

BRINGING A TRAFFIC GARDEN TO THE WILLAMETTE  
VALLEY

by

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A THESIS

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Cities are seeking to find ways to shift their transportation culture to incorporate more active modes in the face of evidence that suggests overall benefits for urban areas as a whole of doing so. From investing in more public transit and cycling infrastructure as part of Complete Streets efforts, to policies for land use and social campaigns that promote active transportation habits, American cities have seemingly tried it all. Except for traffic gardens. Only a handful of cities have experimented with this type of culture-shifting infrastructure, which consists of a miniature network of streets where users can learn to ride bicycles safely on the road. On the back of efforts including a report issued by students in the Real World Eugene class, the city of Eugene, Oregon is attempting to bring one to their Metro Area.

This thesis will answer the research question, “what does it take to implement a traffic garden in the Eugene Metro Area?” by documenting the collaboration and brainstorming of stakeholders who view the traffic garden as a missing investment capable of transforming the region towards its goal of a more active transportation-oriented culture. The thesis will then offer a range of recommendations for doing so based on the research.

## **Acknowledgements**

This thesis would not have come to fruition without the influence of many people. Professor Marc Schlossberg's Sustainable Bicycle Transportation Planning Field School was my personal introduction to the existence of traffic gardens, and much of the passionate mindset I've developed for the power of bicycle transportation to shape the city can be attributed to that course.

The Real World Eugene Course became the outlet for this idea to begin to take shape, providing invaluable experience and firsthand opportunity for this idea to receive feedback from the people ultimately responsible for getting the project done. Without Professor Bethany Steiner providing the outlet for it, this would not have occurred. If not for another member of the study abroad course enrolled in the Real World Eugene class, Gilly Garber-Yonts, I would likely not have been involved in this process either. It was he who recruited me to the course that served as the crucial bridge between idea and real world effort.

Along those lines, it is Laughton Elliot-DeAngelis, the Safe Routes To School Coordinator for the City of Springfield, who accompanied us on the trip with Professor Schlossberg, and reached out to its participants after the fact, to get efforts going on a local application of this concept. Without his eagerness, and ongoing efforts in planning "Bike Rodeos" that give kids an introduction to this experience, the local effort to create one of these gardens would not be occurring either. Additionally, Caroline Crisp was a member of the study abroad who responded to Laughton's call and compiled a list of possible locations within the metro area that the Traffic Garden Team within the Real

World Eugene course largely based their evaluations off of. Miranda Menard Hannu, another member of the study abroad, served as intern for Laughton this year, and spent countless hours helping plan the Bike Rodeos. And Robert Binder, another student in the course, assisted with the site selection process and even made the trip from Atlanta, Georgia to accompany us on our evaluations.

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## Chapter 1: Introduction

When a person in America sets out from their house to get around, the vast majority naturally hop into their personal car, about 76% to be exact.<sup>1</sup> Urban planners have long known this, and have been seeking to create changes in the form of creating “complete streets” that invite access from all modes of transportation.<sup>2</sup> This trend accepts the premise that the decisions people make to get around are reflective of a way of life, and in shaping this, it is the way people, planners and residents alike, view the street that matters.

But now, imagine stepping off of the city streets to enjoy the park. There, parents and other adults have gathered near the playground, seated comfortably enjoying food and drink from local vendors while children climb playground equipment. Performers nearby activate eyes and ears. And within the same space, interested-but-concerned-turned-eager-and-confident<sup>3</sup> riders young and old maneuver their way around a miniature street network, mastering the road markings, street signage and maneuvering abilities necessary to claim space on the road. As they leave the park for the streets on their bikes, their route already seems familiar. This could be an everyday sight, passed down from generation to generation, that ingrains a new culture of transportation and way-of-life into urban residents, and it is called a traffic garden.

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<sup>1</sup> Tomer, 2018

<sup>2</sup> Smart Growth America, 2016

<sup>3</sup> Portland Bureau of Transportation, 2009

## Chapter 2: Literature Review

### General Transportation Situation

Our point in time with respect to urban transportation is facing a period of transition. One represents the desire of most urban areas in the United States and around the globe to shift to a more multi-modal urban transportation environment. “In total, over 1,200 Complete Streets policies have been passed in the United States, including those adopted by 33 state governments, the Commonwealth of Puerto Rico, and the District of Columbia.”<sup>4</sup> These “complete streets” have included major infrastructure projects such as Bus Rapid Transit and Streetcar lines, and center around street redesign measures to enable more cycling/pedestrian access and greenery.

The transition towards active modes most cities are seeking is the result of convincingly negative societal impacts that auto-dependency has produced. Through decades, the practice of redlining and the phenomenon of white flight supported and encouraged auto-centric planning, which have in turn exacerbated inequities resulting from residential segregation in our cities ever since. This serves to create the dynamic presuming that our “natural” system of driving our personal car wherever we want to go is our democratic choice.<sup>5</sup>

And there are many other reasons why the automobile way of life has proven to be harmful, and not “natural” for humans in general, ranging from negative impacts on public health resulting from poor air quality, inactivity within vehicles, and sheer

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<sup>4</sup> Smart Growth America, 2016

<sup>5</sup> Shertzer et al, 2016

numbers of road accidents. to the incredible cost burden of owning and operating a car.<sup>6</sup> Transportation planners have long sought to reduce congestion and pollutant emissions as a central transportation goal, but previous strategies of widening lanes have only shown to attract more drivers and congestion, a phenomenon known as Induced Demand, creating further pollution.<sup>7</sup>

### **New Transportation Trends**

Into the future, millennials yet to start a family have shown preferences for urban living.<sup>8</sup> Developers have recognized the benefits of transit oriented development as well, creating a symbiotic demand for denser land use that accommodates multi-modality. Millennials have also shown affinity for ridesharing services like Uber and Lyft that in some areas have driven up the number of automobiles on the road.<sup>9</sup> Autonomous Vehicles will challenge this dynamic into the future, with impacts on transportation habits yet to be determined, but likely set to be popular in general if viewed the way ridesharing is. This begs the importance of capitalizing on demand for multi-modal-friendly urban living and maintaining active transportation habits within people before the next era of transportation culture fully takes shape.

### **Why Cycling Matters**

The benefits of multi-modal transportation, specifically high rates of active modes such as biking or walking, have long been documented to provide increases in

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<sup>6</sup> Strong Towns, 2015

<sup>7</sup> Mann, 2014

<sup>8</sup> Maslan, 2016

<sup>9</sup> Bliss, 2017

indicators of public health indexes in urban areas. Thus, enabling and encouraging the active modes of transportation that have been documented to create the most benefits in the way of public health, daily experience, overall quality of life, and in creating human-scale, inviting, aesthetically-pleasing spaces is imperative.

In contrast to personal vehicle modes of transportation, “previous integrated health impact assessments, based on existing evidence, suggest that a shift to human-powered transport modes (bicycling, walking, running, wheel- chair, skating) for short commute trips would be good for health, aside from the risk of road traffic injury.”<sup>10</sup> This is due to the fact that these trips emit little to no greenhouse gas and air pollution costs, while also encouraging physical activity at the same time. Because these forms also carry a low fiscal cost to consumers, they can reduce the financial burden one depends on for transportation. This decreased financial burden, and additional option for moving around, can open the door for more people to be able to enter the workforce via applying for jobs they would not have previously been able to access without a car, while saving more of their earned income in the process.<sup>11</sup> Data on reduction of this job-related stress, as well as the overall impact of interaction with nature on mental well-being that active modes of transport on complete streets would offer, combine again to form sweeping opportunities to increase health through a decreased stress level, one of the leading underlying killers we face in the U.S.<sup>12</sup>

Where human-powered transit falls short in allowing for long distance trips,

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<sup>10</sup> Macmillan et al, 2014

<sup>11</sup> American Public Transportation Association, 2018

<sup>12</sup> United States Department of Agriculture, 2018 & Avila-Palencia et al., 2017

mass transit is able to pick up the slack, providing generally more reliable trip times, at a lower cost, to more people while taking up fewer space on the road through both its physical footprint and its removal of other potential users.<sup>13</sup> But a key challenge for attracting transit ridership is having stations close to points of origin and destination. This challenge is known as the “first/last mile problem” of getting people from their location of origin to transit stations, and from those stations to their final destination. The first & last miles are crucial in creating and sustaining someone’s transportation habits, and with cycling, “by providing efficient first / last mile connectivity, it can also play a vital role in increasing public transit ridership (Katia and Kagaya 2011).”<sup>14</sup> In tandem, “Apart from being a clean, cheap and equitable mode of transport for short-distance journeys, cycling can potentially reduce traffic congestion, parking space requirements and roadway costs,”<sup>15</sup> all of these benefits align with the nature of complete streets, which seek to make the road experience more human-centered, allowing for multi-modality through more public mass transit and dedicated space for active modes.

With the aforementioned data in mind, for cities, the overall public health and environmental benefits of cycling over auto usage is undebatable. What does end up coming down to debate is the preferences transportation “consumers” if you will, have among their transit options, and what liberties they believe they have to exercise those

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<sup>13</sup> Jaffe, “Public Transportation Does Relieve Traffic Congestion, Just Not Everywhere,” 2013 & Jaffe, “Public Transit Is Worth Way More to a City Than You Might Think,” 2013

<sup>14</sup> kumar et al., 2012

<sup>15</sup> McClintock, 2002

preferences.

### **The Types of Cyclists and Strategies to Create Them**

The existence of comfortable, perceptive users of the road is a crucial component in creating a mobilized bicycling culture in urban environments. In tandem with proper infrastructure, the culture is a precursor to increasing cycling mode-share.<sup>16</sup> This is because the perception of one's ability to move safely and freely via cycling is intimately linked to the existence of both the proper infrastructure and a legitimized cycling culture within the urban road-space and transportation decision-making framework. As the data about cycling ridership points out, "safety concern is a deterrent since cyclists are more prone to accidents in mixed traffic conditions."<sup>17</sup> Popular data from the Portland Bureau of Transportation identifies only 8% of people as either "strong & fearless" or "enthused & confident" to ride on most any road. About 60% are "interested but concerned" and could be swayed by better infrastructure or a more legitimized culture.<sup>18</sup> Counter-intuitively, "as the number of cyclists goes up, fatality rate due to cyclists can go down (Pucher and Buehler 2008)."<sup>19</sup> This effect of riding in numbers is something the Netherlands has created, to the tune of a 25% national cycling mode-share.<sup>20</sup>

Investments in infrastructure seem to have more of an effect on increasing cycling mode-share than simply cultural campaigns alone, but often they work better in

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<sup>16</sup> Aldred, 2017

<sup>17</sup> Pucher and Dijkstra, 2000

<sup>18</sup> Portland Bureau of Transportation, 2009

<sup>19</sup> kumar et al., 2012

<sup>20</sup> Oakil, 2014

tandem with cultural shifts.<sup>21</sup> Strategies for ingraining a safe cycling perception among city-goers are typically channeled through direct infrastructure investments or media campaigns to change the transportation culture.<sup>22</sup> But even these strategies often fall short in dramatically shifting mode-share without appealing to people who don't typically see themselves in the culture being espoused. The cycling cultures celebrated among planners hail mostly from Scandinavia, where the users are predominantly white. And in the United States, the traditional image of the cyclist as a MAMIL (Middle-Aged Man In Lycra) is also almost always white. In tandem with aspects of Vision Zero that emphasize police enforcement,<sup>23</sup> other cultural campaigns that take a punitive approach to encouraging cycling, and the simple reality of investment for bike infrastructure often producing gentrification whose benefits typically flow to well-off white residents,<sup>24</sup> these strategies often function to deter people of color from seeing themselves in the population being encouraged to cycle.

Many cities do not have the funds, or more precisely, the political willpower to distribute their funds, towards comprehensive cycling infrastructure ends. Thus, it is imperative to find a way to implement infrastructure that makes cycling more comfortable, while also legitimately shifting the transportation culture and mode share, at a reasonable cost. This is where a traffic garden becomes the missing link.

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<sup>21</sup> Wardlaw, 2014

<sup>22</sup> Savan et al., 2017

<sup>23</sup> Bliss, 2016

<sup>24</sup> Flanagan et al, 2016

## Traffic Gardens as Intervention

In general, there are multiple reasons why traffic gardens can perform the role of encouraging cycling. One is the simple ability to get practice riding on the roads so as to feel more comfortable doing so in real life. “Shared markings and conventional bicycle lanes may have, in the past, met the needs of the cycling 1% that consider themselves “strong and fearless,” but these facilities are viewed by the majority of cyclists as high-stress (Mekuria et al., 2012).”<sup>25</sup> The stress of cycling on the road is the leading barrier to people riding. Where no separated infrastructure exists, the road is not a peaceful place for cyclists to ride. Traffic gardens are sites where they could become more confident, both practicing on infrastructure that the city wants to implement in the future, as well as on seemingly daunting infrastructure that already exists.

