

7 | INFRASTRUCTURE AND UTILITIES

7.1 WATER

A. EXISTING CONDITIONS

Lānaʻi has only one aquifer that is divided into two sub-aquifers: Leeward and Windward. Each has a sustainable yield of three million gallons per day (MGD), for a total island sustainable yield of six MGD. As of 2013, metered pumpage totaled approximately 1.8 MGD. Although the 1.8 MGD represents approximately 30 percent of the total sustainable yield, most of the 1.8 MG comes from the Leeward sub-aquifer. Hydrologists have cautioned against this practice and instead recommend increased redundancy by spreading the pumpage throughout both sub-aquifers. The Mānele PD uses approximately 1.0 MGD, or about 66 percent, of the total water used.¹⁹

The Lānaʻi CPAC predicated their decisions on the availability of significant additional water sources for future development proposals.

B. LĀNAʻI WATER ADVISORY COMMITTEE.

The Lānaʻi Water Advisory Committee (LWAC) was established pursuant to Resolution No. 05 (1999) of the County of Maui Board of Water Supply (BWS) with the purpose and intent “to provide public input and involvement during the development of the Lānaʻi Water Use and Development Plan (WUDP) and to monitor the Lānaʻi WUDP implementation.” The WUDP was adopted by Ordinance 3885 (2011). Under the BWS resolution, LWAC was to “remain in existence until otherwise determined by the Board by subsequent resolution.” As a result of a Charter amendment in 2002, the County Council has authority to determine the existence, duties, and authority of LWAC. To date, the County Council has not acted to replace, supersede, or modify the BWS resolution. In 2012, a bill to reestablish the LWAC as advisory to the Lānaʻi Planning Commission was considered by the County Council, but recommitted to the Water Resources Committee, where it remains pending.

B. ISSUES AND STRATEGIES

Issue 1: **Degradation of the Lānaʻihale forest ecosystem is likely to adversely affect groundwater recharge and decrease the sustainable yield of the aquifer.**

Issue 2: **Overpumping of any well can alter the quality and production of the well. In addition, water quality can be negatively affected by nonpoint source pollutants that infiltrate the aquifer through the ground.**

¹⁹ Lānaʻi Island Water Use & Development Plan, Ordinance 3885 (2011).

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Strategies 1 and 2: Protect the Lāna`ihale watershed, groundwater, and aquifers through: 1) programmatic measures, 2) Federal, State, and County regulatory requirements and 3) community involvement and education. Clearly identify recharge areas that are highly susceptible to pollution.

Issue 3: Much of the original water infrastructure from the 1920s – 1950s has not been significantly improved, resulting in water loss that is higher than industry-accepted standards.

Strategy 3: Although the water purveyor has decreased leakage over the past few years, continued leak detection and remediation are essential to conserving water resources. Continue the LWC's leak detection program and identify areas of needed repair and program improvement.

Issue 4: Lāna`i's water resources will be insufficient as development in Kō`ele and Mānele and the expansion of Lāna`i City increase the island's water demands.

Strategy 4: Continued conservation and water efficiency measures are needed to address water demand.

Issue 5: Based on the WUDP, build-out of the island requires existing groundwater source to be supplemented by alternative sources that are not from the Lāna`i high-level aquifer system.

Strategy 5: Continue the development of alternative water sources, such as desalination. Continue planning and design to direct the development of an alternative water source that will be used to supplement the existing high-level aquifer water source.

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C. GOAL, ISSUES, STRATEGIES

Goal **Lāna`i will have a sufficient supply of potable and non-potable water provided in an environmentally sustainable and cost-effective manner.**

