



Safe and Connected Salem: Bicycle Transportation Recommendations

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PPPM 438: BICYCLE TRANSPORTATION | COLLEGE OF DESIGN



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Salem Bike Vision

Oregon Department of Transportation (ODOT)

Mid-Willamette Valley Council of Governments (MWVCOG)

Salem Safe Routes to School

Salem Bicycle Club

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 Salem. Text and images contained in this report may not be used without permission from the University of Oregon.

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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.

About City of Salem

The City of Salem is Oregon's second largest city (179,605; 2022) and the State's capital. A diverse community, Salem has well-established neighborhoods, a family-friendly ambiance, and a small town feel, with easy access to the Willamette riverfront and nearby outdoor recreation, and a variety of cultural opportunities.



The City is known for having one of Oregon's healthiest historic downtowns, hosts an airport with passenger air service, and is centrally located in the heart of the Willamette Valley, 47 miles south of Portland and an hour from the Cascade Mountains to the east and the ocean beaches to the west.

State government is Salem's largest employer, followed by the Salem-Keizer School District and Salem Health. The City also serves as a hub for area farming communities and is a major agricultural

food processing center. A plethora of higher education institutions are located in Salem, ranging from public Western Oregon University, private Willamette and Corban universities, and Chemeketa Community College.

Salem is in the midst of sustained, steady growth. As a "full-service" city, it provides residents with services such as police and fire protection, emergency services, sewage collection and treatment, and safe drinking water. Salem also provides planning and permitting to help manage

growth, as well as economic development to support job creation and downtown development. The City also provides 2,338 acres of parks, libraries and educational programs, housing and social services, public spaces, streetscaping, and public art.

Salem's vision is a safe, livable, and sustainable capital city, with a thriving economy and a vibrant community that is welcoming to all. The City's mission is to provide fiscally sustainable and quality services to enrich the lives of present and future residents, protect and enhance the quality of the environment and neighborhoods, and support the vitality

of the economy. The City is in the midst of a variety of planning efforts that will shape its future, ranging from climate action planning and implementation, a transportation system plan update, as well as parks master planning.

This SCYP and City of Salem 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 partnership will allow UO students and faculty to study and make recommendations on city-identified projects and issues.

Course Participants

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Course Description

PPPM 438: BICYCLE TRANSPORTATION

Bicycle Transportation (PPPM 438) explores the various elements involved in planning and advocating for increased utilization of bicycles as a form of urban transportation. The class focuses on three key areas: policy and planning; design, safety, and legal issues; and social change.

Executive Summary

The City of Salem's goal is to increase bike mobility, thereby increasing street safety in the process. The City's comprehensive code outlines ambitious goals aimed at reducing pollution, ensuring safe travel, and developing multi-modal transportation networks that cater to all community members. In pursuit of these objectives, students in the Bicycle Transportation course conducted intensive research and proposed innovative recommendations for designing transportation routes that accommodate various modes of travel.

Student research highlights the potential for significant improvements in bike mobility, which can lead to increased street safety and reduced vehicular emissions. Students studied specific areas for potential improvements and interacted with local community advocates to identify where best practice research and innovative ideas would be most beneficial. Students spent months curating their ideal

plans to allow for better bicycle movement within Salem. Their recommendations, derived from comprehensive research and analysis, suggest enhancements to bicycle infrastructure that aim to promote sustainable urban mobility, boost public health, and stimulate local economic activity while considering cost, use of street, community needs, and more.

Introduction

This report represents the culmination of student efforts in the Bicycle Transportation course at the University of Oregon's School of Planning, Public Policy, and Management. The course focuses on increasing bike mobility and safety as a core part of urban planning, aligning with Oregon's Statewide Land Use Planning goals. Specifically, the projects in this report explore ways to enhance Salem's bicycle infrastructure in support of Goal 12, which emphasizes the need for comprehensive transportation systems that accommodate multiple modes of travel.

The report is structured around a series of redesign projects that span key areas of Salem, including commercial streets, residential neighborhoods, and school routes. Each project proposes innovative redesigns intended to improve safety, connectivity, and overall bikeability throughout the city. The proposals range from specific street and intersection redesigns to broader systemic improvements like wayfinding enhancements and micromobility strategies.

To inform these proposals, students engaged with local stakeholders, reviewed relevant city planning documents, and considered best practices from other bike-friendly cities. The goal is to create

an interconnected and accessible biking network that promotes sustainable urban mobility, fosters public health, and encourages community engagement.

The redesign projects presented in this report include specific interventions for various Salem neighborhoods, focusing on creating safer, more efficient, and more appealing cycling infrastructure. Through the redesign of major streets like Edgewater and Commercial, improvements to residential areas such as Northgate Park, and the creation of Safe Routes to School plans, this report outlines a comprehensive approach to reimagining Salem's transportation system with cycling at its core.

Redesign Opportunities

The following redesign areas were selected by students. Students were put into small groups and assigned a type of area to redesign (for example, they were assigned to find a neighborhood street in need of a redesign). They were asked to locate a street that the students could see the potential for redevelopment to accommodate bicycle use. Students spoke to residents and searched on Google Maps to identify potential redevelopment opportunities/options.

EDGEWATER REDESIGN

Current Design

Edgewater is a two-way street separated from the Willamette River by the Salem Dallas Highway. Parking along Edgewater is primarily on street parallel parking on both sides of the street, and the area has several parking lots in front of and behind commercial businesses. The main pedestrian walkway winds through the green space between Edgewater Street and the Salem Dallas Highway. This pathway is not easily accessible, and pedestrians must cross traffic to use the path.

The beginning and end of the main walkway were abrupt and led to no location and respectively end underneath

a highway overpass and an empty dirt lot. Additionally, the path bends and winds often, going behind businesses, next to and underneath the highway. This makes the path an unsafe option for foot travel at night.

Proposal

Students propose that Salem switches the bike and parking lanes to provide a protected area for bikes. To increase the bike lane size, students slightly slimmed down the car lanes. Not only does this allow for more room for bikers but making streets narrower will cause automobiles to drive slower. In addition, parklets were added in between parking spots to enhance connectivity and promote outdoor congregation.

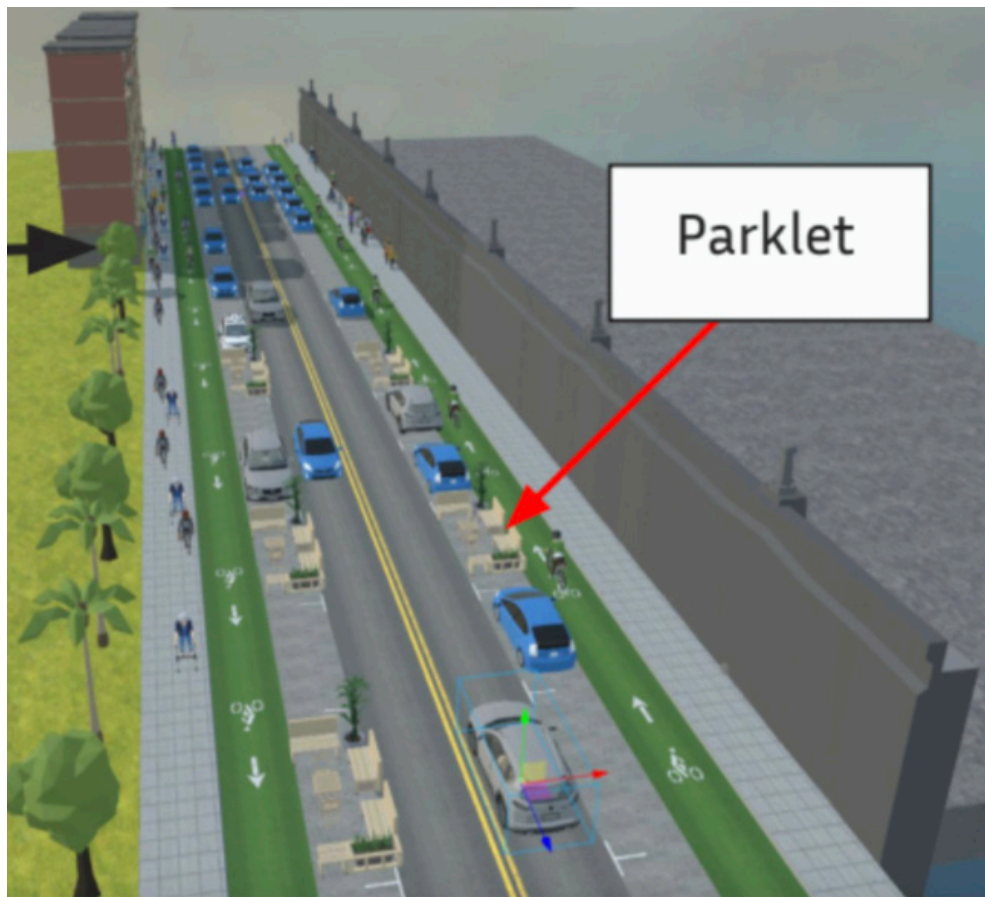


FIG. 1

Additionally, students recommended redesigning the bus stops on Edgewater St with the images below showing a redesign of the bus stop located at 1311 Edgewater St NW. Here, pedestrians can wait by the

covered bus stop until the bus arrives, then carefully cross over the bike lane onto the bus stop platform where they will be able to board the bus.

FIG. 2

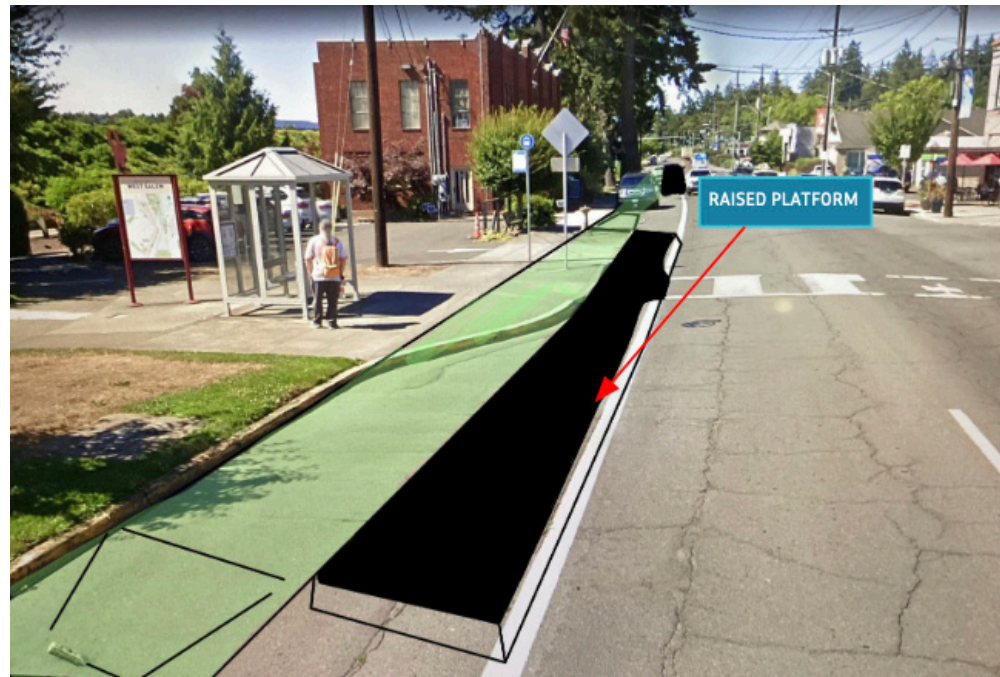


FIG. 3



Mockup street redesign by Maya Beal, Max Morley, Devon Trepess, and James Femino

As this area has many businesses, a farmers' market and is near a residential zone, it could serve as an ideal location for a potential bikeshare station, should a system relaunch, to provide more opportunities for nearby residents to travel within the neighborhood efficiently

and safely. Additionally, there is a lack of places to lock a bike. If community members were to try to ride to the market or a business, there are very few options for places to safely store their bike so this area could also benefit from increased bike parking.

COMMERCIAL STREET REDESIGN

Current Design

Currently, the design of Commercial Street is solely focused on automobile travel and parking. Commercial is a one-way street that runs south and cuts through downtown Salem. The current layout of the street in the downtown area is three large lanes for traffic and 60-degree angled parking on both sides of the street. The outside traffic lanes are 14.5', and the middle lane of traffic is 13', while the parking on both sides is 15' wide. As for south of downtown, there are three full lanes of car traffic. With this focus on automobile transportation there is a limited focus on bicycle infrastructure on Commercial Street which ultimately means these are unsafe conditions for cyclist to ride on this street. The corridors car volumes are also below current built capacity.

Proposal

Students created three plans to improve bicycle infrastructure on Commercial Street. The “Gold plan” is their most aggressive plan which takes the street down to one car lane with parallel parking on both sides of the street. On the outside of these parking spots will be eight-foot planting strips which will act as a buffer between cars and the ten-foot bike lanes that flow in both directions. South of downtown there will be no parking and the planting strips will be two-foot curbs acting as buffers. Bus stop design will follow the union street bikeway bus stop model already in place in Salem.