Building on this evidence that shows perception of safety on the road is a crucial component to adopting a habit of cycling, data has shown that the presence of safe, free-flowing cycling infrastructure “represents an important ‘trigger’” in getting citizens to take up cycling, primarily for the positive experience it produces.<sup>26</sup> That positive experience of cycling is necessary in order to increase its mode share. There are various infrastructure pieces that have shown to be helpful in providing this “trigger,” each of which carry an inherent interest in reducing car usage, and have been “more effective when introduced in integrated packages.”<sup>27</sup> These investments run the gamut from “cycletracks (separated by curb from other traffic infrastructure),” colored lanes, lane

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<sup>25</sup> Burke and Scott, 2016

<sup>26</sup> Gossling, 2013

<sup>27</sup> Gossling, 2013



markings, and “bike boxes (also called ‘advanced stop lines’)” to bicycle traffic signals, wayfinding signage, traffic controls/calming, complete streets, bike parking at public mass transit stations and even showers at workplaces to name a few.<sup>28</sup> These are features that could be mirrored within traffic gardens and provide even more legitimization through practice.

The aforementioned investments in infrastructure make cyclists feel welcome on the roads and normalize the culture. But along those lines, “research indicates that cyclists strongly prefer separated on-road bike lanes over recreational paths (Nuworsoo and Cooper, 2013). Moreover, an earlier study found that even the highest quality off-road paths are used by utilitarian cyclists infrequently (Aultman-Hall et al., 1997).”<sup>29</sup> It makes sense that people wishing to ride bikes prefer infrastructure that normalizes cycling as a daily mode of transport, rather than “otherizes” it as recreational. In addition, in order to fully traverse the boundary between recreational and normal, cycling needs to be a realistic option for commuters. “For cycling to play a part in alleviating the urban mobility problem, it must attain significant modal share during the morning peak-hour. Commuters will compare it with other available modes of transport in terms of affordability, reliability, comfort, convenience, and other factors.”<sup>30</sup>

The relationship between increased cycling infrastructure and increased active mode share is there in general, but in some places the link between the implementation of this infrastructure and the creation of a multi-modal transportation culture is less

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<sup>28</sup> *ibid*

<sup>29</sup> Burke and Scott, 2016

<sup>30</sup> kumar et al., 2012

strong as in others. Some evidence has shown that simply slapping down cycling-friendly infrastructure is not enough to create the desired change in mode share. Places looking to invest in infrastructure that will encourage active forms of transportation, but simultaneously help foster a more multi-modal transportation culture itself simply by its existence, can look to a traffic garden as the tool.

For instance, campaigns attempting to foster an increased cycling culture that hone in on rider safety have often highlighted, or even mandated, wearing a helmet, which have actually “had negative impacts on bicycle use.”<sup>31</sup> Something like a traffic garden would assuredly be a much more fun way to impart the need for safety on the road, as well as give cyclists more agency within that discourse. This is something that could appeal to cyclists of all ages turned off, or made inaccessible to usage, of the active transit system by legal restrictions such as helmet laws which dissuade them from participating through potential penalization, by engaging their desire for safety on the road.

Getting the opportunity to practice reading signs and performing road maneuvers in a low-risk, low-stress environment could be a first step to getting those interested but concerned to ride. But another, possibly more self-perpetuating, reason why traffic gardens can perform the role of encouraging cycling within the overall transportation culture is for the impact that exposing children to it can have. Those newly forming perceptions on how to get around in the world would have a crucial opportunity to form active habits before becoming dependent on automobiles to get

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<sup>31</sup> Gossling, 2013

them around.

Aside from the benefits that active transportation has for adults, of which children would still benefit from, there are known specific cognitive impacts of developing these habits in a child's formative years as well. "Mitchell et al. used the concept of 'island' geography to describe the perceptions and experiences of children who were driven to and from school. They concluded that these children were only cognizant of the places that they were chauffeured to and from." Furthermore, "These children did not engage with the 'local spaces in between,' which are critical to learning about the environment. In our study, AST children took more photographs of nature/aesthetics (e.g., gardens, plants, trees, flowers) and built environment features (e.g., side-walks, curbs, roads) than non-AST children."<sup>32</sup> The abbreviation AST refers to Active School Transportation, or traveling to school via human-powered modes like walking, biking, etc. The benefits of spatial awareness are self-explanatory. Even in a technology dominated world such as ours, the ability to navigate surroundings on one's own without the help of a map can make a large difference in their ability to get around efficiently, as well as in their sense of confidence and awareness in general. "Mitchell et al. suggest that the physical and social worlds available to children who are driven are shrinking and that there may be 'a generation of children who are largely unfamiliar with their local neighborhoods.'"<sup>33</sup>

The Walking School Bus, run by Safe Routes To School in Eugene (and many

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<sup>32</sup> Fusco et al., 2012

<sup>33</sup> Fusco et al., 2012

other places) gives an opportunity for children to walk, rather than ride in the back of a car, from their neighborhood to school in the morning. As research states, “non-AST children in our study were neither oblivious to, or uninterested in, their environments and indeed lamented that travelling by car prevented them from ‘slowing down to take another look’ at interesting things on the way to and from school.”<sup>34</sup> Having helped lead these Walking School Buses multiple mornings this year, it is already apparent how much more spatially aware these trips allow children to be. We have had conversations about restaurants they have pointed out along the route that are normally hidden from view via a fast-moving car, as well as what they would want to see go into buildings that are under construction as we walk by. The simple ability to point to what they are looking at as they speak about it, and continue to take it in, clearly gives them better opportunity to connect with and anticipate changes in their neighborhood than if they were to experience it in passing from a car window.

These anecdotes are corroborated by evidence as well: “AST of course occurs more slowly than non-AST – this difference in the speed of movement also affords opportunities for reflection and provides enough time for the ‘environment’ to actually cognitively register with AST children. These children remembered details and told stories about their environments because they experienced moving through them at a slower pace than would be the case if they were driven.”<sup>35</sup> By the time a parent in the front seat of a car pointed such things out to engage with the children over it, the

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<sup>34</sup> *ibid*

<sup>35</sup> *ibid*

opportunity to really take it in would have passed.

It is important to bring the role of parental perception into the way children get around. After all, it is the parents who have control up until a certain age for how they do so. “Indeed, parents’ perceptions of the environment are a stronger predictor of AST than urban form variables (McMillan, 2005). Second, as others have recently noted, children’s voices have only been partially represented in this field of work (Mitchell et al., 2007).”<sup>36</sup> Children make up a substantial percentage of the human population, and they need to get around just as often as anyone else does, thus their perception of travel should not be discounted. “Indeed, the views of children as active agents and ‘key informants’ in matters pertaining to their health and wellbeing are often ignored and neglected (Darbyshire et al., 2005). Children are often viewed as unsophisticated and thus incapable of being taken seriously in discussions about their needs (Oakley, 1994).”<sup>37</sup>

Despite their neglect from the sphere of influence in policy formation, “children and adolescents are very cognizant of the links between health, physical activity places and travelling between home and school (Mitchell et al., 2007; Holt et al., 2008; Ross, 2007), and are able to articulate their future travel behaviour intentions (Line et al., 2010).”<sup>38</sup> There is also evidence from real life studies to suggest that children do indeed soak in the information they receive about the road and assimilate it into their worldview on how to get around. In post-study interviews, “Children talked

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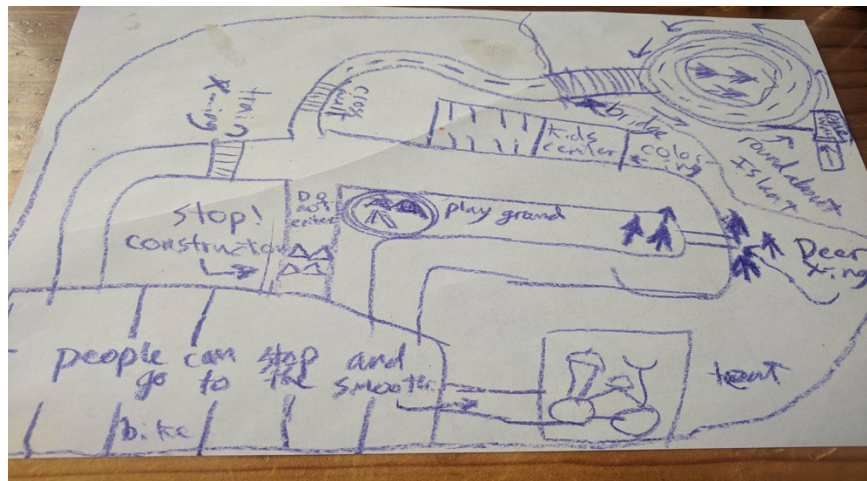
<sup>36</sup> *ibid*

<sup>37</sup> *ibid*

<sup>38</sup> *ibid*

about using signs for wayfinding – signs indicated where they were and prevented disorientation in the built environment. All children suggested that signage helped them feel more safe and helped them know the way to and from school.”<sup>39</sup> This ability extends to the work on the ground in the Willamette Valley, as the figure below showcases the perceptive abilities of a child in relating to the traffic garden project.

Figure 1: Child drawn traffic garden concept



A traffic garden concept drawn by a Springfield Third-Grader, passed along by the Springfield Safe Routes to School coordinator. It incorporates aspects like a deer crossing and construction zone that had not come up in brainstorming with adults, and demonstrates the perceptive ability of children often left out in the planning process. It includes the smoothie-bike (blender powered by pedaling) often included in Bike Rodeos, further demonstrating the impact those experiences have on the kids who attend.

Children have also learned to perceive the road not only from their own point of view, but to predict the view of an automobile driver. A study from from Auckland,

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<sup>39</sup> ibid

New Zealand confirmed previous research on this, saying “Children’s attention to signs in this study confirms Mitchell et al.’s (2007) findings: they note that young commuters are aware of drivers’ carelessness and often take responsibility for their own safety by paying attention to signs.”<sup>40</sup> A traffic garden would be a space where instruction and practice on how to interact with road users would even further develop and apply this knowledge within children.

The operation of makeshift traffic gardens in Eugene/Springfield area elementary school gymnasiums for Safe Routes to School (SRTS) Bike Rodeos attests to the aforementioned perceptive ability within children. Over the course of one night, approximately 60 kids were able to run multiple times through a course that was designed to emulate the roads. They received instruction as they went through various portions of the course, but by the time they had run through it multiple times, the majority had gained the ability to follow the signs and tell me what each one meant in their own words. There was even an instance where a pair of girls gleefully walked a younger friend through the course unprompted while giving her the same instruction that I would have given at each step of the way. This, after likely not even had an hour of experience, already seemed to begin transforming their view of the world around them. And while it is again only anecdotal, it is a very encouraging example to be able to point to.

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<sup>40</sup> *ibid*

Figure 2: Bike Rodeo



Pictures of traffic gardens for a bike rodeo in Springfield, Oregon. Kids learned how to navigate a roundabout, crosswalk, train tracks, stop signs, yield signs and one way streets in addition to gaining practice riding their bike and preparing to interact with other road-goers

Overall, given the known perceptive and cognitive abilities of children to assess their surrounding environment, and the lack of opportunity to apply such abilities that the “island concept” reveals, there is arguably no greater opportunity to ingrain active transportation habits into the young population, and thus our population as a whole moving forward, than programming with schools through traffic gardens. “If we want a generation of children and young people to grow up with attachments to the environment, policy measures may need to promote AST as a means to increase opportunities of environmental engagement. Moreover, policies that are more broadly directed at how children and youth travel to school and other activities should consider this estrangement problem.”<sup>41</sup> Programs within SRTS, like the Walking School Bus that gives kids experience with AST, and bike rodeos which have introduced kids to

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<sup>41</sup> *ibid*



temporary versions of a traffic garden could be more fully ingrained into the transportation habits of those kids, as well as the parents who help mold them, by regularly accessible exposure to a permanent traffic garden. The encouragement of active transportation, to school and elsewhere, would be inherent by its usage.

## **Chapter 3: Background**

### **Eugene/Springfield Overview**

Eugene and Springfield share goals for the future of increasing active modeshare in the area, as discovered in conversations with local planners and Safe Routes to School leaders. The MoveEugene 2021 report outlines these goals, as does the SRTS 2017-21 vision plan. They include action items for how to get there that the traffic garden functions to accommodate, and after the Real World Eugene Report described below was created, the SRTS plan even explicitly includes the recommendation of implementing one in the area.

### **Real World Eugene**

Through Professor Bethany Steiner's Real World Eugene course in the PPPM Department at University Oregon, I was part of a group that compiled a report for the City of Eugene about the efficacy of traffic gardens as a catalyst for shifting mode-share, specifically within the Eugene/Springfield Metro. Our report consisted of case studies analyzing traffic gardens worldwide, from basic to complex, as well as potential sites within the metro area, memos describing presentations and workshops to both TOAC (Transportation Options Advisory Committee) and community members regarding the project. The report in its entirety is attached in the Appendix.

