

## APPENDIX B – PERFORMANCE MEASUREMENT

# Performance Measures and Targets

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## Introduction

Approximately every six years, the US Congress passes a transportation authorization bill that guides federal investment in the nation's transportation system. On June 6, 2012, "Moving Ahead for Progress in the 21<sup>st</sup> Century", or MAP-21, was enacted by Congress to authorize transportation funding for both highway and transit projects and programs. The provisions of MAP-21 are moving the nation into a performance-based approach for managing transportation systems.

Using performance management allows regional, federal, and state transportation agencies to:

- Better understand and quantify the effects of transportation investments.
- Efficiently allocate resources.
- Increase accountability and transparency.
- Improve communication with decision-makers and the public.

Under MAP-21, states and MPO's will be required to adopt transportation performance measures and ultimately establish future performance targets in order to gauge the success of investments.

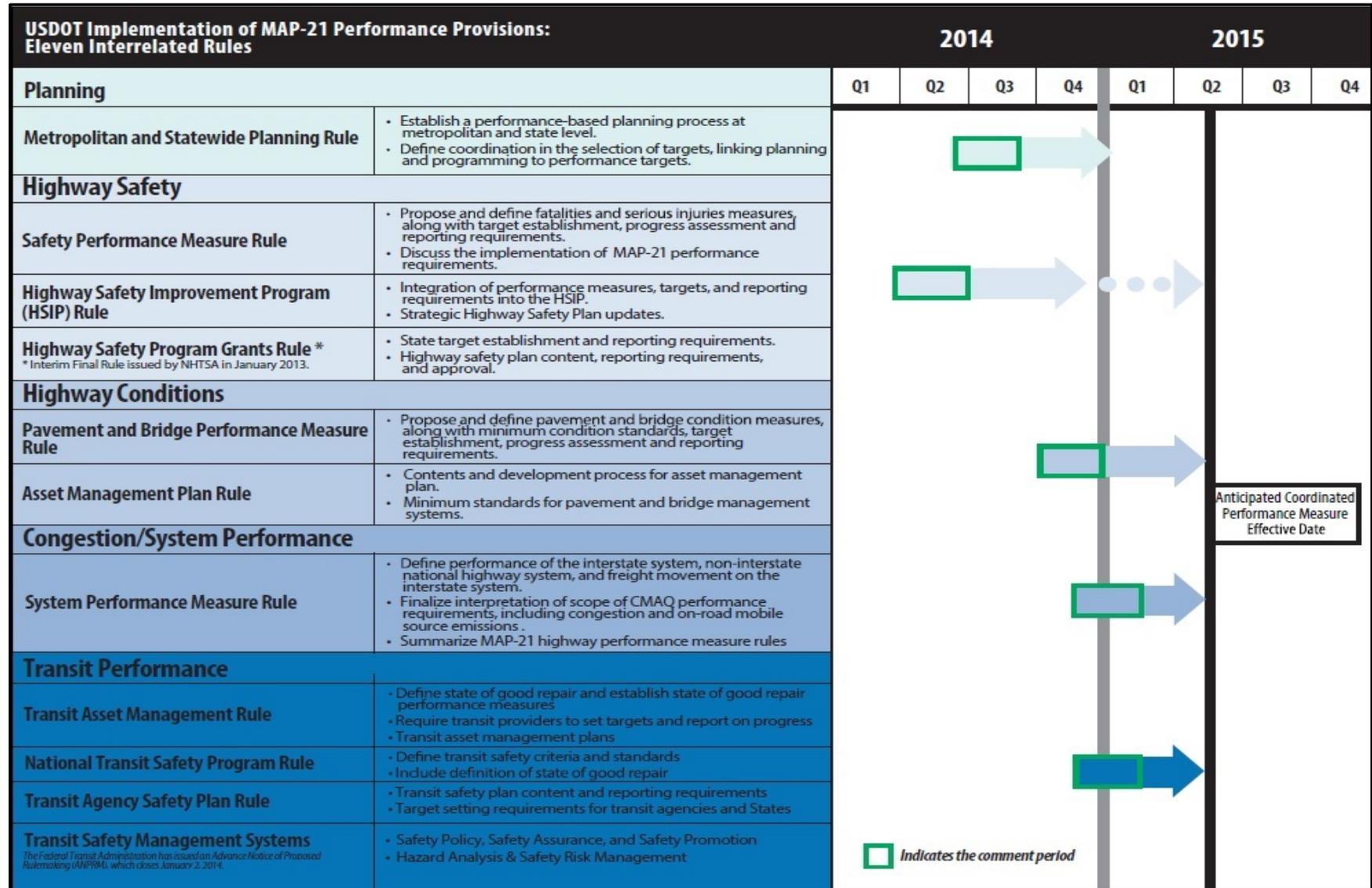
## Chapter 1 National Performance Measures

At this time, the US Department of Transportation (USDOT) is still in the processes of developing regulations to guide performance planning under MAP-21, including a timeline for adoption of performance measures and targets by states and MPO's.

