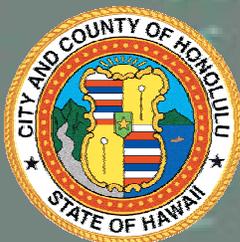


City and County of Honolulu

Waikīkī Regional Circulator Study

June 2013



Department of Transportation Services
Public Transit Division

Funding and Administrative Support

This report was funded through a grant from the Federal Highway Administration (FHWA) and funds provided by the City and County of Honolulu. The FHWA grant is administered by the O'ahuMPO and included in the Overall Work Program (OWP) as work element #202.84-11.

Administrative support has been provided by the Waikiki Improvement Association (WIA) and the Hawai'i Convention Center (HCC).

The content included herein represents the work of Weslin Consulting Services, Inc. and is not intended to represent any official position of any participating agency including the FHWA, FTA, HDOT, the City and County of Honolulu, the O'ahuMPO, WIA, HTA, HART or HCC.

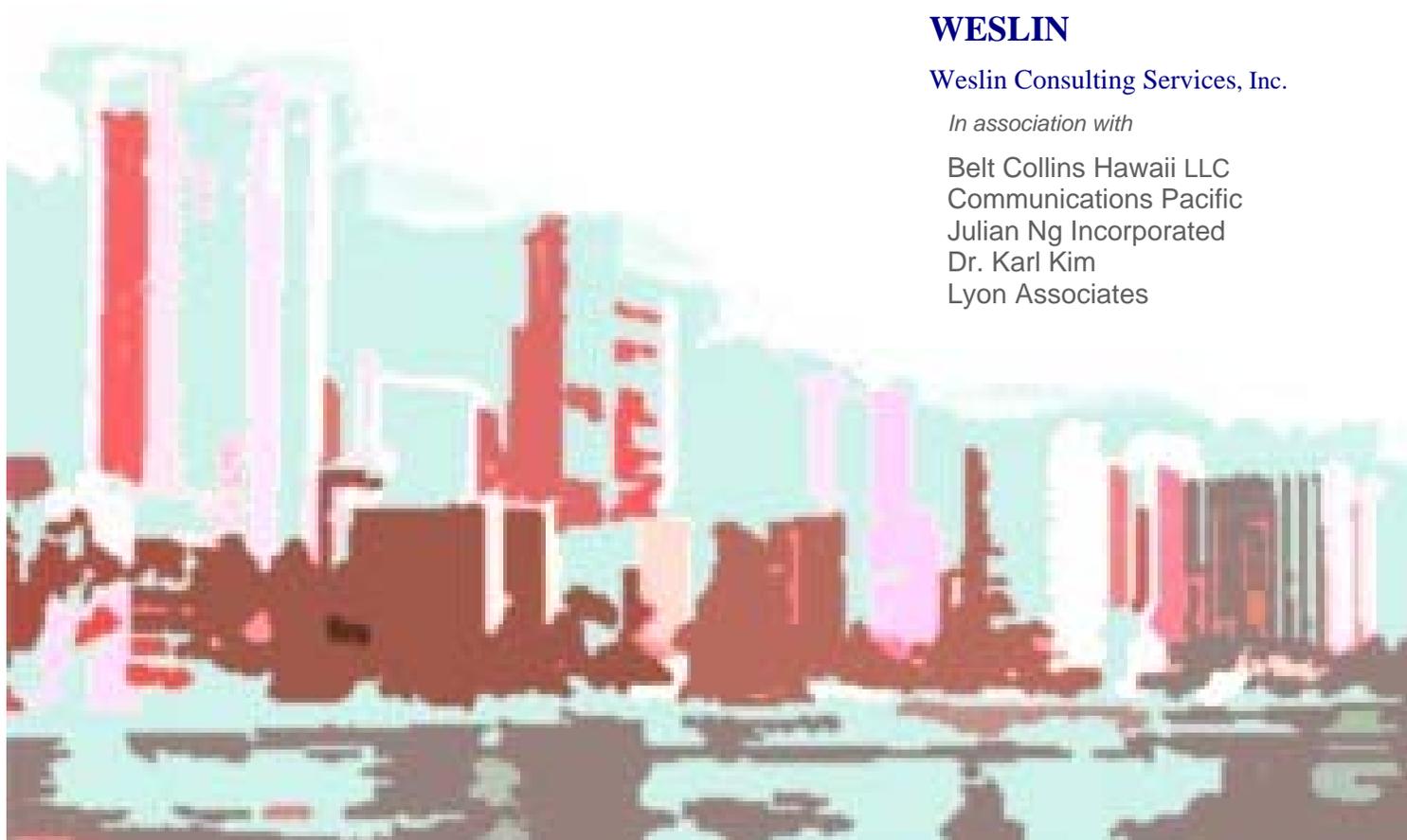
Prepared by

WESLIN

Weslin Consulting Services, Inc.

In association with

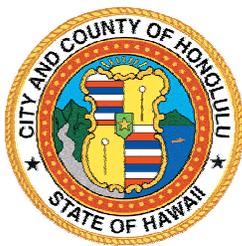
Belt Collins Hawaii LLC
Communications Pacific
Julian Ng Incorporated
Dr. Karl Kim
Lyon Associates



City and County of Honolulu

Waikīkī Regional Circulator Study

June 2013



Department of Transportation Services
Public Transit Division



Acknowledgements

Waikīkī Transportation Stakeholder Oversight Committee

Eric Masutomi, Chair, EJM Consulting LLC

Joe Davis, Hawai'i Convention Center (former member)

Greg Dickhens, Kyo-ya Hotels & Resorts

Rick Egged, Waikīkī Improvement Association

Michael Formby, City and County of Honolulu, Dept. of Transportation Services

Bob Finley, Waikīkī Neighborhood Board

Joe Francher, Ala Moana Center

Jerry Gibson, Hilton Hawaiian Village Beach Resort & Spa

Wayne Goodwin, Hawai'i Convention Center (alternate for Joe Davis)

Les Goya, Queen Emma Land Company

Connie De Guair, Hilton Hawaiian Village (alternate for Jerry Gibson)

Cecil Hunt, Hawai'i Transportation Association

Glenn Kawamura, Polynesian Adventure Tours, Gray Line Hawai'i

Maki Kuroda, E Noa Corporation

Tracy Kubota, City and County of Honolulu, Dept. of Enterprise Services

Bill Meehan, Polynesian Adventure Tours (alternate for Glenn Kawamura)

Roger Morton, O'ahu Transit Services

Frederick Orr, Sheraton Princess Ka'iulani

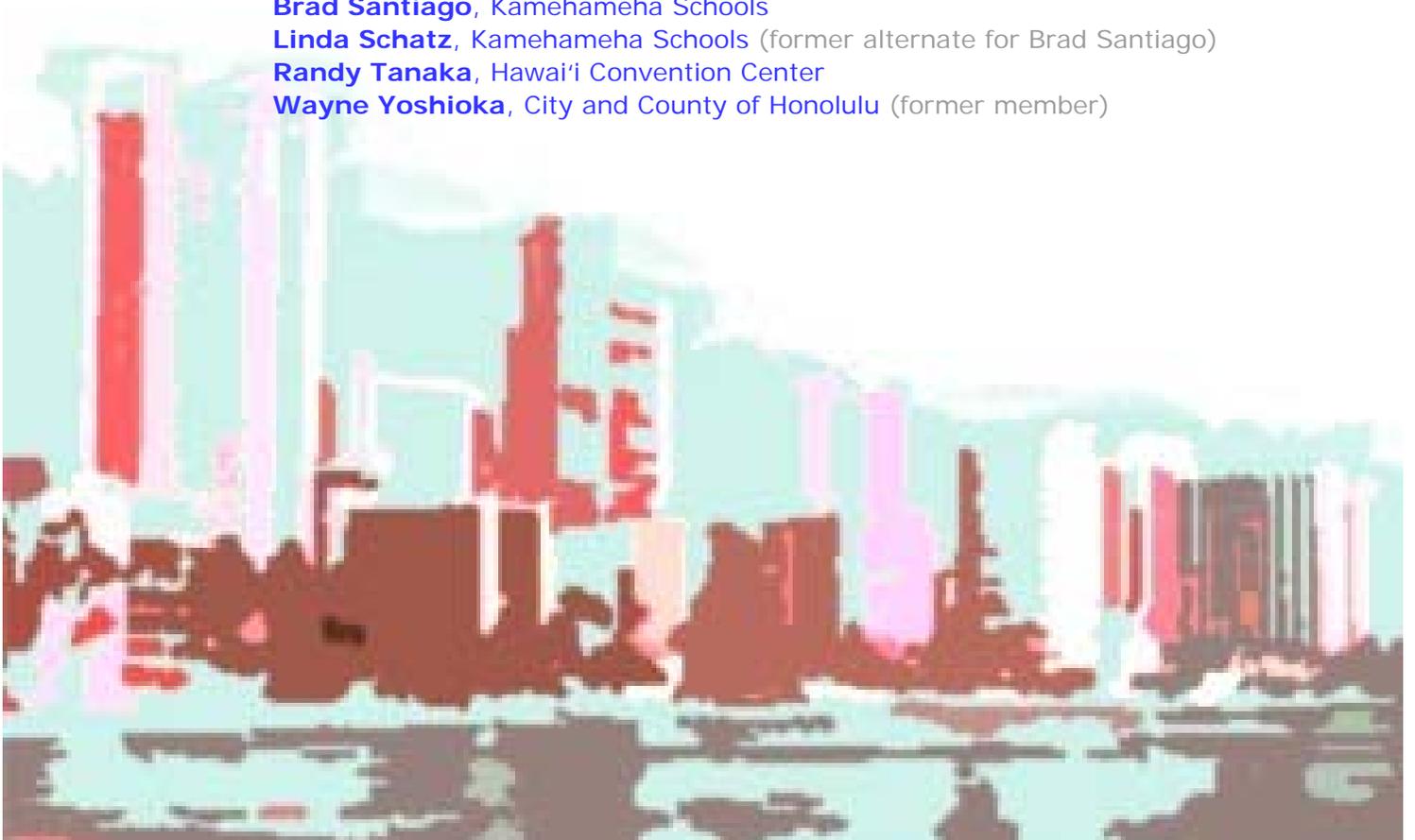
Gareth Sakakida, Hawai'i Transportation Association

Brad Santiago, Kamehameha Schools

Linda Schatz, Kamehameha Schools (former alternate for Brad Santiago)

Randy Tanaka, Hawai'i Convention Center

Wayne Yoshioka, City and County of Honolulu (former member)



City and County of Honolulu

Michael Formby, DTS Director
Mark Garrity, DTS Deputy Director
Wayne Yoshioka, DTS Director (2011-2012)
Kai Nani Kraut, DTS Deputy Director (2011-2012)
Eileen Mark, DTS, Public Transit Division, Chief
Glenn Moir, DTS, Public Transit Division, Project Manager
Sandra Abelaye, DTS, Public Transit Division
Mark Kikuchi, DTS Traffic Engineering Division, Chief
Jack Patterson, DTS Traffic Engineering Division, Engineer
Tracy Kubota, Department of Enterprise Services, Deputy Director
Keoki Miyamoto, Department of Enterprise Services, Director (2011-2012)
Randy Leong, Department of Enterprise Services, Deputy Director (2011-2012)

Consultants and Support

Wes Frysztacki, Weslin Consulting Services, Inc., Project Manager
Alan Fujimori, Belt Collins Hawaii
Sue Sakai, Belt Collins Hawaii
Linda Frysztacki, Weslin Consulting Services, Inc.
Cindy McMillan, Communications Pacific
Andrew Garrett, Communications Pacific
Isabella Gee, Communications Pacific
Julian Ng, Julian Ng Incorporated
Ty Dempsey, Lyon Associates
Karl Kim, PhD, University of Hawai'i at Mānoa
Honglong Li, Parsons Brinckerhoff
Randall Urusaki, Parsons Brinckerhoff
Jan Yamane, Waikīkī Improvement Association
JoAnn Morimoto, Waikīkī Improvement Association
Kyle Oshiro, Hawai'i Convention Center



Contents

Executive Summary

Why This Study Was Done	1
The Needs	2
The Eight Major Elements	3
Actions	4
Monitoring	4

1. Introduction

The Challenges	5
The Study Area	6
Project History and Background	7
Waikīkī Transportation Strategy	8
Relationship to Rail Planning	9
Report Content	10
The Eight Elements	11

2. History

Historical Transportation Influences	13
Transportation Studies and Plans	20

3. Analysis

Existing Transit Conditions	35
Existing Private Bus Operations	57
Existing Taxi Operations	65



4. Process

An Ongoing Process	67
The WTSOC	67
Public Outreach	69

5. Proposals

Major Elements	81
Major Element #1 Services	83
Major Element #2 Fare Collection	91
Major Element #3 Stop Locations	99
Major Element #4 Information & Wayfinding	109
Major Element #5 Running Way	113
Major Element #6 Vehicles	115
Major Element #7 Livable Communities	117
Major Element #8 Implementation	131

Appendix

Appendix A	137
------------------	-----

Hawai‘ian Diacritical Marks

The project consultant team recognizes the use of diacritical marks (i.e., glottal stop (‘), macron (ā)) in place names of Hawai‘i, such as Waikīkī, Ka‘iulani, Kālia, Kūhiō and Kalākaua. These are all used in this report and will be included whenever possible. We also respect the individual use (or not) of these markings for names of organizations and businesses or by others providing content for this document. Therefore, there will be times when we may not have a chance to add or change the markings in all of the places herein. When that happens, e kala mai.



List of Figures

- 1. Number of *TheBus* Trips Departing Kona Street 35
- 2. *TheBus* System Operating Speed By Year 38
- 3. Route 8 Average Roundtrip Travel Time Components 40
- 4. Passenger Loading and Delay Conditions 41
- 5. *TheBus* Stop Blockage At Ala Moana Center 42
- 6. Time and Delay Traffic Observations At Ala Moana Center 43
- 7. Time and Delay Traffic Observations Along Kona Street 44
- 8. Time and Delay Traffic Observations Along Kona Street 45
- 9. Time and Delay Traffic Observations Along Kona Street 46
- 10. Time and Delay Traffic Observations Regarding Bus Routing 47
- 11. Time and Delay Traffic Observations Regarding Bike Conflicts 49
- 12. Time and Delay Traffic Observations Regarding Right Turns 50
- 13. Time and Delay Traffic Observations Regarding Stop Blockage 51
- 14. Time and Delay Traffic Observations Regarding Stop Blockage 52
- 15. Time and Delay Traffic Observations Regarding Right Turns 53
- 16. Time and Delay Traffic Observations Regarding Queuing 54
- 17. Bus Bunching Primarily Caused By Long Traffic Signal Cycles 55
- 18. Bus Platooning Primarily Caused By Operational Delays 56
- 19. Waikīkī Private Transportation Operation 57
- 20. AMC Ala Moana Boulevard Terminal Activity 58
- 21. AMC Ala Moana Boulevard Terminal Activity 59
- 22. AMC Nordstrom Terminal Activity 60
- 23. AMC Nordstrom Terminal Activity 61
- 24. AMC Private Bus Operations 62
- 25. Airport Shuttles and Other Private Transportation Opportunities 63



26. Tour Buses Staging Prior To Curbside Passenger Loading	64
27. Taxi Staging Locations	65
28. Taxi Unloading in Bus Stop Zone	66
29. Pedestrians On The Kalākaua Bridge	67
30. Pedestrians On The Kalākaua Bridge	68
31. WRCS Process	70
32. WRCS Public Workshop #1 Category Rating Results Summary	71
33. WRCS Public Workshop #1 Modal Priority Results Summary	72
34. WRCS Public Workshop #1 Bicycle Presense Presentation Slide	73
35. WRCS Public Workshop #1 Idea Categories Positive Comments	74
36. WRCS Public Workshop #1 Idea Categories Negative Comments	75
37. WRCS Public Workshop #2 Participants	76
38. WRCS Public Workshop #2 Presentation	77
39. WRCS Public Workshop #2 Rotating Station #1	78
40. WRCS Public Workshop #2 Rotating Stations #2 and #3	79
41. WRCS Public Workshop #2 Rotating Station #4	80

List of Tables

1. <i>TheBus</i> Fixed Routes With The Slowest Operating Speeds	37
2. <i>TheBus</i> Route 8 Weekday Scheduled Traveltimes	38
3. Neighborhood Boards Briefed On The WRCS	69

Credits

The project consultant team has used images from many historical, institutional and personal sources. We greatly appreciate those contributions and acknowledge them as appropriate. Any images displayed where the source is not cited may be attributable to Wes Frysztacki, Weslin Consulting Services, Inc.





The Ala Moana Boulevard and Kalākāua bridges over the Ala Wai Canal look the same today as they did in 1950, but just about everything else has changed.



Executive Summary

Why This Study Was Done!

The evolution of transportation in and around Waikīkī is both fascinating and perplexing. Dozens of substantive documents were reviewed to set a foundation for this study, why it is needed and what it might be expected to accomplish. These past documents offer meaningful examples of outstanding planning, but limited implementation. Extensive community participation occurred, ideas offered, proposals developed, approvals given and budgets adopted. But, too many good Waikīkī transportation projects have died somewhere along the path to fruition.

There is no current Waikīkī transportation plan that addresses how pedestrians, bicycles, buses, trucks, taxis and other vehicles are to function safely, efficiently and interactively into the future. There have been such plans in the past. Although the Waikīkī Regional Circulator Study was conceived with a fundamental objective to define a transit service link between the future rail terminus at Ala Moana Center and Waikīkī, it was gradually expanded to include related transportation implications for McCully, Mō'ili'ili, Kapahulu, and the University of Hawai'i at Mānoa; for all modes of transportation; and, for the livability of those areas.

The City Department of Transportation Services directed the Waikīkī Regional Circulator Study consultant team to conduct an ongoing stakeholder oversight and public outreach process. The City directed a parallel effort, the Waikīkī Traffic Study, to closely coordinate with the Waikīkī Regional Circulator Study and to use the stakeholder oversight and public outreach process in a collaborative effort. This was done. The Waikīkī Transportation Stakeholder Oversight Committee was charged with working with City consultants to develop immediate solutions to Waikīkī's transit and traffic issues.

The Waikīkī Transportation Stakeholder Oversight Committee tasked itself with assuring Waikīkī's future multi-modal transportation system keeps pace with its continuing transformation. Waikīkī needs to evolve from a typical vehicle traffic congested urban atmosphere into a more appealing pedestrian-oriented environment reflective of its unique heritage. Waikīkī's transportation infrastructure and services need proper prioritization and reorientation to respond to its 'Pedestrian First' policy.

Surprisingly, review of planning and environmental impact documents prepared since the "Pedestrian First" policy was established reflect very little change over practices giving preferential treatment to vehicles. Since there is obviously a difference between policy and practice, numerous activities were conducted to confirm that the Waikīkī community supports the implications of the "Pedestrian First" policy. The results of these activities clearly affirmed Waikīkī wants the "Pedestrian First" policy to be understood, respected and implemented.

Executive Summary

The Needs

Today, too much vehicle traffic conflicts with pedestrians in Waikīkī. People concerned about Waikīkī's future believe the conflicts between vehicles and pedestrians in Waikīkī, a serious concern now, could significantly worsen in 2019 when rail will become operational with a terminus at Ala Moana Center.

Because of this, the Waikīkī Regional Circulator Study encompasses more than just transit planning. It involves being sensitive to the unique nature of Waikīkī and transportation links to Mānoa, McCully, Mō'ili'ili and the Kapahulu corridor.

Travel patterns, transportation needs, capacity constraints, opportunities and community expectations are different for each neighborhood. The study sought input from individuals, employers, transportation providers, community groups and stakeholders during the outreach process to account for this variety of expectations. People were asked to consider the following:

- Overall, the largest share of *TheBus* riders' trips originate in Waikīkī where there is no transit center, terminal or station, just bus stops.
- In 2011, O'ahu hosted 4.4 million visitors, who took more than 17,000 transit trips daily. This excludes the private transportation bus trips which are believed to be much greater in number. Most of these visitors stay in Waikīkī.
- Visitor trips from Waikīkī and work trips to Waikīkī are two of the top twelve key transit markets on O'ahu.

The Waikīkī Regional Circulator Study acknowledged that Waikīkī has transportation problems justifying urgent attention:

- Waikīkī bus service has reliability problems. Route 42 had the largest reliability problem over the 1992 to 2008 period. Route 42 travels from Ewa Beach to Waikīkī and is part of our bus system's backbone. Rail will improve reliability. The future bus connection to Waikīkī needs to be as reliable.
- Waikīkī has traffic problems, but Waikīkī is not included in the committed congestion-relief project list in the O'ahu Regional Transportation Plan. Different approaches are needed for Waikīkī.
- Waikīkī has parking problems. On- and off-street parking facilities are heavily used in Waikīkī. Inadequate parking supply has been a long-term problem. Better transit connections can alleviate parking demands.

The Eight Major Elements

The Waikīkī Regional Circulator Study contains eight sets of proposals. These are designed to offer solutions to specific problems identified by the study. The fundamental characteristics of these major elements are as follows:

1. ***Services and Operations*** – The problem: today’s indirect Route 8 alignment would require 16 buses to meet rail passenger demand. The solution: the circulator will provide direct, more frequent service with fewer stops requiring only 12 buses.
2. ***Fare Collection*** – The problem: today’s Route 8 takes 21 more minutes to operate the same route alignment than it took to operate 20 years ago. This is primarily due to passenger loading time delays. The solution: the circulator will provide pre-boarding fare payment and all-door boarding to reduce delays.
3. ***Stop Locations*** – The problem: today’s Route 8 shares bus zone space with other bus routes at locations with insufficient capacity causing delays. The solution: the circulator will have exclusive stops.
4. ***Information and Wayfinding*** – The problem: confused riders cause delay. The solution: the circulator stops will have coordinated wayfinding and provide real time electronic information displays.
5. ***Running Way*** – The problem: shared roadway causes delay. The solution: the circulator will extend transit priority treatment starting with colorized pavement and “bus stop” markings at each circulator stop.
6. ***Vehicles*** – The problem: vehicles must have high reliability. The solution: the circulator will have only proven technology with meaningful features.
7. ***Livable Communities*** – The problem: pedestrians have not been first, bicycling infrastructure has not been adequate and vehicle traffic is over-whelming the roadway system. The solutions: create a 7-mile, grade-separated, pedestrian and bicycle core network, create an extensive bike sharing program, emphasize morning deliveries with priority treatments for trucks, provide real-time parking supply information displays, use complete street guidelines to provide pedestrian friendly improvements, create home zones where appropriate and offer enhancements to the public realm.
8. ***Implementation*** – The problem: past plans have been unfulfilled. The solutions: create definitive milestones, institutional mechanisms and monitoring programs administered by a Waikīkī Transportation Management Association.

Executive Summary

Actions

The Waikīkī Regional Circulator Study identifies the actions required for each major element by year. In general, the timing is as follows:

- **2013 – 2014** – The City and Waikīkī Transportation Stakeholder Oversight Committee collaborates with others on refining the specifics of proposals including the operational requirements of dynamic scheduling, an environmental assessment for the Diamond Head transit center, design refinements for bus stops, coordination with General Growth Properties (GGP) on the Ewa stop, specifications for ticketing machines, procurement of electronic information displays, development of wayfinding signage, design of traffic operations changes, procurement of vehicles, refinement of livable communities proposals, and requests for budget and related approvals.
- **2015 – 2016** – The City completes design, construction, procurement and testing of all major elements. The Waikīkī Transportation Stakeholder Oversight Committee provides continuing oversight in conjunction with the newly formed Waikīkī Transportation Management Association.
- **2017 – 2018** – All first phase major elements become operational with work continuing on subsequent improvements. The City and the Waikīkī Transportation Management Association continue to monitor improvements.
- **2019 – 2020** – Rail service reaches Ala Moana Center. Transit operations and ridership are closely monitored. The Waikīkī Transportation Management Association becomes fully operational and seeks improvements, if necessary.

Monitoring

There is broad consensus among those who have participated in the Waikīkī Regional Circulator Study that the lack of progress on past plans, proposals and projects can be attributed to the absence of a responsible authority and consistent champions for what needs to be done. Some institutional mechanism is needed. The genesis of what needs to be done has started with the Waikīkī Transportation Stakeholder Oversight Committee. This group needs to continue to make sure progress occurs.

The Waikīkī Transportation Stakeholder Oversight Committee must continue its liaison with the City and its' consultants. But, more is needed than a policy oversight group. The Waikīkī Transportation Management Association is the essential institutional mechanism needed for future success.

CHAPTER # 1: Introduction

The Challenges

Weslin Consulting Services, Inc. (Weslin) and its team of sub-consultants prepared this Waikīkī Regional Circulator Study (WRCS) for the City and County of Honolulu’s Department of Transportation Services Public Transit Division (DTS-PTD). The WRCS was undertaken to achieve three objectives:

- A. Develop a plan that leads toward sustainable public transit service between the future rail terminus at Ala Moana Shopping Center and Waikīkī and address any resulting transit service impacts to McCully, Mō‘ili‘ili, Kapahulu, and the University of Hawai‘i at Mānoa.
- B. Develop and identify ways to effectively integrate concepts of livable communities into the circulator study.
- C. Conduct an ongoing stakeholder oversight and public outreach process.

The WRCS considered ways to move Waikīkī away from a typical vehicular-traffic-congested urban atmosphere toward a more appealing pedestrian-oriented-environment reflective of its unique heritage. Waikīkī’s transportation infrastructure and services need proper prioritization and reorientation to respond to a “Pedestrian First” policy established in the 1990’s and reaffirmed continuously throughout the study.

People concerned about Waikīkī’s future believe the conflicts between vehicles and pedestrians in Waikīkī, a serious concern now, could worsen in 2019 when rail will become operational with a terminus at Ala Moana Center. Transportation conflicts and being able to have meaningful, multi-modal access to rail and overall mobility in the area could affect the neighborhoods of Ala Moana, McCully, Mō‘ili‘ili and Kapahulu, as well as the University of Hawai‘i at Mānoa.

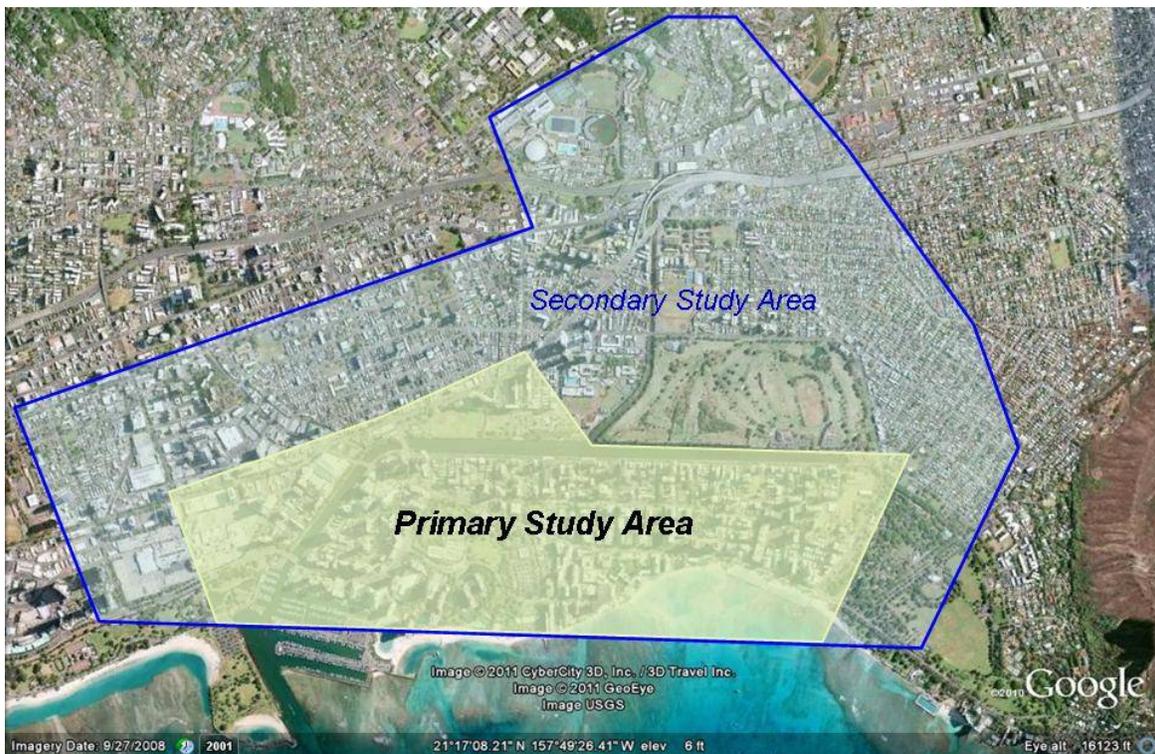
Because of this, the Waikīkī Regional Circulator Study encompasses more than transit planning. The WRCS involves being sensitive to the unique nature of Waikīkī, the University of Hawai‘i at Mānoa, the neighborhoods of McCully and Mō‘ili‘ili, and the Kapahulu corridor. Travel patterns, transportation needs, capacity constraints, opportunities and community expectations are different for each. The study sought input from all types of stakeholders during the outreach process to account for this variety of expectations.



Chapter # 1

The Study Area

The primary study area involves the direct connection between Waikīkī and the Ala Moana Center station. The secondary study area considers the relationships of that connection with the University of Hawai'i at Mānoa, the neighborhoods of McCully and Mō'ili'ili, and the Kapahulu corridor.



The “Primary Study Area” reflects the emphasis on Waikīkī and the connection to Ala Moana Center where the rail line will terminate. The “Secondary Study Area” includes the geographic areas that may be positively or negatively impacted by transit service changes associated with the primary study area.