There were multiple steps in the process for creating the report. First, the local Safe Routes to School coordinator and Springfield Transportation planner assigned their interns the task of locating 10 public spaces that had substantial space and proximity to residential areas for traffic garden potential. From there, the Traffic Garden Team (TG

Team) within the Real World Eugene course gathered with them, a representative from the Willamalane special district, the bicycle and pedestrian planner for the City of Eugene, and a couple of other volunteers to tour around the sites and evaluate them along the following criteria: Existing amenities including seating, lighting, covered seating/shelters, restrooms, playground and green space, as well as the type of neighborhood land use present, like the zoning of the site itself, adjacent land use zoning, proximity to schools, neighborhood demographics, total population in proximate area, and median income.

The TG Team then deliberated over these sites and narrowed them down to 4 that were ultimately synthesized into tables for comparison, to be included in the final report. In tandem with site analysis, the TG team performed case studies on existing traffic gardens in Oceano, California; Fort Collins, Colorado; Copenhagen, Denmark; and Seattle, Washington. These were evaluated for their site characteristics, operations, funding, neighborhood land use, existing features, amenities, usage, and accessibility which were synthesized into write-ups and also presented in tables to be included in the report appendix.

The TG Team then scheduled a meeting with the Transportation Options Advisory Committee (TOAC) in Eugene to brainstorm what a traffic garden in the metro could look like and how it would be sustained. The meeting took place for 1 hour on November 16<sup>th</sup>, 2017, with the first half devoted to presenting case study and site analysis findings, and the latter half to answering 2 questions that the TG Team posed. Firstly, with scale, location, and programming in mind, what ideas do you envision for a traffic garden in the Eugene/Springfield area? And secondly, what can we do to ensure

the sustainability of this Traffic Garden? The findings were synthesized into a memo that was sent back to the group, and included in the report appendix. These findings also informed the recommendations that the TG Team included in the body of their report.

The final report was then completed in time to present to a gathering of community members on December 7<sup>th</sup>, 2017, along with the other groups in the Real World Eugene course. The groups were given approximately 30 minutes each for presenting their material and receiving input from the attendees. The Traffic Garden Team Final Report was brought to the presentation for reference, and ultimately included a introductory background framing the possibility for a traffic garden's impact, a methodology, a summary of ongoing efforts, preliminary findings of site analysis, the case studies, a summary of recommendations, and conclusion, as well as appendix including the TOAC memo and case study tables, followed by citations.

One of the key takeaways from our research for the report was that there needs to be better documentation of users of traffic gardens as they develop transportation habits over time in order to truly solidify the efficacy of traffic gardens. Some of the best correlations we have for their effect is in comparing the subjective quality of the gardens themselves against the cycling mode-share within a given area, namely Copenhagen and the Netherlands, which have had these pieces of infrastructure from the beginning of their bike planning stages. Conversation with others knowledgeable of traffic gardens found the more it emulates its existing surrounding cycling environment, the more reflective it has shown to be of a community's willingness to ride a bicycle as a means of transport. These takeaways helped guide the approach to the further brainstorming with stakeholders that functions as the new research for this thesis.

## **Chapter 4: Methodology**

In answering the research question of how a traffic garden can be implemented in the Eugene Metro Area, collaboration with the Transportation Options Coordinator for the City of Eugene resulted in a workshop with stakeholders that kept the energy for the project alive. The first step was to brainstorm the stakeholders necessary for participation. It was deemed that a range of perspectives would be valuable, and particularly those whose input would be used to bring the project together. These included elected officials, city leaders and staff such as parks and transportation planners, school programming leaders, bike-related businesses, and community leaders. Then, to prepare for the workshop, brief summary of the Real World Eugene report site analysis was discussed and a location was proposed for the stakeholders to brainstorm around. We chose to propose a specific site in order to gain practice deliberating considerations necessary for moving the project forward in a given location.

We ultimately held the workshop on April 27<sup>th</sup>, 2018 where we presented background information on what traffic gardens are, how they fit into the Eugene metro's future transportation culture goals, a summary of efforts to that point, and a specific site proposal for the attendees to brainstorm over. Notes were taken during the session to keep track of responses being brainstormed, which I later compiled into a pair of summary pages included in Appendix 3.

Not all who were contacted were able to attend, such as any of the elected officials or community members, but the turnout still contained a variety of

representatives. All who were initially contacted were kept in the loop by having the notes from the workshop sent to them.

## **Chapter 5: Results**

The results of the brainstorming done in the Stakeholder Workshop over considerations for the project are presented in this section. They include presentation of the data itself and the interpretation of those findings. Included in the raw data presented are the types of stakeholders brought into the process to form a brainstorming coalition, others who should be brought in in the future, opportunities for the traffic garden's vision, potential barriers to it realizing that vision, advantages of a specific site proposed, what to consider for the project in terms of design and function, potential satellite locations, and the next steps moving forward. Appendix 3 includes summary pages of these notes that assist in processing the information.

Afterwards, the Interpretation of Findings subsection assists in processing the data by providing background on the stakeholders and elaborating on the conversations that took place.

## Data

### *Stakeholders and the Knowledge-based Assets They Provided:*

- 4J & SRTS; lots of opportunity for programming, elementary age instruction
- SRTS; has put in lots of work through SRTS to get the groundwork going & provide early opportunities for kids to practice this concept through Bike Rodeos
- Assistant Traffic Engineer; seen the Netherlands where children know how to ride. Believes it's worthy of translating into our community
- Traffic Engineer; has seen in Copenhagen where it is staffed, has bikes, & they teach kids how to bike, views as an opportunity to do these things but to also work on culture
- Parks Planning; knows 4J has great amount of parking, this idea near RiverPlay cool. Florida had this for driving cars
- Transportation Planning Manager; love synergy with riverplay and riverpath, café and/or coffeshop great idea for commercial element. Bike café. Bikeshare station nearby for possible leisure for others. Update city master plan, figure out how to get money for this
- EPD crime prevention; host safety town every year for 2 weeks, environmental design. Would want us weighing in on design of that with CPTED (Crime Prevention Through Environmental Design) in mind. Riverfront development has unique considerations.
- Burley (bike trailer company); has seen a lot of different traffic gardens. Was at a bicycle leadership conference and key discussion was how to engage that 60%, (forget small AVs- we'll have tiny bike trailers), Free Bikes 4 Kidz could partner as well
- MPO (LCOG); interested in concept, aligned with safety and transportation options. Federal funds could potentially be used depending on where it's located.
- Safe Lane Transportation Coalition Coordinator; great opportunity to promote traffic safety, get involved in educating
- Bethel SRTS Coordinator; that area needs to be considered. Shasta middle school and ballfields has lots of real estate, beltline bike path provides a lot of opportunity. Satellite would be nice. Willamalane site in Springfield being explored, so could do one here as well

### *Others to get/keep involved:*

- University of Oregon
- Transportation Manager – Eugene School District 4J
- The Y
- Peace Health/Kaiser/healthcare focused organizations
- Boys and Girls Club
- KidSports/other youth & family organizations
- Rotary Club, Kiwanis & other civic organizations
- Chamber of Commerce
- CAT (Center for Active Transportation) with great potential tie-ins
- REI
- Community Members with special connections to the project



*Opportunities/Vision for Project:*

- If we get Skinner Butte Master Plan to include a Traffic Garden, could use System Development Charges for funding.
- 4J site is a little out of the way, so the only reason to be there would be to go to the Traffic Garden. Parking on Cheshire an opportunity for RiverPlay site.
- Opportunities for painting at satellite locations, reaching out to principals or staff on designs they want. Conversation we should probably have with our facilities managers. \$300 at one of the schools, could go towards paint at one of these locations
- Flexibility for a simple design or a different approach
- River Master Plan
- Within Parks and Open Spaces – Could be permitted
- Is there a best practice for a design that doesn't just emulate roads with shared lanes for bike/car? Can try to find a way to build what we have with what we're moving towards in mind. (eg; if we know we're building separated bike paths we should incorporate those)
- Opportunity for bioswales or more innovative wastewater treatment. Look at it as creation of small city; concrete gives opportunity for vertical element. Could make mini-eugene (river the bioswale? Mini Autzen?)

*Barriers to Project Success:*

- Equity: how do we keep kids with less opportunities & advantages involved? Is there a bus line to whatever site? One relatively close to RiverPlay
- Lots of moving parts with different people and agencies
- Environmental permitting/need to consider natural resources
- Stranger danger a big concern
- Operating costs/maintenance
- If schools bus kids, might be a barrier because pretty small streets, so might take infrastructure to get them in
- This would involve a lot of pavement, which is a cost but also produces runoff and stormwater. Do we do mini-curbs and gutters? If so, very expensive
- Easy to give money to build things, but not quite as easy to maintain. How do we ensure someone does?

*Advantages of RiverPlay Site:*

- Great aspect for RiverPlay site is that there's a bathroom, that would be a huge expense otherwise
- Problem area so engages it for better behavior

- Increases mix of reasons for people to be there: RiverPlay, Skinner Gardens, etc.
- Bike Share station nearby
- On Path
- Good parking (lot and on-street)
- Bike share stations
- Bus stop nearby
- Partnerships with Parks, Riverhouse, District, CAT, businesses, etc.

*To Consider for Inclusion:*

- Pump track has big impact on getting kids riding, possible mobile pump tracks
- Retail potential (Café/Beer Gardens/Disc Golf/Canoe Rental/Bike Repair). Challenge with permanent business could be activation throughout the year, so mobile vendors that match demand could be better
- Outdoor seating really useful for activating space
- Do bikeshare providers make kids bikes?
- Ft. Collins people mentioned the need to have the road signs at their real-life height (or at least 3/4) so that kids don't get used to looking at their own eye-level

*Potential Satellite Locations:*

- School Parking Lots – opportunity for small scale versions there and on playground blacktops
- Where do we have places that are blank slates? Reservoir on top of College Hill?
- Depending on timing of EWEB development, there's a lot of paving and area around steamplant to pop something in there for a couple of years. Places near University where something could be put in (possible pumptrack?)
- Underutilized basketball courts emulating the ALTA White Center one could work as satellites
- Peterson barn site? SW corner of park has opportunity possibly. Meadowview? But Shasta area with beltline path is central and allows for external connections

*Next Steps:*

- Do we need to update Skinner Butte Park Master Plan? Does it already include planned development west of RiverPlay? Boating access to river being updated, but this site would be excluded from it. What's city's vision for that whole area?
- If we want retail, what is the zoning? Philosophy on retail in parks has changed over time, so maybe more of a permitting issue.
- UO Foundation to get money
- Meyer Memorial Trust may not be used for construction but for providing access to the site
- Oregon Community Foundation may have specific funds

- Look at potential funding as far as planning piece - potential seed money?? Will need to have specific funds/rough cost estimate in order to figure out what it is we need to do and/or get a contract
- Find out how much did campaign who sold bricks for RiverPlay raise?
- Our lobbyist for Springfield Public Schools connected to Senator Wyden's staff; can try to probe those connections

## **Interpretation of Findings**

This section expands upon the key findings from the data. It will provide more information on the background and assets that the stakeholders brought to the table, as well as further detail on the thought process and discussion that led to what is presented as the data.

### *Coalition of Stakeholders/Representatives*

The stakeholder workshop brought together a coalition of representatives across groups and government agencies with various knowledge-based assets to bring to the table. Out of 11 representatives in total, 5 worked for the City of Eugene itself, including transportation specialists like the Transportation Planning Manager as well as head and assistant Traffic Engineer, a representative from the Parks Planning division, and one from the Police Department. These perspectives allowed for the conversation to tie in considerations of the city's transportation-related infrastructure, planning process and long-term vision with the same considerations for the parks system and the approach of the police department to keeping spaces like the future traffic garden safe. Each of these background perspectives served to inform the process of visioning the traffic garden in line with the city's approach to transportation culture, park development, and safety needs.

Two other representatives provided a regional government approach, including one from Lane Council of Governments (LCOG) - the Metropolitan Planning Organization (MPO) – and another from Safe Lane Transportation Coalition. Gathering perspective from the MPO kept the discussion broad enough to consider other cities in the region, like Springfield in particular, who would be left out by a Eugene-focused discussion. And the inclusion of a representative with a regionally-based transportation focus, in the Safe Lane Transportation Coalition, expanded that discussion of keeping other cities involved and aligned it with the vision for reducing road injury, creating safer streets and a more active transportation culture.

Three representatives served Safe Routes to School (SRTS), including the regional director for the program, the director for Springfield’s chapter, and the director for the Bethel neighborhood chapter in Eugene, each of whom do overlapping work with the Eugene 4J School District. SRTS is the nationwide program that promotes active routes to school for children in the form of walking, biking, scooter, etc., and has the most interest in seeing the traffic garden come to fruition for its direct alignment with the program’s mission. Each of the representatives has helped to put on Bike Rodeos, which bring kids and parents out to various schools to learn more about SRTS’ efforts in getting kids to school actively and safely, give feedback on the efficacy of doing so in their neighborhood, have bikes tuned-up by an on-site mechanic, enjoy interactive activities like a bike-powered smoothie maker, participate in a raffle for gadgets and prizes that make active transportation easier, and even practice riding through a temporary traffic garden put together with cones, plastic signs, and chalk or tape as road markings. This experience allowed these representatives to provide insight

directly applicable to the vision for design and usage of the space. In addition, having a representative from Springfield as well as Bethel (which is the most isolated and economically-challenged area of Eugene) in conjunction with the director for the overall regional program kept valuable pressure on the discussion to be inclusive and make sure the accessibility portion of the project was always considered.

