Kaua'i Island Plan

APPENDICES

May 2004

The Department of
Hawaiian Home Lands

State of Hawai'i

GROUP 70
INTERNATIONAL
925 Bethel Street, 5th Floor • Honolulu, HI 96813

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Cost Estimates

Waimea Costs						TOTALS
DESCRIPTION	1 acre Residential Mauka	1 acre Residential Makai	3 acre Sub Ag Mauka	3 acre Sub Ag Makai	Community Use Area	
TOTAL # OF LOTS	89	52	20	30	42 acres	191
Potable Water						
Gallons Required	133,500	78,000	45,000	52,500	504,120	813,120
Per Gallon Cost	$2	$2	$2	$2	$2	$2
Storage Cost	$267,000	$156,000	$90,000	$105,000	$1,008,240	$1,626,240
New Source						
Units served	89	52	20	30	n/a	191
Cost per Unit	$10,500	$10,500	$10,500	$10,500	n/a	$10,500
Source Cost	$934,500	$546,000	$210,000	$315,000	n/a	$2,005,500
Water Transmission						
Pipe Length	11,600	7,800	3,500	5,300	n/a	28,200
Per Linear foot cost	$150	$150	$150	$150	$150	$150
Total cost	$1,740,000	$1,170,000	$525,000	$795,000	n/a	$4,230,000
Roads						
Road Length	8,400	4,600	0	0	0	13,000
Per Linear foot cost	$500	$500	$400	$400	$500	
Road Cost	$4,200,000	$2,300,000	$0	$0	$0	$6,500,000
Wastewater						
IWS	$890,000	$520,000	$200,000	$300,000	n/a	$1,910,000
Gallons Generated	n/a	n/a	n/a	n/a	TBD	0
Cost per Gallon	n/a	n/a	n/a	n/a	$20	$20
STP Cost	n/a	n/a	n/a	n/a	TBD	$0
Wastewater Transmission						
Pipe Length	n/a	n/a	n/a	n/a	n/a	0
Per Linear foot cost	n/a	n/a	n/a	n/a	$150	$150
Total cost	n/a	n/a	n/a	n/a	n/a	$0
Site Preparation						
Total sf to clear	356,000	208,000	80,000	120,000	N/A	764,000
Per sf cost	$2.50	$2.50	$2.50	$2.50	$2.50	$150
Total Cost	$890,000	$520,000	$200,000	$300,000	N/A	$1,910,000
Electricity						
Wire Length	11,600	7,800	3,500	5,300	n/a	28,200
Per Linear foot cost	$150	$150	$150	$150	$150	$150
Total Cost	$1,740,000	$1,170,000	$525,000	$795,000	n/a	$4,230,000
Other Costs						
n/a						
TOTALS	$10,661,500	$6,382,000	$1,750,000	$2,610,000	$1,008,240	**$22,411,740**
COST PER LOT	$119,792.13	$122,730.77	$87,500.00	$87,000.00	n/a	**$117,339**
TOTAL LUD COST	$17,043,500		$4,360,000			
COST/LUD LOT	$120,876		$87,200			

Waimea Cost Assumptions

Water

Gallons required is based on an average daily demand of 500 gallons per housing unit
2,500 gal/acre for Ag, 4,000 gal/acre schools or parks, 3,000 gal/acre commercial
In general the gallons required is multiplied by a factor of 3 to account for fire flow needs
New Water Source = $ 2 million
New Water Source figures a 500 gallons per minute (gpm) well supplies 720,000 gallons per day
More than one well needed when average daily demand exceeds 720,000 gallons per day
Storage = $2 per gallon
Transmission = $150 per linear foot
Irrigation lines = $10 per linear foot to repair (COST NOT INCLUDED)
Gay & Robinson uses an 8 " irrigation line which travels across DHHL property along Kōke‘e Rd. Possible opportunity

Roads

Rd. with out utilities costs approx $500 per linear foot. This includes pavement, grading, & drainage
After talking to the County Planning Dept. it was determined that DHHL can do Ag standard rd. in Ag areas
Therefore, cost can be reduced by 20% (24 ft pavement down to 16-18 ft)
Amended Ag rd. cost with out utilities = $400 per linear foot.
County Planning also said Kōke‘e Rd. need not be improved therefore no rd. cost for Ag Lots

Wastewater

Gallons generated is based on 400 gallons per day per housing unit
which assumes that each household has 4 persons who each generate 100 gallons of waste per day
Sewer treatment = $20 per gallon
IWS = $10,000 per residence
Transmission = $150 per linear foot

Site Preparation

Based on a 4,000 SF house site/pad being cleared for each lot
Clearing and grubbing only, no grading cost included
Assumes an area with a slope of 0-10 % would be found

Electricity

Transmission = $150 per linear foot

Special Notes

Cost significantly reduced because no Kōke‘e Rd. improvements & Ag rd. costs used.
No irrigation costs included in this cost analysis. Assumption is that existing lines could be repaired
Community Use area cost only includes water storage costs since proposed development of area is not well defined
Length of rds./transmission unknown for C/CU

Kekaha Costs		**TOTALS**
DESCRIPTION	Special District Area	
TOTAL # OF LOTS	13 acres	0
Potable Water		
Gallons Required	151,800	151,800
Per Gallon Cost	$2	$2
Storage Cost	$303,600	$303,600
New Source		
Units served	n/a	n/a
Cost per Unit	n/a	n/a
Source Cost	n/a	n/a
Water Transmission		
Pipe Length	300	300
Per Linear foot cost	$150	$150
Total cost	$45,000	$45,000
Roads		
Road Length	300	300
Per Linear foot cost	$500	$500
Road Cost	$150,000	$150,000
Wastewater		
IWS	10,000	$10,000
Gallons Generated	n/a	n/a
Cost per Gallon	n/a	n/a
STP Cost	n/a	n/a
Wastewater Transmission		
Pipe Length	n/a	n/a
Per Linear foot cost	n/a	n/a
Site Preparation		
Total sf to clear	n/a	0
Per sf cost	$2.50	$2.50
Total Cost	n/a	$0
Electricity		
Wire Length	300	300
Per Linear foot cost	$150	$150
Total Cost	$45,000	$45,000
Other Costs		
None		n/a
TOTALS	n/a	**$553,600**
COST PER LOT	n/a	n/a

Kekaha Cost Assumptions
Water
Gallons required is based on an average daily demand of 500 gallons per housing unit
2,500 gal/acre for Ag, 4,000 gal/acre schools or parks, 3,000 gal/acre commercial
In general the gallons required is multiplied by a factor of 3 to account for fire flow needs
New Water Source NOT NEEDED
Transmission = $150 per linear foot
Roads
Road with out utilities costs approx $500 per linear foot. This includes pavement, grading, & drainage
After talking to the County Planning Dept. it was determined that DHHL can do Ag standard rd. in Ag areas
Therefore, cost can be reduced by 20% (24 ft pavement down to 16-18 ft)
Amended Ag rd. cost with out utilities = $400 per linear foot
Wastewater
IWS = $10,000 per residence/unit
Site Preparation
No cost for Community Use or Commercial sites due to uncertainty.
Based on a 4,000 sf house site/pad being cleared for each lot
Clearing and grubbing only, no grading cost included
Assumes an area with a slope of 0-10 % would be found
Electricity
Transmission = $150 per linear foot
Special Notes
Costs are based on one comfort station/pavilion site on Makai, roadside special district property

Hanapēpē Costs										TOTALS
DESCRIPTION	10,000 SF Residential East *Priority, Phase I*	10,000 SF Residential East *Priority, Phase II*	10,000 SF Residential West *Priority, Phase III*	3 acre Sub Ag Gulch	2 acre Sub Ag Mauka	Community Use West *Priority*	Community Use East	Commercial Mauka	Commercial Makai	
TOTAL # OF LOTS	40	208	234	13	36	15 acres	7 acres	11acres	6 acres	531
Potable Water										
Gallons Required	0	312,000	351,000	39,750	57,000	186,600	92,160	295,260	267,945	1,601,715
Per Gallon Cost	$2	$2	$2	$2	$2	$2	$2	$2	$2	$2
Storage Cost	$0	$624,000	$702,000	$79,500	$114,000	$373,200	$184,320	$590,520	$535,890	$3,203,430
Facilities Reserve*	$104,000									$104,000
New Source										
Units served	0	208	234	13	36	n/a	n/a	n/a	n/a	491
Cost per Unit	$8,147	$8,147	$8,147	$8,147	$8,147	n/a	n/a	n/a	n/a	$8,147
Source Cost	$0		$1,906,398	$105,911	$293,292	n/a	n/a	n/a	n/a	$2,305,601
Water Transmission										
Pipe Length	2,100	10,200	12,300	4,700	6,400	n/a	n/a	n/a	n/a	35,700
Per Linear foot cost	$150	$150	$150	$150	$150	$150	$150	$150	$150	$150
Total cost	$315,000	$1,530,000	$1,845,000	$705,000	$960,000	n/a	n/a	n/a	n/a	$5,355,000
Roads										
Road Length	2,100	10,200	12,300	4,700	6,400	n/a	n/a	n/a	n/a	35,700
Per Linear foot cost	$500	$500	$500	$400	$400	$500	$500	$500	$500	
Road Cost	$1,050,000	$5,100,000	$6,150,000	$1,880,000	$2,560,000	n/a	n/a	n/a	n/a	$16,740,000
Wastewater										
IWS	n/a	n/a	n/a	$130,000	$360,000	n/a	n/a	n/a	n/a	$490,000
Gallons Generated	16,000	83,200	93,600	5,200	14,400	n/a	n/a	66,000	36,000	314,400
Cost per Gallon	n/a	n/a	n/a	n/a	n/a	n/a	n/a	$20	$20	$20
STP Cost	n/a	n/a	n/a	n/a	n/a	n/a	n/a	$1,320,000	$720,000	$2,040,000
Wastewater Transmission										
Pipe Length	2,100	10,200	12,300	n/a	n/a	n/a	n/a	n/a	n/a	24,600
Per Linear foot cost	$150	$150	$150	n/a	n/a	$150	$150	$150	$150	$150
Total cost	$315,000	$1,530,000	$1,845,000	n/a	n/a	n/a	n/a	n/a	n/a	$3,690,000
Site Preparation										
Total sf to clear	160,000	832,000	936,000	52,000	144,000	N/A	N/A	N/A	N/A	2,124,000
Per sf cost	$2.50	$2.50	$2.50	$2.50	$2.50	$2.50	$2.50	$2.50	$2.50	$150
Total Cost	$400,000	$2,080,000	$2,340,000	$130,000	$360,000	N/A	N/A	N/A	N/A	$5,310,000
Electricity										
Wire Length	2,100	10,200	12,300	4,700	6,400	n/a	n/a	n/a	n/a	35,700
Per Linear foot cost	$150	$150	$150	$150	$150	$150	$150	$150	$150	$150
Total Cost	$315,000	$1,530,000	$1,845,000	$705,000	$960,000	n/a	n/a	n/a	n/a	$5,355,000
Other Costs										
Detention basin for drainage mitigation										$500,000
Intersection improvement										$250,000
TOTALS	$2,499,000	$12,394,000	$16,633,398	$3,735,411	$5,607,292	$373,200	$184,320	$1,910,520	$1,255,890	**$45,343,031**
COST PER LOT	$62,475	$59,587	$71,083	$287,339	$155,758	n/a	n/a	n/a	n/a	**$85,392**
TOTAL LUD COST	$31,526,398			$9,342,703						
COST/LUD LOT	$60,223			$190,667						

Hanapēpē Cost Assumptions
Water
Gallons required is based on an average daily demand of 500 gallons per housing unit
2,500 gal/acre for Ag, 4,000 gal/acre schools or parks, 3,000 gal/acre commercial
In general the gallons required is multiplied by a factor of 3 to account for fire flow needs
New Water Source = $ 2 million
New Water Source figures a 500 gpm well supplies 720,000 gallons per day
More than one well needed when average daily demand exceeds 720,000 gallons per day
Storage = $2 per gallon
Transmission = $150 per linear foot
Irrigation lines = $10 per linear foot to repair (COST NOT INCLUDED)
*Facilities Reserve Charge= $2,600 in order to hook up to the existing water system to access water credits
Roads
Rd. with out utilities costs approx $500 per linear foot. This includes pavement, grading, & drainage
After talking to the County Planning Dept. it was determined that DHHL can do Ag standard rd. in Ag areas
Therefore, cost can be reduced by 20% (24 ft pavement down to 16-18 ft)
Amended Ag rd. cost with out utilities = $400 per linear foot
Wastewater
Assumed that transmission lines are all that is needed. Development will hook into existing STP
Transmission = $150 per linear foot
Existing STP only has 200,000gpd capacity remaining. Full build out requires 295,000 gpd. Package plant for 95,000 gallons (commercial area or 238 homes)
Site Preparation
Based on a 4,000 sf house site/pad being cleared for each lot
Clearing and grubbing only, no grading cost included
Assumes an area with a slope of 0-10 % would be found
Electricity
Transmission = $150 per linear foot
Special Notes
No irrigation costs included in this cost analysis. Assumption is that existing lines could be repaired
Water exists for 40 more units prior to creating new source
Existing STP only has 200,000gpd capacity remaining. Full build out requires 295,000 gpd. Package plant for 95,000 gallons (commercial area or 238 homes)
Community Use and Commercial area cost only includes water storage costs since proposed development of area is not well defined
Length of roads/transmission unknown for C/CU
Commercial STP costs are estimated

Wailua Costs										**TOTALS**
DESCRIPTION	10,000 SF Residential South *Priority, Phase I*	10,000 SF Residential North *Priority, Phase II*	Kupuna Housing *Priority*	3 acre Sub Ag North	3 acre Sub Ag South	Community Use Mauka *Priority*	Com/CU Makai	Commercial N. Makai	Commercial S. Makai	
TOTAL # OF LOTS	231	420	50	22	13	15 acres	11 acres	19 acres	22 acres	736
Potable Water										
Gallons Required	346,500	630,000	277,500	46,500	40,500	338,940	308,460	325,815	339,810	2,654,025
Per Gallon Cost	$2	$2	$2	$2	$2	$2	$2	$2	$2	$2
Storage Cost	$693,000	$1,260,000	$555,000	$93,000	$81,000	$677,880	$616,920	$651,630	$679,620	$5,308,050
New Source										
Units served	231	420	50	22	13	n/a	n/a	n/a	n/a	736
Cost per Unit	$5,435	$5,435	$5,435	$5,435	$5,435	n/a	n/a	n/a	n/a	$5,435
Source Cost	$1,255,485	$2,282,700	$271,750	$119,570	$70,655	n/a	n/a	n/a	n/a	$4,000,160
Water Transmission										
Pipe Length	11,200	23,200	TBD	4,500	3,000	TBD	TBD	TBD	TBD	41,900
Per Linear foot cost	$150	$150	$150	$150	$150	$150	$150	$150	$150	$150
Total cost	$1,680,000	$3,480,000	TBD	$675,000	$450,000	TBD	TBD	TBD	TBD	$6,285,000
Roads										
Road Length	11,200	23,200	TBD	4,500	3,000	TBD	TBD	TBD	TBD	41,900
Per Linear foot cost	$500	$500	$500	$400	$400	$500	$500	$500	$500	
Road Cost	$5,600,000	$11,600,000	TBD	$1,800,000	$1,200,000	TBD	TBD	TBD	TBD	$20,200,000
Wastewater										
IWS	n/a	n/a	n/a	220,000	140,000	n/a	n/a	n/a	n/a	$360,000
Gallons Generated	92,400	168,000	20,000	n/a	n/a	n/a	n/a	54000	114000	280,400
Cost per Gallon	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	$20
STP Cost	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Wastewater Transmission										
Pipe Length	11,200	23,200	TBD	n/a	n/a	TBD	TBD	TBD	TBD	34,400
Per Linear foot cost	$150	$150	$150	$150	$150	$150	$150	$150	$150	$150
Total cost	$1,680,000	$3,480,000	TBD	n/a	n/a	TBD	TBD	TBD	TBD	$5,160,000
Site Preparation										
Total sf to clear	924,000	1,680,000	n/a	88,000	52,000	N/A	N/A	N/A	N/A	2,744,000
Per sf cost	$2.50	$2.50	$2.50	$2.50	$2.50	$2.50	$2.50	$2.50	$2.50	$2.50
Total Cost	$2,310,000	$4,200,000	n/a	$220,000	$130,000	N/A	N/A	N/A	N/A	$6,860,000.00
Electricity										
Wire Length	11,200	23,200	TBD	4,500	3,000	TBD	TBD	TBD	TBD	41,900
Per Linear foot cost	$150	$150	$150	$150	$150	$150	$150	$150	$150	$150
Total Cost	$1,680,000	$3,480,000	TBD	$675,000	$450,000	TBD	TBD	TBD	TBD	$6,285,000
Other Costs										
Intersection improvement										$250,000
*195,000 cubic yards of fill for topographic depression in Residential area										$9,750,000
TOTALS	$14,898,485	$29,782,700	$826,750	$3,802,570	$2,521,655	$677,880	$616,920	$651,630	$679,620	**$64,458,210**
COST PER LOT	$64,496	$70,911	$16,535	$172,844	$193,973	n/a	n/a	n/a	n/a	**$87,579**
TOTAL LUD COST	$44,681,185			$6,324,225						
COST/LUD LOT	$68,635			$180,692						

Wailua Cost Assumptions
Water
Gallons required is based on an average daily demand of 500 gallons per housing unit
2,500 gal/acre for Ag, 4,000 gal/acre schools or parks, 3,000 gal/acre commercial
In general the gallons required is multiplied by a factor of 3 to account for fire flow needs
New Water Source = $ 2 million
New Water Source figures a 500 gpm well supplies 720,000 gallons per day
More than one well needed when average daily demand exceeds 720,000 gallons per day
Storage = $2 per gallon
Transmission = $150 per linear foot
Irrigation lines = $10 per linear foot to repair (COST NOT INCLUDED)
Roads
Rd. with out utilities costs approx $500 per linear foot. This includes pavement, grading, & drainage
After talking to the County Planning Dept. it was determined that DHHL can do Ag standard rd. in Ag areas
Therefore, cost can be reduced by 20% (24 ft pavement down to 16-18 ft)
Amended Ag. road cost with out utilities = $400 per linear foot
Wastewater
Assumed that transmission lines are all that is needed. Development will hook into existing STP
Transmission = $150 per linear foot
Site Preparation
Based on a 4, 000 sf house site/pad being cleared for each lot
Clearing and grubbing only, no grading cost included
Assumes an area with a slope of 0-10 % would be found
* Topographic depression 3,500 ft long, 200 ft across, and 15 ft deep = approx 5.25 million cubic feet = 195,000 cubic yards x $50 per cubic yard = $9.75 M
Electricity
Transmission = $150 per linear foot
Special Notes
No irrigation costs included in this cost analysis. Assumption is that existing lines could be repaired
Water cost could be reduced if able to tap into Grove Farm surface water treatment plant. No new source would be required
Community Use and Commercial area cost only includes water storage costs since proposed development of area is not well defined. Length of rds./transmission unknown.

