Cargo Operations

Meeting Notes # 1, September 19, 2018
Meeting Notes # 2, October 23, 2018
Meeting Notes # 3, November 8, 2018

MEETING NOTES

Project:	Honolulu Harbor 2050 Master Plan (HHMP)
Date/Time:	Wednesday, September 19, 2018, 8:30 a.m. HST
Location:	Homer A. Maxey International Trade Resource Center 521 Ala Moana Blvd, Honolulu, HI 96813, USA
Purpose:	Cargo Sub-TAC, Meeting #1
Attendees:	See attached sign-in sheet

A. HHMP Overview

1. Sub-TAC Process
    a. The purpose of the Sub-TAC is to provide technical expertise and experienced observations about harbor operations, issues and needs. Input from the Sub-TAC will be used to develop preliminary alternatives for review by a Planning Advisory Committee (PAC). The PAC will be comprised of DOT-H Administration, representatives from each Sub-TAC, selected State agencies and others as determined by DOT-H. The preliminary alternatives will be refined based on PAC input prior to presenting the information to the public during public information meetings (PIM). Three iterations of review by the PAC and PIM will be undertaken before finalizing the HHMP.
    b. The first PAC and PIM will be held during the first quarter of 2019.
    c. Sub-TACs are by-invitation only. It's okay to substitute representatives from your organization, but please let the Project Team know.
    d. The Sub-TACs and PAC are advisory, not decision-making bodies. The Project Team, under advisement of the PAC, will provide recommendations to DOT-H Administration for acceptance. Decisions about master plan alternatives and improvements will ultimately be made by the DOT-H.
    e. Each Sub-TAC will select a primary and back-up representative to represent the Sub-TAC on the PAC. The selection process will occur at the end of meeting #2.
2. HHMP Mission Statement, Goals and Evaluation Criteria
    a. The HHMP is focused on supporting commercial maritime uses, guided by the DOT-H Mission Statement:

    To effectively improve and manage a commercial harbors system that facilitates safe and efficient operations of commercial cargo, passenger, fishing, and other commercial maritime-related services and support activities within the State of Hawaii and which serves to sustain and enhance the State's economic prosperity and quality of life.

   b. The Project Team defined basic goals for the HHMP to guide the planning work and ensure each Sub-TAC stays focused on DOT-H's mission. Goals include:
      i. Meet current and future maritime needs.
      ii. Optimize use of the Harbor's finite land resources.
      iii. Balance stakeholders' competing needs and interests.
      iv. Ensure resiliency in the face of natural and human-made disasters, and climate change.
      v. Consider emerging technologies and trends.
      vi. Consider public access and waterfront development opportunities in select locations.
3. Evaluation Criteria
   a. The criteria provide a basic framework to guide decision making during the development of alternatives. Additional or more focused criteria may be added over the course of the project. Stakeholders are invited to provide additional criteria for consideration. Evaluation criteria include:
      i. To what extent does it align with the HHMP Goals?
      ii. To what extent is it economically reasonable and feasible – can we afford it?
      iii. To what extent do the costs justify the benefit to the Harbor and the State – do we need it?
      iv. To what extent does it improve harbor function?
      v. To what extent does it benefit or adversely impact the environment?
4. Master Plan Phasing
   a. The planning period is to 2050. The purpose of the HHMP is to guide future decision-making for Honolulu Harbor's use and development to best serve the State of Hawaii. The HHMP will consider current requirements and challenges facing Honolulu Harbor, and also project future demands and formulate a strategic plan to guide facility and infrastructure improvements and harbor usage to meet those demands over the 30-year planning horizon.
   b. The HHMP will include recommendations for short- (10-year), medium- (20-year) and long-term (30-year) improvements.
   c. Projects do not have to wait for the HHMP to be completed. Short-term projects needed in the next 1 to 6 years can be recommended to DOT-H for immediate implementation through the Capital Improvements Program, Special Maintenance Projects Program, or other programs.

B. Presentation – Cargo and Passenger Forecast (SMS)

The following is a record of the discussion that accompanied SMS's PowerPoint slide presentation regarding preliminary cargo and passenger forecast analysis. Comments are presented based on each slide (see attached presentation).

1. SMS's role in the HHMP 2050 planning process is to:

   a. Conduct the Harbor Users Survey to obtain information about harbor operations.
   b. Forecast cargo and passenger flow through Honolulu Harbor. The forecast becomes the basis for long-range planning.
   c. Assess the economic value of Harbors to the State of Hawai'i.
2. Hawai'i Gross State Product (GSP)
   a. Cargo forecasts out to year 2050 are based on GSP annual percentage change, as projected by the State Department of Business, Economic Development and Tourism (DBEDT).
3. Containerized Cargo
   a. Historically, containerized cargo imports closely matched the State's GSP. However, as more materials and goods are being containerized, container growth has exceeded overall State GSP. Generally, container growth is expected to track closely with GSP.
   b. The data for full and empty containers should be more in balance since there is an equivalent flow of containers entering and exiting the harbor. There isn't a single simple explanation for this discrepancy, but some possible factors include:
      i. The data is based on DOT-H's wharfage data. Wharfage fees apply to containers as they cross the berth, not to containers in the yard. Empties are not charged wharfage.
      ii. Laden containers (State exports) comprise a small proportion of the total containers leaving the state.
      iii. Containers get counted with every pick. Therefore, transshipments are counted twice: once when it arrives in Honolulu Harbor, and again when it is moved to a barge for transport to the neighbor islands.
      iv. Not all empty containers leave the state; some are sold for various uses or are disposed if they're damaged, although this is a very small proportion of the total number of containers and can't account for the total difference.
   c. Empty containers and full containers should be treated as a single category, since a container is a container that occupies space and represents throughput through the port regardless of what is inside.
   d. For total twenty-foot equivalent unit (TEU) or box count, SMS should look at how many times the container has been picked. This data is available through the American Association of Port Authorities (AAPA); however, DOT-H noted that AAPA receives its data from DOT-H, which is the same wharfage data used by SMS. [Note: The raw Wharfage data provided by DOT-H to SMS and the Planning Team is a count of container picks, measured in TEUs.]
   e. Document the notes and assumptions in the projections so readers understand the complexity of the variables included to determine the projection.
4. Cargo, Vehicles

a. Fewer and fewer vehicles are containerized; the trend is for vehicles to be transported as roll-on/roll-off (RO/RO) cargo. The projection for containerized vehicles should flatten out as RO/RO continues to increase. Some cargo operators (e.g., Pasha) have already completely converted to RO/RO and do not move any vehicles by container. Therefore, autos as a percentage of containerized cargo will drop to nearly, but not quite zero.
    i. Containers can accommodate 4 small-sized vehicles or 2 regular-sized vehicles. Frames can carry 4 vehicles.
    ii. There will continue to be some containerized autos, such as luxury or specialty vehicles that require added protection in transit.
    iii. RO/RO vehicles include specialized, heavy and oversized vehicles and construction equipment, such as cranes, airplane taxis, earth movers and military equipment. Specialized RO/RO cargo is difficult to measure in TEU. The analysis will consider ways to convert this cargo to square footage for the purpose of determining port capacity.
b. The vehicle forecast is directly linked to the visitor industry and economy. This makes it difficult to predict the highs and lows over the future planning period (e.g., in comparison to the historic data line).
c. Trends that may affect the projection include:
    i. Car rental companies used to cycle through rental cars every three months; however, after the car rental market contracted during the recession, car rental companies now cycle through rental cars every year. Therefore rental cars have been decreasing as a percentage of cargo.
    ii. Visitors from Asia are increasing as a percentage of total visitors to the state. This demographic often prefers to do group travel, e.g., by bus and minivan, versus independent travel which requires renting individual vehicles. [Note: The HHMP will examine if and how this preference may change in the next 30 years.]
    iii. O‘ahu’s carrying capacity for single passenger / family vehicles may be reaching its limits, which would depress future demand.
    iv. The hub-and-spoke model is expected to remain in place with vehicles coming through Honolulu Harbor first, but this could change in the future with an increase in direct shipments to the neighbor islands. The same could happen with other cargo types as well, although the economic drivers are different.
d. The projection for vehicles appears high. Accurate data for incoming cars could be obtained from Servco, which would have the history of imported cars. Another source is the United States Coast Guard (USCG), which inspects all imported cars. This may provide better baseline data to develop the projections. However, when there is demand on a neighbor island, rental companies will move vehicles as

needed, which causes a single vehicle to be counted multiple times. [Note: This is okay, as we're trying to count how many vehicles the harbor needs to process, not how many vehicles are on the island or in the state.]

   e. Vehicles may not be easily organized into incoming and outgoing categories, but the vehicle projection is still useful in determining the number of vehicles moving through the yard, which is an important factor in determining future cargo capacity.
   f. The harbor capacity study will include an analysis of the amount of yard area required for auto storage.

5. Liquid Bulk Cargo (Fuels)
   a. Jet fuel dominates liquid bulk imports to Honolulu Harbor. Jet fuel demand is driven by the visitor industry and the military.
   b. The fuel data doesn't include crude oil imports. The whole fuel picture is trending toward a reduction in the use of crude oil. There is expected to be an increase in green energy.
   c. Trends that may affect future liquid bulk projections include:
      i. The 2045 Hawai'i Clean Energy Initiative will reduce the import of fossil fuels used for power generation; however, jet fuel and vehicle fuel will still be imported.
      ii. Increasingly, airline operators are buying their own jet fuel on the global market and importing it in tankers and fuel barges.
      iii. There is expected to be a reduction in diesel truck use, but not significantly by 2050. More transport vehicles will use alternative sources of fuel.
      iv. There may be a trend towards fueling smaller vessels with liquefied natural gas (LNG). Some of the container ships are also going to dual-fuel.
6. Break Bulk / Less-than-Container Load (LCL) Cargo
   a. The preliminary analysis shows Break Bulk / LCL will increase along with economic growth. However, the trend toward containerization will depress the rate of growth. The consensus among the meeting participants is that the preliminary projection is too high.
   b. Most of break bulk and LCL cargo have been containerized so the break bulk / LCL growth projection should be less than GSP growth and is expected to significantly flatten, perhaps even decrease (negative growth), but never to zero.
   c. There will always be some amount of specialty project cargo that doesn't fit into containers.
7. Dry Bulk Cargo (Aggregate / Sand)
   a. Overall, the demand for dry bulk might go up because local quarries are closing. However, the dry bulk projection for Honolulu Harbor should flatten or decrease to nearly zero, but is not projected to go away entirely.
8. Passengers

a. Passenger growth is tied to the national economy, and to a certain degree the economies of foreign countries.
b. In theory, every passenger that arrives also departs from the island, but it is not necessarily the case that everyone who comes into the harbor leaves by the harbor, i.e. some visitors arrive by ship but leave by plane, or vice versa.
c. There is a capacity problem, where only so many cruise vessels can visit the island due to berth restrictions and scheduling. In addition, the harbor may not be able to accommodate the increasing size (both length and beam) and draft of newer cruise vessels. However, the passenger projection shows what growth could be without constraints. If there are any constraints to growth, it is the purpose of the HHMP to remove or balance the constraints.

C. Presentation – Throughput and Estimated Annual Capacity (Stantec Consulting Ltd.)

The following is a record of the discussion that accompanied Stantec Consulting Ltd.'s powerpoint slide presentation regarding port capacity analysis (see attached presentation).

1. Stantec's role in the HHMP 2050 planning process is to:
    a. Evaluate existing port capacity for LCL, RO/RO/autos, break bulk and liquid bulk.
    b. Determine future capacity demand based on economic forecasts by SMS.
    c. Identify opportunities for meeting future capacity demands.
    d. Develop alternatives to meet future capacity demands.
2. Discussion
    a. The capacity analysis is determined by three primary factors:
        i. Physical assets and characteristics of the port, e.g., yard layout, wheeled versus ground slots, storage facilities, etc.;
        ii. Productivity, e.g., ability to move cargo, dwell times for specific cargo types, lifts per hour, gate processing times, etc.; and,
        iii. Market demands. The capacity analysis determines the harbor's sustainable practicable capacity, where operations can be conducted without congestion. Throughput beyond the estimated capacity indicates congestion.
    b. Capacity is a dynamic number. It's constantly changing on a daily, monthly, seasonal basis. The numbers tell us at what point the harbor operations start to experiencing congestion.
    c. Preliminary estimates for current annual capacity:
        i. Containers = 1.1 million TEU without the Kapālama Container Terminal (KCT), (1.55 million with KCT factored in). Compared to the FY2016 throughput number of 1.212 million TEU. This indicates that the Harbor is currently experiencing congestion. The primary capacity constraint is available yard space.

a. These numbers factor in the current cargo handling practices of the various operators in Honolulu Harbor (e.g. wheeled, grounded, stacked operations and dwell times).

ii. Vehicles = 315,000 units. This is primarily RO/RO. This excludes containerized vehicles. Compared to FY2016 throughput of 213,000 units, this indicates there is extra capacity for RO/RO/auto.

iii. Liquid Bulk = 14,500,000 barrels. Compared to FY 2016 throughput capacity of 7,020,000, this indicates there is approximately twice as much capacity as required for current operations.

iv. Break-Bulk/LCL = 535,000 tons. Compared to FY2016 throughput of 497,000 tons, this indicates that we're nearing capacity for handling Break-Bulk/LCL.

d. The cargo capacity analysis represents the entire harbor in aggregate, so actual allocation and distribution of cargo handling at a particular pier may not match the estimated cargo capacity. Some piers within the Harbor may be overloaded and others have ample capacity.

e. Preliminary estimated throughput to 2050 (see slide)

i. Containers – 2050 projected throughput = 2.9 million TEU. Compared to current capacity, this indicates that with KCT constructed, the harbor will need to add capacity to handle approximately 1.35 million additional TEU.

ii. Vehicles – 2050 projected throughput = 550,000 units. Compared to current capacity, this indicates that the harbor will need to add capacity to handle approximately 235,000 additional auto units.

iii. Liquid Bulk – 2050 projected throughput = 13,500,000 barrels. Compared to current capacity, this indicates that the harbor will have sufficient and even excess capacity of approximately 1,000,000 barrels, for liquid bulk cargo.

iv. Break-Bulk/LCL – 2050 projected throughput = 818,000 tons. Compared to current capacity, this indicates that the harbor will need to add capacity to handle approximately 283,000 tons of additional Break-Bulk / LCL cargo, keeping in mind that this estimate may be too high based on feedback from this Sub-TAC that the rate of growth for LCL cargo will likely flatten.

f. At the planning level, the solutions for meeting the throughput need and increasing capacity include: adding space, become denser (e.g., go vertical), and increase productivity.

g. Vehicles

i. Consider developing a parking structure to support RO/RO operations, especially since utilizing the yard for single layer vehicle storage is an inefficient use of space. You can't stack autos, like you can containers. To densify auto operations, you

have to invest in auto storage facilities. However, vertical auto terminals are rare as they are a very expensive proposition.

ii. Sometimes container and RO/RO operations are mixed within a confined space, which creates a hazardous environment for the work force. To address this issue, container and RO/RO operations should be clearly separated. An example is container operations at Pier 1 could be relocated to the KCT, while RO/RO and special cargo operations could be increased at Pier 1.

iii. The best location to develop a dedicated RO/RO/auto pier is Kalaeloa Barbers Point Harbor (KBPH). In addition, DOT-H currently has an initiative to acquire 80 acres by KBPH, of which a portion could be developed as an auto storage area for incoming/outgoing vehicles. However, there are navigation concerns with KBPH, including current, wind, depth, and narrow channel entry. DOT-H should consult the US Army Corps of Engineers and tug pilots regarding navigation to/from KBPH.

iv. The only other option to expand the port's auto capacity is to move the autos through the terminal faster.

h. Other comments:

i. Transporting cargo to/from Pier 1 creates heavy congestion along Nimitz Highway.

ii. Consider workforce safety requirements and limitations when projecting cargo capacity. Ensuring the workforce can safely manage the projected increase in throughput should be a priority.

D. Presentation – Berthing Utilization Analysis (RMTC)

1. Berthing utilization analysis uses eCIDS data from DOT-H for FY2017 and FY2018 to determine utilization based on annual berth foot days (BFD). BFD is a function of the vessel length and its duration at a specific berth as a percentage of the berth length multiplied by 365 days in a year.
2. The preliminary analysis is only for the cargo berths. Analysis for all of the piers in the Harbor will be conducted by the second Cargo Sub-TAC meeting.
3. Berth utilization forecasts are based on State DBEDT average annual GSP growth projections of 1.7% to 2050.
4. Berth utilization rates and projections don't account for:
   a. Future improvements to the piers that would increase capacity;
   b. Changes in future berth operations, e.g., when Pasha moves to KCT and related adjustments to vessel operations in the harbor;
   c. Mooring allowances (beyond the length of the ship); and
   d. Active versus lay status.

   As a result, the preliminary analysis results in low utilization numbers.
5. The assumption is that anything over 50% for unscheduled and 60% for scheduled berths is considered to be at capacity. Beyond that percentage, the berth is experiencing congestion.

6. The preliminary utilization analysis for cargo operations indicates most of the cargo piers are operating at or above capacity.
    a. Utilization rates over 100% can be explained by a combined berth (e.g., 40A and 40B might record all vessels at 40A), vessels that overhang the berth length, and rafting.
7. Discussion
    a. Add footnotes to explain percentages above 100%, e.g., a vessel could be occupying both Piers 40A and 40B, or the data for vessels at Pier 40A or 40B could all be recorded at 40A.
    b. The lack of layberths throughout the Harbor limits berthing capacity. Piers 2, 10, and 11 could be used for layberth in order to relieve pressure on other congested piers used for active operations such as cargo.
    c. Potentially, there could be longer barges in the future, but not wider. One-hundred-foot beam is about the maximum. For utilization forecasts, frequency (as it relates to the just-in-time delivery) is more appropriate than barge size.

E. Closing / Next Steps

1. Meeting #2 is scheduled on October 23, 2018, 8:30 – 10:30 a.m. at the Homer Maxey Conference Center.
2. The HHMP website will be updated with the agenda and meeting notes (www.honoluluharbormp.com/subtac).

Cargo Operations Sub-TAC

CONTACT LAST NAME	CONTACT FIRST NAME	ORGANIZATION	DIVISION/BRANCH/SECTION		EMAIL	SUB-TAC MTG #1 ATTENDANCE
Chang	Susan	Department of Transportation	Highways - Vehicle Safety Office	State	susan.chang@hawaii.gov	
Friel	Lek	Matson Terminals, Inc.		Business / Orgs	Lfriel@matson.com	
Furtado	Wesley	Hawaii Longshore Division, ILWU Local 142		Business / Orgs	wesley.furtado@ilwu.org	
Grune	Randy	Hawaii Stevedores, Inc.		Business / Orgs	rgrune@hawaiistevedores.com	
Guard	Matt	McCabe, Hamilton & Renny Co., Ltd.		Business / Orgs	mguard@mhrhawaii.com	
Haneberg	Scott	Department of Transportation	Highways - Vehicle Safety Office	State	scott.haneberg@hawaii.gov	
Heatherly	Scott	US Customs and Border Protection		Federal	scott.k.heatherly@cbp.dhs.gov	
Hong	Glenn	Saltchuk - Hawaii (~~Pote Maritime~~)		Business / Orgs	glenn@saltchuk.com	
Iida	Todd	Hawaii Stevedores, Inc.		Business / Orgs	tiida@hawaiistevedores.com	
Jose	Ferdinand	US Customs and Border Protection		Federal	Ferdinand.A.Jose@cbp.dhs.gov	
Kaku	Melvin	Department of Emergency Management		City and County of Honolulu	mkaku@honolulu.gov	
Knauss	John	National Cargo Bureau, Inc.		Business / Orgs	ncbhono@natcargo.org	
MacDonald	Michael	Young Brothers/ Foss Maritime - Hawaii		Business / Orgs	mac@htbyb.com	
Martin	Chris	Young Brothers/ Foss Maritime - Hawaii		Business / Orgs	cmartin@htbyb.com	
Martin	Dane	Young Brothers/ Foss Maritime - Hawaii		Business / Orgs	dmartin@htbyb.com	
Mihlbauer, Jr.	John P.	All Ship and Cargo Surveys		Business / Orgs	contact@ascshawaii.com	
North	Gary	Hawaii Harbor Users Group (HHUG)		Business / Orgs	garyjnorth@gmail.com	
Roer	Mik	Kirby Offshore Marine		Business / Orgs	Mik.Roer@kirbycorp.com	
Sakakida	Gareth	Hawaii Transportation Association		Business / Orgs	gareth@htahawaii.org	

Cargo Operations Sub-TAC

CONTACT LAST NAME	CONTACT FIRST NAME	ORGANIZATION	DIVISION/BRANCH/SECTION		EMAIL	SUB-TAC MTG #1 ATTENDANCE
Satre	Jon	Aloha Marine Lines (Lynden Transport)		Business / Orgs	jsatre@Lynden.com	[signature]
Sikkink	David	Department of Business, Economic Development and Tourism	Hawaii Foreign-Trade Zone No. 9	State	david.j.sikkink@ftz9.org	
Sullivan	Carlos	The Delivery People		Business / Orgs	carlos@thedeliverypeople.com	
Tanaka	Lance	Par Hawaii, Inc.		Business / Orgs	lance.tanaka@parpacific.com	
Wang	Ali	Inchcape Shipping Services	[signature]	Business / Orgs	ali.wang@iss-shipping.com	
Whitworth	Tiffanie	Young Brothers/ Foss Maritime - Hawaii	[signature]	Business / Orgs	twhitworth@htbyb.com; tiff@htbyb.com	X
Yocum	Janet	US Department of Homeland Security	Federal Emergency Management Agency	Federal	janet.yocum@fema.dhs.gov	[illegible]
Dawson	Dustin	Long Shore/ILWU	[illegible]		Ddawson@ILWU142.ORG	
Prather	Jeffrey	DOT- HARBORS	OPS		Jeffrey.s.Prather@hawaii.gov	
Pillone	Peter	DOT - H	OPS		Peter.Pillone@hawaii.gov	
~~Michael~~ Wu	Michael	SMS-Research.			michaelskwu@gmail.com	[signature]
Chang	Susan	State - DOT	HWY			[signature]
Bannon	John	USCG	Sector Honolulu		John.e.bannon@uscg.mil	[signature]
Zane	Jimmy					

Welcome

CARGO OPERATIONS

Technical Advisory Sub-Committee Meeting #1

September 19, 2018

Department of Transportation
Harbors Division

Homer Maxey Conference Center
521 Ala Moana Blvd.
Honolulu, HI 96813

Harbors Mission Statement

Supports DOT-H's Mission

To effectively improve and manage a commercial harbors system that facilitates safe and efficient operations of commercial cargo, passenger, fishing, and other commercial maritime-related services and support activities within the State of Hawaii and which serves to sustain and enhance the State's economic prosperity and quality of life.

