



# Corvallis 9th Street Urban Redesign

Fall 2023  
Corvallis

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COLLEGE OF DESIGN

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This report represents original student work and recommendations prepared by students in the University of Oregon's Sustainable City Year Program for the City of Corvallis. Text and images contained in this report may not be used without permission from the University of Oregon.

Cover image: aerial of downtown Corvallis and the Willamette River

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## About SCI

The Sustainable Cities Institute (SCI) is an applied think tank focusing on sustainability and cities through applied research, teaching, and community partnerships. We work across disciplines that match the complexity of cities to address sustainability challenges, from regional planning to building design and from enhancing engagement of diverse communities to understanding the impacts on municipal budgets from disruptive technologies and many issues in between.

SCI focuses on sustainability-based research and teaching opportunities through two primary efforts:

1. Our Sustainable City Year Program (SCYP), a massively scaled university-community partnership program that matches the resources of the University with one Oregon community each year to help advance that community's sustainability goals; and

2. Our Urbanism Next Center, which focuses on how autonomous vehicles, e-commerce, and the sharing economy will impact the form and function of cities.

In all cases, we share our expertise and experiences with scholars, policymakers, community leaders, and project partners. We further extend our impact via an annual Expert-in-Residence Program, SCI China visiting scholars program, study abroad course on redesigning cities for people on bicycle, and through our co-leadership of the Educational Partnerships for Innovation in Communities Network (EPIC-N), which is transferring SCYP to universities and communities across the globe. Our work connects student passion, faculty experience, and community needs to produce innovative, tangible solutions for the creation of a sustainable society.

## About SCYP

The Sustainable City Year Program (SCYP) is a yearlong partnership between SCI and a partner in Oregon, in which students and faculty in courses from across the university collaborate with a public entity on sustainability and livability projects. SCYP faculty and students work in collaboration with staff from the partner agency through a variety of studio projects and service-learning courses to

provide students with real-world projects to investigate. Students bring energy, enthusiasm, and innovative approaches to difficult, persistent problems. SCYP's primary value derives from collaborations that result in on-the-ground impact and expanded conversations for a community ready to transition to a more sustainable and livable future.

## Course Description and Instructors

### **Kaarin Knudson**

*Graduate Workshop in Urban Design,  
PPPM 608*

This class taught the theories and methods of urban design and facilitated the project's direction and deliverables.

### **Shengxiao (Alex) Li**

*Planning Analysis I, PPPM 613*

### **Bob Choquette**

*Planning Analysis Lab*

The quantitative analysis performed by the students for the background research and demographic profile of the site was made possible thanks to the theoretical and practical knowledge provided by these two classes. This course focused on data sources and methods of data collection including surveys; descriptive and multivariate analysis; computer applications; selected analytic models, population projections, and cost-benefit analysis.

### **Megan Banks**

*Introduction to Planning Principles and Practice, PPPM 610*

The coursework for this class provided a foundational understanding of planning principles, what tools planners have at their disposal, how to implement them, and the historical and current context of the profession.

### **Marc Schlossberg**

*Human Settlements, PPPM 617*

This course asked students to think critically about the long-term effects of a built environment and gave guiding principles to how transportation predicated the function of a design.

## Land Acknowledgment



The University of Oregon Community and Regional Planning students would like to recognize the indigenous people of the region, the Kalapuya (cal-uh-poo-yuh) people. The urban planning work that we have engaged with for this project lies on the ancestral homelands of the Marys River, or Ampinefu Band of Kalapuya people. These lands were never ceded by the Kalapuya, rather the Kalapuya were forcibly removed from indigenous stewardship by use of the Willamette Valley Treaty in 1855 and the Morill Act of 1862 onto reservations in western Oregon.

The seizures of 11 million acres of indigenous land caused the displacement of 250 sovereign tribal nations. The impacts of that displacement continue today, experienced by the living descendants of those displaced, the Confederated Tribes of Grand Ronde Community of Oregon and the Confederated Tribes of the Siletz Indians.

*The Land Acknowledgment above is an adaptation of the Land Acknowledgment used by Oregon State University, Corvallis.*

### **View from Marys Peak.**

Photo: Visit Corvallis tourism board

## About the City of Corvallis

Corvallis is located at the confluence of the Willamette and Marys Rivers in the heart of Oregon's Willamette Valley.

**Benton County  
Courthouse in  
Corvallis, Oregon**



Historically, land that comprises the Willamette Valley, including Corvallis, was home to the Kalapuya, a diverse group of several distinct Native American tribes who lived as hunters and gatherers, taking fish and wild game from waterways and forests, and gathering nuts and berries throughout western Oregon. The first White settler in present-day Corvallis, Joseph C. Avery, surveyed a town site in 1849, and the city was incorporated in 1857. Avery and William F. Dixon granted land to establish a county seat. Corvallis is Oregon's 10th largest city with a 2023 population of 61,669 and serves as the county seat of Benton County.

The city is centrally located 90 miles south of the Portland metropolitan area, west of the Cascade Mountains, and east of the

Oregon coast. Major highways running through Corvallis include Highways 20, 34 and 99W. Interstate 5 is located approximately 10 miles east of the city. A municipal airport offers private and corporate services.

Oregon State University is a public land-grant research university that significantly impacts the city. OSU's total Corvallis campus student enrollment for the 2022–2023 school year was over 24,000. The 20–29 age group composes the greatest percentage (32%) of the city's population. Oregon State is also one of the city's major employers, along with Samaritan Health Services and Hewlett Packard. Agriculture is a major part of the local economy, with several farms surrounding the city. Products include Christmas trees, wine

grapes, seed crops, dairy, sheep, and produce. On Saturdays in April through November, a Farmers Market is set up in downtown Corvallis, which continues indoors during the winter months as the Corvallis Indoor Winter Market.

The city uses the City Council/City Manager form of government with a weak mayor. The City Council is made of nine city councilors who represent their representative wards and are elected to two-year terms. The City Manager is appointed by the City Council and whose primary job is to run the administrative day-to-day operations of the city. The community developed a vision document

in 2016 that outlines the community's aspirations by the year 2040. The Imagine Corvallis 2040 Vision is organized into six focus areas that cover all aspects of life in Corvallis in 2040.

Corvallis has over 2,000 acres of parks, playgrounds, playing fields, trails, open spaces and beautification areas. Willamette Park and Natural Area is the City's largest park, featuring significant natural areas, open meadows, playing fields and a community garden. Popular annual events in Corvallis include Graand Kinetic Challenge, Corvallis Fall Festival, and the Benton County Fair & Rodeo, among others.

Sources:

City of Corvallis  
Oregon State University  
visitcorvallis.com  
Wikipedia

This year's SCYP partnership is possible in part due to support from U.S. Senators Ron Wyden and Jeff Merkley, as well as former Congressman Peter DeFazio, who secured federal funding for SCYP through Congressionally Directed Spending. With additional funding from the city, the partnerships will allow UO students and faculty to study and make recommendations on city-identified projects and issues.



# Course Participants

## Master of Community and Regional Planning

### *Equity Team*

Bree Baumgartner  
Sienna Fitzpatrick  
Ambram Tapia

### *Resilience Team*

McClellan Gonzalez  
Jeremy Means  
Michael Slater  
Lauren van Vliet

### *Walkability Team*

Caroline Alkire  
Hunter Carey  
Lee Tachoir  
Timothy Vaster

Course participants and faculty on location in Corvallis



## Executive Summary



**Artistic rendering of a Corvallis summer afternoon (det.)**

Photo: Courtesy Corvallis 2020 Vision Statement

Over fall term 2023, Community and Regional Planning graduate students worked with the City of Corvallis to reimagine how a 14-acre site in north central Corvallis, along the city's 9th Street commercial/mixed use corridor, might redevelop and intensify under the city's recently adopted commercial mixed use (CMU) zoning standards.

Three student groups analyzed the opportunities, constraints, and challenges of reimagining the site based on three areas of focus: 1) Equity, 2) Walkability, and 3) Climate Resilience. Each group used this unique lens to inform their research, analysis, and design.

While each group uniquely organized their urban design proposal based on their theme, common elements included:

- Pedestrian-friendly and highly walkable spaces
- Improved safety for bicyclists and pedestrians
- Higher density housing, including townhouses
- Mixed commercial and residential uses
- Community gathering areas with plazas and/or water features
- Green spaces and robust landscaping throughout the site, including a landscaped buffer separating the site from Highway 99
- Improved access to public transit and safer bus stop(s)

This report outlines the scope of work, background research, and design proposals that could be considered by Corvallis for the future of the site.

## Introduction

Oregon is experiencing a variety of challenges around housing, transportation, and a changing climate. Nationally, Oregon ranks 4th in underproducing housing stock (Oregon Housing Needs Analysis Legislative Report, 2022), which disproportionately impacts low-income Oregonian renters.

Oregon's income inequality has continued to rise, which undermines the well-being of Oregonians and contributing to chronic illness and premature death (Oregon Center for Public Policy, 2023). Pollution from transportation is the largest source of statewide climate pollution (Department of Land Conservation and Development Climate-Friendly and Equitable Communities Overview, 2022). This has led many Oregon communities, including Corvallis, to have significant populations experiencing poverty, cost-burdened households that spend more than 30% of their income on rent and utilities, and a higher percentage of vulnerable populations.

To address these diverse and complex issues with sustainable and equitable urban development, the City of Corvallis desired to reimagine how a 14-acre site in north central Corvallis, along the city's 9th Street commercial/mixed use corridor, might redevelop and intensify under

the city's recently adopted commercial mixed use (CMU) zoning standards. The city developed these standards in response to the state's Climate Friendly Areas (CFA) and Climate Friendly and Equitable Community (CFEC) directives, which require Corvallis to address parking management; create high quality pedestrian, bicycle, and transit infrastructure; and prioritize choices that improve climate/equity outcomes. The site is also an excellent location to focus on the City's goals and priorities identified in its community vision including climate resilience, walkability, and equity.

A redesign of the 9th Street site presents an opportunity for Corvallis to build a roadmap for how future urban growth and development could look under the state's new initiatives and the city's vision. The menu of tools presented in the student's designs could be incorporated in this design and throughout the city.

# Methodology

## Document Review

Teams reviewed city and state planning documents and research specific to their team focus to help them understand the city's goals and values as well as guide their design proposals. Those documents include but are not limited to:

- City of Corvallis Site Development Design Standards
- Corvallis Comprehensive Plan 2023
- Land Development Code, City of Corvallis
- Corvallis Climate Action Plan
- Imagine Corvallis 2040
- 9th Street Improvement Plan, Corvallis Area MPO

A complete list of the documents used to support the designs are in Appendix E, Citations.

## Data Analysis

To inform their community profiles, demographics, and ultimately design goals, students analyzed American Community Survey (ACS) five-year estimates data, 2014-2019, (to control for data variations related to the COVID-19 pandemic).

Each team considered demographic data relevant to their designs. These analyses gave each group a better understanding of how specific design elements could affect the demographic variables within the site's Census tract and within Corvallis as whole. Data analysis graphs are included in Appendix B.

## Site Visit

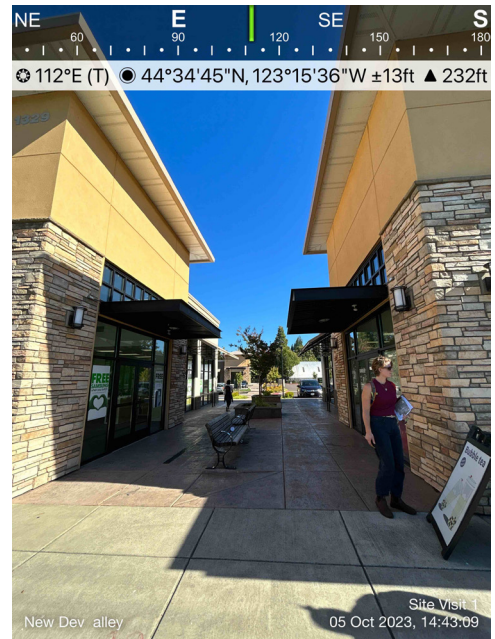
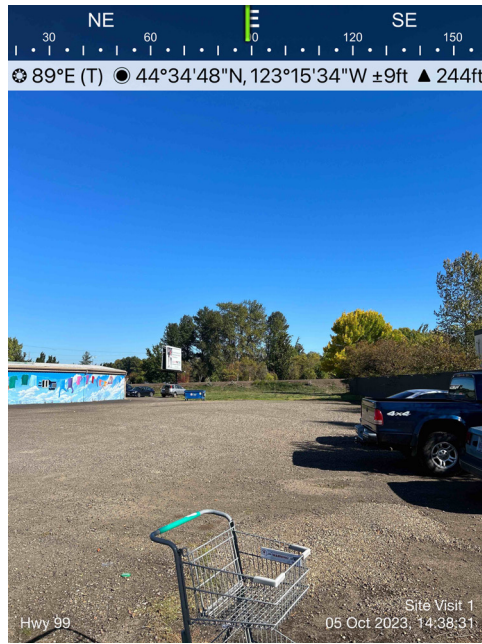
In fall 2023, students visited Corvallis and the 9th Street site to better understand the site, the corridor, and the city's context. City staff shared the history, current trends, and future goals for the site and the city overall. Students observed the site's present conditions and staff shared what urban features would be best to retain and work around, and which are amenable to change. Students documented features of interest on the parcel and adjoining properties as well as the surrounding neighborhood.

## Existing Conditions

The site is a long and narrow parcel containing multiple tax lots. The parcels have existing businesses that are accessible via individual curb cuts along 9th Street west of the site. The buildings are set back from the curb with significant space for parking. A sidewalk runs along the site that varies in age, condition, and dimensions. Timed crosswalks connect the site to shopping on the west side of 9th Street, which presently includes a grocery store and specialty commercial shops.

On the site's east side, an irrigation ditch and intermittent trees buffer it from Highway 99. A bike path is east of the highway and is visible from the site but there is no infrastructure connecting the bike path to the site or 9th Street in that area.