FIG. 4

Mock up redesign by Cooper Kingsbury, Mike Coburn, Josh Kaatz

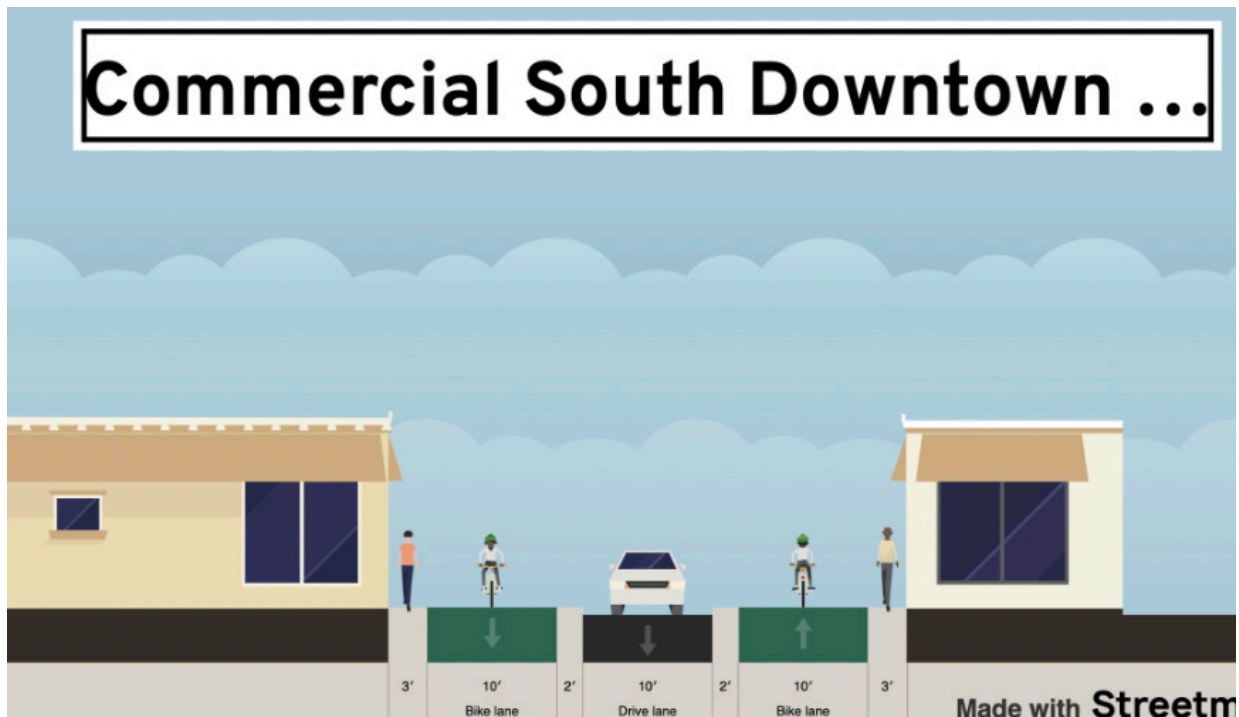


FIG. 5

FRONT STREET SE REDESIGN

Current Design

Front Street is one of the main roads in downtown Salem. It is a hub for local businesses, shops, and restaurants, contributing to the City's economy by attracting both residents and tourists. Front Street facilitates transportation within the City, especially since it is connected to OR-22. Its connectivity to key areas makes it an important route for commuters, cyclists, and pedestrians.

Front Street is connected to the main entrance of Riverfront Park, which includes ample greenery, play structures, the Gilbert House Children's Museum, and a bike bridge that connects to the other side of the Willamette River. Currently, Front Street is very car-centric, with cars being the easiest mode of transportation. The bike lanes are about six-feet wide and unprotected, making it unsafe for cyclists. Pedestrians also have difficulty accessing

Riverfront Park. The car lanes are around 12-16' wide, making it challenging for pedestrians to cross the street due to insufficient time to get from one side to the other. Many intersections lack a safe pedestrian island in the middle, forcing pedestrians to navigate crosswalks dangerously. However, the intersections of State Street and Court Street, the two main entrances to Riverfront Park, do have large pedestrian islands.

Proposal

Students expanded the bike lane from six to nine feet and added a three-foot planter box buffer to separate cyclists from drivers. The bike lane has two options, a line that continues straight and a right turn lane. On either side of these is a bike footrest so cyclists going either way have a comfortable stop. For cyclists continuing forward there are dashed lines that indicate where their lane continues. This lane has also been expanded.

For cyclists turning right, the dashed markings on the road indicate the continuation of the bike lane as it is moved behind car parking. The orange color in the image is used as a placeholder and stripped buffer area provides room for car doors for additional safety.

A signal dedicated only to bikes was included to give priority to cyclists turning right and ensure that cars are not turning into cyclists continuing straight. The blue pentagon represents wayfinding for cyclists as they enter downtown. Stripped crossings and tactile paving were included to improve the comfort and safety of pedestrians.



FIG. 6

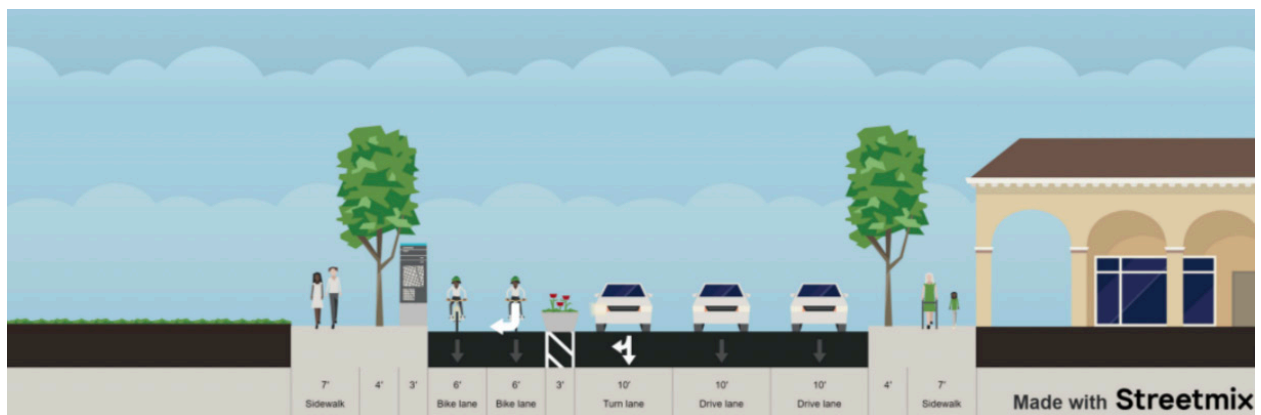


FIG. 7

Mockup redesign by Catryn Beddoes, Sulwyn De Crozuc, and Tara Marasco

KUEBLER ROAD REDESIGN

Current Design

The current design of Kuebler features two lanes of car traffic traveling east and two traveling west. A small amount of space is allocated to bike lanes, but they are only separated from cars by a painted line. The speed limit here is 45 miles per hour, which can deter people if bicycling feels unsafe. Kuebler Blvd. connects the neighborhoods of south Salem to commercial areas, grocery stores, schools, and churches. Kuebler Blvd. offers easy connections to potential and existing bike routes leading to downtown.

Proposal

The proposed designs suggest the use of four-foot (center example) and two-foot (bottom example) barrier curbs between bike and car traffic. These changes are made between Battle Creek Rd. and Liberty Rd., 2.5 miles. These suggestions can easily be substituted with more affordable types of barriers.

Raised bollards or concrete bumps may be preferred for these models; the featured bike lanes are wide enough that utility vehicles may be able to drive in them without hitting the barriers.

Proposal 1

The first redesign features a very wide barrier between car and bike traffic. A four-foot-wide barrier increases safety for cyclists by decreasing the likelihood of a car entering the bike lane even if it accidentally swerves onto the barrier. This proposal also recommends reducing the number of continuous car lanes from two to one traveling in each direction. Reducing the total number of lanes dedicated to cars will decrease the average speed of car traffic making the area safer for anyone crossing the street on bike or on foot at an intersection. When cars are already established in a single lane, they can use a single-lane roundabout more easily, safely, and efficiently.

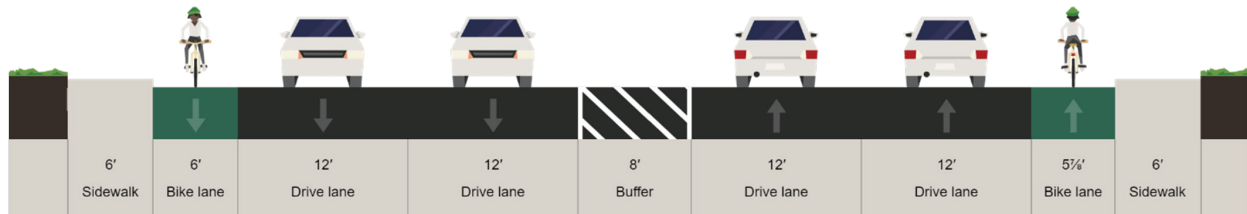
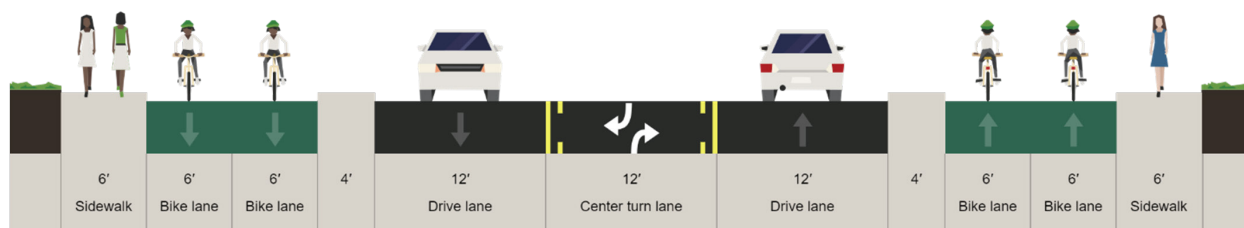


FIG. 8

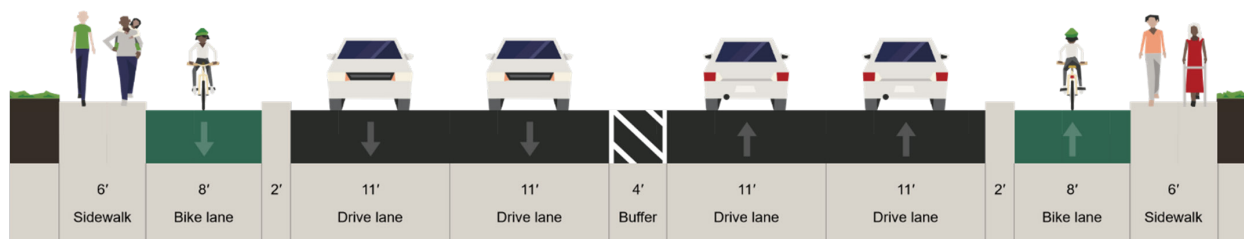
This proposal also features two bike lanes traveling in each direction, effectively a 12-foot-wide bike lane on each side of the street. This allows faster cyclists to pass slower cyclists without either person

feeling squeezed or forced out of their lane. Wider bike lanes make it easier for parents to ride with their children or for friends to ride side by side.

**FIG. 9*****Proposal 2***

The second proposal recognizes that there is frequent pushback from communities when a proposal is made to eliminate a lane of car traffic. In this model, car lanes and the buffer area between traffic of opposing directions are reduced in width.

Drivers will use more caution and drive more slowly when lanes are narrower. A narrower center buffer will also deter people from speeding by making opposing traffic feel closer. This model allows the bike lanes to be expanded to eight feet wide with room for a two-foot-wide buffer.

**FIG. 10**

Filtering Car Traffic

The goal of the filtering group was to establish a more interconnected city by creating a traffic filtration system, upgrading bicycle lanes, and a pedestrian bridge across the Willamette. Students main priorities for this project were to:

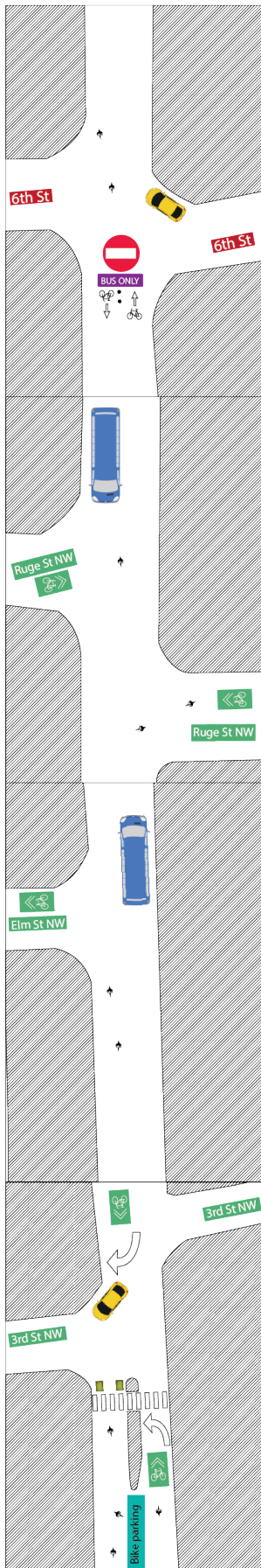
- Create more accessibility to public parks
- Provide a safer environment for the students of Walker Middle School and their families
- Enhance the quality and safety of biking in the neighborhood.

