

# Community Engaged Learning Report

April 2024

Logan City Planning Group





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# Group Members

## Alex Fielder



I am a Junior and recent transfer student to USU majoring in Environmental Studies and GIS. I am from Salt Lake City and have loved Logan since moving here. I think the course content has provided me with valuable communication and group work experience. Working with the city has been particularly insightful and has made me more confident working with public officials.

### Contributions to Project

- Conducting communications with Mike Johnson and Avery Cronyn
- Wrote the Summary of Interactions section, worked on Benefits section, and mapped the bike crash data
- Edited videos and compiled reports for Community Partner Meetings

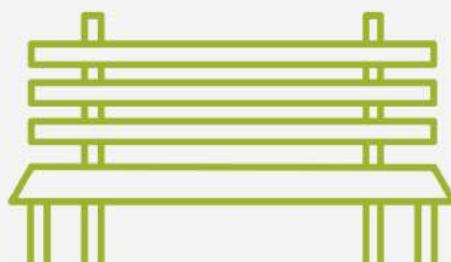
I'm an Environmental Studies student with a minor in Sustainability at Utah States University. I'm a hobbyist beekeeper and aquarist.

While working on this project, I've learned an incredible amount about applying knowledge. Sustainability and permaculture have become a major focus of my life.

### Contributions to Project

- Wrote and edited news article
- Wrote Evaluation Plan section of this report.
- Made video edits to partner introduction video
- Various research

## Kendrick Udy



# Group Members Cont. <sup>3</sup>

## Paxton Taylor



I'm a student at Utah State University currently in the ending portion of my senior year. I originally took up an interest in environmental studies through my experiences living in Washington (State). They brought me to appreciate the natural environment and to help people find a more sustainable way of interacting with the environment.

This course was much better than I originally anticipated. To be honest I put it off until my last semester because I thought it was going to be a class I wouldn't enjoy. However, the experiences I've had in this class and with my group have helped me prepare for my career as I will be interacting with local government regularly. I believe that the experiences I've had in this class have helped me refine both my communication skills and the skills I will need in my career.

### Contributions to Project

- Wrote the Goals and Objectives sections of this report
- Researched Logan's city values
- Collected data from Logan City Police on crash statistics

A senior in Environmental Studies with a minor in Sustainable Systems. I worked with the National Park Service last summer as a Park Guide and hope to continue work like that after graduation. I'm originally from Minnesota and would love to end up back there. I have really appreciated working with local government and becoming more confident in how to get my opinions voiced to the city. This project has served as a basis for my future efforts in sustainability in the cities I'll live in. I'm really happy I had this experience.

### Contributions to Project

- Conducting the communications with Russ Holley
- Designed report template
- Wrote the Course Content section of this report
- Gathered the Utah Wellbeing Survey data
- Lots of research for the report

## Madison Fjeldsted



# Community Partner: Logan City

## Planning Division Mission and Values

### Mission:

"The Planning Division seeks to preserve the past while building an enhanced future by preparing plans which produce a quality and sustainable community."

-Logan General Plan

### Vision:

"Our vision for Logan is one where people want to stay and contribute to the betterment of all people who live here."

"Our vision for Logan is one where business, industry, and residential development are accomplished with enduring quality."

-Logan City Website

## Key Individuals:

"As we continue to struggle with poor air quality and the overall rising costs of automobiles, momentum seems to be building for viable, more environmental sensitive transportation options"

-Russ Holley  
(Molini, 2013)

"Logan is projected to continue to experience a high growth rate... We need to keep a long term view when building our roads, housing and businesses. Sometimes the easiest solution isn't the best." -Mike Johnson  
(Johnson, 2024)

### Russ Holley

Russ is Senior Planner for the City of Logan. He has been very willing to work with us on this project. He bikes to work himself and wants to see Logan become more walkable and bikable for everyone.

### Mike Johnson

Mike has been serving as a city council member for the City of Logan since January of this year. He is also on the Bicycle Pedestrian Advisory committee. He supports our ideas and is our connection to the rest of city council.



# Our Goal

Our target behavior is bike use over single commuter driving. Many people in Logan use their car to go to work, school, out with friends, or wherever else they may go in their day. This however creates a problem for the environment, as the excessive driving leads to air pollution in a place already prone to having inversions.



We aim to encourage the Logan City Planning Commission and the City Council to support usage of **biking transportation in lieu of single-car commuting**. Our vision is that by promoting these more sustainable forms of transportation we will be contributing to a greener city and help solve our infamous air quality problem. Project Drawdown estimates that implementing bicycle infrastructure globally could avoid 2.73–4.63 gigatons of carbon dioxide equivalent emissions by 2050 if just 2–3% more trips are taken by bicycle! (Project Drawdown, 2024)

From what we have observed, the Planning Commission and City Council want to encourage these behaviors. They live in the same air-polluted, traffic-ridden city that we do. However, it is more a question of whether they will be able to engage in these behaviors as they have many other issues on their slate. We hope that they will commit to certain aspects of these behaviors, even if they are small, as they will **improve the quality of life in the city and potentially the valley at large**.

The behavior is already in the minds of some city leaders. One example of this is back in 2015 a plan (Logan Bicycle & Pedestrian Master Plan) was created. One of the current sitting city council members was engaged with the creation/approval of this plan as well as our community partner, Aggie Blue Bikes. (Aggie Blue Bikes is a community oriented, on-campus shop that fixes and rents bicycles). We believe that since they had an interest in sustainable transportation back then, they'll still hold to that belief and be willing to adopt some of our suggestions.

As far as residents go, a 2012 study determined that 3% of trips taken in Logan were done by bicycle and 83% by car, so there is room for improvement (Alta, 2015). This same study though determined that a higher percentage of trips were done by biking or walking in Cache County than in any other Utah county, so that is a source of encouragement (Alta, 2015). 63% of people in Cache County agreed that "**The ability to walk and bike to places in my neighborhood is important to me**", so we know it is on the minds of the majority of citizens (Alta, 2015).

