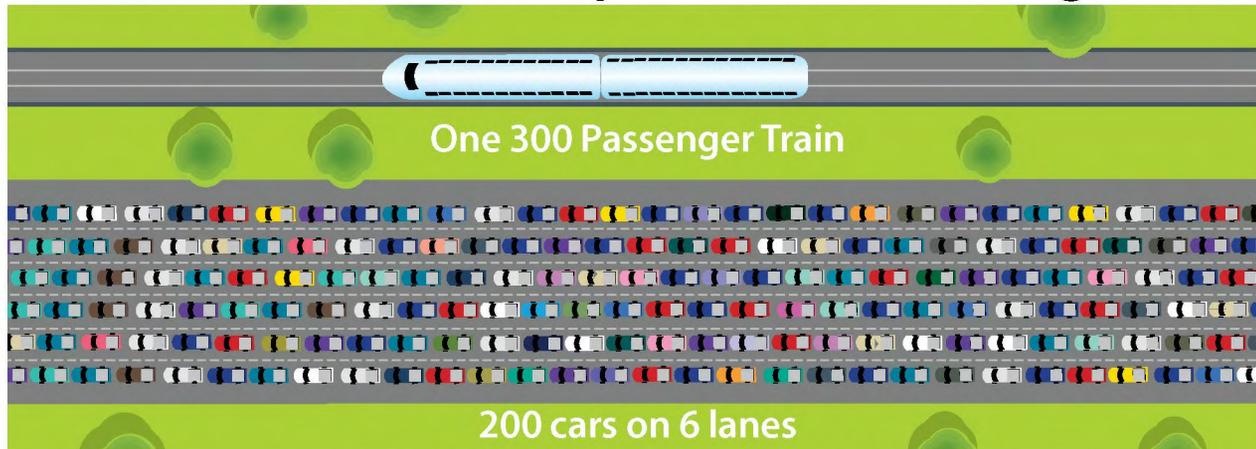




## What is Honolulu Rail Transit?

Honolulu Rail Transit is a proposed 20-mile elevated rail line that will connect West O‘ahu with downtown Honolulu and Ala Moana and, one day, will extend even further to Honolulu International Airport, Waikīkī, UH Mānoa and Kalaeloa. The system features 200-foot-long electric, steel-wheel trains capable of carrying more than 300 passengers each. Trains can carry more than 6,000 riders per hour. By 2030, up to 90,000 riders per day are expected to use rail transit.

## How does rail transit help reduce traffic congestion?



One 300-passenger train can relieve the freeway of 200 cars every three minutes during morning rush hour.

Traffic congestion develops when too many vehicles try to use a roadway at the same time. During rush hours, congestion builds quickly, particularly where major roadways converge – like the H-1/H-2 Interchange or Middle Street Merge – and from the downtown area outward.

Considering the limited space in Honolulu, the only solution is to reduce the number of vehicles at those critical pinch points. That’s what’s so important about rail transit. Rail transit is the only large-scale solution that helps reduce the number of vehicles on the road, especially in the downtown and Ala Moana areas, and the H-1 corridor from West O‘ahu.

O‘ahu’s population is expected to grow by 200,000 people by 2030, and an estimated 750,000 more daily trips are expected on O‘ahu’s roads. But a detailed Alternatives Analysis showed that a rail transit system could reduce future traffic congestion by 11%, while simply increasing the number of buses would reduce future traffic congestion by just 1.3%. Adding toll lanes or roads would actually increase future traffic congestion.

There is no “magic bullet” to reduce O‘ahu’s traffic problems. Building rail transit now is the most cost-effective way to avoid even more congestion in the future.

## WHAT ARE THE GOALS OF HONOLULU RAIL TRANSIT?

▪ **Improved Mobility.** We need to get from here to there – island-wide. The roads and freeways are often congested, limiting our community’s mobility. A fully-elevated, steel-wheel rail transit system will be able to move thousands of people per hour without taking away the already limited highway and road space we have now.

