

# CHAPTER FOUR

## PLANNING FRAMEWORK

The planning framework guides the development of the Regional Transportation Plan, articulating what the region is trying to achieve. This chapter establishes a foundation to focus data-gathering efforts, shape project alternatives, and select and fund the best options for future implementation.



Pikes Peak Area  
Council of Governments

Communities Working Together

## CHAPTER FOUR

# planning framework

**T**he planning framework guides the development of the regional transportation plan, articulating what PPACG is trying to achieve through the regional transportation planning effort. It establishes the foundation for decision-making, focuses data-gathering efforts, shapes project alternatives, and outlines how decision-makers select and fund the best investments.

The following components make up the planning framework:

- Vision, mission, and principles
- Goals and performance measures
- Objectives and targets
- Project evaluation criteria
- Weighting of evaluation criteria

### VISION, MISSION, AND PRINCIPLES

The vision, mission, and principles are the first components of the planning framework. During the fall of 2013, the Board of Directors concurred with the vision, mission, and principles from the 2035 Moving Forward Update for use in the 2040 Moving Forward plan.

The vision articulates the Pikes Peak region's desired outcome for a future regional transportation system. This statement helps focus planning efforts for the 2040 Moving Forward plan. The vision is responsive to the needs of citizens, references the various plans of our member governments, and challenges all to develop a transportation system that addresses the region's quality of life.

The vision does not identify the necessary steps to reach the desired outcome, but it does set the direction for the development of the regional transportation plan. A vision should be a grand and inspiring statement, one that inspires users of the transportation system to support and stand behind it.

The mission statement provides guidance on how those involved in the plan effort will move forward to achieve the desired outcome. No changes were made to the mission.

Principles are standards that describe the integrated multimodal transportation system the Pikes Peak region is working to achieve. They provide an overview of the factors that must be addressed in the plan.

### GOALS AND PERFORMANCE MEASURES

Transportation improvements chosen for implementation over the next 25 years must balance the competing needs that are expressed in the 10 principles listed in the sidebar. Specific goals and performance measures are used to determine how well the transportation system performs today, how well it will perform in the future given a set of assumptions, and how well a particular transportation strategy or alternative meets these established goals.

Performance measures for each goal attempt to meet the following standards:

- Consistent data is likely available or can be obtained to facilitate analysis
- The measure can be applied at system levels
- The measure is quantitative

In developing goals and performance measures for the 2040 Moving Forward plan, PPACG hosted five focus groups to enhance collaboration among citizens. The objective of these gatherings was to discuss a distilled list of goals and performance measures. Each group focused on goals in transportation, community/social, economy, and the environment. This process occurred during the public comment period for the draft goals and performance measures that the PPACG Board reviewed and released for public comment in November 2013. PPACG also hosted a public open house to solicit additional comments on the goals and performance measures in December 2013.

The public participation process resulted in approximately 50 participants in the five focus groups, robust discussion at Transportation Advisory Committee and Community Advisory Committee meetings, an open house, and two additional comments via e-mail or mail.

What resulted from the goal development process was a concise list of 13 goals (reduced from 17 in the previous plan) with well-defined performance measures that can be collected to help track regional progress. In February 2014, the PPACG Board approved these goals and performance measures to enable further development of planning framework items necessary for project analysis and evaluation. The adopted goals and performance measures are shown on the next page.

### VISION, MISSION, AND PRINCIPLES

#### Vision

Create a sustainable multi-modal transportation system that meets regional mobility and accessibility expectations as essential elements of the Pikes Peak Area's quality of life.

#### Mission

Plan multimodal transportation facilities and services that efficiently move people and goods, support economic vitality, and sustain and improve the quality of life in the Pikes Peak Region.

#### Principles

1. Preserve the function of the existing transportation system.
2. Provide efficient transportation for people and goods.
3. Develop a multimodal transportation system that provides access to employment, services, military installations, and other destinations.
4. Fully integrate connections within and between modes for people and for freight.
5. Increase the safety of motorized and non-motorized travel.
6. Increase the security of the multimodal transportation system.
7. Support the economic vitality of the Pikes Peak region.
8. Improve mobility of people and goods.
9. Protect and enhance the environment by implementing transportation solutions that are sensitive to natural and human contexts.
10. Seek reliable and sufficient funding sources to implement regional transportation needs.