# Objectives

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Our goal as stated above is to implement an improved sustainable transportation system for biking. We would like to see this done through the use of protected bike lanes. We believe that by adding a source of protection to the already established bike lanes, they will receive more use by residents. This will in turn decrease the number of cars on the road and help with solving Cache Valley's infamous air quality problems. We also believe that through the addition of protected bike lanes we will be increasing safety for all non-vehicular modes of transportation (such as walking or jogging). Our objectives under that goal are as follows:



## **Provide sound research to city leaders about protected bike lanes**

Our hope is that by putting in the effort and placing the burden of research on our group, we can make our proposal much easier for city council. We believe this is the best way to engage with them as some members are a little apprehensive about our proposal. We aim to convince them that this is a necessary change through public surveys of local residents, police report data, case studies from other similar cities and other applicable examples.

We have met the objective of gathering and sharing our research.

## **Meet with City Council Members**

We believe that by hearing us out, viewing our data and inspecting our report, the city council will come on board with our proposal. This will enable the city to implement protected bike lanes along 500 N and hopefully in other places as needed throughout the city. We believe that by adding one protected bike lane, it will receive increased use, get noticed by the city and serve as the start of the proverbial snowball. Without a meeting this may be unattainable.

We met this objective and the meeting went as well as we could've hoped. City council members heard us out and seem quite willing to implement this idea if funds are acquired.

## **Get our proposal added to the Master Transportation Plan**

This would be the best outcome of a meeting with city council. If it's in the plan, it is on the docket as a potential future project.

This objective has yet to be realized, but they may do this in the future.

# Objectives Cont.

## **How our goals and objectives have changed:**

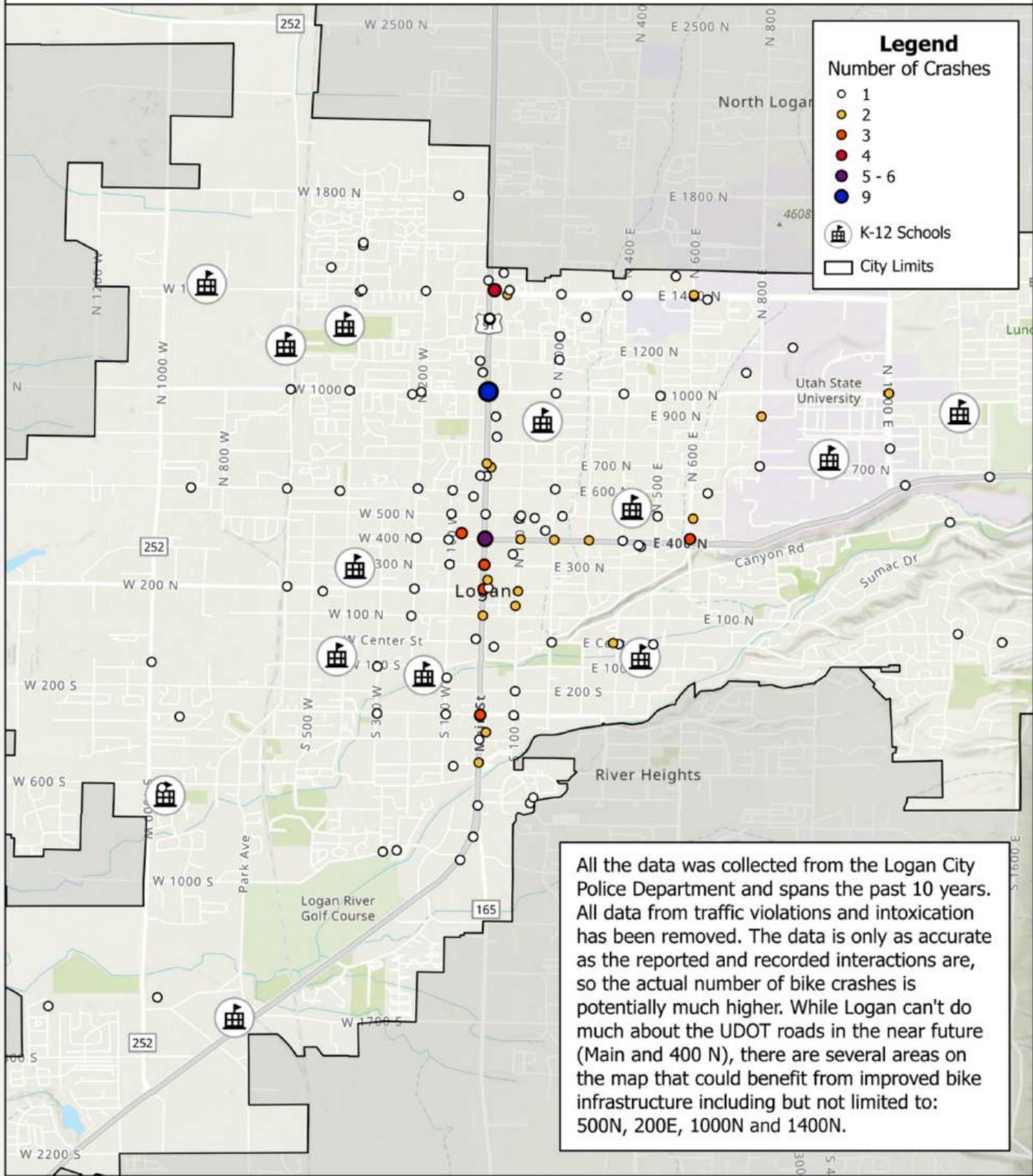
We originally started out wanting to improve something transportation related but we couldn't settle on one specific topic. Even throughout our first meeting we had many different ideas and ran them by Russ for his thoughts on them. Eventually we decided to focus on biking, but we still didn't know exactly where we wanted to focus. We had some debates about which roads would be the best candidates based on personal experiences on those roads, general bike use and the roads' reputation for being dangerous or not. After obtaining bike crash data from the past 10 years from Logan City Police Department, we were able to create a map of the incidents (on next page), which pointed to 500 N being one of the most dangerous stretches. That road also connects Main Street to campus and has an elementary school on it and the transit center. From there on we decided to focus our efforts on 500 N as it would make the greatest impact. After finally figuring all that out we were able to refine our objectives to be centered around the protected bike lane project.