Finally, a representative from the private sector was present. They represented the company Burley, which makes bike trailers commonly used by parents carting their children around. Eager interest in the project from them was valuable in keeping options open for partnerships with bike-related businesses that could be valuable down the road for a variety of purposes like sponsorship, supply of materials like bikes and trailers, and helping ingrain the project into the area's cycling culture, of which private companies like these often more so than the city or regional government are likely to interact with the people of. The representative was also in the process of founding a local chapter of the nationwide non-profit Free Bikes 4 Kidz, which collects and refurbishes used bikes to give away back to local kids. They were eager to make the program an integral partner to the traffic garden down the line, in providing many of the same benefits mentioned above that Burley could provide.

### *Points of Discussion*

The key points of discussion in the workshop started with representatives introducing themselves outlining the assets each felt they brought to the table, which were described above. Then the conversation shifted towards outlining the opportunities the coalition saw for the project itself. The discussion of these opportunities was guided

by framing the project in terms of the overall goals of increasing active mode-share in the metro area and doing so by creating a culture of cycling in the region. From that starting point, the discussion sought to brainstorm what specific ways the traffic garden could get off the ground and envision how its design and functionality could align with the guiding goals.

Creative design ideas to enhance place-making like the idea of creating a mini version of the city, with bioswales representing the Willamette river, a miniature Autzen stadium, and even a Hayward field-style track encircling the road infrastructure were key highlights discussed as a way to ingrain the project into the community. In addition, brainstorming ways to fit design plans into funding opportunities was a big point of discussion. For instance, Safe Routes to School grants would not be directly applicable for construction because the site would not be in the right of way, but a redesign of the neighboring street to accommodate more active modes certainly would. In addition, certain types of funding like Systems Development Charges are in accordance with what is outlined in master plans, thus seeking to update those plans becomes an opportunity for funding.

From there, the coalition discussed the barriers that would be in the way of the traffic garden achieving the vision set out. Equity was the primary consideration, in terms of ensuring accessibility to any and all users in the region via any form of transportation, be it biking/walking, taking the bus to a conveniently nearby stop, providing space for school bus entry and drop off, and if necessary, having sufficient space to park for driving a personal car. These considerations prompted discussion of a need for satellite versions outside of the main project for those whose access to the site

is not convenient. Other considerations included logistics of making the project successful to begin with like considering the permitting requirements and environmental hazards on site, and creation of a safe atmosphere when built, which is where the Eugene Police Department representative offered to help make sure the design was in accordance with the philosophy of Crime Prevention Through Environmental Design that focuses on spaces that are welcoming and conducive to good behavior. Another major point of discussion was recognizing the need to maintain the project long term, which would require sufficient budgeting for site upkeep, the logistics of which would need to be figured out in the future as improvements become necessary.

A specific site, termed the RiverPlay Site, was proposed for evaluation in order to take the discussion from an abstract one to a concrete one, giving the stakeholder coalition practice planning around a real location. This site was chosen upon review of the site analysis within the Real World Eugene Report and discussions had with TOAC and community members during the process, each of which indicated great possibility for it. The advantages of the RiverPlay site, which is the name of the playground shown in the aerial photograph on the Key Takeaways page, and which the traffic garden would be located in one of the grassy areas around, were discussed in order to take inventory of specific assets that other future site proposals could be compared against. Things like the presence of a bathroom, currently activated space with room for more, and accessibility via bikepath, bus line and vision for road redesign were highlighted as standout assets of the space. This discussion allowed for a segue into what other aspects of a traffic garden were ripe for inclusion, like potential surrounding place-making and

creative usage of the large space provided like a pump track, which allows users to have fun with jumps and maneuvering on rise and fall terrain.

From there, the discussion shifted towards next steps that would need to be considered for moving the project forward. Much of it centered around the question of how to receive funding, and described the need to outline a concrete vision for design and usage that would allow for better estimates of cost, subsequently laying the groundwork to search for a contract for development of the site and to request a grant. Additional discussion referred to the zoning of the site, and how to fit the city's current master plans for the area into a vision for a traffic garden. This was because the presence of a vision for a traffic garden in the master plans for the area would allow for speedier approval of zoning and permitting requirements, as well as open the door for the different types of funding like Systems Development Charges that get funneled through based on needs outlined in master plans. Satellite locations were also briefly brainstormed, including the Peterson Barn Site or a space off of the Shasta bikeway in Bethel, as well as more abstract proposals to search for unused basketball courts or school parking lots throughout the area.



## Chapter 6: Recommendations

This section synthesizes the data and interpretation of the findings into a summary laying out what the most integral considerations for a traffic garden in Eugene/Springfield should be. It is a section that other cities could look to to envision this process taking place in their own community and evaluate what elements are applicable to them. It will cover the considerations for the design - and site as a whole - as well as the strategy for funding and maintenance for sustaining it into the future.

### *Design*

**Creating a phase-friendly design**, such that infrastructure both reflects the current surrounding environment, but is also flexible in a way that accommodates more forward-looking infrastructure is important. It was referenced in the workshop that if the city knows it may be implementing separated bike lanes, create them in the traffic garden. There could be separate sections of the garden, even, dedicated to a present-reflective environment and a future-reflected environment. This is a place that Dutch-style curbs could be considered to promote future infrastructure development along that trajectory. The broader infrastructure point, as it relates to traffic gardens, is an important point to elaborate on, because traffic gardens traditionally emulate existing infrastructure. It is indeed important not to train people on inaccurate representations of their local infrastructure, but that does not mean that there are not opportunities to push the boundary on traffic garden infrastructure as well. These spaces could offer valuable testing grounds for data on how certain types of infrastructure would work in the real world, and at a much lower cost than implementing it full-scale. If kids are not able to

utilize the infrastructure then maybe it is not the appropriate form to implement, and experimenting with this infrastructure in an environment where the risk of injury is almost nonexistent compared to the real world would be valuable.

**The traffic garden should allow for practice on as many types of road situations as possible.** Most present infrastructure includes many streets with sharrows and/or bike lanes that abruptly end or merge. Allowing for practice on these situations, where one inevitably interacts with other vehicles and thus knowing how to surveying the road becomes a necessity, is a great opportunity for decreasing the barrier of stress associated with getting out to bike on less than separated separated infrastructure, even though practice on these situations is important as well. Another key recommendation from the Real World Eugene report, resulting out of meeting with TOAC indicated having a long straight away with a gentle slope would allow for practice managing speed and control. Conversely, winding roads would help with speed and control as well, and these, along with slalom-like features have been incorporated into bike rodeos to allow users practice with this.

**Incorporating fun features** like a Hayward field-like track encircling and crossing through the space would function as an identifier with the city, provide a place for users to practice navigating those crossing in front of them, as well as provide an activity opportunity for those accompanying the users. Other features like to bioswales to mitigate runoff produced by the addition of concrete could add aesthetically pleasing greenery to the area, and possibly even function to emulate the Willamette river as another form of place-making, with mini representations of city buildings and Autzen Stadium further reflecting the surrounding environment. Other fun features like a pump

track (rise and fall terrain allowing users to perform small jumps and prompting them to “pump” their weight in accordance with the shock absorption it is performing) were described in the workshop as having successfully ingratiated kids with cycling culture as something that is fun for them. Anecdotal experience at a bike rodeo in Bethel showed a small wooden ramp to be a fun component keeping the kids engaged and wanting to use the course over and over again.

**In addition to road markings, creating signage for as many situations as possible** is crucial as well. This includes stop, yield, crosswalk, railroad crossing, one way, etc. that teaches users how to interact upon encountering one of the signs in the real world. A recommendation from the Ft. Collins, Colorado Walk & Wheel Skills Hub relayed through the workshop was that keeping the signs normal size, as opposed to child-sized, is important so as to train kids precisely where to look for instruction and prevent them from getting used to keeping a line of sight at their own eye level. In anecdotal experience running local bike rodeos, children are often keeping their eyes on the ground ahead, thus teaching them to keep eyes up and ahead has proven to be impactful. Interactions with the Eugene Police Department (EPD) in the stakeholder workshop and parks planners during Real World Eugene indicated a need for the signs to be vandal resilient, possibly meaning portable. This could help reduce the fear of stranger danger that may accompany public spaces as it is. EPD has shown interest in ensuring the design is compatible with CPTED, as mentioned in the Interpretation of Findings.

In consideration of human-friendly development for the overall space, **surrounding the traffic garden with assets and activated space** would help ensure

the creation of a place that feels ingrained into the community. This includes a playground, bathroom, creative and inviting seating, as well as space for performers at possible events, and regular vendors. Discussion in the stakeholder workshop suggested mobile vendors would reduce necessary cost of investment and be more conducive to seasonal fluctuations in demand, and could range from food carts, to coffee or beer carts, or if a more permanent space, a flower/vegetable/beer garden. Other activities like disc golf or a canoe rental area would further activate the space for as many uses as possible given the location is conducive to these aspects.

**Having a mechanic station, possibly within a classroom or structure dedicated to housing programming functioning** would provide a permanent source of education for the users, both in terms of knowledge for bike repair and in the preparation needed to use the traffic garden. This is where schools could come to drop children off, receive preliminary instruction, and get fitted for bikes and helmets before hitting the road.

Finally, **having the garden accessible via all types of transportation** will maximize those able to use it. Location next to a greenway or pathway is ideal to encourage bike travel, as well as having streets accessible for biking. This is where an opportunity for accessibility and funding has come into play, described in discussions on SRTS funding. Converting the surrounding street to an advisory bike lane (as proposed for Cheshire Ave next to the RiverPlay) could provide the perfect bridge between creating a funding opportunity while increasing accessibility at the same time. Having nearby bus access for those arriving from farther away is also crucial, and considering where bus lines reach from the particular stop is important as well.

Understanding that many may arrive by car is important as well. Even though the goal is to increase active modeshare, it is not always feasible for everyone, so accommodating those who must drive with parking is necessary as well. Ensuring that school buses have access to the site for programming drop off must fit with all of the accommodations for accessibility as well.

### *Creation/Sustainability*

**The budget for the project must include consideration of equity.** If the traffic garden is deemed to not be accessible for all, then the budget should factor in funds for satellite versions in places where it is accessible to those that the main project is not. In addition, outreach for programming should include all schools in the area, and messaging and campaigns from the city should be visible in all communities. Ideas suggested for satellite locations included area school blacktops, unused basketball/tennis courts, and specific sites in Bethel like the Peterson Barn site, and a site accessible via the Shasta greenway path. The College Hill reservoir, and EWEB lot were suggested as temporary satellites as well.

The project will need sources of funding to get off the ground. **Updating the River/Skinner Butte/Parks master plan** is a strategy that came out of the workshop for getting funding through Systems Development Charges, and would make it easier to attract grant money.

As previously mentioned, **proposing a street redesign** of Cheshire or other surrounding street could utilize the SRTS grant money for right of way projects.

**Getting the site designated as multi-use in the zoning code** could mean multiple sources of funding for the project. This was a key takeaway from the Real World Eugene Report that was in line with the goal of multiple uses for activation of the space that the stakeholder workshop helped to brainstorm.

**Having a phased design** would help lessen the burden on finding start-up capital by making the project accommodating to funding in chunks rather than all at once.

**Partnerships/sponsorships** will be integral to the funding structure as well. The Real World Eugene report suggested this could possibly be used as a strategy for funding maintenance, as was seen with the White Center project's partnership with Cascade Bicycle Club. It was suggested in the stakeholder workshop that Eugene/Springfield could look to Kaiser Permanente, the YMCA, University of Oregon, PeaceHealth, the Boys & Girls Club, Rotary/Kiwanis, the Center for Active Transportation, REI, and even community members with special connections for general funding. In addition, it was suggested that the UO Foundation and Oregon Community Foundation may have specific funds they could dedicate, and the Meyer Memorial Trust possibly would provide funds to ensure proper access to the site. Stakeholders referenced bricks that were sold to help fund the RiverPlay playground, that could possibly serve as inspiration for a similar fundraising campaign for this.

## *Usage*

**Programming** in conjunction with local schools, coordinated through partnerships with 4J, SRTS, and individual schools would be the most important aspect to ensuring the traffic garden's usage. It would provide a steady flow of kids that would use the space, as well as provide the instructors that would help teach proper usage.

**Explore possibility of staffed or volunteer instructors**, in addition to those accompanying field trips for school programming. The budget may not have ample space for paying someone full time to do this work, but having instructors of some kind would be preferable than none for those that aren't using the site as part of a school field trip.

**Find ways to incorporate multi-modal usage.** Have some kids walking, scootering, skateboarding, and some pedaling toy vehicles. In the face of the Autonomous Vehicle (AV) era, a company could even be contracted to provide either remotely powered miniature vehicles operated by staff, or miniature slow-moving AVs that receive parental consent for usage in certain areas. Arci Moto was a company referenced in the Eugene area that could potentially perform this task.

