

Connecting Bikes to Transit in Springfield: Transforming Springfield's bicycle network and LTD's transit stations to encourage bike-to-bus opportunities

Fall 2012 • Planning, Public Policy and Management

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Sustainable Cities Initiative

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About SCI

The Sustainable Cities Initiative (SCI) is a cross-disciplinary organization at the University of Oregon that promotes education, service, public outreach, and research on the design and development of sustainable cities. We are redefining higher education for the public good and catalyzing community change toward sustainability. Our work addresses sustainability at multiple scales and emerges from the conviction that creating the sustainable city cannot happen within any single discipline. SCI is grounded in cross-disciplinary engagement as the key strategy for improving community sustainability. Our work connects student energy, 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 year-long partnership between SCI and one city in Oregon, in which students and faculty in courses from across the university collaborate with the partner city on sustainability and livability projects. SCYP faculty and students work in collaboration with staff from the partner city 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 resulting in on-the-ground impact and expanded conversations for a community ready to transition to a more sustainable and livable future. SCY 2011-12 includes courses in Architecture; Arts and Administration; Business; Economics; Journalism; Landscape Architecture; Law; Oregon Leadership in Sustainability; and Planning, Public Policy, and Management.

About Lane Transit District

Since 1970, Lane Transit District has provided transportation services to Eugene-Springfield and the surrounding communities of Coburg, Junction City, Creswell, Cottage Grove, Veneta, and Lowell. Beginning with 20 vehicles, LTD today carries roughly 11.5 million customers annually with a fleet of 104 buses, which includes both standard and low-floor buses, in length of 30-foot, 40-foot, and 60-foot articulated buses for regular services. Among those 104 vehicles, 11 of those are 60-foot bus rapid transit (BRT) vehicles used for EmX service. All LTD buses have been wheelchair-accessible since 1985. The district currently operates 45 hybrid-electric buses. A board of directors, whose members are appointed by the Governor, governs LTD. A combination of passenger fares, payroll taxes, and state and federal monies fund the system.

About Springfield, Oregon

The City of Springfield has been a leader in sustainable practices for more than 30 years, tackling local issues ranging from waste and stormwater management to urban and suburban redevelopment. It is the first and only jurisdiction in Oregon to create two separate Urban Renewal Districts by voter approval. Constrained by dramatic hillsides and rivers to the north and south, Springfield has worked tirelessly to develop efficiently and respectfully within its natural boundary as well as the current urban growth boundary. Springfield is proud of its relationships and ability to work with property owners and developers on difficult developments, reaching agreements that are to the benefit of both the project and the affected property owners. These relationships with citizens are what continue to allow Springfield to turn policy and planning into reality.

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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 Lane Transit District and the City of Springfield. Text and images contained in this report may not be used without permission from the University of Oregon.

Executive Summary

The proposals outlined in this report were a result of collaboration between Lane Transit District (LTD), the City of Springfield, and the University of Oregon Sustainable Cities Initiative during the fall academic term of 2012. Forty-seven students, a mix of graduate and undergraduates from a variety of disciplines, enrolled in the Planning, Public Policy, and Management course entitled “Topics in Bicycle Transportation,” used their knowledge of bicycle infrastructure and planning to develop recommendations to increase the number of bicycles reaching LTD’s transit stops.

LTD and City of Springfield planners joined students in class to answer questions and offer information to meet the City’s and LTD’s goals for the project. David Reesor, City of Springfield Senior Transportation Planner, and Tom Schwetz, LTD’s Director of Planning and Development, collaboratively identified the goal of increasing the number of trips made to and from the transit station by bicycle and providing the facilities and infrastructure for bicyclists of all skill levels to safely reach transit opportunities.

LTD provided two project concept areas for students to facilitate collaboration with the City of Springfield’s bicycle planning efforts in the future. LTD enlisted students’ ideas for the Gateway EmX corridor, an established route, and Springfield’s Main Street, a potential future EmX corridor. This report is organized to address each transit stop location, highlighting the students’ innovative ideas to increase bike-to-bus connections.

Students were split into 12 groups to examine existing and proposed transit stops:

- Four groups focused on the Gateway corridor stops:
 - Gateway Station, and
 - Centennial EmX stop.
- Four groups focused on existing stops along Springfield’s Main Street:
 - Springfield Station, and
 - Thurston Station.
- Four groups focused on proposed future EmX stops along Main Street:
 - 14th Street and Main Street transit stop, and
 - 42nd Street and Main Street transit stop.

Students developed a range of original ideas to increase the bicycle presence at LTD’s EmX stops. The report is organized to highlight key infrastructure changes, programs, and facilities for the City of Springfield and LTD to use as a toolbox of items to implement. The recommendations throughout this report are not intended to be comprehensive, but rather complementary to one another. The report offers broad suggestions that can be easily paired with one another to create a more comprehensive approach.

