Helen Wong Smith, MLIS, CA
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Professional Focus

Librarianship

Archival Management and Processing

Historical Documentary Research

Education

Masters in Library and Information Studies - University of Hawai'i at Mānoa, 1991

Bachelor of Arts - Hawaiian Studies - University of Hawai'i at Mānoa, 1986

Academic/Professional Honors

Agnes C. Conrad Award (Archivist) - 2009

Certified Archivist, Academy of Certified Archivists – 2001 - 2011

Mary Edward Professional Award - Library Alumnus

Beta Phi Mu (Library Honor Society) Chapter XI

Noyes Foundation Grant of New York – Water Policy Research

State Foundation on Culture and the Arts - Hawaiian Quilting Design

Current Position

Archivist, Hawai'i Volcanoes National Park, 2010

Experience

Library and Archival Positions and Consulting

Librarian, Hawaiian Collection/Edwin H. Mookini Library Archivist, University of Hawai'i at Hilo Mookini Library, January 2007 – [Leave 2010]

Historical/Cultural Specialist – Land Assets Division, Kamehameha Schools, March 2004 – January 2007

Librarian - Kamehameha Schools – Hawai'i Campus, August 2001 – March 2004

Assistant Librarian - Gemini North Observatory, November 1999-June 2001

Select and Design Automated Cataloging for Archival Collection applicable for off-site retrieval via OPAC - Kamehameha Schools, January – May 2001

Establish Archival Policies and Processing of Historical Archival Collection for electronic retrieval - Bank of Hawai'i, August 2000 – February 2001

Reference Librarian-Archivist - Hawai'i Medical Library, September 1996 - April 2000

Archival Processing, Cataloging and Management - Queen's Historical Room, Queen's Medical Center

Develop Cataloging Procedure for Photographs and Archives to be Included on Automated Library System - Kamehameha Schools – Midkiff Learning Center

Experience – Continued

Develop Library & Establish Automated Catalog and Online Public Access Catalog System
W.M. Keck Telescope
Urawatandi Hawai'i College

Develop Archival Procedures
Pacific Tsunami Museum

Develop Database to Automate Jean Greenwell Collection
Kona Historical Society

Archival Processing
KCAA Preschools of Hawai'i
Lyman Memorial House Museum

Recommendations for Establishing Archival Polices & Procedures
KCAA Preschools of Hawai'i
The Outdoor Circle
Hawai'i Preparatory Academy
Queen Lili`ūokalani Children's Center, O`ahu & Moloka`i Units

Student Services

Recruitment Coordinator
Native Hawaiian Center of Excellence, John A. Burns School of Medicine Education Specialist

Nā Pua No`eau : Center for Gifted and Talented Native Hawaiian Children, University of Hawai'i at Hilo

Instructor
Introduction to Hawaiian Quilting, College of Continuing Education - University of Hawai'i at Hilo

Research Consulting

Research and Composition for Special Exhibits:

Mamiya Medical Heritage Center, Hawai'i Medical Library

Early Physicians in Hawai'i http://hml.org/mmhc/exhibits/earlymds.html
Queen's First Physicians http://hml.org/mmhc/exhibits/qhstafmd.html
Nils P. Larsen http://hml.org/mmhc/exhibits/larsen/index.html

Bernice Pauahi Bishop Museum
Interpretive signs for National Historic Site at South Point, Island of Hawai'i

Lyman Memorial House Museum
Historic Buildings of Hilo and the Hamākua Coast in Photograph

R.W. Meyer Sugar Mill
Moloka`i, Past and Present: Cultural Persistence and Continuity

Historical Documentary Research & Oral History Interviewees for:
Hawai`i State Department of Business and Economic Development & Tourism
Queen Lili`ūokalani Trust

Research Consulting - Continued

Paul H. Rosendahl, Inc., Consulting Archaeologist
PBR Hawaii, Land Use Planning
Kamehameha Schools

Policy Research
Development and implementation of the Hawa`i State Water Code
Hawai'i's Thousand Friends

Economic Development

Program Coordinator - *Recycling and Remanufacturing Industry Assistance*
Small Business Development Center

Grant writer/researcher-*Improving Infrastructure through a Community Mentoring Strategy*
Rural South Hilo Community Association

Other
Newsletter editor - Hawaiian Studies Program, University of Hawai'i at Mänoa
Legislative Intern - Office of Hawaiian Affairs

Publications and Presentations

Invited Presenter:

Digital Hawaiian Resources: Disseminating Hawai'i-based Primary & Compiled Resources, After Dark in the Park, Hawai'i Volcanoes National Park, July 20, 2010

Preserving Hawaii's Many Cultures through Five Governments, Society of American Archivists Annual Conference, Austin, August 15, 2009

We are the World: Serving Diverse Cultures in Your Library, Medical Library Association Annual Meeting and Exhibition, Waikīkī, May 17, 2009

Hawai`i's Agricultural Archives: Records and Special Collections*, January 9, 2009; *Digital Hawaiian Resources: Disseminating Hawai`i-based Primary & Compiled Resources, January 10, 2009, 7th Annual Hawaii International Conference on Arts & Humanities, Waikīkī, January 9-12, 2009

Identifying and Accessing the Lesser Known Archival Collections IN *Hawaii Archives: Records and Special Collections*, 89th Annual Meeting of the Pacific Division of the American Association for the Advancement of Science, Kamuela, June 19, 2008

Report on "Persistence of Memory: Stewardship of Digital Assets, (Requirement for NEDCC scholarship) Association of Hawai'i Archivists, August 10, 2007; Hawai`i Museum Association, December 14, 2007, January 25, 2008

Outreach to those less served Annual Conference of the Society of American Archivists, Chicago, August 30, 2007

Basic Workshop for Religious Congregations, Honolulu, July 21, 2007

Digital Hawaiian Resources: Latest Innovations in Disseminating Hawai'i-based Primary Resources, "Hidden Treasures: Accessing the Riches in the Pacific Collections (Conference), March 16, 2007, Hawaii Library Association, July 20, 2007

Publications and Presentations - Continued

"Land Legacy Database" Greenstone Digital Library Open Source Software, Information & Computer Science Department, Library & Information Science Program, University of Hawai`i - Mānoa, June 6, 2006

"X" Marks the Spot: Archiving GIS Databases 2006 Joint Annual Meeting of Society of American Archivists, National Association of Government Archives & Records Administrators, Council of State Archivists, Washington D.C., August 3, 2006

Caring for Family Treasures, Lāna`i, February 20, 2005; Moloka`i, May 20, 2006

Kamehameha Schools Land Legacy Database: A new cultural dissemination tool. World Indigenous Peoples' Conference on Education, Hamilton, New Zealand, November 30, 2005.

Documentary Resources for Cultural Impact Assessments, Information Sources for Hawaiian Studies, Graduate Program of Library and Information Studies, October 17, 2000, February 5, 2002.

Astronomy Web-based Resources, Information Sources & Systems in Science, Graduate Program of Library and Information Studies, October 16, 2000, October 6, 2003.

Nils P. Larsen, M.D., and Plantation Medicine, The Wilcox Health System Public Forum Series, January 21, 1999, Lihu'e; The Association of Hawai'i Archivists, April 17, 1999.

The Independent Archivist, Student Archives Society, Graduate Program of Library and Information Studies, April 21, 1999.

Archival Finding Aids: Graduate Program of Library and Information Studies, Class on Indexing and Abstracting, August 1998.

Co-Presenter

Archival Processing of the Queen's Historical Room, Annual Conference of the Association of Hawai'i Archivists, February 1997

Researcher

A *Brief History of the Ahupua`a of Pu`uwa`awa`a and its Neighbors in North Kona, Island of Hawai'i*. Collaboration with Marion Kelly, for Earl Bakken, Kïholo, 1996, Hawai'i

Presenter

A Partnership Approach to Recruiting Native Hawaiians to Medicine. Annual Conference - Association of American Medical Colleges, Boston, 1995

Researcher/Author

Rural South Hilo Heritage Corridor Strategic Plan. Prepared by Big Island Resource Conservation & Development Council for the State Department of Business, Economic Development & Tourism, 1995

Researcher/Author

Kona in History: A Guide to Resources. Published by The History and Humanities Program of the State Foundation on Culture and the Arts in cooperation with the Kona Historical Society, 1994, Honolulu

Publications and Presentations - Continued

Researcher/Compiler
A selected annotated bibliography of Hawaiian `aumakua. Paper prepared for SLIS 687, School of Library and Information Studies, University of Hawai'i at Mānoa, 1991.

Researcher/Compiler
An annotated bibliography of ceded lands in Hawai'i materials. Paper prepared for SLIS 699, School of Library and Information Studies, University of Hawai'i at Mānoa, 1991.

Cultural Impact Assessments and Historical Documentary Reports (partial list):

Cultural Impact Assessment for St. Michael's Church Parcel, Land of Hienaloli 2nd, North Kona District, TMK 7-5-8:06, March 2009

Cultural Impact Assessment for lands within the *ahupua`a* of Keahuolū and Hienaloli (TMK 3-7-4-08:Por 56; 3-7-4-21:Por.21 and TMK 3-7-4-21:Pors 14 and 21) for the proposed Affordable Housing Development, December 2007.

Cultural Impact Assessment for lands within the *ahupua`a* of Keahuolū (TMK 3-7-020-009, 3-7-020-010, 3-7-020-014, 3-7-020-015, 3-7-020-011, 3-7-020-012, 3-7-020-013, 3-7-020-022, 3-7-008-002) for Queen Lili`ūokalani Trust, November 2007.

Cultural Impact Assessment for the lands within Waikōloa, (TMK Nos. 6-8-01:25, 36, 37, 38, 39, and 40) for Bridge `Āina Lea LLC, August 2007.

Cultural-Historical Resources Review for lands within Kea`au (TMK 316-003-010) for Tsukazaki, Yeh & Moore, June 2006.

Cultural Impact Assessment study for the Mämalahoa Highway By-pass Environmental Impact Statement for PBR Hawai'i, 1999.

Archaeological Inventory Survey Report – Pu`u Lani Phase II, Pu`uanahulu, North Kona, for Chiniago Inc., 1993.

Cultural and Archaeological Assessment for Kona, Hawai'i Properties of the Kamehameha Schools, 1993.

Historical Documentary Research in Archaeological Inventory Survey Kapa`anui Agricultural Subdivision, Lands of Kapa`anui and Kou, North Kohala District, for Ahualoa Development, Inc., 1989.

Historical Documentary Research in Archaeological Inventory Survey Honokōhau Industrial Park (Parcel VII), Land of Honokohau 2nd, North Kona District, prepared for Helber, Hastert & Kimura, Planners, 1990.

Professional Affiliations/Community Service

Society of American Archivists – Committee on Education, 2008-2010, Minority Graduate Education Scholarship Task Force; Member of Sections: Business Archives, College & University, Electronic Records

Native Hawaiian Library Services Grant, Institute of Museum and Library Services – Reviewer, 2010

American Heritage Preservation Grant, Institute of Museum and Library Services – Reviewer, 2008, 2009

U.S. Delegation to China, Society of American Archivists – Delegate, October 2008

Nominating Committee, Society of American Archivists – Member, 2008-2009

Association of Hawai'i Archivists – President, 2000-2001, 2007-2008; Director - 1996-1999; Treasurer, 2004-2006

Hawai'i (State) Library Association – President, 1997-1998

Friends of Hawai`i Volcano National Park – Board Member 2008-2010

Volcano Art Center – Board Member, 2002-2003

Association of Certified Archivists – Member, 2001-2011

Hawaiian Historical Society – Member

Proven Skills

Cultural Impact Assessment and Historical Documentary Research for land-based projects.

Designing and establishing digital archival systems including policies and procedures.

Establishment and management of library and archival facilities with access and retrieval systems.

Grant writing, management and reporting.

Professional reference service.

Knowledge of AACR2r, LCSH, MESH, MARC, DC metadata.

Working knowledge of word processing, database and spreadsheet programs, automated library catalogs, OPAC and the Internet. Specifically, working knowledge of the following computer applications: Microsoft Windows XP, MS Word, Excel, Access, Adobe InDesign, Photoshop, DYNIX, Voyager, and Greenstone.

Processing, cataloging, managing archival collections including photographs in both paper and electronic formats.

Nine semesters of Hawaiian Language at the University of Hawai'i at Mānoa; Six semesters at UH Hilo

References

Kris Anderson, Collection Development Officer/Head, Technical Services, University of Hawai`i at Mānoa, 956-2474 krisa@hawaii.edu

Barbara Dunn, Administrative Director & Librarian, Hawaiian Historical Society, 537-6271, bedunn@lava.net

Nancy Lenoil, State Archivist, State of California, (916) 653-0401, nancy.lenoil@sos.ca.gov

PROFESSIONAL QUALIFICATIONS OF THOMAS W. HOLLIDAY

Business Background

Senior Analyst	The Hallstrom Group, Inc. Honolulu, Hawaii Since 1980
Former Staff Appraiser	Davis-Baker Appraisal Co. Avalon, Santa Catalina Island, California

Education

- B.A. (Communications/Journalism) 1978 California State University at Fullerton
- SREA Course 201- Principles of Income Property Appraising
- Expert witness testimony before State of Hawaii Land Use Commission and various state and county boards and agencies since 1983.
- Numerous professional seminars and clinics
- Contributing author to Hawaii Real Estate Investor, Honolulu Star Bulletin

On January 1, 1991, the American Institute of Real Estate Appraisers (AIREA) and the Society of Real Estate Appraisers (SREA) consolidated, forming the Appraisal Institute (AI).

Recent West Hawaii and Neighbor Island Assignments

- Market Study, Economic Impact Analyses and Public Costs/ Benefits Assessments
  - -- Kamakana Villages (Mixed Use Planned Development)
  - -- Waimea Town Center (Mixed Use Planned Development)
  - -- Nani Kahuku Aina (Resort/Residential Community)
  - -- Kona Kai Ola (Mixed-Use Resort Community)
  - -- Waikoloa Highlands (Residential)
  - -- Waikoloa Heights (Mixed-Use Residential Development)
  - -- Keaau Master Plan Lands (Mixed Use Development)
  - -- Village at Poipu (Resort/Residential)
  - -- Ocean Bay Plantation (Resort/Residential)
  - -- Waipono/Puhi (Mixed-Use Planned Development)
  - -- Eleele Commercial Expansion (Commercial)
  - -- Upcountry Town Center (Mixed-Use Planned Development)
  - -- Maui Lani (Residential and Industrial Components of Master Planned Community)
  - -- Maui Business Park, Phase II (Industrial/Commercial)
  - -- Four Seasons Private Estates and Residences Club (Resort/Residential)
  - -- Kualono Subdivision (Residential)
  - -- Kapalua Mauka (Master Planned Community)
  - -- Hailiimaile (Mixed-Use Master Planned Community)
  - -- Pulelehua (Master Planned Community)
  - -- Westin Kaanapali Ocean Villas Expansion (Resort/ Timeshare)

Professional Qualifications of Thomas W. Holliday (continued)

- Major Neighbor Island Valuation Assignments

  -- Mauna Lani Bay Hotel
  -- Keauhou Beach Hotel
  -- Coco Palms Resort
  -- Grand Hyatt Kauai
  -- Islander on the Beach
  -- Waimea Plantation Cottages
  -- Coconut Beach Resort
  -- Sheraton Maui Hotel
  -- Outrigger Wailea Resort Hotel
  -- Maui Lu Hotel
  -- Coconut Grove Condominiums
  -- Palauea Bay Holdings
  -- Wailea Ranch
  -- Maui Coast Hotel
  -- Westin Maui Hotel
  -- Maui Marriott Hotel
  -- Waihee Beach
  -- Kapalua Bay Hotel and The Shops at Kapalua

Email Address TWH@HallstromGroup.com

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HAWAII COUNTY INCOME SCHEDULE BY FAMILY SIZE 2010

THE FOLLOWING TABLE PRESENTS INCOME LIMITS BY FAMILY SIZE AND BY PERCENTAGES OF THE MEDIAN INCOME ESTABLISHED BY HUD. THESE INCOME LIMITS SERVE AS GUIDELINES TO ESTABLISH SALES/RENTAL PREFERENCES.

	LIMITS BY FAMILY SIZE							
MEDIAN	1 PERSON	2 PERSON	3 PERSON	4 PERSON	5 PERSON	6 PERSON	7 PERSON	8 PERSON
Adjustments for family size	0.7000	0.8000	0.9000	1.0000	1.0800	1.1600	1.2400	1.3200
% of Income 10%	$4,840	$5,530	$6,220	$6,910	$7,470	$8,020	$8,570	$9,130
20%	$9,680	$11,060	$12,440	$13,820	$14,940	$16,040	$17,140	$18,260
30%	$14,550	$16,600	$18,700	$20,750	$22,450	$24,100	$25,750	$27,400
40%	$19,360	$22,120	$24,880	$27,640	$29,880	$32,080	$34,280	$36,520
50%	$24,200	$27,650	$31,100	$34,550	$37,350	$40,100	$42,850	$45,650
60%	$29,040	$33,180	$37,320	$41,460	$44,820	$48,120	$51,420	$54,780
70%	$33,880	$38,710	$43,540	$48,370	$52,290	$56,140	$59,990	$63,910
80%	$38,750	$44,250	$49,800	$55,300	$59,750	$64,150	$68,600	$73,000
90%	$43,560	$49,770	$55,980	$62,190	$67,230	$72,180	$77,130	$82,170
100%	$46,690	$53,360	$60,030	$66,700	$72,040	$77,370	$82,710	$88,040
110%	$51,360	$58,700	$66,030	$73,370	$79,240	$85,110	$90,980	$96,850
120%	$56,030	$64,030	$72,040	$80,040	$86,440	$92,850	$99,250	$105,650
130%	$60,700	$69,370	$78,040	$86,710	$93,650	$100,580	$107,520	$114,460
140%	$65,370	$74,700	$84,040	$93,380	$100,850	$108,320	$115,790	$123,260

HUD determines the median, very low (50%), and low (80%) income limits. Adjustments are made by HUD for areas with unusually high or low family income or housing cost to income relationships. Pursuant to rules for the Low Income Housing Tax Credit Program, the 60% income limit is calculated as 120% (60/50) of the very low income limit for each family size. The income limits for other income groups of less than 80% are calculated in the same way. The remaining income limits are calculated as a percentage of the median income for a family of four (the base) with adjustments for family size (i.e., income for a 3-person family is 90% of the base, income for a 2-person family is 80% of the base, etc.).

AFFORDABLE RENT GUIDELINES* 2010

Affordable rents are based on 30% of income (including utilities)**

Area	$ 66,700	Studio	1 Bedroom	2 Bedroom	3 Bedroom	4 Bedroom
HAWAII						
30% of Median		$363	$389	$467	$540	$602
50% of Median		$605	$648	$777	$898	$1,002
60% of Median		$726	$777	$933	$1,078	$1,203
80% of Median		$968	$1,037	$1,245	$1,438	$1,603
100% of Median		$1,167	$1,250	$1,500	$1,734	$1,934
120% of Median		$1,400	$1,500	$1,801	$2,081	$2,321
140% of Median		$1,634	$1,750	$2,101	$2,427	$2,708

*Please note that are market rents may be lower than these rent guidelines.

**Monthly rent levels would include the cost of the following utilities: water, sanitary sewage services, electricity and gas (where applicable). Please refer to the Utility Allowance Schedule for each island.

Based on 2010 median income established by HUD.

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AFFORDABLE SALES GUIDELINES* 2010

COUNTY: **HAWAII** FAMILY SIZE: **1 PERSON**

% of Median:	50%	60%	70%	80%	90%	100%	110%	120%	130%	140%
$ Income:	**$24,200**	**$29,040**	**$33,880**	**$38,750**	**$43,560**	**$46,690**	**$51,360**	**$56,030**	**$60,700**	**$65,370**
4.45%	$118,000	$141,600	$165,200	$188,900	$212,400	$227,700	$250,400	$273,200	$296,000	$318,700
0.00%	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
4.00%	$124,500	$149,400	$174,300	$199,400	$224,100	$240,200	$264,200	$288,300	$312,300	$336,300
4.25%	$120,800	$145,000	$169,200	$193,500	$217,500	$233,100	$256,400	$279,700	$303,100	$326,400
4.50%	$117,300	$140,800	$164,200	$187,800	$211,200	$226,300	$249,000	$271,600	$294,200	$316,900
4.75%	$113,900	$136,700	$159,500	$182,500	$205,100	$219,800	$241,800	$263,800	$285,800	$307,800
5.00%	$110,700	$132,900	$155,000	$177,300	$199,300	$213,600	$235,000	$256,400	$277,700	$299,100
5.25%	$107,600	$129,200	$150,700	$172,400	$193,800	$207,700	$228,400	$249,200	$270,000	$290,800
5.50%	$104,700	$125,600	$146,600	$167,600	$188,400	$202,000	$222,200	$242,400	$262,600	$282,800
5.75%	$101,900	$122,200	$142,600	$163,100	$183,300	$196,500	$216,200	$235,800	$255,500	$275,100
6.00%	$99,100	$119,000	$138,800	$158,700	$178,400	$191,300	$210,400	$229,500	$248,700	$267,800
6.25%	$96,500	$115,800	$135,100	$154,600	$173,800	$186,200	$204,900	$223,500	$242,100	$260,800
6.50%	$94,000	$112,800	$131,700	$150,600	$169,300	$181,400	$199,600	$217,700	$235,900	$254,000
6.75%	$91,600	$110,000	$128,300	$146,700	$165,000	$176,800	$194,500	$212,200	$229,900	$247,500
7.00%	$89,300	$107,200	$125,100	$143,100	$160,800	$172,400	$189,600	$206,800	$224,100	$241,300
7.25%	$87,100	$104,600	$122,000	$139,500	$156,800	$168,100	$184,900	$201,700	$218,500	$235,400
7.50%	$85,000	$102,000	$119,000	$136,100	$153,000	$164,000	$180,400	$196,800	$213,200	$229,600

1. Based on **2010** medium income established by HUD for various family sizes. Adjustments to the very low- (50%) and low-income (80%) limits are made by HUD for areas with unusually high or low family income or housing cost. Most income limits are proportionately based on very low-income limits. Thus, the four-person income limit is 120% (60/50ths) of the four-person very low-income limit.

