Hawaii Statewide Freight Plan

Overview

The State of Hawaii Department of Transportation (HDOT) completed a comprehensive study of its freight network and identified recommendations for improving the State's freight mobility. The study culminated in the development of the Hawaii Statewide Freight Plan (HSFP). The HSFP lays out a well-connected multimodal global freight transportation system that moves people and goods in a manner that supports and improves the state's economic vitality, natural beauty, and high quality of life.

The HSFP:

- Presents the existing freight transportation infrastructure and conditions in Hawaii.
- Describes the economic context of freight transportation planning in Hawaii, including freight trends, needs and issues.
- Discusses the stakeholder approach and decision-making process used to develop the HSFP.
- Presents a performance-based planning and programming approach that uses technical data to inform decision-making and outcomes.
- Identifies goals for freight movement, which fulfill the federal requirement for a statewide freight plan, and meets the national goals, and requirements of the 2015 Fixing America's Surface Transportation (FAST) Act.
- Presents an implementation strategy that supports the goals and objectives for the HSFP.
- Includes a fiscally constrained investment plan and describes how the State will implement the recommendations of the HSFP.

The HSFP builds on previous work completed by the HDOT, including the Hawaii Statewide Transportation Plan, Statewide and Regional Long-Range Land Transportation Plans, and other pertinent plans and studies that identify existing mobility conditions and issues for the state and major county road network. The HSFP provides an opportunity to improve the freight system, while recognizing the importance of providing a comprehensive transportation system that addresses all modes of transportation.

Integral to this plan was the formation and involvement of a Technical Advisory Committee (TAC) and a Freight Advisory Committee (FAC). The committees included freight industry stakeholders and technical staff of federal, state, and local agencies and jurisdictions with interest in the project. The representatives provided valuable input throughout the development of the HSFP.

The HSFP is a living document. The HDOT will continue to collaborate with the FAC and TAC, as needed, to re-evaluate, update and implement the HSFP.

Hawaii State Freight Plan Goals

Safety

Develop a State freight network that provides for the safety of people, infrastructure, and goods movement.

Infrastructure Preservation

Maintain and improve the state of good repair of the freight transportation system.

Infrastructure Mobility Improvements

Improve the multimodal freight infrastructure to provide mobility and connectivity for freight, and to support the needs of the local economy, including the tourism industry and military.

Reliable Freight Network

Create a reliable freight network that allows shippers and receivers to plan around predictable travel times.

Minimize Environmental Impacts

Minimize the environmental impacts of freight movement on the State freight network to surrounding communities and the natural environment.

Resiliency to Global Climate Change

Create and maintain resilient freight infrastructure able to withstand the effects of global climate change.

