

**KEA‘AU-PĀHOA ADVISORY GROUP (KPAG)**  
**Meeting No. 4 Summary – Day Two**

Tuesday, December 9, 2008 – 5:45 p.m.  
Kea‘au Elementary School  
Kea‘au, Hawai‘i

**PURPOSE:**

- 1) Provide technical discussion on various elements; 2) Screen reasonable set of alternatives from the “Universe of Alternatives” for the project; and 3) Prepare for Public Informational Meeting.

**SUMMARY OF MEETING:**

**I. Welcome and Remarks – Jiro Sumada, Hawaii Department of Transportation (HDOT) Deputy Director**

Mr. Sumada opened the meeting. He emphasized that the budget is not locked in stone and that the Keaau-Pahoa Road Improvement’s project will be competing with other projects. Practicalities must be accepted; furthermore, the community will be setting the priorities.

Mr. Robert Taira addressed the issue of the Puna Makai Alternate Route (PMAR). It was stated that HDOT supports the PMAR. It was noted that this project will not be a typical project, and the Environmental Impact Statement will be complex. It is possible the project will take twenty years due to objections by stakeholder. The PMAR is looked at as a long-term solution that will be addressed by the County of Hawaii while the Keaau-Pahoa Road Improvements project will be a mid-term project addressed by HDOT.

Mr. Ken Tatsuguchi followed up on the suggestion of replenishing KPAG Members. At this time, the KPAG has good forward momentum. Replacing KPAG Members will be considered after the Public Informational Meeting.

The following representatives of the project team were present:

Hawai‘i State Department of Transportation (HDOT) - Ken Tatsuguchi, Nelson Sagum, and Dina Lau with the Planning Branch; Robert Taira from the Hawaii District Office; and Peter Chan with the Traffic Branch;

SSFM International, Inc. - Cheryl Soon, Robin Barnes, Austen Drake, Heather Forester, Jo-Anna Herkes, and Genevieve Runningwind; Learning Unlimited – Facilitators Barbara Lively and Diane Gentry; and Geometrician Associates – Ron Terry.

The following members were present:

<b>Name</b>	<b>Group</b>
Larry Brown	County of Hawaii Project Manager for PRCP and PCDP
Fred Blas	Resident of Pahoia
Susan Cordell	Hawaiian Paradise Park Resident
Oliver English	W.H. Shipman, Limited
Neil Erickson	Architect, Planner, Community Service Member, and Cyclist
Dina Lau	HDOT
Keith Lawrence	Sitting in for Frank Lawrence
Manny Mattos	Resident & Retired Police Officer Council Member, District 5
Jon Olson	Puna Traffic Safety Committee & PCDP Chairman & Sierra Club Big Island Chapter, Moku Loa Group
Wesley Owens	VP of Orchidland Association and Cyclist
Jennifer Perry	Resident of Kapoho and Produce and Flower Transporter
Nelson Sagum	HDOT
Elizabeth Salfen	PCDP Community Liaison & PMAR Working Committee; and Weed and Seed
Damon Tucker	Friends of Puna's Future

Absent Members included: Faye Hanohano and Emily Naeole.

Members that have resigned include: Kehaulani Costa, Bill Davis, Lorraine Godoy, Malcolm Saxby, and Roy Takemoto.

Friends of the Advisory Group and public participants in attendance included: Francis Malawi, Gail Clarke, Bobby Lee Jr., Kimo Lee, Frankie Stapleton, Elizabeth Weatherford, and Tim Rees.

## **II. KPAG Meeting #4 Day One Re-cap – Cheryl Soon, SSFM International, Inc. Project Manager**

Ms. Soon announced the results of the Purpose and Need priority voting (Attachment 1). The KPAG has agreed that the Purpose and Need statement is in accordance with what has been discussed at previous meetings; 15 yes, 0 no, and 1 abstained. Minor revisions were made based on comments received before the voting (Attachment 2).