We also had a change in objectives about halfway through the project when we were denied being added to a city council agenda. Originally we had an objective to present in a city council meeting so all members of the council as well as the public could hear us out, but we weren't able to make that happen. We refined our objective to be meeting with city council members in a private meeting. City council members can only meet in groups of two if the meeting is not public. Because we had to resort to this we were not able to meet with all members of the council. We chose to prioritize the one who seemed most willing and the one who seemed least willing in our meeting.

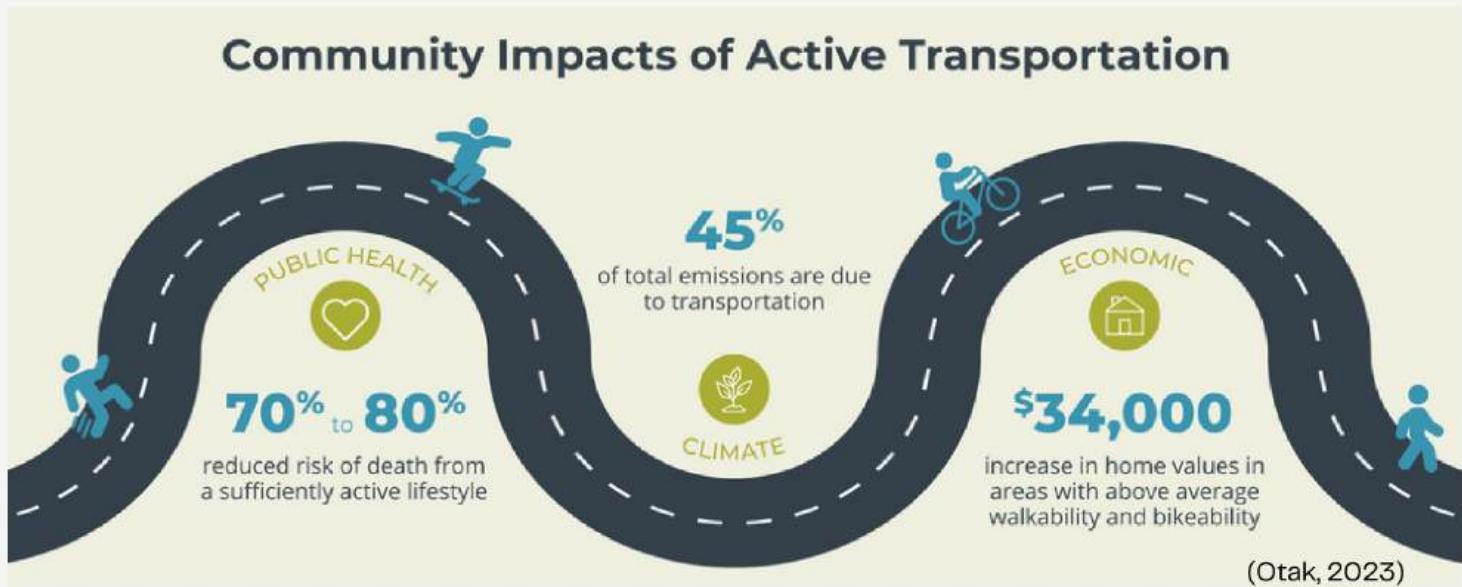


# Reported Bike Crashes to Logan Police Between January 2014 and February 2024

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# Benefits to the Community



**Increasing bikeability in Logan would improve many aspects of citizens' lives and the community at large.** Making active transportation easier would benefit **public health**. Those who bike experience increased cardiovascular fitness, strength, balance and flexibility, endurance, cognition, energy, and burn extra calories (Brain, 2013).

**Safety** in the community is also enhanced. "Cities with the highest levels of bicycling generally have the lowest bicycle fatality rates" (Alta, 2015). As cities become less centered around cars, drivers tend to be more aware of other users of the road. Proper infrastructure for bikes can significantly increase safety as well, which generally comes with increased ridership.

Cycling for transportation would improve the local **environmental quality** within Logan as carbon and pollutant emissions are avoided by biking instead of driving. Biking makes Logan cleaner and more sustainable. Each gallon of gasoline in our cars emits 8,887 grams (almost 20 pounds of CO<sub>2</sub>) into the atmosphere, whereas riding a bicycle produces none aside from our breath (Brain, 2013).

"Bicycle and pedestrian infrastructure projects create up to double the jobs of road infrastructure projects per \$1 million spent" (Alta, 2015). Bike infrastructure is also generally **cheaper to maintain** than car infrastructure and results in less costly accidents.

Quality of life is positively impacted for those who bike. Life outside of cars eliminates road rage. Active transportation also strengthens **social bonds** and neighborhoods, as people spend more time outside. "A survey of 13,000 people in the United States by researchers from Clemson University in 2014 showed that cyclists were the **happiest commuters**" (Hidalgo, 2018).

Lastly, implementing these measures in Logan could help alleviate the traffic problems that are a concern for many citizens. Displacing car traffic could help to maintain the small town feel and **character of Logan**.

# In addition to that, people are asking for it.

Comments from the 2022 Utah Wellbeing Survey in Logan when asked, "Is there anything else you'd like to tell us about **wellbeing in Logan?**" after answering questions about general wellbeing:

"I have a concern about some of the sidewalk situations around Logan. Where I live in North Logan, there is a huge cluster of high density housing, but to access the shops along main street, I sometimes have to walk on unpaved paths, gravel, or along the side of the road in order to reach it. It feels like a safety concern and a big deterrent from walking to the store sometimes."

"I would love to see improved roads, sidewalks, and bike routes/lanes.  
Quality of air is very important to me"

"I believe that overall wellbeing of the population of Logan will improve as we increase the ease and availability of public transportation options and decrease the convenience of using private vehicles as single passenger conveyances. Making new roads and increasing the width of existing roads, constructing more above-ground parking lots and generally making it inconvenient to take public transportation and easy to use a fully gas or diesel powered vehicle lead to bad outcomes regarding our valley air quality. I would like to see many more bicycle-only paths and roads, much more convenient public transportation, and incentives to use electric and hybrid vehicles."

"As a senior citizen I find limited paved bike riding opportunities in Cache Co (other than sharing dangerous roads with aggressive drivers)"

"I feel like well-being would be improved by access to high quality public transportation and other non-car centric infrastructure"

"I'd really like to see Logan be denser and more walkable"

"I'm begging the city to make better walking, biking and trail access throughout the valley. Paved or dirt, we need better trails and paths around the valley"

# Why protected bike lanes?

In order to increase the amount of people that bike as a form of transportation in Logan, we propose adopting protected bike lanes.