Importance of Freight to Hawaii

Freight mobility is critical to Hawaii's economic vitality and livability

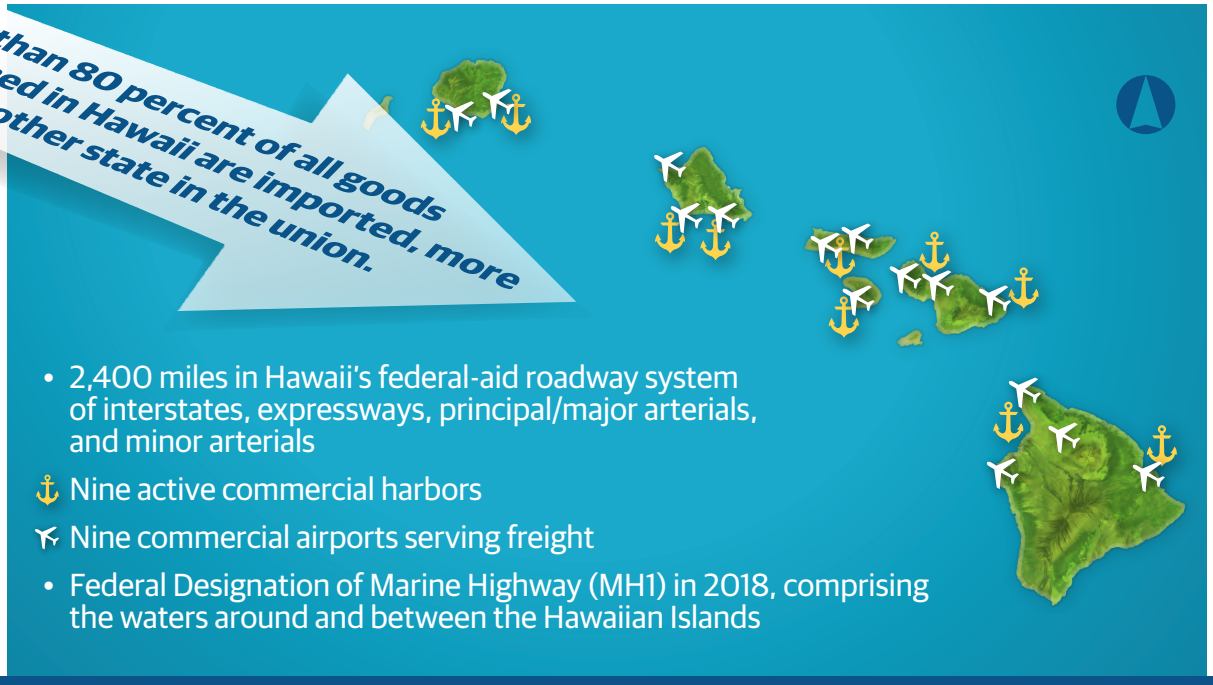
The Hawaiian Islands are home to more than 1.4 million people with the population expected to grow to 1.6 million by 2045 (DBEDT, 2018). Hawaii's incredible natural beauty also makes it one of the most visited places in the nation, drawing more than 8 million visitors each year. Because of its distant location and resource dependency, Hawaii is dependent on the transport of freight. Its people and its economy rely on an interconnected freight transportation network between the mainland, abroad, and between the islands themselves. Hawaii imports food, fuel, raw materials, and most consumer goods to maintain its current quality of life. This requires an extensive network of infrastructure, carriers, shippers, distribution centers, and warehouses to receive and store supplies and deliver products to customers.

Hawaii's freight network is also a major component of the state's economic success. Freight supports jobs in freight-dependent businesses such as the accommodation and food service sector, retail trade, and construction. The substantial percentage of employment and economic output in freight-related sectors reinforces the importance of the freight industry in supporting the state's economy.

Hawaii's Freight System

Millions of tons of goods are shipped through the state's multimodal transportation network, including highways, harbors, and airports. Most goods are delivered to Honolulu Harbor on Oahu and distributed throughout the state via the interisland short-sea and air freight cargo shipping system and each island's ground transportation network. Marine freight and truck freight comprise the primary mode of freight transport and are nearly equal at approximately 40% each. Marine freight accounts for 97% of the mode distribution for international freight.

More than 80 percent of all goods consumed in Hawaii are imported, more than any other state in the union.



- 2,400 miles in Hawaii's federal-aid roadway system of interstates, expressways, principal/major arterials, and minor arterials
- Nine active commercial harbors
- Nine commercial airports serving freight
- Federal Designation of Marine Highway (MH1) in 2018, comprising the waters around and between the Hawaiian Islands

The economic output of freight-related sectors in Hawaii in 2016 was **$23.4 billion** which is **32% of the state's overall economic activity.**

Road Network

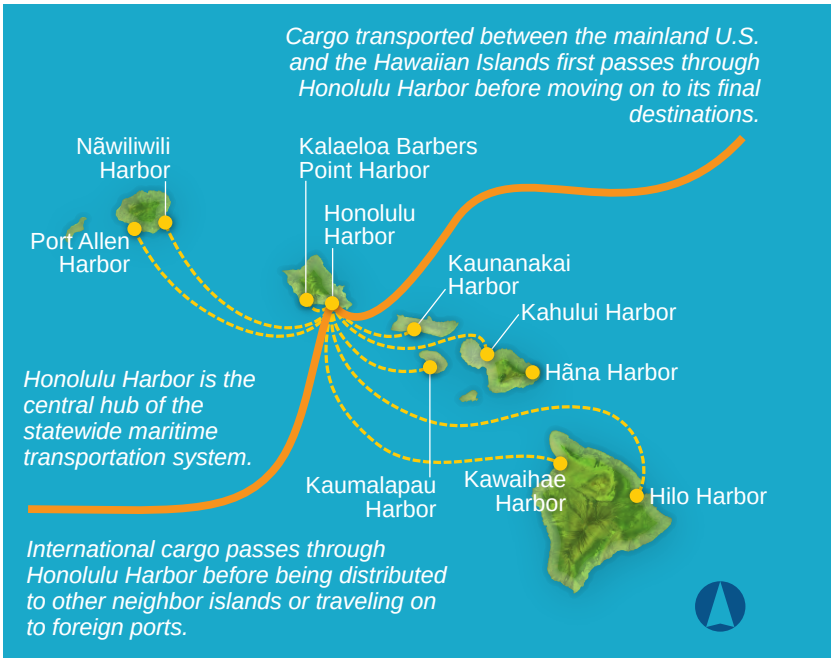
Unlike other parts of the U.S., the useable land area in Hawaii is very limited. Hawaii's islands are of volcanic origin, and as such, many of the islands feature one or more mountains or mountain ranges in the interior sections of the island, with flatter eroded topography along the coastline. This geography limits vehicular connectivity around and across the islands; most of the major roadways are constructed on the flatter coastline sections. Many of Hawaii's belt roadways carry a substantial amount of traffic and serve as the primary means to transport freight and goods. These roads are essential to the well-being of the communities they serve. Furthermore, in the event of an emergency, natural disaster, or other unplanned incident on the roadway system, there can be significant adverse effects to those communities.