When finding local vendors interested in activating site, **give opportunity/preference to less-established or minority-owned businesses.** This is a general suggestion meant to enhance accessibility within the community as well as create an inclusive environment that makes the cycling culture seem welcome to all. Literature has shown that campaigns often fail to attract riders of minority or low income demographics due to the perception of cycling being a privileged or MAMIL occupied sphere. (Reference)

**Establish some way of obtaining data on the traffic garden's impact.** This was something the Real World Eugene group discovered in case studies, and was mirrored in research for this thesis, that there is a significant lack of data directly linking traffic gardens to increased mode-share in an area, primarily because that data has not been kept. Keeping that data in association with this project could possibly be part of the scope of work for the agency tasked with maintenance. They could perform initial surveys on mode-share with users and continue to update those surveys periodically as those users continue to return and/or develop their own transportation habits.

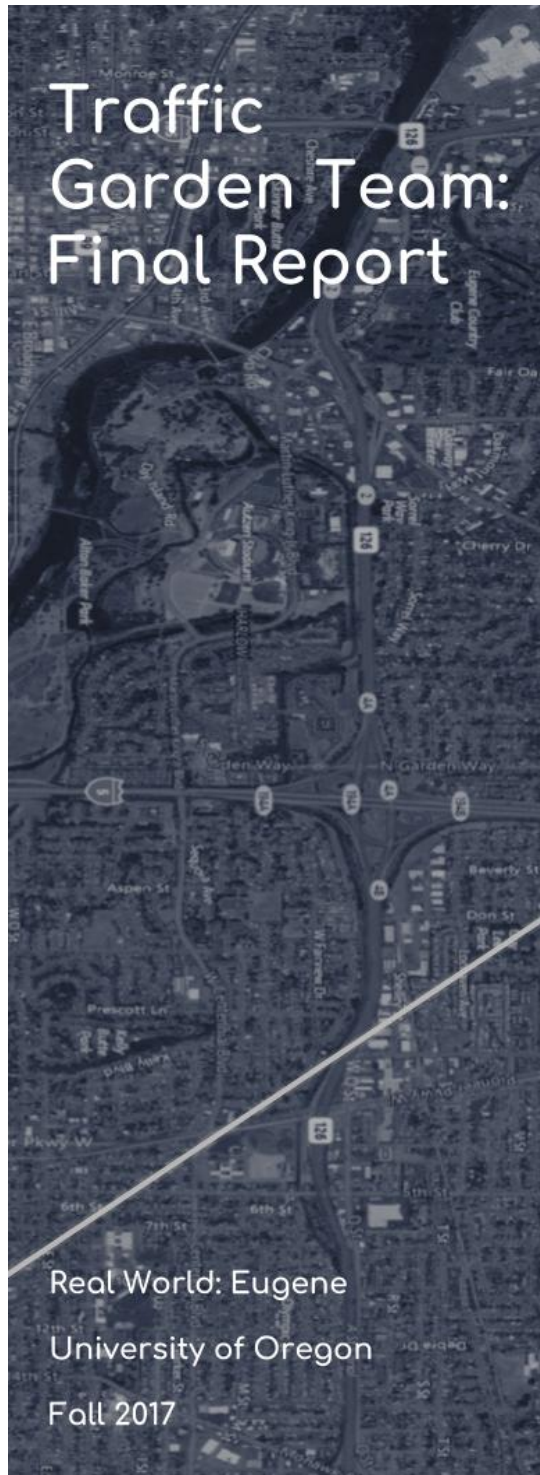


## **Chapter 7: Conclusion**

In light of the pages above, the overall benefits of active transportation are clear. Having planned cities for decades around the automobile, the negative consequences have shown and ideals for transportation are trending in a more multi-modal direction. Data has shown cycling to be important in fostering multi-modalism systemically, and that attracting cyclists takes both infrastructure projects and developing a culture that shifts the way the road is perceived. The opportunities that exist for traffic gardens to serve as the missing link for cities to create the type of active transportation culture they desire are there, and have been embraced by planners and stakeholders in the Willamette Valley. This embrace, upon completion of Real World Eugene's report, has taken the form of adoption of new strategic goals that the traffic garden serves to satisfy, and has carried through brainstorming with stakeholders on the opportunities and barriers of the project, with attention towards the future identifying others to get involved and next steps to bring the project to life. It is hoped that planners and resident advocates alike can continue to reference primary literature discussed in this thesis, the research done by the Traffic Garden Team to analyze its efficacy, and the ongoing efforts in the Eugene metro area to make the project happen, as inspiration for advocating implementation of a traffic garden/s in their own area. Not only is there opportunity to shape the way people perceive the roads and their options for traveling along them, but for urban residents to rethink the entire systemic functioning of their city as place-making such as this shows what can be possible.

## Appendix 1

### Real World Eugene Traffic Garden Final Report (including TOAC memo)



Jack Blashchishen

Kaitlyn Cook

Gillian Garber-Yonts

Chelsea Ingram

Sam Murrey

Trevor Shott

Course Instructor: Bethany Steiner

Community Partner: Reed Dunbar

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# Purpose of the Project

## Research Question:

*Given how traffic gardens have been implemented in the U.S. and around the world, how can we turn lessons learned from those efforts into recommendations that serve as a tool for planners and community members to create a traffic garden in the Eugene metro area?*

## Introduction

The Traffic Garden Team was composed of students enrolled in Bethany Steiner's *Real World Eugene* capstone course at the University of Oregon in the fall of 2017. The class provides students with the opportunity to gain real-world experience by partnering with the City of Eugene and undertaking a current project. The class is divided into small groups, with each group working on a different project, those being Downtown Programming, EWEB riverfront redevelopment, Microhoods, and the Traffic Garden project. Class lectures teach the students the important concepts that are needed in the workforce, but getting out of the classroom and practicing those skills is what makes this class so unique. Very few courses allow students the opportunity to practice what they've learned by interacting with those who are currently in the field and working with them to accomplish a goal.

The Team was tasked with researching how to go about implementing a traffic garden in the Eugene-Springfield area. To answer this research question, the Team conducted research on existing traffic gardens to determine what makes them successful and how beneficial they are to their city. The Team also analyzed several parks throughout Eugene and Springfield where a traffic garden could be built. The underlying conviction of this project is that a traffic garden is a valuable piece of infrastructure for a community, giving children a place to safely practice riding their bikes in preparation for navigating a city's busy streets. This report summarizes the Team's research and recommendations for how to incorporate a traffic garden right here in our community.



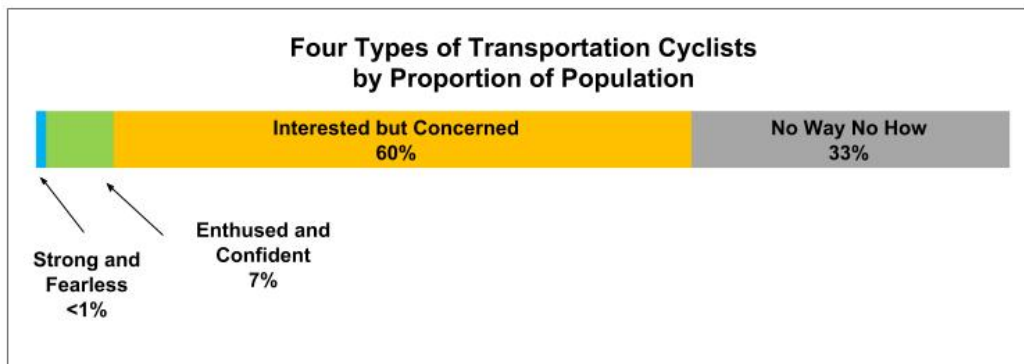
## Background

Cities around the United States have been shifting to encourage active transportation modes over the last decade. The sustainability of vehicular travel has been questioned. Whether the issue is framed as a health, equity, or cost problem, we have begun to understand that moving vehicles through our cities is simply not an efficient use of space or taxpayer dollars. This is why many cities around the country have included new mode share goals for transit, walking and biking in their Comprehensive and Transportation System Plans. Active transportation modal options encourage the efficient use of the transportation infrastructure built in a city.

In Eugene, there have been impressive strides to encourage active transportation. The City and Lane Transit District have implemented the only Bus Rapid Transit System in a mid-sized US city. The city also receives a gold rating for bicycle transportation. While these successes are impressive and deserving of praise, it is important that we remember that the job is not yet done.

Over the last several years, our cycling mode share has plateaued. While we host one of the more impressive active transportation modal splits in the United States, we do not have to look far to see examples of much more normalized bicycle transportation in other countries. It is clear that our transportation system can do more to encourage bicycle transportation, but stalled progress means that the issue needs to be approached from different angles.

Figure 1. Types of Cyclists, Portland Bureau of Transportation, 2005





## Background (cont.)



The Portland Bureau of Transportation identifies four different types of transportation cyclists. The 'Strong and Fearless' and 'Enthusied and Confident' categories refer to residents who are already making use of bicycle infrastructure in the city. The concept points to the fact that the majority (60%) of residents could be convinced to bike as a form of transportation, but there is something that needs to change to help them gain the confidence. In the past, planners have built bike lanes to convince these residents to bike. However, as bicycle mode share numbers plateau, we must look at other factors that are keeping these people from getting on their bike.

A critical barrier to people using a bicycle in the interested but concerned category is the fact that they do not feel comfortable bringing their family along with them. Cars offer safety features like car seats, air bags, and bulky frames that make it easy for parents to bring their kids with them. A parent does not have to worry about teaching their child how to ride in the back seat, but might worry about their child biking on a public street. Countries in Europe have developed a systemic approach to addressing this issue. Their solution lies in the creation of 'Traffic Gardens', public parks where people can bring their children to practice using the transportation network that is implemented in the city. Traffic gardens look like scaled down cities where cyclists can interact with stop signs, roundabouts, traffic lights, and other traffic features in a safe and controlled environment. Traffic gardens address the 'interested but concerned' cyclists in that they allow people to test drive the transportation infrastructure before using it in an exposed setting. Parents can bring their kids to safely use the infrastructure so that they can feel confident riding on public streets in the future.

This report will serve as a catalyst to bring a traffic garden to the Eugene/Springfield area. The presence of a traffic garden in our region invites exciting new futures for our active transportation modal split. This document will serve as an educational tool for both local decision makers and community members to become better informed on the issue.

### Traffic Garden Definition:

A miniature street network for users to learn how to bike on the roads and interact with other road-goers. It is often located in a public park or other shared space.

# Methodology

The Traffic Garden Team conducted research on traffic gardens and similar types of sites to evaluate the existing infrastructure both in the U.S. and abroad. We compared design features, programming, usage, funding sources, and public vs. private ownership models to determine best practices. From this research we developed a list of important features to provide comparative analysis for case studies and potential sites for the development of a local traffic garden.



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# Ongoing Efforts

The Traffic Garden Team is working in conjunction with Laughton Elliot-DeAngelis of Safe Routes to School in Springfield and Emma Newman, Transportation Planner for Springfield. They have two interns, Caroline Crisp and Robert Binder, who researched locations and accompanied site visits, respectively. Sophie McGinley also provided support for this research.

In addition, the City of Eugene has a history of support for this idea, including visionaries like Shane MacRhodes, who has provided support with prior resources and research devoted to this idea. Reed Dunbar, Bicycle and Pedestrian Planner for City of Eugene, has served as our main point of contact throughout this process and our intermediary for connections with people whose support is relevant and necessary.

LiveMove, the active transportation advocacy group at U of O, has considered taking on a project in relation to the traffic garden, either designing its features or redesigning a surrounding street. They will be adopting a different project for this year, but have already expressed interest in ensuring this project's completion and future success.

Our meeting with the Transportation Options Advisory Committee (TOAC) gave us an opportunity for feedback on our approach and an outlet for communicating the efforts of our project to prominent members of the planning community.





# Preliminary Findings

## Site Analysis

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Ten sites were selected by the Safe Routes to School program. The ten sites were toured by the Safe Routes to School team, the traffic garden team, and Reed Dunbar. Based on the tours, we narrowed it down to four sites. Two of the sites are in Eugene and two are in Springfield. The two sites in Springfield are Meadow Park (851 Mill St, Springfield, OR 97477) and Willamalane (1276 G St, Springfield, OR 97477). The two sites in Eugene are Kiwanis Park (Kiwanis Park, Eugene, OR 97401) and the 4J property (200 N Monroe St, Eugene, OR 97402). The following is a map which shows the locations of the sites.



# Preliminary Findings

## Kiwanis Park

Next to the Riverplay Park playground, Kiwanis park is a large activated green space that is on the riverfront. In this park, one can hear the river sounds and see people using the bike paths that hug the river. This site has mature trees that could be incorporated into the final design of the traffic garden. It has a parking lot, restrooms, lighting along the bike path, and benches, all of which were built to serve the Riverplay Park.

