

# PRIORITIZE PROPOSED PROJECTS



# CHAPTER 7: PRIORITIZE PROPOSED PROJECTS

After developing a network, the next step in your active transportation plan (ATP) is prioritizing your projects. A prioritization process establishes an order for funding and implementing projects based on a common set of criteria that stakeholders agree upon. Agencies and communities have limited funding and resources, so it is important to prioritize projects that advance your goals to the greatest degree. Prioritization processes also help determine how much funding you need to allocate to your capital improvement programs for active transportation projects and the best timing of these investments.

This chapter explains two different methodologies for undertaking a project prioritization process: a qualitative approach and a quantitative approach. A qualitative approach is relatively simple and typically involves ranking projects through a stakeholder voting activity. Quantitative project prioritization approaches are more complex and use data to determine which projects are both feasible, given real-world constraints, and align with stakeholders' priorities. These two approaches can be used in unison or separately. Both options are explained in more detail below.

## Qualitative Approach

Qualitative approaches work best for communities that have a smaller planned network of active transportation facilities, or who may need a less resource-intensive option for prioritizing their projects. In these cases, communities develop a simple voting activity (in-person activity or online survey) for stakeholders and community members that ranks various proposed projects. Public and stakeholder participation in the

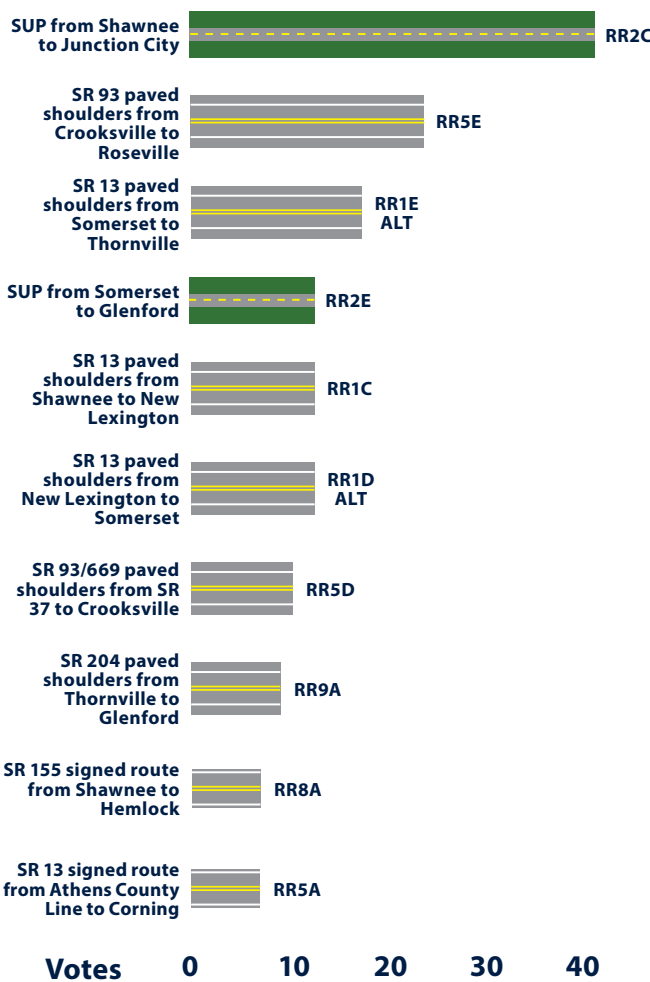
prioritization process is critical to ensure that final recommendations align with local needs. Voting activities can be as simple as ranking projects from first to last and averaging the votes to determine a prioritized order of projects.

Another method gives stakeholders a limited number of votes to distribute among all projects based on what is most important to them. The

point totals are then added up to determine project scores. This method allows participants to emphasize individual projects they feel strongly about prioritizing. For example, they could assign all of their votes to one high-priority project. These voting activities can act as standalone prioritization decisions, or they can feed into a more quantitative approach as one of several criteria being considered.