Methodology



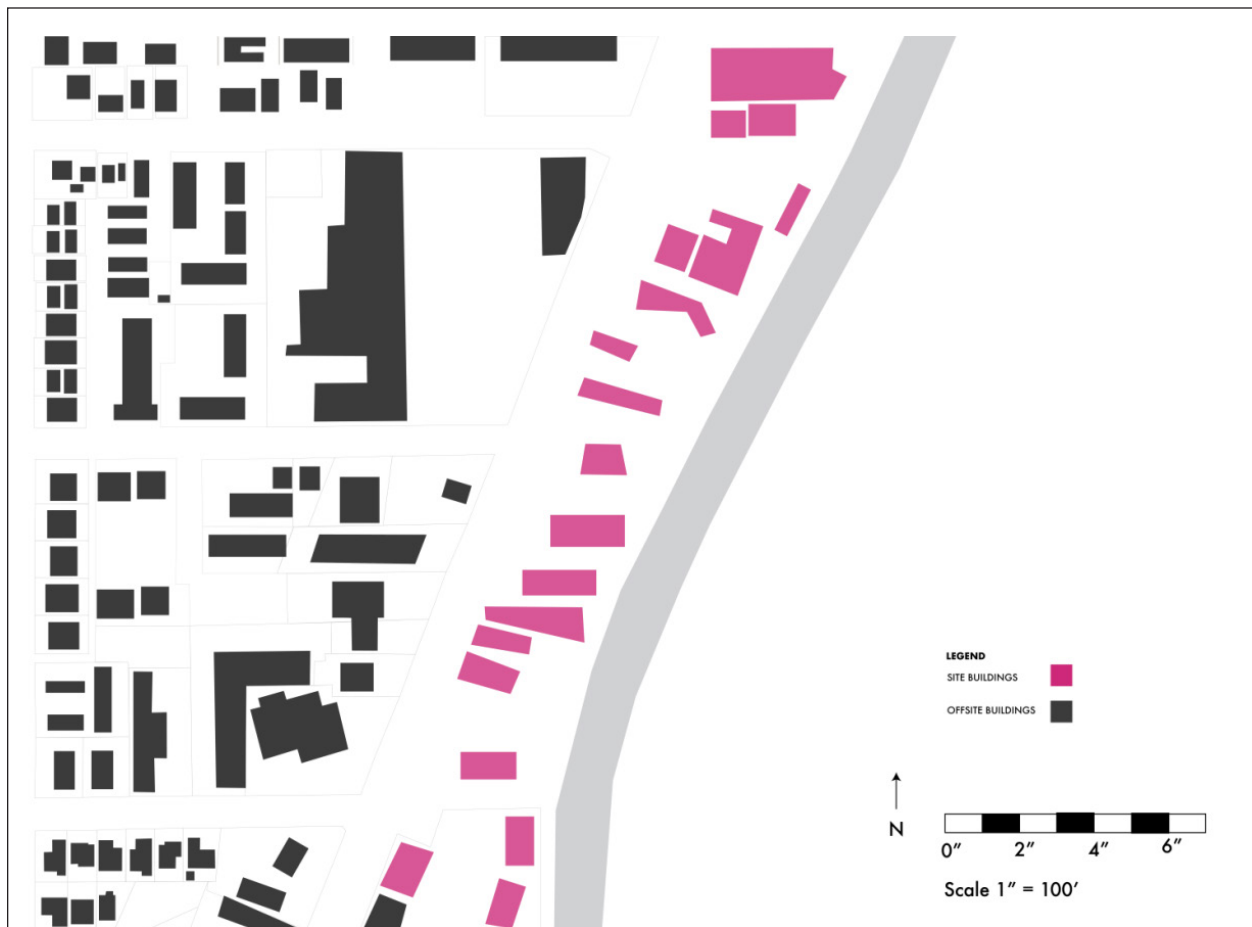
**Top left: Vacant parking in between two existing businesses on site.**

**Bottom left: Bike infrastructure on Grant Avenue at the intersection with 9th Street.**

**Top right: Alley between two existing single story buildings, with sightline to Highway 99.**

**Bottom right: New development to the south of the site with mini plazas, wider sidewalks, and sidewalk facing commercial spaces.**

Photos: McClean Gonzalez



**Site Observations; Strengths, Weaknesses, Opportunities, and Threats**

Based on site observations and analysis, students considered the following implications on their designs:

- 9th Street historically developed in a linear commercial fashion, without a mixture of uses/residential uses
- Some of the existing uses are auto-oriented and the new CMU zone is not. Therefore the project involves re-imagining how auto-oriented commercial development can transition into mixed use development, with enhanced bicycle, pedestrian, and transit features.
- Integrating pedestrian and bicycle connectivity into the development

and across 9th Street to the residential neighborhoods to the west will be challenging due to access management, the width of 9th Street, and the volume of traffic traveling north and south

- There is a hard geographic barrier on the east side in the form of Highway 99, but on the other side of that is a multi-use path

The following Strengths Weaknesses Opportunities & Threats (SWOT) summarizes the strengths, weaknesses, opportunities, and threats of the site, allowing the proposed designs to best leverage strengths and opportunities while minimizing existing and future negative influences. For example, the site’s strength of being within a 15-minute walking radius to schools and other

**Existing buildings on (pink) and near (black) the site.**

Michael Slater

neighborhoods as well as retail positions it to potentially counter the pressure of growing populations. The limiting features of the highway and train tracks to the east may be turned into a strength by

the natural protection of the view of hills across the valley. The 9th Street site teams relied on this framework throughout the design process to weigh the site's needs and intrinsic assets.

## Strengths

- Flat grade
- Clear of flood plain
- On Transit Corridor
- 15 min walking radius of neighborhoods and retail
- Primarily older buildings on site

## Weakness

- Adjacent to Highway 99
- Clay soils and high water table
- Railroad tracks on the east
- Narrow lot of east/west frontage

## Opportunity

- Proximity to employers
- NW Summer wind
- Southernly Winter wind
- Economic revitalization
- Established trees

## Threats

- Changing weather
- Potential for earthquakes
- Fire intensification
- Urban technological advances
- Population increases

Lauren van Vliet

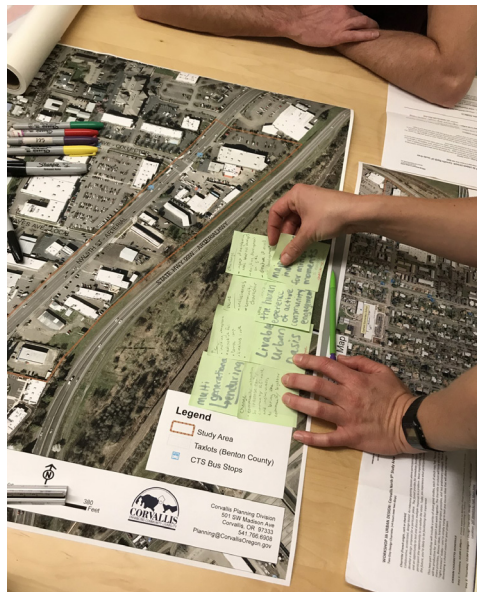
## Case Studies

Each team researched several case studies to provide design input. The case studies informed site design, from road and building layout to what the structures looked like. Some case studies provided a blueprint for transitioning a vehicle-dominant area into a pedestrian-friendly area, whereas others provided built form or funding ideas.

Case studies can be found in the Appendix C.

## Design Charrette

A design charrette is a group design process that focuses on choosing and locating potential site elements. Each group member contributes ideas and the team iterates possible design solutions. For the Corvallis project, groups used a site map as a base and proposed various land uses using different colored paper. Student teams then considered how different configuration fit their vision for the site, selecting the best option to refine into their urban design proposal.



**Charrette work products.**

Kaarin Knudson





# Urban Design Proposals

## Student Perspectives

Each of the three groups had a specific lens through which to research, analyze, and design the Corvallis site. The following

shares those perspectives, introduces the three urban redesigns, and provides an overview of the common design themes.



Top: Courtesy of [seattlebikeblog.org](http://seattlebikeblog.org).  
Left: Courtesy of 2020 Oregon DEI Action Plan  
Right: Photo by Don Erhart

# Walkability Team: Valena Promenade

## Walkability Team Vision Statement

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**Valena Promenade is a transformative neighborhood that values community health, safety, and opportunity through meaningful use of space.**

**With pedestrian-focused features, Valena Promenade encourages social connection and provides attractive and accessible networks on a human scale.**

**This redevelopment will be a model for all Oregon cities working toward walkability, equity, and sustainability.**

---

### *Walkability Team*

Caroline Alkire  
 Hunter Carey  
 Lee Tachoir  
 Timothy Vaster

### **What’s in a Name: Valena Promenade**

When the town was settled, Thurston and Valena were proposed as prospective town names but the moniker of Corvallis stuck, as its Latin root gives homage to the land, “heart of the valley.” Paying homage to one of Corvallis’ early names, the Walkability Team chose Valena Promenade as the title of their development to invoke a sense of place and the focus of their design.

Their design focuses on the pedestrian’s ability to walk around their neighborhood, the 9th Street Corridor, and to be able to connect to greater Corvallis. To create that vision, the team focused on six design goals:

1. Walkable connectivity
2. Safe automobile-alternative travel features
3. Mixed-use buildings
4. Middle and high density housing
5. Central plaza for gathering
6. Ample green space

## Walkability

Much of what a city looks like relies upon the blueprint of the pathways we took to get there. In some parts of Corvallis, infrastructure has historically prioritized vehicles over other modes of transportation. The walkability design team focused on increasing other modes of travel.

## Valena Promenade Design

The design of Valena Promenade has four water features, four plazas, and an internal pedestrian path that serves as emergency access to the internal residences. The street edge along 9th Street is lined by vertical mixed-use residential buildings to give a strong definition between the roadway and the Promenade.

### **What is Walkability?**

The Walkability Team defined their design focus using the following definition: “Walkability is the extent to which the built environment supports & encourages walking by providing for pedestrian comfort and safety, connecting people with varied destinations within a reasonable time and effort, and offering visual interest in journeys throughout the network.” (Dr. Michael Southworth, Professor Emeritus, UC Berkeley)

The **main plaza** is situated directly east of Hayes Avenue, fostering a greater connection between the neighborhoods on the east and west sides of 9th Street. The **plazas** on either side of 9th Street will connect and expand the activity node, encouraging use of the bus stop nearby as a launching pad from one activity

node (Valena Promenade) to another (Downtown Corvallis).

The **neighborhood** within Valena Promenade would be a mix of high and medium-density housing typologies. Medium density would be townhomes or

garden apartments, following guidelines from middle housing research (Parolek, 2020).

The team proposed a seasonal farmers market for this zone, as well as ad hoc public gatherings.



- Mixed use
- Residential
- Pedestrian only
- Bus stop
- Water Feature

Courtesy of Walkability Team members

**Dedicated Bus Lane**

A bus that can move expediently as well as drop off and pick up passengers safely and unobtrusively is a net benefit to the through put of a road. As currently designed, 9th Street buses block the entire bicycle lane and half of the car lane to load and unload passengers, causing conflicts with cars and bicycles.

Even in localities designed to be walkable, if residents have not established routines that include walking to complete their daily commutes or errands, they will likely resort to their old habits, which may mean using a car. The dedicated bus lane incentivizes new habit formation by providing consistent, reliable, and timely public transportation. Additionally, the dedicated bus lane is designed as a transitional stage to a more robust

light rail system should the demand be sufficient to support it in the future.

**Cycle Track**

The two-way protected cycle track is a prominent component of Valena Promenade. Designed in response to research noting that safer cycle paths lead to triple the ridership, the Walkability Team proposes a strong barrier between the road and the cycle paths (Vijayakumar & Burda, 2015; McKeown et al., 2007).

Ideally, the barrier is wide enough to accommodate a nature strip and bus stop. Most of the cycle track would be below sidewalk grade but becomes flush at intersections and bus stops to indicate to cyclists to slow down for crossing pedestrians. This speed cue design feature in the cycle track makes the bus stop accessible to wheelchairs.



**A case study of a floating bus stop that provides a traffic buffer to a two-way cycle track.**

Image courtesy of mass.gov

**Walkability-Specific Design Features**

- Bus stops
- Protected cycle track
- Active plazas
- Green spaces
- Water features
- Dedicated bus lanes

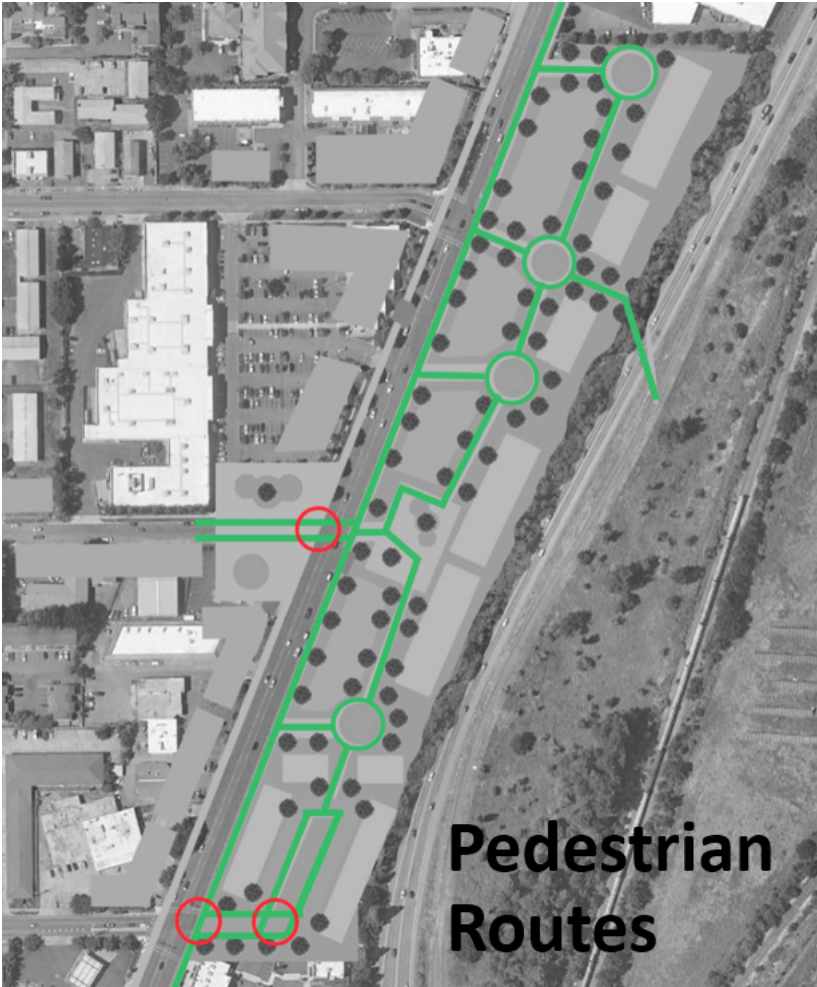
**Walkability Team's design inspiration for the center of the Valena Promenade.**

Photo courtesy of Street Design Manual



**Intended pedestrian route along Valena Promenade to inspire circular movements around the site.**

Photo courtesy of Walkability Team





**Valena Promenade proposed residential structures.**

Photo courtesy of Walkability Team



**Walkability Team's commercial mixed-use building placement on the site.**

Photo courtesy of Walkability Team

## PHASING

Since the site is composed of many individual parcels with distinct landowners, the emphasis on community support is the essential element of implementation. The first phase of implementation will include working with the existing business owners and local community.