## 4J District Property

This site is about a five minute walk from Kiwanis Park and is located next to the Eugene Rose Garden. This site is an unactivated part of the riverfront which makes it a great candidate for continuing the revitalization of the riverfront. It is accessible by the South Bank bike path which is easy to walk to from the Riverplay Park playground. The site has mature trees and a bench that could be incorporated into the final design.

## Meadow Park

Just off of Pioneer Parkway to the south of Centennial Boulevard, Meadow Park is located in a highly residential area. This location is very accessible by foot and car, has an EmX stop, and is close to the major bike path off of the Willamette River. Meadow Park was recently renovated over the summer of 2016 to include several amenities such as a new playground, basketball courts, pickleball courts, and several seating options. Along with these amenities, there is plenty of green space and natural landscape for children and adults to enjoy.

## Willamalane

One mile east of Meadow Park lies Willamalane Park, a large outdoor area next to the Willamalane Swim Center. Located just off of Mohawk Boulevard, this park is surrounded by housing and is highly accessible by surrounding residents. Amenities at this park include a play structure, basketball courts, a skate park, and a horseshoe pit. There is also a very large green area that is not being used for anything specific and could accommodate a traffic garden.

## Site Analysis

These tables are attributes that we took into account when we toured the sites. A more in depth analysis will need to be performed on each site in order to finalize design features.

| Existing Amenities        | Kiwanis Park (Eugene) | 4J District Property (Eugene) | Meadow Park (Springfield) | Willamalane (Springfield)    |
|---------------------------|-----------------------|-------------------------------|---------------------------|------------------------------|
| Seating                   | 2+ benches            | 1 bench                       | 6 benches                 | 2 benches                    |
| Lighting                  | Lighting at Riverplay | Lighting on bikeway           | Yes - throughout the park | No                           |
| Covered seating/ shelters | No                    | No                            | Yes                       | No                           |
| Restrooms                 | Yes                   | No                            | Yes                       | Yes - inside the Swim Center |
| Playground                | Yes                   | No                            | Yes                       | Yes                          |
| Green space               | Yes                   | Yes                           | Yes                       | Yes                          |

# Preliminary Findings

| Site Characteristics     | Kiwanis Park (Eugene) | 4J District Property (Eugene) | Meadow Park (Springfield) | Willamalane (Springfield) |
|--------------------------|-----------------------|-------------------------------|---------------------------|---------------------------|
| Size (sq ft or acreage)  | ~330,000 sq feet      | ~160,000 sq feet              | ~560,000 sq feet          | ~250,000 sq feet          |
| Topography               | Flat                  | Flat                          | Flat                      | Flat                      |
| Trees/plants             | Yes                   | Yes                           | Yes                       | Yes                       |
| Land ownership           | Public Land           | Public Land                   | Public Land               | Public Land               |
| Development Restrictions | Unknown               | Unknown                       | Unknown                   | Unknown                   |

| Neighborhood/ Land Use                        | Kiwanis Park (Eugene)   | 4J District Property (Eugene)   | Meadow Park (Springfield)   | Willamalane (Springfield)   |
|---|---|---|---|---|
| Zoning of Site                                | Public Land   | Public Land   | Public Land & Open Space  | Public Land & Open Space  |
| Adjacent land use (Zoning)                    | Medium density residential  | Low to mid density residential  | Low density & high density residential  | Low density residential   |
| Proximity to Schools                          | 2 miles away from nearest elementary school                                       | 2 miles away from nearest elementary school                                       | 0.5 miles away from nearest school  | Located next door to Dos-Rios Elementary School                                   |
| Neighborhood Demographics: Race and Ethnicity | White: 77.5%<br>Hispanic: 10.6%<br>Two+ races: 5.6%<br>Asian: 3.6%<br>Black: 1.7% | White: 77.5%<br>Hispanic: 10.6%<br>Two+ races: 5.6%<br>Asian: 3.6%<br>Black: 1.7% | White: 79.5%<br>Hispanic: 13.2%<br>Two+ races: 2.9%<br>Asian: 1.6%<br>Black: 1.2% | White: 79.5%<br>Hispanic: 13.2%<br>Two+ races: 2.9%<br>Asian: 1.6%<br>Black: 1.2% |
| Population                                    | 166,575   | 166,575   | 61,893  | 61,893  |
| Median Income (Region)                        | \$43,101  | \$43,101  | \$39,729  | \$39,729  |

# Case Studies

In order to gain a better understanding of what our traffic garden should have, our team has prepared four case studies that look at different cities and the traffic gardens that they have built. For our case studies, we have developed a set of criteria which includes site characteristics, operations, funding, land use, and design features, among others\*. These criteria will help us to point out any similarities that the traffic gardens have, or any differences that we think should be incorporated into our traffic garden.

By researching what other cities have done, we can begin to determine the characteristics that our traffic garden should have and also determine how we can make our traffic garden sustainable so that children can use it for generations to come.

In these case studies, we look solely at traffic gardens that focus on bicycle safety rather than the safety villages that also incorporate different types of learning. While we acknowledge that these safety villages can be beneficial, they are not what we are looking to bring to Eugene or Springfield.

\* The tables containing all of the data we generated during the case studies can be found in Appendix B on page 19.



Clockwise from top-left: Oceano Elementary School Bicycle Track, Walk and Wheels Skills Hub, White Center Traffic Garden, Trafiklegepladsen

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## Case Study: Oceano Elementary School Bicycle Track Oceano, California



Oceano Elementary School, in Oceano California, designed a bicycle track over a portion of their blacktop playground in the fall of 2015. Similar to a traffic garden, this bicycle track is an educational course that provides a training ground for bicycle riding skills.

The bicycle track is painted on the blacktop with an oily surface material standard to blacktop playground ("slurry") with additional green paint added after. This process took only four days to complete. The total cost is estimated at \$600-\$1,650. The exact cost isn't known because the work was done in tandem with resurfacing for the rest of the playground's blacktop surface as part of routine scheduled maintenance. Funding came from the school's Facilities and Maintenance budget.

Inspiration for the bicycle track came from one of the school's teachers, Jim DeCecco. While traveling abroad, DeCecco visited traffic gardens in Italy and Copenhagen. Inspired to do something similar at Oceano Elementary, he contacted Ron Walton, the principal at the time who was very supportive. By the time DeCecco had returned from his trip, Walton had already contacted the school's facilities department to discuss the possibilities.

Oceano Elementary School was an ideal site for the bicycle track because faculty were already heavily involved in teaching bicycle and traffic safety. The school uses a curriculum developed by Safe Routes to School (SRTS) for 4th and 5th graders. The bicycle track is now used by the P.E. teacher during school, and by families after school. The school hosts a number of events throughout the year dedicated to encouraging bicycle ridership, including walk or bike to school day, Ride 2 Recovery parade and assembly, and a Girls Bike Posse Ride.

For these reasons, in 2017 Oceano Elementary School was named the most bike-friendly school in the entire United States, according to a cycling advocacy group called the League of American Bicyclists.

The success of Oceano Elementary School's bicycle track was the impetus for similar bicycle tracks at other elementary schools in the nearby Atascadero Unified School District. The district was able to get partial funding with a grant from the county's SRTS Program. The bicycle track is viewed as a "complete success" by the teachers and families at Oceano Elementary School.

## Case Study: Walk & Wheel Skills Hub Fort Collins, Colorado



The City of Fort Collins opened up their Walk and Wheel Skills Hub at the end of August 2017 and has seen a great amount of support for it ever since. This traffic garden is a great example of what can be done to an existing underutilized area in order to make it into an educational tool for children.

Criteria for a new site included being centrally located, accessible by all forms of transportation, close to schools, and not requiring excessive renovation. Originally the city was looking at parks and schools for the location, but nothing they were finding had space or the necessity for an additional amenity such as a traffic garden. The city continued its search elsewhere and eventually began talks with a local church which went on to offer to lease a portion of its parking lot that wasn't needed. This location was great because it was central, directly next to a major bike trail, and close to other parks.

The cost of building a traffic garden at this site was approximately \$50,000. The city anticipates that there will be some touch up work needed for the lines and potential graffiti, but hopes that these costs will be minimal. The main costs covered in the budget are paving (\$14,000), landscaping (\$13,000), painting/stripping/signage (\$9,500), and paying a design firm (\$5,500). There are no full time staff dedicated to the skills hub, as the city uses volunteers in order to minimize cost. The funding for this site comes from the city budget which gets reevaluated every two years.

The skills hub is around 21,000 square feet and offers many real-world elements that replicate the city's streets. Some of these elements include: bike turn lanes/boxes, railroad crossings, sidewalks, on street parking spaces, a traffic circle, and a long straightaway. This long straightaway is a unique design that allows the user to ride along a variety of curved paths in order to practice avoidance techniques. The space also has plenty of seating, bike racks, trees, and even provides a bike repair stand.

The Walk and Wheel Skills Hub offers several different types of programming opportunities aimed at getting children interested in visiting and learning about bike safety. They hold monthly drop-in sessions with a bike instructor that teach children about bike safety, pedestrian safety, and introduce the site. There is also a great partnership with the local Safe Routes to School program, which offers a number of different Smart Cycling and other bike classes for people of all ages. Additionally, the space has been reserved by different groups or clubs, such as the Boy Scouts of America.

As the city is currently in its evaluation phase on the site, future plans for the skills hub are still being discussed. There are no long-term plans for additional changes to the site, but there is the potential to reach out to other neighborhoods and build multiple sites all throughout Fort Collins. Overall, the city has found that the space has had positive feedback from the community and so far they are very happy with the turnout.



## Case Study: Trafiklegepladsen Copenhagen, Denmark



In 1974, a traffic garden was opened to the public in a large city park in Copenhagen. While the design for Trafiklegepladsen was impressive, it was by no means the first traffic garden introduced in Denmark. In 1947, schools all over Denmark started teaching children safe bicycle transportation practices. In the 1950s, traffic gardens were built as a place for schools to advance their bicycle education efforts.

In Denmark, children begin their education around safe bicycle transportation in the 3<sup>rd</sup> grade and are tested on their proficiency in the sixth grade. Trafiklegepladsen, hosts staff during business hours who answer questions, perform bicycle maintenance, check out loaner bikes for children, and hold classroom teaching sessions. The site has a large garage where children can check out bikes tailored to their skill level. There are 'Strider' bikes that do not require any pedaling for the youngest children and small bikes for children ready to try their hand at the real thing. Trafiklegepladsen also allows outside bikes and scooters.

The traffic garden itself provides a long list of amenities. Roundabouts, crosswalks, working traffic lights and bus stops can all be found at the park. All amenities in the traffic garden are scaled down to be sized for children, but imitate real transportation infrastructure that is used in the city of Copenhagen. The park provides spaces for children riding at different levels of difficulty. There is a fenced area for children 2-5 years old, where they can safely practice becoming comfortable balancing on bikes. The rest of the traffic garden is intended for children ages 5 to 14. By providing everything from slightly raised bike lanes to angled trash cans, the traffic garden models almost every aspect of both urban and suburban travel.

Trafiklegepladsen is strategically located in Faelledparken, a large public park located in downtown Copenhagen. Of course, the park is highly accessible by bike and provides a large amount of bicycle storage for visitors. There is also complete multimodal access to the park that provides users with a range of transportation options. All streets bordering the public park have bus stops for transit riders to access the park. Pedestrian infrastructure in and around the park is exceptional and there is parking provided for those who must visit the park by car.

While Faelledparken is home to Trafiklegepladsen, the traffic garden is by no means the only attraction to the site. The public park provides a large amount of green spaces for city dwellers to enjoy. The park has play fields, a multitude of playgrounds, food, and even a skate park. The park provides a dense network of walking and biking paths for users to enjoy. By providing a wide variety of amenities, Faelledparken encourages families of all ages and sizes to attend the park and make use of its world-class traffic garden.

## Case Study: White Center Traffic Garden Seattle, Washington



In 2016, a community just south of the City of Seattle named White Center implemented a traffic garden. The project was the result of an initiative headed by multiple partners. King County Parks, the body that owns and manages the public parks in Seattle's county, approached the Cascade Bicycle Club with a site that could be repurposed for their active transportation vision. It was a defunct tennis court, enclosed on three sides by a tall wire fence and surrounded by a little bit of green space, parking, a disc golf course, a playground, a middle and a high school.

Cascade then hired the services of Steve Durrant of ALTA Planning, based in Portland, Oregon, to design a project for the space. He and his team had previously been inspired by the traffic garden that exists in Copenhagen, having put together a small makeshift version of one in an alley beside their headquarters earlier in the year. He and his team decided to paint over the old tennis court, revealing in its place a network of streets that emulate all kinds of road scenarios for users, from roundabouts to mergers to curvy trajectories. A storage unit for bikes, seating, and tent-covered stations along the side were created for non-users when they accompany their learners.

The cost of the project was about \$95,000, with \$50,000 coming through a grant from King County Parks. The rest was raised by private donation, which was not made out by the leaders to be too hard to obtain. ALTA agreed to offer their services in exchange for "sponsorship value that Cascade Bike Club provided," giving them "higher recognition out of their events (Durrant, Steve)." This may not be an option everywhere, but certainly in cases where there is high interest and energy behind the project, it may be easier to create this sponsorship-type contract with a design/construction group than a capital-based one. A funding structure for maintenance was unclear, but programming seems relatively light with instruction offered in the summer through the Cascade Bike Club.