Policies

1. Improve the long-term efficiency, reliability, and capacity of the island's water infrastructure.
2. Work with CWRM, landowner(s), and LWAC or a committee of Lāna`i residents sanctioned by the County, to ensure that water resource management is based on BMPs.
3. Support the implementation and monitoring of the WUDP by LWAC, or a committee of Lāna`i residents sanctioned by the County, in collaboration with the water purveyor and regulatory agencies that have responsibility over Lāna`i's water.
4. Support the provisions under "Land Use Entitlements" of the WUDP by deferring additional or incremental discretionary entitlements pending careful consideration of the adequacy of long-term water supply sources and infrastructure.
5. Protect the long-term health of the Lāna`ihale watershed for groundwater recharge.
6. Encourage and improve data exchange and coordination among Federal, State, County, LWAC or a committee of Lāna`i residents sanctioned by the County, and private land use planning and water resource management agencies.
7. Ensure the repair, replacement, or removal of aging, damaged, and leaking water infrastructure occurs in an efficient and timely manner.
8. Encourage water conservation through demand-side management measures by using education, incentives, and regulations.
9. Support the planning, design, and development of an alternative water source that will supplement the existing high-level aquifer while protecting the integrity of the high-level aquifer.
10. Support the use of recycled water for irrigation and prohibit the use of potable water for golf course irrigation.
11. Support the development, adoption, and implementation of a wellhead protection strategy and ordinance for potable water distribution systems.
12. Discourage the removal of plant material necessary for water recharge. Plant material necessary for water recharge should not be used as a source of landscape planting materials.

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Actions

Table 7.2 Infrastructure – Water Actions				
No.	Action	Policy No.	Lead Entity	Partners
7.01	Update the WUDP demand analysis to account for new growth areas. Monitor and implement the updated WUDP.	3, 4	Pūlama Lāna`i*	CWRM LWC LWAC DLNR NGOs
7.02	Develop and implement a comprehensive watershed protection plan that would plant more trees and foliage on Lāna`ihale and other areas to maximize fog drip and recharge the aquifer.	3, 5	Pūlama Lāna`i	CWRM DLNR NOAA USFWS LFWP LWAC NGOs
7.03	Develop and continue to support public and quasi-public partnerships to protect and restore the island's watershed and maximize aquifer recharge.	2, 5, 6	Pūlama Lāna`i	CWRM LWC LFWP LWAC DLNR NGOs
7.04	Evaluate the status of available water resources on the island, if CWRM identifies major flaws in the monthly water status reports.	1, 3	Pūlama Lāna`i	CWRM LWC LWAC NGOs
7.05	Develop and implement a water rate structure that encourages conservation.	1, 8	Pūlama Lāna`i	CWRM LWC
7.06	Continue to improve landscape planting and irrigation guidelines that encourage drought-tolerant plants and water-conserving irrigation systems.	1, 8, 10	Pūlama Lāna`i	LWC LWAC NGOs
7.07	Continue to implement leak detection and repair programs.	1, 7	Pūlama Lāna`i	LWC
*Hereafter, references to Pūlama Lāna`i in the Action tables will include Lāna`i Resorts, LLC, and its relevant successors and assigns.				

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Table 7.2 Infrastructure – Water Actions				
No.	Action	Policy No.	Lead Agency	Partners
7.08	Cover the 15 MG brackish reservoir to reduce evaporation by the end of June 2017.	1, 3, 7	Pūlama Lāna`i	LWC
7.09	Implement demand-side water conservation management through education, initiatives, and regulations.	8	Pūlama Lāna`i	LWC LWAC NGOs
7.10	Continue planning, exploring, testing, and developing alternative water resources, such as a desalination plant.	9	Pūlama Lāna`i	LWC LWAC NGOs
7.11	Prohibit the use of high-level aquifer water for golf course irrigation purposes, consistent with the Water Use and Development Plan for Lāna`i and as provided for by law.	10	Pūlama Lāna`i	LWC LWAC NGOs

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7.2 WASTEWATER

A. EXISTING CONDITIONS

Wastewater collection and treatment is managed on Lāna`i by both the DEM's Wastewater Reclamation Division, and Pūlama Lāna`i. The majority of wastewater generated in Lāna`i City and the Kō`ele PD is conveyed through gravity pipelines to the County-owned and operated WWTF. There are, however, a few subdivisions in Lāna`i City that require a small pump station. These pump stations are owned and operated by Pūlama Lāna`i. The treated effluent from the County WWTF then flows to the Pūlama Lāna`i Auxiliary WWTF where the wastewater is further treated (recycled) to meet the R-1 water standard. Recycled water is stored in a 10 MG reservoir and eventually pumped to the Experience at Kō`ele golf course and used for irrigation purposes.