▪ **Reliability.** The elevated system will operate with precision and reliability. So, if you need to be at work by 8 a.m., you’ll arrive at work by 8 a.m., even if it’s raining or there’s a big accident on H-1. There will be just 3 minutes between rail vehicles during peak hours, so you won’t have to check the schedule to catch the next one.

▪ **Improving The Economy.** Construction of the rail line would create an estimated 11,000 jobs over the next eight years, and increase state and city revenues.

▪ **Protecting Our Environment.** Rail transit can be powered by electricity from renewable sources, and is endorsed by the Sierra Club.

▪ **Sustainable Growth.** It is vital that improved infrastructure is in place to support West O‘ahu’s growth. It will help focus growth in designated areas, and away from areas where we don’t want it – helping to “keep the country country.”

▪ **Fairness.** Rail transit is affordable for working families, seniors, and students. Rides will cost the same as TheBus and TheBoat, come with free transfers, and like now, a monthly pass will work system-wide.

Rail transit, as part of an overall public-transportation system, is a way to enhance Honolulu’s quality of life, by easing traffic congestion, enhancing our economy, reducing pollution, and providing greater mobility for us and future generations.

This brochure is provided by the City & County of Honolulu as part of the public information program required by the Federal Transportation Administration.

## WHAT’S INSIDE

- How much rail costs and how we’ll pay for it
- Route map and travel times
- How much you can save riding mass transit
- Why steel-wheel technology was selected
- Why “HOT” lanes won’t work
- How rail transit is the quietest option
- Why rail transit is eco-friendly
- How rail transit benefits Hawai‘i’s economy

## How much will it cost to build, and how will we pay for it?

Rail transit is the most cost-effective option among those studied, including expanding bus service or building a HOT lane viaduct. The initial route from East Kapolei to Ala Moana Center can be paid for with already identified funding sources. No new additional taxes are needed for construction.

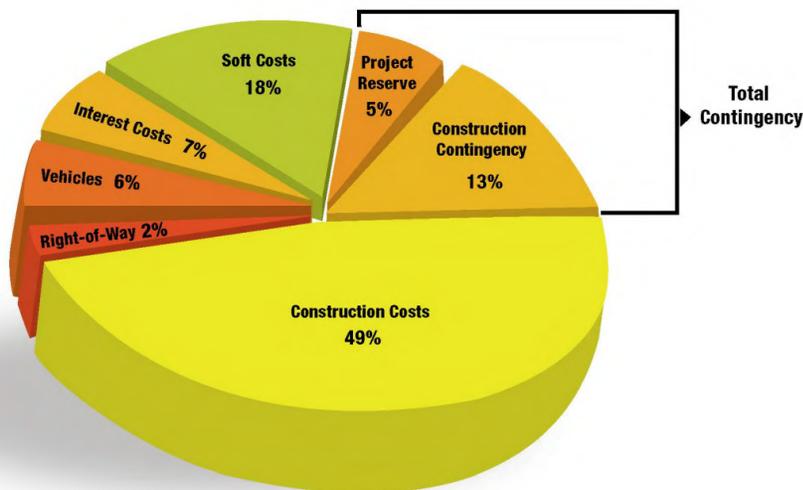
Funding comes from the 1/2% GET surcharge and the Federal Transit Administration's New Starts program. \$15.5 million for the planning phase has been appropriated by Congress for this

year, and another \$20 million is in the pipeline. A key to current and future federal support is the commitment Honolulu has already made for local funding, with more than \$250 million banked for the project. Federal funding is expected to increase significantly as the project moves to construction.

Construction costs are estimated using the building industry's best practices and reviewed regularly by the Federal Transit Administration's auditors. Costs are based on engineers' calculations

of current and comparable construction costs in Hawai'i. The cost estimate will be adjusted and updated with inflation as the project advances. Nearly a billion dollars in contingency – almost 20% of the total budget (see pie chart) – is included in the total cost to absorb any future uncertainties.