This design assumes that no existing structures will remain.

**Stage 1** of development is the redesign of 9th Street; bus, bike, and pedestrian infrastructure should be in place before those users start to populate the area.

**Stage 2** will be the construction of the townhome clusters at the south of the lot. The Walkability Team recommends that the residents are not offered temporary parking during the construction phase.

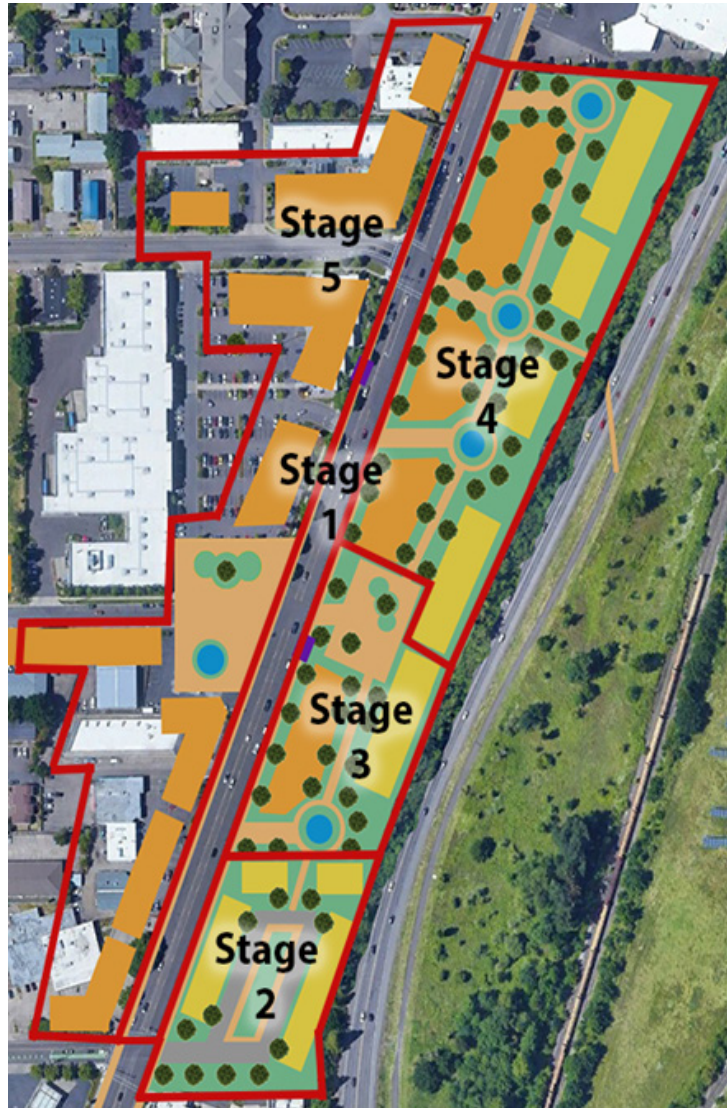
**Stage 3** will see the construction of the mixed-use and residential buildings in the central portion of the Valena Promenade.

**Stage 4** fills in the northern more section, complete with plazas and a full internal pedestrian corridor.

**Stage 5** suggests the expansion of a similar development on the western side of 9th Street.

Walkability Team's phasing design calls for zones that the development will focus on during each stage of development.

Zone map courtesy of Walkability Team



# Equity Team: Grow Gather

## Grow Gather Vision Statement

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**We envision the 9th Street study area as a place that exemplifies the City of Corvallis' commitment to creating fair outcomes for all community members.**

**The study area is a beautiful, supportive environment that holds community, encourages neighborhood commerce, celebrates cultural diversity, and is a model of universal and ecological design.**

---

### *Equity Team*

Bree Baumgartner

Sienna Fitzpatrick

Abram Tapia

### **What's in a Name: Grow Gather**

The name Grow Gather reflects a verdant and diverse community coming together to live, work, shop, and simply gather with one another.

Oregon's history includes severe violence against the indigenous populations who resided here and ongoing legalized prohibition of black residents. The subsequent decades saw the slow remediation of those harms, but the implications of the laws, regulations, and social structures had a lasting effect.

In recent years, Oregon has become increasingly diverse in race, ethnicity, gender, sexual orientation, and disability status (Stoudamire-Wesley et al., 2021). The Equity Team uses their urban redesign as a reconciliation to that history and a safeguard for vulnerable populations currently living in the region.

### **What is Equity?**

The Equity Team chose to use the 2021 State of Oregon Diversity, Equity, and Inclusion Action Plan as a guideline for their definition of "equity."

*"Equity is the effort to provide different levels of support based on an individual's or group's needs in order to achieve fairness in outcomes. Equity actionably empowers*

*communities most impacted by systemic oppression and requires the redistribution of resources, power, and opportunity to those communities."* (page 9).

Their design addresses the support of those who have been historically and continually underserved, by identifying their diverse needs, empowering those who have been most adversely affected by systems of oppression, and delivering opportunity to those in the community to whom it has been knowingly denied.

### **Grow Gather Design**

The Grow Gather development is designed to create a place where people of all backgrounds can call home. It has designed a welcoming street edge lined with townhome residences and vertical mixed-use buildings.

The interior of the site is complete with green spaces and active plazas, as well as integrated and socially inspired housing typologies for residents to know their neighbors while having easy access to employment and resources.

Green spaces not only allow for temperature modulation and wind barriers, but also as a psychological benefit and tool for restorative justice.








Low-income residents have historically been deprived of access to open green spaces to the detriment of their physical and mental well-being.

Access to public transit, green space, and housing choice are keystone elements to Grow Gather. See Appendix A for Current and Future 9th Street section.

# GROW GATHER

Site Vision

	ROW HOUSES
	COMMERCIAL MIXED USE
	FLEXIBLE SPACES
	ECOLOGICAL BUFFER
	ACTIVE PLAZAS



**Equity Team proposal,  
Grow Gather.**

Photo courtesy of  
Equity Team members

## Equity Team Design

### Universal Design Framework

The guiding principle of “Universal Design” (UD) is to create products and environments that are functional for all people, to the greatest extent possible, without reliance on specialized design or adaptation.

The seven defining principles are as follows:

1. Equitable use: The design is useful and marketable to people with diverse abilities.
2. Flexibility in use: The design accommodates a wide range of individual preferences and abilities.
3. Simple and intuitive use: Use of the design is easy to understand, regardless of the user’s experience, knowledge, language skills, or current concentration level.
4. Perceptible information: The design communicates necessary information effectively to the user, regardless of ambient conditions or the user’s sensory abilities.
5. Tolerance for error: The design minimizes hazards and the adverse consequences of accidental or unintended actions.
6. Low physical effort: The design can be used efficiently and comfortably and with a minimum of fatigue.
7. Size and space for approach and use: Appropriate size and space is provided for approach, reach, manipulation, and use regardless of the user’s body size, posture, or mobility. (North Carolina State University, 1997, Center for Universal Design)

**Equity Team's design  
inspiration for the  
plazas encircled by  
rowhouses.**  
Rendering courtesy of  
HHL Architects



**Flexible Spaces**

A flexible space is open space that is designed to suit multiple needs throughout a development’s lifetime. Inferring spaces that are adaptable to the needs of the community, so a space that serves as a playground for one decade, can be hooked into utility lines to become

transitional housing for the subsequent decade.

The Equity Team employs these spaces to inspire active outside use, a shared inviting environment, and a location to accommodate the shifting needs of a community.



**Top left: Flexible space as adapted for a community garden.**

Photo courtesy of Equity Team members

**Bottom left: A playground as a possible use in the flexible space.**

Photo courtesy of Oregon Coast Aquarium

**Top right: Tanner Springs Park in Portland Oregon used as an example of a greenspace use of flexible space.**

Photo courtesy of LaValle Linn

**Bottom right: Peninsula Crossing Safe Rest Village in North Portland. An example of transitional housing as a use for flexible space.**

Photo courtesy of Kristyna Wentz-Graff / OPB

### **Small Business Incubator**

The Equity Team recommends small and medium sized business spaces to allow for brick and mortar, or office-based businesses to hold space in the community with lower overhead. In tandem with development that supports businesses of diverse size, the Equity Team proposes that the City support a small business incubator program.

Local support for entrepreneurial endeavors would be a resource for would-be-business owners who have been excluded because of systematic inequities. For instance, individuals who identify as a racial minority lack generational wealth, which affects their ability to pursue business loans, and feel emboldened to take the risk of starting a business (Kamali, 2021).

#### **Design Features**

- **Cooperatives**
- **Land trusts**
- **Universal design principles**
- **Flexible spaces**
- **Green spaces**
- **Small business incubator**

### **Community Land Trusts**

The Equity team defines a community land trust as “a mode of land tenure with roots in the Civil Rights Movement that pairs shared ownership of land with individual ownership of improvements.” They are characterized by three elements: trusteeship, use rights, and community control (Okafor, 2021). The Grow Gather development seeks to lower the barriers to entry for marginalized communities to have access to the property market. Community land trusts are a creative and critical mechanism for achieving that goal.

### **Cooperative Housing**

Similar in concept to land trusts, cooperative housing allows residents to maintain continual housing security through cooperative community control of the corporation that owns the property. Residents act as the property manager. (SquareOne Village, 2020). Members of the housing cooperative pay dues that contribute not only to communal maintenance and future improvements but also their share of ownership.



The Equity Team’s design influence for their active plaza, from a rendering by Van Meter Williams Pollack LLC.

**Phasing and Implementation**

The variables of community support, partnerships, and City readiness are main principles of the Equity Team’s phasing plan. It emphasizes that plans of this scale are high level and subject to change but serve fundamental features of a redevelopment plan.

**Phase 1:** Land Bank and Outreach (18 Months–4 Years)

- Fundraising and land banking
- Conversations with landowners and business
- Community members feedback

**Phase 2:** Partnership and Financing (3-6 Years)

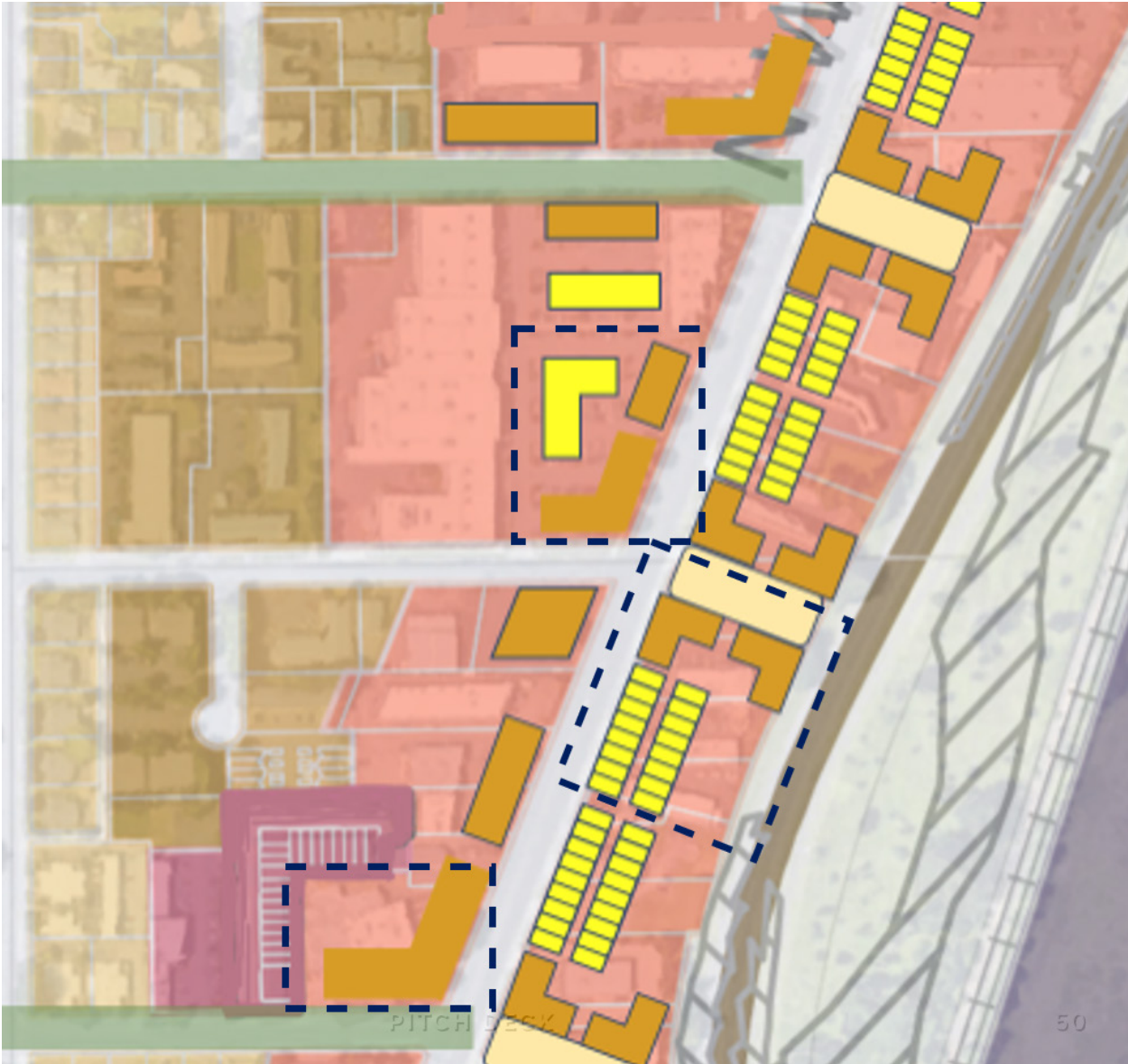
- Relationship building city and developers.
  - Partnerships with not-for-profit developers
- Use of Universal Design principles.

- Identifying long-term partner(s) that are interested in supporting:
  - housing cooperatives
  - a land trust model.
- Mitigate displacement of business owners and community members

**Phase 3:** Site Development and Management (5 + Years)

- The largest and longest portion of the development occurs in Phase 3, where the structures and other built forms of the development start to change.
- The goals during the construction phase are to continually engage with the developers and existing property owners to foster trust and understanding throughout the process.
- Perpetually seeking new and continued opportunities for funding and remaining flexible to changing needs while remaining aligned with the community long-term vision.