2. Mortgage term: **30 years**

3. Housing Expense of: **28.00%**

4. Down Payment of: **5.00%** for those earning at or below HUD 140% median income.

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AFFORDABLE SALES GUIDELINES* 2010

COUNTY: **HAWAII** FAMILY SIZE: **2 PERSON**

% of Median:	50%	60%	70%	80%	90%	100%	110%	120%	130%	140%
$ Income:	**$27,650**	**$33,180**	**$38,710**	**$44,250**	**$49,770**	**$53,360**	**$58,700**	**$64,030**	**$69,370**	**$74,700**
4.45%	$134,800	$161,800	$188,800	$215,800	$242,700	$260,200	$286,200	$312,200	$338,200	$364,200
0.00%	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
4.00%	$142,200	$170,700	$199,100	$227,700	$256,000	$274,500	$302,000	$329,400	$356,900	$384,300
4.25%	$138,000	$165,700	$193,300	$220,900	$248,500	$266,400	$293,100	$319,700	$346,300	$373,000
4.50%	$134,000	$160,800	$187,600	$214,500	$241,300	$258,700	$284,500	$310,400	$336,300	$362,100
4.75%	$130,200	$156,200	$182,300	$208,300	$234,300	$251,200	$276,400	$301,500	$326,600	$351,700
5.00%	$126,500	$151,800	$177,100	$202,500	$227,700	$244,100	$268,600	$293,000	$317,400	$341,800
5.25%	$123,000	$147,600	$172,200	$196,800	$221,400	$237,300	$261,100	$284,800	$308,600	$332,300
5.50%	$119,600	$143,500	$167,500	$191,400	$215,300	$230,800	$253,900	$277,000	$300,100	$323,100
5.75%	$116,400	$139,600	$162,900	$186,200	$209,500	$224,600	$247,100	$269,500	$292,000	$314,400
6.00%	$113,300	$135,900	$158,600	$181,300	$203,900	$218,600	$240,500	$262,300	$284,200	$306,000
6.25%	$110,300	$132,400	$154,400	$176,500	$198,500	$212,900	$234,200	$255,400	$276,700	$298,000
6.50%	$107,400	$128,900	$150,400	$172,000	$193,400	$207,400	$228,100	$248,800	$269,600	$290,300
6.75%	$104,700	$125,600	$146,600	$167,600	$188,500	$202,100	$222,300	$242,500	$262,700	$282,900
7.00%	$102,100	$122,500	$142,900	$163,400	$183,700	$197,000	$216,700	$236,400	$256,100	$275,800
7.25%	$99,600	$119,500	$139,400	$159,300	$179,200	$192,100	$211,300	$230,500	$249,800	$269,000
7.50%	$97,100	$116,600	$136,000	$155,400	$174,800	$187,400	$206,200	$224,900	$243,700	$262,400

1. Based on **2010** medium income established by HUD for various family sizes. Adjustments to the very low- (50%) and low-income (80%) limits are made by HUD for areas with unusually high or low family income or housing cost. Most income limits are proportionately based on very low-income limits. Thus, the four-person income limit is 120% (60/50ths) of the four-person very low-income limit.

2. Mortgage term: **30 years**

3. Housing Expense of: **28.00%**

4. Down Payment of: **5.00%** for those earning at or below HUD 140% median income.

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AFFORDABLE SALES GUIDELINES* 2010

COUNTY: **HAWAII** FAMILY SIZE: **3 PERSON**

% of Median:	50%	60%	70%	80%	90%	100%	110%	120%	130%	140%
$ Income:	$31,100	$37,320	$43,540	$49,800	$55,980	$60,030	$66,030	$72,040	$78,040	$84,040
4.45%	$151,600	$182,000	$212,300	$242,800	$273,000	$292,700	$322,000	$351,300	$380,500	$409,800
0.00%	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
4.00%	$160,000	$192,000	$224,000	$256,200	$288,000	$308,800	$339,700	$370,600	$401,500	$432,400
4.25%	$155,300	$186,300	$217,400	$248,600	$279,500	$299,700	$329,700	$359,700	$389,600	$419,600
4.50%	$150,800	$180,900	$211,100	$241,400	$271,400	$291,000	$320,100	$349,200	$378,300	$407,400
4.75%	$146,400	$175,700	$205,000	$234,500	$263,600	$282,600	$310,900	$339,200	$367,400	$395,700
5.00%	$142,300	$170,800	$199,200	$227,900	$256,100	$274,700	$302,100	$329,600	$357,100	$384,500
5.25%	$138,300	$166,000	$193,700	$221,500	$249,000	$267,000	$293,700	$320,400	$347,100	$373,800
5.50%	$134,500	$161,400	$188,300	$215,400	$242,200	$259,700	$285,600	$311,600	$337,600	$363,500
5.75%	$130,900	$157,100	$183,300	$209,600	$235,600	$252,700	$277,900	$303,200	$328,500	$353,700
6.00%	$127,400	$152,900	$178,400	$204,000	$229,300	$245,900	$270,500	$295,100	$319,700	$344,300
6.25%	$124,100	$148,900	$173,700	$198,700	$223,300	$239,500	$263,400	$287,400	$311,300	$335,200
6.50%	$120,900	$145,000	$169,200	$193,500	$217,500	$233,300	$256,600	$279,900	$303,300	$326,600
6.75%	$117,800	$141,300	$164,900	$188,600	$212,000	$227,300	$250,000	$272,800	$295,500	$318,200
7.00%	$114,800	$137,800	$160,700	$183,800	$206,700	$221,600	$243,800	$266,000	$288,100	$310,300
7.25%	$112,000	$134,400	$156,800	$179,300	$201,600	$216,100	$237,700	$259,400	$281,000	$302,600
7.50%	$109,200	$131,100	$152,900	$174,900	$196,600	$210,900	$231,900	$253,100	$274,100	$295,200

1. Based on **2010** medium income established by HUD for various family sizes. Adjustments to the very low- (50%) and low-income (80%) limits are made by HUD for areas with unusually high or low family income or housing cost. Most income limits are proportionately based on very low-income limits. Thus, the four-person income limit is 120% (60/50ths) of the four-person very low-income limit.

2. Mortgage term: **30 years**

3. Housing Expense of: **28.00%**

4. Down Payment of: **5.00%** for those earning at or below HUD 140% median income.

HHFDC
Hawaii Housing Finance & Development Corporation

AFFORDABLE SALES GUIDELINES* 2010

COUNTY: **HAWAII** FAMILY SIZE: **4 PERSON**

% of Median:	50%	60%	70%	80%	90%	100%	110%	120%	130%	140%
$ Income:	**$34,550**	**$41,460**	**$48,370**	**$55,300**	**$62,190**	**$66,700**	**$73,370**	**$80,040**	**$86,710**	**$93,380**
4.45%	$168,500	$202,200	$235,900	$269,600	$303,200	$325,200	$357,800	$390,300	$422,800	$455,300
0.00%	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
4.00%	$177,700	$213,300	$248,800	$284,500	$319,900	$343,100	$377,500	$411,800	$446,100	$480,400
4.25%	$172,500	$207,000	$241,500	$276,100	$310,500	$333,000	$366,300	$399,600	$432,900	$466,200
4.50%	$167,500	$201,000	$234,500	$268,100	$301,500	$323,300	$355,700	$388,000	$420,300	$452,700
4.75%	$162,700	$195,200	$227,700	$260,400	$292,800	$314,100	$345,500	$376,900	$408,300	$439,700
5.00%	$158,100	$189,700	$221,300	$253,000	$284,500	$305,200	$335,700	$366,200	$396,700	$427,200
5.25%	$153,700	$184,400	$215,100	$246,000	$276,600	$296,700	$326,300	$356,000	$385,700	$415,300
5.50%	$149,500	$179,300	$209,200	$239,200	$269,000	$288,500	$317,400	$346,200	$375,100	$403,900
5.75%	$145,400	$174,500	$203,600	$232,700	$261,700	$280,700	$308,800	$336,900	$364,900	$393,000
6.00%	$141,500	$169,800	$198,200	$226,500	$254,800	$273,200	$300,600	$327,900	$355,200	$382,500
6.25%	$137,800	$165,400	$193,000	$220,600	$248,100	$266,100	$292,700	$319,300	$345,900	$372,500
6.50%	$134,300	$161,100	$188,000	$214,900	$241,700	$259,200	$285,100	$311,000	$336,900	$362,900
6.75%	$130,800	$157,000	$183,200	$209,400	$235,500	$252,600	$277,800	$303,100	$328,400	$353,600
7.00%	$127,600	$153,100	$178,600	$204,200	$229,600	$246,200	$270,900	$295,500	$320,100	$344,700
7.25%	$124,400	$149,300	$174,200	$199,100	$223,900	$240,100	$264,200	$288,200	$312,200	$336,200
7.50%	$121,400	$145,600	$169,900	$194,300	$218,500	$234,300	$257,700	$281,200	$304,600	$328,000

1. Based on **2010** medium income established by HUD for various family sizes. Adjustments to the very low- (50%) and low-income (80%) limits are made by HUD for areas with unusually high or low family income or housing cost. Most income limits are proportionately based on very low-income limits. Thus, the four-person income limit is 120% (60/50ths) of the four-person very low-income limit.

2. Mortgage term: **30 years**

3. Housing Expense of: **28.00%**

4. Down Payment of: **5.00%** for those earning at or below HUD 140% median income.

HHFDC
Hawaii Housing Finance & Development Corporation

AFFORDABLE SALES GUIDELINES* 2010

COUNTY: **HAWAII** FAMILY SIZE: **5 PERSON**

% of Median:	50%	60%	70%	80%	90%	100%	110%	120%	130%	140%
$ Income:	**$37,350**	**$44,820**	**$52,290**	**$59,750**	**$67,230**	**$72,040**	**$79,240**	**$86,440**	**$93,650**	**$100,850**
4.45%	$182,100	$218,500	$255,000	$291,300	$327,800	$351,300	$386,400	$421,500	$456,600	$491,700
0.00%	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
4.00%	$192,200	$230,600	$269,000	$307,400	$345,900	$370,600	$407,700	$444,700	$481,800	$518,800
4.25%	$186,500	$223,800	$261,100	$298,300	$335,700	$359,700	$395,600	$431,600	$467,600	$503,500
4.50%	$181,100	$217,300	$253,500	$289,600	$325,900	$349,200	$384,100	$419,000	$454,000	$488,900
4.75%	$175,900	$211,000	$246,200	$281,300	$316,500	$339,200	$373,100	$407,000	$440,900	$474,800
5.00%	$170,900	$205,100	$239,200	$273,400	$307,600	$329,600	$362,500	$395,500	$428,500	$461,400
5.25%	$166,100	$199,400	$232,600	$265,800	$299,000	$320,400	$352,500	$384,500	$416,500	$448,600
5.50%	$161,600	$193,900	$226,200	$258,500	$290,800	$311,600	$342,800	$373,900	$405,100	$436,300
5.75%	$157,200	$188,600	$220,100	$251,500	$283,000	$303,200	$333,500	$363,800	$394,200	$424,500
6.00%	$153,000	$183,600	$214,200	$244,800	$275,400	$295,100	$324,600	$354,100	$383,600	$413,100
6.25%	$149,000	$178,800	$208,600	$238,300	$268,200	$287,400	$316,100	$344,800	$373,600	$402,300
6.50%	$145,100	$174,200	$203,200	$232,200	$261,200	$279,900	$307,900	$335,900	$363,900	$391,900
6.75%	$141,400	$169,700	$198,000	$226,300	$254,600	$272,800	$300,100	$327,300	$354,600	$381,900
7.00%	$137,900	$165,500	$193,000	$220,600	$248,200	$266,000	$292,500	$319,100	$345,700	$372,300
7.25%	$134,500	$161,400	$188,300	$215,100	$242,100	$259,400	$285,300	$311,200	$337,200	$363,100
7.50%	$131,200	$157,400	$183,700	$209,900	$236,200	$253,100	$278,300	$303,600	$329,000	$354,300

1. Based on **2010** medium income established by HUD for various family sizes. Adjustments to the very low- (50%) and low-income (80%) limits are made by HUD for areas with unusually high or low family income or housing cost. Most income limits are proportionately based on very low-income limits. Thus, the four-person income limit is 120% (60/50ths) of the four-person very low-income limit.

2. Mortgage term: **30 years**

3. Housing Expense of: **28.00%**

4. Down Payment of: **5.00%** for those earning at or below HUD 140% median income.

HHFDC
Hawaii Housing Finance & Development Corporation

AFFORDABLE SALES GUIDELINES* 2010

COUNTY: **HAWAII** FAMILY SIZE: **6 PERSON**

% of Median:	50%	60%	70%	80%	90%	100%	110%	120%	130%	140%
$ Income:	**$40,100**	**$48,120**	**$56,140**	**$64,150**	**$72,180**	**$77,370**	**$85,110**	**$92,850**	**$100,580**	**$108,320**
4.45%	$195,500	$234,600	$273,700	$312,800	$352,000	$377,300	$415,000	$452,700	$490,400	$528,200
0.00%	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
4.00%	$206,300	$247,600	$288,800	$330,000	$371,300	$398,000	$437,900	$477,700	$517,500	$557,300
4.25%	$200,200	$240,300	$280,300	$320,300	$360,400	$386,300	$424,900	$463,600	$502,200	$540,800
4.50%	$194,400	$233,300	$272,100	$311,000	$349,900	$375,000	$412,600	$450,100	$487,600	$525,100
4.75%	$188,800	$226,600	$264,300	$302,000	$339,900	$364,300	$400,700	$437,200	$473,600	$510,000
5.00%	$183,500	$220,200	$256,900	$293,500	$330,200	$354,000	$389,400	$424,800	$460,200	$495,600
5.25%	$178,400	$214,000	$249,700	$285,300	$321,000	$344,100	$378,600	$413,000	$447,400	$481,800
5.50%	$173,500	$208,200	$242,900	$277,500	$312,200	$334,700	$368,200	$401,700	$435,100	$468,600
5.75%	$168,800	$202,500	$236,300	$270,000	$303,800	$325,600	$358,200	$390,800	$423,300	$455,900
6.00%	$164,300	$197,100	$230,000	$262,800	$295,700	$317,000	$348,700	$380,400	$412,000	$443,700
6.25%	$160,000	$192,000	$223,900	$255,900	$287,900	$308,600	$339,500	$370,400	$401,200	$432,100
6.50%	$155,800	$187,000	$218,200	$249,300	$280,500	$300,700	$330,700	$360,800	$390,800	$420,900
6.75%	$151,900	$182,200	$212,600	$242,900	$273,300	$293,000	$322,300	$351,600	$380,900	$410,200
7.00%	$148,000	$177,600	$207,300	$236,800	$266,500	$285,600	$314,200	$342,800	$371,300	$399,900
7.25%	$144,400	$173,300	$202,100	$231,000	$259,900	$278,600	$306,400	$334,300	$362,100	$390,000
7.50%	$140,900	$169,000	$197,200	$225,300	$253,500	$271,800	$299,000	$326,200	$353,300	$380,500

1. Based on **2010** medium income established by HUD for various family sizes. Adjustments to the very low- (50%) and low-income (80%) limits are made by HUD for areas with unusually high or low family income or housing cost. Most income limits are proportionately based on very low-income limits. Thus, the four-person income limit is 120% (60/50ths) of the four-person very low-income limit.

2. Mortgage term: **30 years**

3. Housing Expense of: **28.00%**

4. Down Payment of: **5.00%** for those earning at or below HUD 140% median income.

HHFDC
Hawaii Housing Finance & Development Corporation

AFFORDABLE SALES GUIDELINES* 2010

COUNTY: **HAWAII** FAMILY SIZE: **7 PERSON**

% of Median:	50%	60%	70%	80%	90%	100%	110%	120%	130%	140%
$ Income:	$42,850	$51,420	$59,990	$68,600	$77,130	$82,710	$90,980	$99,250	$107,520	$115,790
4.45%	$208,900	$250,700	$292,500	$334,500	$376,100	$403,300	$443,600	$483,900	$524,300	$564,600
0.00%	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
4.00%	$220,400	$264,500	$308,600	$352,900	$396,800	$425,500	$468,100	$510,600	$553,200	$595,700
4.25%	$213,900	$256,700	$299,500	$342,500	$385,100	$413,000	$454,200	$495,500	$536,800	$578,100
4.50%	$207,700	$249,300	$290,800	$332,500	$373,900	$400,900	$441,000	$481,100	$521,200	$561,300
4.75%	$201,800	$242,100	$282,500	$323,000	$363,200	$389,400	$428,400	$467,300	$506,300	$545,200
5.00%	$196,100	$235,300	$274,500	$313,900	$352,900	$378,400	$416,300	$454,100	$491,900	$529,800
5.25%	$190,600	$228,700	$266,800	$305,100	$343,100	$367,900	$404,700	$441,500	$478,200	$515,000
5.50%	$185,400	$222,400	$259,500	$296,700	$333,600	$357,800	$393,600	$429,300	$465,100	$500,900
5.75%	$180,300	$216,400	$252,500	$288,700	$324,600	$348,100	$382,900	$417,700	$452,500	$487,300
6.00%	$175,500	$210,600	$245,800	$281,000	$316,000	$338,800	$372,700	$406,600	$440,500	$474,300
6.25%	$170,900	$205,100	$239,300	$273,700	$307,700	$329,900	$362,900	$395,900	$428,900	$461,900
6.50%	$166,500	$199,800	$233,100	$266,600	$299,700	$321,400	$353,500	$385,700	$417,800	$449,900
6.75%	$162,300	$194,700	$227,200	$259,800	$292,100	$313,200	$344,500	$375,800	$407,200	$438,500
7.00%	$158,200	$189,800	$221,500	$253,300	$284,700	$305,300	$335,900	$366,400	$396,900	$427,500
7.25%	$154,300	$185,100	$216,000	$247,000	$277,700	$297,800	$327,600	$357,300	$387,100	$416,900
7.50%	$150,500	$180,600	$210,700	$241,000	$270,900	$290,500	$319,600	$348,600	$377,700	$406,700

1. Based on **2010** medium income established by HUD for various family sizes. Adjustments to the very low- (50%) and low-income (80%) limits are made by HUD for areas with unusually high or low family income or housing cost. Most income limits are proportionately based on very low-income limits. Thus, the four-person income limit is 120% (60/50ths) of the four-person very low-income limit.

2. Mortgage term: **30 years**

3. Housing Expense of: **28.00%**

4. Down Payment of: **5.00%** for those earning at or below HUD 140% median income.

HHFDC
Hawaii Housing Finance & Development Corporation

AFFORDABLE SALES GUIDELINES* 2010

COUNTY: **HAWAII** FAMILY SIZE: **8 PERSON**

% of Median:	50%	60%	70%	80%	90%	100%	110%	120%	130%	140%
$ Income:	**$45,650**	**$54,780**	**$63,910**	**$73,000**	**$82,170**	**$88,040**	**$96,850**	**$105,650**	**$114,460**	**$123,260**
4.45%	$222,600	$267,100	$311,600	$355,900	$400,700	$429,300	$472,200	$515,200	$558,100	$601,000
0.00%	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
4.00%	$234,900	$281,800	$328,800	$375,600	$422,700	$452,900	$498,300	$543,500	$588,900	$634,100
4.25%	$227,900	$273,500	$319,100	$364,500	$410,300	$439,600	$483,500	$527,500	$571,500	$615,400
4.50%	$221,300	$265,500	$309,800	$353,900	$398,300	$426,800	$469,500	$512,100	$554,800	$597,500
4.75%	$214,900	$257,900	$300,900	$343,700	$386,900	$414,500	$456,000	$497,400	$538,900	$580,400
5.00%	$208,900	$250,600	$292,400	$334,000	$376,000	$402,800	$443,100	$483,400	$523,700	$564,000
5.25%	$203,000	$243,700	$284,300	$324,700	$365,500	$391,600	$430,800	$469,900	$509,100	$548,200
5.50%	$197,500	$237,000	$276,500	$315,800	$355,500	$380,800	$419,000	$457,000	$495,100	$533,200
5.75%	$192,100	$230,600	$269,000	$307,200	$345,800	$370,500	$407,600	$444,700	$481,700	$518,800
6.00%	$187,000	$224,400	$261,800	$299,100	$336,600	$360,700	$396,800	$432,800	$468,900	$505,000
6.25%	$182,100	$218,500	$254,900	$291,200	$327,800	$351,200	$386,300	$421,400	$456,600	$491,700
6.50%	$177,400	$212,900	$248,300	$283,700	$319,300	$342,100	$376,300	$410,500	$444,800	$479,000
6.75%	$172,900	$207,400	$242,000	$276,400	$311,200	$333,400	$366,800	$400,100	$433,400	$466,800
7.00%	$168,500	$202,200	$235,900	$269,500	$303,400	$325,000	$357,500	$390,000	$422,600	$455,000
7.25%	$164,400	$197,200	$230,100	$262,800	$295,800	$317,000	$348,700	$380,400	$412,100	$443,800
7.50%	$160,400	$192,400	$224,500	$256,400	$288,600	$309,300	$340,200	$371,100	$402,100	$433,000

1. Based on **2010** medium income established by HUD for various family sizes. Adjustments to the very low- (50%) and low-income (80%) limits are made by HUD for areas with unusually high or low family income or housing cost. Most income limits are proportionately based on very low-income limits. Thus, the four-person income limit is 120% (60/50ths) of the four-person very low-income limit.

