

Appendix B

**Service Area Health Care Facilities Forecast –
Kaloko Makai
Cattaneo & Stroud, Inc.
June 2011**

Cattaneo & Stroud, Inc.

Consultants to the Health Care Industry

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Service Area Health Care Facilities Forecast - Kaloko Makai

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June 2011

Summary of Kaloko Makai Health Care Facilities Forecast

SCD-TSA Kaloko Makai, LLC is reserving 40 acres of land for the potential development of a hospital. SCD-TSA is not committed to developing the new hospital or any of the suggested support facilities indicated in this study. The purpose of this study is to show potential staffing requirements and space (square footage) demands for a finite number of healthcare facilities based on current and future population figures as well as Medical visit records produced by the Hawaii Health Information Corporation.

A population-based forecast of the health care facility and manpower needs for the residents of the Kona Coast region resulted in the following plan for health care facilities development:

Service Area Health Care Facilities Forecast - Kaloko Makai	
Campus Planning Scenarios: Phase One (2015-2020)	
Medical Office Building (# MDs)	10
Urgent Care	4,500
Hospital	
Skilled Nursing/LTC	50
Campus Planning Scenarios: Phase Two (2020-2030)	
Medical Office Building (# MDs)	50
Urgent Care	5,100
Hospital	130
Skilled Nursing/LTC	100
Campus Planning Scenarios: Phase Three (2030-2040)	
Medical Office Building (# MDs)	100
Urgent Care	5,700
Hospital	150
Skilled Nursing/LTC	150

The forecast is presented in three phases that result in the estimated need for the following services:

- **Medical Office Building(s):** The estimated number of physicians that would locate in the proposed Kaloko Makai development. Phase One would occur early in the development and before a hospital is located in the area, hence the offices would start small, with limited ancillary services (xray, lab draw station, pharmacy) to support the community and medical practices. Over the next five to ten years, as the development grows and plans for the hospital are

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completed, medical office needs would grow to an estimated 50 physicians. As the community and hospital grow, the need for physician offices will grow to up to 100 physicians.

- **Urgent Care:** The Urgent Care component of the project will meet the immediate medical needs of the growing community, in concert with the physician offices, as well as provide access to health care for lower acuity cases. The forecast is based on an assumption that approximately 17% of emergency visits are low acuity, based on a 2010 study of Hawaii resident cases. When the hospital opens, the urgent care function would be coordinated with the hospital emergency room to determine the optimal staffing and facility for both services.
- **Hospital:** Construction of the hospital is anticipated in Phase Two which is forecast to occur between 2020 – 2025. This plan assumes that the hospital is built in two phases, with the first hospital building sized to house up to 130 beds. However, capacity could be phased in depending on how quickly demand develops in the area. Overall demand for acute care beds is forecast to reach 150 by 2035 at recent use rates for Big Island residents of the Kona Coast. Additionally, a portion of beds could be operated as “swing beds”, i.e. they could be operated as acute or skilled nursing based on demand.
- **Long Term Care:** There is a significant shortage of long term care beds in the state of Hawaii, including on the Big Island. The elderly population is the fastest-growing component locally and statewide. This project proposes to develop a fifty bed facility in Phase One with fifty bed increments added in Phases Two and Three, for a total of 150 beds.

Summary

The proposed health care facilities address a growing need for local services to support the needs of the regional population. Over the past few years, local and state groups have documented the shortage of skilled nursing and long term care beds, the shortage of physicians, and the aging status of the state’s hospitals. The Kaloko Makai development includes a continuum of modern, needed services that should provide a strong foundation for community health and for attracting health professionals to the region.