Goals of the Master Plan

- Identify current and meet future maritime needs
- Optimize use of the Harbor's finite land resources
- Balance stakeholders' competing needs and interests
- Ensure resiliency in the face of natural and human-made disasters, and climate change
- Consider emerging technologies and trends
- Consider public access and waterfront development opportunities in select locations

Source: Star Compass, Polynesian Voyaging Society

Evaluation Criteria

- To what extent does it align with the Master Plan Goals?
- To what extent is it economically reasonable and feasible, and beneficial to the Harbor and the State?
- To what extent is the project needed and does it improve harbor function?
- To what extent does it benefit or adversely impact the environment?

PRELIMINARY

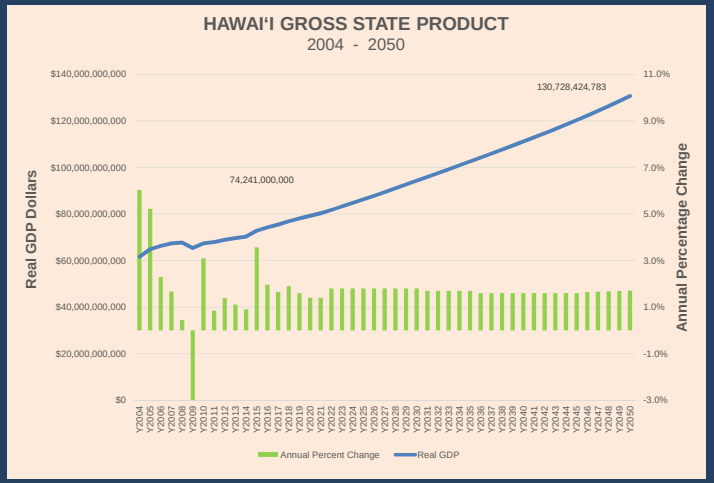
CARGO & PASSENGER FORECASTS

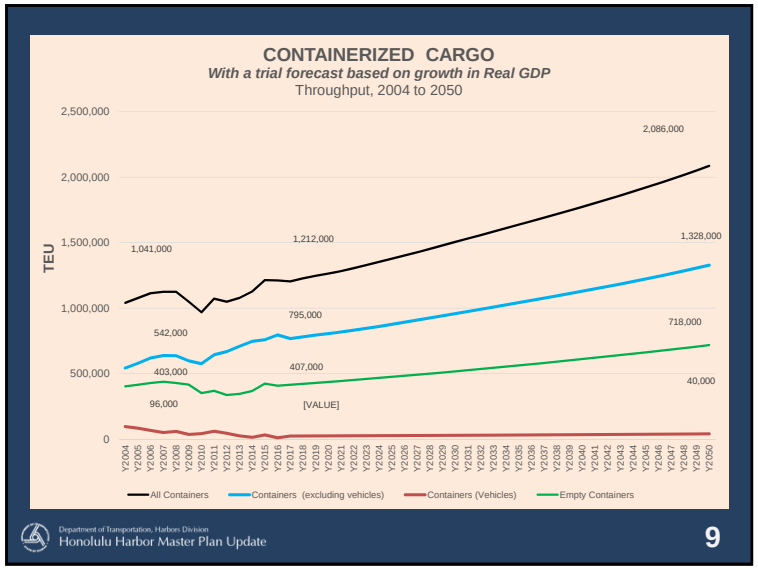
SMS Research & Marketing Services, Inc.

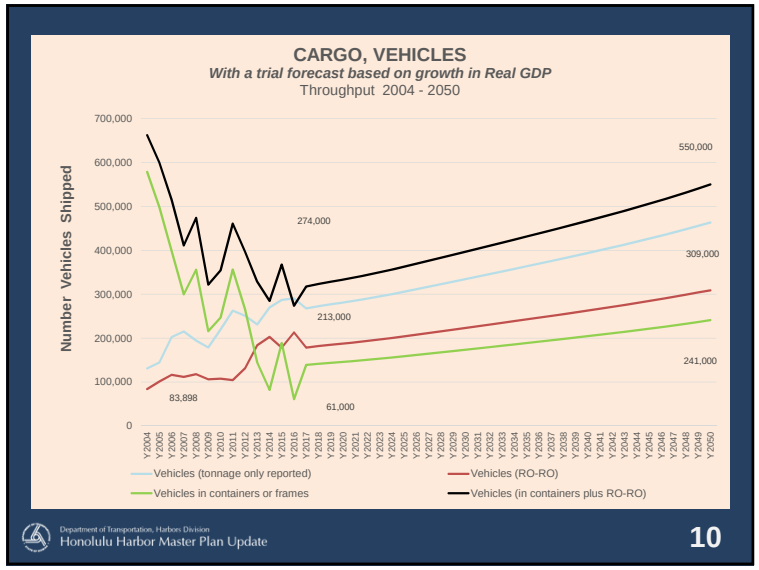
Source: Hawai'i State Archives Digital Collection

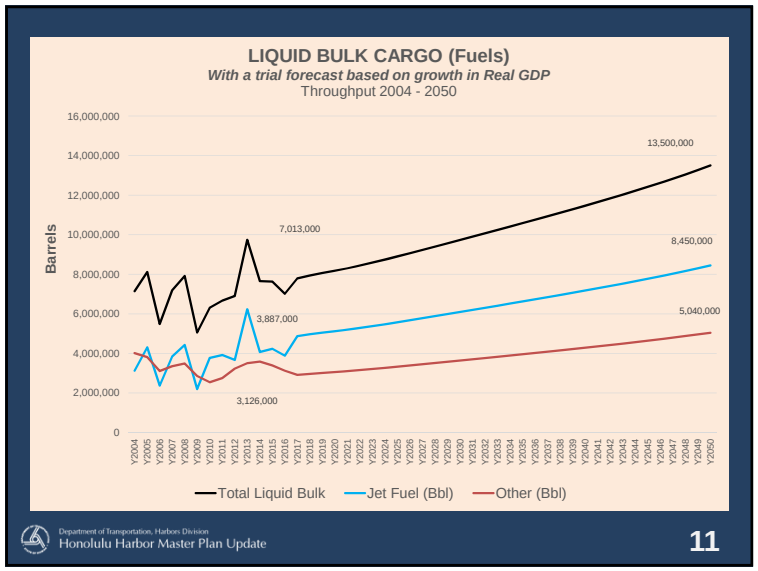
SMS Role

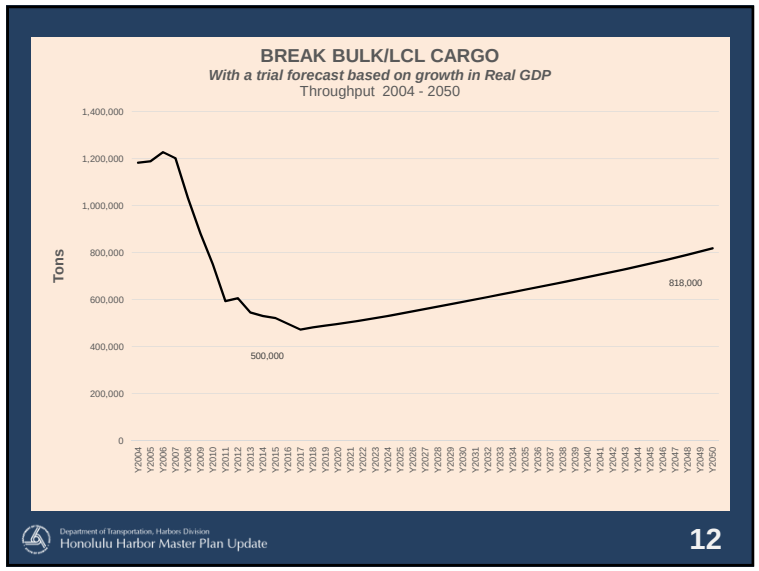
- Conduct the Harbor Users Survey
- Forecast cargo and passenger flow through Honolulu Harbor
  - Becomes the basis for long-range planning
- Assess the economic value of Harbors.

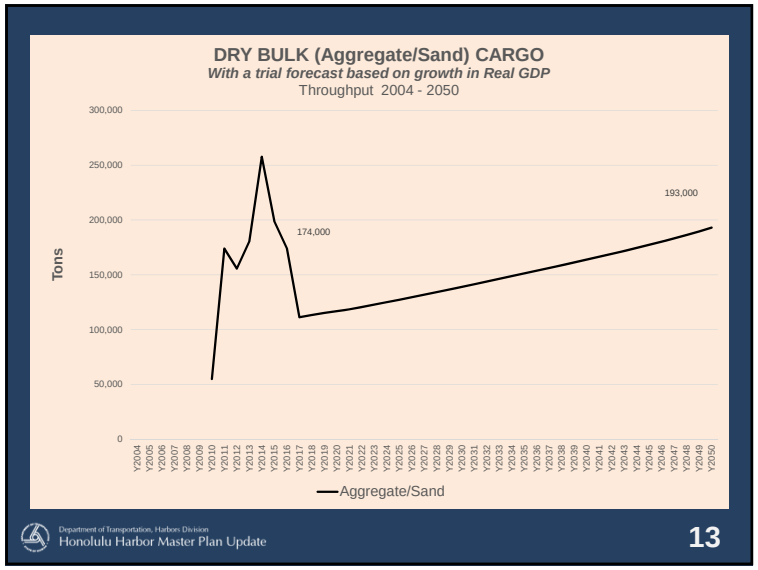


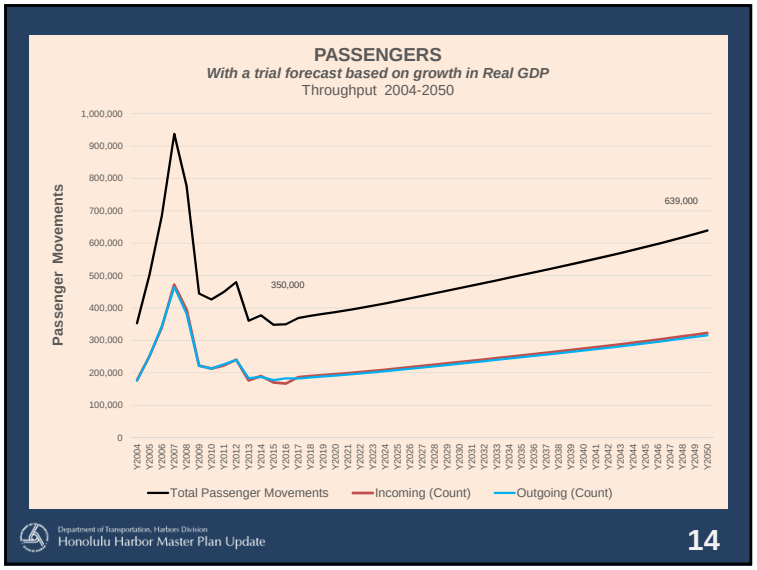

CONTAINERIZED CARGO
With a trial forecast based on growth in Real GDP
Throughput, 2004 to 2050
TEU
2,500,000
2,000,000
1,500,000
1,000,000
500,000
0
2,086,000
1,328,000
1,212,000
1,041,000
795,000
718,000
542,000
407,000
403,000
40,000
96,000
[VALUE]
All Containers
Containers (excluding vehicles)
Containers (Vehicles)
Empty Containers
Department of Transportation, Harbors Division
Honolulu Harbor Master Plan Update
9

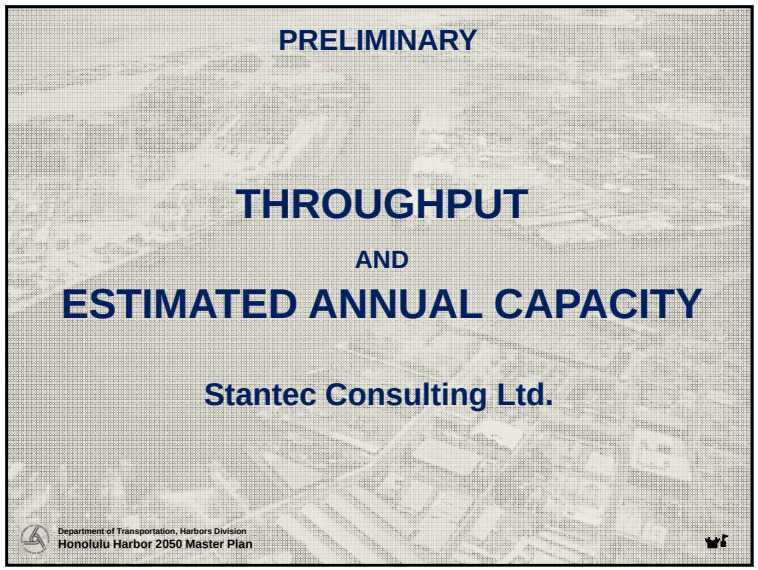

CARGO, VEHICLES
With a trial forecast based on growth in Real GDP
Throughput 2004 - 2050
Number Vehicles Shipped
700,000
600,000
500,000
400,000
300,000
200,000
100,000
0
550,000
274,000
309,000
213,000
241,000
83,898
61,000
Vehicles (tonnage only reported)
Vehicles (RO-RO)
Vehicles in containers or frames
Vehicles (in containers plus RO-RO)
Department of Transportation, Harbors Division
Honolulu Harbor Master Plan Update
10


LIQUID BULK CARGO (Fuels)
With a trial forecast based on growth in Real GDP
Throughput 2004 - 2050
Barrels
16,000,000
14,000,000
12,000,000
10,000,000
8,000,000
6,000,000
4,000,000
2,000,000
0
13,500,000
7,013,000
8,450,000
3,887,000
5,040,000
3,126,000
Total Liquid Bulk
Jet Fuel (Bbl)
Other (Bbl)
Department of Transportation, Harbors Division
Honolulu Harbor Master Plan Update
11


BREAK BULK/LCL CARGO
With a trial forecast based on growth in Real GDP
Throughput 2004 - 2050
Tons
1,400,000
1,200,000
1,000,000
800,000
600,000
400,000
200,000
0
818,000
500,000
Department of Transportation, Harbors Division
Honolulu Harbor Master Plan Update
12







Stantec's Role

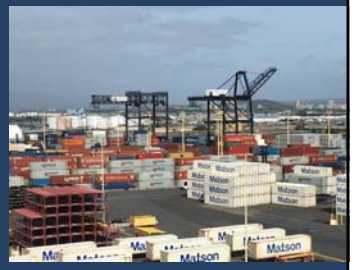
- Evaluate existing port capacity
  - (containers, LCL, RO/RO, autos, break bulk, liquid bulk)
- Determine future capacity demand based on economic forecast by SMS
- Identify opportunities
- Develop alternatives to meet future capacity demand

Department of Transportation, Harbors Division
Honolulu Harbor 2050 Master Plan
16

Cargo/Passenger Capacity Analysis

Primary Sectors to be Examined

- Containers
- LCL's/General Merchandise
- Break-Bulk (Livestock, Lumber, Scrap, etc.)
- Autos & Trucks
- Refined Petroleum Products (Bunker, Gasoline, Jet Fuel, Diesel, Fuel Oil, LPG, etc.)
- Cruise Passengers
- Dry Bulk (Agri., Aggregates, etc.)



2016 Annual Throughput and Estimated Annual Capacity

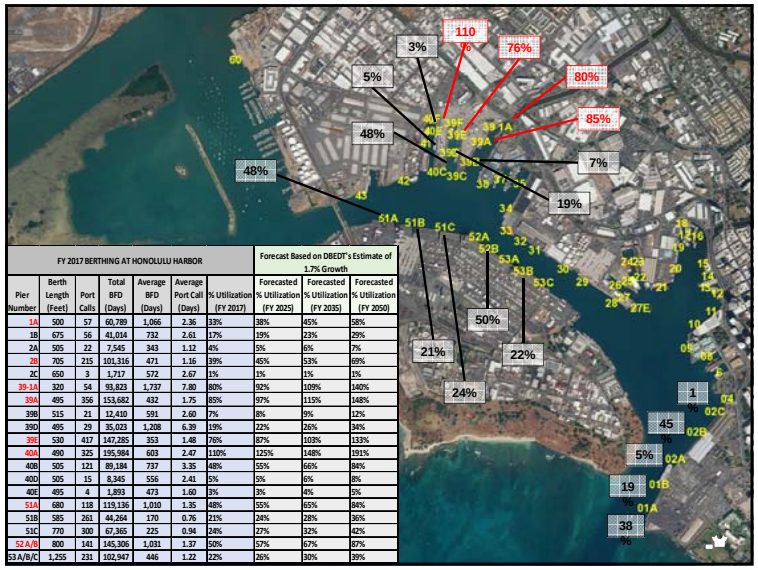
Sector	Unit	FY2016 Throughput	Estimated Annual Capacity
Containers	TEU	1.212 Million	1.1 million (w/o KCT) 1.55 million (w/ KCT)
Vehicles (RO/RO)	Unit	213,000	315,000
Liquid Bulk	BBL	7,020,000	14,500,000
Break-Bulk/LCL	Ton	497,000	535,000

Estimated Annual Capacity FY2018 and Estimated Annual Throughput FY2050

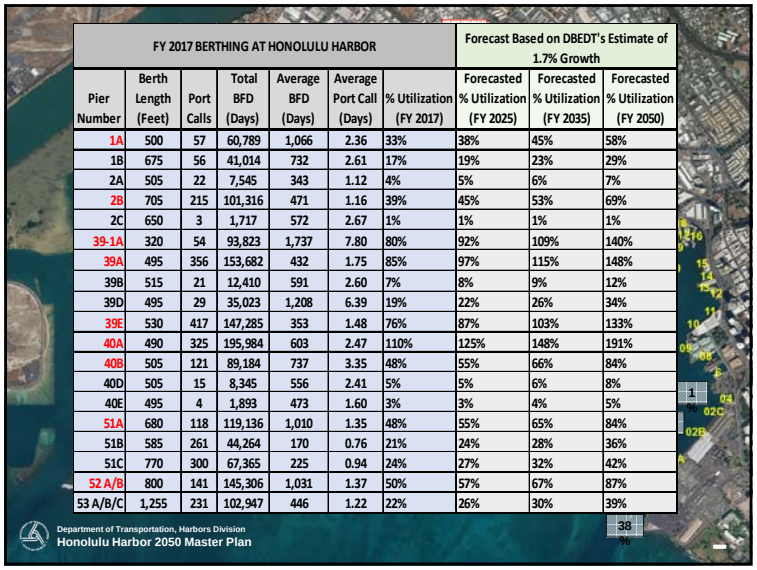
Sector	Unit	Estimated Annual Capacity 2018	Estimated Annual Throughput 2050	Difference
Containers	TEU	1.55 million (w/ KCT)	2.09 million	+ 0.54 million
Vehicles (RO/RO)	Unit	315,000	550,000	+ 235,000
Liquid Bulk	BBL	14,500,000	13,500,000	- 1,000,000
Break-Bulk /LCL	Ton	535,000	818,000	+ 283,000

