

**Presentations to the City Council of West St. Paul by
Students of the University of Minnesota**

December 13, 2020

This fall, students in the capstone course for the Environmental Sciences, Policy, and Management major at the University of Minnesota gathered and synthesized information on a wide range of priorities identified by the City of West St. Paul, including sustainable vegetation, community engagement, recycling, and others. We are delighted to share our findings and recommendations with you this evening. It is our hope that elected officials, city staff, and residents will find this work useful in the pursuit of a sustainable future for your community.

Presentation Schedule

We will pause briefly for questions between each presentation and invite extended questions after all presentations have concluded. (Note: * indicates group leader; ^ indicates group liaison)

Opening Remarks by *Gaby Gutenkauf*

1. Bike and Pedestrian Plan Assessment
Presented by: Gaby Gutenkauf and Sara Ostertag*
With group members: Wyatt Schulman^, Elizabeth Grove, and Crosby Carreno
2. Park Use Assessment
Presented by: Ash Maus and Angelique Pham*
With group members: Chloe Behounek^, William Shirola, and Jordan Bragg
3. Fruit-Bearing Trees and Shrubs
*Presented by: Cassandra Barry^ and Mckenzie Beckman**
With group members: Mason Donat^, Lennart Droege, and Amina Muumin
4. Restoring Native Vegetation to South Roberts Street
Presented by: Elise Bernstein and Justin Highum*
With group members: Serena Raths^, Jacob King and Benjamin Adolphson
5. Residential Yard Nutrient Management and Water Use
Presented by: Cole Montgomery and Kate Carnahan^
With group members: Ben Newcomb, Megan Walkenhorst and Tyler Wrich*
6. Adopt-a-Drain and Stormwater Management
Presented by: Michael Spies and Michael Gurrieri
With group members: Alan Knudsen, Jess Jurcek and Rita Fredrick^*
7. Volunteer Urban Tree Survey
Presented by: Lydia Anthony and Owen Anderson*
With group members: Amalia Scipioni^, Jaxen Garlick, and Matthew Wosje
8. Improving the Efficiency of Recycling Education in the City of West St. Paul
Presented by: Rachel Elsen and Rowan Koch^*
With group members: Eden Turnbow, Ethan Cypull and Zach Gazda
9. Green Step Cities
Presented by: Matt Preis and Emily Sheleski^
With group members: Amanda Borwege and Madyson Hoese*

Closing Remarks by *Lydia Anthony*

Instructors

Kristen C. Nelson, Professor; Eric North, Professor; Hannah Ramer, Teaching Assistant

Acknowledgements

We would like to thank West St. Paul for the opportunity to collaborate on these projects. We are especially grateful to Assistant Manager Parks and Recreation Manager Dave Schletty for his extended support, as well as Councilmember Lisa Eng-Sarne and City Manager Nate Burkett for their insightful comments and questions as we developed our findings.

Executive summaries of each project are included below. We will provide digital copies of the full reports, appendix materials, webpages, and presentations in January 2022.

Pedestrian and Bike Plan Assessment

Gaby Gutenkauf (presenter), Wyatt Schulman, Elizabeth Grove, Crosby Carreno and Sara Ostertag (presenter)

The goal of this project is to analyze West St. Paul's 2011 Pedestrian and Bike Plan to provide a progress report as well as recommendations for updates to the plan. Increasing population densities have led to higher levels of traffic congestion in urban areas, compelling cities to increase accessibility to alternative forms of transportation such as biking and walking. This idea of biking and walking friendly cities is supported internationally, specifically in the United Nations Sustainable Development Goals, for its contributions to public health, decreases in emissions, and equitable transportation. In developing this infrastructure, concerns with safety, equity, and accessibility are consistently acknowledged as reasons why members of the community do not feel comfortable using these alternative modes of transportation. An analysis of West St. Paul's Pedestrian and Bike Plan will identify the extent to which the city has completed the infrastructure changes established in the plan, while also providing recommendations to increase biking and walking while still placing an emphasis on stakeholder involvement and safety in the community.