2. Mortgage term: **30 years**

3. Housing Expense of: **28.00%**

4. Down Payment of: **5.00%** for those earning at or below HUD 140% median income.

PETITIONER'S EXHIBIT 56

AFFORDABLE HOUSING GUIDELINES FOR THE COUNTY OF HAWAI'I

FOR-SALE UNITS GUIDELINES *(Effective 09/01/2010)*

This information is based on 2009 median income established by the U.S. Department of Housing and Urban Development (HUD) for various family sizes. Adjustments to the very low- (50%) and low-income (80%) limits are made by HUD for areas with unusually high or low family income or housing costs. Most income limits are proportionately based on very low-income limits. Thus, the four-person (60%) income limit is 120% (60/50ths) of the four-person very low-income limit.

The figures considers (1) a **30-year** conventional fixed mortgage; (2) a fixed interest rate of **5.00%***; (3) housing expenses equal to **28%** of gross annual income; and (4) a down payment equal to **5%** of the sales price. *The interest rate used is the annual average interest rate for a 30-year conventional fixed mortgage, for the twelve months ending in the previous year, as published by the Federal Home Loan Mortgage Corp (http://www.freddiemac.com/pmms/docs/30yr_pmmsmnth.xls). The rate is rounded to the nearest half percent.

% of Median	50%	60%	70%	80%	90%	100%	110%	120%	130%	140%
FAMILY SIZE: 1										
Income	$ 24,200	$ 29,040	$ 33,880	$ 38,750	$ 43,560	$ 46,690	$ 51,360	$ 56,030	$ 60,700	$ 65,370
Sales price	$ 110,700	$ 132,900	$ 155,000	$ 177,300	$ 199,300	$ 213,600	$ 235,000	$ 256,400	$ 277,700	$ 299,100
FAMILY SIZE: 2										
Income	$ 27,650	$ 33,180	$ 38,710	$ 44,250	$ 49,770	$ 53,360	$ 58,700	$ 64,030	$ 69,370	$ 74,700
Sales price	$ 126,500	$ 151,800	$ 177,100	$ 202,500	$ 227,700	$ 244,100	$ 268,600	$ 293,000	$ 317,400	$ 341,800
FAMILY SIZE: 3										
Income	$ 31,100	$ 37,320	$ 43,540	$ 49,800	$ 55,980	$ 60,030	$ 66,030	$ 72,040	$ 78,040	$ 84,040
Sales price	$ 142,300	$ 170,800	$ 199,200	$ 227,900	$ 256,100	$ 274,700	$ 302,100	$ 329,600	$ 357,100	$ 384,500
FAMILY SIZE: 4										
Income	$ 34,550	$ 41,460	$ 48,370	$ 55,300	$ 62,190	$ 66,700	$ 73,370	$ 80,040	$ 86,710	$ 93,380
Sales price	$ 158,100	$ 189,700	$ 221,300	$ 253,000	$ 284,500	$ 305,200	$ 335,700	$ 366,200	$ 396,700	$ 427,200
FAMILY SIZE: 5										
Income	$ 37,350	$ 44,820	$ 52,290	$ 59,750	$ 67,230	$ 72,040	$ 79,240	$ 86,440	$ 93,650	$ 100,850
Sales price	$ 170,900	$ 205,100	$ 239,200	$ 273,400	$ 307,600	$ 329,600	$ 362,500	$ 395,500	$ 428,500	$ 461,400
FAMILY SIZE: 6										
Income	$ 40,100	$ 48,120	$ 56,140	$ 64,150	$ 72,180	$ 77,370	$ 85,110	$ 92,850	$ 100,580	$ 108,320
Sales price	$ 183,500	$ 220,200	$ 256,900	$ 293,500	$ 330,200	$ 354,000	$ 389,400	$ 424,800	$ 460,200	$ 495,600

FOR-SALE FINISHED LOTS GUIDELINES *(Effective 09/01/2010)*

This information is based on the affordable sales price for a completed unit for a household, earning one hundred percent of the median income in the County of Hawai'I, less the cost to build a single-family home of 1,100 square feet. *$150 per square foot cost is based on estimates by The County of Hawai`i, Department of Public Works, Building Division.

% of Median Income	Affordable Home Price		Cost/Unit		Affordable Lot Price
80%	$ 253,000	-	$ 165,000	=	$ 88,000
100%	$ 305,200	-	$ 165,000	=	$ 140,200

FOR-RENT GUIDELINES *(Effective 09/01/2010)*

Affordable rents are based on 30% of gross monthly income, including utilities (water, sanitary sewage service, electricity and/or gas). Please refer to form HUD-52667*(Allowances for Tenant-Furnished Utilities and Other Services)* for utilities for either single- and/or multi-family units.

Bedroom Size		Studio	One	Two	Three	Four
% of Median Income	30%	$ 363	$ 389	$ 467	$ 540	$ 602
	50%	$ 605	$ 648	$ 777	$ 898	$ 1,002
	60%	$ 726	$ 777	$ 933	$ 1,078	$ 1,203
	80%	$ 968	$ 1,037	$ 1,245	$ 1,438	$ 1,603
	100%	$ 1,167	$ 1,250	$ 1,500	$ 1,734	$ 1,934
	120%	$ 1,400	$ 1,500	$ 1,801	$ 2,081	$ 2,321
	140%	$ 1,634	$ 1,750	$ 2,101	$ 2,427	$ 2,708

JIM LYON, P.E., LEED AP, CFM – President/Principal-in-Charge

Mr. Lyon manages the Honolulu office and works with clients, project managers and stakeholders to monitor the progress and successful completion of a project, from scope development through construction. He has worked closely with Forest City for four years and focuses on business development, strong project operations with a focus on customer service and quality, and ensures that sufficient technical and administrative resources are provided to project teams throughout Hawaii and internationally. He is a member of the American Society of Civil Engineers (ASCE); The American Council of Engineering Companies Hawaii (ACECH), the Association of State Floodplain Managers (ASFPM) and the Pacific Century Fellows-Class of 2008, and former Board Member of the U.S. Green Building Council-Hawaii and the Aloha Tower Development Corporation. Mr. Lyon is fluent in Japanese.

Education: Masters in Business Administration, University of Hawaii, 1996
Graduate Studies, Civil Engineering, University of Hawaii, 1993
B.S. Mechanical Engineering, University of the Pacific, 1988
B.S. Japanese, University of the Pacific, 1988

Active Registrations: P.E. Civil Engineer, Hawaii, Guam

EMPLOYMENT HISTORY

- Lyon Associates, Inc., President, VP, Sr. Project Manager, Project Manager, 1991-Present
- TRW/Koyo Steering Systems, Inc., Project Engineer, 1988-1990

RESIDENTIAL PROJECT EXPERIENCE

- Kamakana Villages at Keahuolu, Kailua-Kona, Big Island, HI
- Kona Vista Development, Big Island, HI
- Pualani Estates Subdivision Phase III and Floodway Study, Kailua-Kona, Big Island, HI
- Pualani Makai Subdivision and Village Center, Kailua-Kona, Big Island, HI
- Pualani Mauka Master Plan, Kailua-Kona, Big Island, HI
- HPHA Renovations to Public Housing Facilities, Statewide, HI
- South Koloa Town Drainage Master Plan, Kauai, HI
- Village at Poipu, Phase II, Kauai, HI
- Hawaii Regional Housing Privatization Project, Mc Grew Point, Oahu, HI
- Hale Wai Vista, Oahu, HI
- Kamehame Ridge Cluster, Oahu, HI
- Keikilani Circle Property, Oahu, HI
- Kirley Residence 6-Unit, Oahu, HI
- Navy and Marine Corps Housing PPV Increment 4, Marine Corps Bases Hawaii, Oahu, HI
- Nipo Street Cluster LOMR, Oahu, HI
- Ocean View Terrace Subdivision, Oahu, HI
- Sea Country Residential Subdivision, Areas 1-7, Oahu, HI
- Star's Edge, Westhills Phase II Subdivision, Oahu, HI
- Waialua Agricultural Subdivision – Drainage and Flood Study, Oahu, HI

Additional Hawaii County Project Experience:

- HDOT Hawaii Scenic Byways Program, Statewide
- HDOT Transportation and Traffic Engineering Congestion at Various Locations , Big Island, Maui, Hawaii
- Flood Study, Kona, HI
- Kona Vista Development, HI
- MTA Rural Para-Transit System for Puna and Kona, HI
- St. Michael's the Archangel Church, Kona, HI
- USDA A/E Professional Services IDIQ, Task Order # 2 – Hilo Field Station Feasibility Study, HI

TOM NANCE **Hydrologist / Water Resource Engineer**

Education

M.S., Civil Engineering, Stanford University, 1970
B.S., Mechanical Engineering, Stanford University, 1966
B.S., Economics, Claremont Men's College, 1966
Graduate Work in Hydrology, University of California at Berkeley, 1977-1978
Graduate Work in Physical Oceanography, University of Hawaii, 1970-1972

Registration

Professional/Civil Engineer – Hawaii #03878, 1975
Certified Diver – Hawaii

Affiliations

American Society of Civil Engineers
American Water Works Association

Expertise

Groundwater and Surface Water Development
Hydraulics and Water System Design
Flood Control and Drainage
Coastal Engineering

EXPERIENCE

1989 –Present President	**Tom Nance Water Resource Engineering - Honolulu, Hawaii**
1972 – 1989	**Belt Collins & Associates - Honolulu, Hawaii**
Senior Water Resources Engineer 1979 – Present	Specializes in hydrologic and engineering studies and designs for water resource development, flood control projects, and unusual drainage applications such as injection wells.
Project Engineer and 1975 – 1979	Responsible for hydrologic investigations, engineering feasibility, and design studies environmental impact statements.
Civil Engineer 1972 – 1975	Engineering feasibility studies; environmental impact assessments and statements.
Planner/Civil Engineer 1970	Donald Wolbrink & Associates, Honolulu, Hawaii Participated in engineering and planning studies.
Civil Engineer/Teacher 1966 – 1968	U.S. Peace Corps Served as volunteer in Micronesia.
Student Engineer 1964 – 1965	Hawaiian Electric Company, Hawaii
Student Engineer 1962 – 1963	Honolulu Board of Water Supply, Hawaii

SELECTED PROJECTS

A&B's Waiale Well No. 1, Island of Maui, 2007
Maui Lani Irrigation Well No. 3, Island of Maui, 2007
DWS' Ahualoa Well, Island of Hawaii, 2006
Kula 1800 Well No. 1, Island of Maui, 2007
Wailea 670 Well Nos. 1 and 2, Island of Maui, 2007
Waikoloa Drinking Water Well No. 7, Island of Hawaii, 2007
DWS' Waiohinu Well, Island of Hawaii, 2007
Hapuna Irrigation Well No. 4, Island of Hawaii, 2006
Kapalawai Resort Potable Wells, Island of Kauai, 2006
Poipu Wastewater Treatment Plant Disposal Wells, Island of Kauai, 2006
Ko Olina Resort Deep Saltwater Supply Well, Island of Oahu, 2006
Kealahewa Potable Wells 1 and 2, Island of Hawaii, 2006
Falko Potable Wells 3 and 4, Island of Kauai, 2006
Kaupulehu Potable Well No. 6, Island of Hawaii, 2005-06
Kaupulehu Irrigation Well No. 6, Island of Hawaii, 2005-06
Maui Lani Potable Wells 5, 6, and 7, Island of Maui, 2005-06
Groundwater Exploration Program, Pohnpei Island of FSM, 2005
Waikoloa Drinking Water Well No. 6, Hawaii Island, 2004
Honomu Potable Well, Hawaii Island, 2004
Saltwater Wells for the Hilton Hawaiian Village Lagoon, Oahu, Hawaii, 2004
Groundwater Modeling of Saltwater Disposal at the Oceanic Institute, Oahu, Hawaii, 2004
Stormwater Modeling for the Pacific Missile Range Facility, Kauai, Hawaii, 2004
Waikoloa Effluent Disposal Well, Hawaii Island, 2004
Kiahuna Mauka Water Master Plan, Kauai, Hawaii, 2004
Village at Poipu Water Master Plan, Kauai, Hawaii, 2004
Kukui'Ula Offsite Water Master Plan, Kauai, Hawaii, 2004
Kaupulehu Potable Well No. 5, Hawaii Island, 2003 to 2004
Anderson AFB Drinking Water Wells, Guam, 2002 to 2004
Four Saltwater Disposal Wells at the Oceanic Institute, Oahu, Hawaii, 2003-2004
Piwai Well Nos. 2 and 3, Kauai, Hawaii, 2001 and 2003
Hapuna Irrigation Well No. 3, Hawaii Island, 2003
Kaieie Mauka Well, Hawaii Island, 2002
Kaupulehu Potable Well No. 4, Hawaii Island, 2002
Kauaula Well No. 3, Maui, Hawaii, 2002
Kaluakoi Resort Brackish Irrigation System, Molokai, Hawaii, 2002
Kaluakoi Potable Water System, Molokai, Hawaii, 2002
East Maui Irrigation Ditch / Stream Study, Maui, Hawaii, 2001
Mana Plain Drainage Study, Kauai, Hawaii, 2001
Hanamaulu Bay Oceanfront Wells, Kauai, Hawaii, 2001
Evaluation of Koloa Well F, Kauai, Hawaii, 2001
Trex Disposal Well, Kauai, Hawaii, 2001
Koele Golf Course Irrigation Supply, Lanai, Hawaii, 2001
Poeleele Well, Kauai, Hawaii, 2001
Pump Testing of the DLNR Oahu (Kaimuki) Exploratory Wells, Oahu, Hawaii, 2001
Kealia Pond for Maui National Wildlife Refuge, Maui, Hawaii, 2001
Falalop Island Water System - Ulithi Atoll, Yap Islands, 2001
Kii Well Rehab at Kahuku Wildlife Refuge, Oahu, Hawaii, 2001
Waiau Pipeline for HECO, Oahu, Hawaii, 2001
Ameron Quarry, Oahu, Hawaii, 2001
Department of Water Supply Waiaha Well and Tank, Island of Hawaii, 2001
South Kohala Groundwater Assessment, Island of Hawaii, 2000
Lihue Energy Services Center Water System Design, Kauai, Hawaii, 2000

SELECTED PROJECTS (continued)

1.5 MG Reservoir at Mauna Lani WWTP, Island of Hawaii, 2000
Yyin to Gargey Pipeline, Yap Islands, 2000
HASEKO Ocean Pointe Water Master Plan, Oahu, Hawaii, 2000
Irrigation Wells for Hualalai Resort, Island of Hawaii, 2000
CEATECH Plantations Wells 3 and 4, Kauai, Hawaii, 2000
Dillingham Airfield Water Supply Evaluation, Oahu, Hawaii, 2000
Hanalilolilo Intake and Pipeline, Molokai, Hawaii, 2000
Hapuna Well No. 3, Island of Hawaii, 2000
Launiupoko Well, Maui, Hawaii, 2000
Department of Water Supply Waiaha Well, Island of Hawaii, 2000
Design of the Maap-Rumung Pipeline Extension, Yap Islands, 2000
Gagil-Tomil System Extension, Yap Islands, 2000
Kaupulehu Potable Well No. 4, Island of Hawaii, 2000
Kapalawai Resort Water Systems, Kauai, Hawaii, 1999
Kadday to Yyin Pipeline, Yap Islands, 1999
Kekaha Sugar Plantation Infrastructure Study, 1999
Maui Land & Pineapple Well in Hailiimaile, Maui, Hawaii, 1999
Mauna Lani Resort Irrigation Well Nos. 8 and 9, South Kohala, 1999
Coral Creek Golf Course Well Development, Oahu, Hawaii, 1998
Uplands Water System Design, South Kohala, Hawaii, 1998
Puu O Hoku Ranch Well Development, Molokai, Hawaii, 1998
Kailua Well Development for East Maui Irrigation, Maui, Hawaii, 1998-99
Waikele Stream Evaluation, Oahu, Hawaii, 1998
Groundwater Development in Eyeb Valley, Yap Islands, 1998-99
Drainage Assessment for Hawaii Reserves, Inc., Laie, Oahu, Hawaii, 1998-99
Well Development at Papaa Bay Ranch, Kauai, Hawaii, 1998-99
Bay View Golf Course Irrigation Wells, Kaneohe, Oahu, 1996-97
Molokai Ranch Replacement Pipelines, Molokai, 1996-97
Molokai Ranch 15 MG Storage Reservoirs, Molokai, 1996-97
Waiola Well, Molokai Ranch, 1996-97
Parker Wells Outfitting, Lalamilo, Hawaii, 1996-97
Royal Kunia Golf Course Irrigation Well, 1996
Hawaii Reserves, Inc. Contested Case, Laie, Oahu, 1996
Puuloa Caprock Users Group Master Plan, Ewa, Oahu, 1996
Kauai Electric-Chevron Groundwater Evaluation, Port Allen, Kauai, 1997
Ewa Caprock Aquifer Monitoring For 1994-97, Oahu, Hawaii
Kaupulehu Potable Wells Evaluation, Island of Hawaii, 1995
Pecatu Graha Project, Bali, Indonesia, 1995
Taman Dayu Well Drilling, Surabaya, Indonesia, 1995
Princeville Water Master Plan, Kauai, Hawaii, 1995
Kaupulehu Brackish Pond Turnover, Island of Hawaii, 1995
Honolulu Resource Recovery Venture Disposal Wells Report, Oahu, Hawaii, 1995
Outfit Mauna Lani Resort's Parker Wells, Island of Hawaii, 1995
Princeville PUC 1995 Rate Case, Kauai, Hawaii, 1995
EPWDC Non-Potable Source Plan, Oahu, Hawaii, 1995
Kaupulehu Disposal Wells, Island of Hawaii, 1995
DWS Piihonua Well Pump Test, Maui, Hawaii, 1995
Kaupulehu Potable Well Nos. 1 and 2, Island of Hawaii, 1995
Ookala Well (DWS), Maui, Hawaii, 1995
Waiahole Irrigation Company, Oahu, Hawaii, 1995
Gentry Area 26 Well, Oahu, Hawaii, 1995
Second Honouliuli 228 Tank, Oahu, Hawaii, 1995
Lanai Well No. 14 Outfitting, Lanai, Hawaii, 1995

SELECTED PROJECTS (continued)

Big Island Country Club Estates Potable Wells Certification, Island of Hawaii, 1995
Mauna Kea Hotel Drainage Improvements, Island of Hawaii, 1995
Gentry Area 26 Irrigation Station, Oahu, Hawaii, 1995
Waialua Sugar Company Pump 3 DOH Certification, Oahu, Hawaii, 1994
Islands Saltwater Well Permits, Mauna Lani Resort, Island of Hawaii, 1994
Kehena Ditch Evaluation For Kohala Ranch, Island of Hawaii, 1994
Chiyoda Makakilo Golf Course, Oahu, Hawaii, 1994
Gentry Waiawa Recharge Study, Oahu, Hawaii, 1994
Gentry East-Side Irrigation, Oahu, Hawaii, 1994
Kawaihae Cogeneration Supply and Disposal Wells, Island of Hawaii, 1994
Kapolei Irrigation Pump Station, Oahu, Hawaii, 1994
Campbell Agricultural Lands Water System, Oahu, Hawaii, 1994
AES Federal UIC Permit, Oahu, Hawaii, 1994
Campbell Estate's Malaekahana Water System, Oahu, Hawaii, 1994
Hauula Well Evaluation, Oahu, Hawaii, 1994
Kapalua's Well No. 3, Maui, Hawaii, 1994
Waikoloa's Tank 1200S-2, Island of Hawaii, 1994
Gentry Golf Course Irrigation Pump Station, Oahu, Hawaii, 1994
HRT's Makaha Site Groundwater Evaluation, Oahu, Hawaii, 1994
Kalaeloa Partners' New Monitoring Wells, Oahu, Hawaii, 1994
Castle & Cooke Central Oahu Master Plan, Oahu, Hawaii, 1994
Kaupulehu Makai Irrigation Well Outfitting, Island of Hawaii, 1994
Villa Escudero, Philippine Islands, 1994
HPOWER Disposal Wells DOH Report, Oahu, Hawaii, 1994
Lost River Water Supply Evaluation, Guam, 1994
Makakilo Golf Course, Oahu, Hawaii, 1994
Lanai Water System Development, Lanai, Hawaii, 1993
Kapolei City Irrigation System, Oahu, Hawaii, 1993
Laie Water Master Plan, Oahu, Hawaii, 1992-93
Kohala Ranch Well Nos. 3 and 4, Island of Hawaii, 1992-93
Mauna Lani Resort's Parker Wells, Island of Hawaii, 1992-93
SNM Rota Island Resort, Rota Island, CNMI, 1992-93
ABB Cogeneration Plant Saltwater Supply Wells, Oahu, Hawaii, 1993
Keauhou High Level Well Development, Island of Hawaii, 1991-93
Waiawa by Gentry Water System Development, Oahu, Hawaii, 1992-93
Kaupulehu Resort Water System Development, Island of Hawaii, 1990-93
Kona Country Club Irrigation Well, Island of Hawaii, 1991-92
Lihilani Groundwater Development, Oahu, Hawaii, 1992
Honouliuli Wastewater Reclamation and Reuse Study, Oahu, Hawaii, 1992
Big Island Country Club Irrigation Well, Island of Hawaii, 1992
Hapuna Golf Course Irrigation Wells, Island of Hawaii, 1991-92
Ewa Caprock Aquifer Computer Model, Oahu, Hawaii ,1991-92
South Kohala Water Master Plan, Island of Hawaii, 1991-92
Princeville Well Development, Kauai, Hawaii, 1992
Waikoloa Well Nos. 1, 2, and 3, Island of Hawaii, 1990-92
Waikoloa Water System Master Plan, Island of Hawaii, 1991
Lalamilo Water System Expansion, Island of Hawaii, 1991
Saltwater Wells for the Islands at Mauna Lani Resort, Island of Hawaii, 1991
Bali Golf & Country Club Irrigation Wells, Bali, Indonesia, 1990-91
Honouliuli Well Nos. 1 to 6, Oahu, Hawaii, 1990-91
Ewa by Gentry Irrigation System Development, Oahu, Hawaii, 1990-92
Saltwater Supply and Disposal Wells for the AES Cogeneration Plant, Oahu, Hawaii, 1990