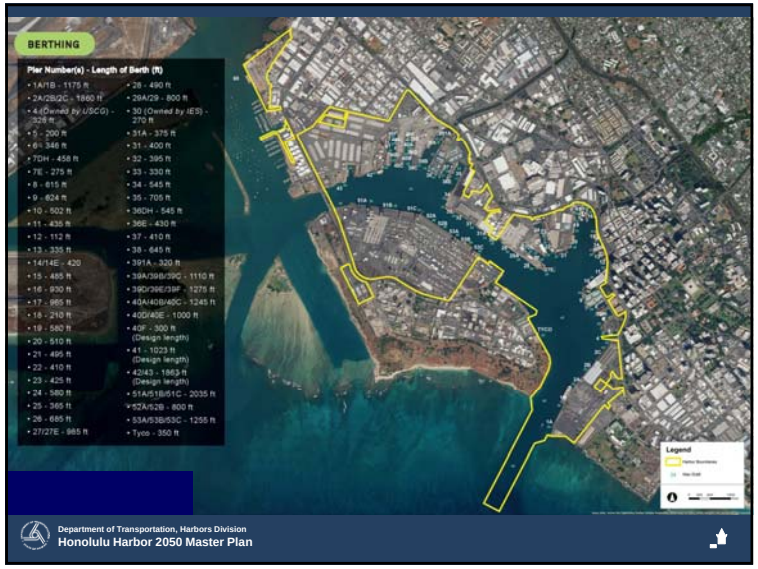
PRELIMINARY

BERTH UTILIZATION ANALYSIS

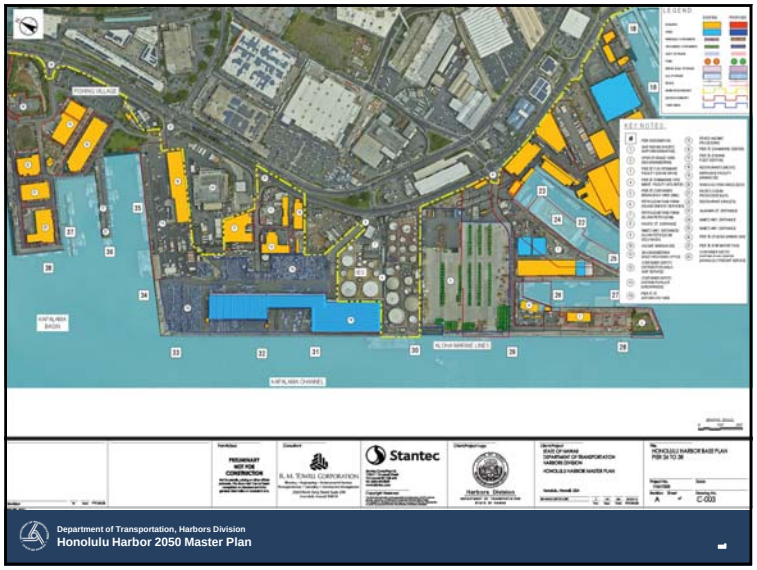


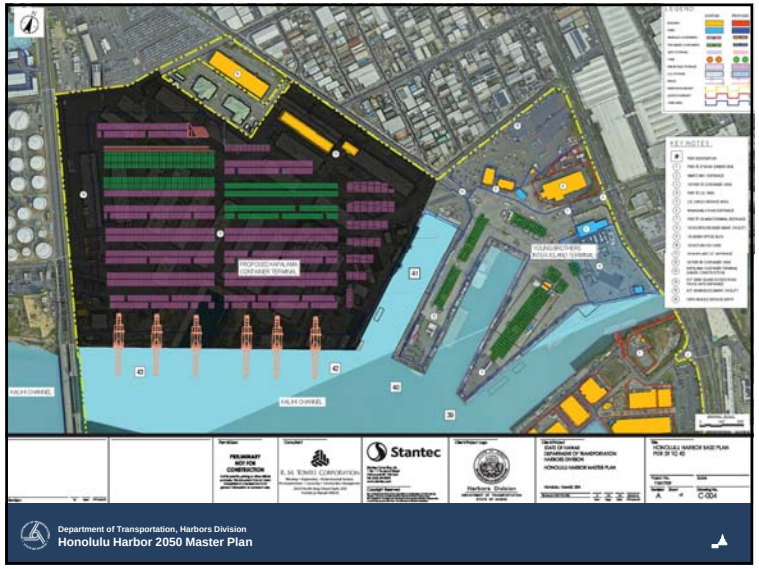
FY 2017 BERTHING AT HONOLULU HARBOR							Forecast Based on DBEDT's Estimate of 1.7% Growth		
Pier Number	Berth Length (Feet)	Port Calls	Total BFD (Days)	Average BFD (Days)	Average Port Call (Days)	% Utilization (FY 2017)	Forecasted % Utilization (FY 2025)	Forecasted % Utilization (FY 2035)	Forecasted % Utilization (FY 2050)
1A	500	57	60,789	1,066	2.36	33%	38%	45%	58%
1B	675	56	41,014	732	2.61	17%	19%	23%	29%
2A	505	22	7,545	343	1.12	4%	5%	6%	7%
2B	705	215	101,316	471	1.16	39%	45%	53%	69%
2C	650	3	1,717	572	2.67	1%	1%	1%	1%
39-1A	320	54	93,823	1,737	7.80	80%	92%	109%	140%
39A	495	356	153,682	432	1.75	85%	97%	115%	148%
39B	515	21	12,410	591	2.60	7%	8%	9%	12%
39D	495	29	35,023	1,208	6.39	19%	22%	26%	34%
39E	530	417	147,285	353	1.48	76%	87%	103%	133%
40A	490	325	195,984	603	2.47	110%	125%	148%	191%
40B	505	121	89,184	737	3.35	48%	55%	66%	84%
40D	505	15	8,345	556	2.41	5%	5%	6%	8%
40E	495	4	1,893	473	1.60	3%	3%	4%	5%
51A	680	118	119,136	1,010	1.35	48%	55%	65%	84%
51B	585	261	44,264	170	0.76	21%	24%	28%	36%
51C	770	300	67,365	225	0.94	24%	27%	32%	42%
52 A/B	800	141	145,306	1,031	1.37	50%	57%	67%	87%
53 A/B/C	1,255	231	102,947	446	1.22	22%	26%	30%	39%



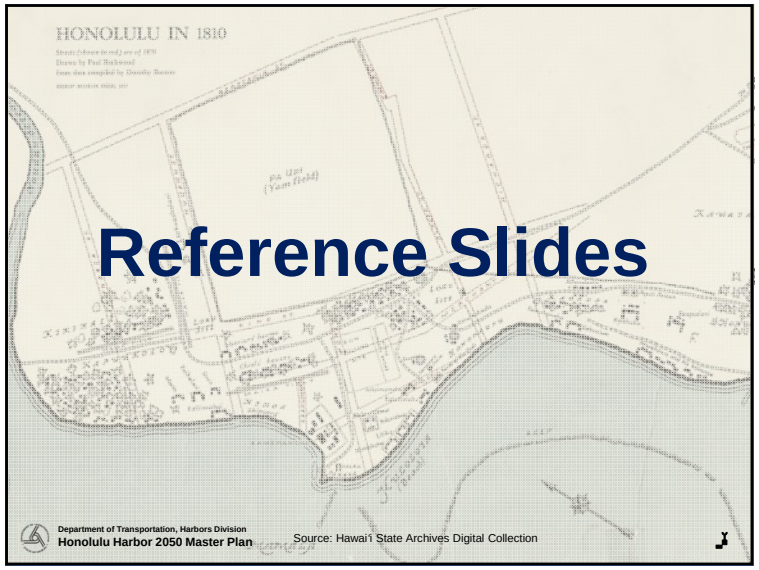


Department of Transportation, Harbors Division
Honolulu Harbor 2050 Master Plan


Department of Transportation, Harbors Division
Honolulu Harbor 2050 Master Plan


Department of Transportation, Harbors Division
Honolulu Harbor 2050 Master Plan

Department of Transportation, Harbors Division
Honolulu Harbor 2050 Master Plan



Reference Slides

Department of Transportation, Harbors Division
Honolulu Harbor 2050 Master Plan

Source: Hawai'i State Archives Digital Collection

Berths - Yards – Gates Analysis

The Three Major Terminal Components will be Examined

DATA DRIVEN PROCESS THROUGH SIMULATION MODELLING

- Data comes from you – the users and operators !
- Data and Simulation Inputs Reflect:
  - Physical Characteristics (Space, Stacking, Equipment, etc.)
  - Productivity Levels (Labor, etc.)
  - Market Conditions (Seasons, Stowage, etc.)

Department of Transportation, Harbors Division
Honolulu Harbor 2050 Master Plan

Berth Capacity

Berth capacity is primarily a function of:

- Available berths and wharf length
- Available/maximum berth occupancy
- Discharge and load rate – amount of labor, equipment (cranes, ramps, ships gear, gangways, etc.) and productivity
- Seasonal fluctuations/peaks

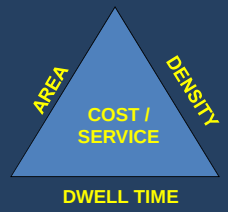
Department of Transportation, Harbors Division
Honolulu Harbor 2050 Master Plan

Yard Capacity
Area – Density – Dwell Time

The Three Elements of Yard Capacity

- Static Capacity = Area x Density
- Throughput Capacity = Static Capacity / Dwell Time
- The Modifying Elements
  - Cost
  - Service

Interrelated & Inseparable



Department of Transportation, Harbors Division
Honolulu Harbor 2050 Master Plan

Gate Capacity

The capacity of a gate, where used, is primarily a function of:

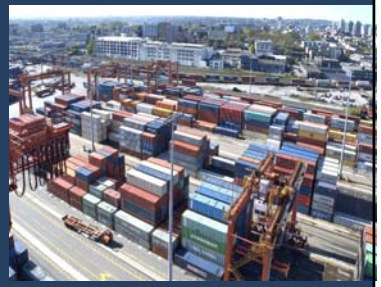
- Opening hours
- Number of lanes
- Staging capacity
- Process rate per truck
- Seasonal and daily peaks and arrivals

- Must correlate number of trucks to facility throughput.

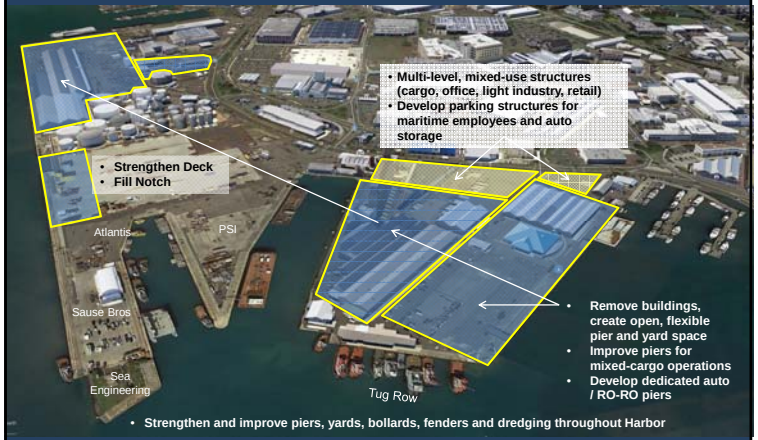
Performance Measurement

We will compare capacity to other ports.

- For example,
  - TEUs/acre of storage
  - Lifts/hour
  - Tons per foot of wharf
  - Trucks/hour/lane
  - Autos/acre/year



Cargo Operations



Cargo Operations

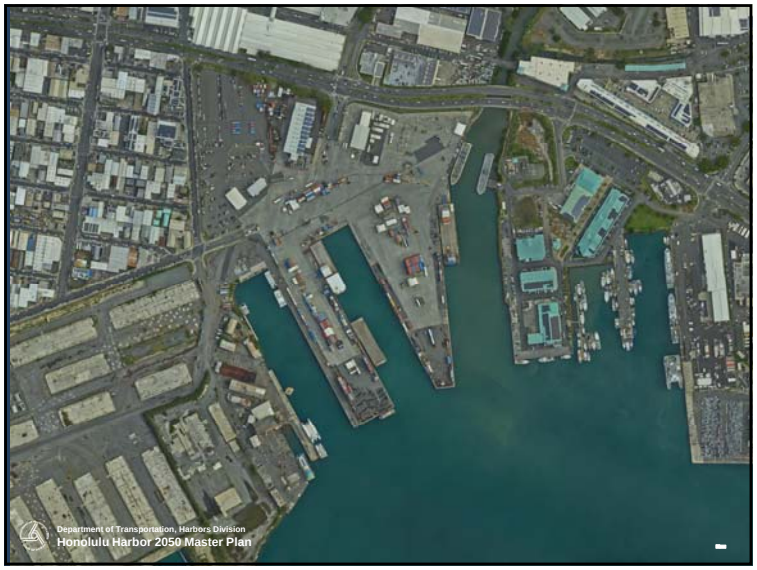
Cargo Operations
Honolulu Harbor Modernization
Kapalama Container Terminal
Cargo Yard – Matson Operations
Cargo Yard Expansion
Annex
Department of Transportation, Harbors Division
Honolulu Harbor 2050 Master Plan

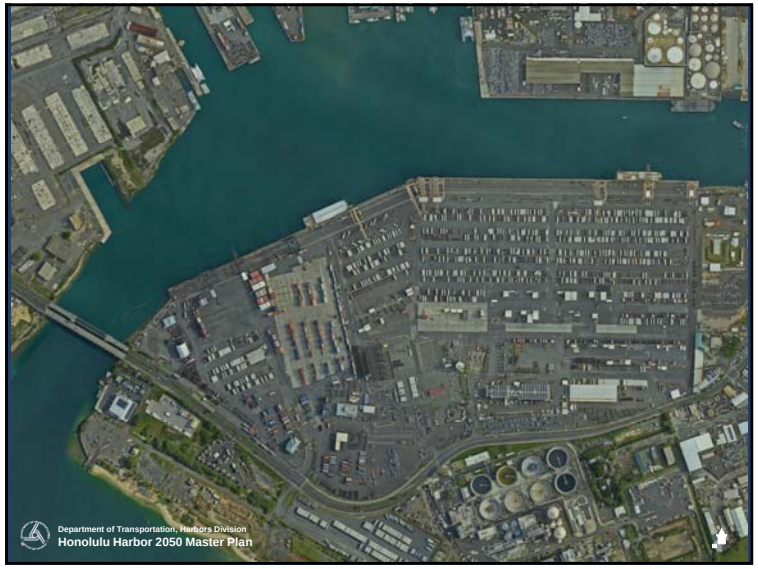
Kalihi
Kalihi Kai
Kapalama Terminal
Iwilei
Keehi Lagoon
Chinatown
Sand Island Terminal
Downtown Business District
Kaka'ako
Fort Armstrong Terminal
Mamala Bay
Department of Transportation, Harbors Division
Honolulu Harbor 2050 Master Plan

Department of Transportation, Harbors Division
Honolulu Harbor 2050 Master Plan

Department of Transportation, Harbors Division
Honolulu Harbor 2050 Master Plan

Department of Transportation, Harbors Division
Honolulu Harbor 2050 Master Plan


Department of Transportation, Harbors Division
Honolulu Harbor 2050 Master Plan


Department of Transportation, Harbors Division
Honolulu Harbor 2050 Master Plan

Aloha Tower
Department of Transportation, Harbors Division
Honolulu Harbor 2050 Master Plan

Pier 38 Fishing Village
Department of Transportation, Harbors Division
Honolulu Harbor 2050 Master Plan

MEETING NOTES

Project:	Honolulu Harbor 2050 Master Plan (HHMP)
Date/Time:	Tuesday, October 23, 2018, 8:30 a.m. HST
Location:	Homer A. Maxey International Trade Resource Center 521 Ala Moana Blvd, Honolulu, HI 96813, USA
Purpose:	Cargo Operations Sub-TAC, Meeting #2
Attendees:	See attached sign-in sheet

A. Presentation - Capacity Analysis and Demand Projections (SMS)

The following is a record of the discussion that accompanied SMS's PowerPoint slide presentation regarding preliminary cargo and passenger 2050 forecast analysis. Comments are presented based on each slide (see attached presentation).

1. Containerized Cargo Total Throughput
    a. Projected to grow from current 1.21 million twenty-foot equivalent units (TEU) (current) to 2.05 TEU in 2050 (medium growth scenario). The high growth scenario is 2.26 and the low growth scenario is 1.84 TEU (mid-range estimate).
    b. A major driver for containerized cargo is the economy.
    c. The projection includes containerized autos, which are expected to decline as a portion of containerized cargo.
    d. There is slight upward curve to the projection based on the assumption that more less-than-container load (LCL) cargo and break-bulk cargo will be transported as containerized cargo in the future.
2. Automobiles (roll-on and roll-off [RO-RO] only)
    a. Projected to grow from current 213,000 units to 225,000 units in 2050 (medium growth scenario). The high growth scenario is 248,000 units and the low growth scenario is negative and estimates 202,000 units.
    b. The auto RO-RO projection is based primarily on historical trends and anticipated future industry trends (e.g., Oahu's carrying capacity for automobiles, increase in ride sharing services). It does not track with the annual average gross state product (GSP) growth of 1.7% (GSP growth projection results in 580,000 units).
3. Liquid-bulk
    a. Projected to grow from current 7,020,000 barrels to 10,080,000 barrels in 2050 (medium growth scenario). The high growth scenario is 10,590,000 barrels and the low growth scenario is 9,080,000 barrels.
    b. Liquid-bulk projections are driven by the economy and anticipated visitor growth. The projection assumes growth in petroleum due to phasing out of coal consumption at the independent power plant by 2023 and renewables can't make up the difference in demand from the

loss of coal. The existing and projected throughput numbers for Honolulu Harbor do not include crude oil.

4. Break-bulk/LCL
    a. Projected to shrink from current 497,000 tons to 368,000 tons in 2050 (medium scenario). The high scenario is 406,000 tons and the low growth scenario is 254,000 tons.
    b. Break-bulk/LCL projections are based on historical trends, which indicate that break-bulk/LCL cargo will continue to drop as more cargo is transported by container. There are no indicators that suggest there will be growth in break-bulk/LCL.
5. Aggregate / Sand
    a. Projected to grow from current 174,000 tons to 303,000 tons in 2050 (medium growth scenario). The high growth scenario is 397,000 tons and the low growth scenario is 209,000 tons.
    b. The medium projection is driven based on historic trends. There's a big spread between the high and low projection, which indicates that there's a lot of speculation about the future of aggregate/sand at Honolulu Harbor.
6. Passenger Movements
    a. Projected to grow from current 350,000 to 639,000 passengers in 2050 (medium growth scenario). The high growth scenario is 705,000 and the low growth scenario is 573,000 passengers.
    b. Passenger projections are driven by various factors, including Hawai'i Tourism Authority's (HTA) passenger forecasts; economic growth; decisions by the cruise operators regarding cruise schedules in the islands, vessel sizes, and marketing; and the capacity of the harbor to accommodate planned cruise service.

Note: Questions from the group about the presentations were asked via MeetingSift (MS Question) as well as asked by participants in the room (Live Question).

7. Live Question: How much of today's liquid throughput actually goes to electricity generation?
    a. Response: there are multiple factors that drive oil imports:
        i. Residential use
        ii. Commercial/industrial use
        iii. Transportation - ground (gas) and air (jet fuel)
        iv. Electricity - While the diesel import for electricity will reduce greatly by 2045, the importation of crude oil may offset that reduction.
8. MS Question: Do you have data that shows the breakout of imports and exports, and the breakout of imports to Honolulu and exports to neighbor islands?
    a. Response: Yes, we have that information but it is aggregated in the projections in today's presentation.
9. MS Question: When counting autos, how are rental autos accounted for?

a. Response: The auto throughput numbers do not separate out rental autos.

10. Live Question: Does the analysis look at inter-island cargo compared with international and domestic?
    a. Response: The analysis focused on throughput, meaning cargo coming in, sitting at the harbor, and going out, not where it was going and coming from. The analysis is focused on understanding what the harbor capacity needs will be.
11. MS Question: Does this analysis look at break-bulk aggregate for Honolulu harbor or both Oahu harbors?
    a. Response: The cargo projections are based on cargo throughput at Honolulu Harbor only.

B. Presentation: Throughput and Estimated Annual Capacity (Stantec Consulting, Ltd.)

The following is a record of the discussion that accompanied Stantec's PowerPoint slide presentation regarding port capacity and throughput analysis (see attached presentation).