A simple and straightforward prioritization voting activity works well for a community that has a planned network with 10 or 20 facilities (Figure 16), but it is much more challenging to rank 50 or more facilities across a broader geographic area.

Figure 16: Stakeholder voting results for Perry County’s ATP recommendations



# Quantitative Approach

A quantitative approach uses GIS datasets to score and rank projects based on a set of criteria that reflects ATP goals. This section describes eight potential criteria to prioritize projects. These criteria reflect statewide active transportation goals, as outlined in Walk.Bike.Ohio. Some or all of these criteria may align with your community’s priorities, but it is important to discuss and vet each item with your key stakeholders to ensure consensus. Typically, four or five criteria is enough for a prioritization process (see Table 8), so select the ones that are most relevant to your community or create your own. Incorporating too many metrics increases the amount of work needed and dilutes each factor’s impact, which can cause misleading results. Data for most criteria were derived from publicly available national and statewide sources.

Table 8: Sample project prioritization framework

Factor	Data	Weight
Demand	Walk Bike Ohio Analysis	20
Equity	Walk Bike Ohio Analysis	20
Safety	5-year Crash History	6
	Posted Speed	7
	Traffic Volumes	7
Connectivity	Plan Recommendations	7.5
	Connections to other counties	7.5
Synergy	ODOT District Work Plans	5
Stakeholder Input	Advisory Team Priority Mapping	5
	Public Engagement Priority Mapping	5
Cost	Relative Facility Type Cost Estimates	10
<b>Total</b>		<b>100</b>



A well-designed prioritization process should accurately reflect the community's goals and priorities when it comes to active transportation. However, not all projects score exactly as you might expect or hope, and it is important to maintain some flexibility during this process. Human interpretation of the results is critical. Rather than treating data-driven prioritization as a foolproof method, examine the results with some skepticism. There may be flaws or inaccuracies in your data or methodology that produce unexpected results. It often takes fine tuning and multiple attempts at prioritization to achieve the desired outcomes.

## Equity

Access for underserved populations is an important consideration for all active transportation projects. For more information on incorporating equity into ATPs, see [Equity](#) in Chapter 5. ODOT houses a [needs analysis](#) for the entire state that provides a composite equity score for every census tract, with scores assigned based upon the presence of people



of color, youth, older adults, poverty, educational attainment, limited English proficiency, and motor vehicle access. This [dataset](#) can be used to inform the prioritization of projects in your ATP.

## Network utilization

Network utilization measures (or demand analysis) quantify the amount of existing or potential travel by walking or bicycling. Projects located in areas that have greater anticipated demand will score higher in the prioritization process than projects that have lower anticipated demand. ODOT recommends two sources of network utilization data:

- ◆ ODOT houses a [demand analysis](#) for walking and bicycling. To achieve the goal of increasing walking and bicycling, the focus for these measures is on potential or “latent” demand. This is a composite score based on employment, walking and bicycling mode share, poverty, population density, retail, parks, and the presence of colleges or universities. This [dataset](#) can be used to prioritize projects in your ATP.
- ◆ ODOT holds a statewide StreetLight Data license, which allows any public agency in Ohio, or any consultant contracted with a public agency, to design, run, visualize, and download unlimited customized transportation analyses. Issues with active transportation StreetLight data may arise in dense urban environments with slow moving traffic and lots of travelers. Human interpretation of the data is critical. When possible, seek opportunities to calibrate and validate Streetlight data outputs using other sources, or through StreetLight’s calibration function.



## Network connectivity

Network connectivity measures the degree to which the network can serve trips regardless of how much demand there is for trip-making at a given location. As active transportation networks expand and grow, they provide additional connections and create opportunities to travel to more destinations. Increasing connectivity within the network often results in higher usage. Projects should be evaluated based on their connections to other proposed active transportation facilities as well as the existing network. To promote regional connectivity, projects should also be scored on their connections to facilities in surrounding communities.

## Safety

The degree to which a project increase safety for people walking and bicycling is a critical measure when evaluating priorities. Recommended safety criteria include three different data sources: five-year crash history, posted speed, and traffic volumes. These factors are central considerations for bicyclist and pedestrian safety and comfort.