A map displaying the Puna Makai Alternate Route (PMAR) was sent out in the mailer was replaced with a more accurate version developed by the County of Hawaii for the Puna Makai Alternate Route (Attachment 3). The steps for creating a transportation project were discussed (Attachment 4). It was noted that the PMAR would not likely be built in 10 years, could be built in 20 years, and probably would take 30 years.

**III. Traffic Forecasts and Level of Service (LOS) – Cheryl Soon, SSFM International, Inc. Project Manager**

The Level of Service (LOS) diagrams were explained (No attachment - LOS diagram will be revised and redistributed based on an inconsistency in the data). Each diagram shows a two lane highway with no improvements, except the shoulder lane conversion project. LOS of E or F signifies that something needs to be done with the road section. Once a set of reasonable alternatives has been determined, LOS can be calculated for each of those as well.

**IV. Current Accident Data – Dina Lau and Peter Chan, HDOT**

Accident data was presented to the KPAG (Attachment 5). The accident data was derived by police reports of accidents occurring within 75 feet of an intersection. It was noted that accident rates rise with an increase in traffic. Other patterns can be looked at to create an accident reconstruction. Factors such as design, driver, vehicle, and weather can influence an accident. Intersections with higher numbers of accidents should be focused on.

The KPAG asked when the Quick Fix Task Force will be implementing the proposed strategies. It was stated that the strategies will be implemented beginning in January.

**V. Design Guidelines – Robin Barnes and Austen Drake, SSFM International, Inc.**

An overview of the American Association of State Highway and Transportation Officials (AASHTO) Green Book Standards were given (Attachment 6). The standards described apply to all states.

**VI. Screening for a Reasonable Set of Alternatives from the Universe - Breakout Groups**

The KPAG was divided into 3 groups to discuss alternatives for the project. Each group reported back with their findings (Attachment 7).

**VII. Questions and Comment: Open to all Attendees**

The following questions were received:

- A. Gail Clarke of Pahoia asked, “What is the process to get signage to slow traffic during school day peaks at this intersection? What about crosswalks?”

*RESPONSE: HDOT requested further information be sent to the Hawaii District Office.*

- B. Elizabeth Weatherford of Hawaiian Paradise Park asked, “What is cost in dollars of roundabout vs. cost of signalized intersection. (Please provide information to allow for some understanding of ANNUAL or MONTHLY COST of electricity service to signal.)

RESPONSE: *This question is off topic and will not be addressed at this time.*

- C. Elizabeth Weatherford of Hawaiian Paradise Park asked, “Regarding Alternate Routes Page – blue banner PEAR!!...floodplain “will require bridge and culverts.” ARE dry wells used, can they be used to address flooding, higher up the watershed?”

RESPONSE: *This question is off topic and will not be addressed at this time.*

- D. Frankie Stapleton of Nanawale Estates asked, “Where is the representation on this panel of the low income people of lower Puna who have NO motorized vehicles, grandparents raising a passel of youngsters and no dependable vehicles, who can’t...? Is there anyone on the KPAG who does not drive a car or bike?”

RESPONSE: *The KPAG is addressing the needs of people in this group.*

- E. Elizabeth Weatherford of Hawaiian Paradise Park asked, “Will bus shelters be placed near safety-improved intersections such that transit riders will be able to cross road safely?”

RESPONSE: *Yes*

# **ATTACHMENT 1**

## **Results of Purpose and Need Voting**

## Purpose and Need Voting

	MEMBERS	FRIENDS
Safety	19	11
Mobility	12	5
Multi-Modal	13	7
Village Centers	1	3
PMAR	3	2
Context	3	0
Natural Beauty	5	3