While regular bike lanes do get used, protected bike lanes would have a significant impact on the citizens of Logan. According to studies on the benefit of protected lanes, people “tend to feel **safer** in protected lanes and express more willingness to allow children to use them to cycle on the road” (Knight & Charlton, 2022). Everyone in our community naturally is concerned about children and protected bike lanes can provide a peace of mind for parents.



Protected Lane in Baltimore, MD

Not everything has to be backed by scientific articles, and a lot of things can be gleaned through experience. We challenge you to bike around the community and **see how safe you feel**. Ask yourself, which bike lane would you let your kid ride home from school in?

Protected bike lanes can promote ridership among all residents, but they especially have potential to be utilized by women. “Existing women bicyclists benefit more than men from the protected lanes” and “for potential women bicyclists, protected lanes **increase stated comfort levels significantly**” (Dill et al., 2014). Although, protected bike lanes can benefit people of every age and gender and the increased perception of safety can help all road users feel safe in their community.



School pickup in New Orleans blocking the bike lane

When protected bike lanes were put in heading towards downtown Salt Lake City, cycling increased by 30% and business sales increased an additional 1.79% along the route compared to the rest of the city. During special events, they saw a 84% cycling increase (Salt Lake City , 2015). Cycling is not just for activity and transportation, but can have positive economic impacts as well.

# Is there public support?

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Our group had the opportunity to table at an Aggie Blue Bikes event to ask people for their opinions about protected bike lanes. We shared a study asking basic questions about their habits and their comfort level on a range of different pictured bike lanes. It is important to note that while we were tabling at a bike to breakfast event and can expect people to be more excited about bike lanes than most, these are all people who bike often, so their comfort might be higher than the average person when reviewing the following bike lanes.



All the bike lanes were graded on a scale of 1-5.

A score of 1 means the respondent would not at all feel comfortable in the bike lane, while 5 is feeling super comfortable. The bike lane on the left had an average of 4.5 and is a style that can be found in other places around the state.

This bike lane had an average score of 4.9 indicating an extreme comfort. The separation from traffic, while not concrete, is still a physical and visual deterrent of sorts.



This bike lane had an average score of 2.5 indicating an indifferent or unsafe comfort level. Many bike lanes in Logan have this type of bike lane on busier streets than shown in this photo.

This bike lane had an average score of 3.5 indicating a moderate to fairly safe comfort level. This is identical to the bike lane many of the respondents rode on to get to the breakfast event.



# Summary of Interactions

Throughout our project we have had multiple interactions with our community partners, and without these meetings we wouldn't have gotten to the point we did. The following meeting notes outline the process of working with our community partners and show the places where we shifted and changed the project. The full meeting notes can be found in the Appendix.

## Meeting 1

January 29 Russ Holley, Senior Planner

- Found out that the City Planning office works within the bounds of code, and the power to change code is given to the city council
- The planning commission is appointed by the mayor
- Logan's government has a "strong mayor" meaning the mayor has veto powers over city council and acts as a branch of the local government
- The planning commission is interested in the idea of "complete streets"
  - They are also interested in hearing from younger residents
- Due to the power of city council, it would be best for us to present to them

## Meeting 2

February 23 Avery Cronyn, Aggie Blue Bikes

- There are several behaviors Avery suggested we look into, including the closure of the canal trail, snow removal for bike lanes, protected bike lanes, and getting a bike share (like greenbike in SLC) in Logan

## Meeting 3

February 26 Russ Holley, Senior Planner

- Protected bike lanes would be a good behavior to focus on
- 500N could be a good first project to get the ball rolling
- It would be good to refer to and cite the Master Transportation Plan that Logan has already created when we present at the end of the semester

# Interactions Cont.

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## Meeting 4

February 26 Mike Johnson, City Council Member

- Concerning infrastructure projects, city council is concerned with quality of life and other benefits, but the budget must balance out for them to agree
- The city is extremely fiscally conservative which is generally a good thing
- It will take good arguments and a strong conviction to convince the City Council to spend money on a protected bike lane
- Getting students to sign on with support for protected bike lanes would go a long way with the city council

## Meeting 5

March 25 Russ Holley, Senior Planner

- The best course of action to get a protected bike lane on 50ON is to set up a independent formal meeting with Amy Anderson to try to convince her that this project is worth city council's time
  - Amy sets the agenda for the council
- We could push for a city council resolution to be more bike friendly
  - A resolution is a general scope, or promise to be more \_\_\_\_ or to increase \_\_\_\_ over time
- Our best bet would to get our project in the master transportation plan
  - It would get added to a list of ~100 projects waiting for funding, but it would have a shot one day
- We need to make sure to focus on the "why" section, as its the most important for city council when considering it
- Work on presentation skills and be prepared for the formal meeting

## Meeting 5

April 24 Russ Holley, Landis Wenger (Country Trails Coordinator), Emily Fletcher (Assistant Trails Planner), Mike Johnson and Amy Anderson (City Council Members)

- Final meeting with the bigger players
- Everyone was very receptive and made commitments related to our proposal!
- Main worry was budget but Landis was confident about finding grants

# Interactions Cont.

These are the commitments we received from city officials in our meeting on April 24.

## Mike Johnson

I am willing to commit to do the following:

working to create a network of protected  
bike lanes in Logan.

## Russ Holley

I am willing to commit to do the following:

TO BIKE MORE & CONVINCE OTHERS  
& BUILD MORE

## Landis Wenger

I am willing to commit to do the following:

Supporting Grant writing with Logan  
Helping plan future routes for Logan as needed  
Keep pushing CACHE BIKEWNY

## Amy Anderson

I am willing to commit to do the following:

Pursue possibility w/ Streets on temporary  
protected lane on 500 N.

In Meeting 1 with Russ we conducted a SWOT analysis, or strengths, weaknesses, opportunities, and threats analysis to discern the current state of the transportation system in Logan. The text in black is what our group had come up prior to the meeting and the text in green is what Russ discussed in our meeting.