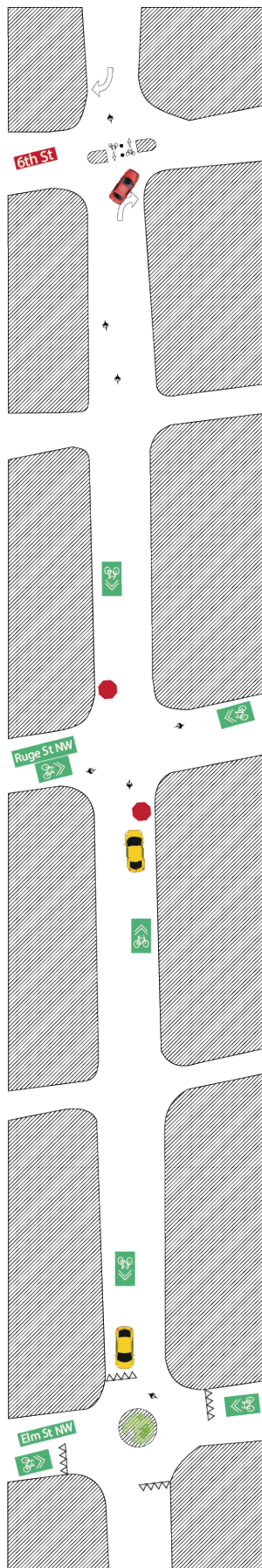
ALTERATIONS TO GERTH STREET

Gerth Street has incredible potential to become a bicycling hub for Walker Middle School and create street connectivity throughout the Northwest Salem area and surrounding neighborhoods. Gerth Street extends directly to the middle school and is the connecting street for the Gerth Street Pedestrian Bridge. To improve the safety and efficiency of Gerth Street, the proposed additions and alterations include increased bike greenways, increased protected bike lanes, increased bike parking, bus, and bike entrancing only, and forced left hand car turns. Designating more greenways for bikes will promote cycling as an ideal mode of transportation while reducing the risk of traffic accidents. Protected bike lanes are a more attractive route for cyclists as there is a physical barrier between the pedestrian path and the road while minimizing the chances of collisions. Increased bike parking and the addition of a bike share system make bicycling more convenient and worry free while providing affordable and easy access to bicycles for the public. Bus and bike entrance and forced left hand turns are both methods to reduce traffic congestion and ultimately add to the creation of controlled and safe street environments.

FIG. 11

Alterations to Gerth Street





ALTERATIONS TO MCNARY AVENUE

Another central street in the Northwest Salem area is McNary Avenue, which is important to maintain the connectivity and safety of Salem's additional bicycling infrastructure. The additional proposed infrastructure on McNary Avenue includes a roundabout with yield signals, rotated stop signs, forced right hand car turns, and increased biking greenways. The addition of roundabouts on McNary will manage traffic flow more efficiently and allow pedestrians and bicyclists to navigate the intersection more smoothly without unnecessary delays. To further minimize collisions and other conflicts, forced right hand turns prevent cars from attempting dangerous left turns across bike lanes or intersections. Thus, this helps streamline car traffic and offer reliably safe paths for cyclists and pedestrians.

FIG. 12

Alterations to McNary Avenue

PEDESTRIAN BRIDGE ACROSS THE WILLAMETTE RIVER

The addition of the pedestrian bridge is a critical feat of this proposal that has many social and economic benefits. Implementing a bridge across the Willamette via Gerth Street will not only connect the East and West sides of Salem but also reduce travel times and is an integral cycling route that protects pedestrians from fast moving and oncoming traffic. The current bridges, Center Street Bridges and Marion Street Bridge, are inefficient commutes from individuals living in South Salem and do not provide adequate or safe bicycling infrastructure to allow pedestrian usage.

The addition of the proposed pedestrian bridge would create an alternative route strictly for pedestrian biking and walking that entirely separates car traffic from foot traffic - creating a safer and more inclusionary route for Salem citizens. Furthermore, the Gerth Street proposed bridge also connects downtown Salem to Minto Island allowing for pedestrian access to parks and other biking and pedestrian paths. Overall, the driving design goal of the new bridge is to make biking safer and more accessible and raise awareness of biking as an increasingly popular alternative mode of transportation.

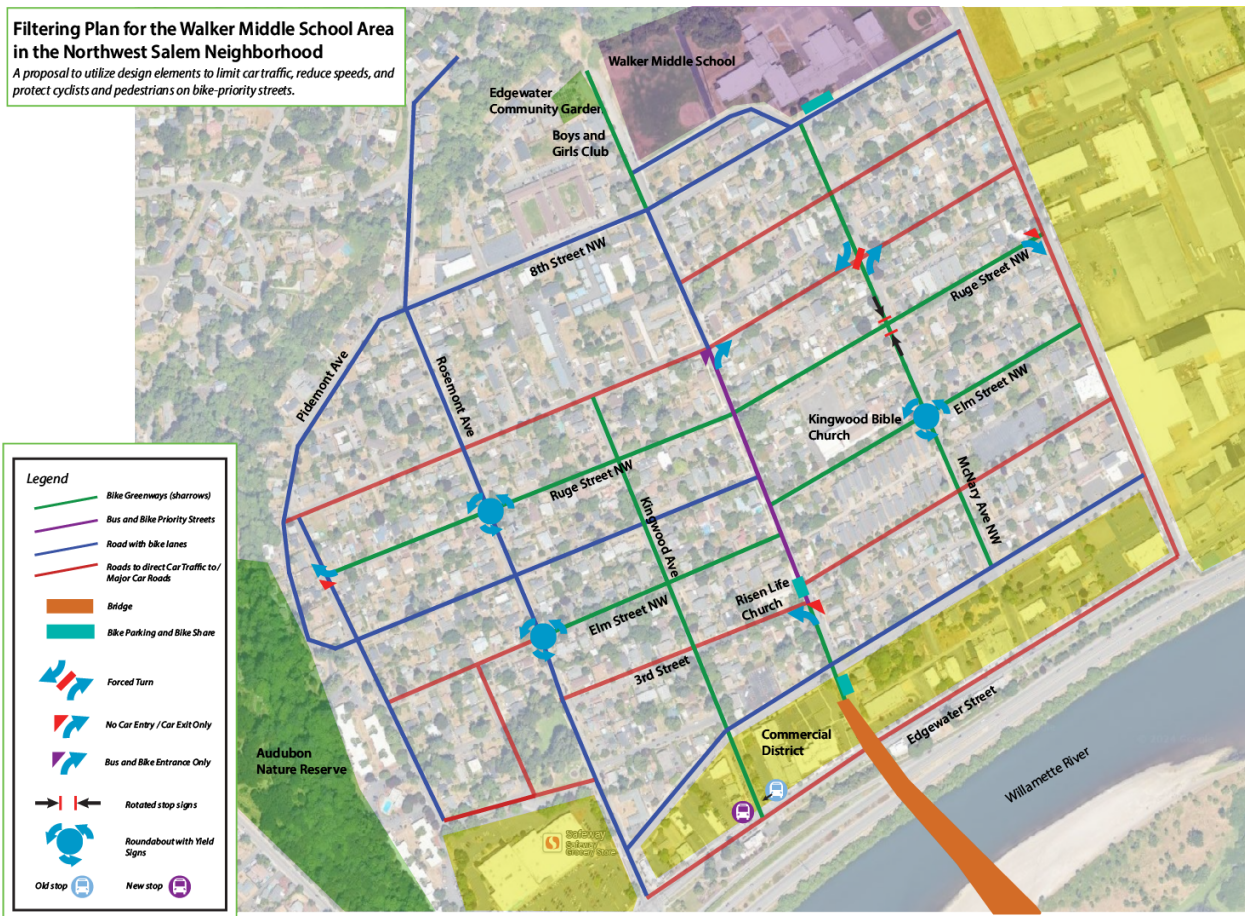


FIG. 13

Residential Redesign

NORTHGATE PARK

Northgate Park is the perfect location for people of all ages to get outside together. To achieve this, however, it must be accessible to all people. Updates needs to be made to the surrounding streets and park entrances make it more accessible by active transportation users.

Current Design

Currently, students felt it was unsafe to travel to Northgate Park by any method other than by car. There are no visible bike racks and sections of the streets have no streetlights or sidewalks. This prevents not only people from walking to the park but can also serve as a disability issue. People who have mobility issues, or may need a mobility aid like a wheelchair, are currently forced to either travel on the street to get to their neighborhood park or likely can't truly enjoy it at all without someone helping them get there by car. The streets themselves also seem to need repaving to allow proper traffic to come to the park without further street damage.

- Northgate Ave NE: No bike lanes, no stop signs, and end of road blockage
- 31st Ave NE: No bike lanes, end of road into another with no stop signs, and sidewalk only on one side
- Carelton Way NE: No bike lanes, unprotected sidewalks
- Fairhaven Ave NE: End-of-road parking not including bike infrastructure or

parking, No bike lanes, and sidewalk only on one side

- Entrance to Northgate Park via Hawthorne Ave NE: No bike-designated areas, and no bike parking or infrastructure
- Entrance to Northgate Park via Northgate Ave NE: Large road blockage, no bike access to sidewalks, and no bike parking
- Entrance to Northgate Park via Fairhaven Ave NE: Parking lot blocking entrance, a singular small sidewalk, no bike lanes

Proposal

Students highlighted the following objectives for the street redesign:

1. Neighborhoods will connect to each other and downtown with comfortable bikeways along key arterials.
2. The Salem Commuter Rail Station will be accessible via comfortable bike infrastructure from all approaches.
3. Salem will connect to Beverly, Marblehead, Lynn, and Peabody with on- and off-street bikeable connections.
4. Recreational trails and parks will be easy to reach by bike for people of all ages, abilities, and backgrounds.
5. Processes, regulations, and programming will embed biking into the daily decision making of Salem staff and officials.



FIG. 14
31st Ave. before



FIG. 15
31st Ave. after



FIG. 16

Northgate Ave. before



FIG. 17

Northgate Ave. after

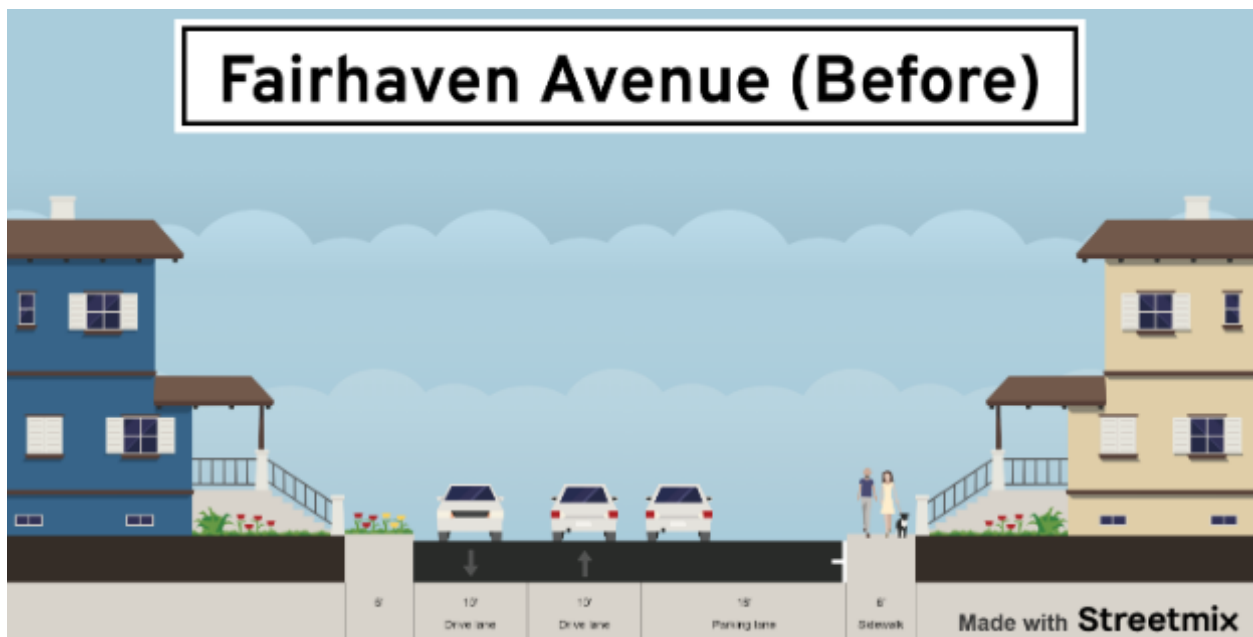


FIG. 18

Fairhaven Ave. before



FIG. 19

Fairhaven Ave. after

**FIG. 20**

Carleton Way before

**FIG. 21**

Carleton Way after

Additionally, students proposed a redesign of the park entrances to best utilize space and allow for smooth park entry.