1. Stantec's role in the HHMP planning process is to:
    a. Evaluate existing port capacity for LCL, RO/RO/autos, break-bulk and liquid bulk.
    b. Determine future capacity demand based on economic forecasts by SMS.
    c. Identify opportunities for meeting future capacity demands.
    d. Develop alternatives to meet future capacity demands.
2. Discussion
    a. Estimates for current annual capacity:
        i. Containers = 1.17 million TEU without the Kapālama Container Terminal (KCT), (1.59 million with KCT factored in) based on current operational mode. Compared to the FY2016 throughput number of 1.212 million TEU. This indicates that the Harbor is currently experiencing congestion. The primary capacity constraint is available yard space.
            a. These numbers factor in the current cargo handling practices of the various operators in Honolulu Harbor (e.g., wheeled, grounded, stacked operations and dwell times).
        ii. Vehicles = 311,000 units. This is primarily RO/RO and excludes containerized vehicles. Compared to state fiscal year (FY) 2016 throughput of 213,000 units, this indicates there is extra capacity for RO/RO/auto.
        iii. Liquid bulk = 14,500,000 barrels. Compared to FY2016 throughput capacity of 7,020,000, this indicates there is approximately twice as much capacity as required for current operations.

iv. Break-bulk/LCL = 568,000 tons. Compared to FY2016 throughput of 497,000 tons, this indicates that the harbor is nearing capacity for handling break-bulk/LCL.

b. The cargo capacity analysis represents the entire harbor in aggregate, so actual allocation and distribution of cargo handling at a particular pier may not match the estimated cargo capacity. Some piers within the Harbor may be overloaded and others have spare capacity.
c. Estimated annual throughput to 2050 (see slide)
    i. Containers – 2050 projected throughput = 2.05 million TEUs. Compared to current capacity of 1.59 million TEUs, this indicates that with KCT constructed, the harbor will need to add capacity to handle approximately 0.46 million additional TEUs.
    ii. Vehicles – 2050 projected throughput = 225,000 units. Compared to current capacity of 311,000 units, this indicates that the harbor will have excess capacity for an additional 86,000 auto units.
    iii. Liquid-bulk – 2050 projected throughput = 10,080, 000 barrels. Compared to current capacity of 14,500,000 barrels, this indicates that the harbor will have excess capacity of approximately 4,420,000 barrels, for liquid bulk cargo.
    iv. Break-bulk/LCL – 2050 projected throughput = 368,000 tons. Compared to current capacity of 568,000 tons, this indicates that the harbor will have excess capacity of approximately 200,000 tons for additional break-bulk / LCL cargo.
d. Based on these numbers, the harbor has sufficient capacity to handle 2050 cargo throughput in all cargo categories except containers. For container cargo, the harbor will need to increase capacity by approximately 30% over existing to accommodate projected 2050 throughput.
e. At the planning level, the solutions for meeting the throughput need and increasing capacity include adding more space, becoming denser (e.g., go vertical), and increasing productivity.

C. Presentation: Berth Utilization Analysis (R.M. Towill Corporation [RMTC])

The following is a record of the discussion that accompanied RMTC's PowerPoint slide presentation regarding berth utilization analysis (see attached presentation and handout).

1. Background for berth utilization presentation:
    a. Berthing utilization analysis uses eCIDS data from DOT-H for FY2017 and FY2018 to determine utilization based on annual berth foot days (BFD). BFD is a function of the vessel length and its duration at a specific berth as a percentage of the berth length multiplied by 365 days in a year.
    b. The eCIDS data was reviewed and modified as follows:
        i. corrected errors in the data inputs,

ii. refined the vessel types and vessel designations to be more accurate,
iii. added mooring allowances based on vessel type,
iv. created new records to capture vessel shifts from RO-RO piers to container cargo piers (e.g., from Pier 32 to Pier 52), and
v. designated vessel calls as "lay" or "active" based on select vessel types and pier locations.

(Note: A detailed description of the methodology is provided in a separate Berth Utilization Analysis document available on the project website: www.honoluluharbormp.com/subtac).

c. The analysis is for all piers in the harbor, but the Cargo Sub-TAC Meeting #2 presentation is focused on the cargo berths.
d. Berth utilization forecasts are based on State DBEDT average annual GSP growth projections of 1.7% to 2050.
e. Berth utilization rates and projections don't account for:
    i. Future improvements to the piers that would increase capacity;
    ii. Changes in future berth operations, e.g., when Pasha moves to KCT and related adjustments to vessel operations in the harbor;
    iii. Active versus lay status. All reported berthing at the cargo piers is considered "active" berthing, with the exception of Pier 60 which assumes the sand barge is in "lay" status approximately 90% of the time.
f. The assumption is that utilization rates over 50% for unscheduled and 60% for scheduled berths is considered to be at capacity. Beyond that percentage, the berth is experiencing congestion and the need for additional berth capacity is indicated.

2. Findings
    a. The current overall berth utilization for Honolulu Harbor based on the refined eCIDS data is calculated to be 57.6%, which supports what the Project Team has been hearing from nearly all of the operators, that there is a need for additional berthing in the harbor. The aggregate number doesn't differentiate utilization based on the type of operations at a specific pier.
    b. The utilization analysis for cargo operations indicates many of the cargo piers are operating near capacity, particularly at the major cargo terminals (i.e., Young Brothers, Matson and Pasha), but there is still capacity at some of the berths used by other cargo operations, such as Piers 1 and 2, 29 and 31 to 33 (the calculated berth utilization rates for these piers ranges from 25% to 35%). The 2050 projections based on straight GSP average annual growth show that berths with a current utilization rate of 30% will be at 50% utilization rate by 2050, which indicates maximum capacity.
    c. Calculated current utilization rates, based on eCIDS data from FY 2017 and FY2018 combined, are as follows:
        i. Pier 1 = 30%
        ii. Pier 2 = 25%

iii. Pier 19 = 22% (This utilization rate would be higher if the pier was not constrained by sediment build-up.)
iv. Pier 20 = 50%
v. Pier 29 = 28%
vi. Pier 31 = 29%
vii. Pier 32 = 35%
viii. Pier 33 = 17%
ix. Piers 39-40 = 50%
x. Pier 51A = 77% (This higher utilization rate can be explained in part by vessels that overhang the makai end of the berth.)
xi. Piers 51B-51C = 33%
xii. Piers 52-53 = 51%
xiii. Pier 60 = 31% (Active utilization is estimated at 6% while the remaining berth utilization is considered lay berth.)

3. Questions / Discussion:
    a. Question: you show that Pier 1 is showing 30% utilization, yet when looking at the yard space and draft, it is at much higher capacity.
        i. Response: Yes, while the yard capacity is a constraint, the berth could handle more if the yard was better utilized.
    b. Comments regarding international container carriers:
        i. Currently, Inchcape serves as agent for large container ships with 8,000 or more TEUs that transit the Pacific Ocean between South and Central America and Asia. These vessels require a 50+ foot draft, and so are unable to call at Honolulu Harbor due to size constraints (draft and channel width). In addition, Inchcape also serves as agent for medium-sized ships of approximately 3,500 to 5,000 TEUs which require a draft of approximately 39.5 feet. Even these smaller vessels are constrained from calling at Honolulu Harbor due to draft restrictions, particularly at pier side. This is a missed opportunity for Honolulu Harbor and the State. DOT-H should consider increasing the operational draft throughout the harbor, including adjacent to the piers to accommodate larger vessels.
        ii. Pier 1 yard currently has space constraints and congestion. There isn't enough capacity in the yard to accommodate the containers. The analysis indicates 30% berth utilization at Pier 1, but if the berth utilization increases, i.e., carriers making more port calls, there isn't yard space to accommodate the increase.
            a. Response: Yes, while the yard capacity is a constraint, the berth could handle more if the yard was better utilized.
        iii. Consider expansion of the Pier 1 yard
    c. Question: Does this take into account all the ships that are inactive or sitting idle?
        i. Response: We are assuming that all vessels at the cargo berths are active. We are looking for ways to differentiate

active/idle/inactive. We're trying to answer the question of how much additional berth space will be necessary by 2050. This will require further understanding of the vessel operations at specific piers and differentiation of lay vs. active berthing status.

d. Question: Cargo operations are affected by berthing. Timeliness is an important factor for this understanding. There are rush hours where it is difficult to get in and get out of the harbor. A 15-minute delay leaving the berth can lead to a missed window for leaving the harbor and a 2- or 3-hour delay waiting for the next departure window, which in turn, affects the timeliness of arrivals at Neighbor Island harbors. Things that can contribute to these delays include operations, scheduling, communication, etc. It's probably more pronounced for barge operators because they have lower priority compared to container ships. Delays are not given estimated times, so it's difficult to estimate the impact on the vessel schedule. In most cases, communication with the harbor control tower and other vessels goes well, but in some cases it can lead to huge delays. Honolulu Harbor's problems affect the Neighbor Islands' economies. One ship in the channel can tie up the whole state. Has this been considered in this planning process?
    i. Response: We've heard about vessel scheduling and prioritization issues from various operators, but we haven't looked into the matter yet for the HHMP.
    ii. Participant suggested solution: In the short term, i.e., the next 5 to 10 years, there needs to be widespread proactive participation with new technology for communication and position tracking among vessels and the harbor control tower. This will allow all operators to be confident that the information about vessel positions, conditions and timelines is true and accurate and will help the harbor control tower send more precise scheduling and vessel movement information to the vessel operators.
e. Piers 22-23 are effectively unusable because of PSI's drydock and the condition of the pier itself. It can be made usable, that could provide additional berthing space.

D. Facilitated Group Discussion - Cargo Operations Issues & Ideas

1. Maritime Servicing Equipment
    a. The landside areas at Piers 19-23 should be maintained for maritime servicing, support operations and equipment storage. Basic infrastructure (electrical, water and sewage service) is already available there. It's a centralized location that can be made secure and it's adjacent to the highway, which facilitates transport of equipment to support other piers that don't have space to secure equipment. From Piers 19-20, equipment can access up to Pier 29 without going on public streets.
2. Maritime Uses at the Harbor

   a. The HHMP needs to identify what uses need to be near the water and what can be moved to other locations. The area between Piers 19 and 20 is right near the water, so it doesn't make sense to use that for parking. Look for land on the mauka side of Nimitz or at Piers 5-6, to develop a parking structure for maritime operators. Consider building a vertical parking structure in a non-critical, non-waterfront area and run a shuttle to move people around the harbor. A parking garage on the makai side of Nimitz is a misuse of space.
3. Office of Hawaiian Affairs (OHA) Area (warehouse adjacent to Pier 1)
   a. Consider acquiring the OHA property adjacent to Pier 1 and expand the Pier 1 yard.
4. Occupational Safety and Health for Vessel and Pier Workers
   a. When looking at expanding areas and improving facilities, consider the human assets working in those areas. The HHMP will look at how to better use the space to accommodate cargo, but these plans will also create or mitigate the hazards that workers are exposed to. It's important to ensure there are facilities in place to handle the safety and welfare of the workers.
      i. Looking at the pier space now, if someone falls into the harbor, how do we get them out of the water? There are no ladders or steps. Consider building steps or ladders and ensuring that the workers are not exposed to identifiable hazards. Workers are working long hours in a stressful and dangerous environment.
      ii. At all of the major pier locations, consider developing rest stations to provide temporary relief and emergency wash stations for workers to use if they've been exposed to harmful substances.
   b. With respect to employer liability as it relates to worker safety, DOT-H should take a close look at the federal Multi-Employer Citation Policy (MECP), which is a policy directive issued by the U.S. Department of Labor, Occupational Safety and Health Administration (OSHA) in 1999. Under the MECP, OSHA can cite up to $70,000 for a serious violation and can hold multiple employers liable for general exposure to hazardous conditions.
5. Piers 5-6 area
   a. Past non-maritime development plans for this area never came to fruition. This is prime land near the highway and central to Honolulu Harbor, so it should be developed for maritime use to support harbor operations. Since there's not enough land for cargo operations, it has great potential as a vessel service berth.
   b. The Piers 5-6 land area is weight bearing (e.g., fill land, not pier and deck construction), there are no existing buildings or uses to remove/relocate, so it's ready for to be improved for maritime uses. The Piers 5-6 area can be developed with maritime center facilities, offices, parking, storage and pier improvements for berthing work boats and vessel service. Harbor space for essential maritime support

services, including trucks for fuel, equipment and provisions, repair and maintenance services, is shrinking.
    c. This area should be used to do something for the maritime industry, not tourists.
6. Removal of Assets in case of an emergency event
    a. There are numerous inoperable or inactive vessels in the harbor that pose a hazard during emergency events: approximately 5 out-of-service tug boats, 5 or 6 other large derelict vessels and 22 inoperable fishing boats (spread between Piers 16 to 18 and Piers 36 and 37). In addition, there are 2 propane barges and 1 aggregate barge with no dedicated tug. These vessels adversely affect harbor operations by creating a risk during harbor evacuation orders. There is no clear plan or responsible party to move these vessels in accordance with evacuation protocols.
        i. Note that it is not economically viable or practical to have a dedicated tug (which requires a dedicated crew) for every barge, as these vessels are not underway/active every day and have lay periods in between their cargo voyages.
7. Lay Berth space
    a. Barges need a place to go while they're waiting. Empty barges are using active berths while they lay idle, sometimes for one day or a few weeks. It's important to determine how long barges will be idle and find appropriate places for them, such as TYCO or the 'Ewa side of Sand Island. If they're going to be idle for more than a day, they should be moved off of active berth space.
    b. Pier 60 has potential for a shallow draft fleet marina at the 'Ewa side. This is a long-term idea; funding, permitting and construction will take a decade or longer, but it should be started now so it's ready when we need it.
    c. There is value in looking for additional offshore mooring/anchorages; all options should be kept open.
    d. Inoperable/derelict vessels take up substantial berthing space that could be used for active vessel operations.
        i. Some of these vessels take up useable berthing space, but do not produce revenue for the Harbor Special Fund. This affects all harbor users by reducing the revenue available to support necessary harbor improvements.
    e. Harbor operators responsible for inoperable and inactive vessels are encouraged to consider the overall needs of the harbor and help improve the utility and operations of the existing port facilities. Derelict vessels should be moved out to reclaim berthing space. Removing these vessels can help reduce the need for expensive port facility expansion.
    f. DOT-H and USCG oversee removal of derelict and abandoned vessels from the harbor.
8. Kapālama Channel Widening

a. There is support for the idea of widening Kapālama Channel by 50 to 75 feet to accommodate Neo-Panamax vessels. Navigating the larger vessels through the channel is challenging, particularly during strong trade wind days and when vessels are berthed alongside the channel.

9. Sand Island / Kalihi Channel Bridge
    a. Support for re-opening a second entrance to the harbor at Kalihi Channel for both resiliency in the event that the main harbor entrance becomes blocked, and to improve normal harbor operations by giving fishing vessels and tug and barge vessels an alternative means of ingress/egress, thereby relieving navigational congestion in the harbor.
    b. The existing bascule bridge got stuck open one day and stranded trucks leaving Sand Island. This put fear into people and they decided to fix the bascule bridge in place. DOT subsequently constructed a fixed bridge adjacent to the original bascule bridge.
    c. It was suggested that a lift bridge replace the existing bascule and fixed bridge across the Kalihi Channel. The lift bridge doesn't have to be very high or very wide. It should provide sufficient air draft in the closed position to allow passage of fishing vessels and tug boats.
    d. Anytime that the bridge is lifted, it would stop cargo trucks from leaving Sand Island. Scheduling bridge operations to off-peak times could help address this concern.
    e. Having a second means of ingress/egress is the one thing that could change the dynamic of vessel operations in the Harbor.
10. Land Tenure for Maritime Users at the Harbor (leases, revocable permits [RPs])
    a. Most maritime users have been occupying space in the harbor under RPs for decades. Lack of secure, long-term tenure discourages investment in port facilities. The result is what you see along Nimitz Highway. It's very telling if you look at everything on the makai side of Nimitz Highway, there are no new buildings or structures; everything is old. Long-term maritime support services and operators are working out of trailers.
    b. There's been no conscious plan or investment in building new facilities because the maritime operators don't have skin in the game. They're not investing in their own facilities because they don't know how long they will be there. The maritime operators are essential to the harbor, they're not going anywhere. They're good candidates for partnering and investment.
        i. Private operators can get better financing from commercial vendors. Everyone's leveraging their own dollars.
        ii. Need a minimum of 35-year lease to recover costs.
        iii. Investments can support purpose-built facilities that address harbor operational needs, rather than generic facilities.
    c. DOT-H needs to look at mechanisms where private and state entities can form partnerships for long-term investment in port facilities. They

will have to start thinking out of the box if they want to do high-end investments. How will the projects in this plan get paid for?
    i. Consider creating a Port Authority. This could have tremendous economic benefit for the port and to the state overall. There are examples throughout the world.
    ii. Look for other models to encourage investment in port facilities.

11. Consider conducting traffic studies for the flow of cargo off of the piers.
    a. Identify necessary traffic improvements to facilitate the movement of cargo.
    b. Review and update the traffic study prepared for the Super Ferry, which considered commercial traffic from the harbor.
12. Hub and Spoke Model
    a. Are any carriers looking at changing their cargo supply chain, for example, making direct calls to Neighbor Islands (similar to bulk commodities moving to Kalaeloa Barbers Point Harbor)?
        i. There may be opportunity to start up small carrier operations to Maui, but it will be along time before that happens. There's no warehousing space on the Neighbor Islands. They would need to have multiple barge calls weekly for it to make sense. It's an idea that could work sometime in the future, but it won't happen all at once.
        ii. There are draft restrictions at neighbor island ports that currently prohibit deeper draft vessels. This needs to be addressed by dredging, in some cases perhaps to depths deeper than their current design depth, which would require justification and more rigorous permitting and environmental review.
    b. All the problems affecting Honolulu Harbor are also impacting our friends and families on the Neighbor Islands. The HHMP should look statewide and support the improvement and expansion of the Neighbor Island ports (fuel tanks, warehouses, docks). Doing so will help them as well as us. Maui Harbor can barely handle the cargo it receives now. Similarly, the maritime community needs to educate the Neighbor Island residents of the importance and benefits of supporting harbor improvements and expansion on their islands.

E. Closing / Next Steps

1. Next meeting: Cargo Operations Meeting #3 on Thursday, November 8, 2018, 8:30 am to 10:30 am at Homer Maxey Conference Center.
2. The HHMP website will be updated with the agenda and meeting notes (www.honoluluharbormp.com/subtac).

FY 2017 AND FY 2018 BERTH UTILIZATION AT HONOLULU HARBOR BY PIER							DBEDT Est. 1.7% Avg Growth Rate		
Pier Number	Berth Length (Feet)	Port Calls	Total BFD (Days)	Average BFD (Days)	Average Port Call (Days)	% Utilization (FY 2017)	Forecasted % Utilization (FY 2025)	Forecasted % Utilization (FY 2035)	Forecasted % Utilization (FY 2050)
01A	500	119	133,621	1,123	2.05	37%	42%	49%	63%
01B	675	144	122,037	847	2.20	25%	28%	33%	43%
01A-01B TOT	**1,175**	**263**	**255,657**	**972**	--	30%	**34%**	**41%**	**52%**
02A	505	64	56,288	879	2.22	15%	17%	21%	26%
02B	705	390	228,965	587	1.18	44%	51%	60%	77%
02C	650	52	52,478	1,009	1.40	11%	13%	15%	19%
02A-02C TOT	**1,860**	**506**	**337,730**	**2,476**	--	25%	**28%**	**34%**	**43%**
4	325	2	12	6	0.07	0%	0%	0%	0%
5	200	1	859	859	13.86	1%	1%	1%	1%
6	346	928	124,163	134	0.59	49%	56%	66%	85%
07DH	458	1	80,872	80,872	223.40	24%	27%	33%	42%
07EWA	275	4	5,039	1,260	7.78	3%	3%	3%	4%
8	615	1,653	191,971	116	0.38	43%	49%	58%	74%
9	624	73	78,710	1,078	3.79	17%	20%	23%	30%
10	502	69	88,258	1,279	3.73	24%	27%	33%	41%
11	435	84	135,951	1,618	3.40	43%	49%	58%	74%
10-11 TOT	**937**	**153**	**224,208**	**1,465**	--	33%	**37%**	**45%**	**57%**
12	112	43	91,624	2,131	13.15	112%	127%	151%	193%
13	335	304	263,999	868	6.85	108%	123%	146%	186%
14-	420	351	367,934	1,048	6.28	120%	136%	162%	207%
15	485	57	339,125	5,950	25.80	96%	109%	129%	165%
16	930	81	100,352	1,239	11.36	15%	17%	20%	25%
17	965	1,576	1,524,690	967	9.02	216%	246%	292%	373%
18	210	3	1,163	388	3.76	1%	1%	1%	1%
19	580	57	92,803	1,628	5.70	22%	25%	30%	38%
20	510	78	187,418	2,403	7.71	50%	57%	68%	87%
21	495	592	327,182	553	4.22	91%	103%	122%	156%
22	410	445	170,753	384	3.58	57%	65%	77%	98%
23	425	4	37	9	0.11	0%	0%	0%	0%
24	580	76	96,918	1,275	6.48	23%	26%	31%	39%
25	365	107	145,175	1,357	5.00	54%	62%	74%	94%
26	685	182	137,160	754	7.46	27%	31%	37%	47%
27-	660	299	137,344	459	3.57	29%	32%	38%	49%
27 DL	325	3,520	445,066	126	1.21	188%	213%	253%	323%
27-27DL TOT	**985**	**3,819**	**582,410**	**153**	--	81%	92%	109%	139%
28	490	168	178,670	1,064	3.93	50%	57%	67%	86%
29-	390	69	46,256	670	2.31	16%	18%	22%	28%
29 A	410	165	117,047	709	2.06	39%	44%	53%	67%
29-29A TOT	**800**	**234**	**163,303**	**698**	--	28%	32%	38%	48%
30	270	532	195,215	367	1.07	99%	112%	134%	171%
31 A	400	111	93,294	840	2.54	32%	36%	43%	55%
31-	375	91	56,969	626	1.46	21%	24%	28%	36%
31A-31 TOT	**775**	**202**	**150,263**	**744**	--	27%	30%	36%	46%
32	395	163	101,617	623	1.33	35%	40%	48%	61%