Kapa‘a Costs		**TOTALS**
DESCRIPTION	Industrial Commercial	
TOTAL # OF LOTS	16 acres	0
Potable Water		
Gallons Required	663,829	663,829
Per Gallon Cost	$2	$2
Storage Cost	$1,327,658	$1,327,658
New Source		
Units served	n/a	n/a
Cost per Unit	n/a	n/a
Source Cost	n/a	$2,000,000
Water Transmission		
Pipe Length	1,000	1,000
Per Linear foot cost	$150	$150
Total cost	$150,000	$150,000
Roads		
Road Length	1,000	1,000
Per Linear foot cost	$500	$500
Road Cost	$500,000	$500,000
Wastewater		
IWS	n/a	n/a
Gallons Generated	96,000	n/a
Cost per Gallon	n/a	n/a
STP Cost	n/a	n/a
Wastewater Transmission		
Pipe Length	1000	1000
Per Linear foot cost	$150	$150
Total cost	$150,000	$150,000
Site Preparation		
Total sf to clear	n/a	0
Per sf cost	$2.50	$2.50
Total Cost	n/a	$0
Electricity		
Wire Length	1,000	1,000
Per Linear foot cost	$150	$150
Total Cost	$150,000	$150,000
Other Costs		
n/a		
TOTALS	n/a	**$4,277,658**
COST PER LOT	n/a	n/a

Kapa‘a Cost Assumptions
Water
Gallons required is based on an average daily demand of 500 gallons per housing unit
2,500 gal/acre for Ag, 4,000 gal/acre schools or parks, 3,000 gal/acre commercial
In general the gallons required is multiplied by a factor of 3 to account for fire flow needs
New Water Source = $2,000,000
Transmission = $150 per linear foot
Roads
Rd with out utilities costs approx $500 per linear foot. This includes pavement, grading, & drainage
Wastewater
Assumed that transmission lines are all that is needed. Development will hook into existing STP
Transmission = $150 per linear foot
Site Preparation
No cost for Community Use or Commercial sites due to uncertainty
Based on a 4,000 sf house site/pad being cleared for each lot
Clearing and grubbing only, no grading cost included
Assumes an area with a slope of 0-10 % would be found
Electricity
Transmission = $150 per linear foot
Special Notes
Costs are based on a few new access roads into the site
No in fill factored into costs.

Anahola Costs

DESCRIPTION	10,000 SF Res.Makai Exist & Surround *Priority Phase I*	10,000 SF Beach Lots *Priority Phase II*	10,000 SF Res. Makai of COM *Priority Phase III*	10,000 SF Res. South *Priority Phase IV*	10,000 SF Res. Mauka of C/CU *Priority Phase V*	10,000 SF Res.Mauka Exist & Surround *Priority, Phase V*	10,000 SF Res. North of River *Priority PhaseVI*	Kupuna Housing *Priority*	2 acre Sub Ag New	2 Acre Sub Ag. Exist	10 acre Pastoral	Com S. Makai *Priority*	Com. N. Mauka	COM/CU Mauka *Priority*	CU- 2 in subdivision *Priority Phase I*	CU- 2 near beach	CU- end of valley	**TOTALS**
TOTAL # OF LOTS	350	100	158	261	154	195	TBD	25	94	9	14	43 acres	3 acres	45 acres	31 acres	29 acres	44 acres	1360
Potable Water																		
Gallons Required	0	150,000	238,500	391,500	235,500	292500	TBD	258,750	catchment	catchment	catchment	433,365	251,250	443,895	423,720	411,960	530,760	3,118,980
Per Gallon Cost	$2	$2	$2	$2	$2	$2	$2	$2	catchment	catchment	catchment	$2	$2	$2	$2	$2	$2	$2
Storage Cost	$0	$300,000	$477,000	$783,000	$471,000	$585,000	TBD	$517,500	catchment	catchment	catchment	$866,730	$502,500	$887,790	$847,440	$823,920	$1,061,520	$8,123,400
Facilities Reserve*	$910,000																	$910,000
New Source																		
Units served	0	100	158	261	154	195	TBD	25	catchment	catchment	catchment	n/a	n/a	n/a	n/a	n/a	n/a	868
Cost per Unit	$4,609	$4,609	$4,609	$4,609	$4,609	$4,609	n/a	n/a	catchment	catchment	catchment	n/a	n/a	n/a	n/a	n/a	n/a	$4,609
Source Cost	$0	$460,900	$728,222	$1,202,949	$709,786	$898,755	n/a	n/a	catchment	catchment	catchment	n/a	n/a	n/a	n/a	n/a	n/a	$4,000,612
Water Transmission																		
Pipe Length	17,000	4,400	10,400	15,600	8,100	12,100	TBD	TBD	catchment	catchment	catchment	TBD	TBD	TBD	TBD	TBD	TBD	67,600
Per Linear foot cost	$150	$150	$150	$150	$150	$150	$150	$150	catchment	catchment	catchment	$150	$150	$150	$150	$150	$150	$150
Total cost	$2,550,000	$660,000	$1,560,000	$2,340,000	$1,215,000	$1,815,000	TBD	TBD	catchment	catchment	catchment	TBD	TBD	TBD	TBD	TBD	TBD	$10,140,000
Roads																		
Road Length	17,000	4,400	10,400	15,600	8,100	12,100	TBD	TBD	13,700	1,900	7,200	TBD	TBD	TBD	TBD	TBD	TBD	90,400
Per Linear foot cost	$500	$500	$500	$500	$500	$500	$500	$500	$400	$400	$400	$500	$500	$500	$500	$500	$500	
Road Cost	$8,500,000	$2,200,000	$5,200,000	$7,800,000	$4,050,000	$6,050,000	TBD	TBD	$5,480,000	$760,000	$2,880,000	TBD	TBD	TBD	TBD	TBD	TBD	$42,920,000
Wastewater																		
IWS	n/a		n/a	n/a	n/a	n/a	TBD	TBD	940,000	90,000	140,000	n/a	n/a	n/a	TBD	TBD	TBD	$1,170,000
Gallons Generated	140,000	40,000	63,200	104,400	61,600	78,000	TBD	TBD	n/a	n/a	n/a	258,000	18,000	270,000	TBD	TBD	TBD	1,033,200
Cost per Gallon	$20	$20	$20	$20	$20	$20	TBD	TBD	n/a	n/a	n/a	$20	$20	$20	TBD	TBD	TBD	$20
STP Cost	$2,800,000	$800,000	$1,264,000	$2,088,000	$1,232,000	$1,560,000	TBD	TBD	n/a	n/a	n/a	$5,160,000	$360,000	$5,400,000	TBD	TBD	TBD	$20,664,000
Wastewater Transmission																		
Pipe Length	17,000	4,400	10,400	15,600	8,100	12,100	TBD	TBD	n/a	n/a	n/a	TBD	TBD	TBD	TBD	TBD	TBD	67,600
Per Linear foot cost	$150	$150	$150	$150	$150	$150	TBD	TBD	$150	$150	$150	$150	$150	$150	$150	$150	$150	$150
Total cost	$2,550,000	$660,000	$1,560,000	$2,340,000	$1,215,000	$1,815,000	TBD	TBD	n/a	n/a	n/a	TBD	TBD	TBD	TBD	TBD	TBD	$10,140,000
Site Preparation																		
Total sf to clear	1,400,000	400,000	632,000	1,044,000	616,000	780,000	N/A	N/A	376,000	36,000	56,000	N/A	N/A	N/A	N/A	N/A	N/A	5,340,000
Per sf cost	$2.50	$2.50	$2.50	$2.50	$2.50	$2.50	$2.50	$2.50	$2.50	$2.50	$2.50	$2.50	$2.50	$2.50	$2.50	$2.50	$2.50	$2.50
Total Cost	$3,500,000	$1,000,000	$1,580,000	$2,610,000	$1,540,000	$1,950,000	N/A	N/A	$940,000	$90,000	$140,000	N/A	N/A	N/A	N/A	N/A	N/A	$13,350,000.00
Electricty																		
Wire Length	17,000	4,400	10,400	15,600	8,100	12,100	TBD	TBD	13,700	1,900	7,200	TBD	TBD	TBD	TBD	TBD	TBD	90,400
Per Linear foot cost	$150	$150	$150	$150	$150	$150	$150	$150	$150	$150	$150	$150	$150	$150	$150	$150	$150	$150
Total Cost	$2,550,000	$660,000	$1,560,000	$2,340,000	$1,215,000	$1,815,000	TBD	TBD	$2,055,000	$285,000	$1,080,000	TBD	TBD	TBD	TBD	TBD	TBD	$13,560,000
Other Costs																		
TOTALS	$23,360,000	$6,740,900	$13,929,222	$21,503,949	$11,647,786	$16,488,755	engineer recommends 2 acre lots- no costs	$517,500	$9,415,000	$1,225,000	$4,240,000	$6,026,730	$862,500	$6,287,790	$847,440	$823,920	$1,061,520	**$124,978,012**
COST PER LOT	$66,743	$67,409	$88,160	$82,391	$75,635	$84,558		$20,700	$100,160	$136,111	$302,857	n/a	n/a	n/a	n/a	n/a	n/a	**$91,896**
TOTAL LUD COST	$93,670,612								$10,640,000		$4,240,000							
COST/LUD LOT	$76,842								$103,301		$302,857							

Anahola Cost Assumptions
Water
Gallons required is based on an average daily demand of 500 gallons per housing unit
2,500 gal/acre for Ag, 4,000 gal/acre schools or parks, 3,000 gal/acre commercial
In general the gallons required is multiplied by a factor of 3 to account for fire flow needs
New Water Source = $ 2million
New Water Source figures a 500 gpm well supplies 720,000 gallons per day
More than one well needed when average daily demand exceeds 720,000 gallons per day
Storage = $2 per gallon
Transmission = $150 per linear foot
Irrigation lines = $10 per linear foot to repair (COST NOT INCLUDED)
*Facilities Reserve Charge= $2,600 in order to hook up to the existing water system to access water credits
Roads
Rd. with out utilities costs approx $500 per linear foot. This includes pavement, grading, & drainage
After talking to the County Planning Dept. it was determined that DHHL can do Ag standard rd. in Ag areas
Therefore, cost can be reduced by 20% (24 ft pavement down to 16-18 ft)
Amended Ag road cost with out utilities = $400 per linear foot
Wastewater
New plant needed for residential. IWS for ag/pastoral
Gallons generated is based on 400 gallons per day per housing unit
which assumes that each household has 4 person who each generate 100 gallons of waste per day
IWS = $10,000 per residence/unit
Transmission = $150 per linear foot
Site Preparation
Based on a 4000SF house site/pad being cleared for each lot
Clearing and grubbing only, no grading cost included
Assumes an area with a slope of 0-10 % would be found
Electricty
Transmission = $150 per linear foot
Special Notes
No irrigation costs included in this cost analysis. Assumption is that catchment is possible
Many ag/pastoral lots could be less costly if cane haul road is in good shape and no paving necessary
Community Use and Commercial area cost only includes water storage and wastewater treatment costs since proposed development of area is not well defined. Length of roads/transmission unknown

Moloa‘a Costs				TOTALS
DESCRIPTION	3 acre Sub Ag Mauka P-Ville	3 acre Sub Ag Mauka- Ana	3 acre Sub Ag Makai	
TOTAL # OF LOTS	13	14	20	47
Potable Water				
Gallons Required	catchment	catchment	catchment	0
Per Gallon Cost	catchment	catchment	catchment	$2
Storage Cost	catchment	catchment	catchment	$0
New Source				
Units served	catchment	catchment	catchment	47
Cost per Unit	catchment	catchment	catchment	n/a
Source Cost	catchment	catchment	catchment	n/a
Water Transmission				
Pipe Length	catchment	catchment	catchment	0
Per Linear foot cost	catchment	catchment	catchment	$150
Total cost	catchment	catchment	catchment	$0
Roads				
Road Length	4,000	2,500	4,500	11,000
Per Linear foot cost	$400	$400	$400	$400
Road Cost	$1,600,000	$1,000,000	$1,800,000	$4,400,000
Wastewater				
IWS	$130,000	$140,000	$200,000	$470,000
Gallons Generated	n/a	n/a	n/a	0
Cost per Gallon	n/a	n/a	n/a	$20
STP Cost	n/a	n/a	n/a	$0
Wastewater Transmission				
Pipe Length	n/a	n/a	n/a	0
Per Linear foot cost	n/a	n/a	n/a	$150
Total cost	n/a	n/a	n/a	$0
Site Preparation				
Total sf to clear	52,000	56,000	80,000	188,000
Per sf cost	$2.50	$2.50	$2.50	$2.50
Total Cost	$130,000	$140,000	$200,000	$470,000
Electricity				
Wire Length	4,000	8,500	7,500	20,000
Per Linear foot cost	$150	$150	$150	$150
Total Cost	$600,000	$1,275,000	$1,125,000	$3,000,000
Other Costs				
n/a				
TOTALS	$2,460,000	$2,555,000	$3,325,000	**$8,340,000**
COST PER LOT	$189,230.77	$182,500.00	$166,250.00	**$177,447**

Moloa‘a Cost Assumptions
Water
Gallons required is based on an average daily demand of 500 gallons per housing unit
2,500 gal/acre for Ag, 4000 gal/acre schools or parks, 3000 gal/acre commercial
In general the gallons required is multiplied by a factor of 3 to account for fire flow needs
New Water Source = $ 2 million
New Water Source figures a 500 gpm well supplies 720,000 gallons per day
More than one well needed when average daily demand exceeds 720,000 gallons per day
Storage = $2 per gallon
Transmission = $150 per linear foot
Irrigation lines = $10 per linear foot to repair (COST NOT INCLUDED)
Roads
Rd with out utilities costs approx $500 per linear foot. This includes pavement, grading, & drainage.
After talking to the County Planning Dept. it was determined that DHHL can do Ag standard rd. in Ag areas
Therefore, cost can be reduced by 20% (24 ft pavement down to 16-18 ft)
Amended Ag road cost with out utilities = $400 per linear foot
Wastewater
IWS = $10,000 per residence
Site Preparation
Based on a 4,000 sf house site/pad being cleared for each lot
Clearing and grubbing only, no grading cost included
Assumes an area with a slope of 0-10 % would be found
Electricity
Transmission = $150 per linear foot
Special Notes
No irrigation costs included in this cost analysis. Assumption is that reservoirs may be in operation

Appendix B

Comments on Plan

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5.0 County of Kaua‘i, Department of Planning Comments (3/19/04)

Hui Kako‘o ‘Aina Ho‘opulapula Written Comments submitted on 2/15/04 & 3/22/04		
Subject	***Comment***	***Response***
Anahola/ Kamalomalo‘o	Expand Community Use above Kūhi‘o Highway.	The plan reflects this suggestion.
	Build Subsistence Agriculture lots out from the existing Residential.	DHHL would like to continue higher density development where possible and encourage groups/hui to farm collectively on General Agriculture land.
	Move some Residential mauka. The makai side requires sewer.	In order to develop the mauka side another water source needs to be developed. Makai side has enough water credits to create approximately 350 more Residential lots. Makai side is the priority, but some Residential will be added mauka of the Project Faith Community Use site.
	Build a complete community. Include adequate Commercial and Community Use lands.	Comment noted. The plan reflects this suggestion.
	Set aside 30 acres for a cemetery.	Comment noted. The plan sets aside land for Community Use.
	Camp Faith special permit should be revisited.	Comment noted.
	Third lane needed. Traffic flow problems.	DHHL can discuss w/ SDOT at the Development Plan phase.
	Create a gymnasium for young people for when it rains.	Comment noted. The plan sets aside land for Community Use.
	Set aside areas for primary health care services.	This is possible within Community Use area and Commercial area.
	Build a meeting space/hall in the Community Use area.	Comment noted- The plan sets aside ample Community Use for the community to develop as they choose.
	Re-evaluate 1995 Anahola Plan for adding 1000+ Residential lots and improve infrastructure.	The plan recommends significant infrastructure improvements.
General	Lot sizes should be 12,500 SF.	Comment noted. 10,000 SF lots are planned because they are less expensive to develop and increase the number of homesteads thus reducing the Residential wait list.
Hanapēpē	Reduce agriculture lot size to 2 acres instead of 4.	Preferred recommendation has both 2 and 3 acre Subsistence Agriculture lots. The 3 acre lots are in the gulch area to ensure that enough land for a house structure is available.
	Change General Agriculture to Subsistence Agriculture.	This change has been made. 3 acre Subsistence Agriculture lots are recommended for the gulch area.
	Move Community Use area on highway behind the Commercial area.	This change has been made. The Community Use area will run to the edge of the gulch with a recreational buffer running along the gulch.
	Let agricultural lands run down to the highway.	Preferred recommendation currently has both agriculture lands and residential lands running down to the highway.
	Designate a Community Use area w/in the Residential are for community facilities	Community facilities will be accessible to residents of both agriculture and residential lots.
	Enlarge Commercial area along highway.	Mauka Community Use road frontage has been increased, yet acreage remains at approximately 11 acres. Makai parcel is 6 acres. Total of approx. 17 acres is designated Commercial.

Subject	***Comment***	***Response***
Kapa‘a	Use property for lo‘i. Iwi may be in area.	Industrial/Commercial more consistent w/ surrounding uses. Areas for lo‘i cultivation are available in other tracts. If development occurs iwi will need to be located.
	Use for Bed-n-breakfast or alternative housing/kūpuna housing. Marshy area for community garden or agriculture activities.	Industrial/Commercial is more consistent w/ surrounding uses. Recommending that Kupuna housing be located in Wailua. Many other agricultural areas exist.
	Find a use for property that will generate more income.	Industrial/Commercial designation would allow for higher revenue generation.
Kekaha	Do an archaeological study of the lands along the road where the sand dunes are located. Involve local families. Perhaps erect a monument acknowledging iwi.	DHHL is aware that burials are in the area and before any development of the Special District area, a professional archaeological survey will occur. Families will be integral in locating the burials.
	School area should rather be for a community facility/meeting place.	Community Use areas are located in the vicinity. This site is designated residential.
	Designate a portion of the roadside Community Use area as Commercial. The flat area before the dunes.	A small informal lunch wagon type operation or water recreation rental could be located in Special District.
Moloa‘a	Designate the area as 3 acre Subsistence Agriculture lots.	Preferred recommendation indicates approx. 130 acres of Subsistence Agriculture use. Steep/sloped areas are in General Agriculture and stream corridor is in Special District.
Wailua	Ensure that SDOT road widening plans do not go near Mala‘e Heiau.	DHHL will proceed w/ development plans that necessitate SDOT does not encroach on their lands.
	Buffer around Mala‘e Heiau should be 15 acres and should encompass the site as a cultural buffer with view planes, information center, protection from the highway.	64 acres has been set aside in Special District along the Wailua river and surrounding Mala‘e Heiau.
	Locate Community Use nearer to the Mala‘e Heiau buffer.	Community Use area is relatively close to Mala‘e Heiau. Special District designation around the heiau does not precluded low impact Community Uses.
	Designate lands along the irrigation ditch as agriculture lands- specifically 2 10-acre Supplemental Agriculture lots and 40+ 3-acre Subsistence Agriculture lots.	Agriculture designation will benefit from close proximity to irrigation water. No Supplemental Agriculture has been designated in order to increase the number of lots that can be awarded.
	Start the subdivision before the river for traffic flow issues.	The Wailua property is located south of the Wailua River.
	Leave commercial area low impact and do not swap out.	Makai land is being planned as a Westside service center for beneficiaries and there are no plans to swap.
	DLNR 9 acres of Mala‘e Heiau should be returned to DHHL.	Currently not part of the Department's plans.
	Create a Community Use green buffer along the highway.	A buffer has been designated along the hwy.

