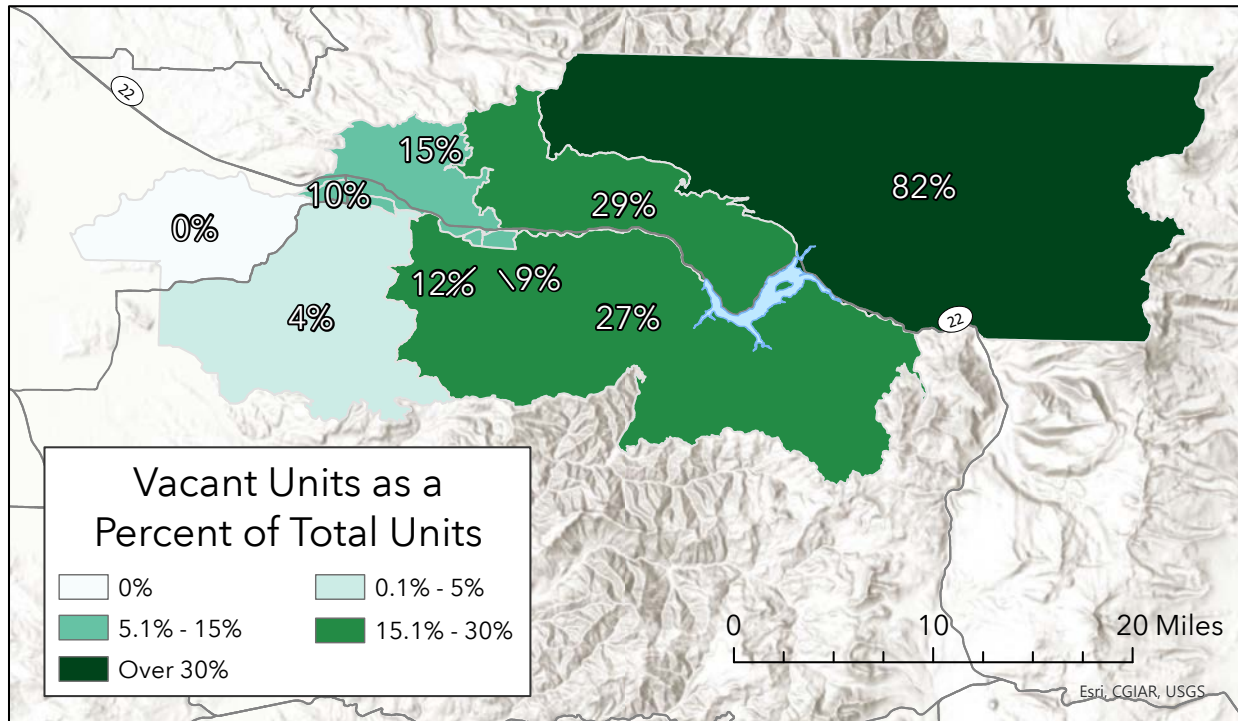
Total	2,045	681,617
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Source: Created by ECONorthwest using data from Marion County Assessor, Comprehensive Download, available at: <https://www.co.marion.or.us/AO/Pages/datacenter.aspx>

Housing units in the Santiam Canyon are more likely to be vacant (22 percent of units) compared to the average rate for Marion County (6 percent) and Linn County (5 percent). However, the rates vary significantly throughout the Canyon area (

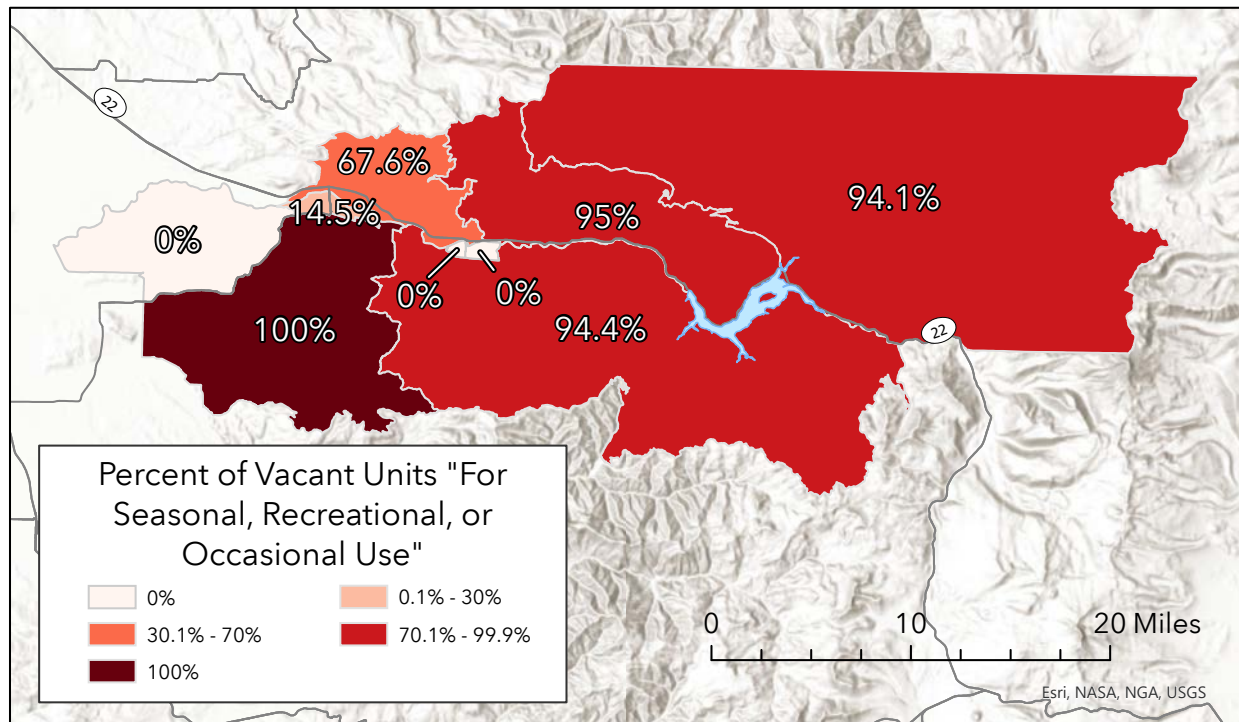
Figure 16). The area near Detroit has the highest vacancy rate at 82 percent. Areas with the highest vacancy rates are vacancy due to “seasonal, recreational, or occasional use” (Figure 17). These data support anecdotal information that a large portion of residences near Detroit Lake are second homes and vacation homes. However, in the census tracts that contain Gates, Mill City, Lyons, and Mehama vacancy rates are low and the reasons for vacancy are not due to second homes and vacation rentals – instead they are vacant due to transitory reasons of being for sale, for rent, or otherwise not currently occupied.

Figure 16. Vacant Units as a Percent of Total Units, Santiam Canyon Geographies, 2015-2019



Source: U.S. Census Bureau, 2015-2019 ACS Data. Table B25002.

Figure 17. Percent of Vacant Units “For Seasonal, Recreational, or Occasional Use”, Santiam Canyon Geographies, 2015-2019



Source: U.S. Census Bureau, 2015-2019 ACS Data. Table B25004 (30200.6 recorded no vacancy and thus is not included in this chart).

Infrastructure

Infrastructure in the Santiam Canyon includes the roads, utility infrastructure (water, sewer, telecommunications), and dams. There are four water delivery systems in the Santiam Canyon, the Lyons-Mehama Water District, Mill City Water, Gates City Water, and Detroit City Water. Some of the districts include properties outside city limits. Other properties use well water as their water sources.

There are two policies related to infrastructure that most influenced physical capital before the fires: 1) The Three Basin Rule, and 2) Management of Detroit Lake.

Three Basin Rule

The “three basin rule” affects sewer infrastructure in the Santiam Canyon. The rule went into effect January 29, 1994 and stipulates that there can be no new or increased wastewater discharges in the North Santiam, Clackamas, and McKenzie River subbasins. Effectively, this rule means that no new permits can be issued, meaning a new Wastewater Treatment Plant that would discharge into the North Santiam River cannot be built, regardless of the quality of the water being put back. A wastewater treatment plant that discharged into another location would be allowed. There are exceptions to the three-basin rule for wastewater discharge to groundwater for domestic sources less than 5,000 gal/day. A 2017 feasibility study for a joint sewer system for the communities of Mill City, Gates, Detroit, and Idanha identified the

potential for sewer systems that would be acceptable under the Three Basin Rule.⁷ However, these systems would be expensive to implement and require funding from outside the four cities in order to be financially feasible.⁸ A 2021 Wastewater Master Plan provides additional details about the plans for the sewer system, including cost estimates.⁹

Management of Detroit Lake

Detroit Lake is a reservoir that is controlled by Detroit Dam. The reservoir is a popular location for recreation that attracts tourists to the Santiam Canyon. The U.S. Army Corps of Engineers (USACE) manages Detroit Dam for flood risk management. In addition, the water controlled by Detroit Dam is managed for hydropower, water quality improvement, irrigation, fish and wildlife habitat and recreation.¹⁰ The multiple demands for water can result in competing interests that complicate management of Detroit Dam. For example, water releases from Detroit Dam in late summer that are necessary to comply with the 2008 Biological Opinion under the Endangered Species Act¹¹ can result in too low of water levels to allow recreational boating at Detroit Lake. In addition, the “rule curve” that the USACE uses to target reservoir levels has been criticized as being outdated and not flexible enough to efficiently manage the stored water.¹²

For the Santiam Canyon communities, and in particular the areas of Detroit and Idanha, recreation around Detroit Lake is a driver of economic activity (see section 3.4.4 for more information). Declining reservoir levels and water quality have impacted water recreation at Detroit Lake. For every one-foot drop in water level below full pool, visitor days at Detroit Lake declined by 2 percent.¹³ Detroit Lake Marina and Kane’s Marina are the primary location for stored watercraft access to the lake. The docks are at 1,546 feet, just 12.5 feet below the full-pool elevation of 1558.5.^{14,15} Another project that would lower water levels in Detroit Lake is the fish passage and water temperature control tower project – this project has been delayed as of

⁷ Gonzales, D. (2017). *North Santiam Joint Sewer Project*. Prepared for Marion County. August 1.

⁸ More information about the proposed sewer system is available at: <https://www.northsantiamsewer.net/>

⁹ Keller Associates. (2021). *North Santiam Sewer Authority Wastewater Master Plan*. Prepared for North Santiam Sewer Authority and Mid-Willamette Valley Council of Governments. September 1.

¹⁰ U.S. Army Corps of Engineers. (2021). *Detroit Dam and Lake*. Available at: <https://www.nwp.usace.army.mil/Locations/Willamette-Valley/Detroit/>

¹¹ National Oceanic and Atmospheric Administration, National Marine Fisheries Service, Northwest Region. (2008). *Willamette Project Biological Opinion*. Retrieved September 24, 2018, from https://www.westcoast.fisheries.noaa.gov/fish_passage/willamette_opinion/.

¹² Urness, Z. (2016). “Should Detroit Lake be managed differently?”. *The Statesman Journal*. Available at: <https://www.statesmanjournal.com/story/news/2016/05/26/should-detroit-lake-managed-differently/84934680/>

¹³ Moore, L. (2015). “Optimizing Reservoir Operations to Adapt to 21st Century Expectations of Climate and Social Change in the Willamette River Basin, Oregon”. *PhD Dissertation*. Oregon State University.

¹⁴ U.S. Army Corps of Engineers. (2021). “Finding of No Significant Impact: Detroit Dam IRRM pool reduction - Environmental Assessment”. Available at: <https://www.nwp.usace.army.mil/Locations/Willamette-Valley/Detroit/Detroit-Interim-Risk-Reduction-Measures/>

¹⁵ The USACE released a new plan in 2021 to reduce the full pool elevation level from 1563.5 feet to 1,558.5 feet to reduce the risk of a dam breach from an earthquake.

2021.¹⁶ Water quality due to algae has also been a historic concern at Detroit Lake. Water quality advisories have been issued by Oregon Health Authority for both recreation and drinking water – the most recent advisory was in 2018.¹⁷

The “Willamette River Basin Review Feasibility Study” was initiated in 2015 as a joint effort between the USACE and Oregon Water Resources Department to consider how to manage dams in the Willamette Basin to provide stored water for municipal and industrial water supply, irrigation, and fish and wildlife uses.¹⁸ Ultimate approval of any reallocation of water will require authorization from Congress, and due to this requirement and other uncertainties the timeline and certainty of approval is unknown.

2.3.3 Human and Social Capital

Social Capital consists of a stock of trust, mutual understanding, shared values, and socially held knowledge. Human Capital refers to the productive capacities of individuals, both inherited and acquired through education and training. These capacities within a community are difficult to measure because they are often not physically represented. However, some physical structures can inform the human and social capital within the community. For example, government services, public services, health services, schools, churches, and other community services help describe how people are using some forms of human and social capital.

Government and Social Services

The government and social services in the Santiam Canyon before the fires were limited. Table 8 summarizes the paid staff positions prior to the fires for the 2020 to 2021 fiscal year (the fiscal year began July 1, 2020, before the fires).

Table 8. City Resources Pre-Fire (Fiscal Year 2020-2021)

City	Paid Staff Positions (FTE)
Lyons	7
Mill City	7
Gates	3.5
Detroit	1.5
Idanha	2

Source: Created by ECONorthwest

¹⁶ More information about the Detroit Dam & Lake Downstream Passage Project is available at: <https://www.nwp.usace.army.mil/willamette/detroit/fish-passage/>

¹⁷ Oregon Health Authority. (2018). “OHA updates protocol for Detroit Lake recreational use advisories, lifts June 13 health alert”. Available at: <https://www.oregon.gov/oha/ERD/Pages/OHAUpdatesDetroitLakeRecreationalUseAdvisoryProtocolLiftsJune13HealthAlert.aspx>

¹⁸ More information about the *Willamette River Basin Review Feasibility Study* is available at: <https://www.nwp.usace.army.mil/willamette/basin-review/>

Fire protection resources before the fire include three rural fire protection districts (RFPD). The three RFPDs are Detroit-Idanha RFPD (based out of Idanha), Gates RFPD, and Mill City RFPD. The Gates and Detroit-Idanha RFPDs are completely staffed by volunteers. The Mill City RFPD is a mix of volunteer and paid positions, with two paid staff members.¹⁹

The Lyons RFPD and Ambulance Service is based in Lyons and extends to Mill City. The staff are a combination of paid and volunteer positions, with the majority of the paid positions being for emergency medical technician staff. The Stayton Fire Department is based in Stayton but covers portions of North Fork Road up to Elkton. There are mutual aid agreements between the fire districts.

Law enforcement services are based in the western part of the Santiam Canyon. The county sheriffs cover all unincorporated areas of the Canyon. The incorporated cities also contract with the Linn County Sheriff's Office or Marion County Sheriff's Office for law enforcement. The Linn County Sheriff's Office maintains a substation in Mill City.

The closest hospital to the Santiam Canyon is the Santiam Hospital in Stayton. Additional health care services are located at the Santiam Medical Clinic in Mill City. In addition, the Santiam Hospital started a Service Integration Team (SIT) for the Santiam Canyon in 2017. The SITs correspond to the school districts. The Santiam Canyon SIT covers Mill City, Gates, Detroit, and Idanha. The North Santiam SIT covers Lyons, Mehama, Stayton, and Sublimity. The goal of the SITs is to coordinate among service providers to facilitate resources and information for individuals and families. The SIT assists not only with health care services but also housing, education, food security, and more.²⁰ Santiam Canyon SIT partners include local health, education, and public safety agencies, larger governmental services providers and non-profits, as well as community churches, the Santiam Canyon Senior Center, and Santiam Hearts to Arts. Prior to the fires there were approximately 35 households receiving services through the Santiam Canyon SIT.

Educational Services

There are two school districts in the Santiam Canyon. The Santiam Canyon School District serves the communities of Mill City, Gates, Detroit, Idanha, and surrounding areas. The Santiam Canyon School District is comprised of two physical schools and one online charter school:

- Santiam Elementary School (Grades K to 6), located in Mill City.
- Santiam Junior/Senior High School (Grades 7 to 12), located in Mill City.
- Oregon Connections Academy (Grades K to 12), an online charter school that serves students statewide.

¹⁹ Mid-Willamette Valley Council of Governments. (2014). *North Santiam Canyon Economic Opportunity Study*.

²⁰ More information about SIT is available at: <https://santiamhospital.org/s-i-t-2/>

- Santiam Canyon Free Preschool program (4-5 years old), run by Strengthening Rural Families

The North Santiam School District serves Lyons, Mehama, Stayton, Sublimity, and some parts of Scio. The North Santiam School District is comprised of:

- Stayton High School (9-12), located in Stayton.
- Stayton Intermediate/Middle School (4-8), located in Stayton.
- Stayton Elementary School (Pre-K-3), located in Stayton.
- Sublimity School (K-8), located in Sublimity.
- Mari-Linn School (K-8), located in Lyons.
- Options Academy (K-12), an online charter school.

Enrollment information from April 2014 and for the 2019/2020 school year for the physical schools physically located in the Santiam Canyon is provide in Table 9. Enrollment has increased by 14 percent (76 students) in the Santiam School District since 2014. North Santiam School District has similar enrollment to 2014.

Table 9. Enrollment by School for 2019/2020 School Year

District	School	2014 Enrollment	2019/2020 Enrollment
Santiam Canyon School District		528	604
	Santiam Elementary School	290	324
	Santiam Jr/Sr High School	238	280
North Santiam School District		974	966
	Mari-Linn School	210	213
	Stayton High School	764	753

Source: Created by ECONorthwest with data for 2019/2020 provided by the School Districts. The 2014 data is from: Mid-Willamette Valley Council of Governments. (2014). *North Santiam Canyon Economic Opportunity Study*.