The area is a residential, low-income community, so it gets used by people who need it, and "people travel to it all across the region," although exact data has not been recorded. That is something that future gardens will want to keep record of. The site is easily accessible by foot, bike or car, but not especially via public transit. In addition, there are not many sidewalks in the surrounding area, meaning when users come across the traffic garden they are practicing on something that is reflective of the transportation habits of the area. "White Center doesn't have a lot of sidewalks. This is a way for kids to learn how to ride on the road[...](Kinney, Jen. Next City)."

While not as extensively designed as Copenhagen's, White Center's traffic garden shows how to implement a useful network of community-reflective streets to practice on, at an absorbable cost. Other future gardens can take advantage of more funds or different values for features.



# Recommendations

This set of recommendations is broken into categories. Design features refer to the physical nature of the traffic garden, and what should be built. Funding and Maintenance Structure considers the procedure of implementing the garden and the ideology that should guide the project through its lifetime. Programming is related to the official usage of the site through programs and outreach that connect users to instruction. These recommendations were inspired by the workshop the Traffic Garden Team held with TOAC on November 18th.

## Design Features

Features should be child-scaled and include:

- Flexibility for future phases
- Vandal resilient infrastructure
- Varied streets that are reflective of city streets, but can also be modified to idealistic ends that drive changes in large-scale street design
- Consideration of ways to redesign surrounding streets to provide better access to the project while also setting an example of a better way to envision streets

### Detailed Infrastructure Ideas

- A pedestrian-activated beacon
- A long straight-away with a gentle slope
- Railroad crossings, crosswalks, roundabouts, mergers, sidewalks, signals, and signs for both cars and bikes



## Funding and Maintenance Structure

- Site should be designated as Multi-Use to open up more funding options
- Funding sources should be diversified
- Maintenance and ongoing costs should be anticipated
- Maintenance costs may need to be covered by sponsorships
- Design and maintenance should anticipate costs associated with vandalism
- Breaking the project into phases to lower the capital requirement.
- Creating a publicly-accessible method for documenting the ongoing development, programming, and impact of the traffic garden.

## Programming

- The traffic garden(s) should provide bikes and partner with local school districts to offer year-round educational programming opportunities.
- The traffic garden(s) should be located near schools and be highly accessible to all.

# Conclusion

The main goal for this traffic garden concept is to enhance road and bicycle safety in the Eugene-Springfield area. In addition to educating children on how to ride bikes in urbanized areas, the traffic garden will give children experience interacting with active transportation infrastructure making them more responsible motorists in the future. The ideas recorded during the workshop with TOAC will help aid in this effort and provide a starting point for concepts developed in the future. The TOAC meeting summary can be found in Appendix A (p17.)

# Appendix

## Appendix A

### TOAC Meeting Minutes Memorandum

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# Memorandum

**To:** TOAC  
**From:** Traffic Garden Team  
**Date:** 11/21/17  
**Re:** Traffic Garden Presentation at the TOAC Meeting

The purpose of this Memorandum is to provide a summary of the meeting minutes and key takeaways from the Traffic Garden Project's presentation during the November 16th TOAC meeting.

#### **Traffic Garden Presentation**

The first thirty minutes of the November 16th TOAC meeting consisted of a presentation delivered by the Traffic Garden Team. A copy of the Powerpoint presentation will be sent out along with this Memorandum. A brief synopsis of the presentation is outlined below.

- **Overview:** A traffic garden is a miniature street network for users to learn how to bike on the roads and interact with other road-goers. It is often located in a public park or other shared space.
- **Case Studies:** Two case studies were showcased in the presentation. The White Center traffic garden in Seattle, Washington served as a basic and most successful implementation of this concept in the US. A traffic garden open in Copenhagen provided context for the potential future of US projects. The Copenhagen model was identified as the ideal version and one of the most successful existing implementations of this concept.
- **Potential Sites in Eugene and Springfield:** Four potential sites were identified (two in Eugene, two in Springfield).
- **Goals:** The traffic garden would serve as a systemic approach to the mode share problem. A traffic garden provides an educational opportunity for the community and has the potential to increase bicycle and active transportation mode share over time.

#### **Workshop**

The second thirty minutes of the meeting were dedicated to a short workshop where members of the Traffic Garden Team asked attendees to answer the following questions.

- 1) *With scale, location, and programming in mind, what ideas do you envision for a traffic garden in the Eugene/Springfield area?*
- 2) *What can we do to ensure the sustainability of this Traffic Garden?*

The responses were recorded and will be included in the Traffic Garden Team's final report, which will be completed on December 7th. The major takeaways from the workshop were synthesized and are displayed below.

**Question #1**

- The traffic garden(s) should provide bikes and partner with local school districts to offer year-round educational programming opportunities.
- The location of the traffic garden(s) should be located near schools and be highly accessible to all.
- Design features that should be included:
  - A long straight-away, with a gentle slope
  - A pedestrian-activated beacon
  - Child-scaled features
  - Flexible design for phased development
  - Vandal resilient infrastructure

**Question #2**

- Funding sources should be diversified
- Site should be designated as Multi-Use to open up more funding options
- Project should be in partnership with local schools
- Maintenance and ongoing costs should be anticipated
- Design and maintenance should anticipate costs associated with vandalism
- Programming should be developed in conjunction with local partners
  - IDEA: Work with the University of Oregon Bike Program

**Conclusion**

The main goal for this traffic garden concept is to enhance road and bicycle safety in the Eugene-Springfield area. In addition to educating children on how to ride bikes in urbanized areas, the traffic garden will give children experience interacting with active transportation infrastructure making them more responsible motorists in the future. The ideas recorded during the workshop will help aid in this effort and serve to provide as a starting point for concepts developed in the future.

## Appendix B Case Studies: Tables

| Site Characteristics   | Oceano Elementary Bicycle Track<br>(Oceano, CA)                            | Walk and Wheel Skills Hub<br>(Fort Collins, CO) | Trafiklegepladsen<br>(Copenhagen, Denmark)  | White Center Traffic Garden (Seattle Area, WA)             |
|------------------------|--|---|---|--|
| Size (sq ft)           | ~5,670 sq ft   | ~21,000 sq ft                                   | ~120,000 sq ft  | 10,000 sq ft   |
| Topography             | Flat   | Flat  | Flat  | Flat   |
| Trees/ plants          | Some nearby trees  | Limited   | Tree, Grass, Bush   | None within Garden   |
| Land ownership         | Oceano Elementary School   | Summitview Church (City leases space)           | City of Copenhagen  | King County Parks  |
| Restrictions           | School property  | Unknown   | Public Park   | Repurposed park  |
| Operations             | Oceano Elementary Bicycle Track<br>(Oceano, CA)                            | Walk and Wheel Skills Hub<br>(Fort Collins, CO) | Trafiklegepladsen<br>(Copenhagen, Denmark)  | White Center Traffic Garden (Seattle Area, WA)             |
| Dedicated Staff        | None   | Volunteers                                      | Paid Staff  | Staff  |
| Maintenance needs cost | Negligible   | Undetermined                                    | Unknown   | Unknown  |
| Cost of Entry          | Free   | Free  | Free  | Free   |
| Hours of Operation     | Closed to the public during school hours. Open to the public after school. | Open except when reserved/used by groups        | <b>March-October</b><br>Mon-Fri: 9-17<br>Every third Saturday: 10-17<br><b>November-Feb</b><br>Mon-Fri: 9-16<br>One Saturday per month: 10-16 | Year-round (except when reserved by programming)           |
| Shared Bike Program    | None   | None  | Yes   | Storage but program unsure                                 |
| Partnerships           | None   | Unknown   | Work closely with schools   | Cascade Bike Club, YES Foundation, White Center Foundation |

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| <b>Funding</b>                                | <b>Oceano Elementary Bicycle Track (Oceano, CA)</b>                                | <b>Walk and Wheel Skills Hub (Fort Collins, CO)</b> | <b>Trafiklegepladsen (Copenhagen, Denmark)</b>                        | <b>White Center Traffic Garden (Seattle Area, WA)</b>       |
|---|--|---|---|---|
| Operating Budget                              | Negligible; can be updated on the existing maintenance schedule for the playground | TBD   | Unknown   | Low   |
| Funding Sources                               | School's Facilities and Maintenance budget   | City/Private Donors                                 | Unknown   | City/Non-profit and Private Donors                          |
| Consistent/ Dedicated Funding?                | Yes  | Yes   | Unknown   | Unsure  |
| <b>Neighborhood/ Land Use</b>                 | <b>Oceano Elementary Bicycle Track (Oceano, CA)</b>                                | <b>Walk and Wheel Skills Hub (Fort Collins, CO)</b> | <b>Trafiklegepladsen (Copenhagen, Denmark)</b>                        | <b>White Center Traffic Garden (Seattle Area, WA)</b>       |
| Zoning of Site                                | Public Facility  | Unknown   | Public Park   | Public Park   |
| Adjacent land use (Zoning)                    | Residential Multi Family, Residential Single Family                                | Residential Multi Family, Residential Single Family | Unknown   | Surrounded by remaining park, but outside is residential    |
| Urban, Rural, or Residential?                 | Residential  | Residential   | Urban   | Residential   |
| Proximity to Schools                          | On school grounds  | Nearby  | Many schools within one mile radius                                   | Elementary/Middle School nextdoor                           |
| Neighborhood Demographics: Race and Ethnicity | Racial diversity: Hispanic 62.4%, White 34.2%, Multiracial 2.4%, Asian 1%          | Unknown   | Racial diversity: Hispanic 3% White 94% Black 1% Two or more races 1% | Racial Diversity: White 39% Hispanic 29% Asian 23% Black 9% |
| Population                                    | 7,857  | Unknown   | 583,525   | 13,500  |
| Median Income                                 | \$49,721   | Unknown   | \$52,865  | \$35,488  |



| <b>Design Features</b>    | <b>Oceano Elementary Bicycle Track (Oceano, CA)</b> | <b>Walk and Wheel Skills Hub (Fort Collins, CO)</b> | <b>Trafiklegepladsen (Copenhagen, Denmark)</b> | <b>White Center Traffic Garden (Seattle Area, WA)</b> |
|---------------------------|---|---|--|---|
| Crosswalks                | No  | Yes   | Yes  | Yes   |
| Fence                     | Y- around school grounds                            | No  | Yes  | ¾ Yes   |
| Incline                   | No  | No  | No   | No  |
| Roundabout                | Yes   | Yes   | Yes  | Yes   |
| Sidewalks                 | N   | Yes   | Yes  | No  |
| Signage                   | No  | Yes   | Yes  | Makeshift/Portable                                    |
| Signals                   | No  | No  | Yes  | Makeshift/Portable or No                              |
| Straight-away             | Yes   | Yes   | Yes  | Short but Yes   |
| <b>Amenities</b>          | <b>Oceano Elementary Bicycle Track (Oceano, CA)</b> | <b>Walk and Wheel Skills Hub (Fort Collins, CO)</b> | <b>Trafiklegepladsen (Copenhagen, Denmark)</b> | <b>White Center Traffic Garden (Seattle Area, WA)</b> |
| Seating                   | Yes- some   | No  | Yes  | Yes   |
| Lighting                  | No  | Yes   | No   | No  |
| Covered seating/ shelters | No  | No  | Yes  | Yes   |
| Restrooms                 | Not open to the public                              | No  | Yes  | Yes?  |
| Playground                | Yes   | No  | Yes  | Yes   |
| Green space               | Yes   | Yes   | Yes  | Yes   |
| Food/beverages nearby     | No  | No  | Yes  | No  |
| Public Art                | Yes   | Yes   | Yes  | No  |



| Usage/Usership             | Oceano Elementary Bicycle Track (Oceano, CA)              | Walk and Wheel Skills Hub (Fort Collins, CO)  | Trafiklegepladsen (Copenhagen, Denmark)                           | White Center Traffic Garden (Seattle Area, WA) |
|----------------------------|---|---|---|--|
| Programming                | Used in school's regular curriculum and for annual events | Drop-in sessions, SRTS classes, group rentals | Used in school curriculum, class sessions, bike borrowing program | Classes and instruction                        |
| Who                        | Oceano Elementary School, and families                    | Schools and anyone else interested            | Anyone, reservations for parties over 5 persons                   | Cascade Bike Club                              |
| Accessibility              | Oceano Elementary Bicycle Track (Oceano, CA)              | Walk and Wheel Skills Hub (Fort Collins, CO)  | Trafiklegepladsen (Copenhagen, Denmark)                           | White Center Traffic Garden (Seattle Area, WA) |
| ADA Accessible             | Yes   | Yes   | Yes   | Yes  |
| Arriving by bike           | Occasional Bike lanes                                     | Yes - major bike trail                        | Highly accessible by bike   | Yes  |
| Arriving by foot           | Walk Score: 58  | Yes - residential area                        | Highly accessible by foot   | Yes  |
| Arriving by public transit | Bus stop nearby; used minimally                           | Yes - by busy transit street                  | Highly accessible by transit                                      | No   |
| Arriving by car            | Plenty of Parking   | Yes - plenty of parking                       | Accessible by car   | Yes  |