**Figure 1-1** shows the USDOT's anticipated schedule for adoption of national performance measures. While the promulgation of federal rules on performance measures is not expected to occur until after adoption of this MTP, recent notices of proposed rulemaking by the Federal Highway Administration (FHWA) and the Federal Transit Administration (FTA), as well as recommendations published by national transportation advisory groups, provide an indication of measures that may be prescribed. To position BTPO to respond as national and statewide performance-planning processes unfold, a set of initial performance measures has been assumed for this MTP and baseline values have been developed.

Not all national metrics may be mandated for use the MPO level. The following sections describe measures currently in development at the national level and BTPO's current ability to report these possible national metrics. Alternate metrics that BTPO may wish to consider if the federal rules allow flexibility are also suggested.

Figure 1-1. USDOT Performance Measure Implementation Schedule



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## National Roadway Performance

The American Association of State Highway Transportation Officials (AASHTO) Standing Committee on Performance Management (SCOPM) has published recommended performance metrics for roadways including pavement condition, delay, system reliability, bridges, safety, and transportation air quality.

### Pavement Condition

AASHTO recommends using an international roughness index (IRI) to monitor national pavement condition on both interstate and non-interstate routes. IRI measures the ride that is experienced by vehicles travelling the roadway. Measurement requires the use of a profilometer to record differences in the surface of the road both longitudinally along the travelled way, and transversely across the roadway. Modern profilometers are truck-mounted instruments which use laser technology to collect data on roadway surfaces. In Idaho, these instruments have been used by Idaho Department of Transportation (ITD) for quality assurance purposes on new paving projects; however the technology has not been universally used to collect data for state and local pavement management systems.

Currently, local roadway jurisdictions within the BTPO planning area each have their own pavement management systems, which rely on visual observation and rating of pavement distress factors such as transverse, longitudinal and edge cracking; fatigue (alligator) cracking; potholes; patching; rutting; etc. While current systems would allow reporting of consistent pavement metrics by each local roadway jurisdiction so that pavement condition could be monitored regionally, local pavement management systems do not currently report IRI. A recommendation of this MTP is for BTPO's technical advisory committee to consider regionalizing pavement management systems, including a process for periodic system-wide pavement data collection.

### Annual Hours of Delay

The total annual hours of delay experienced by all vehicles using the roadway system can be used to gauge congestion in the system overall, and is recommended by AASHTO as a system performance measure. AASHTO recommends reporting hours of delay for all vehicles on the interstate system and national highway system routes. BTPO's travel demand model has the ability to report this measure.

Annual hours of delay specifically for trucks on the interstate system is also recommended by AASHTO. Adoption of this measure by BTPO may require additional refinement and calibration of the regional travel demand model for commercial vehicles.

### Reliability

AASHTO recommends the use of system reliability indices, applied both to the system overall, and also to interstate corridors separately as a measure of freight reliability. The purpose of this metric is to further quantify and articulate the impacts of congestion. AASHTO's reliability metric compares the

total travel time needed to ensure on-time arrival at a desired destination to a reasonable travel time for that trip under a threshold congestion level. AASHTO's Reliability Index is calculated as the ratio of the 80<sup>th</sup> percentile travel time to the agency-determined threshold travel time. For example, Reliability Index of 1.5 means that a trip that should take 10 minutes under acceptable congestion levels actually takes 15 minutes.

In 2009, a Major Arterial Study sponsored by BTPO was geared toward examining reliable travel times on regional arterials. Reporting system reliability and freight reliability using AASHTO's methods could be a goal of the next major arterial study.

Currently BTPO uses a volume to capacity ratio to help gauge congestion at the regional level. This measure could be substituted for a reliability index, if federal rules allow.

## **Bridges**

The importance of bridges to the safe and efficient movement of people and goods is underscored by the number of bridge performance measures under consideration by FHWA. It is anticipated that multiple national metrics to report numbers of structurally deficient bridges, bridges with routine or cyclic or preventative maintenance needs, and bridges requiring rehabilitation or replacement will be adopted. National performance measures for bridges will likely cover all bridges on the National Highway System (NHS), as well as non-NHS bridges under state and local jurisdictions. (The NHS includes all interstate and principal arterial roadways.)

ITD is the central source of bridge condition data for all roadway bridges in Idaho, and will have primary responsibility for reporting these metrics. If bridge performance measures are ultimately adopted for the BTPO area, the values reported could be a simple subset of the state totals.

## **Safety**

FHWA has issued a notice of proposed rulemaking that prescribes four national safety performance measures: (1) Number of fatalities; (2) Rate of fatalities; (3) Number of serious injuries; and, (4) Rate of serious injuries.

These measures are five-year rolling averages. The rates of fatalities and serious injuries are measured per vehicle mile travelled (VMT), and these rates are reported at the national level as fatalities or injuries per 100 million VMT.

BTPO has the ability to monitor and report these measures using crash data collected and provided by ITD.