## GOALS AND PERFORMANCE MEASURES

1. Maintain or improve current transportation infrastructure condition.
  - Percent of bridges that are not structurally deficient and/or functionally obsolete
  - Transit asset condition (% of vehicles in fair, good, and excellent condition)
  - Percent of roadway miles in good, fair, and poor condition
2. Improve the operation of transportation systems and services to enhance emergency response, minimize travel times and maximize service quality of all modes of commercial and private travel throughout the region.
  - Planning time index
3. Prioritize transportation funding towards those projects/programs that have the highest life-cycle cost-effectiveness.
  - Lifecycle benefit/cost ratio
4. Improve system connectivity within and between modes and accessibility for everyone.
  - Nonmotorized system connectivity and accessibility index
  - Percent transit ridership increase annually over a five year moving average
  - Total number of revenue service miles for transit passenger service
5. Improve safety for all travelers.
  - Serious injuries and fatalities per VMT
  - Total number of serious injuries and fatalities
  - Serious injuries and fatalities per capita
6. Increase resiliency and redundancy of the transportation system.
  - Percent of assets at high risk without viable alternative(s)
7. Ensure transportation system investment benefits are equitably distributed to minorities, and citizens with disabilities, low incomes, and/or other special needs.
  - Benefits (timing and amount of) accrued by typical citizens in the Pikes Peak region compared to those accrued by protected status
  - Travel time benefit
8. Reduce transportation-related adverse impacts to communities, neighborhoods, natural environments, and areas identified for cultural and/or historical preservation.
  - Direct impacts to areas
  - Indirect impacts to areas
9. Improve economic vitality and freight movement in the region by enhancing the transportation system.
  - Regional per capita income
  - Inter-regional freight tons
10. Incentivize infill in, and redevelopment of, existing communities.
  - Number of lane miles per capita
  - Number of projects in urban and urbanizing area
11. Improve, protect, and mitigate impacts to critical habitat and connecting corridors for threatened, endangered, and imperiled species.
  - Acres of habitat corridors for threatened, endangered, and imperiled species impacted and not mitigated
  - Ratio of acres replaced/purchased for mitigation to acres impacted
12. Minimize the amount of stormwater runoff and transportation-associated pollutants that enter the region's streams.
  - Miles of stream segments that exceed pollution standards
13. Reduce absolute transportation-related greenhouse gas emissions and air criteria pollutant emissions.
  - Change in CO<sub>2</sub>, CO, Ozone Levels, NO<sub>x</sub>, VOCs Levels
  - Percent of alternative fuel vehicles of all registered vehicles
  - Percent nonmotorized share of all trips

## OBJECTIVES AND TARGETS

MAP-21 requires an [outcome-based process](#) with established performance targets to ensure investments are directly related to achievement of identified goals. FHWA reports that “performance management will transform the Federal-aid highway program and provide a means to the most efficient investment of Federal transportation funds by refocusing on national transpor-

tation goals, increasing the accountability and transparency of the Federal-aid highway program, and improving project decision making.”

Where applicable, objectives from the 2035 Moving Forward Update were carried through with updated timeframes. Otherwise, stakeholders used proposed national and [state objectives](#) (see **Table 4-1**). To establish local performance targets for the safety goal, PPACG worked with local public safety and

transportation officials at PPACG's Regional Transportation Safety Summit.

## PROJECT EVALUATION CRITERIA + SCORING

Following the creation and adoption of clear, measurable goals and performance measures, evaluation criteria was developed. This was necessary to help determine how proposed projects and policies would be evaluated to determine the most valuable alternatives to recommend for plan inclusion.

In May 2014, PPACG issued a call for projects to member governments to be considered for inclusion in the plan. **Figure 4-1** is a sample project submission form.