Introduction

The Lane Transit District, in partnership with the University of Oregon Sustainable Cities Initiative, is working to increase active transportation in the urban environment. This report presents a series of student projects focusing on creating connections between bicycle transportation and the local transit network to produce a more complete, multimodal system. Students from the University of Oregon enrolled in the Topics in Bicycle Transportation class offered their insight and knowledge to produce innovative ideas to enhance the bicycle network that brings cyclists to transit and a transit system that welcomes bicyclists of all levels.

The class coursework provided students with knowledge of bicycle infrastructure, research, and policies for active transportation. Case studies from Europe and readings presented both the achievements and difficulties of creating policy, installing infrastructure, and changing behaviors in bicycling and transit use. With Europe's high level of bicycle and transit use, students were urged to research designs from overseas and tailor them to fit bicycle travel to transit stops in the United States.

To create a system that encourages bicycle travel to transit there must be bicycle infrastructure leading up to and at the transit stop. This infrastructure will support the comfort, safety, and accessibility of the cyclists while transitioning from bike to bus. Currently, LTD's stops see steady quantities of riders accessing transit stops by bicycle. With the City of Springfield's upcoming bicycle plan update and the possible future expansion of LTD's EmX in Springfield, LTD needs to prepare for increased bicycle use at transit stops. The projects contained in this report seek to increase the quantity of bicyclists traveling throughout Springfield to LTD's transit stops. There is an opportunity to reduce vehicle travel to transit stops by providing bicycle infrastructure within a two-mile radius of the stop,

The LTD Emerald Express (EmX) is a bus rapid transit line in the Eugene/Springfield area. The EmX provides median and curbside stations with enhanced amenities. Dedicated lanes and signal priority allow EmX to bypass vehicle traffic, serving riders every 10 to 15 minutes during weekday work travel and Saturdays and every 30 minutes on late evenings and Sundays.

giving transit riders another option for “door-to-door” travel from the door of their home to the door of the transit bus. A two-mile bike ride takes approximately 10 minutes, reduces GHG emissions, reduces the need for parking and impervious surfaces, and promotes active transportation as a viable, everyday option. By providing the necessary bicycling infrastructure in a two-mile radius around LTD’s current and future transit stops, biking to transit becomes a feasible and enjoyable option.

The infrastructure, encouragement programs, and advertising within these projects are tailored to LTD and the City of Springfield. By collaborating with City and LTD staff, conducting site visits, and gathering traffic count data, students took the idea of bike-to-bus connectivity and adapted it to suit Springfield, LTD, and transit and bicycle riders. Since LTD’s buses and EmX are already at capacity for bicycles with front racks and interior corrals for storage, students channeled their efforts into changing the built environment at and around the transit stops. The challenge students faced was to create an environment where bicyclists felt comfortable leaving their bicycle at the transit stop, and continuing on the bus without it. By providing this attention to bicyclists LTD can expand ridership, provide additional service for current riders, and promote the sustainable image of transit in a new way.



Figure 1: Map of Springfield, OR EmX corridors included in this proposal.

Building Bike-to-Bus Connections at Existing Transit Stops: The Gateway EmX Corridor

Background

The Gateway Corridor EmX route, established in 2011 to connect Eugene Station, Springfield Station, and the Gateway/Riverbend area, offers residents and visitors transportation options to reach amenities in northwest Springfield. The second stop on the Gateway EmX line is the Centennial stop which serves the surrounding neighborhoods and nearby schools. The Gateway EmX station serves the commercial and light industrial areas in the northern portion of Springfield. The current conditions at both stops provide a pleasant waiting spot for bus riders. However, with LTD's initiative to increase bicycle access to transit, the current conditions at these stops can benefit from more amenities to serve bicyclists.

To encourage more transit riders to bike to the stop, the transit stops must be made more accommodating for bicycles. Currently bicyclists are limited to a small quantity of outdoor bicycle parking at each location, and cyclists must intermix with fast moving vehicle and heavy traffic. Reaching these transit stops as a bicyclist is not easy. Once bicyclists arrive at the stop there is little infrastructure and encouragement to support them biking to transit. To change this, we must make bicycling to the transit stop an appealing, safe, and feasible option. By equipping the area surrounding the stop for bicycle access, LTD and the City of Springfield can increase the safety and appeal of the transit stops and surrounding areas for all users. The following four reports identify opportunities to increase bicycle access to the Centennial and Gateway EmX stops.

A cycle track is a bicycle lane physically separated from vehicle traffic. Cycle tracks can be one or two (bi-directional) way.