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## Transportation Air Quality

The MAP-21 requirement to establish air quality performance measures applies only to MPO's that are designated as Transportation Management Areas (population over 1 million) and that have been designated as air quality nonattainment or maintenance areas.

BTPO is not being required to develop air quality performance measures under MAP-21. However, BTPO is required to demonstrate that its plans and programs conform to the federal Clean Air Act. BTPO has had a prior designation as an air quality non-attainment area and is now in maintenance status. This designation triggers increased oversight of BTPO's plans and programs by the Idaho Department of Environmental Quality (IDEQ). Also, when funding projects under the federal Congestion Mitigation Air Quality (CMAQ) program, FHWA requires states and MPO's to estimate emission reductions that can be anticipated from implementation of CMAQ projects.

The US Environmental Protection Agency (EPA) provides computer models to assist with these estimates, and recently released a new "MOVES" (Motor Vehicle Emission Simulator) Model, which estimated emissions from cars, trucks, and motorcycles. For the purposes of determining air quality conformity for BTPO's plans and programs, BTPO and the IDEQ have been collaborating to develop a MOVES model for the BTPO planning area.

Further information on the region's conformity with the Clean Air Act is provided in Chapter 5.

## National Transit Performance

Under MAP-21, FTA is tasked with developing performance measures related to transit safety, and state of good repair. A key FTA goal is to establish consistent metrics for tracking performance and safety comparisons across agencies. As a result, flexibility in adopting transit performance measures that differ from national measures may be limited.

### Transit Safety

A National Safety Plan is under development for transit which will articulate goals for safety risk analysis and transit safety performance management. The National Safety Plan will establish new processes for collection of standardized data, and define an initial set of transit safety metrics.

According to the National Safety Council<sup>1</sup>, travel by transit is exceedingly safe. The lifetime odds of dying as an occupant of a bus are approximately 1 in 178,000. By contrast, the lifetime odds of dying as an occupant of a passenger car are just 1 in 415; as a pedestrian, 1 in 749; and as a bicyclist, 1 in 5,000. Nonetheless, serious incidents can happen, and when they do occur, they can be disastrous on a scale distinct from typical passenger vehicle incidents due to the potential numbers of people involved.

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<sup>1</sup> National Safety Council (2013) *Injury Facts, 2013 Edition*. Itasca, IL.

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FTA's pending rulemaking to address MAP-21 is expected to require all public transit agencies to develop and implement their own Public Transit Safety Plan. Small transit providers may have their plans drafted by the state. However, larger providers that are direct recipients of federal transit funding, such as PRT, will likely be required to have their own safety plan.

Transit performance management concepts are generally less developed at the national level for transit than for highways at this time. Conjecture about specific measures is therefore difficult. FTA's October 3, 2013 notice of proposed rule-making identifies these potential categories for transit safety performance measures:

- Training and supervision of employees
- Maintenance of equipment and infrastructure
- Policies, rules and procedures supporting a culture of safety

BTPO and PRT can prepare for the eventual rollout of transit safety measures by considering additional data collection in these areas, and programming funds for future development of a Public Transit Safety Plan.

### **Transit State of Good Repair**

Under FTA's pending rulemaking, all recipients of federal transit funding through FTA will be required to have a transit asset management (TAM) system and set state of good repair (SGR) targets. Actual metrics to be used by all funding recipients in establishing SGR targets will be defined by FTA. While the specific measures are as yet unknown, BTPO and PRT can prepare for their eventual rollout by developing a detailed inventory of all capital transit assets including equipment, rolling stock, infrastructure and facilities. At this time, funds should also be programmed for future development of a TAM system for PRT.

## Chapter 2 State Performance Measures

ITD began moving to a performance management approach with the adoption of its statewide transportation plan in December, 2010, which established a new policy for performance-based planning across all transportation divisions. This policy shift enabled ITD to begin encouraging an organizational culture around performance management as the department also underwent a restructuring of personnel.



*ITD's Performance  
Management Process*

ITD is currently awaiting the adoption of federal rules by FHWA and FTA. However, in the meantime, individual modal plans and other statewide initiatives outline performance measures that are in use or under development at the state level. The following discussion describes statewide measures that can be found in individual statewide modal plans and their applicability to BTPO.

### Idaho Freight Performance Measures

A Statewide Freight Study completed in 2013 examined existing performance measures in use by ITD that could also pertain to freight, such as pavement and bridge condition, and the state's five-year fatality rate. The study also recommended monitoring statewide indicators related to freight demand, such as the value or tonnage of freight moved by mode, commodities moved, gross state product by freight-dependent industry sectors and productivity by industry sectors.

Statewide transportation system performance measures related to freight safety, efficiency, and system condition were also recommended as provided in **Table B-1**. Several freight measures adopted for use in Idaho overlap with national performance measures which are anticipated to result from MAP-21.

