

NMDOT TAMP: PROJECT EVALUATION PROCESS
PROJECT EVALUATION OVERVIEW



Transportation Asset Management Plan
Abridged Presentation

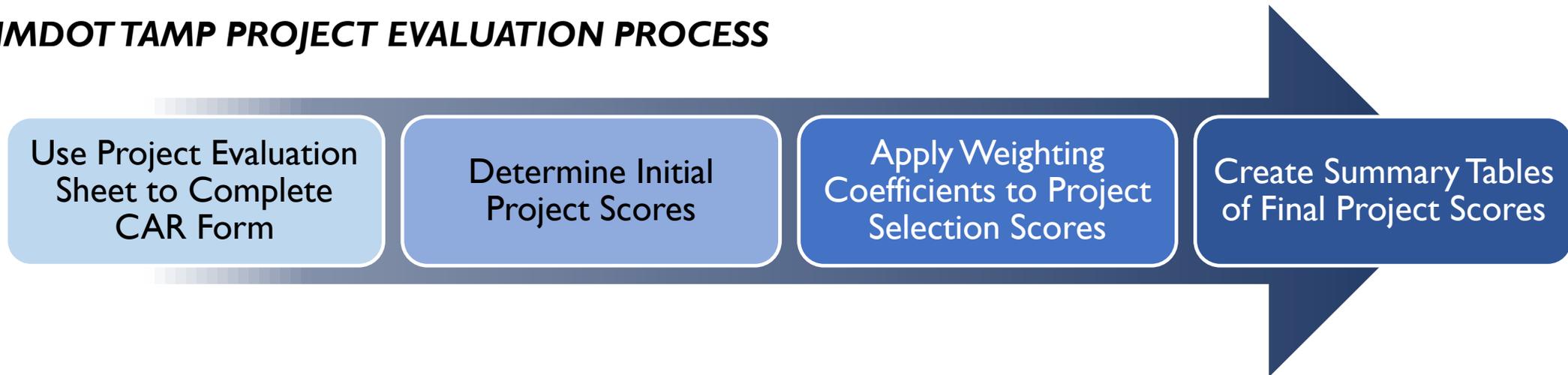
OVERVIEW OF PROJECT EVALUATION USER GUIDE



Using this User Guide, NMDOT staff can learn the steps needed to collect data from internal NMDOT tools to:

- *Calculate scoring inputs to complete the NMDOT Conditions Analysis Report (CAR) form;*
- *Determine initial project scores using established scoring thresholds;*
- *Apply the established scoring coefficients to determine a final project score for project evaluation*

NMDOT TAMP PROJECT EVALUATION PROCESS



WHAT DO YOU NEED TO GET STARTED?



CAR Form

Used to House the Data

The Conditions Analysis Report (CAR) Information Form allows for a streamlined approach to data collection on potential projects. The CAR Form is then used for the project evaluation process, as well as the level of effort determination for project delivery. In order to build consistency with the data collection process the NMDOT Capital Programs and Investment Division staff captures the majority of the data, while the individual Districts provide more local and subjective project details.

Project Evaluation Sheet

Used to Calculate the Data

The Project Evaluation Sheet is an Excel template used to calculate and compare projects to be included in the TAMP using data obtained from the CAR form and GIS. Built-in formulas allow for easy calculation of scoring inputs which can then be used to complete the CAR form and evaluate projects.

As the roadway segments which are used in the evaluation process may not coincide with project area boundaries, the Project Evaluation Sheet is designed to evaluate multiple roadway segments in order to calculate scoring inputs for a given project.

WHAT DO YOU NEED TO GET STARTED?



CAR Form

Used to House the Data

CAR Information Form
Conditions Analysis Report

BLUE - to be completed by the NMDOT Districts
ORANGE - to be completed by NMDOT Asset Management
PINK - to be completed jointly by Districts & A.M.

The Conditions Analysis Report (CAR) information Form allows for a streamlined approach to data collection on potential projects which will then be used for both the state-wide project selection process and level of effort determination for project delivery. In order to build consistency with the data collection process the NMDOT Asset Management staff will capture the majority of the data while the Districts will provide more local and subjective project details. All data is captured in one location for easy application, as needed.

Project Information

Date: _____ NMDOT District: _____

Project Location: Name _____ Project Type _____

Roadway: _____ Mileposts _____ Project County _____

Safety

Number of crashes over most recent 5-year period* _____

Fatalities* _____

Conditions

Pavement Condition Rating* _____

Bridge Condition Rating* _____

PMS-Recommended Preservation Treatment: _____ Final Preservation Treatment: _____

Mobility

ADT* _____ Number of Lanes* _____ AADT per Lane* _____ Shoulder Width* _____

Freight ADT* _____ Percentage of Freight Traffic in total ADT (%) _____ Sidewalks (Y/N) _____ Transit Route (Y/N) _____

Functional Classification* _____ Planning Area (MPO/RTPO) * _____

Daily VMT* _____ NM Bike Plan Tier * _____

Physical Deficiencies

Drainage: Required (Y/N) _____ Level of Impact _____ Notes _____

Culvert Replacement: _____

Culvert Extension: _____

Culvert Clearing: _____

Is alignment modification necessary for the project? _____

Is existing roadway geometry compliant with NMDOT and ADA standards? _____

* Available in EGIS | * Available through NMDOT GIS Database | - See User Guide for scoring input calculation

NMDOT General Office Phone Email
1120 Centilise Road, Santa Fe, NM 87504-1149 (505) 795-1401 TamaraP.Hess@state.nm.us

CAR Information Form
Conditions Analysis Report

Other Assets

Asset: _____ Required (Y/N) _____ Notes _____

Guardrails: _____

Signage: _____

Other: _____

Economic Development

Recreational Access: Does the project provide access to an identified recreational site? (Y/N) ^ _____

Recreational Site Name: _____ Minor or Major Rec. Site? ^ _____

Local Plans: Is the project listed in any local plans or transportation studies? (Y/N) _____

Current County Population* _____ Projected County Population* _____ Projected Population Change (%) ^ _____

Emergency Events

Has the project loading required repair or reconstruction due to an emergency event? _____

