

# ORTP 2035 Performance Measures Oahu Regional Transportation Plan 2035 Project

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Prepared for the  
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## Acronyms Used in this Document

OahuMPO	Oahu Metropolitan Planning Organization
ORTP	Oahu Regional Transportation Plan
TAC	Technical Advisory Committee

The performance measures of the Oahu Regional Transportation Plan (ORTP) are derived from the adopted ORTP 2035 Vision Statement, and Goals and Objectives. The Vision Statement states:

*In 2035, Oahu will be a place where we will have efficient, well-maintained, safe, secure, convenient, appropriate, and economical choices in getting from place to place. Our transportation system will move us and the goods we use in a manner that supports the island's high quality of life, natural beauty, economic vitality, and land use policies by supporting appropriate density development and avoiding urban sprawl. This system will promote energy conservation and economic sustainability as well as the protection of our ports of entry, preparation for emergency situations and changes in global climate patterns.*

To help achieve the vision, the ORTP 2035 is defined by five overarching goals that address the following topics:

- Transportation facilities
- Transportation operations and services
- Natural environment
- Human environment and quality of life
- Land use and transportation integration

To support the goals, 25 objectives were identified for the ORTP 2035. Appendix A provides a listing of the goals and objectives approved for the ORTP 2035.

Performance measures will be an essential part of the planning process. These 31 measures will be used to help determine how well candidate projects and programs proposed for inclusion in the ORTP 2035 address the plan's adopted goals and objectives. A more detailed explanation of the role and function of the performance measures in this project will be included in the technical memorandum associated with Task 9.1, *Scenario Evaluation Methodology*.

A number of the measures included in Section 2 below have been used in the development of previous versions of the ORTP. Building off of these existing measures, additional performance measures have been added to address new long range transportation planning requirements in the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users.

The performance measures were presented to the Technical Advisory Committee (TAC) of the OahuMPO on April 15, 2009, for discussion and approved at its meeting on May 21, 2009, for use during the ORTP 2035 update process.

<b>Performance Measure</b>	<b>Description</b>
<b>Transportation Facilities</b>	
1. Bicycle and Pedestrian Facilities	Compares the level of investment in new or improved non-motorized transportation elements as well as potential impacts to existing bicycle and pedestrian facilities, and assesses how the scenario affects continuity of and accessibility to the bicycle/pedestrian network.
2. Intermodal Freight Connections	Assesses the quality of connections between freight modes (highway, air and seaports) based on quality (suitable routes, design standards, conflicts, etc) and redundancy of connections.
3. Modal Conflicts	Assesses the candidate improvements' affect(s) on the potential for modal conflicts by assessing the negative effect(s) on other travel modes.
4. Mode Share	Measures the share (as a percentage) of person-trips carried by travel modes (e.g., single-occupant vehicle, high-occupant vehicle, transit, bicycle, pedestrian) based on travel demand model output.
5. Regional Transportation Linkages	Assesses whether the candidate improvements provide connections between regional transportation facilities or services.
6. Improved Accessibility to the Transportation System for Persons with Disabilities	Assesses the level of investment in the proposed project or program that support Americans with Disabilities Act Accessibility Guidelines.
<b>Transportation Operations and Services</b>	
7. Economic Vitality	Assesses the contribution of candidate improvements to the economic development and vitality of the region in terms of both job creation and reducing the costs associated with congestion.
8. Average Vehicle Occupancy	Measures the average number of occupants per automobile based on travel demand model output, excluding buses and commercial vehicles.
9. Condition and/or Life Span of Transportation Infrastructure	Assesses whether the candidate improvements improve the condition and/or life span of transportation infrastructure and the degree to which strategies balance resources for construction, rehabilitation, and maintenance.
10. Highway and Arterial Level of Service (LOS)	Measures (in lane-miles) and maps LOS for all major highway and arterial segments based on demand model Volume/Capacity ratios.
11. Historical Accident Risks	Assesses whether candidate improvements address existing high-accident locations and maps those locations based on compiled accident data for available modes.
12. Homeland Security, Personal Security, and All-Hazards Preparedness	Assesses whether candidate strategies are consistent with and support Homeland Security initiatives, personal security concerns, and all-hazards preparedness.