Figure 2: A cycletrack provides two-way bicycle access to the Centennial EmX stop.

EmX Centennial Station Redesign

Quinton Kreth, Francis Lewington, James Morrison, Haley Smith

Connectivity is a major factor in getting more transit riders to ride bikes to the stop. With the Rosa Parks Path running parallel to the Gateway EmX corridor the following recommendations provide ways to better integrate cyclists into the existing infrastructure and provide new infrastructure to encourage cycling to the transit stop and surrounding areas in Springfield.

A two-way cycle track provides the ability for bicycle traffic to move fluidly by staying separated from vehicle traffic. Separated bicycle infrastructure and bi-directional access makes bicycling more appealing to those who may be intimidated to bike and those who regularly cycle to locations. Implementing this cycle track on Centennial Boulevard extending through the Centennial EmX stop from North 1st Street to North 5th Street provides cyclists with a safe, protected route to and from the stop. This cycle track, equipped with a safe crossing at the intersection of Pioneer Parkway and Centennial Boulevard, provides one major thoroughfare and helps to link the surrounding neighborhoods with the Centennial EmX stop, the Rosa Parks Path, and the surrounding schools.

Additional measures to improve the bicycle infrastructure surrounding the transit stop include signage and safe crossings.

Centennial Station: A Bike to Bus Hub

Alex Cocco, Matt Keeler, Olivia Reiter, Jon Reha

This report seeks to create a sense of belonging for cyclists at the Centennial Station by dedicating facilities and signage to cyclists. Creating this sense of belonging can result in a dedicated stream of cyclists relying on the Centennial Station transit stop daily. The following recommendations address increasing ridership and accommodating large amounts of cyclists in the future.

Bicycle education, advertisements, and incentives provide the support and encouragement to attract new cyclists and keep current cyclists cycling. Bicycle education exposes children to the option of bicycling and provides them with the information to bike safely. With two schools near the Centennial EmX stop an awareness and encouragement campaign can greatly benefit the children and families in the surrounding neighborhoods. The Safe Route to School Program (SRTS) coordinates with classes at area schools to give hands on lessons in bicycle safety, rules of the road, and active transportation. Encouraging bicyclists with information about how to use their bike to reach transit will provide transportation options to children and families in addition to the family vehicle. The Centennial EmX stop can serve as a demonstration area for students and adults learning to access transit with a bicycle.



Figure 3: Safe Routes to School provides area students with safety information (Eugene Safe Routes to School 2013).

Incentivizing bike-to-bus participation is a positive way of attracting those who are interested but concerned to take the initial action to participate. It is also a way of rewarding those who consistently take the opportunity to bike to the transit stop. Possible incentives include:

Free or reduced rates for cycling to an EmX Station:

Creating a system to provide discounted rates for cycling to an EmX station can make bike-to-bus more economically feasible. It can also be advertised as a carbon credit system to give real value to the emissions foregone by biking instead of driving.

Lunch credits for bike to bus participation at local schools:

Cycling makes kids hungry! While bicycling creates healthy habits for growing children, it also creates a need for extra nourishment. This need can be satisfied by providing lunch credits to students who bike to the EmX stop.

After administering these encouragement and awareness programs the infrastructure around the stop must be able to support an influx of cyclists. Instead of providing infrastructure that continues to mix bicycles with vehicles and transit buses on the roadways this report recommends exploring the possibility of an underground bicycle tunnel connecting the Centennial EmX stop to the surrounding bicycle infrastructure on Pioneer Parkway.



Figure 4: A tunnel carries bicyclists under a busy roadway (Shahan 2011).

Gateway to Gateway

Noelle Last, Pete Last, Phuong Huynh, Taylor Canoles

The Gateway EmX station is one LTD's busiest transit stations in number of boardings and departures. To further increase ridership this section focuses on creating safe avenues for cyclists to access the stop. Safe avenues can be created by separating bicycle and vehicle traffic and prioritizing cyclist movement at the intersection of Oakdale Street and Gateway Street just north of the stop.



Figure 5: Direct access for cyclists at the Gateway EmX stop.

To increase bicycle access we recommend creating a direct route from the existing bicycle lanes on Gateway Street to the Gateway EmX station. This will give bicyclists an entrance and exit separate from vehicle and transit traffic, increasing the appeal and safety for all types of bicyclists.

To tap into the bicycle riding potential of the surrounding neighborhoods students recommend specific bicycle infrastructure at the intersection of Gateway Street and Oakdale Street. The existing crossing is designed for vehicles. By giving pedestrians and cyclists priority while traveling through the T-shaped intersection, the Gateway EmX stop becomes more appealing for bicyclists from the surrounding neighborhood areas. Sharrows on Oakdale Street

A bicycle box is an intersection safety design measure used to position bicyclists in front of vehicle traffic while at a red light. The box is formed between the vehicle stop line and the crosswalk, and is usually painted green for visibility. Bicycle lanes feed into the bicycle box for safe access by cyclists.