**Table B-1. Idaho Statewide Freight Performance Measures**

Category	Existing ITD Performance Measures Applicable to Freight	Near Term Freight Measures Proposed by ITD (data available)	Future Freight Measures Proposed by ITD (requires additional data collection)
Freight Demand	<ul style="list-style-type: none"> <li>None</li> </ul>	<ul style="list-style-type: none"> <li>Current and Future Year Value/Tonnage of Freight Moved by Mode by Direction</li> <li>Current and Future Year Value/Tonnage of Key Commodities Moved</li> </ul>	<ul style="list-style-type: none"> <li>Output (Gross State Product) by Freight-Dependent Industry Sectors</li> <li>Employment by Freight-Dependent Industry Sectors</li> <li>Productivity by Freight-Dependent Industry Sectors</li> </ul>
Freight Safety	<ul style="list-style-type: none"> <li>Number of Commercial Vehicle Crashes by Type in Idaho</li> <li>Commercial Average Vehicle Miles Travelled (CAVMT) in millions</li> <li>Number of Commercial Vehicle Fatalities per 100 million CAVMT</li> <li>Number of Commercial Vehicle Injuries per 100 million CAVMT</li> </ul>	<ul style="list-style-type: none"> <li>Economic Cost of Commercial Vehicle Crashes by Year</li> <li>Number of Highway-Rail At-Grade Crashes</li> </ul>	<ul style="list-style-type: none"> <li>Commercial Vehicle At-Fault Crash Rate</li> <li>Percent of Containers Damaged or Lost at Port of Lewiston</li> <li>Total Monetary Loss per 1,000 Operations at Boise Air Terminal</li> </ul>
Freight System Efficiency	<ul style="list-style-type: none"> <li>None</li> </ul>	<ul style="list-style-type: none"> <li>Average Truck Speed on Interstate Highways</li> <li>Percent of Interstate Highway Segments with Average Truck Speeds Greater than 50 mph</li> <li>Average Variability in Truck Speeds on Interstate Highways</li> <li>Percent of Rail Track Miles Rated at FRA Class 2 or Higher</li> <li>Number of Locations with Restricted Double-Stacking Capability</li> <li>Number of Nonstop Airline Markets Served from Idaho Air Terminals</li> </ul>	<ul style="list-style-type: none"> <li>Percent of Major Grain Elevators with On Site Rail Access</li> </ul>
Freight System Condition	<ul style="list-style-type: none"> <li>Percent of Pavement in Good or Fair Condition</li> <li>Percent of Bridges in Good Condition</li> </ul>	<ul style="list-style-type: none"> <li>Percent of Pavement in Good or Fair Condition on Designated Freight Corridors</li> <li>Percent of Weight Restricted Bridges on Designated Freight Corridors</li> <li>Resources Expended on Freight Transportation Maintenance Projects</li> </ul>	<ul style="list-style-type: none"> <li>Percent of Rail Network That Can Accommodate 286,000 Pound Cars</li> </ul>

At this time, BTPO is not required to report on Idaho’s freight performance measures at the MPO level. Development and ongoing measurement and reporting of many of ITD’s proposed freight measures would require resources beyond BTPO’s current capacity. However, as ITD moves forward with data collection and development of statewide performance measures for freight, it may ultimately be possible for some of the measures outlined in **Table B-1** to be reported for BTPO’s planning area as subsets of the statewide values. This is an area that should be re-assessed at the next MTP update.

## Idaho Performance Measures for Transit

Idaho currently requests transit providers report these statistics quarterly:

- Total Passenger Trips Provided broken down by rider type and by service mode
- Total Service Miles, Hours, and Days broken down by service mode
- Operating and Capital Costs broken down by service mode
- Revenue Sources (Federal, State, Local, and Rider Fares) broken down by service mode
- Changes to services (route structure, times, etc.)
- ADA or general service complaints received by service provider
- Other operating information including the number of accidents and incidents, completed training, drug and alcohol testing, and contracts with disadvantaged business enterprise firms.

Reporting of these statistics is a condition of receiving funding as a subrecipient of ITD from the federal rural transit program and other federal transit funding programs managed by ITD. PRT is a direct recipient of federal urban transit funding, but is also eligible for funding in other transit funding programs through ITD. Regional transit data provided by PRT to ITD could also be used to calculate transit performance measures that are recommended for BTPO.

## Idaho Performance Measures for Bicycles and Pedestrians

A draft Idaho Statewide Bicycle and Pedestrian Plan published in April, 2014, establishes these specific statewide measures and targets:

- Tangibly accommodate bicycles on 60% of roadways statewide.
- Increase mode share of bicycling to 6%.
- Elevate Idaho to top ten status among bicycle friendly states.
- Increase the number of recognized bicycle friendly communities in Idaho to twenty (20).
- Develop 650 miles of new shared use paths to comprise a branded statewide system of over 1,000 miles, to attract tourists and provide recreation opportunities to residents.
- Provide shoulders on at least 30% of Idaho’s paved Scenic Byways.
- Slow the statewide obesity rate trend by 10% by 2030.
- Cut bicycle and pedestrian crash rates by 50% by 2035.

These statewide targets are ambitious, and a specific investment plan and estimate of financial resources needed to understand their impact has not yet been prepared by ITD. A redirection of federal project funding within Idaho may be required in order to meet the proposed targets.