Community Considerations

Are there any known community concerns regarding the project? _____

Are there any direct economic development opportunities associated with the project? _____

Environmental Concerns

Are there any known environmental concerns associated with the project? _____

Other Important Concerns for Scoping

Are there any other potential issues which should be noted for scoping the project? _____

Notes: _____

Additional comments, notes, or images may be included as an attachment with the CAR Form

* Available in EGIS | * Available through NMDOT GIS Database | - See User Guide for scoring input calculation

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Project Evaluation Sheet

Used to Calculate the Data

TAMP Project Evaluation Sheet - NMDOT TEST - 05-07-2016.xlsx - Excel

District	Roadway	Number of Lanes	Sidewalks (Y/N)	Project Information				Project Length (mi.)	Functional Classification	Multi-Modal	
				Transit Route (Y/N)	MPO or RTPO	Mileposts	Shoulder Width (ft.)			NM Bike Plan Tier	
				Economic Development				Conditions			
Recreational Site (Y/N)	Recreational Site Name	Minor or Major Recreational Site	Included in Local Plan (Y/N)	County	Current Population	Projected Population	Percent Change in Population	Pavement Condition Rating	Planned Preservation Treatment	Bridge Condition Rating	
							#DIV/0!				
				General Mobility			Freight Mobility	Safety			
Segment	Begin Point	End Point	Length	AAADT	AAADT per Lane	VMT	Freight AADT	Crashes within Project Area 2013-2017	Accidents per Million VMT	Total Crashes per Mile	
1					#DIV/0!				#DIV/0!	#DIV/0!	
2					#DIV/0!				#DIV/0!	#DIV/0!	
3					#DIV/0!				#DIV/0!	#DIV/0!	
4					#DIV/0!				#DIV/0!	#DIV/0!	
5					#DIV/0!				#DIV/0!	#DIV/0!	
Total				0	#DIV/0!	#DIV/0!		0	#DIV/0!	#DIV/0!	
Weighted Average Percentage of Total AADT					#DIV/0!	#DIV/0!		#DIV/0!	#DIV/0!	#DIV/0!	

NM 6 MP 2.1 - Suwanne Bridge | I-40 MP 17.9-22 | US 550 MP 20-23 | I-40 MP 31.6-33.7 | Project Scoring Sheet - RAW | AADT-Pavement-Bridge Worksheet

PROJECT EVALUATION

NMDOT must evaluate a wide variety of transportation projects of differing sizes, settings, and types, and apply a standard data collection methodology. The following section provides step-by-step instructions on how to identify and/or calculate the evaluation criteria used in the project evaluation process.

Since project boundaries may not generally conform to data segments, some level of data interpretation is necessary. In these cases, averages are taken from the totals of the various segments. Which comprise the project area.



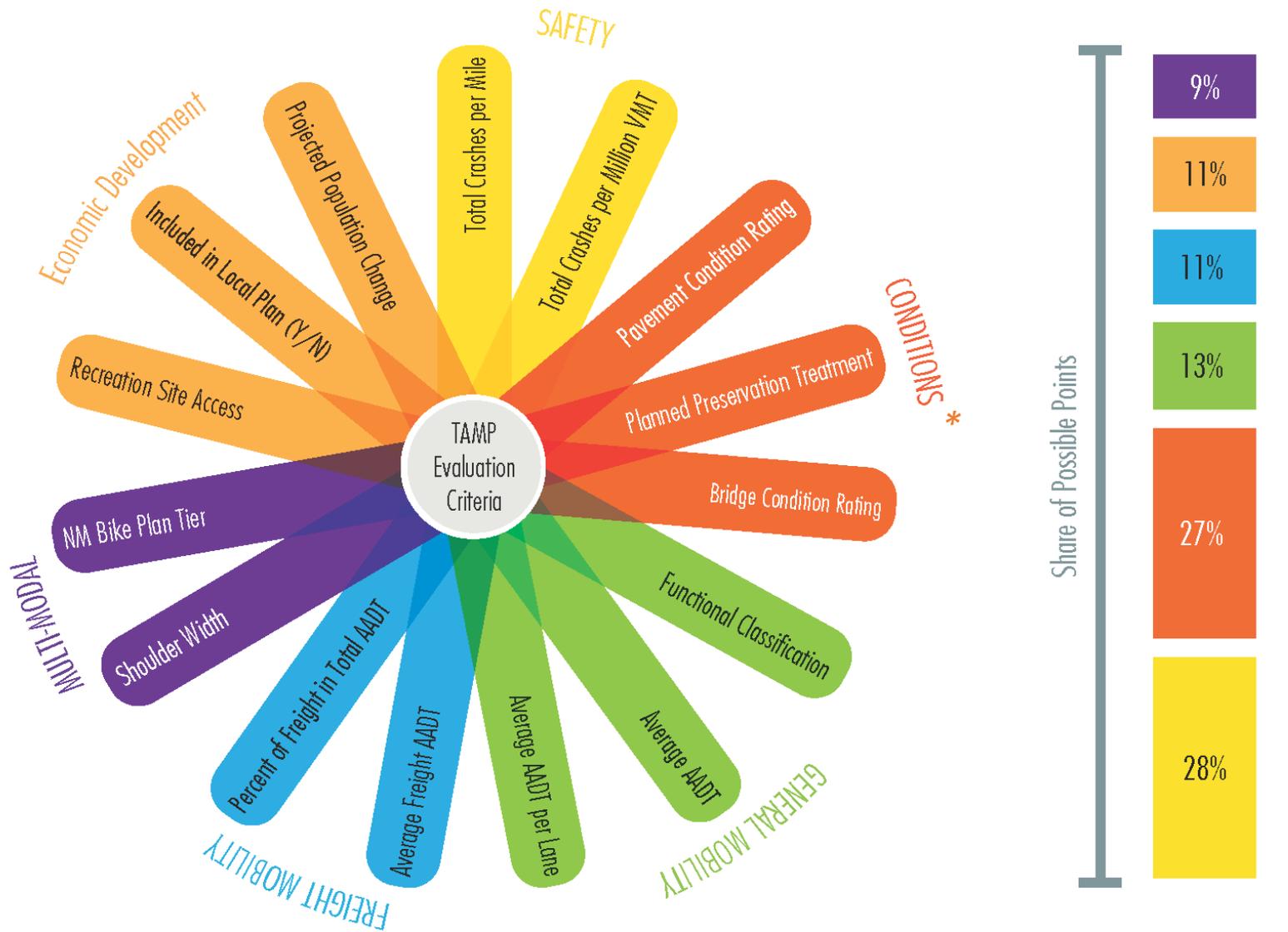
CONSIDERATIONS OF AVAILABLE DATA

Consideration of what data to use for evaluation was critical in the development of the project evaluation criteria, as NMDOT's ability to rank projects is limited by what data is readily available. Various departments across NMDOT collect potentially relevant transportation data, including traffic counts, crashes, and pavement and bridge conditions. The project evaluation process builds upon these available datasets to create objective and quantitative evaluation criteria.