Even when adjusted for inflation (see table below) and allowing for fluctuations in the economy, Honolulu Rail Transit can be built within budget.



### BALANCING THE BUDGET

	2006 Dollars (in millions)	Year-of-Expenditure Dollars (in millions)
Capital Costs	3,470	4,570
Net Interest Costs	250	410
<b>Total Project Cost</b>	<b>3,720</b>	<b>4,980</b>
City GET Revenue	3,020	4,055
Federal Funding	700	925
<b>Total Project Funding</b>	<b>3,720</b>	<b>4,980</b>

## How much will operations and maintenance cost?

Rail transit will cost 40% less to operate and maintain per passenger-mile than buses.

In Honolulu, operating and maintenance costs for our rail system are estimated to be about \$60 million per year in today's dollars. By comparison, we currently spend approximately \$180 million each year for operating and maintenance costs of TheBus.

**Rail transit costs less than the cost of carrying the same number of riders on a bus-only system. Operating and maintenance costs, after fares, is \$40 million per year – about 2 to 3% of the City's budget.**

One reason is that each 300-passenger train typically requires just a single operator, while it would take more than four buses – each with their own driver – to match that passenger capacity. Another is that rail transit's modern electric-motor technology is more efficient than the diesel engines used in buses. Of course, steel wheels hold up much longer than rubber tires – Honolulu currently spends more than \$600,000 per year for new bus tires alone. Train cars also have a much longer lifespan than buses.

Projected costs are reviewed regularly by the Federal Transit Administration's auditors.

The cost savings of rail transit have been observed time and time again in transit systems nationwide. In almost every case, rail transit demonstrates that, in corridors like Honolulu's, it can save on ongoing operational expenses as compared to those of bus-only systems.

## Why was steel-wheel technology chosen for Honolulu?

Honolulu's new transit system will last for generations, so it is important to maximize benefits and minimize costs, including the costs of operations. To help select the specific transit technology to be used, the City sought assistance from an independent panel with knowledge of, and experience with, all the rapid-transit technologies available today. The panel selected steel-wheel rail as the best long-term solution for Honolulu.

Rail is a proven technology with by far the greatest number of in-service systems today.

Rail has the best long-term operating performance characteristics, including higher passenger-carrying capacity; better ride quality; lower noise impacts; better energy efficiency; lower air-quality impacts; and lower long-term costs. There are also many suppliers in the rail business, which enhances flexibility and further minimizes costs over time.

According to Ron Tober, chairman of the five-member technology selection panel, "Modern rail technology is a far cry from the elevated rail lines in New York City, Chicago and elsewhere. It is quiet, smooth, and efficient."

### Comparison of Mass Transit Options

	Steel-Wheel Rail Transit	Rubber-Tire Fixed Guideway	Elevated "HOT" Toll Roads
Lowest construction costs	Yes	No	No
Lowest cost to maintain and operate	Yes	No	No
Qualifies for federal transit funding	Yes	Yes	No
Highest passenger capacity	Yes	Yes	No
Electric-powered, can run on wind, solar, H-power	Yes	Yes	No
Lightest construction impact on community	Yes	Yes	No
Greatest relief of traffic congestion	Yes	Yes	No
Lowest operating noise levels	Yes	No	No
Most proven mass transit solution	Yes	No	No

## Is Honolulu "too small" for rail transit?

No. In fact, many communities that are successfully operating rail transit are smaller, and less densely populated than Honolulu.