# POTENTIAL LAND BANK SITES



**The Equity Team's map of potential land banking sites is a key feature of their phasing plan.**

Map courtesy of Equity Team members

# Climate Resilience Team: Heartwood Village

## Heartwood Village Vision Statement

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**Corvallis’ Heartwood Village redevelopment on North 9th Street will be a leader for urban sustainability by implementing climate-resilient building types and neighborhood form to provide active and equitable community.**

---

*Climate Resilience Team*  
 McClean Gonzalez  
 Jeremy Means  
 Michael Slater  
 Lauren van Vliet

### What’s in a Name: Heartwood Village

Heartwood Village gets its name from the tree-covered hills that have been an industry driver in Corvallis for more than a century. Just as Corvallis is the heart of the Willamette Valley, Heartwood Village aims to be the driving engine for a more environmentally friendly future.

The increasing negative effects of climate change will mean more intense heat waves, consistent and intensifying wildfire smoke, droughts, and more destructive storms. These climatic events will have major repercussions for Corvallis.

Heartwood Village’s design safeguards the community against these negative effects and will be a blueprint for future sustainable developments in the region.

### What is Resilience?

Resilience is the ability of a system to be operational even though it is under deterrent stress. A system that is built with multiple ways to provide the same service is adaptable. And a system that can recover from failure and return to normal operations demonstrates its ability to recover.

## Heartwood Village

Heartwood Village has a strong street edge with mixed-use residential lining 9th Street. Cyclists and pedestrians travel under tree canopy to access the shops along 9th Street that open onto a large store frontage.

It expands upon the existing design to the south, as well as gradually increases the height of the buildings from two to eight stories, to ease the transition and to mimic the Corvallis hills.

The intersection of Hayes Avenue and 9th Street is where the main semi-covered arcade, called the “Grove,” is situated. The Grove will function as the main gathering place for the community, and will be highly vegetated, as the name would suggest.

The interior of the site is reserved for middle-housing typologies, primarily townhomes. The townhomes are aligned in semi-courtyard patterns in some locations and traditionally in others. This arrangement offers pockets of privacy for residents.

Nearly 30% of the site reserved for green and open spaces of various uses, which are connected by an interior pedestrian path.



**Heartwood Village  
Master Plan.**

Rendering by  
McClellan Gonzalez



## Resilience Specific Design Features

### Geothermal District Heating and Cooling

This heating and cooling system requires low energy loads to operate, does not rely on fossil fuels, and has low maintenance costs. District heating and cooling relies on a central facility (a transfer facility) to heat or cool water, which is distributed to other buildings by a network of pipes. It is well suited to larger developments such as Heartwood.

### Solar Plus Battery Backup

Photovoltaic (PV) panels are a popular renewable energy resource for commercial and residential electrical needs. Storing the electricity generated in the day in battery backup systems is important for nighttime demand and for wildfire, storm, or other adverse events when the conventionally powered grid is unavailable.

### Microgrid

Another back up system for the development's energy resourcing is a microgrid. It allows for multi-directional distribution of power within a grid system.

**Green Stormwater Infrastructure**

A nature-based solution for stormwater uses plant material and soil to capture and treat stormwater on-site instead of using pipes and canals to channel

water offsite. It reduces flooding, treats waterborne contaminants before they reach natural waterways or aquifers, provides habitat, adds visual interest to the urban environment, and are often more cost-effective than traditional greywater systems.



**Example of a natural based stormwater solution.**

Photo courtesy of International Water Association

**Mass Timber**

Mass timber construction refers to structural beams and panels made from a process of “laminating,” or joining timbers together against their grain to create a

stronger unit. This style of construction can lead to more carbon sequestration, minimized emissions from construction, and a more adaptable and durable building (Shin et al., 2023).

**Example of a mass timber building atrium.**

Photo by Don Erhard, Forest Sciences Center



**Passive Solar**

This concept is a low-cost design alteration that optimizes or minimizes the solar gains throughout the year to regulate

internal temperature. Heartwood’s building design will allow winter sun in, and keep summer sun out, while ideally daylighting 50% or more of the interior space.



**The Climate Resilience Team’s design inspiration for the commercial mixed-use street edge along 9th Street.**

Photo sourced from Dezeen Magazine from a Herzog & de Meuron rendering



**Impressionistic rendering of a cross view of Heartwood Village.**

Designed and created by Michael Slater

## Phasing

Heartwood Village will be a climate resilience template for future developments. As such special consideration and attention is given to the utility features of the site. The Climate Resilience Team emphasizes community engagement and development continuity.

### **Phase 1:** Community Outreach and Engagement (5-8 years)

- Collaborate and problem solve with existing land and business owners.
- Pursue land banking and developer involvement.
- Solicit community engagement and feedback.

### **Phase 2:** Utilities and Street (3-6 Years)

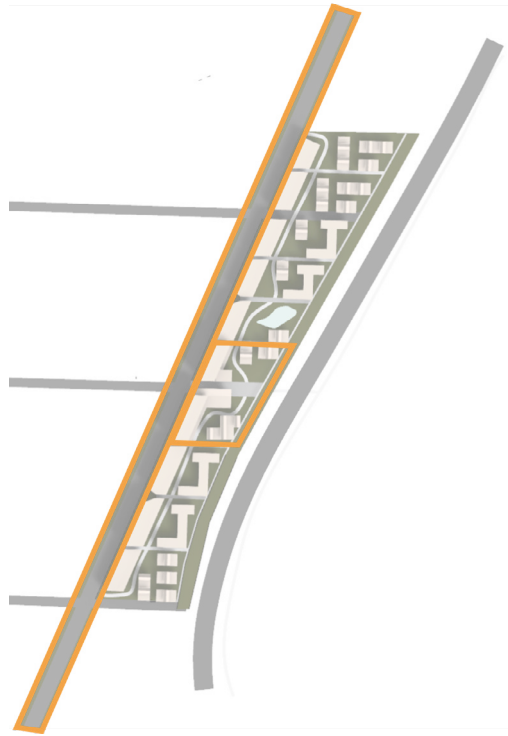
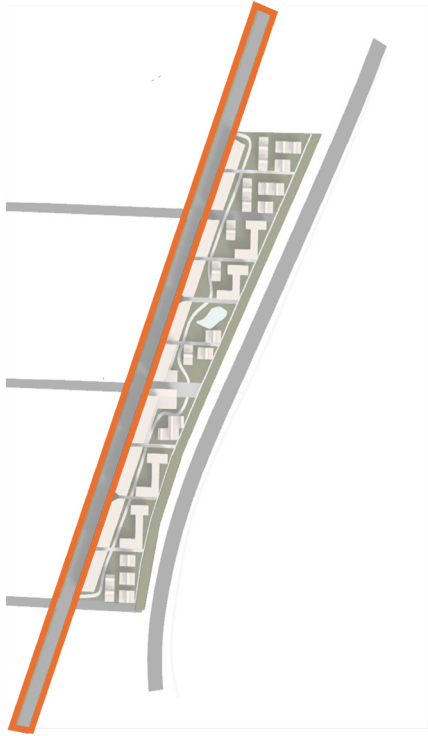
- Commence street redesign process and construction.
- Run lines for natural stormwater solutions, micro grid electric, and plumbing.
- Establish District Heating zone and central building.

### **Phase 3:** Site Development

- Start by building the Grove and commercial mixed-use building in the center of the site. This will establish a shortened block structure along 9th Street and encourage early visitation.
- South portion of site: building of mid-rise and townhome structures to establish continuity between existing development to the south and Heartwood.
- North lot is last to develop, allowing for a reassessment of community needs and desire for continued development along the north of 9th Street.

The accompanying renderings of the site design have orange boxes overlaid on

the development to depict which zones will be prioritized over the course of construction.

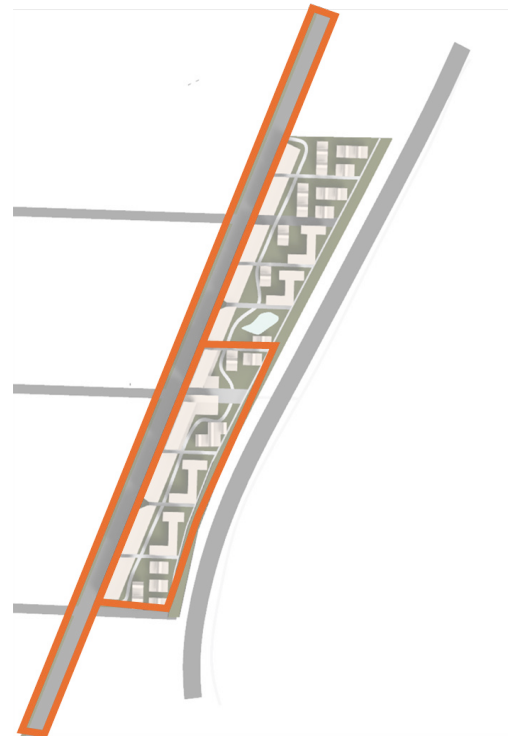


**Left: the first zone in the implementation of Heartwood Village is the street and utilities.**

**Right: the Center atrium of Heartwood Village is called the Grove, located inside the orange box.**

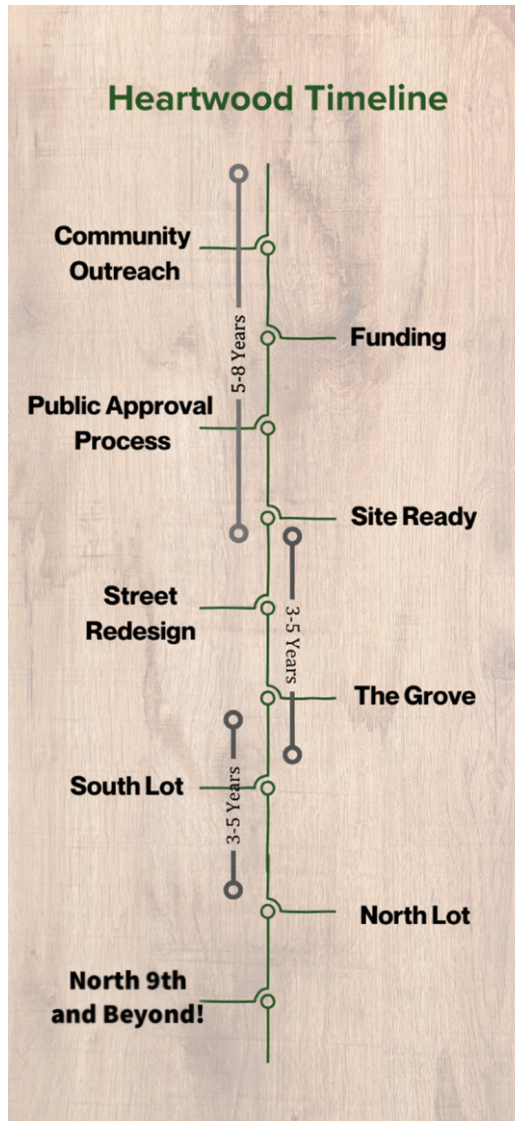
**Below: the South lot of the site.**

Renderings by McClean Gonzalez



Heartwood Village  
anticipated  
timeline.

Image by Lauren  
van Vliet



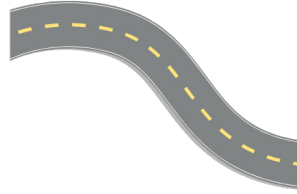
## Common Themes

### Common Design Themes

This section will discuss the design components all three groups shared,

which Corvallis staff may choose to use as a menu of design tools that address the three themes: walkability, equity, and climate resilience.

# Street Redesign



## Ecological Buffer

## Active Plaza



## Townhomes

**Common design themes.**

Image by Lauren van Vliet

### Street Design

The 9th Street Corridor is both a strength and a weakness for the site. Currently a busy thoroughfare with minor regard to pedestrian, bicycle, or transit user experience, a redesign of 9th Street is a top priority for all three teams. Creating a greater balance between vehicular and non-vehicular transportation activity is a primary goal of each design.

#### Buses

Both the Walkability and the Equity Teams designed a two-way bicycle thoroughfare and designated bus lanes. The Equity Team's design creates separate inner lanes for protected bus lanes; the Walkability Team integrates the dedicated bus lanes with vehicular traffic; and the Climate

Resilience Team focuses on prominent bus stops.

These bus lanes serve a visual function of prioritizing public transit and allow transit users to travel at a more expedient pace than their vehicular counterparts, incentivizing its use. Each team emphasizes prominent and protected bus stops.

#### Bikes

The protected two-way bike lanes allow for safe and easier passage along 9th Street, which connects north Corvallis to its downtown city center. The Climate Resilience Team proposed protected bicycle lanes on each side of 9th Street, which allows cyclists to have stop and go access to the residences and resources on both sides of the street.



### Crossings

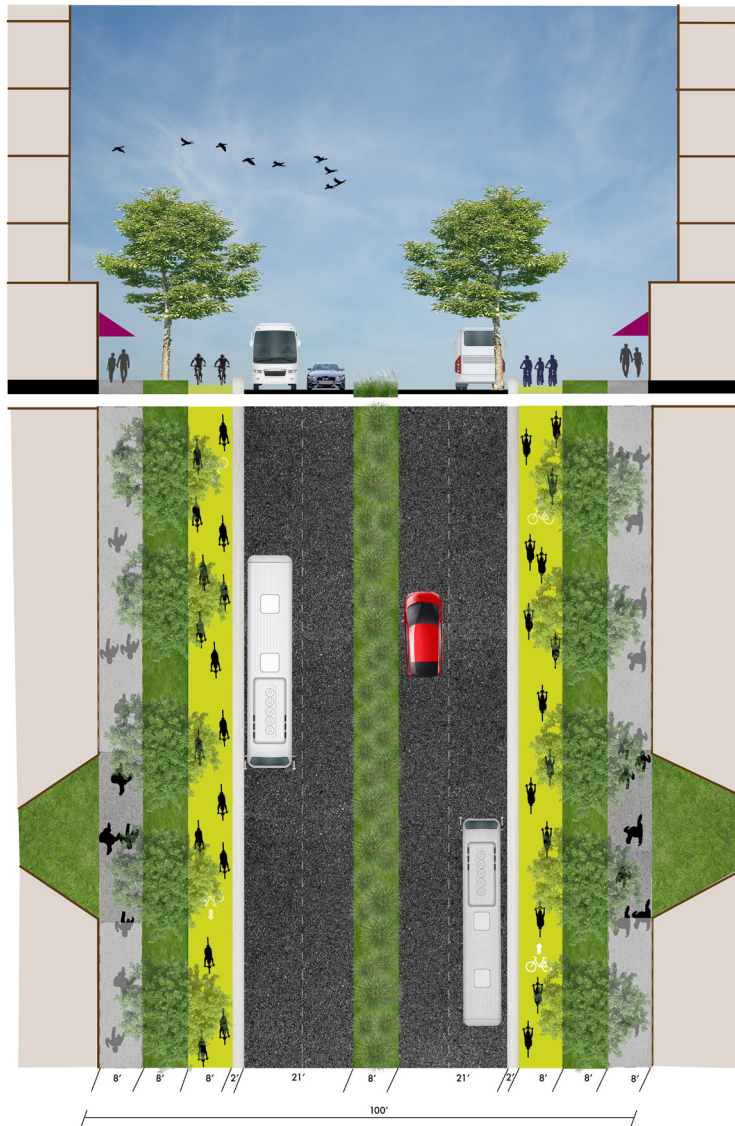
Each team designed a strong pedestrian crossing in the middle of the site, where Hayes Street intersects with 9th Street. This emphasizes each development's commitment to connecting the Corvallis community. Safe crossing for residents to get groceries, go to work, and walk to school are proposed from the center of each new development. Longer crossing times, elevated crossing tables, lights, chicanes, and clear site lines are all possible mechanisms to achieve safe and easy crossings.