BTPO's preferred scenario includes goals for improving active transportation opportunities and funding non-motorized projects identified in the Portneuf Valley Bicycle Pedestrian Plan, and positive progress in this area is possible within the planning horizon for this MTP. However, based on BTPO's anticipated revenues and investment program, it is not likely that BTPO will be able to achieve the aspirational targets proposed for use statewide.

## **Idaho Performance Measures for Airports**

Air transport is not specifically addressed in BTPO's MTP because the Pocatello Regional Airport is outside of BTPO's planning area boundary. However, the airport does have an influence on the regional economy and transportation system needs, and BTPO's preferred scenario includes leveraging the airport as an asset for industrial development in the region.

**Table B-2** outlines statewide performance measures from in Idaho's Airport System Plan, and are provided here for reference and perspective. While these measures are not applicable at the regional level, they do offer an understanding of important elements of air transport in Idaho. Pocatello Regional Airport's contribution to these statewide measures could be considered by BTPO in future, if the MPO planning area is someday expanded to include the airport.

**Table B-2. Idaho Statewide Airport System Performance Measures**

Statewide Airport System Performance Measure	Description
Geographic Coverage	Percent of the state's population located in proximity to airports.
Facility Support	Monitors airports with instrument approach and/or on-site weather reporting, and airports meeting minimum facility objectives.
Preservation	Monitors pavement condition, land use zoning, and airports with master plans, layout plans, prevention control and counter measures, and storm water pollution prevention plans.
Transportation Support	Tracks percent of airports providing access to remote communities, airports with courtesy cars and/or rental cars, airports with public transportation available, and percent of airports with on-demand air taxi flights.
Safety & Security	Tracks airports with height zoning, airports controlling all runway end projection zones, airports supporting life flight activities, airports that have written security procedures and airports that support firefighting.
Economic Support	Monitors ability of airports to meet business user needs, employment proximate to airports, airports capable of meeting Very Light Jet needs, proximity of businesses with propensity to use aviation, airports that accommodate aerial application services, airports accommodating Instrument Flight Rules operations from outside Idaho, airports with air cargo/freight activities and recreational areas served by "portal" airports.

## **Chapter 3 Other Potential Measures to Support BTPO's Preferred Scenario**

Several goals and objectives for BTPO's preferred scenario (Chapter 3) contain specific strategies for performance management. The following measures could assist BTPO in meeting its stated objectives.

### **Housing and Employment near Transit**

These two indicators were used during the scenario planning process, and may be helpful in monitoring transit accessibility over time, as well as whether land development policies are encouraging active transportation. Both measures are also related to BTPO's goal of reducing transportation impacts and costs through land use strategies. The actual metrics are the number of dwelling units and jobs within 1/3 mile of transit stops. Data needed for these measures are available from PRT (transit stop locations) and local land use jurisdictions (residential parcels and dwelling units.)

### **Mode Split**

The percent of residents that commute by transit, walking, or biking can be used to monitor the effect of active transportation incentives in the region. The American Community Survey maintains a three-year rolling average for community by transit for the Pocatello area, available from the US Census Bureau. Census Journey to Work data provides walking and bicycling commute statistics.

### **Transit Ridership**

Monitoring and reporting the annual number of linked trips (or number of total annual boardings if linked trip information is not available), will also help to gauge the effect of active transportation strategies and general transit accessibility.

### **Transit Productivity**

Monitoring the number of transit boardings per revenue hour will help PRT and BTPO to articulate the cost effectiveness of transit and changes over time. If also examined at the route level, this measure could help to indicate areas of growing demand for transit and also identify areas of low demand where additional strategies and incentives may help to improve cost effectiveness.

### **Pedestrian and Bicycle Connectivity**

Wholesale adoption of Idaho's proposed statewide pedestrian and bicycle targets is not recommended at this time given BTPO's anticipated funding levels and constraints. However, measures to report and track the percent of non-interstate roadways with pedestrian and bicycle accommodation are

recommended. For the pedestrian accommodation measure, a percentage of all roadways with sidewalks adjacent to developed lands are appropriate. For the bicycle connectivity measure, the percent of directional roadway miles with average daily traffic greater than 2,500 and/or posted speeds of 35 mph or greater with bicycle facilities (such as bicycle lanes, separated pathways or cycle tracks) is recommended. Data is currently available at BTPO.

## Bicycle Safety and Comfort

This measure is closely tied to the region's active transportation objectives under the preferred scenario. An average Bicycle Level of Service (BLOS) calculated by roadway functional class is recommended, using Idaho's established methodology. Data for evaluation of this measure is available in GIS through the University of Idaho's BLOS GIS toolbox.

## Public Involvement Performance Measures

BTPO has adopted these performance measures related to public involvement in its plans and programs:

- Providing Public Participation Opportunities (Yes/No measure of whether individuals were provided an opportunity to participate in planning activities identified in BTPO's Unified Planning Work Program, during development of the MTP, and as funding decisions are made for the Transportation Improvement Program.)
- Providing Complete, Accurate and Timely Public Information. (Yes/No measure.)
- Title VI Compliance. (Yes/No measure.)