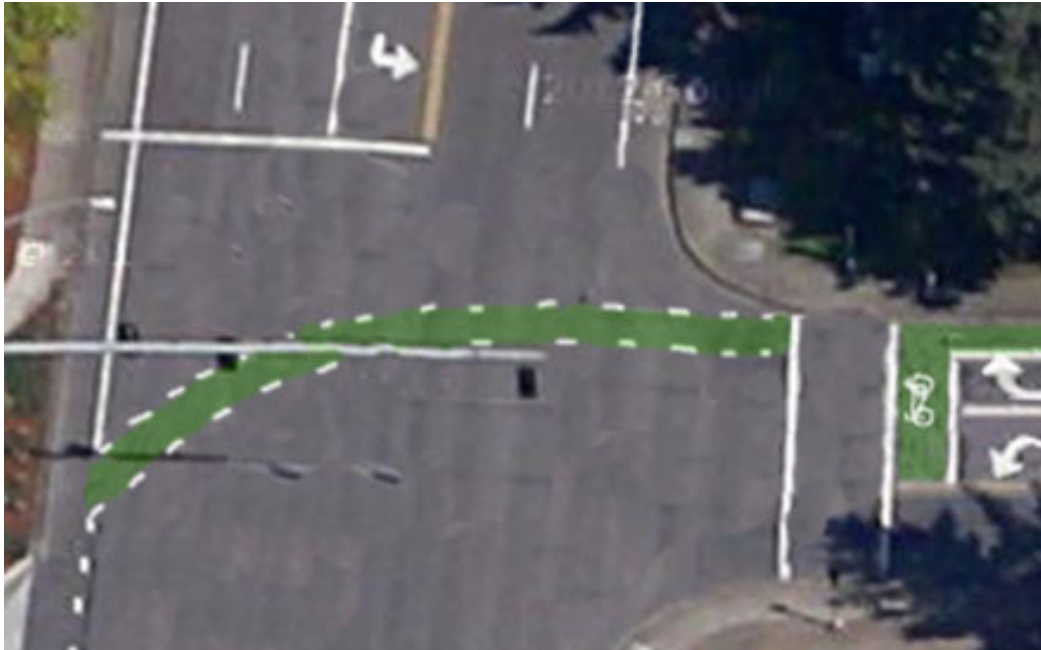


Figure 6: Improvements to the bicycle network on Oakdale Street.

remind vehicles and bicycles that this is a shared roadway. A bicycle box at the intersection assures that cyclists have a place on the road while waiting for the traffic signal. A bicycle-specific traffic signal at this intersection allows bicyclists to travel through this intersection independently without cars. These additional safety measures can attract more cyclists in the area surrounding the Gateway EmX station.

Wayfinding is the practice of orienting people in a physical environment by using visually appealing information that easily conveys a sense of “where.”

BIKEMX: Enjoy the Ride

Allie Camp, Ian Foster, Katie Myhre

Wayfinding, secure parking, and education can support an influx of bicycle use at the Gateway EmX station. The following recommendations establish a bicycle-friendly environment that creates a safe, secure, and informative transit station.

Proper signage to both inform and direct bicyclists is an essential part of encouraging transit users to bike to the EmX. Signage includes wayfinding indicators and educational materials. Distance, estimated time of ride, and directions to the station with information about bicycle parking availability can easily be displayed on surrounding signage. We recommend branding the signage to

teach riders that biking to and from the bus stop are feasible options. Signage can take on a fun name, like BIKEMX, and should accommodate transit riders of limited English proficiency. An integral part of the signage campaign is educational materials for those choosing to bike to the transit stop. LTD, through point2point solutions and programs such as SmartTrips and Drive Less Connect, has the outreach infrastructure to do an effective education program for BIKEMX. These programs can serve as a base for a future bike-to-bus encouragement program. The education should include the best bike routes for passengers to their stations, where and how to safely lock a bike, and the rules for bringing a bicycle on the EmX bus and on standard LTD buses.

Point2point solutions is the Eugene/Springfield area's transportation options service. Point2point provides vanpool, bike, transit, carpool, and walking information through various programs such as SmartTrips and Drive Less Connect.