# **ATTACHMENT 2**

## **Revised Purpose and Need Statement**

# Kea'au-Pāhoa (Highway 130) Corridor Improvements Project

Revised 1/16/09

CATEGORIES OF PURPOSE AND NEED	CRITERIA	WAYS TO MEASURE
<b>Improve Roadway Safety</b>	<ul style="list-style-type: none"> <li>• Reduce the number of accidents and their severity</li> <li>• Reduce the number of points of conflict at intersections</li> <li>• Improve merge movements</li> <li>• <i>Improve or eliminate movements out of driveways</i></li> </ul>	<ul style="list-style-type: none"> <li>• Number of accidents</li> <li>• Number of driveways</li> <li>• <i>Adequate distance for Merge movements</i></li> <li>• <i>Reduced number of driveway left turns</i></li> <li>• <i>Use on and off ramps for side streets entering the main road</i></li> </ul>
<b>Configure the road for safe use by transit vehicles and school buses, bicyclists, pedestrians and agriculture vehicles</b>	<ul style="list-style-type: none"> <li>• Increased transit ridership and level of transit service</li> <li>• Increased use of the corridor by bicyclists and pedestrians</li> <li>• Create safe and attractive bus waiting areas <i>that are user-friendly and barrier free</i></li> </ul>	<ul style="list-style-type: none"> <li>• Number and percent of transit riders</li> <li>• Number and percent of bicycle riders</li> <li>• Number of improved bus waiting areas</li> <li>• <i>Number of barrier free staging areas</i></li> </ul>
<b>Improve corridor mobility and capacity to meet future demand</b>	<ul style="list-style-type: none"> <li>• Ability to accommodate future average daily use of the corridor</li> <li>• Ability to accommodate traffic during future peak periods</li> <li>• Reduction in delay</li> <li>• Improved levels of service</li> <li>• Equity</li> <li>• <i>Efficiency</i></li> </ul>	<ul style="list-style-type: none"> <li>• Level of Service (LOS)</li> <li>• Travel Time</li> <li>• Delay Time</li> <li>• Number of daily vehicles (AADT)</li> <li>• Number of vehicles in AM and PM peaks</li> <li>• LOS is improved for different segments of the community</li> </ul>
<b>Respect the Natural Beauty of Puna</b>	<ul style="list-style-type: none"> <li>• Preserve scenic vistas                             <ul style="list-style-type: none"> <li>- towards Mauna Kea</li> <li>- at the Catholic Church</li> <li>- towards the ocean</li> </ul> </li> <li>• Preserve canopy trees</li> <li>• Bury utility lines</li> <li>• Use materials and landscape plantings that are sensitive to the area</li> </ul>	<ul style="list-style-type: none"> <li>• Vistas are retained</li> <li>• Landscape materials include canopy trees</li> <li>• Choice of materials and plants are endorsed by community</li> <li>• Number of utility poles are reduced</li> </ul>
<b>Complement creation of an alternate road <i>that can be used both as an additional travel route and for emergency use</i></b>	<ul style="list-style-type: none"> <li>• Improve access for emergency vehicles</li> <li>• Create connections between Highway 130 and any new alternate route</li> <li>• <i>Reserve right of way for other means of travel</i></li> <li>• <i>Create redundancy for temporary closures</i></li> </ul>	<ul style="list-style-type: none"> <li>• <i>Successful completion of a second route in Puna district by County that creates redundancy</i></li> <li>• Emergency vehicles have lanes available for their use during emergencies</li> <li>• Intersections improved for use by emergency vehicles</li> </ul>
<b>Context Sensitivity</b>	<ul style="list-style-type: none"> <li>• <i>Retain the current rural character of Puna District</i></li> <li>• <i>Choose an alternative that is sustainable</i></li> <li>• <i>Improve drainage</i></li> </ul>	<ul style="list-style-type: none"> <li>• Assess how each alternative improves the environment, including climate change, reduced energy use and resource availability</li> </ul>
<b>Respond to intra-regional connectivity needs and future land use strategies such as Village Centers</b>	<ul style="list-style-type: none"> <li>• Be consistent with the Puna Community Development Plan</li> <li>• Improve connections among the residential neighborhoods and the village centers</li> </ul>	<ul style="list-style-type: none"> <li>• <i>Facilitate</i> good connections to the Village Centers</li> <li>• Create interpretive and way-finding signage</li> </ul>