SELECTED PROJECTS (continued)

Makakilo Golf Course Supply Wells and Desalination Plant Design, Oahu, Hawaii, 1990
Kapalua Resort Well Nos. 1 and 2, Maui, Hawaii, 1990-91
Lalamilo Water System, Mauna Lani Resort, Island of Hawaii, 1989
Waikoloa Water System Expansion, Island of Hawaii, 1989-90
Clark AFB Well Development, Philippine Islands, 1988-90
Mangilao Golf Course Irrigation Well Development, Guam, 1988-90
Waikoloa Stream Flood Study, Island of Hawaii, 1990
Ewa Water System Development, Oahu, Hawaii, 1986-88
Reclamation & Beach Construction, Sentosa, Singapore, 1986-88
Waikoloa Beach Resort Irrigation Well Development, Island of Hawaii, 1988
Mauna Lani Resort Irrigation Well Development, Island of Hawaii, 1988, 1990, and 1992
Westin Kauai Irrigation Well Development, Kauai, Hawaii, 1987-88
Makaiwa Bay Beach Development, Mauna Lani Resort, Island of Hawaii, 1986
Kosrae Groundwater Development, Trust Territory, 1984
Palau Islands Groundwater Development, 1984-88
Keauhou Resort Golf Course Irrigation Well Development, Island of Hawaii, 1983-84
Kula Up-Country Water Study, Maui County, Hawaii, 1983-84
Ewa Water Master Plan, Oahu, Hawaii, 1983-84
Lalamilo Water System, Island of Hawaii, 1984 & 1988
Beach Construction, Mauna Lani Bay Hotel, Island of Hawaii, 1983
Southern Water System, Yap State, Federated States of Micronesia, 1983
Water Development, Saipan, CM, 1983
Molokai Water Master Plan, Molokai, Hawaii, 1982
Yap Island Groundwater Exploration & Development, Yap State, 1982
Molokai Ranch Mountain Water System, Molokai, Hawaii, 1983 & 1988
Princeville Golf Course Irrigation System, Kauai, Hawaii, 1981
Kiahuna Golf Course Irrigation System, Kauai, Hawaii, 1981
Prototype High Capacity Injection Well Field Testing, Waiale, Maui, 1978-80
Irrigation Well, Liliuokalani Trust, Island of Hawaii, 1979
Yap Island Sewage Treatment Plant Ocean Outfall, Trust Territory, 1980
Design of the Gagil-Tomil Water System, Yap State, 1981
Tripler Hospital Traffic Study, Oahu, Hawaii, 1979
Kaumalapau Harbor Breakwater Repair, Lanai, Hawaii, 1980 & 1982
Beach Development Study for Mauna Loa Land Resort, Hawaii, 1979
Drainage Master Plan, Waiale Development, Kahului, Maui, Hawaii
Conceptual Water Development Plans for Colonia, Gagil-Tomil, and Southern Yap areas of Yap State, Trust Territory of the Pacific Islands, 1980
Appeal of FIA Flood Hazard Designations for the Mauna Loa Land, Inc. Resorts, South Kohala, Hawaii, 1980
Irrigation Wells for Kiahuna Golf Village, Koloa, Kauai, Hawaii, 1979
Yap Islands Groundwater Investigation, Yap State, 1979
Yap Wastewater Facility Plan, Trust Territory of the Pacific Islands, 1978
Wailua Basin Water Resources Development Study (Dam Feasibility Study, Hydropower, Flood Control, Irrigation), Kauai, Hawaii, 1976-77
Irrigation Study, Kilauea Agricultural Subdivision, Kauai, Hawaii, 1977
Waimea to Kawaihae Water Transmission Line Study, Hawaii, 1977
Sewerage Master Plan, U.S. Naval Facility, Diego Garcia, 1976
South Kohala Groundwater and Deep Well Evaluation Study, Hawaii, 1975
Fort Shafter Sewage Pump Station, Oahu, Hawaii, 1975
Tafuna Industrial Park, Tutuila Island, American Samoa, 1974
Kapalua Master Plan, Maui, Hawaii, 1974

CURRICULUM VITAE
W. ARTHUR WHISTLER

EDUCATION

B.A. in Biology, University of California, Riverside. 1965
M.A. in Botany, University of California, Santa Barbara. 1966
Ph.D. in Botany, University of Hawai'i. 1979

CITIZENSHIP: U.S.A. **BIRTHPLACE**: California **AGE:** 65

AREAS OF EXPERTISE

Flora of the tropical Pacific Islands
Tropical vegetation ecology
Ethnobotany of Polynesia
Ornamental plants
Pacific herbal medicine

RELATED EMPLOYMENT/RESEARCH

(1) Associate Professor of Biology, University of the South Pacific (2006–2007)
(2) Independent consultant in botany, with projects completed in Hawai'i, Guam, Federated States of Micronesia, Palau, the Marshal Islands, Kwajalein, Samoa, American Samoa, Niue, Tonga, Fiji, Vanuatu, Okinawa, Korea, Indonesia, and Japan (1975–present). Company name: Isle Botanica.
(3) Consultant with Char and Associates (1986–1991). This included fieldwork on Environmental Assessments and Environmental Impact Statements throughout Hawai'i.
(4) Ethnobotanist with the National Tropical Botanical Garden (1983–1992).
(5) Lecturer in Botany, U.H. Botany Department (1979–1989).
(6) Office manager, Environment Consultants (Texas) in Honolulu (1976–1978).
(7) Teaching Assistant in Botany, U. H. Botany Department (1972–1976)

OTHER RELATED ACTIVITIES

(1) Visiting Fellow, East West Center Program on Environment (1998–1999)
(2) Adjunct Associate Professor and Graduate Faculty member at the University of Hawai'i Botany Department (1990–present)
(3) Adjunct Associate Professor, Lyon Arboretum (1996–present)
(4) Field Associate of the Bishop Museum (1980–present)
(5) Peace Corps Volunteer in Western Samoa (1968–1970) teaching biology at Samoa College

ADDRESS: 2814 Kalawao St. Honolulu, Hawai'i 96822
E-MAIL:whistler@hawaii.edu.
WEBSITE: islebotanica.com
PHONE: (808) 988-1771

PUBLICATIONS (1976–2010)

Whistler, W.A. 1976. Wetland vegetation of American Samoa. Report submitted to the U.S. Army Corps of Engineers, Honolulu. 94 pp. (Mimeograph)

Whistler, W.A. 1978A. Notes on the flora of Samoa. Phytologia 38 (5): 409–410.

Whistler, W.A. 1978B. The vegetation of the montane region of Savai'i, Western Samoa. Pacific Science 32 (1):79–94.

Whistler, W.A. 1978C. Development and conservation in Western Samoa. The New Pacific; July-August: 38–4l.

Whistler, W.A. 1979. Collecting orchids in Samoa. Bull. Pacific Tropical Botanical Garden IX (2): 34–38.

Whistler, W.A. 1980A. Coastal flowers of the tropical Pacific. Pacific Tropical .Garden, Lawai, Kauai. 82 pp.

Whistler, W.A. 1980B. The vegetation of eastern Samoa. Allertonia 2 (2): 45–190.

Whistler, W.A. 1981A. A naturalist in the South Pacific: off the beaten track in Samoa. Bull. Pacific Tropical Botanical Garden XI (1):1–6.

Whistler, W.A. 1981B. A naturalist in the South Pacific: north to Tokelau. Bull. Pacific Tropical Botanical Garden XI (2): 29–37.

Whistler, W.A. 1983A. Weed handbook of Western Polynesia. Gesellschaft für Techniche Zusammenarbeit, Eschborn, West Germany; no. 157. 151 pp.

Whistler, W.A. 1983B. The flora and vegetation of Swains Island. Atoll Research Bull. 262:1–25

Whistler, W.A. 1984A. The vegetation and flora of the Aleipata Islands, Western Samoa. Pacific Science 37 (3): 227–249.

Whistler, W.A. 1984B. Annotated list of Samoan plant names. Econ. Bot. 38 (4): 464–489.

Whistler, W.A. 1984C. Notes on the flora of Niue. N. Z. Jour. Bot. 22: 565–567.

Whistler, W.A. 1985A. Traditional and herbal medicine in the Cook Islands. Jour. Ethnopharmacology 13: 239-280.

Whistler, W.A. 1985B. Researches into Polynesian Ethnobotany. Bull. Pacific Tropical Botanical. Garden 15 (4):77–79.

Whistler, W.A. 1986. A revision of *Psychotria* (Rubiaceae) in Samoa. Jour. Arnold Arboretum 67:341–370.

Whistler, W.A. 1988A. A revision of *Syzygium* (Myrtaceae) in Samoa. Jour. Arnold Arboretum 69:167–192.

Whistler, W.A. 1988B. Checklist of the weed flora of Western Polynesia. South Pacific Commission Technical Paper 194. Noumea, New Caledonia. 69 pp.

Whistler, W.A. 1988C. Ethnobotany of Tokelau: the plants, their Tokelau names, and their uses. Economic Botany 42 (2): 155–176.

Whistler, W.A. 1989. The unique flowers of Polynesia: Tonga. Bull. National Tropical Botanical Garden 19(3):81–84.

Whistler, W.A. 1990A. Ethnobotany of the Cook Islands: the plants, their Maori names, and their uses. Allertonia 5 (4): 347–424.

Whistler, W.A. 1990B. The other Polynesian Gourd. Pac. Sci. 44 (2): 115–122.

Whistler, W.A. 1991A. Ethnobotany of Tonga: the plants, their Tongan names, and their uses. Bishop Mus. Series in Botany 2:1-155.

Whistler, W.A. 1991B. Herbal medicine in the Kingdom of Tonga. Jour. Ethnopharmacology 31:339–372.
Whistler, W.A. 1991C. Polynesian plant introductions. Pp. 25–66. *In* Islands, Plants, and Polynesians. Cox, P.A. and S. Banack (eds.). Dioscorides Press, Portland, Oregon.
Whistler, W.A. 1992A. The vegetation of Tonga and Samoa. Pacific Science 46: 159–178.
Whistler, W.A. 1992B. Polynesian herbal medicine. National Tropical Botanical Garden, Lawai, Kauai. 238 pp.
Whistler, W.A. 1992C. Botanical inventory of the Ta'u portion of the National Park of American Samoa. Technical Report 83. Cooperative National Park Resources Study Unit, Honolulu. 85 pp. (Mimeograph).
Whistler, W.A. 1992D. Flowers of the Pacific island seashore. Isle Botanica, Honolulu. 146 pp.
Whistler, W.A. 1992E. Tongan herbal medicine. Isle Botanica, Honolulu. 122 pp.
Whistler, W.A. 1992F. Palms of Samoa. Mooreana 2 (3): 24–29.
Whistler, W.A. 1993A. Getting back to nature in a Samoan rain forest. Bull. National Tropical Botanical Garden 23 (3):55–58.
Whistler, W.A. 1993B. The cloud forest of Samoa. Pp. 231–236. *In* Tropical montane cloud forests. Hamilton, L. S., J. O. Juvik, and F. N. Scatena (eds.). East West Center Program on Environment, Honolulu.
Whistler, W.A. 1993C. Botanical survey of the Ottoville lowland forest, Tafuna, Tutuila, American Samoa. Report prepared for the Government of American Samoa. 58 pp. Mimeograph.
Whistler, W.A. 1994. Botanical inventory of the proposed Tutuila and Ofu portions of the National Park of American Samoa. Technical Report 87. Cooperative National Park Resources Study Unit, Honolulu. 142 pp. (Mimeograph).
Whistler, W.A. 1995A. Wayside Plants of the Islands. Isle Botanica, Honolulu. 202 pp.
Whistler, W.A. 1995B. Folk plant nomenclature in Polynesia. Pacific Studies 18 (4): 39–60.
Whistler, W.A. 1995C. Permanent forest plot data from the National Park of American Samoa. Cooperative National Park Resources Study Unit, Honolulu. (Mimeograph) 66 pp.
Whistler, W.A. 1996. Samoan Herbal Medicine. Isle Botanica, Honolulu. 116 pp.
Whistler, W.A. 1998. A study of rare plant species of American Samoa. U.S. Fish and Wildlife Service, Honolulu. Mimeograph. 118 pp.
Whistler, W.A. 2000. Tropical ornamentals: a guide. Timber Press, Portland, OR. 542 pp.
Whistler, W.A. 2001. Plants in Samoan culture: the ethnobotany of Samoa. Isle Botanica, Honolulu. 234 pp.
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RESUME OF
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Mr. Okaneku is a traffic engineer and transportation planner whose professional career has spanned the field of transportation engineering since 1977: from highway and traffic signal design at a Hawaii-based consulting engineering firm and traffic operations and design at the City and County of Honolulu Department of Transportation Services; to specialization in traffic engineering and transportation planning as an independent consultant. The depth and breadth of Mr. Okaneku's experience in the fields of traffic engineering and transportation planning culminated in his founding of The Traffic Management Consultant (TMC) in 1989. Mr. Okaneku has been Principal-in-Charge and Project Manager on large and small projects throughout the State of Hawaii. Mr. Okaneku has been a Licensed Professional Civil Engineer in the State of Hawaii, since 1980.

TMC's past and current projects include:

- Costco Warehouse (Kapolei, Oahu) – Traffic Impact Analysis
- Manana Village Center (Pearl City, Oahu) – Traffic Impact Analysis
- Turtle Bay Resort Master Plan (Kahuku, Oahu) – Traffic Impact Analysis
- West Hawaii Business Park(Kona, Hawaii) – Traffic Impact Analysis
- Kohala Place at Waikoloa (Waikoloa, Hawaii) – Traffic Impact Analysis
- Waimea Town Center (Waimea, Hawaii) – Traffic Impact Analysis
- Saddle Road Extension (South Kohala, Hawaii) – Traffic Impact Analysis
- Honoapiilani Highway Improvements - Launiupoko to the Pali Tunnels (Lahaina, Maui) – Traffic Operations Analysis
- U.S. Army Security Upgrade of Installation Gates – Access Control Points Traffic Analysis
- Wal-Mart at Manana (Pearl City, Oahu) – Traffic Impact Analysis
- Kilauea Avenue/Kinoole Street Traffic Circulation Improvement Study (Hilo, Hawaii) – Preliminary Traffic Engineering
- Kamehameha Schools East Hawaii Campus (Keaau, Hawaii) – Traffic Impact Analysis

- Keauhou Mauka (Keauhou-Kona, Hawaii) – Traffic Impact Analysis
- Housing Project at Marine Corps Air Station (Kaneohe, Oahu) – Traffic Impact Analysis
- Puainako Street Extension (Hilo, Hawaii) – Traffic Impact Analysis
- Mamalahoa Highway Improvements (Waimea, Hawaii) – Traffic Impact Analysis
- Molokai Long-Range Land Transportation Plan (Molokai) – Regional Transportation Plan
- Hawaii Convention Center (Honolulu, Oahu) – Traffic Impact Analysis

Record of Experience

The Traffic Management Consultant, Principal – 1989 to the Present

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University of Hawaii MBA Alumni Association

PETITIONER'S EXHIBIT 65

Oahu MPO

Oahu Regional Transportation Plan 2030

The Policy Committee of the Oahu Metropolitan Planning Organization approved Amendment #1 to the Oahu Regional Transportation Plan 2030 in May 2007. The Oahu Regional Transportation Plan 2030 was first approved in April 2006.

WHAT IS THE ORTP?

TABLE OF CONTENTS

2 WHAT IS THE ORTP?
3 LOOKING AT THE FUTURE OF OAHU
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5 GOALS
6 OVERVIEW OF ORTP 2030 PROJECTS
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The Policy Committee of the Oahu Metropolitan Planning Organization (OahuMPO) approved the Oahu Regional Transportation Plan (ORTP) 2030 in April 2006 and modified it through Amendment #1 in May 2007. This document reflects the official plan as of Amendment #1.

The ORTP 2030 is a blueprint that guides us in putting together pieces of the transportation puzzle to address the mobility issues and transportation needs of our community. It is a multifaceted plan that integrates planned growth patterns and reflects available financial resources over the next 25 years. It includes a vision and goals, identifies projects, and provides an implementation program for mid- and long-range investment of the available transportation funds across Oahu in a fair and equitable manner.

The development of the plan helps decision-makers understand the options that are available for improving the transportation system and how they address our mobility needs. Any future transportation improvement for Oahu that receives federal transportation funds must be consistent with the ORTP in order to be eligible for these funds.

This regional planning document is required by a number of state and federal mandates and requirements, which include the Safe, Accountable, Flexible, Efficient Transportation Equity Act – A Legacy for Users ("SAFETEA-LU"). These requirements are mandated by the U.S. Department of Transportation as a means of verifying the eligibility of metropolitan areas for federal funds earmarked for surface transportation systems.

The ORTP is updated at least every five years to ensure that transportation decisions are based on current information and community priorities. As part of each update, future population and employment are projected and corresponding changes in travel patterns, revenue, and construction costs are forecast to validate and test past and new directions for transportation development on Oahu.

FIGURE 1

POPULATION AND EMPLOYMENT GROWTH BY DEVELOPMENT PLAN AREA

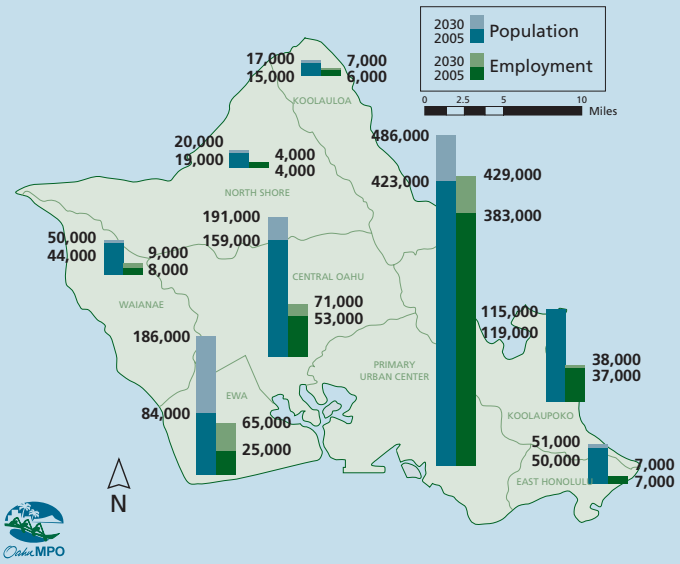
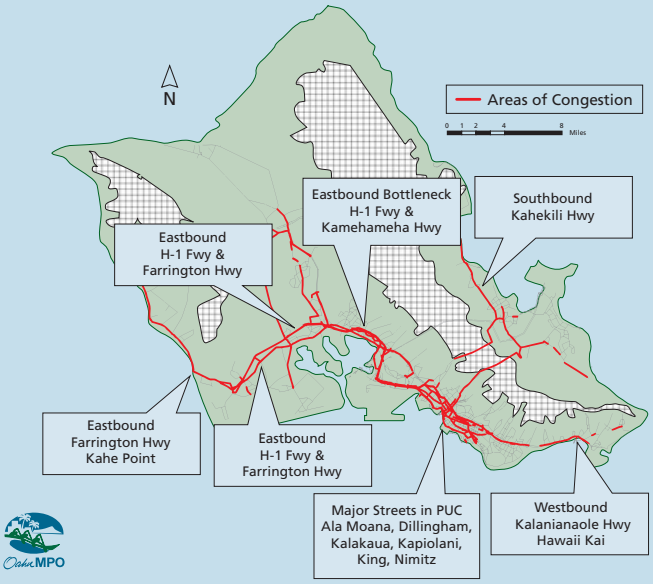


FIGURE 2

LOCATIONS OF SIGNIFICANT AM PEAK HOUR CONGESTION (BASELINE 2030)



LOOKING AT THE FUTURE OF OAHU

The Primary Urban Center (PUC) in Honolulu and the Secondary Urban Center in Kapolei have been designated by the City & County of Honolulu as the projected areas where growth in residential development and employment shall occur over the next 25 years. Additional growth is encouraged in Central Oahu to relieve pressure on the rest of the island.

Figure 1 graphically shows the amount of future growth in residential development and employment expected in each of the eight development plan areas of Oahu. Of the 203,000 new residents and 107,000 new jobs expected on Oahu by 2030, about 80% will be located in the PUC and Ewa.

Transportation and New Growth

As we continue to grow, more people and more employment opportunities mean more and more traffic – more clogged roads and more delays getting to work, school, stores, and the beach. As an illustration of how congested the transportation system could become, a "Baseline 2030" analysis was conducted to estimate future traffic conditions if growth is allowed to occur, but no new transportation facilities are built. Figure 2 shows significantly congested locations on Oahu during the morning peak hour in the Baseline 2030 analysis.

The impact of congested roadways corresponds to an increase in travel time for all Oahu residents; some increases are huge, depending upon where people live and work. Figure 3 shows the morning peak period travel time from each area on Oahu to downtown in the Year 2005. Figure 4 shows the projected morning peak period travel time from each area on Oahu to downtown Honolulu for the Baseline 2030 if nothing is done. Travel times in excess of 80 minutes are projected from the western and some northern portions of the island to downtown Honolulu during the morning peak period.