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Health Care Facilities Forecast - Kaloko Makai

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Campus Planning Scenarios: Phase One				
Building Types	Components	Building GSF	Parking	Acreage for new Buildings
Outpatient Care Center	Imaging, Lab, Pharmacy, Urgent Care	14,629	73	1.28
MOB #1	10 MD Office/Suites	18,750	94	1.44
Hospital	No hospital this phase	-	-	-
Skilled Nursing/LTC	No Skilled Nursing Beds	-	-	-
Totals		33,379	167	2.72

Campus Planning Scenarios: Phase Two				
Building Types	Components	Building GSF	Parking	Acreage for new Buildings
Outpatient Care Center	Expand OP service, Add Ambul Surgery	23,639	118	2.06
MOB #2	30 MD Office/Suites	56,250	281	4.33
Hospital	No hospital this phase	-	-	-
Skilled Nursing/LTC	50 Skilled Nursing Beds	32,500	75	1.71
Totals		112,389	474	8.10

Campus Planning Scenarios: Phase Three				
Building Types	Components	Building GSF	Parking	Acreage for new Buildings
Outpatient Care Center	New OP services replaces UC & ASC	23,639	118	2.06
MOB #3	50 MD Office/Suites	93,750	469	6.78
Hospital	100 bed hospital this phase	185,000	500	8.55
Skilled Nursing/LTC	100 Skilled Nursing Beds	60,000	150	3.31
Service Building 1		6,000	12.00	0.34
Totals		362,389	1,237	21.04

Campus Planning Scenarios: Phase Four				
Building Types	Components	Building GSF	Parking	Acreage for new Buildings
Outpatient Care Center	OP Services expands by 25%	29,548	148	2.58
MOB #4	100 MD Office/Suites	187,500	938	13.56
Hospital	150 bed hospital this phase	270,000	750	12.74
Skilled Nursing/LTC	150 Skilled Nursing Beds	82,500	225	4.79
Service Building 2		10,000	20	0.57
Totals		569,548	2,060	34.23

Campus Staffing Forecast - Kaloko Makai

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Building Types	Staffing Assumptions	Building GSF	MD's	Total Staff
Outpatient Care Center	1 MD plus 4 staff/ 2000 usable SF	14,629	9	47
MOB #1	1 MD plus 4 staff/ 1500 usable SF	18,750	10	50
Hospital	No hospital this phase	-	-	-
Skilled Nursing/LTC	No Skilled Nursing Beds	-	-	-
Totals		33,379	19	97

Building Types	Staffing Assumptions	Building GSF	MD's	Total Staff
Outpatient Care Center	1 MD plus 4 staff/ 2000 usable SF	23,639	9	47
MOB #2	1 MD plus 4 staff/ 1500 usable SF	56,250	30	150
Hospital	No hospital this phase	-	-	-
Skilled Nursing: 50 Beds	1.6 staff/ bed	32,500	-	275
Totals		112,389	39	472

Building Types	Staffing Assumptions	Building GSF	MD's	Total Staff
Outpatient Care Center	1 MD plus 4 staff/ 2000 usable SF	23,639	9	47
MOB #3	1 MD plus 4 staff/ 1500 usable SF	93,750	50	250
Hospital: 100 Beds	5.5 staff/ bed	185,000	-	550
Skilled Nursing: 100 Beds	1.6 staff/ bed	60,000	-	160
Service Building 1	Included in hospital staff	6,000	-	-
Totals		362,389	59	1,007

Building Types	Staffing Assumptions	Building GSF	MD's	Total Staff
Outpatient Care Center	1 MD plus 4 staff/ 2000 usable SF	29,548	12	59
MOB #4	1 MD plus 4 staff/ 1500 usable SF	187,500	100	500
Hospital: 150 Beds	5.5 staff/ bed	270,000	-	825
Skilled Nursing: 150 Beds	1.6 staff/ bed	82,500	-	240
Service Building 2	Included in hospital staff	10,000	-	-
Totals		569,548	112	1,624