Steel-wheel rail transit is the most proven, cost-effective, and reliable technology in use today. Other cities – large and small – that have invested in steel-wheel rail transit systems include:

- |               |                 |                 |                    |                   |
|---------------|-----------------|-----------------|--------------------|-------------------|
| Atlanta, GA   | Cleveland, OH   | Los Angeles, CA | Philadelphia, PA   | San Francisco, CA |
| Baltimore, MD | Dallas, TX      | Miami, FL       | Phoenix, AZ        | San Jose, CA      |
| Boston, MA    | Denver, CO      | Minneapolis, MN | Pittsburgh, PA     | San Juan, PR      |
| Buffalo, NY   | Edmonton, AB    | New Orleans, LA | Portland, OR       | Seattle, WA       |
| Calgary, AB   | Houston, TX     | New York, NY    | Sacramento, CA     | St. Louis, MO     |
| Charlotte, NC | Jersey City, NJ | Newark, NJ      | Salt Lake City, UT | Vancouver, BC     |
| Chicago, IL   | Long Beach, CA  | Oakland, CA     | San Diego, CA      | Washington, DC    |



San Francisco



Houston



Charlotte



Miami



Kuala Lumpur



New York

## How will we pay for operations and maintenance?

Passenger fares for rail transit will cover approximately 30% of operations and maintenance. The rest will be paid out of the City's annual budget, the same way we currently pay for TheBus, and how other public transit systems are funded nationwide.

Overall, the City's share of rail transit's operating and maintenance costs is projected to be 2-3% of the annual operating budget. By comparison, Honolulu currently spends approximately twice that for its cultural and recreational programs.

### WILL RAIL TRANSIT CONSTRUCTION INCREASE PROPERTY TAXES?

All capital and construction costs will be paid for by federal funding and the existing 1/2% GET surcharge revenue. No property tax increases will be required for construction.

# Where will Honolulu Rail Transit go?

The proposed route of Honolulu Rail Transit is designed to connect where people live – in O’ahu’s largest and fastest-growing communities – with the areas where most people work, shop and attend school.

Honolulu rail transit stations will feature five park-and-ride facilities along the initial 20-mile route, and will be served by express and local feeder buses from neighboring communities. The first line will run from Kapolei to Ala Moana Center, with stops including UH West O’ahu, Waipahu, Leeward Community College, Pearl City, Pearlridge, Aloha Stadium, Salt Lake, Kalihi, Honolulu Community College, downtown, and Kaka’ako. Expansions will include service to Honolulu International Airport, UH Mānoa, Waikīkī, and Kalaeloa.



PROJECTED RAIL TRAVEL TIMES						
A	B	C	D	E	F	G
Kapolei to Ala Moana Center	Waipahu to Downtown	Pearl Highlands to Downtown	Pearlridge to Downtown	Aloha Stadium to Downtown	Kalihi to Ala Moana Center	Downtown to Ala Moana Center
40 minutes	28 minutes	23 minutes	19 minutes	16 minutes	10 minutes	5 minutes

## How will Rail Transit help me if I don't live along the route?

Each train can carry more than 300 passengers – the equivalent of more than 200 cars. It is estimated that rail transit will help keep more than 25,000 cars off O’ahu’s roads and highways each day. So even if rail transit doesn’t directly serve your neighborhood, it will help ease your commute, whether you’re coming from the Windward Side, East Honolulu, Mililani, or the North Shore.

It’s estimated that by 2030 rail transit will reduce traffic congestion island-wide by 11%, compared to what traffic will be like at that time if we don’t build it. To put that in perspective, that’s similar to the difference between summer traffic and the back-to-school jam.

Keeping cars out of downtown, Kaka’ako and Ala Moana areas will also help reduce parking congestion, and will reduce costs for employees or employers.

It’s also important to remember that every other major transportation improvement made in the last 50 years – including the Wilson Tunnel, H-2 and H-3, the Kalaniana’ole and Kahekili highway widening projects, and many others – has primarily served select areas of the island. Rail transit will help support our families, friends, and co-workers from West O’ahu, whose peak hour commutes can now take an hour or more every day.