*NOTE: Purpose and Need revisions shown in italics are based on KPAG discussion at Meeting #4 – Day One*

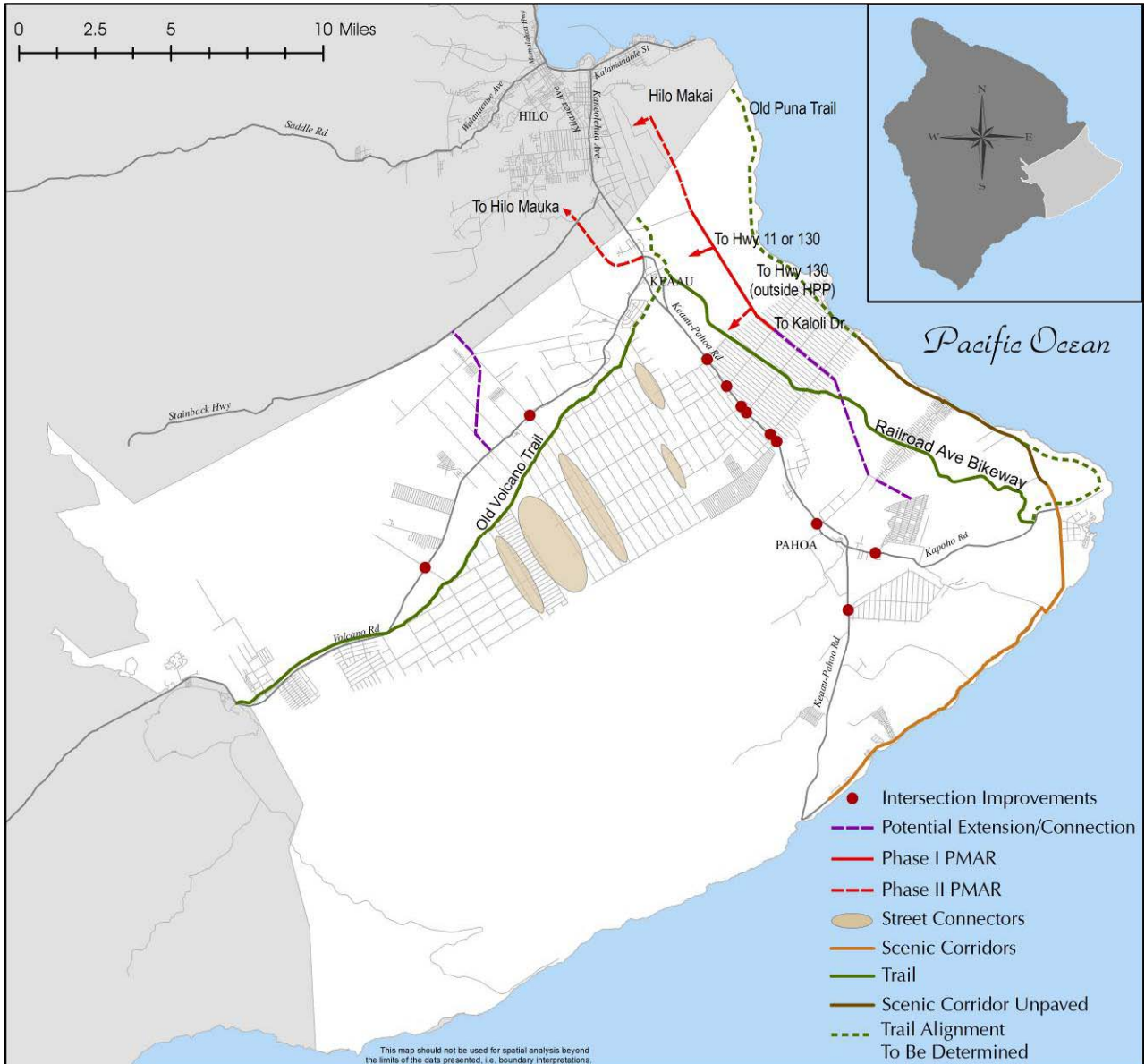


# **ATTACHMENT 3**

## **Proposed Transportation Corridor Improvements from Puna Community Development Plan**



Figure 4-1: Proposed Transportation Corridor Improvements



Note: The ovals representing “Street Connectors” in the above map indicate the general areas where road connections between existing streets in adjoining subdivisions will be located, subject to a planning, site selection and design process involving the owners and residents of the affected subdivisions (see Section 4.3.3 a.)