FY 2017 AND FY 2018 BERTH UTILIZATION AT HONOLULU HARBOR BY PIER							DBEDT Est. 1.7% Avg Growth Rate		
Pier Number	Berth Length (Feet)	Port Calls	Total BFD (Days)	Average BFD (Days)	Average Port Call (Days)	% Utilization (FY 2017)	Forecasted % Utilization (FY 2025)	Forecasted % Utilization (FY 2035)	Forecasted % Utilization (FY 2050)
33	330	54	41,043	760	2.89	17%	19%	23%	29%
34	545	27	59,920	2,219	9.31	15%	17%	20%	26%
35	705	122	285,034	2,336	9.65	55%	63%	75%	95%
36DH	545	1,590	676,553	426	4.50	170%	193%	230%	293%
36EWA	430	352	295,728	840	8.59	94%	107%	127%	162%
37	410	441	502,965	1,141	11.89	168%	191%	227%	289%
38	645	901	878,499	975	8.45	187%	212%	252%	321%
36DH-38 TOT	**2,030**	**3,284**	**2,353,744**	**717**	--	159%	180%	214%	273%
39-1A	320	95	198,527	2,090	6.77	85%	96%	115%	146%
39A	495	694	373,675	538	1.70	103%	117%	140%	178%
39B	515	28	18,918	676	2.13	5%	6%	7%	9%
39D	495	33	53,608	1,624	6.08	15%	17%	20%	26%
39E	530	839	417,959	498	1.54	108%	123%	146%	186%
40A	490	605	431,326	713	2.21	121%	137%	163%	208%
40B	505	289	263,380	911	3.02	71%	81%	96%	123%
40C	250	1	70	70	0.65	0%	0%	0%	0%
40D	505	44	77,345	1,758	4.62	21%	24%	28%	36%
40E	495	4	2,473	618	1.60	1%	1%	1%	1%
40F	170	2	476	238	2.37	0%	0%	1%	1%
39A - 40F TOT	**4,450**	**2,539**	**1,639,230**	**646**	--	**50%**	**57%**	**68%**	86%
41	940	178	213,649	1,200	10.07	31%	35%	42%	54%
42	800	23	26,360	1,146	12.40	5%	5%	6%	8%
51A	680	302	381,957	1,265	1.39	77%	87%	104%	132%
51B	585	574	132,927	232	0.75	31%	35%	42%	54%
51C	770	588	192,147	327	1.02	34%	39%	46%	59%
51B-51C TOT	**1,355**	**1,162**	**325,073**	**280**	--	**33%**	**37%**	**45%**	**57%**
52A	800	431	483,222	1,121	1.37	83%	94%	112%	142%
53A	490	442	274,762	622	1.23	77%	87%	104%	132%
53B	765	2	623	312	0.99	0%	0%	0%	0%
52A-53C TOT	**2,055**	**875**	**758,607**	**867**	--	51%	92%	109%	139%
60	155	69	103,378	1,498	4.34	31%	36%	42%	54%
AT&T	350	9	11,850	1,317	2.49	5%	5%	6%	8%

Cargo Operations Sub-TAC

CONTACT LAST NAME	CONTACT FIRST NAME	ORGANIZATION	DIVISION/BRANCH/SECTION		EMAIL	SUB-TAC MTG #1 ATTENDANCE
Bannon	John	US Coast Guard	Sector Honolulu	Federal	John.E.Bannon@uscg.mil	
Chang	Susan	Department of Transportation	Highways - Vehicle Safety Office	State	susan.chang@hawaii.gov	
Dawson	Dustin	Hawaii Longshore Division, ILWU Local 142		Business / Orgs	ddawson@ilwu.org	
Friel	Lek	Matson Terminals, Inc.		Business / Orgs	Lfriel@matson.com	
Fry	Michael	US Fish and Wildlife Services	Environmental Contaminants	Federal	michael_fy@fws.gov	
Furtado	Wesley	Hawaii Longshore Division, ILWU Local 142		Business / Orgs	wesley.furtado@ilwu.org	
Grune	Randy	Hawaii Stevedores, Inc.		Business / Orgs	rgrune@hawaiistevedores.com	
Guard	Matt	McCabe, Hamilton & Renny Co., Ltd.		Business / Orgs	mguard@mhrhawaii.com	
Haneberg	Scott	Department of Transportation	Highways - Vehicle Safety Office	State	scott.haneberg@hawaii.gov	
Heatherly	Scott	US Customs and Border Protection		Federal	scott.k.heatherly@cbp.dhs.gov	
Hong	Glenn	Saltchuk - Hawaii (Tote Maritime)		Business / Orgs	glenn@saltchuk.com	
Iida	Todd	Hawaii Stevedores, Inc.		Business / Orgs	tiida@hawaiistevedores.com	
Jose	Ferdinand	US Customs and Border Protection		Federal	Ferdinand.A.Jose@cbp.dhs.gov	
Knauss	John	National Cargo Bureau, Inc.		Business / Orgs	ncbhono@natcargo.org	
Lui-Kwan	Randal	Hawaiian Electric Company		Business / Orgs	randal.luikwan@hawaiianelectric.com	
MacDonald	Michael	Young Brothers/ Foss Maritime - Hawaii		Business / Orgs	mac@htbyb.com	
Martin	Chris	Young Brothers/ Foss Maritime - Hawaii		Business / Orgs	cmartin@htbyb.com	
Martin	Dane	Young Brothers/ Foss Maritime - Hawaii		Business / Orgs	dmartin@htbyb.com	
Mihlbauer, Jr.	John P.	All Ship and Cargo Surveys		Business / Orgs	contact@ascshawaii.com	
Miyasaki	Rob	Department of Transportation	Statewide Transportation Planning Office	State	robert.miyasaki@hawaii.gov	

Cargo Operations Sub-TAC

CONTACT LAST NAME	CONTACT FIRST NAME	ORGANIZATION	DIVISION/BRANCH/SECTION		EMAIL	SUB-TAC MTG #1 ATTENDANCE
Nikaido	Blayne	Department of Transportation	Statewide Transportation Planning Office	State	blayne.h.nikaido@hawaii.gov	
North	Gary	Hawaii Harbor Users Group (HHUG)		Business / Orgs	garyjnorth@gmail.com	
Pillone	Peter	Department of Transportation	Operations	State	peter.pillone@hawaii.gov	
Prather	Jeffrey	Department of Transportation	Operations	State	jeffrey.s.prather@hawaii.gov	
Roer	Mik	Kirby Offshore Marine		Business / Orgs	Mik.Roer@kirbycorp.com	
Sakakida	Gareth	Hawaii Transportation Association		Business / Orgs	gareth@htahawaii.org	
Satre	Jon	Aloha Marine Lines (Lynden Transport)		Business / Orgs	jsatre@Lynden.com	
Sikkink	David	Department of Business, Economic Development and Tourism	Hawaii Foreign-Trade Zone No. 9	State	david.j.sikkink@ftz9.org	
Sullivan	Carlos	The Delivery People		Business / Orgs	carlos@thedeliverypeople.com	
Tanaka	Lance	Par Hawaii, Inc.		Business / Orgs	lance.tanaka@parpacific.com	
Toiya	Hirokazu	City and County of Honolulu	Department of Emergency Management	CCH	htoiya@honolulu.gov	
Wang	Ali	Inchcape Shipping Services		Business / Orgs	ali.wang@iss-shipping.com	
Whitworth	Tiffanie	Young Brothers/ Foss Maritime - Hawaii		Business / Orgs	twhitworth@htbyb.com; tiff@htbyb.com	
Yocum	Janet	US Department of Homeland Security	Federal Emergency Management Agency	Federal	janet.yocum@fema.dhs.gov	
Zane	Jimmy	McCabe, Hamilton & Renny Co., Ltd.		Business / Orgs	jzane@mhrhawaii.com	
Enos	Ed	PLCTS			capt.edenos@gmail.com	
Velez	Eric	USCG	Sector Honolulu	Federal	eric.j.velez@uscg.mil	

Welcome

CARGO OPERATIONS

Technical Advisory Sub-Committee Meeting #2

October 23, 2018

Department of Transportation
Harbors Division

Homer Maxey Conference Center
521 Ala Moana Blvd.
Honolulu, HI 96813

CARGO & PASSENGER FORECASTS

SMS Research & Marketing Services, Inc.

Source: Hawai'i State Archives Digital Collection

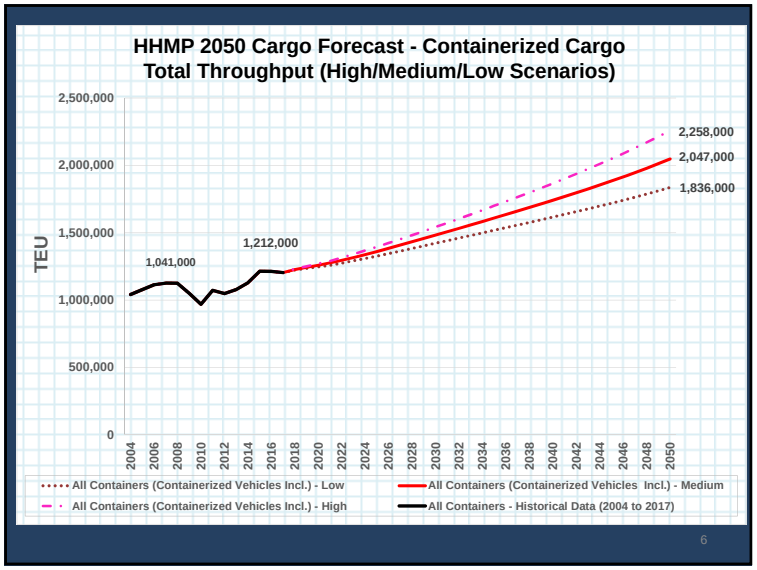
SMS Role

- Conduct the Harbor Users Survey
- Forecast cargo and passenger flow through Honolulu Harbor
  - Becomes the basis for long-range planning
- Assess the economic value of Harbors.

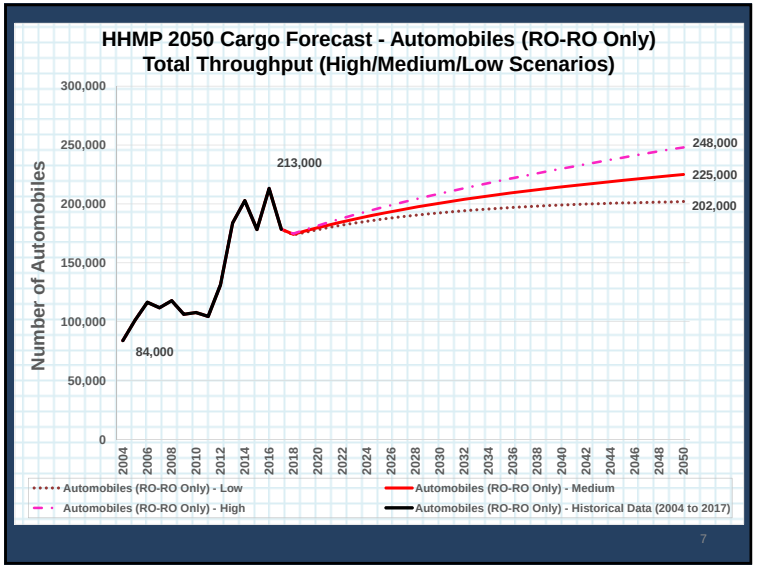
Major Cargoes/Commodities Breakdown

- **Containerized Cargoes:** laden, empty, flat/open racks, etc.
- **RO-RO Cargoes:** vehicles/rolling stock
- **Liquid Fuels:** jet fuel, other fuels (diesel fuel, gasoline, petroleum, etc.)
- **Dry Bulk:** aggregate/sand
- **Break bulk/LCL:** general merchandise, island agricultural products, lumbers, etc.
- **Passenger Movements:** incoming/outgoing passengers

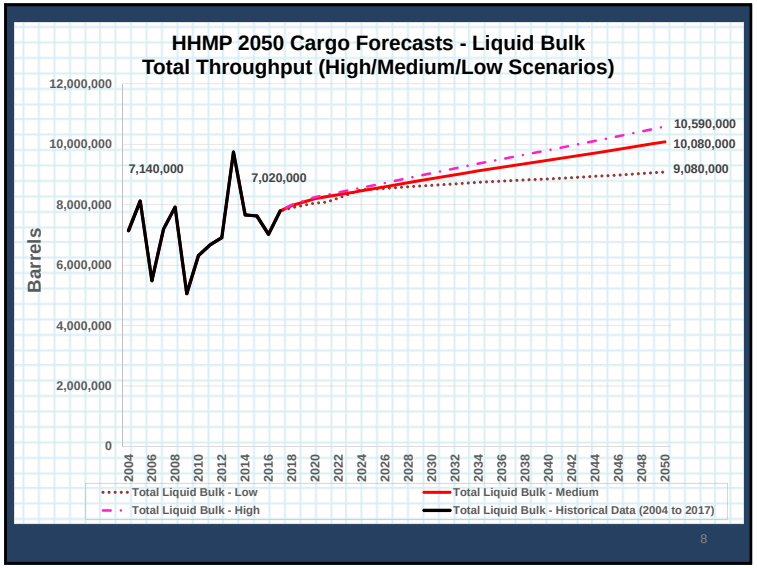
5



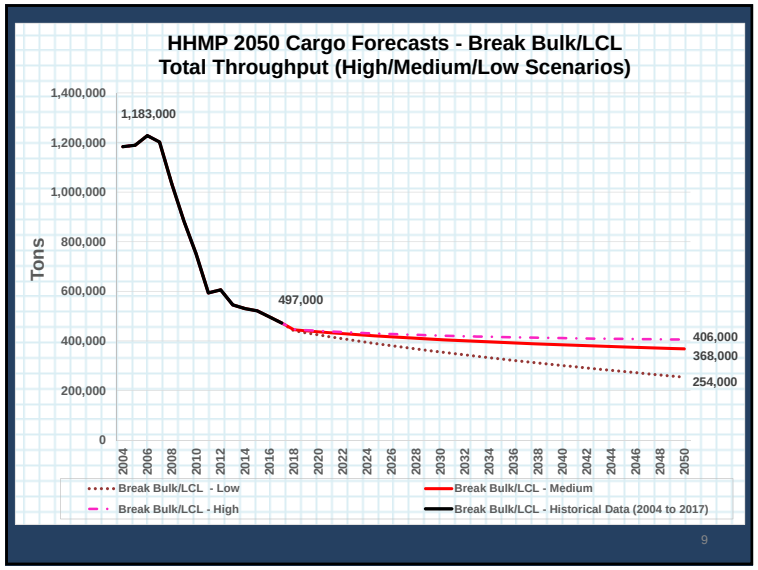
6

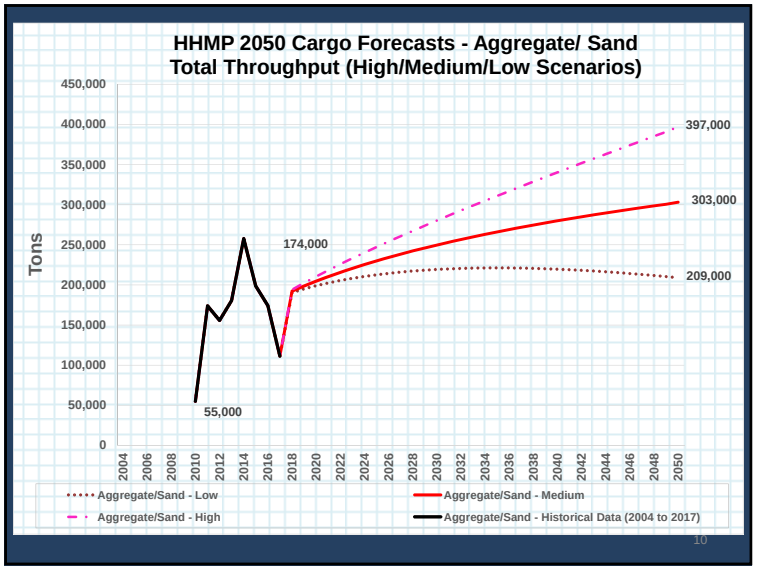


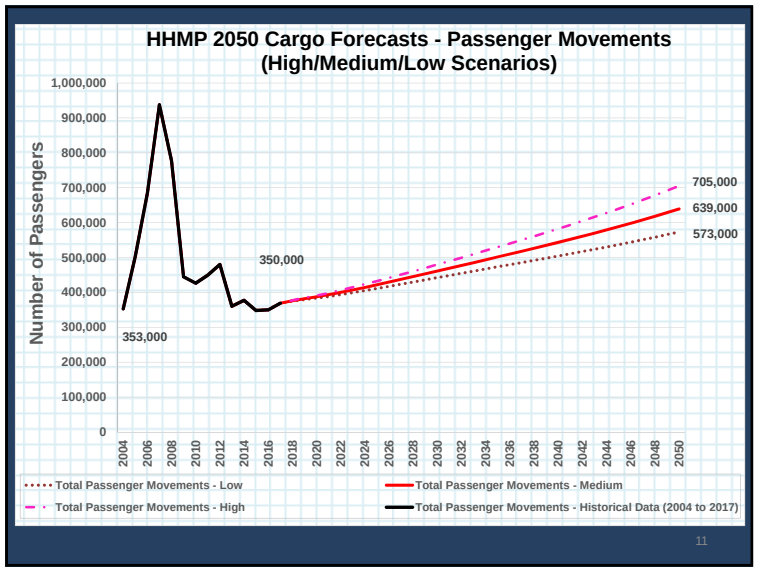
7



8


HHMP 2050 Cargo Forecasts - Break Bulk/LCL
Total Throughput (High/Medium/Low Scenarios)
Tons
1,400,000
1,200,000
1,000,000
800,000
600,000
400,000
200,000
0
1,183,000
497,000
406,000
368,000
254,000
2004 2006 2008 2010 2012 2014 2016 2018 2020 2022 2024 2026 2028 2030 2032 2034 2036 2038 2040 2042 2044 2046 2048 2050
Break Bulk/LCL - Low
Break Bulk/LCL - Medium
Break Bulk/LCL - High
Break Bulk/LCL - Historical Data (2004 to 2017)
9


HHMP 2050 Cargo Forecasts - Aggregate/ Sand
Total Throughput (High/Medium/Low Scenarios)
Tons
450,000
400,000
350,000
300,000
250,000
200,000
150,000
100,000
50,000
0
397,000
303,000
174,000
209,000
55,000
2004 2006 2008 2010 2012 2014 2016 2018 2020 2022 2024 2026 2028 2030 2032 2034 2036 2038 2040 2042 2044 2046 2048 2050
Aggregate/Sand - Low
Aggregate/Sand - Medium
Aggregate/Sand - High
Aggregate/Sand - Historical Data (2004 to 2017)
10


HHMP 2050 Cargo Forecasts - Passenger Movements
(High/Medium/Low Scenarios)
Number of Passengers
1,000,000
900,000
800,000
700,000
600,000
500,000
400,000
300,000
200,000
100,000
0
705,000
639,000
573,000
350,000
353,000
2004 2006 2008 2010 2012 2014 2016 2018 2020 2022 2024 2026 2028 2030 2032 2034 2036 2038 2040 2042 2044 2046 2048 2050
Total Passenger Movements - Low
Total Passenger Movements - Medium
Total Passenger Movements - High
Total Passenger Movements - Historical Data (2004 to 2017)
11

PRELIMINARY
THROUGHPUT
AND
ESTIMATED ANNUAL CAPACITY
CARGO SUB-TAC #2
Stantec Consulting Ltd.
Department of Transportation, Harbors Division
Honolulu Harbor Master Plan Update

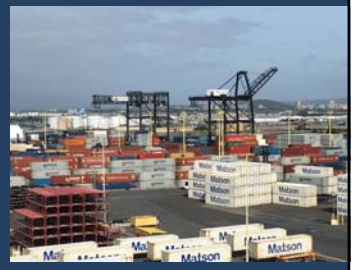
Stantec's Role

- Evaluate existing port capacity
  - (containers, LCL, autos, break bulk, liquid bulk)
- Determine future capacity demand based on economic forecast by SMS
- Identify opportunities
- Develop alternatives to meet future capacity demand

Cargo/Passenger Capacity Analysis

Primary Sectors to be Examined

- Containers
- LCL's/General Merchandise
- Break-Bulk (Livestock, Lumber, Scrap, etc.)
- Autos & Trucks
- Refined Petroleum Products (Bunker, Gasoline, Jet Fuel, Diesel, Fuel Oil, LPG, etc.)
- Cruise Passengers
- Dry Bulk (Aggregates, sand, etc.)