*“We can move our workforce more efficiently and generate more jobs...through greater investment in public transportation sources. We will also enjoy benefits including better air and water quality, greater public health, less sprawl, and more independence for our aging population. A more balanced transportation system...is a winning combination for the economy, for families, and for individual commuters’ quality of life.”*

– Sierra Club’s report *Missing the Train*

## How loud will rail transit be?

Modern steel-wheel rail transit produces less noise than diesel buses, trucks, mopeds and many automobiles. Smooth, welded rails and vibration-absorbing fasteners eliminate much of the noise we associate with traditional rail travel.

A steel-wheel rail system generates a lower noise level than a rubber-tire-on-concrete system, and the noise that is generated can be more easily and inexpensively reduced to acceptable levels. That’s because the noise from a bus-type rubber-on-concrete vehicle is generated both from the engine/exhaust and from the contact between the tires and the pavement. The exhaust system

is generally mounted high on the back of the bus; therefore, most of the noise comes from a high point on the vehicle.

By contrast, a modern electric-rail vehicle’s noise is generated only from where the wheels contact the rail. Noise mitigation therefore only requires a short two- to three-foot high wall, far more attractive and much lower than the taller walls needed for a rubber-tire system. For Honolulu’s proposed rail system, sound barrier walls are planned for the entire 20-mile guideway.



## How will property owners along the route be affected?

The plan to build elevated guideways generates one of the smallest land-use footprints, resulting in the least property impacts of all alternatives, including building new roads and highways, tunnels, underpasses, or widening roadways.

While some residential and commercial properties must be acquired in full, most of the right-of-way acquisitions required are for portions of individual parcels.

The exact impacts of the route and stations are still being refined as engineers continue with detailed design. Once there is a precise determination of exactly which properties will be affected, potentially-impacted property owners

will be contacted on an individual basis. In fact, the City has already made contact with property owners in the initial construction areas. The overarching goal is to reach negotiated agreements with landowners and the City is committed to assist with appropriate relocation efforts. In all cases, property owners will be notified before the Draft Environmental Impact Statement is released to the general public.

The rail transit project includes sufficient funding to cover right-of-way acquisition costs, with a nearly 40% contingency to ensure the City’s ability to pay fair market value.

## Why don't we just add more buses?

Adding more buses is not cost-effective or practical. Buses cost more to operate than rail, and during peak hours our crowded streets cannot handle more buses.

Currently, TheBus accommodates about 230,000 daily passenger trips, and ridership is growing as gas prices increase. According to Federal Transit Administration data, Honolulu has the fourth-highest ridership-per-capita in the entire nation.

“Increasing our fleet by 50%, as some have suggested, would result in a nonstop ribbon of buses along our major streets and further slow traffic,” according to Roger Morton, president of O’ahu Transportation Services. Increased traffic also makes it hard for TheBus to offer reliable service. During rush hour, most buses are already full, and getting fuller (the same is true for car-pool and bus lanes). Buses get stuck in traffic with everyone else, so despite best efforts, TheBus has an on-time average of just 65%.

Buses are also not without impact. An accelerating bus is louder than a modern rail system, emits greenhouse gases, and uses increasingly costly and scarce petroleum products. Operating a comparably larger bus fleet would be more costly than operating an integrated bus/rail system. Across the country, the cost per passenger-mile for rail is approximately 1/3 less than the cost for buses.

Building elevated bus roadways won't solve the problem either, since the buses eventually wind up back in street traffic again, stuck with everyone else, and adding to the problem. What's more, elevated bus roadways cost more to build, and take up more room, than rail guideways.

For the greatest efficiencies of cost, service and reliability, Honolulu needs an integrated system of rail, buses, ferries, bicycle lanes, car pools, taxis, and private vehicles.

## How will rail transit benefit Hawaii's economy?

Rail transit, poised to break ground in late 2009, will generate an estimated 11,000 jobs in construction and related industries. Transit-oriented development – the creation of shops, services, and housing in the vicinity of transit stations – will attract new investment and create even more jobs. More jobs and businesses help fund state and city services. And the reduction

of commute times and easing of parking pressures will benefit employers and employees island-wide.