With limited connectivity it becomes increasingly important for the existing freight network to be maintained and improved for the reliable and efficient distribution of goods.

As part of the development of the HSFP, the pavement, congestion, and safety conditions of the statewide highway segments with the highest truck volumes were analyzed. These are locations that are heavily used by trucks and are therefore important for the movement of goods on the highway system. The highest concentration is in the urban area of Honolulu, Oahu, most notably north and east of the port facilities on Sand Island. West Oahu has high truck volumes on H-1, H-2, and Fort Weaver Road. The Pearl City subregion also has a relatively high number of locations with high truck volumes because of the connecting roads between Central and West Oahu. On the Big Island, most of the top truck volume locations are on Highway 11 (also called Kanoelehua Avenue). On Kauai, the top truck volume roadways are Kaumualii Highway (Highway 50), Kuhio Highway (Highway 56), and Rice Street/Waapa Road (Highway 51). On Maui, the Honoapiilani Highway Bypass has the most frequent high truck volume locations.

Marine Freight

Hawaii's geographic isolation requires almost all imported goods to arrive via cargo vessel, making marine freight a lifeline of Hawaii. In 2016, there were approximately 21.1 million tons moved through Hawaii's harbors. Honolulu Harbor is the largest container port in Hawaii and serves as the hub of port traffic for the state, as it distributes inbound goods that are ultimately destined for other islands and assembles outbound shipments from other islands for shipping around the world. Kalaeloa Barbers Point Harbor is located on the western side of Oahu and has many specialized cargo-handling facilities not available in Honolulu Harbor. Combined, the two harbors handled 72% of the total short tons moved in the state in 2016. The remaining islands have limited port operations, with incoming and outgoing shipments by barge to/from Honolulu Harbor received only on certain days and times.



Freight-dependent sectors of the economy employ nearly 350,000 people, representing **38% of the total employment in Hawaii.**

Air Cargo

The air cargo industry is also an essential component of Hawaii's economy. The value of air cargo shipped in Hawaii was $19.8 billion in 2015. High-value products as well as perishable time-sensitive agricultural products and seafood are transported to and from the mainland and global destinations. In 2015, just over 715,000 tons of air cargo were transported in, out, and around Hawaii. 52% of these were inbound shipments, 35% were outbound shipments, and 13% were inter-island shipments. Daniel K. Inouye International Airport (Honolulu Airport) on Oahu is the largest airport in terms of air cargo, with over 400,000 tons carried each year. From a tonnage perspective, air cargo represents 1.6% of all goods shipped in Hawaii. However, from a value perspective, air cargo represents 19% of all goods shipped in Hawaii

Critical Urban and Rural Freight Corridors

An important component of the HSFP was to identify Critical Urban Freight Corridors and Critical Rural Freight Corridors, which are a part of the National Highway Freight Network (NHFN) and required by the FAST Act. Only projects on the NHFN are eligible for funding from the National Highway Freight Program and the new freight related discretionary grant program, Infrastructure for Rebuilding America (INFRA) grants. There are four components of NHFN: the Primary Highway Freight System (PHFS), other interstates not included in the PHFS, critical urban freight corridors, and critical rural freight corridors.