2016 Annual Throughput and Estimated Annual Capacity

Sector	Unit	Throughput FY2016	Estimated Annual Capacity 2018
Containers	TEU	1.212 Million	1.17 million (w/o KCT) 1.59 million (w/ KCT)
Vehicles (RO/RO)	Unit	213,000	311,000
Liquid Bulk	BBL	7,020,000	14,500,000
Break-Bulk/LCL	Ton	497,000	568,000

Estimated Annual Capacity FY2018 and Estimated Annual Throughput FY2050

Sector	Unit	Estimated Annual Capacity 2018	Estimated Annual Throughput 2050	Difference (Future Need)
Containers	TEU	1.59 million (w/ KCT)	2.05 million	+ 0.46 million
Vehicles (RO/RO)	Unit	311,000	225,000	- 86,000
Liquid Bulk	BBL	14,500,000	10,080,000	- 4,420,000
Break-Bulk /LCL	Ton	568,000	368,000	- 200,000

PRELIMINARY

BERTH UTILIZATION ANALYSIS

Department of Transportation, Harbors Division
Honolulu Harbor 2050 Master Plan

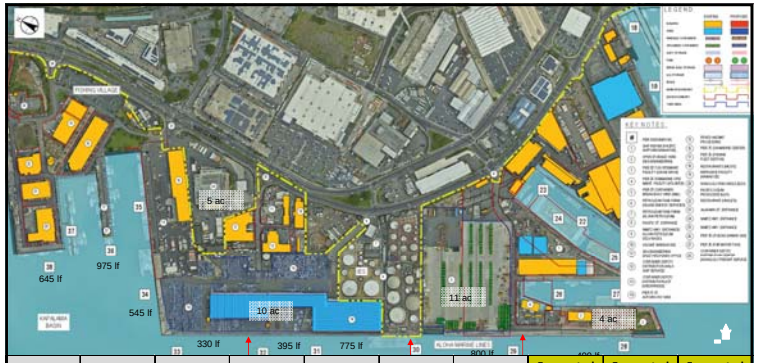
Pier Number	Berth Length (Feet)	Port Calls	Total BFD (Days)	Average BFD (Days)	Average Port Call (Days)	% Utilization (FY 2017)	% Utilization (FY 2025)	% Utilization (FY 2035)	% Utilization (FY 2050)
01A	500	119	133,621	1,123	2.05	37%	42%	49%	63%
01B	675	144	122,037	847	2.20	25%	28%	33%	43%
01A-01B TOT	1,175	263	255,657	972	--	30%	34%	41%	52%
02A	505	64	56,288	879	2.22	15%	17%	21%	26%
02B	705	390	228,965	587	1.18	44%	51%	60%	77%
02C	650	52	52,478	1,009	1.40	11%	13%	15%	19%
02A-02C TOT	1,860	506	337,730	2,476	--	25%	28%	34%	43%
4	325	2	12	6	0.07	0%	0%	0%	0%
5	200	1	859	859	13.86	1%	1%	1%	1%
6	346	928	124,163	134	0.59	49%	56%	66%	85%

Pier Number	Berth Length (Feet)	Port Calls	Total BFD (Days)	Average BFD (Days)	Average Port Call (Days)	% Utilization (FY 2017)	Forecasted % Utilization (FY 2025)	Forecasted % Utilization (FY 2035)	Forecasted % Utilization (FY 2050)
07DH	458	1	80,872	80,872	223.40	24%	27%	33%	42%
07EWA	275	4	5,039	1,260	7.78	3%	3%	3%	4%
8	615	1,653	191,971	116	0.38	43%	49%	58%	74%
9	624	73	78,710	1,078	3.79	17%	20%	23%	30%
10	502	69	88,258	1,279	3.73	24%	27%	33%	41%
11	435	84	135,951	1,618	3.40	43%	49%	58%	74%
10-11 TOT	937	153	224,208	1,465	--	33%	37%	45%	57%

Pier Number	Berth Length (Feet)	Port Calls	Total BFD (Days)	Average BFD (Days)	Average Port Call (Days)	% Utilization (FY 2017)	Forecasted % Utilization (FY 2025)	Forecasted % Utilization (FY 2035)	Forecasted % Utilization (FY 2050)
12	112	43	91,624	2,131	13.15	112%	127%	151%	193%
13	335	304	263,999	868	6.85	108%	123%	146%	186%
14	420	351	367,934	1,048	6.28	120%	136%	162%	207%
15	485	57	339,125	5,950	25.80	96%	109%	129%	165%
16	930	81	100,352	1,239	11.36	15%	17%	20%	25%
17	965	1,576	1,524,690	967	9.02	216%	246%	292%	373%
18	210	3	1,163	388	3.76	1%	1%	1%	1%
19	580	57	92,803	1,628	5.70	22%	25%	30%	38%
20	510	78	187,418	2,403	7.71	50%	57%	68%	87%

Pier Number	Berth Length (Feet)	Port Calls	Total BFD (Days)	Average BFD (Days)	Average Port Call (Days)	% Utilization (FY 2017)	Forecasted % Utilization (FY 2025)	Forecasted % Utilization (FY 2035)	Forecasted % Utilization (FY 2050)
21	495	592	327,182	553	4.22	91%	103%	122%	156%
22	410	445	170,753	384	3.58	57%	65%	77%	98%
23	425	4	37	9	0.11	0%	0%	0%	0%
24	580	76	96,918	1,275	6.48	23%	26%	31%	39%
25	365	107	145,175	1,357	5.00	54%	62%	74%	94%
26	685	182	137,160	754	7.46	27%	31%	37%	47%
27-	660	299	137,344	459	3.57	29%	32%	38%	49%
27 DL	325	3,520	445,066	126	1.21	188%	213%	253%	323%
27-27DL TOT	985	3,819	582,410	153	--	81%	92%	109%	139%

Pier Number	Berth Length (Feet)	Port Calls	Total BFD (Days)	Average BFD (Days)	Average Port Call (Days)	% Utilization (FY 2017)	Forecasted % Utilization (FY 2025)	Forecasted % Utilization (FY 2035)	Forecasted % Utilization (FY 2050)
28	490	168	178,670	1,064	3.93	50%	57%	67%	86%
29-	390	69	46,256	670	2.31	16%	18%	22%	28%
29 A	410	165	117,047	709	2.06	39%	44%	53%	67%
29-29A TOT	800	234	163,303	698	--	28%	32%	38%	48%
30	270	532	195,215	367	1.07	99%	112%	134%	171%
31 A	400	111	93,294	840	2.54	32%	36%	43%	55%
31-	375	91	56,969	626	1.46	21%	24%	28%	36%
31A-31 TOT	775	202	150,263	744	--	27%	30%	36%	46%



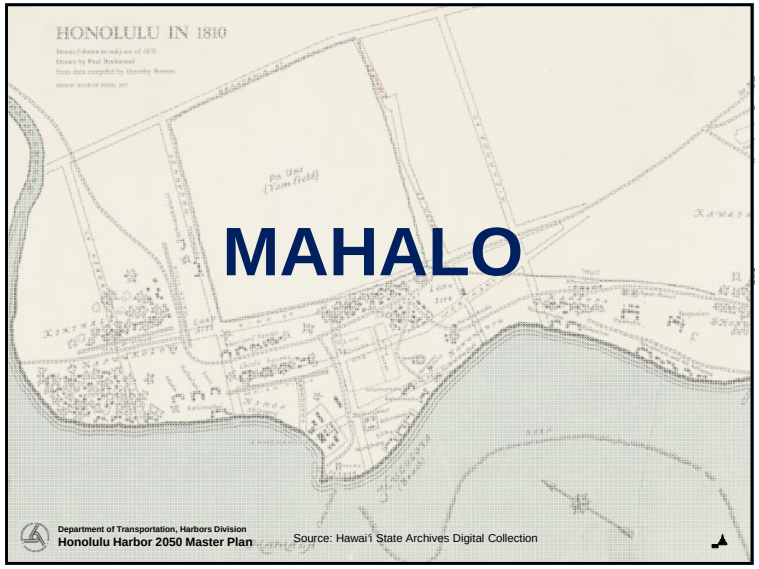
Pier Number	Berth Length (Feet)	Port Calls	Total BFD (Days)	Average BFD (Days)	Average Port Call (Days)	% Utilization (FY 2017)	Forecasted % Utilization (FY 2025)	Forecasted % Utilization (FY 2035)	Forecasted % Utilization (FY 2050)
32	395	163	101,617	623	1.33	35%	40%	48%	61%
33	330	54	41,043	760	2.89	17%	19%	23%	29%
34	545	27	59,920	2,219	9.31	15%	17%	20%	26%
35	705	122	285,034	2,336	9.65	55%	63%	75%	95%
36DH	545	1,590	676,553	426	4.50	170%	193%	230%	293%
36EWA	430	352	295,728	840	8.59	94%	107%	127%	162%
37	410	441	502,965	1,141	11.89	168%	191%	227%	289%
38	645	901	878,499	975	8.45	187%	212%	252%	321%
36DH-38 TOT	2,030	3,284	2,353,744	717	--	159%	180%	214%	273%

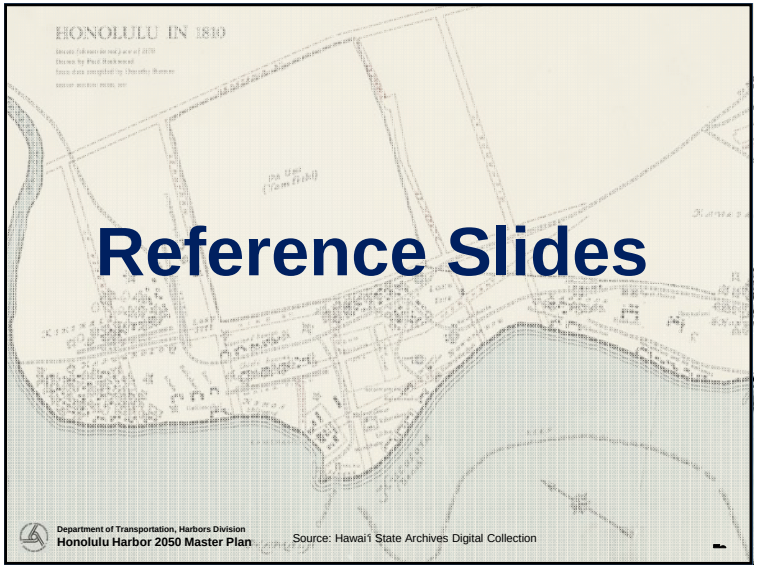
Pier Number	Berth Length (Feet)	Port Calls	Total BFD (Days)	Average BFD (Days)	Average Port Call (Days)	% Utilization (FY 2017)	% Utilization (FY 2025)	% Utilization (FY 2035)	% Utilization (FY 2050)
39-1A	320	95	198,527	2,090	6.77	85%	96%	115%	146%
39A	495	694	373,675	538	1.70	103%	117%	140%	178%
39B	515	28	18,918	676	2.13	5%	6%	7%	9%
39D	495	33	53,608	1,624	6.08	15%	17%	20%	26%
39E	530	839	417,959	498	1.54	108%	123%	146%	186%
40A	490	605	431,326	713	2.21	121%	137%	163%	208%
40B	505	289	263,380	911	3.02	71%	81%	96%	123%
40C	250	1	70	70	0.65	0%	0%	0%	0%
40D	505	44	77,345	1,758	4.62	21%	24%	28%	36%
40E	495	4	2,473	618	1.60	1%	1%	1%	1%
40F	170	2	476	238	2.37	0%	0%	1%	1%
39A - 40F TOT	4,450	2,539	1,639,230	646	--	50%	57%	68%	86%

Pier Number	Berth Length (Feet)	Port Calls	Total BFD (Days)	Average BFD (Days)	Average Port Call (Days)	% Utilization (FY 2017)	% Utilization (FY 2025)	% Utilization (FY 2035)	% Utilization (FY 2050)
41	940	178	213,649	1,200	10.07	31%	35%	42%	54%
42	800	23	26,360	1,146	12.40	5%	5%	6%	8%

Department of Transportation, Harbors Division
Honolulu Harbor 2050 Master Plan

Pier Number	Berth Length (Feet)	Port Calls	Total BFD (Days)	Average BFD (Days)	Average Port Call (Days)	% Utilization (FY 2017)	% Utilization (FY 2025)	% Utilization (FY 2035)	% Utilization (FY 2050)
51A	680	302	381,957	1,265	1.39	77%	87%	104%	132%
51B	585	574	132,927	232	0.75	31%	35%	42%	54%
51C	770	588	192,147	327	1.02	34%	39%	46%	59%
51B-51C TOT	**1,355**	**1,162**	**325,073**	**280**	**--**	**33%**	**37%**	**45%**	**57%**
52A	800	431	483,222	1,121	1.37	83%	94%	112%	142%
53A	490	442	274,762	622	1.23	77%	87%	104%	132%
53B	765	2	623	312	0.99	0%	0%	0%	0%
52A-53C TOT	**2,055**	**875**	**758,607**	**867**	**--**	51%	92%	109%	139%
60	155	69	103,378	1,498	4.34	31%	36%	42%	54%





10/23/2018
CARGO SUB-TAC #2
STORM PREP / HARBOR EVAC.
E.G. 22 FISHING VESSELS ~ INACTIVE
LONG-TERM
• START PLANNING NOW FOR LONG TERM MAJOR CHANGES.
– LONG-LEAD ITEMS, GET LIFE INTO THE IDEAS NOW.
• OCCUPATIONAL SAFETY & HEALTH
OSHA
– PLANS CREATE HAZARDS TO WORKERS.
– PROVIDE ADEQUATE SPACE / FACILITIES FOR WORKERS
– PROVIDE FAC. TO ACCESS WATER / EMERG.
– NEED REST STATIONS @ ALL MAJOR PIERS
• WORK HARD / NO REST → NEED REFUGE
• HAZARDOUS MATERIAL WASH STATIONS
– FED GOV. MULTI-EMPLOYER CITATION POLICY
– GEN. EXPOSURE, TO HAZARD
Kalihi
Kalihi Kai
• CONDUCT TRAFFIC STUDIES FOR FLOW OF CARGO OFF THE PIERS. • WHAT TRAFF. IMPROVEMENTS ARE RECOMMENDED?
Kapalama Terminal
→ LOOK @ FERRY TERMINAL STUDY.
LONG TERM NOT MOVING
– WHAT NEEDS TO BE NEAR THE WATER? WHAT DOESN'T?
– MOVE CARGO SERVICE VESSELS
– LOOK @ LANDS MAUKA OF NIMITZ OR AT PIER A – RUN A SHUTTLE
– CREATE SPACE FOR STORAGE OF CARGO EQUIPMENT (STAGING)
• DON'T PUT A MAINT. FACILITY HERE.
FOR PARKING, STORAGE
Iwilei
LEASE / LAND SPACE SECURITY / INVESTMENT
• R.P. – TYP. ON FOR DECADES FOR MAR. OPERATORS
E.G. AIRPORTS.. PRIVATE / STATE LONG-TERM INVESTMENT TO IMPROVE PORT FACILITIES – JOINT VENTURE
BOTH HAVE SKIN IN THE GAME
E.G. PORT AUTHORITY PROFIT-DRIVEN.
• WHAT TERMS?
– PURPOSE-BUILT VS. GENERIC, NEED
• MIN. 35-YEAR LEASE TO RECOUP COSTS.
• NEED TO HAVE POLITICAL LEADERS
Ke'ehi Lagoon
POTENTIAL MOORING AREA (85 AC)
POTENTIAL MOORING AREA (100 AC)
MARINA 515' X 6,130'
SEAPLANE 'A' (150' X 4,000')
SEAPLANE 'B' (300' X 5,000')
• LIFT BRIDGE
• FIXED WITH AIR DRAFT
RE-OPEN SECOND ENTRANCE TO TUG & WORK BOATS
– BLOCKS TRUCK TRAFFIC.
– SCHEDULE OPEN / CLOSE OFF PEAK TIME
• NAVIGATION / OPS IMPROVEMENT
• EMERGENCY ACCESS
BERTHING?
MAKAI OF NIMITZ – EVERYONE WORKING OUT OF TRAILERS.
– NO CONSCIOUS INVESTMENT IN PAST DECADES.
Sand Island Terminal
Chinatown
DON'T HAVE AREA TO STORE EQUIP. FOR MAINT.
Downtown Business District
HARBOR TOWER
• SCHEDULING
• TECH / COMM BTWN TOWER & VESSELS
• AVOID DECAYS.
ROSS. PARKING FOR MARITIME
Kaka'ako
PIER 5/6 – NEVER
• VENT ANYWHERE. IN 2050 → PRIME & CENTRAL TO THE HARBOR.
• BIG SERVICE VESSEL BERTH
• WEIGHT-BEARING DOCKS
• READY-TO-GO ~ NO BLDGS.
• CAN DO SERVICE ON VESSELS
• MARITIME OFFICES, PKNG.
– ON THE WATER. IN/OUT OF THE HARBOR EASILY.
– MARITIME USERS TODAY / SVC. BOATS
Fort Armstrong Terminal
INCREASE DRAFT TO 12 M FOR 9,500 TEU
EXPAND FOR PIER 1
• CARGO HANDLING
• LAND SWAP WITH OHA
– LOAD FUEL, PROVISIONS (NOT CARGO)
– OPEN OTHER HARBOR AREAS TO CARGO.
TYCO
Mamala Bay
→ HHMP – KEEP ALL OPTIONS OPEN TO IDEAS OF PORT AUTHORITY
– START FINDING MODELS TO ENCOURAGE INVESTMENT IN PORT FACILITIES.
CARGO ~ DELIVERY CHAIN
• HUB & SPOKE MODEL?
• DIRECT DELIVERY TO NEIGHBOR ISLANDS?
– BY COMMODITY?
→ SMALL WEST COAST TO MAUI OPERATION – BEING CONTEMPLATED
– NEED WAREHOUSING SPACE ON THE ISLANDS.
ITS AN IDEA THAT COULD WORK. BUT WILL TAKE TIME / GENERATIONS
⇒ HONOLULU HARBOR 2050 MP → NEEDS TO LOOK STATEWIDE
SUPPORT DOT-H TO EXPAND TO NEIGHBOR ISLANDS
⇒ ALL THE PROBS IN HONOLULU HARBOR ARE REFLECTED IN NEIGHBOR ISLANDS.
→ HAVE TO EDUCATE N. ISLE RES. THE IMPORTANCE OF / SUPPORT FOR HARBOR FAC. EXPANSION / IMPROVEMENTS @ NEIGHBOR ISL.
– FUEL TANKS
– WAREHOUSES
– DOCKS IN N. ISL. PORTS
DEPARTMENT OF TRANSPORTATION
HARBORS DIVISION
HONOLULU HARBOR 2050 MASTER PLAN

MEETING NOTES

Project:	Honolulu Harbor Master Plan (HHMP)
Date/Time:	Thursday, November 8, 2018; 8:30 a.m. HST
Location:	Homer A. Maxey International Trade Resource Center 521 Ala Moana Blvd, Honolulu, HI 96813, USA
Purpose:	Cargo Operations Sub-TAC, Meeting #3
Attendees:	See attached sign-in sheet

A. Recap of Meeting #2

1. Issues and opportunities discussion from Meeting #2
    a. Space constraints in cargo areas.
        i. Consider acquiring OHA property adjacent to Pier 1 through a land swap and expand the Pier 1 Yard area to relieve yard congestion.
        ii. Consider developing Pier 60 as a marina for shallow-draft vessels to create more space in the harbor for deep draft cargo vessels.
    b. Labor coordination and related spatial needs and operational layouts.
        i. Consider providing storage areas for large/heavy maritime servicing equipment at Piers 19-20.
        ii. Consider developing Piers 5 and 6 for maritime support, work boats and vessel services in order to free up other areas of the harbor more suitable for cargo operations.
    c. New vessels sizes / requirements (Neo-Panamax).
        i. Consider dredging harbor to accommodate 3,500 to 5,000 TEU ships (39.5 feet draft depth) at a minimum.
    d. Scheduling / berth assignments.
        i. Consider removing inactive and inoperable vessels from the harbor to reduce hazards during an emergency and to free up needed berthing space.
    e. Need better communication to improve efficiency of vessel movements in and out of harbor.
        i. Consider adopting new technology for communication and position tracking among vessels and the harbor control tower to transmit information about vessel positions, conditions and timelines to more precisely schedule and control vessel movement.
    f. Additional issues identified.
        i. Consider improving occupational health and safety for workers by providing worker support facilities within the cargo yards such as rest facilities, emergency shower/eye wash stations,

and ladder or stair systems for emergency access to and from the pier and water.

ii. Lack of secure land tenure inhibits investment and port modernization.

iii. Dependency on Hub-and-Spoke cargo distribution model makes the State vulnerable to natural and man-made disasters. In the event that Honolulu Harbor is blocked or damaged and cannot function to handle emergency cargo throughput or be quickly restored to normal cargo handling operations, there are no alternative port facilities that can handle the cargo demands of the state

B. Presentation: Throughput and Estimated Annual Capacity (Stantec Consulting, Ltd.)

The following is a record of the discussion that accompanied Stantec's PowerPoint slide presentation regarding port capacity and throughput analysis (see attached presentation).