**“Every dollar taxpayers invest generates \$6 or more in economic returns.”**

According to APTA's report, *Dollars & Sense: The Economic Case for Public Transportation in America*, “Every dollar taxpayers invest in public transportation generates \$6 or more in economic returns.”



San Diego



Miami



Atlanta



Vancouver

## Why will the tracks be elevated?

Dedicated elevated guideways ensure that trains will never be impacted by traffic on roads. When highways slow, or even stop, rail transit keeps on moving without delay or interruption. In turn, rail transit will not interfere with roadway traffic.

Elevated rail guideways require a smaller construction and operational footprint minimizing impact to property owners and the community –

than rail lines built at ground level. Guideways will be approximately 30 feet high in most areas, supported by six-foot diameter columns about 150 feet apart.

Rail stations will also be elevated, equipped with elevators and/or escalators, and will be completely ADA accessible.

## Will rail transit attract riders in Honolulu?

Judging both by national trends of rail ridership and by current Honolulu ridership of TheBus, the answer is a resounding YES.

According to recent data from the American Public Transportation Association, rail ridership is increasing dramatically across the U.S. In Portland, San Francisco, New York, and Washington, DC, rail ridership has increased more than 5% in the last year. The Dallas DART

system is up 9%. In Los Angeles – a city that loves its cars – rail ridership is up over 15%. In Seattle, it's up 28%, in Charlotte, 34%, and in Sacramento, rail ridership has increased 43% in just a year.

Across the country, light rail ridership is up 11.2%, commuter rail is up 5.3%, and even heavy rail – which includes some of the nation's most mature systems – is up 4.4%. More and

more people are turning to rail transit as a way to save money and avoid traffic hassles. (To see the full APTA report go to [www.apta.com/research/stats/ridership](http://www.apta.com/research/stats/ridership).)

As for Honolulu, we already have the fourth-highest public transit ridership-per-capita in the nation, and it's still on the rise, up 4% in 2008.

Rail transit is a way to save money (see the savings chart) and provide options for those who cannot easily drive to, or park at, their destinations.

SAVING MONEY BY RIDING MASS TRANSIT		
CITY	MONTHLY SAVINGS	ANNUAL SAVINGS
1 Boston	\$1,124	\$13,490
2 New York	\$1,119	\$13,431
3 San Francisco	\$1,054	\$12,648
4 Chicago	\$978	\$11,738
5 Philadelphia	\$946	\$11,346
6 Seattle	\$944	\$11,327
<b>7 Honolulu</b>	<b>\$935</b>	<b>\$11,215</b>
8 Washington, DC	\$883	\$10,593
9 Los Angeles	\$871	\$10,455
10 Minneapolis	\$859	\$10,302

The top 10 cities with the highest transit ridership are ranked in order of their transit savings based on the purchase of a monthly public transit pass, factoring in local gas prices (as reported by AAA on 9/4/08) and the local monthly unreserved parking rate.

APTA's monthly "Transit Savings Report" shows how much a family can save by taking public transportation and living with one less household car.

**“Rail is tested and trusted in cities across the United States and in countries throughout the world. Rail is a modern, reliable, convenient, and environmentally-friendly alternative to clogged freeways and expensive fossil fuels that pollute our air.”**

— Former state transportation directors Fujio Matsuda, Ed Hirata, Kazu Hayashida and Rod Haraga, and former deputy state health director James Kumagai

## What about salt-air and corrosion?

Some have been concerned that a steel-wheel system would experience corrosion due to our tropical, humid, salt-air conditions. But, to be sure, this is not the kind of experimental material and construction that caused problems at Aloha Stadium.

Steel-wheel rail transit has been used successfully in many tropical and ocean-side environments for decades, including Miami, Bangkok, Manila, Singapore, Hong Kong, and Rio de Janeiro.

Even our own 100-year-old O’ahu Railway tracks are still in use on the ‘Ewa Plain, and are still visible on Nimitz Highway leading to the old A’ala Park train station.