## Livability

Whereas universal standards exist for safety, network utilization, etc., livability is a unique factor that changes meaning depending on local settings. In some communities, tourism and economic development may be the most important measures of livability while in others, public health and environmental quality could be key factors. Whatever the case, it is better to select one or two measurable criteria rather than a composite livability index with many factors, which can lead to inaccurate and opaque results. For example, if your advisory team determines that environment is an essential livability metric, projects could be scored based on their potential to reduce vehicle miles traveled and greenhouse gas emissions. Similarly, considering public health as an important factor may lead you to prioritize projects in areas with high chronic disease rates. Rely on your advisory team to determine the best criteria for measuring potential project impact on your community's livability.

## Preservation

Project prioritization can incorporate preservation criteria in several ways. It is important to consider the lifecycle cost of proposed projects when evaluating which recommendations to prioritize. Calculating this measure requires an understanding of the existing location and condition of assets. Conducting an [Asset condition inventory](#) will identify project types that may have a more useful life than others and should be prioritized.

Including preservation criteria also encourages a balance between maintaining your existing network while also building new capacity in a thoughtful and resource-conscious way. In some locations, the lack of any facility for active transportation is a larger concern than the existing condition of infrastructure, so this measure should not distract from the pressing concerns of missing infrastructure.



Preservation criteria can incorporate anticipated maintenance needs of a facility, favoring facility types with lower maintenance cost. However, framing the criteria this way will likely prioritize bikeway projects over pedestrian projects, and non-separated facilities over separated facilities due to the additional maintenance cost associated with such facilities. Communities should balance these additional costs with the safety and comfort benefits that separated facilities can offer and seek lower cost alternatives when they are infeasible, such as low-stress neighborhood greenways.

## Construction feasibility

Some projects are very difficult to implement, and others are relatively straight forward. For example, a project that simply requires restriping the roadway to add on-street bike lanes is much more feasible from a construction perspective than adding a shared use path through a narrow corridor that requires driveway modifications, bus stop relocation, or right-of-way acquisition. However, construction feasibility should be balanced against other criteria; for example, achieving a safe, equitable, and connected network may require funding some projects that score low on feasibility.

## Project cost

Project costs vary dramatically based on the type of facility, from shared use paths (high cost) to signed bike routes (low cost) and everything in between. Projects can be assigned relative cost estimate ranges (low, medium, high) based on facility type.





## Project Scoring

There are several common approaches to project scoring. Many communities assign a weight to each criteria based on its importance, then calculate the final score for each project as the sum of the weighted criteria values. Projects are then divided into high-, medium-, and low-priority categories based on their scores. This process is somewhat arbitrary since it is very difficult to quantify the importance of certain criteria, and because projects with similar scores may land in different categories.

Another option is to score projects on each individual criteria so that every project receives an equity score, a safety score, etc. Thresholds are defined that identify the high priority projects for each category. Priority projects in each category receive points and projects with more than X number of points are considered the highest priorities. This approach still allows for communities to place a greater value on some criteria than others. For example, in a community that highly values connectivity, any project that does not receive a connectivity point could be removed from the priority list. It also places emphasis on projects that do an excellent job of meeting several different needs without penalizing them for failing on other considerations. For example, a project that addresses an equity need, significantly increases access to parks, and improves school access could still rise toward the top even if it is not part of a pre-existing plan and doesn't expand access to jobs.

Instead of calculating scores mathematically, some communities take an engagement based approach. A steering committee or advisory team, or a special group convened for prioritizing projects, uses maps, data dashboards, and other tools that summarize criteria data for each project. Based on this data as well as their local expertise, the group builds consensus around top priority projects. This approach is more transparent and inclusive, and provides additional value beyond the prioritization process since local agencies can leverage these relationships during implementation.

# Project Phasing

Implementing ATPs takes significant time and effort. Implementation requires working with many partners, as well as building public support for priority projects. Identifying short-, medium-, and long-term priorities will help you break down implementation into manageable time frames.