The County WWTF has a design capacity of 500,000 gallons per day (GPD). In 2012, the facility processed approximately 302,000 GPD of wastewater, or 60 percent of capacity. In 2009, the County performed an inspection of the high capacity sewer pipes with higher failure potential. The inspection revealed that the sewer collection system was mostly in satisfactory condition. The Pūlama Lāna`i Auxiliary WWTF in Lāna`i City has a design capacity of 400,000 GPD and current wastewater flow is approximately 245,000 GPD, or 61 percent of capacity.

Pūlama Lāna`i owns and operates the Mānele WWTF that services the Four Seasons Resort at Mānele Bay, the MSBH, and the Mānele PD. This treatment facility has a design capacity of 140,000 GPD and current flow is 77,281 GPD, or 55 percent of capacity. Wastewater is processed into R-1 water and used to irrigate the Challenge at Mānele golf course.

There are no major injection wells on Lāna`i. Some properties in Lāna`i City, above Hotel Lāna`i and below the new houses at Kō`ele, are served by individual wastewater systems.

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B. ISSUES AND STRATEGIES

Issue 1: If actual growth exceeds 2030 projections, the Lānaʻi City WWTF will have insufficient wastewater treatment capacity in the near future.

Strategy 1: Monitor growth on the island and prepare a facilities plan when seventy-five percent of capacity of the WWTFs is reached, pursuant to DOH guidelines. Relocate the WWTFs, if necessary.

Issue 2: Wastewater treatment plants are expensive to build and expand.

Strategy 2: Explore options for wastewater treatment system technologies that will minimize cost and energy use, while limiting odor generation. Maximize recycled water by treating all wastewater to the R-1 water standard.

Issue 3: Lānaʻi's limited resource of potable water is being used for purposes that do not require potable water, such as flushing toilets and home garden irrigation.

Strategy 3A: Explore options for permitting use of non-potable water (brackish water or household graywater) for flushing household toilets and home garden irrigation, provided any system meets County and State safety standards.

Strategy 3B: Promote the conservation of potable water by residents, hotels, and golf courses.

C. GOAL, POLICIES, ACTIONS

GOAL An efficient, effective, and environmentally sound wastewater system that meets the population's needs.

Policies

1. Provide a sustainable and sufficient level of wastewater service that complies with environmental regulations.
2. Improve and upgrade Lānaʻi's existing wastewater collection, treatment, and reuse facilities when warranted, consistent with current and future plans, and the County's capital improvement projects schedule.

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3. Encourage a water conservation ethic that supports wastewater reclamation, utilization of alternative resources, conservation, and reuse technologies. Wastewater treatment to the R-1 water standard will continue to be used regardless of the addition of water resources from desalination.

Actions

No.	Action	Policy No.	Lead County Agency	Partners
7.12	Coordinate with the landowner to develop a comprehensive wastewater functional plan for Lāna`i that addresses the long-term goals for maintenance and upgrading of facilities.	1	DEM	Lāna`i Utilities Pūlama Lāna`i
7.13	Maintain an ongoing sewer inspection program for public and private multi-user systems to identify potential problems and forecast each system's residual life.	1	DEM	Lāna`i Utilities Pūlama Lāna`i
7.14	Coordinate with the landowner to regularly update and implement the County's wastewater reuse plans.	1	DEM	Lāna`i Utilities Pūlama Lāna`i
7.15	Work with the State to develop code and regulation changes to allow graywater reuse systems for home garden irrigation and toilet flushing as long as the system meets County and State safety standards. Provide educational materials to encourage residential use.	1, 2, 3	DPW (Development Services Administration (DSA)) DEM	DOH
7.16	Study options for using biological sanitation treatment systems.	1	DEM	Lāna`i Utilities Pūlama Lāna`i
7.17	Relocate the Lāna`i City WWTF if necessary because of the Lāna`i City Expansion.	2	DEM	Lāna`i Utilities Pūlama Lāna`i