To develop our recommendations we conducted an observational inventory, equity study, comparative city analysis, and document analysis. With the findings from these studies we have developed:

- A GIS map showing the progress of treatments to roads and sidewalks planned in the 2011 Pedestrian and Bike Master Plan

As well as the following recommendations:

- Increase signage to make pedestrians and bicyclists more confident about using pedestrian and bicycle geared transportation
- Re-evaluation of stakeholder involvement in the development of the updated Pedestrian and Bike plan to ensure for equitable involvement and accessibility
- Integration of the Complete Streets Policy into the updated Pedestrian and Bike Plan

These recommendations will help West St. Paul become a more bike and walk friendly city and provide reliable alternate forms of transportation. With these suggestions we hope to provide West St. Paul with a solid starting point for updating the Pedestrian and Bike Master Plan this upcoming year.

Park Use Assessment

Jordan Bragg, Angelique Pham (presenter), Chloe Behounek, William Shirola, and Ash Maus (presenter)

The city of West St. Paul is predicting a sharp increase in population in the next few years due to several housing developments currently being built. Due to this predicted increase, the City is putting a great deal of effort into ensuring that moving forward, equity is at the forefront of all future decisions and changes. University of Minnesota ESPM senior students worked with Dave Schletty, the Assistant Parks and Recreation Director, to develop several reports that will assist his department and other departments in the City with making changes to create an inclusive city. The recommendations made in this report have assessed the parks and how they are used and can be used to assist the Parks Department with future changes.

The methods used to develop our recommendations were city comparisons, questionnaires for community members, and questions for potential interviewees. Our group of five used these methods to assess whether there were any limitations within the current parks system of West St. Paul. Our findings from these methods lead us to better understand who and how the parks are being used. We were also able to discover through this process that West St. Paul has similar amenities and accessibility as surrounding cities. In addition, our findings showed us that the importance of green spaces is not an isolated desire to just West St. Paul, but has been found to be of importance to many other communities who use their cities' outdoor public spaces. We used the insight we gained to develop two umbrella categories for recommendations with subcategories beneath them.

The recommendations developed in this report for the City of West St. Paul are as follows:

1. Equity
 - i. A community garden to be placed in a desirable location to enrich the community.
 - ii. Sports equipment rentals for families without access to the sporting equipment their children wish to use.
 - iii. Playground infrastructure update to create greater inclusivity in who is able to use the park's playgrounds.
2. Future Assessment
 - i. Surveying community members on a frequent and regular basis will create an element of equity amongst all new residents of West St. Paul and will ensure that everyone's voices are heard.
 - ii. Future city comparisons will allow for the city to reevaluate how they are growing in terms of equity and accessibility in comparison to the surrounding cities.

Fruit-Bearing Trees and Shrubs

Cassandra Barry (presenter), Mckenzie Beckman (presenter), Mason Donat, Lennart Droege, and Amina Muumin

The City of West St Paul's Parks and Recreation Advisory Committee and Environmental Committee is interested in exploring the use of fruit-bearing trees and shrubs in public parks. The scope of this exploration includes assessing community interests and perceptions. Our research supports the incorporation of edible trees and shrubs as being beneficial in providing a sense of community, as well as encouraging more environmentally friendly actions. Additional benefits include physical and mental health benefits from working with gardens, and aesthetic benefits stemming from the presence of increased greenery. These would be valued improvements to a city environment, and are what the City of West St. Paul's Environmental Committee aims to foster through the creation and maintenance of food forests.

This was a collaboration between the City of West Saint Paul and University of Minnesota undergraduate seniors in the Environmental, Science, Policy, and Management major. The research was conducted by the students to form recommendations concerning edible fruit trees and shrubs. The research was composed of a thorough literature review, as well as interviews with key persons.