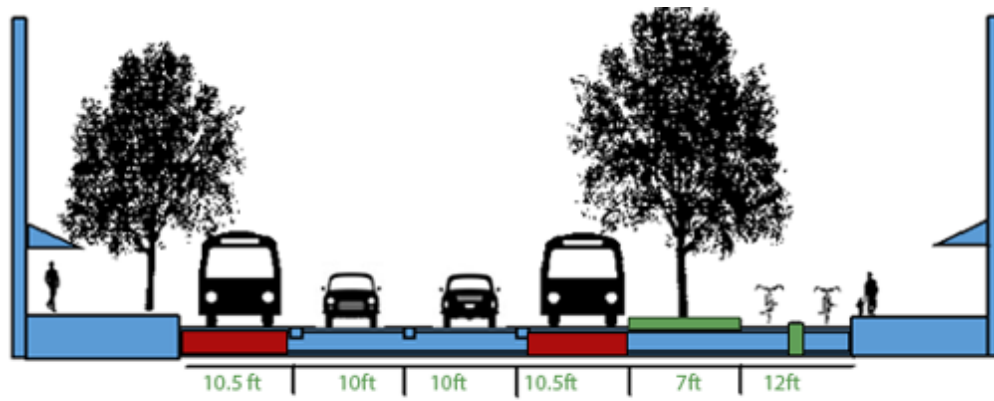
### Nature Strip

A verdant and productive nature strip is an important aspect in each design. Landscaping in the public roadways allows for a natural rainwater catchment, carbon sequestration, increased mental well-being, and helps lower the perceived height of the surrounding buildings. Trees and landscape would have a significant impact on those living in the area, as well as those passing through. The visual channeling created by a green road tunnel helps to calm traffic and make drivers more alert to pedestrian presence, making 9th Street more aesthetic and accessible.

#### Climate Resilience Team street redesign.

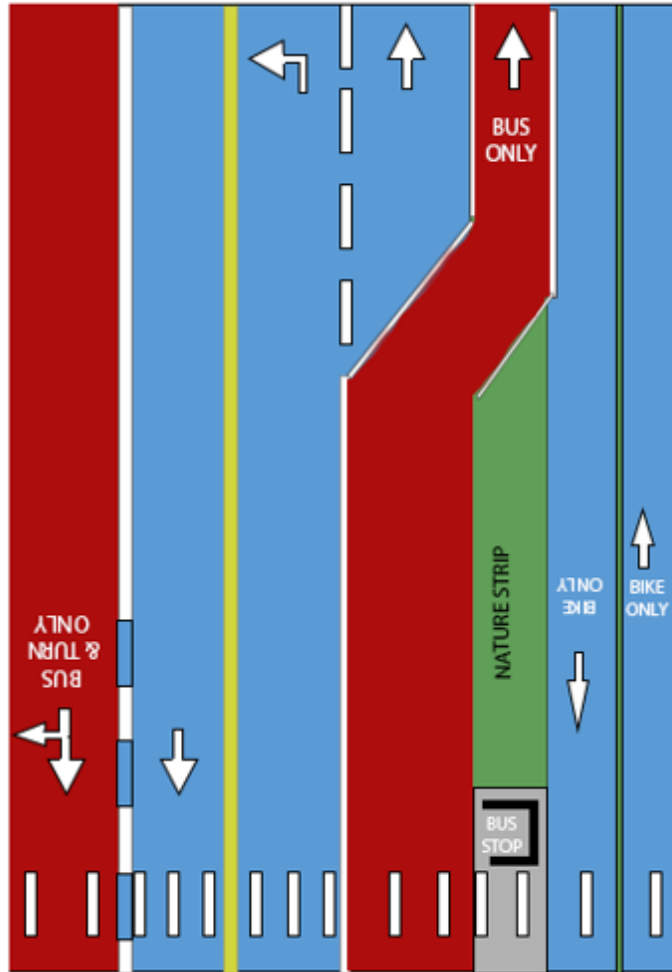
Rendering by  
Michael Slater

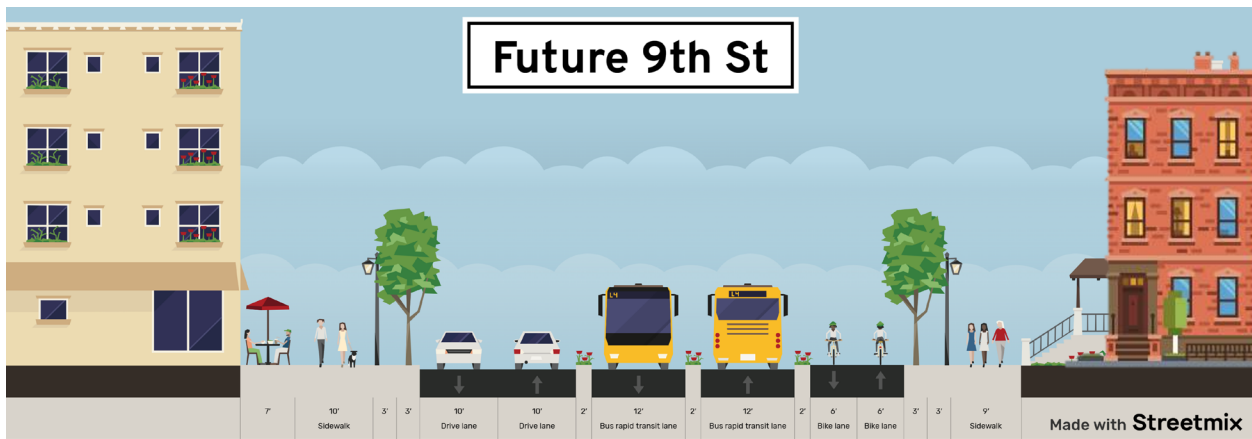




**Walkability Team  
street redesign.**

Image by Timothy  
Vaster





**Equity Team street redesign.**

Image created with Streetmix by Equity Team members

**Ecological Buffer**

Highway 99 runs along the east side of the site. As the north-south major highway through Corvallis, it sees significant local and inter-city use. Designing a residential development next to a highway presents challenges to human comfort, the safety of wildlife, and other ecological interactions such as water runoff. The design teams applied a variety of strategies to address those challenges.

**Border**

This buffer provides a visual barrier, habitat, and rainwater catchment, as well as a verdant carbon dioxide sequestering nature strip. The teams do not rely on this buffer for primary sound diffusion, but rather a delineation between spaces, creating a lush green border for the community, like the Coastal range hills do for Corvallis at large (Emmingham et al., 2005).

**Wellness**

The buffer allows the higher density residential urban area to have a greater feeling of outdoor space, providing a mental health benefit for residents and highway travelers alike. In summer the trees in this space will help shade and cool the residences and plazas. In winter, they will provide habitat for wildlife and allow the Oregon sun to flood into homes (House, E., C. O'Connor, K. Wolf, J. Israel, & T. Reynolds, 2016).

**Restorative Justice**

A focus on housing for low-income residents should take extra care to incorporate this kind of design feature as these underserved populations have been historically denied access to green spaces, to the detriment of their health and wellness (Kruize et al., 2019).



**Ecological buffer design inspiration.**

Photo by Thom Brown



Tall trees

Deciduous and evergreen shrubs

Grasses and flowers

**Example of a hedgerow from Oregon State University Extension as a cross section of ecological buffer.**

Graphic: Kerry Wixted with graphics from Tracey Saxby, IAN Image Library, courtesy of the Integration and Application Network, University of Maryland Center for Environmental Science

## Active Plazas

A public forum along 9th Street is a central feature of all three designs. The active plaza serves to attract visitors, bolster commercial activity, and create community cohesion. These plazas are meant to be open, inviting, and dynamic public spaces for a range of uses. Active plazas help stimulate local economies by improving aesthetics. They also serve as a design tool to manage stormwater, improve well-being, and allow for healthier social connection within communities (House, E., C. O'Connor, K. Wolf, J. Israel, & T. Reynolds, 2016).

The key features of the active plazas are as follows:

### **Pedestrian Access Prioritized**

People who are not in vehicles are prioritized in this space. A bus stop has been designed at the entrance of the plaza to encourage use and entry into the space without needing to find parking.

Teams envisioned a child-friendly atmosphere, cafés, restaurants, a library outpost, clothing stores, and bike mechanics, etc. Plaza interiors are rich with amenities such as water features, picnic spaces, playgrounds, a small amphitheater, and/or gardens.

Access to these features happens at pedestrian speeds for a sense of safety, stress reduction, as well as an opportunity to bump into a neighbor or friend.

### **Sense of Enclosure**

The intimate nature of active plazas relies on a sense of enclosure. There is a balance between a sense of “entrapment” and a comforting sense of enclosure. The sense of enclosure means that users do not feel exposed to traffic or the movement of travel that implies needing to go somewhere else. Rather, users feel that they can stay awhile (Projexity, 2015).

### **Suggested Community Uses**

The plazas will be used on an everyday basis as the nearest grocer, café, and store for development residents. However, these spaces are also designed to accommodate larger gatherings to foster a sense of community.

The designers anticipate that their plazas could support:

- Farmers markets
- Small concerts
- Local theater productions
- Fundraising events
- Craft fairs
- Cultural events



Top left: photo by Ithaca Commons

Top right: Rendering by Van Meter-Williams Pollock LLP

Bottom left: Rendering by HHL Architects

Bottom right: Rendering by Michael Green Architecture

## Housing Typologies

### Townhomes

Each of the three teams incorporated townhomes in their residential housing typology. The homes are situated in different locations in each design, but they all offer more diverse housing options than existing residential typologies in Corvallis. Residents may be used to single family homes on small lots, so as Corvallis transitions to higher density, providing homes that look and feel like a single-family home could be an important steppingstone for the community.

The townhome, or row house, offers additional benefits, such as energy savings and cost savings due to the smaller space requirements of a townhome, as well as lowered construction cost due to fewer exterior walls and consolidated utility lines. Townhomes have also proctored

public support as a familiar form of housing and increase feelings of community connectivity (Row Houses, n.d.).

### Mixed Use Apartments

Apartment style housing offers the maximum density of dwelling unit per square foot, and it also has other benefits to a community. Researchers Shen and Sun found that commercial mixed use residential created neighborhood vibrancy, encouraged a walkable neighborhood, and increased accessibility.

The size and scale vary from two to eight stories for each team's specific design. However, residential starting on the second floor was a common trend. Reserving the lower level for either commercial space, or communal residential areas like laundry, bike parking, or storage.

### Dwelling Unit Estimations

#### Equity Team

- Mid-rise apartments: 135–225 dwelling units
- Townhomes: 23–32 row houses on 2,420- to 3,630- square-foot lot sizes

#### Climate Resilience Team

- Total of 40 dwelling units per acre
- Mid-rise apartments: 410 dwelling units
- Townhomes: 154 dwelling units



**Townhomes in Germany.**

Source: Michael Hsu  
Office of Architecture



**Townhomes in Germany.**

Source: Xantana



**Downtown Portland's Pearl District example of a four-story vertical mixed use building.**

Photo courtesy of  
expedia.com



## Financing

The finance mechanisms identified by the three teams ranged from tax based, grants and federal funding, to land banking and private investments. The scale of this development necessitates funding from multiple sources. Example potential funding sources follow.

### Grants and Tax Based Solutions

**Low-Income Housing Tax Credit:** The Low-Income Housing Tax Credit (LIHTC) Program is “the largest source of funds for affordable housing development, uses federal income tax credits to finance below-market-rate housing in localities across the United States” (Freeman & Schuetz, 2017). This program uses nonprofit and for-profit sponsors to fund affordable housing programs (Bratt & Lew, 2016). In return, sponsors gain tax credits. The affordable housing units created through this program require that household incomes do not exceed 60% of the area median income (Bratt & Lew, 2016).

**Tax Increment Financing:** Tax increment financing (TIF) is frequently used to generate local funds by reserving any additional revenue generated above the

base tax rate (which is determined by the year in which it is “frozen”) for financing projects that have a public benefit (Freeman & Schuetz, 2017).

**National Housing Trust Fund:** The National Housing Trust Fund (HTF) provides block grants for the development of “rental housing for extremely low-income families” (Tegeler, 2021a).

**HOME:** The HOME Investment Partnerships Program also provides block grants to city and state governments and are intended for the funding rental housing developments and homeownership for low and moderate income households (Tegeler, 2021a).

**Community Development Block Grants:** The Community Development Block Grant (CDBG), another state and local block grant program, can be used for housing and community development activities that benefit low-income families. While not primarily a housing production program, it can support community based non-profit housing organizations, including housing acquisition and rehabilitation (Tegeler, 2021).

**Not for Profit Development Partnerships**

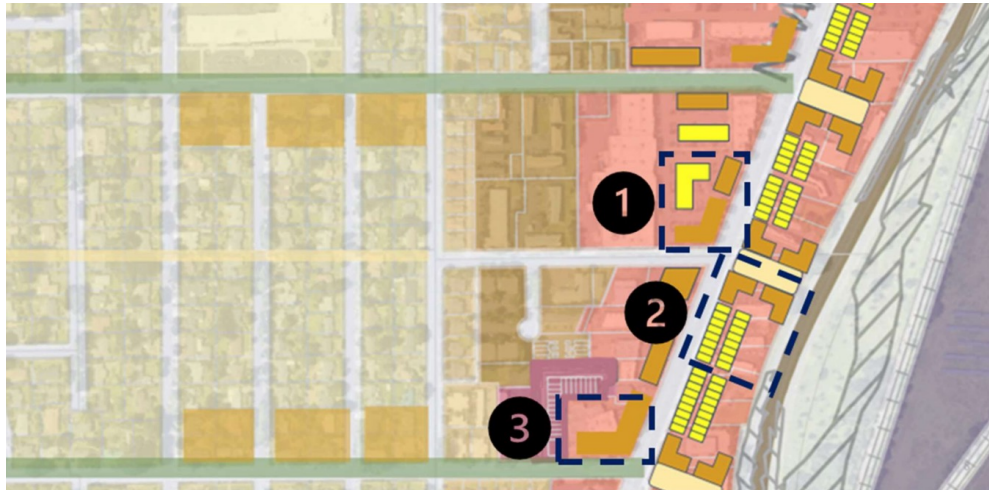
Not for profit development partnerships may be an equity-focused tool and economic development incentive.