### SWOT Analysis of transportation in Logan

Strengths	Weaknesses
<ul style="list-style-type: none"> <li>● Excellent job in winter (no cancel, maintained buses, snow removal, plowing sidewalks).</li> <li>● Free bus admission (no payment problems/worry).</li> <li>● Bike lanes and trails</li> <li>● The gridded streets</li> </ul>	<ul style="list-style-type: none"> <li>● Unsafe crosswalks or lack of crosswalks</li> <li>● Lack of protected bike lanes</li> <li>● No connection to outside the valley/county</li> <li>● Speed limit on main street</li> <li>● Potholes and utility types hotels and covers in bike lands and cracks in sidewalks and disconnected sidewalks</li> <li>● The car culture leads to air quality issues</li> <li>● There is a spatial land consumption issue</li> <li>● Car culture increases road rage on roads</li> <li>● Restricted by costs of projects</li> <li>● Various safety issues</li> </ul>
Opportunities	Threats
<ul style="list-style-type: none"> <li>● Improve bus stops (add benches/concrete pads).</li> <li>● UDOT Inter-city bus study</li> <li>● State funding/federal funding</li> <li>● Protective cones between bike lanes and car lanes.</li> <li>● Could add more stop signs/street lights in certain intersections (200E 700 N for example)</li> <li>● The fact that the streets are already wide allows for easy infrastructure changes</li> <li>● Potential for street calming devices</li> <li>● Potential for reconfiguring streets to be more pedestrian friendly</li> <li>● Painting the roads on the "bike routes"</li> <li>● Continuing bike lanes through car turn lanes</li> </ul>	<ul style="list-style-type: none"> <li>● People driving in the bike lanes.</li> <li>● Increasing traffic and population</li> <li>● Snow, and adverse weather -</li> <li>● Old habits are hard to change and the existing demographic is wanting more car centric improvements</li> <li>● "We're our biggest threats to ourselves"</li> <li>● growth</li> </ul>



In Meetings 3 with Russ and meeting 4 with Mike we went over the possibility of pitching protected bike lanes to the city council. To determine if this behavior is a good candidate, we discussed the following benefits and barriers to both the behavior we hope to pitch as well as the current behavior. Again, the black text is what we had talked about before the meetings, and the green is the additions of Russ and Mike.

	Barriers	Benefits
Target Behavior (building protected or buffered bike lanes)	<ul style="list-style-type: none"> <li>● Snow removal will be more difficult in protected bike lanes</li> <li>● Figuring out a solution to route the lanes into the roundabouts</li> <li>● Figuring out a solution to working around driveways</li> <li>● Financial cost to adding these</li> <li>● The budget for this year has already been laid out, so it would have to be worked in by something else losing money</li> <li>● Political pushback</li> <li>● There is concern from city council about them being used enough to justify effort</li> </ul>	<ul style="list-style-type: none"> <li>● Increases the safety for cyclists by a lot (a barrier can stop cars, paint cannot)</li> <li>● Increases the amount of people that feel like they can bike around</li> <li>● Increases the amount of parents that feel comfortable letting their kids ride alone</li> <li>● Reduces car traffic</li> <li>● Increased biking is good for personal health and wellbeing</li> <li>● If one protected bike lane gets built, it will be much easier to continue implementing them throughout the city</li> <li>● Reduces air pollution</li> <li>● It completes something in their 2015 Bicycle and Pedestrian Plan which shows citizens that the city does follow through</li> </ul>
Current Behavior (leaving roads car dominated, with occasional painted bike lanes)	<ul style="list-style-type: none"> <li>● Cost of gas and car maintenance required in car dominated culture</li> <li>● Car infrastructure is more expensive to upkeep for the city than walking or biking infrastructure</li> <li>● Cars take up a lot of room that could be used for other things (green space, stores, homes, etc.)</li> <li>● Current infrastructure does not necessarily represent the desires of the upcoming generations, which the city tries to plan for</li> </ul>	<ul style="list-style-type: none"> <li>● Easier to snow plow</li> <li>● No extra cost to change the infrastructure</li> <li>● Does not impose on ease of getting around in a car</li> </ul>

# Course Content Application

## Guest Lecture: Rob Davies

Rob spoke on how to effectively communicate science based issues and made many points that could help us in our communications with City Council. The most important of these are the following:

- Don't approach a topic as if it is the only time your audience has heard about your topic, build off what you anticipate they already know
- Have compassion when delivering hard topics and always offer solutions
- Use visuals as needed

These three points taught us to communicate with city council in a way that builds off their knowledge, is solution focused, and utilizes visuals to amplify our points. (Davies, Personal Communication, 2024)

## Science of Persuasion Video

This video summarized research done by Robert Cialdini and presented six different tips to effectively persuade people. The tips that apply most directly to our project are:

- Look for and ask for small commitments
- People prefer to say yes to those who are similar to themselves and have common goals
- People are persuaded by authority, credentials, and expertise

We applied this to the way we approached city council by establishing common ground and goals, making our commitment a single street before asking for more, and distinguishing ourselves as members of the University. (BigSpeak Speakers Bureau, 2018)

## The Psychology of Sustainable Behavior, Christie Manning

This article is divided into seven different tips and one felt particularly relevant to our project. Each tip is also further divided into more specific approaches. Tip 2, "Emphasize Personal Relevance", offers the approaches of "Finding a new frame" and "Focus on local issues, local effects".

Finding a new frame is the idea that you don't have to frame a sustainability issue purely as an environmental problem with only environmental benefits. You should explore all the dimensions of your issue and you are not limited to just one frame. As we appealed to city officials we felt that this principle was very important as they have many cares and priorities beyond the environment. We made a case for the economic benefit. We also framed this as a safety issue and solution. We still mentioned environmental aspects, but we didn't limit ourselves to just that.

Focus on local issues, local effects, emphasizes the importance of not talking about environmental issues too broadly. It's one thing to say "America has a transportation problem" and another to say "Logan battles with traffic and dangerous infrastructure". Especially within our project, we made sure we retained our focus locally. (Manning, 2009)

# Course Content Cont. 19

## How to Win Friends and Influence People, Dale Carnegie

Chapter 3 of this book discusses the importance of making people want for themselves the thing you're offering or the change you are trying to implement. If your target audience don't want it for themselves they are unlikely to want to change. In the case of our project, we will be much more successful if Logan City wants to change because it will benefit the citizens, not because we are asking them to. We needed to clearly articulate how active transportation is in the best interest of everyone, so they lead out this shift in the city on their own. We feel like we did this well in our presentation.