Our recommendations are as follows:

1. **Fruit-bearing trees and shrubs:** We recommend planting fruit trees and shrubs of various species that fruit across the seasons, to have a constant harvest for anyone interested. Pruning should be done in a way that enables safe and accessible harvesting. Species should be chosen based on their maintenance needs, fruit quality, and potential desirability to community members.
2. **Community Engagement/Education:** Volunteer efforts are critical to the success of food forests. The city should begin with a detailed survey to community members that would gauge several factors, such as willingness to forage and/or maintain the plants. The responses to this survey will help determine what species are in demand, as well as assess community willingness to assist in maintaining the trees and shrubs. Educational outreach activities and community events can be organized to motivate volunteers to come out and participate in maintenance or foraging at select times throughout the year. Educating community volunteers will increase the efficacy of their work. Signage will be used throughout the park to inform visitors of the purpose of this project as well as the specifics of each plant present. Training events held by the city in conjunction with University of Minnesota tree and garden programs will serve to educate the community on how to care for their food forest. Community groups such as Green Thumbs would have the opportunity to hold classes and workshops in these spaces.
3. **Management Practices:** Ensuring that management strategies fit the needs of the specific site maximizes the benefits of a food forest, and community management fills this role well for West St. Paul. Some maintenance will need to be conducted by municipal workers, though this will decrease over time, as community members grow more comfortable with managing the space. Both maintenance and city-led training should be on a regular schedule. Community-based management practices encourage engagement and create a stronger relationship among residents.

Restoring Native Vegetation to South Roberts Street

Benjamin Adolphson, Elise Bernstein (presenter), Jacob King, Justin Highum (presenter) and Serena Rath

The City of West St. Paul collaborated with students at the University of Minnesota to develop a management plan for the right of way (ROW) vegetation along South Robert Street (S Robert Street). This report provides an inventory of possible plant species to implement along S Robert Street in the future.

The City plans to improve the conditions of its ROW vegetation, located along the median and sides of road areas. The site under review, S Robert Street, experiences harsh conditions from the high volume of regular traffic, road salt use, inconsistent irrigation, and limited maintenance availability. Yet, ROW vegetation offers many benefits to the City, such as improved pollinator habitat and aesthetic qualities. Still, vegetation must be carefully determined due to the hard conditions of the road.

This report generated six study methods, including site observations, expert interviews, outreach literature reviews, comparable case studies, plant selection, and pollinator research.

After collecting and analyzing various data, we provide three recommendations for the City of West St. Paul:

1. We identified fifteen native plant species that meet the criteria for ROW vegetation along S Robert Street. These include three species of grass, two shrub species, and ten flowering perennials. These plants can withstand the conditions in the right of way, require minimal maintenance, cater to pollinators, and generate aesthetic value along S Robert Street.
2. We recommend implementing management techniques that are cost and time-effective for West St. Paul. These include mowing the entire ROW area in early spring to simulate a prairie fire and pruning select vegetation once annually to meet height requirements for ROW vegetation. Maintenance personnel should conduct a thorough cleaning of any maintenance equipment to limit the risk of spreading undesired species.
3. We recommend creating educational material, such as signage and flyers, organizing a community outreach event, including community involvement through service learning. These methods allow for community feedback and will spread environmental awareness and expand the implementation of native, pollinator friendly vegetation across the City.

Residential Yard Nutrient Management and Water Use

Kate Carnahan (Presenter), Cole Montgomery (presenter), Ben Newcomb, Megan Walkenhorst, and Tyler Wrich

West St. Paul is passionate about improving the sustainability and equity of their city. It has many parks, water bodies, and recreational areas to enjoy. However, the current management practices for residential lawn care are affecting the health of the nearby waterbody, Thompson Lake. This report focuses on informing West St. Paul residents about the best management practices for lawn management, such that lawns across the City can provide both ecological and cultural benefits.