Integration of Future Data

The TAMP is designed to be an ongoing and evolving practice that utilizes all available data to evaluate transportation asset projects. As new data is made available, NMDOT will continually work to update the TAMP EGIS database, and incorporate this data into the project evaluation process. NMDOT is currently in the process of integrating the latest available crash data into the EGIS database.





EVALUATION CRITERIA



Following review of state DOT selection processes, and upon further review by the TAMP ESC, the adjacent evaluation criteria were established for project evaluation. Evaluation criteria are clustered into six categories based on NMDOT's overall goals: Safety, Pavement Conditions, General Mobility, Freight, Multi-Modal, and Economic Development.

To minimize bias towards urban roadways in the project evaluation process, the evaluation criteria include both raw volume statistics (e.g. number of crashes, AADT, freight AADT) as well as the rate of a statistic (e.g. number of crashes per million miles VMT, AADT per lane, truck volume as a share of total traffic volume).

NOTE: Economic development is promoted by various other categories. The criteria included here are considered additional considerations for economic development. *Planned Preservation Treatment is as an information item only.

project delivery. In order to build consistency with the data collection process the NMDOT Asset Management staff will capture the majority of the data while the Districts will provide more local and subjective project details. All data is captured in one location for easy application, as needed.

Project Information

Date	Name	NMDOT District	-
Project Location			
Project Length	Project Type		
Roadway	Mileposts	Project County	

Safety

Number of crashes over most-recent 5-year period^	
Fatalities^	
Total Crashes per Mile	

CAR FORM



FILL OUT PROJECT INFORMATION

Prior to calculating the project evaluation inputs, NMDOT staff should first fill out the project information in both the CAR form and Project Evaluation Sheet.

Project Information

District	Roadway	Number of Lanes	Sidewalks (Y/N)	Transit Route (Y/N)	MPO or RTPO	Mileposts	Project Length (mi.)	Functional Classification	Should
4	I-25	4	No		RTPO	415-421	6	1 - Interstate	

Economic Development

Recreational Site (Y/N)	Recreational Site Name	Minor or Major Recreational Site	Included in Local Plan (Y/N)	County	Current Population	Projected Population	Percent Change in Population	Pavement Condition Rating	Pl Pres Tre
No	N/A	N/A		Colfax	13,750	11,397	-17.11	35	Maje
				Total	13,750	11,397	-17.11		

General Mobility

Freight Mo

EVALUATION SHEET

HOW TO CALCULATE EVALUATION INPUTS

The following section provides descriptions of how to calculate the individual scoring inputs based on the data in the CAR form and corresponding Project Evaluation Sheet.

A detailed definition of each scoring input can be found within the ***TAMP Project Selection Process Manual***.



AVERAGE AADT *MOBILITY*

AADT measures the Annual Average Daily Traffic for a given roadway, which is calculated using a weighted average for each roadway segment within a project area.



AVERAGE AADT



- AADT data is available through EGIS. The user will need to select the road name and milepost locations provided in the CAR form. Once the project location has been identified, the user should populate the “Length” and “AADT” fields of the Project Evaluation Sheet for each roadway segment; the built-in formula should automatically populate the “Weighted Average AADT” field. The resulting Average AADT is the final input used in the AADT field of the CAR form. For interstates and divided highways, the user should consider whether the AADT information is provided by direction.

FORMULA

$$\text{Average AADT} = ((\text{Segment 1 Length} \times \text{Segment 1 AADT}) + (\text{Segment 2 Length} \times \text{Segment 2 AADT}) + (\text{Segment 3 Length} \times \text{Segment 3 AADT}) \dots) / \text{Total Length of Roadway Segments}$$

EXAMPLE

A project chosen for evaluation is made up of two segments which total 10 miles. One is 6 miles long and has an AADT of 4,000. The other is 4 miles long and has an AADT of 8,000.

To calculate the project’s Average AADT:

$$((6 \text{ miles} \times 4,000 \text{ AADT}) + (4 \text{ miles} \times 8,000 \text{ AADT})) / 10 \text{ total miles}$$
$$((24,000) + (32,000)) / 10 = 5,600 \text{ Average AADT}$$



AAADT PER LANE *MOBILITY*

AAADT per Lane is utilized as an evaluation criterion to normalize projects of differing functional classifications and road widths.

Utilizing AAADT per Lane in addition to overall AAADT is intended to remove the bias towards major, typically urban roadways, and allows for a direct comparison of traffic volumes across all roadway types.

Roads with high AAADT per lane values may be subject to congestion.

AVERAGE AADT PER LANE



- Upon calculating Average AADT, divide the Average AADT by the total number of lanes of the project area. The resulting amount is the final input for the *Average AADT per Lane* field of the CAR form. For interstates and divided highways, the user should consider whether the AADT information is provided by direction.

FORMULA

Average AADT per Lane = Average AADT / Total Number of Lanes

EXAMPLE

A project chosen for evaluation is a 4-lane highway with an average AADT of 8,000.

To calculate the project's Average AADT per lane:

8,000 Average AADT / 4 total lanes = 2,000 Average AADT per Lane



VEHICLE MILES TRAVELED (VMT)*

MOBILITY

Vehicle miles traveled (VMT) calculates the total amount of driving that occurs along the project area.