Kaloko Makai, Medical Campus: Site Planning Scenarios

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Building Group by Phase	Building GSF	Parking Spaces	Building Site in Acres	Peak Trips per Hour
Outpatient Care 1	14,629	73	1.28	76
Outpatient Care 2	23,639	118	2.06	122
Outpatient Care 3	23,639	118	2.06	122
Outpatient Care 4	29,548	148	2.58	153
MOB 1,	18,750	94	1.44	70
MOB's 2	56,250	281	4.33	209
MOB's 3	93,750	469	6.78	349
MOB's 4	187,500	938	13.56	698
Skilled Nursing, 50 beds	32,500	75	2.46	14
Skilled Nursing, 100 beds	60,000	150	4.68	25
Skilled Nursing, 150 beds	82,500	225	6.68	35
Hospital: 100 beds	185,000	500	8.55	218
Hospital: 150 beds	270,000	750	12.74	319
Service Building 1	6,000	12	0.34	7
Service Building 2	10,000	20	0.57	12

Traffic Volumes for each building-type based on guidelines from the Institute for Transportation Engineering

Traffic Volumes (Peak Trips per hour) do not occur across all buildings at the same hour.

"Building Acreage" does not include Storm Detention areas or Open Space

Kaloko Makai, Medical Campus, Medical Office Buildings					
SCD-TSA Kaloko Makai, LLC		Revised as of June 2011			
Building by Phase (1)	Total MD's	GSF /MD Suite	Total GSF	Total of MOB's Footprint (2)	Total Footprint Acres
MOB 1	10	1,500	18,750	10,313	0.24
MOB's 2	30	1,500	56,250	30,938	0.71
MOB's 3	50	1,500	93,750	32,813	0.75
MOB's 4	100	1,500	187,500	65,625	1.51
Parking Spaces by Phase (3)			Parking GSF	With all Drives, Landscape & Misc (4)	Total Site Work Acres
MOB 1	94		37,500	52,500	1.44
MOB 2	281		112,500	157,500	4.33
MOB 3	469		187,500	262,500	6.78
MOB 4	938		375,000	525,000	13.56

Notes:

1. Medical Office Building with 80% Usable per floor
2. Building Footprint assumes 2 story building with 55% at grade level
3. Parking at 5 Spaces/ 1000 GSF
4. Roadways, Landscape & Misc Sitework at 40% of Parking lots

Kaloko Makai, Medical Campus: Skilled Nursing Facility					
SCD-TSA Kaloko Makai, LLC		Revised as of June 2011			
Building Group by Phase (1)	GSF/Bed	Total GSF	Building Footprint (2)	Building Footprint Acres	
SNF 1: Beds 50	650	32,500	32,500	0.75	
SNF 2: Beds 100	600	60,000	60,000	1.38	
SNF 3: Beds 150	550	82,500	82,500	1.89	
Parking Spaces by Phase (3)		GSF/Space	Parking GSF	With all Drives, Landscape & Misc (4)	Total Site Work Acres
SNF 1:	75	400	30,000	42,000	1.71
SNF 2:	150	400	60,000	84,000	3.31
SNF 3:	225	400	90,000	126,000	4.79

Notes:

1. Freestanding SNF w/ 80% Semi-private rooms and minimal outsourcing of medical services
2. Building Footprint assumes 1 story building with 100% at grade level
3. Parking at 1.5 Spaces/ Bed
4. Roadways, Landscape & Misc Sitework at 40% of Parking lots

Kaloko Makai, Medical Campus: Community Hospital

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Building Group by Phase (1)	GSF/Bed (5)	Total GSF	Building Footprint (2)	Building Footprint Acres
Hospital 3: Beds 100	1850	185,000	92,500	2.12
Hospital 4: Beds 150	1800	270,000	135,000	3.10
Parking Spaces by Phase (3)	GSF/Space	Parking GSF	With all Drives, Landscape & Misc (4)	Total Site Work Acres
Hospital 3: Beds	500	400	200,000	8.55
Hospital 4: Beds	750	400	300,000	12.74

Notes:

1. Community Hospital w/ private rooms and minimal outsourcing of medical services
2. Building Footprint assumes 3 story building with 50% at grade level
3. Parking at 5 Spaces/ Bed
4. Roadways, Landscape & Misc Sitework at 40% of Parking lots