# **ATTACHMENT 4**

## **Steps in Creating a Transportation Project**

## STEPS IN CREATING A TRANSPORTATION PROJECT

What Needs to be Done	Elements	Typical Duration
Coming up with a project concept and definition	Preliminary concept Begin and end points Alignment (aka right of way) Number of lanes (and width, cross section) Shoulder treatment (use and width) Drainage method (gutters?) Determine the functional classification	County of Hawai'i is initiating the planning phase in 2009. Funds budgeted. <i>The planning work can take from 3-5 years or more</i>
Coordination with Others	County and State Agencies If involves agriculture lands, may require going to the State Land Use Commission Coordination with stakeholders, including business interests, community associations, and landowners.	
Prepare an Environmental Impact Statement	Purpose and Need Statement Description of Existing conditions Description of Future conditions Prepare alternatives Develop impacts and costs of each alternative Recommend a preferred alternative	County of Hawai'i will combine the EIS work with the planning work <i>The EIS typically takes from 5-7 years</i>
Remain on the list of projects in the Hawai'i Long Range Land Transportation Plan	Plan is being revised during 2009-2011	<i>The Hawaii Long Range Land Transportation Plan for Hawai'i County is about to be initiated. List of projects typically comes at the end of the work.</i>
Funding for various phases	Get on the Statewide list of projects (STIP) County match required from county budget	<i>The STIP is prepared every year for a rolling six year period. The current year is the most fixed.</i>
Detailed design and engineering phase	Typically the project sponsor (County of Hawai'i) hires an engineering consultant firm	<i>Typically takes 3-5 years</i>
Acquisition of right of way phase	Negotiation Eminent Domain Fair Market Price	<i>Difficult to estimate; varies whether there is a single large land owner or multiple small landowners.</i>
Construction phase	Often done in phases depending on length, cost, and availability of funding	Typically done in phases and takes approximately 2 years per phase.

# **ATTACHMENT 5**

## **Accident Data**

Accident Rates at the Intersections Along Keaau-Pahoa Road, 2004 - 2006

Cross-street to Keaau-Pahoa Road	Accidents (acc/3yr period)	Average Daily Traffic* (veh/day)	Accident Rate (acc/mil-veh)
Volcano Road	31	36865	0.77
Milo Street	6	17792	0.31
Kukula Street	4	17591	0.21
Access to Old Keaau-Pahoa Road	18	24534	0.67
Opukahaia Street	0	18961	0.00
Transfer Station	6	18961	0.29
Pohaku Drive/Shower Drive	16	20029	0.73
Pohaku Place	6	18961	0.29
Kaloli Drive	16	18961	0.77
Pohaku Circle	3	18961	0.14
Orchidland Drive	13	18961	0.63
Paradise Drive	17	18961	0.82
Aulii Street	4	18961	0.19
Makuu Drive	24	18961	1.16
Ilma Street	1	18961	0.05
Ainaloa Boulevard	37	21595	1.56
Ka Ohuwalu Drive	1	11567	0.08
Kaluahine Street/Aulani Street	3	11567	0.24
Old Pahoa (Government) Road	26	20087	1.18
Kahakai Boulevard	23	16219	1.30
Homestead Road (W)	3	8858	0.31
Homestead Road (E)	2	8858	0.21
Pahoa-Kapoho Road	13	14880	0.80

\* If traffic counts were not available at intersection, volume only from Keaau-Pahoa Road was used to compute the accident rate.