**Information item only*



VEHICLE MILES TRAVELED (VMT)



- Upon calculating the Average AADT of a project, multiply this amount by the total project length (in miles) to calculate VMT. Populate the “Length” and “AADT” fields of the Project Evaluation Sheet for each roadway segment, and the built-in formula should automatically populate the “VMT” field.
- *VMT is used as an information item only for roadway and bridge projects.*

FORMULA

VMT = Average AADT x Total Project Length (in miles)

EXAMPLE

A project chosen for evaluation is has an average AADT of 8,000, with a total project length of 10 miles.

To calculate the project’s VMT:

8,000 Average AADT x 10 miles = 80,000 Vehicle Miles Traveled

AVERAGE FREIGHT AADT

MOBILITY

Freight AADT measures the Annual Average Daily Traffic for Freight for a given roadway, which is then averaged for each roadway segment measured within a project area.



AVERAGE FREIGHT AADT (METHOD I)



- If both the percentage of freight traffic and the Average AADT of a project are known, but Freight AADT is missing, another method can be used to calculate the Average Freight AADT of a project. The Freight Traffic percentage is available in EGIS and will be discussed in the following section. The calculated Freight AADT for each segment can then be averaged out using the formula in the previous page.

FORMULA

Average Freight AADT = Average AADT x Percentage of Freight Traffic

EXAMPLE

A project chosen for evaluation is has an average AADT of 8,000, with 20% freight traffic listed in EGIS.

To calculate the project's Average Freight AADT:

8,000 Average AADT x 20% Freight Traffic = 1,600 Average Fright AADT



AVERAGE FREIGHT AADT (METHOD 2)

- Freight AADT data is available through EGIS. The user will need to select the road name and milepost locations provided in the CAR form. Once the project location has been identified, the user should populate the “Freight AADT” field of the Project Evaluation Sheet for each roadway segment; the built-in formula should automatically populate the “Weighted Average Freight AADT” field. The resulting Freight Average AADT is the final input used in the Freight AADT field of the CAR form. For interstates and divided highways, the user should consider whether the AADT information is provided by direction.

FORMULA

$$\text{Average Freight AADT} = ((\text{Segment 1 Length} \times \text{Segment 1 Freight AADT}) + (\text{Segment 2 Length} \times \text{Segment 2 Freight AADT}) + (\text{Segment 3 Length} \times \text{Segment 3 Freight AADT}) \dots) / \text{Total Length of Roadway Segments}$$

EXAMPLE

A project chosen for evaluation is made up of two segments which total 10 miles. One is 6 miles long and has a Freight AADT of 300. The other is 4 miles long and has a Freight AADT of 800.

To calculate the project’s Average Freight AADT:

$$((6 \text{ miles} \times 300 \text{ Freight AADT}) + (4 \text{ miles} \times 800 \text{ Freight AADT})) / 10 \text{ total miles}$$

$$((1,800) + (3,200)) / 10 = 500 \text{ Average Freight AADT}$$

PERCENTAGE OF FREIGHT TRAFFIC IN TOTAL AADT

MOBILITY

Freight AADT measures the Annual Average Daily Traffic for Freight for a given roadway, which is then averaged for each roadway segment measured within a project area.



PERCENTAGE OF FREIGHT TRAFFIC IN TOTAL AADT



- The Percentage of Freight Traffic is available within EGIS under the “Traffic” tab. Additionally, upon calculating the Average AADT and Average Freight AADT of the project area within the Project Evaluation Sheet, the built-in formula should automatically populate the “Percentage of Total AADT” field. The resulting percentage is the final input used in the Percentage of Freight Traffic of Total AADT field of the CAR form.

FORMULA

Percentage of Freight Traffic of Total AADT = (Average Freight AADT / Average AADT) x 100

EXAMPLE

A project chosen for evaluation has an average AADT of 8,000, with an Average Freight AADT of 2,000.

To calculate the project’s Average AADT per lane:

(2,000 Average Freight / 8,000 Average AADT) x 100

(0.25) x 100 = 25% Freight Traffic in Total Average AADT



Bridge Condition Rating*	N/A		
PMS-Recommended Preservation Treatment ¹	Major Rehabilitation	Final Preservation Treatment ¹	
Mobility			
AADT*	5,483	Number of Lanes* 4	AADT per Lane ¹ 1,371
Shoulder Width ^	10		
Freight AADT*	1,808	Percentage of Freight Traffic in total AADT (%) ¹	32.97
Sidewalks (Y/N) ¹	No		Transit Route (Y/N) ^
No		No	
Functional Classification*	1 - Interstate		Planning Area (MPO/RTPO) *
RTPO		Interstate	
Daily VMT ¹	32,898		NM Bike Plan Tier ^
Physical Deficiencies			
Drainage	Required (Y/N)	Level of Impact	Notes
Culvert Replacement	-		

CAR FORM

EVALUATION SHEET

General Mobility							Freight Mobility	Crashes within project Area 2013-2017
Segment	Begin Point	End Point	Length	AADT	AADT per Lane	VMT	Freight AADT	
1	413.476	415.801	2.325	7,337	1,834	17,059	2,373	2
2	415.801	416.013	0.212	4,050	1,013	859	2,373	0
3	416.013	420.086	4.073	5,034	1,259	20,503	1,629	22
4	420.086	420.283	0.197	6,612	1,653	1,303	2,138	4
5	420.283	420.463	0.18	4,007	1,002	721	1,295	0
6	420.463	427.102	6.639	5,270	1,318	34,988	1,706	12
Total			13.626		-	32,898		40
Weighted Average				5,483	1,371		1,808	
Percentage of Total AADT							32.97	

MOBILITY

FUNCTIONAL CLASSIFICATION

MOBILITY

Functional classification carries with it expectations about roadway design, including its speed, capacity and relationship to existing and future land use development, in addition to determining eligibility for funding.

There are seven functional classes as defined by the FHWA:

1. Interstates
2. Other Freeways & Expressways
3. Principal Arterials
4. Minor Arterials
5. Major Collector
6. Minor Collector
7. Local Roads



PAVEMENT CONDITION RATING *CONDITIONS*

As part of NMDOT's asset management efforts, pavement condition is monitored and maintained to ensure safe and efficient travel throughout the state. Pavement condition is measured on a scale from 0 (worst) to 100 (best).