When developing evaluation criteria, PPACG staff considered several factors emphasized in current federal transportation legislation:

- Safety: to achieve a significant reduction in fatalities and serious injuries on all public roads
- Keeping infrastructure in good repair
- Congestion reduction
- System reliability and efficiency
- Freight movement and economic vitality: to improve the national freight network and strengthen the ability of rural communities to access trade markets and support economic development
- Environmental sustainability
- Reduced project delivery delays: to reduce project costs, promote jobs and the economy, and expedite the movement of people and goods

The decision-making process must obtain meaningful input and utilize evaluation techniques and information-gathering processes that consider the needs and objectives of all potentially affected interests. A well-designed planning framework and evaluation system may not eliminate conflicts, but it can ensure credible decision-making and pinpoint areas and reasons for conflict. It can also contribute to building consensus by establishing the foundation to focus data-gathering efforts, shape the alternatives and evaluate tradeoffs between them, and finally, select the best options for investment.

Goal-based evaluation criteria were vital in assisting PPACG staff when scoring member entities' project submissions. The evaluation criteria were approved and adopted by the PPACG Board in April 2014 and are shown in **Table 4-2**.

### WEIGHTING OF EVALUATION CRITERIA

While evaluation criteria act as a tool to score possible investments, a process of prioritizing, or weighting, the evaluation criteria was needed to identify which criteria are more important or valuable to regional stakeholders and the community as a whole. The assigned weight of each criterion places a level of importance on each relative to the others, and assists in selecting projects that help to achieve the region's transportation system goals.

After the 2040 Moving Forward evaluation criteria were approved and adopt-

**Figure 4-1.** Sample Project Application Form

PPACG 2040 Regional Transportation Plan Project Submission Form	
Project Name:	
Project Description: Provide all relevant information to FULLY describe the project scope and location. Attach diagram or map showing location/extent of project if necessary.	
Sponsoring Entity(ies):	
Project Category(ies) (road, transit, bicycle/pedestrian, etc.):	
Existing Conditions (# lanes, surface, service provided, etc.):	
Proposed Conditions (# lanes, surface, service provided, etc.):	
Is the project in the fiscally constrained 2035 Plan (yes or no)?	
Desired/Expected Completion Timeframe	
2014-2020	
2021-2030	
2031-2040	
Project Cost (enter amount(s) requested)	
7th Pot	
Bridge-On	
Bridge-Off	
CMAQ	
Transportation Alternatives	
FTA 3507	
FTA 3509	
FTA 3510	
FTA 3511	
Safe Routes to Schools	
Hazard Elimination/Safety	
Metro	
FASTER	
Project Cost (Federal Funds)	\$0
Local/State/Private Funds	
Project Cost (Total)	\$0
% Local Match	
Point of Contact	
Name:	
Address:	
Phone:	
Email:	
Fax:	

ed by the PPACG Board of Directors in April 2014, staff solicited evaluation criteria weighting input from PPACG's Transportation and Community Advisory Committees.

After both committees recommended weights for the evaluation criteria in May 2014, the PPACG Board of Directors approved an average between the TAC's and CAC's recommended weights. The approved weights can be seen in **Table 4-3**, along with the TAC and CAC results.

The approved weighting was multiplied against the project scores to develop the fiscally-constrained project list, a prioritized list of transportation projects recommended for funding and included in the 2040 Moving Forward plan.

### SUMMARY

The planning framework is crucial in guiding the development of the entire 2040 Moving Forward Regional Transportation Plan. These components state the purpose of what the Pikes Peak region is trying to achieve, show the steps necessary, and provide the foundation required to complete the plan.