The State of Hawaii, Department of Transportation, has provided this traffic accident information under the protection of 23 USC 402(k) and 409. This information may not be used in any federal or State court proceeding in any action for damages arising from any occurrence at a location mentioned or addressed in the information provided.

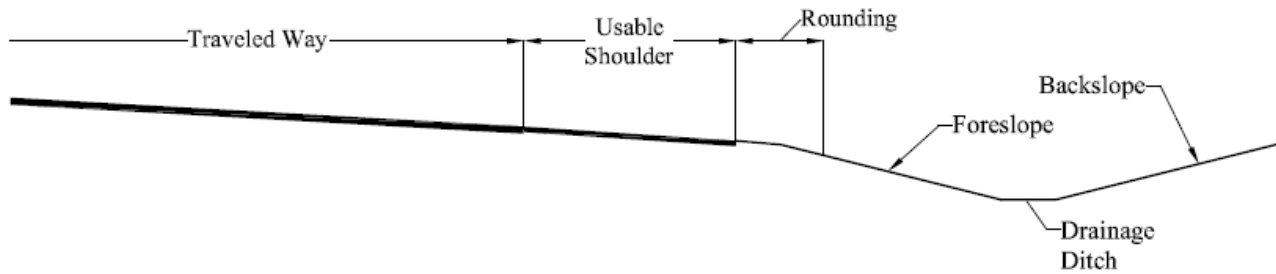
# **ATTACHMENT 6**

**AASHTO Green Book Design  
Standards Presentation  
by Robin Barnes  
and Austen Drake  
December 9, 2008**

## Keaau –Pahoa Advisory Group

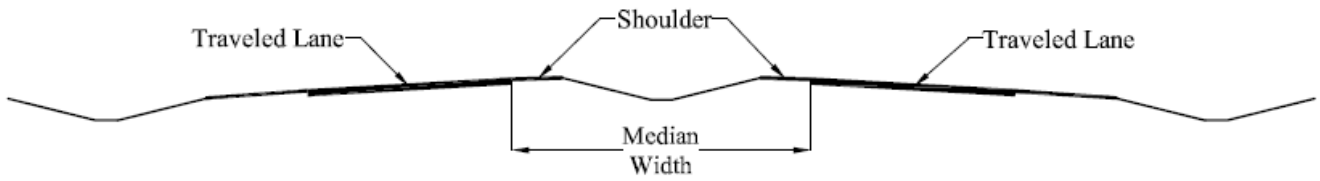
Basic standards for design – **Geometric Design of Highways and Streets**  
American Association of State Highway and Transportation Officials (2004)  
“Green book”

- Lane Widths
- Shoulders

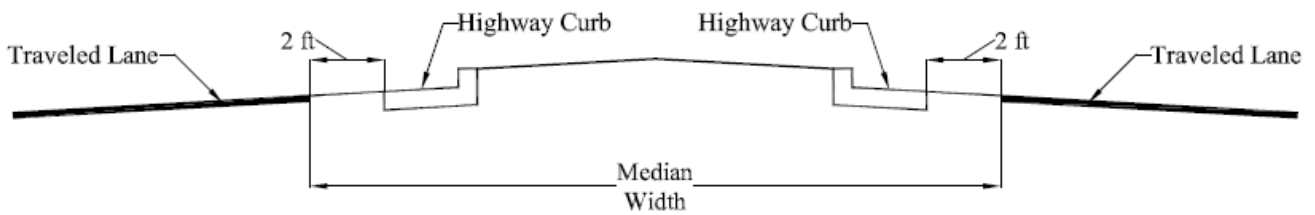




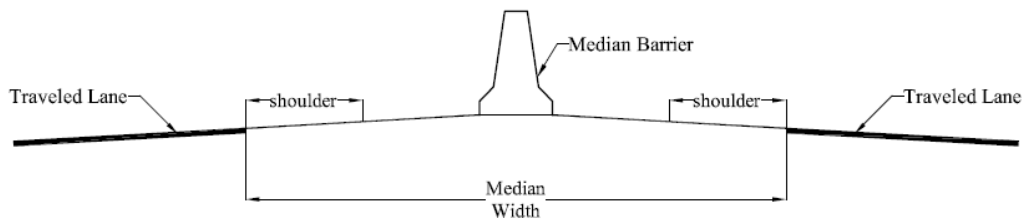
• Medians



Depressed Median  
Generally preferred on major highway for more efficient drainage.