Subject	***Comment***	***Response***
Wailua	Homes built near Mala‘e Heiau should be in keeping w/ the pride of Wailua using village residential design that's consistent w/ Heiau emphasis, respect, pride.	Comment noted. Design standards can be set.
	Build residences back from the Highway so that tidal/tsunami occurrences do not impact.	Residential is Mauka.
	Mitigate fumes from sewage treatment plant so they do not impact residences.	Comment noted. DHHL will work with the County Public Works Dept.
	Coco Palms hotel renovation will also use STP. Make sure DHHL only pays their share.	DHHL will negotiate with County Public Works Dept.
Waimea	Include agricultural, Pastoral, and Residential land uses for area.	Only Residential and Subsistence Agriculture homestead designations exist in the final preferred alternative. Pastoral uses are possible in General Agriculture areas.
	Designate Residential use along the ridges where feasible.	Kōke‘e Rd. Corridor is the most accessible, buildable land. Residential will be focused there.
	Designate Subsistence Ag not just supplemental.	Kōke‘e Rd. Corridor, as the most accessible area, will have 3-acre Subsistence Agriculture lots in response to community sentiment that smaller agricultural lots are better.
	Designate valley floor areas agriculture- good for taro.	The current General Agriculture designation for much of Waimea allows for leasing of the land for agriculture. Also, Special District has been created in the historic Wai‘awa‘awa valley where Taro was originally planted. Agriculture is allowed in Special District.
	Designate 300 acres agriculture in Wai‘awa‘awa Valley below Heiau.	Approximately 700 acres will be designated Special District in order to preserve and protect cultural resources. Agriculture is allowed in Special District.
	Enlarge Commercial area along Kōke‘e Rd.	Commercial would be encouraged as part of the Community Use area as well as on the residential lots along the highway. We recommend split zoned/mixed use for the residential.
	Protect the Heiau in Wai‘awa‘awa Valley.	Heiau is part of a Special District designation and will be protected.
	More Pastoral lands should be opened up.	The department is providing new pastoral lease opportunities in Anahola where water catchment is available. Additionally, DHHL's focus is on increasing residential opportunities. Pastoral activities can be done on General Agriculture lands in Waimea.
Westside	Participants in the Focus Group held on the West side indicated their priority for residential development being: First- Hanapēpē, Second- Kekaha, Third- Waimea.	Priority tracts in the plan reflect this comment.

Working Group Meeting #3- 2/11/04

Subject	***Comment***	***Response***
Awards	Agricultural lessees are not farming their land. DHHL needs to hold workshops.	To address this issue smaller lots are recommended.
General	The preferred alternatives do not address the agricultural waiting list.	Focus is on reducing the Residential waiting list by providing Residential homesteads. Many agricultural applicants await Residential awards as well.
	Important to have lots larger than 10,000 SF to reflect local lifestyle.	Cost estimates will be developed for larger lots, however the focus is to maximize Residential awards.
Infrastructure	Because of the use of cess pools the ocean is polluted.	Sewage Treatment plant is the preferred alternative to deal with waste.
	Water infrastructure should be turned over to lessees to manage and control.	Organized lessee group can come forward to DHHL with a proposal.
Wailua	Evaluate how to bring the ditch back in Wailua and manage the water.	Comment noted.
	Use existing cane haul roads as bike trails/motorcycle paths in Wailua.	Comment noted. Wailua will primarily be a Residential community.
	Wailua is the most prime spot. Develop it.	It is the first priority for Kaua‘i.
Waimea	Swap the "upper" game mgmt. land in Waimea for Mana Plain/more developable land.	There are developable areas along the Kōke‘e Rd. corridor.
	Use the upper land for an income generating hunting lodge. DLNR can still do game mgmt.	This would be possible under the General Ag. Designation.
	Use the upper land for forestry.	This is possible under the current General Ag. Designation.
	Convert Waimea irrigation ditches into piped water for better control.	This decision would come later in a development plan.
	Cost sharing for water may be possible in Waimea.	This decision would come later in a development plan.
	Is the road to Pu‘u Opa‘e accessible?	It could be upgraded for 4-wheel drive traffic.

Working Group Meeting #2- 11/12/03

Subject	***Comment***	***Response***
Anahola/ Kamalomalo‘o	In Anahola, there is a Heaiu located in one of the undeveloped Residential areas.	This will need to be identified.
	In Anahola, there is enough water for 400 more units.	Further discussions revealed that 350 credits for water remain.
	Adding the Residential areas shown in the update to the Anahola Development Plan doubles the amount of housing. Requires new sewer system.	New sewer system is recommended in the plan.
	(400) 1 acre lots could be developed in Anahola immediately. There is enough water for 400 more units and 1 acre lots would not require a sewage treatment system.	Further study revealed that this is not the best alternative, moreover only 350 water credits remain.

Subject	***Comment***	***Response***
Awards	Beneficiaries prefer ½ acre – 1 acre awards vs. 10,000 SF.	The plan designates a mix of lot sizes. Mostly 10,000 SF in Residential developments.
	Beneficiaries want a 10,000 SF lot and many might have difficultly maintaining larger lots.	The plan designates a mix of lot sizes.
Eastside	Kūpuna housing suggested for Kapa‘a but prefer a location closer to medical facilities.	Kūpuna housing is important. Plan addresses this need.
General	Conservation should be used as passive open space/parks.	This is an allowed use in Conservation area.
	Suggested growth areas:1) 400 1 acre lots in Anahola, 2)Wailua – satisfy Līhu‘e preference, 3)Hanapēpē - relatively easy to develop, 4)Anahola – Develop more Residential after sewage treatment plant is developed.	Community meetings illuminated different priority areas. Plan indicates the following priority areas: 1- Wailua, 2- Hanapēpē, 3- Anahola.
	Develop least expensive, easiest lots first.	Phasing recommendations are part of the Island Plan.
	Exceed the modest goals of DHHL’s General Plan.	The Plan will exceed the goals of 840 Residential homesteads over 20 years.
	Develop matrix summarizing important factors about each area (beneficiary preferences, infrastructure needs, etc).	Matrix developed.
Hanapēpē	A new option was proposed for Hanapēpē: Change Subsistence Ag to Residential in Alternative 2.	This change was made and brought back to the community. Community indicated it wants to maintain some agricultural land in Hanapēpē because the land is very prime/fertile.
	Best agricultural land in Hanapēpē-designate as agriculture. Homesteads there vs. Anahola.	The plan reflects this suggestion and designates agricultural land in both areas.
	Hanapēpē land should not be General Agriculture.	The plan does not recommend General Agriculture for Hanapēpē.
	Locate commercial activities in most viable area in Hanapēpē; no preference for location of Community Use.	Proposed alternative locates Commercial in visible areas along the highway corridor.
	Are there plans for the Port Allen airport which might impact the future use of Hanapēpē lands?	DOT indicated that there are no major future plans. The airport will continue to be used for helicopters.
	Port Allen as a birthing area for cruise ships?	The port does not have plans to upgrade for cruise ships.
Infrastructure	DHHL may introduce a new rural lot land use category to avoid high infrastructure costs. This category would be for 1 acre lots and some infrastructure such as sidewalks would not be provided.	This action has not taken place- planning has proceeded without a rural land use category.
	There is an island-wide shortage of water.	Most development will require new water sources and storage facilities.

Subject	***Comment***	***Response***
Kapa‘a	Some beneficiaries might prefer living in Kapa‘a. 10,000 SF lots would be appropriate since its more urban living.	The Kapa‘a lands are surrounded by Industrial/Commercial uses which are not compatible with residential development.
	In Kapa‘a, develop affordable rentals or transitional housing for Hawaiians on the waiting list. This idea could be unpopular among beneficiaries but it may be more realistic for those who can’t afford a mortgage, etc. The rentals should be designed to accommodate large families.	Rent-to-Own and other alternative projects have been implemented on Oahu and may be considered for other Islands as appropriated.
Kekaha	Use the Kekaha burial lot for a Community Use such as a cemetery.	The plan suggests Special District for this area and the community can access.
	DHHL may own additional land in Kekaha.	The Department does not own additional Kekaha lands.
Moloa‘a	Moloa‘a land ranks low in Survey. Exchange for land in Līhu‘e.	Moloa‘a lands may become desirable in the future.
Wailua	The Conservation buffer zone along the Wailua River is some of DHHL’s most valuable land. Maximize the income generating potential. A Polynesian Cultural Center type attraction. This idea was supported as long as the development was not intensive. The Special District designation was suggested.	The plan for Wailua reflects this suggestion. The river strip is changed to Special District.
	The future of the by-pass road could impact the Wailua property. Makes planning difficult. Determine most advantageous route for DHHL and lobby for that route.	The plan addresses the route which has the least impact on the Wailua lands.
	Negotiate w/ DOT for an underpass so homesteaders could get to Lydgate Park from the mauka side. This could tie the cultural sites on the makai side with the Wailua River and cultural sites on the mauka side of the highway. DOT could use IST funds since the highway bisects cultural sites.	Connections should be provided.
	Acquire Wailua prison site because it is incompatible with a homestead community.	This is not in DHHLs plans.
	Wailua lands could be used to grow produce for hotels.	Agricultural lots will be made available in Wailua.
	The makai Wailua lands could be used for homesteads to provide beneficiaries close access to Lydgate Park amenities. Commercial development could be moved to the mauka side.	Makai area will remain Commercial.
Waimea	Make Waimea development compatible with the military uses at PMRF.	PMRF has been contacted.
	Research "poison valley."	The Dept. of Health has been contacted and the site has been visited.
	Develop Waimea's flatter, more accessible areas for Pastoral homesteads.	The department is providing new pastoral lease opportunities in Anahola where water catchment is available. Additionally, DHHL's focus is on increasing residential opportunities. Pastoral activities can be done on General Agriculture lands in Waimea.

Subject	***Comment***	***Response***
Waimea	In Waimea, all developable areas could be ½ acre Residential lots	This alternative was considered but it was determined to be too intensive of a use, very expensive, and not enough demand.
	Rim development option is more assessable and water is available.	Development is concentrated on Kōke‘e Road to reduce infrastructure costs.
	Change Waimea's Conservation area to the General Agricultural designation because they could be developed in the future.	This change was incorporated and is reflected in all development alternatives from the date the comment was received.
	Ni‘ihau applicants prefer the Westside (Hanapēpē)?	Comment noted. Many homesteads will be made available on the Westside.
	Kekaha can be the community center for Waimea.	Comment noted. Waimea may develop a community center of its own in the CU area.

Working Group Meeting #1- 9/24/03

Subject	***Comment***	***Response***
Anahola/ Kamalomalo‘o	Illegal dumping in Kamalomalo. DHHL should fence off land and restrict access on Kealia Road.	The plan does not address the management of the land.
	Stream diversion issues. Natural stream flows and habitats should be restored.	Plan leaves stream corridors as Conservation.
Awards	Create large lots for lessees to subdivide for their children.	Plan will offer a variety of lot types and sizes.
Burials	Burials will be found on all DHHL parcels. Re-internment sites should be designated on each parcel.	This will be addressed at the Development Planning phase for each site.
	Cemeteries/Grave yards are important uses.	Community use areas lend themselves to this type of development.
General	Preserve appropriate lands for taro planting.	General Agriculture lands are designated through out the plan and can be used for Taro.
	DHHL should utilize partnerships.	Partnerships will become very important for the development of infrastructure for the proposed homestead sites. DHHL has done some creative partnering in the past such as working with Habitat for Humanity to develop self-help housing.
	Health care/medical services should be located near the population.	Many of the proposed development sites are less than 10 miles from the nearest medical facility.
	Use Ahupua‘a concept in planning.	Mauka-makai connection is made in the plan and surrounding uses are taken into account.
	Preserve land as open space for regeneration/recuperation.	Reflected in the development plans. Conservation, Community Use, General Agriculture, and Special District land could be used for these purposes.
	Need shelters for abused people.	Community use areas lend themselves to this type of development.
	Work w/in Ahupua‘a to determine resources.	Planning process accounts for resources on nearby/surrounding lands.
	County’s community planning does not include Native Hawaiians.	Best to contact the County.
	Ag land not taxed as highly as Residential. Make DHHL land Ag.	Kaua‘i flat taxes all DHHL property holders.

Subject	***Comment***	***Response***
General	Include economic development both for DHHL and for Beneficiaries. Create jobs near DHHL lands.	Plan designates land in each area as Commercial for both local community income generation and to make money for the department.
	Need Drug rehab facility.	Community use areas lend themselves to this type of development
	Develop additional house lots .	Creating Residential homesteads is the primary focus of the DHHL Kaua‘i Island Plan
	Acquire new lands/look for land swaps.	Existing parcels have great potential for development, however DHHL is open to land swap
	Hawaiian Service Centers located on both east and west side. Co-locate Hawaiian/ social service agencies.	An eastside service center is addressed in the Wailua Development Plan. Community use land is available on the Westside and could be used for this purpose-specifically Hanapēpē.
	Some parcels are better for certain types of development/non-development.	This is exactly correct and the plan aims to designate the land for the best use possible.
	Agricultural & Pastoral lands should be maintained and protected.	The plan sets aside both agricultural and Pastoral land.
	DHHL should develop a community input system.	The Department has a District Office and the Hawaiian Homes Commission meets on each Island at least once each year.
	Community Patrols should be established in homestead areas.	This can be developed by the homestead community associations.
Kekaha	Golf Course in Kekaha.	Land in Kekaha is limited. Golf Courses often lose money. Residential lots take priority.
	Recycling center could be developed in Kekaha	Land in Kekaha is limited. Recycling center can be addressed in Development Plan or Community Homestead Plan. Partnership w/ county.
Wailua	Showcase/enhance Wailua cultural sites.	The plan suggests leaving the Wailua cultural corridor in Special District which would allow for many different projects/commercial ventures/cultural preservation to take place.
Westside	Waimea-Kekaha garbage dump issues- DHHL beneficiaries want to make decisions about garbage.	Illegal dumping hard to stop. Community can patrol, report dumpers. County should enforce fines.

Report to DHHL Staff- 04/02/04

Subject	***Comment***	***Response***
Anahola/ Kamalomalo‘o	Traffic in the area is very congested. Will County allow further development.	DHHL will have to pay their fair share for regional traffic improvements.
	Too expensive to do infill development. Do not make Anahola a top priority.	Plan reflects this comment.
General	$2 million sounds inexpensive for creating a new well.	Cost verified with Civil Engineer. Civil mentioned that well cost is usually based on depth. $2 million is a standard estimate.
	A well recently developed on another Island by DHHL cost approx. $5.8 million.	This reflects the varying, site by site nature of development/infrastructure costs.
	Discussion about required lot frontage. 65-70 ft? Kaua‘i mandates that there be a 3:1 width /length proportion.	60 foot frontage for 10,000 SF lot is required. Lotting schemes developed for the Plan reflect approx. 80 ft frontages.
	Former sugar cane lands are expensive to grade because of their clay like features.	Grading costs will be developed further along in the planning process.
	Costs should factor in site preparation.	Site preparation is factored in at $2.50 per square foot of clearing and grubbing.
	Confirm all infrastructure costs because they seem low.	Corrections made.
	Priorities should change to- 1) Wailua, 2) Hanapēpē, 3) Anahola.	The plan reflects this comment.
Hanapēpē	12,500 SF lot size is too large, too expensive to develop. Change to 10,000 SF.	The plan reflects this comment.
	Inquire how much existing wells in the Hanapēpē area cost to develop.	Recent well in Hanapēpē cost $2.3 million
Kekaha	No need for another community meeting area. There are existing facilities nearby. Remove the Community Use area from the neighborhood.	The plan reflects this comment.
Wailua	Costs seem low for Wailua. Double-check.	After double checking costs have increased.
	Concern expressed about getting approval to build houses in Wailua due to traffic implications.	DHHL will have to pay their fair share for regional traffic improvements. Intersection upgrade is factored into cost.
	DHHL is trying to partner with the County for affordable housing development. perhaps Wailua could be the site.	This would be desirable.
Waimea	Elevation will be a factor for well development.	Civil engineer states that elevation is not a large factor because water can pool in high places on a volcanic island.

Report to DHHL Staff- 12/03/03

Subject	***Comment***	***Response***
Anahola/ Kamalomalo‘o	Land is abundant in Mauka Anahola. How expensive is it to get water to upper areas versus sewer treatment plant for lower areas?	Easily accessible land should be developed first. In Anahola there is ample land near existing roadways. Mauka land is very challenging and expensive to access.
DHHL	How many people already have a residential award and remain on the waiting list for an agricultural award?	Determined from the excel spreadsheets Joe provided for the survey mail out. There are 267 Residential lessees waiting for another lease, 34 agricultural lessees waiting for another type of lease, and one Pastoral lessee waiting for another type of lease.

Subject	***Comment***	***Response***
Infrastructure	Could DHHL get water from the Pu‘u Lua reservoir which is outside of DHHL’s property?	This would need to be negotiated.
	Different types of sewage treatment options such as package plants will be explored to see if they could reduce costs for Anahola and elsewhere.	Met w/ Aqua Engineers and toured the Puhi Plant on Kaua‘i. Definitely an option for DHHL.
	Rural residential standards versus county standards could reduce infrastructure costs.	Agricultural standards do make road cost less expensive. $400/linear ft. vs. $500/ linear ft.
Kekaha	Could the flood zone in Kekaha create problems for beneficiaries securing mortgages?	All of Kekaha is a flood zone. As long as the pump is operated the area should be fine.
Moloa‘a	County DOW asked for a “right of entry” to do an exploratory well above the Moloa‘a property in the forest service area	We are aware of the County's exploratory wells.
Waimea	There is potable water in Kōke‘e State Park? Group 70 should verify that this water cannot be used for DHHL Waimea parcels.	Kōke‘e State Park uses surface water. Negotiations will need to take place if water sharing is to occur.
	Group 70 will look into the extent of contamination from Amfac’s pesticide warehouse in Waimea	The site was toured. Environmental remediation needs to take place on approx. 1 acre.
	Waimea was extensively used by military in the past.	Plan is mindful of this history and recognizes that before any development takes place area should be well surveyed.
Wailua	What will be impact if the Wailua ditch system is altered?	Wailua ditch is an asset. Plan recommends maintaining ditch and creating a buffer along ditch.
Westside	Is Kekaha desirable to Nihau applicants? Or is just the Westside generally?	Challenge to determine who on the waiting list is from Nihau.

Other DHHL Comments

Subject	***Comment***	***Response***
General	Reserve for certain land for future development outside of the 20-year planning framework.	The Island Plan is taking a longer view than 20 years and has factored in the need for development many years out.
Wailua	A Kaua‘i community group wants to keep the Wailua lands in open space and may oppose any development.	DHHL can be mindful of the non-beneficiary community concerns, however their main goal is to get lands to beneficiaries.

Honolulu Community Meeting -03/23/04

Subject	***Comment***	***Response***
Anahola/ Kamalomalo‘o	Kūpuna housing in Anahola is far from the hospital.	Project Faith's plans include a skilled nursing facility.
DHHL	When will Ag lots be available?	Agricultural lots are not in the upcoming budget; there is a much bigger demand for Residential housing. Residential waiting list is given more priority. However, a person can farm presently if they apply for a license or RP on lands designated General Agriculture.
General	Kūpuna awards should be a part of every project area.	The plan recommends Kūpuna housing on both the eastside and Westside.
Hanapēpē	Develop Agricultural lands in Hanapēpē first.	The plan focuses on Residential development because it is a priority. Most beneficiaries want a house on their award.
	Is drainage an issue in Hanapēpē?	It can intermittently become a problem, because of this large lots have been created through the gulch/drainage channel so that the house site can be placed on high ground.
	How is traffic in Hanapēpē?	Moi Rd. can get congested but the Highway is rarely congested.
Wailua	How does the Kapa‘a Bypass Road impact Wailua property?	DHHL has met w/ DOT and their consultants to make them aware of homestead project plans. KIP Wailua designations makes space for the route alternative with the least impact to DHHL property.

Eastside Community Meeting -03/18/04

Subject	***Comment***	***Response***
Anahola/ Kamalomalo‘o	Have hui been formed? Where are they going to be? Who is in charge of the hui?	Contact DHHL directly to be connected with those working as a hui in Anahola.
	What about the water in Anahola?	DHHL can access DLNR's water because DHHL has the right to government owned water free of charge.
	North of the river- G1 & G2 What is the timing of this project can you talk about it?	The land remains in Residential as suggested in the original Anahola Development Plan. Much of the land is steep and challenging to develop.
	Did DHHL sell land to people since the 1995 Plan and the current proposed plan?	No, however, the map now indicates the land that never belonged to DHHL.
	I want to start a school. Is the land set aside in the 1995 plan still available for a school?	The land is set aside in Community Use.
	Do not take land from the Hawaiians to create bike path along the beach.	Comment noted. It is not clear whether the County bike path plan referred to hopes to proceed through Anahola.
	EPA thinks cesspools should be eliminated. Anahola must have an STP. We need to be creative and use sustainable infrastructure. If we develop STP more homes can be built.	Comment noted. Future Residential requires a sewage treatment plant.
	We need to look at how a bike path can benefit us. We are responsible to put our position together in advance so when the bike path comes we are ready. Change is inevitable but how can it benefit us.	Comment noted.