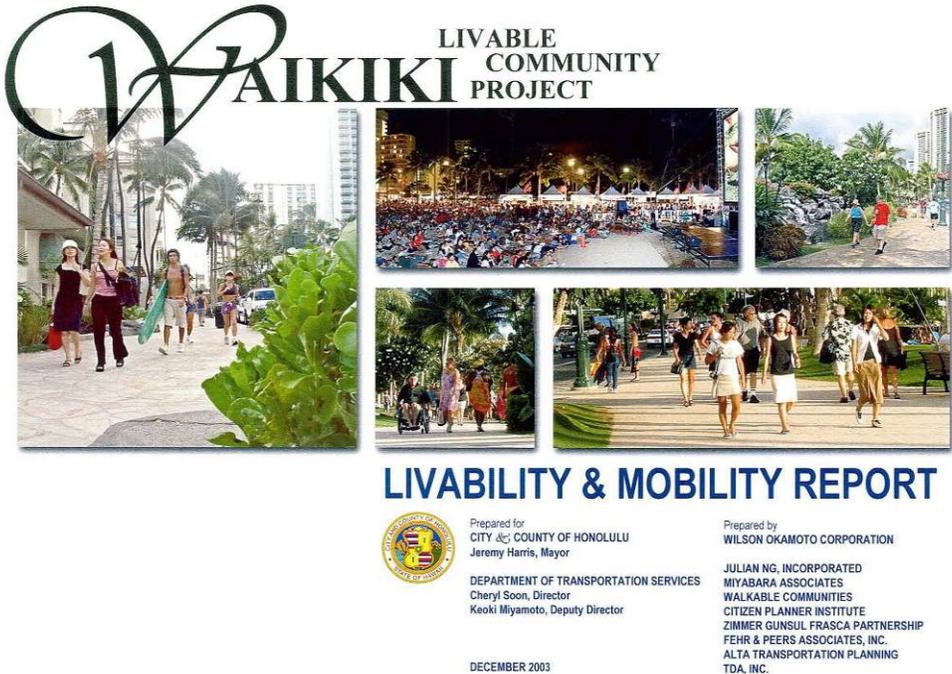
During the course of this study some bus route changes were made to bus route alignments in the secondary study area. Proposals made as part of this effort only involve route alignment changes to avoid traffic delays. The WRCS has identified proposals within the livable communities component of the project to provide better pedestrian and bicycle connections.

Project History and Background

In 2003, the Waikiki Livable Community Project (WLCP) report was completed. The WLCP’s transportation related actions relied upon the completion of the Bus Rapid Transit (BRT) project, subsequently replaced with the Honolulu High Capacity Transit Corridor Project (HHCTCP). BRT directly served Waikiki. The first operational segment of HHCTCP does not.

The HHCTCP’s Ala Moana Transit Center station terminus is a situation not contemplated by the WLCP. A need was identified to update prior work to achieve the objectives of the WLCP and the HHCTCP, simultaneously.

A request was made by the Waikiki Improvement Association (WIA) to the City and County of Honolulu Department of Transportation Services (DTS) for their support of a cooperative effort to address concerns about the need for a high quality transit link between the Ala Moana Transit Center station and Waikiki. WIA asked that the high quality transit link be supportive of the Waikiki transportation strategy originally established in the WLCP and updated in 2008.



Chapter # 1

Waikīkī Transportation Strategy

The Waikīkī Transportation Strategy included in the WLCP is founded upon the 1999 report “*Recapturing the Magic of Waikīkī*” and it’s following expectation:

“ In Waikīkī the pedestrian, visitor and resident alike, will come first. Waikīkī will be a pedestrian-oriented resort and a pedestrian-oriented residential area. Walking will be the primary mode of getting around within Waikīkī and it will be a pleasurable way to enjoy Waikīkī.”

The Waikīkī Regional Circulator Study was conducted recognizing that Waikīkī holds a prominent position as a major O’ahu transit travel market:

- Overall, the largest share of *TheBus* riders’ trips originate in Waikīkī.
- In 2011, O’ahu hosted 4.4 million visitors, who took more than 17,000 transit trips daily. Many of these visitors stay in Waikīkī.
- Visitor trips from Waikīkī and work trips to Waikīkī are two of the top twelve key transit markets on O’ahu.

The Waikīkī Regional Circulator Study was conducted acknowledging that Waikīkī has transportation problems justifying urgent attention:

- Waikīkī bus service has reliability problems. Route 42 has the largest reliability problem over the 1992 to 2008 period as identified in the HHCTCP Environmental Impact Statement (EIS). Route 42 travels from Ewa Beach to Waikīkī and is part of the transit system’s backbone.
- Waikīkī has traffic problems, but Waikīkī is not included in the committed congestion-relief project list in the O’ahu Regional Transportation Plan (ORTP).
- Waikīkī has parking problems. On- and off-street parking facilities are heavily used in Waikīkī. Inadequate parking supply has been a long-term problem. Better transit connections can alleviate parking demands.

Relationship to Rail Planning



The WRCS investigated a critical relationship between the 20-mile rail project and Waikiki. The WRCS was conducted under the direction of DTS. Since the DTS Director is a member of the Honolulu Authority for Rapid Transportation (HART) Board of Directors and the WRCS prime consultant is the lead consultant to the HART General Engineering Contractor (GEC) for bus planning coordination was maintained among these entities.

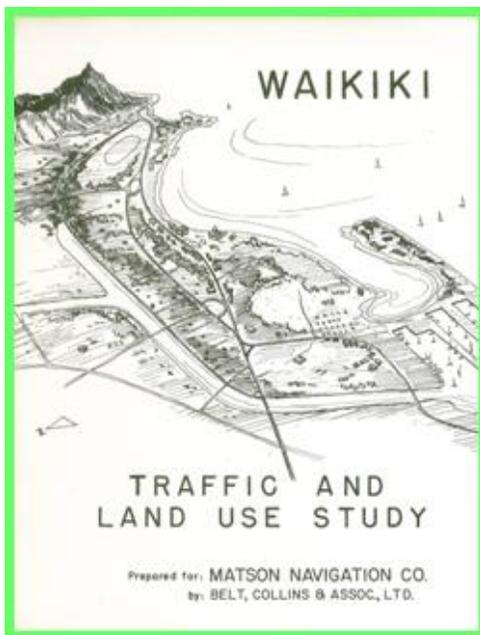
The Waikiki Regional Circulator Study built upon the HHCTCP EIS which defined the proposed rail project and identified several important unresolved issues potentially significant to Waikiki's connection to rail at Ala Moana Center:

- Ala Moana Center station bus to rail connection details are characterized, but not specified. When the HHCTCP EIS was released in June 2010 it was assumed bus transfers would be made at an off-street transit center adjacent to the fixed guideway station. Subsequent conceptual designs identified on-street bus positions along Kona Street similar to past operations. The WRCS was tasked with proposing options for the rail to bus interface at AMC.
- Ala Moana Center to Waikiki bus service details were characterized in the HHCTCP EIS, but not specified. Enhanced bus service would be provided between the terminal station and Waikiki. The HHCTCP EIS noted bus system improvements, including traffic signal priority, automated vehicle identification, and off-vehicle fare collection, could complement frequent bus service. The WRCS was tasked with investigating these types of possibilities to determine their merits in making the best connection possible to AMC.
- Ala Moana Center transit demand entering the station in 2030 is projected to be 22,610, over two times higher than any other station. Most of those riders (17,790) are arriving by bus. About a third of those people are coming from Waikiki. The WRCS was tasked with conducting the analysis to accommodate this extraordinary volume of passengers with reliable and quality operations.

Chapter #1

Report Content – Chapter #2: History

The future livability of Waikīkī and understanding how to enhance Waikīkī’s “Hawai’ian sense of place” through transportation planning is best achieved by first understanding how historical transportation influences by time period have impacted Waikīkī. Chapter 2 identifies some details about early influences from pre-contact to present day. It reviews studies and plans dating back to the 1950’s up to ongoing related planning.



The evolution of transportation in and around Waikīkī is both fascinating and perplexing. Dozens of major documents were reviewed to set a foundation for the WRCS. These documents offer many examples of outstanding planning, but limited implementation.

There is no single transportation planning history document addressing how pedestrians, bicycles, transit and vehicles are to function safely and efficiently interactively into the future. Therefore, the WRCS became a means to recognize this deficiency while completing its primary mission of identifying the best transit connection between the AMC station and Waikīkī.

Report Content – Chapter #3: Analysis

The conflicts among pedestrians, bicycles, cars, commercial vehicles, tour buses and public buses along the bus route alignments between Ala Moana Center and Kapi’olani Park are identified and analyzed in Chapter 3. The travel time delays for buses circling Ala Moana Center, meandering through Waikīkī and circling the Honolulu Zoo are quantified and evaluated.



Report Content – Chapter #4: Process

One of the primary objectives of the WRCS was to conduct an ongoing stakeholder oversight and public outreach process. Chapter #4 describes this process. This directive was also established for the concurrent Waikīkī Traffic Study (WTS). Both studies reported to the Waikīkī Transportation Stakeholder Oversight Committee (WTSOC) and participated in the public outreach process.



Report Content – Chapter #5: Proposals

The WRCS proposals are grouped into eight major elements described in detail in Chapter 5 and summarized on the next page. Each is color-coded in this report for easy reference. Each is associated with different mixes of administrative and technical expertise needed for proceeding with the next steps. Some of these steps are already underway. Others need further refinements and approvals before proceeding. All aspects of these proposals will continue to include the process that has been used to identify the WRCS eight major elements including future WTSOC meetings, neighborhood board briefings, stakeholder consultations and public workshops.



Chapter # 1

The Eight Major Elements

Chapter 5 presents eight sets of proposals. These are designed to offer solutions to specific problems identified by this study. The fundamental characteristics of these WRCS major elements are as follows:

1. ***Services and Operations*** – The problem: today’s indirect Route 8 alignment would require 16 buses to meet rail passenger demand. The solution: provide direct, more frequent service with fewer stops requiring only 12 buses. An alternative was selected after considering the seven elements listed on the next page.
2. ***Fare Collection*** – The problem: today’s Route 8 takes 21 more minutes to operate the same route than it did 20 years ago primarily due to passenger loading time delays. The solution: provide pre-boarding fare payment and all-door boarding to reduce delays.
3. ***Stop Locations*** – The problem: today’s Route 8 shares bus zone space with other bus routes at locations with insufficient capacity causing delays. The solution: create stops dedicated to the circulator.
4. ***Information and Wayfinding*** – The problem: confused riders cause delay. The solution: create coordinated wayfinding and provide real time electronic information displays.
5. ***Running Way*** – The problem: shared roadway causes delay. The solution: extend transit priority treatment starting with colorized pavement and “bus stop” pavement markings at each circulator stop.
6. ***Vehicles*** – The problem: vehicles must have high reliability. The solution: offer proven technology with meaningful features.
7. ***Livable Communities*** – The problem: pedestrians have not been first, bicycling infrastructure has not been adequate and vehicle traffic is over-whelming the roadway system. The solutions: create a 7-mile, grade-separated, pedestrian and bicycle core network, create an extensive bike sharing program, emphasize morning deliveries with priority treatments for trucks, provide real-time parking supply information displays, use complete street guidelines to provide pedestrian friendly improvements, create home zones where appropriate and offer enhancements to the public realm.
8. ***Implementation*** – The problem: past plans have been unfulfilled. The solutions: create definitive milestones, institutional mechanisms and monitoring programs administered by a Transportation Management Association.

Chapter #2: History

Historical Transportation Influences

Dozens of major documents were reviewed to set a foundation for the WRCS. These documents offer many examples of outstanding planning and limited implementation. This chapter uses the review of those past documents to highlight how past planning for Waikīkī has influenced today's transportation environment.

Although well over one hundred documents were reviewed for the WRCS, no single document could be found with a complete transportation history of Waikīkī. No current document could be found that addresses how pedestrians, bicycles, transit and vehicles are to function safely and efficiently interactively into the future. Therefore, the WRCS became a means to recognize and correct this deficiency while completing its primary mission of identifying the best transit connection between the AMC station and Waikīkī.

The future livability of Waikīkī and understanding how to enhance Waikīkī's "Hawai'ian sense of place" through transportation planning is sometimes best achieved by first understanding how historical transportation influences have impacted Waikīkī.

Transportation Influences: Pre-Contact to 1810

Polynesians were ancient mariners. They travelled the Pacific for thousands of years. Their canoes were the means of access throughout the Hawai'ian Archipelego to visit, or to conquer. Canoe travel was the dominant transportation mode to get to O'ahu and Waikīkī.

Walking was the dominant mode once on O'ahu. Walking occurred on many historic trails. One of those trails connected Kou (Honolulu) and Waikīkī.



In the early 1800s, large sailing vessels brought economic and social changes to O'ahu. The advent of western trade and the whaling industry placed strategic importance on Honolulu Harbor as the center of commerce. This caused Kamehameha I to move his court from Waikīkī to Honolulu in 1809 where the deep draft harbor became the focus of maritime activities.

Chapter #2

Transportation Influences: Early 1800s:

Waikīkī, three miles from downtown, became the country retreat for royalty and kama'āina businessmen who lived in Honolulu from 1810 to 1860. Waikīkī maintained an informal lifestyle as Honolulu grew and became more sophisticated. The sandy Waikīkī shore became a retreat for the ali'i. It was the only place close to the city with a beach and inviting waters.

The Great Mahele and subsequent 1850 legislation allowed foreigners to purchase land and changed the residential population of Waikīkī. Horses were introduced to Hawai'i in 1803. By 1860, they were everywhere.

Transportation Influences: 1860 to 1900s:

The trail to Waikīkī was expanded into a road in the 1860s. It was known as the Waikīkī Road. The name changed to Kalākaua Avenue in 1905. It became the major streetcar line connecting Honolulu and Waikīkī.

Waikīkī was a playground for Honolulu. Bathhouses would provide a towel, bathing suit, dressing rooms and a stretch of beach to enjoy the ocean for a fee. The baths were operated in conjunction with an 'omnibus' or carriage service to Waikīkī and offered the public a special fifty-cent roundtrip fare which included admission to the bathhouse.



J.J. Williams Photo 1892 – Private Collection - hand-tinted by Lee Sampson – JLB Press

The early mule-drawn streetcar system allowed Honolulu residents to make weekend trips to Waikīkī for pleasure. Waikīkī residents used the streetcar to make shopping excursions into Honolulu. The mule-drawn streetcar run by Hawai'i Tramway improved access to Waikīkī. Mule streetcars were relatively short lived (1889-1903). They were replaced by the electric trolley operated by Honolulu Rapid Transit Company (HRTC). The bicycle was very much in vogue in these pre-automobile years of the 1890s and 1900s.

Transportation Influences: 1900s to PreWar:



Bishop Museum – hand-tinted by Lee Sampson – JLB Press

HRTC inaugurated service in 1903 between downtown and Waikīkī. Commute time was reduced from 45 to 28 minutes. Waikīkī increasingly became a focal point for social and recreational activities. HRTC provided easier access to Waikīkī. HRTC built the aquarium as an end-of-the-line attraction. Streetcar ridership reached its zenith in 1923 - over 20 million paid riders. With the population of O‘ahu at 148,849 - every man, woman and child rode the streetcar 136 times a year.

HRTC’s Waikīkī Line already had a polo field and racetrack at Kapi‘olani Park, plus the beach itself. Even in these early days the aquarium was just one of many Waikīkī attractions: public bathhouse in Kapi‘olani Park (1907), Hawai‘ian Outrigger Canoe Club (1908), the Zoo (1914), the Natatorium (1924), and the Outrigger Club (1930).

Streetcars served as the primary urban transportation mode in Honolulu between about 1901 and 1941. Until their popularity was usurped by private vehicles, they were a way of life.

The departure of the streetcar and its replacement by private vehicles as the primary mode of transportation radically changed Waikīkī’s character.

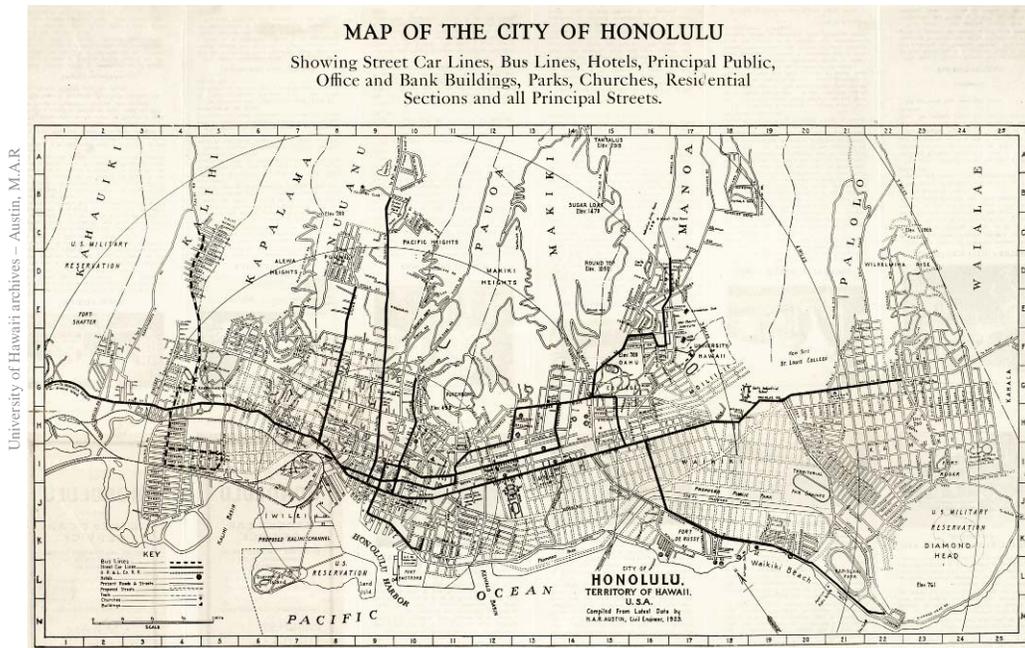


Collection of Robert C. Pava – hand-tinted by Lee Sampson – JLB Press

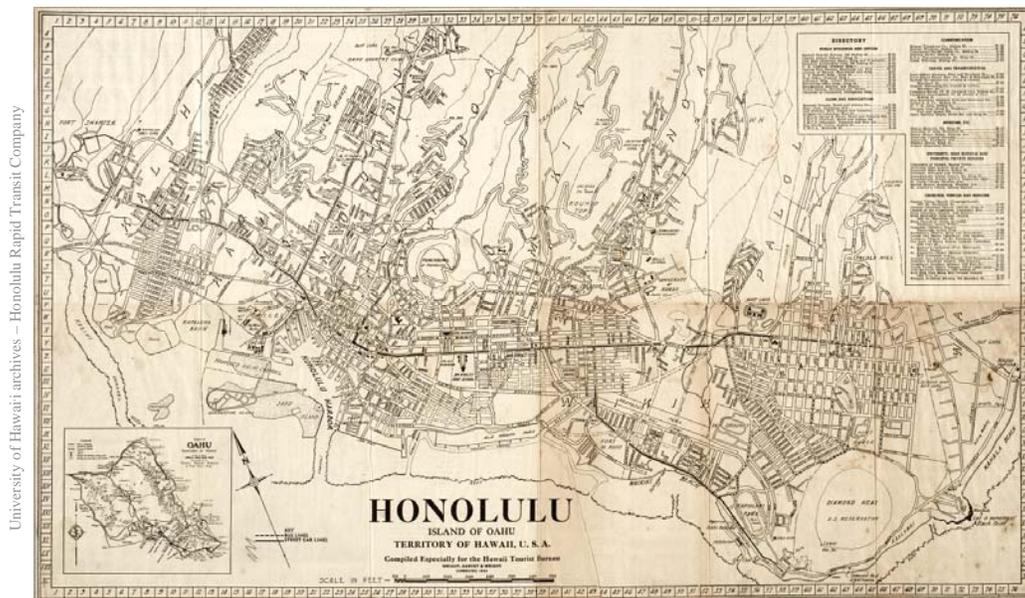
Chapter #2

Transportation Influences: 1920s to PreWar:

In 1923 the Honolulu map was dominated by the extensive streetcar network.



By 1932 most streetcar routes had been replaced by bus routes.

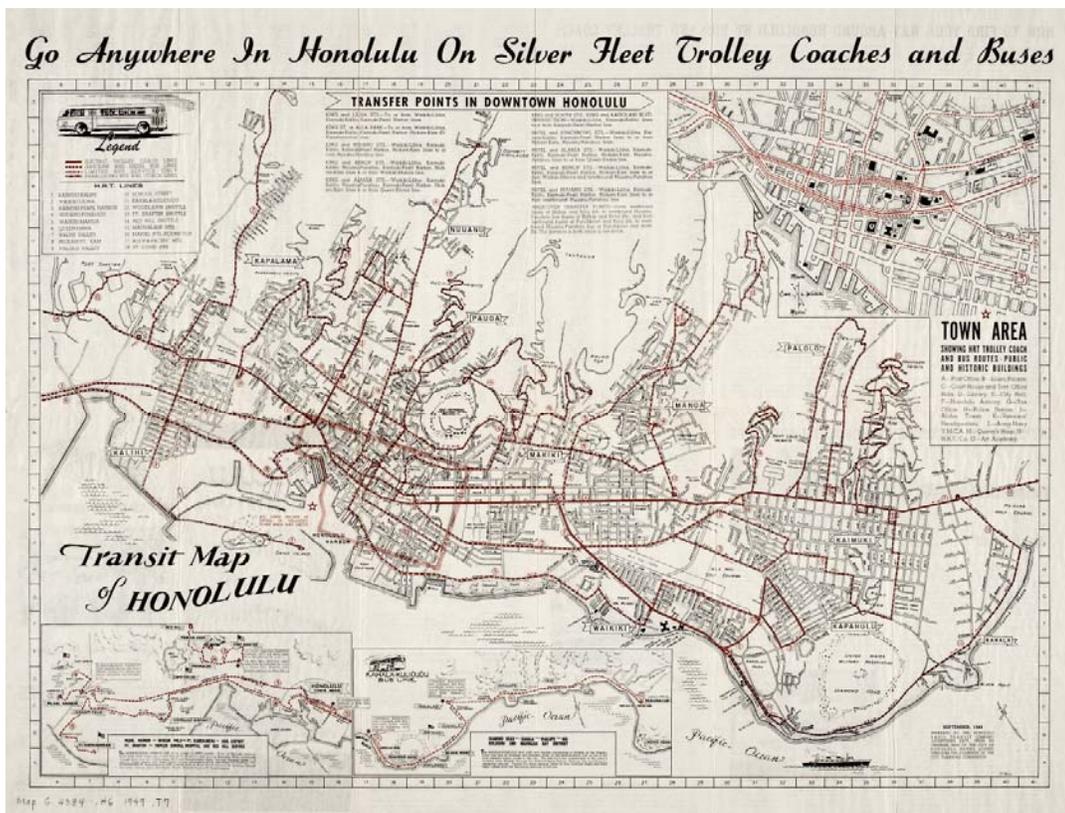


Transportation Influences: World War II Years

By 1941, the decision had been made that streetcars in HRTC's fleet would be replaced by rubber-tired buses - electric, gas and diesel. The last streetcar ride on June 30, 1941 was a historic moment - part celebration, part wake.

Then came the attack on Pearl Harbor. The Territory's population doubled to over a million, half of whom were soldiers, sailors, marines and civilian war workers. Waikīkī became a rest and recreation area for soldiers and sailors coming and going to the war in the Pacific. Waikīkī was the last stop for those heading to war. Waikīkī was the first stop on American soil on the way back. The Moana Hotel transformed into a respite for soldiers. Increasingly, visitors arrived to Waikīkī by car.

By 1949, streetcars were gone and two bus routes served Waikīkī. One-way streets had not been introduced so Route 2 was able to provide two-directional service along Kalākaua Avenue while Route 5 provided two-way service along Ala Wai Boulevard.



Chapter #2

Transportation Influences: Post World War II Years

The strong and direct transit link between downtown Honolulu and Waikīkī so important to the positive relationship between these two locations since the 1860s weakened after the war. No longer could one see streetcars headed for Waikīkī encouraging residents to leave their auto safely at home.



While it was public transportation that served Waikīkī as its mobility backbone for almost a century, it was the automobile that dominated the transportation scene in Waikīkī since the war ended. It has been estimated that if all of the cars using Kalākaua Avenue in one day were placed end to end, they would reach half way from Honolulu to the island of Hawai'i.

Prior to World War II, Hawai'i's overnight visitor count never rose above 30,000. By the mid-1950s it hovered around the 100,000 mark. In 1959 - the year of Statehood, jets and James Michener's Hawai'i - it jumped to a quarter million. Five years later, it doubled to half a million.

Transportation Influences: 1990s to Present Day

Pedestrian travel is the only mode of transportation that has continuously provided access throughout Waikīkī from pre-contact times to the present day. From the late 1990s, there has been a resurgence to reestablish the pedestrian realm as the mode to best experience a “Hawai‘ian sense of place”. Substantive public improvements have been invested to improve the quality of Waikīkī’s sidewalks and public open spaces. This has leveraged billions of private investment dollars spent by Waikīkī resorts and the business community to renovate resort infrastructure.

Zoning limited commercial development along both sides of Kalākaua back in the 1920s. Starting in the 1920s, the automobile was given preferential consideration, negatively impacting quality of life and mobility for other modes. The dominance of the auto and changes in zoning helped develop Kalākaua Avenue into a commercial strip. Vehicles, and the lack of parking management, created a major traffic congestion problem that has continued since the end of the second world war.

Public transportation has been the only transportation influence that has spanned the entire urban development of Waikīkī. It has been associated with positive influences to livability for Waikīkī’s residents, visitors and workers.

As Waikīkī developed into an urban resort and major employment base, *TheBus* provided workers with ease of access to hotels and businesses. Public transportation in Waikīkī has been given some preferential treatment in a few locations, such as the contra-flow lanes, Ewa-bound along Kalākaua Avenue.



Today, *TheBus* routes serve all of Waikīkī’s population. Many proposals to upgrade transit services to Waikīkī have come and gone while *TheBus* steadfastly continues to serve large volumes of patrons.

Chapter #2

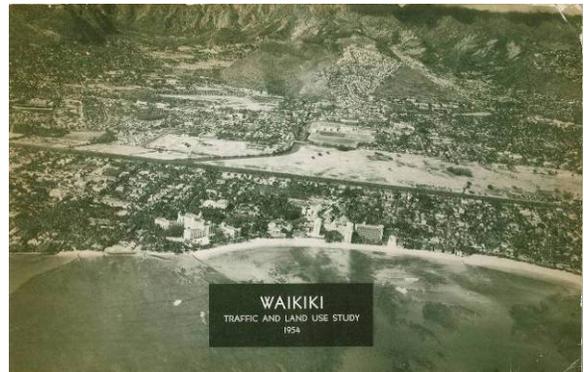
Transportation Studies and Plans

Transportation studies and plans focused on Waikīkī offer a curious message about how to make such a wonderful place better through transportation.

Lewis Mumford, the internationally noted authority on city and regional planning, came to Honolulu at the invitation of the Honolulu Park Board in 1938. Mumford produced “A Memorandum Report on Park and City Planning - Whither Honolulu.” His advice: “Whatever is done toward urban improvements should be done well.” The evidence seems plans have been done well. Implementation of those plans has been piecemeal.

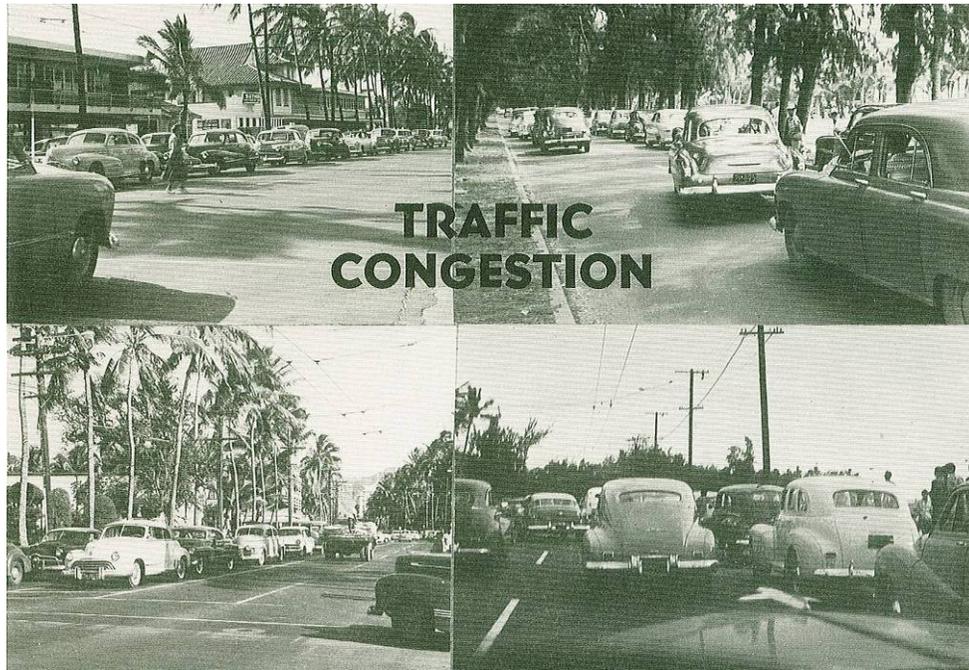
Early Studies and Plans – the 1950s

The 1954 Traffic and Land Use Study reviewed a number of roadway projects for Waikīkī. These road projects were viewed as necessary due to severe congestion in Waikīkī. The 1954 Waikīkī Traffic and Land Use study did not address transit or the impacts or benefits of the proposed road improvements on the transit system. There are no known comparable transit plans conducted in the 1950s.



A number of proposed transportation projects were offered to improve road network connectivity: 1) completion of Kūhiō Avenue and improvements of tributary streets; 2) a Beachwalk and Lewers one-way system; and, 3) a University Avenue extension and bridge.

Other road proposals would have negatively impacted Waikīkī: 1) an Ala Moana Boulevard extension to Ala Wai Boulevard would have bifurcated Fort DeRussy, Waikīkī’s largest open space, 2) widening of Paki Avenue and restrictions on Monsarrat would have impacted the beautiful plantation of monkey pod trees between Monsarrat and Kapahulu Avenue; 3) relocation of a portion of Kalākaua Avenue would have detached public access to the beach and 4) a new scenic road mauka of Ala Wai Canal would restrict land uses on the Ewa side of the canal.