(Carnegie, 1936)

## Park City and Moab Sustainability Materials

We looked through Park City's Sustainability website and Moab City's flyer for landscaping guidelines and these helped inform our group about other Utah cities' sustainability initiatives. Though they are different topically from our project they do help us see the language other cities in Utah are using surrounding sustainability and the way they communicate with their residents. Park City's website ends with this statement, "This is an exciting time. Join us in leading impactful change." This kind of wording is really common from city leaders and something we tried to emulate, so we were speaking their language. (City of Moab, 2023) (Park City Website)

## Utilizing Community Based Social Marketing

The first chapter of our textbook discusses what methods are effective and ineffective in influencing sustainable behaviors. One important point is that information campaigns rarely have a measurable impact on behavior.

"Programs that are strictly information-based have little likelihood of substantively changing behavior. Nonetheless, this does not mean that providing information should not be a component of a behavior change program, only that by itself information is unlikely to be effective" (McKenzie-Mohr, 2014, p. 5).

This helps us to understand that presenting a lot of information to the council about why the behavior we desire is important, likely will not sway them unless other techniques are also used. We need to provide just enough information to set the stage but spend much of our time using other methods of communicating such as addressing barriers, establishing norms, and appealing to their values. Learning this was a good basis for our project.

One of the principles in Community Based Social Marketing is convenience. The idea is that if an action is easier for people to take, they will be more likely to change their behavior. This applies to our project in two ways. The first is that the behavior we've

# Course Content Cont.<sup>20</sup>

chosen to focus on (protected bike lanes) helps to add convenience to biking. Biking on roads with no bikes lanes or protection is uncomfortable for most people and we want to implement the infrastructure tailored specifically to biking to make it more convenient.

The second way this principle applies to our project is through our interaction with the city leaders. We have put a lot of time into making the decision of adding protected bike lanes in Logan easy and convenient for them by doing research so they don't have to. We've compiled safety data, data from other cities where these have been implemented, information on benefits, information on applications and infrastructure problems and solutions, and put it all in a report we will be giving them. We wanted to make it easy for the city leaders to decide.

Another principle in CBSM that we used in our project was to seek commitment. At the end we presented multiple options for commitments and then asked them to write down what they were each willing to commit to. We don't want them to hear us out and then forget all about us. Commitment is a way to foster obligation to our cause and to hopefully see change down the road.

Lastly, we applied the principle of creating an effective message. We were careful about appealing to our audience as we decided what to spend our time talking about. Page 97 of the text states,

"Before you craft the content of your message and decide when and how you will present it, you need to know the attitude, beliefs and behavior of your intended audience" (McKenzie-Mohr, 2014).

We spent a lot of time working with Russ to understand city council's values and to be able to speak to them. We presented protected bike lanes as something good for wellbeing, budget, and equality, not just the environmental because we understood our audience. We also talked about how this change can keep Logan clean, quiet, and safe. (McKenzie-Mohr, 2014)



# Results

In terms of actual results we were able to generate reasonable commitments from key city leaders (page 15). We also generated traction and excitement around the idea of protected bike lanes within some city leaders. We have reason to believe they are moving forward with our proposed plan. We were also able to generate some awareness of our project within the bike community on campus through Aggie Blue Bikes.



As a result of our efforts, several changes and outcomes could be anticipated if the project is implemented:

- Increase in Bike Lane Usage:
  - If a protected bike lane is implemented along 500 N, it is expected that more residents would opt for biking as a mode of transportation. This would lead to a decrease in the number of cars on the road which would then contribute to improved air quality around Logan.
- Safety Improvements for Non-Vehicular Transportation
  - The addition of protected bike lanes not only enhances safety for cyclists but also benefits pedestrians, joggers and other non-vehicular modes of transport.
- City Council Engagement and Policy Change
  - Our goal of implementing protected bike lanes into the Master Transportation Plan would pave the way for future projects and investments in sustainable transportation infrastructure.
- Long-term Environmental and Social Impact
  - While specific metrics may not be directly applicable, the long-term environmental impact of reducing car usage and improving air quality can be significant. Additionally, the social impact of promoting alternative modes of transportation and creating safer streets enhances community cohesion and quality of life. Our best estimate at a long-term environmental impact is based on EPA's estimate of estimate of 400g of CO<sub>2</sub> emitted per mile by a vehicle (EPA, 2023). That would mean if 10 people a day switched a mile of their travels to biking, over 1.5 tons a year of CO<sub>2</sub> emissions would be avoided.

As we and other future projects continue to engage with stakeholders and advocate for future proposals, we will likely see further positive outcomes and transformations in Logan's community.

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# Appendix A: Notes

Madison's notes from meeting 1

- the planning commission is appointed by the mayor, they do not run for office
  - there are 7 people on the planning commission
  - it operates sort of like a judicial branch in that they approve projects according to the existing codes
- The city council approves or sets the city code
- public infrastructure is done by public works and they are in charge of right of way
- public infrastructure project are funded by the state or federal funds
- the "street" is considered to be the area from sidewalk edge to sidewalk edge
- "it is difficult to properly manage cars when a city reaches a certain size"
  - they are consumptive in nature
  - how do you manage those impacts in a way that is fair and equitable
    - complete streets is one solution
- The constituents and the past of the city limits the choices made regarding streets
- We need to get in front of city council to get anything changed
- future generations are big to the council
- "We have the authority and ability to grow differently"

Alex's notes from meeting 2

- The Canal trail just above canyon road could be a great project to focus on because:
  - The property owner on the west trail entrance has put up a fence blocking access
  - The trail has not been completed, only the east side from the landslide site (now canyon road park) is done.
- Bike lane paint maintenance would be a good project because the paint only looks good for about 2 years. Getting them to commit to repaint the lanes when necessary could increase safety
- A bike share, similar to GreenBike in SLC would be great in Logan
- Real protected bike lanes would probably provide the most benefit to the cycling community and would increase safety for all road users
- Snow removal from the bike lanes would go a long way
  - Bike lanes are currently the dumping place for snow removed from the road.