Project phasing and planned implementation timelines are based on prioritization results, as well as local judgment and expertise. Projects that score highly in the prioritization process are not necessarily confined to the first phase of implementation. For example, some plans have priority projects in the medium- or long-term phases because of funding mechanisms. You may need to adjust these time frames to match your funding sources and capacity.

## Short-term

Short-term projects are an important phase of implementation. Projects that are successfully completed early on in the process in highly visible areas with the potential to serve many users can generate excitement around your ATP and show the community's commitment to expanding active transportation as a valid means of travel. Short-term projects often include low hanging fruit or projects that are easier to implement due to their construction feasibility, cost, or because they are already programmed into a scheduled construction project.

## Medium-term

Projects completed during the medium-term phase of plan implementation expand the active transportation network to more areas of the community. A medium-term project may include a project that scored highly in the project prioritization process, yet it is located on a roadway that is not programmed for a scheduled resurfacing

project in the short-term. Another example may be a project that scores highly in prioritization, but requires multiple funding sources or right-of-way acquisition to implement.

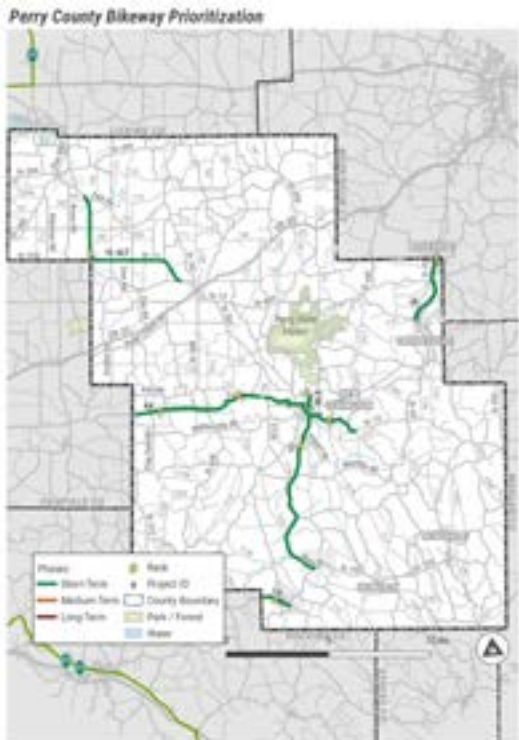
## Long-term

Full network buildout often involves major infrastructure improvements that are high-cost projects with extended timelines. Many of these projects may build upon efforts in the short- and medium-term phases. During the last phase of implementation, projects tend to significantly expand the community's active transportation network. Long-term projects may also include smaller recommendations that do not serve many people or connect to important destinations, and therefore did not score highly during prioritization. However, these projects still play an important role in extending the network to every part of your community and establishing alternative routes for people with different abilities and comfort levels (for example, a section of shared use path that runs parallel to an existing bike lane).

## Flexibility in project phasing

When building out a network of active transportation facilities, it is important to remain flexible and opportunistic in case unexpected implementation opportunities arise. For example, you may need to upgrade a long-term project to the short-term phase if the proposed location gets programmed for resurfacing a few years after your plan is adopted. This situation presents an exceptional opportunity to leverage the programmed roadway project and implement the active transportation facility. When implemented during roadway resurfacing or reconstruction, active transportation projects can be built for a very small portion of the overall project budget. These efficiencies make implementation more palatable to

