

Creating a Model for Active Transportation Project Prioritization in Westminster, Colorado

Executive Summary

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## Introduction

The City of Westminster (the City) needs a system to help make more informed decisions about the prioritization of implementation and funding for transportation projects. The City also desires to have more quality, data-driven decisions to help better inform the community. A streamlined and standardized approach to making these decisions will be especially important as the City moves forward in the process of creating and implementing their Transportation & Mobility Plan (TMP).

Thus, the purpose of this Capstone project is to create a model for prioritizing transportation projects. Specifically, the capstone creates a customized version of the ActiveTrans Priority Tool (APT) to fit the vision and goals of the City's TMP. This tool will guide the prioritization and decision making for the implementation and funding of transportation projects in Westminster.

The APT is a step-by-step methodology for prioritizing bicycle and pedestrian projects. It functions by walking the user through a 10-step process to:

1. Enter the projects under consideration
2. Define criteria and corresponding weights
3. Add scoring data for each criterion
4. Calculate a final prioritization score

This can be done as two separate processes or together as part of a complete streets project. This tool is flexible and allows the user to customize factors and variables within the tool to reflect the goals and values of the user. A programmed spreadsheet for calculating score and rank of projects is available to the user as well as an accompanying guidebook.

## Literature Review

Background research was conducted through three mediums: academic literature, case studies, and relevant planning documents. The literature indicates that there is no single, widely accepted methodology for prioritizing active transportation projects. However, the APT gives the user a step-by-step methodology for doing so in a data-driven manner. There is a lot of flexibility with this tool. The factors and variables within the tool are customizable which allows the user to tailor the tool to align with their goals and values. This then raises the question about which factors and variables to use and which ones to customize. The American Planning Association (APA) Policy Equity Guide emphasizes equity in all plans and policies. This guide is an important tool for ensuring that equity is considered at all stages of the prioritization process. Case studies where the APT have been used are outlined in the official report that accompanies the APT. These are helpful for understanding how other cities have customized the APT as well as the pros and cons for using it.

## Methodology

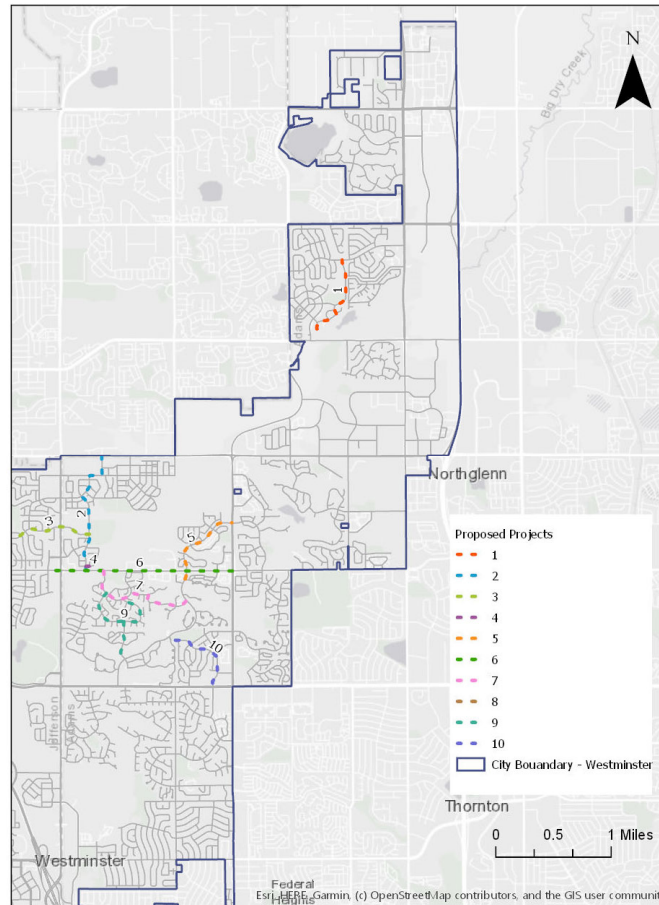
In order to analyze data and the usefulness of the APT, ten bicycle projects from The City of Westminster's existing Mobility Action Plan (MAP) were selected to be used as test projects (*Figure 1*).

Once the projects have been selected, there are three main steps to the methodology:

1. Determine which data to use for the tool and for GIS analysis.

2. Use GIS software to analyze the data as it relates to the projects.
3. Complete the APT programmed spreadsheet to determine project scores and rank.

Figure 1: Selected MAP Projects



## Analysis

In this section, the process by which data was used to determine active transportation improvement project prioritization as well as data analysis, a more detailed methodology, and notable findings are discussed.

The specific factors and variables used in the test of the APT include:

- **Constraints-** magnitude of estimated project cost
- **Opportunities-** potential for Safe Routes to School grant funding
- **Safety-** total bike involved crashes and total bike fatalities (killed) and severe injuries (KSI)
- **Demand-** presence of existing bicycle facility, proximity to a school, and connection to employment density
- **Connectivity-** connection to an existing bike facility and connection to trails
- **Equity-** percentage of population for whom poverty status has been determined and percentage of households with no vehicle within the census tracts each project intersects

There are maps to supplement the explanation of how each set of data was analyzed.

## Recommendations

There are two ways that recommendations are made in this report. First, recommendations are made for several factors and variables that were used in the APT test. There are also recommendations of additional data to consider and how that data can be analyzed. Secondly, there are recommendations for next steps the City should take to be set up for success when using the APT. They are as follows:

1. Review the proposed factors and corresponding variables
2. Identify who needs to be involved in determining variables and weights; which departments, how many representatives; how many community members, stakeholders, etc.
3. Identify the data needed and availability, how much work it would take to create it if needed
  - a. Build a database
4. Select projects to be ranked
  - a. Decide whether these projects should be scored against each other or separately if bicycle and pedestrian projects
5. Use GIS to determine spatial relationships between variables where necessary
6. Use APT to score projects based on outcomes of the above steps using the selected factors and variables
7. Analyze ranking results and determine if multiple iterations are needed