Madison's notes from meeting 3

- On the bicycle and pedestrian plan about 12 out of 55 actions have been completed
  - they are still working on it actively though
- There is no more recent study on percentage of users that bike/walk/bus/drive
- A bike share with bird is in the works for next summer
  - they are having issues getting USU on board

- Protected bike lanes has not been implemented yet but is in the 2015 plan
  - 500 N would be a good corridor
    - connected to bus route
  - find the design standards that exist already to have some precedence
  - should it be kept where the painted bike lane is or put next to the curb?
  - issues to address: political pushback, driveways, snow removal, roundabouts
  - benefits: physical health, affordable, safety, air quality
- To sell it to city council
  - contact police about crash data
  - use graphics when you present
  - mention we acknowledge the design challenges but there are solutions
  - reference aspects of the 2015 plan
  - spend time on the why this is a good thing before getting into details

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#### Madison's notes from meeting 4

- To convince city council
  - choose a single and effective location for the protected bike lane
  - consider finances
    - make it clear that it's a good investment
      - will get utilized
    - explain that up to 10% of people bike but 2% of transportation budget is for cycling infrastructure
    - bike infrastructure is cheaper than car infrastructure
    - there are low cost ways to implement
      - pouring concrete for barriers without digging up road
      - using candlestick cones instead of concrete
  - address problems and solutions (driveways, snow removal)
  - give data about how its worked in other places such as Ogden and Provo
    - bike ridership increasing with improved infrastructure as an argument against "no one will use them"
  - look into how many students would like to see this change
  - be specific about the type of protected bike lane
  - really get them to see why we need to step up to protected bike lanes and why paint is not enough
  - Talk about all the groups it will positively affect including elementary kids and college students

#### Madison's notes from meeting 5

##### Options for moving forward:

- Independent meeting with Amy or Mike
- Group meeting with Landis, Mike, Russ, Amy,

They rarely have a single bike lane as an agenda item at a city council meeting

Generally things like this are

- CIP – ordinances
- Or a resolution

Goal should be to get it into the master transportation plan or CIP

Thoughts on presenting:

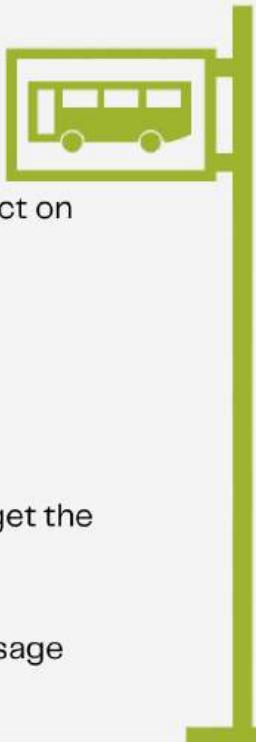
- Don't skip over the why
- More data on where protected lanes worked before
- Road rage data
- Keep it to like 30 minutes
- Data of why protected bike lanes is the optimal
- Benefits
- Expected results upon implementation

Alex's notes from meeting 5

- Schedule, we should be done with this project within a month-ish from today.
- We could set up an independent formal meeting with mike and amy to try to convince her to get it on the agenda
  - A meeting we can do involving city council, but not directed at city council
  - We can loop in community advocates and county people (like Landis)
- Agenda items for city council are action items
  - A single bike lane would not be an action item, but would be a part of one
  - We might be able to get our bike lane in the action item with other stuff
  - Parts of ordinances
- Resolutions are not usually a single project, but cover an overall scope of "being bike friendly"
  - A lot more general
  - A vague letter stating that we want to "do thing"
- Our project could be called the '5th north bike lane resolution'
  - Gets the ball rolling
- We should aim to get our project in the master transportation plan
  - There are over 100 projects in there waiting for money
  - This should give us hope that what we do today should have an impact on tomorrow

## REPORT FEEDBACK

- Don't skip over the "why this matters" section
  - That is one of the most important parts to convince them
- Same with the student surveys
- The city council's current attitude is "we don't mind trying it but want to get the bang for our buck"
  - They want people using it a lot
  - We need more data from towns showing economic, wellbeing, and usage statistics and improvements



- Give our report during the meeting
  - Leave it open after and make them want to read the report
  - 30 minutes would probably be as much as they want to sit though, maybe do less
- Spend 10 or 15 minutes on the WHY
  - Give them the expected results of the bike lane implementation
- Look into the well being “happiness index” of the US dropping
- Maybe look into the negatives of car commuting regarding cost and happiness
- Work on presentation skills and organization

# Appendix B: Additional Research

The following images are a few pages of the report we sent the city leaders. We chose not to include all our research in the body of this report. It is not necessary to be able to read everything, but one can see from the images, that we provided city leaders options of bike lane protection, bike lane standards, location recommendations, and solutions to issues like roundabouts and bus stops when building these protected bike lanes.

## Applying this in Logan

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There are many possible types of protected bike lanes. Here is an overview of many common methods (Green Lane Project). These are continued on the next page.



### Delineator Posts

1.5 ft. additional width, \$15k-\$20k per lane-mile

PROTECTION LEVEL	+	+	+	+	+
INSTALLATION COST	\$	\$	\$	\$	\$
DURABILITY	@@@	@@@	@@@	@@@	@@@
AESTHETICS	@@@	@@@	@@@	@@@	@@@



### 12" PRECAST CURB

1.5 ft. additional width, \$400k-\$600k per lane-mile

PROTECTION LEVEL	+	+	+	+	+
INSTALLATION COST	\$	\$	\$	\$	\$
DURABILITY	@@@	@@@	@@@	@@@	@@@
AESTHETICS	@@@	@@@	@@@	@@@	@@@



### TURTLE BUMPS

1.5 ft. additional width, \$15k-\$20k per lane-mile

PROTECTIONLEVEL	+	+	+	+	+
INSTALLATION COST	\$	\$	\$	\$	\$
DURABILITY	@@@	@@@	@@@	@@@	@@@
AESTHETICS	@@@	@@@	@@@	@@@	@@@



### LARGE BUMPS

1.5 ft. additional width, \$15k-\$20k per lane-mile

PROTECTION LEVEL	+	+	+	+	+
INSTALLATION COST	\$	\$	\$	\$	\$
DURABILITY	@@@	@@@	@@@	@@@	@@@
AESTHETICS	@@@	@@@	@@@	@@@	@@@