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7.3 SOLID WASTE

A. EXISTING CONDITIONS²⁰

The existing County landfill occupies about 20 acres of a 36-acre parcel and is located four miles south of Lānaʻi City, between Kaumālapaʻu Highway and the Kalamaiki Gulch at an elevation of about 850-1,020 feet. The landfill has been operating since 1969. As a small landfill in an arid area, it was developed without a liner and leachate collection and removal. County employees divert both inert material and green waste from the materials brought to the landfill. The green waste is collected in a dedicated area where its volume is reduced before it is used for slope stabilization.

The landfill receives about 14 tons of solid waste per day and is forecasted to reach capacity by 2029. The DEM updated its Integrated Solid Waste Management Plan in 2007-2009 which assessed options for expanding the landfill or shipping solid waste off island in containers.

Private haulers bring 64 percent, County crews 19 percent, and self-haulers 17 percent of the waste to the landfill. County crews collect waste from 640 homes, out of the 1,300 homes on the island. For the past four years, the Community Work Day Program and DEM's Abandoned Vehicles Office have held three to four collection events each year for scrap metal, white goods (refrigerators, stoves, freezers, washing machines, etc.), tires, and batteries at the Lānaʻi recycling center.

The pilot recycling center, located behind Pūlama Lānaʻi's central services offices in Lānaʻi City, will be moving to Miki Basin at a future date.

B. ISSUES AND STRATEGIES

Issue 1: Too much solid waste is being sent to the landfill.

Strategy 1A: Improve solid waste diversion by encouraging increased recycling, reuse, and reduction.

Strategy 1B: Expand recycling facilities and programs.

Issue 2: The landfill is nearing capacity; the estimated lifespan is now fourteen years from 2016 to 2029.

²⁰ Information in this section is from the County's *Integrated Solid Waste Management Plan, February 17, 2009*.

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Strategy 2: Implement the recommendations of the County's Integrated Solid Waste Management Plan, including assessing options to either expand the landfill utilizing alternative technologies that would extend its life, or shipping solid waste off island.

Issue 3: **There are no facilities for scrapping vehicles, machinery, metal, household hazardous waste, white goods, and bulky goods.**

Strategy 3: Continue to develop periodic events for the collection of specialty waste materials and provide pick up by appointment for bulky waste and white goods, with storage until collection event.

C. GOAL, POLICIES, AND ACTIONS

GOAL **Efficient, environmentally sound, and comprehensive solid waste management that aids residents and businesses on Lāna`i to effectively reduce, reuse, and recycle as much as possible.**

Policies

1. Reduce the amount of solid waste that is sent to the landfill through effective waste reduction and recycling programs.
2. Support cost effective, environmentally sustainable solutions to the landfill, which is reaching its capacity.
3. Support implementation of the County's Integrated Solid Waste Management Plan.
4. Support increased recycling by commercial and residential customers, including bulky, hazardous, and metal waste materials.
5. Support the development of an efficient and cost effective mechanism to deal with obsolete and abandoned vehicles, machinery, and appliances.
6. Explore options for creating energy from waste.
7. Ensure that all solid waste and recycling facilities are landscaped and well maintained.
8. Ensure that leachate from landfill sites, either expanded or new, does not degrade soil or pollute ground, surface, or coastal waters.

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Actions

Table 7.4 Infrastructure – Solid Waste Actions				
No.	Action	Policy No.	Lead County Agency	Partners
7.18	Provide information on what can be recycled, where facilities are located, and when facilities are operated (hours and days). Develop and distribute educational materials to residents and businesses to encourage reduction, reuse, and recycling efforts. Expand recycling options.	1	DEM	Pūlama Lāna`i
7.19	Develop a cost-effective, environmentally sustainable solution to the landfill, which is nearing capacity.	2, 3, 4	DEM	Pūlama Lāna`i
7.20	Conduct an educational program to discourage residents and tourists from dumping garbage, cars, and machinery in remote locations and locations other than the landfill or appropriate recycling sites.	4, 5	DEM	Pūlama Lāna`i
7.21	Develop regular programs for collection of hazardous, bulky, and metal waste, including vehicles, machinery, and appliances.	4, 5	DEM	Pūlama Lāna`i
7.22	Study options for waste-to-energy through different technologies, such as small, ultra-high temperature incinerators.	6	DEM	Pūlama Lāna`i
7.23	Provide funding to DEM's Solid Waste Division for the proper landscaping and maintenance of solid waste facilities and surrounding environment, including leachate management.	7	Department of Finance DEM	Pūlama Lāna`i