1. Discussion
    a. Estimates for 2018 Annual Capacity and 2050 annual throughput:
        i. Stantec received additional stakeholder data for container operations, which increased the estimated 2018 Annual Capacity for containers by approximately 10 percent from 1.17 to 1.32 million TEUs without Kapālama Container Terminal (KCT) and 1.59 to 1.75 million TEUs with KCT.
        ii. Based on the 2050 Demand Forecast prepared by SMS, the estimated 2050 annual throughput for containers is forecasted to be 2.05 million TEUs. At this level, Honolulu Harbor would be approximately 300,000 TEUs over the estimated annual capacity. This means that by 2050, the harbor will experience yard congestion for container operations, if nothing is done.
        iii. Industry standard strategies to alleviate container yard congestion include:
            a. Expand the port area by acquiring additional acreage for container operations contiguous with the existing container terminal yards;
            b. Decrease dwell time of containers stored within the terminal; and/or
            c. Increase density of the storage yard (i.e., stack containers higher).
        iv. The 2050 estimated annual throughout for the remaining sectors (autos/RO-RO, liquid bulk, and break-bulk/LCL) can be accommodated within the existing harbor footprint assuming same operations.
        v. The analysis assumes a steady state of "Sustainable Practical Capacity" that allows operators to meet customer service expectations. The analysis produces an annual average and

includes a seasonal monthly peak, but doesn't factor in major disruptive events, such as disasters. The reality is that the port conditions are dynamic and changing by the hour, day, month, season and year.

b. Containers
    i. Container yard capacity is determined based on density, dwell time, and area. If container yard capacity is constrained, options include acquire additional area, decrease dwell time, increase density (stack higher), or a combo of all three.
        a. Currently, the total cargo storage area in Honolulu Harbor is approximately 182.4 acres, derived from aerial mapping of all cargo handling and storage areas. Based on the forecasted increase in container cargo, approximately 193.5 acres will be required, an increase of approximately 11 acres above existing cargo yard acreage, to accommodate the projected 2050 container throughput, if existing operations (dwell time and density) continue as-is.
            i. Under a scenario where container and auto/RO-RO operations currently located at Piers 1 and 2 [Note: Ocean Network Express (ONE) Shipping and Pasha conduct container and auto/RO-RO operations at Piers 1 and 2 respectively (Pasha also occasionally operates at Pier 1) and Matson conducts auto/RO-RO operations at Pier 33.] move to KCT and Sand Island after KCT improvements are complete (i.e., to avoid split operations by the cargo operators and to utilize the gantry cranes for container operations), then for practical purposes Pier 1 and 2 yard areas would no longer be used for container cargo operations and this area should not be included in the container capacity analysis. As a result, under this scenario, to accommodate future growth in container cargo throughput at Sand Island and KCT, and to accommodate shifting auto/RO-RO operations to these piers, an additional 27 acres of yard area contiguous to Sand Island and KCT would be required. [Note: Auto/RO-RO throughput is projected to decrease from 312,000 units (FY2018) to 225,000 units (FY2050).] The 27 acres includes only container storage footprint and internal aisles. An estimated 10 to15 additional acres (approximately 40 in total) would be required after accounting for peripheral operational areas, including perimeter access, additional equipment

staging and storage space. The total amount will depend on the yard conditions and layout, and the terminal operator's mode of operation. This analysis assumes:

a. no changes to existing operational modes (primarily chassis operations);
b. Aloha Marine Lines (AML) and Young Brothers (YB) operations remain constant at Piers 29 and Piers 39 to 41 respectively;
c. Foreign carriers at Pier 1 (ONE Shipping) will move to KCT along with Pasha; and
d. Matson will move auto/RO-RO operations from Pier 33 to Sand Island.

b. Dwell Times – Based on the information provided by the cargo operators, current dwell times for both laden and unladen containers are consistent with industry standards. In general, the cargo operators reported laden container dwell times averaging about 2.5 to 3.5 days and unladen (empty) container dwell times averaging approximately 5 to 7 days. There is not much operators can do to decrease dwell times since they are already doing a good job at moving containers through the port.
c. Density – Increase density by transitioning all or a portion of container storage from wheeled (one container per storage slot) to grounded (multiple containers on a single storage slot) operations. Transitioning the Sand Island and KCT container areas from 100% wheeled operation to 50/50 wheeled/grounded would achieve the same capacity as adding 11 acres. [Note: Currently, Matson has an entirely wheeled container operation, Pasha and AML operate with a combination of wheeled and grounded containers, and Young Brothers has an entirely grounded container operation.]

ii. Stantec analyzed the capacity of the berth and yard separately for the container terminals to identify the constraining factor that limits achieving the estimated 2050 annual throughput of 2.05 million TEUs. Stantec determined that there is sufficient berth capacity (2.5 million TEUs); however, there is insufficient yard capacity (1.9 million TEUs) to accommodate the estimated 2050 annual throughput. The analysis indicates that by 2050, if operations continue with the same dwell time and density, in aggregate the harbor will need an additional 11 acres of container storage space, not including aprons. However, if density was increased with the use of technology and/or stacking, there would be sufficient yard space, in aggregate, to accommodate the estimated 2050 annual throughput. Note that

the location and distribution of the additional container yard acreage will determine the ability of individual operators, such as Young Brothers which is already operating a dense, grounded operation, to accommodate additional container throughput

iii. Questions / Comments:
   a. Question: Does the estimated 2050 annual throughput assume a steady arrival of goods entering the State and 100 percent usage of the facilities and equipment?
      i. Response: The 2050 annual throughput indicates the harbor's sustainable capacity, which means a service level that meets the customer's expectations without terminal congestion. Capacity can increase by an additional 10 – 20 percent beyond the sustainable capacity, but that creates congestion. The analysis indicates that the terminal yard space can accommodate 1.9 million TEUs; however, the harbor will need to increase either acreage or density to accommodate the projected 2.05 million TEUs by 2050 for container storage.
   b. Question: Does the estimated annual throughput account for disruptive natural or manmade events?
      i. Response: The model does not account for scenarios where disruptive events impair terminal operations. It assumes ongoing operations. The model is based on stakeholder-provided data on average dwell times, lift rates, and other data points that produce the annualized throughput capacity. The model does account for seasonal monthly peaks, e.g., the peak prior to the Holidays when retailers increase their stock.
   c. Question: Is the estimated 2050 annual throughput based on current operations?
      i. Response: Yes, the estimated 2050 annual throughput capacity was determined based on current operations (i.e., density and dwell time) as reported by the cargo operators.

c. Autos/RO-RO
   i. There is sufficient overall capacity [Note: Due to a calculation error, the Sub-TAC meeting presentation noted 311,000 units/annum in FY2018; the corrected number is 312,000 units/annum.] to accommodate the estimated 2050 annual vehicle throughput (projected to be at 225,000 units/annum).
   ii. Existing berth capacity (650,000 units/annum) at Piers 1, 20, 32 and YB far exceeds the projected 2050 annual vehicle

throughput. Stantec's analysis indicates that consolidating the multiple berths currently used for auto/RO-RO to a single auto facility with two berths would provide sufficient capacity (455,000 units/annum) [Note: Each auto/RO-RO berth should be approximately 800 lf based on a typical auto/RO-RO ship length of 600 ft plus a 200-ft mooring allowance.] The single auto facility would need to be approximately 17 acres, which is less than the 23.5 acres of yard area currently used for auto/RO-RO. This indicates that there is a surplus of space in the long-term.

iii. Questions / Comments:
   a. Question: If the current overall capacity is 311,000 units/annum, why is the current berth capacity 650,000 units/annum and yard capacity 312,000 units/annum? [Note: Current overall capacity should be "312,000" based on corrected capacity calculation. Current yard capacity is 326,000 units per annum.]
      i. Response: The quantities indicate that there is a lot more capacity at the berths than the yards. The berths could move more units, but the volume is restricted by the yards since there is not enough space to store them. In the future, if a single auto facility with two berths was developed, auto/RO-RO storage could shift to the dedicated auto facility and the vacated areas currently used for autos/RO-RO could become available for container capacity, assuming that the vacated space is suitable for container operations.
   b. Comment: Developing a single auto facility is contrary to Matson's current plan, which is to handle and store vehicles at Pier 51.
      i. Response: Matson would like to store vehicles at Pier 51, but in the long-term they may have to adjust their plan to accommodate the growth of container operations.
   c. Comment: Even though they do it now, operators are not going to want split operations, i.e., discharging their cars at one pier and discharging their containers at another pier.
      i. Response: If operators don't want to consolidate autos to a single facility and split their auto and cargo operations, then they will be compelled to increase yard capacity by other means, such as yard expansion or increasing density. If auto/RO-RO is accommodated at KCT and Sand Island,

then Piers 1, 20, and 31 to 33 will be largely unused. Other options include:

a. Densify container operations (fully grounded) at Sand Island and KCT to free up approximately 17 acres at the terminals for autos.
b. Build a parkade; however, this is an expensive option.

[Note: If Matson and Pasha consolidate their container and auto operations at Sand Island and KCT, respectively, there may still be a demand for an auto/RO-RO pier to serve international auto carriers.]

d. Comment: Do you need an additional 17 acres to accommodate the estimated 2050 auto/RO-RO throughput?
    i. Response: No, the harbor already has 23.5 acres, which is sufficient. 17 acres is the total amount of acreage that will be required to accommodate auto/RO-RO.
e. Question (R.M. Towill Corporation [RMTC]): In several of the stakeholder meetings, the idea of developing a single auto facility was proposed. Would a dedicated auto facility at Piers 1, 19/20 or 31 to 33 be a feasible idea? If not, then the Project Team will need to increase the acreage of additional land needed to be acquired.
    i. Response: In general, operators do not want to manage split operations. The ideal operation is to allow domestic container and auto/RO-RO operations at Sand Island and KCT. The Project Team will evaluate development of a single auto facility as an alternative in the master plan.
    ii. Response: The single auto facility would have to accommodate seasonal demand driven by rental car operations.
        a. Comment (Stantec): At Hilo Harbor, Stantec designed a huge single auto facility to manage the peak season; however, for a majority of the year it's empty and for a few months it is fully used, which is a poor use of space. A consolidated auto facility could be operated by one business that all operators have access to. Operators could separate the shared space with fences, depending on their seasonal demand, to promote efficient use of the space.

f. Comment: If certain terminals are designated for autos, and Sand Island and KCT are designated for containers, then the ships will need to shift around to unload the two types of goods. This would require transferring work force staff from terminal to terminal and having other staff on standby. In addition, if operators have to unload at multiple terminals, they must pay additional demurrage.
    i. Response (Stantec): Operators can handle a majority of containers and other goods from the mainland by either densifying and/or adding acreage. For autos, operators could either have split operations with a consolidated auto facility, or the DOT-H needs to acquire an additional 17 acres, if container operations continue as is, i.e., as primarily wheeled operations. Another option is to further densify container operations by grounding half or three quarters of the containers on Sand Island and KCT to free up 17 acres.
g. Comment: If the HHMP is to work for the harbor 20 – 30 years from now, it needs to support a recommendation to acquire more yard space for container operations. The berth is not useful if there is no yard space. While it's difficult to predict future operations, it's easy to predict the future need for additional space. Prime areas to acquire include the State of Hawai'i Department of Agriculture (DOA) parcel contiguous with KCT and space on Sand Island.

C. Facilitated Group Discussion – Cargo Operations Issues and Ideas

1. Participant input on alternatives for meeting future capacity needs:
    a. Need to assess all the non-cargo related functions that are located near and around the cargo yards and relocate certain functions that are non-essential, especially non-maritime uses. Recommend consolidating maritime support services.
    b. In the long-term, DOT-H should acquire additional acreage. Ideally land acquisition should be located contiguous to the existing container terminals because it is expensive to split container operations. However, DOT-H should acquire more land for the harbor wherever it can be found contiguous with the existing harbor boundaries, e.g.:
        i. The DOA parcels containing the Plant Quarantine Building;
        ii. Adjacent federal lands;
        iii. Re-route Sand Island Access Road and consolidate land on Sand Island with Piers 51 to 53; and
        iv. OHA land at Pier 1.
    c. In the short-term, DOT-H should use maintenance repairs as an opportunity to strengthen yards to support stacked containers. Yard

asphalt should be incrementally replaced with hardened concrete surfaces. DOT-H should prioritize repairs that are needed to support the transition to stacked operations.
    i. In Long Beach, the port installed hardened concrete surfaces with striping for wheeled and grounded operations and as volumes increase, operators slowly transition to grounded operations since the striping was already done.
    ii. YB's piers and yard have an irregular configuration that limits efficient use of space. YB will need additional space to expand and improve its stacked operations.

2. Participant input on cargo operation forecast assumptions and trends:
    a. SMS spoke with representatives from the rental car industry to confirm that auto volumes will be decreasing and plateauing from 310,000 to 255,000 units annually. The decrease in auto volumes is due to the following factors:
        i. Limited carrying capacity of the roadway network on O'ahu;
        ii. Limited parking supply;
        iii. Transportation trends, e.g., increasing use of transit, ride share, and other alternative modes of transportation, and;
        iv. Consolidation of auto rental companies.
3. Lay Berthing
    a. Petroleum barges have the biggest need for lay berth space.
    b. All cargo berths are 100 percent active and not used for lay berth of any kind. Regular cargo operators will only lay berth if they have an emergency (e.g., engine failure, etc.), then they will relocate to Piers 2 or 10/11 for maintenance.
    c. The former-Tyco Pier and adjacent area of the Sand Island State Recreation Area is the only location in the harbor to create additional lay berth space.
    d. Every operator has different lay berth needs specific to their operations.
4. Preparation in anticipation of a storm event:
    a. The US Coast Guard and DOT-H have operational procedures in place for evacuating the harbor. The scheduling for evacuating the harbor ahead of storm events has not been an issue for cargo operators. Cargo operators and most vessel operators evacuated the harbor smoothly within several hours.
    b. There are other groups already planning and identifying actions to respond to various levels of emergencies.
    c. Reopening the second entrance/exit would require significant improvements, including a new bridge and additional channel dredging, especially if it were to accommodate a container ship. However, it may be feasible for smaller vessels in its current configuration, e.g., fishing vessels, tugs and barges, work boats, etc. A second entrance to the harbor, even if limited to smaller vessel traffic,

would provide a substantial benefit by relieving harbor congestion and improving resiliency in the event of a disaster.

d. Matson already has emergency generators to support the gantry cranes and container operations after a storm event. Pasha is researching options for back-up generators at KCT.
    i. The Federal Emergency Management Agency (FEMA) will provide a resupply of fuel to generators and renewable components to ensure that energy supplies stay online. However, FEMA does not have enough generators to supply the power needs of the harbor and recommends that the State and maritime operators make plans and prepare equipment and infrastructure for emergency power generation and distribution.

5. Other Topics
    a. DOT-H should collaborate with DOT Highways Division (DOT-HWY) to improve cargo access points to enter/exit the terminals in order to facilitate safe transportation of goods by container trucks, alleviate congestion, accommodate truck traffic within the gates, and address other transportation-related issues.
        i. YB is unable to accommodate all the traffic within the terminal, which creates congestion along Nimitz Highway and impacts operations. YB has looked into adding queuing lanes within the yard adjacent to Nimitz Highway, however doing so substantially reduces yard capacity.
        ii. For AML, the traffic light and lane configuration by Zippy's/City Mill, impacts their operations, especially when container trucks are headed west on Nimitz Highway.

D. Closing / Next Steps

1. PAC Representatives
    a. Glenn Hong / Young Brothers and Saltchuk was selected as the primary Cargo representative for the PAC. [Note: Glenn Hong has been invited to participate on the PAC as an at-large maritime operator. The primary Cargo Sub-TAC seat on the PAC will be filled by Randy Grune / Hawai'i Stevedores and Pasha].
    b. Chris Martin / Young Brothers was selected as the back-up Cargo representative for the PAC. [Note: Chris Martin has been replaced by Jimmy Zane / McCabe Hamilton & Renny Co. as the back-up representative to the PAC.]
2. The HHMP website will be updated with the agenda and meeting notes (www.honoluluharbormp.com/subtac).

Cargo Operations Sub-TAC

CONTACT LAST NAME	CONTACT FIRST NAME	ORGANIZATION	DIVISION/BRANCH/SECTION		EMAIL	SUB-TAC MTG #1 ATTENDANCE
Bannon	John	US Coast Guard	Sector Honolulu	Federal	John.E.Bannon@uscg.mil	
Chang	Susan	Department of Transportation	Highways - Vehicle Safety Office	State	susan.chang@hawaii.gov	EC
Dawson	Dustin	Hawaii Longshore Division, ILWU Local 142		Business / Orgs	ddawson@ilwu.org	
Enos	Ed	Hawaii Pilots Association (HPBS, Inc.)		Business / Orgs	capt.edenos@gmail.com	
Friel	Lek	Matson Terminals, Inc.		Business / Orgs	Lfriel@matson.com	
Fry	Michael	US Fish and Wildlife Services	Environmental Contaminants	Federal	michael_fy@fws.gov	
Furtado	Wesley	Hawaii Longshore Division, ILWU Local 142		Business / Orgs	wesley.furtado@ilwu.org	
Grune	Randy	Hawaii Stevedores, Inc.		Business / Orgs	rgrune@hawaiistevedores.com	
Guard	Matt	McCabe, Hamilton & Renny Co., Ltd.		Business / Orgs	mguard@mhrhawaii.com	
Haneberg	Scott	Department of Transportation	Highways - Vehicle Safety Office	State	scott.haneberg@hawaii.gov	
Heatherly	Scott	US Customs and Border Protection		Federal	scott.k.heatherly@cbp.dhs.gov	
Hong	Glenn	Saltchuk - Hawaii (Tote Maritime)		Business / Orgs	glenn@saltchuk.com	
Iida	Todd	Hawaii Stevedores, Inc.		Business / Orgs	tiida@hawaiistevedores.com	
Jose	Ferdinand	US Customs and Border Protection		Federal	Ferdinand.A.Jose@cbp.dhs.gov	
Knauss	John	National Cargo Bureau, Inc.		Business / Orgs	ncbhono@natcargo.org	
Lui-Kwan	Randal	Hawaiian Electric Company		Business / Orgs	randal.luikwan@hawaiianelectric.com	
MacDonald	Michael	Young Brothers/ Foss Maritime - Hawaii		Business / Orgs	mac@htbyb.com	
Martin	Chris	Young Brothers/ Foss Maritime - Hawaii		Business / Orgs	cmartin@htbyb.com	
Martin	Dane	Young Brothers/ Foss Maritime - Hawaii		Business / Orgs	dmartin@htbyb.com	
Mihlbauer, Jr.	John P.	All Ship and Cargo Surveys		Business / Orgs	contact@ascshawaii.com	

Annoor Bill

Cargo Operations Sub-TAC

CONTACT LAST NAME	CONTACT FIRST NAME	ORGANIZATION	DIVISION/BRANCH/SECTION		EMAIL	SUB-TAC MTG #1 ATTENDANCE
Miyasaki	Rob	Department of Transportation	Statewide Transportation Planning Office	State	robert.miyasaki@hawaii.gov	
Nikaido	Blayne	Department of Transportation	Statewide Transportation Planning Office	State	blayne.h.nikaido@hawaii.gov	
North	Gary	Hawaii Harbor Users Group (HHUG)		Business / Orgs	garyjnorth@gmail.com	
Pillone	Peter	Department of Transportation	Operations	State	peter.pillone@hawaii.gov	
Prather	Jeffrey	Department of Transportation	Operations	State	jeffrey.s.prather@hawaii.gov	
Roer	Mik	Kirby Offshore Marine		Business / Orgs	Mik.Roer@kirbycorp.com	
Sakakida	Gareth	Hawaii Transportation Association		Business / Orgs	gareth@htahawaii.org	
Satre	Jon	Aloha Marine Lines (Lynden Transport)		Business / Orgs	jsatre@Lynden.com	
Sikkink	David	Department of Business, Economic Development and Tourism	Hawaii Foreign-Trade Zone No. 9	State	david.j.sikkink@ftz9.org	
Sullivan	Carlos	The Delivery People		Business / Orgs	carlos@thedeliverypeople.com	
Tanaka	Lance	Par Hawaii, Inc.		Business / Orgs	lance.tanaka@parpacific.com	
Toiya	Hirokazu	City and County of Honolulu	Department of Emergency Management	CCH	htoiya@honolulu.gov	
Velez	Eric	US Coast Guard	Sector Honolulu	Federal	Eric.J.Velez@uscg.mil	
Wang	Ali	Inchcape Shipping Services		Business / Orgs	ali.wang@iss-shipping.com	
Whitworth	Tiffanie	Young Brothers/ Foss Maritime - Hawaii		Business / Orgs	twhitworth@htbyb.com; tiff@htbyb.com	
Yocum	Janet	US Department of Homeland Security	Federal Emergency Management Agency	Federal	janet.yocum@fema.dhs.gov	
Zane	Jimmy	McCabe, Hamilton & Renny Co., Ltd.		Business / Orgs	jzane@mhrhawaii.com	

Welcome

CARGO OPERATIONS

Technical Advisory Sub-Committee Meeting #3

November 8, 2018

Department of Transportation
Harbors Division

Homer Maxey Conference Center
521 Ala Moana Blvd.
Honolulu, HI 96813

2050 ANNUAL THROUGHPUT

AND

ESTIMATED CAPACITY NEEDS

CARGO SUB-TAC #3

Stantec Consulting Ltd.