Other Community Resources

Other community service enterprises in the Santiam Canyon include the Canyon Closet (Mill City), Canyon Crisis and Resource Center (Mill City), Canyon Senior Center (Mill City), Detroit Community Church (Detroit), Gates Community Church of Christ (Gates), Mehama Community Church (Mehama), Mill City Baptist Church (Mill City), Mill City Christian Church (Mill City), Mill City Presbyterian Church (Mill City), Santiam Hearts to Arts (Mill City), and Santiam Outreach Community Center (Mill City).

2.4 Economic Activity

Economic activity refers to the jobs, income, value added, and economic output that occurs in the Santiam Canyon. Because of the importance and the sizes of the industries, three

components of the local economy are discussed in their own subsections: the real estate market, recreation/tourism, and the forestry industry.

2.4.1 Businesses, Employment, and Income

In the five years prior to the fire, 2015 to 2019, there has been consistently approximately 160 establishments in the five-zip code area that comprises the Santiam Canyon (Table 10). As of 2019, there were 1,511 people employed through covered employers in the Canyon. This number is lower than true employment because it considers only entities that report employment insurance tax reports, so it does not include employment for self-employed individuals and others.²¹

Table 10. Establishments, Employment, and Payroll in the Santiam Canyon (2015-2019)

Year	Number of Establishments	Employment (FYE)	Total Payroll	Average Annual Pay
2015	157	1,437	\$54,699,241	\$38,065
2016	162	1,477	\$56,668,567	\$38,367
2017	166	1,503	\$59,659,076	\$39,693
2018	167	1,499	\$63,491,669	\$42,356
2019	160	1,511	\$64,841,148	\$42,913

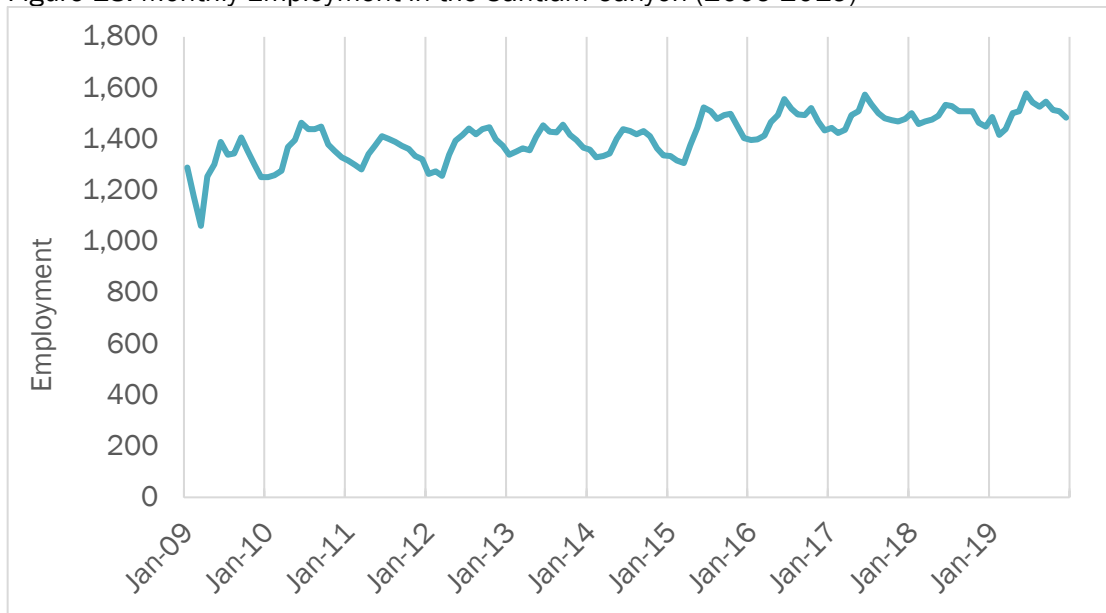
Source: Oregon Employment Department, Quarterly Census of Employment and Wages

Note: The geographic area for this data is zip codes 97342, 97346, 97350, 97358, and 97360.

Employment in the Santiam Canyon does display cyclical patterns – with higher employment in the summer months and lower employment in the winter months (Figure 18). Employment had been steadily increasing since the recession in 2009 at a rate of approximately 2 percent per year.

²¹ More information about the type of employment that is covered by Quarterly Census of Employment and Wages data is available at: <https://www.qualityinfo.org/-/data-sources-and-limitations-for-qcew>.

Figure 18. Monthly Employment in the Santiam Canyon (2009-2019)



Source: Oregon Employment Department, Quarterly Census of Employment and Wages

Note: The geographic area for this data is zip codes 97342, 97346, 97350, 97358, and 97360.

The distribution of the businesses and employment is weighted towards the western end of the Canyon, consistent with where the larger share of the population is located and in closer proximities to the urban areas of the Willamette Valley. Approximately 35 percent of employment in the Santiam Canyon is in Gates/Mill City, 14 percent in Detroit/Idanha, and the remaining 51 percent in Lyons, Mehama, or outside city limits.

Table 11. Number of Establishments and Employee in City Groupings (2019)

	Number of Establishments (2019)	Percent	Average Annual Employment (FYE, 2019)	Percent
Gates/Mill City	73	46%	529	35%
Detroit/Idanha	21	13%	217	14%
All Others	66	41%	765	51%
Total	160	100%	1,511	100%

Source: Oregon Employment Department, Quarterly Census of Employment and Wages

Note: The geographic area for this data is zip codes 97342, 97346, 97350, 97358, and 97360.

Employment in the Santiam Canyon is heavily concentrated in the manufacturing industry (44 percent). Average pay in the manufacturing industry is higher than the average for the five-zip code area. The next largest industry by employment is the tourism-related industry, “Accommodation and Food Services,” approximately 13 percent of employment. This industry has the lowest average annual pay – potentially due to a higher proportion of part-time and seasonal employment.

Table 12. Characteristics of Industries in the Santiam Canyon (2019)

	Number of Establishments	Employment (FYE)	Total Annual Payroll	Average Annual Pay
Manufacturing	17	670	\$36,744,642	\$54,843
Accommodation and Food Services	15	210	\$3,708,166	\$17,658
Educational Services	6	145	\$5,239,669	\$36,136
Retail Trade	16	88	\$1,908,939	\$21,692
Public Administration	9	82	\$2,500,509	\$30,494
Agriculture, Forestry, Fishing and Hunting	12	68	\$3,016,994	\$44,368
Construction	20	65	\$3,774,496	\$58,069
Wholesale Trade	2	46	\$2,221,775	\$48,299
Other Services	25	39	\$914,437	\$23,447
Professional, Scientific, and Tech. Services	8	17	\$2,006,691	\$118,041
Transportation and Warehousing	8	17	\$735,286	\$43,252
Arts, Entertainment, and Recreation	7	30	\$943,164	\$31,439
Health Care & Social Assistance	4	11	\$465,595	\$42,327
All Others	11	23	\$660,785	\$28,730
Total	160	1,511	\$64,841,148	\$42,913

Source: Oregon Employment Department, Quarterly Census of Employment and Wages

Note: The geographic area for this data is zip codes 97342, 97346, 97350, 97358, and 97360.

More detailed employment data for the five zip-code study area is available from IMPLAN.²² This data set includes both covered and uncovered (i.e., self-employed) employment (in full year equivalents). As a result, it has higher employment estimates. Total employment in the five zip-code area is 2,240, total labor income is \$135.5 million, total output is \$574.2 million, and average employee compensation is \$65,083 (2019 dollars) (Table 13).

Table 13. Employment, Labor Income, Output, and Average Employee Compensation by Industry

Display Description	Employment	Labor Income	Output	Average Employee Compensation
Veneer and plywood manufacturing	444	\$29,112,233	\$136,888,240	\$69,081
All other crop farming	149	\$2,037,636	\$6,188,935	\$36,843
* Employment and payroll of local govt, education	146	\$9,748,030	\$11,372,155	\$66,801
Sawmills	126	\$8,609,507	\$42,032,458	\$71,965
Hotels and motels, including casino hotels	105	\$3,519,212	\$10,288,814	\$36,569

²² IMPLAN Group, LLC. Data for five-zip code area provided under purchase agreement.

* Employment and payroll of local govt, other services	84	\$7,112,171	\$8,309,772	\$84,294
* Employment and payroll of state govt, other services	82	\$8,115,168	\$9,439,629	\$98,608
Nonferrous metal (exc aluminum) smelting and refining	72	\$8,562,072	\$124,428,898	\$120,887
Other accommodations	69	\$3,175,179	\$5,834,202	\$52,526
Commercial logging	68	\$7,427,755	\$9,557,622	\$69,479
Full-service restaurants	49	\$1,320,008	\$3,180,540	\$25,630
Offices of physicians	47	\$3,684,191	\$6,075,729	\$97,443
Construction of new single-family residential structures	46	\$2,820,672	\$5,314,090	\$59,282
Greenhouse, nursery, and floriculture production	40	\$1,412,020	\$4,302,425	\$38,051
Paperboard mills	27	\$2,609,795	\$24,057,412	\$98,225
All Others	685	\$36,278,243	\$166,906,348	N/A
Total	2,240	\$135,543,895	\$574,177,268	\$65,083

Source: IMPLAN 2019 model year for the five zip codes: 97358, 97360, 97346, 97342, 97350

From the IMPLAN data we can also discern information about the individual industries in each incorporated city. Table 14 lists the top 10 industries by employment for each city. Mehama/Lyons and Mill City both have the top industry as veneer and plywood manufacturing – indicating the importance of the forestry industry for these cities. These cities also employ the largest number of people, which is to be expected because they also have the largest populations. Gates has a variety of industries and is not dominated by a single industry type. Detroit is clearly dependent on tourism economic activity, as evidenced by the high proportion of jobs in the lodging and restaurant sectors.

Table 14. Employment by Zip Code and Top Industries

	Zip Code (West to East)				
	97358 (Mehama/Lyons)	97360 (Mill City)	97346 (Gates)	97342 (Detroit)	97350 (Idanha)
Total Employment	1,140	591	236	197	76
1. Industry (Employ.)	Veneer and plywood manufacturing (303)	Veneer and plywood manufacturing (141)	* Employment and payroll of state govt, other services (44)	Hotels and motels, including casino hotels (105)	Manufactured ice (16)
2. Industry (Employ.)	Sawmills (108)	* Employment and payroll of local govt, education (53)	All other crop farming (42)	Full-service restaurants (21)	Other accommodations (12)
3. Industry (Employ.)	All other crop farming (92)	Offices of physicians (47)	Greenhouse, nursery, and floriculture production (30)	Management consulting services (9)	* Employment and payroll of state govt, other services (11)
4. Industry (Employ.)	* Employment and payroll of local govt, education (65)	* Employment and payroll of local govt, other services (31)	Commercial logging (25)	Waste management and remediation services (8)	Full-service restaurants (7)
5. Industry (Employ.)	Nonferrous metal (exc aluminum) smelting and refining (54)	Limited-service restaurants (25)	* Employment and payroll of local govt, education (20)	* Employment and payroll of state govt, other services (8)	Oil and gas extraction (6)
6. Industry (Employ.)	Commercial logging (42)	Sawmills (18)	* Employment and payroll of local govt, other services (10)	Retail - Food and beverage stores (6)	* Employment and payroll of local govt, education (5)
7. Industry (Employ.)	Other accommodations (40)	Nonferrous metal (exc aluminum) smelting and refining (18)	Construction of new single-family residential structures (8)	Other amusement and recreation industries (5)	Commercial fishing (3)
8. Industry (Employ.)	* Employment and payroll of local govt, other services (39)	Other accommodations (17)	Death care services (6)	Oil and gas extraction (4)	* Employment and payroll of local govt, other services (3)
9. Industry (Employ.)	Retail - Nonstore retailers (21)	Construction of new single-family residential structures (15)	Vegetable and melon farming (5)	All other food and drinking places (4)	Other clay, ceramic, refractory minerals mining (3)
10. Industry (Employ.)	Paperboard mills (20)	All other crop farming (15)	Fruit farming (5)	* Employment and payroll of local govt, education (3)	Construction of new single-family residential structures (2)

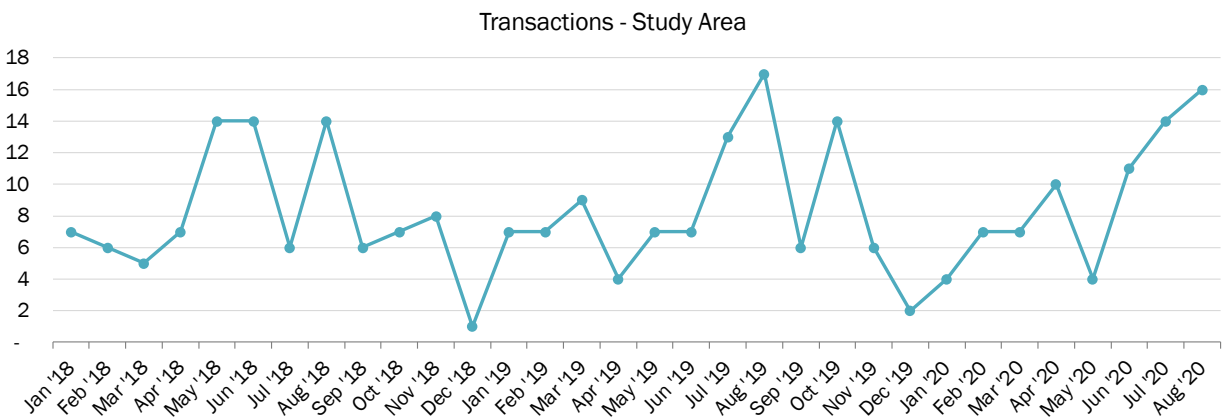
Source: IMPLAN 2019 model year for the five zip codes: 97358, 97360, 97346, 97342, 97350

Note: See Figures 1 and 2 for a map of Zip Codes

2.4.2 Real Estate

The real estate market in the Santiam Canyon prior to September 2020 was characterized by relatively few transactions. The Santiam Canyon has mobile and manufactured homes as well as luxury lake-front second homes, resulting in broad range of sales prices. Transactions per month varied between a low of one and a high of 17 during the time period of January 2018 to August 2020 (Figure 19). Median sales price was \$316,000 as of August 2020, with a low of \$180,000 and a high of \$378,000. The median sales price value is similar to Marion County (approximately \$350,000 in August 2020) and higher than Linn County (approximately \$325,000 in August 2020). Average days on the market for the Santiam Canyon averaged 125 (Figure 21), higher than the averages in the two counties of approximately 50 days.

Figure 19. Santiam Canyon Single-Family Transactions



Source: Redfin, Downloadable Housing Market Data, available at: <https://www.redfin.com/news/data-center/>

Figure 20. Santiam Canyon Single-Family Median Sales Prices



Source: Redfin, Downloadable Housing Market Data, available at: <https://www.redfin.com/news/data-center/>

Figure 21. Santiam Canyon Single-Family Days on Market



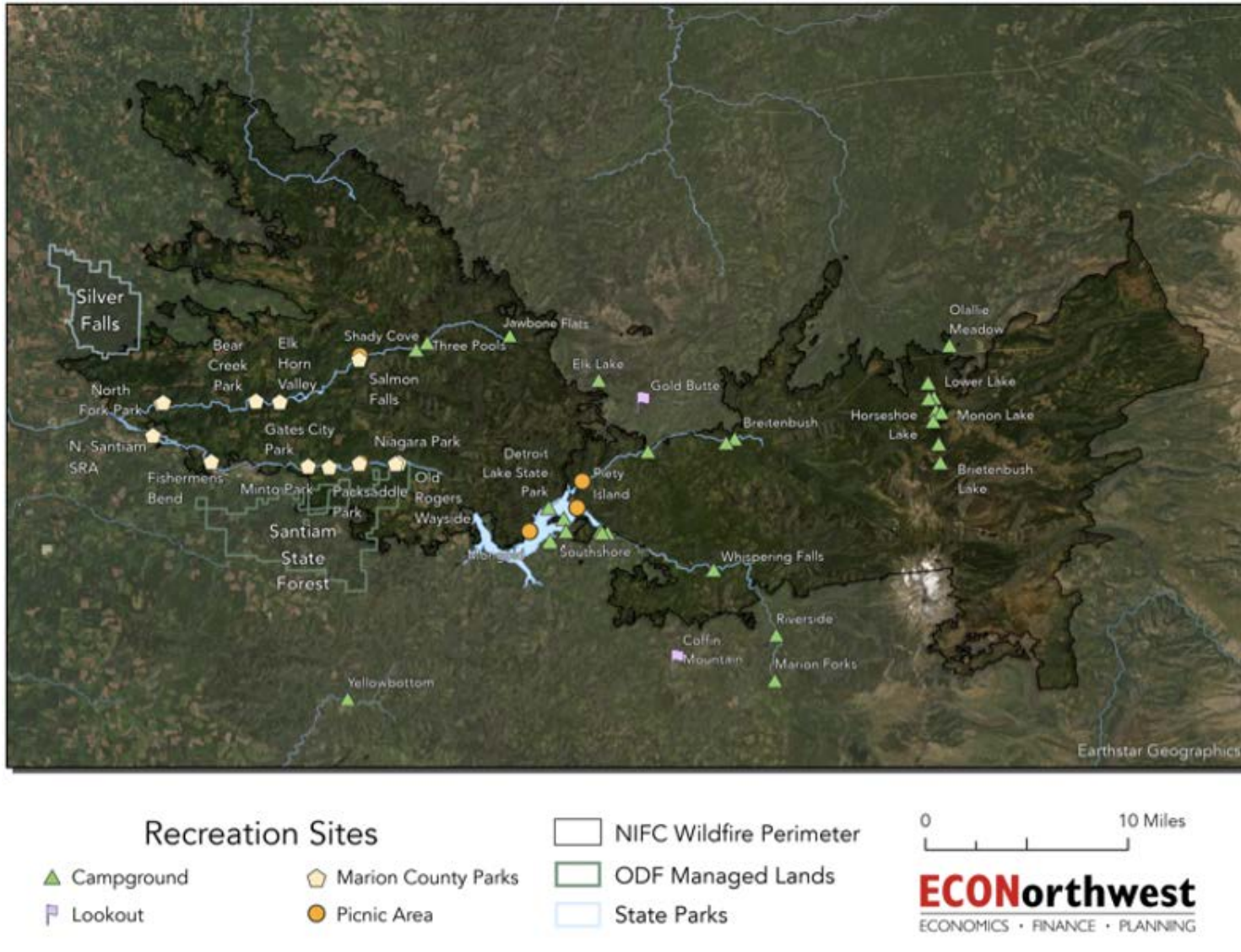
Source: Redfin, Downloadable Housing Market Data, available at: <https://www.redfin.com/news/data-center/>

2.4.3 Recreation and Tourism

Outdoor recreation attracts tourism to the Santiam Canyon and provides enjoyment for residents. Detroit Lake, the North Santiam River and its tributaries, trails, and the forested area of the Canyon attract visitors as well as provide recreation opportunities for residents. Tourism spending in the Santiam Canyon that supports jobs, income, and economic activity. Figure 22 maps outdoor recreation resources in the Santiam Canyon.