Kaloko Makai, Medical Campus, Outpatient Care Center

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Building Group by Phase	GSF for these services	Total GSF	Building Footprint	Total Footprint Acres
Outpatient Care Center 1: Imaging, Lab & Urgent Care (1)	11,704	14,629	14,629	0.34
Outpatient Care Center 2: Expand OP, Add ASC (2)	18,911	23,639	23,639	0.54
Outpatient Care Center 3: Backfill OP as UC & ASC move to hosp (3)	18,911	23,639	23,639	0.54
Outpatient Care Center 4: Expand OP services by 25% (4)	23,639	25,548	23,548	0.68
Parking Spaces by Phase (5)	GSF/Space	Parking GSF	With all Drives, Landscape & Misc (6)	Total Site Work Acres
OCC 1	73	400	29,269	1.28
OCC 2	118	400	47,278	2.06
OCC 3	118	400	47,278	2.06
OCC 4	148	400	59,287	2.58
Total all OCC phases	457		182,911	256.075

Notes:

1. Includes Imaging rooms, Draw Stations, Blood Urgent Care Center & Support Space
2. Adds ASC with 2 OR's, Pre-Op Recovery & Support Spaces
3. ASC and UC to hospital. Backfill spaces with PT and Wellness Center
4. All OP centers grow by 25%
5. Roadways, Landscaping and Misc Sitework at 40% of parking lots
6. Outpatient Parking Ratio: 5 spaces/1000 GSF

Kaloko Makai Health Campus	Facility Master Planning
Space Program	Revised as of June 2011

Urgent Care Center

Room Name or Space Req'd.	Remarks	Units	SF/Unit	Total SF
Waiting Room	Seals 20 plus child's play area	1	400	400
Volunteers Station	Desk and Refreshment Cart	1	40	40
Public Toilet		2	55	110
Reception & Registration	2 Registration Booths & Work counter	1	60	60
Staff Stations				
Central Nurses Station	Workstations for 6 Staff	1	160	160
MD Dictation	2 Workstations	1	30	30
Medication Room	Automated Dispensing	1	60	60
PACS Viewing Station		1	40	40
Medical Supplies	Cart Restroom Room	1	80	80
Clean Utility	Sink Counter and Storage	1	100	100
Linen Storage	Linen Carts	1	20	20
Soiled Utility	Hopper Sink	1	60	60
Treatment Bays				
Fast Track/ Minor Treatment	Partial Waked Stations w/ Cubicle Curtain	4	100	400
Exam Rooms	Isolated / Secured Exam Room	4	120	480
Handwash Stations	Staff Stations	1	10	10
Patient Toilets		2	55	110
Support Services				
MD Office		1	100	100
Unit Managers Office		1	100	100
Electrical Closet		1	60	60
Communication Closet		1	40	40
Janitor Closet		1	40	40
Staff Lockers/ Showers		1	140	140
Staff Conference Lounge	Table & Kitchenette	1	120	120
Staff Toilet		1	60	60
Total Net SF				2,820
Circulation		1.5		1,410
Total SF				4,230

Pharmacy

Prescription Preparation	3 Fill Stations, Dispensing and Sink	1	60	60
Cashier Station	Swing staff w/ pharmacy	1	20	20
Pharmaceutical Shelving	350 Lf of Shelving	1	100	100
Bulk Stores and workroom		1	60	60
Pharmacy Waiting	5 seats	2	15	30
Retail Shelving	Medical/ Retail. No food or DME	1	200	200
Net SF				470
Circulation		1.4		188
Subtotal SF				658

Outpatient Reception/ Waiting Area

Room Name or Space Req'd.	Remarks	Units	SF/Unit	Total SF
Entry/ Waiting				
Entry Vestibule	Separate entry from Women's Center	1	100	100
Reception Desk	2 Workstations, Copier, Fax	1	100	100
Registration				
Registration Cubicles	Access to Women's & Amb Care Waiting	2	60	120
Clerical Area	Copy, Chart Assembly, Files & Storage	1	100	100
Financial Counseling/ Insur Verif.	PAT discharge counseling	1	100	100
Waiting Area				
Patient/ Family Waiting	General waiting, seats (120)	1	240	240
Children's Area	Quiet play, games, puzzles	1	50	50
Toilets		2	60	120
Health Resource Center	Books, Videos, Operable Wall	1	100	100
Net SF				1,030
Circulation		1.5		515
Subtotal SF				1,545