These ratings are used to establish whether a section of pavement is in good, fair or poor condition.



PAVEMENT CONDITION RATING



- The pavement conditions for the project area may be identified in EGIS. The user will need to select the road name and milepost locations provided in the CAR form. Once the project location has been identified, the PCR value for all segments along the location may be averaged to produce a composite PCR value. The PCR information may be found using the “Identify” tool or exporting the information as a report.
- The resulting Pavement Condition Rating is the final input used in the *Pavement Condition Rating* field of the CAR form.

SCORING INPUT

Pavement Condition Rating from 1 to 100, as determined by the Pavement Management and Design Bureau.

RECOMMENDED PRESERVATION TREATMENT *CONDITIONS*

In its PMS, NMDOT establishes recommended treatments for flexible and rigid pavements and criteria for when each treatment is feasible.



RECOMMENDED PRESERVATION TREATMENT



In its Pavement Management System, NMDOT establishes **recommended** treatments for flexible and rigid pavements and criteria for when each treatment is feasible. Seven treatment categories were established by NMDOT for pavement preservation:

- Monitor (no treatment);
 - Preventative Maintenance;
 - Minor Preservation;
 - Major Preservation;
 - Minor Rehabilitation;
 - Major Rehabilitation; and
 - Reconstruction
- The CAR form allows space for a “Final Preservation Treatment,” as the final treatment may be different than the one recommended by the PMS.
 - ***Preservation treatment is an informational item only. It does not affect project scoring.***

BRIDGE CONDITION RATING *CONDITIONS*

As part of NMDOT's asset management efforts, bridge condition is monitored and maintained to ensure safe and efficient travel throughout the state. Bridge condition is measured on a scale from 0 (worst condition) to 9 (best condition).

These ratings are used to establish whether a bridge is in good, fair or poor condition.



RIO PUERCO BR
THIS PARKER THROUGH TRUSS LOCATED ON
ROUTE 66 WAS BUILT IN 1933. IT WAS F
THE KANSAS CITY STRUCTURAL STEEL
ERECTED BY F. D. SHUFFLEBARGER OF A
ITS 250 FOOT LENGTH IS ONE OF THE L
MEXICO. REPAIRS AND REMODELING WER
IN 1957. THIS STRUCTURE WAS REPLAC
IS BEING PRESERVED BY THE NEW MEXICO
AND TRANSPORTATION DEPART

BRIDGE CONDITION RATING



- Bridge condition information may be found in the EGIS database using the bridge ID number or the road name and milepost location(s) provided in the CAR form. The bridge condition information may be found using the “Identify” tool or the bridge ID number.
- The identified rating is the final input used in the Bridge Condition Rating field of the CAR form.
- BCR is used as an information item for roadway projects; used as a scoring measure for bridge projects to allow bridge and pavement/roadway projects to be evaluated side by side.

SCORING INPUT

Each bridge is assigned a condition rating is scored either Good, Fair, or Poor, as determined by data from the NMDOT BRM database.



BRIDGE & PAVEMENT CONDITIONS

Fatalities^				
Total Crashes per Mile				
Total Crashes per Million Miles VMT				
Conditions				
Pavement Condition Rating*				
Bridge Condition Rating*				
PMS-Recommended Preservation Treatment ¹		Final Preservation Treatment ¹		
Mobility				
AADT*	Number of Lanes*	AADT per Lane ¹	Shoulder Width ^	
Freight AADT*	Percentage of Freight Traffic in total AADT (%) ¹	Sidewalks (Y/N) ¹	Transit Route (Y/N)	
Functional Classification*	Planning Area (MPO/RTPO) *			

CAR FORM

(N)	(Y/N)	RTPO	Mileposts	(mi.)	Classification	(ft.)	Tier
o		RTPO	415-421	6	1 - Interstate	17	Interstate
Economic Development							
led in Plan (N)	County	Current Population	Projected Population	Percent Change in Population	Pavement Condition Rating	Planned Preservation Treatment	Bridge Condition Rating
	Colfax	13,750	11,397	-17.11	35	Major Rehab	N/A
	Total	13,750	11,397	-17.11			
Mobility				Freight Mobility	Safety		
gth	AADT	AADT per Lane	VMT	Freight AADT	Crashes within Project Area 2013-	Accidents per Million VMT	

EVALUATION SHEET

NM BIKE PLAN TIER

MULTI-MODAL

To connect to past planning efforts and incorporate multi-modal access into the project prioritization process, the tiers established in the NM Bike Plan are included as a project evaluation criterion.

Tier I facilities are locations where the benefits of bikeways (i.e. shoulders, bike lanes, or parallel trails) are greatest.



1

2

3

1

2

3

NM BIKE PLAN TIER METHOD 2

1. Open the InTrans Map gallery.
2. Select the **NM Bike Plan Priority Tier** window and the map will open in a new window.
3. Use the search bar to identify a route, or use the mouse to scroll to the given location. As you zoom in closer to the map, select the route to identify its Bike Plan Tier Designation.

SHOULDER WIDTH

MULTI-MODAL

Shoulders on a roadway provide space for bicyclists to travel and for motorists in the event of an emergency or breakdown without impeding traffic flow.

An inventory of existing shoulder widths is maintained by NMDOT for all roadways owned and maintained by the agency. In urban areas, projects generate points if a bike lane is present.

In cases where a roadway has different shoulder widths, the smaller of the two widths is used as the input to indicate a greater need.