FIG. 22

31st Ave. entrance before



FIG. 23

31st Ave. entrance after



FIG. 24

Hawethorn Ave. entrance before



FIG. 25

Hawethorn Ave. entrance after



FIG. 26

Fairhaven Ave. entrance before



FIG. 27

Fairhaven Ave. entrance after

HOOVER ELEMENTARY TO GEER COMMUNITY PARK

Current Design

Geer Community Park is an existing asset to this region. It already has bike paths within the park, ball fields, bike park, and a trail area. The park is a beautiful place for cyclists and improved infrastructure would help the community travel there safely. This area was chosen by students to increase north south bikeability in a more residential area of Salem, especially for elementary school students who are crossing the busy crossroads of D St. and Center St.

Proposal

Students proposed a protected bike network from Hoover Elementary School to Geer Community Park in the Northeast Salem Community Association (NESCA) region.

The network would begin on Savage Road Northeast and connect through D Street, Vinyard Avenue, Center Street, and Illinois Avenue. The network would then continue through the park and circle around the parking lots to get cyclists back to Center Street from the back of the park. Students

propose creating a designated bike lane along Park Avenue continuing up to Center St to better connect the network. Adding a ramp and more signage to the park entrance on Illinois Avenue will make this entrance clearer and more widely known.

Currently, there are bike lanes on both sides of Savage Road NE (where Hoover Elementary is located). However, once it intersects with D St NE all bike lanes disappear. The students propose a protected bike lane while leaving the south side of the street for parking. Creating a protected bike lane on the north side of the road will allow students to bike to school safely and comfortably.

Currently, there are bike lanes on both sides of Center Street NE but there is no protection. Cyclists are biking directly next to moving vehicles. This street proposes challenges as it has a turning lane. However, the lanes are wide enough to allow for a larger protected bike lane on the north side of the street. Increased painting and signage would also be necessary as cyclists would need to cross Center Street to continue to the park.

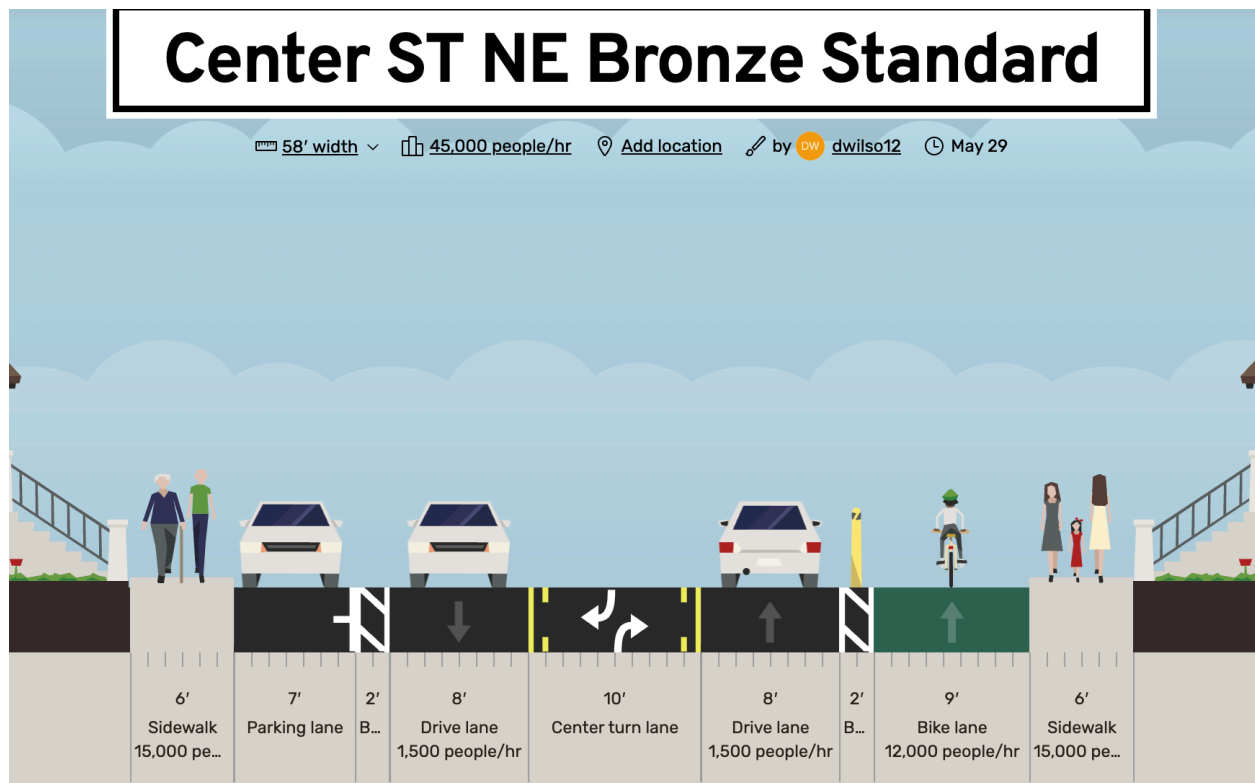


FIG. 28

Students suggest that bike lanes be added on both sides of the street to increase cyclist comfortability, safety, and visibility. Further, it better connects the region as cyclists can reach destinations on the north or south side of the road. Here, students suggest the addition of trees as a barrier to help with the beauty and environmental conditions of the area. For Vinyard Avenue, planter boxes should be placed at the edge of the bike lane. This

placement will allow cyclists continuous movement while slowing down turning vehicles to improve safety.

The improved proposal adds protection and widens the existing bike lanes. These lanes would increase cyclist comfortability, safety, and visibility. Adding painting through residential streets also helps cyclists with wayfinding from Hoover Elementary to Geer Park.

**FIG. 29**

The most favored design amongst students moves the bike lane to the south side of the street while also increasing the barrier between cyclists and moving vehicles. The travel lane is also reduced to one lane to reduce general vehicle speed. Moving the bike lanes to the south side will

make it easier for cyclists to access Illinois Avenue and Geer Park. Reducing the travel lanes also increases the safety of drivers as it reduces their speed. These lanes would increase cyclists' comfort, safety, and visibility.

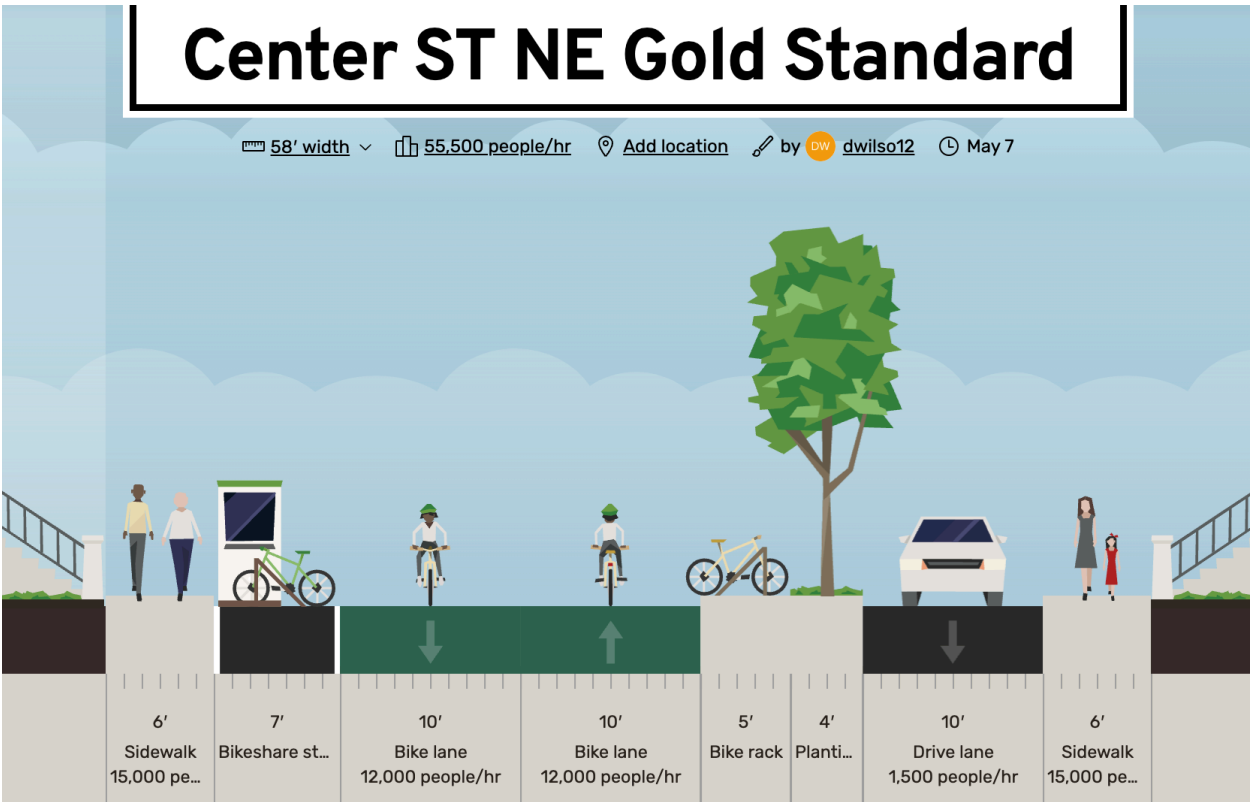


FIG. 30

CAPITAL STREET

Context

Students chose Capital Street for a redesign for the following reasons:

- Community Connection: High potential to connect multiple communities
- Accessibility: Ideal for encouraging walking and biking with safer, protected bike paths extending North-South

- Support for Young Riders: More accessible routes for young and inexperienced cyclists

Proposal

Students created three ideas for a potential redesign, naming them Gold, Silver, and Bronze tier. The Silver and Bronze phases serve as steppingstones towards achieving the Gold phase.

Bronze



FIG. 31

This first section of the proposed new bike path would convert Capitol and Court through Capitol and Center from a two-

way street into a one-way street, using the extra space to create room for a two-way, protected bike lane.

Silver

This second section of the proposed bike path covers Capitol and Center through Capitol and Marion and would replace the

current parking lane with a two-way bike path, moving the parking to the left and removing only one vehicle lane.

Gold



FIG. 32

This final section of the proposed bike path stretches from Capitol and Marion to Capitol and D St., where it eventually reaches Parrish Middle School. It replaces

one of the vehicle lanes with a two-way bike lane, keeping the other two vehicle lanes and the parking lane intact.

Safe Routes to School Redesign

In a continued effort to expand and enhance Salem's bicycle network, residential streets and roads near schools serve as practical locations to implement bike-friendly infrastructure. Unlike a major arterial or downtown road, in which higher speed limits create unsafe conditions and nearby businesses can exert undue influence over street redesigns, residential and school roads present the perfect testing grounds for innovative bicycle designs.

Students selected the areas surrounding Englewood Elementary, Parrish Middle School, and North Salem High School to increase cyclist connectivity between the three schools and enhance existing bike infrastructure. Their plans include major and minor arterial street redesigns, intersection redesigns to decrease car speeds and increase cyclist and pedestrian navigation and safety, as well as school-specific alterations to parking lots and surrounding residential streets.

SAFE ROUTES TO SCHOOL REDESIGN – GROUP 1

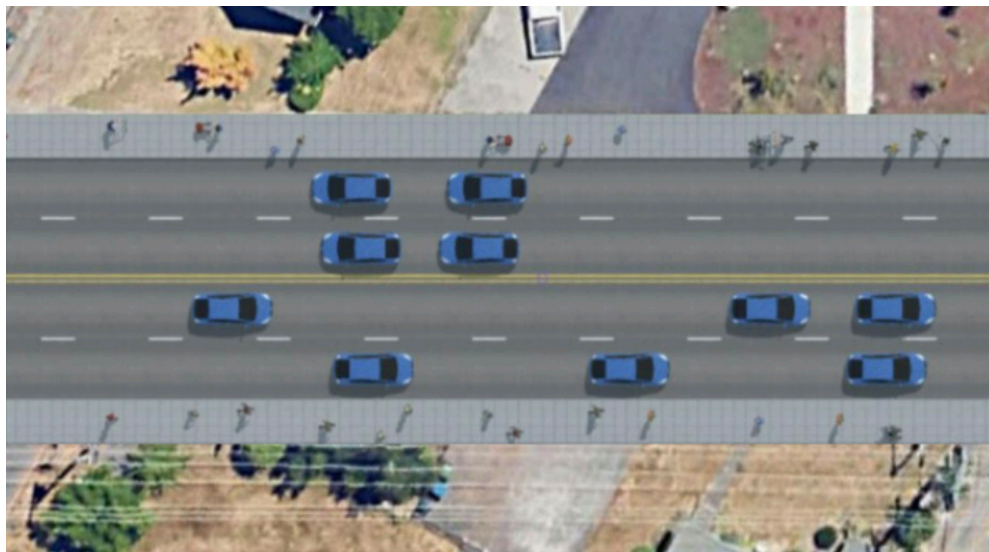


FIG. 33

Market St. before

Proposal

Currently, Market St NE has four eleven-foot lanes for car travel and eight-foot sidewalks on either side with no green space or bicycle infrastructure. Speeds

are high, because, despite a 30-mph limit, there are no physical restrictions that encourage drivers to follow the speed limit.