Lab and Testing Services

Room Name or Space Req'd.	Remarks	Units	SF/Unit	Total SF
Point of Care Testing	Countertop equipment, Basic tests	1	100	100
Specimen Processing	Specimen storage, sorting & pick-up	1	40	40
Workstation	Paperwork station	1	65	65
Lab Storage	Lab Supplies & Refrig. Storage	1	40	40
Testing/ Consult Rooms	Draws, EKG, History, Staff Work	1	100	100
Draw Stations	Draw Chair & phlebo. cart	2	70	140
Clerical Work	Chart assembly & Storage	1	80	80
Toilet	Specimen collections	1	55	55
(Group Teach in RMP Conf Room)				
Net SF				620
Circulation		1.4		248
Subtotal SF				868

Room Name or Space Regd.	Remarks	Units	SF/Unit	Total SF
Reception/ Scheduling				
Reception/ Scheduling	Workstations, Copier, Fax	1	80	80
Sub-Waiting for Imaging	Seats 4 w/ Main Waiting nearby	1	100	100
Men's Change Booths	Booths w/ adjacent patient lockers	2	30	60
Women's Change Booths	Booths w/ adjacent patient lockers	2	30	60
Women's Toilet		1	55	55
				-
Image Reading & Processing				
PAC Work Stations/ Film Reading	PAC & Large Film Reading cubicles	1	80	80
Radiologists Work Stations	Work cubicles	1	50	50
Clerical Area	Clerical, Copy, Sorting	1	100	100
Dept Manager	Private Office	1	80	80
Utility Storage	Paper Storage & Coffee/ microwave	1	100	100
				-
Rad/ Fluoro				
Rad/Fluoro Room	Digital R/F	2	320	640
Control Areas	Shared Room Controls	1	75	75
R/F Toilet	Toilet w/ 2 doors	1	60	60
Radiographic Rooms	Rad Unit w/ Chest Stand	1	225	225
				-
Central Workroom/ Processing				
Central Workroom/ Processing	Rad Techs, Film Load, Digital O/A	1	120	120
Darkroom	Film Process	1	65	65
Tech Lounge	Conf, Lockers, Kitchenette	1	100	100
Staff Toilet		1	55	55
				-
Mammo & UltraSound Suite	Adjacent to Women's changing area			
Ultrasound Exam Rooms		1	150	150
Mammography	Change at Dressing Area	1	140	140
Work/Utility		1	60	60
				-
Support Functions				
General Storage Rooms		1	100	100
Hallway Alcoves	Wheelchair, Equip Storage	2	30	60
Staff Locker/ Toilet	lockers, Toilet & Shower	1	120	120
General Staff Lounge and Conf.	Used by all Amb. Care Staff	1	100	100
Janitor Closet		1	40	40
Electrical Room		1	60	60
				-
			Net SF	2,935
			Circulation 1.5	1,468
			Subtotal SF	4,403