**Table 4-1.** Objectives and Targets

Goal	Objective(s) + Target(s)
1. Maintain or improve current transportation system infrastructure condition.	<p><b>2015:</b> Establish 2010 baseline for Roads and Bridges; 2014 baseline for Transit</p> <p><b>2020:</b> Maintain infrastructure so that more than 90% is not structurally deficient or functionally obsolete; maintain the percentage of vehicles in transit fleet to no less than 65% operating in fair, good, or excellent conditions (FTA definitions).</p> <p><b>2030:</b> Maintain infrastructure so that more than 90% is not structurally deficient or functionally obsolete; maintain the percentage of vehicles in transit fleet to no less than 65% operating in fair, good, or excellent conditions (FTA definitions).</p> <p><b>2040:</b> Maintain infrastructure so that more than 95% is not structurally deficient or functionally obsolete; maintain the percentage of vehicles in transit fleet to no less than 70% operating in fair, good, or excellent conditions (FTA definitions).</p>
2. Improve the operation of transportation systems and services to enhance emergency response, minimize travel times and maximize service quality of all modes of commercial and private travel throughout the region.	<p><b>2020:</b> Maintain PTI at 2012 Values on Corridors Defined in CMP.</p> <p><b>2030:</b> Reduce PTI by 5% from 2012 Values on Corridors Defined in the CMP.</p> <p><b>2040:</b> Reduce PTI by 10% from 2012 Values on Corridors Defined in the CMP.</p>
3. Prioritize transportation funding towards those projects/programs that have highest life-cycle cost-effectiveness.	<p><b>2020:</b> 80% of transportation projects funded in the TIP will have been prioritized using cost-effectiveness analysis.</p> <p><b>2030:</b> 100% of transportation projects funded in the TIP will have been prioritized using cost-effectiveness analysis.</p> <p><b>2040:</b> 100% of transportation projects funded in the TIP will have been prioritized using cost-effectiveness analysis.</p>
4. Improve system connectivity within and between modes and accessibility for everyone.	<p><b>2020:</b> Increase transit ridership and nonmotorized commuters by at least an average of 1.5% over a five-year period beginning in 2015.</p> <p><b>2030:</b> Increase transit ridership and nonmotorized commuters by at least an average of 1.5% over a five-year period beginning in 2015.</p> <p><b>2040:</b> Increase transit ridership and nonmotorized commuters by at least an average of 1.7% over a five-year period beginning in 2015.</p>
5. Improve safety for all travelers.	<p><b>2020:</b> Achieve a five-year annual average:</p> <ul style="list-style-type: none"> <li>(1) reduction of 6 in the number of fatalities from the 2013 baseline,</li> <li>(2) fatality rate of .77 per 100 million VMT,</li> <li>(3) reduction of 140 in the number of serious injuries from the 2013 baseline,</li> <li>(4) serious injury rate of 24 per 100 million VMT.</li> </ul> <p><b>2030:</b> Achieve a five-year annual average:</p> <ul style="list-style-type: none"> <li>(1) reduction of 16 in the number of fatalities from the 2013 baseline,</li> <li>(2) fatality rate of .51 per 100 million VMT,</li> <li>(3) reduction of 340 in the number of serious injuries from the 2013 baseline,</li> <li>(4) serious injury rate of 19 per 100 million VMT.</li> </ul> <p><b>2040:</b> Achieve a five-year annual average</p> <ul style="list-style-type: none"> <li>(1) reduction of 26 in the number of fatalities from the 2013 baseline,</li> <li>(2) fatality rate of .30 per 100 million VMT,</li> <li>(3) reduction of 510 in the number of serious injuries from the 2013 baseline,</li> <li>(4) serious injury rate of 14 per 100 million VMT from a 2013 baseline.</li> </ul>