Subject	***Comment***	***Response***
Anahola/ Kamalomalo‘o	Fancy homes are coming on either side of Anahola. We will become the ghetto if we don’t get our act together. We need to get ready and embrace economic opportunities.	DHHL encourages the community to get organized.
	Project Faith utilizes our human resources to work alongside DHHL- judge us on the work we do.	Comment noted.
General	How long will it take to complete Priority #1 before you begin on Priority #2?	They are not mutually exclusive and can happen simultaneously.
	Will this plan satisfy the waitlist for Kaua‘i?	Yes, the Residential waitlist.
	You should advertise your meeting in more places than just the local newspaper. You could get a better turn out.	Comment noted.
	You should be concerned that if you give land away in a long term Commercial lease that the Commercial lessee can contest you in the future and not give you back the land.	Comment noted. Commercial leases will be well defined w/ any lessee.
	Cooperative Home building could dramatically reduce costs; federal money is available in grants for this type of activity, builds capacity in communities.	DHHL encourages the community to get organized.
	We need land in Līhu‘e- why aren’t we in the center of commerce and activity?	Wailua development should satisfy this need.
Hanapēpē	Are you using the Hanapēpē sight as a model for development?	DHHL has learned that those lots are not desirable and will make larger lot sizes.
Infrastructure	If we have our own resources, can we develop our own infrastructure on our leases?	Beneficiaries may be able to make infrastructure improvements but they must meet County and State regulations.
Wailua	Do not allow DOT to cross/take/ use any DHHL lands in Wailua for the Kapa‘a Bypass Rd.	DHHL will support the route which impacts the Wailua land least.
Westside Community Meeting -03/17/04		
Subject	***Comment***	***Response***
Awards	What is the target date for the Kūpuna housing in Wailua to be complete?	This will depend largely on community demand and input.
Burials	Are there areas blocked out for cemeteries?	Community Use areas lend themselves to this type of development.
DHHL	Does DHHL have in place methods to make sure the land is better when RP is pau?	There is a “good husbandry” clause written into all RP contracts and that most RP’s are issued for “friendly” uses.
	Can you build a house on agricultural homestead land?	Yes. However you must meet health and safety standards, submit a request to build and plans, the DHHL will review.
	Is their a section or department w/in DHHL that looks into sensitive cultural areas, maps them and knows them?	No, but if people know of sensitive areas they should inform DHHL.
	Does water come with agricultural lots?	DHHL would like to focus agricultural development where catchment is possible.
	Where will DHHL get the dollars to do these plans?	DHHL’s money stream: $30mill from settlement with the state; $8mill generated by DHHL; $10mill from NAHASDA (Native American Housing Assistance Self Determination Act); currently negotiating with US dept. of Agriculture Rural Development.

Subject	*Comment*	*Response*
DHHL	Raw land leases should be made available to young people.	Very few beneficiaries have indicated that they are interested in raw land.
General	Was Group 70 International, Inc. formed just to do this plan? How much has Group 70 International, Inc. been paid? Who is going to profit from this venture- you and your business partners? Why is this land being leased to non Kanaka when Kanakas want to build a house?	The entire contract is for $190,000 and includes other sub consultants. Group 70 has been in existence for over 30 years.
	Kūpuna units should be 50 rather than 25.	Comment noted. This will be determined during Development Planning Phase.
	Kūpuna housing should be available on both the west and east side.	Comment noted. Plan will incorporate this suggestion.
	What is a target date for the possible completion of these projects?	The Island Plan will be completed in May. Then Development Planning would take approx. 1.5 years. Development would begin after that awards could happen in 2-3 years.
Kekaha	The non-DHHL Kekaha parcel is in the flood zone and not suitable for development	Comment noted. DHHL will factor this into their assessment of whether or not to acquire.
Wailua	Where do you get the water for Wailua Residential lots and is the County aware of your plans?	The civil engineer has been in contact w/ the Board of Water Supply and we are aware of Grove Farm’s surface water treatment plans that could provide more water in the area.
Waimea	Beneficiaries with ties tWai‘awa‘awa Valley should be contacted prior to development.	No development plans are in place for Wai‘awa‘awa Valley. Rather it will be protected in the Special District designation.

Westside Community Meeting -01/23/04

Subject	*Comment*	*Response*
Agriculture	Agricultural lot sizes may dictate the type of loan a beneficiary could receive (i.e. USDA loan).	Correct, lot sizes are all 3 acres or less and will qualify for certain USDA rural development loans.
Awards	How many beneficiaries await two different awards?	Approximately 1,150.
	How many beneficiaries have been awarded two lots?	4 people on Kaua‘i hold two leases, meanwhile, 305 people who have received an award await another award.
	Raw land should be awarded. Hawaiians are resourceful.	This has been done in Kahikinui on Maui. DHHL's current focus is to create house lots near centers of employment.
	Hawaiians need to "occupy" the land even if they can't live on it.	DHHL is considering awarding undeveloped lots. Efforts are being made to "vest" land to the beneficiaries so they have rights to the land despite status of development.
	I would like the land to be vested to me so I can pass it on to my children.	DHHL is considering awarding undeveloped lots. Efforts are being made to "vest" land to the beneficiaries so they have rights to the land despite status of development.
Burials	Where are the lessees going to be buried?	Many Community Use areas are proposed which could become cemetery sites.

Subject	***Comment***	***Response***
DHHL	Do RP recipients submit business plans?	Yes. The civil is looking into existing irrigation systems and catchment.
	RP recipient may mismanage land.	DHHL has a good stewardship clause and can revoke permit at any time.
	Beneficiaries want access to RP land- cultural sites.	Beneficiaries should have access to cultural sites.
General	Are County plans accounted for?	Yes.
Infrastructure	Look at non-traditional infrastructure (i.e. composting toilets, hydroelectric power, etc.).	Innovative technology and non-traditional infrastructure is being explored.
Kekaha	Award all Kekaha lands now! Economic development ideas- golf course, quarry blue rock from Makahoa Ridge (good fill lands, Grove farm used to sell those rocks before.)	A residential area in Kekaha is being developed now.
Moloa‘a	Make Moloa‘a a Residential priority because land is so beautiful.	Moloa‘a is not a priority development location, due to the substantial investment in infrastructure that will need to be made.
Survey	Survey under-represents Westside demand. Beneficiaries weren't aware of the amount of west land.	Surveys are just one tool and an imperfect one at that. DHHL is aware that had beneficiaries known more about the land on the Westside they may have been more likely to choose it as a preferred location for an award.
	Re do the survey because beneficiaries are more informed now.	Existing results are useful; survey is one planning tool; community input also considered.
Wailua	Designate more Commercial in Wailua- it will become a Commercial corridor.	Ample Commercial land is set aside in Wailua, specifically 47 acres.
Waimea	Waimea Mauka Village concept supported. Tour buses suggest market for Hawaiian products on Kōke‘e Rd.	This suggestion is factored into plans for the area.
	Distribute raw land in Waimea.	The department is focusing on distributing improved land because it is highly demanded by beneficiaries.
	Swap Waimea lands for flatter lands w/ better access to infrastructure (i.e. Mānā Plain).	Kōke‘e Rd. provides access to flatter areas for development.
	ATV tour business on DHHL Waimea lands.	DHHL wants to be good stewards of their land and manage erosion.
Westside	Major Westside development will impact area's character.	Planning goal to maintain the special rural character of Kaua‘i.
	Is Blue Rock Quarry (Makaloa Ridge) on DHHL property?- Good economic dev. Opportunity.	No- just Makai of DHHL property

Eastside Community Meeting -01/09/04

Subject	***Comment***	***Response***
Anahola/ Kamalomalo‘o	Real name of Kealia stream should be in report.	Comment noted.
	Kealia Kai subdivision is taking free water from the Kamalomalo‘o area.	Comment noted.
	When will developed lots in Anahola be available.	Anahola is the third priority in the plan, therefore lots in both Wailua and Hanapēpē may become available first.
	There should be economic development opportunities for the Hawaiian people in Anahola.	Commercial and Community Use sites are a part of the plan.

Subject	***Comment***	***Response***
Anahola/ Kamalomalo‘o	What are the differences between the 1987 and 1995 plans.	The differences are in the number of house lots. The 1995 update changes some Subsistence Agriculture lots to house lots on the makai Kamalomalo‘o area.
	Could the Island Plan make changes to the 1995 plan?	Yes, the plan recommends some changes.
Awards	Older people should be given priority on the waiting list.	This would require a change in DHHL regulations.
	Awarding paper lots gives a fake sense of progress when many who were awarded lots in the 1980s still have not been able to move on the land.	DHHL is working to provide lots. The Island Plan is a step in the process.
	The goal of 42 lots per year and 840 over 20 years is not ambitious enough. More homesteads should be provided.	The plan will recommend for more than 840 Residential leases.
DHHL	Will financing be available for new Residential developments?	DHHL can assist beneficiaries with locating financing.
	Do Hawaiians own the land or does the State?	The State owns the land in trust for Native Hawaiians.
	I want to lease Commercial or Industrial land. Please advise if lots are available.	The land management division deals with revocable permits and leases and will be able to assist.
	The requirement of 50% Hawaiian ancestry for Hawaiian home land eligibility is too restrictive. It should be expanded to include 25% ancestry.	This requires a change to DHHL regulations which is not dealt with in the Island Plan.
General	Use DHHL land for homesteads not schools.	DHHL is working to build communities. Educational facilities are important to the community.
	How will the proposed alternatives impact the Kaua‘i General Plan?	The General Plan has been considered but not all proposed designation are consistent w/ the County's general plan designations.
	Evacuation planning is important and should be considered in the planning.	Roads will be built to county standards and will account for evacuation.
	Why have large landowners been consulted during the planning process?	Two reasons, first, to understand whether it would be appropriate to exchange DHHL parcels for other parcels more desirable for homestead awards. Second, part of the planning process includes examining the future uses of neighboring land to examine whether they are compatible with the proposed uses for DHHL parcels.
	The meeting should be recorded.	Detailed notes have been taken.
	The planning process is too short. May is an unrealistic deadline. The community should have more time to comment on the plan because the plan will guide future homestead development.	Comment noted.
	What are the priority areas? Which areas will be developed first?	Priority is a topic of discussion for the Island Plan and smaller projects can be done while bigger projects are scheduled.
	Major concern about lack of planning in area of Community Use when subdivisions come up.	More detailed plans for Community Use areas will be addressed at the development planning phase.
	Not enough areas for recreation and cultural activities.	Community Use land lends itself to these types of activities, as well as Special District, General Agriculture, and Conservation.
	Have microphones at beginning of meeting. Hold questions after presentation.	Based on this recommendation a P.A system was used at the second community mtg.

Subject	***Comment***	***Response***
Infrastructure	Can beneficiaries drill their own wells after their homestead is awarded?	Following County rules, regulations, and code, a person can do what they like with their property.
	Who has the water rights to Hawaiian Home Lands and specifically in Anahola.	If the source is on DHHL land it belongs to DHHL. DHHL has first rights to water from all State lands.
	Beneficiaries could work together to maintain the ditches if the department cannot afford the cost of maintenance. Does the Island Plan include maps of the ditch system?	Some ditches are shown in the island plan. It would be up to the beneficiaries to work w/ DHHL to organize a ditch maintenance program.
	Agricultural and Pastoral lands need water.	Yes. The civil is looking into existing irrigation systems and catchment.
	We don’t want to repeat West Hawai‘i (Kona) traffic problems. Please consider when determining site locations and densities.	Roads and traffic will be thoroughly planned for at the Development Planning phase.
	Water rights should be resolved to ensure that DHHL and homesteaders have water. There is concern that private land owners are stealing all the water.	DHHL has first rights to water from all state lands.
	Proper infrastructure must be in place.	The plan recommends priority development of those parcels in which infrastructure is easy to provide.
	Are the canals in Kapa‘a manmade or natural?	The canals are man made.
Kapa‘a	Does the Kapa‘a tenant encroach onto the wetland areas?	Kapa‘a has no land designated as wetland, however there are lands prone to flooding.
	Does the proposed Industrial/Commercial use in Kapa‘a conform to surrounding uses?	Yes, the surrounding land uses are mostly warehouses.
	What is the current lease rent? What are the conditions of the current lease? Will the tenant have to take the gravel away?	The lease is a month-to-month revocable permit. DHHL Land Management Division has additional information regarding the terms of all revocable permits.
	How much backfill would be necessary to improve the site conditions in Kapa‘a?	An estimated 4-6 feet would be needed to get the site above flood grade but further studies are required.
	Is the Kapa‘a area designated as a wetland?	The area has not been formally designated as a wetland. FEMA has designated part of the property as located in a flood zone.
	The Kapa‘a land should be used primarily for Residential.	Limited Residential preference shown for this area. It is surrounded by Industrial/Commercial uses.
	Revenue generation in Kapa‘a.	The plan recommends a designation for Kapa‘a which would generate income.
Moloa‘a	Are there any flat areas in Moloa‘a?	There are some flatter areas but the topography is generally rolling hills.
	What is the current lease rent for Moloa‘a?	This is public information available from the DHHL’s Land Management Division.
	Is there water available now in Moloa‘a.	The County is planning two wells off-site on nearby properties. Water may be available when the wells are developed but there may be some transmission costs. However, catchment is feasible in the area.

Subject	***Comment***	***Response***
Wailua	The plan should consider relocating the proposed agricultural homesteads from along the highway to near ditch. The ditch could be a community element. Beneficiaries may not be able to do organic farming along the highway because of pollutants. A park strip should be provided along the highway to buffer Residential homesteads from the road. Who would be responsible for the maintenance of this buffer area?	Wailua land will be maximized for Residential development, however ditch system and highway buffer will be maintained.
	Is there really excess capacity at the Wailua Sewage Treatment Plant? Wind direction should be considered if package sewage treatment plant is needed.	Yes, total capacity is 1.2 mgd whereas only .6 mgd is currently being used.
	Where does water for Wailua development come from?	Various wells in the area, however most likely a new well will need to be developed or a surface water treatment plant utilizing the ditch and reservoir water.
	There are a lot of cultural sites in the Wailua area. A cultural center is needed for Kūpuna to meet and to host people from other areas. The Mala‘e Heiau has several important features including burials and evidence of house sites. It is a symbol of the Hawaiian culture, buildings, and the social system.	The Wailua cultural corridor will be designated Special District in order to allow for thoughtful development and preservation.
	The highway should be kept in the existing corridor.	This is what DHHL will advocate for, however it is not likely.
	The area around the jail would be a good place for aquaculture.	It is proposed to be General Agriculture. Aquaculture could take place there if a beneficiary initiated a plan.
	What would be the impact of the proposed development on traffic in the area? The impact on traffic flows should be studied further.	Traffic Impact studies come further along in the development process.
	Does the plan include a fire station?	It includes Community Use sites which could be developed into a fire station if one is needed.
	I support housing on the Mauka side of Kūhi‘o Highway in the Wailua area.	The plan proposes houses on the mauka side of Kūhi‘o Highway.
	Will a resort be located on the Makai Wailua land?	It is not currently proposed, however as income generating commercial land market forces will factor into the development decisions.
	Wailua- Development of Hawaiian Immersion Schools Kula Kaiapuni (DOE).	Community use areas are set aside and lend themselves to this type of development.

County of Kaua‘i, Dept. of Planning written comments submitted 03/19/04

Subject	***Comment***	***Response***
Anahola/ Kamalomalo‘o	These lands are master planned and are Kaua‘i's largest DHHL project.	DHHL would now like to shift focus to new, master planned communities in other areas. Incremental development will likely continue in Anahola.
	It is important that the mauka irrigation system be preserved and/or maintained since these lands are a vital link in the eastside irrigation system.	Ideally, the irrigation system will be preserved and made operational. However, the agricultural homestead areas designated in the plan are deliberately located in zones where water catchment is possible.
	It is anticipated that infrastructure development to develop this project will be immense, therefore it is important that the development of infrastructure (water in particular) be coordinated with the County of Kaua‘i. Maybe cost sharing or other options would be available.	Cost sharing is preferred and will be pursued when the time is right. Both new water sources and a new sewage treatment plant are needed.
Hanapēpē	Second access to Hanapēpē Heights is important for traffic circulation and public safety.	This is understood and the plan designates an existing cane haul road for potential upgrade.
	Commercial use along Highway is questionable since it could conflict with the revitalization of Hanapēpē town.	Revitalization of Hanapēpē Town is worthwhile and would improve the quality of life for all residing in the area including Hawaiian homes beneficiaries. Commercial planning will work to complement the efforts to revitalize Hanapēpē Town.
	Commercial use on the corner of Lele Rd and Kaumuali‘i highway is an important opportunity to examine. Commercial land uses on this site should enhance opportunities for Hanapēpē town, not conflict w/ efforts to revitalize Hanapēpē town.	Efforts will be made to enhance Hanapēpē's revitalization efforts. Plans for the commercial areas will be market and community driven.
Kapa‘a	These lands are ideal for industrial use as proposed.	Comment noted.
	Would these lands be available for the general public to lease if developed into industrial parks?	Yes, the department would like to generate revenue by leasing these lands.
	Our long range planning efforts reflect a need for industrial lands in Kapa‘a mainly to service the resort development on the eastside and Princeville. However, there is a lack of inventory of Industrial zoned lands in Kapa‘a.	DHHL lands will add to the inventory of industrial lands available for lease in Kapa‘a. We are encouraged that the County is supportive of this designation.
	Would DHHL consider land exchange with the State of Hawaii in the event there is a need for industrial lands and DHHL is not ready to move. The State of Hawaii may be able to develop and dispose of these lands for industrial use faster than DHHL. Not sure, but these lands are valuable from the standpoint that Kapa‘a has limited amount of available industrial lands.	DHHL is open to exchange of land if the terms and conditions are suitable.
Kekaha	We question the roadside commercial designation on the corner of the Kaumuali‘i Highway and Akialoa St. This site is undesirable for commercial use due to spot zoning and traffic concerns.	The Commercial designation in this site has been changed to Special District, which will require closer review of issues and constraints before any activities are allowed. The community expressed desire was for a small lunch wagon or beach/water sport rental.
	Kekaha plans are a logical expansion.	Comment noted.