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7.4 ENERGY

A. EXISTING CONDITIONS

According to Hawaiian Electric Company, Inc. (HECO), the cost to produce power in Hawai'i is higher than on the U.S. mainland for the following reasons: 1) Hawai'i's power systems are designed to include back-up emergency infrastructure facilities needed to address emergency situations; 2) there are no economies of scale in Hawai'i's market due to the relatively small population base; 3) the use of imported crude oil needed to fuel the power generators makes Hawai'i vulnerable to global crude oil price fluctuations; and 4) being an island state, other raw materials that might be used to power the plants are unavailable. In 2013, the average residential rate was 46.61 cents per kilowatt hour on Lāna`i, 46.13 cents per kilowatt hour on Moloka`i, and 38.71 cents per kilowatt hour on Maui. Business rates were also highest on Lāna`i, except that the small power user rate was highest on Moloka`i.

The power plant and associated power distribution components on Lāna`i are owned and operated by MECO, a subsidiary of HECO. The majority of the electrical loads are attributed to the large resorts (the Lodge at Kō`ele and Mānele Bay), the water well pumps, and Lāna`i City. Power production capacity on Lāna`i is approximately 10.4 megawatts (MW), with two 2.2 MW diesel generators that typically run in a master-slave configuration, and six 1.0 MW diesel powered generators that operate during peak power demand times. In 2008, the former majority landowner installed a 1.2 MW solar PV farm. The PV facility was purchased by Pūlama Lāna`i as part of the island purchase agreement. The average daily electrical load on Lāna`i is approximately 4.5 MW; with an average peak load of approximately 5.4 MW and a minimum load of 2.1 MW.

Since 2008, the State has supported the Hawai'i Clean Energy Initiative, which calls for 70 percent clean energy by 2030, with 40 percent coming from renewable energy and 30 percent coming from energy efficiency. This support, along with Pūlama Lāna`i's stated goal to develop Lāna`i as a model of island sustainability, will require changes in how electricity is generated and distributed on the island, while creating the impetus for conservation and improvements in efficiency, and decreasing the reliance on petroleum-to-fuel vehicles. New technologies, such as smart grid and smart meter systems, should be explored along with additional sources of renewable energy generation.

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B. ISSUES AND STRATEGIES

Issue 1: Lāna`i has the highest electricity rates in the state.

Strategy 1A: Work with MECO and PUC Consumer Advocate to find ways to reduce electricity rates for Lāna`i.

Strategy 1B: Promote conservation and reduction of power usage by residential, commercial, and resort consumers.

Strategy 1C: Explore technologies, and the integration of information technologies and mechanisms, that would improve the efficiency and reliability of the electrical grid.

Issue 2: Ninety percent of Lāna`i's electricity is produced by petroleum.

Strategy 2A: Work with MECO and the major landowner to develop appropriate electrical generation from renewable sources.

Strategy 2B: Encourage homeowners to install solar hot water and solar PV panels.

Issue 3: Fuel for vehicles is expensive and requires importation to the Island.

Strategy 3A: Increase the use of electric vehicles on the island.

Strategy 3B: Provide charging stations, fed by renewable power sources, in multiple locations around the island.

C. GOAL, POLICIES, AND ACTIONS

GOAL Increase the proportion of electricity that is generated from renewable sources to reduce electricity costs and Lāna`i's dependence on fossil fuels.