## Chapter 4 Recommended Performance Measures for BTPO

In considering the universe of potential measures, BTPO must be selective to ensure performance measures are either a) linked to specific BTPO goals and objectives or b) mandated by state or federal legislation. The availability of data is also a factor, however at this early stage, BTPO has time to establish necessary data collection and processing systems. Care should be taken to avoid selecting a performance measure for the sole reason that data exists. Also, selecting too many measures can unduly burden BTPO's planning resources, and dilute the agency's focus.

**Tables 1-3** through **4-5** provides a summary of recommended performance measures and data sources for BTPO, showing applicability to BTPO's preferred scenario goals and national performance management categories. **Table B-3** identifies recommended performance measures being considered at the national level, while **Table B-4** details performance measures related to the implementation of the preferred scenario. **Table B-6** recommends metrics related to public involvement and Title VI compliance. Chapter 5 provides an overall system performance report including baseline values for these measures, as available.

**Table B-3. Recommended BTPO Performance Measures- Potential National Measures**

Potential National Performance Measures															
Performance Measure	Actual Metric	Methodology and Notes	Data Available?	BTPO GOALS					MAP-21 Factors						
				1- Multimodal, Safe, Active, Healthy	2 - Leverage Existing Infrastructure	3 - Reduce Costs thru Land Use	4 - Regional Econ Dev/ Local Industry	5 - Human and Natural Environ.	A - Economic Vitality	B - Safety	C - Security	D - Accessibility and Mobility	E - Environment	F - Integration and Connectivity	G - Management and Operation
Interstate Pavement Condition	IRI Rating: Good, Fair, Poor	Recommended by AASHTO. Based in international roughness index (IRI). Percentage of 0.1 mile segments of interstate pavement mileage in good, fair and poor condition: Good = IEI < 95, Fair = IRI between 95 and 170; Poor = IRI > 170.	Yes. ITD has IRI data for all state routes.		X									X	
Non-Interstate Pavement Condition	Pavement Condition Index (PCI) (0 worst to 100 best)	Average PCI calculated separately for local agency arterials and collectors.	AASHTO recommends international roughness index; however, IRI not available at local level. Pocatello, Chubbuck and Bannock County can report PCI, however not all agencies have pavement condition data cross referenced with roadway functional classification.		X									X	X

Potential National Performance Measures														
Performance Measure	Actual Metric	Methodology and Notes	Data Available?	BTPO GOALS					MAP-21 Factors					
				1-Multimodal, Safe, Active, Healthy	2 - Leverage Existing Infrastructure	3 - Reduce Costs thru Land Use	4 - Regional Econ Dev/ Local Industry	5 - Human and Natural Environ.	A - Economic Vitality	B - Safety	C - Security	D - Accessibility and Mobility	E - Environment	F - Integration and Connectivity
Reliability Index	Ratio of 80th percentile travel time to the agency-determined threshold travel time	Recommended by AASHTO. The Reliability Index is defined as the ratio of the total travel time needed to ensure on-time arrival at the desired destination to the agency-determined threshold travel time. A Reliability Index of 1.50, for example, indicates that travelers should allow 30 minutes for a trip that would take only 20 minutes at the agency-determined congestion threshold conditions (20 minutes times 1.50 = 30 minutes).	Data incomplete at this time. BTPO's 2009 Major Arterial study could possibly help us estimate a baseline. Arterial study would need to be repeated periodically.				X		X		X	X		X

Potential National Performance Measures														
Performance Measure	Actual Metric	Methodology and Notes	Data Available?	BTPO GOALS					MAP-21 Factors					
				1-Multimodal, Safe, Active, Healthy	2 - Leverage Existing Infrastructure	3 - Reduce Costs thru Land Use	4 - Regional Econ Dev/ Local Industry	5 - Human and Natural Environ.	A - Economic Vitality	B - Safety	C - Security	D - Accessibility and Mobility	E - Environment	F - Integration and Connectivity
Freight Reliability Index	Ratio of total travel time needed to ensure on-time arrival at desired destination to the agency-determined travel time (80th percentile worst travel time during weekday peak).	Recommended by AASHTO. Initially for interstate corridors only, this is a potential future measure that would need to be developed jointly by ITD and BTPO. Alternatively ITD may elect to use values computed by FHWA. Specific origin and destination would need to be selected for each corridor.	Data incomplete at this time. BTPO's 2009 major arterial study could provide an estimated baseline. The arterial study would need to be repeated periodically (every 5 years?) For target-setting, BTPO's travel demand model would need further refinement/ calibration for commercial vehicles.	X			X			X		X		
Annual Hours of Delay	Travel time above BTPO's congestion threshold in vehicle-hours on the interstate system and NHS corridors	Recommended by AASHTO	Preliminary system-wide estimates can be made at this time; however, the regional travel demand model will need further refinement/calibration for improved evaluation of delays and travel times.				X	X	X			X		X