**Land Banking**

A land banking strategy may be of value to redesign 9th Street, as the site is composed of many smaller lots. Land banking is the acquisition and strategic retention of land parcels within the study area. It serves three functions: it demonstrates the City’s commitment to a cohesive design within the development, it signals to developers that the city is invested in development in that area, and alleviates the carrying cost of the land for the duration of the construction phase.

There may be a financial advantage to retaining land that will likely increase in value, due to the development. It is possible for the city to experience cost-saving or even revenue generation with land banking through the eventual sale or lease of the land. By securing parcels in advance of a major development, the city may also ensure that the development continues to align with the community’s goals and Imagine Corvallis 2040 Vision.

The Figure below suggests a possible roadmap for land banking. The numbers indicate the grouping of lots to secure but not necessarily the order in which they should be secured.



**Proposed land banking sites.**

### **Impact Investing and Developer Investing**

Several case studies pointed to the potential of developer- and investor-led financial leadership in designing for resilient urban communities. The PAE Living Building is entirely developer financed, proving that the most technically difficult and sustainable building methods can be economically viable. As the real estate market shifts to adjust for the housing crisis and new demands, climate resilient designs, such as proposed here, may be attractive investments.

In addition, impact investing may be an effective tool. Through Realize Impact, the Northaven Senior Center received an additional million dollars of funding when a single donor wanted to support the development mission. This case study did not involve investment outreach, which could have yielded even more investment. In speaking with a representative from Realize Impact about the future of real estate investments within the field, they were particularly hopeful regarding the younger generation's motivation to invest in workforce housing and sustainable building developments.

### **Policy and Development Code Opportunities**

The proposed designs align themselves with the state Climate Friendly Ares (CFA) and Climate Friendly and Equitable Community (CFEC) recommendations. While working within these parameters, the teams isolated additional policies and development code amendments that could bolster these ideas (see Appendix D for applicable Corvallis Development Code sections).

### **Townhomes**

Parcels within the study area are currently zoned Commercial Mixed Use (CMU-2) and do not allow townhomes or first floor residential without an affordable housing exception. Although there is workforce housing on this site, it is offered within the mid-rise structures and not intended as the entirety of the apartment units.

Rezoning, or adding language to CMU-2 zone to allow for townhomes could introduce compact, urban-style, middle housing to alleviate housing burden across more income levels. The attached townhome style allows for expedited and possible modular construction, and lends itself to tight building envelopes. An additional policy solution could be to allow townhomes to exist on a shared parcel, not requiring their own lot. Developing this as a community land trust may also be a possible solution, or a reconfiguration within Corvallis' Expedited Land Division Middle Housing standards.

Allowing residential without street-frontage could be another development code amendment. Townhomes accessible via a primarily pedestrian interior multi-use path may create more walkable neighborhoods, and car independent households, while balancing the needs for emergency and utility access.

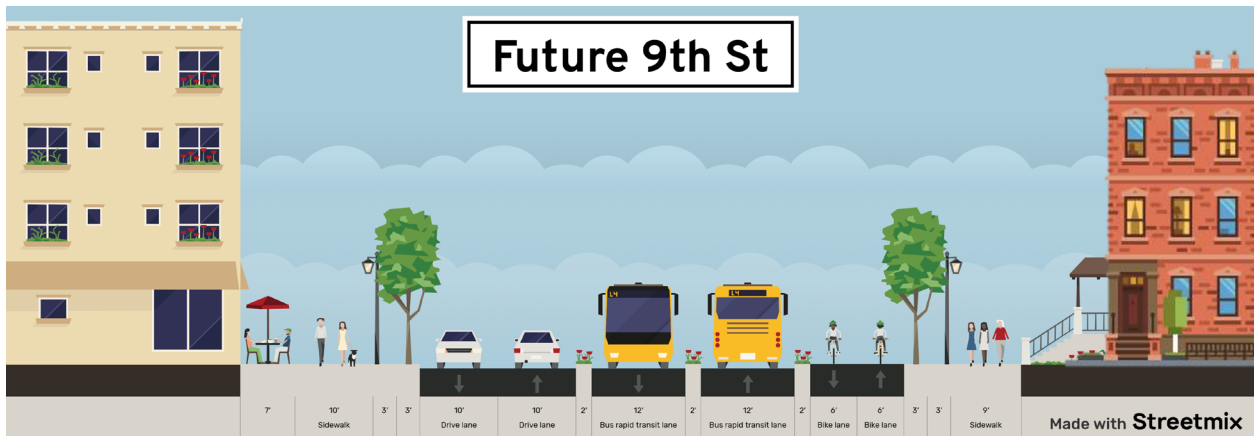
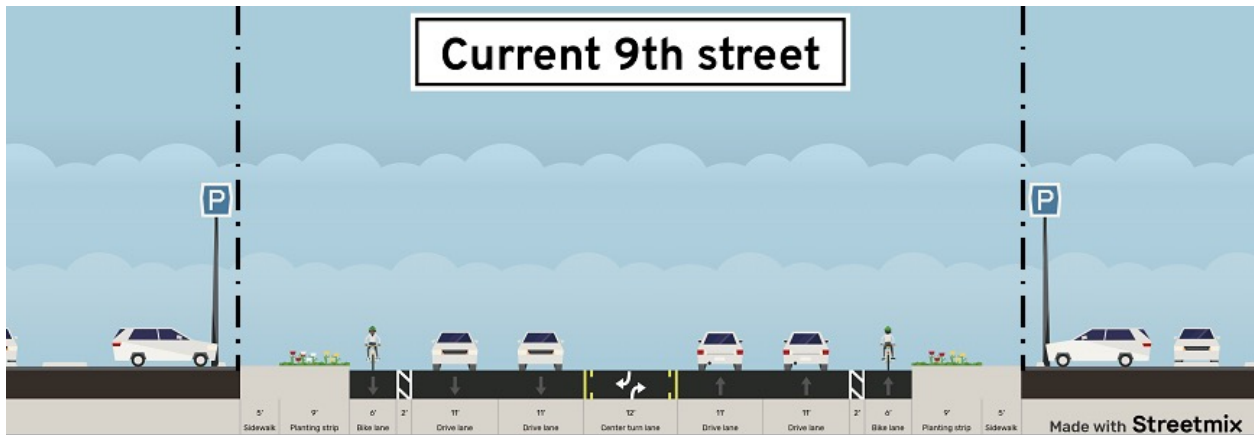
### **Greenspace**

Corvallis values accessible public space although there is not a greenspace requirement for urban developments. The Climate Resiliency Team proposal, Heartwood Village, accommodates five acres or 35.7% of green space for stormwater, carbon capture, and human enjoyment. Incentives or requirements for greenspace could be considered for the benefit of the residents and the environment.

## Conclusion

Corvallis has a wonderful opportunity to redevelop 9th Street. Changes made to this site could serve as a design template for the future of both local and regional developments who share the goals of equity, walkability, and climate resilience. By incorporating the design aspects highlighted by the student teams, Corvallis could provide the community with safe, affordable, resilient housing for its current and future residents.

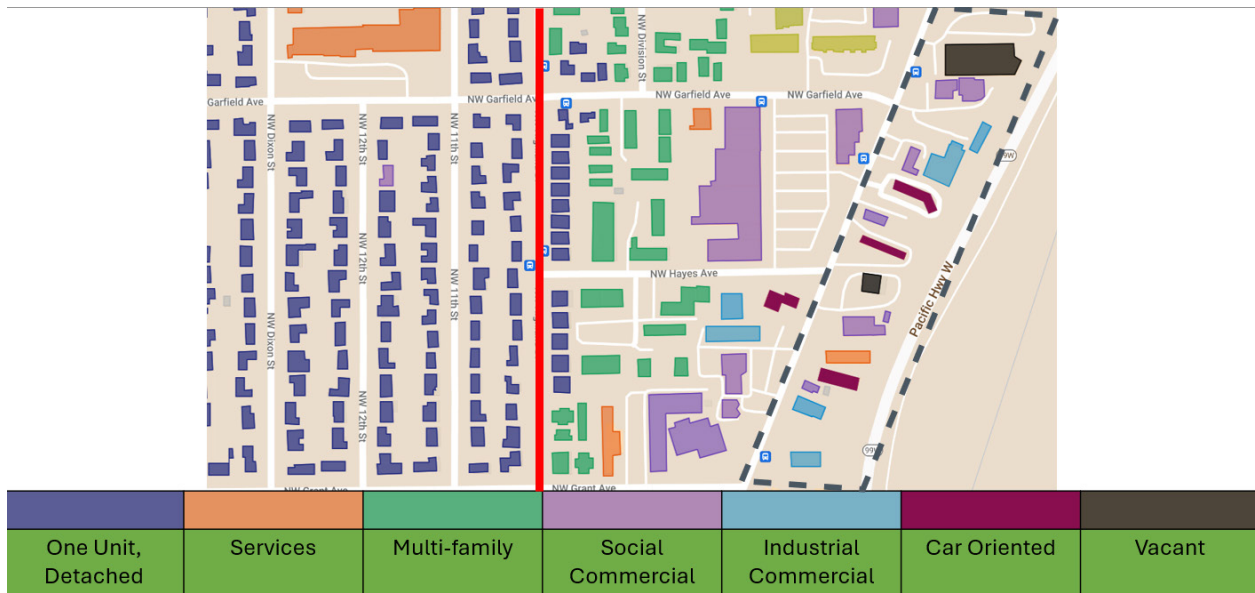
# Appendix A: Design Graphics



**Above: current road design of 9th Street.**

**Below: Equity Team's street redesign with a bus stop.**

Created with Streetmix



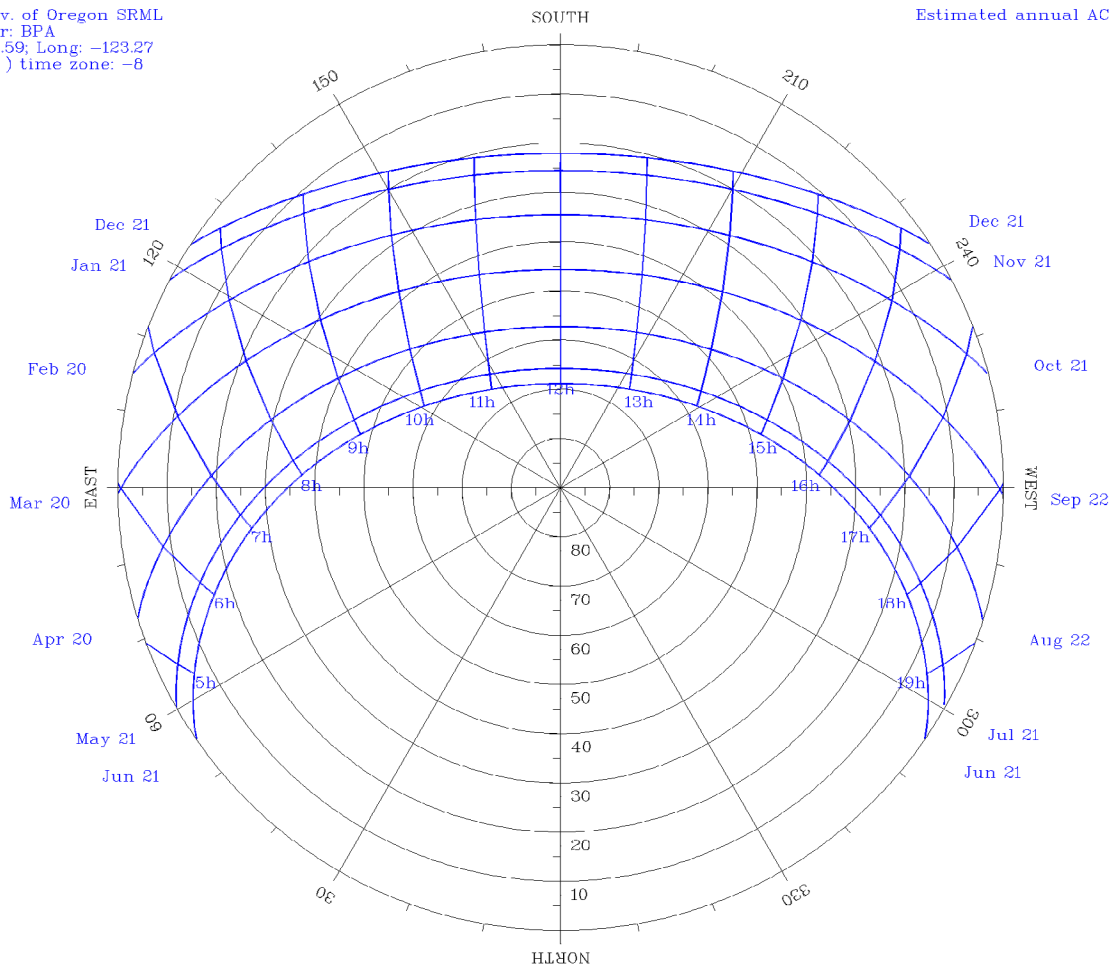
**Site with surrounding area map with color-coded buildings denoting use.**

Created by the Equity Team in PowerPoint

# Appendix B: Data Graphics

(c) Univ. of Oregon SRML  
 Sponsor: BPA  
 Lat: 44.59; Long: -123.27  
 ( Solar ) time zone: -8

Estimated annual AC output:

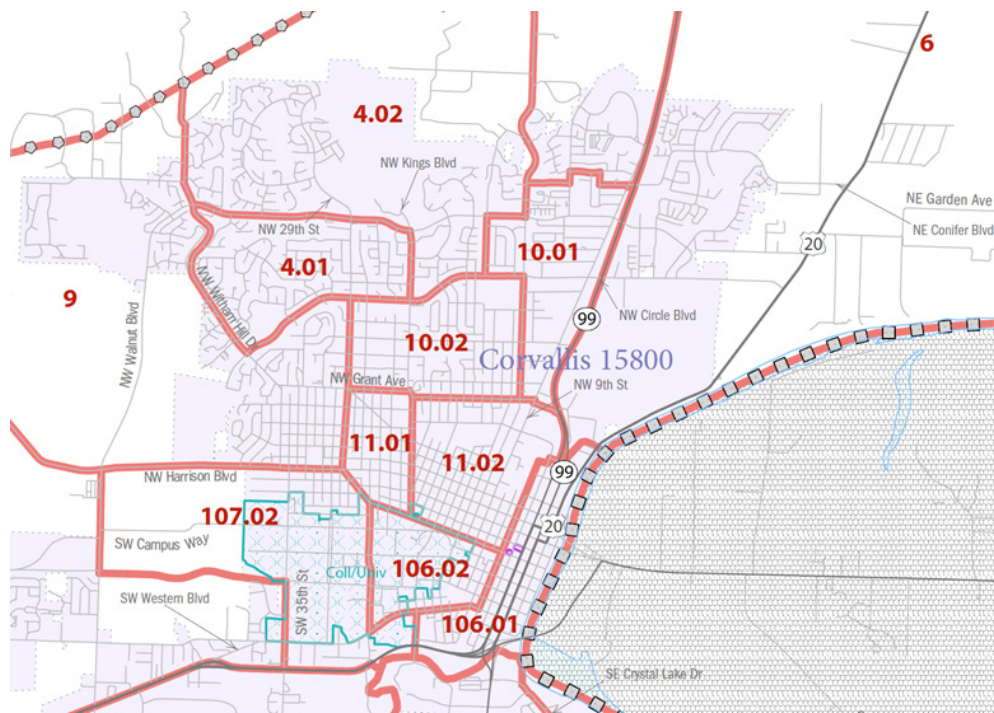


**Solar modeling from center of 9th Street site.**

Modeling by McClean Gonzalez

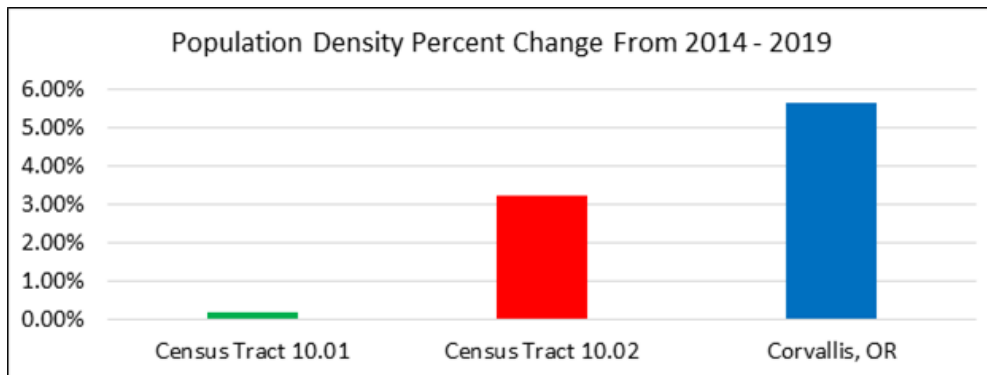
Solar modeling of the site allowed the urban designers to visualize and anticipate the path of sunlight on the site throughout

the year. Having adequate access to daylight is an important feature of all three designs.



**Map of the Census Tracts in the City of Corvallis.**

Source: U.S. Census



**Population density change from 2014 to 2019.**

Source: 2019 5-year ACS



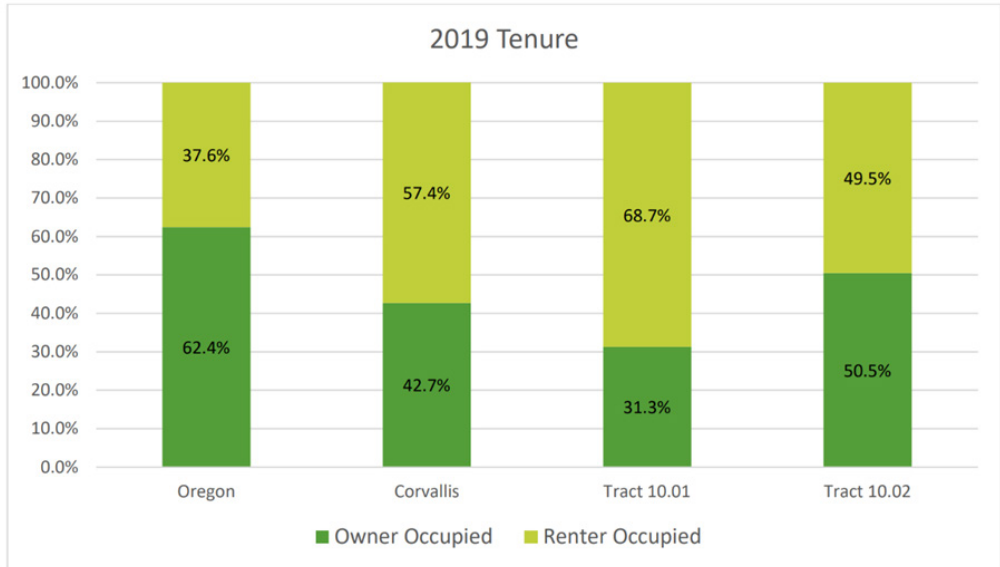
**Shortcomings of Data**

Please note that the demographic data does not use the most recent ACS data collected. By using earlier data the student design teams removed data that could have been effected by the COVID-19 pandemic.

Although ACS data aim to be comprehensive, margins of error are possible when working with data that are small, which is the case for Census Tract 10.01 and 10.02, within which the site is located.