Policies

1. Support the increased use of renewable energy sources.

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2. Maintain and support consumer incentives to promote the installation of renewable energy systems.
3. Promote energy conservation and awareness programs, including the use of compact fluorescent lights (CFL), solar hot water, and conservation behaviors.
4. Promote the use of electric vehicles charged via renewable energy.
5. Support research and investigation into alternative sources of fuel that could be grown or produced on the island, such as biofuels or biomass.
6. Ensure main utility transmission lines are robust and resilient enough to withstand hurricane force winds.
7. Promote the placement of utilities underground in new areas of development and in existing areas, where possible.

Actions

No.	Action	Policy No.	Lead County Agency	Partners
7.24	Create a smart grid that would allow for integration of additional renewable energy sources.	1, 2	OED (Energy Commissioner)	Pūlama Lāna`i MECO
7.25	Install charging stations powered by renewable energy to support the use of electric vehicles on the island.	2, 4	OED (Energy Commissioner)	Pūlama Lāna`i MECO
7.26	Install steel poles for primary utility transmission lines during new or replacement projects.	6	Department of Planning Mayor's Office	Pūlama Lāna`i MECO
7.27	Explore options for growing, manufacturing, and producing biodiesel, biomass, and other biofuel sources.	5	OED (Energy Commissioner)	Pūlama Lāna`i MECO

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7.5 TRANSPORTATION

A. INTRODUCTION

As a small island, Lāna`i relies heavily on its transportation systems – air and sea – to deliver people, goods, and services to the island. Most of Lāna`i's consumable goods are transported to the island via barge, making the cost of most items more expensive than on Maui or on O`ahu. Tourism, Lāna`i's major industry, relies on stable and consistent plane and ferry service to ensure a sufficient flow of tourists.

Existing Conditions

Sea

Young Brothers' barge service between O`ahu and Lāna`i occurs once a week on Wednesday. Expeditions' passenger ferry offers five daily round trips between Lahaina and MSBH. Fuel oil (diesel for the power plant and gasoline for vehicles) is now transported to the island on the barge using "pods," or small cylindrical tanks that can be moved by truck. Previously, fuel oil was transported to the island using a less expensive, double-hulled fuel barge.

Air

The number of flights serving Lāna`i increased as economic conditions improved in 2012 - 2013. Island Air was purchased by Larry Ellison in 2013 and provides service to Lāna`i Airport with flights to and from Honolulu and Kahului. `Ohana by Hawaiian has been servicing Lāna`i since March 2014. FedEx and Kamaka Air, Inc. provide air freight service. In April 2015, Island Air reduced daily frequency on its Lāna`i routes by more than one half.

The Lāna`i airport's runway may require lengthening in order to bring it into FAA compliance. Fully loaded and fueled planes have had difficulty in the past taking off given the length of the runway and its direction with respect to Lāna`ihale. Newer planes have greater lift and can operate fully loaded on shorter runways than in the past. As of 2014, Pūlama Lāna`i is working with HDOT Airports Division to determine the requirements for extending the runway to accommodate newer planes.

Land

Most roads on Lāna`i are publicly owned and managed; the County controls local roads and the State is responsible for Kaumālapa`u Highway (Route 440) and Mānele Road. While there is no public transit system on the island, Four Seasons Resort runs a shuttle service for hotel guests from MSBH and Mānele Resort to Lāna`i City, the Lodge at Kō`ele, and the airport. MEO operates a shuttle service for youth, elderly, and the disabled. Commercial taxi and shuttle services are also available.

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Given the small size of Lānaʻi City, walking is one of the primary modes of transportation. Lānaʻi City's layout with a compact street grid is extremely conducive to walking. However, not all streets in Lānaʻi City have facilities for pedestrians. "Complete Streets" is a relatively new approach to street and transportation design which aims to accommodate all users of roadways and rights of way. In 2009, the Hawaiʻi State Legislature amended state law to require the HDOT and the counties' transportation (or public works) departments to adopt complete street policies that accommodate all users of roadways, including pedestrians, bicyclists, transit users, motorists, and persons of all ages and abilities. Because Maui County is currently working on developing a complete streets policy, consideration and policy should be developed for Lānaʻi's rural streets.