### OBLONG LOW BUMPS

1.5 ft. additional width, \$10k-\$20k per lane-mile

PROTECTION LEVEL	+	+	+	+	+
INSTALLATION COST	\$	\$	\$	\$	\$
DURABILITY	@@@	@@@	@@@	@@@	@@@
AESTHETICS	@@@	@@@	@@@	@@@	@@@

Of these many options a few stand out to us as having larger benefits. Delineator posts could be a cheap way to start out this project. Those could be implemented fairly quickly and at a low cost and could be used as a way to gauge effectiveness and receptivity before moving onto other options. Jersey barriers or curbs could be a good option as an upgrade to delineator posts. They would provide much more protection and a greater sense of security. Parked cars is another very viable option for 500 N as there is already a parking lane and it would merely need to switch places with the bike lane. It would add much more protection than there is currently.



#### Required Features

- ① A cycle track, like a bike lane, is a type of preferential lane as defined by the MUTCD.<sup>29</sup>

- ② Bicycle lane markings, symbols, and/or arrow markings (MUTCD Figure 9C-3) shall be placed at the beginning of a cycle track and at periodic intervals along the facility based on engineering judgment.

- ③ If pavement markings are used to separate motor vehicle parking lanes from the preferential bicycle lane, solid white lane line markings shall be used. Diagonal crosshatch markings may be placed in the neutral area for special emphasis. See MUTCD Section 3B.2a. Raised medians or other barriers can also provide physical separation to the cycle track.

#### Recommended Features

- ④ The minimum desired width for a cycle track should be 5 feet. In areas with high cyclist volumes or high speeds, the minimum desired width should be 7 feet (allow for bicycles passing each other).<sup>30</sup>

- ⑤ Three feet is the desired width for a parking buffer to allow for passenger loading and to prevent door collisions.<sup>31</sup>

- ⑥ When using a parking protected pavement marking buffer, divided parking lane and buffer combined width is 11 feet to discourage motor vehicle encroachment into the cycle track.

- ⑦ In the absence of a raised median or curb, the minimum desired width for the painted buffer (11 ft. + buffer space) should be added to lane line barriers, planters, signs or other forms of physical protection.<sup>32</sup>

These two images from the National Association of City Transportation Officials outline some of the basic principles for protected bike lanes. This provides a starting point for better understanding and for further design considerations.

## Infrastructure Solutions

### Driveways

- Place a two way protected bikeway in the center of the street
- Do a raised bike lane that is equal to the sidewalk and the curb and dips for driveways (image 1)
- Have a dotted line on the bike lane paint and no physical barriers at driveway entrances (image 2)



Image 1



Image 2

### Bus Stops

- Use a curb extension, where the bike lane rises and there's no physical barrier at the site of the bus stop (image 3)
- Use a bus bulb or floating bus island (image 4)
- Another option could be to not have any barrier there if no other infrastructure is being changed



Image 3



Image 4

The map on the previous page shows potential hotspots for bicycle danger in Logan according to police data. Protected bike lanes may be one piece of a potential solution to those dangers.



"Most people are "interested but concerned" about biking and would bike with higher-comfort facilities. 60% of the total population are "interested but concerned" about biking. Of those, 80% would be willing to ride on streets with a separated or protected bike lane. In particular, recent national research suggests that that people of color are more likely than white Americans to say that adding protected bike lanes would make them ride more." (NACTO, 2016)

"More people ride when cities build protected bike lanes. Studies from cities across North America show that adding protected bike lanes significantly increases bike ridership on those streets, with rates ranging from 21% to 171%." (NACTO, 2016)



In conclusion, adding protected bike lanes increases two very important things: safety and ridership according to previous studies. These lanes can also especially benefit women and people of color. The map of accidents also highlights the potential room for improvement in bicycle safety.

## Where should this be implemented?

We recommend starting with a protected bike lane on 500 North for the following reasons:

- As demonstrated on the map on the last page could benefit from enhanced safety
- 500 N connects children to Adams Elementary and students to the university and to Main Street and has an importance in Logan's bike infrastructure and will assuredly be utilized
- 500 N already has buffered bike lane which would make the transition easier to a protected bike lane

### Roundabouts

Two options for routing cyclists through roundabouts:



**Small (10ft) central island**  
Two travel lanes  
Shared lane bicycle markings & signs  
Medium traffic volumes (sometimes have to yield to and interact with other vehicles)  
35mph speed limit on adjacent roads (25mph or less in the roundabout)



**Large (120ft) central island**  
One travel lane  
Bicycle ramps to the sidewalk  
High traffic volumes (usually have to yield to and interact with other vehicles)  
25mph speed limit on adjacent roads (25mph or less in the roundabout)

### A protected bike lane going into a roundabout



### Snow Removal

- "Bollards or flexible delineators may be removed in winter to provide improved access by snow removal equipment." (NACTO)
- "If you're in a city that plows some of its sidewalks, the same equipment will probably work for bike lanes." (Streetsblog)
- "In 2016, Salt Lake City started using a 66.5-inch-wide [Kubota RTV1100](#) to sweep and plow its protected bike lanes. For narrower spaces in its downtown, SLC uses a 44.9-inch-wide [Kubota F3060](#). The widest part of that tiny tractor, not currently manufactured by Kubota, is its 511-inch wheelbase." (Streetsblog)

# Appendix C: Other

## **Note on working with writing fellows:**

Working with the writing fellows was beneficial. For the mid semester report, Ellie gave us feedback about citation accuracy, design choices, where to be more specific in our wording, the appropriate use of bullets, as well as specific feedback on sentence structure, grammar, and things of that sort. We do feel like our report improved because of the feedback we received. For the final version of the report her feedback was mainly about including necessary context in our writing and the flow and order of the report which also proved helpful.

## **GivePulse Hours:**

- Paxton - 10 hours
- Alex - 10 hours
- Ken - 10 hours
- Madison - 11 hours