The positive elements of the 1954 plan included completion of Kūhiō Avenue and mauka-makai streets; creation of open space connection on the mauka side of the Ala Wai Canal for recreational access connecting Ala Moana Park to Kapi'olani Park and extending Kapi'olani Park to Kūhiō Beach as was done in 1998 with the Kūhiō Beach Promenade; and, creation of an Ala Wai Bridge.

The not so great elements included a Kalākaua and Kūhiō one-way couplet making vehicles dominant in the pedestrian-oriented district; realignment of Kalākaua into Kapi'olani Park impacting the park and additional "Magic Island" type land fills with their attendant environmental impacts.

Early Studies and Plans – the 1960s

The 1967 O'ahu Transportation Study defined a transit corridor based on travel demand. The corridor connected Pearl City and Hawai'i Kai. Subsequent studies involved a Preliminary Engineering and Evaluation Program (PEEP I in 1972 and PEEP II in 1976). These explored fixed guideway alternatives, corridors, and technologies including various branch lines into Waikīkī. The transit planning efforts began an over-arching policy direction to shift travel demand away from private vehicles, but implementation faltered.

Chapter #2

Early Studies and Plans – the 1970s

The 1970 Waikīkī Traffic Study concluded congestion in Waikīkī is due to:

- The frequency and short spacing of two way intersections having a mixture of high vehicle turning movements and pedestrian crossings which create excessive and detrimental conflicts.
- High demand for curb parking spaces generated by the overall deficiency and unbalanced distribution of off-street facilities for both parking and loading.
- Poor parking way-finding signage.
- Convergence of several major arterials within a relatively small area on the Ewa side of Waikīkī.

Ironically, the above conclusions are still relevant. The 1970 Waikīkī Traffic Study included the following recommendations:

- Sidewalk widening along Kalākaua
- University Avenue crossing of the Ala Wai Canal for vehicles and pedestrians.
- A water carrier connection between the airport and somewhere near Waikīkī.
- A rapid transit system would be along Kūhiō Avenue.
- Physical separation of pedestrian ways from streets for vehicles carrying passengers and cargo.

The 1972 Waikīkī Transportation Plan was proposed by Mayor Fasi. It provided an ambitious four year plan for improvement to transform Waikīkī into a people-oriented place. Some of the more significant ideas were:

- Widen Kūhiō Avenue roadway into a pedestrian mall.
- Close roads to increase landscape areas.
- Close diagonal road at Ka'iulani Avenue makai of Kūhiō.
- Close makai bound right turn lane of McCully onto Ala Wai Boulevard to create large landscape space.
- Close Kalākaua from the zoo through the park.
- Ala Wai Promenade from Kalaimoku to Ohua.
- All new street furniture, traffic fixtures and crosswalks.
- Convert Kalākaua to a pedestrian mall.

Early Studies and Plans – the 1980s

Honolulu proceeded into detailed planning, environmental and engineering studies for the Honolulu Area Rail Rapid Transportation (HART) project in the 1970s. These studies culminated in 1982 with the acceptance of the HART Final Environmental Impact Statement by the U.S. Department of Transportation Secretary. However, there was a change in City Administration and the decision was made not to proceed with the HART project.

A re-examination of fixed guideway options began in 1985. The HART project had completed the Preliminary Engineering phase and was at the point of entering final design. However, in the re-examination of fixed guideway options, it was decided to explore new technologies that had been developed, to examine alignment variations that would take advantage of the new technologies, and to evaluate alternative public-private options.

To focus on these issues, a modified Alternatives Analysis / Draft Environmental Impact Statement (AA/DEIS) approach was undertaken. The alternatives analysis relied on previous planning and engineering studies and recognized many key decisions that had already been made. These decisions, such as the corridor, the need for full grade separation and specification of a fixed guideway technology, were not re-examined.

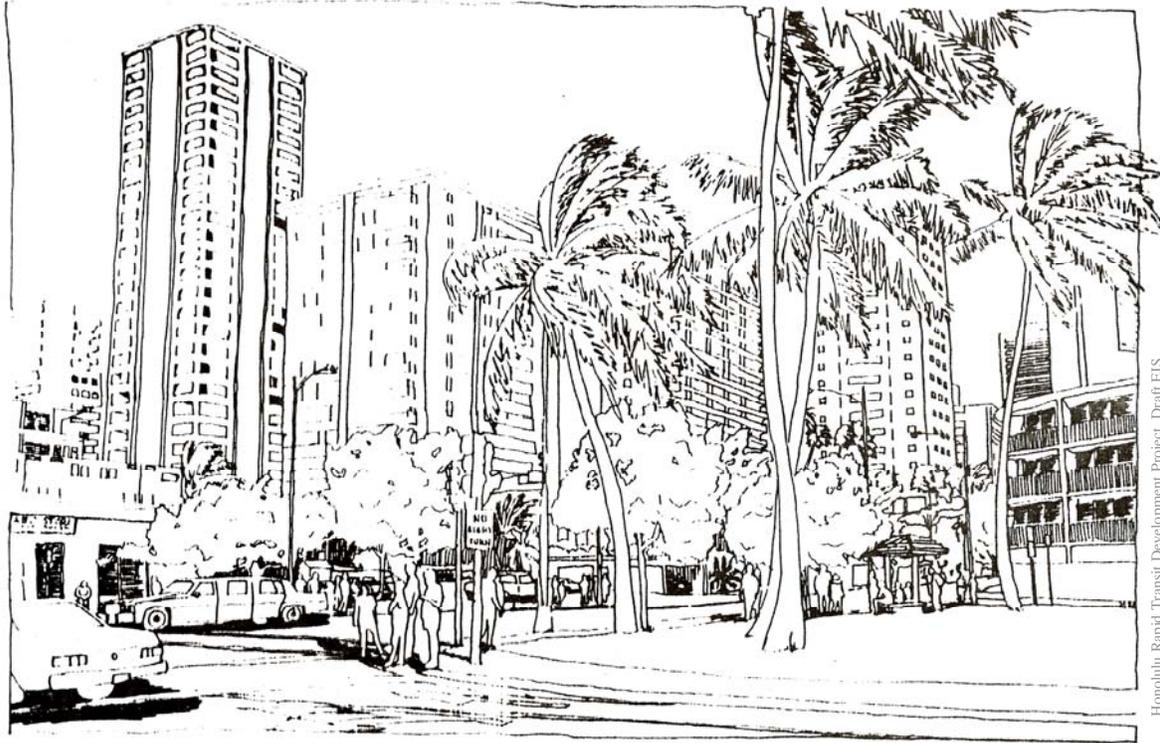
Transitional Studies and Plans – the 1990s

By 1990, there were 613,000 automobiles registered on O‘ahu. Residents made 2,410,000 daily person trips and only seven percent of the trips were made by transit. In 1960, 134,000 automobiles were registered on O‘ahu and residents made a total of 1,190,000 daily person trips. Eleven percent of those trips were made by transit. Between 1960 and 1990, the population of O‘ahu increased by 68 percent, while the number of daily person trips more than doubled, and the number of vehicles registered on the island increased five-fold.

The 1990s began with the late 1980s work on the AA/DEIS being published in March 1990. Throughout these intensive transit planning efforts, Kūhiō was used for the elevated alignment for any fixed guideway extension into Waikīkī.

The Waikīkī branch went from Kapi‘olani Boulevard across the Ala Wai Canal at an elevation of 17 to 20 feet higher than the historic Kalākaua Avenue Bridge and past the mahogany trees in the median of Kalākaua Avenue. It was acknowledged the guideway would produce an adverse impact at this location.

Chapter #2

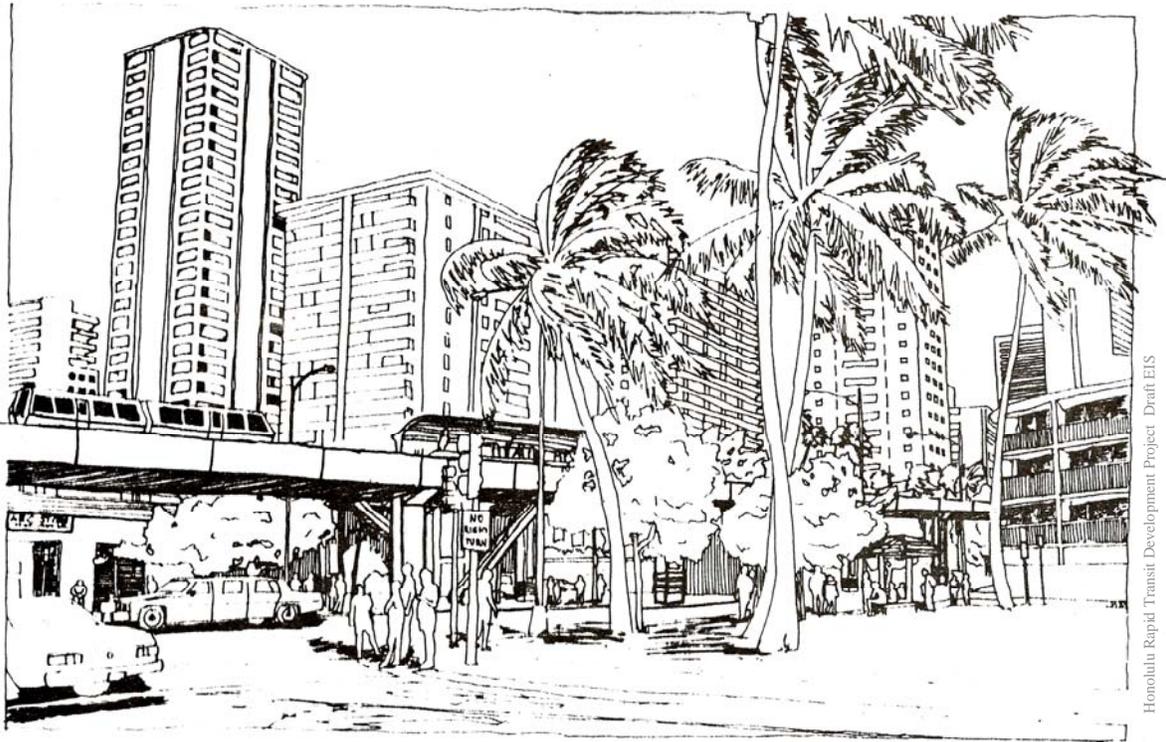


Honolulu Rapid Transit Development Project Draft EIS

Along Kūhiō Avenue it was surmised that the guideway would not significantly affect the area's strong aesthetic diversity of built forms, heavy pedestrian traffic, ground level commercial/retail outlets, and heavy street traffic. The impact on the visual setting was extensively reviewed and portrayed in renderings such those illustrated on these pages.

The proposed guideway would be adjacent to or near several parks in Waikīkī. It was concluded in the AA/DEIS report that the elevated guideway would not affect the function or intrude on the visual quality of these open space resources. Four stations were identified in Waikīkī. These were located on Kalākaua at McCully, on Kūhiō between Kaiolu and Lewers, on Kūhiō at Ka'īulani and on Kūhiō at Makee near Kapahulu Avenue where the branch line would terminate.

The dual-sided proposed Ka'īulani Station and its vertical access from the platform above would have been adjacent to Princess Ka'īulani Park. Because the park is essentially a planted traffic triangle, used more as a pedestrian path from the adjacent bus stop than as a recreational facility, visual impact was judged to be minimal.



Honolulu Rapid Transit Development Project - Draft EIS

Later in 1990 the State Legislature passed funding acts to authorize the City to impose a general use and excise tax surcharge to provide local funding for the project. Local funding was needed to leverage federal funds Congress would make available for the project. The City selected a grade-separated, fixed-guideway transit alternative that included a tunnel under downtown, and FTA authorized the City to proceed to preliminary engineering for this Locally Preferred Alternative (LPA).

Discovery of unfavorable soil conditions in the downtown area and updated financing and environmental impact information resulted in an amendment to the LPA. The project was changed to follow Nimitz Highway on an elevated structure, and the branch line to Waikīkī was eliminated.

The Federal Transit Administration (FTA) and City issued a Supplemental EIS to address the amended LPA. In 1992, a final EIS was issued. However, the City Council failed to authorize the general use and excise tax surcharge to provide the local funding, and the project collapsed. Federal funds allocated to Honolulu were diverted to cities on the mainland.

Chapter #2

Transitional Studies and Plans – the late 1990s

The 1995 Waikīkī People Mover and Parking Study proposed a circulator that would run between Ala Moana Center and the Zoo. The expected round trip was estimated to be 30 minutes (a round trip that would take much more time under current conditions). The route would be integrated with *TheBus*. A rubber tired trolley replica was recommended which had a capacity of 40-45 passengers. Currently, E-Noa Tours is operating this type of service.

The objective of the 1996 Waikīkī Downtown Connector was to restructure the major bus routes serving downtown and Waikīkī adding about 25% more capacity. The Downtown to Waikīkī connector program would use hybrid-electric buses. The three corridors would include the King/Beretania couplet, Kapi‘olani Boulevard and Ala Moana Boulevard.

The Waikīkī 1999 Parking Management Plan study’s objectives were to:

- Increase the supply of off-street parking in the central portion of Waikīkī.
- Concentrate off-street parking in larger parking facilities that are geographically distributed throughout the district.
- Emphasize long-term parking mauka of Kūhiō Avenue and short-term parking makai of Kūhiō Avenue.
- Establish a management framework for the shared use and optimal operations of parking facilities in central Waikīkī.
- Allow the payment of in-lieu fees and/or expanded use of off-street parking agreements to satisfy parking requirements for new uses and buildings.

The 1999 Waikīkī Parking Management Plan made three important observations:

- There is no parking shortage in Waikīkī except for weekend evenings, when all facilities are operating at 85% occupancy.
- A third to a half of the weekday parking demand in Waikīkī is attributable to employee long term parking.
- The deficiency in parking supply during both weekday and weekend peak periods are concentrated in the resort commercial core of Waikīkī.

Transitional Studies and Plans – early 2000s

The 2002 Waikīkī Livable Community Plan (WLCP) mission was to find out how to give meaning to a “Pedestrian First Policy”. A key issue was, “when do the functions of vehicles detract from the pedestrian experience so severely that change is required?” The WLCP Report proposed a range of projects from ones that are straight forward to big-picture, long-term ideas. These proposals would make the transportation network in Waikīkī work more effectively in the future and increase the livability of Waikīkī.

The vision for change used to serve as the catalyst for the WLCP was articulated in George Kanahēle’s 1994 “Restoring Hawai’ianness to Waikīkī”. He called for Waikīkī to be the “Community of Aloha” and to reestablish there a “Hawai’ian Sense of Place”.

A joint City-State Waikīkī Task Force was formed in 1999 to examine policies and initiatives that could be developed to revitalize and improve Waikīkī as a visitor destination area. They issued a report called “Recapturing the Magic of Waikīkī” which contained a number of recommendations for Waikīkī. The governing notion was captured in the following statement:

“ In Waikīkī the pedestrian, visitor and resident alike will come first. Waikīkī will be a pedestrian-oriented resort and a pedestrian-oriented residential area. Walking will be the primary mode of getting around within Waikīkī and it will be a pleasurable way to enjoy Waikīkī.”

During this same time period, the City began developing the O’ahu Trans 2K Islandwide Mobility Concept Plan. Once again the need for high-capacity, frequent transit service was identified for the Primary Urban Center including Waikīkī. This study led to the Primary Corridor Transportation Project (PCTP).



The PCTP focused on alternatives constructed within existing transportation rights-of-way to provide mobility improvements at a lower cost and with fewer impacts. A final EIS was completed in 2002 with Bus Rapid Transit (BRT) as the locally preferred alternative. The proposed system included Regional and In-Town BRT operations extending from Kapolei to Waikīkī and the University of Hawai’i at Mānoa. The planning for the BRT extension into Waikīkī was coordinated with the proposals emanating from the WLCP.

Chapter #2

Transitional Studies and Plans – BRT



BRT related facility improvements completed by Hawai'i Department of Transportation (HDOT) included extension of the morning vehicle traffic flow zipper lane for buses and High Occupancy Vehicles (HOVs) on the H-1 freeway between Radford Drive and the Ke'ehi Interchange. BRT service improvements completed by DTS included planning and implementing *CityExpress!* Routes A, B and C. DTS launched many other new bus route improvements for O'ahu based upon the Hub & Spoke Bus Route System Plans.

The 2006 BRT Final Report identified rubber-tired, diesel-powered buses as the preferred vehicles. Much research was conducted on self-guided vehicles, but these were determined to be too unproven for immediate implementation. Intelligent Transportation System (ITS) treatments and Transit Signal Priority (TSP) would be used to expedite operations for vehicles.



Although some bus stop improvements were completed and various aspects of BRT were successfully tested, the proposed BRT program required an integrated set of features and services that were never achieved.

Post BRT bus planning efforts culminated in the Bus Service Improvement Plan (BSIP) completed in 2006. The BSIP contained a set of proposals to restructure portions of O'ahu's *TheBus* network. These proposals were based upon an extensive review of *TheBus* involving systemwide goal-based performance assessments, detailed data compilations, ongoing Bus Route Study network evaluations and proposals and a careful evolution of a three-tiered system structure. A geographical orientation was used to minimize disruptions and maximize public awareness. DTS continued bus service planning concurrent with the high capacity transit corridor work. The BSIP was consistent with current policies and future plans to provide for high capacity transit investments.

Transitional Studies and Plans – Honolulu High Capacity Transit Corridor

DTS, in cooperation with FTA, developed the Honolulu High-Capacity Transit Corridor Project (HHCTCP), a fixed-guideway that would provide new extraordinarily beneficial transit service on O‘ahu. The project area was within the overall travel corridor between Kapolei and Waikīkī.



Between Pearl City and ‘Aiea, the corridor’s width is less than one mile between Pearl Harbor and the base of the Ko‘olau Mountains. The corridor includes both Ala Moana Center and Waikīkī. Ala Moana Center is served by more than 1,000 weekday bus departures and visited by more than 56 million shoppers annually. Waikīkī has more than 20,000 residents and provides more than 44,000 jobs. It is one of the densest tourist areas in the world, serving approximately 72,000 visitors daily. Many residents in the narrow gap between the Ko‘olau mountains and Pearl Harbor commute daily to those jobs in Waikīkī.

The Alternatives Analysis phase of HHCTCP evaluated a range of transit mode and general alignment alternatives in terms of their costs, benefits, and impacts. The Locally Preferred Alternative (LPA) adopted by the City Council identified an elevated fixed guideway transit system between Kapolei and UH Mānoa with a branch to Waikīkī.

Chapter #2

Transitional Studies and Plans – HHCTCP Rail Component

FTA has granted a continuing series of authorizations for the HHCTCP including a Full Funding Grant Agreement announced in 2012. All 20-miles of the FTA authorized fixed guideway system will be a double-tracked, elevated structure. The line extends from a western terminus in Kapolei traversing an alignment generally along the Kualakai Parkway, Farrington Highway, Kamehameha Highway, Nimitz Highway, Dillingham Boulevard, Halekauwila Street, Queen Street and Kona Street to an eastern terminus at Ala Moana Center.

The FTA authorized 20-mile line is the portion of the overall project that can be constructed with anticipated funding. The remainder of the guideway will be constructed once additional funding is secured. For Waikīkī, this means consideration of the alignment along Kūhiō with possible station locations at Launiu and Kealohilani Streets.

Possible Waikīkī Branch Stations along Kūhiō Avenue at Launiu and Kealohilani Streets



Honolulu High Capacity Transit Corridor Project

The fixed guideway system is planned to operate between 4 a.m. and midnight, with a train arriving in each direction at each station every three to ten minutes, with the more frequent service during the morning and afternoon peak hours. It will have a unified fare structure with *TheBus* (i.e., transfers and passes would be usable on both systems).

Transitional Studies and Plans – HHCTCP Bus Component

HHCTCP bus service will be reconfigured to transport riders on local buses to nearby fixed-guideway transit stations. To support this system, the bus fleet will be expanded to 469 buses operating in the peak period as compared to 435 today. The total fleet requirement including spare vehicles is estimated to be about 563 buses by 2030. *TheHandi-Van* fleet is expected to grow to 185 vehicles by 2030.

A review of historical bus service and facility improvements over the past decade indicates that all three areas that would be served by the fixed guideway extensions have received transit improvements, but by significantly varying degrees. The Kapolei region was the beneficiary of the creation of an entire new hub and spoke network of routes including new community circulators and a *CountryExpress!* route. These were linked together at a new transit center in Kapolei.

UH Mānoa was the beneficiary of a *CityExpress!* route which was extended on several occasions, assigned more frequent service and anchored with a new transit stop at Sinclair Circle. Waikīkī was to receive comparable service and facility improvements, but these faltered with the abandonment of the BRT project and a corresponding lack of support for the WLCP proposals.

The HHCTCP EIS recognized Waikīkī's prominent position as a major transit travel market. Overall, the largest share of *TheBus* riders' trips originates in Waikīkī. In 2011, O'ahu hosted 4.4 million visitors, who take more than 17,000 transit trips daily. Many of these visitors stay in the Waikīkī area and travel to points of interest outside of Waikīkī, including many of the activity centers in the study corridor. The FEIS identifies "Visitor trips from Waikīkī" and "Work trips to Waikīkī" as "Key Transit Markets."

The EIS identified transportation problems justifying the HHCTCP as a preferred solution. Many of these identified transportation problems feature references to Waikīkī transportation issues. Waikīkī bus service has been determined to have reliability problems. Route 42 has the largest reliability problem (as depicted by schedule increase) over the 1992 to 2008 period. Route 42 travels from Ewa Beach to Waikīkī and is part of the system's backbone with the second highest number of boardings of the selected routes included in the HHCTCP analysis.

Chapter #2

Transitional Studies and Plans – HHCTCP, Unresolved Issues and Waikīkī

The EIS documents suggest that the HHCTCP will greatly benefit Waikīkī. The HHCTCP Draft EIS (DEIS) stated that “Bus and fixed guideway departures and arrivals would be coordinated and predictable to minimize transfer time resulting in a substantial increase in transit share. The transit share of the Waipahu to Waikīkī travel market will increase from 8 percent under the No Build Alternative to 36 percent under the Project. This increase in transit share is related to faster systemwide transit speeds and improved access to the fixed guideway system due to more reliable feeder bus service.”

The FEIS identified unresolved issues significant to Waikīkī. Funding sources for an extension to Waikīkī are not identified. Ala Moana Transit Center details are characterized as an off-street facility, but no detail is offered.

Transit service details are characterized with advanced features in the DEIS, but not as specifically in the FEIS. The HHCTCP DEIS states that “Enhanced bus service would be provided between the terminal stations of the Project and the planned extensions of the fixed guideway system.” The DEIS further states that “system improvements, including traffic signal priority, automated vehicle identification, and off-vehicle fare collection, would complement frequent bus service,” but these references are not included in the FEIS.

The transit route alignment connecting Waikīkī with Ala Moana Center should be one that is quickly and easily understood by visitors and residents alike. This is achieved using the most direct connection possible with Ala Moana Center. To be consistent with the expectations created by the HHCTCP FEIS, the transit operation should be given priority at intersections. Ultimately, the transit connection should have service intervals between departures equal to the rail operation at Ala Moana Center. The high quality transit link between Waikīkī and Ala Moana Center should provide the minimum elapsed travel time possible not just between Waikīkī and Ala Moana Center, but other important destinations as well such as UH Mānoa.

The O’ahu Regional Transportation Plan 2035 was adopted by the Policy Committee of the O’ahu Metropolitan Planning Organization in April 2011. A fixed guideway connection between Ala Moana Center and UH Mānoa is included at an estimated cost in ‘year-of-expenditure’ dollars of \$1.8 billion. However, this is an ‘illustrative’ project not included in the financially-constrained plan due to funding limitations. Therefore, it is likely that the high quality transit link identified in the Waikīkī Regional Circulator Study will need to serve far beyond the year 2019 when rail service begins to serve the Ala Moana Center station.

Transitional Studies and Plans – Current Policy and Plan Development Efforts

In 2009, the Hawai'i state legislature passed Act 54 requesting that HDOT develop a statewide complete streets policy. The complete streets task force was formed to develop principles for the state and the counties to direct their planning, design and construction. They defined complete streets as, “transportation facilities that are planned, designed, operated, and maintained to provide safe access and mobility for all users, including bicyclists, pedestrians, transit riders, freight, and motorists, and that are appropriate to the function and context of the facility”.

Currently, the counties are at various stages of adopting policies and guidelines for complete streets. The complete streets program potentially can improve the livability of Waikīkī as it provides user equity in the context of land use activities, user needs, and the transportation function of the facilities. For Waikīkī, pedestrians, cyclists, and transit patrons should be given the highest priority over motor vehicles. This can be attributed to the improvement made to the Waikīkī streetscape. The traffic capacity of the streets was not increased. Instead, there were significant improvements made to the pedestrian capacity and the design character of sidewalk areas. This has resulted in significant improvements to the livability of Waikīkī.

The 2011 Draft Statewide Pedestrian Safety Master Plan evaluated ways to enhance pedestrian safety, mobility and accessibility to help create a multi-modal transportation system. The plan identified engineering, education, encouraging awareness, enforcement and evaluation of programs and projects to achieve improved pedestrian safety. Pedestrian safety projects were identified state wide and include the Ala Moana Boulevard and Hobron intersection. A tool box of pedestrian safety improvements are provided in the report. Funding, performance measures and monitoring are identified.

The O'ahu Bike Plan was released in August 2012. The plan provides a strategy for better integrating bicycling into the City's transportation system.

A public review draft of the City's Short Range Transit Operations Plan was released in March 2012. The plan recommends service changes in *TheBus* routes and other services to be implemented over the next five years. Some of those changes were included in the 2012 bus service reductions.

All of these current policy and plan development efforts suggest a shift is occurring to take a more balanced approach toward transportation planning that is reflected in the Waikīkī Regional Circulator Study.

Chapter #2

Transitional Studies and Plans – Transit Oriented Development (TOD) Efforts

The City Department of Planning and Permitting (DPP) has been working with station area communities on Neighborhood TOD Plans. The plans address land use, circulation, urban design, housing, community facilities, parking, pedestrian amenities, historic and cultural enhancements and desired and necessary public investments. It is from these completed plans that new zoning regulations will be adopted for the station areas based on City Ordinance 09-04.

Ordinance 09-04 established the City's TOD program and enabled the creation of special districts around each station (within 2000 feet from the station). In the future, rail will represent a change in the way we commute and in the way we live. In world-class cities transit, walking and cycling are the primary means of travel, not the personal motor vehicle.

The experience of other cities demonstrates that quality transit systems with high capacity and frequent service spur growth and neighborhood investment, particularly in the areas surrounding transit stations. The City wants to assure that growth stimulates walking and cycling, rather than driving. The City wants to create neighborhoods where people can live, work, play, and raise their families.

All TOD Neighborhood Plans are being developed with extensive community involvement. The Ala Moana TOD Neighborhood Plan process held a community workshop in August 2012. This was followed by a 1,350 household sample survey completed in November 2012. 74% of all respondents indicated being close to bus stops was one of the three things they liked most about living in their neighborhood. Location and/or being close to travel destinations (shopping, jobs, recreation) was included in all three top responses. However, 67% thought the number of bicycle paths and lanes in Ala Moana is poor. In contrast, only 8% thought overall ease of bus travel was poor, even after the most recent bus service reductions.

The Ala Moana TOD Neighborhood Plan survey results identified 19% of the trips to work by respondents were by bus, 15% walked and 4% biked. Most commuted to jobs just a few miles away: 23% to downtown, 19% to Ala Moana, 10% to Kaka'ako and 10% to Waikīkī. This information and similar data from other studies was extensively used during the WRCS to understand current conditions, public concerns and possible solutions to the problems of greatest concern to area neighborhoods.

Chapter #3: Analysis

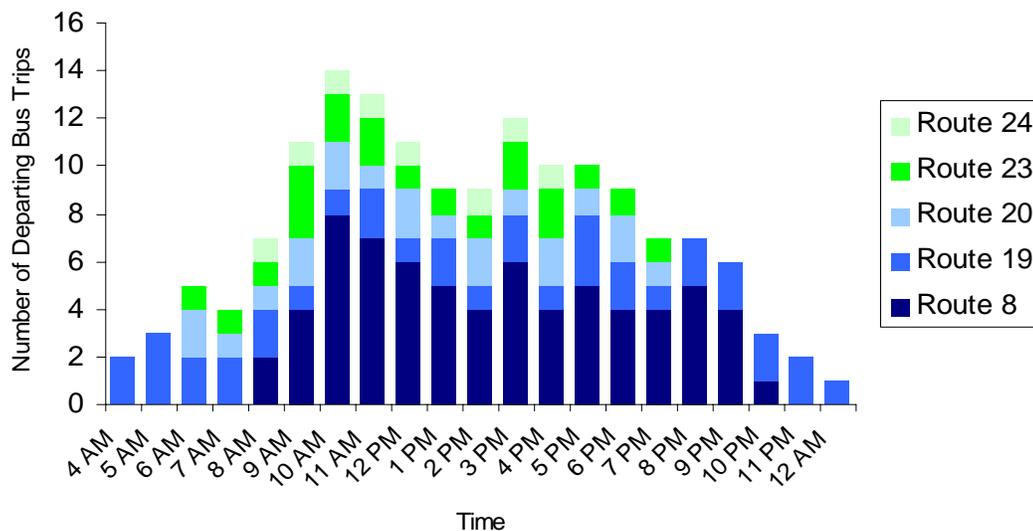
Existing Transit Conditions

The conflicts among pedestrians, bicycles, cars, commercial vehicles, tour buses and public buses along the bus route alignments between Ala Moana Center and Kapi'olani Park are identified and analyzed in this chapter. The travel time delays for buses circling Ala Moana Center, meandering through Waikīkī and circling the Honolulu Zoo are evaluated.

The major bus route alignments to and from Waikīkī have changed little over the past ten years. Route 8 is one of a group of four routes (Routes 8, 19, 20 and 23) that operate on the same alignment between Ala Moana Center and Waikīkī. Route 8 is the only one that does just this connection.