Potential National Performance Measures																
Performance Measure	Actual Metric	Methodology and Notes	Data Available?	BTPO GOALS					MAP-21 Factors							
				1-Multimodal, Safe, Active, Healthy	2 - Leverage Existing Infrastructure	3 - Reduce Costs thru Land Use	4 - Regional Econ Dev/ Local Industry	5 - Human and Natural Environ.	A - Economic Vitality	B - Safety	C - Security	D - Accessibility and Mobility	E - Environment	F - Integration and Connectivity	G - Management and Operation	H - Existing System Preservation
Annual Hours of Truck Delay	Travel time above BTPO's congestion threshold in vehicle-hours for trucks on the interstate system	Recommended by AASHTO.	Not at this time. Regional travel demand model will need further refinement/calibration for commercial vehicles.	X			X		X			X		X	X	
Structurally Deficient Bridges on NHS Routes	Percent of NHS deck area on structurally deficient bridges	Recommended by AASHTO	Yes. ITD data.		X		X		X	X	X	X		X	X	
Structurally Deficient Bridges on Non-NHS Routes	Percent of Non-NHS deck area on structurally deficient bridges	Recommended by AASHTO	Yes. ITD data.		X		X		X	X	X	X		X	X	
Maintenance of Bridges on National Bridge Inventory (NBI)	Percentage of all bridges in the NBI with needs for routine or cyclic maintenance (CM), preventative maintenance (PM) and Rehabilitation or Replacement	Recommended by AASHTO	Yes. ITD data.		X		X		X	X	X	X		X	X	

Potential National Performance Measures															
Performance Measure	Actual Metric	Methodology and Notes	Data Available?	BTPO GOALS					MAP-21 Factors						
				1-Multimodal, Safe, Active, Healthy	2 - Leverage Existing Infrastructure	3 - Reduce Costs thru Land Use	4 - Regional Econ Dev/ Local Industry	5 - Human and Natural Environ.	A - Economic Vitality	B - Safety	C - Security	D - Accessibility and Mobility	E - Environment	F - Integration and Connectivity	G - Management and Operation
Maintenance of Bridge <u>Decks</u> for Bridges on National Bridge Inventory	Percentage of all bridges in the national bridge inventory with needs for routine or cyclic maintenance (CM), preventative maintenance (PM) and Rehabilitation or Replacement	Recommended by AASHTO.	Yes. ITD data.		X		X			X	X	X	X		X
Number of Fatalities	Five-year moving average of the count of the number of fatalities on all public roads for a calendar year	Recommended by AASHTO	Yes. Crash data available on-line from Local Highway Technical Assistance Council (LHTAC).	X				X			X				
Fatality Rate	Five-year moving average of the number of fatalities divided by VMT for a calendar year	Recommended by AASHTO	Yes. Crash data available on-line from LHTAC. VMT from BTPO's regional travel demand model.	X				X		X					
Number of Serious Injuries	Five-year moving average of the count of the number of serious injuries on all public roads for a calendar year	Recommended by AASHTO	Yes. Crash data available on-line from LHTAC.	X				X		X					

Potential National Performance Measures																	
Performance Measure	Actual Metric	Methodology and Notes	Data Available?	BTPO GOALS					MAP-21 Factors								
				1-Multimodal, Safe, Active, Healthy	2 - Leverage Existing Infrastructure	3 - Reduce Costs thru Land Use	4 - Regional Econ Dev/ Local Industry	5 - Human and Natural Environ.	A - Economic Vitality	B - Safety	C - Security	D - Accessibility and Mobility	E - Environment	F - Integration and Connectivity	G - Management and Operation	H - Existing System Preservation	
Serious Injury Rate	Five-year moving average of the number of fatalities divided by VMT for a calendar year	Recommended by AASHTO	Yes. Crash data available on-line from LHTAC. VMT from BTPO's regional travel demand model.	X					X		X						
Transportation Air Quality	Daily kg of on-road, mobile source criteria air pollutants	Recommended by AASHTO. Based on MOVES output.	Yes. IDEQ/BTPO MOVES model.	X					X					X			

Tabs B-4. Recommended BTPO Performance Measures to Support Implementation of the Preferred Scenario

Performance Measures to Support Preferred Scenario														
Performance Measure	Actual Metric	Methodology and Notes	Data Available?	BTPO GOALS					MAP-21 Factors					
				1-Multimodal, Safe, Active, Healthy	2 - Leverage Existing Infrastructure	3 - Reduce Costs thru Land Use	4 - Regional Econ Dev/ Local Industry	5 - Human and Natural Environ.	A - Economic Vitality	B - Safety	C - Security	D - Accessibility and Mobility	E - Environment	F - Integration and Connectivity
Roadway System Efficiency	LOS	Roadway Volume to Capacity by functional classification based on BTPO travel demand model output. A<=0.5, B=0.51 to 0.7; C = 0.71 to 0.8; D = 0.81 to 0.9; E=0.91 to 0.99; F>=1.0	Yes, output from BTPO's travel demand model.											
Housing Near Transit	Percent of total dwelling units within 1/3 mile walking distance from transit stops	For this transit accessibility indicator, we used distance to route, not bus stop, in the scenario planning work. Need to update based on stop buffers.	Baseline data from GIS. 2040 target from scenario planning process.	X	X	X	X				X		X	X
Employment Near Transit	Percent of total jobs within 1/4 mile walking distance of transit stops	For this transit accessibility measure, we used distance to route, not bus stop, in the scenario planning work. Need to update based on stop buffers.	Baseline data from GIS. 2040 target from scenario planning process.			X	X							