DRAFT

Figure 22. Outdoor Recreation Opportunities in the North Santiam Canyon



Source: Created by ECONorthwest

Recreation visitation data is available for some, but not all, of the sites within the Santiam Canyon. Table 15 provides a summary of available use data before the fire. In total, for only the sites that track recreational use directly within the Santiam Canyon, there were approximately 450,000 visits in 2019. Although this estimate includes many popular recreation sites, the total number of recreational uses is likely closer to double the 450,000 estimate, based on the number and quality of sites without available visitation data.

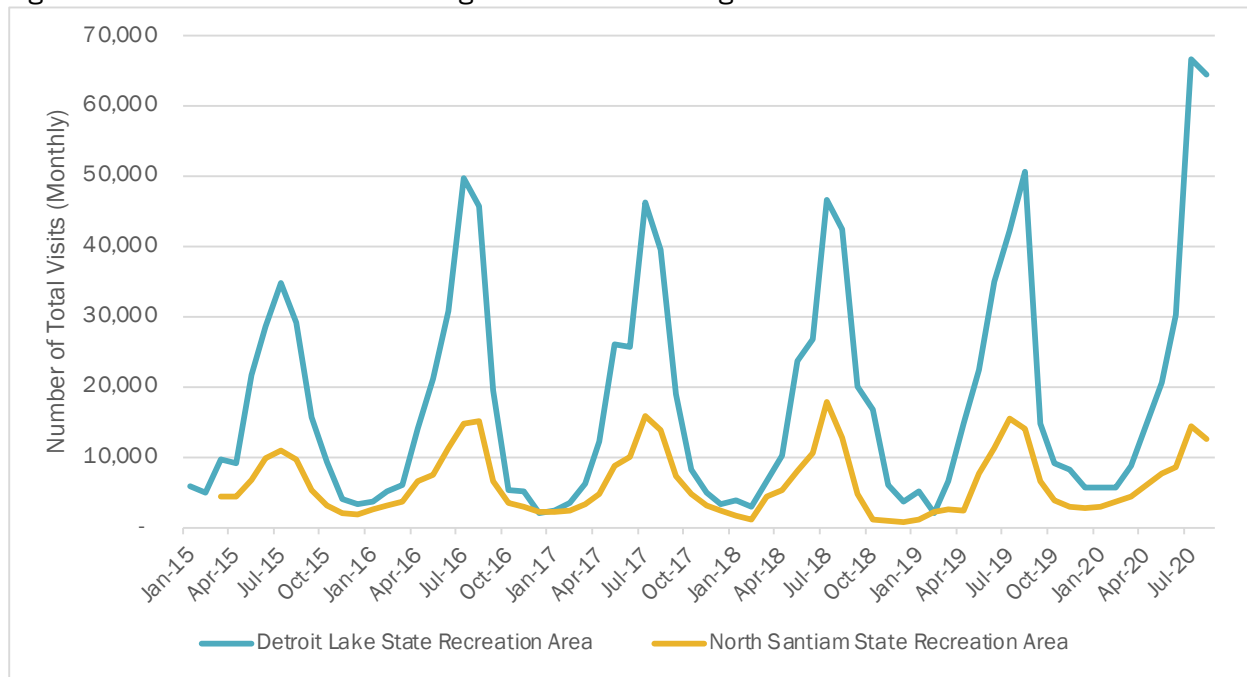
Table 15. Recreation Sites with Visitation Data (2019)

Recreation Site	Owner/Manager	Annual Visitation Pre-Fire (2019)	July 2019 Monthly Visitation
Detroit Lake (Overnight)	Oregon State Parks	96,465	24,374
Detroit Lake and Mongold Day Use Area (Day)	Oregon State Parks	120,468	17,840
North Santiam State Rec Area (Overnight)	Oregon State Parks	3,016	944
North Santiam State Rec Area (Day)	Oregon State Parks	70,468	14,564
Salmon Falls	Marion County	4,420	1,534
North Fork Park	Marion County	9,776	3,700
Bear Creek	Marion County	3,266	1,267
Packsaddle	Marion County	61,313	10,477
Detroit Lake Overlook	USACE	57,911	6,569
Fishermen's Bend	BLM	13,497	2,505
Elkhorn Valley	BLM	1,364	456
Three Pools Day Use	USFS	15,000	N/A

Source: Data provided by recreation site managers

The two most popular recreation sites, Detroit Lake State Recreation Area and North Santiam State Recreation Area, have highly seasonal visitation (Figure 23). At Detroit Lake State Recreation the visitation in July and August is ten times larger than visits in the winter months and two to four times larger than months in the spring and fall. As of 2008, the most popular activities at Detroit Lake are waterskiing and cruising, which are motorized boating activities (Table 16).

Figure 23. Seasonal Visitation at Oregon State Park Managed Sites



Source: Created by ECONorthwest using data from Oregon State Parks and Recreation

Table 16. Participation in Recreation Activities at Detroit Lake (2008)

Activity Type	Number of Activity Days	Percent of Total
Cruising	43,816	41.0%
Waterskiing	21,064	19.7%
Fishing	19,007	17.8%
Sailing	15,974	14.9%
Personal Watercraft	7,021	6.6%
Hunting	113	0.1%
All Activities	106,995	100.0%

Source: Oregon State Marine Board. (2013). Waterbodies in Rank Order, 2008 Survey. Available at: <https://data.oregon.gov/Recreation/Waterbodies-In-Rank-Order/rqyv-cfng>

Approximately 36,000 visitors went to a Marion County park or recreation site in 2020. The most popular recreation site that is managed by Marion County is Packsaddle Park with over 61,000 visitors in 2020. Packsaddle Park located approximately 2.5 miles east of Gates on highway-22. The location of the recreation sites managed by Marion County off of North Fork Road are displayed in Figure 24.

Table 17. Estimated Visitation at Marion County Recreation Sites

Site	Estimated Total Visitors (2020)
Packsaddle Park	61,313
North Fork Park	12,915
Bear Creek	4,809
Road MP 0.4	5,180
Road MP 4.0	2,100

Road Lomker's Bridge	1,694
Road Upper Bridge	1,729
Salmon Falls Main Lot	4,155
Salmon Falls Overflow Lot	3,455
Total	36,036

Source: Marion County

Figure 24. Location of Marion County Recreation Sites on North Fork Road



Source: Marion County

The U.S. Forest Service estimates visitation data at National Forests every five years through the National Visitor Use Monitoring Program. The 2017 results for the Willamette National Forest are detailed in Table 18. These visitation estimates are for the entire forest, including areas outside the Santiam Canyon that are accessed from Highway 20, Highway 126, and Highway 58. There were 1.5 million estimated visits to the Willamette National Forest in 2017 and approximately half of visits were "general forest area visits" not at developed sites or wilderness areas.

Table 18. Willamette National Forest Visitor Estimates (2017)

Type of Use	Site Visits	Percent of Visits
Day Use Developed Site Visits	521,000	32.8%
Overnight Use Developed Site Visits	146,000	9.2%
General Forest Area Visits	839,000	52.8%
Designated Wilderness Visits	82,000	5.2%
Total Estimated Site Visits	1,589,000	100.0%

Source: U.S. Forest Service. (2017). National Visitor Use Monitoring Program - Willamette National Forest. Available at: <https://apps.fs.usda.gov/nvum/results/A06018.aspx/FY2017>

Note: A Site Visit is the entry of one person onto a National Forest site or area to participate in recreation activities for an unspecified period of time.

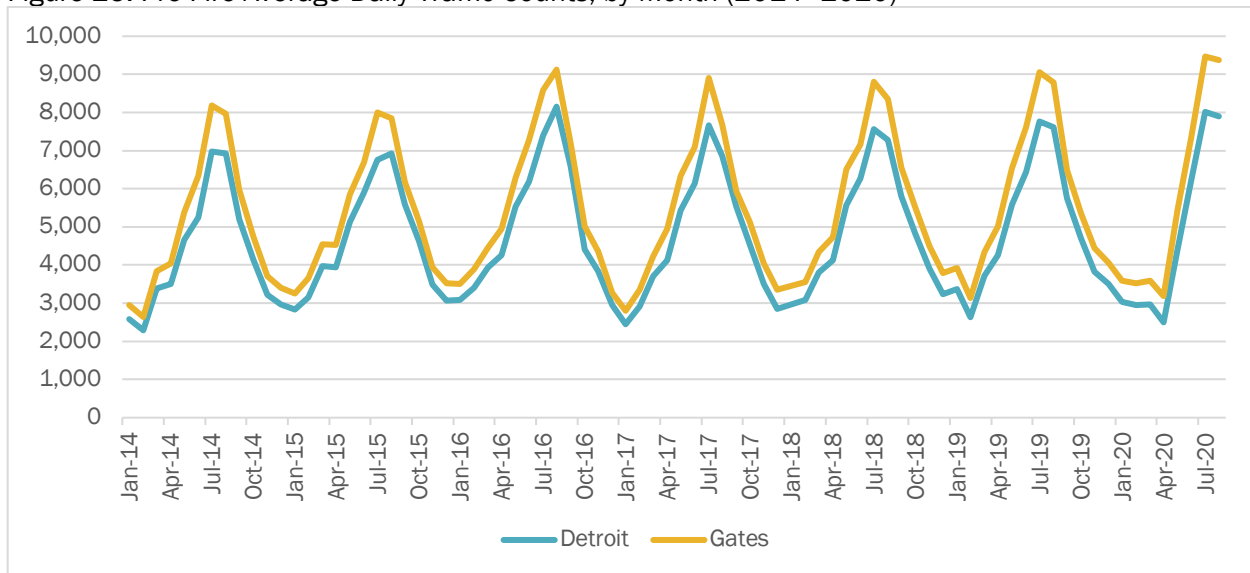
In addition to outdoor recreation sites there are also developed recreation areas that attract visitors to the Santiam Canyon. Breitenbush Hot Springs is a resort located approximately 11 miles northeast of Detroit that offers hot springs, retreats, and camping. Elkhorn Golf Course is located 5 miles north of Gates and hosts an 18-hole course. Accommodations for overnight tourism to the Santiam Canyon is supported through campgrounds, RV parks, motels, hotels, bed and breakfasts, and vacation rental.

Because not all recreation sites collect visitation data, traffic volumes can be used as a proxy to estimate total potential tourism throughout the region. Traffic volumes describe how many vehicles are travelling throughout the Santiam Canyon. These traffic volumes include vehicles for all purposes and destinations including residents, freight, commuters to and from east of the Canyon, and visitors to the Canyon. On average approximately 55 to 65 percent of vehicles are passenger, 15 to 20 percent are light trucks, 1 percent are motorcycles, 1 percent are buses, and the remaining 20 percent are heavy trucks.

Figure 25 shows the traffic at two permanent counters along OR-22 from January 2014 to August 2020.²³ There is a general trend of higher traffic in the summer months (approximately 5,000 to 6,000 vehicles per day) and less traffic in the winter months (approximately 3,000 to 4,000 vehicles). The total traffic counts are higher at Gates than at Detroit – higher traffic levels are correlated with higher population concentrations. In 2019, the traffic counter at Gates recorded 2.1 million vehicles and 1.8 million vehicles at the Detroit traffic counter. Traffic counts for both locations have been increasing until 2017 when there was a slight decrease – due in part to smoke from the Whitewater and other fires in September 2017.

²³ The Gates traffic counter is located on OR-22 at mile post 33.69. The Detroit traffic counter is located on OR-22 at mile post 51.30.

Figure 25. Pre-Fire Average Daily Traffic Counts, by Month (2014–2020)



Note: Monthly counts based on average daily traffic counts

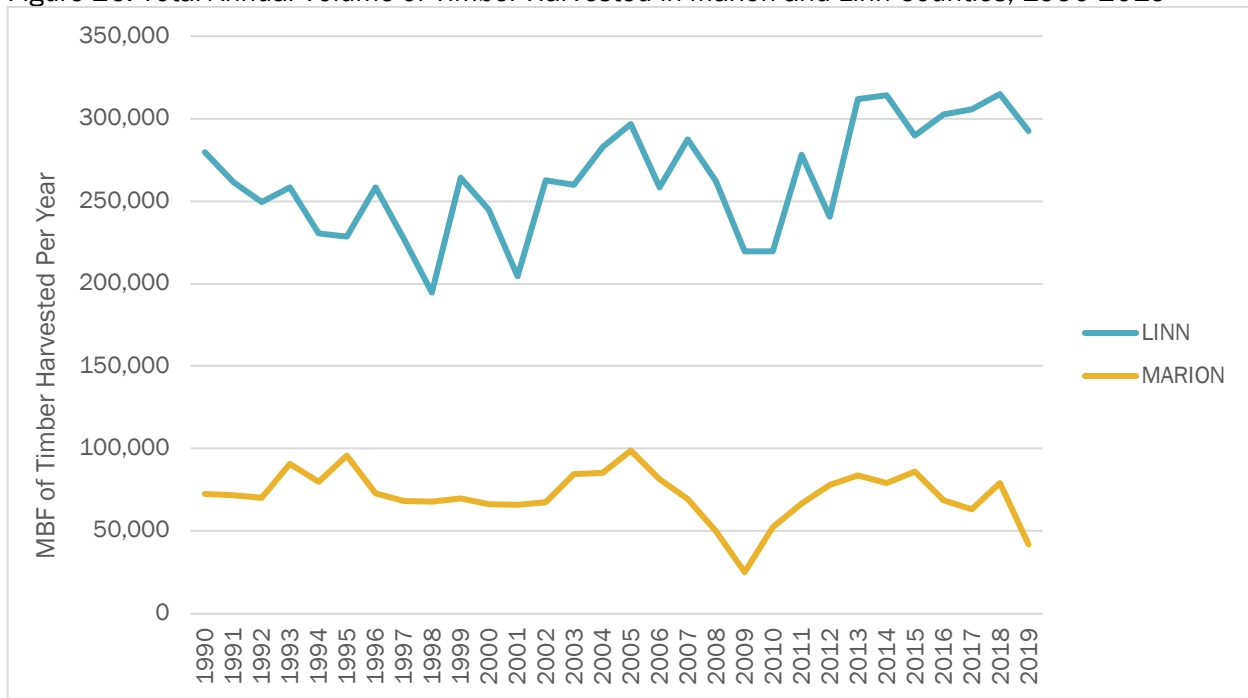
Source: Oregon Department of Transportation, *Traffic Counting*, available at: <https://www.oregon.gov/odot/Data/Pages/Traffic-Counting.aspx>

Despite the abundance of recreational resources and magnitude of people who travel through the Santiam Canyon on a small portion of the economic activity from these activities is spent within the local area. The tourists who contribute most to the local economy are those whose primary destination is within the Santiam Canyon, particularly overnight visitors who stay at a lodging facility (rather than campers). Before the fires, there were limited services for people traveling to or through the Santiam Canyon other than grocery, gas, and limited restaurants. The eastern part of the Canyon – Detroit and Gates – are closest to many of the recreation and tourism resources of the Santiam Canyon but face limitations to offering expanded services due to the lack of sewer and the extreme seasonality of visitation.

2.4.4 Forestry

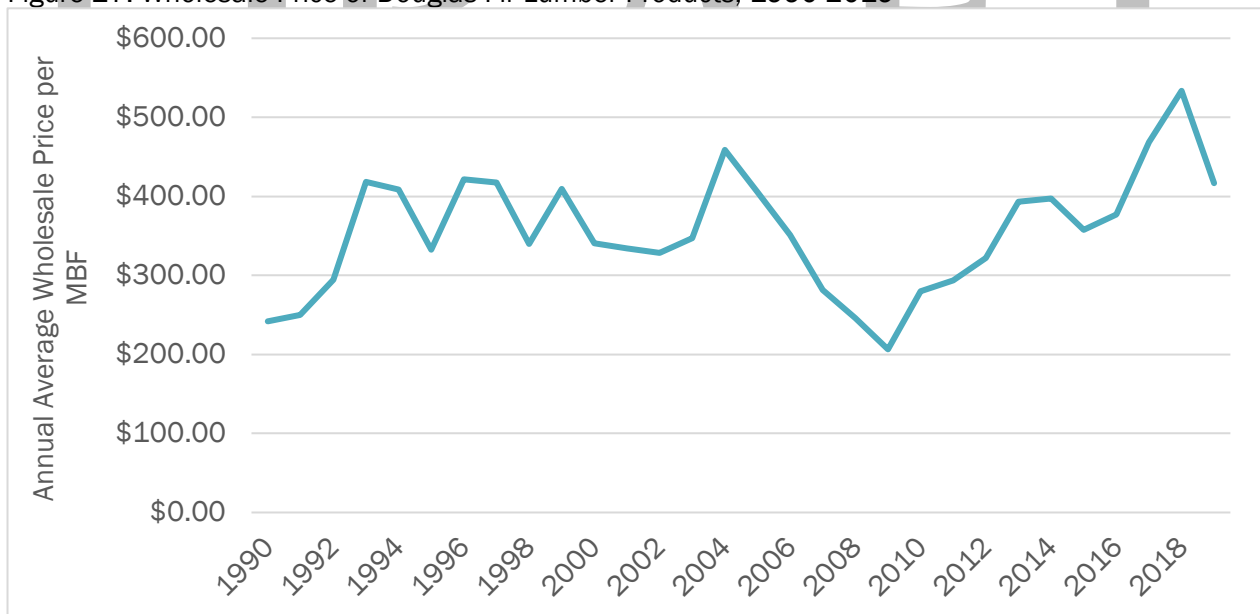
There are state, federal (BLM and USFS), county, and private timber harvests in Marion and Linn County. In 2019 the total timber harvested in Linn County was 292,577 thousand board feet (MBF). In Marion County the 2019 harvest level totaled 42,072 MBF. Figure 26 charts total annual harvest by year for both counties. The value of lumber has been increasing over time. As of 2019 the wholesale price of Douglas Fir was \$416.50 per MBF (Figure 27).