To determine the best recommendations for the problems of lawn nutrient management and water use in West St. Paul, several steps needed to be taken. First, a pilot survey was created to determine West St. Paul residents' knowledge. Next, we identified similar cities within the metropolitan area to West St. Paul and reviewed their website information for accessibility and education programs, as compared to West St. Paul's. To develop an action plan for the City, University of Minnesota websites were reviewed to determine best management practices for lawn nutrient management and water use. Finally, the health of the watershed district region that includes West St. Paul was assessed via the Watershed Health Assessment Framework.

We found that about 60% of respondents infrequently water their lawn and those that do, water at night or in the morning. By comparing city websites, we found that the information on West St. Paul's website about lawn care could be made clearer with a modified layout, where the lawn care information is found, and adding more information. From the University of Minnesota lawn management websites, we gained valuable information on recommendations for best management practices. Finally, with the Watershed Health Assessment Framework information, we determined that there is some room for improvement in West St. Paul in terms of watershed management and health.

Based on these findings, we can make the following recommendations to address lawn nutrient management and water use concerns:

- Provide more lawn care resources on the city website
- Host educational events on nutrient lawn care management and water use
- Implement an irrigation controller program
- Develop policies for alternative lawns

Adopt-a-Drain and Stormwater Management

Alan Knudsen, Jess Jurcek, Michael Gurrieri (presenter), Michael Spies (presenter), and Rita Fredrick

City residents can play an important role in improving municipal stormwater quality. The Adopt-a-Drain program provides a unique opportunity for residents to protect water quality by adopting and cleaning storm drains near where they live. We partnered with the City of West St. Paul for our undergraduate capstone project to develop recommendations for how to increase participation in Adopt-a-Drain within the city. There are eight other reports which supplement ours to address sustainability within the city.

We integrated four data collection methods. These methods included interviews with stakeholders, a survey, spatial analysis of drains and elevations in West St. Paul, and a literary analysis on environmental education practices.

Through these combined methods, we discovered that word of mouth and existing relationships are powerful tools for encouraging new participants to sign up for environmental behavior change initiatives like Adopt-a-Drain. We also learned that Adopt-a-Drain provides many resources for municipalities to use, such as yard signs, interactive kiosks, and other handout materials. Additionally, we learned that targeted communication is key to motivating residents to participate in programs like Adopt-a-Drain by demonstrating to them the connection between water quality and the quality of their community. Based on these findings, we developed the following recommendations for the City of West St. Paul:

1. Utilize Adopt-a-Drain resources such as yard signs, door hangers, and informational kiosks to spread awareness about the program
2. Leverage community resources by using existing communication channels, building relationships with local groups and institutions, and creating community events or competitions to increase awareness of the program and provide an incentive for participating.
3. Target messages based on local values or water features to connect drain adoptions to improving the quality of the community and its resources.

Integrating any of the three recommendations above would improve community engagement with the Adopt-a-Drain program and potential future water quality projects. By adapting these accessible and effective methods of community engagement, the City of West St. Paul can continue to utilize the Adopt-a-Drain program for future projects.

Volunteer Urban Tree Survey

Lydia Anthony (presenter), Amalia Scipioni, Owen Anderson (presenter), Jaxen Garlick, and Matthew Wosje

The City of West St. Paul seeks to gather tree survey data through organizing a volunteer urban tree survey. West St. Paul needs updated data for the trees on its public lands. The last formal survey was conducted in 2014, and an attempt at a volunteer urban tree survey in 2015 was not as successful as planned. The City is currently looking to complete another volunteer tree survey. Volunteer surveys are an example of citizen science, which is a great way to engage residents and provide a sense of investment in their community. Volunteers often engage in volunteer surveys for purposes such as enjoying nature and the natural resources they are surveying, rather than the purpose of contributing to data gathering (Boxall & McFarlane, 1993). Therefore, West St. Paul must design a volunteer urban tree survey program that allows volunteers to feel connected to nature above all else, where the steps volunteers participate in for the survey are centered around their enjoyment of nature and trees.