Subject	***Comment***	***Response***
Moloa‘a	Infrastructure development (water in particular) is important. Like Anahola- must discuss w/ DOW to see if opportunities to share resources and costs may be possible. Water master plan for Moloa‘a was done for DOW. There are many properties in Moloa‘a which do not have county water service. Coordinate.	Moloa‘a is not a priority development location, but DHHL will coordinate with the DOW to stay abreast of water service opportunities. Moreover, it is thought that catchment would be a viable water source thereby not obligating DHHL to develop a new well.
Wailua	Be mindful of the Kapa‘a Bypass road project by DOT. These lands may perform a vital role in the by pass project.	DHHL and SDOT have met. DHHL will offer their comments to the Draft EIS which will outline the proposed routes. DHHL has a preferred route option, that which impacts DHHL land the least.
	May not be the ideal place for residential development due to archaeological sites and access from the highway.	Wailua ranks highest with DHHL beneficiaries as a priority residential area to develop due to its proximity to population centers and jobs. DHHL will preserve and protect any substantial archaeological finds. Thorough traffic studies would be conducted prior to any development.
	One of the alternatives for the Wailua Golf course expansion involves use of these lands. DHHL may want to consider discussing exchange, purchase, and/or lease of these lands with the County to allow for golf course expansion.	Development of the Wailua lands is the priority project for DHHL on Kaua‘i. If the area for golf course expansion does not impact the planned residential development DHHL may consider.
	The expansion of the correctional facility has been a potential project for many years. This matter should be discussed with the State Correctional people since the lands needed for expansion are owned by DHHL.	DHHL will proceed with plans. Correctional facility has not informed DHHL of any desire to acquire DHHL lands. At present there are no plans to expand beyond, nor relocate from, the current site.
	Should discuss w/ the Sewer division of Public works the possibility of sewage treatment plant w/in these lands. Most times the sewer division may not like the location- but never can tell.	DHHL intends to hook into the existing STP. The understanding is that the facility has a capacity for 1.2 million gpd and currently only .6 is being used.
	Lands on the makai side of highway are intended more for resort development. Residential development may not be the most appropriate use. Suggest exchange, sale or lease of these lands for resort development.	DHHL does not intend to use makai lands for residential development but rather commercial in order to serve the many resorts, tourists, and communities in the area.
	Lands abutting the golf course may be needed for golf course use or resort type development. Suggest discussing development of this piece w/ the Wailua golf course people. These lands are also ideal for exchange lease or sale to resort developers. Therefore, the use potential for these lands for income generation is very high.	DHHL intends to maximize income generation potential for these lands. Development will be driven by market forces.
Waimea	Adjacent to this property are State lands that are proposed for a winery and a visitor center.	DHHL's proposed development can compliment these activities.
	Residential and Agriculture subdivision development, especially further mauka, will have infrastructure concerns and could conflict with the Kōke‘e visitor experience in terms of visual impacts.	DHHL hopes the residential community will enhance the visitor experience.
	Any interest expressed by Olokele Sugar Co. for sugar cane cultivation?	Not aware of any interest.

Appendix C

Working Group & Community Meeting Attendees

Working Group Meeting #1- September 24, 2003

Name	City/State	Organization
Kaipo Kincaid	Kailua, HI	Hui Kako‘o Aina Ho‘opulapula
Jose Villa	Honolulu, HI	OHA
Sharon Pomroy	Anahola, HI	Anahola Hui
Audrey Loo	Anahola, HI	Anahola Farm Lands Assn
Richard Kanahele	Waimea, HI	Kekaha Hawaiian Homestead Assn
Thomas Oi	Lihue, HI	DLNR - Land
Marlene Kali	Kekaha, HI	K.H.H.A. VP
Leah Pereira	Waimea, HI	K.H.H.A.Tres.
Tom McCloskey	Anahola, HI	McCloskey & Co.
Linda Rosehill	Honolulu, HI	McCloskey & Co./Rosehill & Assoc.
Jeffrey Rivera	Kealia, HI	Kauai Ranch
Joseph Manini	Waimea, HI	Homesteader
Joe Chu	Honolulu, HI	DHHL Planning
Robin Danner	Anahola, HI	Ahupua‘a O Kaua‘i
Annette Creamer	Lihue, HI	Alu Like
Kaui Castillo	Lihue, HI	QLCC
Roland Licona	Lihue, HI	DHHL Kaua‘i District Supervisor
Gregg Fujikawa	Lihue, HI	DOW
Tom Contrades	Kapaa, HI	HHC
Rudy Raralio	Lihue, HI	State DOT Highways
L. Haulani Fernandez	Anahola, HI	Anahola Village
Donna Aana-Nakahara	Lihue, HI	KS
Robert S Ishikawa	Lihue, HI	USDA-FSA

Working Group Meeting #2- November 12, 2003

Name	City/State	Organization
Kipukai Kuali‘i	Lihue, HI	Hui Kako‘o Aina Ho‘opulapula
Jose Villa	Honolulu, HI	OHA
Thomas Oi	Lihue, HI	DLNR - Land
Linda Rosehill	Honolulu, HI	McCloskey & Co./Rosehill & Assoc.
Annette Creamer	Lihue, HI	Alu Like
Roland Licona	Lihue, HI	DHHL Kaua‘i District Supervisor
Edward Doi		DOW
Galen Gokan	Lihue, HI	Kodani and Associates
Glenn Yamamoto	Lihue, HI	DOT

Working Group Meeting #3- February 11, 2004

Name	City/State	Organization
Winifred Cummings	Anahola, HI	
Amanda Kaleiohi	Anahola, HI	Pres., Anahola Hawaii. Hms. Assoc.
Richard Kanahele	Waimea, HI	Pres., Kekaha Hawaii. Hms. Assoc.

Working Group Meeting #3- February 11, 2004 (CONTINUED)

Name	City/State	Organization
Kaipo Kincaid	Kailua, HI	Hui Kako‘o Aina Ho‘opulapula
Kipukai Kuali‘i	Lihue, HI	Hui Kako‘o Aina Ho‘opulapula
Audrey Loo	Anahola, HI	Anahola Farm Land Association
Roland Licona	Lihue, HI	DHHL Kaua‘i District Supervisor
Donna Aona Nakahara	Lihue, HI	Kamehameha Schools
Jeffrey Rivera	Kealia, HI	Kaua‘i Ranch
Dutchi Kapu Saffery	Keaau, HI	Hui Kako‘o Aina Ho‘opulapula
Jose Villa	Honolulu, HI	OHA
Glenn Yamamoto	Lihue, HI	DOT

Eastside Community Meeting (Development Alternatives)- January 9, 2004

Name	City/State
Lonor Aei	Kapaa, HI
Juliet Aiu	Kapaa, HI
Stewart Kopa Akaha	Kapaa, HI
Valentine Ako	Kapaa, HI
Mary L. Akui	Anahola, HI
Eddie Alapai	Lihue, HI
Miely Alaua	Kaneohe, HI
Liberta Albao	Kapaa, HI
Wayne & Jeanne Alonzo	Kapaa, HI
Ivy H. Andrade	Kilauea, HI
Althea Arinaga	Kealia, HI
Crystal Caga	Lihue, HI
Milton Ching	Kapaa, HI
Raynette Chun	Lanai, HI
Winifred E. Cummings	Anahola, HI
Edith Defries	Anahola, HI
Edwina & Dana Demello	Kapaa, HI
Frances Dinnan	Lihue, HI
Bernadine Enrique	Anahola, HI
L. Haulani Fernandez	Anahola, HI
Stuart Hanchett	Kapaa, HI
Cynthia K. Haumea	Nanakuli, HI
Emmaline Hooikaika	Anahola, HI
Gary Hooser	Kapaa, HI
Amanda Kaleiohi	Anahola, HI
Lame Kaleiolu	Anahola, HI
Madonna Leilani Kalilimoku	Kilauea, HI
Opa Kalwahu	Anahola, HI
Nobleen Kamaunu	Kapaa, HI
LaFrance Kapaka	Anahola, HI

Eastside Community Meeting (Development Alternatives)- January 9, 2004 (CONTINUED)

Name	City/State
Elma L. Kaueahua	Kapaa, HI
Sabra Kauka	Lihue, HI
Annabelle K. Kawaihalau	Lihue, HI
Kani K Keanaaina	Kurtistown, HI
Kaipo Kincaid	Kailua, HI
Kipukai Kualii	Lihue, HI
Henry Kupihea	Kealia, HI
Roland Licona	Lihue, HI
John Noa Limahai	Waimanalo, HI
Charles K. Mahehana	
Raimie Mardonada	Kapaa, HI
Alan Merton	Lihue, HI
Rowin Morrisugu	Kapaa, HI
Creighton Nakamura	Kapaa, HI
E. K. Namilo	Kapaa, HI
Montgomery L. Pia	Kapaa, HI
Robert PiPa	Hanalei, HI
Sam Powell	Anahola,
Jocelyn Powers	Kapaa, HI
Francine & Rudy Ramos	Lihue, HI
James K. Reyes	Anahola, HI
Amber Rivera	Anahola, HI
Shannon Rodgers	Hanalei, HI
Bill Rowan	Anahola, HI
Ian & Mahealani Rowland	Kapaa, HI
Thelma & Laurie Ruiz	Koloa, HI
Eleanor C. Ruua	Anahola, HI
Caroline Saronitman	Kapaa, HI
Lorraine Scarpace	Kapaa, HI
Shawn Shimabukuro	Kapaa, HI
Marlyn Siaw	Lihue, HI
Sharlyn Silva	Kealia, HI
H'Kaulana Smith	Anahola, HI
James Torio	Anahola, HI
Denise & Desiree Tung-long	Kapaa, HI
Flynn Aiu Wood	Anahola, HI
Maggie Wood	Anahola, HI
Kaiopua	Lihue, HI
Kulamanu	Anahola, HI

Westside Community Meeting (Development Alternatives)- January 23, 2004

Name	City/State
Kamuela Aea	Koloa, HI
Laolu Aea	Koloa, HI
Ellen Albarado	Hanapepe, HI
Cyrilla Aquan	Kekaha, HI
Amos Arashiro	Kekaha, HI
Winifred Basques	Lanai City, HI
Sherlin & John Beniamina	Makaweli, HI
Tracey A. Betts	
Odetta Boria	Kekaha, HI
Myrna Bucosas	Waimea, HI
L. Haulani Bustillos	Eleele, HI
Yolanda K. Cabral	Eleele, HI
Gweneth Cardejon	Kekaha, HI
Merrell Cardejon	Kekaha, HI
Justin Chandler	Kekaha, HI
Sam Chandler	Kekaha, HI
Ana Davey	Makaweli, HI
A'alona Dela Cruz	Waimea, HI
Blossom Feisteira	Wailuku, HI
L. Haulani Fernandez	Anahola, HI
Jerome Freitas	Kapaa, HI
Kehaulani Frimoita	
Nani Fukino	Waimea, HI
Kaleo Hookano	Waimea, HI
Dutchie Kapu Jaffery	Keeau, HI
Marlene Kali	Kekaha, HI
Peter Kama	Waimanalo, HI
John Kanahele	Kekaha, HI
Joseph Kanahele	Makaweli, HI
Richard Kanahele	Waimea, HI
Sabra Kauka	Lihue, HI
Anya Kazennova	Lihue, HI
Ruby Kekahu	Koloa, HI
Kaipo Kincaid	Kailua, HI
Ray & Jinx Klein	Kekaha, HI
Kipukai Kualii	Lihue, HI
Al & Pauline Kupo	Waimea, HI
Stevenette Lee	Waimea, HI
Thomas K. Matsuyoshi	Eleele, HI
James Nakaahiki	Kekaha, HI
Heely Nanbu	Kilauea, HI
Sonny A. Niau	Kekaha, HI
Liela Nitta	Lawai, HI

Westside Community Meeting (Development Alternatives)- January 23, 2004 (CONTINUED)

Name	City/State
Leah Pereira	Waimea, HI
Bruce Pleas	Waimea, HI
Joe & T. Reyes	Eleele, HI
Johnathan Rivera	Eleele, HI
Rose Vaivao	Waimea, HI
Van Warren	Eleele, HI

Westside Community Meeting (Draft Plan)- March 17, 2004

Name	City/State
Roland Licona	Lihue, HI
Sandra Kanahele	Makaweli, HI
Emalia Kanahele	Eleele, HI
Ambrore Kanahele	Makaweli, HI
Debbie Kanahele	Makaweli, HI
Jaylynn Kanahele	Makaweli, HI
Shereen Peleras	Hanapepe, Hi
Betsy K. Moonihoawa	Kekaha, HI
Christopher Kauahi	Kalaheo, HI
Amos Arashiro	Kekaha, HI
Momi Leon Niheu	Kekaha, HI
Pauline Kupo	Waimea, HI
Richard Kanahele	Waimea, HI
Mary Girod	Waimea, HI
Mr. & Mrs. Joseph Reyes	Eleele, HI
Wilma Holi	Hanapepe, HI
Shirley Ann Kauahi	Kalaheo, HI
Elama Kanahele	Makaweli, HI
Myrnadette Bucosas	Waimea, HI
Michael DeMatti	Hanapepe, HI
Kaipo Kincaid	Kailua, HI
Fred Patricio	Kekaha, HI
James Nahaahili	Kekaha, HI
Nani Fukino	Waimea, HI
Jody Nakaahiki	Eleele, HI
Hollianne Nakaahiki	Eleele, HI
Isaac Koa Vegas	Eleele, HI
Eric Arizo	Wiamea, HI
Nani Hookano	Waimea, HI
Nellie Nunice	Kalaheo, HI
Ninda Collins	Waimea, HI
Roland Saguan III	Waimea, HI

Westside Community Meeting (Draft Plan)- March 17, 2004 (CONTINUED)

Name	City/State
Blossom Kanahele	Makaweli, HI
Joseph Kanahele Jr.	Makaweli, HI
Sylvia Nakaahiki	Kekaha, HI
Healani Trembath	Lihue, HI

Eastside Community Meeting (Draft Plan)- March 18, 2004

Name	City/State
James Kimokeo	Anahola, HI
Gordon Maio	Kapaa, HI
Violet Maio	Kapaa, HI
Herb Ellegano	Koloa, HI
Mark Nanbu	Kilauea, HI
Robert	Kapaa, HI
Charles & Diana Spencer	Hanalei, HI
Ryant Rowe	Koloa, HI
Stanley Kaluahine	Kapaa, HI
Kaipo Kincaid	Kailua, HI
Lani Kaleiohi	Anahola, HI
Opie Kaleiohi	Anahola, HI
Liberta Alkao	Kapaa, HI
Roland Licona	Lihue, HI
Shawn Conant	Kilauea, HI
Diana Trazon	Anahola, HI
Puanani Rogers	Kapaa, HI
Vern Kauanui	Kapaa, HI
Jerome Freitas	Kapaa, HI
James & Marie Tovio	
John Kaneholani	Anahola, HI
Keone Kaneholani	Anahola, HI
Darrell Yagodich	Honolulu, HI
Thomas Contrades	Kapaa, HI
Milton Ching	Kapaa, HI
Kipukai Kualii	Lihue, HI
Kale Kelekoma	Anahola, HI
George Rapozo	Anahola, HI
Avery Young	Kapaa, HI
Nebra Kekaualua	Kapaa, HI
Kai'I Caliza	Anahola, HI
Abi Rita	Anahola, HI
Ipo Kamsay Dealelco	Kapaa, HI
Oana DeMello	Kapaa, HI
Rowin Moritsuga	Kapaa, HI

Oahu Community Meeting (Draft Plan)- March 23, 2004

Name	City/State
Cynthia Haumea	Nanakuli, HI
Mikala Snook	Honolulu, HI
Bene Kaiwi	Honolulu, HI
Diana Basque	Honolulu, HI
Mary Sueoka	Honolulu, HI

Appendix D

Examination of Two Non-DHHL Parcels

NON DHHL PARCELS

BACKGROUND

Planning assessments have been conducted for two parcels not owned by DHHL in order to determine their suitability for residential development.

The first parcel is on the westside of the island adjacent to the existing DHHL Kekaha tract while, the second parcel is located on the eastside just south of the DHHL Wailua tract.

The assessment evaluates existing conditions, identifies constraints and opportunities, and recommends whether the parcel is suitable for homesteads.

KEKAHA PARCEL

This parcel, TMK 1-2-02:32, is a 28.63 acre agricultural property. It is currently owned by the State of Hawaii, Department of Land and Natural Resources (DLNR). The parcel is directly adjacent to DHHL's existing, westernmost Kekaha parcel and like the existing parcel it is bound by undeveloped agricultural land to the north and west with Kaumuali‘i Highway and the beach to the south. The location of the parcel is illustrated on the map *(Figure 1.)*

Figure 1
Non-DHHL Kekaha Parcel

Existing Conditions

The following is a summary of the existing conditions of the Kekaha parcel:

Topography - The parcel is lowland and coastal, not rising higher than 200 ft above sea level. The landscape is flat to rolling with a slope range from 0-8%.

Soils - The Land Study Bureau Detailed Land Classification system rates the agricultural potential of the parcel as least productive while the land is described as "other" under the Agricultural Lands of Importance to the State of Hawai‘i (ALISH) rating system. There are two predominant soil types in the area, Jaucus, which consists of loamy fine sand and Dune Land, made up of hills and drifts of sand-size particles. See *Figure 2*.

Natural Hazards and Flooding - While the parcel is relatively near the coast, no portion of the parcel is located within the hurricane inundation zone. A small strip of land along the mauka border of the parcel is located in the flood zone. See *Figure 3.*

Flora, Fauna, and Threatened and Endangered Species – There are no threatened or endangered species on the property. The land has been used for sugar cultivation for many years.

Wetlands – No part of the property is classified as wetlands.

Rainfall – Annual precipitation in the area is less than 10 inches and no streams run through the property.

Land Use Designations - The State Land Use Designation for the land is agricultural. The County of Kaua‘i General Plan designates the area agricultural as well.

Culture/History – There may be burial or historic sites on the property.

Opportunities and Constraints

The opportunities and constraints relating to the parcel are similar to those for the DHHL Kekaha Lands (Chapter 4 of the Kaua‘i Island Plan.) In terms of opportunities, the location is accessible and near an existing DHHL community, the topography is flat and easy to develop, and a range of existing community facilities are located nearby.

Development of the parcel may be constrained by the fact that there is no sewage system in the area and it is susceptible to flooding.

Recommendation

This Kekaha parcel adjacent to DHHL's would be suitable for residential homesteads.