Figure 26. Total Annual Volume of Timber Harvested in Marion and Linn Counties, 1990-2019



Source: Created by ECONorthwest using data from Oregon Department of Forestry. (2020). *Timber Harvest Data 1962-2019*. Available at: <https://data.oregon.gov/Natural-Resources/Timber-Harvest-Data-1962-2019/c3sg-dt24>

Figure 27. Wholesale Price of Douglas Fir Lumber Products, 1990-2019



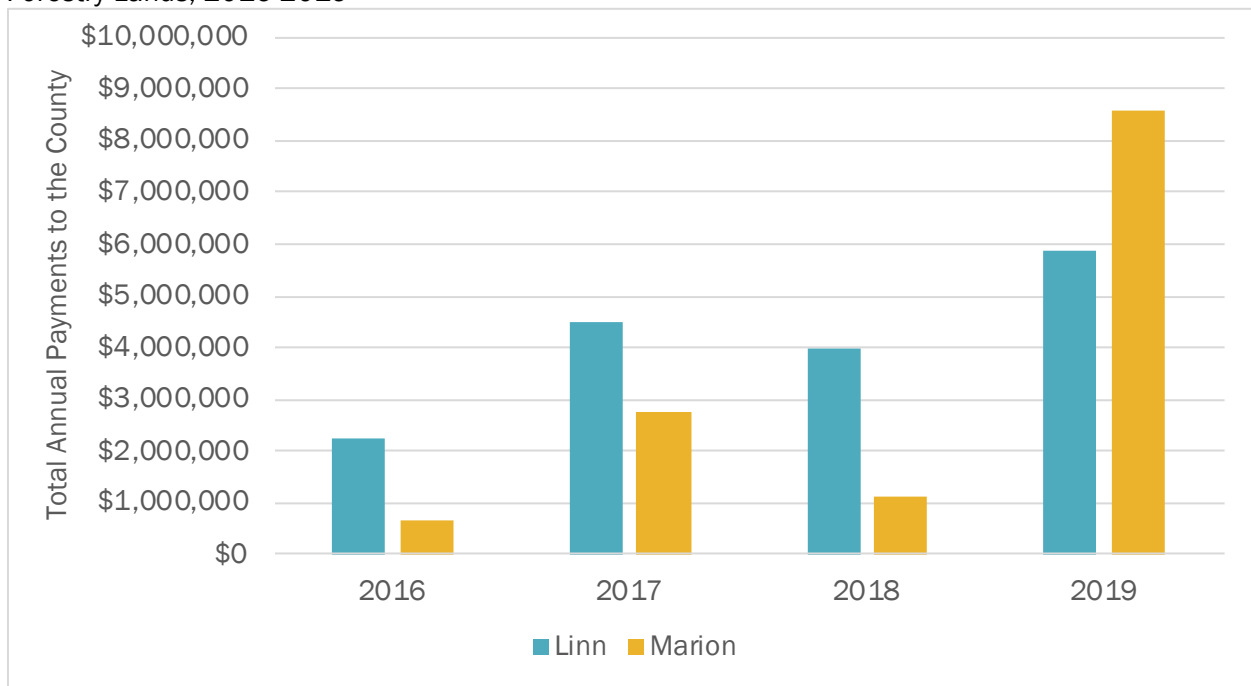
Source: Created by ECONorthwest using data from U.S. Forest Service. (2020). *Production, Prices, Employment, and Trade in Northwest Forest Industries: 1958-2019*. Table 7—Wholesale prices of selected softwood lumber products, 1965-2019.

The economic impacts of timber harvests are the income to the landowners as well as the additional economic activity supported by the processing of lumber at mills. There are three mills located within the Santiam Canyon, two sawmills and one plywood/veneer mill. These mills do not necessarily receive timber from harvests within Santiam Canyon. Timber harvests

are usually bid out to mills and logging operations. Timber will go to different mills depending on species, quality, and other factors. The Santiam Canyon mills may be more competitive because of their proximity to the standing forest but they likely only have a portion of their product coming from the logs that originated from the Santiam Canyon.

Marion County has a higher proportion of harvests on state (13.7 percent) and federal land (10.1 percent) compared to Linn County – which had 4.5 percent state and 4.3 percent federal harvests in 2019. Timber harvests in the Santiam State Forest in Marion County are a source of revenue for the County that provides funding for local government operations and school districts. In 2019 Marion County received 8.5 million in timber payments from timber harvests on Board of Forestry Lands (which includes the Santiam State Forest). In that same year Linn County received \$5.8 million in payments.

Figure 28. Annual Fiscal Year Payments to Marion and Linn County from Timber Harvests on Board of Forestry Lands, 2016-2019



Source: Created by ECONorthwest using data from Oregon Department of Forestry. (2019). *Council of Forest Trust Land Counties Annual Report*. November.

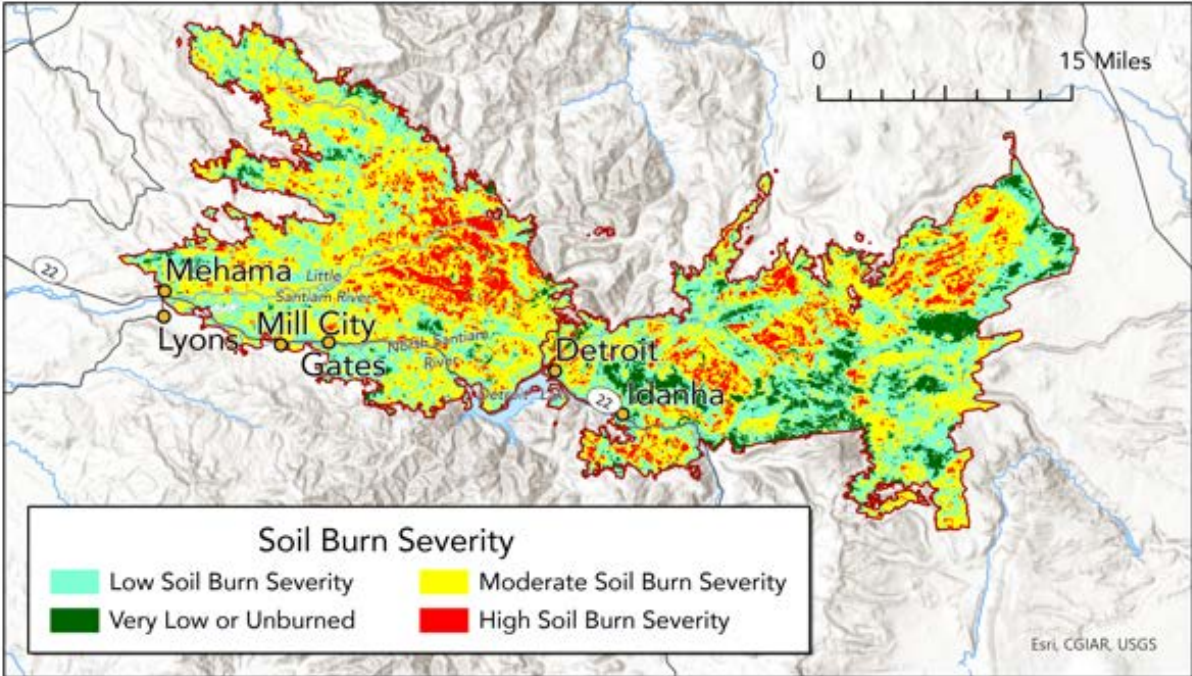
3 Post-Fire Economy: 2020-2021

This chapter provides an evaluation of the economic resources that were impacted by the fire and the current situation that exists approximately one-year after the fires occurred. This analysis describes current conditions to understand the immediate damages from the fires, as well as what gaps remain between current conditions and potential future recovery scenarios.

3.1 Post-Fire Landscape

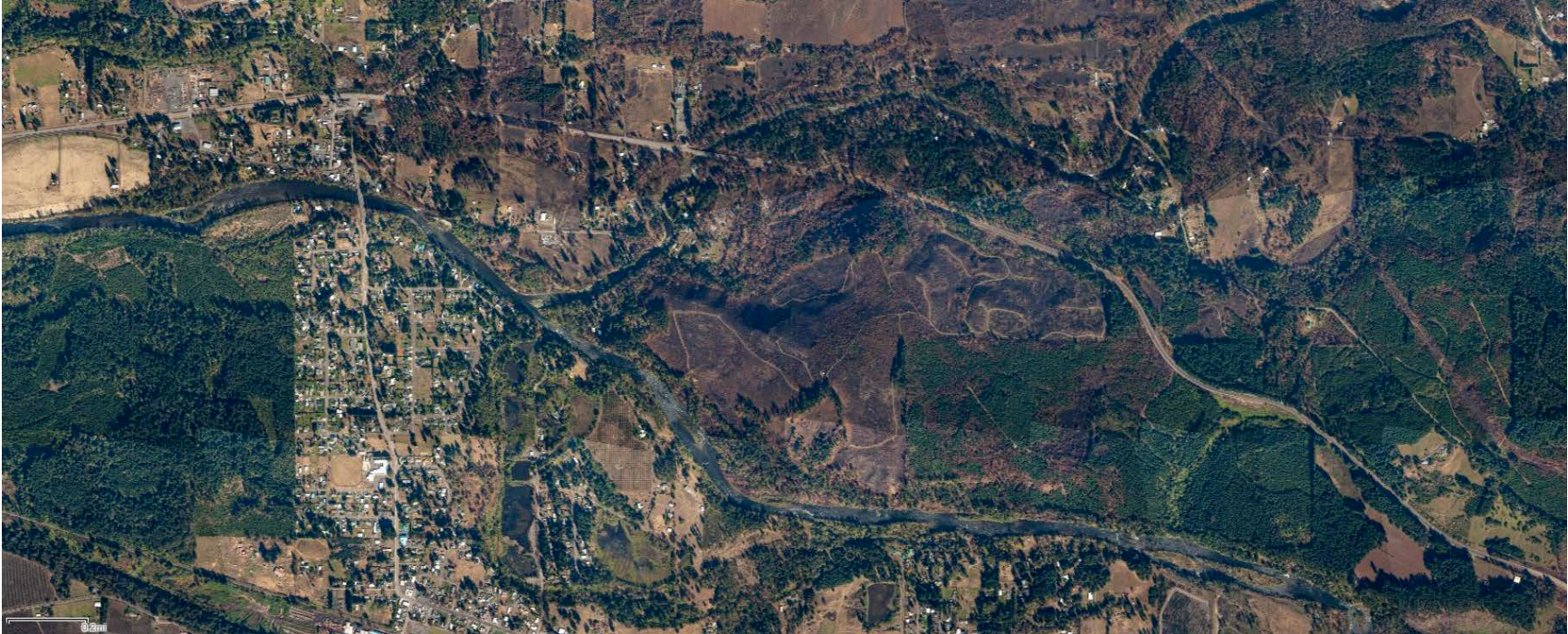
All communities had some level of fire damage and the surrounding forests, particularly north of the communities has transformed from green treetops to bare and completely burned or partially burned hillsides. Like all wildfires, the burn pattern is not uniform across the landscape and burn area severity follows a spotting pattern, depicted for both the Beachie Creek and Lionshead fires in Figure 29. The figures that follow (Figures 30 through 35) show the aerial imagery of the pre-fire landscape for each of the communities in the Santiam Canyon.

Figure 29. Soil Burn Severity for the Beachie Creek and Lionshead Fires



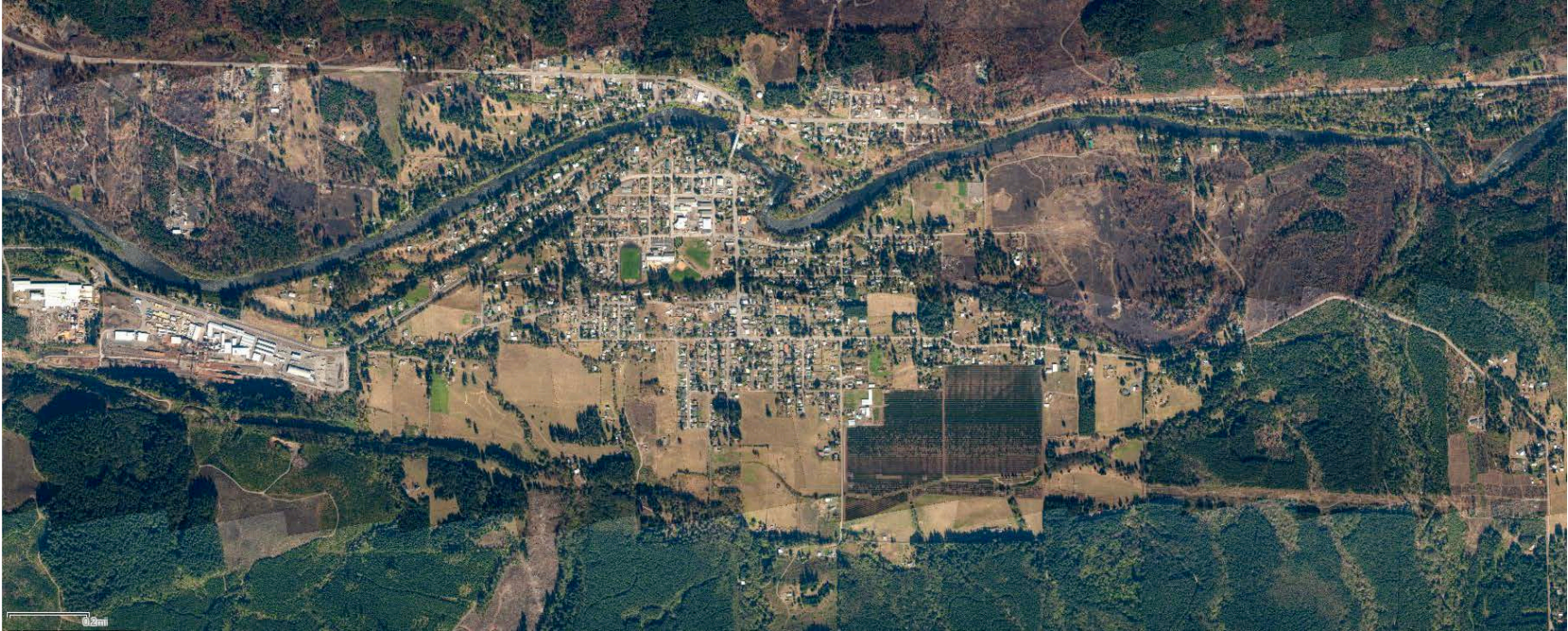
Source: Created by ECONorthwest using data from USDA Forest Service, *Burned Area Emergency Response (BAER)*, available at: <https://fsapps.nwcg.gov/baer/baer-imagery-support-data-download>

Figure 30. Lyons/Mehama Post Fire Landscape (2020)



Source: Marion County, *Wildfire Before and After Imagery – Internal*. Available at:
<https://marioncounty.maps.arcgis.com/apps/webappviewer/index.html?id=326b8aeedcff4822b921f580774db7d7>

Figure 31. Mill City Post-Fire Landscape (2020)



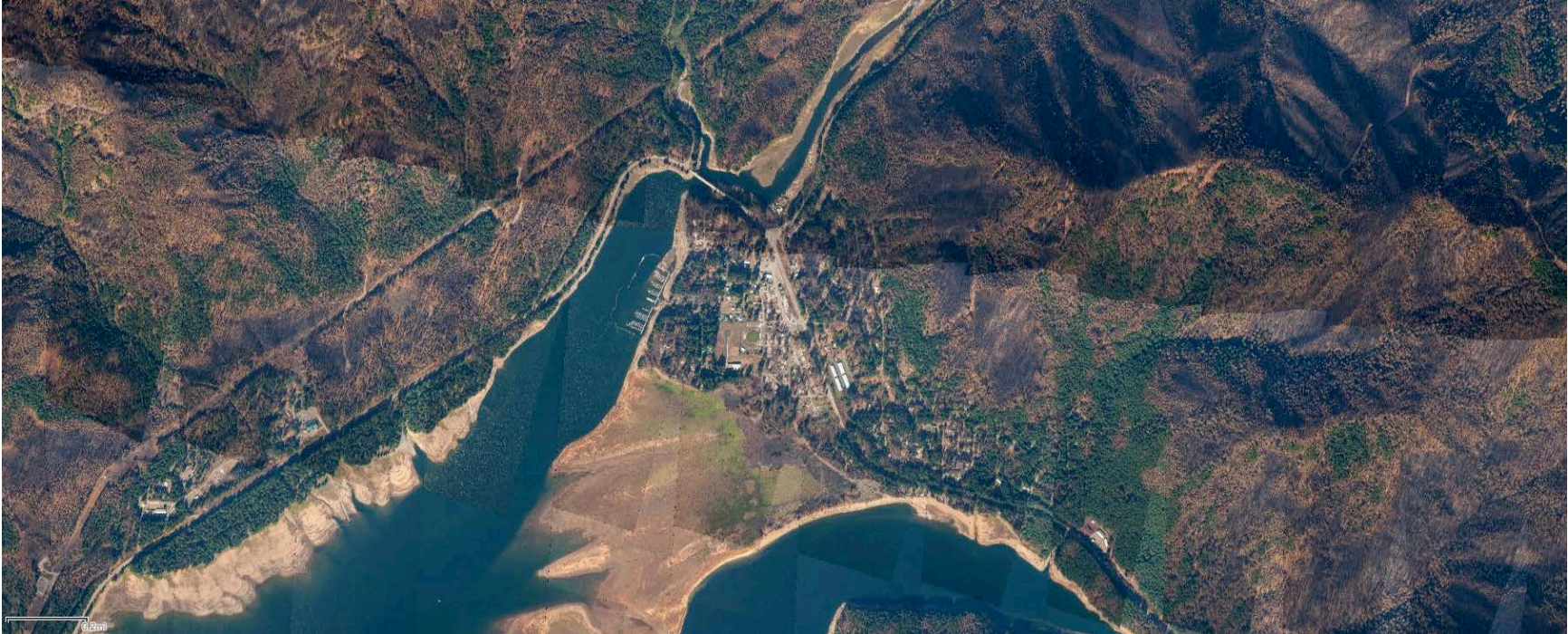
Source: Marion County, *Wildfire Before and After Imagery – Internal*. Available at:
<https://marioncounty.maps.arcgis.com/apps/webappviewer/index.html?id=326b8aeedcff4822b921f580774db7d7>

Figure 32. Gates Post Fire Landscape (2020)



Source: Marion County, *Wildfire Before and After Imagery – Internal*. Available at: <https://marioncounty.maps.arcgis.com/apps/webappviewer/index.html?id=326b8aeedcff4822b921f580774db7d7>

Figure 33. Detroit Post-Fire Landscape (2020)



Source: Marion County, *Wildfire Before and After Imagery – Internal*. Available at:
<https://marioncounty.maps.arcgis.com/apps/webappviewer/index.html?id=326b8aeedcff4822b921f580774db7d7>

Figure 34. Idanha Post-Fire Landscape (2020)



Source: Marion County, *Wildfire Before and After Imagery – Internal*. Available at:
<https://marioncounty.maps.arcgis.com/apps/webappviewer/index.html?id=326b8aeedcff4822b921f580774db7d7>

3.2 Population

There were immediate evacuations during the wind event on the evening of September 7, 2020 that resulted in the spread of the fire to the communities of the Santiam Canyon. Approximately 800 properties with buildings were affected or destroyed by the wildfires (out of a total of over 1,100 properties impacted with some fire damage).²⁴ Although these were the households that experienced a direct property loss, other population members were also affected by the fires. Some renters have been displaced because the landlord lost their home in the fire and needed to move into the rental property. Workers who relied on employment opportunities that were affected by the fires were also affected.