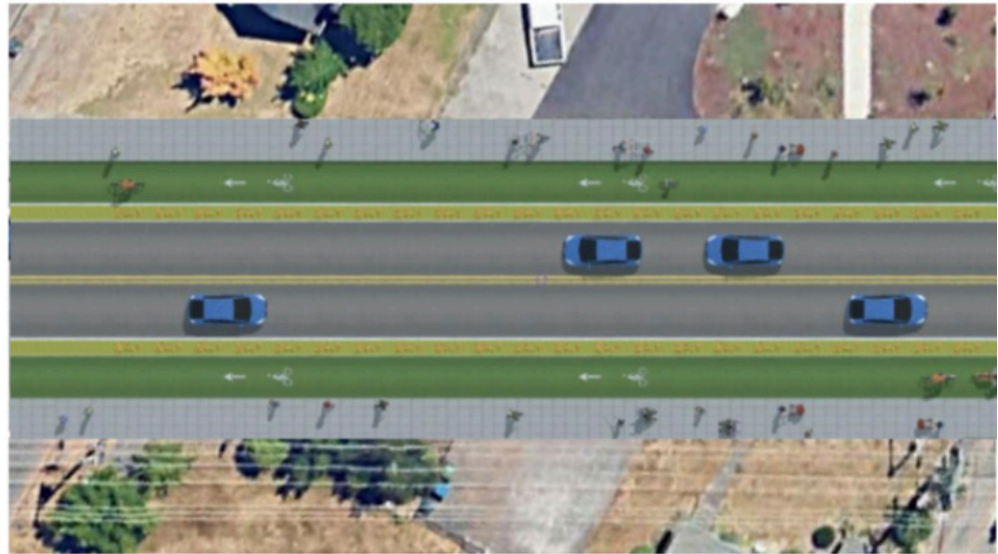
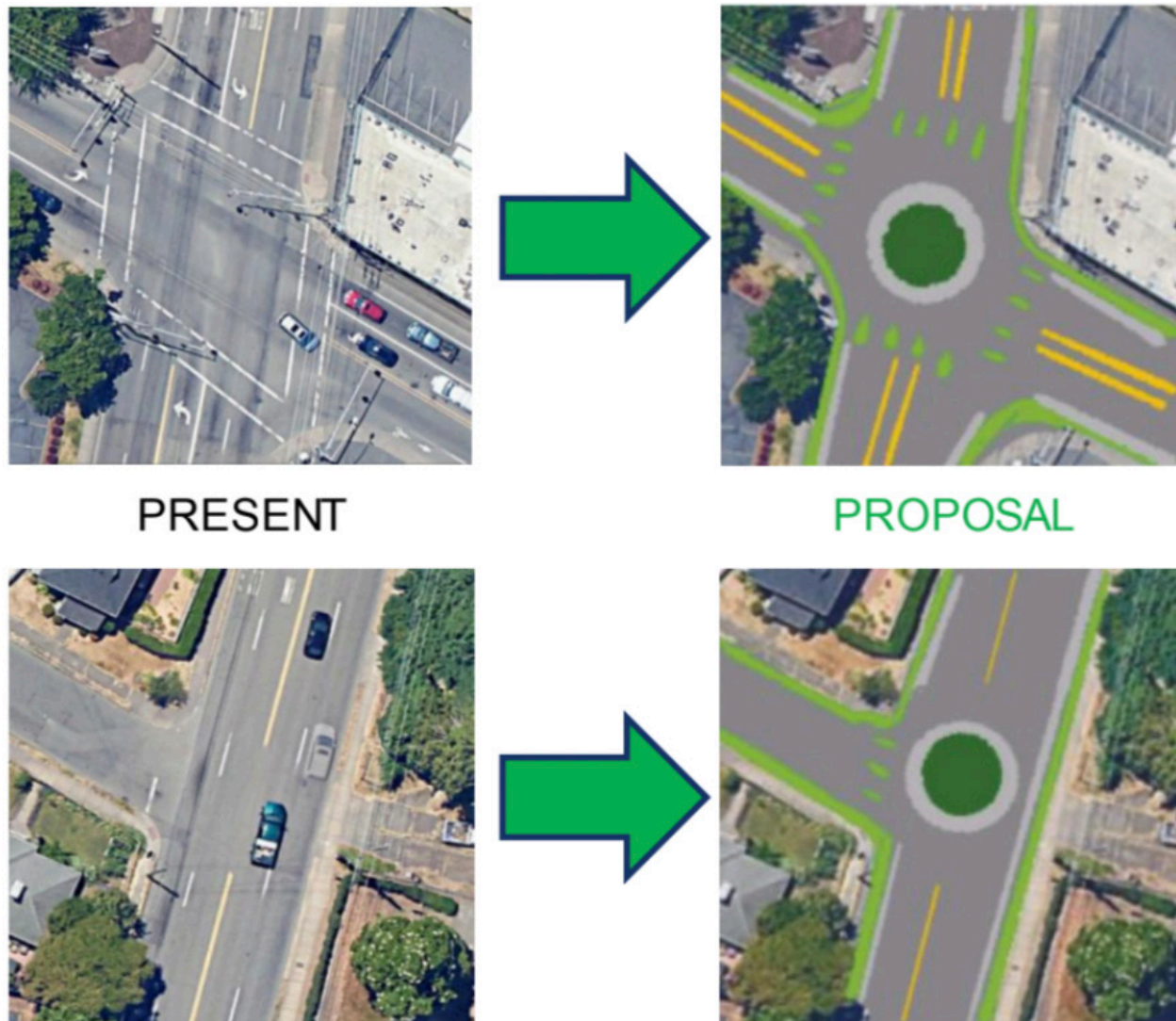


FIG. 34

Market St. after

Adding bike lanes to either side of Market St NE and implementing planting buffers between car travel and bike lanes will increase the safety of bicyclists and

pedestrians, encourage slower speeds, and increase bicyclist connectivity for a large portion of west Salem.

**FIG. 35**

Market St. roundabout

Market St NE & 17th St NE (near identical to Market St NE & Capitol St NE) is a four-way intersection that must be adapted to accommodate bicyclists and make pedestrians visible. Adding a traffic circle will help maintain the flow of traffic while allowing all modes to travel through safely.

Market St NE & 14th St NE is a three-way intersection that also needs updating to accommodate bicyclists and pedestrians. Adding a traffic circle will include those entering or exiting 14th St NE in the flow of traffic while increasing cyclist and pedestrian safety.

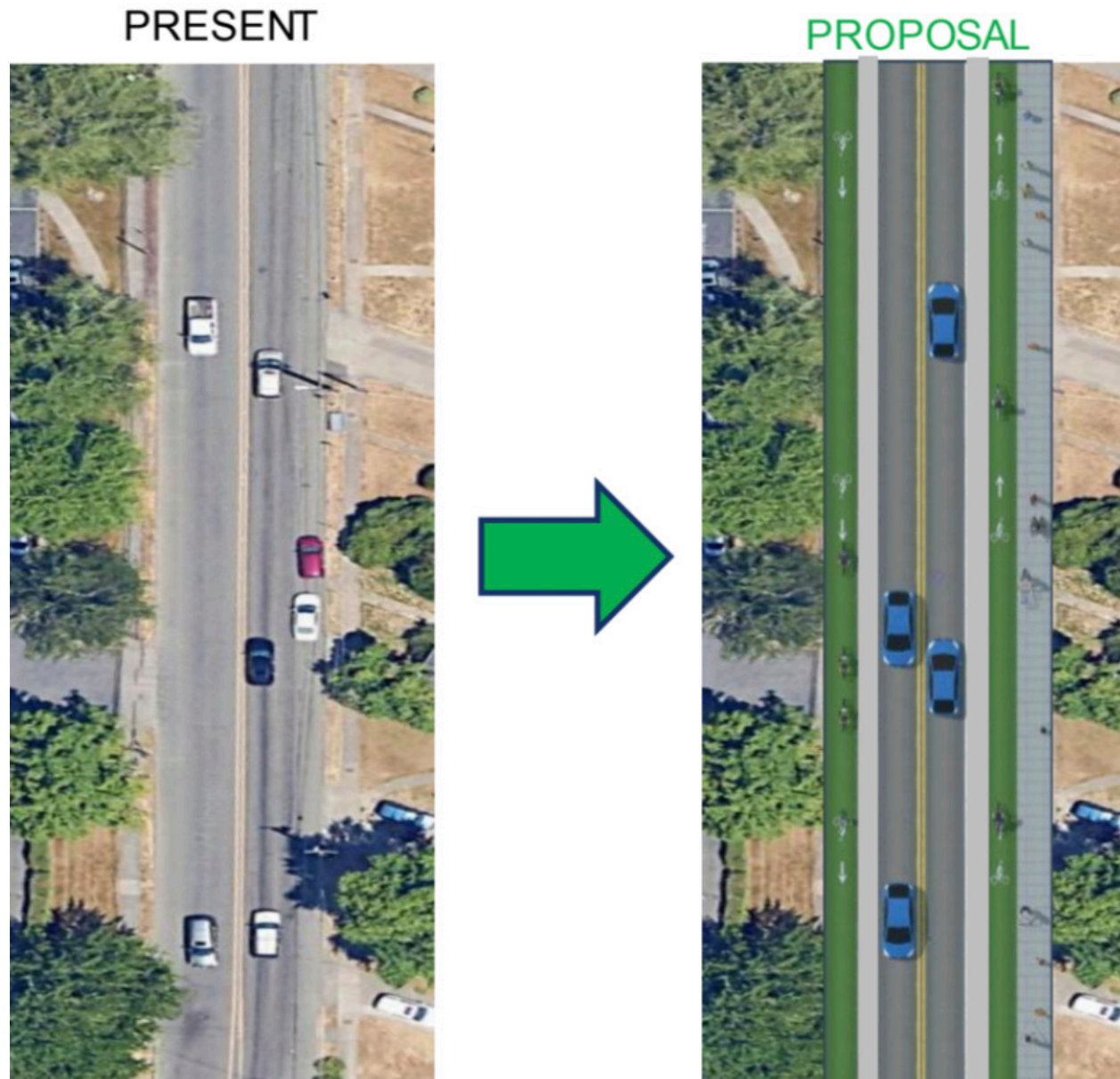
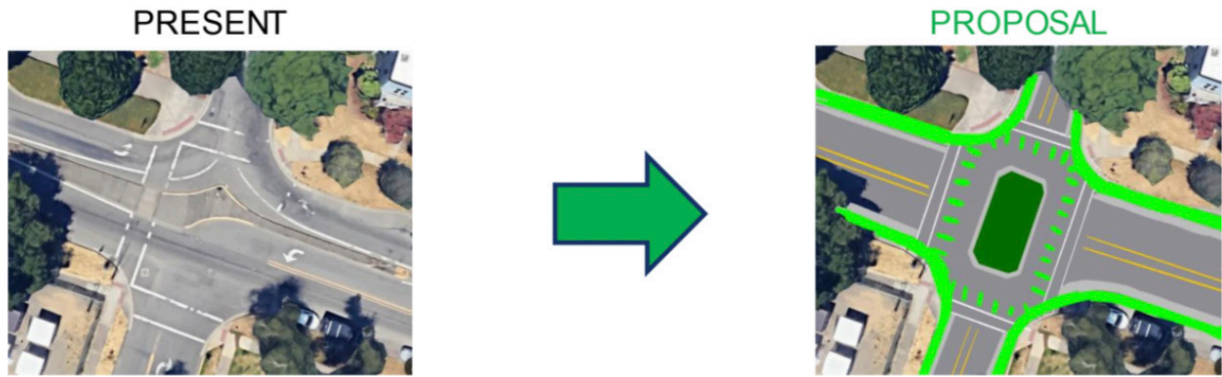


FIG. 36
Center St.

Center Street NE is a high-speed area. Narrowing car lanes will reduce speeds and improve safety for all. Adding

protected bike lanes will allow for safe bike access. Repaving sidewalk gives pedestrians a safe space.