PLANNING CONSIDERATIONS

Opportunities

- Location
- Flat, easy to develop topography
- Community Resources

Constraints

- No sewage system
- Flooding

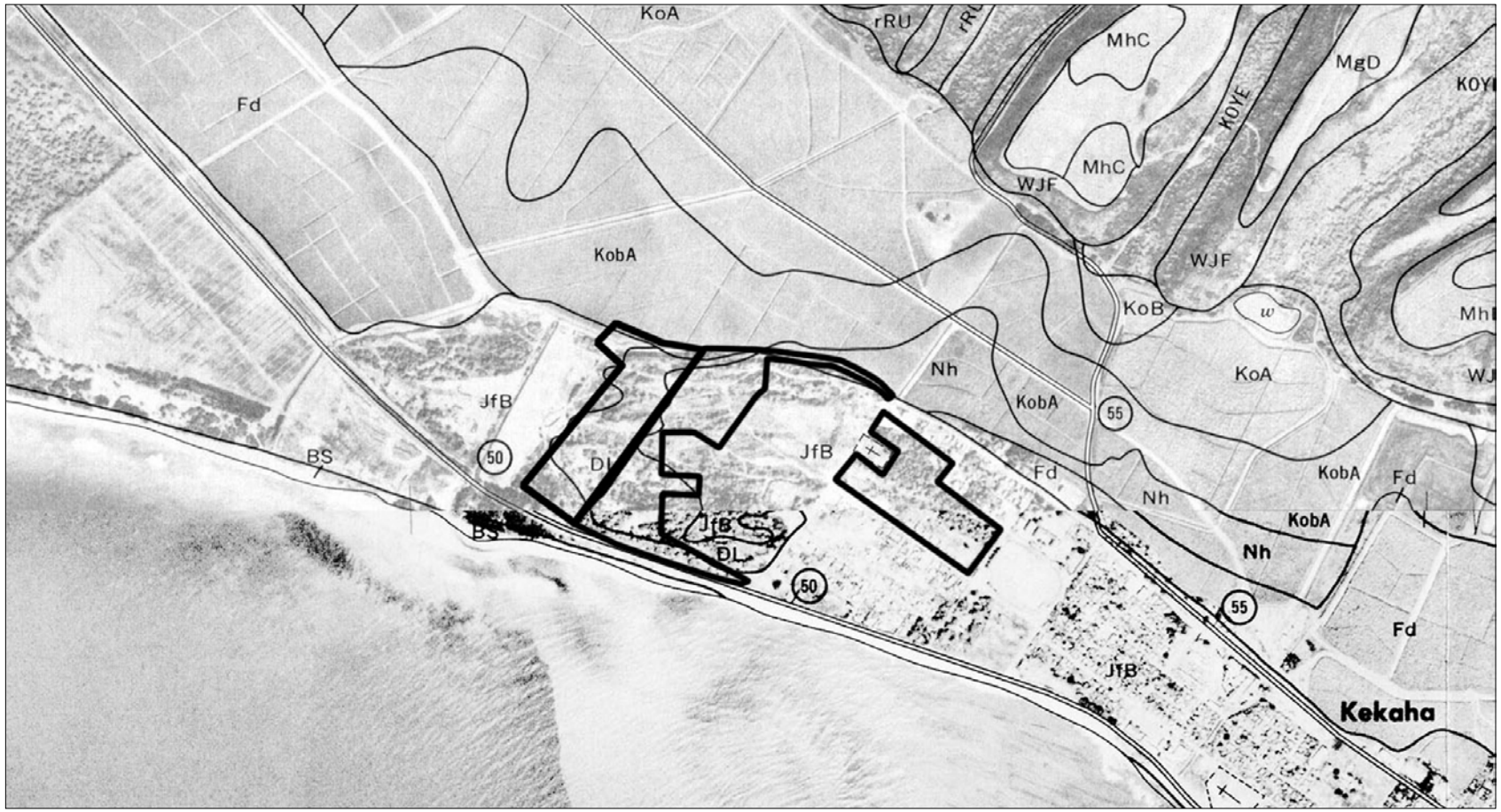

Figure 2

Non-DHHL Kekaha Parcel Soil Map

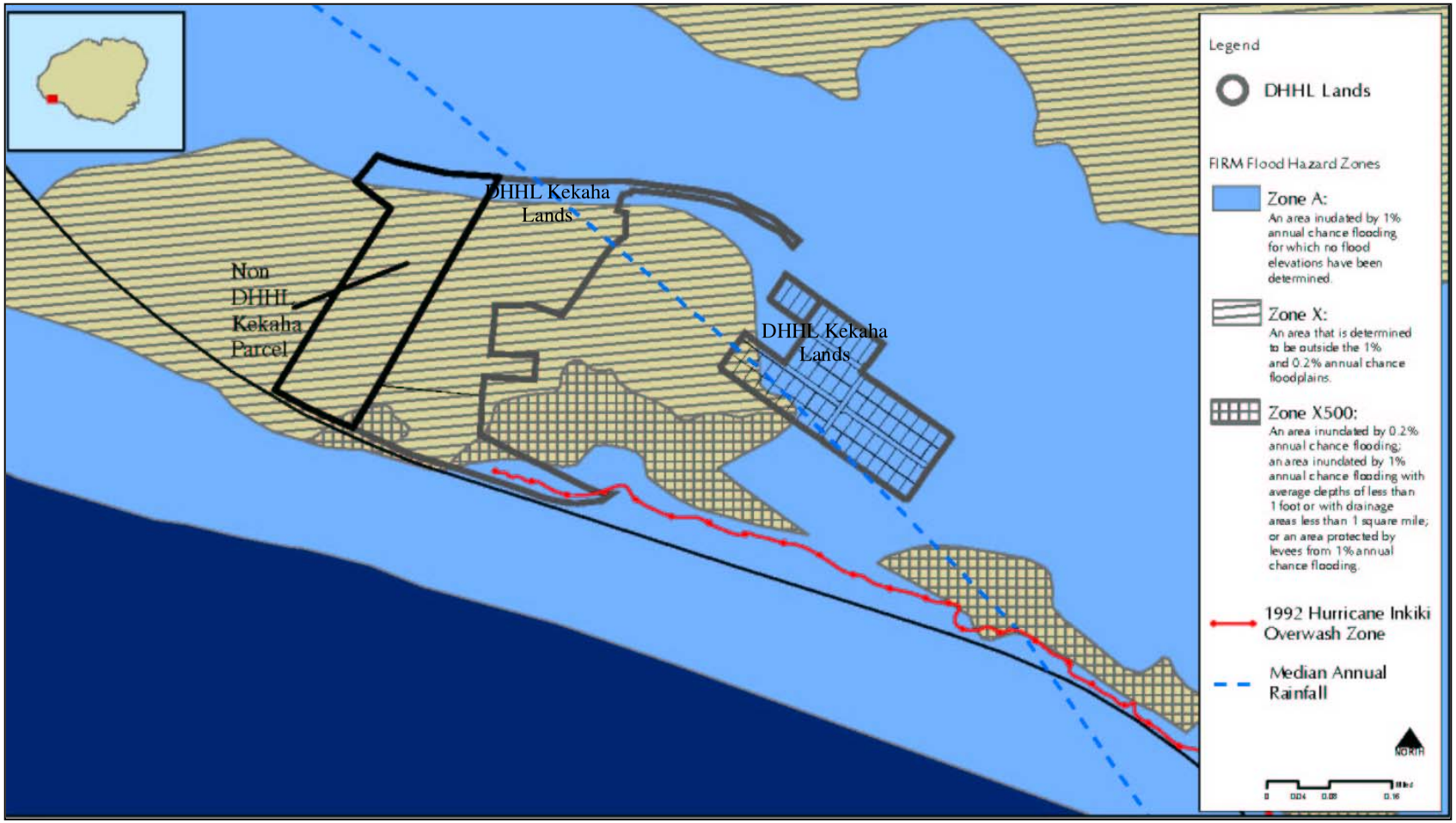

Figure 3

Non-DHHL Kekaha Parcel Flood Map

WAILUA PARCEL

Grove Farms owns TMK 3-9-05:06 under consideration in the Wailua area. The 55.3 acre parcel is now vacant but it was historically used for sugar cane. Located adjacent to the southern boundary of the DHHL Wailua tract it is even closer to the population center of Līhu‘e. The makai side of the parcel fronts on Kūhiō Highway, the mauka side follows along Kālepa Ridge and its southern border is defined by an old cane haul road and former sugar cane land. See the map below *(Figure 4.)*

Existing Conditions

Background research on the Wailua parcel revealed the following information:

Topography - The parcel is relatively flat to rolling with views to the ocean. The elevation of the property is below 200 feet.

Soils - The majority of the parcel is rated by the Land Study Bureau Detailed Land Classification system as B on a scale of A to E with A being the most productive agriculturally. It is prime agricultural land of importance to the state of Hawai‘i (ALISH.) The most prevalent soil type is LhC of the Līhu‘e soil series described as dusky, red, silty clay which is good for home sites or buildings. See *Figure 5.*

Natural Hazards and Flooding - No portion of the parcel is located within the hurricane inundation zone or the flood zone. Streams do not run through the property. See *Figure 6.*

Figure 4
Non-DHHL Wailua Parcel

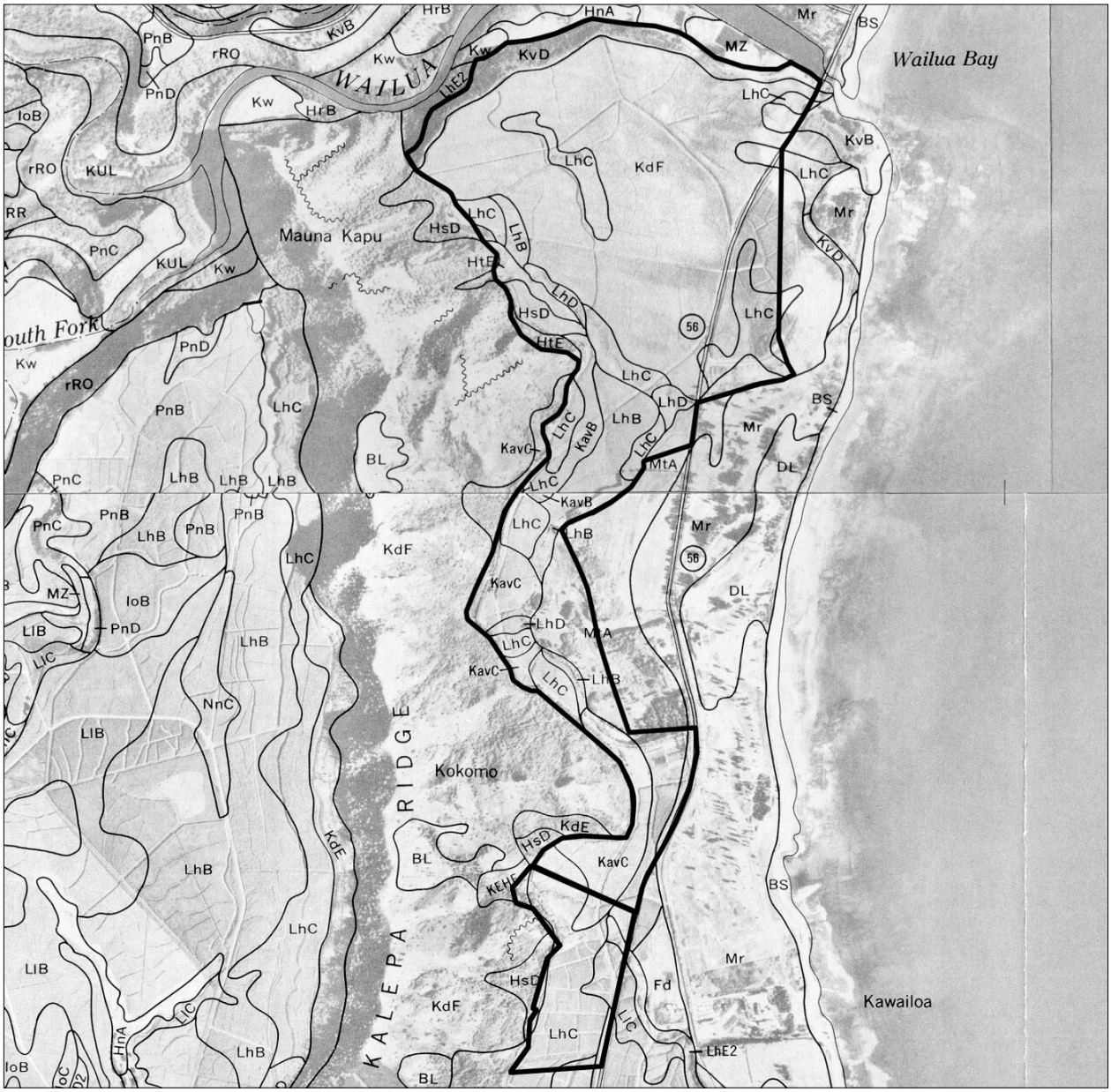

Figure 5

Non-DHHL Wailua Parcel Soil Map

Figure 6
Non-DHHL Wailua Parcel Flood Map

Flora, Fauna, and Threatened and Endangered Species - No threatened or endangered species are located on the property.

Wetlands - The property is not classified as a wetland.

Rainfall - Precipitation in the area is 5 inches or less each month.

Land Use Designations - The State Land Use Designation for the land is agricultural. The County of Kaua‘i General Plan also designates the area agricultural.

Culture/History - While the parcel is relatively near to the mouth of the Wailua River, known as one of the most culturally and historically rich areas within the Hawaiian Islands, no known cultural or historic sites are located on the subject parcel. It is unlikely that any historic sites will be found on the property since it has historically been used for sugar cane cultivation.

Opportunities and Constraints

Because site conditions are much the same as the DHHL parcels to the north the opportunities and constraints are similar (Chapter 6 of the Kaua‘i Island Plan.)

The land is rated productive for agriculture, it is relatively flat and easy to develop, wastewater treatment is available, and its location is ideal for community development.

Like the DHHL parcel to the north, off-site water improvements would be required if the area was developed as a residential homestead area. Also, the proposed Kapa‘a by-pass route could impact this property. Some by-pass routes proposed by the Department of Transportation would completely bisect the DHHL parcel to the North, yet this parcel would only be impacted due to road widening directly adjacent to the property.

Recommendation

The parcels conditions, opportunities, and constraints make it suitable for residential or agricultural homesteads.

CONCLUSION

Both the Kekaha and Wailua parcels would be suitable for homestead development. However, DHHL holds property on Kaua‘i, which is also suitable for development. Prior to purchasing or swapping land for the parcels discussed in this section, DHHL can first develop land it already owns detailed in the Kaua‘i Island Plan.

PLANNING CONSIDERATIONS

Opportunities

- Good agricultural land
- Flat easy to develop property
- Wastewater treatment available
- Near major population centers & jobs
- Near recreational amenities

Constraints

- Kapa`a Bypass route
- Water upgrades needed

Appendix E

Analysis of Agriculture Infrastructure Costs

	More Infrastructure		Water & Gravel Roads Only	
	Cost Per Lot	Total cost	Cost Per Lot	Total Cost
Wailua Ag	$ 180,000	$6,300,000	$ 106,000	$3,700,000
Hanapēpē Ag	$ 190,000	$9,300,000	$ 114,000	$5,600,000
Anahola Ag	$ 103,000	$10,600,000	$ 45,000	$4,600,000
Anahola Pastoral	$ 302,000	$4,200,000	$ 154,000	$1,500,000
Waimea Ag	$ 87,000	$4,400,000	$ 41,000	$2,100,000
Moloa‘a Ag	$ 177,000	$8,300,000	$ 80,000	$3,800,000
TOTAL	--	$43,100,000	--	$21,300,000

More Infrastructure = potable water, roads, individual waste systems, site preparation, electricity

Numbers assume the use of catchment water for Anahola & Moloa‘a

Agricultural & Pastoral Infrastructure Cost Analysis

Waimea Costs - Minimum Infrastructure for Ag						TOTALS
DESCRIPTION	1 acre Residential Mauka	1 acre Residential Makai	3 acre Sub Ag Mauka	3 acre Sub Ag Makai	Community Use Area	
TOTAL # OF LOTS	89	52	20	30	42 acres	191
Potable Water						
Gallons Required	133,500	78,000	45,000	52,500	504,120	813,120
Per Gallon Cost	$2	$2	$2	$2	$2	$2
Storage Cost	$267,000	$156,000	$90,000	$105,000	$1,008,240	$1,626,240
New Source						
Units served	89	52	20	30	n/a	191
Cost per Unit	$10,500	$10,500	$10,500	$10,500	n/a	$10,500
Source Cost	$934,500	$546,000	$210,000	$315,000	n/a	$2,005,500
Water Transmission						
Pipe Length	11,600	7,800	3,500	5,300	n/a	28,200
Per Linear foot cost	$150	$150	$150	$150	$150	$150
Total cost	$1,740,000	$1,170,000	$525,000	$795,000	n/a	$4,230,000
Roads						
Road Length	8,400	4,600	0	0	0	13,000
Per Linear foot cost	$500	$500	$300	$300	$500	
Road Cost	$4,200,000	$2,300,000	$0	$0	$0	$6,500,000
Wastewater						
IWS	$890,000	$520,000	n/a	n/a	n/a	$1,410,000
Gallons Generated	n/a	n/a	n/a	n/a	TBD	0
Cost per Gallon	n/a	n/a	n/a	n/a	$20	$20
STP Cost	n/a	n/a	n/a	n/a	TBD	$0
Wastewater Transmission						
Pipe Length	n/a	n/a	n/a	n/a	n/a	0
Per Linear foot cost	n/a	n/a	n/a	n/a	$150	$150
Total cost	n/a	n/a	n/a	n/a	n/a	$0
Site Preparation						
Total sf to clear	356,000	208,000	n/a	n/a	N/A	564,000
Per sf cost	$2.50	$2.50	$2.50	$2.50	$2.50	$150
Total Cost	$890,000	$520,000	n/a	n/a	N/A	$1,410,000
Electricity						
Wire Length	11,600	7,800	n/a	n/a	n/a	19,400
Per Linear foot cost	$150	$150	$150	$150	$150	$150
Total Cost	$1,740,000	$1,170,000	n/a	n/a	n/a	$2,910,000
Other Costs						
n/a						
TOTALS	$10,661,500	$6,382,000	$825,000	$1,215,000	$1,008,240	**$20,091,740**
COST PER LOT	$119,792.13	$122,730.77	$41,250.00	$40,500.00	n/a	**$105,192**
TOTAL LUD COST	$17,043,500		$2,040,000			
COST/LUD LOT	$120,876		$40,800			

Waimea Cost Assumptions

Water
Gallons required is based on an average daily demand of 500 gallons per housing unit
2,500 gal/acre for Ag, 4,000 gal/acre schools or parks, 3,000 gal/acre commercial
In general the gallons required is multiplied by a factor of 3 to account for fire flow needs
New Water Source = $ 2million
New Water Source figures a 500 gpm well supplies 720,000 gallons per day
More than one well needed when average daily demand exceeds 720,000 gallons per day
Storage = $2 per gallon
Transmission = $150 per linear foot
Irrigation lines = $10 per linear foot to repair (COST NOT INCLUDED)
Gay & Robinson uses an 8 " irrigation line which travels across DHHL property along Kōke‘e Rd. Possible opportunity

Roads
Rd. with out utilities costs approx $500 per linear foot. This includes pavement, grading, & drainage
After talking to the County Planning Dept. it was determined that DHHL can do Ag standard rd. in Ag areas
Therefore, cost can be reduced by 20% (24 ft pavement down to 16-18 ft)
Amended Ag rd. cost with out utilities = $400 per linear foot
Road cost is further reduced if only gravel road provided = $300/linear foot
County Planning also said Kōke‘e Rd. need not be improved therefore no rd. cost for Ag. Lots

Wastewater
Gallons generated is based on 400 gallons per day per housing unit
which assumes that each household has 4 person who each generate 100 gallons of waste per day
Sewer treatment = $20 per gallon
IWS = $10,000 per residence
Transmission = $150 per linear foot

Site Preparation
Based on a 4,000 sf house site/pad being cleared for each lot
Clearing and grubbing only, no grading cost included
Assumes an area with a slope of 0-10 % would be found.