The HDOT worked with the FAC and TAC to identify Critical Urban Freight Corridors and Critical Rural Freight Corridors in Hawaii. Table 1 shows the breakdown of the NHFN, as well as additional Hawaii freight corridors important to the State. The additional Hawaii freight corridors were identified by selecting roads with higher truck volumes that are not already designated on the NHFN—specifically, roads in urban areas with greater than 500 annual average daily traffic (AADTT) and roads in rural areas with greater than 100 AADTT. Additional road segments were included if they helped to create a continuous freight network. However as many of these roads are under the jurisdiction of the Counties and Cities, HDOT Highways Division acknowledges that these jurisdictions have specific freight street classification systems, and HDOT is committed to working with them in maintaining and improving a continuous freight network. The complete roadway listing of the NHFN and the Hawaii Freight Network is provided in Appendix D of the HSFP.

Table 1. HDOT National Highway Freight Network

Designation	Lane Miles				
	Hawaii	Kauai	Maui	Oahu	**Total**
Primary Highway Freight System	111	17	58	90	**277**
Critical Rural Freight Corridors	122	4	4	19	**150**
Critical Urban Freight Corridors	0	0	4	71	**75**
National Highway Freight Network	234	21	67	180	**501**
Hawaii Freight Network	63	90	71	185	**409**

Most of Hawaii's important freight corridors experience significant congestion. These include major corridors such as Lunalilo Freeway and Nimitz Highway, whose actual morning peak speed is about half of the speed limit.

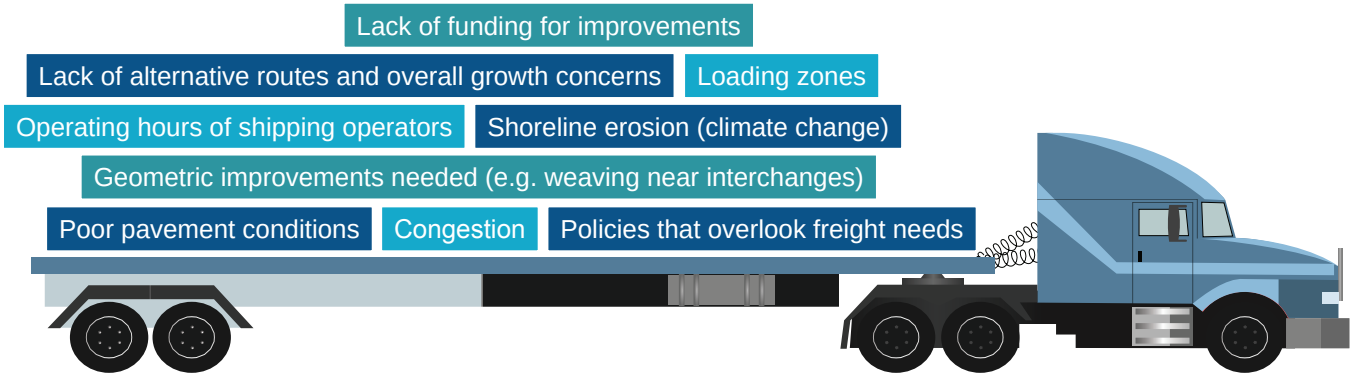
Intermodal Transfers and Connectors

Intermodal connectors, also known as first-mile connectors, join the main highways with the ports and airports. It is critical that these routes perform well because they are a necessary component of the supply chain—their poor performance can lead to congestion and delays that affect the rest of the supply chain. The HSFP identifies ten intermodal connectors leading to six harbors and five roadway connectors leading to four airports (see Section 3 of the HSFP). There are also several roadways identified as connectors as part of the NHS connector system. The NHS intermodal connector system is an acknowledgement that many mile connectors are local roads but have national significance.

Freight Needs and Issues

Most of Hawaii's transportation infrastructure was constructed many years ago and the cost to maintain the system continues to increase and the demands on the system continue to grow. This, combined with a lack of funding, makes improving the freight network a significant challenge. In addition, many of the freight corridors experience congestion and an extreme amount of variability in travel times for trucks. This lack of reliability is a critical operational issue for shippers and truck fleet operators and the receivers.

The following themes and freight issues for the state were identified through the HSFP technical analysis, stakeholder outreach, and from previous studies.The issues identified were generally consistent throughout all the islands



Strategies and Recommendations for Meeting Our Goals

Hawaii must find a way to make strategic investments in its freight network that are necessary to support economic growth and survival while ensuring that environmental concerns are also given appropriate consideration. To this end, the HSFP proposes three broad-based improvement strategies for addressing freight transportation challenges in Hawaii:

- Policies – Broad policy recommendations to help transform the way freight planning is considered and approached in Hawaii.
- Programs – Use and enhance existing programs or establish new initiatives that can be undertaken to achieve and support the policies.
- Projects – Complete specific infrastructure projects that support the policies and improve freight movement along the Hawaii Freight Network.