To provide recommendations as to how West St. Paul can conduct a volunteer urban tree survey, successful strategies were determined via interviews and a literature review. Dimensions of a successful volunteer urban tree survey considered were effective recruitment, retaining, and training of volunteers, as well as how the surveys would be conducted on-the-ground. Remote sensing data was also gathered to determine the current state of the urban forest of West St. Paul.

To conduct a successful volunteer urban tree survey, West St. Paul should consider what the most important tree attributes needed to be measured are, provide in-classroom and in-field training, have an image heavy and text-short training manual, provide appropriate measurement tools, and provide on-site support for volunteers throughout the survey. Volunteers should receive an assignment of an area to survey, and work in groups of 2-3.

This report explores the current state of West St. Paul's tree coverage and inventory, and then provides recommendations as to how the city can conduct a successful volunteer urban tree survey. The inventory resulting from the collected data will allow the city to conduct several analyses and queries related to the urban forest's tree health, diversity, management, and then social and cost implications.

Improving the Efficiency of Recycling Education

Rachel Elsen (presenter), Rowan Koch (presenter), Eden Turnbow, Ethan Cypull and Zach Gazda

This report covers local recycling patterns, policy, and effective strategies for recycling education to assist West St. Paul in bolstering current recycling campaigns. Recycling is a powerful tool that should be maximized in waste reduction. The city of West Saint Paul is currently working to achieve a recycling rate of 63% as per the 2020 policy plan for the Twin Cities Metropolitan Area. To reach this goal, education is key. Among recyclers, issues of “wish cycling” and overconfidence in recycling ability create contaminated loads that end up in the garbage. On the other end of this spectrum, people may opt out of recycling due to lack of access or confusion on recycling policy.

We interviewed apartment and multi-family property owners, completed a meta-analysis of recycling education literature, and compared recycling guides dispersed by Dakota County and surrounding communities. Through these methods, we found that recycling education should be geared towards residents rather than building managers, recycling education should be marketed for the environmental benefits rather than monetary incentives, and that overconfidence of recycling knowledge in residents leads to wish-cycling that contaminates city recycling.

Based on the findings from our interviews, literature review, and document review, we created three recommendations for the city of West St. Paul to adopt that will increase residential recycling rates and reduce residential recycling contamination. We recommend that West St. Paul...

- I. Create One West St. Paul Approved Recycling Guide
- II. Create More Opportunities for Easy Recycling
- III. Offer a Recycling Self-Assessment to West. St. Paul Residents

The combination of these three recommendations will reduce confusion around what is accepted as recycling, will increase the accessibility of recycling, and will allow the residents as well as the city to gauge their recycling behaviors.

GreenStep Cities

Amanda Borwege, Madyson Hoese, Emily Sheleski (presenter), and Matt Preis (presenter)

The city of West St. Paul has actively been working on making strides in the sustainability realm of city planning and operations. In 2017, the City showed its commitment to the sustainability by enrolling in the GreenStep Cities voluntary program. As a result, the City was able to achieve Step 1 public recognition that same year. As of 2021, the City has already reached Step 3 recognition. With support from University of Minnesota senior students specializing in environmental policy and sciences, West St. Paul aims to achieve Step 4 and even 5 City in the next few years.

We developed an evaluation of West St. Paul's current GreenStep Cities program and ideas for the future of best practices. Through our research methods, we found that the City has eight remaining best practices to complete in order to achieve the goal of completing as many as possible. Additionally, we found that in order to advance in the GreenStep program, it is more feasible to create an internal green team versus allocating funds for a grant writer.

Three recommendations identified to be both beneficial and achievable by West St. Paul are as follows:

1. Start by completing the eight remaining best practices on the GreenSteps Assessment at either a 1, 2, or 3 star level in order to expand the City's sustainability efforts.
2. Measure and report on the 8 CORE metrics and 5 additional city performance metrics to advance to Step 4 in the GreenStep program.
3. Develop an organizational awareness of GreenStep Cities that includes a GreenStep Team that will influence and encourage future achievements within the program.