Of these four routes that serve Waikīkī, Routes 8 and 23 originate at Ala Moana Center. Routes 19 and 20 serve the Kona side of the center on eastbound trips. All four routes then proceed on the same alignment from Kona Street to Waikīkī. Figure 1 charts the number of bus trips departing Kona Street by time of day. All four routes have the same westbound alignment from Monsarrat and Paki Avenues through Waikīkī to the Ala Moana Center bus stop on Ala Moana Boulevard. The number of bus trips departing Ala Moana Center by time of day does not correspond to commuter travel times.

Figure 1
Number of Bus Trips Departing Kona Street by Time of Day
(Source: *TheBus* Weekday Public Timetables, 2012)



Chapter #3

Existing Bus Service Redeployment

The project investigated whether the Route 8 could be cost-effectively redeployed to function as a more direct link. The other routes sharing the current route alignment would operate as detailed in the FEIS. The question is will current passengers be better served by a revised Route 8 with some benefitting from a more direct and frequent service while others benefit from less crowded and more reliable scheduling?

Data was collected and analyzed to determine whether operating efficiencies could be provided to create a more direct link using the same number of vehicles as today to offer more frequent service needed to serve the passenger demand from the rail terminus at Ala Moana Center.

In 2012, the all day average wait between bus departures was 7.5 minutes. The average wait between bus departures in the morning peak period, defined as start of service to 8:59 AM, was 12 minutes. Buses are now sometimes scheduled to depart at the same time or within one or two minutes even though the prior or next bus departure is scheduled for a substantial time interval.

This irregular and random service interval scheduling is not compatible with the regular intervals between trains arriving and departing at Ala Moana Center. The HHCTCP used equal 3 minute intervals between train departures in the morning peak period to meet the peak commuter-demand for connecting service to Waikīkī.¹

Waikīkī services need to operate as a “system” not individual routes passing through. To do this, it is desirable to separate the internal Waikīkī passenger trip making activity (which is approximately 38 percent of all Waikīkī boardings) from those trips that are traveling to downtown, the University of Hawai‘i at Mānoa, East Honolulu or other destinations. It is also desirable to specifically identify a “service” or route which connects Waikīkī quickly and efficiently with Ala Moana Center. This can be done with a highly visible route on a unique alignment and/or with unique bus stop locations and information postings. The question is how much efficiency can be gained by changing current operations?

Ideally, a future Waikīkī Regional Circulator will upgrade Route 8 service by serving both the majority of internal trip making and by emphasizing the major connection to Ala Moana Center.

¹ Honolulu High-Capacity Transit Corridor Project (HHCTCP) Final Environmental Impact Statement (FEIS); City and County of Honolulu DTS and USDOT FTA; June 2010; Appendix D.

Bus Operating Speed

Route 8 is consistently one of the slowest routes in the system with an average scheduled operating speed of 6.5 miles per hour in 2012 as shown in Table 1.

Table 1
TheBus Fixed Routes With The Slowest Operating Speeds
 (Source: DTS/OTS, 2012)

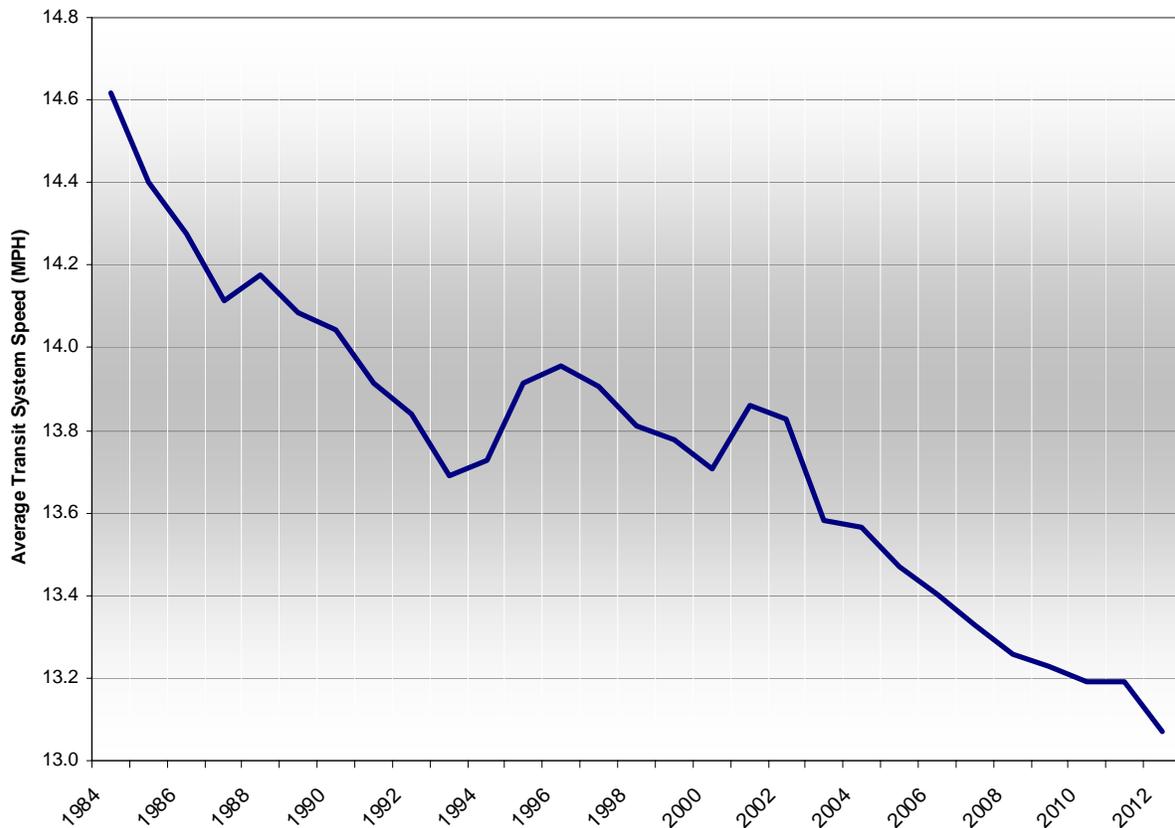
ROUTE DESCRIPTION			SERVICE CHARACTERISTICS					
			March 2011			December 2012		
Number	Name	Classification	Revenue Hours	Revenue Miles	Miles Per Hour	Revenue Hours	Revenue Miles	Miles Per Hour
17	Makiki - Ala Moana Center	urban feeder	18.4	108.6	5.9	18.4	108.6	5.9
8	Waikīkī - Ala Moana Center	urban trunk	89.0	549.5	6.2	81.2	528.7	6.5
13	Waikīkī - Liliha	urban feeder	152.8	1107.8	7.3	145.7	1153.4	7.9
2	Waikīkī - School - Middle	urban feeder	179.5	1307.7	7.3	228.1	1705.2	7.5
B ¹	Waikīkī - Kalihi	rapid bus	104.2	806.5	7.7	--	--	--
System Totals			4,176.9	55,113.2	13.2	4,085.7	53,392.9	13.1
Notes: ¹ Route B was discontinued mid-2012.								

All of the routes included in Table 1 were the slowest routes in the system in both 2011 and 2012. Their operating speeds are based on the scheduled weekday revenue miles divided by the weekday scheduled revenue hours of service. The operating speeds of these five routes range between 5.9 and 7.9 mph as compared to overall system operating speeds of 13.2 miles per hour (mph) in 2011 and 13.1 mph in 2012. All of the five slowest routes involve either Ala Moana Center or Waikīkī as a major route destination. Four of the five slowest routes have Waikīkī as their major destination.

The decrease of overall system operating speed from 13.2 to 13.1 mph is a continuation of overall bus speed reductions over many years as illustrated in Figure 2. Since 1984 the average system speed has dropped from 14.6 to 13.1 mph. This means that it now requires 442 more hours of service each day to provide the same amount of service mileage as compared to the conditions that existed in 1984. If all those lost hours were invested in today's system service could be increased by 10%.

Chapter #3

Figure 2
TheBus System Operating Speed By Year
(Source: National Transit Database and DTS/OTS March 2012)



The HHCTCP EIS used the statistics in Figure 1 to explain why a fully grade separated rail service is needed. The EIS noted that the bus operates in mixed traffic, without signal priority. Buses are caught in the same congestion as general-purpose traffic. With increasing traffic congestion over the past several decades, scheduled trip times have been increased to maintain reliability. The EIS reported that this inefficiency consumes about \$13.5 million in additional annual operating expenses. With the introduction of rail it is projected in the EIS that the overall transit system operating speed will increase to about 15.5 mph.

Route 8 experienced travel time problems more emphatically than the system's totals would suggest and more so than might be indicated by comparing recent route schedules. The 2012 time schedule reveals 65 minutes are needed to operate the route under the most restrictive conditions, 21 minutes more than in the 1992 Route 8 schedule. The 2012 overall roundtrip run time is 48% longer than in 1992 as shown in Table 2.

Table 2
***TheBus* Route 8 Weekday Scheduled Traveltimes**
By Route Segment For Selected Years
 (Source: DTS/OTS)

ROUTE SEGMENT	WEEKDAY SCHEDULE COMPARISONS	
	1992	2012
WESTBOUND: Waikīkī to Ala Moana Center	24	29
EASTBOUND: Ala Moana Center to Waikīkī	20	36
ROUNDTRIP: Without recovery time	44	65

The comparisons of 2012 schedule times versus 1992 do not explain why Route 8 records such poor schedule adherence. Schedule adherence reports for June 2012 indicate Route 8 was late 37% of the time in the evening period, 46% late in the eastbound direction from Ala Moana Center to Waikīkī. This result is very comparable for the same month in 2011 when Route 8 was late 38% of the time in the evening, 47% of the time in the eastbound direction.

Although other routes have comparable reports, this schedule adherence data is significant since a route is determined to be late only if it arrives over five minutes after the scheduled time and the longest elapsed schedule travel time for the same direction on Route 8 is already 36 minutes to serve just 3.6 miles.

Chapter #3

Bus Operating Delays

There is an inclination to attribute the majority of the scheduled bus travel time increase to normal traffic conditions. The analysis indicated this is true to a large extent, but not as significantly as suspected. One of the fundamental findings of the analysis was that actual travel time was often longer than scheduled even though the scheduled time has included significant expected delay time. Most of the scheduled travel time is consumed by passenger loading activity and traffic related delays as quantified in Figure 3 and depicted in Figure 4.

Figure 3
Route 8 Average Roundtrip Travel Time Components During Peak Conditions
(Source: Weslin Consulting Services, Inc., 2012)

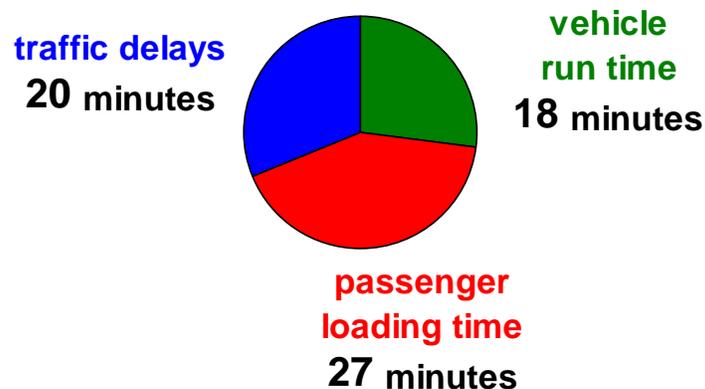


Figure 3 allocates Route 8 average roundtrip travel time during peak conditions into the following components:

- passenger loading time
 - normal loading time
 - payment delay time
 - information delay time
 - bicycle, wheelchair or other loading delay time
- traffic delay
 - traffic controlled intersections
 - vehicle queue
 - pedestrians in crosswalks or other related delays
 - bus stop blocked
- vehicle run time

Figure 4
Passenger Loading and Delay Conditions
(Source: Weslin Consulting Services, Inc., 2012)



Wheelchair Operations –

Waikīkī has a normal amount of wheelchair operations which often involve the driver lending assistance. This wheelchair deployment occurred at a stop on Kalākāua served by the Route B (which has been discontinued).

Passenger Questions –

The most frequent driver distraction in Waikīkī involves drivers being asked questions by passengers. These passengers were also blocking the door at the next stop where they eventually decided to get off the bus.



Chapter #3

General Traffic Delays

Inconsiderate blockage caused by one private vehicle has a cascading impact on other buses as shown in Figures 5 and 6. Although the Ala Moana Center bus stop functions adequately most of the time, the situation pictured occurs many times each day.

Figure 5
Bus Stop Blockage at Ala Moana Center
(Source: Weslin Consulting Services, Inc., 2012)



Buses blocking other buses at both the makai and mauka sides of Ala Moana Center happens often as shown in Figure 7. Since many of the Waikīkī routes operate along Kona, these traffic delays have a significant negative impact on schedule reliability. 75% of all Route 8 eastbound riders board before the bus has even reached the Keeaumoku stop, much to the bewilderment of the uninformed waiting Waikīkī bound passengers as illustrated by the sequence of pictures in Figure 8.

Figure 6
Time and Delay Traffic Observations
Bus Stop Blockage at Ala Moana Center
(Source: Weslin Consulting Services, Inc., 2012)



Traffic Blockage Delays –

A rental car blocks the Route 20 bus from accessing the Ewa bound loading position at Ala Moana Center's Ala Moana Boulevard bus stop. Passengers who want to board walk toward their bus and exchange words with the group of people from the rental car who seem oblivious to what they are doing.



Doors remain open and the vehicle driver is in no hurry to leave.



Passenger doors open, but no effort is made to get out of the way of the bus.



The bus driver pulls along side of the vehicle and yells at the group, but with no apparent effect.

Chapter #3

Figure 7
Time and Delay Observations Along Kona Street
Bus Stop Blockage at Ala Moana Center
(Source: Weslin Consulting Services, Inc., 2012)

4:18 PM –

Four buses along Kona Street are staging before going into service. A Route C articulated bus making the left turn from Kona Iki Street onto Kona Street attempts to park but finds insufficient curb space is available. It becomes stuck in the middle of the street and blocks all Koko Head bound traffic.



4:19 PM –

One bus has departed and two have moved up to make space available, but the Route C articulated bus scheduled to depart at 4:15 PM is still parked with no driver present. The incoming Route C articulated bus still blocking Kona Street isn't scheduled to depart until 4:45 PM.



4:22 PM –

After blocking Kona Street for over four minutes the parked Route C bus leaves, the new Route C bus pulls up to the curb and two Route 8 buses with scheduled departures of 4:13 PM and 4:20 PM are now able to proceed.



Figure 8
Time and Delay Observations Along Kona Street
Bus Stop Blockage at Ala Moana Center
 (Source: Weslin Consulting Services, Inc., 2012)

**5:08 –
 5:10 PM:**

A bus load of passengers are waiting at the Kona and Kona Iki Street stop for a Waikīkī bound bus. Route 19, bus number 504 arrives.



**5:13 –
 5:14 PM:**

The Route 19, bus number 504 has a full load and bypasses dumb-founded people at the Kona and Keeaumoku stop.



**5:15 –
 5:18 PM:**

The Route 19, bus number 504 passes by, but two Route 8 buses have room for the waiting passengers.



**5:23 –
 5:24 PM:**

Eight minutes later the Route 19, bus number 504, has traveled only a few hundred feet along Kona due to traffic.

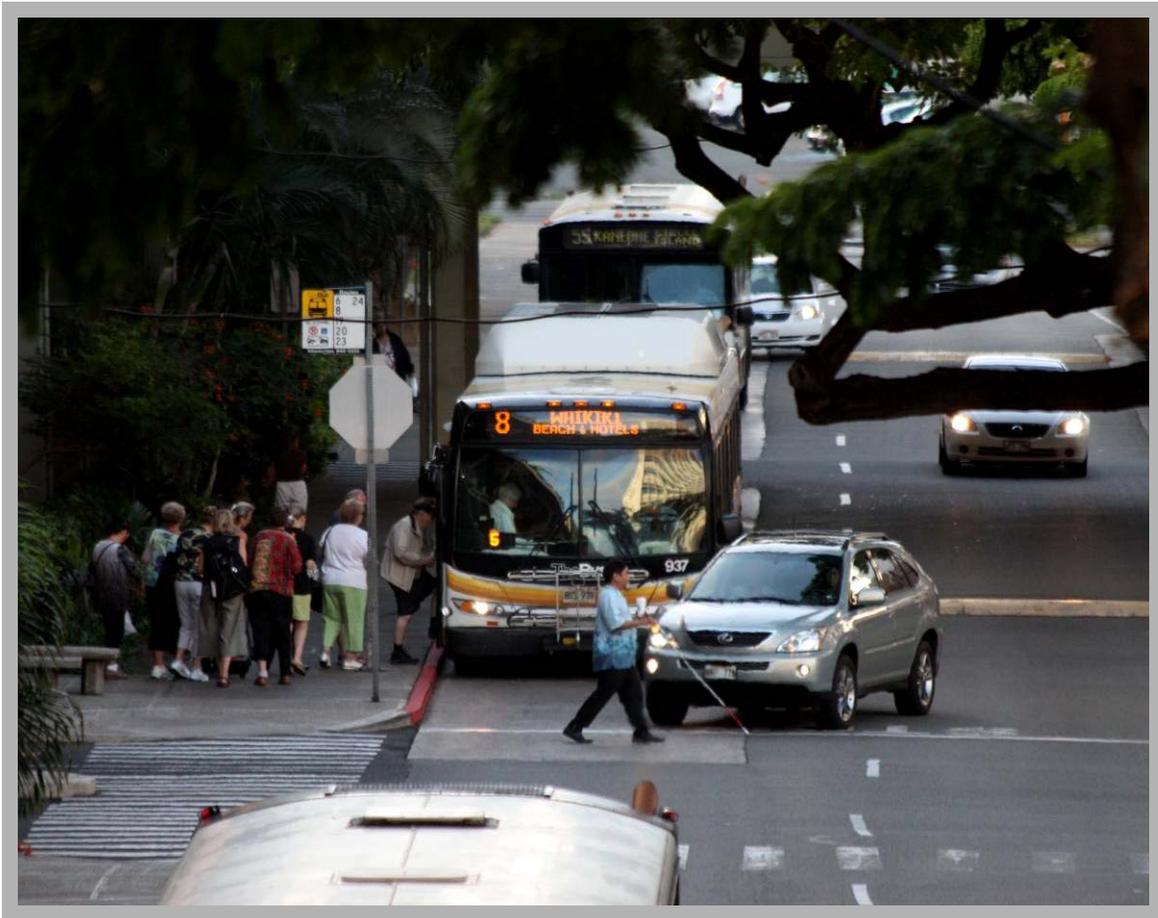


Chapter #3

Bus Passenger Delays

Sometimes multiple delays are occurring at the same time and traffic or pedestrian blockages are not as significant as the delays caused by passenger activity as depicted in Figure 9.

Figure 9
Time and Delay Observations Along Kona Street
Bus Stop Blockage at Ala Moana Center
(Source: Weslin Consulting Services, Inc., 2012)



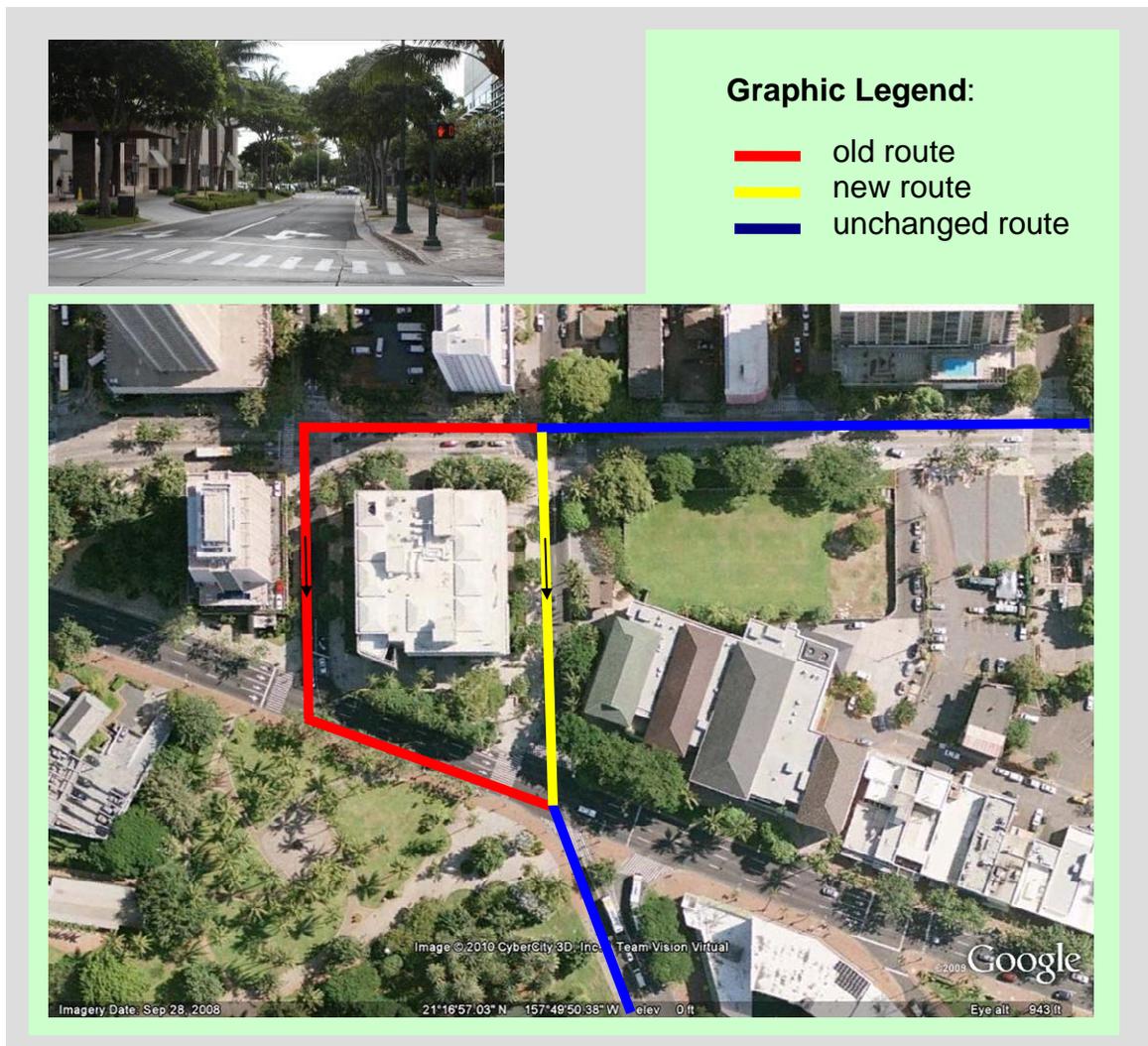
Wheelchair deployments and bike rack usage were not found to be significant causes of delay. Route 8 has 2.2 % of system ridership, 2.3% of the wheelchair deployments and 0.7% of the bicycle rack usage.

Bus Routing Delays

One-way streets create some bus routing delays. For example, Routes 8, 19, 20, 23 and 42 are delayed by an average of 2 to 4 minutes per westbound trip because they are routed as shown in Figure 10 to go through two extra traffic signals. One signal involves a yield to oncoming traffic. Another involves a conflict with a pedestrian signal. Introducing a bus-only, contra-flow lane could alleviate this bus routing delay.

Figure 10
Time and Delay Observations Regarding Bus Routing
at Kalaimoku Between Kūhiō and Kalākaua

(Source: Weslin Consulting Services, Inc., 2012)



Chapter #3

Traffic Conflict Delays

Some delays are not significant in terms of added seconds to the trip, but add to the burden placed upon the bus operator. Some of these situations are more prevalent in Waikīkī than elsewhere or present themselves in unique ways. Figure 11 illustrates this as it pertains to bicyclists.

One odd situation is the apparently growing tendency of bicyclists to travel in both directions on the Kalākaua Avenue contra flow lane. This is the one roadway in Waikīkī where a bus should not have to be confronted with a conflict. The bus had enough room to avoid the bicyclist in the gutter on Ala Moana Boulevard, but often two buses are side by side at this location and the bicyclist's safety might be jeopardized.

Traffic Signal Delays

In 1972 the Route 8 alignment would have passed through 18 traffic signals in Waikīkī. Today, it passes through 48. Neither the route alignment nor the way the bus is treated at these traffic signals appears to have changed very much over 40 years.

Fifty-seven (57) traffic controlled intersection movements were analyzed. Five of them caused 30.9% of the red phase delay. All of the five intersections involve Ala Moana Boulevard and excessively long traffic signal times for an urban environment. These intersections all require a revision to policy regarding how to time and treat urban traffic signal cycles involving significant bus and pedestrian movements.

Other long signal cycle delays are caused by the inability of transit to proceed on a green signal because it is in a right lane where there is a general purpose through movement and right turn vehicle demand that is unable to complete the turn because of conflicting pedestrian movements. All signalized intersections surrounding Ala Moana Center have high pedestrian crossing movements with many of these in direct conflict with vehicles.

Figure 12 illustrates the Kona Street and Atkinson Drive intersection where buses are blocked for an extended period (70 seconds for one red signal cycle, but sometimes more as observed at the bottom of Figure 8). This is the case even though a dedicated right turn lane exists for an opportunity to proceed without significant delay. However, in the picture shown and in many other occasions during a normal day, the bus is unable to reach the right turn lane due to the left turn traffic queue.

Figure 11
 Time and Delay Observations Regarding Bike Conflicts
 (Source: Weslin Consulting Services, Inc., 2012)



Bike Conflict –

A bicyclist traveling in the opposing direction along the contra flow portion of Kalākaua. This is a common practice along this stretch of road where cyclists find it safer than traveling with traffic where bike lanes and sharrows markings have recently been provided.



Bike Conflict –

A bicyclist traveling in the gutter along Ala Moana Boulevard. This makes room for buses, but creates an undesirable condition. Buses either reduce speed and proceed at the same pace as the bicyclist or swing wide.



Chapter #3

Figure 12
Time and Delay Observations Regarding Right Turns
Blockage at Kona Street & Atkinson Drive
(Source: Weslin Consulting Services, Inc., 2012)



The Olohana Avenue at Kalākaua left turn movement as shown in Figures 13 and 14 is another example of significant traffic delay for bus operations in Waikīkī. Making the right lane for right turns by transit only onto Saratoga Avenue or making Kalaimoku contra flow for buses only are suggested.

The Ala Moana Boulevard at Pi'ikoi Street mauka bound right turn and the Kūhiō Avenue at Kapahulu right turn movement offer other examples of traffic delay for transit that can be improved. Buses are delayed by through traffic in the right lane stopped for the red signal as shown in Figure 15. Delays of over 20 seconds were consistently observed. The solution is to designate the right lane for right turns only except for transit.

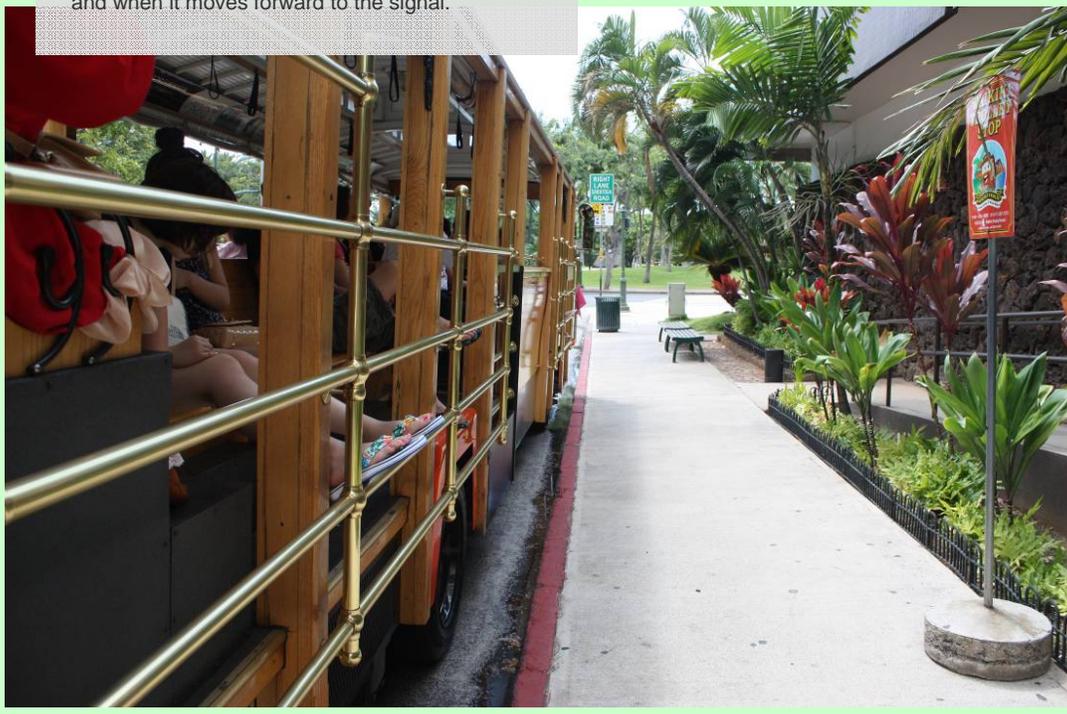
There is a 48.6 second average red signal time delay encountered by virtually every city bus using Kālia Road Ewa bound. The delay at Rainbow Drive essentially gives priority queue treatment to Hilton general purpose traffic while the right turn lane is normally free flowing as shown in Figure 16. Dedicating the right lane on Kālia Road Ewa bound between Maluhia Road and Ala Moana Boulevard as a transit only except for right turn lane including a continuous through movement for city buses and right turns at the Rainbow drive intersection using discrete lane signals and a low profile raised lane divider between the right lane and other lanes can mitigate transit delays.

Figure 13
Time and Delay Observations Regarding Bus Stop Blockage
at Olohana Avenue & Kalākāua Avenue
(Source: Weslin Consulting Services, Inc., 2012)



Traffic Blockage Delay –

The Waikīkī Trolley allows insufficient transition space for *TheBus* both while at the curb to load and when it moves forward to the signal.