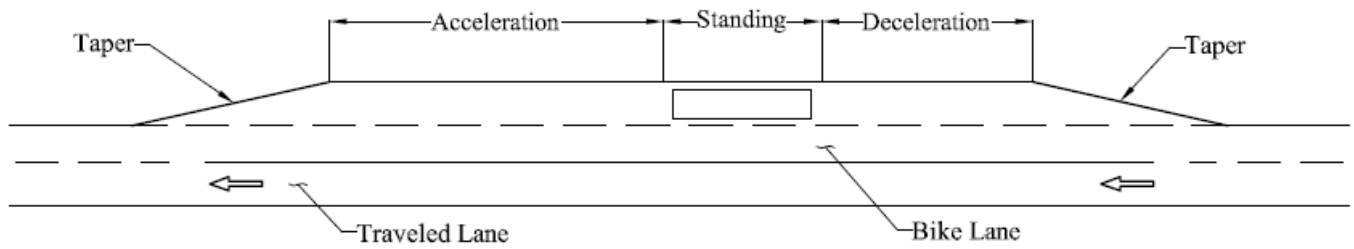


Raised Median  
Generally used on Arterial Roads



Flush Median  
Generally used on Urban Arterial Roads

## Bus turnouts

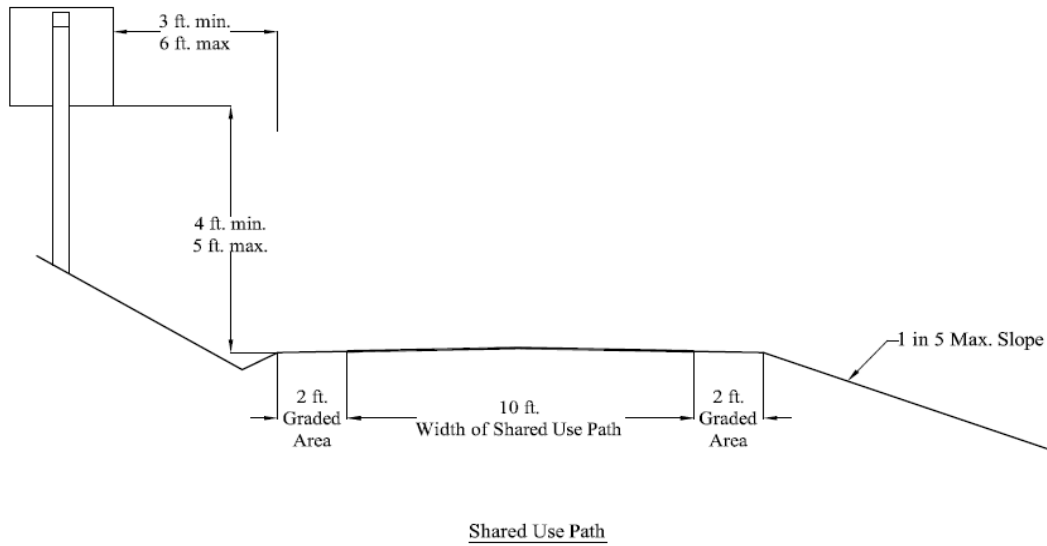


Bus Turnout

- Pedestrians & Crosswalks



- **Shared used paths**

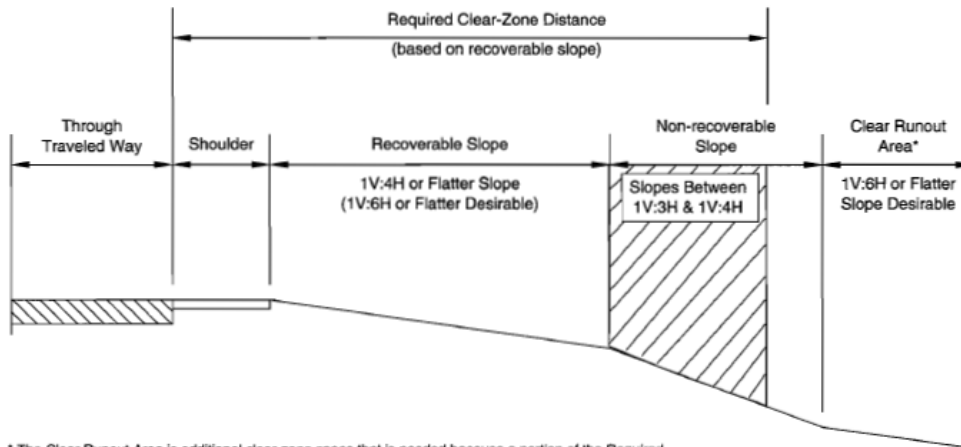


- **Utilities**

- **Lighting**



- **Clear Zone**



\* The Clear Runout Area is additional clear-zone space that is needed because a portion of the Required Clear Zone (shaded area) falls on a non-recoverable slope. The width of the Clear Runout Area is equal to that portion of the Clear Zone Distance that is located on the non-recoverable slope.

FIGURE 3.2 Example of a parallel foreslope design

- **Best Management Practices**



# **ATTACHMENT 7**

## **Outcome of Alternatives from Breakout Groups**

**OUTCOME OF ALTERNATIVES EXERCISE BY KPAG BREAKOUT GROUPS  
DECEMBER 9, 2008**

	<b>Kea'au Bypass to Shower Drive</b>	<b>Shower Drive to Paradise Drive *</b>	<b>Paradise Drive to Ainaloa Boulevard</b>	<b>Ainaloa Blvd. to Old Pāhoa Road**</b>