The many trails that are on the island – historic trails, as well as hunting access and hiking trails – are an important and vital part of Lānaʻi's culture and rural lifestyle.

Future Multi-Modal Transportation System

Vision

Lānaʻi will have a multi-modal land transportation system that:

- Consists of streets, roads, and highways that accommodate multiple users including freight, trucks, cars, transit, bicycles, pedestrians, and other non-motorized vehicles;
- Maintains Lānaʻi City as a walkable, pedestrian-oriented, compact community; and
- Provides clear and uncomplicated connections to air and sea transportation at the transportation hubs at MSBH, Kaumālapaʻu Harbor, and the Lānaʻi Airport.

Roadway Extensions and New Roads

- Within the Lānaʻi City Expansion areas as shown on Map 9.3, Lānaʻi City Land Use Detail, the grid street layout is to be continued and connections to existing streets will be made where possible.
- Roadway extensions and new roads are illustrated on Map 7.2, Transportation: Existing and Proposed, and are as follows:

Lānaʻi City Expansion

- Western extension of 5th Street and 9th Street, into the Lānaʻi City Expansion area.
- Northern extension of Mānele Road, from intersection with Kaumālapaʻu Highway, into the Lānaʻi City Expansion area.
- Lānaʻi City Bypass Road will connect Kaumālapaʻu Highway to the southern terminus of Keomuku Road at Lānaʻi Avenue, along the western edge of the Lānaʻi City Expansion area.

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Outside of Lāna`i City

- Mānele West Road to be developed as a secondary access road, west of the Mānele Resort and residential areas.
- Keomuku Beach Road will need to be realigned mauka if development at Halepalaoa occurs.

Transit

- When demand warrants, a public transit system (i.e. bus) will provide regular service for residents and visitors between the island's population centers and transportation hubs to supplement or replace the existing private shuttle service provided by the Four Seasons Resort.
- Future roadways, and to the extent possible, existing roadways will accommodate the public transit system with pull-outs, shelters, and turn-around areas.

Bicycle facilities, lanes, and trails

- Lāna`i City: Bicycles will continue to be accommodated by sharing the roadway with vehicles.
- Lāna`i City Expansion: Bicycle lanes should be considered on arterial and collector roads and shared facilities on local streets.
- Mānele Road / Mānele West: Provide wide shoulder or bicycle lane.

Pedestrian Facilities

- Lāna`i City: Lāna`i City's central business area surrounding Dole Park will have a complete network of pedestrian facilities such as concrete sidewalks. Major streets, such as Fraser Avenue, Lāna`i Avenue, 6th Street, 7th Street, 8th Street, 9th Street, and wider local streets, such as `Ilima Avenue, should provide pedestrian facilities in the form of concrete or asphalt walkways. On local streets, currently pedestrian facilities are on the shoulder or shared with vehicles. Where there are opportunities, pedestrian facilities should be provided.
- Lāna`i City Expansion: The Lāna`i City Expansion will be a walkable, pedestrian-oriented community. The network of pedestrian facilities (sidewalks or walkways) along collector roads (5th Street and 9th Street) should be extended. Pedestrian facilities will be provided throughout the expansion area.
- Mānele Mauka: Mānele Mauka will be a new compact development area with primarily residential uses, a central community park, and commercial area. Pedestrian facilities should provide for connections between the residential areas, commercial areas, and parks.
- Kaumālapa`u Harbor Residential: The Kaumālapa`u Harbor Residential area will be a small settlement of rural, low-density housing. Pedestrian facilities appropriate for rural areas should be provided.