LTD wants to encourage bicyclists to leave their bicycle at the stop. Recommendations for safe and secure long-term bicycle parking include updating the infrastructure, increasing the quantity and variety of parking options, and locating parking in a visible, well traveled place. Offering a mix of parking styles, like staple racks and long-term bicycle storage facilities, can encourage biking to transit for long and short trips. BikeLid or a similar long-term, secure bicycle parking option provides covered and protected parking for commuters using a bicycle for the “last mile” of each trip (Bikelid 2010). Staple rack or U rack bicycle parking accommodates additional bikes at the stop. Providing additional racks with covered shelter creates a sense of safety for cyclists leaving bicycles for long and short durations and encourages bicycling year round.



Figure 7: One style of long-term, secure bicycle parking.



Figure 8: Signage and wayfinding example.

Building Bike-to-Bus Connections at Existing Transit Stops: Springfield Station

Background

Springfield Station is at the heart of downtown Springfield. Constant foot and vehicle traffic make it a hub of activity. Springfield Station was established with the first EmX line traveling along Franklin Boulevard in 2007. The EmX connects downtown Eugene with downtown Springfield, passing through the University of Oregon for a total of ten stops. At the terminus is Springfield Station, providing a connection point for six bus and EmX routes.

Downtown Springfield is home to resources and amenities for Eugene/Springfield residents. The area surrounding Springfield Station holds a mix of land uses including small businesses, restaurants, cafes, elementary and middle schools, and city government buildings. A downtown area such as Springfield should be accessible by many modes of transportation. However, with high traffic one-way streets as the main thoroughfares through downtown, walking and bicycling are not as accessible as they could be. By encouraging bike to bus connections at Springfield Station, downtown Springfield can become a safer, more accessible area for transit riders, pedestrians, and bicyclists alike. And as one of the largest stops in the LTD transit system, Springfield Station can tap into a new transit rider group by providing the amenities to encourage transit riders to bike to the stop and bicyclists to take transit. The following two sections identify opportunities to increase bicycle use as a mode of transportation to and from Springfield Station.

Integrating Bikes and Public Transportation: Redesigning Bike Accessibility to Springfield EmX Station

Matthew Huber, Kelsey Kopec, Anne Le, Katherine Signell

This report provides recommendations to change the flow of bicyclist traffic in and out of Springfield Station. Currently, one-way streets and one-way bike lanes inhibit bicyclists from accessing the transit stop from other areas of Springfield. The following recommendations encourage two-way bicycle infrastructure on Main Street so cyclists can travel against traffic and Fourth Street so bikes can enter Springfield Station separate from transit buses.

Students recommend that the two-way bicycle infrastructure be a cycle track. This cycle track extends from the Springfield Station parking



Figure 9: Bicyclists enter Springfield Station separate from transit buses.

lot to Broadway Street, a 0.7 mile protected bike infrastructure route safely connecting Springfield Station with the neighborhoods north of Main Street. A bioswale buffer will add greenery to Fourth Street in addition to meshing with the existing bioswale landscaping at Springfield Station. Green paint indicates the cycle track's existence across busy South A Street, leading cyclists safely into the Springfield Station parking lot just east of the transit station.

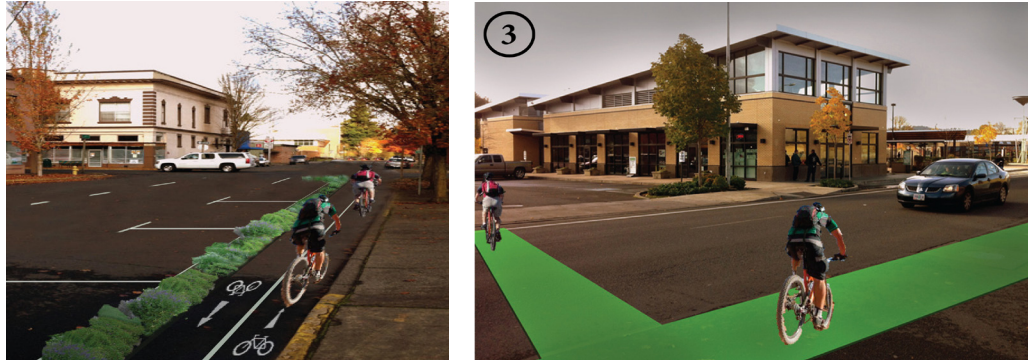


Figure 10: A cycle track connects bicyclists to Springfield Station.

Cycle Safety in Springfield: Creating Bicycle Connectivity to Springfield Station

Michael Hale, Simranjit Khalsa, Shelby Serra, Jamie Wai, Paul Ward

Connecting to the existing bicycle infrastructure in Springfield along key corridors encourages cyclists to try biking to Springfield Station. Signage, cycle tracks, and bike lanes will create an environment that compliments the existing bicycle network and creates additional connections on low-volume traffic streets.