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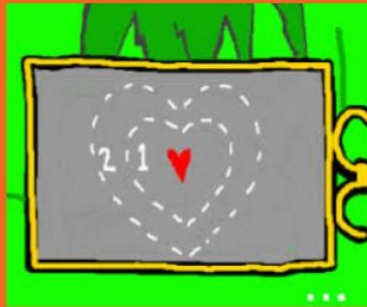
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## Appendix 2

### Slides from Traffic Garden Stakeholder Workshop Presentation



## Tripling of Mode Share



### ...and Plans That Fit

- Envision Eugene
- Climate & Energy Action Plan
- Transportation System Plan
- MoveEug 2017-2021
- SRTS 2017-21 Strategic Plan (Action Item #6)
- Park & Rec System Plan

# The Mode-Share Factor

## Four Types of Transportation Cyclists by Proportion of Population



## What do we need?

- Systemic approach to mode share
- Public safety
- Enriching education opportunities for youth (and adults)

(Image of a local child removed)

## What is a traffic garden?

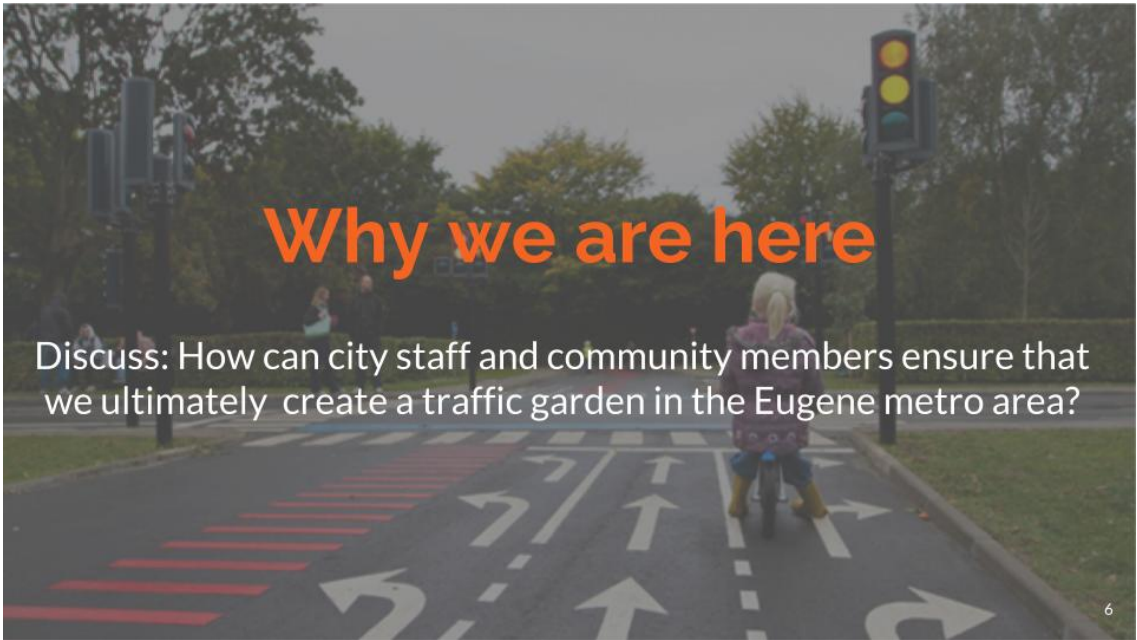
A mini street network for users to learn how to bike on the roads and interact with other road-users. It is often located in a public park or other shared space.



5

## Why we are here

Discuss: How can city staff and community members ensure that we ultimately create a traffic garden in the Eugene metro area?



6



# What has happened?

- Basic Mobile Traffic Gardens
- Scan Tours
- 2015 LiveMove Study
- 2017 Real World Eugene Class Report
- New SRTS funding in State Transportation Bill
- MoveEUG 2021 - Active Transportation Strategy
- Interest from the City



Live. Move. Learn. A Traffic Garden For Eugene

LiveMove  
2015 Traffic Garden Study Page 15  
2015 Traffic Garden Study Page 15  
2015 Traffic Garden Study Page 15  
2015 Traffic Garden Study Page 15



Jack Beinhorn  
Kaitlan Cook  
Oliver Garner-Words  
Charles Ingram  
Sam Murray  
Travis Shatt  
Course Instructor: Bethany Steiner  
Community Partner: Reed Dunbar

# Traffic Garden Examples



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## White Center, Washington Traffic Garden



Source: Alta Planning

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## Ft. Collins, Colorado Skills Hub



10

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## Prague, Czech Republic Traffic Rules Playground



11

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## Trafiklegepladsen (Copenhagen)



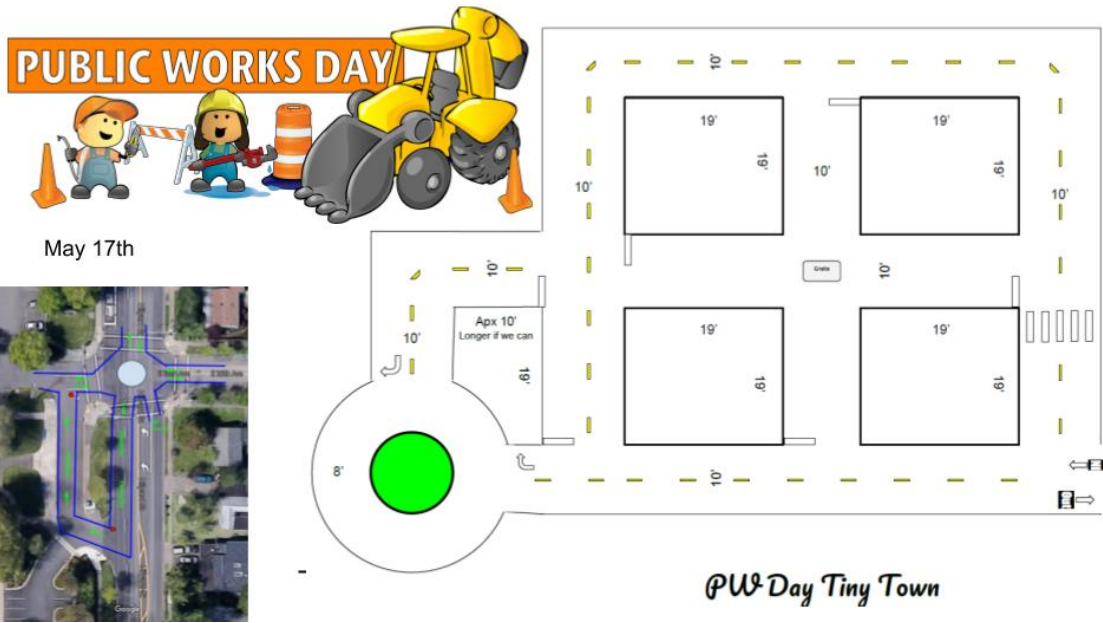
12



# Denizli, Turkey Traffic Park



13



# Future Possibilities

15

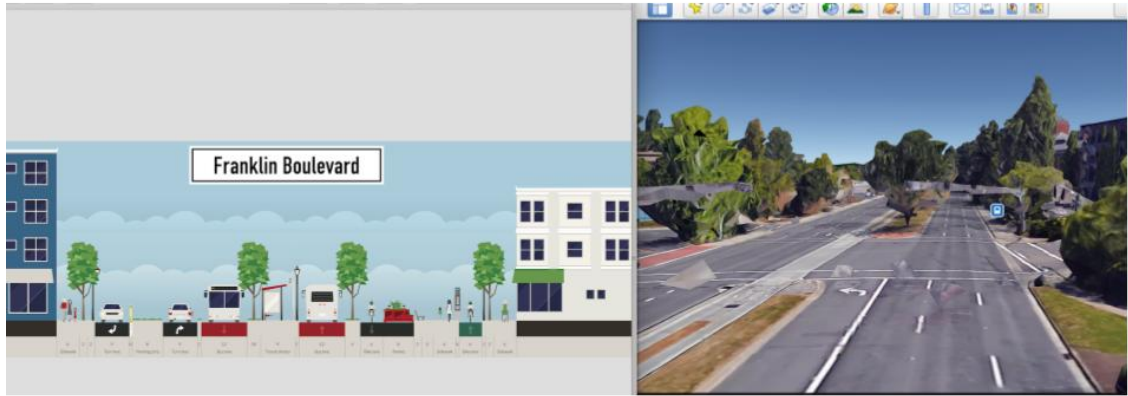
## Working Idea



- Programming in conjunction with school districts (SRTS Strategic Plan)
- Phased development (other placemaking possible)
- Cheshire Ave redesign (SRTS funding possible for right-of-way purposes?)
- Arcimoto involvement?
- Senator Wyden Internship

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# LiveMove Franklin Boulevard Redesign



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## Conclusion



# Introductions

Name, Organization/Department, How connected to Traffic Garden



# Opportunities, Barriers, & Discussion





# Appendix 3

## Presentation of Stakeholder Workshop Notes

# STAKEHOLDER WORKSHOP

## AGENCIES REPRESENTED & THEIR ASSETS BROUGHT TO THE TABLE

### ASSETS OF AGENCY REPRESENTATIVES

- Safe Routes To School (SRTS): Has put in lots of work to get the groundwork going & provide early opportunities for kids to practice the traffic garden concept through Bike Rodeos
- 4J: Eager to assist with developing programming, elementary age instruction
- Parks Planning: Can help with permitting, developing area master plans
- LCOG (MPO): Sees alignment with regional safety & transportation goals; can advise on receiving federal funds
- Safe Lane Transportation Coalition Coordinator: In line with mission, can help promote traffic safety and get involved in educating
- Eugene Police Department: Currently host "Safety Town" every year for 2 weeks. Would help design adhere to philosophy of Crime Prevention Through Environmental Design (CPTED)
- Burley: Specializes in bike trailers which could be provided for use. Representative also founding a local Free Bikes 4 Kidz chapter, which could provide both personal bikes for users to keep and supply for programming
- Transportation Planning Manager: Can help with updating city master plan to find seed money
- Traffic Engineer & Assistant Traffic Engineer: Experience with concept in other places & role in creating cycling culture
- Bethel SRTS Coordinator: Knowledge & ties to Bethel neighborhood area & community to make sure they are included in plans

Attendees by background (11 Total)

### STAKEHOLDER AGENCIES PRESENT

3 representatives w/ overlapping ties from:

1 representative each from:

Additional representatives:

- Transportation Planning Manager
- Traffic Engineer & Assistant Traffic Engineer

### OTHERS TO GET INVOLVED

+ Center for Active Transportation (CAT), & any individual community members with special connections



### OPPORTUNITIES/VISION

- Design road infrastructure with what the city is moving towards in mind
  - More innovative wastewater treatment. Could utilize bioswales that are designed to represent Willamette River
  - Designing mini city landmarks could enhance placemaking (Mini Autzen?)
- SRTS grant funding for right of way projects could be used on neighboring streets (Cheshire Ave Advisory Bike Lanes?)
- System Development Charges can be used for funding if Master Plan is updated
- Coordinating with school principals and staff on painting their own satellite versions

### BARRIERS

- Equity: how do we keep disadvantaged communities included? Are there connections via transit to the site?
- Long Term Operating Costs/Maintenance
  - Environmental permitting needed over consideration of natural resources
- If using pavement, how to limit runoff? Mini gutters & even bioswales may add up (\$)
  - Managing stranger danger
  - School buses will need to access for programming; keeping streets wide enough to accommodate but also attractive to bike/ped access

# Key Takeaways

### Advantages of RiverPlay Site

- There is already a bathroom on site. Would be a huge expense otherwise
- RiverPlay Playground & Skinner Gardens are present assets to encourage further mix of uses. Provides more reasons for people to be there & engages it for better future behavior
- There is a bus stop & bikeshare station nearby that makes it accessible, & it is on the Riverfront path
  - Good parking (lot and on-street)
- Partnerships with Riverhouse, CAT, nearby businesses, & Parks, District planning

### To Consider for Inclusion

#### In Traffic Garden Design:

- Road signs that are life-size (or at least 3/4 scale)
- Pump track (possibly mobile)

#### On Surrounding Site:

- Retail Potential (Café, Beer/Vegetable Garden, Disc Golf, Canoe Rental, Bike Repair, etc.)
- Creative outdoor seating

### Next Steps

- Figure out concrete plan for funding sources (Updating Master Plan needed?). Will need specific funds or rough cost estimate to get a contract
- Ask UO Foundation, Meyer Memorial Trust, Oregon Community Foundation if willing to provide funds
- Find out how much brick-selling campaign raised for the RiverPlay playground. Could do something similar
- Figure out zoning of area for including retail
- Brainstorm satellite locations (Bethel sites, school parking lots, basketball courts, etc.)

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