MULTI-MODAL

Bridge Condition Rating*		Final Preservation Treatment ¹	
PMS-Recommended Preservation Treatment ¹			
Mobility			
AAAT*	Number of Lanes*	AAAT per Lane ¹	Shoulder Width ^
Freight AAAT*	Percentage of Freight Traffic in total AAAT (%) ¹	Sidewalks (Y/N) ¹	Transit Route (Y/N) ^
Functional Classification*		Planning Area (MPO/RTPO) *	
Daily VMT ¹		NM Bike Plan Tier ^	
Physical Deficiencies			
Drainage	Required (Y/N)	Level of Impact	Notes
Culvert Replacement			

CAR FORM

Project Information						Multi-Modal	
Sidewalks (Y/N)	Transit Route (Y/N)	MPO or RTPO	Mileposts	Project Length (mi.)	Functional Classification	Shoulder Width (ft.)	NM Bike Plan Tier
No		RTPO	415-421	6	1 - Interstate	4	Interstate
Economic Development					Conditions		
Included in Local Plan (Y/N)	County	Current Population	Projected Population	Percent Change in Population	Pavement Condition Rating	Planned Preservation Treatment	Bridge Condition Rating
	Colfax	13,750	11,397	-17.11	35	Major Rehab	N/A
	Total	13,750	11,397	-17.11			

EVALUATION SHEET

TOTAL CRASHES IN PROJECT AREA OVER LATEST 5-YEAR PERIOD *SAFETY*

While car crashes can occur on any roadway, at anytime, stretches of roadway in which crashes occur regularly may indicate a safety concern on the roadway which could be contributing to higher accident rates.

By totaling the total number of crashes which has occurred within a project area over a period of five years, NMDOT staff can identify the project in which accidents regularly occur, as well as calculate additional crash rate statistics. The total number of fatalities is also noted as an informational item.





TOTAL CRASHES IN PROJECT AREA OVER LATEST 5-YEAR PERIOD

Project Location		
Project Length	Project Type	
Roadway	Mileposts	Project County
Safety		
Number of crashes over most-recent 5-year period^		
Fatalities^		
Total Crashes per Mile		
Total Crashes per Million Miles VMT		
Conditions		
Pavement Condition Rating*		
Bridge Condition Rating*		
PMS-Recommended	Final Preservation	CAR FORM

		Total	13,750	11,397	-17.11				
General Mobility					Freight Mobility	Safety			
Point	Length	AADT	AADT per Lane	VMT	Freight AADT	Crashes within Project Area 2013-2017	Accidents per Million VMT	Total Crashes per Mile	
415.801	2.325	7,337	1,834	17,059	2,373	2	0.08	0.86	
416.013	0.212	4,050	1,013	859	2,373	0	0.00	0.00	
420.086	4.073	5,034	1,259	20,503	1,629	22	0.73	5.40	
420.283	0.197	6,612	1,653	1,303	2,138	4	2.10	20.30	
420.463	0.18	4,007	1,002	721	1,295	0	0.00	0.00	
427.102	6.639	5,270	1,318	34,988	1,706	12	0.23	1.81	
Total	13.626		-	32,898		40			
Average		5,483	1,371		1,808		0.38	6.67	
al AADT					32.97				

EVALUATION SHEET

TOTAL CRASHES PER MILE

SAFETY

Total Crashes per Mile is utilized as an evaluation criterion to normalize projects of differing lengths, so that the overall rate of crashes is used as a comparison between projects, rather than the total number of crashes, which typically increases the longer a project becomes.



NMDOT

TOTAL CRASHES PER MILE



- To determine Total Crashes per Mile, the total number of crashes identified within the project area over the latest five-year period of available crash data is divided by the total length of the project (in miles). A crash includes all fatalities, serious injuries, non-serious injuries, and crashes with property damage only.

FORMULA

Total Crashes per Mile = Total Number of Crashes in Project Area ÷ Project Length in Miles

EXAMPLE

A project chosen for evaluation has 100 crashes which fall within the total project area of 10 miles.

To calculate the projects Total Crashes per Mile:

100 crashes ÷ 10 mi. = 10 crashes per mile

CRASHES PER MILLION VMT SAFETY

Crashes per Million VMT is utilized as an evaluation criterion to normalize projects of differing traffic volumes, so that the overall rate of crashes is used as a comparison between projects, rather than the total number of crashes, which typically increases as traffic volumes increase.



CRASHES PER MILLION VMT



- To determine Crashes per Million VMT, the total number of crashes identified within the project area over the latest five-year period of available crash data is multiplied by 1,000,000. This is then divided by the AADT of the project multiplied by 365, the total length of the project (in miles), and the number of years which the crashes were collected (i.e. 5 for crashes occurring from 2011-2015).

FORMULA

Crashes per Million VMT = (Total Number of Crashes) (1,000,000) / (AADT) (365) (Miles) (Years)

EXAMPLE

A project chosen for evaluation has an average AADT of 5,000, and 100 total crashes over the last 5 years within the project area of 10 miles.

To calculate the projects Total Crashes per Million VMT:

(100) (1,000,000) / (5,000) (365) (10) (5)

100,000,000 / 91,250,000 = 1.10 Crashes per Million VMT



Project Location		
Project Length	Project Type	
Roadway	Mileposts	Project County
Safety		
Number of crashes over most-recent 5-year period^		
Fatalities^		
Total Crashes per Mile		
Total Crashes per Million Miles VMT		
Conditions		
Pavement Condition Rating*		
Bridge Condition Rating*		
PMS-Recommended	Final Preservation	CAR FORM

**TOTAL
CRASHES PER
MILE &
CRASHES PER
MILLION VMT**

EVALUATION SHEET

Length	AADT	AADT per Lane	VMT	Freight AADT	Safety		
					Crashes within Project Area 2013-2017	Accidents per Million VMT	Total Crashes per Mile
2.325	7,337	1,834	17,059	2,373	2	0.08	0.86
0.212	4,050	1,013	859	2,373	0	0.00	0.00
4.073	5,034	1,259	20,503	1,629	22	0.73	5.40
0.197	6,612	1,653	1,303	2,138	4	2.10	20.30
0.18	4,007	1,002	721	1,295	0	0.00	0.00
6.639	5,270	1,318	34,988	1,706	12	0.23	1.81
13.626		-	32,898		40		
	5,483	1,371		1,808		0.38	6.67
				32.97			



RECREATION SITE ACCESS

ECONOMIC DEVELOPMENT

Recreation Site Access is based on whether a roadway project provides direct or indirect access to a recreation site. Recreation sites are classified as major or minor.

Major Recreation Sites include state parks, national parks and monuments, national wildlife refuges, and ski areas.

Minor Recreation Sites include other areas used for outdoor recreation and tourism, such as national forest land.