To create a north-south connection for cyclists we recommend a cycle track on 5th Street extending from Main Street to Centennial Boulevard. This cycle track connects to existing bicycle lanes in the north Springfield area and provides an immediate route to Springfield Station for any cyclists in the vicinity. As a primary north-south route this cycle track includes an informative signage system to alert cyclists of distances to common destinations.



Figure 11: A cycle track and signage provides a north south connection.

To create an east-west bicycle connection to Springfield Station we recommend connecting with the existing Rosa Parks Path. Bicycle lanes on A Street extending from the Path to 10th Street offer a safer alternative than traveling on Main Street with its one-way heavy traffic. Signage provides directions to connect to the bike lanes on A Street.



Figure 12: Signage redirects bicyclists to the bike lanes on A Street.

Building Bike-to-Bus Connections at Existing Transit Stops: Thurston Station

Background

The Thurston Transit Station serves east Springfield with a heavily used Park & Ride and two LTD bus routes, including the number 11 route, one of LTD's highest ridership routes. The heavy use of the number 11 route and the Park & Ride indicate that people travel regularly to east Springfield. LTD is exploring the possibility of expanding the EmX line down Main Street to create a transit corridor on Springfield's main east-west thoroughfare. Because of its distance from downtown Springfield, the Thurston area is automobile dependent with few bicycle and pedestrian amenities. Distance is one factor in the separation from downtown Springfield; Highway 126's intersection with Main Street is another. Highway 126 acts as a barrier between east and west Springfield, inhibiting cyclists and pedestrians from safely reaching the Thurston area's shopping centers, neighborhoods and schools of all levels.

The Thurston Station is ripe with activity. The proper bicycle amenities can transform it into a hub for bike to bus connections. Increased bicycle access at the Thurston transit station can capture transit riders currently driving and provide a safe, feasible, and enjoyable alternative to arriving at or departing from the Thurston transit station. The following two sections include recommendations to take advantage of the high level of activity at the Thurston transit station and incorporate it into access for the surrounding amenities.

Thurston Station Bike and Ride

Ellen Heenan, Amanda McCaffrey, Eric McCoy, Aaron Rourke

New bicycle infrastructure projects create the necessary environment to encourage more people to reach the Thurston Station by bicycle. This section recommends overcoming current safety barriers with new bridges and pathways. Currently Highway 126 bisects two thriving residential neighborhoods. A new connection between the two neighborhoods provides a safe way to access the Thurston station, nearby schools, and the commercial opportunities in east Springfield. Students recommend a pedestrian bridge spanning Highway 126 at A Street to encourage bicyclists and pedestrians into east Springfield towards the Thurston transit station. The bridge provides a midway crossing point over Highway 126, between existing crossings at Main Street and at 52nd Street. The bridge is in proximity to neighborhoods, schools, businesses, and additional LTD transit stops. It provides a fluid connection with existing bicycle boulevards along 58th and Thurston Road, creating a safer, more contiguous corridor for bicycle and pedestrian use.

A bicycle boulevard is a low traffic, shared roadway that optimizes bicycle travel over vehicle travel. Traffic calming treatments (speed bumps, chicanes), signage and pavement markings, and extensive intersection crossings all may be found along a bicycle boulevard. Bicycle boulevards attract cyclists with a wide range of abilities because of the heightened perceived safety they provide.

A multiuse path provides access across an undeveloped green space resting between the commercial areas at Village Square and McKenzie Crossing. A forged path shows current usage patterns. Students recommend a paved, multiuse path to encourage seamless connections between these two commercial areas and the Thurston transit station. A path encourages bicyclists from all areas to utilize the area.



Figure 13: A bicycle/pedestrian bridge across Highway 126 provides a safe crossing.



Figure 14: A paved path through undeveloped green space for bicyclists and pedestrians.

A multiuse path is physically separated from vehicle traffic and provides a paved surface for cyclists, walkers, joggers, and other recreational users.

Thurston Transformation

Clarissa Acevedo, Kimina Jamison, Jason Shender, Ryan Stangl

This section includes recommendations to increase safety for bicyclists using 58th Street as a main connection point to Thurston Station. Colored pavement, cycle tracks, and attention to intersections create a network around the Thurston transit stop that encourages cyclists to bike instead of drive to the stop. By providing safer connections between Thurston Station and Thurston High School, students can easily incorporate bicycling into their transit trips.

A dedicated space for cyclists through the intersection of 58th Street and Main Street ensure that bikes can reach the new infrastructure. Pavement colors vary. Green is used in the United States to call attention to bicycle infrastructure for drivers; red is used more often in Europe to identify bicycle infrastructure from roads and sidewalks. Colored pavement connects the existing bicycle infrastructure with the recommended cycle track and makes bike traffic more visible to vehicles.