Challenges Facing Oahu

To solve the transportation puzzle, we must address several challenges that Oahu will face over the next 25 years:

- We will have more people - more people who want to go to work, to school, to shop, and to play - resulting in about 27% more travel.
- Many of our major roadways are congested, especially those within the H-1 travel corridor between Manoa/Waikiki and Kapolei. As a result, residents on the Waianae Coast, on the North Shore, in Ewa, and in Central Oahu are experiencing some of the worst morning commute travel times to downtown.
- Established communities want additional access for times of emergency as well as congestion relief.

FIGURE 3

AM PEAK PERIOD TRAVEL TIME TO DOWNTOWN (YEAR 2005)

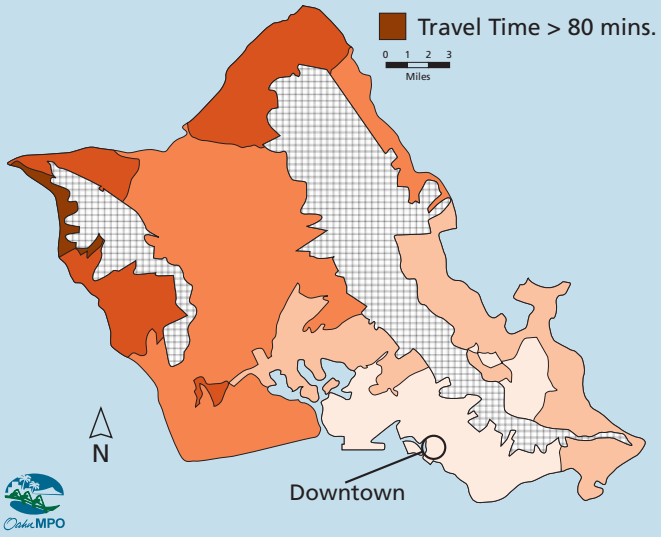
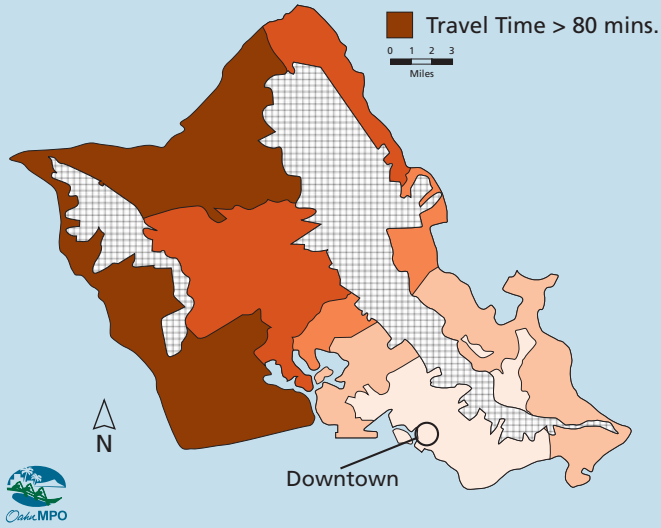


FIGURE 4

AM PEAK PERIOD TRAVEL TIME TO DOWNTOWN (BASELINE 2030)



- Many of our existing roadways need to be maintained, repaired, and rehabilitated.
- Our numerous transportation needs are constrained by our limited resources.

Our ultimate challenge is to decide how to distribute our limited resources to our various needs. There is only so much money available to fund transportation projects. How much money should be spent to reduce congestion on our roads, make our streets safer, provide more bikeways, create alternate accesses to communities, and maintain our roadways?

VISION FOR OAHU IN 2030

OAHU

ORTP VISION

In 2030, Oahu is a place where transportation choices are available and the importance of the H-1 travel corridor is recognized.

The vision for the ORTP 2030 is:

In 2030, Oahu is a place where transportation choices are available and the importance of the H-1 travel corridor is recognized.

The first part of our vision focuses on increasing our mobility options. We recognize that we cannot afford to eliminate congestion. To improve mobility, the ORTP 2030 provides a number of strategies and programs to address the island's future transportation needs. These include major capital improvement projects that add to the system's person-carrying and vehicular capacities; projects that expand on the existing systems and services to optimize their use; increased focus on operational, management, and preservation strategies; and programs that help integrate the transportation system into the land uses of each community.

This vision also acknowledges the importance of the H-1 travel corridor. Projects included in the transportation plan propose numerous ways to address the increased traffic congestion expected along this travel corridor:

- A major component of the ORTP 2030 is a fixed guideway between East Kapolei and Ala Moana.
- Also included in the plan are projects to increase the capacity of H-1 itself with new interchanges, additional High Occupancy Vehicle (HOV) lanes, freeway widenings, and operational improvements at key locations. These major H-1 travel corridor projects are supplemented with projects that provide alternatives to H-1, such as the intra-island commuter ferry from Ewa to downtown Honolulu and the Nimitz flyover HOV facility.
- The ORTP 2030 implements the island's bikeway plan; expands the bus system; and includes several second access/emergency access roadways and projects to maximize the use of existing facilities, and other measures to reduce the need for auto travel.

H-1

GOALS

The ORTP 2030 will advance us toward the vision for addressing future growth and traffic on Oahu. To meet our vision, the island-wide transportation plan for Oahu is defined by three overarching goals.

Transportation Services System:

Develop and maintain Oahu's island-wide transportation system to ensure efficient, safe, convenient, and economical movement of people and goods.

The objectives guiding this goal include increasing capacity of the system; providing an efficient and convenient transit system; providing access to all important destinations; serving all intermodal terminals; ensuring that projects are distributed equitably; ensuring that safety and security are provided; integrating the entire system; supporting economic development; and providing for system preservation.

Environment and Quality of Life:

Develop and maintain Oahu's transportation system in a manner that maintains environmental quality and community cohesiveness.

The objectives associated with this goal are directed at developing a plan that satisfies noise, air, and water quality standards; encouraging energy conservation; preserving cultural integrity and natural resources; developing alternative transportation modes that are environmentally friendly, including pedestrian walkways and bicycle routes; optimizing use of transportation resources; minimizing disruption of neighborhoods; ensuring compatibility with the physical and social character of existing development; incorporating landscaping and public safety; and planning for emergencies.

Land Use and Transportation Integration System Goal:

Develop and maintain Oahu's transportation system in a manner that integrates land uses and transportation.

The objectives that support this goal include reinforcing planned population distribution and land use development policies; encouraging innovation; and encouraging implementation of land use policies that support efficient use of transportation systems.

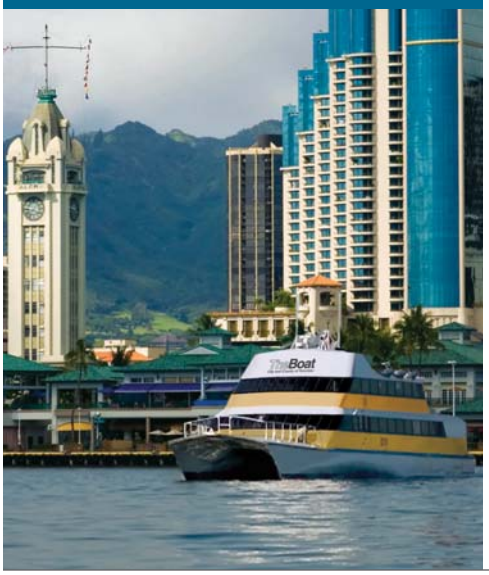
PALI HIGHWAY

OVERVIEW OF ORTP 2030 PROJECTS

FIXED GUIDEWAY

THEBUS

THEBOAT



The ORTP 2030 is a financially constrained plan that provides $7.61 billion for capital projects and $7.64 billion to operate, maintain, and preserve the highway and transit systems. The projects contained in the ORTP 2030 attempt to balance our need for mobility options, congestion relief, safety, second access, and bicycling and pedestrian facilities.

To improve mobility, a number of strategies and programs are proposed. These include new travel options, such as fixed guideway and ferry systems that add to the system's person-carrying capacities; projects that expand upon the existing systems and services to optimize their use; increased focus on operational, management, and preservation strategies; and programs that help integrate the transportation system into the land uses of each community.

With regard to congestion relief, the technical analysis and public input received during this effort highlighted the need to focus on the H-1 travel corridor and the Ewa and Central Oahu areas. Preliminary analysis indicated that island-wide congestion could be significantly addressed by focusing on the H-1 travel corridor. The need for transportation infrastructure in the Ewa area is already apparent and will increase in the future as population and employment are projected to grow substantially. Additional population and employment increases are also projected in Central Oahu.

The following provides descriptions of specific elements of the plan. Individual projects are listed on pages 18 through 22

Fixed Guideway

A key component of the ORTP 2030 is a fixed guideway that will serve the H-1 travel corridor. It is important to note that building a fixed guideway will not eliminate congestion. We will also not be able to eliminate congestion by building more highways, for we do not have the resources to keep up with the demand. The fixed guideway will give priority to moving people rather than cars, will be a major factor in providing mobility options, and will work together with our land use policies in shaping our city.

The proposed fixed guideway from East Kapolei to Ala Moana will become the backbone of the transit system – connecting major employment and residential centers to each other and to downtown Honolulu. This project also includes associated feeder bus services for each station and access ramps and other freeway improvements to facilitate the flow of buses that supplement the fixed guideway.

Transit System Expansion

While fixed guideway is the backbone of the transit system in the ORTP 2030, the existing bus system will continue to be an important element of public transportation. Many fixed guideway passengers are expected to access the system using City buses. Expansion of the bus system will be focused primarily in Ewa, with moderate increases in other parts of Oahu, including express bus service to rural areas. Purchasing and replacing new buses to support service increases are included in the plan.

An additional element of future transit service includes an intra-island express ferry service from Ewa to Honolulu Harbor.

Congestion Relief

The ORTP 2030 acknowledges that auto travel is, and will continue to be, a dominate travel mode and, subsequently, increases in roadway capacity will be required. This is especially true in the H-1 travel corridor and where congestion is forecast to increase significantly if new projects are not constructed. This plan provides an additional 280 lane-miles to Oahu's roadways.

As part of the ORTP 2030, new and expanded roadway projects are proposed for the Ewa area, Central Oahu, and PUC, where the majority of the residential and employment growth is projected. For the Ewa area, these projects include expansion of several roadways like the North-South Road and Kapolei Parkway; new or modified freeway interchanges in Kapolei and Makakilo; and the widening of existing roadways such as Farrington Highway, Fort Barrette Road, and Kunia Road. Examples of roadway projects in the Central Oahu area include expansion of Kamehameha Highway and H-1 between the Waiau and Waiawa Interchanges; and widening and improvements at the H-1 and H-2 Waiawa Interchange. Several capacity enhancement projects to various sections of H-1 from Pearl City to downtown Honolulu are also programmed.

H-1

BIKE LANE

Bicycle Facilities

One hallmark of a livable city is that its public spaces are actively used and the outdoors can be enjoyed. Honolulu is a great city for bicycles with its physical beauty, mild year-round climate, relatively flat coastal plain, and compact form. Enhancing the appealing qualities of Oahu can be achieved in part by integrating bicycle facilities as a key component of the transportation system. The ORTP 2030 incorporates the Oahu elements of Bike Plan Hawaii and the "Priority One" projects identified in the Honolulu Bicycle Master Plan. This provides Honolulu with an integrated network of on-road bike lanes and off-road shared-use paths to link people with their favorite destinations.

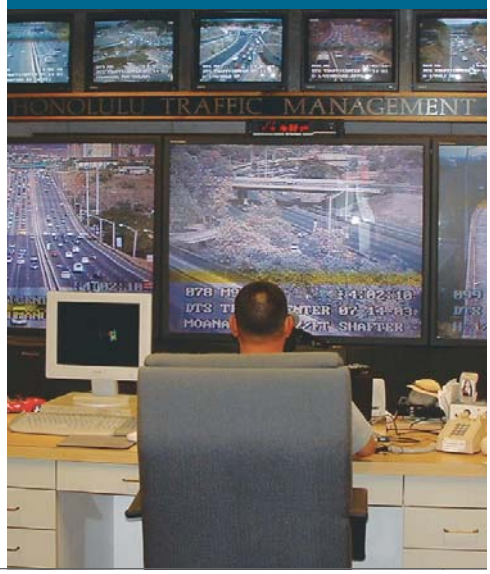
ITS

Pedestrian Facilities

The majority of us walk to get to our cars, catch a bus, and run errands on our lunch breaks. Some of us walk for exercise as well as to get to work and to shop. In past plans, pedestrian facilities were combined with bicycle facilities. We recognize that the needs of pedestrians are, in many cases, different from those of bicyclists. To address this difference, the ORTP 2030 includes the development of a pedestrian plan for Oahu.

Intelligent Transportation Systems

The ORTP 2030 contains an intelligent transportation system (ITS) line item. ITS is a collection of technologies that enable multiple agencies to work together to manage the transportation network better. ITS can include services for highways, transit services, commercial vehicle operations, and emergency service providers. ITS technologies can be used for emergency response and incident management. ITS technologies are effective in lessening the amount of time it takes to clear an accident on the freeway as well as providing travelers with information on traffic conditions and transit schedules.



OVERVIEW OF ORTP 2030 PROJECTS *(continued)*

HANDI-VAN

BUS SYSTEM

ROAD RESURFACING

TDM and TSM

Transportation Demand Management (TDM) and Transportation System Management (TSM) programs consist of measures that are designed to reduce demand and increase the efficiency of the transportation system. The TDM and TSM programs for Oahu include facilities to enhance flow, such as HOV lanes on freeways, park-and-ride lots, bus-only lanes on city streets, and even separate HOV facilities. Also included are programs to help form and maintain carpools and vanpools, as well as programs to give people incentives to rideshare.

Second Access Highways

While the coastal plains are relatively flat, Oahu's interior terrain is divided by two primary mountain ranges that can make access between communities difficult. Many of the established communities on the island have only one roadway into and out of the area. Providing a second means of access to these communities serves to increase the capacity to these areas and to provide needed emergency access. Four "second access" projects are included in the ORTP 2030 for Makakilo, Mililani Mauka, Wahiawa, and the Waianae Coast.

Operations, Maintenance, and System Preservation

The ORTP 2030 recognizes the importance of the existing and future roadways and transit systems from the perspective of operations, maintenance, and preservation. The plan includes the allocation of funding for these categories totaling $7.64 billion, or approximately half of the plan cost. This funding covers both City and State facilities.

City operations and maintenance funding includes operating the public transit system (TheBus, paratransit, the proposed fixed guideway, and the proposed commuter ferry system), and roadway system maintenance and operations. A total of approximately $5.79 billion is estimated for City operations and maintenance over the 25-year life of the plan – consisting of about $5.26 billion for transit operations and maintenance and $532 million for roadway system maintenance and operations.

Maintenance and operation of the State's existing and future highway operations and routine maintenance includes, but is not limited to, pavement repair; guardrail and shoulder improvements; lighting improvements; drainage improvements; sign upgrades and replacement; and traffic signal upgrade and retrofit. About $850 million is allocated in the plan for State maintenance and operations.

The ORTP 2030 allocates $1.0 billion, over the life of the plan, to preserving the highway system through projects including, but not limited to, bridge replacement and seismic retrofit, pavement preventative maintenance, erosion control, viaduct improvements, and road resurfacing and rehabilitation projects.

Illustrative Projects

The ORTP 2030 planning process identified many potential projects that could prove beneficial as transportation improvements for the island of Oahu; however, 2030 revenue projections could not support inclusion of these projects in the ORTP 2030 at this time. As part of the endorsement of the ORTP 2030, the OahuMPO Policy Committee identified a subset of those projects as "illustrative projects".Illustrative projects are identified in Figure 5 and Table 2.

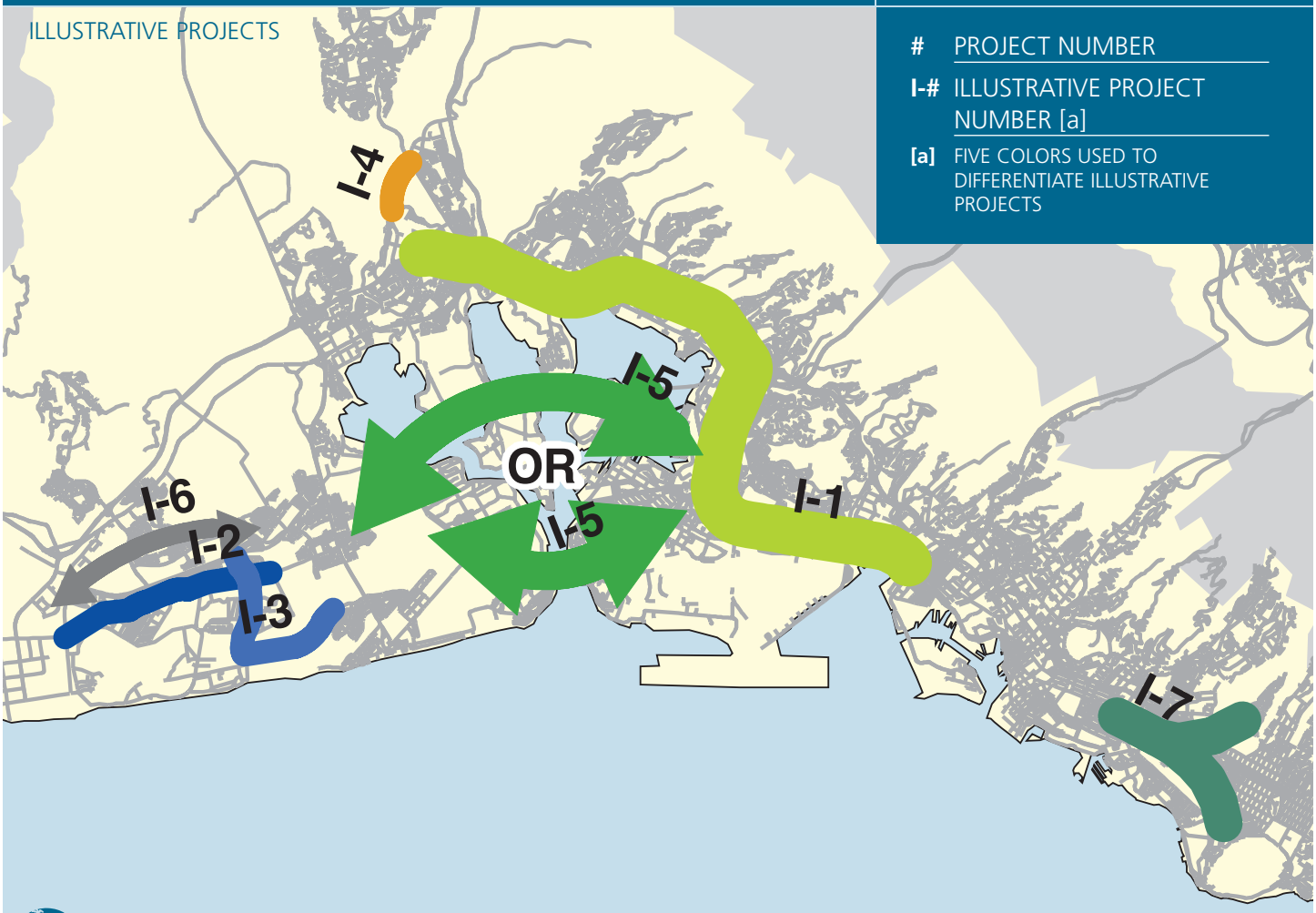
Illustrative projects are those projects that are considered high-priority for inclusion into the regional transportation plan should additional, firmly-established funding revenue sources become available. Illustrative projects are not considered to be a part of the officially endorsed regional transportation plan. Projects considered in the plan development and included on the ORTP 2030 illustrative projects list include fixed guideway segments from West Kapolei to East Kapolei and Ala Moana to Manoa/Waikiki, the concept of a Pearl Harbor crossing (tunnel or bridge), and elevated reversible high occupancy toll ("HOT") lanes within the H-1 travel corridor.

ILLUSTRATIVE PROJECTS

Illustrative projects are those projects that are considered high-priority for inclusion into the regional transportation plan should additional, firmly-established funding revenue sources become available.

FIGURE 5

ILLUSTRATIVE PROJECTS



LEGEND

#	PROJECT NUMBER
I-#	ILLUSTRATIVE PROJECT NUMBER [a]
[a]	FIVE COLORS USED TO DIFFERENTIATE ILLUSTRATIVE PROJECTS

Note: Project I-5 will provide an alternative route through the Pearl Harbor Corridor. Options include a bridge or a tunnel.