**Table 4-1.** Objectives and Targets (cont.)

Goal	Objective(s) + Target(s)
6. Increase resiliency and redundancy of the transportation system.	<p><b>2015:</b> Establish baseline.</p> <p><b>2020:</b> Attain a 25% reduction of the percent of assets with a low Network Robustness Index (NRI)</p> <p><b>2030:</b> Attain a 50% reduction of the percent of assets with a low NRI.</p> <p><b>2040:</b> Attain a 75% reduction of the percent of assets with a low NRI.</p>
7. Ensure transportation system investment benefits are equitably distributed to minorities, and citizens with disabilities, low incomes, and/or other needs.	<p><b>2020:</b> Increase investment benefits to areas identified as having a higher level of at-risk populations by 10% over 2010 levels.</p> <p><b>2030:</b> Increase investment benefits to areas identified as having a higher level of at-risk populations by 20% over 2010 levels.</p> <p><b>2040:</b> Increase investment benefits to areas identified as having a higher level of at-risk populations by 30% over 2010 levels.</p>
8. Reduce transportation-related adverse impacts to communities, neighborhoods, natural environments, and areas identified for cultural and/or historical preservation.	<p><b>2015:</b> Establish baseline.</p> <p><b>2020:</b> Reduce road-tire noise in neighborhoods by 5%, reduce engine noise in neighborhoods by 5%, reduce cut-through traffic by 5%</p> <p><b>2030:</b> Reduce road-tire noise in neighborhoods by 10%, reduce engine noise in neighborhoods by 10%, reduce cut-through traffic by 10%</p> <p><b>2040:</b> Reduce road-tire noise in neighborhoods by 15%, reduce engine noise in neighborhoods by 15%, reduce cut-through traffic by 15%</p>
9. Improve economic vitality and freight movement in the region by enhancing the transportation system.	<p><b>2020:</b> Maintain GRP in proportion to population growth.</p> <p><b>2030:</b> Maintain GRP in proportion to population growth.</p> <p><b>2040:</b> Maintain GRP in proportion to population growth.</p>
10. Incentivize infill in, and redevelopment of, existing communities.	<p><b>2020:</b> Decrease number of lane miles per capita by 5% over 2010 levels.</p> <p><b>2030:</b> Decrease number of lane miles per capita by 10% over 2010 levels.</p> <p><b>2040:</b> Decrease number of lane miles per capita by 15% over 2010 levels.</p>
11. Improve, protect, and mitigate impacts to critical habitat and connecting corridors suitable for threatened, endangered, and imperiled species.	<p><b>2020:</b> Maintain habitat linkages at 2010 levels.</p> <p><b>2030:</b> Maintain habitat linkages at 2010 levels.</p> <p><b>2040:</b> Maintain habitat linkages at 2010 levels.</p>
12. Minimize the amount of stormwater runoff and transportation-associated pollutants that enter the region's streams.	<p><b>2020:</b> Reduce transportation-associated pollutant levels by 10% from 2005 levels.</p> <p><b>2030:</b> Reduce transportation-associated pollutant levels by 20% from 2005 levels.</p> <p><b>2040:</b> Reduce transportation-associated pollutant levels by 30% from 2005 levels.</p>
13. Reduce absolute regional transportation-related greenhouse gas emissions and air criteria pollutant emissions	<p><b>2020:</b> Attain national air quality health standards and reduce regional transportation-related greenhouse gas (GHG) and air criteria pollutant emissions by 4% below 2005 levels.</p> <p><b>2030:</b> Attain national air quality health standards and reduce regional transportation-related GHG and air criteria pollutant emissions by 20% below 2005 levels.</p> <p><b>2040:</b> Attain national air quality health standards and reduce regional transportation-related GHG and air criteria pollutant emissions by 30% below 2005 levels.</p>