Chapter #3

Figure 14
Time and Delay Observations Regarding Bus Stop Blockage
at Olohana Avenue & Kalākāua Avenue
(Source: Weslin Consulting Services, Inc., 2012)

Traffic Blockage Delay –

Tour buses loading passengers at the curb block bus access to the Olohana stop. Even when the Kalākāua Kalakaua traffic signal turns green there is no improvement. Notice how the pedestrian signal goes through an entire countdown cycle. Over a minute elapses before the trolley moves and the bus moves into position.



Figure 15
Time and Delay Observations Regarding Right Turn Blockage
at Kūhiō Avenue & Kapahulu Avenue
(Source: Weslin Consulting Services, Inc., 2012)



Right Turn Delays –

Routes 8, 19, 20, 23 and 42 all turn right from Kūhiō Avenue makai bound onto Kapahulu Avenue. They should have an unrestricted right turn after a stop at the Kūhiō and Kapahulu traffic signal. However, a left turn is allowed from the right lane routinely blocking all right turns and causing a bus overflow at the under capacity bus stop located along Kapahulu at Kalākaua in front of the Park Hotel.



Chapter #3

Figure 16
Time and Delay Observations Regarding Queuing
Along Kālia Avenue Between Maluhia Street & Ala Moana Boulevard
(Source: Weslin Consulting Services, Inc., 2012)



Traffic Blockage Delay –

The two traffic signalized intersections along Kālia Ewa bound at Maluhia and Rainbow Drive give preferential treatment to turning movements at the detriment of transit. The right turn lane could be used to give transit priority treatment.

Delay Consequences

Long traffic signal cycles allow vehicles, including buses, to accumulate. This accumulation creates platoons of vehicles. From a traffic engineering perspective, this type of platooning is desirable. From a transit operations perspective, it is not.

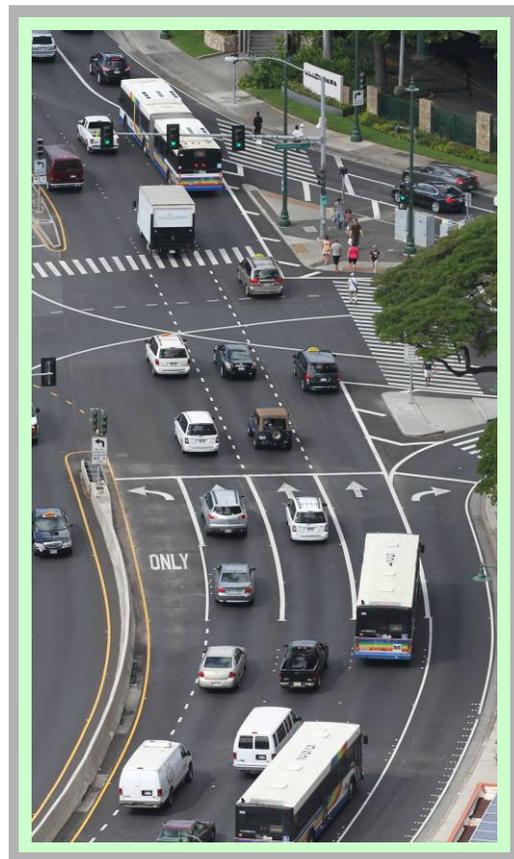
The platooning of vehicles offers an opportunity to interconnect a series of traffic signals to allow for timed progression of the vehicle platoon. Forced platooning of vehicles optimizes the vehicle capacity of the roadway network. However, the platooning of buses negatively impacts transit operating efficiency. It is more desirable to have buses arrive at a bus stop in equal time intervals, not all at once.

Accumulating both pedestrians and buses during long signal cycles along Ala Moana Boulevard is disadvantageous to those modes. New multimodal traffic engineering practices give more balanced consideration to the level and quality of service to all modes, not just the level of service of general purpose vehicle traffic.

One of the consequences of long signal cycles on high frequency bus schedules is the inability to maintain a sufficient time gap between bus arrivals to avoid several buses arriving at the same stop in the same direction at the same time. The three buses shown in Figure 17 were all stopped for the same red signal and are now all headed for the same bus stop shown in Figure 5.

This bunching of buses shouldn't be a consequence on a relatively short route such as Route 8, but it is a common problem as illustrated in Figure 18.

Figure 17
Bus Bunching Delay Consequences
Along Ala Moana Boulevard Primarily
Caused by Long Traffic Signal Cycles
(Source: Weslin Consulting Services, Inc., 2012)



Chapter #3

Figure 18
Bus Platooning Primarily Caused by Operational Delays
(Source: Weslin Consulting Services, Inc., 2012)



Platooning –

Two Route 8 buses are often seen following each other along the route. This is referred to in transit jargon as “platooning”. It is the primary consequence of unpredictable operational delays. The picture to the left is at the beginning of the route at the Ala Moana Boulevard and Hobron stop. The ones below are along Kūhiō and Kona Streets.



Existing Private Bus Operations

Waikīkī is served by three types of private transportation operations: 1) Non-fixed line (i.e., loading and unloading zones vary); 2) Multiple-fixed lines (multiple loading and unloading zones); and 3) One-fixed line (one loading and unloading zone). Examples of these are depicted in Figure 19.

Figure 19
Waikīkī Private Transportation Operations
(Source: Weslin Consulting Services, Inc., 2012)



Most of the heavy passenger loading and unloading activity occurs at major off-street terminals in Waikīkī and at Ala Moana Center. Major terminals are located at the Sheraton, Hilton Hawai‘ian Village and Ala Moana Center. Two terminals are located at Ala Moana Center at Ala Moana Boulevard and at Nordstrom as illustrated in Figures 20 to 23.

Private transportation operator fixed line operations such as the Waikīkī Trolley primarily operate from these off-street terminals as depicted in Figure 23, but also serve some strategic on-street loading positions.

Chapter #3

Figure 20
AMC Ala Moana Boulevard Terminal Activity
(Source: Weslin Consulting Services, Inc., 2012)

There are four large and well lighted passenger shelters serving eight private operator and three *TheBus* positions at the Ala Moana Center's Ala Moana Boulevard Terminal. Private operators shown include the Waikiki Trolley, Jalpak, HIS and KNT. This terminal is often operating at its functional capacity.



Figure 21
AMC Ala Moana Boulevard Terminal Activity
(Source: Weslin Consulting Services, Inc., 2012)



TheBus is shown sharing platform space with positions used by JTB Trolleys and the new whale buses. Other positions are used by KNT Trolleys and their new double-decker buses. There are two additional positions designated for bus and trolley out-of-service vehicle parking. Although there are no other formally designated positions many other buses, vans and shuttles have been observed parking in areas marked for automobile parking.



Chapter #3

Figure 22
AMC Nordstrom Terminal Activity
(Source: Weslin Consulting Services, Inc., 2012)



The Nordstrom Terminal vehicle activity is at capacity several times during the day. Vehicles catering to just a few passengers sometimes are occupying space more appropriately dedicated to high capacity buses. Most of these vehicles exit Ewa-bound along Kona Street while the others exit Diamond Head-bound onto Kapi'olani.



Figure 23
AMC Nordstrom Terminal Activity
(Source: Weslin Consulting Services, Inc., 2012)



Nordstrom terminal bus positions are dominated by JTB associated vehicles. Other positions are utilized by a variety of operations including JTB out-of-service vehicles. One position is used exclusively by The Waikīkī Trolley's Pink Line. Another is used by the AlohaBus for both drop off and pick up. It is highly probable many of the passengers using these private operations will want to access the AMC rail station from these existing terminals.



Chapter #3

Figure 24
 AMC Private Bus Operations
 Fixed Route Provided By The Waikīkī Trolley
 (Source: Weslin Consulting Services, Inc., 2012)



The Waikīkī Trolley Pink line serves AMC at both Ala Moana Boulevard and Nordstrom Terminals.

The Waikīkī Trolley's Pink Line loads and unloads at locations throughout Waikīkī including where private operators and *TheBus* share stops. *TheBus* shares the trolley stops on Kālia Road fronting Hilton Hawai'ian Village. The most congested times at these locations are between 7 a.m. and 10 a.m. when they are used as loading zones.

Because they operate on fixed routes, the Waikīkī Trolley and AlohaBus loading locations are marked with signs. Their passengers gather in one place to board. Some stops allow the trolley or AlohaBus to pull out of traffic while loading and unloading. At others, the driver stops in the curb lane.

The commercial passenger loading and unloading situation at the Hilton Hawai'ian Village is complex. A high volume of passenger and cargo vehicles move from Kālia Road into and out of Paoa Place, which serves the Hale Koa and provides access to the Hilton's off-street loading area. On both sides of Kālia Road, *TheBus* shares stops with trolleys and the AlohaBus, although plans call for separating the stops. The trolley and *TheBus* stops on the makai side of Kālia Road experience the most congestion. This should be alleviated when the makai trolley and AlohaBus stop is moved to the decommissioned *TheBus* stop on Kālia Road fronting the Hale Koa.

Highly visible publicity and the resultant passenger demand for transportation service into Waikīkī served by shuttles at the airport as shown in Figure 25 drives much of the loading and unloading practices and locations that private transportation companies use in Waikīkī.

Figure 25
Airport Shuttles and Other Private Transportation Opportunities
 (Source: Weslin Consulting Services, Inc., 2012)



Chapter #3

Many hotels do not have off-street loading and unloading areas. Drivers seek space in nearby on-street commercial passenger-loading zones or simply use the curb lane to load and unload passengers. Private buses can be found staging just outside of Waikīkī in the Magic Island parking lot or on side streets in Waikīkī so that they can be on time for their scheduled pick ups as shown in Figure 26.

Figure 26
Tour Buses Staging Prior to Curbside Passenger Loading
(Source: Weslin Consulting Services, Inc., 2012)



Representatives from E Noa Corporation, Royal Star, Paradise Cove and Polynesian Cultural Center stated that the Sheraton Waikīkī and the Hilton Hawai‘ian Village are the most heavily used loading and unloading zones. All sixteen private transportation companies use the off-street loading areas at the Sheraton Waikīkī (called Aloha Landing) and the Hilton Hawai‘ian Village or the on-street trolley stops nearby.

The major trolley lines, AlohaBus and the City have been able to agree on shared use of certain *TheBus* stops. E Noa Tours is currently working with the City to try to coordinate traffic at these stops. Gray Line reported that AlohaBus, along with the major trolley lines, will soon be able to take over other decommissioned bus stops.

Private transportation companies operate five different types of vehicles in Waikīkī: 1) van (12-14 seats), 2) mini coach or bus (25 seats), trolley (40-50 seats), motor coach (55-60 seats), double-decker bus: (60 or more seats). Public Utility Commission (PUC) reports identify 485 transportation operators who were licensed to operate on O‘ahu as well as other counties in 2010. Of these, 460 operated on O‘ahu only, an increase from 390 in 2003. Of the 485 operators, 299 are licensed to operate vehicles with a passenger capacity ranging from 8 to 25 people while 16 are licensed to operate vehicles with a capacity of over 25 people. In addition to these vehicles there are hundreds of taxicabs.

Existing Taxi Operations

Taxicabs identified by the dome light prominently displayed on the top of the vehicle are regulated by the counties. The number of taxicabs on O’ahu in 2010 was 1,609, an increase from 1,319 reported in 2003. Taxicab registrations actually decreased in the rest of the state over the same period.

Charley’s Taxi & Tours and TheCAB have the two largest fleets in Hawai’i, and both operate extensively in Waikīkī. TheCAB’s fleet consists of 500 vehicles and the Charley’s Taxi fleet comprises 200 vehicles. Charley’s Taxi & Tours has the concession at the Hilton Hawai’ian Village. Although there are examples of taxis using formal staging locations, there are also many taxis using whatever informal staging area puts them in the best position to find a potential fare as shown in Figure 27.

Figure 27
Informal Taxi Staging Locations
 (Source: Weslin Consulting Services, Inc., 2012)



Chapter #3

There is often fierce competition to use permitted loading zones in Waikīkī. It is common for taxis to pick up and drop off customers illegally, often blocking lanes and creating congestion. Figure 28 illustrates a typical situation where a taxi is using a bus stop zone to unload passengers, blocking a Route 8 bus and contributing to schedule delay.

Figure 28
Taxi Unloading In Bus Stop Zone
(Source: Weslin Consulting Services, Inc., 2012)



Taxis were observed using side streets to make multiple passes by hotels along Kalākaua and Kūhiō Avenues while trolling for passengers. During traffic counts on Kūhiō Avenue up to 22% of the traffic was composed of taxis without a fare.

Chapter #4: Process

An Ongoing Process

One of the three primary objectives of the WRCS was to conduct an ongoing stakeholder oversight and public outreach process. This directive was also established for the concurrent Waikīkī Traffic Study (WTS). Both studies reported to the Waikīkī Transportation Stakeholder Oversight Committee (WTSOC) and participated in the public outreach process.

The WTSOC

The Waikīkī Transportation Stakeholder Oversight Committee was created to develop immediate solutions to Waikīkī's transit and traffic issues.

The WTSOC is tasked with assuring Waikīkī's multi-modal transportation system keeps pace with its continuing transformation. Waikīkī needs to evolve from a typical vehicle traffic congested urban atmosphere into a more appealing pedestrian-oriented environment reflective of its unique heritage. Waikīkī's transportation infrastructure and services need proper prioritization and reorientation to respond to its' "Pedestrian First" policy.

Today, too much vehicle traffic conflicts with pedestrians. Previous studies have offered solutions, but few of these have been fully implemented. A late 2010 visitor event at the Hawai'i Convention Center ended with departing participants attempting to return to Waikīkī. They couldn't. Thousands of people were backed up and stranded along the makai sidewalk of the Kalākaua Bridge over the Ala Wai Canal.

Figure 29
Pedestrians On The Kalākaua Bridge
(Source: Weslin Consulting Services, Inc., 2010)



Chapter #4

Our visitors formed a line beginning at Ala Wai Boulevard and ending in the convention center. The front of the line shown in Figure 30 was stopped at the Kalākaua Avenue and Ala Wai Boulevard intersection. Each traffic signal cycle allowed no more than one hundred people to cross Ala Wai Boulevard every three to four minutes. Thankfully, the threatening rain did not turn into a downpour.

Figure 30
Pedestrians On The Kalākaua Bridge
(Source: Weslin Consulting Services, Inc., 2010)



The event attendance was 15,000. If we continue to treat our visitors this way, we will have fewer visitors. The WTSOC was formed to work with the City to solve this type of transportation problem.

Conflicts could worsen with rail terminating at Ala Moana Center for Waikīkī, UH Mānoa and the surrounding McCully, Mō'ili'ili and Kapahulu neighborhoods. Planning work needed to be conducted to determine the best linkages between the rail terminus and Waikīkī that works best for everyone from every perspective. That planning work was given WTSOC oversight.

The WTSOC's role was to assure the WRCS and WTS work was done within a multi-disciplinary context. Sufficient emphasis needed to be given to neighborhood values, cultural sensitivities, historical conditions, tourism requirements, economic expectations and desired land development patterns in addition to transportation functions. The WTSOC governed over the development of the WRCS and WTS with guidance to solve current problems and to mitigate potential impacts that might otherwise be created by the rail project. The WTSOC identified what actions are necessary, when they should be completed and how they should be supported.

The WTSOC membership is listed at the front of this report. The group met many times during the conduct of the WRCS and WTS. The agendas, minutes and activities of the WTSOC are available in one of the working papers listed at the end of this report.

Public Outreach

The WRCS consultant team worked closely with the Waikīkī Neighborhood Board to provide Waikīkī residents with information about the WRCS and to inform them about two public workshops. Other area neighborhood boards listed in Table 3 were provided briefings and informed of the workshops. Flyers were provided to everyone in attendance at the meetings.

Table 3
Neighborhood Boards Briefed On The WRCS

NEIGHBORHOOD BOARD	MEETING DAY OF MONTH	TIME	LOCATION
Ala Moana-Kaka'ako	Fourth Thursday	7:00 PM	Makiki Christian Church 829 Pensacola Street
Diamond Head-Kapahulu-St. Louis	Second Thursday	7:00 PM	Ala Wai Club House 404 Kapahulu Avenue
Mānoa	First Wednesday	7:00 PM	Mānoa Elementary School 3155 Mānoa Road
McCully-Mō'ili'ili	First Thursday	6:30 PM	Washington Middle School 1633 South King Street
Waikīkī	Second Tuesday	7:00 PM	Waikīkī Community Center 310 Paoakalani Avenue

The WRCS public workshops were widely advertised. At least one flyer was posted at every bus stop location in Waikīkī. Notices were posted on the City buses. Notices were distributed by e-mail including the O'ahuMPO's master distribution list. Notices were included in the Honolulu Star Advertiser including one front page article on April 20, 2012 written in conjunction with a story on proposed upcoming changes to route schedules and alignments.

A second round of presentations were made to the neighborhood boards after the second public workshop to present the proposals being put forward into the WRCS report as presented in the next chapter. Altogether, the WRCS attended 16 neighborhood board meetings.

Two targeted group workshops were held in cooperation with the Hawai'i Transportation Association. One was with private transportation providers and the other was with commercial delivery services.

Chapter #4

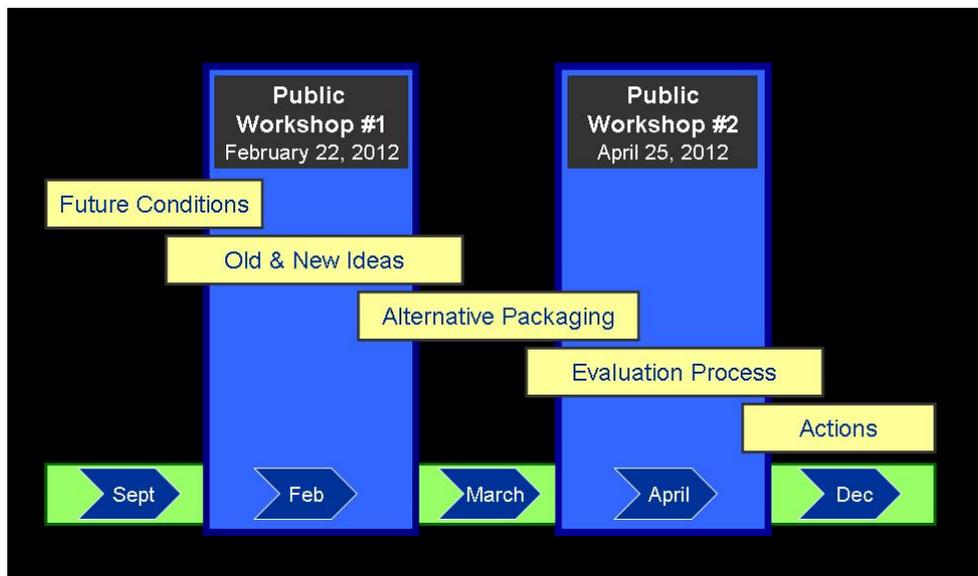
Public Workshop #1 – February 22, 2012

Representatives from organized neighborhood and civic associations, business groups and special interest groups from Waikīkī and residents in the surrounding communities were invited to attend the workshop. Twenty people attended the meeting.

Each participant at the first workshop was given a colored folder with information related to each of four work stations. The color coded folder included a set of forms and instructions for each of the four rotating workstations. They were invited to visit the displays and watch videos of communities around the world where transit systems complement and extend the pedestrian experience.

A presentation provided information about the WRCS process as depicted in Figure 31. It explained the purpose of this workshop was to consider future conditions, review old ideas that had been offered in past studies and identify new ideas that should be considered.

Figure 31
WRCS Process



The presentation reviewed the evolution of transportation in Waikīkī and the need to connect to rail that will terminate at Ala Moana Shopping Center in 2019.

A context for transportation planning in Waikīkī was provided with a focus on the “Hawai‘ian Sense of Place” and the pedestrian-first expectation as articulated in the Waikīkī Livable Community Project, a study that examined and evaluated how Waikīkī’s transportation system is used and how it might be improved. This project engaged the community through design charettes and public workshops, and a number of projects were identified that would meet pedestrian needs. The proposed plans included gateways and bridges.

After a brief Q&A session, the program transitioned to the most important part of the evening: the rotating work stations where participants were asked to provide direct feedback. Participants were invited to provide their input at each of the four work stations: 1) category ratings (see Figure 32), 2) modal priorities (see Figure 33), 3) traffic issues, and 4) *TheBus* proposed service changes.

Figure 32
WRCS Public Workshop #1 Category Rating Result Summary

Waikīkī Transportation And Livable Community Concepts Category Rating		
INSTRUCTIONS: Rate each of the 12 categories as 1, 2, 3, 4 or 5.		
Number	Categories	Rating 1 = Least Important; 5 = Most Important
4.1	1. Pedestrian Friendly Amenities – Provide a range of pedestrian-friendly amenities and attractions to continually enhance the experience of walking in Waikīkī and respond to the “pedestrian-first” policy.	1 2 3 <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> 5
4.1	2. Implementation – Identify institutional mechanisms necessary to provide the ongoing planning, programming, enforcement, revenue generating and monitoring capabilities needed to achieve the proposals identified.	1 2 <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> 5
4.0	3. Public Transit Priority – Identify routing, technology, traffic and other infrastructure investments that give transit a priority over other modes, except for pedestrians.	1 2 <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> 5
3.8	4. Public Transit Services – Provide sustainable public transit service between the future rail terminus at Ala Moana Shopping Center and Waikīkī.	1 2 3 <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> 5
3.6	5. Deliveries – Make deliveries more efficient and coordinated by improving the ease and efficiency of freight and passenger loading and unloading, and by reducing the impact of these activities on traffic flow.	1 2 <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> 5
3.5	6. Enhancements – Offer a variety of enhancements primarily to soften the transportation environment such as shady sidewalks during the day and pedestrian scale lighting at night.	1 2 <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> 5
3.5	6. Bicycling as Viable Transportation – Provide facilities and create opportunities to make bicycling in Waikīkī a safe and viable transportation option.	1 2 <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> 5
3.4	8. Transportation Options – Provide safe, convenient, affordable, accessible, and sustainable mobility alternatives to driving vehicles in Waikīkī. Provide strategically managed parking capacity.	1 2 <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> 5
3.4	9. Gateways and Links – Provide pedestrian linkages to regional attractions both as a functional transportation mode and as a recreational endeavor.	1 2 <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> 5
3.3	10. Beach Walk – Provide a boardwalk or hardened pedestrian walkway along the beach to enhance and expand pedestrian access to experience Waikīkī’s most renowned attraction.	1 <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> 5
3.1	11. Tour Bus Center – Minimize tour bus traffic on Waikīkī streets by centralizing passenger loading and unloading operations	1 <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> 5
2.6	12. Water Features – Take advantage of the waters surrounding Waikīkī to further enhance the visitor experience, attract local residents and diversify mobility options.	1 <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> 5

Chapter #4

Figure 33
WRCS Public Workshop #1 Modal Priority Result Summary

Waikīkī Transportation Mode Priority Worksheet

INSTRUCTIONS: Rank each mode based on your personal opinion. Check how each mode should be accommodated – should it be in certain places, at certain times or all of the time and everywhere? Offer specifics where you think accommodation of each mode is most important; for example, better pedestrian links to the Convention Center or across the Ala Wai canal.

1. Pedestrians		
<input type="checkbox"/> all of the time and everywhere		
<input type="checkbox"/> in certain places		
<input type="checkbox"/> at certain times		
2. Transit		
<input type="checkbox"/> in certain places		
<input type="checkbox"/> all of the time and everywhere		
<input type="checkbox"/> at certain times		
4.3	Bicyclists	
<input type="checkbox"/> all of the time and everywhere		
<input type="checkbox"/> in certain places		
<input type="checkbox"/> at certain times		
4.8	General Purpose Traffic	
<input type="checkbox"/> in certain places		
<input type="checkbox"/> all of the time and everywhere		
<input type="checkbox"/> at certain times		
5.0	Commercial Deliveries	
<input type="checkbox"/> at certain times		
<input type="checkbox"/> in certain places		
<input type="checkbox"/> all of the time and everywhere		
5.4	Taxis	
<input type="checkbox"/> in certain places		
<input type="checkbox"/> all of the time and everywhere		
<input type="checkbox"/> at certain times		
5.5	Tour Buses	
<input type="checkbox"/> in certain places		
<input type="checkbox"/> at certain times		
<input type="checkbox"/> all of the time and everywhere		
7.6	Segways and similar devices	
<input type="checkbox"/> in certain places		
<input type="checkbox"/> at certain times		
<input type="checkbox"/> all of the time and everywhere		

Waikīkī Regional Circulator Study
Revised 03-01-2012

Public Workshop #1 – Sentiments and Notions

WRCS and WTS consultants and City personnel answered questions and compiled comments at each of the workshop stations. After 10 minutes participants rotated to the next station. All participants were given an opportunity to visit each station. At the conclusion of the work session, highlights and themes from each station were reported back to the whole group.

For the WRCS several key messages were received. One was that pedestrians were consistently rated “first” – reaffirming the long-standing Waikīkī “Pedestrian-First” policy. Another was the emergence of “Implementation” as one of the strongest sentiments. People voiced frustrations over previous studies, proposals and plans not reaching implementation. Some expressed the notion that they were more concerned about seeing something happen than the details of what specific transportation improvements might emerge.

“Public Transit Priority” and “Public Transit Services” received strong support. Participants were generally familiar with the current bus operation and understood the need to provide a better bus link to rail. There was general concern about the increase in bicycling in Waikīkī and the need to accommodate the bicycle as a serious mode of transportation. Bikes seem to be everywhere posing unsafe and unsightly conditions as shown in Figure 34.

Figure 34
WRCS Public Workshop #1 Presentation Slide Portraying Strong Bicycle Prevalence



Chapter #4

Public Workshop #1 – Comments

Comments were offered by workshop participants expressing positive (Figure 35) or negative (Figure 36) thoughts about bus transit, urban design and transportation. Participants were asked to use **green** Post-it notes provided in their folders to share their comments on concepts they felt are working well, or would work well, in Waikīkī.

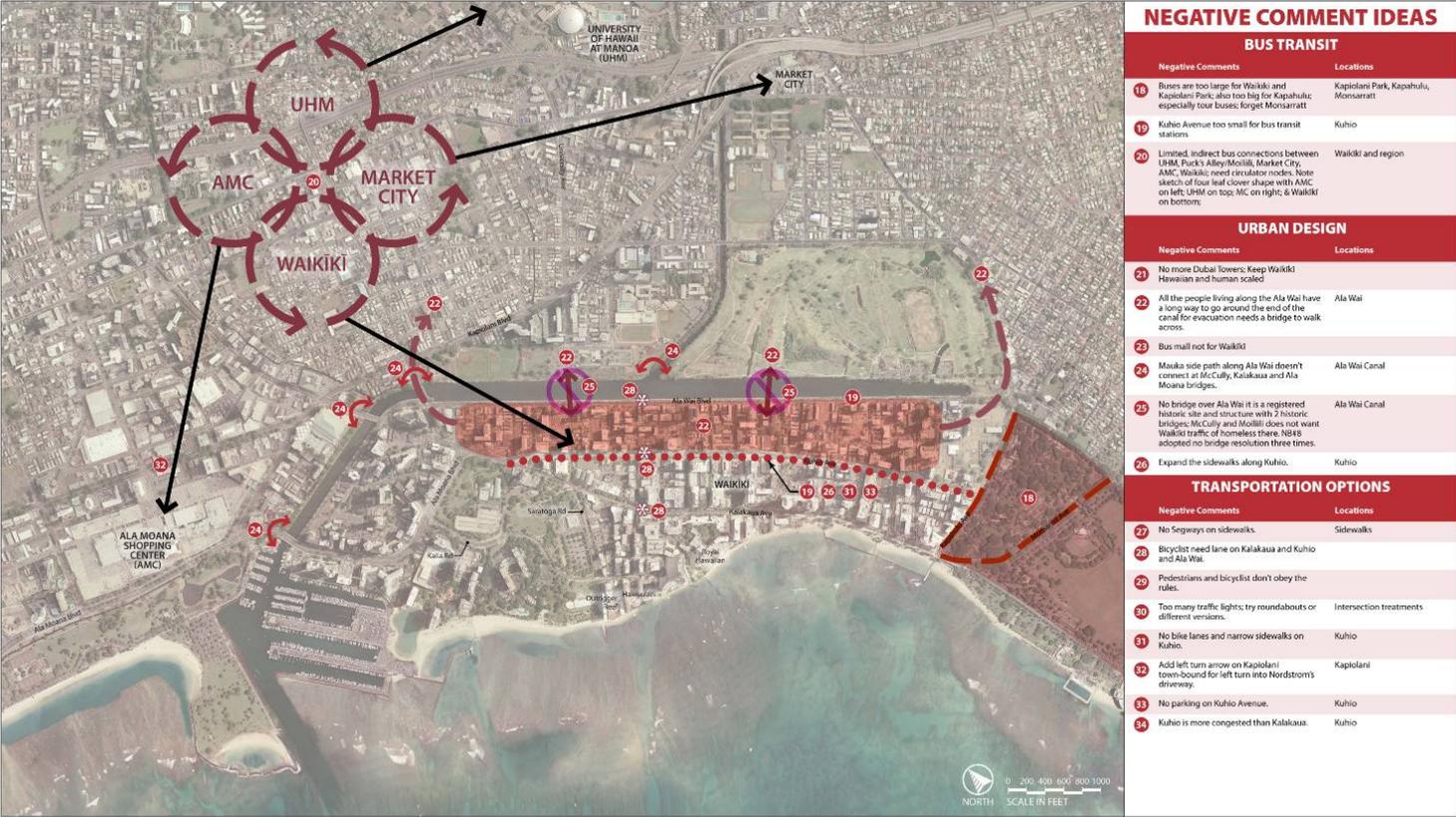
Figure 35
WRCS Public Workshop #1 Idea Categories Positive Comment Summary



Among the positive comments were various bus routing concepts, malls for bikes and pedestrians, skybridges, additional Ala Wai bridges for pedestrians and bicyclists, two-way bike lanes, beachwalk connections, more barns dance intersections and satellite parking with transit stops.