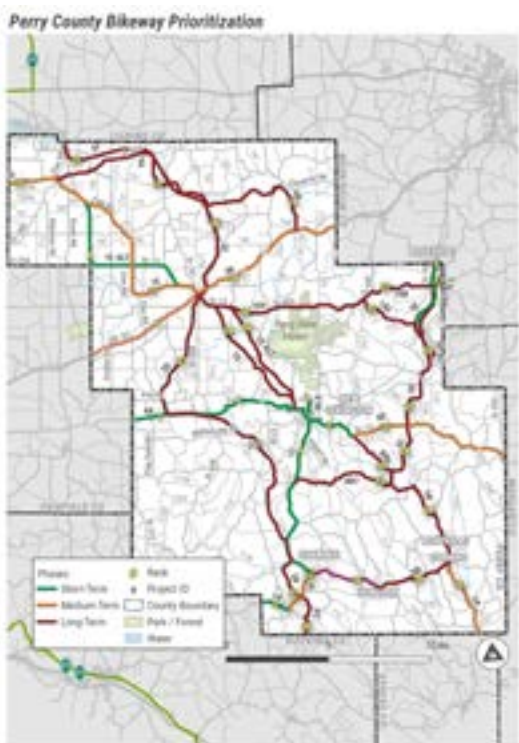




Project Phasing Short-Term



Project Phasing Medium-Term



Project Phasing Long-Term

These maps show project phasing for Perry County's ATP based on prioritization results. The top eight recommendations are classified as short-term project, the next eight recommendations are classified as medium-term projects, and the remaining recommendations are classified as long-term projects.



agency staff, policy makers, and community members. Similarly, your agency could apply for and be awarded infrastructure funding for a specified project, which allows that project to be bumped up in the queue. New construction and development projects can also provide opportunities to implement sidewalk or trail projects.

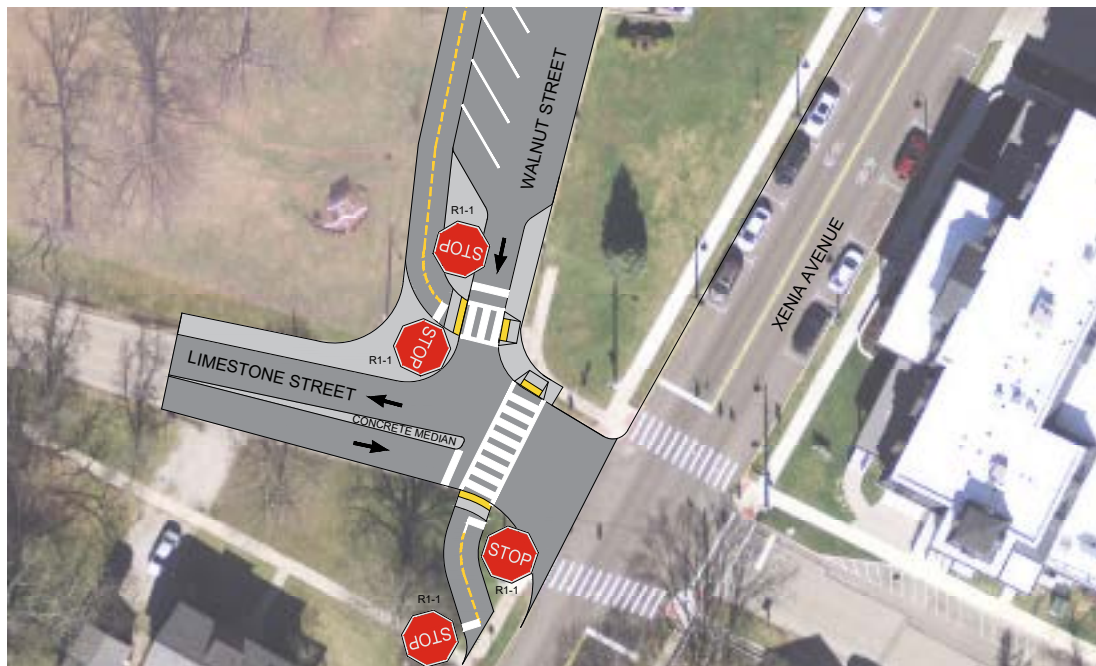
Ideally, top ranked projects will receive more attention in the final stages of your plan development (see next section). In some instances though, there may be a case for focusing on lower-ranked projects instead of, or in addition to, your high-scoring recommendations. For example, in Perry County's ATP, a shared use path from Shawnee to Junction City was the top voted project among the public and advisory team members but it ranked only 21<sup>st</sup> in the quantitative project prioritization analysis. The project team recognized the importance of putting local priorities at the center of the implementation process to build momentum, generate good will and political support, and empower the public to realize its own vision for active transportation in Perry County. Despite its low score, they selected the shared use path project for a cost estimate, conceptual rendering, and site analysis.