RECREATION SITE ACCESS



- Consult the **NMDOT ROADS RecSites** GIS layer to determine the presence of recreation sites near the project area. A project is deemed to provide access if the roadway is within **5 miles of a Major Recreation Site** or **3 miles of a Minor Recreation Site**. The name of the site(s) and the classification should be included in the Recreation Site Access field of the CAR form.

SCORING INPUT

Minor or Major Recreation Site, as determined by NMDOT staff using GIS.

PROJECTED POPULATION CHANGE FOR AFFECTED COUNTIES

ECONOMIC DEVELOPMENT

Projected Population Growth for Affected Counties considers the projected change in population for the counties directly affected by a given project.



PROJECTED POPULATION CHANGE



- The project county is identified in the CAR form. Use the population projections from [UNM Geospatial and Population Studies](#) to complete the “Current Population” and “Projected Population” fields of the Project Evaluation Sheet.

FORMULA

Projected Population Change = ((Total Projected Population – Total Base Year Population) / Total Base Year Population) x 100, using data from UNM Geospatial and Population Studies

EXAMPLE

A project chosen for evaluation falls within Luna County.

To calculate the project’s Projected Population Change:

(2040 projected population - 2010 population) / 2010 population x 100

(24,348 - 25,095) / 25,095 x 100 = -2.98% Projected Population Change

REFERENCES IN LOCAL PLAN(S)

ECONOMIC DEVELOPMENT

Projects receive points in this criterion if a citation can be provided from local plans or transportation studies conducted within the last 8 years.

In addition to corridor studies or other feasibility studies, primary resources include MPO/RTPO long-range plans. Local transportation master plans or comprehensive plans may also be referenced.



CAR FORM



CAR Information Form
Conditions Analysis Report

Other Assets

Asset	Required (Y/N)	Notes
Guardrails	-	
Signage	-	
Other	-	

Economic Development

Recreational Access: Does the project provide access to an identified recreational site? (Y/N) ^		No
Recreational Site Name	N/A	Minor or Major Rec. Site? ^
Local Plans: Is the project listed in any local plans or transportation studies? (Y/N)		-
Current County Population^	13,750	Projected County Population^
		11,397
		Projected Population Change (%) ^1
		-17.11

Emergency Events

Has the project locating required repair or reconstruction due to an emergency event?	
---	--

Community Considerations

Are there any known community concerns regarding the project?	
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REFERENCED IN LOCAL PLANS



ECONOMIC DEVELOPMENT

Other -

Economic Development

Recreational Access: Does the project provide access to an identified recreational site? (Y/N) ^ No

Recreational Site Name N/A Minor or Major Rec. Site? ^ N/A

Local Plans: Is the project listed in any local plans or transportation studies? (Y/N) -

Current County Population^	13,750	Projected County Population^	11,397	Projected Population Change (%) ¹	-17.11
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Emergency Events

Has the project locating required repair or reconstruction due to an emergency event?

Community Considerations

CAR FORM

Segment	Begin Point	End Point	Length	AADT	AADT per Lane	VMT	Freight Mobility
4	I-25						
Economic Development							
Recreational Site (Y/N)	Recreational Site Name	Minor or Major Recreational Site	Included in Local Plan (Y/N)	County	Current Population	Projected Population	Percent Change in Population
No	N/A	N/A	No	Colfax	13,750	11,397	-17.11
				Total	13,750	11,397	-17.11
General Mobility							
							Freight Mobility

EVALUATION SHEET

OTHER CONSIDERATIONS: EMERGENCY EVENTS*

Roadways which are subject to regular emergency events like flooding face increased levels of wear and tear as a result.

By identifying roadways which are regularly subject to emergency events, NMDOT can seek possible solutions, alternatives, or alleviations of the issue leading to the observed damage.

**Information item only*



CAR FORM



CAR Information Form Conditions Analysis Report

Other Assets

Asset	Required (Y/N)	Notes
Guardrails	-	
Signage	-	
Other	-	

Economic Development

Recreational Access: Does the project provide access to an identified recreational site? (Y/N) ^		No			
Recreational Site Name	N/A	Minor or Major Rec. Site? ^ N/A			
Local Plans: Is the project listed in any local plans or transportation studies? (Y/N)		-			
Current County Population^	13,750	Projected County Population^	11,397	Projected Population Change (%) ¹	-17.11

Emergency Events

Has the project locating required repair or reconstruction due to an emergency event?

Community Considerations

Are there any known community concerns regarding the project?



EMERGENCY EVENTS*

PROJECT SCORING

Upon collecting the data using the CAR form and Project Evaluation Sheet, it is necessary to create an initial ranking of projects with which to begin the project prioritization process.

To accomplish this, thresholds established by the TAMP ESC which score the individual data inputs on a 4-point scale are utilized to create the initial ranking of projects. The following table lists the scoring thresholds established by the Executive Steering Committee.



NMDOT

SCORING THRESHOLDS

Scoring Criteria	Low (1)		Medium (2)		High (3)		Very High (4)		Source
Total Crashes per Mile	0-5		5.1-10		10.1-25		>25		NMDOT Crash Database
Crashes per Million VMT	0-0.5		0.51-1		1.01-3		3+		NMDOT Crash Database
Pavement Condition Rating*	95-100	85-94	75 - 84	65 - 74	55 - 64	45 - 54	35 - 44	<35	NMDOT PMS
Bridge Rating	85+		80.1-85		70.1-80		0-70		NMDOT
Functional Classification	Local / Minor Collector		Major Collector		Minor Arterial		Principal Arterial		NMDOT
Average AADT	0-5000		5001-15000		15001-25000		>25000		NMDOT Traffic Counts
AADT per Lane	<2000		2001-4000		4001-6000		>6001		NMDOT Traffic Counts
Average Freight AADT	<1500		1500-3000		3001-5000		>5000		NMDOT Traffic Counts
Freight Traffic / Total AADT (%)	<15%		15-30%		30.1-50%		>50%		NMDOT Traffic Counts
Shoulder Width (ft.)	<4		4-6		6.1-8.5		>8.5 or Widens Existing Shoulders		NMDOT / Bicycle Guidelines Map
NM Bike Plan Tier	Tier 3		Tier 2				Tier 1		NM Bike Plan
Rec. Site Access (Y/N)	Minor Site				Major Site				GIS Inventories / Land Ownership
Local Plan (Y/N)					Yes				Inventory Needed
Projected Population Change (%)	<0%		0.1-10%		10-20%		>20%		UNM GPS