As of October 2021, the population in the Santiam Canyon has declined due to the wildfires. Approximately 11 households remain in hotels/motels outside of the Santiam Canyon while they are waiting to rebuild or decide on next steps. Other people have chosen not to rebuild yet or sold their property and have relocated out of state. There are approximately 12 households in trailers in Detroit. There are 11 families living in 13 trailers in the FEMA Direct Housing Program (FEMA Trailers) in Mill City.²⁵ There are 12 households living in donated RVs in a temporary RV park in Mill City (not the FEMA Direct Housing program)

Approximately 40 resident households have relocated out of the area.²⁶ Some wanted to remain in the Santiam Canyon but were unable to find properties to rent so relocated to nearby communities, such as Mount Angel and Silverton, or moved in with family. A May 2021 wildfire survey by Marion County and Linn County asked people living near where the fires occurred: “What is your current living situation”? The primary response among respondents whose home was destroyed in the fire was “I live in an RV on my property” (Table 19).

Table 19. Wildfire survey response to the question “What is your current living situation” among respondents whose home was destroyed in the fire

Response	Percent	Number of Responses
I live in an RV on my property	24.2%	32
Other (please specify)	24.2%	32
I live in my home	18.9%	25
I am renting until I can get back on my property	11.4%	15
I live in an RV on someone else’s property	9.1%	12
I live with family/friends until I can get back to my property	4.5%	6
Blank	3.0%	4
I live in an RV park	3.0%	4

²⁴ Oregon Department of Human Services. (2020). Multi-Agency Shelter Transition Teams (MASTT) Oregon Straight Line Winds and Wildfire DR4562. October 16. <https://www.oregon.gov/ohcs/get-involved/Documents/committees/HTF/10-16-2020-MASTT-Presentation-Final.pdf>

²⁵ Personal communication with FEMA representative.

²⁶ Personal communication with Santiam Integration Team (SIT) representative.

I'm living in a hotel	1.5%	2
Total	100.0%	132

Source: Survey results provided by Marion County

The survey also asked respondents “Which category best describes your pre-fire housing in the Canyon?” Approximately three-quarters (76 percent) of respondents, indicated that their pre-fire housing was their primary residence and 9 percent indicated that it was their secondary residence. Only 4.8 percent of respondents indicated that they were renters. As noted in section 3.2.3, even before the fire there was a smaller proportion of renter occupied housing in the Santiam Canyon compared to the average for Linn County and Marion County.

Table 20. Wildfire survey responses to the question “Which category best describes your pre-fire housing in the Canyon?”

Response	Percent	Number of Responses
Primary residence	75.8%	172
Secondary residence	9.3%	21
Renter	4.8%	11
Landlord	1.3%	3
Staying with Family/Friends	0.9%	2
Unhoused	0.4%	1
Other	3.5%	8
Blank	4.0%	9
Total	100.0%	227

Source: Survey results provided by Marion County

The survey also asked a question that helps gauge if people are going to relocate out of the Santiam Canyon. The question that was asked was: “Do you plan to rebuild in the Canyon?”. This question was open-ended. Only 6 out of 132 respondents indicated “no” or that they will not rebuild or return full time. Even among respondents that said they did plan on rebuilding, many expressed uncertainty about when they will be able to rebuild and mentioned concerns about their financial ability to rebuild.

3.3 Economic Resources

3.3.1 Natural Capital

The Beachie Creek and Lionshead fires damaged thousands of acres of forestlands in the Santiam Canyon. The Beachie Creek Fire encompassed 193,000 acres and the Lionshead fire encompassed a total 204,000 acres. The impact of the fires on the landscape are the effects to soil quality, water quality, and habitat provisioning for both animals and plants.

The initial impacts to soil quality are the burning of materials and nutrients. Heavy burning makes soil more susceptible to erosion. Much of the topsoil in severely burned areas was lost from rain event after the fire. Modeled post-fire erosion potential for a five-year storm event (20 percent probability of occurring in any year) ranges from 9.3 tons per acre to 20.7 tons per acre

in heavily burned sub watersheds.^{27,28} The initial runoff from burned areas includes ash, burned material debris, and other sediment. Sedimentation threatens water quality for both drinking water and habitat for aquatic species. As of October 2021, there has not been an impact to downstream drinking water quality or treatments needs due to wildfire sediment. Risks of erosion will be minimized overtime as revegetation is reestablished in the burned area.

Impacts on water quality in the streams and rivers in North Santiam can affect federally listed species, including Upper Willamette spring Chinook salmon, Upper Willamette steelhead trout, and bull trout. Increases in sediment can lead to mortality of eggs and juvenile salmon. Salmon and steelhead are susceptible to sediment pollution because they build their nests in the stream bottom and the eggs rely on a steady flow of clean, cold water to deliver oxygen and remove waste products. Sediment can smother the eggs by restricting the supply of oxygenated water. Sediment can also fill in deep areas that provide refuge for aquatic species.

Terrestrial species that were impacted by the fire include the endangered Northern Spotted Owl. The Beachie Creek Fire burned 6,491 acres of suitable habitat and the Lionshead Fire burned 17,775 acres of suitable habitat for the Northern Spotted Owl. Ongoing threats from the residual fire effects to the Northern Spotted Owl include additional loss of habitat in the fire area due to blowdown, mass soil movement, flooding, and insects and disease.

Native plant communities were directly destroyed by the fires. The threatened and endangered plant species that existed within the burned area including Gorman's aster (*Eucephalus gormanii*), shorthair redgrass (*Calamagrostis breweri*), and white bark pine (*Pinus albicaulis*), and several listed species of lichens and fungi. Regrowth of native plants is threatened by the potential for the introduction and spread of noxious weeds. Noxious weeds could have been introduced through fire suppression or clean-up activities. Noxious weeds can compete with native species for space and nutrients in adjacent burned areas. Particularly sensitive habitats include Mt. Jefferson Wilderness and Opal Creek Wilderness.

3.3.2 Human-Built Physical Capital

Physical capital was damaged or destroyed throughout the Santiam Canyon from wildfire. In Marion County there were 130 properties that were affected by the fires and 937 properties that were destroyed.²⁹ Approximately 724 dwellings were destroyed in Marion County and Linn County.³⁰ A total of 1,067 properties were affected or destroyed in Marion County and 100 in Linn County. The estimated value of what was lost in Marion County is \$142.5 million in total

²⁷ U.S. Forest Service. (2020). *Burned Area Emergency Response Summary – Beachie Creek Fire*. October 21.

²⁸ U.S. Forest Service. (2020). *Burned Area Emergency Response Summary – Lionshead Fire*. October 21.

²⁹ "Affected" means there was damages to some of the property. Affected means damages was of lower value ancillary structures and/or less than 50 percent of the (house/business) structural elements received damages. "Destroyed" means either all or major (home/business) Improvement(s) were destroyed or where damaged beyond 50 percent.

³⁰ Marion County. (2021). *Santiam Canyon Wildfire Recovery Report*. September 23.

improvement value (Table 21). The estimated loss of real market value for the 100 properties in Linn County is \$12 million.

Table 21. Affected and Destroyed Property Improvement Value and Square Feet

	Total Improvement Value Lost	Square Feet Affected or Destroyed
Marion County	\$142,587,740	753,797
Detroit	\$39,777,270	200,690
Gates	\$10,725,360	71,730
Mill City	\$3,135,000	26,861
Other Area	\$44,475,055	454,516
Linn County	\$12,003,001	N/A
Total	\$252,703,426	N/A

Source: ECONorthwest with information from Marion County Assessor

After the fire, impacted properties had to go through a clean-up process. Clean up requires removing household hazardous waste removal and removal of ash, debris and burned-out structures.³¹ As of October 2021, approximately 68 percent of “home site” properties (489 properties in total) have completed the clean-up process,³² which can take 6 to 18 months.³³ In addition, approximately 75 percent of hazard trees have been removed.³⁴

After clean-up, the property owners that elected to rebuild needed to obtain a dwelling permit. As of October 2021, approximately 36 percent of properties have been issued a permit to rebuild (Table 22). Septic systems were also damaged by the fires. As of September 2021, approximately 46 percent of damaged septic systems have had a permit issued for replacement (Table 23).

Table 22. Dwelling Permits for Repair/Replacement in the Santiam Canyon

	Estimate to be Repaired/Replaced	Number of Dwelling Permit Issued	Percent with Permit Issued
Mill City (Marion)	31	9	29%
Mill City (Linn)	0	2	>100%
Gates (Marion)	74	32	43%
Gates (Linn)	14	7	50%
Detroit	268	74	28%
Unincorporated Marion	279	142	51%
Unincorporated Linn	59	21	36%
Total	724	287	40%

Source: Marion County. (2021). *Santiam Canyon Wildfire Recovery Report*. September 23.

³¹ More information about the wildfire clean-up process in Oregon is available at: <https://wildfire.oregon.gov/cleanup>

³² Marion County. (2021). *Santiam Canyon Wildfire Recovery Report*. September 23.

³³ This timeframe based on information obtained from: <https://wildfire.oregon.gov/cleanup>

³⁴ Marion County. (2021). *Santiam Canyon Wildfire Recovery Report*. September 23.

Table 23. Septic Permits for Repair/Replacement in the Santiam Canyon

	Estimate to be Repaired/Replaced	Number of Septic Permit Issued	Percent with Permits Issued
Gates (Marion)	74	45	61%
Gates (Linn)	14	8	57%
Detroit	268	112	42%
Unincorporated Marion	279	170	61%
Unincorporated Linn	59	36	61%
Total	694	371	53%

Source: Marion County. (2021). *Santiam Canyon Wildfire Recovery Report*. September 23.

To assist with the housing shortage from the wildfire there are plans to build 32 houses using wildfire recovery funds approved during the 2021 legislative session. The homes will be in two locations, a group of cabins at North Santiam State Park and a “tiny home village” in Gates.³⁵

Like homes, businesses and community buildings were also damaged by the fires throughout the Santiam Canyon. The following businesses and community buildings in the Santiam Canyon were physically damaged by the fires:

- Oregon Department of Forestry – North Cascade District Office
- Detroit City Hall and Fire District Office
- Cedars Restaurant and Lounge
- Mountain High Grocery
- River’s Run Mini Mart and Gas
- Korner Post Restaurant
- Kane's Marina
- All Seasons Motel
- Detroit Lake Marina
- Rivers Run Deli and Gas Station
- Ion Testing
- Detroit Lakeside Motel
- Detroit Community Church
- The Lodge at Detroit Lake
- Breitenbush Hot Springs
- Oak Park Motel & RV Park
- Conners BBQ and Pizza
- Greenhouses by Chad
- Canyon Espresso
- North Fork Crossing
- Elkhorn Valley Golf Course
- Gene’s Meat Market

³⁵ Tabrizian, A. (2021). “Marion County plans to build housing in Santiam Canyon for wildfire survivors”. *Salem Reporter*. September 23. Available at: <https://www.salemreporter.com/posts/5053/marion-county-plans-to-build-housing-in-santiam-canyon-for-wildfire-survivors>

- Camp Benadoo
- Upward Bound Camp
- Canyon Cannabis
- Gates Second Hand Store
- Oak Park Motel and RV
- Oak Park Trailer Court
- Deer Creek Hollow RV & Mobile Home Park
- Torres Flowers & Gifts
- Caleb’s Carvings
- CW Specialty Lumber
- Kelly Lumber Sales
- eNRG Kayaking

Many other owner-operated businesses operated on personal property also experienced fire damage. Some businesses – such as mechanics, landscapers, machinists – lost their tools in the fires. These businesses have faced high prices and shortages due to the supply chain issues caused by the COVID-19 pandemic which has delayed or increased the cost of replacing their tools.

Some of the businesses have plans for reopening and rebuilding, some have closed permanently. Breitenbush Hot Springs Resort, located north of Detroit, lost a large portion of their guest cabins, staff housing, and damage to outbuildings. The resort is rebuilding and began hosting guests again in October 2021. Conners BBQ and Pizza reopened in Detroit as a food truck after losing their brick and mortar building in the fires. Detroit Lake Marina and Kane’s Marina reopened for the 2021 season after rebuilding and repairing stairs and docks. Elkhorn Valley Golf Course has 9 of the 18 holes reopened. Upward Bound Camp has reopened for limited camping with donated tents and supplies. However, other businesses, like Kelly Lumber Company in Mill City was destroyed in the fire and closed permanently as a result. The Marion County Building Department estimates that rebuilding will be at a steady rate for the first five years after the fire, with full rebuilding completed in ten years. The potential new sewer system in three to ten years is a large unknown that will affect the rate of rebuilding to pre-fire levels as well as the potential to add additional physical businesses.

The Small Business Administration (SBA) provides low-interest, long-term disaster loans to property owners and renters to repair or replace uninsured/underinsured disaster damaged property. Applicants are assessed using a Failed Income Test (FIT) to determine their eligibility for an SBA Disaster Loan. Applicants who have received high insurance payments are often not eligible for an SBA loan. These loans help both homeowners and businesses repair and rebuild. In total, 554 SBA Loans have been approved for people impacted by the 2020 wildfires in Marion and Linn County.

Table 24. Small Business Administration (SBA) Approved and FIT

County	SBA Total Approved and FIT
Marion	414

Linn	140
Total	554

Source: US Department of Housing and Urban Development. (2021). Housing Impact Assessment Oregon Wildfires and Straight-Line Winds (DR-4562-OR). April 30. Available at: [https://www.oregon.gov/ohcs/get-involved/Documents/committees/ODHTF/05-03-2021-DR-4562-OR%20Assessment%20\(FINAL%202021-04-30\).pdf](https://www.oregon.gov/ohcs/get-involved/Documents/committees/ODHTF/05-03-2021-DR-4562-OR%20Assessment%20(FINAL%202021-04-30).pdf)

In addition to buildings, roads and other infrastructure were also damaged by the fires. Detroit's drinking water system was severely damaged by the fire. In March 2021 Detroit implemented a temporary membrane filtration system, but a longer-term and higher-capacity replacement system still needs to be built. Much of the utility pole and other burned infrastructure has been replaced since the fire. Road repairs needed after the fires included making improvements to drainage features, replacing guardrails, and replacing damaged culverts. As of October 2021, \$19 million in federal grants to replace damaged infrastructure from the 2020 Labor Day Fires.³⁶ These funds include \$12 million to Oregon Department of Transportation, which will cover the full cost of its disaster recovery projects.

On the week of September 28, 2020 a Joint Preliminary Damage Assessment (PDA) was conducted by FEMA and validated significant damages in the following counties: Clackamas, Douglas, Jackson, Klamath, Lane, Lincoln, Linn, Marion and Tillamook. Estimates are not available for the individual counties or fires. The cost estimates provided are conservatively low due to the ongoing fire/emergency response operations and the lack of access to the impacted areas at the time the assessments were accomplished. From the public assistance PDA assessments, the estimated costs of the 2020 fires in all of Oregon are categorized as follows:

- Debris Removal: \$310,878,021
- Emergency Protective Measures: \$16,453,378
- Roads and Bridges: \$12,365,999
- Water Control Facilities: \$1,398,564
- Public Buildings: \$4,845,916
- Utilities: \$24,724,250
- Parks/Other: \$9,562,820
- Total Costs: \$380,228,948

Those who have chosen to rebuild physical infrastructure have faced higher than average costs to do so. The supply chain shortages and delays caused by the COVID-19 pandemic resulted in high prices for durable consumer goods and for construction supplies. The price of lumber increased from \$448 per million board feet in February 2020 to a high of approximately \$1,600 per million board feet in May 2021 – the same time when many people were able to start rebuilding.³⁷ Prices have since declined, and are approximately \$800 per million board feet as of November 2021.