<b>Lanes</b>	G 1: 4 Lanes  G 2: 4 Lanes  G 3: 6 Lanes	G 1: 4 Lanes (tie) 3 Lanes (***) Also considered 5 lane(****)  G 2: 4 Lanes (2) 2 Lanes  G 3: 6 Lanes	G 1: 3 Lanes Also considered 4 Lanes  G 2: 4 Lanes  G 3: 4 Lanes	G 1: 2 Lanes w/ accel/decel lanes (2) 3 Lanes Also considered 4 Lanes  G 2: 4 Lanes Also considered 6, 5, & 2  G 3: 2-4 Lanes
<b>Shoulder Treatment</b>	G1:10' w/ rumble strip  G2: 12'  G3: 12'	G1: 10' w/ rumble (2) 6-8 '  G2: 12'  G3: 12'	G1: 10' w/ rumble (2) 6-8'  G2: 12'  G3: 12'	G1: 10'w/ rumble strip  G2: 12'  G3: 12'
<b>Median Treatment</b>	G1: None  G2: Jersey barrier (2) Guardrail (3) Landscaped  G3: Grassy w/ U-turn, turn lanes and a/decal lanes	G1: Median (do not like conc. Barrier)  G2: Jersey barrier (2) Hedge Also considered guardrail and landscape  G3: Grassy w/ U-turn, turn lanes and a/decal lanes	G1: None  G2: Jersey barrier  G3: Grassy w/ U-turn, turn lanes and a/decal lanes	G1: None  G2: None  G3: Grassy w/ U-turn, turn lanes and a/decal lanes

\*Indicates Group 1 felt an additional break point would be at Kaloli

\*\*Indicates Group 2 felt an additional break point would be at the water spigot

\*\*\* 3 Lane signifies a middle lane for left turns and one through lane in each direction

\*\*\*\* 5 Lane signifies a middle lane for left turns and two through lanes in each direction