### Performance Measures to Support Preferred Scenario

Performance Measure	Actual Metric	Methodology and Notes	Data Available?	BTPO GOALS					MAP-21 Factors							
				1-Multimodal, Safe, Active, Healthy	2 - Leverage Existing Infrastructure	3 - Reduce Costs thru Land Use	4 - Regional Econ Dev/ Local Industry	5 - Human and Natural Environ.	A - Economic Vitality	B - Safety	C - Security	D - Accessibility and Mobility	E - Environment	F - Integration and Connectivity	G - Management and Operation	H - Existing System Preservation
Public Transit Mode Split	% of residents that commute by transit	American Community Survey (ACS) 3-year rolling average. Could be used to monitor the effectiveness of active transportation incentives per BTPO objective 1A.	Yes, from ACS	X	X			X				X	X	X		X
Transit Ridership	Annual fixed route boardings	Data as reported to the National Transit Database	Yes, from the National Transit Database.	X	X							X	X	X		
Transit Connectivity	% major collectors and higher with transit service	(Roadway miles with functional class urban collector and higher with fixed route transit service) x 100/(total local roadway miles collector and higher)	Yes, calculated using GIS.	X	X		X					X				X
Transit Productivity	Boardings per Revenue Hour	(Total annual unlinked passenger trips) / (annual vehicle revenue hours)	Yes, use operating statistics reported to National Transit Database.	X	X							X	X	X		

### Performance Measures to Support Preferred Scenario

Performance Measure	Actual Metric	Methodology and Notes	Data Available?	BTPO GOALS					MAP-21 Factors							
				1-Multimodal, Safe, Active, Healthy	2 - Leverage Existing Infrastructure	3 - Reduce Costs thru Land Use	4 - Regional Econ Dev/ Local Industry	5 - Human and Natural Environ.	A - Economic Vitality	B - Safety	C - Security	D - Accessibility and Mobility	E - Environment	F - Integration and Connectivity	G - Management and Operation	H - Existing System Preservation
Walking Mode Split	% of residents that commute by foot	From Census Journey to Work data. Table for City of Pocatello: Percentage of Workers who Walked to Work in Small Cities: 2008-2012.	Yes, from ACS.	X				X				X		X		
Pedestrian Connectivity	% of non-interstate roadsides with pedestrian accommodation	(Total one-directional roadway miles with sidewalk) x 100 / (Total one-direction miles).	Yes, calculate in GIS.	X				X		X		X	X	X		
Bicycling Mode Split	% of residents that commute by bike	From Census Journey to Work data. Table for City of Pocatello: Percentage of Workers Who Commuted by Bicycle in Small Cities: 2008-2012.	Yes, from Census/ACS.	X				X				X		X		



### Public Involvement Performance Measures

Performance Measure	Actual Metric	Methodology and Notes	Data Available?	BTPO GOALS					MAP-21 Factors								
				1- Multimodal, Safe, Active, Healthy	2 - Leverage Existing Infrastructure	3 - Reduce Costs thru Land Use	4 - Regional Econ Dev/ Local Industry	5 - Human and Natural Environ.	A - Economic Vitality	B - Safety	C - Security	D - Accessibility and Mobility	E - Environment	F - Integration and Connectivity	G - Management and Operation	H - Existing System Preservation	
Citizen Participation Opportunities	Yes/No	Participation in planning activities identified in Unified Planning Work Program (UPWP), development of the MTP and Transportation Improvement Program (TIP) decision-making	Yes, from BTPO.	X				X									
Complete, Accurate and Timely Public Information	Yes/No	Assessed annually	Yes, from BTPO.	X				X									
Title VI Compliance	Yes/No	Assessed annually	Yes, from BTPO.	X				X									

## Chapter 5 Target Setting

A target-setting process for MPO performance measures is anticipated to unfold through a cooperative forum with ITD and Idaho's coalition of MPO's after federal performance measurement rules are adopted.

Targets should be attainable rather than aspirational. Target-setting best practices involve predicting the effect of a program of investments and assigning targets to match those anticipated effects. Based on BTPO's anticipated investment program described in Chapter 6, targets have been suggested in this MTP for several potential measures. However, any targets developed at this early stage are subject to refinement as Idaho's performance planning process matures. In some instances where the body of available research is not yet sufficient to correlate investments with predicted changes in system performance, target setting will need to be deferred pending future statewide discussions.