## Project cutsheets

After the project prioritization process, there are additional steps you can take to set the stage for successful plan implementation. Project cutsheets provide specific information for high priority projects, including site analyses, recommendations, implementation considerations, and responsible parties for design and implementation. They can also include conceptual design plans or renderings and planning-level cost estimates. Developing design concepts and cost estimates for top priority projects gives these projects a jump start towards implementation and can make them more competitive for funding opportunities.

## Conceptual designs

A concept design takes a planning project from a line on a map to a more tangible visualization. Conceptual designs include photo realistic renderings and typical cross sections of a project. They help communicate what a project could look like if built and generate momentum and excitement for specific projects. Involve community members during the conceptual design process for these high priority projects. Consider holding workshops to gather public and stakeholder feedback on existing conditions, needs, desires, and challenges for the project.



Traffic calming and shared use path concept for a Safe Routes to School project in Yellow Springs.



An intersection treatment for a proposed neighborhood greenway crossing a busy road in Grandview Heights.





Black Street Bridge in Hamilton reimagined as a pedestrian, bicycle, and transit only bridge.



Rendering of a proposed sidepath in Elyria.

## Cost estimates

Planning level cost estimates for high priority projects support funding applications and provide valuable information to decisionmakers. It is important to determine how detailed your cost estimate needs to be for the funding source. Engineers should lead this process. Opinions of probable cost are typically developed by identifying major pay items and establishing rough quantities to determine an approximate order of magnitude cost. ODOT's [Historical Bid Data](#) is helpful in developing cost estimates. Cost opinions usually do not include easement and right-of-way acquisition; permitting, inspection, or construction management; special site remediation; escalation; or the cost for ongoing maintenance. Construction costs will vary based on the ultimate project scope, actual site conditions and constraints, schedule, and economic conditions at the time of construction.

## Network buildout

There are many design resources to inform building your active transportation network. Table 9 shows suggested resources. See ODOT's [Active Transportation Plan Template](#) for common steps and considerations in implementing ATPs by facility type.

Table 9: Active Transportation Design Resources

ODOT Design Resources	Additional Design Resources
<a href="#">Bicycle and Pedestrian Resources for Engineers</a>	<a href="#">FHWA Small Town and Rural Design Guide</a>
<a href="#">Active Transportation Guidance</a>	<a href="#">FHWA Achieving Multimodal Networks: Applying Design Flexibility and Reducing Conflicts</a>
<a href="#">Ohio Traffic Engineering Manual (TEM), Part 9 Bicycle Facilities</a>	<a href="#">FHWA Bikeway Selection Guide</a>
<a href="#">Location and Design (L&amp;D) Manual, Sections 300, 400, 600, 700, &amp; 800</a>	AASHTO Guide for the Development of Bicycle Facilities (update forthcoming)
<a href="#">Ohio Manual of Uniform Traffic Control Devices (OMUTCD), Part 9: Traffic Controls for Bicycle Facilities</a>	AASHTO Guide for the Planning, Design, and Operation of Pedestrian Facilities
Guidance to inform Pedestrian/Bicycle infrastructure at Railroad Crossings	
Multimodal Design Guide (forthcoming)	

## Conclusion

Project prioritization is an important final step prior to implementing your plan. Going through the prioritization process helps agencies identify which facilities are the most impactful to the community, set aside funding for projects, create project design and development timelines, and ultimately begin to build out the active transportation network. The project prioritization process can also be helpful in garnering community support for your plan. By involving community members in the process, you demonstrate that the project team has listened to the community's needs and priorities and is using that information to determine where, when, and how projects are built. Following the steps outlined in this chapter will help your community prepare for successful implementation of your plan.