Electricity
Transmission = $150 per linear foot

Special Notes
Cost significantly reduced because no Kōke‘e Rd. improvements & Ag. road costs used.
No irrigation costs included in this cost analysis. Assumption is that existing lines could be repaired.
Community Use area cost only includes water storage costs since proposed development of area is not well defined.
Length of roads/transmission unknown for C/CU

Hanapēpē Costs - Minimum Infrastructure for Ag										TOTALS
DESCRIPTION	10,000 SF Residential East *Priority, Phase I*	10,000 SF Residential East *Priority, Phase II*	10,000 SF Residential West *Priority, Phase III*	3 acre Sub Ag Gulch	2 acre Sub Ag Mauka	Community Use West *Priority*	Community Use East	Commercial Mauka	Commercial Makai	
TOTAL # OF LOTS	40	208	234	13	36	15 acres	7 acres	11acres	6 acres	531
Potable Water										
Gallons Required	0	312,000	351,000	39,750	57,000	186,600	92,160	295,260	267,945	1,601,715
Per Gallon Cost	$2	$2	$2	$2	$2	$2	$2	$2	$2	$2
Storage Cost	$0	$624,000	$702,000	$79,500	$114,000	$373,200	$184,320	$590,520	$535,890	$3,203,430
Facilities Reserve*	$104,000									$104,000
New Source										
Units served	0	208	234	13	36	n/a	n/a	n/a	n/a	491
Cost per Unit	$8,147	$8,147	$8,147	$8,147	$8,147	n/a	n/a	n/a	n/a	$8,147
Source Cost	$0		$1,906,398	$105,911	$293,292	n/a	n/a	n/a	n/a	$2,305,601
Water Transmission										
Pipe Length	2,100	10,200	12,300	4,700	6,400	n/a	n/a	n/a	n/a	35,700
Per Linear foot cost	$150	$150	$150	$150	$150	$150	$150	$150	$150	$150
Total cost	$315,000	$1,530,000	$1,845,000	$705,000	$960,000	n/a	n/a	n/a	n/a	$5,355,000
Roads										
Road Length	2,100	10,200	12,300	4,700	6,400	n/a	n/a	n/a	n/a	35,700
Per Linear foot cost	$500	$500	$500	$300	$300	$500	$500	$500	$500	
Road Cost	$1,050,000	$5,100,000	$6,150,000	$1,410,000	$1,920,000	n/a	n/a	n/a	n/a	$15,630,000
Wastewater										
IWS	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	$0
Gallons Generated	16,000	83,200	93,600	5,200	14,400	n/a	n/a	66,000	36,000	314,400
Cost per Gallon	n/a	n/a	n/a	n/a	n/a	n/a	n/a	$20	$20	$20
STP Cost	n/a	n/a	n/a	n/a	n/a	n/a	n/a	$1,320,000	$720,000	$2,040,000
Wastewater Transmission										
Pipe Length	2,100	10,200	12,300	n/a	n/a	n/a	n/a	n/a	n/a	24,600
Per Linear foot cost	$150	$150	$150	n/a	n/a	$150	$150	$150	$150	$150
Total cost	$315,000	$1,530,000	$1,845,000	n/a	n/a	n/a	n/a	n/a	n/a	$3,690,000
Site Preparation										
Total sf to clear	160,000	832,000	936,000	n/a	n/a	N/A	N/A	N/A	N/A	1,928,000
Per sf cost	$2.50	$2.50	$2.50	$2.50	$2.50	$2.50	$2.50	$2.50	$2.50	$150
Total Cost	$400,000	$2,080,000	$2,340,000	n/a	n/a	N/A	N/A	N/A	N/A	$4,820,000
Electricity										
Wire Length	2,100	10,200	12,300	n/a	n/a	n/a	n/a	n/a	n/a	24,600
Per Linear foot cost	$150	$150	$150	$150	$150	$150	$150	$150	$150	$150
Total Cost	$315,000	$1,530,000	$1,845,000	n/a	n/a	n/a	n/a	n/a	n/a	$3,690,000
Other Costs										
Detention basin for drainage mitigation										$500,000
Intersection improvement										$250,000
TOTALS	$2,499,000	$12,394,000	$16,633,398	$2,300,411	$3,287,292	$373,200	$184,320	$1,910,520	$1,255,890	**$41,588,031**
COST PER LOT	$62,475	$59,587	$71,083	$176,955	$91,314	n/a	n/a	n/a	n/a	**$78,320**
TOTAL LUD COST		$31,526,398		$5,587,703						
COST/LUD LOT		$60,223		$114,035						

Hanapēpē Cost Assumptions
Water
Gallons required is based on an average daily demand of 500 gallons per housing unit
2,500 gal/acre for Ag, 4,000 gal/acre schools or parks, 3,000 gal/acre commercial
In general the gallons required is multiplied by a factor of 3 to account for fire flow needs
New Water Source = $ 2 million
New Water Source figures a 500 gpm well supplies 720,000 gallons per day
More than one well needed when average daily demand exceeds 720,000 gallons per day
Storage = $2 per gallon
Transmission = $150 per linear foot
Irrigation lines = $10 per linear foot to repair (COST NOT INCLUDED)
*Facilities Reserve Charge= $2,600 in order to hook up to the existing water system to access water credits
Roads
Rd. with out utilities costs approx $500 per linear foot. This includes pavement, grading, & drainage
After talking to the County Planning Dept. it was determined that DHHL can do Ag standard rd. in Ag areas
Therefore, cost can be reduced by 20% (24 ft pavement down to 16-18 ft)
Amended Ag road cost with out utilities = $400 per linear foot
Road cost is further reduced if only gravel rd. provided = $300/linear foot
Wastewater
Assumed that transmission lines are all that is needed. Development will hook into existing STP
Transmission = $150 per linear foot
Existing STP only has 200,000gpd capacity remaining. Full build out requires 295,000 gpd. Package plant for 95,000 gallons (commercial area or 238 homes)
Site Preparation
Based on a 4,000 sf house site/pad being cleared for each lot
Clearing and grubbing only, no grading cost included
Assumes an area with a slope of 0-10 % would be found
Electricity
Transmission = $150 per linear foot
Special Notes
No irrigation costs included in this cost analysis. Assumption is that existing lines could be repaired
Water exists for 40 more units prior to developing new source
Existing STP only has 200,000gpd capacity remaining. Full build out requires 295,000 gpd. Package plant for 95,000 gallons (commercial area or 238 homes)
Community Use and Commercial area cost only includes water storage costs since proposed development of area is not well defined
Length of roads/transmission unknown for C/CU
Commercial STP costs are estimated

Wailua Costs- Minimum Infrastructure for Ag										TOTALS
DESCRIPTION	10,000 SF Residential South *Priority, Phase I*	10,000 SF Residential North *Priority, Phase II*	Kupuna Housing *Priority*	3 acre Sub Ag North	3 acre Sub Ag South	Community Use Mauka *Priority*	Com/CU Makai	Commercial N. Makai	Commercial S. Makai	
TOTAL # OF LOTS	231	420	25	22	13	15 acres	11 acres	9 acres	19 acres	711
Potable Water										
Gallons Required	346,500	630,000	258,750	46,500	40,500	338,940	308,460	325,815	339,810	2,635,275
Per Gallon Cost	$2	$2	$2	$2	$2	$2	$2	$2	$2	$2
Storage Cost	$693,000	$1,260,000	$517,500	$93,000	$81,000	$677,880	$616,920	$651,630	$679,620	$5,270,550
New Source										
Units served	231	420	25	22	13	n/a	n/a	n/a	n/a	711
Cost per Unit	$5,435	$5,435	$5,435	$5,435	$5,435	n/a	n/a	n/a	n/a	$5,435
Source Cost	$1,255,485	$2,282,700	$135,875	$119,570	$70,655	n/a	n/a	n/a	n/a	$3,864,285
Water Transmission										
Pipe Length	11,200	23,200	TBD	4,500	3,000	TBD	TBD	TBD	TBD	41,900
Per Linear foot cost	$150	$150	$150	$150	$150	$150	$150	$150	$150	$150
Total cost	$1,680,000	$3,480,000	TBD	$675,000	$450,000	TBD	TBD	TBD	TBD	$6,285,000
Roads										
Road Length	11,200	23,200	TBD	4,500	3,000	TBD	TBD	TBD	TBD	41,900
Per Linear foot cost	$500	$500	$500	$300	$300	$500	$500	$500	$500	n/a
Road Cost	$5,600,000	$11,600,000	TBD	$1,350,000	$900,000	TBD	TBD	TBD	TBD	$19,450,000
Wastewater										
IWS	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	$0
Gallons Generated	92,400	168,000	10,000	n/a	n/a	n/a	n/a	n/a	n/a	270,400
Cost per Gallon	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	$20
STP Cost	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Wastewater Transmission										
Pipe Length	11,200	23,200	TBD	n/a	n/a	TBD	TBD	TBD	TBD	34,400
Per Linear foot cost	$150	$150	$150	$150	$150	$150	$150	$150	$150	$150
Total cost	$1,680,000	$3,480,000	TBD	n/a	n/a	TBD	TBD	TBD	TBD	$5,160,000
Site Preparation										
Total sf to clear	924,000	1,680,000	n/a	n/a	n/a	N/A	N/A	N/A	N/A	2,604,000
Per sf costs	$2.50	$2.50	$2.50	$2.50	$2.50	$2.50	$2.50	$2.50	$2.50	$2.50
Total Cost	$2,310,000	$4,200,000	n/a	n/a	n/a	N/A	N/A	N/A	N/A	$6,510,000.00
Electricity										
Wire Length	11,200	23,200	TBD	n/a	n/a	TBD	TBD	TBD	TBD	34,400
Per Linear foot cost	$150	$150	$150	$150	$150	$150	$150	$150	$150	$150
Total Cost	$1,680,000	$3,480,000	TBD	n/a	n/a	TBD	TBD	TBD	TBD	$5,160,000
Other Costs										
*195,000 cubic yards of fill for topographic depression in Residential area										$9,750,000
Intersection improvement										$250,000
TOTALS	$14,898,485	$29,782,700	$653,375	$2,237,570	$1,501,655	$677,880	$616,920	$651,630	$679,620	**$61,699,835**
COST PER LOT	$64,496	$70,911	$26,135	$101,708	$115,512	n/a	n/a	n/a	n/a	**$86,779**
TOTAL PER LUD	$44,681,185			$3,739,225						
COST/LUD LOT	$68,635			$106,835						

Wailua Cost Assumptions
Water
Gallons required is based on an average daily demand of 500 gallons per housing unit.
2,500 gal/acre for agriculture, 4000 gal/acre schools or parks, 3000 gal/acre commercial
In general the gallons required is multiplied by a factor of 3 to account for fire flow needs.
New Water Source = $ 2 million
New Water Source figures a 500 gpm well supplies 720,000 gallons per day.
More than one well needed when average daily demand exceeds 720,000 gallons per day
Storage = $2 per gallon
Transmission = $150 per linear foot
Irrigation lines = $10 per linear foot to repair (COST NOT INCLUDED)
Roads
Road with out utilities costs approx $500 per linear foot. This includes pavement, grading, & drainage
After talking to the County Planning Dept. it was determined that DHHL can do Ag standard rd. in Ag areas.
Therefore, cost can be reduced by 20% (24 ft pavement down to 16-18 ft)
Amended Ag. road cost with out utilities = $400 per linear foot.
Road cost is further reduced if only gravel road provided = $300/linear foot.
Wastewater
Assumed that transmission lines are all that is needed. Development will hook into existing STP
Transmission = $150 per linear foot
Site Preparation
Based on a 4000SF house site/pad being cleared for each lot
Clearing and grubbing only, no grading cost included
Assumes an area with a slope of 0-10 % would be found.
* Topographic depression 3,500 ft long, 200 ft across, and 15 ft deep = approx 5.25 million cubic feet = 195,000 cubic yards x $50 per cubic yard = $9.75 M
Electricity
Transmission = $150 per linear foot
Special Notes
No irrigation costs included in this cost analysis. Assumption is that existing lines could be repaired.
Water cost could be reduced if able to tap into Grove Farm surface water treatment plant. No new source would be required.
Community Use and Commercial area cost only includes water storage costs since proposed development of area is not well defined. Length of roads/transmission unknown.

Anahola Costs- Minimum Infrastructure for Ag & Pastoral

DESCRIPTION	10,000 SF Res.Makai Exist & Surround *Priority Phase I*	10,000 SF Beach Lots *Priority Phase II*	10,000 SF Res. Makai of COM *Priority Phase III*	10,000 SF Res. South *Priority Phase IV*	10,000 SF Res. Mauka of C/CU *Priority Phase V*	10,000 SF Res.Mauka Exist & Surround *Priority, Phase V*	10,000 SF Res. North of River *Priority PhaseVI*	Kupuna Housing *Priority*	2 acre Sub Ag New	2 Acre Sub Ag. Exist	10 acre Pastoral	Com S. Makai *Priority*	Com. N. Mauka	COM/CU Mauka *Priority*	CU- 2 in subdivision *Priority Phase I*	CU- 2 near beach	CU- end of valley	**TOTALS**
TOTAL # OF LOTS	350	100	158	261	154	195	TBD	25	94	9	14	43 acres	3 acres	45 acres	31 acres	29 acres	44 acres	1360
Potable Water																		
Gallons Required	0	150,000	238,500	391,500	235,500	292,500	TBD	258,750	catchment	catchment	catchment	433,365	251,250	443,895	423,720	411,960	530,760	4,061,700
Per Gallon Cost	$2	$2	$2	$2	$2	$2	$2	$2	catchment	catchment	catchment	$2	$2	$2	$2	$2	$2	$2
Storage Cost	$0	$300,000	$477,000	$783,000	$471,000	$585,000	TBD	$517,500	catchment	catchment	catchment	$866,730	$502,500	$887,790	$847,440	$823,920	$1,061,520	$8,123,400
Facilities Reserve*	$910,000																	$910,000
New Source																		
Units served	0	100	158	261	154	195	TBD	25	catchment	catchment	catchment	n/a	n/a	n/a	n/a	n/a	n/a	868
Cost per Unit	$4,609	$4,609	$4,609	$4,609	$4,609	$4,609	n/a	n/a	catchment	catchment	catchment	n/a	n/a	n/a	n/a	n/a	n/a	$4,609
Source Cost	$0	$460,900	$728,222	$1,202,949	$709,786	$898,755	n/a	n/a	catchment	catchment	catchment	n/a	n/a	n/a	n/a	n/a	n/a	$4,000,612
Water Transmission																		
Pipe Length	17,000	4,400	10,400	15,600	8,100	12,100	TBD	TBD	catchment	catchment	catchment	TBD	TBD	TBD	TBD	TBD	TBD	67,600
Per Linear foot cost	$150	$150	$150	$150	$150	$150	$150	$150	catchment	catchment	catchment	$150	$150	$150	$150	$150	$150	$150
Total cost	$2,550,000	$660,000	$1,560,000	$2,340,000	$1,215,000	$1,815,000	TBD	TBD	catchment	catchment	catchment	TBD	TBD	TBD	TBD	TBD	TBD	$10,140,000
Roads																		
Road Length	17,000	4,400	10,400	15,600	8,100	12,100	TBD	TBD	13,700	1,900	7,200	TBD	TBD	TBD	TBD	TBD	TBD	90,400
Per Linear foot cost	$500	$500	$500	$500	$500	$500	$500	$500	$300	$300	$300	$500	$500	$500	$500	$500	$500	
Road Cost	$8,500,000	$2,200,000	$5,200,000	$7,800,000	$4,050,000	$6,050,000	TBD	TBD	$4,110,000	$570,000	$2,160,000	TBD	TBD	TBD	TBD	TBD	TBD	$40,640,000
Wastewater																		
IWS	n/a		n/a	n/a	n/a	n/a	TBD	TBD	n/a	n/a	140,000	n/a	n/a	n/a	TBD	TBD	TBD	$140,000
Gallons Generated	140,000	40,000	63,200	104,400	61,600	78,000	TBD	TBD	n/a	n/a	n/a	258,000	18,000	270,000	TBD	TBD	TBD	1,033,200
Cost per Gallon	$20	$20	$20	$20	$20	$20	TBD	TBD	n/a	n/a	n/a	$20	$20	$20	TBD	TBD	TBD	$20
STP Cost	$2,800,000	$800,000	$1,264,000	$2,088,000	$1,232,000	$1,560,000	TBD	TBD	n/a	n/a	n/a	$5,160,000	$360,000	$5,400,000	TBD	TBD	TBD	$20,664,000
Wastewater Transmission																		
Pipe Length	17,000	4,400	10,400	15,600	8,100	12,100	TBD	TBD	n/a	n/a	n/a	TBD	TBD	TBD	TBD	TBD	TBD	67,600
Per Linear foot cost	$150	$150	$150	$150	$150	$150	TBD	TBD	$150	$150	$150	$150	$150	$150	$150	$150	$150	$150
Total cost	$2,550,000	$660,000	$1,560,000	$2,340,000	$1,215,000	$1,815,000	TBD	TBD	n/a	n/a	n/a	TBD	TBD	TBD	TBD	TBD	TBD	$10,140,000
Site Preparation																		
Total sf to clear	1,400,000	400,000	632,000	1,044,000	616,000	780,000	N/A	N/A	n/a	n/a	56,000	N/A	N/A	N/A	N/A	N/A	N/A	4,928,000
Per sf cost	$2.50	$2.50	$2.50	$2.50	$2.50	$2.50	$2.50	$2.50	$2.50	$2.50	$2.50	$2.50	$2.50	$2.50	$2.50	$2.50	$2.50	$2.50
Total Cost	$3,500,000	$1,000,000	$1,580,000	$2,610,000	$1,540,000	$1,950,000	N/A	N/A	n/a	n/a	n/a	N/A	N/A	N/A	N/A	N/A	N/A	$12,320,000.00
Electricity																		
Wire Length	17,000	4,400	10,400	15,600	8,100	12,100	TBD	TBD	n/a	n/a	7,200	TBD	TBD	TBD	TBD	TBD	TBD	74,800
Per Linear foot cost	$150	$150	$150	$150	$150	$150	$150	$150	$150	$150	$150	$150	$150	$150	$150	$150	$150	$150
Total Cost	$2,550,000	$660,000	$1,560,000	$2,340,000	$1,215,000	$1,815,000	TBD	TBD	n/a	n/a	n/a	TBD	TBD	TBD	TBD	TBD	TBD	$10,140,000
Other Costs																		
TOTALS	$23,360,000	$6,740,900	$13,929,222	$21,503,949	$11,647,786	$16,488,755	engineer recommends 2 acre lots- no costs	$517,500	$4,110,000	$570,000	$2,160,000	$6,026,730	$862,500	$6,287,790	$847,440	$823,920	$1,061,520	**$117,218,012**
COST PER LOT	$66,743	$67,409	$88,160	$82,391	$75,635	$84,558		$20,700	$43,723	$63,333	$154,286	n/a	n/a	n/a	n/a	n/a	n/a	**$86,190**
TOTAL LUD COST	$93,670,612								$4,680,000		$2,160,000							
COST/LUD LOT	$76,842								$45,437		$154,286							

Anahola Cost Assumptions
Water
Gallons required is based on an average daily demand of 500 gallons per housing unit
2,500 gal/acre for Ag, 4,000 gal/acre schools or parks, 3,000 gal/acre commercial
In general the gallons required is multiplied by a factor of 3 to account for fire flow needs
New Water Source = $ 2million
New Water Source figures a 500 gpm well supplies 720,000 gallons per day
More than one well needed when average daily demand exceeds 720,000 gallons per day
Storage = $2 per gallon
Transmission = $150 per linear foot
Irrigation lines = $10 per linear foot to repair (COST NOT INCLUDED)
*Facilities Reserve Charge= $2,600 in order to hook up to the existing water system to access water credits
Roads
Rd. with out utilities costs approx $500 per linear foot. This includes pavement, grading, & drainage
After talking to the County Planning Dept. it was determined that DHHL can do Ag standard rd. in Ag areas
Therefore, cost can be reduced by 20% (24 ft pavement down to 16-18 ft)
Amended Ag rd. cost with out utilities = $400 per linear foot.
Rd. cost is further reduced if only gravel road provided = $300/linear foot
Wastewater
New plant needed for residential. IWS for ag/pastoral
Gallons generated is based on 400 gallons per day per housing unit
which assumes that each household has 4 person who each generate 100 gallons of waste per day
IWS = $10,000 per residence/unit
Transmission = $150 per linear foot
Site Preparation
Based on a 4,000 sf house site/pad being cleared for each lot
Clearing and grubbing only, no grading cost included
Assumes an area with a slope of 0-10 % would be found
Electricity
Transmission = $150 per linear foot
Special Notes
No irrigation costs included in this cost analysis. Assumption is that catchment is possible
Many ag/pastoral lots could be less costly if cane haul road is in good shape and no paving necessary
Community Use and Commercial area cost only includes water storage and wastewater treatment costs since proposed development of area is not well defined. Length of rds./transmission unknown.