Conversely, participants were asked to use pink Post-it notes provided to share their concerns on issues they felt need to be addressed in Waikīkī. These included concerns about the size of buses and potential stations along Kūhiō, the appropriateness of a bus mall, the pros and cons of Ala Wai pedestrian bridges, the need for wider sidewalks on Kūhiō and a variety of concerns about the lack of regulatory control over bicyclists and segways.

Figure 36
WRCS Public Workshop #1 Idea Categories Negative Comment Summary



The input from the public received at the first workshop was summarized at workshop #2 held on April 25, 2012.

Chapter #4

Public Workshop #2 – April 25, 2012

Figure 37 shows some of the eighty-one people who attended the second workshop. The presentation from the first workshop was displayed on a continuous loop both before the workshop started and during the work station session. The presentation shown at the beginning of the meeting was shown on a second screen during the work station session.

Figure 37
WRCS Public Workshop #2 Participants



The presentation provided a summary of the first workshop. The Waikīkī Transportation and Livable Community Concepts Category Rating and the Waikīkī Transportation Mode Priority Worksheet results were highlighted. Alternative route options to connect rail to Waikīkī in 2019 were presented. Options were based on the current Route 8. The options presented illustrate a number of ways to streamline the route alignment.

The top alternatives were incorporated into two baseline alignments -- Baseline A and B. Baseline A would straighten the current route to achieve faster times to Ala Moana Shopping Center. Baseline B would serve the Kālia and Saratoga corridor to and from Ala Moana Shopping Center. The combination of these two legs was referred to as Option 23C, illustrated to the public on display boards with other options shown in Figure 39 and on page 85.

Figure 38
WRCS Public Workshop #2 Presentation



The Option 23C alternative route was discussed in detail to allow for public feedback. The proposed changes would offer 4-minute intervals between buses with the speed increasing from 6-7 mph to 8-9 mph, meaning the same number of vehicles and hours of service used today could provide more frequent service with Option 23C.

Those with a black folder given to them when they registered started at rotating station #1 – The Waikiki Regional Circulator Route Options depicted in Figure 39. Participants were given the opportunity to see the options considered which were illustrated on a series of display boards. Team members were present to answer questions and respond to comments.

The folder included a form where participants could indicate their alternative preferences for each of four route sections. Twenty forms were returned with at least ten people selecting Option 23C for each of the four sections. At least three people had their own ideas for each of the four sections. There was most agreement on how to serve the Ewa end of the route and least agreement on how to serve along Kūhiō and/or Kalākaua Avenues.

Chapter #4

Figure 39
WRCS Public Workshop #2 Rotating Station #1



Those with a light blue folder given to them when they registered started at rotating station #2 – The Waikīkī Traffic Study Issues. Participants were given the opportunity to see the traffic issues located on maps already identified from the first workshop, other meetings or technical sources.

Participants were able to look at pedestrian counts and past studies in Waikīkī. Problem areas were identified. A complete list of problem areas was compiled. These will be included in a separate Waikīkī Traffic Study report.

Those with a red folder started at rotating station #3 – The Waikīkī Regional Circulator Study Design Issues. Participants were given the opportunity to see two display boards created as a result of the first public workshop (Figures 35 and 36). One board summarized positive comment ideas and the other summarized negative comment ideas.

Figure 40
WRCS Public Workshop #2 Rotating Stations #2 and #3



Those with a dark blue folder given to them when they registered started at rotating station #4 – *TheBus* proposed service changes. City staff explained the proposed service changes and answered questions.

Participants were given the opportunity to view display boards and other handouts highlighting the proposed service changes. Participants were able to fill out comment forms or take them home to be completed later and mail them back to the City.

Chapter #4

Figure 41
WRCS Public Workshop #2 Rotating Station #4



Public Workshop #2 – Sentiments, Notions and Comments

Most of the 81 attendees actively participated in workshop activities and most offered detailed sentiments, notions and comments at several rotating stations. Twenty people submitted forms identifying a preference for the circulator alignment.

No less than ten people selected Option 23C for each of the four geographical sections. Those who had a different preference often offered their own ideas. There was no consensus among those who did not prefer Option 23C, but many supported the basic concept of a more direct alignment. Some were very passionate about their preferences: “Love the 8A and 8B ideas!” (which are included with Option 23C).

Written comments described the type of circulator service desired. Descriptors used include: quick, fast, reliable and efficient. Operational features receiving support included support for: fewer stops, fare pre-payment, information kiosks, special pavement markings, transit signal priority and electronic real time displays. Comments on traffic included eliminating coning on Kapi’olani. One person offered concerns about proposed stops at Fort DeRussy and the Honolulu Zoo.

An abundance of public opinion was gathered and is included in the working paper for the workshop. Most of the audience were frequent bus riders. Some of their comments and concerns were about specific bus routes and proposed changes. Others were interested in specific traffic issues. The WTS will be providing a separate report on the results of that effort.

Chapter #5: Proposals

Major Elements

The WRCS proposals are grouped into eight major elements. Each of these is associated with different mixes of administrative and technical expertise needed for proceeding with the next steps. Some of these steps are already underway. Others need further refinements and approvals before proceeding.

The proposals are described in the next 50 pages for each major element. The major element sections are color-coded as follows:

MAJOR ELEMENT	
Number	Description
1	Service and Operations
2	Transit Centers and Stops
3	Fare Collections
4	Information and Wayfinding
5	Running Way
6	Vehicles
7	Livable Communities
8	Implementation

The next page provides an overview of the eight major elements by describing the problem being addressed and the most significant aspects of the solutions provided within each of the major elements of the WRCS.



Overview of Major Elements

The fundamental characteristics of the WRCS Major Elements are:

1. **Services and Operations** – The problem: today’s indirect Route 8 alignment would require 16 buses to meet rail passenger demand. The solution: provide direct, more frequent service with fewer stops requiring only 12 buses. An alternative was selected after considering the seven elements listed on the next page.
2. **Fare Collection** – The problem: today’s Route 8 takes 21 more minutes to operate the same route than it did 20 years ago primarily due to passenger loading time delays. The solution: provide pre-boarding fare payment and all door boarding to reduce delays.
3. **Stop Locations** – The problem: today’s Route 8 shares bus zone space with other bus routes at locations with insufficient capacity causing delays. The solution: create stops dedicated to the circulator.
4. **Information and Wayfinding** – The problem: confused riders cause delay. The solution: create coordinated wayfinding and provide real time electronic information displays.
5. **Running Way** – The problem: shared roadway causes delay. The solution: extend transit priority treatment starting with colorized pavement and “bus stop” pavement markings at each circulator stop.
6. **Vehicles** – The problem: vehicles must have high reliability. The solution: offer proven technology with meaningful features.
7. **Livable Communities** – The problem: pedestrians have not been first, bicycling infrastructure has not been adequate and vehicle traffic is over-whelming the roadway system. The solutions: create a 7-mile, grade-separated, pedestrian and bicycle core network, create an extensive bike sharing program, emphasize morning deliveries with priority treatments for trucks, provide real-time parking supply information displays, use complete street guidelines to provide pedestrian friendly improvements, create home zones where appropriate and offer enhancements to the public realm.
8. **Implementation** – The problem: past plans have been unfulfilled. The solutions: create definitive milestones, institutional mechanisms and monitoring programs starting with the continuation of the WTSOC and administered by a Waikīki Transportation Management Association.

MAJOR ELEMENT #1: Services

Alternative Elements

Each alternative or option considered had the following elements:

1. ***Alignment Options*** – Each alternative was composed of different alignment possibilities. These were primarily based upon either maintaining or changing the existing Route 8 alignment. The first four options retained the Route 8 alignment. The other options mixed and matched portions of the Route 8 alignment.
2. ***Enhanced Stops/Terminals*** – Each alternative was composed of a different set of possible locations where passengers can board or alight a bus. The first nine alternatives retained the existing Route 8 bus stops, used other existing stops or added minimal new bus stops to serve the proposed alignment. Alternatives 10-24 identified fewer bus stops and proposed that these be enhanced bus stops.
3. ***Service Characteristics*** – Each alternative was composed of a different set of service characteristics including service frequency by time of day, service span and cycle times based upon projected traffic conditions and some minor preferential improvements to bus efficiency.
4. ***Bus Operations Features*** – Each alternative included consideration of a range of bus operational features such as real time dynamic scheduling, electronic passenger information signage, transit signal priority, transfer connections, queue jumper lanes and fare prepayment to increase the speed of operations.
5. ***Complete Streets Features*** – Each alternative included consideration of complete streets features such as Keala O Ka Ola (the Hawaiian term for “home zones” originally included in the Waikīkī Livable Community Project for use on selected mauka-makai streets), freight delivery restrictions, tour bus loading restrictions, taxi staging strategies and parking management.
6. ***Pedestrian Connectivity*** -- Each alternative included consideration of how bus service connected with pedestrian facility features including various types of grade separated treatments.
7. ***Bicycle Accommodation*** -- Each alternative included consideration of bicycle network connectivity such as bicycle right-of-way treatments, bicycle sharing program site locations, bicycle parking, bicycle rental locations and improvements to bicycle infrastructure.

MAJOR ELEMENT # 1

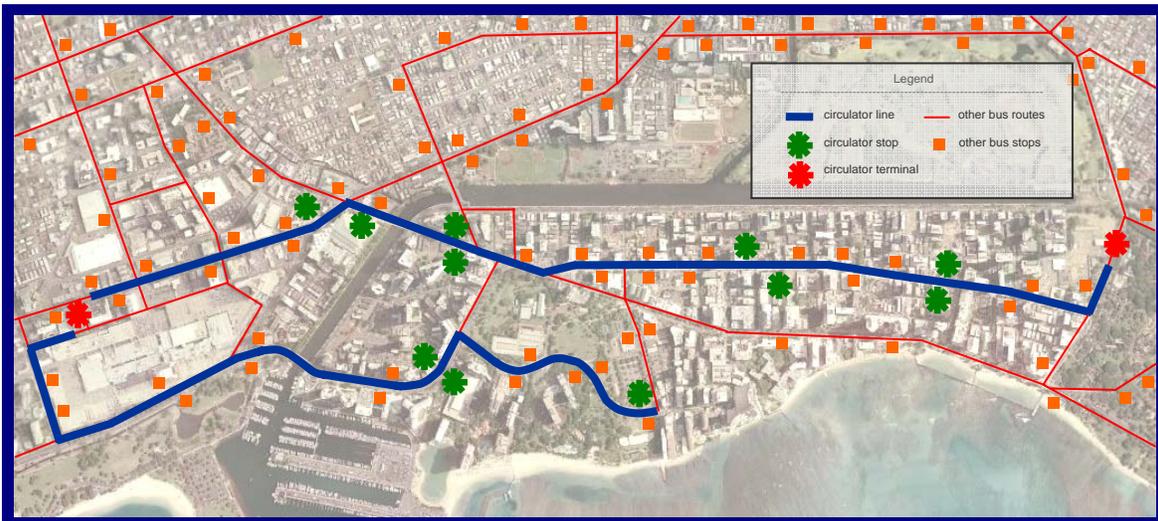
Range of Alternatives

Forty alternatives were developed and evaluated. Alternatives 1 – 9 were a test of current practices to establish a baseline for comparison. Alternatives 10-24 included many of the features in elements 3-7, except for alternatives 14-16 which emphasized peak-period, peak-direction operations. The most significant variations primarily included route alignment, number of stops and intervals between buses. These variables resulted in a range of vehicle and daily revenue service levels as demonstrated below for the most significant or competitive alternatives.

ALTERNATIVE	YEAR	MAXIMUM SERVICE PERIOD		DAILY REVENUE SERVICE	
		Frequency	Required Vehicles	Hours	Miles
1	2012	12.5 minutes ⁽¹⁾	9 ⁽²⁾	81.2	528.7
2	2030 ⁽³⁾	4 minutes	16	161.5	1,109.3
3	2019 ⁽³⁾	4 minutes	16	161.5	1,109.3
21	2019	4 minutes	8	81.2	800.8
21	2019	3 minutes	10	89.5	915.2
22	2019	8 minutes	4	55.2	457.6
22	2019	10 minutes	3	50.3	426.8
23	2019	4 & 8 minutes	12	136.4	1,258.4
23	2019	4 & 10 minutes	11	131.5	1,227.6
23	2019	3 & 8 minutes	14	144.7	1,372.8
23	2019	3 & 10 minutes	13	139.8	1,342.0
Notes: ¹ Current Route 8 frequency based on public timetables. ² Current Route 8 service statistics provided by DTS/OTS. ³ Future year 2019 & 2030 statistics consistent with FEIS.					

Evaluation Process

The table on the previous page compares operating characteristics of selected alternatives. Alternatives 1, 2 and 3 are the existing Route 8 in different years. Alternative 21 is the A line and 22 is the B line. Alternative 23C is the preferred alternative as shown below representing a combination of alternatives 21 and 22.



The alternatives represented the full range of possibilities. These were tested against the following set of evaluation guidelines:

1. Operational by 2018 - 2019
2. Capacity for peak period rail demand
3. Supports Waikīkī Transportation Strategy
 - achieves the 'Pedestrian-First' policy
 - maintains our 'Hawai'ian Sense of Place'
 - Invigorates our economic vitality
4. Solutions are cost-effective and affordable
5. Solutions are based on community outreach
6. Solutions are highly reliable
 - during scheduled special events such as parades
 - during natural disasters such as a tsunami

The guidelines were used to develop, refine and evaluate the alternatives. The evaluation process produced the preferred alternative. The preferred alternative has two terminals (red icons) and 11 bus stops (green icons).

MAJOR ELEMENT # 1

Service and Operating Characteristics

The preferred alternative will operate with two lines: A and B. Line A is the mauka blue line extending from a terminal (shown in red) at Ala Moana Center along Kapi'olani, Kalākaua and Kūhiō Avenues and ending at a terminal (shown in red) in the vicinity of the Honolulu Zoo.

Line B line is the makai blue line extending from a terminal at Ala Moana Center along Pi'ikoi, Ala Moana Boulevard and Kālia ending at a stop in the vicinity of the Fort DeRussy parking lot.

Line A has eight intermediate stations, four in each direction (shown in green). Line B is has two intermediate stations, one in each direction. The Preferred Alternative was selected because it offers the following service features:

- Line A provides service to about three-quarters of the existing Route 8 riders. It can be operated with one less bus and about the same number of daily operating hours as today's service, but with more than triple the service frequency (12.5 minute average intervals versus a bus every 4 minutes in peak service).
- Line B provides essential service coverage to the makai area of Waikīkī without forcing the 75% of the Route 8 riders who will use Line A to travel along the most time consuming portion of the current route alignment. Line B will skip most intermediate bus stops along Ala Moana Boulevard allowing buses to benefit from the interconnected signal timing. Line B can be operated with four vehicles on eight minute headways as compared to the current 12.5 minute headways.
- The Preferred Alternative combines Lines A and B. This Preferred Alternative exceeds the service level included in the HHCTCP EIS with 22 bus departures to Waikīkī in the peak hour versus the 15 included in the EIS. It achieves this using 12 vehicles versus the 16 included in the EIS.

The potential capital and operating cost savings implied by these numbers will be offset by the capital costs of the enhanced bus stops and other infrastructure proposals. However, some of these costs were also included in the HHCTCP Financial Plan. Therefore, it is expected that the Waikīkī Regional Circulator will offer greater service quality and levels at no significant additional costs and no apparent impacts to other current riders or transit services.

Ala Moana Center Future Bus Routes

The Waikīkī Regional Circulator transforms existing meandering service into two direct alignments between Ala Moana Center and Waikīkī with very frequent service. Complementing the Waikīkī Regional Circulator routes will be a comparable high-frequency route to UH Mānoa, identified as a new Route 7 in the table on the following page. Combined, the high frequency routes will have as many as 44 departures from Ala Moana Center during the peak hour. Another 63 public bus departures will be offered from other bus stops located in close proximity to Ala Moana Center.



The number of bus departures looping clockwise around Ala Moana Center has been reduced over the past several years from over 60 to 38 because of the schedule adherence problems being encountered. Experience tells us the future total of 107 bus departures per hour would overwhelm intersections if all buses operated along the same alignment serving bus stops next to the rail station.

The table on the next page identifies how the future Ala Moana Center area buses will operate in terms of their bus stop locations and operational characteristics when rail is operational. Work continues on refining these services. As shown, buses circling Ala Moana Center would be further reduced, alleviating congestion and improving schedule adherence.

MAJOR ELEMENT # 1

Future Ala Moana Center Area Bus Routes

BUS STOP LOCATIONS				BUS OPERATIONAL CHARACTERISTICS			
Route	Location	Direction	Type	Maximum Vehicle Size (feet)	Peak Hour Maximum Number of Buses	Possible Simultaneous Timed Connection	Typical Stop Duration (minutes)
A	Kapi'olani Boulevard	Eastbound	On-street stops using current stop locations	60	6	NO	1
A	Kapi'olani Boulevard	Westbound	On-street stops using current stop locations	60	6	NO	1
3	Kapi'olani Boulevard	Eastbound	On-street stops using current stop locations	45	5	NO	1
3	Kapi'olani Boulevard	Westbound	On-street stops using current stop locations	45	5	NO	1
5	Kona Street	Eastbound	Farside Ke'eamoku	40	2	NO	2
6	Kona Street	Eastbound	Farside Ke'eamoku	40	6	NO	2
7	AMC Garage	Eastbound	Nearside Kona Iki under parking structure	60	16	RAIL	2
8A	AMC Garage	Eastbound	Nearside Kona Iki under parking structure	60	20	RAIL	2
8B	AMC Garage	Eastbound	Nearside Kona Iki under parking structure	60	8	RAIL	2
9	Kona Street	Eastbound	Nearside Ke'eamoku	40	4	NO	2
17	Kona Street	Eastbound	Farside Ke'eamoku	40	2	NO	2
18	Kona Street	Eastbound	Farside Ke'eamoku	40	2	NO	2
19	Ala Moana Boulevard	Eastbound	On-street stop using current stop locations	60	4	NO	1
19	Ala Moana Boulevard	Westbound	On-street stop using current stop locations	60	4	NO	1
23	Kona Street	Eastbound	Farside Ke'eamoku	40	2	NO	2
40	Kona Street	Eastbound	Farside Kona Iki	60	3	NO	15
52	Kona Street	Eastbound	Farside Kona Iki	60	2	NO	15
88A	Kona Street	Eastbound	Nearside Ke'eamoku	40	2	NO	1

Notes: ¹ Routes 7 & 8 will be redefined as UH Mānoa and Waikīkī Connectors, respectively. Route 8A peak hour maximum number of buses will increase to 20 to synchronize with rail arrivals in the peak period. Routes 7 and 8B may be interlined and share the same platform.

² Table does not include *TheHandi-Van* space.

³ Table does not include bus staging area located off-site.

⁴ Bus stop duration will vary throughout the day. More time will be required in the peak periods when passenger activity is heaviest and less time in the off-peak period. Wheelchair operations will add to the typical stop duration time.

Waikīkī's Future Bus Network

The WRCS maintains bus service connections between East Honolulu, Kahala, Kaimukī, UH Mānoa, downtown Honolulu and Waikīkī. Bus stops (shown in orange on the previous map) not served by the Circulator will continue to be used by local routes. The following table identifies those bus routes and their operating characteristics that will be operating in Waikīkī together with the Circulator. The western end of Waikīkī is accessed via the following three corridors:

- Kalākaua Avenue – Routes 2 and 13, in addition to the Circulator, will provide service to Waikīkī via Kalākaua Avenue. Route 2 serves downtown Honolulu via the King and Beretania couplet providing 8-minute service. Route 13 provides the connection via Kapi'olani Boulevard every 15 minutes.
- Ala Moana Boulevard – Routes 19 and 23, in addition to 8B, will use the Ala Moana Boulevard corridor. Route 23 will continue to circle AMC providing 30-minute service. Route 19 will remain on Ala Moana Boulevard with 15-minute service. Both routes will serve Kālia Road, Saratoga Road and Kūhiō Avenue.
- McCully Street will continue to be the access point for Route 4 with 15-minute service.

The eastern end of Waikīkī has the following three access corridors:

- Kapahulu Avenue – Route 13 will provide 15-minute service between UH Mānoa and Waikīkī. Route 2 serves Kapahulu from KCC and Campbell Avenue. Both routes will continue to Kūhiō Avenue and downtown Honolulu. Route 14 connects St. Louis Heights and Wilhelmina Rise via Kapahulu Avenue.
- Monsarrat Avenue/Paki Avenue/Kūhiō Avenue is the access for Route 23 connecting Waikīkī with Hawai'i Kai every 30-minutes.
- Diamond Head Road/Paki Avenue is used by Routes 14 and 22.

Separating the connection between Ala Moana Center and Waikīkī from other bus routes will provide less congestion and confusion at the bus stops not served by the Circulator. Altogether, the number of bus routes serving Waikīkī will decrease from 14 to 8 in the future. However, the total number of bus trips serving Waikīkī will increase over today's level providing Waikīkī passengers with better travel options and decreased wait times between buses. Through services will be maintained for passenger convenience and system cohesion.

MAJOR ELEMENT # 1

Future Waikīkī Bus Routes

BUS ROUTES				BUS OPERATIONAL CHARACTERISTICS			
Number	Connecting to Major Activity Center	Access Corridor	Direction	Maximum Vehicle Size (feet)	Peak Hour Maximum Number of Buses	Possible Simultaneous Timed Connection	Typical Stop Duration (minutes)
2	Waikīkī	Kalākaua Avenue to Kūhiō Avenue	Eastbound	60	7	NO	1
2	Downtown Honolulu	Kapahulu Avenue to Kūhiō Avenue	Westbound	60	7	NO	1
4	UH Mānoa	McCully Street to Kalākaua Avenue	Westbound	40	4	NO	1
8A	Waikīkī	Kapi'olani Boulevard to Kalākaua Avenue	Eastbound	60	20	NO	1
8A	Ala Moana Center	Kūhiō and Kalākaua to Kapi'olani Boulevard	Westbound	60	20	NO	1
8B	Waikīkī	Ala Moana Boulevard	Eastbound	60	8	NO	1
8B	Ala Moana Center	Ala Moana Boulevard	Westbound	60	8	NO	1
13	UH Mānoa	Kalākaua Avenue	Eastbound	60	4	NO	1
13	Downtown Honolulu	Kapahulu Avenue to Kūhiō Avenue	Westbound	60	4	NO	1
14	Wilhelmina Rise	Kapahulu Avenue to Kalākaua Avenue	Eastbound	40	2	NO	1
14	St. Louis Heights	Diamond Head Rd. to Paki and Kapahulu Avenues	Westbound	40	2	NO	1
19	Waikīkī	Ala Moana Boulevard	Eastbound	60	4	NO	1
19	Downtown/Iwilei	Paki Avenue to Kūhiō Avenue	Westbound	60	4	NO	1
22	Hanauma Bay	Kalākaua Avenue to Diamond Head Road	Eastbound	40	1	NO	1
22	Waikīkī	Diamond Head Road to Paki and Kūhiō Avenues	Westbound	40	1	NO	1
23	East Honolulu	Ala Moana Boulevard	Eastbound	40	2	NO	1
23	Ala Moana Center	Monsarrat Avenue to Kūhiō Avenue	Westbound	40	2	NO	1

Notes: ¹ Route 8 will be redefined as the Waikīkī Connector. Route 8A peak hour maximum number of buses will increase to 20 to synchronize with rail arrivals at AMC in the peak period, assuming 3-minute rail service. Route frequency will adjust to match rail arrivals.

² Bus stop duration will vary throughout the day. More time will be required in the peak periods when passenger activity is heaviest and less time in the off-peak period. Wheelchair operations will add to the typical stop duration time.

MAJOR ELEMENT #2: Fare Collection

Fare Approach

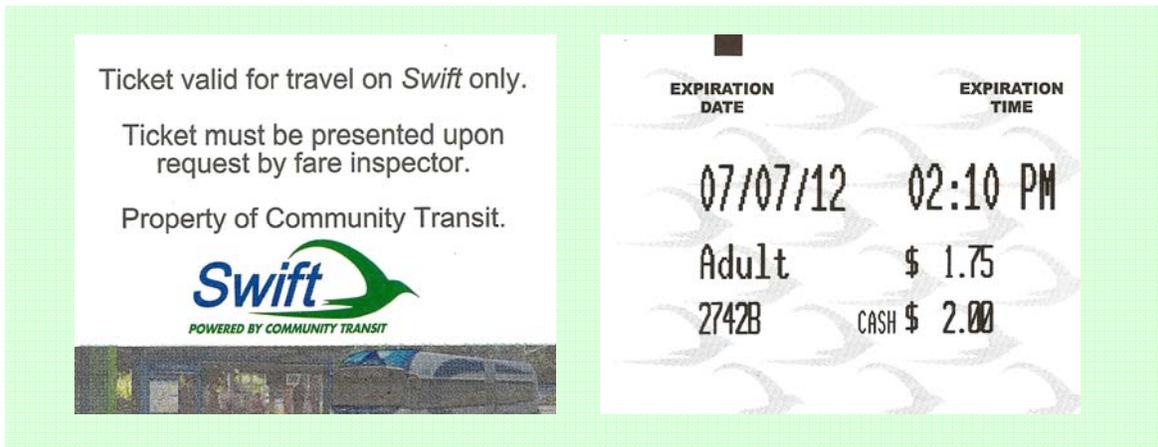
The circulator cash fare would be the same base fare as for the *TheBus*, currently \$2.50 per ride. Cash fares would be paid at ticket machines located at each WRCS station. All City passes would be honored. Bus stop ticket machines are becoming common at U.S. transit systems as shown below based upon many years of use in European cities.



MAJOR ELEMENT #2

Off-Board, Barrier-Free, Proof-of-Payment System

Machines would issue tickets similar to the one shown below for the Swift operation in Snohomish County, Washington. Tickets would include an expiration date and time. Transfers would not be issued, but would be accepted as proof of payment, if valid.



Improvements address delays caused by the need for driver involvement including:

- Extensive station area information including next bus displays
- Off-board, barrier-free, proof-of-payment system
- Self-engaging, passive restraint wheelchair positions

Passengers will be able to board using any door, a practice common in Europe.



Fare Collection

All-door bus loading is an approach being adopted by many U.S. operations. San Francisco started on July 1, 2012. The Orange Line in Los Angeles uses proof of payment. About 15,000 passengers transfer between the Orange (bus) and Red (rail) Lines each day. Passengers use a Transit Access Pass (TAP) on both lines, although one is bus and the other rail. They TAP an off-board validator for the Orange Line and swipe the card at a turnstile for the Red Line.



Metro Orange Line
It's the bus that acts like a train.



MAJOR ELEMENT #2

Benefits of Off-Board Payment

The off-board, barrier-free, proof-of-payment approach is the most important activity that will reduce dwell time and no longer require the driver's attention.

Each passenger will be required to carry a valid proof of payment. Passengers will be subjected to random inspections by roving personnel to verify payment.

Station platforms will be the same length as the bus, or longer. Platforms will be designed to position passengers at each doorway. *Swift*, a BRT line that opened in 2009 connecting the Washington State cities of Shoreline and Everett demonstrates this feature.



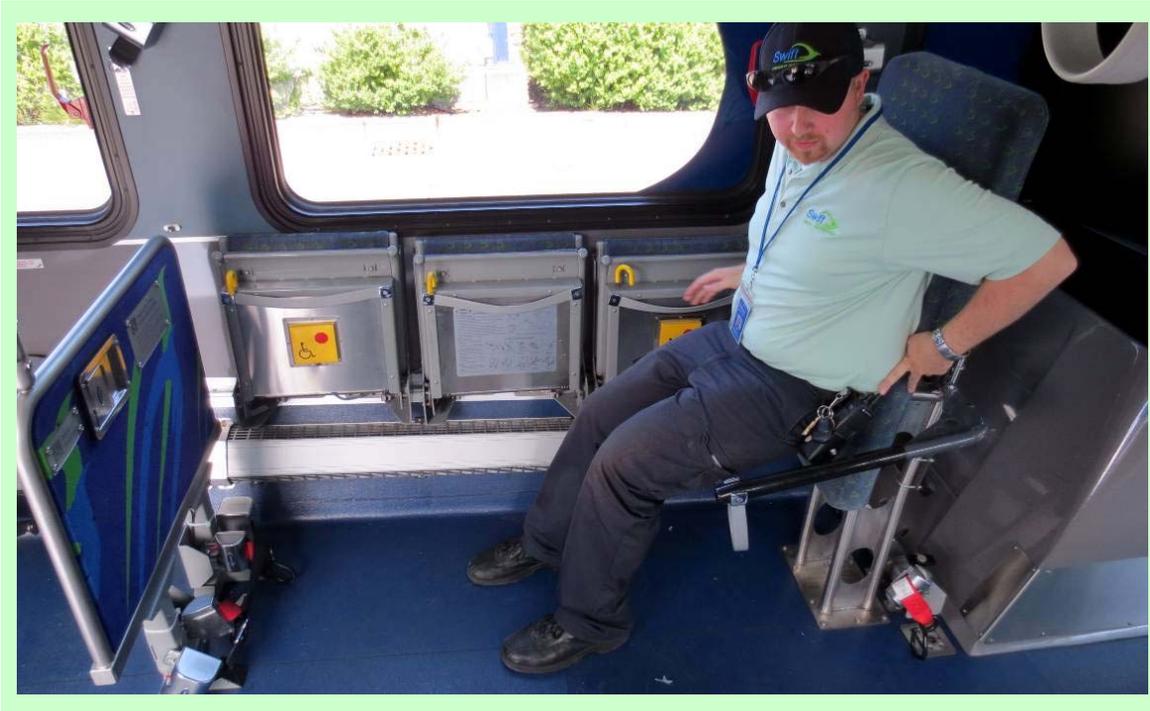
People are guided to position themselves where doors will be located after the bus comes to a complete stop. Wheelchairs use the front door. Bicyclists use the back door and bring their bike on board on Swift buses.

Bicyclists do not spend time placing their bike on the rack at the front of the bus. Other passengers can see where others are prepared to board and can pick a boarding location that represents the quickest entry for them.

The wheelchair areas on *Swift* buses can either be used in the standard front-facing position, or in a rear-facing position as shown by the *Swift* Ambassador demonstrating this capability on the next page.