³⁶ <https://www.wyden.senate.gov/news/press-releases/merkle-wyden-announce-19-million-in-federal-grants-to-assist-wildfire-recovery-in-oregon>

³⁷ Trading Economics website, *Lumber*, available at: <https://tradingeconomics.com/commodity/lumber>

3.3.3 Human and Social Capital

Human and social capital were damaged by the fires through both physical and non-physical effects. Physically, people were displaced, lost their homes, lost community gathering places, lost natural resources that they valued, and generally had their lives severely disrupted. The non-physical effects of the fire include the trauma of the experience, the hardships that it created, and the resulting stress.

Social Capital consists of a stock of trust, mutual understanding, shared values, and socially held knowledge. Human Capital refers to the productive capacities of individuals, both inherited and acquired through education and training.

Financial Hardships

The fires and resulting devastation disrupted the lives and incomes of the people who were impacted. People who were fully insured were still displaced from their home or their business. They had to handle the logistics of finding housing, filing insurance claims, and deciding if and how to rebuild – all of which requires resources, including people's time.

Some victims of the fires were uninsured or underinsured. As a result, they experienced a loss of wealth and property from the fires that they are not likely to recover from. Many uninsured people were older – they had paid off their home and did not have insurance because it was not required without a mortgage.³⁸ Other people had enough insurance to pay off their remaining mortgage, but those funds often are not large enough to allow them to rebuild. In some cases, insurance payments went directly to the insurance company, requiring that the mortgage is paid off without distributing funds to the victim.

Due to the high cost of construction materials, there are also people who partially rebuilt but then ran out of funds to complete the rebuild. Some funds were available through FEMA, \$35,500 for housing assistance/house repairs and \$35,000 for personal property. Not all eligible people received these assistance funds from FEMA. The low-interest SBA loans from FEMA are a source of financing, but some applicants are not able to access these funds because they received insurance payouts and do not meet the income requirement. There are many other financing options for people who were impacted by wildfire, but the financing is not a grant and represents additional, increased costs and a loss of wealth for the victims of the fires.

Emotional Trauma

Both social capital and human capital were severely damaged by the fires and their aftermath because of the trauma and stress placed on the community. Direct exposure to large scale fires can significantly increase the risk for mental health disorders, particularly for post-traumatic

³⁸ Personal communication with representative from Santiam Integration Team.

stress disorder (PTSD) and depression.³⁹ People who did not have a direct trauma from the fire itself could still have mental health impacts from the grief of the effects of the fire on the landscape. Pioneering research on *solastalgia*, the grief that people feel when a landscape that they are connected to is dramatically altered, suggest that large fires and smoke can cause feelings of isolation from others, less community participation, perceptions of loss of nature, and worsened mental health.⁴⁰

The 2020 Labor Day Fires were not only a traumatic disaster, but they occurred during a global pandemic. The isolation required due to the pandemic added an additional burden for survivors to bear – which impacts their ability to be resilient because social capital was so eroded. During this time people had added fear of getting sick and saw themselves or their loved ones be affected by COVID-19, including sickness and death. Children did not have the social outlet of their peers at school because education had been online for the prior nine months.

The ongoing difficulties that some survivors have faced for recovery further erode their ability to resiliently respond to and recover from the disaster. An ice storm in early 2021 caused further damage from hazard trees, requiring additional clean up and response. In addition to these headwinds, the financial hardships of rebuilding and dealing with bureaucracy takes significant emotional tolls that further erode people’s ability to recover. Informational interviews provide narrative examples of the harms caused by the fires – including divorce, substance abuse, homelessness, and suicide.

Human Capital and Workforce

Human capital includes the people and workforce that define a community and contribute to its social capital – in the aftermath of devastating fires these resources are particularly important to rebuild. Human capital was diminished in the Santiam Canyon due to the fires because people were displaced or choose to relocate due to the event.

The Santiam School District provides a measure of how population has changed due to the fires. Enrollment in 2019-2020 was 604 students. From the pre-fire to postfire period, 72 students left the Santiam Canyon School District, a 12 percent decrease.⁴¹ Identifying when and why families left is a complicated picture that is further affected by COVID-19. In the immediate aftermath of the fire some families who lost their homes left the area but came back once they were able to find stable housing. Other families remained in the area trying to find a permanent residence

³⁹ Silveira, S., Kornbluh, M., Withers, M. C., Grennan, G., Ramanathan, V., & Mishra, J. (2021). Chronic mental health sequelae of climate change extremes: a case study of the deadliest Californian wildfire. *International journal of environmental research and public health*, 18(4), 1487.

⁴⁰ Eisenman, D P., Kyaw, M.T., Eclarino, K. (2021). *Review of the Mental Health Effects of Wildfire Smoke, Solastalgia, and Non-Traditional Firefighters*. UCLA Center for Healthy Climate Solutions, David Geffen School of Medicine at UCLA, & Climate Resolve.

⁴¹ This and the following information came from an interview with Todd Miller, Superintendent of Santiam Canyon School District (November 1, 2021).

but were forced to eventually move away. As of the writing of this report, enrollment and attendance has been stable at 524 students for the 2021-2022 school year. The fires also affected teachers and staff. Ten percent of staff lost their homes.

The school district hired an outside counselor to support mental health among students and teachers. The school district ran buses as far away as Lebanon to the south and Salem to the east to pick up displaced students. They also paid parents who were driving their kids to school a mileage stipend to lower the cost burden. The school district is funded based on enrollment, so has led to an estimated loss of \$637,000 in funding. The district had also recently passed a school bond (prior to the fire they had anticipated significant population growth) and they are uncertain whether property taxes will be sufficient to pay it off.

Government Revenue and Social Services

The Service Integration Team of Santiam Hospitals (SIT), Oregon Department of Human Services (ODHS), the Federal Emergency Management Agency, Marion County, Linn County, and the Oregon Red Cross comprise the Multi-Agency Shelter Transition Team for the Santiam Canyon which assists residents with overcoming barriers to finding shelter. The Multi-Agency Shelter Transition Team has assisted approximately 400 households in the Santiam Canyon. Only residents are eligible for assistance, not second-home owners if their primary residence was not affected.

SIT has transformed its service offerings since the fires. In addition to access to health, food, and housing issues that it was providing before the fire, SIT now assists households with FEMA applications and appeals, small businesses assistance (SBA) loans, navigating the clean-up process, and accessing other available funds and resources. SIT has increased staffing from 1.5 FTE to 7.0 FTE because of the fires.

Marion County has funded two interim City Manager positions, one in Gates and one in Detroit, to assist those cities with the recovery process. The City Managers are assisting with coordinating recovery activities. For both cities, facilitating building permits to allow people to rebuild quickly has been a primary priority. In addition, a high priority for Detroit is replacing the drinking water system, which was destroyed in the fire, with a long-term solution that can account for changes in water quality from sedimentation from the fires as well as accommodate future growth.

Property tax revenue collections in the affected cities decreased for the 2021-2022 fiscal year because of the loss of taxable value. Marion County and Linn County assessors had to expend considerable resources to reassess properties after the fires. As people rebuild the property tax revenues will increase. However, because of transition times and people choosing not to rebuild, it will likely take multiple years before property tax revenues return to their pre-fire values.

The five incorporated cities all increased their total budgets from the 2020-21 to the 2021-22 fiscal year because of insurance and grants directly related to the fires. Detroit's 2021-22 budget

includes a “rebuilding” fund dedicated to rebuilding in the aftermath of the fire. The \$495,000 fund uses insurance proceeds and FEMA funding.⁴² The \$875,000 CCIS Beachie Creek fire insurance settlement will be used to replace the Cedar Creek pedestrian bridge, cover the Reid House loss, and fund improvements to local parks and public facilities. Lyons notes that properties within its city limits did not suffer direct fire loss but were affected by smoke and ash.⁴³ Lyons also had disruptions in natural gas and water services.

Impacts to Historical and Cultural Resources

Social capital is often reinforced by cultural and historical values. Cultural values are created through connection to cultural customs and traditions. Cultural value is particularly important for tribes and extends to physical resources such as tribal artifacts, historical burial site, and ceremonial locations. Historical value is similar to cultural value but is derived from sites and items that tell the history of a location. A total of 15 cultural resource sites were identified as at risk within the Beachie Creek Fire area.⁴⁴ A total of 23 cultural sites within the fire area were identified as at risk within the Lionshead Fire area.⁴⁵ These sites are determined to be at risk because they have been burned or damaged by the fire or face post-fire threats from looting, vandalism, erosion, and/or hazard trees. To limit post-fire impacts the fire incident managers have closed roads and trails, as well as conducted mulching and hazard tree removals.

3.4 Economic Activity

3.4.1 Businesses, Employment, and Labor Income

Businesses, employment, and income were all impacted by the fires. Businesses that experienced full or partial damage to their structures incurred the associated costs, particularly if they were underinsured. For these businesses the impacts will last until they rebuild, and customers return. Some businesses have made the decision to not rebuild and have either closed their business or reopened with limited capacity, without plans to replace it at this time. Even if a business was not physically burned by the fires, the evacuations and loss of businesses in the aftermath resulted in a loss of income. Businesses also incurred costs to remove ash and soot. Insurance will generally not cover lost income if the businesses itself does not sustain physical fire damage. There may be some businesses in the Santiam Canyon that experienced an increase in economic activity from the fires, such as logging and construction companies.

There has been a loss in employment after the fires, suggesting there was also a loss in business revenues. Figure 35 shows the trends for each of the Santiam Canyon communities. The data for this chart only show covered employment, meaning that it does not include self-employed

⁴² City of Detroit. (2021). *City of Detroit Financial Report*. June 30.

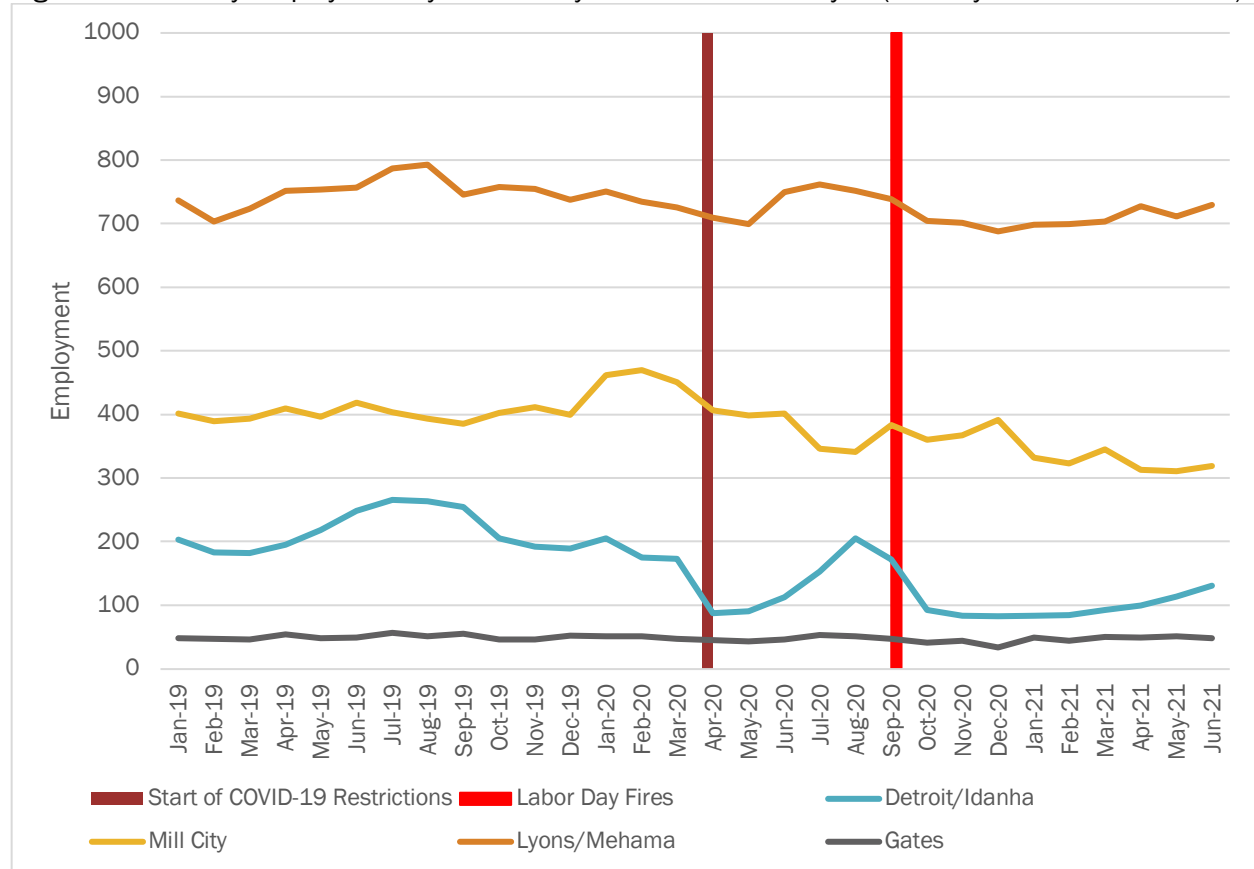
⁴³ <https://www.cityoflyons.org/wp-content/uploads/2021/05/2021-22-Budget-Proposal-w.detail-sheets.pdf>

⁴⁴ U.S. Forest Service. (2020). *Burned Area Emergency Response Summary – Beachie Creek Fire*. October 21.

⁴⁵ U.S. Forest Service. (2020). *Burned Area Emergency Response Summary – Lionshead Fire*. October 21.

persons.⁴⁶ The COVID-19 pandemic and associated restrictions on public activities obscure the effects of the fire because when the fire occurred aligns with when some restrictions were lifting.

Figure 35. Monthly Employment by Community in the Santiam Canyon (January 2019 to June 2021)

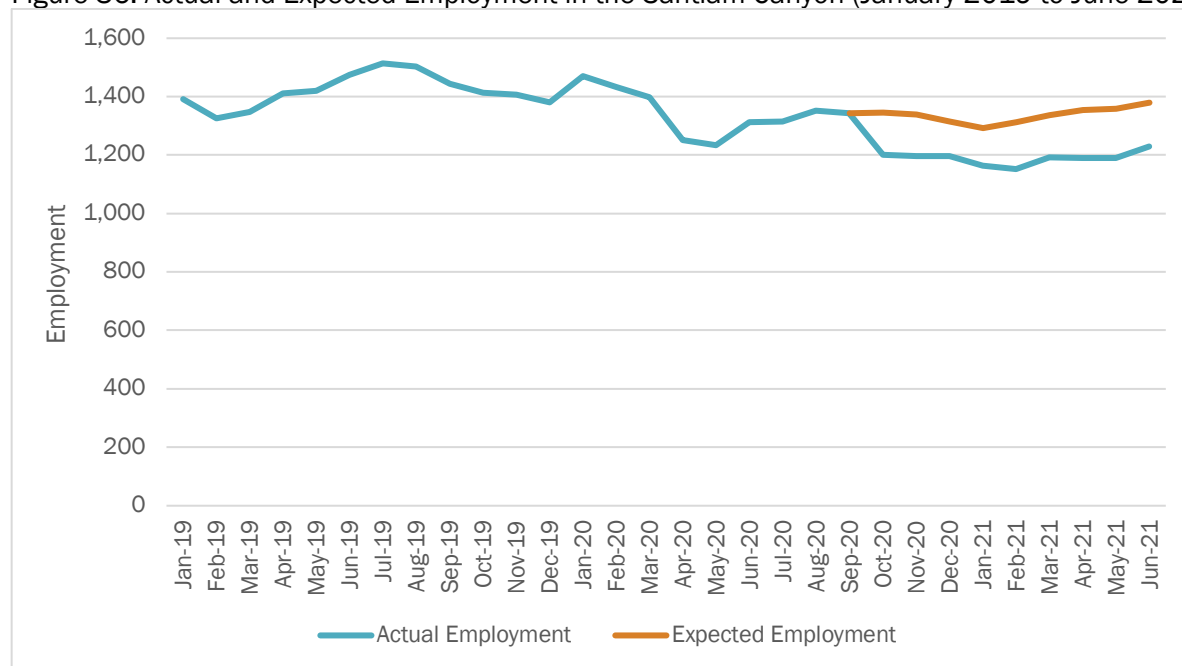


Source: Oregon Employment Department, Quarterly Census of Employment and Wages
 Note: The geographic area for this data is zip codes 97342, 97346, 97350, 97358, and 97360.

Based on the trends for Marion and Linn County from October 2020 to June 2021, there is a clear decline in employment for the Santiam Canyon due to the fires. Figure 36 shows the actual employment that occurred as well as the expected employment calculated by applying the employment trends from the two counties. These values indicate that as of June 2021 (the most recent data month available) that **there are approximately 250 fewer jobs in the Santiam Canyon than there would be if the fire did not occur.** Note that this includes only covered employment – so any job losses among self-employed persons or any other covered employment is not included in this estimate, meaning the true value may be even higher.

⁴⁶ More information about the type of employment that is covered by Quarterly Census of Employment and Wages data is available at: <https://www.qualityinfo.org/-/data-sources-and-limitations-for-qcew>.

Figure 36. Actual and Expected Employment in the Santiam Canyon (January 2019 to June 2021)



Source: Calculated by ECONorthwest using Oregon Employment Department, Quarterly Census of Employment and Wages.

The average per capita income in the Santiam Canyon is \$28,364 per year or \$2,364 per month. Applying that value to the reduction in covered employment suggests that **approximately \$3.1 million in income has not occurred in the Santiam Canyon due to reductions in employment from October 2020 to June 2021**. This value is equivalent to an average of \$346,000 in income per month.

The total value added in the five-zip code study area was \$251 million per year or \$20.94 million per month for 2019.⁴⁷ Valued added is a measure of the new economic activity created, and, for simplicity, can be considered the same as net income for businesses. Value Added is equivalent to the Industry’s contribution to Gross Regional Product (GRP). Assuming that the reduction in employment is proportional to the percent reduction in value added suggests that **the loss of GRP for the Santiam Canyon from October 2020 to June 2021 is approximately \$20.6 million, equivalent to \$2.3 million per month**.