<b>Performance Measure</b>	<b>Description</b>
13. Operations Management Strategies	Assesses whether the candidate improvements effectively employ Intelligent Transportation System, Transportation Systems Management and/or Transportation Demand Management (TDM) techniques.
14. Screenline Person-Trips	Measures the person-trips (all modes) crossing study area screenlines based on travel demand model output.
15. Total Annual System Costs	Estimates annualized transportation costs (capital, operating and maintenance) over a predetermined span of time based on available cost information.
16. Transit Ridership	Measures number of transit patrons based on travel demand model output.
17. Travel Demand	Assesses the degree to which candidate improvements employ or support TDM techniques to reduce travel demand based on the potential to reduce vehicle trips.
18. Travel Times [Selected Origin-Destination (OD) Pairs]:	
- Auto	Measures and maps as travel time contours the average peak period travel time between key destinations based on travel demand model output.
- Freight	Measures and maps as travel time contours the average peak period travel time between key freight destinations based on travel demand model output.
- Public Transit	Measures and maps as travel time contours the average peak period travel time between key destinations on transit based on travel demand model output.
19. Vehicle Hours of Delay	Measures the total hours of delay (daily and peak period) experienced by all vehicles on the network based on travel demand model output. Delay is the difference between predicted travel times and travel time under free-flow (uncongested) conditions.
20. Vehicle Hours of Travel	Measures the total duration of trips by motorized vehicles (automobiles, buses, trucks) based on travel demand model output.
21. Vehicle Miles of Travel (VMT)	Measures the total length of trips by motorized vehicles (automobiles, buses, trucks) based on travel demand model output.
<b>Natural Environment</b>	
22. Natural Resource/Environment Effects	Assesses potential disruption or other impacts to natural areas such as animal habitats, open spaces, beaches, archeological sites, and forested areas/vegetation based on the mapped location of sensitive areas and potential footprint changes associated with proposed projects.
23. Reliance on Renewable	Assesses the degree to which candidate actions promote the

<b>Performance Measure</b>	<b>Description</b>
and Sustainable Energy Sources	use of renewable and sustainable energy sources for transportation (over non-renewable sources).
24. Susceptibility to Global Climate Change	Evaluates the effects of global climate change, including rising sea level, on transportation infrastructure.
<b>Human Environment and Quality of Life</b>	
25. Disruption during Construction	Assesses potential disruption to neighborhoods (access, mobility, noise, dust, etc.) during construction of candidate improvements based on degree of travel disruption, availability of suitable alternate routes, and proximity to sensitive neighborhoods.
26. Energy Consumption	Assesses whether candidate actions reduce energy consumption based on VMT, presumed fuel efficiency assumptions, and mix of fuel/power sources.
27. Air Quality	The State of Hawaii is in attainment for air quality. Assesses the level of greenhouse gas emissions as the result of proposed projects based on VMT, presumed fuel efficiency assumptions, and mix of fuel/power sources.
28. Title VI/Environmental Justice (T6/EJ) :	
- Accessibility	Compares share of people within T6/EJ and non-T6/EJ Traffic Analysis Zones (TAZs) who are within a 20-minute trip of selected work, shopping, education and healthcare destinations based on travel demand model output.
- Equity	Compares transportation funding allocations for T6/EJ and non-T6/EJ areas needs based on available cost information.
- Mobility	Compares travel times for work trips from T6/EJ and non-T6/EJ TAZs based on travel demand model output.
- Public Involvement and Outreach	Assesses concerns and issues of T6/EJ populations regarding transportation system performance and plan project selection based on feedback from focus groups, telephone surveys, and other public outreach initiatives. Assesses the degree to which outreach was done to T6/EJ populations.
<b>Land Use and Transportation Integration</b>	
29. Land Use Plans	Assesses whether the candidate improvements serve planned growth areas based on forecast population and employment growth.
30. Built Environment Effects	Assesses potential displacements of people and/or activities and structures to developed areas.
31. Compact, Mixed-Use Growth	Assesses the degree to which candidate actions would encourage land development that supports more efficient use of transportation services as a result of concentrated growth patterns, mix of uses, and/or development around public transportation facilities.