Fare Collection

Swift uses “Ambassadors”. These Ambassadors are Community Transit staff who assist riders on *Swift* buses and at *Swift* stations. Ambassadors are authorized to verify fare payment and identification under Washington State law (RCW 81.112.210). Passengers are instructed to show proof of payment upon request, or be prepared to pay a \$124 citation.



After persistent questioning the *Swift* Ambassador cheerfully relented and demonstrated how the passive restraint wheelchair positions work. The position requires no driver assistance. The occupant simply backs up to the padded backboard, sets their brakes and pulls down on the armrest.

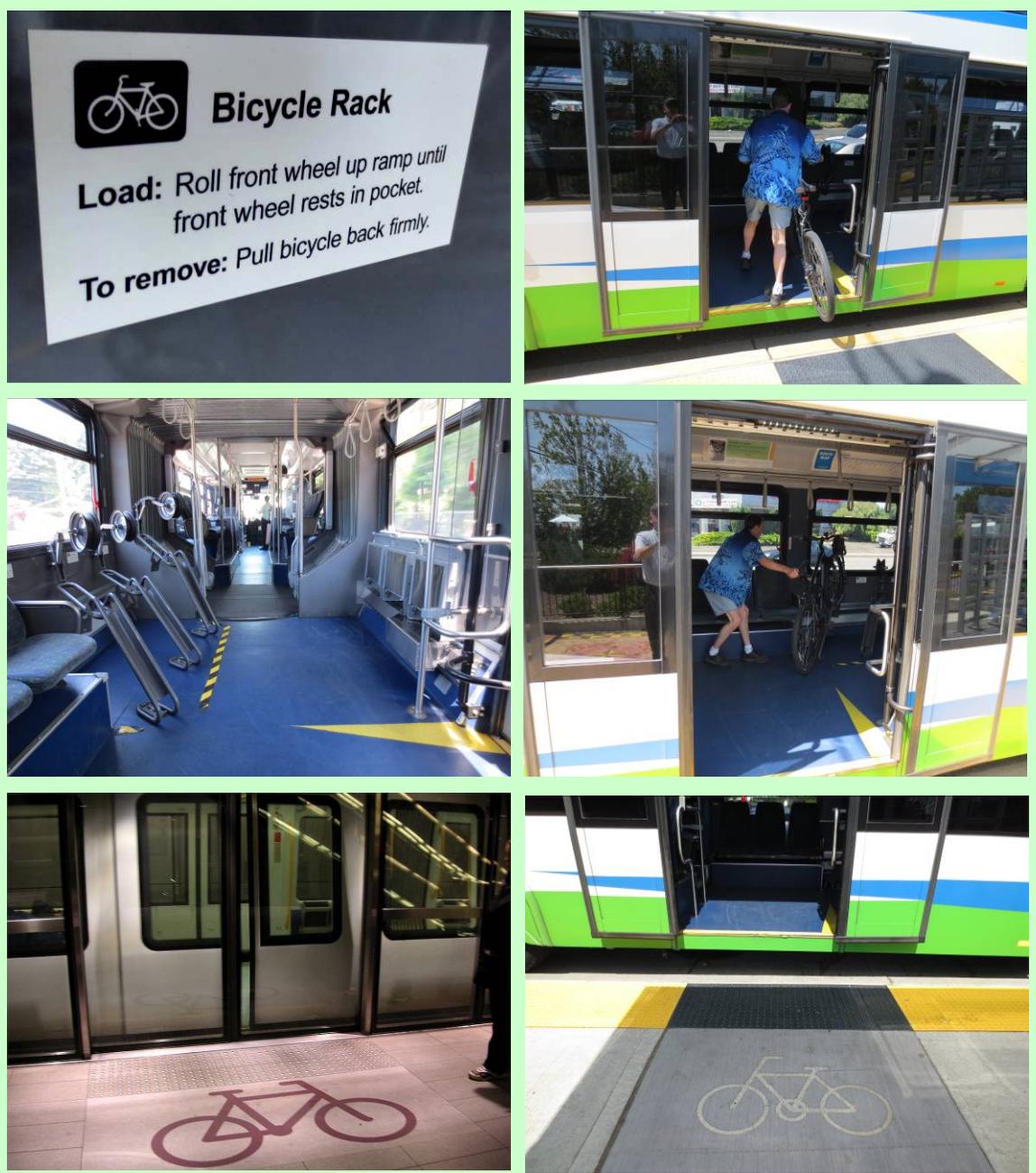
The Ambassador on board the *Swift* bus indicated that he was a former driver and that the *Swift* Ambassadors are specifically trained for their job. He indicated there are three *Swift* Ambassadors.

It is anticipated that more Ambassadors would be needed in the first year of service than in subsequent years. Ambassadors would need to be stationed at the two terminals and at the two inbound stations along Kuhio during most of the day, but they would also randomly station themselves at other stations and on board buses.

MAJOR ELEMENT #2

Passenger Boarding Expectations

Passengers will be able to board from any door if their questions have been answered before they board the bus. Passengers will no longer have to wait or board first while wheelchairs board from the front.



Fare Collection

The expectation is that dwell time at stations will be reduced. This loading and unloading efficiency should substantially improve the overall speed of operation, especially when these features are done in combination with fewer stations.

The wide array of fare payment and vehicle loading choices are common on transit systems throughout the world and shouldn't be confusing to people. Experience has shown that those transit systems that issue multiple day passes from ticket machines use heavier and more durable paper stock. This could impact the cost of ticket machines which have a wide range of costs.



MAJOR ELEMENT #2

The fare ticket can be set with any expiration. The ticket can be limited to a single ride by having a short time allowed, say one hour. Or, it could be used as a two-way ticket by setting the expiration to several hours. Or, it could be used as a day pass by setting the expiration at midnight. Or, it could be issued as a multi-day pass by setting the expiration at any number of days with different fares for each length of validation. The fare ticket can be used between bus and rail.



The proof-of-payment concept is not new to Waikīkī. It is the method used by E Noa Corporation on their Pink Line to expedite boarding and better control fare verification and payment. Ambassadors are stationed at the Ala Moana Boulevard stop and collect fares from those who do not already have a valid pass or ticket. However, at the Pink Line stop at Ala Moana Center under the Nordstrom parking structure, Pink Line passengers are only allowed to unload. There is no loading at this stop because there are no ambassadors located at this stop. This reduces the cost of having a person at each stop.

There are many possibilities for identifying what personnel are best suited for the random inspection of proof-of-payment. This could be bus drivers, police officers, parking enforcement personnel, Waikīkī's Aloha Ambassadors (the Waikīkī Business Improvement District), Department of Enterprise Services personnel, some new personnel or some combination of these. The assumption is that *TheBus* drivers, supervisors or other personnel would fill this role, but this needs to be further researched.

MAJOR ELEMENT #3: Stop Locations

Enhanced Stops

The thirteen enhanced bus stops and two terminals will have common attributes:

- Roadway treatments designating the exclusive area for the circulator
- Sidewalk treatments designating the area for circulator patrons
- Large theme-oriented passenger shelters
- Information displays including area maps and electronic next bus displays
- At least two ticket vending machines
- Extensive area lighting and landscaping
- High quality street furniture

Several of the thirteen locations will be designed to support bus terminal operations and may have additional features such as vehicle charging for ultra-capacitor or other types of high technology propulsion vehicles. The Ala Moana Center terminal and Kapahulu terminal options were investigated in detail to identify joint development and other multi-modal transportation opportunities

STOP NUMBER	FACILITY DESCRIPTION					COMMENTS
	Line	Direction	StopType	New or Existing Bus Stop Number	Nearest Street Names	
1	A	Terminal	TC	new	KONA IKI & KONA STREETS at ALA MOANA CENTER	2 short term options, 2 additional longer term options
2	A	Eastbound	station	new	KALAKAUA & KAPIOLANI at CONVENTION CENTER	bus stop location included in Convention Center EIS
3	A	Eastbound	station	147	KALAKAUA & MCCULLY	new tandem stop
4	A	Eastbound	station	151	KUHIO AVE. & SEASIDE AVE.	near Duke's Lane
5	A	Eastbound	station	153	KUHIO AVE. & LILIUOKALANI AVE.	existing bus pullout needs priority treatment, stop line setback
6	A	Terminal	TC	new	KUHIO AVE. & KAPAHULU AVE.	2 short term options, 2 additional longer term options
7	A	Westbound	station	22	KUHIO AVE. & LILIUOKALANI AVE.	existing high curb stop
8	A	Westbound	station	26	KUHIO AVE. & SEASIDE AVE.	existing high curb stop
9	A	Westbound	station	31	KALAKAUA & MCCULLY	new tandem stop
10	A	Westbound	station	985	KAPIOLANI & ATKINSON at CONVENTION CENTER	
11	B	Eastbound	station	new	ALA MOANA BOULEVARD & KAHANAMOKU	farside with new pedestrian crossing at intersection.
12	B	Turnaround	station	new	KALIA & SARATOGA	new parking lot driveway for transit only
13	B	Westbound	station	879	ALA MOANA BOULEVARD & KAHANAMOKU	new pedestrian crosswalk at current intersection

MAJOR ELEMENT #3

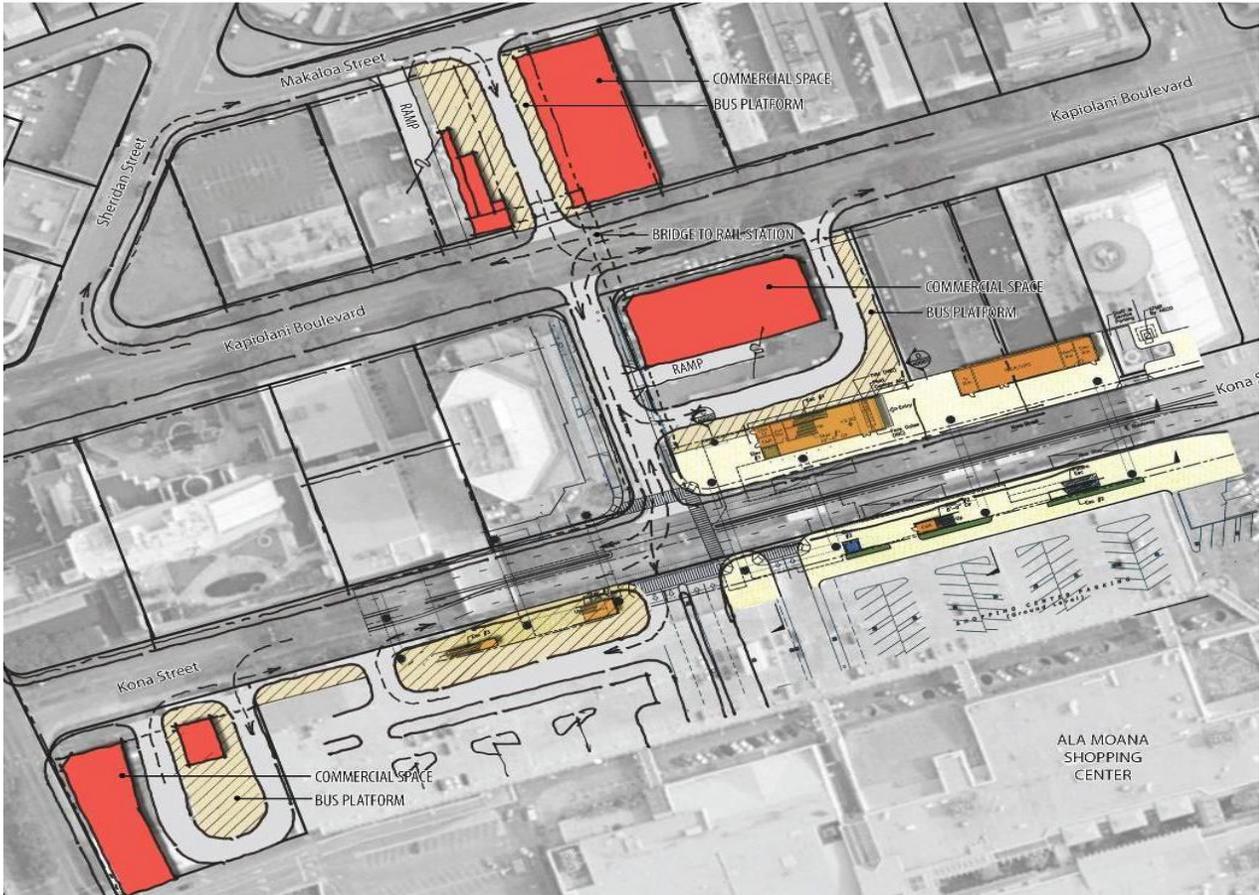
Ala Moana Center Area Terminal Options

Four sites were considered for the Ala Moana Center terminal:

1. The area composed of two parcels between Kapi'olani Blvd. and Makaloa.
2. The area composed of the portion of one parcel not used by the AMC station bordered by Kona Street, Kona Iki Street and Kapi'olani Boulevard.
3. The area bordered by Pi'ikoi Street and Kona Street adjacent to AMC parking.
4. An area within the AMC parking structure



Stop Locations



LEGEND

-  Commercial Space
-  Rail Transit Facilities
-  Bus Transit Platforms + Pedestrian Connections



0 100 200 400
Scale 1" = 200'-0"

GROUND LEVEL PLAN KONA + PIIKOI STREETS SITE PLANNING June 2012

MAJOR ELEMENT #3

Ala Moana Center Bus Stop Needs and Analysis

TheBus has two major concentrations of service at AMC – at a bus stop with three positions for vehicles along the mauka side of Ala Moana Boulevard and at a series of four bus stops along the makai side of Kona Street. In 2012 there were 20 routes serving these two major concentrations of bus stops with the highest passenger activity of any location on O’ahu.



CHARACTERISTIC	MAJOR BUS STOP	
	Ala Moana Boulevard	Kona Street
Number of TheBus Routes	20	20
Number of Bus Trips	486	504
Passengers Boarding	3,177	6,311
Passengers Alighting	3,121	4,779

TheBus routes that go around Ala Moana Center require 16 minutes in good traffic conditions to complete the loop. The buses are sometimes trapped by high traffic volumes and turning movements on Kona Street. The Waikīkī Regional Circulator will use more direct routing to avoid this delay and as much of the loop as possible.

Each of the four site options considered offers aspects of what is needed to provide a better consolidation of current bus operations and an opportunity for a close connection for passengers who desire access to the future rail station. Sites 1 and 2 offer joint development opportunities with property intended to be redeveloped. However, coordination with the plans for those sites would be challenging for a variety of reasons.

Sites 3 and 4 also offer joint development opportunities, but are considered less challenging because the coordination involves primarily parking relocation rather than a mix of commercial and residential development over a bus terminal operation. Site 4 offers the best site plan with passengers able to go between bus and rail without having to cross any vehicle movements.

Kūhiō and Kapahulu Area Terminal Options

Four sites were considered for the Kūhiō and Kapahulu terminal:

1. The area composed of the mauka section of Jefferson Elementary School. This site was advanced into a detailed analysis shown on the following pages.
2. The area including portions of the Honolulu Zoo visitor parking lot and administrative buildings. Also advanced into a detailed analysis.
3. The area composed of the makai section of Jefferson School bordered by Kapahulu Avenue, Kūhiō Avenue and Makee Road. Not advanced.
4. The area composed of the makai section of Jefferson School between Kūhiō Avenue and Kaneloa Road. Not advanced.



MAJOR ELEMENT #3



SITE PLAN
Ground Level

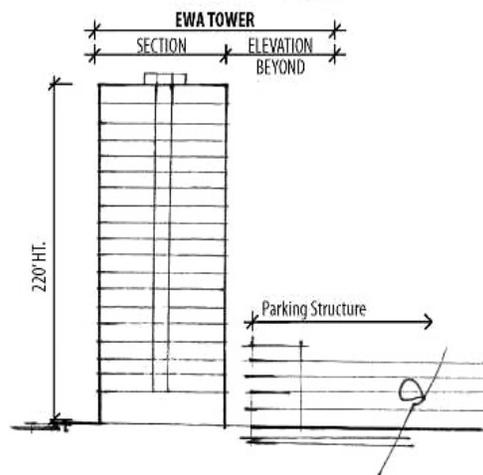


0 125 250 500

Scale 1" = 250'-0"

LEGEND

- Commercial Space
- Residential
- Administrative Office Space
- Classroom Facilities
- Vertical Circulation
- Transit Pedestrian Connections



Stop Locations



NOTES:

1. Parking for Jefferson School Development (JSD) are discounted 50% for Transit Oriented Development (TOD).
2. JSD will require zoning change to Apartment Zoning
3. Zoo Development height limit is 25' maximum.

JEFFERSON SCHOOL DEVELOPMENT				
USES	EWA TOWER	DIAMOND HEAD TOWER	TOTAL	
RESIDENTIAL UNITS	254	214	468	
BUILDING HEIGHT	220'	220'	-	
NO. OF FLOORS	20	20	-	
COMMERCIAL	11,400 sf	9,600 sf	21,000 sf	
REQUIRED PARKING	RESIDENTIAL	254	214	468
	GUEST	25	22	47
	COMMERCIAL	19	16	35
	SCHOOL	-	-	100
TOTAL	-	-	650	
PARKING PROVIDED			661	

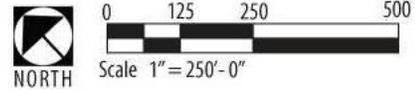
OPTION 1 JEFFERSON SCHOOL + ZOO SITE PLANNING

June 2012

MAJOR ELEMENT #3



SITE PLAN
Ground Level



LEGEND

- Commercial Space
- Residential
- Administrative Office Space
- Classroom Facilities
- Vertical Circulation
- Transit Pedestrian Connections

Stop Locations



OPTION 2

JEFFERSON SCHOOL + ZOO SITE PLANNING

June 2012

Kūhiō and Kapahulu Bus Stop Needs and Analysis

The intent of considering site 1, the mauka section of Jefferson School, was to determine if a joint development opportunity existed. Such a joint development might involve the City using a portion of school property for the purpose of developing an off-street terminal for the Waikīkī Regional Circulator with passenger transfer connections to other routes. The State would use the same site for developing mixed land uses requiring variances by the City for the development to be viable. The options shown on the preceding pages were developed for illustrative purposes to assist in formulating a possible project.

Discussions with the Department of Education (DOE) determined that although the State may benefit from creating a joint partnership, DOE would not. Any development value created by any project would go to the general fund. The Public Land Development Corporation (PLDC) is the agency tasked with looking into getting more value for the land. The PLDC is a new agency created in 2011 to develop state lands. The variety of entities involved and the process to be followed seemed not to be conducive for the type of joint development envisioned by the site analysis. The discussions indicated any joint venture for site #1 is likely to be a long and complicated process.

Sites 3 and 4 were suggested by DOE representatives and would not involve joint development. They were not advanced due to their proximity to residences and the uncertainty as to whether these locations might also be subjected to an involved development and approval process.

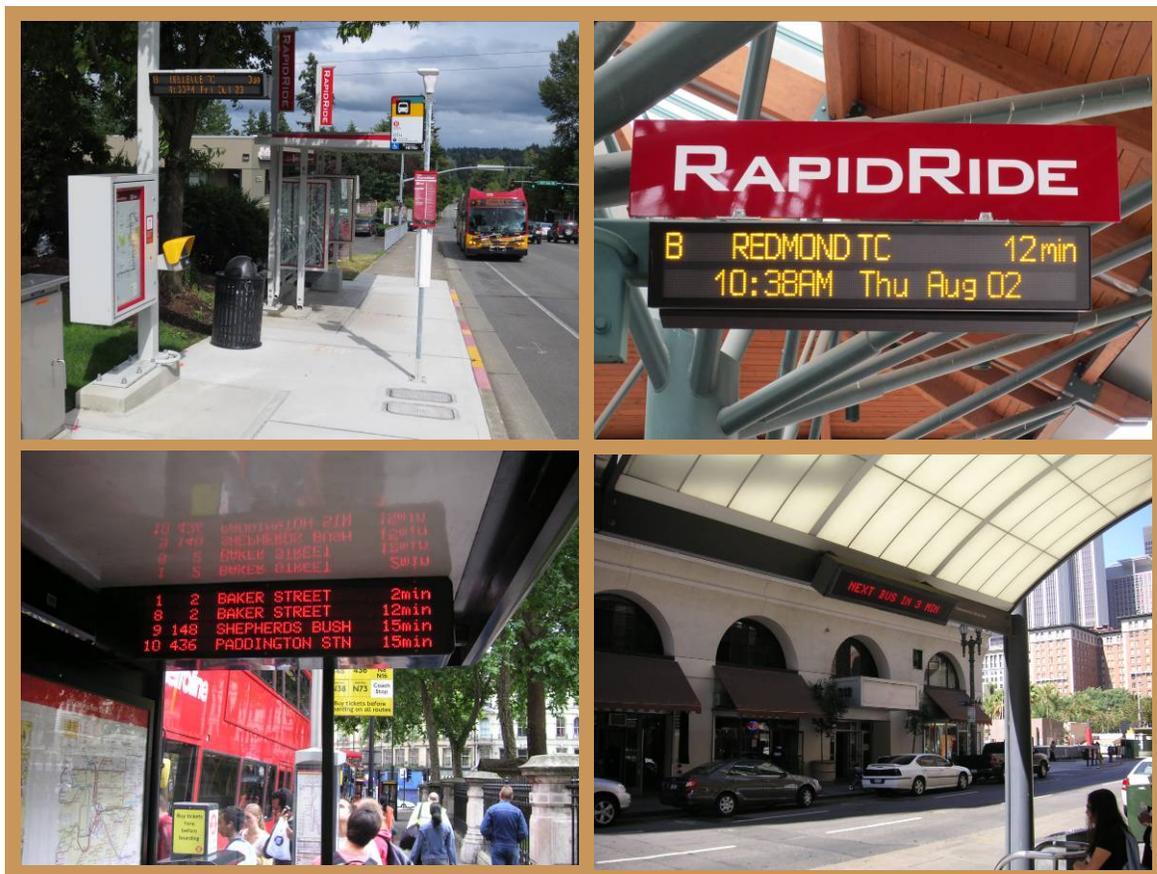
The intent of considering site #2, a portion of the Honolulu Zoo premises located along Kapahulu, was to determine if a joint development opportunity existed wherein the City might be able to use a portion of zoo property for the purpose of developing an off-street terminal in consideration of the zoo being able to develop the same property for needed administrative facilities. Discussions with the City's Department of Enterprise Services resulted in a positive agreement that significant benefits exist for the Honolulu Zoo with the type of Waikīkī Regional Circulator terminal facility proposed. The proposed project would include administrative offices and a cafeteria for the zoo and bus positions for the Waikīkī Regional Circulator, other City bus routes and two school buses.

Site 2 offers the best site plan and joint development opportunity. Although the other enhanced stops for the Waikīkī Regional Circulator are categorically excluded from an environmental process, site 2 is in the Kapi'olani Park Trust lands and would need an environmental assessment. A 1991 court finding did conclude that unobtrusive bus stops or bus facilities is not a violation of the terms of the Trust.

MAJOR ELEMENT #4: Information

Electronic Information Displays

Multiple electronic information displays will be located at each enhanced bus stop. Two electronic information displays will be on a post erected exclusively for their support consistently positioned at each location. The electronic information displays will be mounted back to back and erected facing pedestrian traffic flows from either direction along the sidewalk.



The ultimate name of the Waikīki Regional Circulator will be placed above the electronic displays as part of a custom-designed housing providing weather protection and shade so information displayed is not washed out by sunlight. Additional electronic displays will be placed under the roof of each shelter. One will be placed under the front lip of the shelter directly aligned with where the back door will be located when the circulator bus stops. It will include a message that passengers may board at the back door. A second electronic display will advise passengers of the other local buses available at the closest local stop.

MAJOR ELEMENT #4

Location Maps

The existing Waikīkī area maps are excellent examples of a useful means to assist people in finding their way around. These serve as an example of the type of locational maps being proposed, but at a different scale to convey to people how to walk or use transit to areas outside of Waikīkī



Multiple types of geographical locational maps will be provided at each enhanced bus stop. One will be the current Waikīkī area map shown above. A second will be a much larger scale detailed urban area street and attraction map including popular destinations within five miles of Waikīkī such as downtown, Chinatown, UH Mānoa and Diamond Head such as the maps used throughout Europe shown below..



Information and Wayfinding

Schematic Diagrams

A third graphic will be a schematic transit route map diagram displaying the connection with rail at AMC, other rail stations and bus routes.

Information and wayfinding will be offered along major pedestrian pathways to guide people to where connections to rail are offered at a nearby enhanced circulator stop.



The main features of the schematic transit map are color coded lines with named icons to indicate major Waikīkī Regional Circulator stops and rail stations. Similar schematic transit maps will be found inside Waikīkī Regional Circulator buses. These schematic transit maps are not intended to be geographically accurate which is why they are provided adjacent to such maps when people need added detail. The schematic map uses straight lines and fixed angles, compressing outer suburban areas and expanding inner urban areas including Waikīkī.

Frames, posts and graphics will be color coordinated to present a unifying and clear portrayal of information and wayfinding components as has been done recently in Seattle where most intersections in the downtown area have red posts with color coded wayfinding directional arrows to major attractions.



MAJOR ELEMENT #4

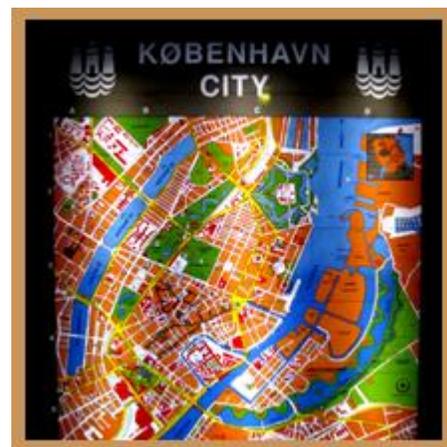
Wayfinding Arrows

Directional wayfinding arrows are popular throughout the world as the most basic means to communicate to an international, multi-lingual traveling public. Wayfinding arrows need only identify the direction one needs to go to find the desired feature.



Lighting

Backlighted graphical displays are very effective in providing easily readable information at all times of night and day. These will be provided with abundant lighting at all height levels and angles to assure wayfinding is prominently illuminated, not hidden in the shadows of excessive landscaping.



MAJOR ELEMENT #5: Running Way

Pavement Markings

The circulator will receive special pavement treatments at each stop and along the route alignment whenever feasible. One option is to use the approach in London where a red asphalt overlay is used for bus only lanes and bus stops. The deployment of this pavement treatment would be done incrementally starting with just the 60-foot directly aside each stop location. The next increment would be along existing bus only roadways, namely the contra-flow stretch of Kalākaua between Kūhiō and McCully. Later phases would extend this treatment to the Ala Wai Boulevard.



A wide variety of techniques are used to communicate the exclusive bus stop area reserved for the Waikīkī Regional Circulator. The picture on the right is from Brussels where the general purpose roadway is normal asphalt, but the enhanced bus zone area pavement treatment uses red cobble stones. Colorizing concrete bus pads or using stamped concrete patterns would also achieve the same objective.



MAJOR ELEMENT #5

Traffic Flow

The WRCS has determined that the existing traffic signal timing along Kūhiō Avenue and the bus priority treatments along Kalākaua Avenue offer excellent examples of how public transportation may be given preferential treatment while minimizing impacts to general purpose traffic. These types of treatments should be maintained, extended and expanded incrementally emphasizing the following:

- Extending the existing contra flow bus only lane along Kalākaua between McCully and Ala Wai Boulevard (with bicycles allowed).
- Maintaining the current amount of traffic signal green time for Kūhiō Avenue traffic signal phases, the total length of the traffic signal cycle and the progression of signal timing along Kūhiō Avenue. Adjustments should not be made for developments that are detrimental to transit operations.



MAJOR ELEMENT #6: Vehicles

Vehicle Features

The HHCTCP EIS used Route 8 as the primary means to provide increased feeder bus services between Waikīkī and the future station at the Ala Moana Center. This route is now operated with nine forty-foot buses. By the year 2019 the rail station would need to be served by sixteen sixty-foot buses to adequately accommodate projected rider demand to and from Waikīkī.

The WRCS has determined that the revised Baseline A and B routes will need thirteen sixty-foot buses by the year 2019 if certain operational features are used such as pre-payment of fares and rear door loading. The sixty-foot hybrid bus now being used on some King County metro RapidRide lines (the same vehicle now operated by *TheBus*) allows rear boarding.



Federal Funding

The U.S. Department of Transportation and the U.S. Department of Housing and Urban Development awarded Honolulu a \$5 million grant. The funding is provided through an initiative called the Transit Investments for Greenhouse Gas and Energy Reduction (TIGGER II) Program. The City will use the grant to replace diesel buses in Waikīkī with turbine hybrid-electric buses that are quieter, more fuel-efficient and produce lower emissions.

MAJOR ELEMENT #6

Tigger Program Objectives

The Waikīkī Regional Circulator TIGGER II project objectives are to:

- Reduce Greenhouse gases and energy consumption;
- Increase the livability and vitality of Waikīkī;
- Evaluate the performance of the bus in Waikīkī;
- Evaluate the use of electrically-powered components including A/C system, air compressor, and power steering pump;
- Eliminate the use, and disposal of, engine oil, transmission fluids, and engine coolant;
- Improve service reliability;
- Compare turbine hybrid buses with conventional hybrid buses and with conventional diesel buses;
- Reduce operations and maintenance costs;
- Prepare an evaluation report which will be used nationwide to advance the knowledge of innovative technologies in transit systems.

Special Design Features

Waikīkī offers the nation a unique testing ground for high technology buses and such grant awards should be sought in the future. However, some features that the federal government may want to test are not necessarily needed for Waikīkī premium services.



WRCS buses will need to be able to have the rear door within six inches of the curb to allow for safe alighting and boarding, but no advance technology guidance system is needed to accomplish this requirement.

No particular advanced propulsion system is being advocated for future vehicle procurements, but the design for the three terminal locations will include site design specifications to allow for overhead electrical charging of ultra capacitor vehicles now in regular service in China.