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B. ISSUES AND STRATEGIES

- Issue 1:** Current barge service to Lāna`i from O`ahu is only once per week. During winter storms or rough sea conditions, barges are unable to enter the harbor.
- Strategy 1A: Explore options for transporting freight goods on the ferry or airplanes, or adding an additional barge as population grows.
- Strategy 1B: Advocate for expanded ferry service as the population increases and economic development warrants.
- Issue 2:** High cost of commuter transportation from Lāna`i City to Mānele for workers, as well as for residents who need transportation.
- Strategy 2: Assess feasibility of providing shuttle transportation for resort workers.
- Issue 3:** The current airport runway is unable to accommodate larger planes.
- Strategy 3: Work with Pūlama Lāna`i, HDOT Airports Division, and the community to assess options to accommodate some larger airplanes via airport runway expansion.
- Issue 4:** There are very limited direct flights between Lāna`i and other Maui County airports.
- Strategy 4: Work with airlines to improve air transportation between the islands of Maui County.
- Issue 5:** Lāna`i customers must pay for both legs of shipping freight to the island from other outer islands (e.g. from Kaua`i to O`ahu, then O`ahu to Lāna`i). Lāna`i is the only island with this extra charge. This also pertains to passenger air transportation routes.
- Strategy 5: Work with the shipping companies and PUC Consumer Advocate to find a better rate structure in order to reduce the premium on shipping and passenger flights to Lāna`i.
- Issue 6:** The cost of shipping fuel to the island from O`ahu is made more expensive by the use of fuel tanks, or pods, rather than a fuel barge.
- Strategy 6: Explore options for shipping fuel to the island that would reduce costs.

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Issue 7: There is only one paved public road between Mānele and the rest of the island.

Strategy 7: Explore options to provide alternative access in and out of Mānele during emergencies, including utilizing the construction access road.

Issue 8: Many Lāna`i City streets do not have sidewalks, and some people are concerned about pedestrian safety.

Strategy 8: Develop a complete streets approach to street design for Lāna`i City and the island, and create an improvement strategy for pedestrians in Lāna`i City.

Issue 9: Some roads and trails within Federal, State, and County mapping databases may have different historical names, spelling, or locations. Additionally, the historical use and legal status of some trails and the ownership of some roads are unknown.

Strategy 9: Coordinate with the Hawai`i Board on Geographic Names (HBGN), Pūlama Lāna`i, and the Lāna`i community to identify and formally correct road and trail names, location, historical use, and legal status. Determine road ownership, if unknown.

C. GOAL, POLICIES, ACTIONS

GOAL A complete, integrated, safe, and reliable system of transportation networks that serves the needs of Lāna`i's businesses, residents, and visitors.

Policies

1. Advocate for adequate, reliable, and reasonably priced barge service.
2. Advocate for continued, reliable, and frequent passenger ferry services between Maui and Lāna`i.
3. Advocate for a more connected, complete, and safe network of lanes, streets, roads, and highways.
4. Advocate for expanded air service between Lāna`i and other islands.
5. Maintain a connected network of public access trails for hunters, hikers, and coastal access.

7 | INFRASTRUCTURE AND UTILITIES

6. Encourage affordable transportation options for resort employees and residents.
7. Encourage commercial concession and lease opportunities for local residents at State harbor and airport facilities.
8. Support the improvement of the airport, including enhancement of the existing runway and possible addition of a second runway. Prohibit the extension of Lāna`i Airport's runway in the direction of Lāna`i City. Prohibit aircraft flight patterns over Lāna`i City as a means of noise mitigation. Identify and implement other aircraft noise mitigation measures such as the prohibition of late-night aircraft operations.
9. Encourage the continuance of regularly scheduled direct flights between Maui and Lāna`i.
10. Encourage competitive pricing for inter-island airfares to provide increased opportunity for inter-island mobility.
11. Support direct ocean freight transport between Maui and Lāna`i.
12. Street and roadway design standards should maintain and enhance Lāna`i's rural character, provide handicap accessibility at the airport and harbor, and include space for private transportation vendors.
13. Maintain a pedestrian orientation for the Lāna`i City core area and in new development areas.
14. Encourage the development of a safe network of pedestrian pathways, connecting key recreational and educational facilities in Lāna`i City and in newly developed areas.
15. Encourage Pūlama Lāna`i to maintain a secondary and emergency access road between Mānele and Lāna`i City.
16. Provide accurate and well-documented names, locations, and historic and legal status, including ownership, of mapped roads and trails.