We recommend providing secure long-term bicycle parking at the transit stop. Current high activity at the Thurston stop and potential increased activity with a possible EmX extension means that more of every type of transit user can be utilizing the Thurston facilities. Providing secure parking for all bicyclists will continue to encourage transit riders to access the stop on two wheels.



Figure 15: A cycle track on 58th Street provides safe access to Thurston Station and schools.

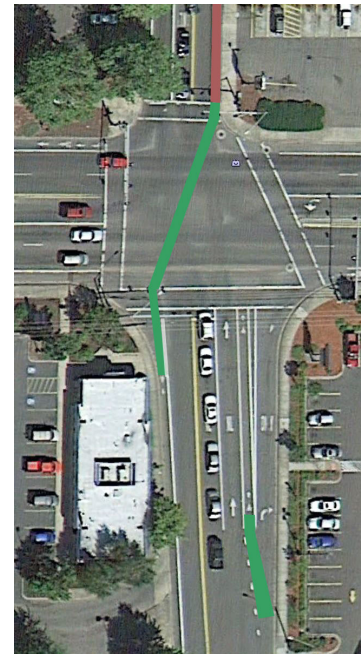


Figure 16: Cyclists can travel safely through the intersection of 58th Street and Main Street by following the colored pavement.



Figure 17: Secure long-term bike parking at the transit stop.

Planning for Bike-to-Bus Connections at Future Transit Stops: 14th Street and Main Street, 42nd Street and Main Street

Background

LTD is planning for the future of the EmX bus rapid transit system. Springfield's Main Street is being studied for possible expansion of the EmX, leading from Springfield Station eastbound towards Thurston Station. The current conditions along Main Street provide standard bus service. The number 11 route, one of LTD's busiest, runs up and down Main with stops at 14th Street and 42nd Street. With a potential new EmX line, LTD can provide fast, reliable bus service to the neighborhoods and businesses within a quarter-mile walking distance of Main Street or a two-mile biking distance. The stops along this corridor have potential to reach a significant number of commuters due to Springfield's linear geography.

Students were asked to re-imagine this corridor as an EmX route, seeing the transit stops at 14th Street and 42nd Street as hubs for active transportation and new development. These stops are not the primary LTD transit center in the area, with Springfield Station less than one mile away. However, they can provide the necessities to encourage bicycling to the transit stop and serve as a catalyst for redevelopment along Main Street. With bicycle connections leading up to the transit network and amenities at the stop for bicycles, local residents will be able to connect from their house to destinations such as worksites, school, and entertainment areas. The following sections include recommendations for bike-to-bus connections along Main Street as it develops into a bus rapid transit corridor.

Utilizing the Underutilized: An Intermodal Redesign of 14th Street and Main Street

Pamela Abreu Aldana, Elissa Kobrin, Stephen Muntet, Kristin White

The addition of the EmX on Main Street brings opportunities to transform the areas surrounding the transit stop. We recommend focusing on creating a sense of community for cyclists and pedestrians at the 14th Street transit stop. The underused Grocery Outlet parking lot to the south of the site provides room for new uses. By adding a covered bike parking pavilion, food carts, and areas to linger and eat, the 14th Street transit stop transforms into a destination, rather than a waiting place. By bringing in new land uses and amenities for bicyclists the transit stop at 14th Street and Main Street can encourage new developments along and beyond the Main Street corridor.



Figure 18: Food carts and protected bicycle parking transform an unused parking lot into a destination.

South 14th Street LTD Transit Center: Linking Bicycles and Buses for Multi-Modal Transportation in Springfield

Joe McAndrew, Mary Tyler, Alanna Young

If a new EmX line is routed along Main Street, it will require updated facilities along the proposed route. This report recommends a transit center and a streetscape at South 14th Street that reflect the needs of a multimodal system. Supplying a lane of traffic for Emx and bike use diminishes some of the barriers to cycling to the transit stop and improves connectivity across all of Springfield's bike lanes, paths, and on-street bike routes (Buehler, 2012). Buses and bikes are at polar opposites in terms of size, mass, and ease of movement. Ensuring safety within the new lane of travel for all its users is important, and a new educational program for LTD drivers will be necessary to ensure bus operators are prepared for all potential conflicts.



Figure 19: A shared bike-bus lane in Paris, France (David Baker + Partners Architects) and signage for a shared bike-bus lane (Bike Chat Forums 2008).

Multimodal is a term used to address all modes of transportation accessing or using a facility.

We recommend that new transit centers include the amenities provided at existing EmX stations: sheltered areas, benches, lighting, and real-time transit information. To attract cyclists from beyond the stop and nearby areas, a city-wide wayfinding system complete with EmX transit stop information will supply bicyclists with information to safely reach the transit system. As the transit stop develops into a multimodal hub, and Main Street becomes further developed, creation of a bike sharing system can contribute additional bike-to-bus users and encourage bicycling for short errands in Springfield.