Within each improvement strategy are specific recommendations that support one or more of the freight goals established in the HSFP.

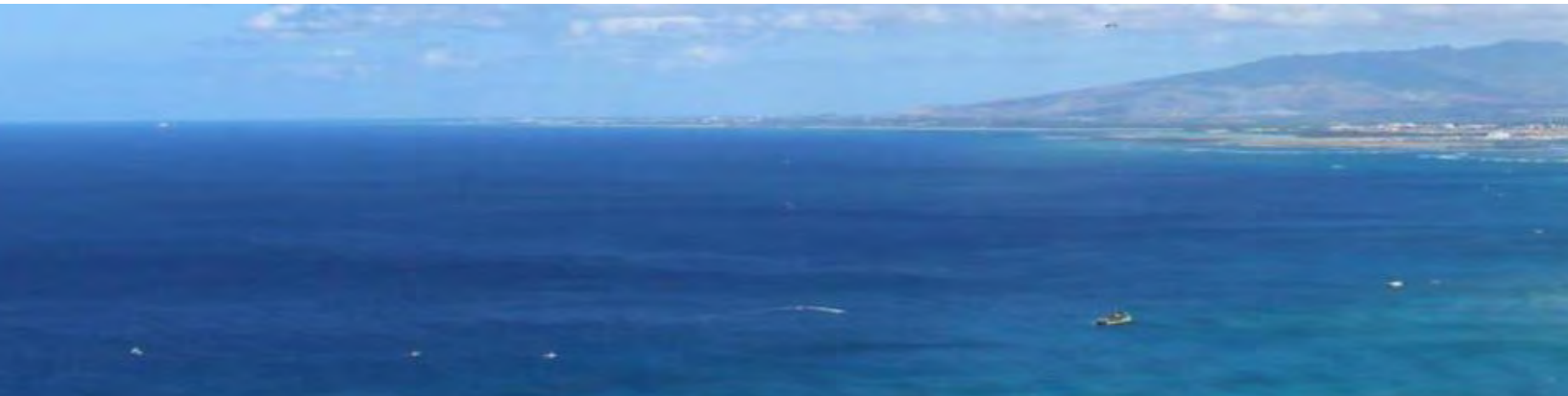
Policy Recommendations

The HSFP policy and program recommendations provide an overall framework for addressing freight transportation needs and issues and guide transportation investment decision-making. The adoption and implementation of these policies will endorse the HDOT's mission to provide a safe, **efficient, accessible, and sustainable** inter-modal transportation system that ensures the mobility of people and goods and enhances and/or preserves economic prosperity and the quality of life.

CATEGORIES	RECOMMENDED POLICY
Hawaii Freight Network Designation and Investment	Prioritize investments located on Hawaii's Freight Network
Safety of the Hawaii Freight Network	Prioritize freight investments that improve safety for all users
Freight Transportation Asset Management	Invest in preservation and renewal of Hawaii's highway system at the levels required to sustain good condition and performance
Freight Network Design Guidelines and Implementation	Evaluate design standards for freight vehicles to facilitate the safe and efficient movement of goods and people
Freight Transportation, Land Use, and Economic Development Integration Initiative	Fully integrate freight transportation with land use and economic development planning
Freight Movement Public Education and Awareness	Promote public education on the importance of freight movement, and trucker education of the importance on adhering to regulatory requirements
Freight Capacity Growth	*Capacity needs on the Hawaii Freight Network will be prioritized as part of the HDOT Capacity Program
Freight Technology-Based Solutions	Actively identify, develop, and deploy technologies that improve the safety and efficiency of freight movement
Rural Connectivity	Develop an equitable project prioritization process that recognizes the importance of rural connectivity
Intermodal Connections	Create efficient intermodal connections through strategic investments and partnerships between responsible agencies and private operators
Freight Connections	Explore opportunities to improve the last-mile connection and efficiencies when delivering or distributing goods to their destination
Climate Change and Resiliency: • Create a resilient freight network • Reduce Hawaii's carbon footprint	Support the deployment of technologies that improve the fuel-efficiency of commercial vehicles and provide better mode-choice and integration to encourage the most sustainable freight transportation options.
Prioritized Project Recommendations	Deliver priority freight projects in support of the goals of the HSFP

Implementing the Plan

One of the driving factors for the HSFP is providing a path forward for solutions that are both effective and implementable. This includes identifying projects that will best meet the goals of the HSFP, determining how to pay for the projects to be implemented, tracking the projects' ability to meet the HSFP goals, collaborating with affected jurisdictions and agencies to meet common goals, and periodically assessing the HSFP for its effectiveness and updating it as needed.