*PCR scoring is doubled, and ranges from 1 to 8

Project Details		
Project Information	Roadway	I-25
	Location	MP 415-421
	District	4
	Category	
	Project Cost	\$8,000,000
	Project Location	Springer
	Project Type	Major Rehab
	Functional Classification	1 - Interstate
	Functional Classification Score	4
	Mileposts	415-421
	Total Project Length (mi.)	6
	Number of Lanes	4
	Sidewalks (Y/N)	No
Transit Route (Y/N)	No	
MPO or RTPO	RTPO	

PROJECT SCORING



Initial project scores can be determined using the project evaluation sheet using the following steps:

1. Fill out with the evaluation sheet with the data collected though the CAR form and Project Evaluation Sheet.
2. When filling out the project evaluation sheet, scores should automatically generate.

Evaluation Criteria		
Safety	Total Crashes	39
	Total Crashes per Mile	6.50
	Crashes per Mile Score	2
	Accidents per Million VMT	0.47
	Accidents per Million VMT Score	1
Conditions	Pavement Condition Rating	35
	Pavement Condition Rating Score	7
	Planned Preservation Treatment	Major Rehabilitation
	Bridge Condition Rating	N/A
	Bridge Condition Rating Score	0
General Mobility	Average AADT	5138
	Average AADT Score	2
	AADT per Lane	1285
	AADT per Lane Score	1
	VMT	30828
Freight Mobility	Average Freight AADT	1692
	Average Freight AADT Score	2
	Percentage Freight in Total AADT	32.93
	Percentage Freight in Total AADT Score	3
Multi-Modal	NM Bike Plan Tier	Interstate
	NM Bike Plan Tier Score	0
	Shoulder Width (ft.)	15
	Shoulder Width Score	4
Economic Development	Rec. Site Access (Y/N)	No
	Minor or Major Recreational Site	N/A
	Rec. Site Score	0
	Included in Local Plan (Y/N)	No
	Included in Local Plan Score	0
	Current County Population	13,750
	Projected County Population	11,397
	Projected Population Change (%)	-17.11
	Projected Population Change Score	1
Total	27	

PROJECT SCORING (CONT.)

- Continue filling out with the evaluation sheet with the data collected though the CAR form and Project Evaluation Sheet.
- Upon filling in all the listed values and generating the score for each criterion, a grand total will automatically be calculated at the bottom of the scoring sheet.

PROJECT SCORING COEFFICIENTS



In order to ensure that the project evaluation criteria reflect transportation goals established by the NMDOT, and to reduce any bias towards urban roadways based on volumes only, weighting factors are applied to the project scores. These weighting factors act as a coefficient to allow for certain data inputs and evaluation categories take on greater value in accordance with policy priorities.

The coefficients provided in the following section were developed and are based on review and discussion with the TAMP ESC and were developed as part of the calibration process using the projects included in the 2020 Priority Projects Lists and the 2019 Unfunded or Not Fully Funded Projects list. Members of the ESC indicated that safety and pavement conditions weighted most heavily.

**Established Coefficients*
(2020)**

	MAX POINTS	BASELINE SHARE	WEIGHTING SHARE	COEFFICIENT
Safety	8	15%	27.4%	1.85
Pavement Conditions	8	15%	28.4%	1.92
General Mobility	12	22%	12.8%	0.58
Freight Mobility	8	15%	11.4%	0.77
Multi-Modal Mobility	8	15%	9.0%	0.61
Economic Development	10	19%	11.0%	0.59
TOTAL	54	100%	100%	

*Coefficients established by NMDOT TAMP Executive Steering Committee

	SCORING CRITERIA	RAW SCORE	COEFFICIENT	ADJ. SCORE	POINTS BY CRITERIA
Safety	Crashes per Mile	2	1.85	3.70	5.5
	Crashes per IM VMT	1	1.85	1.85	
Conditions	PCR	7	1.92	13.42	13.4
	BCR	0	1.92	0.00	
General Mobility	Functional Classification	4	0.58	2.30	4.6
	AADT	2	0.58	1.15	
	AADT per Lane	2	0.58	1.15	
Freight	Freight AADT	2	0.77	1.54	3.8
	Freight Percentage	3	0.77	2.31	
Multi-Modal	NM Bike Plan Tier	0	0.61	0.00	2.4
	Shoulder Width	4	0.61	2.43	
Economic Dev.	Recreation Site Access	0	0.59	0.00	0.6
	Referenced in Local Plan	0	0.59	0.00	
	Population Change	1	0.59	0.59	
TOTAL		27	-	30*	-

Apply Scoring Coefficients to Produce Final Score for Project Ranking

To determine the final, adjusted score for project ranking, multiply the raw project scores with the coinciding scoring coefficient.

*The raw adjusted project score (29.9) is rounded to the nearest whole number.

PROJECT EVALUATION RESULTS



After applying the scoring coefficient to the initial project scores, a final ranking of projects can be established using the resulting weighted scores. This ranking can be used to prioritize the transportation projects and to aid in the programming of federal and state transportation dollars. Ultimately, the project evaluation process results in the prioritization of projects that best support the overall well-being of the transportation system and its users, as well as making progress toward achieving the goals set forth in the TAMP.

The evaluation process is intended to be flexible and project rankings may be sorted in multiple ways. In addition to overall ranking, NMDOT may consider ranking projects by location in which all projects within an MPO planning area are compared against each other, while projects located in rural areas (i.e. RTPO planning areas) may be compared to each other. Similarly, the evaluation process may be applied for projects *within* an NMDOT district.

The evaluation process also supports decisions based specifically on the three general types of funding allocation categories: asset management, congestion mitigation, and local/regional government. Subsequent to the ranking of projects, the application of funding maximums, based on percentage of total dollars, will assist in creating an isolated list of projects for each of these three categories. The percentage of total dollars for each of the funding categories should be determined on an annual basis, outside the evaluation process, to align with current statewide goals.