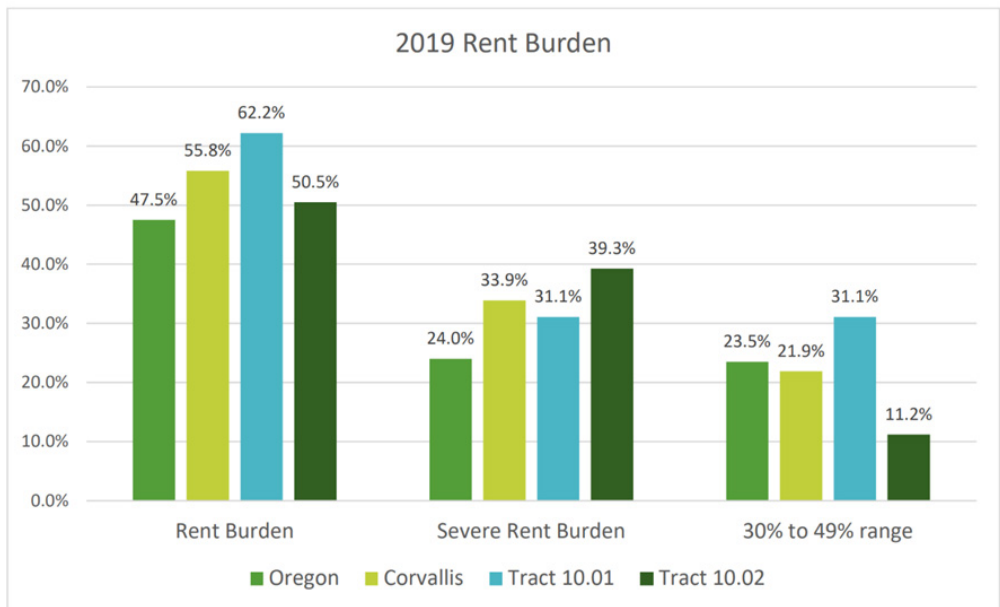
**Housing Tenure.**

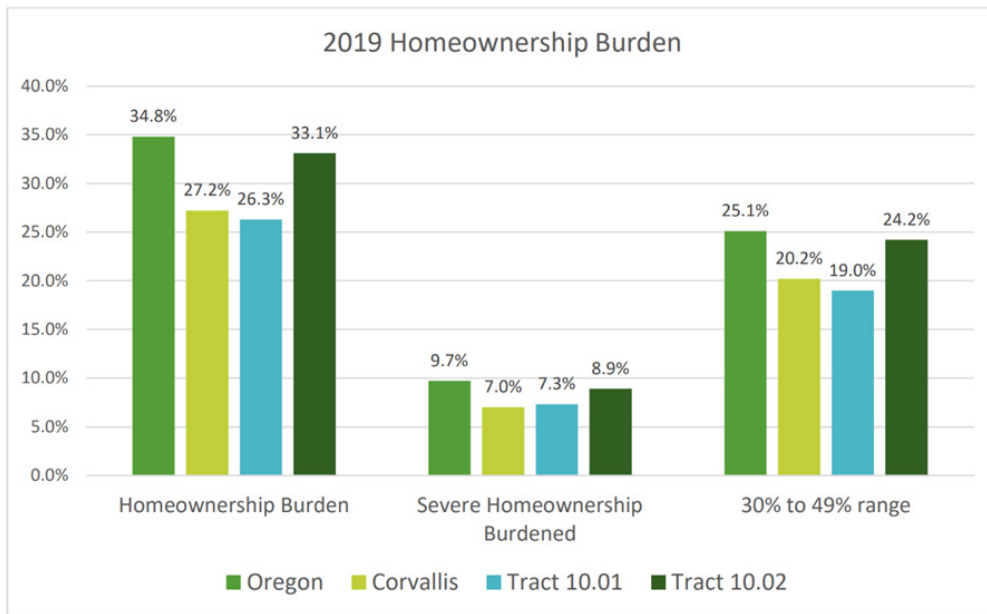
Source: 2016–21  
5-year ACS



**Rent Burden.**

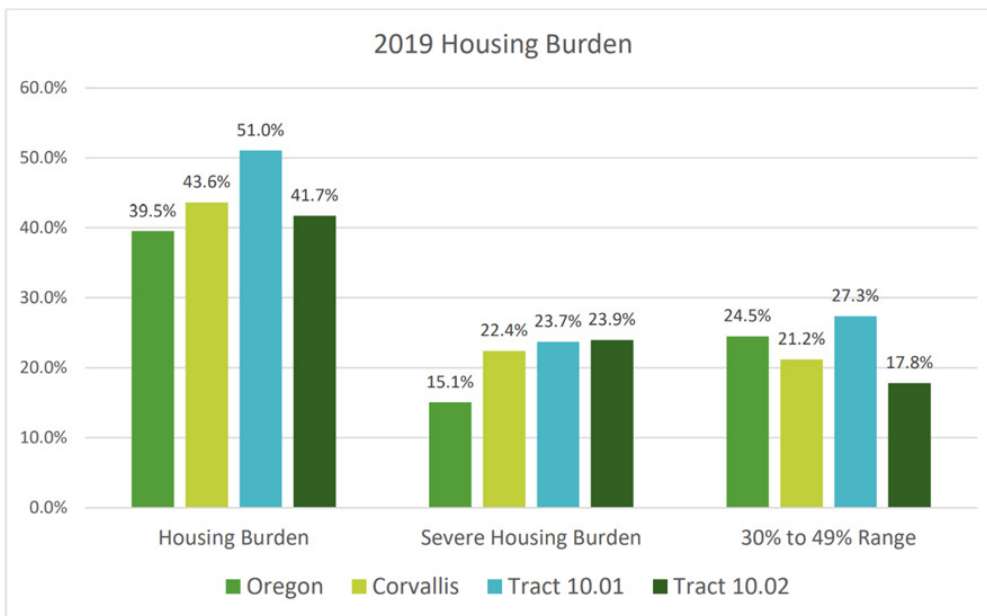
Source: 2016–21  
5-year ACS





**Homeownership Burden.**

Source: 2016-21 5-year ACS

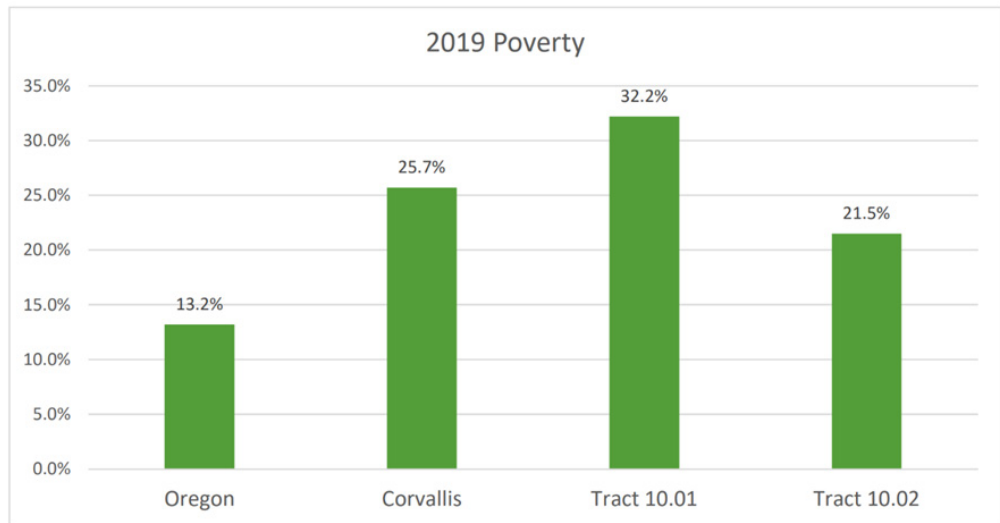


**Housing Burden.**

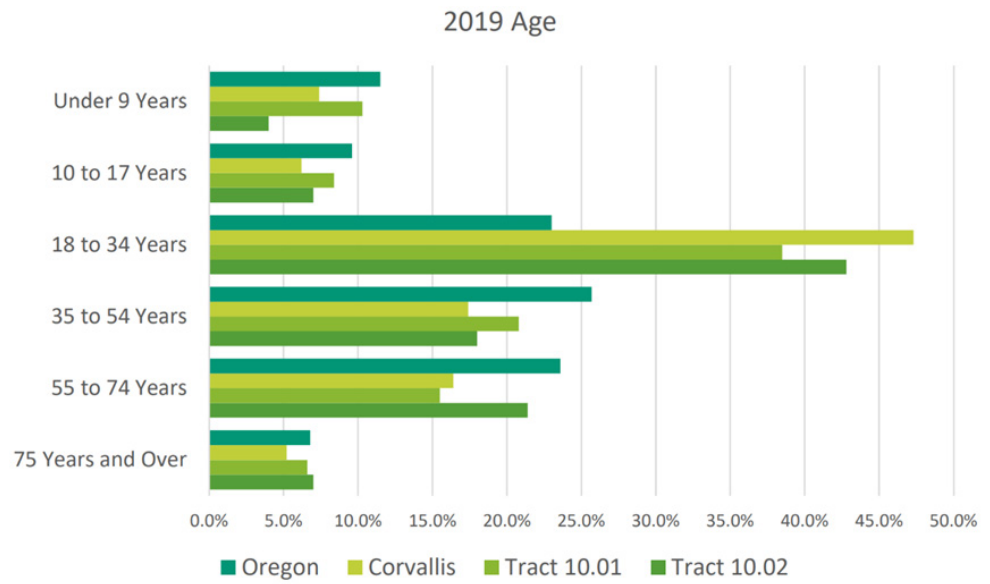
Source: 2016-21 5-year ACS

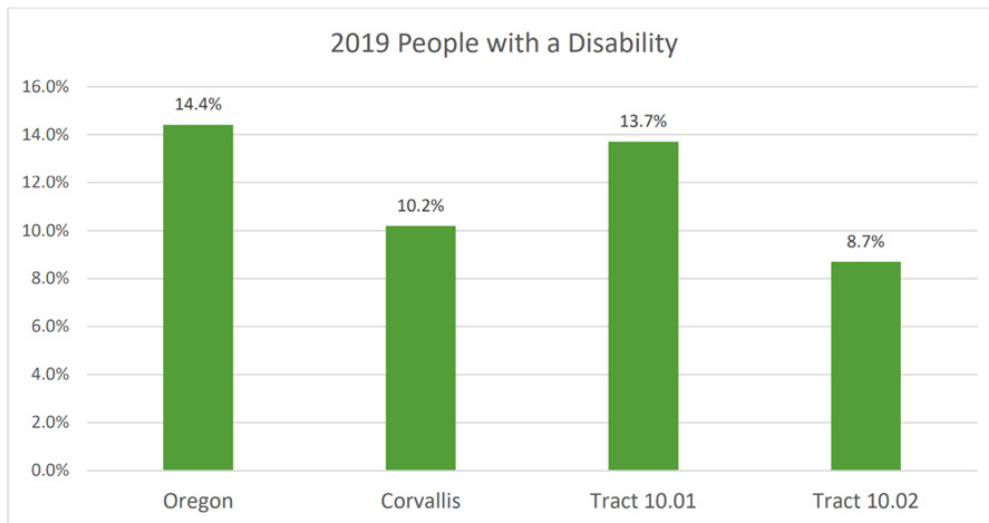
Appendix B: Data Graphics

**Poverty.**  
Source: 2016–21  
5-year ACS



**Age.**  
Source: 2016–21  
5-year ACS





**People with a Disability.**

Source: 2016–21 5-year ACS

	Oregon	Corvallis	Tract 10.01	Tract 10.02
White Alone	84.3%	81.6%	80.3%	84.0%
Black or African American Alone	1.9%	1.3%	4.8%	0.3%
American Indian and Alaska Native Alone	1.2%	0.7%	1.3%	1.1%
Asian Alone	4.4%	9.9%	5.7%	6.5%
Native Hawaiian and Other Pacific Islander Alone	0.4%	0.3%	0.0%	0.1%
Some Other Race Alone	3.1%	1.5%	0.9%	0.6%
Two or More Races	4.8%	4.7%	7.0%	7.5%

**Table of Hispanic/ Not Hispanic.**

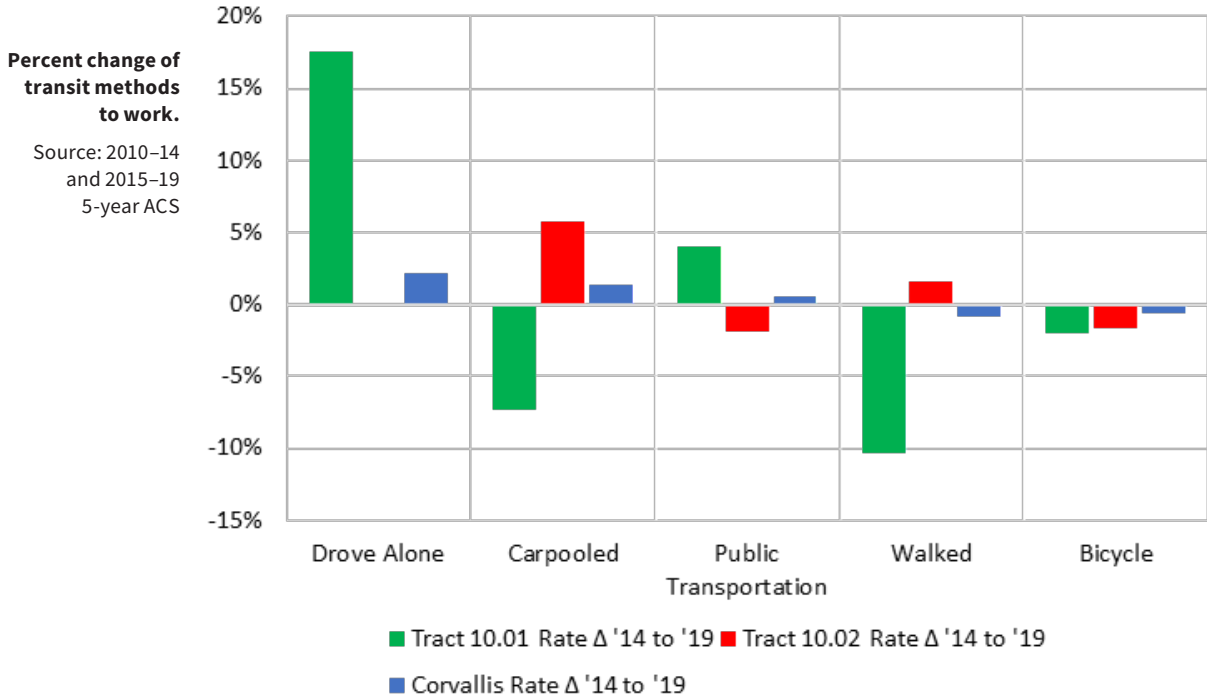
Source: 2016–21 5-year ACS

	Oregon	Corvallis	Tract 10.01	Tract 10.02
Not Hispanic or Latino	87.0%	92.2%	80.2%	95.7%
Hispanic or Latino	13.0%	7.8%	19.8%	4.3%

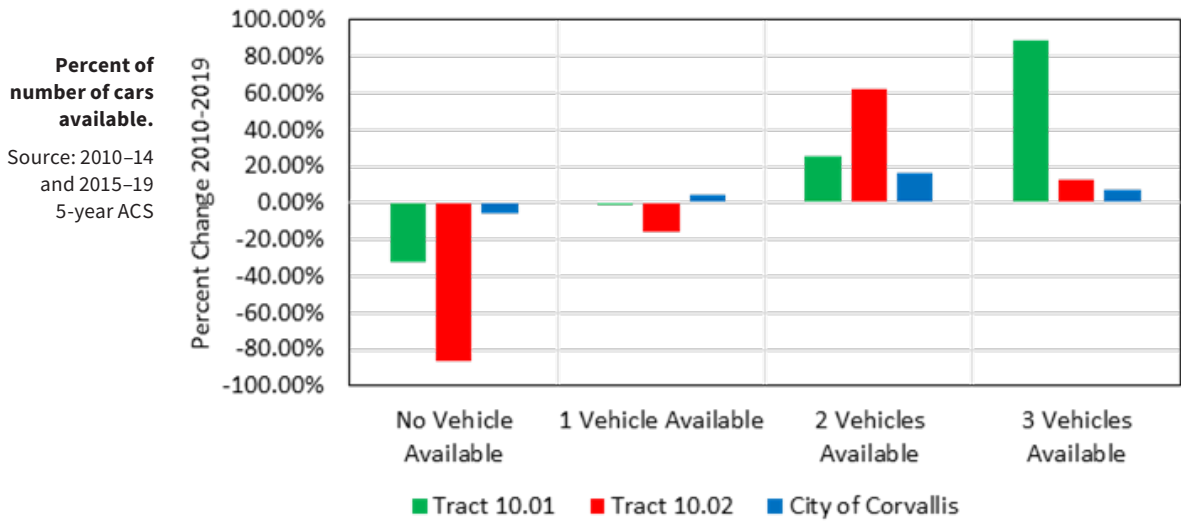
**Table of Demographics.**

Source: 2016–21 5-year ACS

Percent Change of Transit Methods to Work 2014 - 2019



Change in Percent of Number of Cars Available 2014 - 2019



## Appendix C: Case Studies

### Opticos: Mews, Salt Lake City

The Mews Development in Salt Lake City is a series of townhomes facing in towards each other, like an extended courtyard. This development is on a narrow 16-acre lot flanked on either side by roadways.

We borrow the concept of the internal path (the mew) to offer both physical and daylight access while making the most of a narrow parcel. The townhomes also feature a longer façade along the pathway, which is not typical of the traditional

style. This allows for additional daylight access into each of the units, as well as “increasing privacy and reducing potential noise.” (Parolek, 2020)

These townhomes have compact footprints of (26’x26-50’) with simple building forms, which kept the construction cost low. Each unit was \$180k-220k, which was over 20k lower than the entry-level purchase price of a home at the time of sale.



**Opticos Mews, a photo from the center of the “mew” in Salt Lake City.**

Photo courtesy of Opticos Design

## Opticos: Cul-de-Sac, Tempe, AZ

The same design firm also made the Cul de Sac development in Tempe, Arizona- this study models an approachable design for a car-free, walkable urban community.

Heartwood aims to mirror this people-first design as proof of concept for

Oregon's Climate Friendly and Equitable Community goals. Within a half mile of a bus line, with comfortable and safe bus access, Heartwood Village development site is a perfect place to model what a 15-minute neighborhood could look like in Corvallis.

**Opticos Cul-de-Sac, rendered map of the development layout.**

Photo courtesy of Opticos Design



## Minnesota Places, Portland Oregon

The Minnesota Places in Portland is entirely workforce housing. This eight-story building focused on 2–3-bedroom units to provide for 72 families. The residential units are designated for those earning 60% of the average median income.

The design features Type IV C mass timber and mass timber plywood panels (MPP). This style of construction reduces on site disruption and therefore minimizes community impact.

The project received funding from a variety of sources including: OHCS LIFT Rental NOFA funding, 4% Low Income Tax Credits, Metro Transit Oriented Development Grant, and Oregon Multifamily Energy Program funding. Other sources of funding include nearly \$10 million in Permanent Loan, and \$1 million in Deferred Development Fee. The total budget is nearly \$21 million, and since they use \$750k of funds from a public agency, and thus are a “public works” project (Minnesota Places, 2020).



**Rendering of the Minnesota Places affordable housing mass timber building.**

Photo courtesy of Wright Architecture



## PAE, PAE Living Building, Portland, Oregon

A uniquely Oregon approach to resilient building design, the PAE Living Building should be the new building benchmark for any new development, but particularly for mid-rise urban development.

This is a five-story vertical mixed use, set to achieve the highest sustainable building metric available, the Living Building Certification from the Living Futures Institute. In addition to the energy, water, human health standards that certification demands, this structure is also designed and built to stand for 500 years.

Unlike most commercial and residential spaces, the PAE Living Building achieved seismic standards as hospitals and fire stations, making it a safer space for residents and visitors, in the event of a natural disaster. The Climate Resilience team suggests that CFA developments seek similar design standards for the ongoing safety of Oregonians.

The efficiency of the heating and cooling mechanism and the tight building envelope means the building can operate for 100 days in the summer,

entirely disconnected from the grid.

This is external from the building's energy production and storage, which due to constraints of the local historic district, sixty percent of the solar panels and batteries were donated to a local affordable housing complex. This gave the building points towards its certification, but the fenestration, building envelope, and high efficiency air conditioning are the key features to its brown out and black out resiliency.

This project was funded entirely by developers, proving that market-rate and truly sustainable, resilient design are not mutually exclusive. The estimated budget for this project was \$20.5 million. (The World's Largest Urban Commercial Living Building | PAE Living Building, 2022)

### Other Resilient Features

- 100% of water demand is collected and treated on site
- 70% of building has operable windows
- 50% of office spaces are daylight throughout the year
- 100% of Materials avoided use of toxic materials (Red List Materials)

### Rendering of the PAE Living Building in downtown Portland.

Photo courtesy of PAE Engineering



## Sugar House, Salt Lake UT

This community redevelopment used to be a sprawl collection of strip malls. Developer and design firm CRSA updated the pedestrian amenities and rezoned for mixed use. It features almost an entire area of public space, which reactivated the plaza as a city center, concurrently revitalizing the historic monument within.

With a combination of private and public financing, it created underground parking and focused on the pedestrian experience on the street side.

### Features

- 100% biking and pedestrian plaza
- Features a historic monument
- Decreased street-parking



**Sugar House Plaza in Salt Lake City after redevelopment.**

Photo courtesy of CRSA Design Firm

## Ithaca Commons, Ithaca, New York

The New York urban space struggles to attract people to gather and engage downtown. What was formerly a two lane roadway with on street parking, was transformed into a pedestrian only promenade.

Allowing for not only business fronts to expand outward, but for a reimagining of public space. The addition of horticulture display, benches, public art, and children's

play zones make for an activated city center for a multitude of needs.

### Features

- 4.5 M Federal Transit Administration grant
- Pedestrian Mall that serves as “the heart of Ithaca”
- Seating, play zones, in addition to business fronts.

**Rendering of the Ithaca Commons as redeveloped into a pedestrian mall.**

Photo courtesy of Sasaki Associates, Inc.



## Appendix D: Applicable Code Considerations

We examined the Corvallis Land Development Code, City of Corvallis (2023) to determine current applicable codes, summarized:

- **§3.11.60 General CMU zones development standards.**
  - Frontage occupation is 70% maximum.
- **§3.11.3 General CMU zones development standards.**
  - Maximum height of 75ft.
  - Maximum of 55,000 sq. ft. of gross ground level for non-residential uses.
- **§4.1 Parking, loading, and access requirements.**
  - Off-street parking is not required.
  - There are provisions for specific parking situations.
    - When parking is provided there are design requirements.
    - Off-street loading facilities are necessary.
    - Bicycle parking is required by §4.1.50.
- **§4.1.30 Standards for vehicle access, maneuvering, and parking.**
  - Off street areas must have sufficient turnaround areas when located off arterial streets.
  - The new development parking must meet criteria in the design manual.
- **§4.9.100 Mixed use building incentives.**
  - A. There is an 18ft height incentive if mandates in subsection B are met
  - B. To gain benefits for mixed use building must have
    - 50% of ground level floor occupied by non-residential use that can be accessories to non-residential uses
    - Residential uses on upper floors are equal to first floor non-residential uses, including accessory non-residential area
- Table 4.11-2 **outlines CMU-2 minimum assured development** area or non-residential uses are 23,950 sq. ft per acre
- **§4.10.40 Ground level activity dictates pedestrian standards.**
  - The largest percentage of ground level activity determines design standards. When commercial activity is the majority of ground level activity is present those standards apply. When residential is the primary ground level activity those standards will apply. Pedestrian standards for these categorizations are found in §4.10.70.01.

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