HOW THE PROJECTS WORK TOGETHER

FIGURE 6

YEAR 2005 DAILY RESIDENT PERSON TRIPS

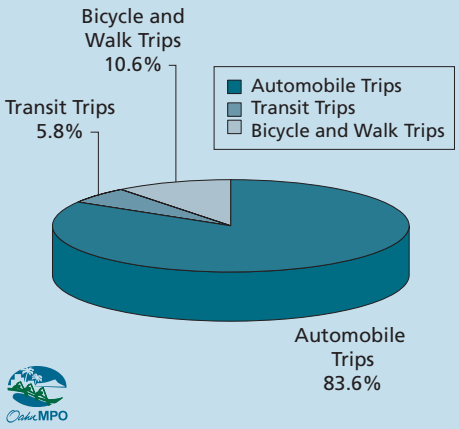


FIGURE 7

BASELINE 2030 DAILY RESIDENT PERSON TRIPS

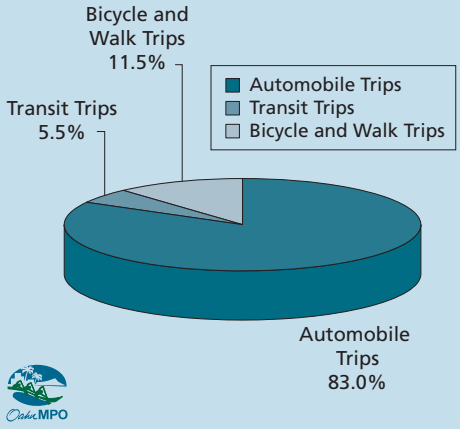
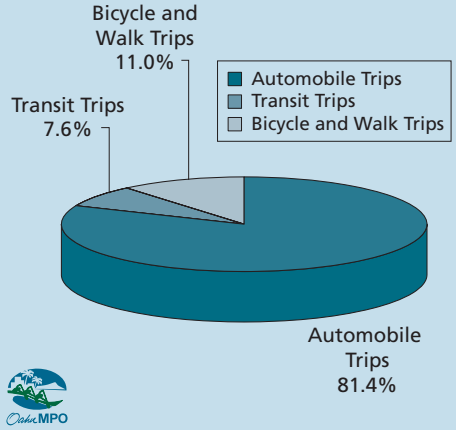


FIGURE 8

ORTP 2030 DAILY RESIDENT PERSON TRIPS



Between 2005 and 2030, we project that the number of trips people will make will increase by about 27%. This means about a fourth more people wanting to go to work, school, stores, beaches, and other places. Travel forecasting models were used to estimate how projects contained in the ORTP 2030 would collectively handle this demand. To help evaluate the quality of our future transportation system, comparisons were made between the ORTP 2030 and the following: 1) Year 2005 conditions and 2) Baseline 2030 conditions.

Comparing the Year 2005 to the ORTP 2030 conditions:

- The percentage of people making trips by auto decreases from 83.6% in 2005 to 81.4% in the ORTP 2030 (Figures 6 & 8). This decrease is offset primarily from an increase in transit trips from 5.8% to 7.6% due to the increase in transit services. This translates to 105,000 additional transit trips (with visitors) as shown in Figure 16. The percentage of people biking or walking increases slightly from 10.6% to 11%. Although the percentage of people making auto trips decreased, there is still projected to be over 540,000 additional auto trips.
- The added population growth in the ORTP 2030 will generate more travel during the day, resulting in a 22% increase in both vehicle miles traveled (VMT) and vehicles hours traveled (VHT), as seen in Figures 13 and 14, respectively. Daily vehicle hours of delay also increases 18% from 50,000 to 59,000 hours, as seen in Figure 15.
- Compared against 2005 conditions, the added transportation improvements in the ORTP 2030 are forecasted to slightly reduce the average travel time per vehicle trip from 12.3 minutes to 12.1 minutes.
- Indicators for traffic congestion during the morning peak period are somewhat poorer.
    - From an island-wide perspective, auto drivers can expect more "bottlenecks".
    - Average travel times from various areas on Oahu to downtown vary slightly between the Year 2005 and the ORTP 2030 when comparing Figure 3 with Figure 10, with the differences highlighted in Figure 11.
    - Average travel time is projected to increase from 23.8 minutes to 26.4 minutes.

Comparing the Baseline 2030 to the ORTP 2030 conditions:

- The percentage of people making trips by auto decreases from 83.0% in Baseline 2030 to 81.4% in the ORTP 2030, resulting in about 44,000 less auto trips. The percentage of people biking or walking also decreases slightly from 11.5% to 11% (Figures 7 & 8). These decreases are offset with an increase in transit trips from 5.5% to 7.6% due to the increase in transit services and reduced levels of congestion. This translates into about 72,000 additional transit trips (with visitors) as shown in Figure 16.

- By providing more roadway capacity for our projected population growth, a 5% decrease in VMT, 22% decrease in VHT, and 62% decrease in daily vehicle hours of delay are projected.
- Indicators for traffic congestion during the morning peak period are positive, suggesting that the ORTP 2030 will alleviate the substantially increased delays and travel times projected in the Baseline 2030.
  - From an island-wide perspective, auto drivers can expect fewer "bottlenecks", as can be seen in comparing Figure 2 with Figure 9.
  - Average travel times from the various areas on Oahu to downtown decrease by 13.9 minutes, from 40.3 minutes to 26.4 minutes. As seen in Figure 12, Waianae Coast and Ewa residents realize the greatest travel time savings.

FIGURE 9

LOCATIONS OF SIGNIFICANT AM PEAK HOUR CONGESTION (ORTP 2030)

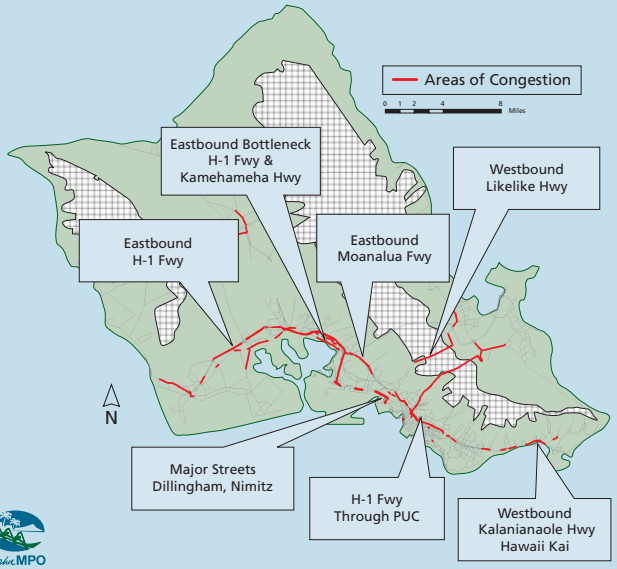


FIGURE 10

AM PEAK PERIOD TRAVEL TIME TO DOWNTOWN (ORTP 2030)

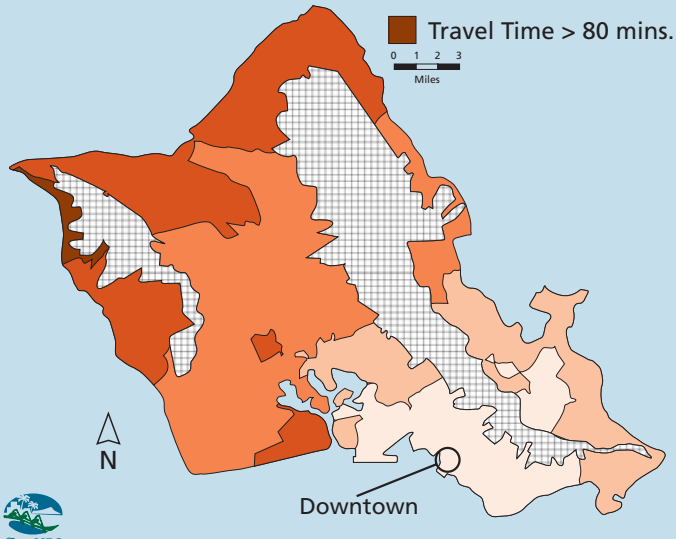


FIGURE 11

CHANGE IN AM PEAK PERIOD TRAVEL TIME TO DOWNTOWN (YEAR 2005 TO ORTP 2030)

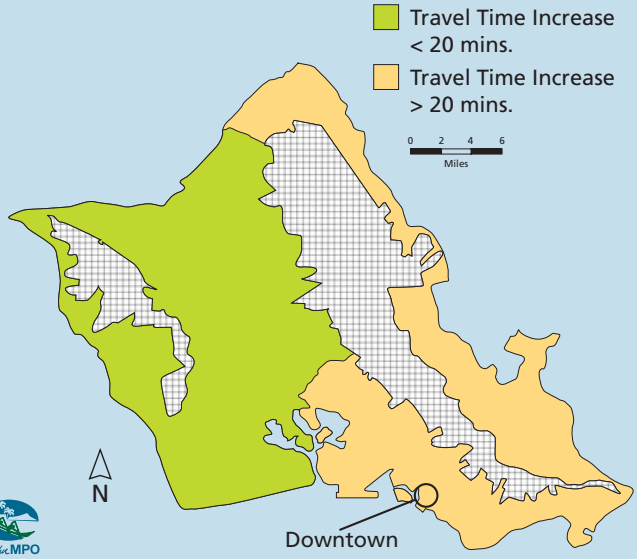
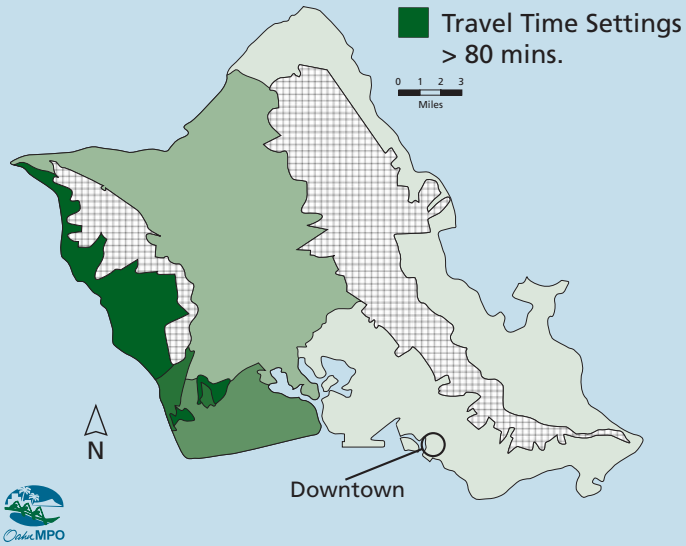


FIGURE 12

CHANGE IN AM PEAK PERIOD TRAVEL TIME TO DOWNTOWN (BASELINE 2030 TO ORTP 2030)



PAYING FOR THE PLAN

The ORTP 2030 is a financially balanced plan that optimizes projected costs with anticipated revenues. All costs are in Year 2005 dollars.

Sources of Revenue for the ORTP 2030

Primary sources of revenues used to support the surface transportation system for Oahu have been, and will continue to be, the Federal, State, and City governments. We estimate that about $15.25 billion will be available over the next 25 years for transportation on Oahu as shown in Figure 17.

The federal portion of these funds, which represents about 23% of the total, is provided through highway funds from the Federal Highway Administration (FHWA) and transit funds from the Federal Transit Administration (FTA).

The State portion, which represents about 17% of the total, comes from the Highway Special Fund and the State Capital Improvement Program (CIP). The Highway Special Fund receives its money from the State liquid fuel tax, registration fees, motor vehicle weight tax, and car rental/tour vehicle tax.

Revenues from the City & County of Honolulu will pay for about 48% of the transportation system costs from 2006 to 2030. Figure 18 identifies the various sources of City funds, including the General Fund as well as County fuel tax, County motor vehicle weight tax, and public utility franchise tax. The County's 0.5% general excise tax (GET) 15-year surcharge (beginning in 2007) to fund the fixed guideway component of the Plan is assumed.

FIGURE 13

DAILY VEHICLE MILES TRAVELED

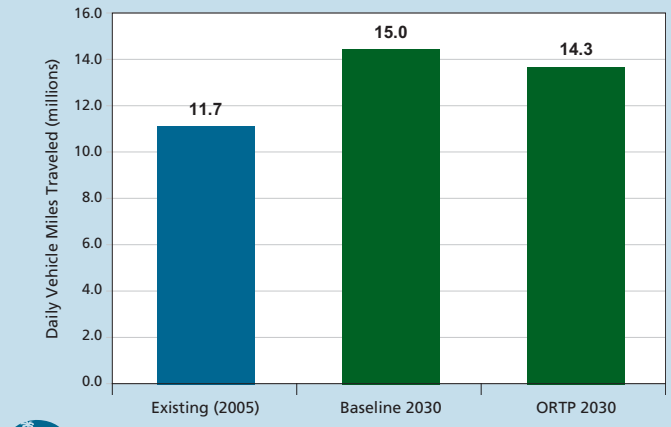


FIGURE 14

DAILY VEHICLE HOURS TRAVELED

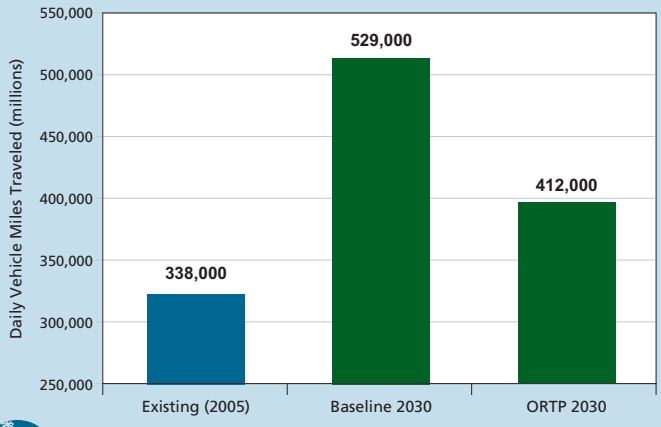


FIGURE 15

DAILY VEHICLE HOURS OF DELAY

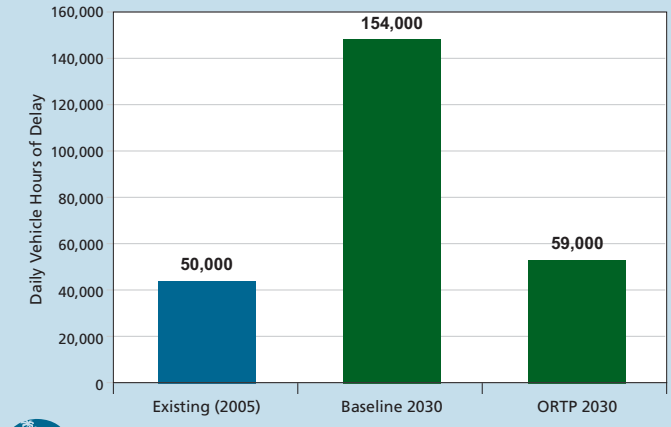
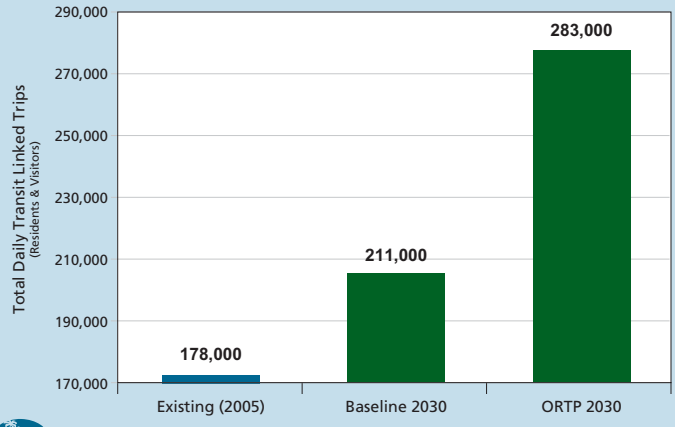


FIGURE 16

DAILY TRANSIT TRIPS (LINKED TRIPS)



The City & County of Honolulu also collects transit fares that cover 27% to 33% of the cost to operate the bus system.

For planning purposes, a portion of the plan is expected to be funded by the private sector to cover some highway projects costs and a portion of the TDM element of the ORTP 2030. Although this source is labeled "developer funding", it is not limited to impact fees and includes other options allowed by State law or County ordinances.

The assumed level of revenues from developer contributions is not intended to establish any developer funding obligations, commitments, or guidelines. Actual funding obligations and commitments will be determined through other planning efforts of the City & County of Honolulu and/or the State.

Revenue Projections

The amount of money that will be available to pay for the capital improvement projects included in the plan and the cost to operate and maintain the system over the 25-year life of the plan were projected using historical trends and future expectations.

Total revenues of approximately $15.25 billion are anticipated over the 25-year life of the plan. The $15.25 billion includes $3.34 billion in Federal funds, $2.65 billion in State funds, $7.38 billion in City & County of Honolulu funds, $1.45 billion in transit fares, and $0.43 billion in developer funding.

FIGURE 17

ESTIMATED TRANSPORTATION REVENUES: 2006-2030
(MILLIONS OF CONSTANT 2005 DOLLARS)

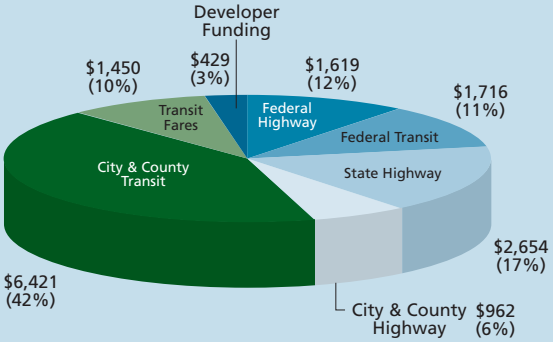


FIGURE 19

ESTIMATED PLAN COSTS: 2006-2030
(MILLIONS OF CONSTANT 2005 DOLLARS)

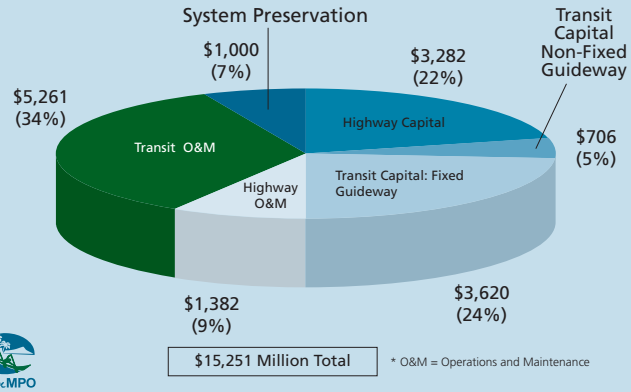
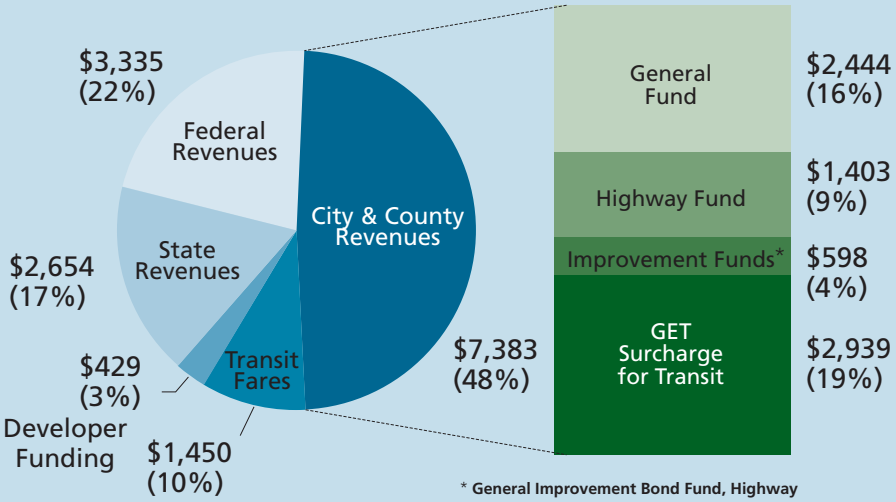


FIGURE 18

BREAKOUT OF CITY & COUNTY CONTRIBUTION TO TOTAL REVENUES: 2006-2030
(MILLIONS OF CONSTANT 2005 DOLLARS)



* **General Improvement Bond Fund, Highway Improvement Bond Fund & Capital Projects Fund**

$15,251 Million Total

Note: Individual numbers may not sum to totals due to rounding

PAYING FOR THE PLAN *(continued)*

FIGURE 20

PROJECT CAPITAL COSTS BY TYPE (MILLIONS OF CONSTANT 2005 DOLLARS)

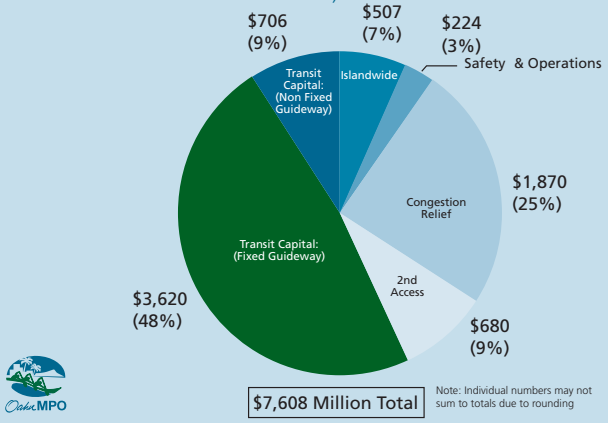
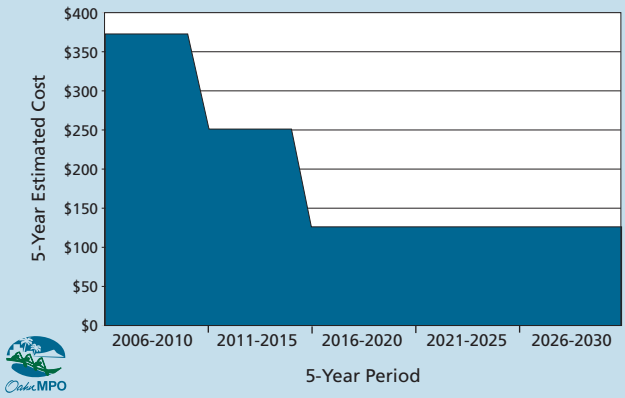


FIGURE 21

SYSTEM PRESERVATION COSTS (MILLIONS OF CONSTANT 2005 DOLLARS)



For the ORTP 2030 planning purposes, the following assumptions were made:

- Recent trends for Federal highway and transit funds allocated to Hawaii will continue.
- The City & County of Honolulu will obtain $681 million in federal funds to assist in the construction costs for the fixed guideway.
- 60% of the State's CIP funds will be spent on Oahu.
- 54% of the federal funds apportioned to the State will be spent on Oahu.