Prioritizing Projects

A key element of the HSFP included developing a comprehensive list of potential projects based on the needs identified during the study process. The list of projects was developed from previous studies, long-range needs, stakeholder outreach, and technical analysis of data. The projects were evaluated through a detailed screening process, with the purpose of narrowing down a reasonable and feasible range of projects that best meet the purpose, goals, and objectives of the HSFP. The evaluation process helped show the benefits of the different individual project recommendations.

Based on the screening process, the HSFP includes a list of prioritized improvement projects that will feed directly into the HDOT's Mid-Range Transportation Plan. While the recommendations presented as part of the HSFP are specifically geared to the HSFP, many potential projects identified are also important to achieving other goals for the HDOT and the community.

The top fifteen results of the project prioritization process are presented below. The complete listing of projects for each island is included in Appendix E of the HSFP.

Table 2. Top 15 Results of Project Prioritization

Route #	Project Title	Program	
		Safety	Capacity
H-1 EB	H-1, Reconstruction and Repair, Eastbound, Waimalu Interchange to Halawa	✓	✓
200	Saddle Road - existing terminus to West Puainako Street/Iwalani Street intersection	✓	✓
H-1	Waiawa IC Ramp Braid	✓	
H-1 EB	H-1 Eastbound Widening: Ola Lane to Vineyard Boulevard	✓	✓
92	Nimitz/Sand Island Access Rd. Grade Separation/IC	✓	✓
H-1	H-1 and H-2, Operational Improvements, Waiawa Interchange	✓	
H-1 EB	H-1, Waiawa Interchange to Halawa Interchange, Widening, Eastbound	✓	✓
H-1 WB	H-1 Westbound; Waiawa IC	✓	
H-1 EB	Braid Ramps on H-1 between Pali Hwy. and Kīnau St.	✓	
1100	Kuakini Highway - Henry Street to Kamehameha III Road		✓
1370	Kalanianaole Avenue - Kanoelehua Avenue to Hilo Harbor		✓
56	Kuhio Highway - Kapule Highway to Mailihuna Road		✓
30	Honoapiilani Highway - Wailuku to Maalaea		✓
32	Kaahumanu Avenue		✓
H-1	Ft. Weaver Ramp Modification	✓	✓

Project Funding

There is a significant gap between the funding needed to implement the HSFP recommendations and the funding available through federal and state sources. In fact, the statewide funding **gap identified in the Statewide Federal-**Aid Highways 2035 Transportation Plan is over $23 billion. This gap is expected to grow with more demands on the system and the increasing difficulty in generating revenue from existing and new sources. The National Highway Freight Program (NHFP) for the State of Hawaii will receive $27 million to be used between Fiscal Year 2016 – 2020. With the anticipated funding gap, it is even more important to prioritize freight

projects within the HDOT's current programs as much as possible. The State Transportation Improvement Plan includes the following high priority projects that address the freight goals and objectives of the HSFP.

The following projects are in construction or are shovel-ready and will receive the NHFP funds for FY 2016-2020. The rest of the funding for these three HSFP prioritized projects will be obtained through other federal programs and state funds.

- H-1 Eastbound Reconstruction and Shoulder Improvements, Waimalu Interchange to Halawa
- H-1 Kapolei Interchange Complex (Phase 2)
- Pali Highway Resurfacing

Conducting Performance Based Investment

Performance-based planning and programming is a strategic approach that uses performance data to inform decision-making and outcomes. Shortfalls in available funding will continue to be a key factor in planning and prioritizing future transportation investments. The HSFP recognizes the need to make hard investment decisions and includes a performance-based process that will objectively guide future investment decisions. The process will assess the condition, performance, effectiveness, and progress of the HSFP at a state, regional, and national level.

Partnering and Planning

Effective planning requires the coordination of numerous public and private entities; not all the recommendations suggested in the HSFP will be under the jurisdiction of the HDOT Highways Division. The implementation of many of the recommendations is everyone's responsibility. Other federal and state agencies, Metropolitan Planning Organizations, Cities and Counties, and private-sector entities, such as trucking and shipping operators will have to participate. The HSFP encourages continued collaboration of the FAC and partnership between agencies and stakeholders for the successful implementation of the HSFP.