Moloa‘a Costs- Minimum Infrastructure				TOTALS
DESCRIPTION	3 acre Sub Ag Mauka P-Ville	3 acre Sub Ag Mauka- Ana	3 acre Sub Ag Makai	
TOTAL # OF LOTS	13	14	20	47
Potable Water				
Gallons Required	catchment	catchment	catchment	0
Per Gallon Cost	catchment	catchment	catchment	$2
Storage Cost	catchment	catchment	catchment	$0
New Source				
Units served	catchment	catchment	catchment	47
Cost per Unit	catchment	catchment	catchment	n/a
Source Cost	catchment	catchment	catchment	n/a
Water Transmission				
Pipe Length	catchment	catchment	catchment	0
Per Linear foot cost	catchment	catchment	catchment	$150
Total cost	catchment	catchment	catchment	$0
Roads				
Road Length	4,000	2,500	4,500	11,000
Per Linear foot cost	$300	$300	$300	$300
Road Cost	$1,200,000	$750,000	$1,350,000	$3,300,000
Wastewater				
IWS	n/a	n/a	n/a	$0
Gallons Generated	n/a	n/a	n/a	0
Cost per Gallon	n/a	n/a	n/a	$20
STP Cost	n/a	n/a	n/a	$0
Wastewater Transmission				
Pipe Length	n/a	n/a	n/a	0
Per Linear foot cost	n/a	n/a	n/a	$150
Total cost	n/a	n/a	n/a	$0
Site Preparation				
Total sf to clear	n/a	n/a	n/a	188,000
Per sf cost	$2.50	$2.50	$2.50	$2.50
Total Cost	n/a	n/a	n/a	$470,000
Electricity				
Wire Length	n/a	n/a	n/a	0
Per Linear foot cost	$150	$150	$150	$150
Total Cost	n/a	n/a	n/a	$0
Other Costs				
n/a				
TOTALS	$1,200,000	$750,000	$1,350,000	**$3,770,000**
COST PER LOT	$92,307.69	$53,571.43	$67,500.00	**$80,213**

Moloa‘a Cost Assumptions
Water
Gallons required is based on an average daily demand of 500 gallons per housing unit
2,500 gal/acre for Ag, 4,000 gal/acre schools or parks, 3,000 gal/acre commercial
In general the gallons required is multiplied by a factor of 3 to account for fire flow needs
New Water Source = $ 2million
New Water Source figures a 500 gpm well supplies 720,000 gallons per day
More than one well needed when average daily demand exceeds 720,000 gallons per day
Storage = $2 per gallon
Transmission = $150 per linear foot
Irrigation lines = $10 per linear foot to repair (COST NOT INCLUDED)
Roads
Rd. with out utilities costs approx $500 per linear foot. This includes pavement, grading, & drainage
After talking to the County Planning Dept. it was determined that DHHL can do Ag standard rd. in Ag areas
Therefore, cost can be reduced by 20% (24 ft pavement down to 16-18 ft)
Amended Ag road cost with out utilities = $400 per linear foot
Road cost is further reduced if only gravel road provided = $300/linear foot
Wastewater
IWS = $10,000 per residence
Site Preparation
Based on a 4,000 sf house site/pad being cleared for each lot
Clearing and grubbing only, no grading cost included
Assumes an area with a slope of 0-10 % would be found
Electricity
Transmission = $150 per linear foot
Special Notes
No irrigation costs included in this cost analysis. Assumption is that reservoirs may be in operation

Appendix F

Fact Sheets

Kaua‘i Island Fact Sheet

Land Area:	• Kaua‘i - 352,000 acres • DHHL - 20,565 acres (6% of total land area of Kaua‘i) • Homesteading - 815 acres (4% of DHHL Kaua‘i land)
DHHL Beneficiary Lessees:	• 465 residential; 47 agricultural; 2 pastoral
DHHL Beneficiary Applicants:	• 1,477 residential; 1,781 agricultural; 189 pastoral
Population: *	• Kaua‘i - 59,000 individuals • Native Hawaiian - 5,369 individuals • Hawaiian Homesteaders - 540 households; 2,018 total population
Economic Profile:	• ***Overall job growth in the Kaua‘i economy will be 3.6% this year, (3% rate expected for state as a whole) • ***Real personal income will expand more than 4% this year and 3.3% in 2004 • ***Unemployment rate - 6.5% • *Median Family Income - $51,378 • *Percent of Families below poverty line - 8.4% (poverty line determined by Fed. Gov based on family size)
Tourism: ***	• Largest industry, generating 1/3 of the County’s real income in a typical year • Tourism has largely recovered from mild slowdown that followed 9/11 • 1,007,000 visitors in 2002; Visitor arrivals will expand more than 6% next year • Importance of timeshare industry: 1,599 units (37% of state total)
Agriculture: ***	• Smaller but visible part of economy • Major crops - Sugar, Coffee, Macadamia Nuts • Closure of AMFAC’s Lihue Plantation in 2000 led to loss of agricultural jobs • Gay and Robinson operations are strong and actually expanding
High Tech:***	• Expansion of activities at Pacific Missile Range but the impact on official job statistics is limited so far
Housing:	• *Homeownership rate - 61.4% • **Median price of single family homes - $410,000; Median price of condominiums - $420,000 • **Home prices have risen 29% in the past year and condo prices have risen 85% • ***Increase in purchase of homes by off-island individuals and new residents
Significant Natural Resources:	Kawaikini the highest peak on Wai‘ale‘ale, Hoary Head or Hā‘upu Mountain, Anahola Mountains, Waimea Canyon, Alaka‘i Swamp, Na Pali Coast, Waimea River, Hanalei River, Wailua River, Great Beaches, Marine Preserves
Significant Cultural Resources:	Many significant Heiau such as those at the Wailua River Heiau Complex where the first Ali‘i from Tahiti are said to have arrived, burial sites, ‘Auwai- ancient ditch systems, Historic Salt ponds, Russian Fort Elizabeth & Capt. Cook’s landing site, numerous petroglyph sites, sacred caves – i.e., Maha‘ulepu, Hōlua Slide Area, Taro Terraces, Fishponds

* Source: Census 2000
** Source: “Kaua‘i housing prices ‘insane’,” Honolulu Advertiser, March 25, 2004
*** Source: “Kaua‘i Economic Outlook,” UH Economic Research Organization, June 30, 2003

Waimea Fact Sheet

Total Acreage:	15,061 acres
Current Use:	• Approximately 475 acres awarded to two pastoral lessees (3 % of total area) • Military leases 26 acres • Gay & Robinson holds revocable permit (RP) for 923 acres for sugarcane, RP to Wally Johnson for 20 acres of diversified agriculture • DLNR utilizes 13,000 acres for game management and public hunting
State Land Use:	Agricultural
County General Plan:	Open
Soils:	• Soil is mostly unproductive but there is a small area of productive soil which is used for sugar cultivation • Small area of land just above the Mānā plain is suitable for building, specifically MgC soil type
Topography:	• 2/3 of area is steep, mountainous terrain and isolated valleys • Elevation – ranges from 200 ft-2800 ft above sea level • Slope – small 0-10 flat areas used for agriculture, mostly 10-20% and >20% steep and marginal
Hazards:	• Rockslide/mudslide hazard in excessive rain/storm weather resulting from steep slopes • PMRF missile testing
Rainfall:	• Dry, leeward side of Kaua‘i • 25 inches per year. at lower elevation • 40 inches per year in upper mauka sections
Flora and Fauna:	• Lowland Dry and Semi-Dry Forest/ Shrub land with some cultivated land • Low concentration of threatened and endangered species
Significant Natural Resources:	• Streams are intermittent with natural flow reaching the coastal plain only during periods of high rain fall • Waimea Canyon in the vicinity, dramatic topography and good views • Kōke‘e/Alaka‘i Swamp, Pu‘u ‘Ōpae Reservoir
Cultural Resources:	• 4 Heiau on DHHL land, two of which are named– Makahoa and Hauola • Ahupua‘a - Mānā, Niu, Wai‘awa
Infrastructure:	• Roads - limited, main road on the perimeter of the land, Access bad • Water - Kōke‘e Ditch System inadequate for further development, not serviced with potable water • Sewer – not available • Electricity – limited, only along roadways • Communications – limited, only along roadways
Community Facilities:	• Medical Services - West Kaua‘i Medical Center (Waimea Town) • Fire & Police – Fire Station 7 (Waimea Town) • Schools –High school in Waimea Town and Elementary School in Kekaha • Parks & Recreation – Waimea Canyon State Park, Polihale State Park, Kōke‘e State Park

Kekaha Fact Sheet

Total Acreage:	52 acres
Current Use:	Two non-adjacent tracts of land • 31 acres (TMK 1-2-002:44 & 45) were recently acquired from DLNR • 20 acres (Parcel # 44) is under development as a 42 house lot site for beneficiaries • 11 acres (Parcel # 45) will not be used for house lots due to presence of cultural layer and burials • Non-adjacent 19 acres subdivided into 70 house lots leased to beneficiaries
State Land Use:	Urban
County General Plan:	Residential
Soils:	• Land not rated for agricultural production • All features of the land are favorable for building
Topography:	• Lowland coastal area • Elevation – 10-100 feet above sea level • Slope – 0-8% flat and rolling
Natural Hazards:	Eastern parcel located in flood hazard zone
Rainfall:	10 inches per year
Flora and Fauna:	• Land altered by residential development • No known threatened or endangered species
Significant Natural Resources:	Close proximity to the coast/ocean
Cultural Resources:	• Cultural layer and burials exist on TMK 1-2-02: 45 and 1-3-02:17, 47-50 • Ahupua‘a - Poki‘i
Infrastructure:	• Roads – Available, paved County roads • Water – Available, serviced by wells/tanks with plans to construct a new tank to satisfy fire flow concerns • Sewer – Serviced by IWS (individual wastewater system) • Electric – Available- serviced by hydroelectric plant in Waimea • Communications – available, new fiber optic cable along Highway from Sandwich Isles Communications, phone by Verizon, cable by Oceanic
Community Facilities:	• Medical Services - West Kaua‘i Medical Center • Fire & police - Fire Station 7 (Waimea), Waimea Police Sub-station • Schools - Kekaha School (K-5), Waimea Canyon School (6-8), Waimea High School (9-12) • Parks & Recreation – Public Park in the vicinity

Hanapēpē Fact Sheet

Total Acreage:	365 acres
Current Use:	• 30 residential leases on 7 acres • Gay & Robinson holds revocable permit (RP) for 347 acres for sugarcane • 5 acre RP for pasture, 0.4 acre RP for bus parking, 0.5 acre RP for storage, and 0.5 acre RP for parking • Land makai of Highway is industrial
State Land Use:	Agricultural
County General Plan:	• Residential • Agricultural
Soils:	• Much of the land is prime and productive for agriculture. Small non-productive area • Land is suitable for buildings, specifically the soil types LIC, LIB, and MgC
Topography:	• Flat gentle slope • Elevation – approximately sea level to 200 feet • Slope – 0-10% Flat areas and gradual slope
Natural Hazards:	Southern corner of land abuts flood hazard zone
Rainfall:	• Less than 30 inches per year
Flora and Fauna:	• Land historically cultivated for sugar production • No known threatened or endangered species
Significant Natural Resources:	• Hanapēpē River • Fertile soil
Cultural Resources:	• Salt ponds, Historic Hanapēpē Town, and 2 Heiau all within vicinity • Ahupua‘a - Hanapēpē
Infrastructure:	• Roads - access around the periphery via Kaumuali‘i Hwy and Moi Rd. • Water – available, storage capacities adequate through 2020 • Sewer – available, subject to connections and expansion of wastewater treatment plant in Ele‘ele, or new plant in Hanapēpē • Electric – available, electric power plant in Port Allen • Communications – Sandwich Island fiber optic along Highway and Moi Rd. in Hanapēpē, phone by Verizon, cable by Oceanic
Community Facilities:	• Medical Services – nearest in Waimea • Fire & Police – Fire Station 6 (Hanapēpē) • Schools –Elementary School in Hanapēpē, Intermediate/High school in Waimea • Parks & Recreation - Hanapēpē Park, Salt Pond Park, Swinging Bridge

Wailua Fact Sheet

Total Acreage:	526 acres (52 acres makai of Kuhiō Highway and 474 acres mauka of Kuhiō Highway)
Current Use:	• 11.5 acres makai of Kuhiō Highway under revocable permit (RP) for grazing, planned as commercial center • 45 acre revocable permit (RP) for pasture mauka of Kuhiō Highway • 10 acre RP for diversified agriculture
State Land Use:	• Agriculture • Urban – (11.5 acres, TMK 3-9-06:11)
County General Plan:	• Agricultural • Open - surrounding Male‘a Heiau
Soils:	• Much of land is prime and productive for agriculture • Approximately 50% of land is good for buildings, specifically soil type LhB and LhC
Topography:	• Both flat and rolling with views to the ocean • Elevation – 10-200 feet above sea level • Slope - 0-10% flat and rolling
Natural Hazards:	• Borders flood hazard zone - wetland area on the northern and eastern edges of the parcels most prone. Area around Kaua‘i Community Correctional Facility, which borders a portion of the eastern edge of the parcels, is known as one of Island’s worst flood prone areas
Rainfall:	Less than 60 inches per year
Flora and Fauna:	• Wetlands area bordering the northern edge of the parcel and the eastern edge near the correctional facility • Lowland Dry and Semi-Dry Forest/Shrub land, some land previously cultivated • No known threatened and endangered species
Significant Natural Resources:	• Wailua River , Wailua Bay, Coastal areas, and Wetland areas • Kālepa Ridge
Cultural Resources:	• Hikin akalā Heiau, Pu‘uhonua o Hauola, Malae Heiau & Petroglyphs • Mouth of Wailua river is landing place of the first ali‘i from Tahiti • Ahupua‘a - Wailua
Infrastructure:	• Roads- Mauka land not very accessible, former cane haul roads could provide some access • Sewage- Wailua treatment plant, cess pools and private treatment • Water – highly interconnected system in need of additional source and future storage capacity • Electricity – Adequate- serviced by power plant in Līhu‘e • Communications – poles/cables follow Kuhiō Highway, Sandwich Island fiber optic, phone by Verizon, cable by Oceanic
Community Facilities:	• Medical Services - Wilcox Hospital in Līhu‘e • Fire & Police – Fire Station 2 (Kapa‘a) or Fire Station 3 (Līhu‘e) • Schools – King Kaumuali‘i Elementary School (Hanamā‘ulu), Kapa‘a Middle School and High School • Parks & Recreation – Lydgate Park, Wailua Beach Park, Wailua Golf Course • Other – Kauai Community Correctional Facility

Kapa‘a Fact Sheet

Total Acreage:	17 acres
Current Use:	Two non-adjacent tracts of land • 1.87 acre parcel TMK 4-5-05:06 under revocable permit (RP) for school bus parking & other parking • 6.5 acres of approx. 15 acre more northern parcel under RP for mini storage and parking
State Land Use:	Urban
County General Plan:	Urban Center
Soils:	• Land not rated for agricultural production. Mostly fill land used for urban development • Portions of the land have a high water table with a shallow surface layer which can impede building
Topography:	• Lowland Coastal Area • Elevation – sea level to 100 feet • Slope - flat 0-5 %
Natural Hazards:	• Drainage canal Moikeha (just north of DHHL land) was initially constructed to alleviate flood problems, however it is now poorly maintained with considerable silt and debris build-up • Hurricane Iniki over wash zone just to the east on the opposite side of Kuhiō Hwy • Smaller southern parcel in flood hazard zone
Rainfall:	• 60 inches per year or less
Flora and Fauna:	• Nearby Kapa‘a Stream finds an abundance of native aquatic species. • Wetlands nearby Waikaea Canal which is adjacent to DHHL parcels • No known threatened and endangered species
Significant Natural Resources:	Nearby canals and wetlands
Cultural Resources:	• No known historic properties on DHHL parcels • Historic Kapa‘a Town and Historic Buildings in vicinity • Ahupua‘a - Kapa‘a
Infrastructure:	• Road – adequate but congested along Kuhiō Highway • Water – available, highly interconnected yet in need of future storage capacity • Sewer - available, serviced by County of Kaua‘i wastewater plant in Wailua • Electricity – available, power plant in Līhu‘e • Communications – available, Sandwich Island fiber optic, phone by Verizon, cable by Oceanic
Community Facilities:	• Medical Services - Samuel Mahelona Memorial Hospital • Fire & Police - Kapa‘a Town has one of Kaua‘i’s three police sub-stations and one of the 7 Fire Stations • Schools - Kapa‘a Middle School, Kapa‘a High School & Elementary school. St. Catherine School (private) • Parks & Recreation - Kapa‘a Ballpark and Kapa‘a Town Park. • Other - New Kapa‘a Park Cemetery

Anahola/Kamalomalo‘o Fact Sheet

Total Acreage:	4,228 acres
Current Use:	• Approx. 359 residential leases (100 acres) and 49 Agricultural leases (225 acres) • 3025 acre general lease to Līhu‘e Plantation expired 12/14/02- lands now vacant • remainder of lands undeveloped and other community uses- i.e. Project Faith
State Land Use:	• Majority Agricultural • Urban (small portion) • Conservation (small portion)
County General Plan:	• Residential, Agricultural, and Open
Soils:	• The soil is largely productive for agriculture in the makai areas and moving up Kamalomalo stream valley. • Upper mauka and some makai pockets of land unproductive • Much of lowland and coastal areas are suitable for buildings, specifically LhB & LhC soils. On the remaining land, steep slope or high water table creates building issue
Topography:	• Both flat lying regions and rugged cliffs rising above the coastal plain • Elevation – sea level to +/- 800 ft • Slope – majority of the land flat to rolling hills, some marginal and steep; approx. 3200 acres <10% slope, approx. 425 acres 10-20% slope, approx 635 acres >20% slope
Natural Hazards:	• Flood hazard in low lying areas near the shoreline and along the river; coastal erosion issues • Ground termite infestations
Rainfall:	• 50 inches per year on lower mauka and makai land • 100 inches per year on upper mauka land
Flora and Fauna:	• Wet Forest/Woodland in portions of upland area, Cultivated land in lowland areas • No known threatened and endangered species
Significant Natural Resources:	• Anahola, Kaupaku, and Kamalomalo Streams with dramatic mountain backdrop to the land • Substantial coastal and marine resources
Cultural Resources:	• Anahola Dune Burials, Aikanaka Heiau, Paeaea Heiau, Kuhua Heiau, Taro Terraces • Within the ahupua‘a of Anahola and Kamalomalo
Infrastructure:	• Road- adequate, agricultural lands access is via dirt roads • Water - systems need significant improvements, supply and storage adequate • Sewer –future development dependent on installing collection and treatment system • Electricity – adequate and available, power plant in Līhu‘e • Communications- Fiber optic from Sandwich Island Communications, phone by Verizon, cable by Oceanic
Community Facilities:	• Medical Services - Kapa‘a • Fire & Police - Kapa‘a • Schools – Kapa‘a (High school, Intermediate, Elementary) • Parks & Recreation - Anahola Beach Park

Moloa‘a Fact Sheet

Total Acreage:	316 acres
Current Use:	All 316 acres under revocable permit (RP) for pasture
State Land Use:	Agricultural
County General Plan:	Open
Soils:	• Soil mostly unproductive for agriculture • Conditions for building are not favorable due to slope, water table, stream over flow, and shrink swell
Topography:	• Flat plateaus cut by streams and gulches • Elevation – 200-760 ft • Slope - Makai of Hwy flat to rolling hills, Mauka of Hwy mostly marginal and steep; 125 acres <10% slope, 30 acres 10-20% slope, 160 acres >20% slope.
Natural Hazards:	• Riverside flooding • Slope failure in steep areas
Rainfall:	• 60 inches per year on makai land • Up to 100 inches per year on mauka land
Flora and Fauna:	• Wet Forest/Woodland in portions of upland area • No known threatened and endangered species, however southern border of land near medium concentration area • Pasture lands
Significant Natural Resources:	• Moloa‘a Stream cuts along the north boundary • Kīlauea Point Natural Preserve
Cultural Resources:	• Registered Archaeological Site in the vicinity • Ahupua‘a – Moloa‘a • Kīlauea Lighthouse
Infrastructure:	• Roads – land bisected by Kuhiō Hwy, but limited accessibility • Water – undeveloped • Sewer - undeveloped • Electricity – available along highway • Communications – available along highway
Community Facilities:	• Medical Services - approximately 12 miles away in Kapa‘a • Fire & Police – Hanalei • Schools – Elementary School in Kīlauea, Middle School and High School in Kapa‘a • Parks & Recreation - Anahola Beach Park is nearest developed park- approx 6 miles