MAJOR ELEMENT #7: Livable Communities

Essential Components

The primary purpose of the WRCS is to develop a plan that leads toward sustainable public transportation services between the future rail terminus at Ala Moana Center and Waikīkī. The WRCS also gave an increasingly high priority to considering ways to move Waikīkī toward a more appealing, livable and pedestrian-oriented environment reflective of its unique heritage. This increasing priority was attributable to the positive response to these essential components by the WTSOC and the public, especially the feedback at neighborhood board meetings and public workshops.

Public outreach has communicated and confirmed the importance of livable communities. The Livable Communities Major Element identifies those complimentary proposals to the provision of public transportation that are designed to work harmoniously with bus operational improvements.

Pedestrian Friendly Amenities

The overall category of “Pedestrian-Friendly Amenities” was consistently rated as one of the highest concept categories during stakeholder interviews and public workshops. This category was defined as providing a range of pedestrian-friendly amenities and attractions to continually enhance the experience of walking in Waikīkī. It is designed to respond to the following “pedestrian-first” policy:

“ In Waikīkī the pedestrian, visitor and resident alike, will come first. Waikīkī will be a pedestrian-oriented resort and a pedestrian-oriented residential area. Walking will be the primary mode of getting around within Waikīkī and it will be a pleasurable way to enjoy Waikīkī.”

Recapturing the Magic of Waikīkī (December 1999).

Waikīkī needs to immediately achieve the community’s expectations of a “Pedestrian First” policy. The community wants to retain and strengthen Waikīkī’s standing as one of the world’s premier destinations, to maintain Waikīkī’s Hawai’ian sense of place and to invigorate Waikīkī’s economic vitality. To do this, Waikīkī requires the highest quality multi-modal transportation system possible.



MAJOR ELEMENT #7

Pedestrian Friendly Streets

Waikīkī’s multi-modal transportation system needs to keep pace with its continuing transformation. Waikīkī needs to evolve from a typical vehicle congested urban atmosphere into a more appealing pedestrian-oriented environment reflective of its unique heritage.

Waikīkī’s transportation infrastructure and services need proper prioritization and reorientation to respond to the “Pedestrian-First Policy”. Home Zones are a proven way to achieve the desired pedestrian-oriented environment.

Home Zones are an established international standard. A Home Zone (also known as a Woonerf) is shown in the picture below. This is the central square in Baden-Baden.



The Hawai‘ian language Woonerf equivalent is Keala O Ke Ola. A Keala O Ke Ola is a street where road space is shared. Pedestrians have priority. Vehicles must yield to pedestrians at all times and at all places. Vehicles must never travel at more than a walking pace. The maximum speed for all vehicles would be 5 MPH.

Home Zones promote the highest quality of life. They contribute to higher safety. The main benefit is a change in the street environment. It allows for a wider variety of activities in street space usually predominately designated for vehicles. Home zones change the function of street space. They are most applicable in residential street situations, but are found in many commercial districts as shown above.

Home Zone Applications

Duke's Lane already has the characteristics of a Home Zone. There are no sidewalks. Vehicles patiently proceed at a walking pace unbeknownst to the pedestrians they are following. The speed limit is posted at 5 MPH.



Duke's Lane is a private roadway used predominately by visitors. It would be an excellent location to introduce the internationally recognized Home Zone sign and use this street as a demonstration of how a Home Zone works.

Many other candidate streets exist in Waikīkī. The most likely next application might be Pualani Way between Paoakalani Avenue and Wai Nani Way. Others include mauka/makai streets between Kūhiō and Ala Wai that do not connect to Kalākaua such as Namahana, Launiu, Kaiolu, Nahua, Walina, Kaiulani, Wai Nani Way and Ainakea Way.

Certain Diamond Head-Ewa side streets such as Aloha, Tustala, Cleghorn, Lemon and Cartwright could be candidates for Home Zones. Hobron Lane and other connecting streets in the Hobron neighborhood (Kaioo Drive, Lipeepe and Ena Road) are also candidates.

Vehicles and pedestrians mingle with no traffic control signals or pavement markings. The use of the Home Zone approach is increasing throughout Europe. This traffic treatment allows pedestrian-friendly design treatments to flourish.

The Home Zone approach is offered as a program, not as a list of definitive projects. The program would include other improvements such as better public lighting, landscaping and benches. It is designed to reduce the need for crosswalks, traffic control devices, sidewalk revisions and other suggestions often cited when a pedestrian-first policy has not been established and streets are designed to give pedestrians and vehicles different parts of the public right-of-way.

MAJOR ELEMENT #7

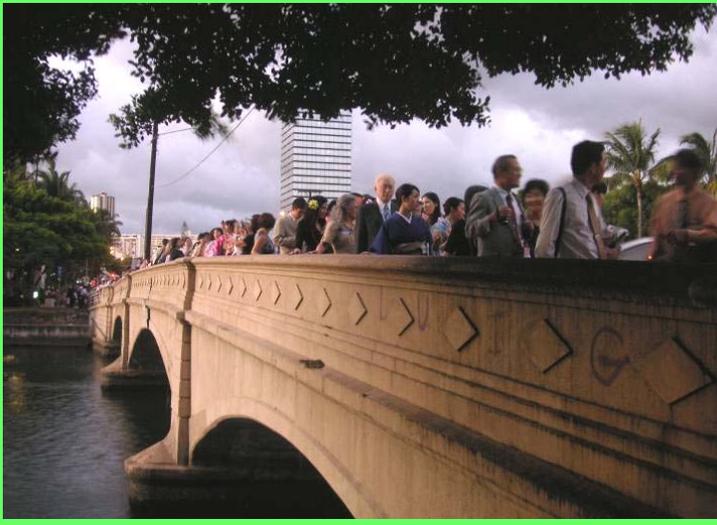
Pedestrian Connections

The last bridges built in the hearts of London, Paris, Frankfurt, Dublin, Venice, Madrid, Lyon, Gothenburg, Vienna, Calgary and Omaha were for pedestrians and bicyclists, but not vehicles. This was done to connect portions of a divided urban area, often separated for many decades, sometimes for centuries, by a body of water.



Livable Communities

Waikīkī's multi-modal transportation system needs better connections across the Ala Wai Canal. Waikīkī needs to evolve from relying upon three high volume vehicle bridges with narrow sidewalks to a world-class destination properly connected to its neighboring communities with the same attractive crossings found elsewhere.



Waikīkī needs to give pedestrians the same type of high quality connectivity found throughout the world. Other cities have given pedestrians priority, especially in situations where major trip attractors such as Ala Moana Center, the Hawai'i Convention Center, and our fantastic parks – Ala Moana, Ala Wai and Kapi'olani are within a reasonable walking distance of each other and other trip origins within Waikīkī.

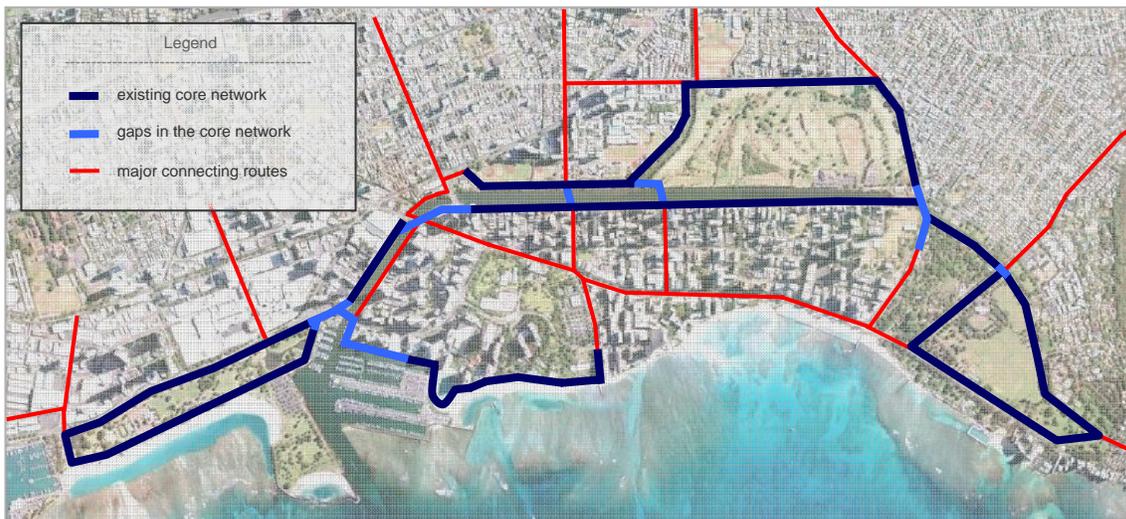
Other cities have greatly increased personal mobility using cost-effective construction techniques and stunning architecture. They did so even though pedestrians could cross the barrier dividing their city using nearby existing roadway bridges, just as we have done forcing pedestrians to get to and from Waikīkī along bridges designed for vehicles, not people. Those who don't have a vehicle available for their trip to Waikīkī must sometimes walk far out of their way or use a bus.

The pedestrian/bicycle bridges being built elsewhere fill long existing critical voids in otherwise attractive networks. Likewise, the Waikīkī area has a seven mile network of pedestrian/bicycle multi-use pathways that have five critical voids. Waikīkī, Ala Moana, Kaka'ako, McCully, Mō'ili'ili and Kaimukī would be served by a continuous, seven-mile long pedestrian/bicycle pathway with no vehicle traffic conflicts if these voids are filled.

MAJOR ELEMENT #7

Core Pedestrian Network

The core pedestrian network builds upon many proposals that have been made in the past with a significant distinction: it emphasizes the need for 100% grade separation of pedestrians and bicyclists from vehicle traffic.



Fortunately, many past proposals to enhance the pedestrian and bicycle environment have been completed. Unfortunately, these often provide a stretch of pathway ending at a traffic signal.

Under the WRCS proposal, it will be possible in the future to walk, run or bicycle not just around Ala Moana and Kapi'olani parks, but between them as well, without stopping at a traffic signal.

The need for the separation of modes in and around Waikiki is not new:

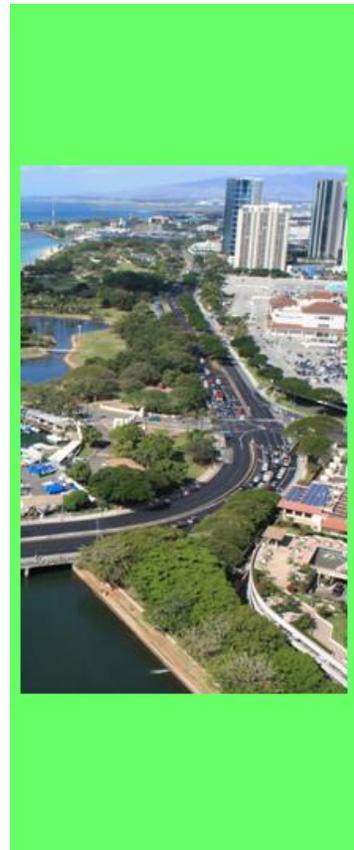
“ The perpetual commingling of different types of vehicles serving different purposes and the pedestrian in ever-increasing numbers will require innovative measures such as pedestrian-oriented promenades, malls or pedestrian skyways...”

Waikiki Traffic Study (1970).

Five Pedestrian Network Gaps

Over 93% of the highlighted blue lines on the map on the previous page already exist. There are only five locations with significant voids. Today, pedestrians and bicyclists can maneuver around these voids by traveling out of their way, waiting for multiple pedestrian signals at the same major intersection and using busy crosswalks where vehicles are making simultaneous conflicting turns. The following projects are intended to eliminate these situations for the benefit of all modes and complete the remaining 7% of a seven mile core network.

- An elevated pedestrian/bicycle crossing of Ala Moana Boulevard connecting the Ala Wai Promenade, Ala Moana Park's interior pathway and the end of the existing elevated pedestrian pathway adjacent to the Modern and Ilikai hotels.
- An elevated pedestrian/bicycle crossing of Kalākaua Avenue and McCully connecting the Ala Wai Promenade with the makai Ala Wai Boulevard pathway.
- Twin pedestrian/bicycle bridge crossings across the Ala Wai canal. One at a location aligned with a University Avenue/Kalaimoku Street/Saratoga Road mauka/makai pedestrian/bicycle corridor providing a connection to the Diamond Head terminus of Baseline B. The second aligned with a Seaside Avenue mauka/makai corridor connecting with bus stops planned for Baseline A along both sides of Kūhiō Avenue.
- An elevated pedestrian/bicycle crossing of Kapahulu Avenue connecting the Ala Wai pathway with the Paki pathway and the Kapahulu/Date pathway.
- An elevated pedestrian/bicycle crossing of Monsarrat Avenue connecting the interior pathway around Kapi'olani Park to the network.



The completion of this core network will encourage others to suggest how to connect their existing or proposed development to the network just as the existing pedestrian networks in Chicago, Minneapolis and Vancouver, B.C. have done.

MAJOR ELEMENT #7

Deliveries

“Deliveries” was consistently rated as one of the top categories that need to be addressed in Waikīkī. The “Deliveries” category was described as follows: “Make deliveries more efficient and coordinated by improving the ease and efficiency of freight and passenger loading and unloading, and by reducing the impact of these activities on traffic flow.”

Among the ideas considered were to reserve loading periods for large trucks (over 30-feet) on Kūhiō Avenue (between Seaside Avenue and Kaiulani Avenue) and on Kalākaua Avenue (between Seaside Avenue and Paoakalani Avenue); to limit size of delivery vehicles; revise loading times; create new loading zones on streets mauka of Kūhiō (such as Walina Street, Nahua Street, Nohonani Street, Seaside Avenue, create a shared off-street loading facility somewhere along Kūhiō (between Royal Hawaiian Avenue and Kaiulani), and, provide better enforcement (using video cameras and/or personnel).

Workshops with passenger and property carriers focused upon two major themes: the need for more equitable and pragmatic enforcement and the need for more loading zones. The following are proposals to address these themes:

- Loading Zone Capacity on Kūhiō could be regulated for large trucks to give them preferential treatment on the makai side between Duke’s Lane and Kaiulani Avenue from 5:00 am and 7:30 am to avoid conflicts with bus operations. Future development along Kūhiō should provide adequate provisions for all deliveries off-street and should be required to coordinate with neighboring properties and tenants to establish a joint loading center where large trucks can remain parked while deliveries are made to adjoining properties.



Livable Communities

- Loading Zone Capacity on mauka/makai streets should be retained and expanded as necessary so those locations with a loading zone time of 7:00 am to 4:00 pm can eventually be transitioned to 5:00 am to 12:00 pm. The intent is to remove as many trucks as possible from the traffic mix along Kūhiō Avenue during the afternoon while giving these deliveries more preferential treatment in the morning.



- Loading Zone Enforcement should be aggressively reformed and intensified. Part of the reform would allow existing conditions to remain illegal unless those holding an explicit permit are allowed to occasionally violate some specific regulations to make essential deliveries. These exceptions will be further developed in cooperation with those impacted. Such exemptions are intended to recognize the circumstances existing along Kalākaua allowing them to prevail under certain conditions and times.

The delivery situation facing Waikīkī is as challenging as what other cities face throughout the world. Many of these cities developed with narrow streets and no rear delivery capability. The common solution is to allow deliveries to occur during a strongly enforced time ending well before lunchtime, no later than 11:00 am.



Deliveries are given preferential treatment while all other modes must maneuver around trucks. Many of these streets are closed to all motorized traffic after 11:00 am. The success of this allocation of modal priority by time period is in how rules are enforced as discussed under the “Implementation” section.

MAJOR ELEMENT #7

Enhancements

Enhancements should be integrated with other capital improvement projects. However, they are not advocated as a primary improvement. The WRCS intends to respect the objectives of the study to include ways to effectively integrate concepts of livable communities. Certainly, these concepts include many aspects of placemaking.

Priority enhancements will include those that are most functional such as benches, toilets, water fountains, planters and trash receptacles. The more an amenity contributes to encouraging one to make a trip by transit, on foot or by bicycle that might otherwise be made by private vehicle, the more that enhancement should be included in a capital project such as at an enhanced bus stop or along a pedestrian way.



Lighting, water features, shade, urban art, benches, and other amenities will be provided as part of the development of terminals and enhanced stops, the five pedestrian/bicycle connection projects and the home zone program. This will be conditioned upon the determination of how these enhancements will be maintained.

Bicycling

Transportation options are viewed as an integral aspect of creating a livable community. Some of these transportation options - carpools, vanpools and preferential parking for shared ride vehicles - are programmatic and are addressed in the next section as part of the WRCS “Implementation” Major Element.

Bicycling is a transportation option that overarches and transcends typical classifications. It requires a change in human behavior prompted by a change in environmental circumstances sufficient to warrant such a change.

The WRCS supports such environmental improvements. The WRCS observed extensive support exhibited during the public outreach activities for bicycling infrastructure and program changes found appealing throughout the world. One of these programs is bicycle sharing now common in places such as Avignon, Paris, Turin, Monaco and dozens of other prominent urban settings.



MAJOR ELEMENT #7

Bike Sharing

The core pedestrian network emphasis on fixing the five pedestrian network gaps is the backbone of the strategy to establish bicycling as a viable transportation option. The seven mile exclusive right-of-way pedestrian/bicycle network will include protected designated lanes for bicyclists.

Adjacent areas to the seven mile network will include extensive bicycle storage, rental and bicycle sharing opportunities. The bike sharing program has been well tested in Kailua as well as throughout European and U.S. cities. The Kailua program is now poised to expand island-wide, including Waikīkī.



The application of the bike sharing concept to Waikīkī should await the completion of the fully grade separated, seven-mile pedestrian/bicycle core network to ensure the same type of success enjoyed in so many European cities where the bike sharing program was deployed in conjunction with extensive, high-quality bicycle network investments.

Parking

The Waikīkī Special District (WSD) provides special considerations for planned development resort or commercial projects including allowing a “parking management plan” to be offered to satisfy off-street parking and loading requirements for the project. Such a parking management plan should be done for all of Waikīkī, not just a single building or project. Many elements of a strategic parking management plan require collaboration and continuous coordination.

Typically, 30% of all vehicle traffic in an urban area such as Waikīkī is composed of drivers cruising in search of an open parking space. An effective Waikīkī Parking Management Plan would develop a central real time parking database remotely accessible on the web identifying parking locations with the number of empty spaces. On street electronic signs displaying the number of empty spaces available would guide people to the closest public parking facility.



MAJOR ELEMENT #7

Multimodal Transportation

A site-specific parking management plan, no matter how well intentioned and prepared, will not suffice because it cannot be adequately responsive to the WSD objectives. City and County of Honolulu Land Use Ordinance (LUO) lists fourteen WSD objectives. Several of these involve desired transportation features. One objective is entirely dedicated to transportation:

“ Support efficient use of multimodal transportation in Waikīkī, reflecting the needs of Waikīkī workers, businesses, residents, and tourists. Encourage the use of public transit rather than the private automobile, and assist in the efficient flow of traffic.”

Waikīkī Special District (Section 21-9.80-1(e)).

Thirteen other WSD objectives offer transportation-related guidance with words such as “*Emphasize a pedestrian-orientation in Waikīkī*”, but no mention is made in any of the fourteen WSD objectives about the desire to promote a “Pedestrian-First” policy and no mention is made about parking.

Whether or not off-street parking supply levels are set as minimums, maximums, or are the discretion of a developer needs to be determined within the context of a Waikīkī Multimodal Transportation Plan which takes into consideration all modes in their relative priority order. Parking must be associated with how it may encourage private automobile use inconsistent with the “Pedestrian-First” policy. Future plans must avoid the unintended consequence where people are forced onto a dirt path because the above WSD objective wasn’t fully respected.



MAJOR ELEMENT #8: Implementation

Actions

The table on the following page identifies the actions required for each major element by year. In general, the timing is as follows:

- **2013 – 2014** – The City and WTSOC collaborate with others on refining the specifics of proposals including the operational specifics of dynamic scheduling, an environmental assessment for the Diamond Head transit center, design refinements for bus stops, specifications for ticketing machines, procurement of electronic information displays, development of wayfinding signage, design of traffic operations changes, procurement of vehicles, refinement of livable communities proposals, coordination with AMC and requests for budget and related approvals.
- **2015 – 2016** – The City completes design, construction, procurement and testing of all major elements. The WTSOC provides continuing oversight.
- **2017 – 2018** – All first phase major elements become operational with work continuing on subsequent improvements. The City and WTSOC continue to monitor improvements.
- **2019 – 2020** – Rail service reaches Ala Moana Center. Transit operations and ridership are closely monitored. The City and WTSOC continue to suggest improvements, if necessary.

Monitoring

There is broad consensus among those who have participated in the WRCS that the lack of progress on past plans, proposals and projects can be attributed to the absence of a responsible authority and consistent champions for what needs to be done. Some institutional mechanism is needed. The genesis of what needs to be done has started with the WTSOC. This group needs to continue to make sure progress occurs.

The WTSOC should continue its liaison with the City and consultants. But, more is needed than a policy oversight group, City representation and task specific consultant efforts. Organizations such as Transportation Management Associations (TMAs) are operating in over one hundred major areas where there is a concentration of travel demand.



MAJOR ELEMENT #8

Major Element Implementation Actions

MAJOR ELEMENT		YEAR		
Number	Description	2013	2014	2015
1	Services	Collaborate With OTS On Dynamic Scheduling and Service Refinements.	Adjust Existing Bus Stop Locations in Preparation For Construction.	Conduct Bus Rider Awareness Campaign.
2	Fare Collection	Collaborate With HART To Develop Ticketing Equipment Specifications.	Seek Budget For Ticketing Equipment.	Procure Ticketing Equipment.
3	Stop Locations	Environmental Assessment For DH TC, bus stop refinements.	Design TCs and Stops. Begin Procurement.	Procure TC and Bus Stop Contractors. Start Construction.
4	Information	Collaborate With HART & WIA On Signage Specifications.	Collaborate With HART & WIA On Signage Specifications.	Procure Electronic Information Displays & Wayfinding Signs.
5	Running Way	Refine and Design Traffic Engineering Improvements.	Seek Budget For Traffic Engineering Improvements.	Procure Traffic Devices and Contractors.
6	Vehicles	Tigger Grant Vehicle Procurement.	Tigger Grant Vehicle Production.	Tigger Grant Vehicle Delivery and Testing.
7	Livable Communities	Collaborate With HTA, WIA & Neighborhood Boards To Refine Proposals.	Work With HTA, WIA & Neighborhood Boards To Seek Budget Approval.	Design Improvements. Procure Contractors.
8	Implementation	Refine Costs and Funding Program. Support WTSOC to Monitor Progress.	Seek Budget to Fund Program. Support WTSOC to Monitor Progress.	Support WTSOC to Monitor Progress.

Implementation

MAJOR ELEMENT		YEAR		
Number	Description	2016	2017	2018
1	Services	Interim Service Inaugurated & Coordinated With Rail Construction.	Service Inaugurated on First Line.	Service Becomes Fully Operational.
2	Fare Collection	Install and Test Ticketing Equipment.	Fare Collection Operational.	Fare Collection Fully Operational.
3	Stop Locations	Finish Construction of TCs and Bus Stops.	TCs and Stops Operational.	TCs and Stops Fully Operational.
4	Information	Install Electronic Information Displays & Wayfinding Signs.	Electronic Information & Wayfinding Signs Operational.	Electronic Information & Wayfinding Signs Fully Operational.
5	Running Way	Install Traffic Devices and Physical Improvements.	Traffic Devices and Improvements Operational.	Traffic Devices and Improvements Fully Operational.
6	Vehicles	Interim Service Inaugurated & Coordinated With Rail Construction.	Service Inaugurated on First Line.	Service Becomes Fully Operational.
7	Livable Communities	Construction and Public Awareness Program.	First Phase Livable Communities Program Completed.	Begin Second Phase of Livable Communities Program.
8	Implementation	Support WTSOC to Monitor Progress.	Support WTSOC to Monitor Progress.	Support WTSOC to Monitor Progress.

Prepared By Weslin Consulting Services, Inc., September 20, 2012.

Waikīkī TMA

A Waikīkī Transportation Management Association (TMA) would perform the functions provided by such organizations to broker existing parking, assist with enforcement of traffic regulations, coordinate deliveries and use of on-street curb-related activities, oversee development of additional shared parking and advocate for alternative transportation programs to reduce parking demand and vehicle traffic congestion. Potential tasks of a Waikīkī TMA include:

- Develop and Manage Alternative Transportation – Create and maintain a multi-modal program to maximize the achievement of Waikīkī’s Pedestrian First Policy.
- Develop Commuter Benefits Program -- Establish a carpool and vanpool matching service, coordinate the formation of vanpools, encourage employers to provide priority parking for carpools and vanpools. Develop and manage incentives such as free parking days and guaranteed ride home programs.
- Develop and Oversee Car Sharing Program – Establish a car sharing program using a private vendor. Identify and establish car sharing sites.
- Develop and Oversee Community Bicycle Sharing Program – Locate potential bicycle stations and seek a private vendor to operate.
- Broker Parking Capacity -- Voluntary participation by existing parking facility owners and operators to share parking and use excess capacity efficiently.
- Improve On-Street Parking Utilization – Advocate for creation of a central parking pay station program with smart card and validation capability. Identify highest and best use for existing on-street parking spaces. Institute variable pricing and time limits.
- Manage Holoholo Parking Program – Expand and enhance the success of the Holoholo program.
- Coordinate Transit Services -- Voluntary participation by existing private transportation operators to coordinate route schedules and transit services at stop locations to avoid overloading.
- Develop Public Signage and Wayfinding – Visitors need guidance. Better signage is needed to direct people to and from Waikīkī.

Implementation

- Provide Parking Information – Better information about parking availability is needed for visitors and residents alike. This includes real time displays of parking availability and other traffic or public information to minimize circling vehicles looking for parking availability.
- Loading Zone Management – Work with those who need loading space and the City to improve loading zone operations. Use expandable, time-based loading zones.
- Develop Mode Share Target Program – Identify current modal shares by market group and time of day. Establish future year targets and programs needed to achieve them. Assist developers in preparing Transportation Management Plans in lieu of Traffic Impact Analysis Reports.
- Fund Management – Prepare all required financial reports for alternative transportation fund. Identify alternative financial disincentive and incentive tactics to support alternative transportation funding such as congestion pricing.
- Special Event Management – Coordinate with the City in providing transportation accommodations for the needs of special events.
- New Development Coordination – Coordinate with project sponsors of development proposals to address transportation opportunities to prepare travel management plans and assure responsiveness to Waikīkī's Pedestrian First Policy, the WRCS, other development proposals and applicable City and State transportation plans.



MAJOR ELEMENT #8

Waikīkī Special District

The Waikīkī Special District Land Use Ordinance (LUO) needs to be more consistent with the “Pedestrian First” policy. Changes are needed:

- Revise WSD Objectives. Update WSD objectives to reference the Waikīkī Pedestrian-First objective as official City policy.
- Change Parking Requirements. Elimination of LUO parking requirements for commercial uses. The LUO should recognize that parking capacity should be shared, not site specific in Waikīkī. People should be encouraged to park their vehicle once in Waikīkī and walk to multiple destinations. It should be recognized that Waikīkī residents own vehicles, but most rarely use them to make trips within Waikīkī. Local residents often walk. Parking is needed for visitors, but they should be encouraged not to rent a car just to travel from the airport while staying in Waikīkī and O’ahu residents visiting Waikīkī should be directed to where they may park so they are not circulating through residential streets while looking for parking. Shared parking availability should be presented to the public in real time with easy to understand information on where off-street parking facilities are located and how many empty spaces they will find when they get there.
- Shift Emphasis To Alternative Transportation Modes. Introduction of a Waikīkī Travel Management Plan (TMP) to identify mitigating actions offsetting on-site parking capacity needs and vehicle traffic capacity projects. Actions can include payment of cash to a Waikīkī Transportation Improvement Fund (TIF) in lieu of parking capacity. The TMP programs would be supported by the proposed TMA.



Appendix #A: Acronyms and Abbreviations

Acronyms and Abbreviations

A/C	Air Conditioning
AA/DEIS	Alternatives Analysis/Draft Environmental Impact Statement
AMC	Ala Moana Shopping Center
BRT	Bus Rapid Transit
BSIP	Bus Service Improvement Plan
CIP	Capital Improvement Program
DOE	Department of Education
DTS-PTD	Department of Transportation Services-Public Transit Division
DEIS	Draft Environmental Impact Statement
EIS	Environmental Impact Statement
FEIS	Final Environmental Impact Statement
FHWA	Federal Highway Administration
FTA	Federal Transit Administration
HART	Honolulu Authority for Rapid Transportation
HCC	Hawai'i Convention Center
HDOT	Hawai'i Department of Transportation
HHCTCP	Honolulu High Capacity Transit Corridor Project
HOV	High Occupancy Vehicle
HRTC	Honolulu Rapid Transit Company
H RTP	Honolulu Rail Transit Project
ITS	Intelligent Transportation System
LPA	Locally Preferred Alternative
LUO	Land Use Ordinance
MPH	Miles per Hour
O'ahuMPO	O'ahu Metropolitan Planning Organization
OTS	O'ahu Transit Services
OWP	Overall Work Program
PCTP	Primary Corridor Transportation Project
PEEP	Preliminary Engineering and Evaluation Program
PLDC	Public Land Development Corporation
PUC	Public Utilities Commission

Appendix # 1: Acronyms and Abbreviations

TAP	Transit Access Pass
TIF	Transportation Improvement Fund
TIGGER	Transit Investments for Greenhouse Gas and Energy Reduction
TMA	Transportation Management Association
TMP	Travel Management Plan
TOD	Transit Oriented Development
TSP	Transit Signal Priority
UH	University of Hawai'i
WBID	Waikīkī Business Improvement District
WIA	Waikīkī Improvement Association
WLCP	Waikīkī Livable Community Project
WRCS	Waikīkī Regional Circulator Study
WSD	Waikīkī Special District
WTS	Waikīkī Traffic Study
WTSOC	Waikīkī Transportation Stakeholder Oversight Committee



Waikīkī Regional Circulator Study

Prepared By

Weslin Consulting Services, Inc.