**FIG. 37**

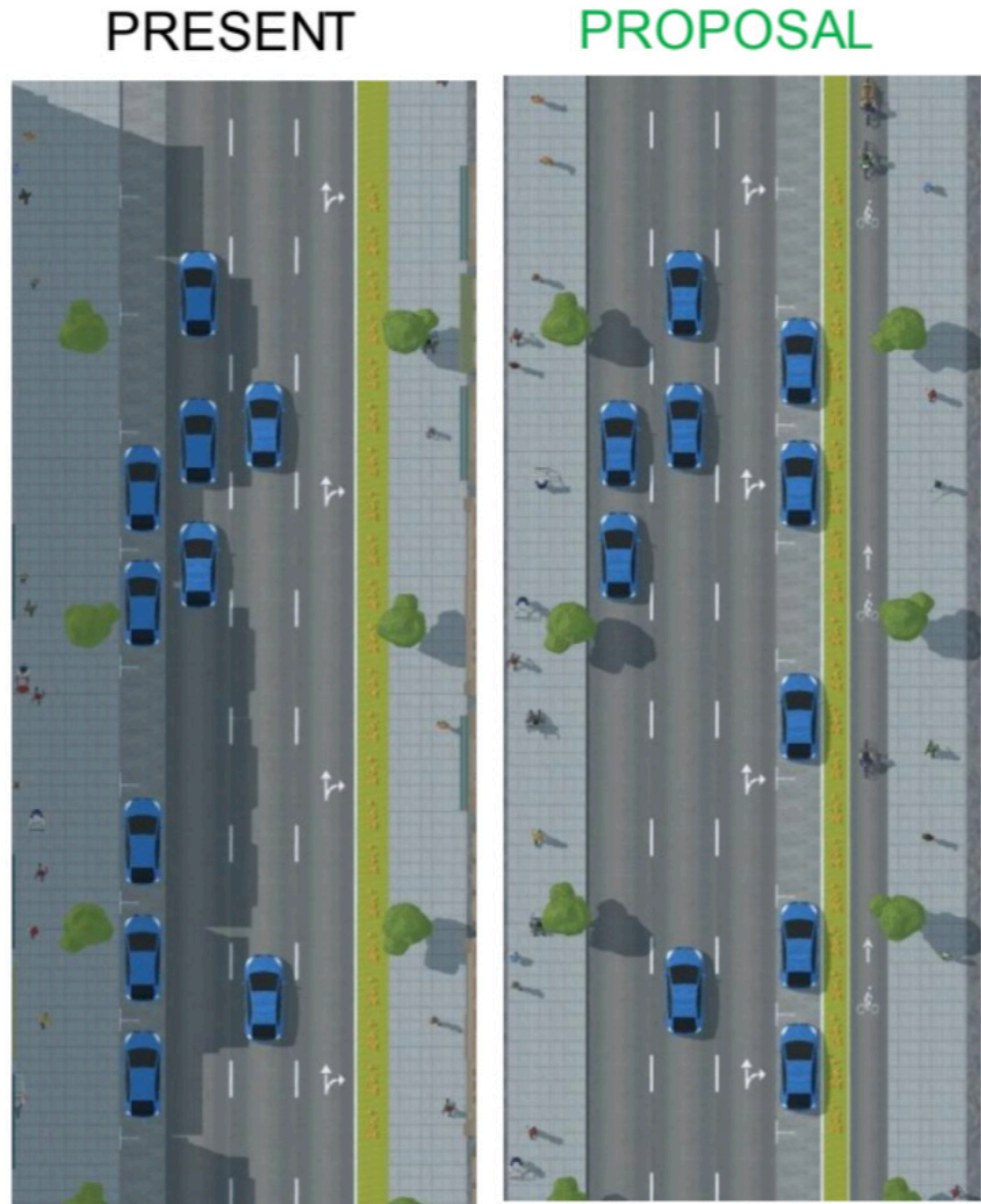
Center St. NE and 13th

Center Street NE and 13th currently have no bike lanes, short turn lanes that are susceptible to backups during peak hours, and a center median taking up space that could be used for more efficient methods of traffic flow. Student suggest improvements that include protected bike lanes separated from cars

via concrete medians, traffic circles that allows for improved flow and safety for all forms of transportation, one car lane in either direction to reduce congestion, and narrowing of car lanes to encourage slower speeds. Students recommend that similar designs be implemented at other busy intersections along Center Street NE.

FIG. 38

Capitol St. NE



Capitol St NE has three Northbound traffic lanes one of which is a turn lane, plus a lane for parking on the west side. Both sides have wide sidewalks and ten-foot buffers of trees, grass and shrubs. While there is a bike lane farther north, the section adjacent to Parrish Middle School has no bike accessibility. There is no clear, straightforward way for students to navigate this street on a bike to attend school.

This redesign connects to the existing one-way bike lane farther north and directly connects students to their school parking lot. Repurposing part of the large, raised sidewalk to create a buffered bike lane will not impact cars, and moving the parking lane to the east side will protect students biking to school from heavy traffic. No trees would require removal, which upholds the community's environmental goals.

Current, Englewood Elementary has infrastructure which includes multi-use paths, 19th St connection directly to major arterial Market St, curb extensions on the north side of Nebraska Ave at 19th to

20th to create space for a line of cars for drop-off/pick-up, a large parking lot along 20th St, and informal parking on E side of 20th St.

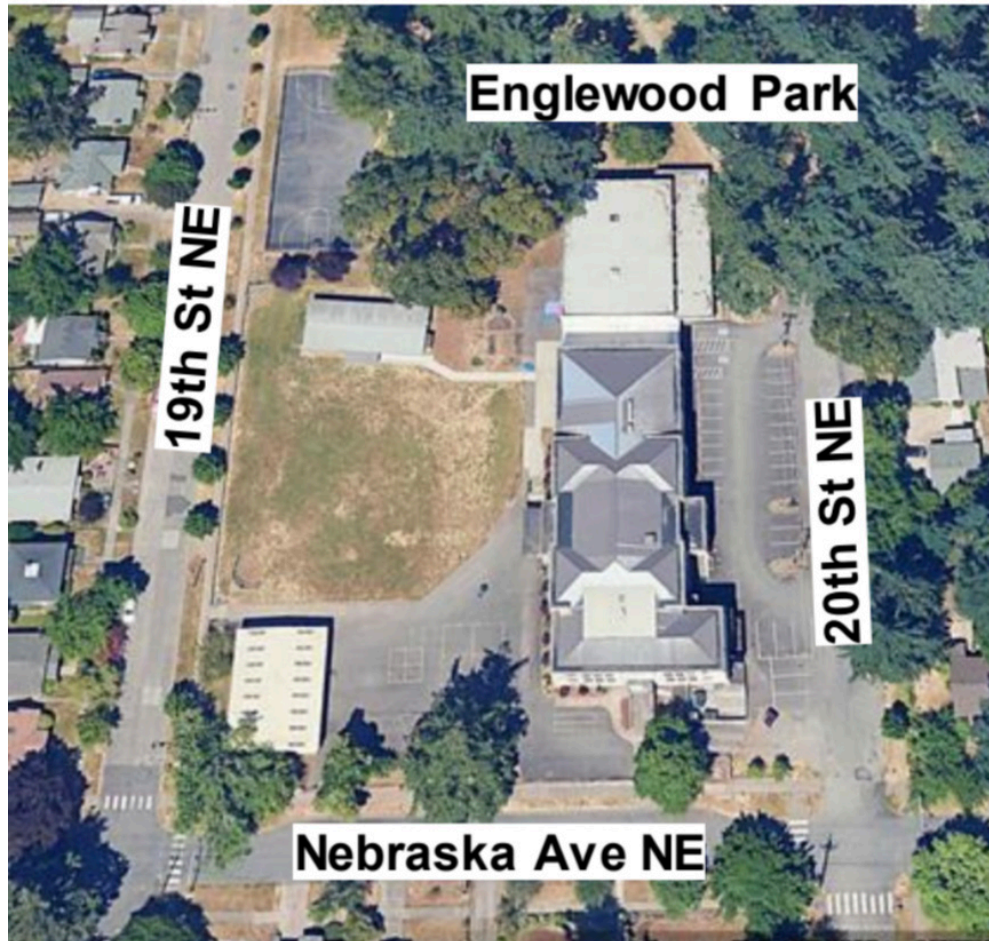


FIG. 39

Englewood Elementary
present

Students propose that Englewood Elementary implements a two-way bike lane on 19th St from Market St to Kay St and redesign intersection to facilitate bike safety, redesign the school parking lot to increase cyclist safety, and add

bike parking. Students recommend establishing Nebraska Ave as a bikeway from 19th to 20th, only allowing staff entry for parking on the south side of the street via 20th St NE, with no through traffic.

FIG. 40
Englewood Elementary
proposal



Currently, 19th St NE has seven-foot parking on both sides, two informal car traffic lanes, eight-foot strips of grass on

either side separating the street from the six-foot sidewalks.