Comparing pre-fire trends to post-fire employment values suggests that the impact of the fire was most severe for Detroit/Idanha and Mill City. Gates has the fewest employees and did not have discernable changes in employment levels. Gates does have a high percentage of people employed in the logging and construction industries, which likely why the job impacts were not as severe for this community. Lyons and Mehama may have experienced a slight decrease in employment and business activity – but there are no reports of specific business closures or long-term disruption due to fires in these communities (although many had significant clean-up costs and were forced to close until evacuations were lifted and clean up was complete). Mill

⁴⁷ IMPLAN 2019 model year for the five zip codes: 97358, 97360, 97346, 97342, 97350

City and Detroit appear to have the largest impacts to businesses, which is supported by information on the business closures which have occurred in these two towns. Businesses that have indicated that they have permanently closed because of the fires include:

- Kelly Lumber (Mill City)
- CW Specialty Lumber (Mill City)
- Cedars Restaurant and Lounge (Detroit)
- Mountain High Grocery (Detroit)
- eNRG Kayaking (Gates)
- Caleb's Carvings (Gates)

The long-term impacts to employment, income, and business activity will likely continue to be suppressed because some businesses have closed permanently. Prior to the fire there were not many new businesses entering the local economy. The rebuilding costs and challenges with the sewer system create conditions that suggest there will not be investments in new physical businesses until the supporting infrastructure is in place

3.4.2 Real Estate

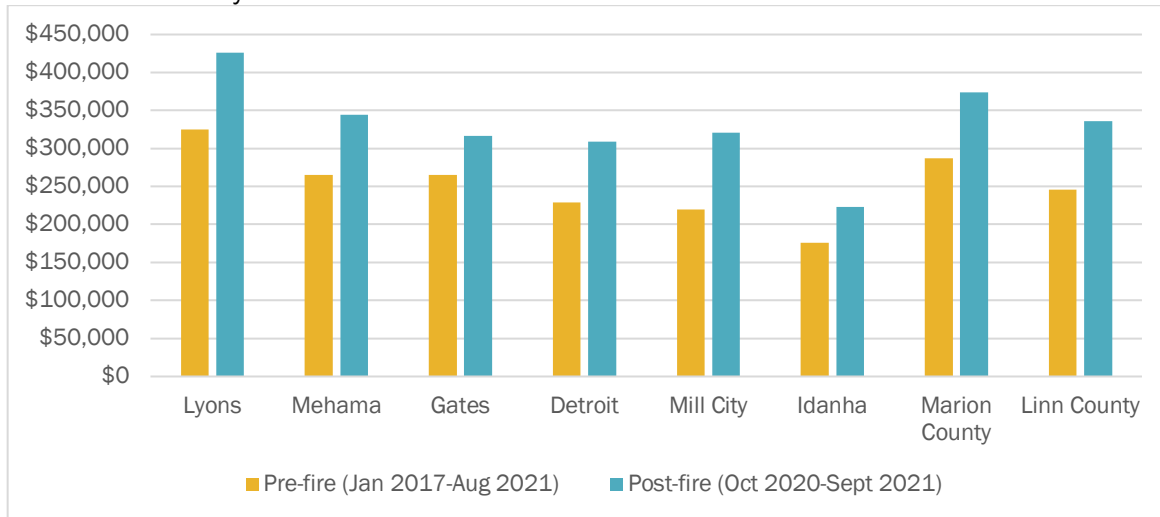
The real estate market fundamentally shifted after the fires. Not only did the fire physically transform real estate property in the Canyon, but it also provided a reason for many people to choose to relocate. Physical impacts of the fire provided a motivator for people to sell, particularly those who were underinsured and could not afford to rebuild. Other sellers may not have lost their home in the fire but chose to relocate because the region changed so significantly, the trauma from the fire experience, and/or perceptions of risks. As discussed in section 3.3.2, as of October 2021, approximately 36 percent of properties have been issued a permit to rebuild.

The uncertainty about the future sewer system is creating complications for the rebuilding effort. Some lots are too small to rebuild with a septic system that meets regulatory requirements, and without sewer being available these people have limited options to rebuild. In some cases, existing septic systems are still functional, and rebuilding is not contingent on new septic investment. In other cases where lots can accommodate the more advanced septic systems that meet regulatory requirements, the added cost is burdensome for property owners. Retrofitting to connect to the sewer system in the future will add costs. Feedback from certain businesses in the area have indicated that they will not be rebuilding until sewer is in place, if at all. The wastewater handling costs and situations are different from property to property and current information does not characterize well which barriers are affecting which property owners and the overall influence septic issues are having on delaying rebuilding efforts.

The fire transformed many properties from built improved land (e.g., single-family residential, commercial, retail, or other built improvements) to vacant land that is now devoid of the hallmark vegetation of the area that was prevalent before the fire. Nominal median sales prices for single-family residential homes increased after the fires, as they did for Marion County and

Linn County overall – this increase has occurred broadly throughout the real estate market and is likely attributable to the response to the COVID-19 pandemic, rather than any impacts from the fires. Median sales prices for Mill City have increased at a disproportionately high rate compared to the other communities. Prices in Gates have increased at a disproportionately low rate. However, due to the low number of transactions a single property sale can have large impacts on the median sales price, distorting the value. The months of February to June 2021 had no reported transactions for Gates or Detroit.

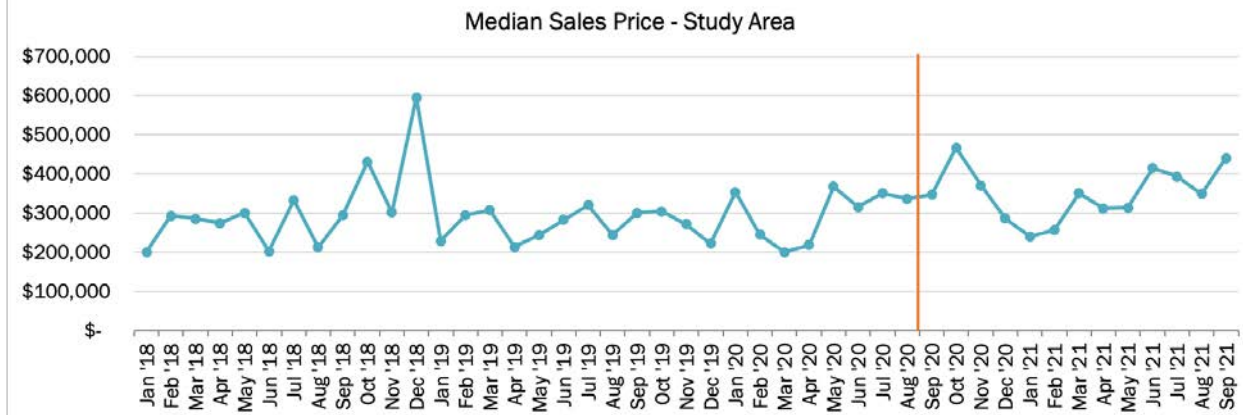
Figure 37. Nominal Median Sales Prices for Single Family Residential Homes, by City, Before and After the Labor Day Fires



Source: Redfin, Downloadable Housing Market Data, available at: <https://www.redfin.com/news/data-center/>

Figures 38 through 41 depict real estate trends on the five-mile area of the Santiam Canyon for single-family residential homes. The number of transactions for this area decreased until approximately June 2021, after which time it has returned to near-pre-fire levels. This data is only for single-family residential properties—the data do not show vacant land sales, which have increased substantially since the fires. Because the impact of the fires reduced the number of potential homes that could be sold, the fact that sales transactions and inventory (i.e., homes listed for sale) has recovered to approximately pre-fire levels means that a higher proportion of homes are being listed for sale than prior to the fires. Feedback from informational interviews also indicated that there have been more total transactions of all property types in Summer 2021 compared to prior years.

Figure 38. Santiam Canyon Median Sales Price (January 2018 – September 2021)



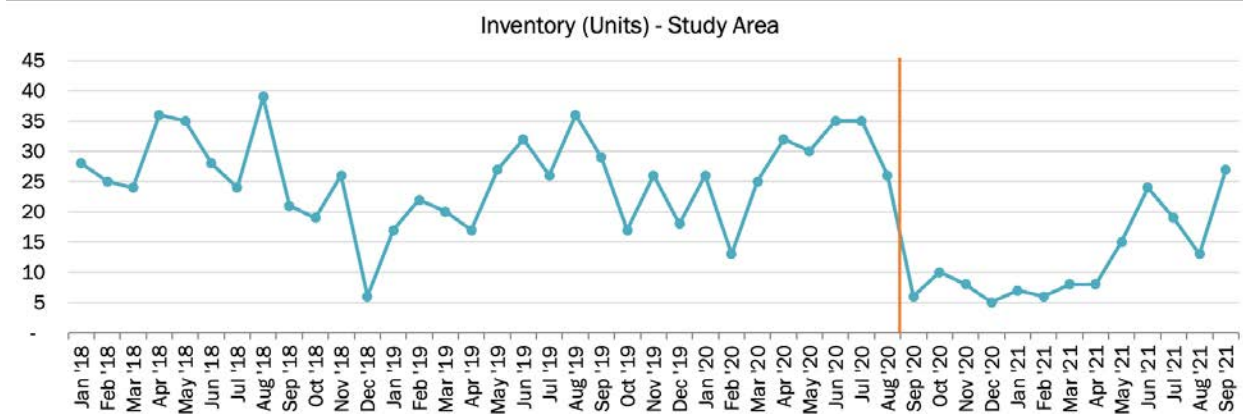
Source: Redfin, Downloadable Housing Market Data, available at: <https://www.redfin.com/news/data-center/>

Figure 39. Santiam Canyon Single-Family Transactions (January 2018 – September 2021)



Source: Redfin, Downloadable Housing Market Data, available at: <https://www.redfin.com/news/data-center/>

Figure 40. Santiam Canyon Single-Family Inventory (January 2018 – September 2021)



Source: Redfin, Downloadable Housing Market Data, available at: <https://www.redfin.com/news/data-center/>

Figure 41. Santiam Canyon Single-Family Days on Market (January 2018 – September 2021)



Source: Redfin, Downloadable Housing Market Data, available at: <https://www.redfin.com/news/data-center/>

Based on informational interview with real estate agents that represent clients in the Santiam Canyon they believe that prices for the residential real estate market will continue to increase in the Santiam Canyon, particularly in the areas near the rivers and Detroit Lake. The reason for continued demand for these properties is due to there being a shortage of available homes near water throughout the state. Detroit is particularly desirable because of the recreational amenities – and demand will only increase once the sewer is in place if it can facilitate new businesses. Properties in the lower parts of the Canyon are also desirable because of their proximity to Salem and metro areas. The area is likely to remain popular with retirees, although there are some concerns about affordability for people living on fixed incomes. There are some reports of investors who are buying properties along the river and lake. Many of these non-local investors are people from the Portland area who are seeking out vacation homes.

Two short-term/immediate housing projects are planned for the Santiam Canyon, with an estimated completion date of Spring 2022. Santiam Cottages at North Santiam State Park in Detroit would house 16 units. Evans Haven in Gates would house 16 units as well. These sites are being developed by Oregon Department of Housing and Community Services in coordination with Marion County and others. The units would be rented at-cost. Additionally, two long-term/permanent housing projects are in “conceptual planning stages”.⁴⁸ The “Marion County Wildfire Portfolio” would offer 54 units in Mill City and 72 units in Stayton. The Homestead site is 9.7 acres contiguous to the Mill City LIFT site that could support up to 170 units. If fully funded and implemented, both projects are planned to have construction begin in 2022.

⁴⁸ Russell, J. (2021). *Santiam Canyon Fires – Marion County Response and Recovery*. Federal Emergency Management Agency.

3.4.3 Recreation and Tourism

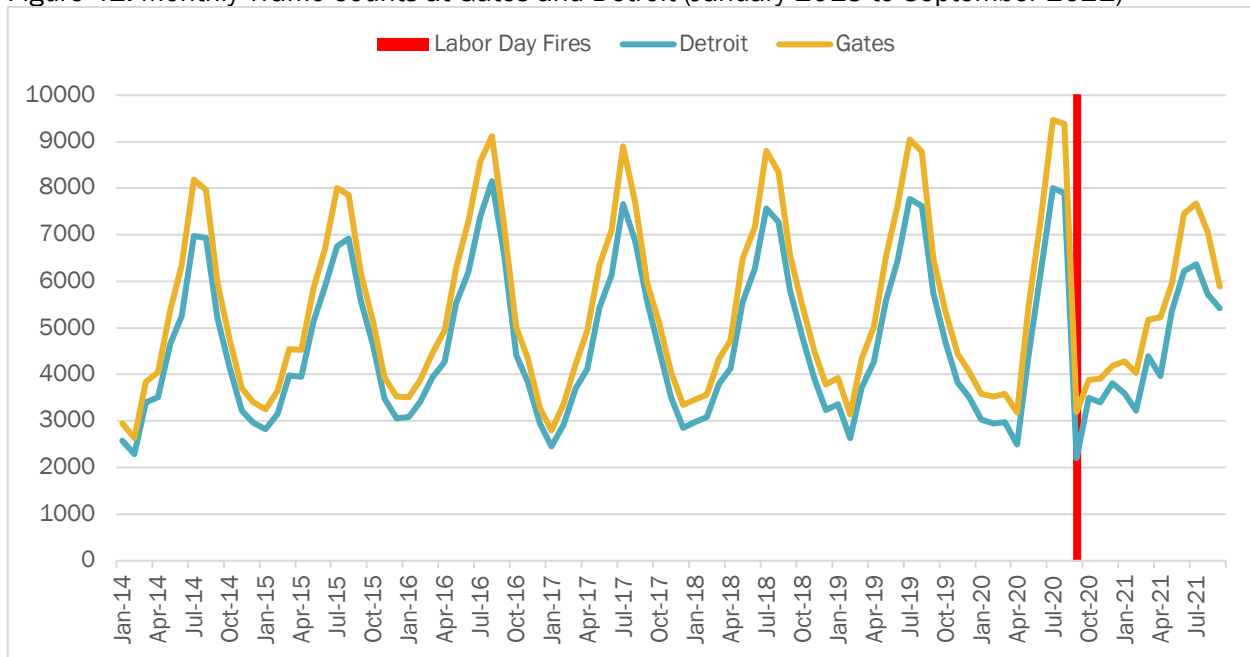
The 2020 tourism and recreation season had already been impacted by smoke from fires, which began on August 16, 2020. The fires spread into populated areas on Labor Day Monday, the end of the year's summer tourism season. Tourism and recreation in the 2020 season were also complicated by COVID-19. The pandemic began to shut down state parks and other recreation areas in March 2020. By September 2020, recreation sites had reopened from the COVID-19 restrictions and demand for outdoor recreation activities close to home had increased as people shifted travel plans to avoid air travel and indoor settings.

The hazards in the aftermath of the fires resulted in ongoing closures of recreation and tourism sites, even if they were not directly impacted by the fires. Since those initial hazards have been cleared and as rebuilding has begun some sites have begun to reopen. Long-term, the impacts of the fires on recreation and tourism will likely return to pre-fire levels for locations where the primary draw of the attraction was not the forest. Some outdoor recreation areas may decide to restrict future visitation so that sensitive habitats have an opportunity for regrowth without human interference.

Tourism

Traffic counts provide a measure of vehicular activity before and after the fires, which is a measure of all activity, including tourism. Figure 42 shows the average monthly traffic counts pre-fire compared to post-fire. The fire occurred in August 2020. In September 2020, traffic counts were down 2,800 vehicles at Gates and 3,200 vehicles in Detroit compared to the previous ten-year average. October counts were also below the average, but in November and December numbers increased back to and even surpassed the average. This slight increase in the last two months of 2020 is likely due to recovery activities, not tourism. Summer traffic levels were approximately 15 percent less than the pre-fire averages – suggesting a decline in tourism for the 2021 season. The Maples Rest Stop, located approximately 1.5 miles east of Gates, displayed similar patterns but showed more of a recovery near pre-fire levels (Figure 43).

Figure 42. Monthly Traffic Counts at Gates and Detroit (January 2013 to September 2021)



Source: Oregon Department of Transportation

Note: Due to damage to traffic counting equipment from the fires, the traffic counts for September 2020 to October 2020 for Gates and September 2020 to January 2021 for Detroit are estimates by Oregon Department of Transportation.

Figure 43. Maples Rest Stop Traffic Counts



Source: Oregon Department of Transportation

Tourism in the Santiam Canyon was impacted before September 7, 2020. Smoke from the fires was impacting people's preferences to visit and engage in recreation since the fires started on August 16, 2020. Because the fire happened at the end of the summer tourist season the impacts

were on shoulder season visitation, which is historically lower. However, the entire tourism economy – including lodging, restaurants, gas stations, grocery, and retail stores – continues to sustain losses to this day. Losses are due to both lack of supply from businesses impacted by the fire as well as demand because many draws for tourism locations remain closed.

The summer 2021 boating season at Detroit Lake was impacted by drought conditions and reservoir management. The marinas at Detroit Lake required boats to be out of the water by July 17 due to low water levels. Low water levels still allowed access at day use areas, but the loss of marina users impacted the revenues of the few businesses that did reopen, particularly in Detroit.

Recreation

Within the Beachie Creek Fire burn area there are 31.1 miles of trails, 14 trailheads, 3 campgrounds, 3 day-use areas, and a historic guard station that experienced moderate to high soil burn severity.⁴⁹ Within Lionshead Fire burn area there are 28 miles of trails, 22 trailheads, 18 campgrounds, 3 day-use areas, and a historic guard station that experienced moderate to high soil burn severity.⁵⁰ As of September 2021 there are at least 30 managed recreation sites that remain closed due to fires (Table 25).