Figure 20: Supplying bicycle parking options like at Springfield Station provides safe, secure, well-lit bike parking for transit users.

Bike share provides short term bicycle rental at points throughout a city. Disbursement through a city encourages bicycling instead of driving. Unattended stations and electronic payment and database systems provide easy access to bicycles wherever a station exists.



Figure 21: A bikesharing system encourages additional bike use to and from transit (Pyzyk 2012).

Expanding Nodes: 42nd Street and Main Street

Alyssa Baker, Candice Harbour, Eric Ohlrich, Colin Weber

Building upon Springfield's existing bike lane system provides opportunities to connect the transit stop at 42nd Street and Main Street to the bicycle network. We propose an expansion of the bicycle network along Commercial Street, providing residents with safe and easy walking and biking access to the transit center at 42nd Street and Main Street.

Traffic calming methods and cross walks along the Commercial Street corridor establish a safe environment for bicyclists and pedestrians to reach the transit stop. With the addition of an EmX-style covered station and delineated crossings with flashing amber lights both pedestrians and cyclists will feel safe crossing busy Main Street to reach the transit stop.



Figure 22: An updated EmX Station for the transit stop at 42nd Street and Main Street.

The intersection of 40th Street and Main Street is a prime location for an additional safe crossing. Despite the level of activity on Main Street, there are few safe crossing opportunities for bicycles and pedestrians. Just two blocks west of the previously recommended crossing in Figure 22, students recommend an additional crosswalk to create more connectivity across busy Main Street for non-motorized users.

Bike lanes along Commercial Street reach both busy streets and local roads. For the local roads traffic calming circles slow motorized traffic to human scale speeds. This adds to the network of connectivity assuring that bicyclists can reach the transit station at 40th Street and Main Street safely and easily.



Current



Proposed

Figure 23: An additional crosswalk across Main Street provides added safety and connectivity for bicyclists and pedestrians.



Figure 24: A traffic circle at 41st Street and Virginia Street makes the neighborhood safer for all users.

Plain Street to Main Street

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With future EmX possibilities along Main Street this section seeks to turn an automobile- oriented area into a livable environment accessible by many modes of transportation. Making this area accessible to multiple users would not only make transportation through the Main Street corridor more efficient, it would support the notion that Main Street is a place to live, shop, and work, not just a place to drive by.

To mitigate the danger at Main Street's intersections, texture and color signals to motorists to reduce speeds and pay attention. By giving cyclists, pedestrians, and motorists dedicated space on the road, less conflict will arise, creating a safer, more active Main Street.



Current



Proposed

Figure 25: A before and after panorama of a redesigned 42nd Street and Main Street intersection.

Just east of this intersection is the LTD transit stop. To encourage more users to bike to the transit stop students recommend creating an atmosphere at the stop that encourages multimodal use. A cycle track separated from vehicle traffic and covered bicycle parking provides a sense of safety and security for cyclists to bike to the stop and leave their bicycles as they ride transit into town.



Current



Proposed

Figure 26: Proposed LTD transit stop with multimodal design.

Conclusion

Collaboration between the Oregon Sustainable City Year, LTD, and the City of Springfield provides an opportunity for students in the Topics in Bicycle Transportation course to apply their knowledge to connect bicycles to transit. Students in the course provided 12 group proposals focused on creating bike-to-bus connections throughout Springfield at present and possible future LTD transit stops. Students provided specific recommendations for each transit stop that can be distilled to five broadly applicable actions. We recommend:

- Improving the existing bicycle network to create connectivity;
- Adding new and innovative bicycle infrastructure to attract bicyclists of varying skill levels;
- Enhancing the transit stops to make them more welcoming to all users;
- Providing safe, secure, and informative amenities for bicyclists at the transit stops; and
- Encouraging and education bicyclists about opportunities through signage and local transportation groups.

This report is not a comprehensive plan for implementing bike-to-bus connections in Springfield. However, it can be used as a toolbox for successful techniques. The reader can select the recommendations most suited for the needs at hand and tailor it to fit the situation. This report provides an array of recommendations spanning in complexity from a bicycle tunnel in *Centennial Station: A Bike to Bus Hub* to simply providing signs for active transportation users as in *BIKEMX: Enjoy the Ride*.

This report shows that planning for bicycle access is not one-sided, but rather a holistic effort. Recommendations can be combined to implement in an area. This report provides a variety of techniques for both the City of Springfield and LTD to collaboratively consider when implementing bike-to-bus initiative.

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