Room Name or Space Req.	Remarks	Units	\$F/Unit	Total \$F
General Operating Rooms	General Surgery	2	350	700
Scrub Station Alcoves	2 sinks per station	1	50	50
Flash Sterilization	Shared between 2 OR's	1	60	60
MD Dictation Alcove	Stand-up Dictation	1	15	15
Stretchers Alcoves		2	30	60
Clean Utility Storage	Clean Surgical Supplies	1	120	120
Equipment Storage	Rolling Equipment	1	120	120
Anesth. Workroom	Bottle storage, Carts, Equip & charting	1	80	80
Blood Bank	UC Refrig & Workstation	1	60	60
Frozen Section Lab	Cryostat, Scope, Bench, UC Freezer	1	80	
Control Station	Nurse, Charting, Clinical	1	100	100
Men's Lockerroom/ Changing	40 lockers, sink vanity, gown storage	1	140	140
Men's Toilet	1 Toilet, Urinal & Shower	1	120	120
Women's Lockerroom/ Changing	40 lockers, sink vanity, gown storage	1	160	160
Women's Toilet	2 Toilet & Shower	1	100	100
Staff Lounge/ Conference	Seating, Table, Refreshments	1	120	120
Physician Dictation	Dictation cubicle	1	20	20
Janitor Closet	Near OR's	1	60	60
(All Prep/ Recovery Adjacent)				-
Central Processing/ Storage	(Processing for procedure, not Endo)			-
Soiled Utility/Decontamination	Soiled Instruments & Clean-up	1	60	60
Sterile Processing	2 Wash/ Decont, 1 Steam Sterile, Carts	1	160	160
Tray make-up	Instr storage, Tray make-up	1	60	60
Equipment Storage	General Medical equip	1	100	100
Clean Supplies	Clean supplies and bulk storage	1	140	140
Gas Storage	Bottle Storage	1	60	60
		Net SF		2,655
		Circulation 1.5		1,333
		Subtotal 5F		3,998

Room Name or Space Req'd.	Remarks	Units	SF/Unit	Total SF
Prep/ Recov & Dressing				
Change/ Prep/ Recovery Rooms	Prep/ Recov. Locker, sink & bed	4	135	540
Patient Toilets	H/C Access	1	55	55
Nurse Station/ Charting	Adjacent to Recovery N/S	1	100	100
MD Dictation		1	30	30
Meds and Utility	Shared w/ Recovery #1			
Linen Storage		1	40	40
Storage		1	80	80
Patient discharge area	Direct discharge to auto pick-up	1	60	60
Patient Recovery Area				
Level 1 Recovery Stations	Partial walled cubicles	4	80	320
Patient Toilets	H/C Accessible	1	55	55
Nurse Station/ Charting	Adjacent to Recovery N/S	1	120	120
Staff Meds and Nourishment	Med dispensing & Refrig	1	40	40
Staff Office	Unit Mgr & Conf	1	100	100
Anesthesia Office	Office and Consult	1	100	100
Hallway alcoves	Stretcher/ Wheelchair	2	30	60
Clean Utility	Clean Linen & Storage	1	100	100
Soiled Holding		1	100	100
Storage	Carts and Equipment	1	120	120
Janitor Closet		1	60	60
Electrical Closer		1	60	60
		Net SF		2,140
		Circulation 1.5		1,070
		Subtotal SF		3,210

Women's Center				
Room Name or Space Req'd.	Remarks	Units	SF/Unit	Total SF
Entry Area				
Entry Vestibule	Separate entry from Amb Care	1	80	80
Reception Desk	2 Workstations, Copier, Fax	1	120	120
Waiting Area	Seats 18 & Coffee Cart	1	360	360
Toilet	H/C Access & Diaper Station	1	60	60
Women's Resource Center	Books, Videos, Linked w/ Amb Care	1	300	300
				-
Women's Dressing Area				
Counsel Room	Counseling & Education	1	100	100
Changing Booths	Adjacent to Imaging and Exam Rooms	8	30	240
Patient Locker/ Storage	With Booths: 8 Full Lockers, 2 Seats	1	120	120
Toilet	H/C Toilet w/ vanity	2	60	120
				-
Exam/ Teaching				
Exam Rooms	Private Hall to Changing Rooms	3	100	300
Exam/ Procedure w/ toilet	Private toilet w/ 2 doors	1	180	180
Control Station	Scale, Charting and Clerical	1	80	80
MD Work Area	Paperwork & Film Viewer	2	60	120
Storage	Clinical and general supplies	1	100	100
Staff Lounge/ Lockers	Common Locker/Lounge (See Imaging)			-
			Net SF	2,280
			Circulation 1.5	1,140
			Subtotal SF	3,420