Table 25. Recreation Sites that Remain Closed Due to Fires as of September 2021

Recreation Site	Owner/Manager
North Santiam State Rec Area (Overnight)	Oregon State Parks
Rock Creek Campground	ODF
Butte Creek Falls Campground	ODF
Santiam Horse Camp	ODF
Shellburg Falls	ODF
Salmon Falls	Marion County
North Fork Park	Marion County
Bear Creek	Marion County
Niagara	Marion County
Minto	Marion County
Fishermen's Bend	BLM
Elkhorn Valley	BLM
Three Pools Day Use	USFS
Shady Cove Campground	USFS
Monument Peak Trail	ODF
PCT from Trail 3440 to Triangle Lake	USFS- Mt Hood
Little North Santiam Trail	USFS- Willamette

⁴⁹ U.S. Forest Service. (2020). *Burned Area Emergency Response Summary – Beachie Creek Fire*. October 21.

⁵⁰ U.S. Forest Service. (2020). *Burned Area Emergency Response Summary – Lionshead Fire*. October 21.

Recreation Site	Owner/Manager
Jawbone Flats	USFS- Willamette
Sawmill Flats	USFS- Willamette
Opal Creek Trailhead	USFS- Willamette
Humbug Campground	USFS- Willamette
Lower Twin Lake	USFS- Willamette
Triangulation Campground	USFS- Willamette
Boca Cave	USFS- Willamette
Whitewater Creek Trailhead	USFS- Willamette
Natural Arch Trailhead	USFS- Willamette
Woodpecker Trailhead	USFS- Willamette
Fox Creek Group Campground	USFS- Willamette
Opal Creek Ancient Forest Center	Private

Source: Created by ECONorthwest

This analysis suggests that between 400,000 and 800,000 outdoor recreation visits occurred in the Santiam Canyon each year before the fires (see Section 3.4.3.). During the 2021 season these visits were reduced due to ongoing closures. Table 26 lists the recreation resources that opened as of October 2021. Because of the timing of this report many of the recreation sites did not yet have reportable data for the Summer 2021 season to understand how use changed compared to other years. Overnight use data is available for Detroit Lake State Recreation Area and North State Recreation Area. In June 2021 when the park re-opened for overnight camping there were 13,626 monthly visits which is on-pace with the 5-year average before the fire of 13,404 visits.

Table 26. Recreation Sites in the Santiam Canyon that Re-opened Post-Fire

Recreation Site	Date Re-opened
Detroit Lake State Rec. Area (Overnight and Day)	April-21 (June-21 for overnight)
North Santiam State Rec. Area (Day Use Only)	May-21
Packsaddle	Aug-21
Detroit Lake Overlook	Oct-20
John Neal Memorial Park	No Closure
Detroit Lake Marina	May-21
Kane's Marina	May-21
Santiam State Forest	Oct-21 (Partial Re-Opening)
Santiam Flats Campground	May-21
Cove Creek Campground	May-21
Hoover Campground	May-21
Southshore Campground	May-21
Whispering Falls Campground	May-21
Riverside Campground	May-21
Big Meadows Campground	Jun-21

Marion Forks Campground	Jun-21
Detroit Flats Day Use Area	May-21

Source: Created by ECONorthwest

There has been a loss in economic activity due to the ongoing closures of recreation areas due to the fires. Fewer recreational visitors are able to come to the Santiam Canyon because of the closures, which reduced the potential spending by those visitors in the area. However, ongoing business closures also mean that visitors would have fewer opportunities to engage in spending compared to prior levels.

What limited data is available on post-fire recovery indicates that visitation is likely to return to pre-fire levels once sites are reopened. There will be some decline in visitation at recreation sites that are highly dependent on the natural environment, such as Opal Creek and Jawbone Flats. Some sensitive environmental areas may remain closed for extended periods of time to promote restoration. Once sites are fully opened, new views and regrowth could attract outdoor recreation over time in the Santiam Canyon.

3.4.4 Forestry

The Beachie Creek fire encompassed forests owned by USFS, BLM, ODF, tribal, and private owners. A total 193,000 acres of timberland were impacted, which translates to 3.1 million board feet of timber. Of this, approximately 10 percent is salvageable.⁵¹ According to the 2021 report by Oregon Forest Resources Institute, the total value of impacted forest was \$6.2 million (in 2020 dollars) with U.S. Forest Service (USFS) (38 percent) and Bureau of Land Management (BLM) (34 percent) as the most impacted owners. Of the \$6.2 million, \$605,000 worth of timber would probably be salvageable. The majority of salvageable timber is owned by large private owners (44 percent), Oregon Department of Forestry (ODF) (22 percent), and BLM (21 percent).

Table 27. Impacted Timberland from Beachie Creek Fire

	USFS	BLM	ODF	Large Private	Other Private	Total
Total Acres in Fire Perimeter	50,500	38,600	23,900	61,600	19,000	193,600
Medium and High Severity Burn	39,900	21,400	11,200	41,100	9,100	122,700
Probable Salvaged Acres	1,900	3,300	4,800	7,200	1,200	26,300
Probable Salvage Value	\$36,000	\$126,000	\$136,000	\$265,000	\$42,000	\$605,000

Source: Oregon Forest Resources Institute. (2021). Economic Impact to Oregon's Forestry Sector: 2020 Labor Day Fires.

⁵¹ Oregon Forests Resources Institute. (2021). 2020 Labor Day Fires: Economic Impact to Oregon's Forestry Sector. September.

Note: “Other private” includes lands owned by small woodland owners, Native American tribes, conservation organizations and a few acres managed by the Bureau of Reclamation.

The Lionshead fire encompassed forests owned by USFS, ODF, and private owners. A total 204,600 acres were impacted, which translates to 2.9 million board feet of timber. Of this, approximately 3 percent is salvageable. The total value of impacted forest was \$5.8 million (in 2020 dollars) with USFS (83 percent) and other private owners (14 percent) as the most impacted owners. Of the \$5.8 million, \$198,000 worth of timber would probably be salvageable. The majority of salvageable timber is owned by USFS (41 percent).

Table 28. Impacted Timberland from Lionshead Fire

	USFS	BLM	ODF	Large Private	Other Private	Total
Total Acres in Fire Perimeter	104,800	0	500	6,200	93,100	204,600
Medium and High Severity Burn	54,600	0	200	2,400	50,700	107,900
Probable Salvaged Acres	4,300	0	0	1,300	27,200	32,800
Probable Salvage Value	\$82,000	\$0	\$0	\$51,000	\$65,000	\$198,000

Source: Oregon Forest Resources Institute. (2021). Economic Impact to Oregon’s Forestry Sector: 2020 Labor Day Fires.

Much of the timberland on USFS lands is in wilderness or otherwise protected areas and would not have been harvested. For timberland owners that manage their stands for harvest, the fire created a loss of value of their agricultural product. Even salvageable logs represent a loss because that timber is harvested sooner than it otherwise would have been and the logs are a poorer quality, resulting in a lower price. For commercially managed timber the fire creates a short-term increase in gross revenues from salvage activities and insurance payments but a long-term decreased because logs that would have been harvested in the future are now no longer available. Most commercial private timberland (i.e., “large private”) is insured for the lost value of the timber. However, non-commercial timber harvests are common on private property as a secondary source of income, and most private property owners who harvest small-volume stands are not insured for that value.

After the fires were extinguished salvage logging and land clearing operations began and continued through 2021.⁵² The salvage logging operations are generally not stimulating economic activity within the Santiam Canyon – although a small portion of logs have been received at Freres Lumber Company in Mill City. Salvage logs are processed at mills throughout Western Oregon, with the highest concentrations in Linn and Lane county.⁵³

⁵² Oregon Forest Resources Institute. (2021). Economic Impact to Oregon’s Forestry Sector: 2020 Labor Day Fires.

⁵³ Oregon Forest Resources Institute. (2021). Economic Impact to Oregon’s Forestry Sector: 2020 Labor Day Fires. Figure 1.

4 Opportunities for Economic Recovery

The prior sections of this report provide an assessment of the pre- and post-fire economies of the Santiam Canyon communities. This section presents the key opportunities for accelerating economic recovery. It builds on the other fire recovery work and takes a Canyon-wide and regional perspective that is needed to fully realize a robust economic future for the Canyon communities.

The recommendations for recovery for the Santiam Canyon communities are largely dependent on the development of sewer infrastructure. This section provides recommendations for two scenarios. One recovery scenario where the communities fast-track sewer investments that will open opportunity for other recovery activities to occur. A second scenario provides a narrower set of recovery activities that will be available without substantial sewer infrastructure development. Each recommendation notes the economic rationale and requirements for the recovery to occur, as well as the implementation strategies and actions and potential funding sources for the County to explore.

4.1.1 Recovery Scenario with Full Sewer Infrastructure Investment

This scenario provides recommendations in a scenario where the communities fast-track investments in the development of sewer infrastructure. These recovery activities are dependent on development of sewer infrastructure and are not feasible opportunities if the infrastructure is delayed or partially developed. As short-term recovery activities decrease, the Santiam Canyon communities will need to develop a vision for the future of economic activity in the Canyon. If the vision includes the recommendations below, the communities will need to first prioritize sewer infrastructure investment.

- **Fast-track sewer investment throughout the Canyon.** As discussed in Section 2, the Three Basin Rule makes developing wastewater management systems very challenging and expensive because of the limitations on discharge. The Three Basin Rule is in place to protect the drinking water quality for downstream users including the City of Salem. In effect this rule has shifted the costs of development to small communities with fewer resources to implement expensive treatment options. Marion County and the local communities have been working to address the challenges posed by the Three Basin Rule for over a decade. The solution that has emerged is a Canyon-wide sewer infrastructure project that would provide centralized wastewater management for residents of Idanha, Detroit, Gates, and Mill City. By implementing a sewer authority Canyon-wide it would draw on a large enough user base to overcome substantial affordability issues.

The fire increased the urgency of the project because not all residents who lost property can rebuild existing septic systems. Furthermore, new septic systems that meet requirements are not always technically feasible given land availability and those that

are typically come with a high price tag, which could limit the opportunities for rebuilding for many residents. New studies are underway, including economic feasibility studies of the proposed sewer system. Preliminary analysis suggests a system could meet federal affordability standards if the upfront capital costs are funded primarily by grants. Rates would be kept lower by direct resources to ongoing operating costs rather than paying off capital debt. The scale of investment in upfront capital (depending on assumptions used, upwards of 90 percent would need to be grant-supported) is well beyond what is typically offered for a system of this scale and size through established programs. This challenging situation has several implications:

- For a system to be “fast tracked” money to cover the upfront capital would have to be quickly identified and aggregated. The scale of the ask may require substantial political will to be successful.
- The economic rationale to invest substantial state and federal dollars in a sewer system is relatively straight-forward: the Three Basin Rule protects drinking water quality for large portions of the state population, as well as water quality for recreation, which residents throughout the state enjoy. If these populations are benefiting from the Santiam Canyon communities’ investment in treating wastewater, they should be willing to pay.
- The implicit tradeoff of not securing state or federal investment in the sewer (discussed later in this section) is limited development in the Santiam Canyon, following the trend of recent years where very little new investment—particularly in Detroit and Idanha—has occurred. If funding is not secured to implement an affordable system, decision makers must acknowledge that this is not a local decision: it is a direct consequence of protecting water quality resources for downstream users. The equity implications of this decision should be fully understood and transparent.

Even construction of a sewer system is fully funded quickly, design, planning, and construction would take between 5 and 7 years. During this time residents and businesses wanting to rebuild will face decisions to invest in septic systems that may become unnecessary well before they reach their useful life. Some residents won’t have the financial resources to follow this path and will delay rebuilding or decide to relocate and sell to someone who is able to afford the improvements. This situation requires strategic decisions to positively influence the path of economic recovery:

- If financial assistance is offered to property owners for septic investments to facilitate rebuilding in the short-term, any program should be designed to incentivize future connection to the sewer system. Investment in a new septic system could discourage property owners from connecting to a centralized system later, an outcome that could undermine the future economic feasibility of the sewer project.
- If financial assistance for septic improvements is not offered, rebuilding patterns could favor those who have the financial means to afford improvements, potentially

shifting the demographic profile of the communities in the long-run and creating inequitable outcomes for some long-time residents.

- Consider providing technical assistance to property owners to rebuild with a future sewer connection in mind, to minimize future connection costs (whether they are borne by the property owner or the sewer authority which is an option that has been discussed in planning efforts to incentivize connections).

The uncertainty around the sewer presents one of the main sources of uncertainty for many property owners, particularly in Detroit and Idanha. Resolving this uncertainty quickly and in a way that provides assurance that development will be able to proceed is a necessary condition for a robust recovery in the Santiam Canyon.

- **Diversify opportunities by enhancing recreation amenities.** Demand for outdoor recreation is growing in Oregon. Many favorite and well-loved places are highly congested and investment in new recreation infrastructure is hampered on state and federal lands by constrained financial resources. Although the fire significantly changed the natural landscape and amenity value of the forest, many areas remain untouched, and some areas will recover relatively quickly. The Santiam Canyon recreation managers have an opportunity to invest in new infrastructure that would capture a larger share of visitors by providing recreation amenities that are highly demanded and valuable. These investments will produce value for visitors for generations to come, as the forest recovers around them. These investments can be made independent of the sewer. However, the economic potential that could arise from increasing visitation in the Canyon would not be realized without the sewer investment.
 - Prioritize reopening existing recreation facilities, including campgrounds, hiking trails, day-use areas, and river access.
 - Use recovery dollars to invest in new recreation infrastructure that diversifies opportunities and responds to areas of recreation demand growth. These include hiking and camping, whitewater and river paddling, and equestrian use.
 - Make recreation investments that benefit both visitors and residents, including recreation facilities (trails and day use areas) in communities that bring visitors into commercial areas and enhance residential quality of life. Invest in signage that draws people to retail services and enhances placemaking efforts recommended below.
 - Maintaining recreation activity in Detroit Lake is important to existing businesses, but ongoing uncertain around lake management and long-term climate trends will limit the growth potential of motorized boating. Consider opportunities to enhance water-based recreation opportunities along the entire North Santiam River.
 - Engage people in forest recovery, turning fire-damaged landscapes into laboratories and education opportunities, to the extent that safety and ecological sensitivity allow.

Funding opportunities to support these investments include:

- Prioritize recreation investment for existing and future federal and state economic recovery funds.
- Explore opportunities to create or raise user fees with clear explanation of how additional funds will be used to rebuild.
- Build partnerships with and leverage expertise and resources of businesses and organizations that are already present in the Santiam Canyon recreation community to maximize the value of new investments.
- **Capture more spending through retail services for residents and visitors.** A key finding in the visioning study included a desire for residents to have access to retail services. However, the demand for retail services from residents in these communities is not sufficient based on market factors. To capture more spending in the communities, retail services can focus on services that also attract visitors including restaurants, day use amenities, parking, and other retail services. Retail centers in each community could also include additional services for visitors such as electric vehicle (EV) charging, restrooms, and parking to attract visitors to other services in the area.

Implementation strategies for attracting more retail services include:

- Review zoning code to remove barriers for development of retail centers.
- Provide small business assistance for new and existing retail businesses.
- Conduct a visitor study to determine demand for visitor services.
- Explore opportunities to improve connectivity and access to retail centers.

Funding opportunities to support these implementation strategies may include:

- Transient Lodging Tax, especially if lodging establishments in the Canyon increase
- ODOT Loans and Grants

- **Grow human capital equitably through development of workforce housing.** In addition to a need to rebuild housing damaged or lost during the wildfires, community stakeholders have identified a need to plan for workforce housing that meets multiple needs during the ongoing recovery. This will allow the communities to grow human capital equitably and respond to the demand for housing affordable to seasonal and temporary workers as well as respond to new demands from remote workers. For housing that is not supported by the private market alone, some housing types will require creative housing solutions, partial subsidies, and a variety of housing types.

Implementation strategies for addressing housing needs include:

- Promote continued rebuilding of housing damaged or lost during the wildfires to support existing residents.
- Support and work with major employers and other partners in development of seasonal and temporary housing.

- Support the development of all types of housing, market-rate or partially subsidized workforce housing, using tools that lower development or operational costs.
- Identify opportunities included in the Oregon Disaster Housing Recovery Plan that may address housing needs in the Santiam communities.

Funding opportunities to support these implementation strategies may include:

- Project Turnkey (Oregon Cultural Foundation)
- Community Development Block Grants
- **Maximize the value of existing economic resources through economic and social connectivity.** Recovery efforts should maximize the value of existing economic resources and focus on existing human capital. Engagement in the visioning process revealed a need to continue to assist recovery of those directly impacted by the wildfires to address ongoing immediate recovery needs. In addition to addressing these immediate needs, ongoing support for the Santiam SIT team would help to strengthen economic and social activity in the communities. Collaborations between the public and private sectors, as well as local non-profits, will help to bridge gaps in ongoing needs as support from short-term recovery programs decreases.

Implementation strategies for promoting economic and social connectivity include:

- Identify collaborative partnerships between public and private entities, as well as local non-profits.
- Explore placemaking opportunities that strengthen the existing community's sense of place and highlight cultural and historic resources.
- Emphasize education on the multiple benefits of the surrounding forest and regional importance of water resources.
- Explore opportunities for cities in the Santiam Canyon to share resources for administration and operations.

Funding opportunities to support these implementation strategies may include:

- DLCD planning assistance grants
- Ford Family Foundation grants
- MWVCOG grants
- American Rescue Plan Act funds (short-term availability during COVID-19 recovery)

4.1.2 Recovery Scenario without Substantial Changes in Sewer Infrastructure

This set of recommendations are possible to implement without substantial changes to the existing sewer infrastructure, or with delayed or partial solutions to sewer infrastructure. An alternative scenario where sewer investments do not materialize would likely result in an

anemic recovery with a higher potential for inequitable outcomes and diminished quality of life, especially for current and displaced residents.

- Detroit/Idanha experiences limited rebuilding focused on 2nd homes
- Limited services available to support the recreation economy
- Affordability concerns for septic and sewer improvements in Mill City/Gates
- Gap grows between income segments—increased inequality
- Growth focused in western part of Canyon, driven by growth out of Salem

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