# ***Appendix A: ORTP 2035 Goals and Objectives***

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## **Transportation Facilities**

### *Goal*

Provide an inclusive, multi-modal transport system whose connectedness provides efficient means for users desiring to move about this island by bicycle, freight carrier, pedestrian facility, road, transit service, and intermodal connectors.

### *Objectives*

1. Develop, operate, and maintain alternative transportation facilities, including bikeways, walkways, and other accessible pedestrian, bicycle, and environmentally-friendly elements.
2. Enhance the integration and connectivity of the regional transportation system.
3. Provide efficient, convenient, and cost-effective transit service to Oahu's citizens.
4. Promote the intermodal efficiency of harbor terminal facilities, airport terminal facilities, and land transportation systems.
5. Provide rehabilitation, renewal, and modernization of facilities in sufficient magnitude to ensure system preservation and continued, effective operation.

## **II. Transportation Operations & Services**

### *Goal*

Develop, operate, and maintain Oahu's islandwide transportation system to ensure the efficient, dependable, safe, secure, convenient, and economical movement of people and goods.

### *Objectives*

1. Promote planning, design, operation, maintenance, and construction of transportation facilities and systems to support economic development and vitality.
2. Optimize transportation resources through Transportation Demand Management (TDM) strategies, including telecommuting solutions, to encouraging transit ridership and ridesharing, while reducing single-occupancy vehicle travel and auto dependency.
3. Encourage public-private partnerships in providing transportation services.
4. Monitor and enhance the performance and efficiency of Oahu's transportation system through the use of operation management strategies, such as Intelligent Transportation Systems (ITS), Transportation System Management (TSM), TDM, and the OahuMPO Congestion Management Process (CMP).
5. Ensure that Oahu's transportation system is planned, designed, constructed, maintained, and operated in an integrated and cost-effective manner.

6. Ensure user and community safety, and practical systems for the disabled by incorporating the priorities, programs, physical design and operation of transportation facilities, and other improvements, consistent with the *Hawaii Strategic Highway Safety Plan* and *Americans with Disabilities Act Accessibility Guidelines*.
7. Increase the peak-period, person-carrying capacities of Oahu's transportation network.
8. Reduce security risks associated with terrorism and other criminal acts, natural and man-made disasters, and other emergencies that would impact the transportation system.

### **III. Natural Environment**

#### *Goal*

Develop, operate, and maintain Oahu's transportation system in a manner that sustains environmental quality.

#### *Objectives*

1. Develop, operate, and maintain Oahu's transportation system to meet or exceed noise, air, and water quality standards set by Federal, State, and City agencies.
2. Maximize energy conservation in transportation and reduce greenhouse gas emissions.
3. Maintain and upgrade existing facilities and locate and design future transportation facilities in a manner that protects them from significant damage or disruption due to global climate change.
4. Preserve and enhance Oahu's cultural integrity, including archaeological and historic sites, and sensitive natural resources, including beaches, scenic beauty, and sea and mountain vistas.

### **IV. Human Environment and Quality of Life**

#### *Goal*

Develop, operate, and maintain Oahu's transportation system in a manner that supports community-wide values related to health, safety, and civil rights.

#### *Objectives*

1. Address and minimize the impacts of energy shortages, natural or man-made disasters, and other emergencies to the transportation system.
2. Encourage the development of sustainable and renewable energy sources for transportation.
3. Ensure that no person shall be excluded from participation in, be denied the benefits of, or be subjected to discrimination in transportation services as provided for under current Federal, State, and City legislation.

4. Maintain and upgrade existing facilities and design future transportation facilities in a manner that complies with local urban design policies and regulations.
5. Encourage innovation in planning, design, construction, operation, and maintenance of transportation services and facilities.
6. Minimize disruption to existing neighborhoods from construction and maintenance of the transportation system.

## **V. Land Use and Transportation Integration**

### *Goal*

Develop, operate, and maintain Oahu's transportation system in a manner that integrates effective land use and transportation with established sources of funding in a fair and equitable manner.

### *Objectives*

1. Develop, operate, and maintain the transportation system to support Oahu's planned population distribution and land use development policies expressed in the City's *General, Development, Sustainable Communities Plans*, and other adopted plans through coordinated efforts of both public and private sectors.
2. Support land use development policies, such as Transit-Oriented Development, that capitalize on the efficient use of the transportation system and reduce vehicular trip-making and vehicle miles traveled.