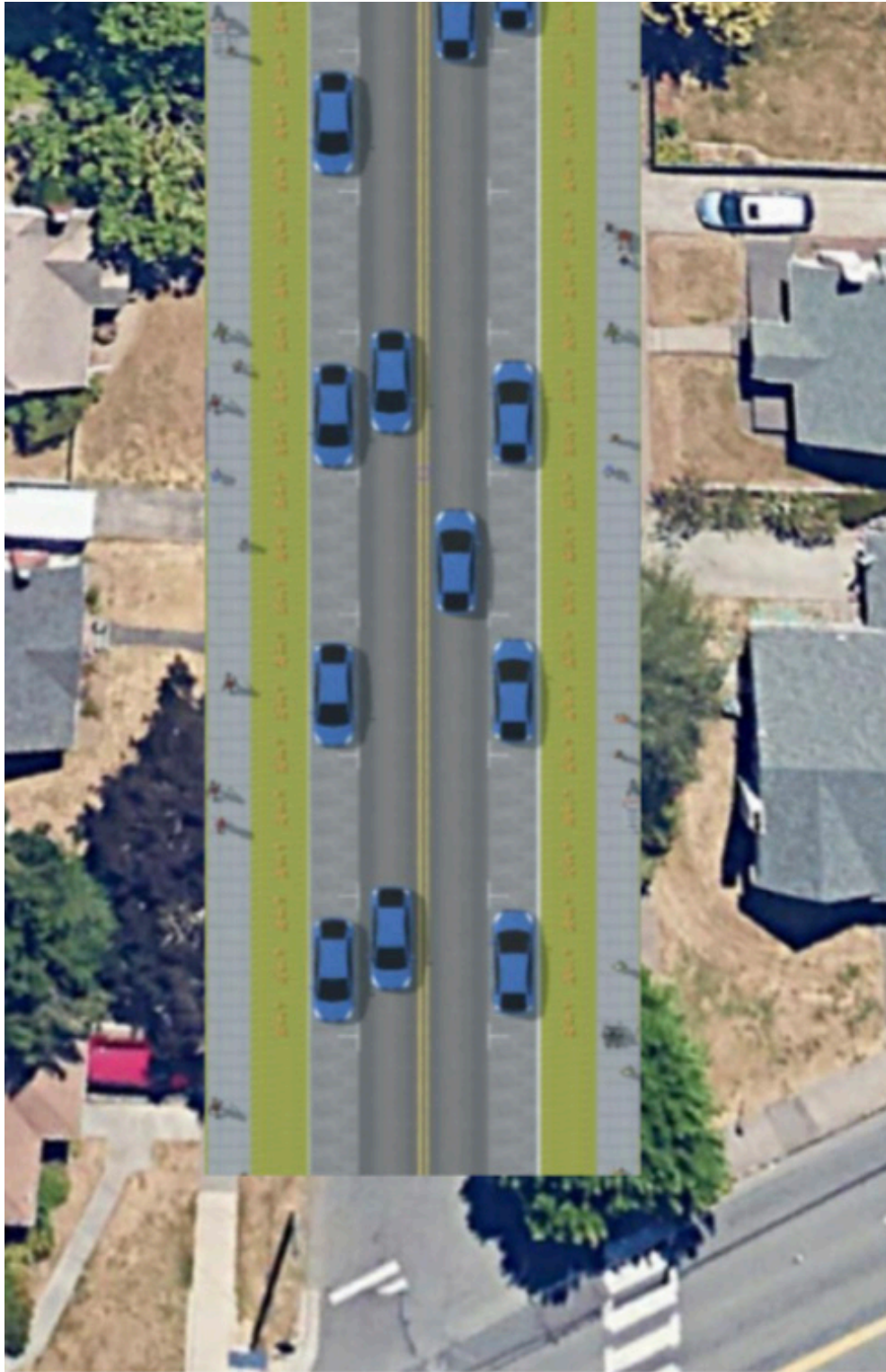


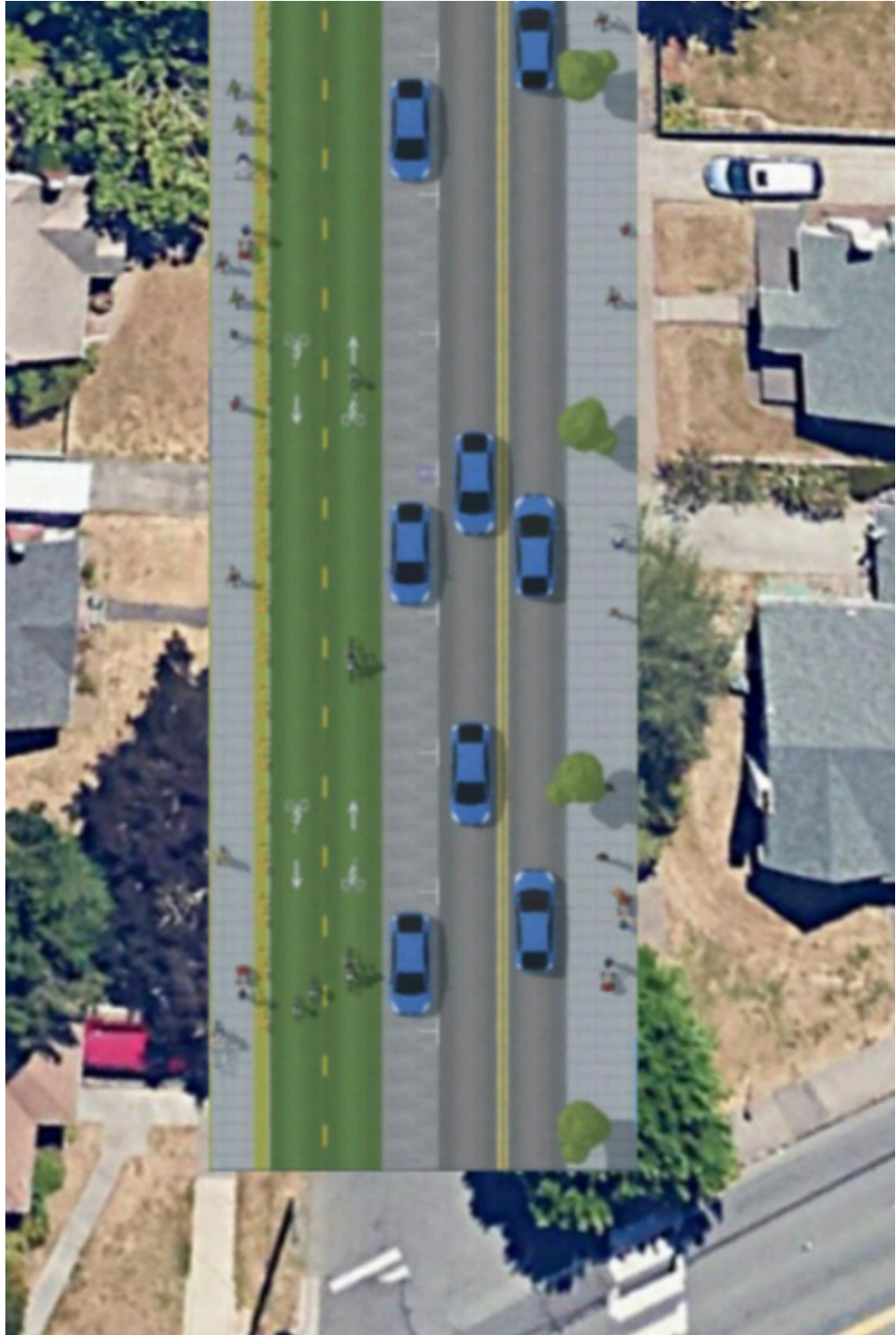
FIG. 41
19th St. before

Implementing a two-way bike lane on the east side (closest to the school) of 19th St NE between Market St NE and Kay St NE would connect the new Market St bike lanes to the Englewood Park multi-use paths and provide Englewood students

with a safer route to school. While green space and parking are important to residents, this proposal stretches only 0.1 miles and will provide large, safe bike lanes.

FIG. 42

19th St. after



Currently, Nebraska Ave NE provides two lanes of street parking and two lanes of car traffic, albeit small ones. The planting

strip is twelve-feet on the south side and five-feet on the north side of the street, and there are no bike lanes.

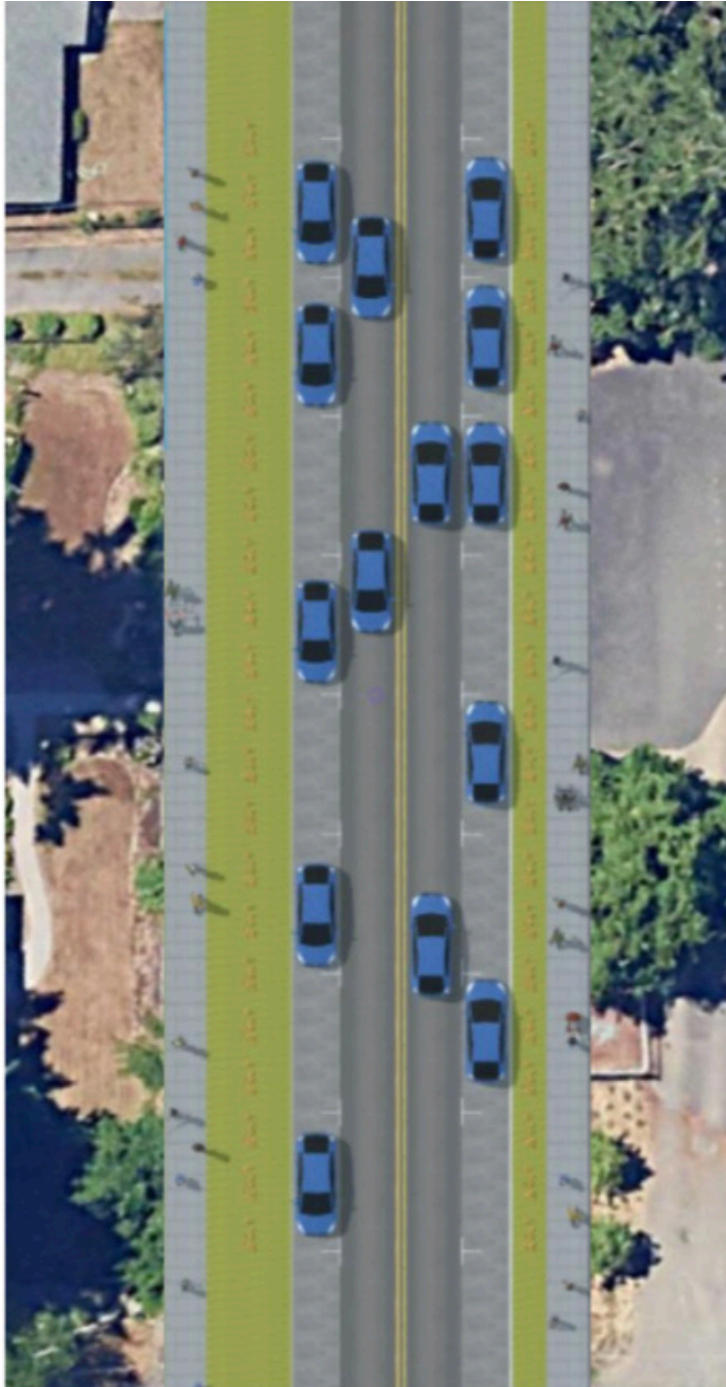


FIG. 43

Nebraska Ave. before

This greenway on Nebraska Ave between 19th St NE and 20th St NE eliminates parking on the north side of the street, and via signage only permits car entry for school staff who may enter and exit the greenway via 20th St NE to park on the south side of the street. A two-way

bike lane or open active travel space will allow bicycle passage, while permitting school staff entry at the 20th St entrance. Sidewalk bulb-outs on the north side of Nebraska Ave at 19th & 20th St will also discourage car entry.

FIG. 44
Nebraska Ave. after



SAFE ROUTES TO SCHOOL REDESIGN – GROUP 2

Background

This proposal addresses D St off Winter St to 14th St. This section of D St is situated next to Parish Middle School and North Salem High School and is bordered by neighborhood homes on the north side of the street. Students focused on connecting the Winter St Greenway, which goes through neighborhoods to streets connecting to the surrounding schools. Additionally, students aim to increase safety conditions through traffic calming measures and street beautification through planter boxes and student street art. The goal is to provide an equally simple, safe, and effective bike-lane design that allows for the seamless transition of the Greenway to D St. while encouraging active transportation to school through outreach and education programs.

Proposal

The recommendations for this section of D St. are set up in a staged implementation. The proposal involves narrowing, beautification, and cohesion with the Maple-Winter Greenway and 14th St redesign groups.

Phase One

For phase one, students propose creating bike lanes on either side of D St. The lane closest to the schools could be protected by a buffer and on the side closer to the neighborhood, students propose it to be protected by a car parking lane. In connection with the Winter-Maple Greenway, students want to implement signage for students that indicates turning towards the schools on D St. Students also plan to incorporate students from North Salem High School to beautify the roads with paintings and chalk. Students want to be able to add more bike infrastructure to outside of schools for students to keep their bikes in a safe place. Through Safe Routes to School programming, students can be informed on how to properly lock up their bikes especially starting at the middle school age.

Phase Two

Students propose bulb-outs at intersections and planter boxes/ pedestrian medians in front of North Salem High School as means of narrowing the road, thereby reducing street traffic, and creating a people-first environment in front of the school. Students also recommend monthly (ideally more



FIG. 45

frequent) bike and walk to school days in conjunction with Safe Routes to School and North Salem High School in which D St is blocked off from car traffic at the beginning and end of the school day. Combined with substantive bicycle education and celebration programs like those proposed in the book read by the class, Joyride, these events will greatly improve high school students' perception of biking.

Phase Three

Phase three will include narrowing the street section down to one lane of traffic. To control traffic, students propose the use of a portable traffic signal to control the flow of traffic for cars. The rest of the street will be blocked off for students biking and walking to school. This plan would take place during drop-off and pickup times for the schools.

FIG. 46



**Safer Route to School Redesigns:
Intersections**

Making intersection visibility a priority. Implement no parking on all four corners so that pedestrians, bikers, and drivers can safely see in each direction. This can be done in many ways, such as: painting yellow rectangular no-zone spaces,

texture paint, cones, bollards, new curbs, or filling them with greenery.

Adding a future bike share station at these locations could be a good way to utilize the space, allowing pedestrians, bikers, and drivers to still maintain visibility on all four corners.



FIG. 47

Wayfinding

Students propose an overhaul of the existing wayfinding system with a heavy emphasis on cycling. Students concentrated their efforts on the downtown and Riverfront Park areas because these are the best places in the city for cycling, meaning improvements will benefit more people, and they provide a wide range of environments to account for, giving their proposal the potential to be implemented city-wide.

CURRENT DESIGN

General wayfinding signs downtown do not stand out with information on one side, a map with emphasis on streets, and orientation with viewer symbolism on top. Directional signs for cyclists are not visible with color-coded route information and often have outdated and misleading directions and symbolism on top. In addition, students found the bike route map hard to read, only accessible online, lacked context, and the legend was hard-to-find and complicated.

PROPOSAL

Students recommended increasing the number of wayfinding signs in the City overall. They suggest having them either every block or every two blocks at intersections along bike corridors near Riverfront Park. They also recommend implementing the following map features:

- Current location
- Bus stops and integration with transit
- Emphasis on parks and leisurely riding
- Color-coded bike routes to help cyclists decide which routes to take based on comfort
- System-wide symbolism, pink theme, highly visible
 - Bike featuring Salem flag logo representative of cherry blossoms and capital city status
 - Directional arrows point to landmarks
 - Correspond with color-coded bike routes checked annually for inaccuracies

Micromobility

Students suggest that the City of Salem would benefit from a proper comprehensive bike share system. This innovative program would enhance the quality of life for residents and visitors while addressing various urban and sustainability initiatives and challenges. With Salem being the capital of Oregon, it should be the gold standard of how to design a livable walkable city. A successful system will offer numerous benefits such as reducing car usage, generating cleaner air, encouraging more physical activity, alleviating traffic congestion, and promoting increased connectivity across Salem. With a proper funding model from local nonprofits and a sponsor, as well as

a good system of hubs and functioning bikes, the City could help promote a more sustainable capital for the future.

RECOMMENDATIONS

Sponsors

The brand sponsor funds bike share in the form of a “rolling billboard.” A brand would pay money to the bike share operator in exchange for placing their advertisement on every bike that is part of the system. Examples include “CitiBike” in New York, “Niketown” in Portland, and “PeaceHealth Rides” in Eugene. For example, a potential brand sponsor for Salem’s bike share system could be Salem Health.



FIG. 48

Communal Partners

Funding, through communal partners, is necessary to help ensure long-term sustainability of the bike share system. There are a variety of governmental and non-governmental organizations local to Salem that each contribute a small amount of funding to operate the system. Examples of funding partners could be Cherriots (the transit operator), Willamette University, Salem-Keizer Area Transportation Study - SKATS (the local MPO), the City of Salem, and even the State of Oregon since Salem is Oregon's capital.

Service Details

A bike share system needs to be easy to use, with an ample number of bikes and hubs. In recent years, the popularity of cell phones has allowed using bike share to be easier than ever before. Users rent bikes straight from a mobile app and other features, such as seeing a real-time map of the hubs (and available bikes) so users can find a hub near their origin and destination. Note that with this system, rental options are still available for those who do not have a cell phone.

Costs and Memberships

For the system to be easy to use, the pricing/fare structure needs to be straightforward. Pricing should follow a similar model to other transit systems in the area. Pricing would still vary on the type of transport and type of membership, with standard bikes being the cheapest, with costs increasing for e-bikes and

more for e-scooters due to higher costs to maintain the batteries on e-bikes and scooters. Having various models and pricing can help the user determine what form of transit they prefer and offer alternatives. There should also be various price tiers and memberships like pay as you go, all-day pass, or monthly pass. Having tiers can help users determine the frequency and length of rides and can have options for determining their usage. A reduced rate should also be available for group employee passes and lower income plans.