Revenue projections are used to estimate the level of transportation "supply" Oahu can reasonably afford and are based on the best available information. The primary purpose of these projections is to ensure the financial viability of the ORTP 2030 from a regional perspective. As projects move from the ORTP 2030 to implementation, funding assumptions (e.g., sources of funds, level of funding, etc.) may be modified. Generally, these modifications should not substantially affect the ORTP 2030 financial plan. Revisions to the ORTP 2030 and its financial plan can be made during its regular five-year update cycle or when an action triggers the need for such an adjustment. Amendments to the ORTP 2030 financial plan may be made if major changes are made to the funding assumptions that would affect the plan's financial viability.

Cost of the Plan

The ORTP 2030 is a financially balanced plan; the total cost for the 25-year plan is limited to $15.25 billion. The cost estimates for the plan include capital improvement projects, costs to operate and maintain the current and expanded transit system, and costs to maintain and preserve the highway system, as identified in Figure 19.

The plan provides $1.0 billion for highway system preservation. Maintenance and preservation of the transportation system is important because it provides a safe and efficient system for Oahu's roadway users. Without timely maintenance, the life of the transportation system would be shortened, leading to more expensive replacement costs as the system fails prematurely. The plan also sets aside $1.38 billion for highway operations and routine maintenance ($0.85 billion for State and $0.53 billion for the City & County of Honolulu), and $5.26 billion to operate the transit system (bus, paratransit, ferry, and fixed guideway), of which $144 million is to operate and maintain the commuter ferry.

The ORTP 2030 includes $7.61 billion in capital costs, as seen in Figure 20: $3.28 billion for highway construction; $0.71 billion to implement a ferry system, purchase new buses, and construct transit centers; and $3.62 billion to build the fixed guideway.

In order to counter some of the neglect of the past, the plan increases spending for system preservation in the early years, then reduces the amount of spending in later years back to traditional levels, as shown in Figure 21.

The financial plan for the ORTP 2030 is balanced, with projected revenues and estimated costs matched at $15.25 billion over the 25-year period of the plan.

SUMMARY

The ORTP 2030 provides a multi-prong approach to achieve our vision and address our future travel needs. Forecasted congestion is reduced and mobility options increased. Specifically:

- The H-1 travel corridor is identified as our priority corridor.
- A fixed guideway that will serve the H-1 travel corridor is a key component of the ORTP 2030.
- Capital projects that serve those who do not or choose not to drive, those who require another access to their community, and those who seek some relief from congestion are planned.
- Half of the plan dedicates funding for system preservation projects and operations and maintenance projects.

Although the ORTP 2030 provides significant improvements over the Baseline 2030, we should still expect more bottlenecks in the future and some decrease in average overall travel time to downtown Honolulu during the morning peak period when compared to 2005.

The ORTP 2030 fulfills the Transportation Services System Goal through developing and maintaining Oahu's islandwide transportation system to ensure efficient, safe, convenient, and economical movement of people and goods. The plan increases the capacity of the system, providing an efficient and convenient transit system serving many destinations across the island. The planned projects are distributed across Oahu, supporting economic development and providing funds to support system preservation.

The ORTP 2030 fulfills the Environment and Quality of Life Goal by developing and maintaining Oahu's transportation system in a manner that maintains environmental quality and community cohesiveness. The plan strives to achieve this goal by improving air quality and encouraging energy conservation through the reduction of VMT; and developing alternative modes of transportation that are environmentally friendly – including transit, pedestrian walkways, and bicycle routes – while optimizing use of transportation resources and minimizing impacts on cultural and natural resources and disruption of neighborhoods. The plan considers compatibility with the physical and social character of existing development, incorporates transportation system enhancements, and includes improvements that address public safety and emergency planning.

The ORTP 2030 fulfills the Land Use and Transportation Integration System Goal by developing and maintaining Oahu's transportation system in a manner that integrates transportation with the City's land use policies. The plan reinforces planned population distribution and land use development policies, encourages innovation, and encourages implementation of land use policies that support efficient use of transportation systems.

HONOLULU

ORTP 2030 PROJECT LIST

FARRINGTON HIGHWAY

THE ZIPPER

KAPOLEI PARKWAY EXTENSION

Each project in the ORTP 2030 is listed in Table 1 and shown on Figure 22. They are prioritized into a "Mid-Range Plan" to be implemented over the next 10 years; and a "Long-Range Plan" to be implemented over the final 15 years of the plan. Projects were placed within each time period based on anticipated funding and the following guidelines:

- Projects of different categories (e.g., island-wide, congestion relief, second access, transit) are placed in both the mid-range and long-range plans. An exception is the placement of all safety projects into the mid-range plan.
- Projects on the FYs 2004-2006 TIP are placed in the mid-range plan.
- Basic elements of projects in the Ewa/Kapolei area are placed in the mid-range plan.

In addition, each project has been given a City and County of Honolulu ("C") or State of Hawaii ("S") designation. While the ORTP 2030 identifies projects as falling under the jurisdiction of either the City or the State, it is done so for reasons of financially balancing the project revenues with the order-of-magnitude cost estimates. This designation does not preclude an entity other than the City or the State from constructing the roadway partially or in its entirety.

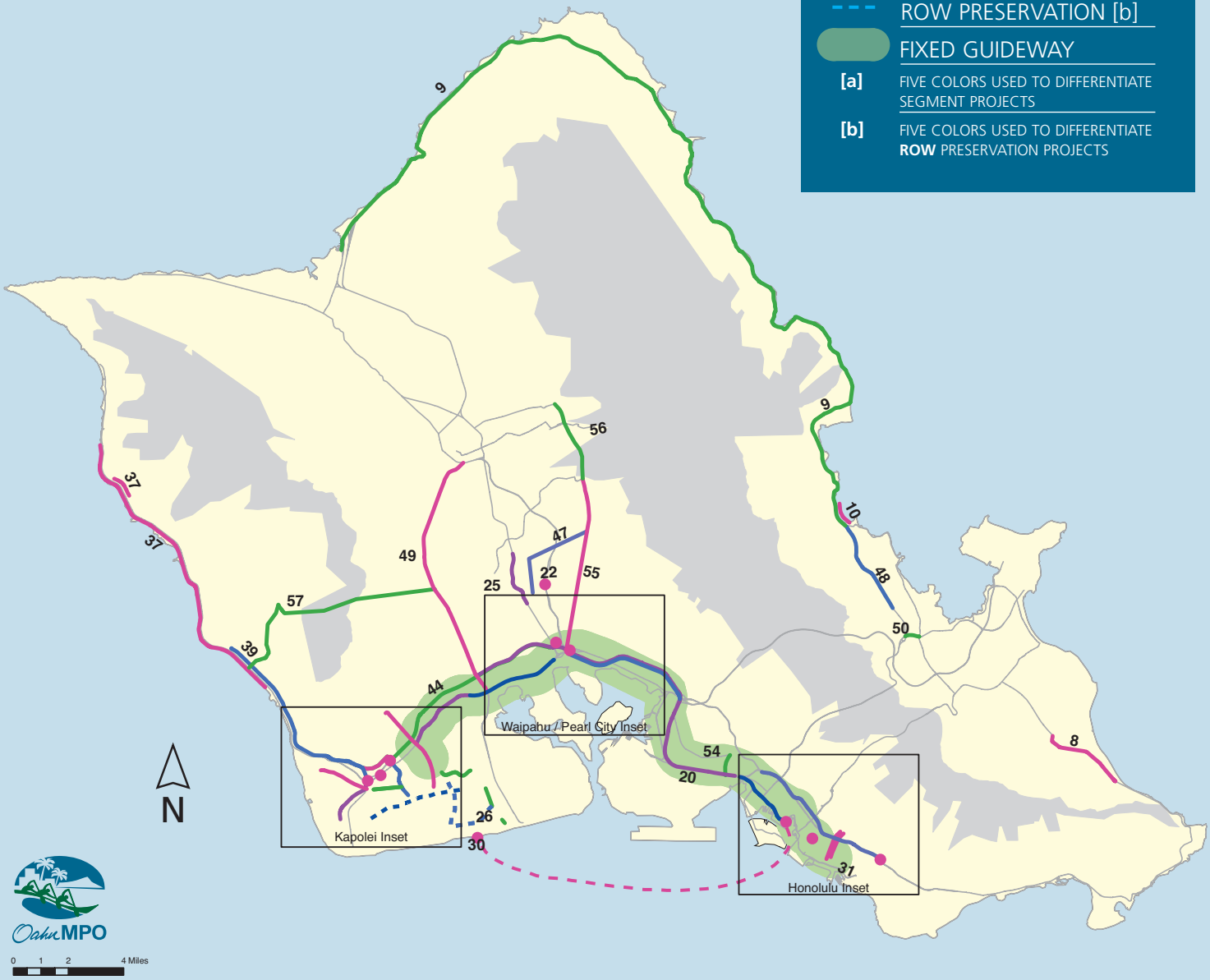
PETITIONER'S EXHIBIT 65

FIGURE 22

ORTP 2030 PROJECT LOCATION MAP

LEGEND

- # PROJECT NUMBER
- SPOT PROJECTS
- SEGMENT PROJECTS [a]
- FERRY
- ROW PRESERVATION [b]
- FIXED GUIDEWAY
- [a] FIVE COLORS USED TO DIFFERENTIATE SEGMENT PROJECTS
- [b] FIVE COLORS USED TO DIFFERENTIATE **ROW** PRESERVATION PROJECTS



Disclaimer: The location of second-access projects will be determined by the implementing agency as part of the planning and design stages of the project implementation.

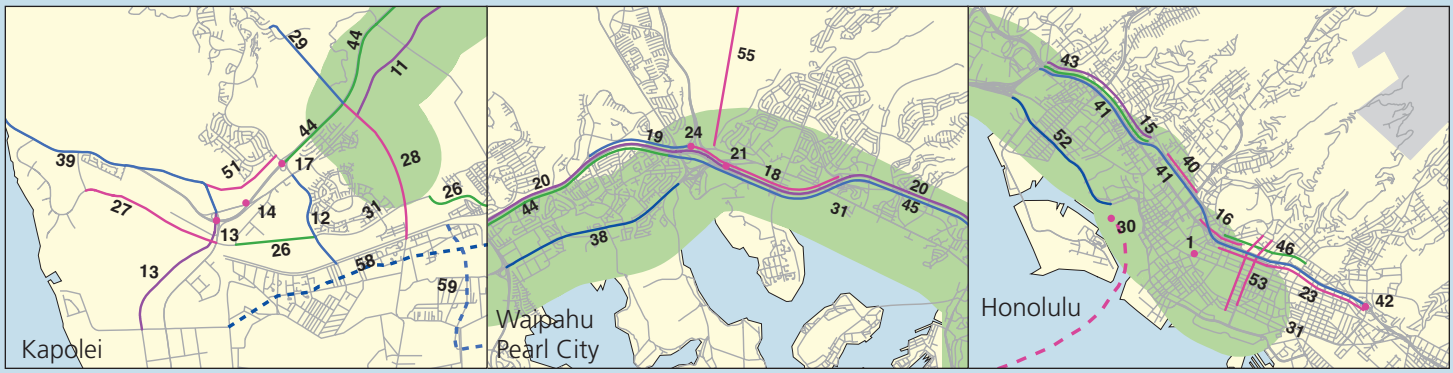


TABLE 1 OAHU REGIONAL TRANSPORTATION PLAN 2030

PROJECT NO.	CITY/ STATE	FACILITY/PROJECT TITLE	PROJECT DESCRIPTION	ESTIMATED COST (Millions of Year 2005 $)
ISLANDWIDE PROJECTS - 2006 TO 2015				
1	C/S*	Alapai Transit Center & Joint Transportation Management Center	Construct a multi-use facility at Alapai Street to include a transit center, City-State transportation management center, and other operations.	$30.0
2	C/S*	Bike Plan Hawaii - Oahu	Implement Oahu elements of the State of Hawaii's Bike Plan Hawaii. (Bike Plan Hawaii includes only "Priority One" projects as identified in the Honolulu Bicycle Master Plan.)	$40.6 of $101.6 total in 1st 10 years
3	C/S*	Enhancement Projects	Implement enhancement projects, including, but not limited to, projects from the Transportation Enhancement Program for Oahu. Includes development of a pedestrian plan for Oahu.	$20.0 of $50.0 total in 1st 10 years
4	C/S*	Intelligent Transportation Systems (ITS)	Implement ITS projects including, but not limited to, those identified in the Oahu Regional ITS Architecture.	$60.0 of $150.0 total in 1st 10 years
5	S	Rockfall Protection, Various Locations	Install rockfall protection or mitigation measures along various state highways at various locations.	$22.5
6	C/S*	Transportation Demand Management (TDM) Program	Develop an aggressive TDM program that could include, but is not limited to: 1. Free real-time online carpool matching, 2. Outreach promotion and marketing of alternative transportation, 3. Emergency ride home program, 4. Major special events, 5. Employer based commuter programs, 6. Emerging and innovative strategies (i.e., car sharing).	$62.9 of $152.9 total in 1st 10 years
7	S	Van Pool Program	Continue implementation and expansion of the State's Van Pool Program.	Included as part of project # 6
SAFETY & OPERATIONAL IMPROVEMENT PROJECTS - 2006 TO 2015				
8	S	Kalanianaole Highway, Safety & Operational Improvements, Olomana Golf Course to Waimanalo Beach Park	Construct safety and operational improvements along Kalanianaole Highway between the Olomana Golf Course and Waimanalo Beach Park. Specific safety and operational improvements include construction of turning lanes, sidewalks, wheelchair ramps, bike paths or bike lanes, traffic signal upgrades, utility relocation, and drainage improvements.	$19.7
9	S	Kamehameha Highway, Safety Improvements, Haleiwa to Kahaluu	Construct safety improvements along Kamehameha Highway, from Haleiwa to Kahaluu. Safety improvements include turn lanes, guardrails, signage, crosswalks, etc. to improve safety. Widening of Kamehameha Highway will only be in areas where needed for storage/turn lanes safety improvements.	$115.9
10	S	Kamehameha Highway, Safety & Operational Improvements, Kaalaea Stream to Hygienic Store	Construct safety and operational improvements along Kamehameha Highway, between Kaalaea Stream and Hygienic Store. Safety and operational improvements include passing and turning lanes, modification of signals, installation of signs, flashers, and other warning devices. This project also includes replacement of Kaalaea Stream Bridge and Haiamoa Stream Bridge with structures that meet current design standards.	$18.9
CONGESTION RELIEF PROJECTS - 2006 TO 2015				
11	C	Farrington Highway, Widening, Golf Course Road to west of Fort Weaver Road	Widen Farrington Highway from 2 to 4 lanes, from Golf Course Road to just west of Fort Weaver Road.	$36.6
12	C	Fort Barrette Road, Widening, Farrington Highway to Franklin D. Roosevelt Avenue	Widen Fort Barrette Road from 2 to 4 lanes, from Farrington Highway to Franklin D Roosevelt Avenue.	$24.9
13	C	Hanua Street, Extension, Farrington Highway to Malakole Street; Interstate Route H-1, New On- & Off-Ramps, Palailai Interchange	**Hanua Street:** • Extend Hanua Street from Malakole Street to Farrington Highway. This new 4-lane roadway will provide access to Kalaeloa Harbor. **Interstate Route H-1, Palailai Interchange:** • Construct new on- and off-ramps at Interstate Route H-1 Palailai Interchange to Hanua Street extension.	$61.1
14	S	Interstate Route H-1, New Interchange, Kapolei Interchange	Construct new Interstate Route H-1 Kapolei Interchange for Kapolei between the Palailai Interchange and Makakilo Interchange.	$45.5
15	S	Interstate Route H-1, Widening, Middle Street to Vineyard Boulevard	Widen the Interstate Route H-1 by 1 lane, in the eastbound direction, from Middle Street to Vineyard Boulevard, as identified below: • From 2 to 3 lanes from Middle Street to Likelike Highway off-ramp • From 3 to 4 lanes from Likelike Highway off-ramp to Vineyard Boulevard This project also includes the widening of: • Gulick Avenue overpass to allow 5 lanes to pass under it • Kalihi Interchange overcrossings to allow 4 lanes to pass under it	$34.8
16	S	Interstate Route H-1, Operational Improvements, Lunalilo Street to Vineyard Boulevard	Modify the weaving movements on the Interstate Route H-1, in the westbound direction, between the Lunalilo Street on-ramp and the Vineyard Boulevard off-ramp.	$24.3

TABLE 1 OAHU REGIONAL TRANSPORTATION PLAN 2030

PROJECT NO.	CITY/ STATE	FACILITY/PROJECT TITLE	PROJECT DESCRIPTION	ESTIMATED COST (Millions of Year 2005 $)
CONGESTION RELIEF PROJECTS - 2006 TO 2015 *(continued)*				
17	S	Interstate Route H-1, New On- & Off-Ramps, Makakilo Interchange	Construct a new eastbound off-ramp and a new westbound on-ramp to the Interstate Route H-1 at the Makakilo Interchange.	$9.9
18	S	Interstate Route H-1, Widening, Waiau Interchange to Waiawa Interchange	Widen Interstate Route H-1 in the westbound direction by 1 lane from the Waiau Interchange to the Waiawa Interchange.	$137.5
19	S	Interstate Route H-1, Widening, Waiawa Interchange	Widen the Interstate Route H-1 by 1 lane, in the westbound direction, through the Waiawa Interchange. This project will begin in the vicinity of the Waiawa Interchange and end at the Paiwa Interchange. • From 2 to 3 lanes in AM peak • From 4 to 5 lanes in PM peak	$6.9
20	S	Interstate Route H-1, Zipper Lane (PM), Keehi Interchange to Kunia Interchange	Construct a Zipper lane on the Interstate Route H-1, in the westbound direction, from Keehi Interchange to Kunia Interchange. This project would be in use during the PM peak.	$19.9
21	S	Interstate Route H-1, Widening, Waipahu Off-Ramp	Widen the Interstate Route H-1 Waipahu Street off-ramp from 1 to 2 lanes, in the westbound direction, at the Waiawa Interchange.	$11.7
22	S	Interstate Route H-2, Widening, Waipio Interchange	Widen both on- and off-ramps on Interstate Route H-2, at the Waipio Interchange. This project includes the widening of the Ka Uka Boulevard overpass and intersection improvements to facilitate movement to and from the on- and off-ramps.	$20.7
23	S	Interstate Route H-1, Operational Improvements, Ward Avenue On-Ramp to University Avenue Interchange	Improve traffic flow on the Interstate Route H-1, in the eastbound direction, from the Ward Avenue on-ramp to the University Avenue Interchange through operational improvements.	$13.7
24	S	Interstate Routes H-1 & H-2, Operational Improvements, Waiawa Interchange	Modify the Interstate Routes H-1 and H-2 Waiawa Interchange, to improve merging characteristics through operational improvements (e.g., additional transition lanes).	$45.5
25	S	Kamehameha Highway, Widening, Lanikuhana Avenue to Ka Uka Boulevard	Widen Kamehameha Highway from a 3-lane to a 4-lane divided facility between Lanikuhana Avenue and Ka Uka Boulevard. This project includes shoulders for bicycles and disabled vehicles, bridge crossing replacement, bikeways, etc.	$78.9
26	C	Kapolei Parkway, Extension, Kamokila Boulevard to Papipi Road	Extend the existing 4-lane Kapolei Parkway by constructing the segments in each of the following areas: • Kamokila Boulevard to Fort Barrette Road • Ewa Village boundary to Renton Road • Geiger Road to Papipi Road	$78.9
27	C	Kapolei Parkway, Extension & Widening, Aliinui Drive to Kalaeloa Boulevard	Extend the existing 4-lane Kapolei Parkway, from Aliinui Drive to Hanua Street. This project includes widening of Kapolei Parkway from 4 to 6 lanes from Hanua Street to Kalaeloa Boulevard.	$46.9
28	S	North-South Road, Widening & Extension, Interstate Route H-1 to Franklin D Roosevelt Avenue	Widen and extend North-South Road as follows: • From 3 to 6 lanes from Kapolei Parkway to Interstate Route H-1 • Extend from Kapolei Parkway to Franklin D Roosevelt Avenue (6 lanes)	$35.3
SECOND ACCESS PROJECTS - 2006 TO 2015				
29	C	Makakilo Drive, Second Access, Makakilo Drive to North-South Road/Interstate Route H-1 Interchange	Extend Makakilo Drive (vicinity Pueonani Street) south to the Interstate Route H-1 Freeway Interchange as 4-lane roadway, connecting Makakilo Drive to North-South Road.	$32.8
TRANSIT PROJECTS - 2006 TO 2015				
30	C	Ferry, Intra-Island Express Commuter, in the vicinity of Ocean Pointe Marina to Honolulu Harbor	Implement intra-island passenger ferry in the vicinity of the Ocean Pointe Marina in Ewa and Honolulu Harbor.	$23.2
31	C	Fixed Guideway, East Kapolei to Ala Moana	Plan, design, and construct a fixed guideway system between East Kapolei and Ala Moana. This project includes intermodal connections with TheBus system to provide feeder services to fixed guideway stations. Note that the alignment, system technology, and location of transit stations may be refined during the preliminary engineering, Environmental Impact Statement and subsequent processes.	$2,644.3 of $3,620.3 in 1st 10 years
32	C	TheBus Service, Expansion, Islandwide	Expand the bus service through increase of capacity of the existing system to accommodate population growth. Expanded service will be ADA-compliant. This includes: • Expansion to and within Ewa, Kapolei, and Central Oahu • mplementation of the Hub and Spoke bus system with transit centers and circuitous routes • Expansion through increase of Express service to the North Shore, Waianae, and Windward Oahu	$199.3 of $606.5 total in 1st 10 years