## Why won't "HOT" lanes or roadways work?

HOT lanes are High-Occupancy Toll lanes, where drivers traveling alone pay a fee to use carpool lanes. Typically, HOT lanes make use of under-used carpool lanes but, as we know, in Honolulu most carpool lanes are already full.

Special elevated HOT roadways have been proposed for Honolulu, but would cost more to build, take up more space, and cause more community disruption than rail transit lines capable of carrying far more passengers.

What's more, the City's Alternatives Analysis showed that elevated HOT lanes actually *increase*

traffic congestion instead of reducing it, since they continue to promote automobile usage, and bring more vehicles into downtown Honolulu and surrounding areas.

HOT lanes and roadways are only viable for those who are able and willing to pay the additional costs. In Seattle, HOT lanes cost \$4 to \$9 one-way; in Orange County it's as high as \$10; in Washington, DC the proposed fee is \$200 per week. They're often called "Lexus Lanes." Meanwhile, working families who can't afford the toll are stuck in even worse traffic than before.

## Why is rail transit considered eco-friendly?

Building rail transit has long been viewed by health experts as an excellent way to limit harmful vehicle emissions and improve air quality. The transportation sector is one of the largest contributors to greenhouse gas emissions and our island's carbon footprint. Rail transit enhances our environmental quality of life in numerous ways:

- Honolulu rail transit will be electrically-powered and benefit from the most promising advances in alternative energy sources, like H-power, wind, solar and bio-fuels.
- Rail is more energy-efficient than single-occupant cars and trucks, consuming 37% less energy per passenger-mile, according to the U.S. Department of Energy.
- It will take more than 25,000 cars and trucks off our highways and roads each day.
- It is the quietest of all mass-transit alternatives.

As the Sierra Club's report *Missing the Train* concludes, "We can move our workforce more efficiently and generate more jobs...through greater investment in public transportation sources. We will also enjoy benefits including better air and water quality, greater public health, less sprawl, and more independence for our aging population. A more balanced transportation system...is a winning combination for the economy, for families, and for individual commuters' quality of life."

## Why is rail transit such an important investment in Honolulu's future?

Since Statehood, our community has invested in the Pali Tunnels and Highway, the Wilson Tunnel and Likelike Highway, the H-1, H-2 and H-3 freeways, as well as many non-transportation projects like Ala Moana and Central O'ahu parks, Blaisdell Center, our community colleges and the University of Hawai'i.

The community leaders and concerned citizens of those times past had the foresight and dedication to plan for the future, to the benefit of all of us today.

Rail transit, as part of an integrated mass-transit system, is an investment in Honolulu's future – growing our economy, protecting our environment, strengthening our community, and providing reliable and affordable transportation for generations to come.

## When will rail transit service actually begin?

The projected schedule for rail transit is:

**Completion of Final Environmental Impact Study – summer 2009**

**Groundbreaking and start of construction – late 2009**

**First segment completed – 2012**

**Segments opened on completion – 2012 to 2017**

**Completion of 20-mile route from Kapolei to Ala Moana – 2018**

Extensions to Honolulu International Airport, Waikiki, UH Mānoa, and Kalaeloa will be built pending future funding.



Miami

FOR FURTHER READING AND SOURCE DATA, VISIT THESE WEBSITES:

American Public Transportation Association – [www.apta.com](http://www.apta.com)

Federal Transit Administration – [www.fta.dot.gov](http://www.fta.dot.gov)

Honolulu On The Move – [www.honolulustransit.org](http://www.honolulustransit.org)

Oahu Metropolitan Planning Organization – [www.oahumpo.org](http://www.oahumpo.org)

The Sierra Club – [www.sierraclub.com](http://www.sierraclub.com)

**This brochure is provided by the City & County of Honolulu as part of the public information program required by the Federal Transportation Administration. To learn more, visit [www.honolulustransit.org](http://www.honolulustransit.org) or call the Project Hotline at 566-2299.**

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