Hubs vs Hubless

A bike share hub is a central place where bike share bikes can lock up to and park. Bike share operators have the option of using this "hub" model, or, going "hubless" allowing users to lock the bike anywhere throughout the service area. Both a hub and hubless system have benefits; the choice is made by the organizations involved. Hubs are more secure and maintain control. However, users may have to walk a while to get a bike, depending on the hub location. Hubless provides more flexibility for users, but bikes have a higher chance of theft. As learned in the bicycle transportation course, best practices suggest that in urban areas, hubs should be placed roughly every 500 meters (and every 200 meters for scooters). With hubs so close together, users shouldn't have to walk more than a block or so to access shared-micromobility services. This keeps the service attractive to use.



FIG. 49

Engagement Event Plans

GROUP 1

This group outlines a strategic initiative to promote biking and expand wayfinding rhetoric in Salem to enhance urban mobility, inclusivity, and sustainability. By encouraging biking, Salem can reduce traffic congestion, help Salem reach Oregon's Climate Action Plan goal of reducing greenhouse gas emissions, and improve public health, drawing inspiration from successful models in cities like Copenhagen, Utrecht, and London. Additionally, diversifying wayfinding systems to include multilingual and culturally inclusive signage will ensure equitable access to city resources for all residents, including non-English speakers and minority communities.

By integrating biking promotion with expanded wayfinding rhetoric, Salem can create a more connected, inclusive, and sustainable urban environment, setting a precedent for equitable urban development.

Proposal

- Students proposed the following ideas to promote biking in Salem;
- Bike Festivals and Events, such as Annual Bike Fair and Bike to Work Day, to raise awareness and enthusiasm for biking.
- Partnerships and Collaborations, including bike discounts and school programs, will engage the community and encourage biking.
- Public involvement and Feedback to be solicited through community

workshops and an interactive online platform, ensuring the resident input shapes the initiative.

- Enhancing Visibility and Accessibility through pilot projects and bike-sharing programs to demonstrate the benefits of improved infrastructure.
- Safety and Education campaigns, along the deployment of City of Salem Bike Ambassadors, to promote safe biking practices. Infrastructure Improvements, such as protected bike lanes and ample bike parking, to address safety concerns and make biking more convenient.
- Incentive Programs, like commuter rewards and employer incentives, will motivate more residents to choose biking.

One of the key components of this proposal is the implementation of multilingual signage throughout the city. This is particularly important in areas with high foot traffic and diverse populations, such as public transportation hubs, parks, and downtown areas. Including languages commonly spoken in Salem, such as Spanish, ensures that non-English speakers can navigate the city confidently.

As part of their ideas to reach more audiences, they created pamphlets that provide information in both English and Spanish. This allows information to be accessible and comprehensible to a diverse community and reach that audience that forms a big part of the City of Salem.

HOW CAN BIKING LEAD TO A POSITIVE CULTURE CHANGE

Biking can lead to a positive culture change because it helps with the health and wellness of the culture, it can also lead to social and more community engagement.

- Cycling will reduce air pollution and create a positive impact compared to cars.
- Bikes require less resources to manufacture and maintain compared to cars.
- In the economic factor, biking is a low-cost mode of transportation.
- For safety, more bikes and less cars will reduce traffic congestion and improve overall traffic flow.
- Well-designed biking infrastructure can enhance safety for all road users.

Biking is better than car use because communities create a positive cultural shift towards healthier, more sustainable, and socially connected living environments.

Overall, biking enhances the quality of life in communities by promoting health, environmental sustainability, economic vitality, social cohesion, and urban efficiency.

EVENTS

Sunday Streets (with HOOPLA/Food Trucks)

Hoopla (3x3 basketball tourney)
Salem Capitol July 23-28
Deadline to register Tues, July 9

Salem Bicycle Club

1) Monday's: Keizer Evening Ride
June 3, 10, 17, 24 at 6:15 PM weekly
Meet in Keizer Station shopping center in front of REI
6035 Ulali Dr. Keizer, OR 97303
Event Contact: Mark Lebow (503) 390-4627
***Registration not required**

2) Tuesday's: Keizer Morning Ride
June 4, 11, 18, 25 at 9 AM weekly
Meet in the Keizer Station shopping center in front of REI
6035 Ulali Dr. Keizer, OR 97303
Event Contact: Doug Parrow (503) 931-0588
***Registration not required**

3) Wednesday's: East Salem Morning Ride
June 5, 12, 19, 26 at 10 AM weekly
Meet at McKay Park on Hollywood Dr between Silverton Rd and Sunnyview Rd. Park on the street or in the west parking lot if gates are closed. Rider sign-in will be in the east parking lot.
Event Contact: George Schopfer (503)-346-1025
***Registration not required**

4) Thursday's: Keizer Family Ride
June 6, 6:30 PM weekly
Meet at Cummings Elementary School on Cummings Lane in Keizer
613 Cummings Lane N. Keizer, OR 97
Event Contact: Mark Lebow (503) 390-4627

PATHS WITH PALS

Bringing Neighbors Together



HISTORIC DOWNTOWN SALEM CYCLING ROUTE MAP (SCAN)





SCYP
Sustainable City Year Program
University of Oregon



CITY OF Salem
AT YOUR SERVICE

FIG. 50

Pamphlet in English

EL USO DE LA BICICLETA LLEVAR A UN CAMBIO CULTURAL POSITIVO

Andar en bicicleta puede llevar a un cambio cultural positivo porque contribuye a la salud y el bienestar de la comunidad y también puede aumentar el compromiso social y comunitario.

- El ciclismo reducirá la contaminación del aire y tendrá un impacto positivo en comparación con los automóviles.
- Las bicicletas requieren menos recursos para su fabricación y mantenimiento en comparación con los automóviles.
- En el factor económico, andar en bicicleta es un medio de transporte de bajo costo.
- En términos de seguridad, más bicicletas y menos automóviles reducirán la congestión del tráfico y mejorarán el flujo general del tráfico.
- Una infraestructura bien diseñada para bicicletas puede mejorar la seguridad para todos los usuarios de la vía.

Andar en bicicleta es mejor que usar el automóvil, ya que las comunidades pueden crear un cambio cultural positivo hacia entornos de vida más saludables, sostenibles y socialmente conectados.

En general, el ciclismo mejora la calidad de vida en las comunidades al promover la salud, la sostenibilidad ambiental, la vitalidad económica, la cohesión social y la eficiencia urbana.

EVENTOS

Calle de Domingo
(con HOOPLA/ Camiones de Comida)
HOOPLA (torneo de básquetbol 3x3)
Capitolio de Salem Julio 23-28
Fecha de límite de registraci3n Martes 9 de Julio

Club de Bicicletas de Salem

1) Lunes: Evento de Keizer en bicicleta
Junio 3, 10, 17, 24 a las 6:15 PM Reunión Semanal
En el Centro comercial Keizer Station frente REI
6035 Ulali Dr. Keizer, OR 97303
Contacto del Evento: Mark Lebow (503) 390-4627
***No se requiere registro**

2) Martes: Paseo en la Mañana en Keizer
Junio 4, 11, 18, 25 a las 9 AM Reunión Semanal
En el centro comercial Keizer Station frente a REI
6035 Ulali Dr. Keizer, OR 97303
Contacto del evento: Doug Parrow (503) 931-0588
***No se requiere registro**

3) Miércoles: Paseo en la Mañana en el Este de Salem
Junio 5, 12, 19, 26 a las 10 AM Reunión Semanal
En el parque McKay en Hollywood Dr entre Silverton Rd y Sunnyview Rd. Estacionar en la calle o en el estacionamiento oeste si las puertas están cerradas. La inscripción de los ciclistas será en el estacionamiento este.
Contacto del evento: George Schopfer (503) 346-1025
***No se requiere registro**

4) Jueves: Paseo Familiar en Keizer
Junio 6, a las 6:30 PM Reunión Semanal
Reunión en la Escuela Primaria Cummings en Cummings Lane en Keizer
613 Cummings Lane N. Keizer, OR 97
Contacto del Evento: Mark Lebow (503) 390-4627

CAMINOS CON AMIGOS

Reuniendo a los Vecinos



MAPA DE RUTAS CICLISTAS DEL CENTRO HISTÓRICO DE SALEM (ESCANÉA)






FIG. 51

Pamphlet in Spanish

GROUP 2

The students created event ideas to encourage bicycle transportation to help Salem build an inclusive and engaging biking culture that appeals to a wide range of community members. Events that cater to various interests and skill levels foster a sense of community and encourage more people to incorporate biking into their daily lives.

The focus on school-oriented events and collaborations with local businesses reflects a desire to integrate biking into the fabric of everyday activities, making it a practical and enjoyable choice for commuting and recreation. The inclusion of community challenges and artistic installations highlights the goal to make biking a shared and celebrated activity, promoting social connections and local pride.

Moreover, the diverse range of events, from beginner-friendly rides to competitive races and themed activities, ensures that there is something for everyone, regardless of age or experience level. By offering educational classes and bike mechanic workshops, events can help empower Salem residents with the knowledge and skills needed to bike safely and confidently.

Ultimately, these themes and events are chosen to create a sustainable and health-conscious community where biking is seen not just as a mode of transportation but as a fun, engaging, and integral part of Salem's lifestyle.

The students came up with the following event ideas:

- School oriented biking events
- Work with Krusteaz Pancakes for a large biking event (similar to the Eugene Marathon)
- Community challenges
- Bike valet services
- Art installations
- City tour on bike
- Bike to work / school day
- Beginners race / road ride through city
- Themed bike race
- Bike scavenger hunt
- Bike decorating contest
- The hog charge mountain biking event
- Bike charity events
- Earth day biking event
- Obstacle course
- BMX/Mountain biking/leisure
- Biking classes
- Mechanic bike classes
- Implementing a peace health bike system

Workplace Engagement:

- Subsidized bike purchases
- Bike maintenance programs
- Provision of showers and changing facilities at workplaces
- Partner with local biking groups, schools, and environmental organizations to promote biking culture and advocate for infrastructure improvements.

Conclusion and Recommendations

The City of Salem has strong foundational bike infrastructure, which includes bike lanes, shared lanes, and bike racks. While these facilities are appreciated by the biking community, additional transportation improvements as outlined in the report can encourage more people to utilize active transportation to the benefit of the entire community.

The current infrastructure often places cyclists close to motor vehicle traffic, increasing the risk of accidents. Some connectivity issues exist, such as existing bike paths and lanes, but they often end randomly and do not form a coherent and comprehensive network. This can make it difficult for cyclists to navigate Salem efficiently and safely. Investing in bike infrastructure can lead to numerous benefits, including reduced traffic congestion, lower pollution levels, improved public health, and economic growth through increased tourism and local business patronage.

Students recommend developing a comprehensive plan to expand the existing network of bike lanes, ensuring they connect key areas of the City such as residential neighborhoods, commercial districts, schools, and parks. Creating continuous and dedicated bike lanes will enhance safety and convenience. Implementing safety measures such as protected bike lanes, clearer signage, and

traffic calming techniques would be most beneficial. The City could also consider adding more bike-specific traffic signals and pedestrian/cyclist bridges over busy intersections. Investing in bike facilities can help the City of Salem make a public commitment to encourage bicycling.

Public awareness campaigns to educate residents about biking benefits and highlighting safety tips, environmental advantages, and personal health benefits would help increase bike safety. Encouraging local businesses to support biking through incentives and promotional events will also help spread the word. Community engagement can help build a strong advocacy network and generate public support for bike-friendly policies.

By implementing these recommendations, Salem can create a more bike-friendly environment that promotes safety, convenience, and widespread adoption of biking as a preferred mode of transportation.

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Appendix: Specific Strategies

Buffer Zones	Creating a series of buffer zones between automobiles and bikers. This makes biking safer and more accessible.
Street Calming	Creating a series of bikeable residential backroads using clear signage and bike-friendly speed bumps. This creates a clear and safe route using minimal changes to streets that already have minimal traffic.
Visibility	Using paints, different materials or signage to indicate the presence of bikers on these side streets and on main streets. Also to make the main bike corridors clear and visible for automobile users and bikers alike.
Protected Bike Lanes	Implementing safer bikeways along some of Salem's primary transportation corridors, namely D St. And Center St. - adding infrastructure and buffer zones with bollards or trees makes biking a safer and more pleasant option, deriving demand for biking along these roadways.
Safer Crosswalks	Implementing safer means of crossing along roadways to Hoover Elementary School especially, such as timed crosswalks with clear paint, an island in the middle of the road, and lights that indicate for automobiles to stop and allow people to cross busy streets.

This proposal is not just a matter of convenience, but a transformative initiative that offers benefits for the entire community:

Safety	Protected bike lanes separate and slow vehicles from bikes, reducing the risk of crashes, making the roads safer for everyone, especially students commuting
Health Benefits	Encouragement of biking as a form of transportation promotes an active lifestyle, leading to improved overall health and well-being
Community Building	Residents are more likely to engage with one another through more personable transportation, strengthening social bonds. Creates opportunity for a wider range of people to commute and engage with the community.
Economic Advantages	Reduced cost of travel for residents, both through maintenance and upfront cost
Environmental Impact	Increased biking reduced the number of vehicles on the road, decreasing greenhouse gas emissions and other pollutants produced through driving
Utilization of Existing Resources	Geer Park is an already available amenity that would become more accessible through increased bikeability

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