**Table 4-2.** Project Evaluation Criteria and Scoring

Evaluation Criteria	Description	Scoring
Transportation System Condition Preservation and Rehabilitation	Projects that are expected to improve or preserve the pavement condition, traffic control device condition, bridge condition, transit vehicle and infrastructure, non-motorized infrastructure are given more points.	Facility/asset is in: 0 – good condition 5 – fair condition or not a maintenance project 9 – poor condition  For pavement, use IRI; for bridge, use sufficiency rating; for transit, use FTA standard; for traffic control device, use years.
Mobility Improvement/Congestion Reduction	Projects that will reduce congestion on priority corridors as identified in the CMP process shall be given more points.	Project reduces congestion on: 0 – a route not identified in the CMP 3 – a National Highway System route 6 – a Regional Corridor 9 – a Strategic Corridor
Cost Effectiveness	Projects that are expected to be cost effective based on their life-cycle benefit cost ratio are given more points.	Normalized score by analyzing all projects and finding the project that has the maximum life-cycle benefit/cost (B/C) ratio; score this project 9; score other projects based on the ratio of its B/C ratio to the maximum B/C ratio.
System Connectivity	Projects that are expected to provide a missing link, extensions, or eliminate a barrier in one specific mode or between modes are given more points.	Project provides: 0 – no missing links, extensions, or eliminated barriers. 3 – ONE missing link, extensions, or eliminated barrier. 6 – TWO missing links, extensions, and/or eliminated barriers. 9 – THREE or more missing links, extensions, and/or eliminated barriers.
Safety	Projects that are expected to address a safety hazard or safety concern are given more points.	Project is on a facility with: 0 – a zero 5-Year Weighted Hazard Index (WHI) or has no demonstrated design improvements for safety 3 – a 5-Year low WHI and has a safety component 6 – a 5-Year medium WHI and has a safety component 9 – a 5-Year high WHI and has a safety component
Redundancy/Resiliency	Projects which are expected to increase the resiliency and/or redundancy of the transportation system are given more points.	Project has a Network Robustness Index (NRI) that is: 0 – High 3 – Medium 6 – Low 9 – Critical

**Table 4-2.** Project Evaluation Criteria and Scoring (cont.)

Evaluation Criteria	Description	Scoring
Environmental Justice	Projects that are expected to have a transportation impact on minorities, citizens with disabilities, low incomes, and/or other needs receive more points. Impacts can include travel times, transit accessibility, noise, and air pollution.	Project is in an area that has: 0 – No Group 3 – 1 Group 6 – 2 Groups 9 – 3 Groups  Groups are: low-income, minority, and 65+
Adverse Impact Reduction	Projects that are expected to reduce transportation-related adverse impacts are given more points.	Project reduces adverse impacts in: 0 – does not reduce adverse impacts 3 – one impact area 6 – two impact areas 9 – three or more impact areas
Economic Vitality and Freight Movement	Projects that are expected to bring increased economic vitality to the region are given more points.	Normalized score by analyzing all projects, finding the project that has the maximum gross regional product (GRP), score this project 9 points; score other projects based on ratio of its GRP to the maximum GRP.
Infill/Redevelopment	Projects that are located in more dense/infill/redevelopment areas are given more points.	Project is located in an: 0 – outside of urban and urbanizing area/cluster 4 – forecasted urbanizing area/cluster 9 – census designated urban area/cluster
Wildlife Habitat	Projects that are expected not to have an impact on wildlife habitat receive fewer points than those that improve habitat areas are given more points.	Project has: 0 – negative impact on habitat 3 – no impact on habitat 6 – improve/protect habitat 9 – improve/protect a priority habitat
Stormwater	Projects shall maintain or decrease the historic discharge rate and/or volume of stormwater runoff when compared to the existing or pre-project conditions are given more points.	Project: 0 – increases stormwater runoff rate or volume 3 – has no stormwater impact 6 – maintains stormwater runoff at existing level 9 – reduces stormwater runoff
Air Quality	Projects that are expected to reduce absolute regional transportation-related greenhouse gas emissions and air criteria pollutant emissions are given more points.	Normalized score by analyzing all projects and finding the project that has the greatest reduction in VMT (this project scores 9); score other projects based on the ratio of its reduction to the maximum reduction.

**Table 4-3.** Summary of Evaluation Criteria Weighting

Data	Combined Weight		
	CAC	TAC	Board Approved
Transportation System Condition Preservation and Rehabilitation	12.7	11.8	12.2
Mobility Improvement/Congestion Reduction	12.3	10.5	11.4
Safety	11.0	11.4	11.2
System Connectivity	9.7	9.0	9.3
Cost Effectiveness	9.3	8.5	8.9
Economic Vitality and Freight Movement	7.0	8.4	7.7
Redundancy/Resiliency	7.2	6.8	7.0
Stormwater	7.2	6.7	6.9
Air Quality	5.9	6.0	5.9
Adverse Impact Reduction	4.9	5.9	5.4
Environmental Justice	4.8	5.7	5.2
Infill/Redevelopment	4.7	5.6	5.1
Wildlife Habitat	3.2	3.9	3.6