TABLE 1 OAHU REGIONAL TRANSPORTATION PLAN 2030

MID-RANGE PLAN (2006 TO 2015)

LONG-RANGE PLAN (2016 TO 2030)

PROJECT NO.	CITY/ STATE	FACILITY/PROJECT TITLE	PROJECT DESCRIPTION	ESTIMATED COST (Millions of Year 2005 $)
TRANSIT PROJECTS - 2006 TO 2015 *(continued)*				
33	C	Transit Centers, Various Locations	Construct transit centers at various locations islandwide to support the Fixed Guideway and TheBus systems.	$49.1 of $76.7 total in 1st 10 years
OPERATIONS, MAINTENANCE & SYSTEM PRESERVATION - 2006 TO 2015				
34	C	City Operations and Maintenance (O&M)	Maintain and operate the City's existing and future roadway, transit and paratransit operations and routine maintenance. Includes, but is not limited to, operation of the transit system (including bus, paratransit, fixed guideway, and ferry), resurfacing, guardrail and shoulder improvements, lighting improvements, drainage improvements, sign upgrades and replacement, etc.	$1,918.3 in 1st 10 years ($1,690.3 transit O&M, $228 roadway O&M)
35	S	State Operations and Maintenance	Maintain and operate the State's existing and future highway operations and routine maintenance. Includes, but is not limited to, pavement repair, guardrail and shoulder improvements, lighting improvements, drainage improvements, sign upgrades and replacement, traffic signal upgrade and retrofit, etc.	$340 in 1st 10 years
36	S	System Preservation	Preserve the highway system through projects including, but not limited to, bridge replacement and seismic retrofit, pavement preventative maintenance, resurfacing and rehabilitation, etc.	$625 in 1st 10 years
COST SUBTOTALS: MID-RANGE PLAN (2006 TO 2015)			CATAGORIES	SUBTOTALS
			Islandwide Projects	$236.0
			Safety & Operational Improvement Projects	$154.5
			Congestion Relief Projects	$733.0
			Second Access Projects	$32.8
			Transit Projects	$2,915.9
			Operations, Maintenance, & System Preservation	$2,883.3
			All Categories	**$6,955.5**
SUBTOTALS BY JURISDICTION				
			City & County of Honolulu Share of Project Costs *	$5,220.8
			State of Hawaii Share of Project Costs *	$1,734.7
			Total: All Shares	**$6,955.5**
ISLANDWIDE PROJECTS - 2016 TO 2030				
2	C/S*	Bike Plan Hawaii - Oahu	See description in Mid-Range Plan	$61.0 in 2nd 15 years
3	C/S*	Enhancement Projects	See description in Mid-Range Plan	$30.0 in 2nd 15 years
4	C/S*	Intelligent Transportation Systems	See description in Mid-Range Plan	$90.0 in 2nd 15 years
6	C/S*	Transportation Demand Management Program	See description in Mid-Range Plan	$90.0 in 2nd 15 years
SAFETY & OPERATIONAL IMPROVEMENT PROJECTS - 2016 TO 2030				
37	S	Farrington Highway, Safety Improvements, Makua Valley Road to Aliinui Drive	Construct safety improvements on Farrington Highway along the Waianae Coast, from Makua Valley Road (Kaena Point) to Aliinui Drive (Kahe Point). This project includes realignment around Makaha Beach Park, between Makau Street and Water Street.	$69.7
CONGESTION RELIEF PROJECTS - 2016 TO 2030				
38	S	Farrington Highway, Widening, west of Fort Weaver Road to Waiawa Interchange	Widen Farrington Highway from Kunia to Waiawa by 1 lane in each direction, from west of Fort Weaver Road to Waiawa Interchange.	$67.1
39	S	Farrington Highway, Widening, Hakimo Road to Kalaeloa Boulevard	Widen Farrington Highway from 4 to 6 lanes, from Hakimo Road to Kalaeloa Boulevard, including intersection of Lualualei Naval Road.	$108.4
40	S	Interstate Route H-1, Widening, Liliha Street to Pali Highway	Widen the Interstate Route H-1 by 1 lane, from 3 to 4 lanes in the eastbound direction, from the Liliha Street on-ramp to Pali Highway off-ramp.	$3.4
41	S	Interstate Route H-1, On- & Off-Ramp Modifications, Various Locations	Modify and/or close various on- and off- ramps on the Interstate Route H-1 from Middle Street to University Avenue. This project includes modification of auxiliary lanes at various exits and other operational changes to Interstate Route H-1. The identification of the precise improvements to be made will require a separate detailed corridor study.	$60.0
42	S	Interstate Route H-1, On- & Off-Ramp Modifications, University Avenue Interchange	Modify on- and off-ramps at the University Avenue Interchange on Interstate Route H-1. This project includes the construction of new ramps to allow all movements, safety improvements, including the closure of the eastbound on-ramp at University Avenue Interchange to Interstate Route H-1 and the construction of a new makai-bound off-ramp to University Avenue from Interstate Route H-1.	$24.0
43	S	Interstate Route H-1, Widening, Vineyard Boulevard to Middle Street	Widen the Interstate Route H-1 by 1 lane in the westbound direction, from Vineyard Boulevard to Middle Street.	$60.0

TABLE 1 OAHU REGIONAL TRANSPORTATION PLAN 2030

PROJECT NO.	CITY/ STATE	FACILITY/PROJECT TITLE	PROJECT DESCRIPTION	ESTIMATED COST (Millions of Year 2005 $)
CONGESTION RELIEF PROJECTS - 2016 TO 2030				
44	S	Interstate Route H-1, HOV Lanes, Waiawa Interchange to Makakilo Interchange	Construct 2 new lanes in the freeway median for HOV use, 1 in the westbound direction and 1 in the eastbound direction, on Interstate Route H-1, from the Waiawa Interchange to the Makakilo Interchange.	$52.5
45	S	Interstate Route H-1, Widening, Waiawa Interchange to Halawa Interchange	Widen the Interstate Route H-1 by 1 lane in the eastbound direction, from the Waiawa Interchange to the Halawa Interchange.	$251.3
46	S	Interstate Route H-1, Widening, Ward Avenue to Punahou Street	Widen the existing Interstate Route H-1 by 1 lane in the eastbound direction, from Ward Avenue to Punahou Street.	$24.3
47	S	Interstate Route H-2, New Interchange, Pineapple Road Overpass	Construct a new full-service freeway interchange on Interstate Route H-2, between Meheula Parkway and Ka Uka Boulevard, to accommodate future developments in Central Oahu. This project includes the widening of the existing Pineapple Road Overpass from 2 lanes to 4 lanes; and addition of new on- and off-ramps to and from Interstate Route H-2 at Pineapple Road Overpass.	$50.0
48	S	Kahekili Highway, Widening, Kamehameha Highway to Haiku Road	Widen Kahekili Highway from 2 to 4 lanes, from Kamehameha Highway to Haiku Road. This project also includes the following improvements: • Contraflow in existing right-of-way between Hui Iwa Street and Haiku Road • Intersection improvements at Hui Iwa Street and Kamehameha Highway	$30.0
49	S	Kunia Road, Widening and Interchange Improvement, Wilikina Drive to Farrington Highway	Widen Kunia Road as follows: • From 2 to 4 lanes, from Wilikina Drive to Anonui Street. • From 2 to 4 lanes, Anonui Street to Kupuna Loop. • From 4 to 6 lanes, Kupuna Loop to Farrington Highway. • Add 1 lane eastbound loop on-ramp at Kunia Road & Interstate Route H-1.	$116.3
50	S	Likelike Highway, Widening, Kamehameha Highway to Kahekili Highway	Widen Likelike Highway from 4 to 6 lanes, from Kamehameha Highway to Kahekili Highway.	$14.6
51	C	Makakilo Mauka Frontage Road, New Roadway, Kalaeloa Boulevard to Makakilo Drive	Construct a new 2-lane Makakilo Mauka Frontage Road, mauka of Interstate Route H-1, from Kalaeloa Boulevard to Makakilo Drive.	$11.1
52	S	Nimitz Highway, High Occupancy Vehicle (HOV) Flyover, Keehi Interchange to Pacific Street	Construct a new 2-lane elevated and reversible HOV flyover above Nimitz Highway, from the Keehi Interchange to Pacific Street. This project includes the removal of the existing eastbound contraflow lane in the AM peak and restoration of all turning movements on the at-grade portion of Nimitz highway.	$250.0
53	C	Piikoi-Pensacola Couplet Reversal	Reverse the direction of the existing one-way Piikoi Street and Pensacola Street couplet.	$4.2
54	C	Puuloa Road, Widening, Pukuloa Road to Nimitz Highway	Widen Puuloa Road, from Pukuloa Road to Nimitz Highway: • From 3 lanes (1 lane southbound and 2 lane northbound) to 5 lanes (2 lanes-southbound and 3 lanes northbound), from Pukuloa Road to Kamehameha Highway.	$10.0
SECOND ACCESS PROJECTS - 2016 TO 2030				
55	C	Central Mauka Road, Second Access, Mililani Mauka to Waiawa	Construct Central Mauka Road, a new 4-lane road from Mililani Mauka to Waiawa. Road connects Meheula Parkway to Kamehameha Highway in Pearl City; parallel to & mauka of Interstate Route H-2. The new 4-lane north-south road includes connections to Interstate Route H-2 interchanges.	$160.0
56	C	Wahiawa, Second Access, Whitmore Avenue to Meheula Parkway	Construct a new 2-lane second access road between Whitmore Village and Wahiawa, from Whitmore Avenue to California Avenue. Continue the new 2-lane second access road to Mililani Mauka, from California Avenue to Meheula Parkway.	$64.4
57	S	Waianae, Second Access, Farrington Highway to Kunia Road	Construct a new 2-lane second access road to Waianae from Farrington Highway in the vicinity of Maili, over the Waianae Mountain Range, to Kunia Road.	$423.0
TRANSIT PROJECTS - 2016 TO 2030				
31	C	Fixed Guideway, East Kapolei to Ala Moana	Plan, design, and construct a fixed guideway system between East Kapolei and Ala Moana. This project includes intermodal connections with TheBus system to provide feeder services to fixed guideway stations. Note that the alignment, system technology, and location of transit stations may be refined during the preliminary engineering, Environmental Impact Statement and subsequent processes.	$976.0
32	C	TheBus Service, Expansion, Islandwide	See description in Mid-Range Plan	$407.2 in 2nd 15 years
33	C	Transit Centers, Various Locations	See description in Mid-Range Plan	$27.6 in 2nd 15 years

TABLE 1 OAHU REGIONAL TRANSPORTATION PLAN 2030

LONG-RANGE PLAN (2016 TO 2030)

RIGHT-OF-WAY PRESERVATION

PROJECT NO.	CITY/ STATE	FACILITY/PROJECT TITLE	PROJECT DESCRIPTION	ESTIMATED COST (Millions of Year 2005 $)
OPERATIONS, MAINTENANCE & SYSTEM PRESERVATION - 2016 TO 2030				
34	C	City Operations and Maintenance (O&M)	See description in Mid-Range Plan	$3,874.3 in 2nd 15 years ($3,570.3 transit O&M, $304 roadway O&M)
35	S	State Operations and Maintenance	See description in Mid-Range Plan	$510 in 2nd 15 years
36	S	System Preservation	See description in Mid-Range Plan	$375 in 2nd 15 years
COST SUBTOTALS: LONG-RANGE PLAN (2016 TO 2030)			CATAGORIES	SUBTOTALS
			Islandwide Projects	$271.0
			Safety & Operational Improvement Projects	$69.7
			Congestion Relief Projects	$1,137.2
			Second Access Projects	$647.4
			Transit Projects	$1,410.8
			Operations, Maintenance, & System Preservation	$4,759.3
			All Categories	**$8,295.4**
SUBTOTALS BY JURISDICTION				
			City & County of Honolulu Share of Project Costs *	$5,670.3
			State of Hawaii Share of Project Costs *	$2,625.1
			Total: All Shares	**$8,295.4**
CONGESTION RELIEF PROJECTS - ROW PRESERVATION				
58	C	Kalaeloa East-West Spine Road, New Roadway, Kalaeloa Boulevard to Geiger Road	Establish and preserve right-of-way (ROW) for Kalaeloa East-West Spine Road (new 4-lane east-west spine road within Kalaeloa by realigning and connecting portions of the existing Saratoga Avenue from Kalaeloa Boulevard in the west and to Geiger Road in the east.)	n/a
59	C	Keoneula Boulevard,	Establish and preserve right-of-way (ROW) for Keoneula Boulevard Extension	n/a
ORTP 2030 COST TOTALS: 2006-2030			CATAGORIES	SUBTOTALS
			Islandwide Projects	$507.0
			Safety & Operational Improvement Projects	$224.2
			Congestion Relief Projects	$1,870.2
			Second Access Projects	$680.2
			Transit Projects	$4,326.7
			Operations, Maintenance, & System Preservation	$7,642.6
			All Categories	**$15,250.9**
SUBTOTALS BY JURISDICTION				
			City & County of Honolulu Share of Project Costs *	$10,891.1
			State of Hawaii Share of Project Costs *	$4,359.8
			Total: All Shares	**$15,250.9**

Note: * Costs for projects shared by City and State (c/s) allocated equally between the two jurisdictions. The designation is done for reasons of financially balancing projected revenues with the order of magnitude cost estimates.

TABLE 2 **OAHU 2030 ILLUSTRATIVE PROJECTS**

PROJECT NO.	FACILITY/PROJECT TITLE	PROJECT DESCRIPTION	ESTIMATED CAPITAL COST (Millions of Year 2005 $)
CONGESTION RELIEF PROJECTS			
I-1	H-1 Corridor, Reversible Highway, Waiawa Interchange to Keehi Interchange	Construct a new, elevated, reversible two-lane highway from west of the Waiawa Interchange to the Keehi Interchange. The new facility could be used for high occupancy vehicles; and a toll could be charged.	$2,500
I-2	Kalaeloa East-West Spine Road, New Roadway, Kalaeloa Boulevard to Geiger Road	Construct a new 4-lane east-west spine road within Kalaeloa by realigning and connecting portions of the existing Saratoga Avenue from Kalaeloa Boulevard in the west and to Geiger Road in the east.	$110
I-3	Keoneula Boulevard, Extension, Kapolei Parkway to Franklin D. Roosevelt Avenue	Extend Keoneula Boulevard from Kapolei Parkway to Franklin D. Roosevelt Avenue.	$85
I-4	Paiwa Street, Extension, Ka Uka Boulevard to Lumiauau Street	Extend Paiwa Street from north of Lumiauau Street, to the intersection of Kamehameha Highway and Ka Uka Boulevard.	$15
I-5	Pearl Harbor Corridor	Construct an alternative route through the Pearl Harbor corridor to provide direct connection between Honolulu and the Ewa Plain. A new tunnel beneath the mouth of Pearl Harbor and a seriesof bridges spanning Pearl Harbor are potential options for this route. This project could operate as a toll facility.	$7,000
I-6	Fixed Guideway, West Kapolei to East Kapolei	Plan, design, and construct a fixed guideway system between West Kapolei to East Kapolei	$500
I-7	Fixed Guideway, Ala Moana to Manoa/Waikiki	Plan, design, and construct a fixed guideway system between Ala Moana and Manoa/Waikiki	$1,150
		Total (with Pearl Harbor Corridor as Tunnel)	**$11,360**

Additional copies of this document can be
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www.OahuMPO.org/ortp
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PETITIONER'S EXHIBIT 66

LINDA LINGLE
GOVERNOR

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DEPARTMENT OF TRANSPORTATION
869 PUNCHBOWL STREET
HONOLULU, HAWAII 96813-5097

IN REPLY REFER TO:

HWY-P
2.6724

September 23, 2010

Mr. Jon Wallenstrom
President
Forest City Hawaii
5173 Nimitz Road
Honolulu, Hawaii 96818

Dear Mr. Wallenstrom:

Subject: Kamakana Villages at Keahuolu, Revised Traffic Impact Assessment Report

As discussed with you today with our Department of Transportation (DOT) and State Office of Planning Staff, we received your revised Traffic Impact Analysis Report (TIAR) for Kamakana Villages of Keahuolu, submitted on August 10, 2010, and are near completion in reviewing your study. We appreciate the thoroughness of your traffic review and the work of your team. We also appreciate the collaborative effort your team has made to work with the DOT staff over the past year to address up front the major issues we may have raised.

Based on our initial review of your TIAR, we are in agreement with the general mitigation concepts being proposed including the future study area for both State and City facilities. With respect to State roadways, your proposed mitigation measures are at least equally as effective as the mitigation measure outlined in the acceptance letter of the HHFCD Final EIS.

Currently, we are reviewing the application of your cost assumptions to confirm that your cost structure and design details are consistent with other projects we have done in the area and conform to acceptable traffic standards to the DOT.

Very truly yours,

BRENNON T. MORIOKA, Ph.D., P.E.
Director of Transportation

RECEIVED
SEP 24 2010
Initial:

FORESTCITY

Race Randle

Development Manager, Forest City Hawai'i

Mr. Randle is currently in charge of managing Forest City Hawai'i's non-military residential development efforts. Led by Forest City's ongoing partnership with the Navy to redevelop 6,500 homes, Forest City is actively pursuing development in the islands. Currently, Forest City is in partnership with the State of Hawai'i Housing Finance and Development Corporation to develop an affordable community on 272 acres of property in Kona, Hawai'i. He is currently managing the efforts to plan, design, entitle, and develop the 2,330-home master planned mixed-use and mixed-income housing village. As part of Forest City's mission of sustainability, the community is being designed to meet LEED Neighborhood certification and to utilize a high degree of renewable energy. Mr. Randle also manages Forest City's non-military renewable Energy efforts, with projects underway on Oahu. In 2009, Mr. Randle and his team received the Solar America Showcase Award from DOE to assist with the efforts.

Prior to working with Forest City, Mr. Randle was a project manager with Castle & Cooke Hawai'i – one of the largest private landowners in the State of Hawai'i. In this position, he was primarily responsible for design, development, sale and delivery of Wehilani at Waikoloa, an 800 home master planned community in Waikoloa Village on the Big Island of Hawai'i. In addition, he managed the subdivision and delivery of future developments on Oahu. For the Wehilani at Waikoloa Community, Mr. Randle's team was a recipient of numerous awards.

Mr. Randle helped lead Renewable Energy and Sustainability efforts within Castle & Cooke as Co-chair of Castle & Cooke's Sustainability Task Force – specifically the "Green" aspects of all core business activities. In this capacity, he successfully implemented Solar hot water heating for homes, solar photovoltaic (PV) systems for homes, ENERGY STAR partnership and specifications, BuiltGreen™ specs, CFL lighting, water conservation, and other energy efficient and sustainable changes.

Mr. Randle is a lifelong Hawai'i resident from the North Shore of Oahu, with family on Maui and the Big Island. He received his MBA in Finance and a Bachelor of Science Degree, Cum Laude, in Civil Engineering from California Polytechnic State University in San Luis Obispo.

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FORESTCITY

Race Randle

Development Manager, Forest City Hawai'i

Mr. Randle is currently in charge of managing Forest City Hawai'i's non-military residential development efforts. Led by Forest City's ongoing partnership with the Navy to redevelop 6,500 homes, Forest City is actively pursuing development in the islands. Currently, Forest City is in partnership with the State of Hawai'i Housing Finance and Development Corporation to develop an affordable community on 272 acres of property in Kona, Hawai'i. He is currently managing the efforts to plan, design, entitle, and develop the 2,330-home master planned mixed-use and mixed-income housing village. As part of Forest City's mission of sustainability, the community is being designed to meet LEED Neighborhood certification and to utilize a high degree of renewable energy. Mr. Randle also manages Forest City's non-military renewable Energy efforts, with projects underway on Oahu. In 2009, Mr. Randle and his team received the Solar America Showcase Award from DOE to assist with the efforts.

Prior to working with Forest City, Mr. Randle was a project manager with Castle & Cooke Hawai'i – one of the largest private landowners in the State of Hawai'i. In this position, he was primarily responsible for design, development, sale and delivery of Wehilani at Waikoloa, an 800 home master planned community in Waikoloa Village on the Big Island of Hawai'i. In addition, he managed the subdivision and delivery of future developments on Oahu. For the Wehilani at Waikoloa Community, Mr. Randle's team was a recipient of numerous awards.

Mr. Randle helped lead Renewable Energy and Sustainability efforts within Castle & Cooke as Co-chair of Castle & Cooke's Sustainability Task Force – specifically the "Green" aspects of all core business activities. In this capacity, he successfully implemented Solar hot water heating for homes, solar photovoltaic (PV) systems for homes, ENERGY STAR partnership and specifications, BuiltGreen™ specs, CFL lighting, water conservation, and other energy efficient and sustainable changes.

Mr. Randle is a lifelong Hawai'i resident from the North Shore of Oahu, with family on Maui and the Big Island. He received his MBA in Finance and a Bachelor of Science Degree, Cum Laude, in Civil Engineering from California Polytechnic State University in San Luis Obispo.

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PREVIOUS CONCEPT PLANS FROM HHFDC'S EARLIER MASTER PLAN PROCESS FOR THE KEAHUOLU AFFORDABLE HOUSING PROJECT

PETITIONER'S EXHIBIT 69

Figure 2-12
CONCEPT PLAN B
HHFDC Keahuolu Affordable Housing Project
Environmental Impact Statement
September 2008

Image: FEIS of the Keahuolu Affordable Housing Project

The previous concept plans above show the progression of the plan with varying land uses, densities, street layout. This various stages of concept plans for this site give a better understanding capacity, layout and site connections.

N E S W Mauka Makai (Plans Not to Scale)