Department of Transportation, Harbors Division
Honolulu Harbor Master Plan Update

Stantec's Role

- Evaluate existing port capacity
  - (containers, LCL, autos, break bulk, liquid bulk)
- Determine future capacity demand based on economic forecast by SMS
- Identify opportunities
- Develop alternatives to meet future capacity demand

Department of Transportation, Harbors Division
Honolulu Harbor Master Plan Update

4

Annual Throughput FY2016 and Estimated Annual Capacity FY 2018

Sector	Unit	Throughput FY2016	Estimated Annual Capacity FY 2018
Containers	TEU	1.212 Million	1.32 million (w/o KCT) 1.75 million (w/ KCT)
Vehicles (RO/RO)	Unit	213,000	311,000
Liquid Bulk	BBL	7,020,000	14,500,000
Break-Bulk/LCL	Ton	497,000	568,000

Department of Transportation, Harbors Division
Honolulu Harbor Master Plan Update

Estimated Annual Capacity 2018 and Estimated Annual Throughput 2050

Sector	Unit	Estimated Annual Capacity 2018	Estimated Annual Throughput 2050	Difference
Containers	TEU	1.75 Million (w/ KCT)	2.05 million	+300,000
Vehicles (RO/RO)	Unit	311,000	225,000	-86,000
Liquid Bulk	BBL	14,500,000	10,080,000	-4,420,000
Break-Bulk/LCL	Ton	568,000	368,000	-200,000

Department of Transportation, Harbors Division
Honolulu Harbor Master Plan Update

Containers Berth and Yard Needs 2050

Sector-Containers * Includes KCT		Capacity	Notes
Current* Overall Capacity	TEU/annum	1,750,000	Compared to 2050 Forecast of 2.05M
Current* Berth Capacity	TEU/annum	2,490,000	Includes 5 major berths with 14 Quay Cranes
Current* Yard Capacity	TEU/annum	1,930,000	Includes Piers 1, 29, 39, 40, 42, 43, 51, 52 & 53
Current* Yard	Acres	182.4	Includes Piers 1, 29, 39, 40, 42, 43, 51, 52 & 53
2050 Yard All Piers	Acres	193.5	Overall Harbor Requires 11 More Acres
Current Yard Sand Isl. & KCT	Acres	152	Includes Piers 42, 43, 51, 52 & 53
2050 Yard Sand Isl. & KCT Only	Acres	179	If AML & YB Remain Constant & No Pier 1: Requires 27 More Acres

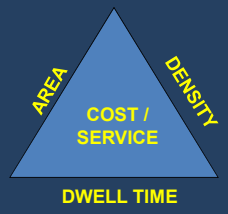
Department of Transportation, Harbors Division
Honolulu Harbor Master Plan Update

Container Yard Capacity
Area – Density – Dwell Time

The Three Elements of Yard Capacity

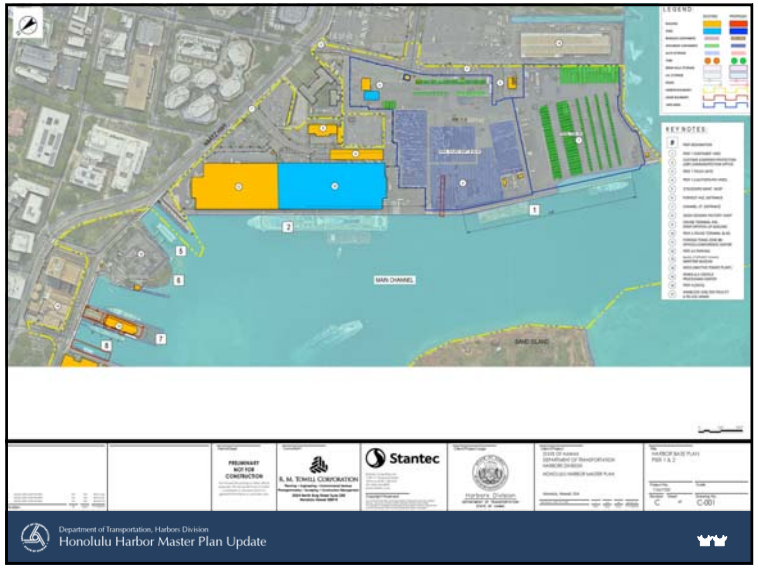
- Static Capacity = Area x Density
- Annual Capacity = Static Capacity x (365/Dwell Time)
- If Additional Acreage Not Available:
  - Decrease dwell times and/or
  - Increase Density (stack higher)

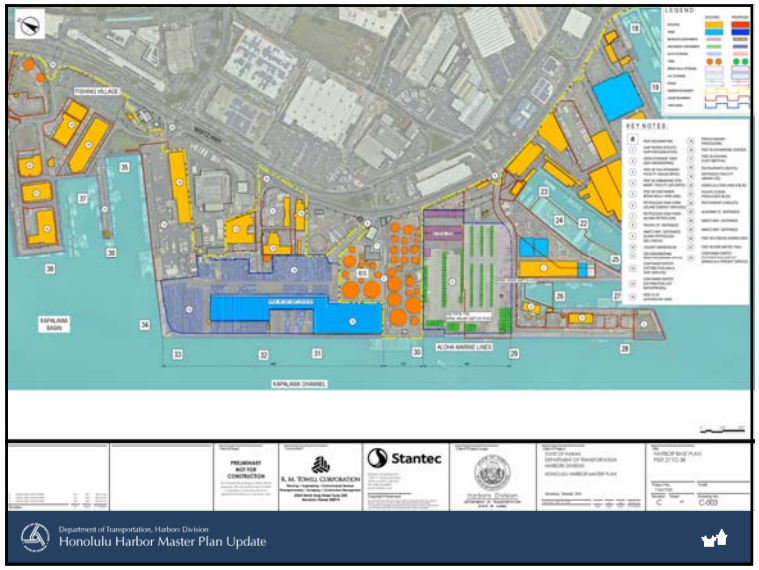
Interrelated & Inseparable

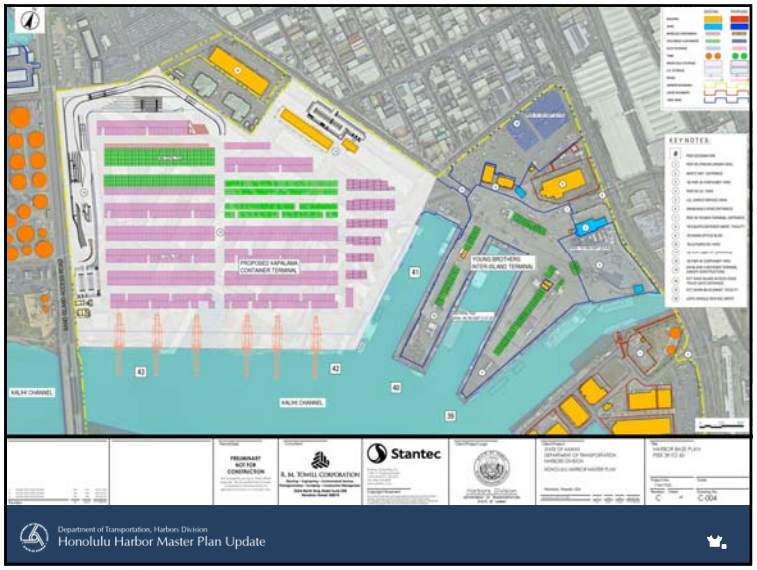


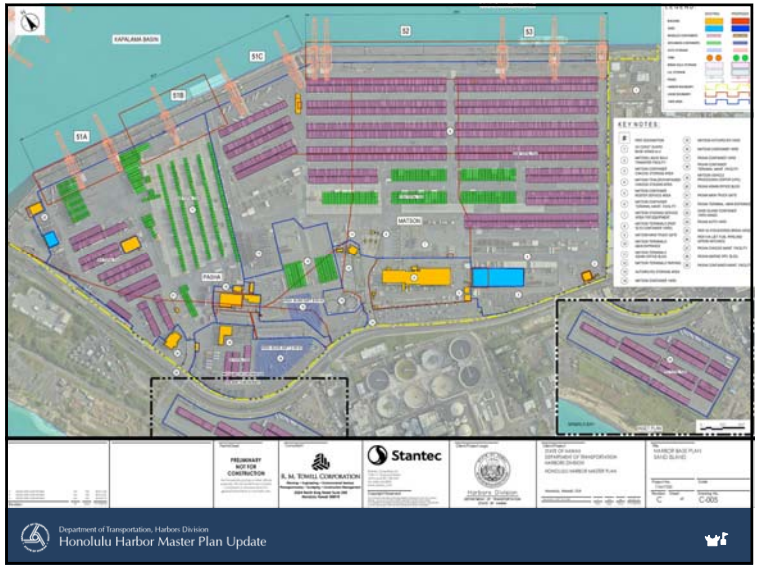
Autos (Ro-Ro)
Consolidated Berth and Yard 2050

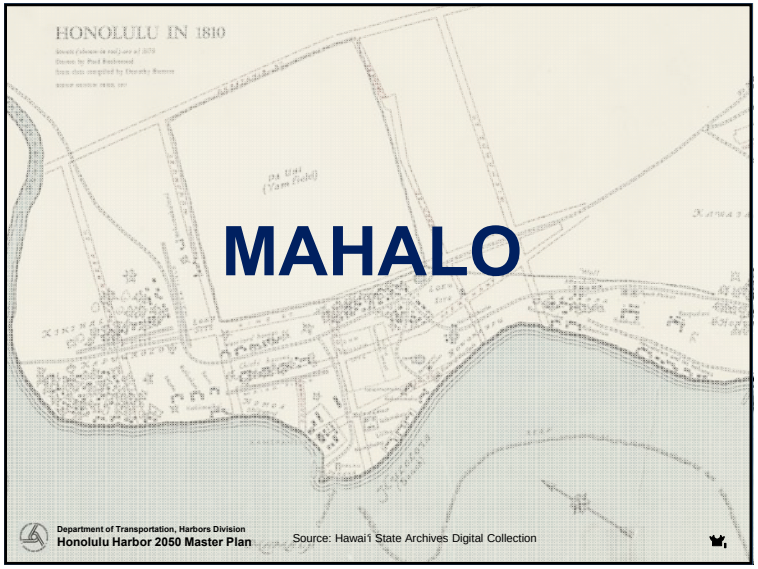
Sector- Autos	Unit	Qty	Notes
Current Overall Capacity	Units/annum	311,000	--
2050 Ro-Ro Forecast	Units/annum	225,000	--
Current Berth Capacity Throughput	Units/annum	650,000	Includes Piers 1, 20, 32 and YB
2050 Berth Capacity (2 Berths)	Units/annum	455,000	Two berths sufficient in 2050
Current Yard Capacity	Units/annum	312,000	Includes Piers 1, 20, 32, and YB
Current Net Yard Area	Acres	23.5	--
2050 Net Yard Area	Acres	17.0	Consolidated Yard Requires 17 acres




Department of Transportation, Harbors Division
Honolulu Harbor Master Plan Update


Department of Transportation, Harbors Division
Honolulu Harbor Master Plan Update


Department of Transportation, Harbors Division
Honolulu Harbor Master Plan Update


HONOLULU IN 1810
MAHALO
Department of Transportation, Harbors Division
Honolulu Harbor 2050 Master Plan
Source: Hawai'i State Archives Digital Collection

Cruise and Excursion Operations

Meeting Notes # 1, September 20, 2018
Meeting Notes # 2, November 16, 2018

MEETING NOTES

Project:	Honolulu Harbor 2050 Master Plan (HHMP)
Date/Time:	Thursday, September 20, 2018, 8:30 a.m. HST
Location:	Marine Education Center 10 Sand Island Parkway
Purpose:	Cruise & Excursion Sub-TAC, Meeting #1
Attendees:	See attached sign-in sheet

A. HHMP Overview

1. Sub-TAC Process
    a. The purpose of the Sub-TAC is to provide technical expertise and experienced observations about harbor operations, issues and needs. Input from the Sub-TAC will be used to develop preliminary alternatives for review by a Planning Advisory Committee (PAC). The PAC will be comprised of DOT-H Administration, representatives from each Sub-TAC, selected State agencies and others as determined by DOT-H. The preliminary alternatives will be refined based on PAC input prior to presenting the information to the public during public information meetings (PIM). Three iterations of review by the PAC and PIM will be undertaken before finalizing the HHMP.
    b. The first PAC and PIM will be held during the first quarter of 2019.
    c. Sub-TACs are by-invitation only. It's okay to substitute representatives from your organization, but please let the Project Team know.
    d. The Sub-TACs and PAC are advisory, not decision-making bodies. The Project Team, under advisement of the PAC, will provide recommendations to DOT-H Administration for acceptance. Decisions about master plan alternatives and improvements will ultimately be made by the DOT-H.
    e. Each Sub-TAC will select a primary and back-up representative to represent the Sub-TAC on the PAC. The selection process will occur at the end of meeting #2.
2. HHMP Mission Statement, Goals and Evaluation Criteria
    a. The HHMP is focused on supporting commercial maritime uses, guided by the DOT-H Mission Statement:
    To effectively improve and manage a commercial harbors system that facilitates safe and efficient operations of commercial cargo, passenger, fishing, and other commercial maritime-related services and support activities within the State of Hawaii and which serves to sustain and enhance the State's economic prosperity and quality of life.

   b. The Project Team defined basic goals for the HHMP to guide the planning work and ensure each Sub-TAC stays focused on DOT-H's mission. Goals include:
      i. Meet current and future maritime needs.
      ii. Optimize use of the Harbor's finite land resources.
      iii. Balance stakeholders' competing needs and interests.
      iv. Ensure resiliency in the face of natural and human-made disasters, and climate change.
      v. Consider emerging technologies and trends.
      vi. Consider public access and waterfront development opportunities in select locations.
3. Evaluation Criteria
   a. The criteria provide a basic framework to guide decision making during the development of alternatives. Additional or more focused criteria may be added over the course of the project. Stakeholders are invited to provide additional criteria for consideration. Evaluation criteria include:
      i. To what extent does it align with the HHMP Goals?
      ii. To what extent is it economically reasonable and feasible – can we afford it?
      iii. To what extent do the costs justify the benefit to the Harbor and the State – do we need it?
      iv. To what extent does it improve harbor function?
      v. To what extent does it benefit or adversely impact the environment?
4. Master Plan Phasing
   a. The planning period is to 2050. The purpose of the HHMP is to guide future decision-making for Honolulu Harbor's use and development to best serve the State of Hawaii. The HHMP will consider current requirements and challenges facing Honolulu Harbor, and also project future demands and formulate a strategic plan to guide facility and infrastructure improvements and harbor usage to meet those demands over the 30-year planning horizon.
   b. The HHMP will include recommendations for short- (10-year), medium- (20-year) and long-term (30-year) improvements.

   Projects do not have to wait for the HHMP to be completed. Short-term projects needed in the next 1 to 6 years can be recommended to DOT-H for immediate implementation through the Capital Improvements Program, Special Maintenance Projects Program, or other programs.

A. Facilitated Group Discussion – Issues and Ideas

1. There are currently inadequate berths and moorings for cruise ships that call in Honolulu Harbor
   a. Excursion operators attempted to have the standoffs approved for hurricane strength by the US Coast Guard (USCG), but USCG would not certify the existing standoffs due to inadequate capacity.

   b. Current bollards are old, undersized and insufficient for securing large cruise ships in the harbor. Bollards should be upgraded to 200 tons or an appropriate rating for the users' operations. In addition, DOT-H should consult the cruise and excursion industry to determine bollard ratings and spacing intervals to accommodate the increasing size and draft of new cruise ships.
   c. Fendering should be upgraded to accommodate the newer dimension of ships and to reduce the risk of damage to the piers and ships.
   d. The harbor does not currently have and should consider installing breasting bollards.
2. There is a risk of large cruise ships with large "sail area" (surface area of ship) grounding in Honolulu Harbor entrance channel due to wind drift.
   a. Single Entrance / Exit
      i. The harbor is dependent on one entrance/exit to support the lifeline to the State. Having only one harbor entrance is a significant vulnerability. If a ship or barge is grounded and blocks the entry/exit channel, it may take several weeks to remove the ship and reopen access to the harbor, e.g., it took 45 days for the Department of Defense to remove a barge that grounded on Wake Island.
      ii. Consider reopening a second entrance/exit to the harbor to reduce vulnerabilities to possible blockages at the only harbor entrance/exit.
   b. Navigation
      i. Opportunities to operate larger ships in the harbor are limited by the size of the entrance/exit channel and draft. Consider widening the entrance/exit channel and creating a deeper draft along the pier to improve navigational safety and accommodate larger vessels.
      ii. Navigation through the channel by Pier 1 is constrained when one of the large cruise vessels is being refueled by a fuel barge.
      iii. Large ships do not navigate straight through the entrance, they crab in at an angle due to the winds. Accurate wind readings would improve navigational safety through the entrance of the harbor. To obtain more accurate real-time information on environmental conditions, Hawaii Pilots Association (HPA) is collaborating with the University of Hawai'i (UH) and USCG to install and operate navigational aids that will provide accurate readings for wind direction and speed. HPA intends to purchase the equipment and UH and Pacific Islands Ocean Observing System (PacIOOS) will maintain the equipment. Pier 4 is a priority for installing navigational aids.
   c. Scheduling
      i. Consider developing an online system to schedule the entrance/exit of vessels and ships.

3. Need alternate terminal(s)-berth(s) to accommodate overflow / unscheduled calls by cruise ships (e.g., if sea conditions prevent calls at other islands).
    a. Offshore Anchorages
        i. There are 3 off-shore anchorage locations to accommodate overflow or unscheduled port calls by cruise ships. Anchorages offshore of neighbor islands could also be used as back-up.
        ii. Off-shore anchorages require the use of ferry boats to transport passengers between the ship and land. Ferrying is not desirable due to operational inefficiency and inconvenience to passengers.
    b. Emergency Repairs
        i. Honolulu Harbor provides a location for ships to dock for emergency repairs; however, pier space to accommodate unplanned vessels is limited. Consider developing more offshore moorings or using neighbor island piers for emergency repairs where ships can be accommodated.
    c. Shore Side Infrastructure
        i. Aside from Pier 2 and Piers 10/11, there are no other locations within the harbor that have the shore side infrastructure to accommodate another cruise terminal, e.g., narrow roads, limited access/entryways, etc.
    b. Other
        i. Recommend that cruise ships dock with their bow (i.e., the front) facing the harbor entrance to reduce turnaround time and congestion during departure.
4. Adapting to changing cruise market and its related needs
    a. Schedule
        i. The cruise industry (outside of Norwegian Cruise Line) is still considered a niche seasonal industry because it is not constant and only calls to Hawai‘i during short peak periods in the fall and winter. Afterwards, the cruise industry shifts its destination to Alaska or other locations.
        ii. The cruise industry is already planning and marketing for cruises 4 years in the future. Some of these cruises may only come to Hawai‘i for one night a few times a year. DOT-H should consult with the cruise industry to understand their forecasts for scheduling and passenger counts. This is critical to improve the harbor’s capacity to accommodate shifts in demand for ground transportation, rental cars, hotels, and interisland/mainland air travel. It is also important information to determine whether it’s worth the investment of public funds to develop more infrastructure to support the cruise industry (e.g., what are the projections, how often will a 5,000-passenger ship come, how committed are the cruise lines to these future plans?)
    b. Market

i. There is limited demand for round-trip cruises from California to Honolulu due to the number of days at sea relative to days in port.
ii. The cruise industry is shifting towards larger cruise ships that can accommodate approximately 4,000 to 5,000 passengers.
iii. Cruise lines are beginning to value establishing and maintaining relationships with city and state agencies to improve their understanding of local operations and determine port-specific best practices to improve the efficiency of their operations in Honolulu Harbor.

5. Inadequate / inefficient terminal service capabilities to accommodate ship turns and resupply (e.g., staging areas for baggage and supplies, ground transportation, sewer discharge, passenger support services)
    a. Sewage
        i. Consider developing shore side sewage pump out facilities for cruise vessels that stay for multiple nights. Currently, cruise ships that have longer duration port calls in the harbor [Note: generally, longer than 36 hours] use temporary hoses that connect and pump the contents of the ship's on-board sewage storage to the City and County of Honolulu's (CCH) sewage system.
        ii. Having dedicated, purpose-built facilities to connect the ship's wastewater system to the municipal wastewater collection system for sewage pump out is a high-priority for cruise ship operators.
    b. Electricity
        i. Provide more robust shore side power supply for cold ironing.
    c. Security
        i. Cruise and excursion operations have different security requirements. Cruise operations require secure facilities to screen passengers and their baggage. Excursion operations require secure public access. Due to the different security requirements, it is difficult to collocate cruise and excursion operations.
    d. Ground Transportation
        i. The current circulation configuration at the landside of Pier 2 does not work. There is enough space there, but it just needs to be reconfigured.
            a. Congestion occurs at Pier 2 when the number of taxis exceeds the designated taxi queue area. Improve the staging area and circulation for buses and taxis to reduce impacts to Foreign Trade Zone operations and traffic flow along Ala Moana Blvd. Consider identifying alternative queue locations for buses, taxis, rideshares, etc. to alleviate congestion by the Pier 2 cruise terminal, e.g. similar to the airport's cell phone / waiting lot.

b. Taxis have a different circulation system on the weekends and weekdays. On the weekdays, there is one-way circulation with taxis entering along Channel Street and exiting along Forrest Ave onto Ala Moana Blvd. On the weekends, there is two-way circulation with taxis entering and exiting along Channel Street onto Ala Moana Blvd. Consider developing alternative ways to improve circulation and expedite movement of passengers away from the cruise terminal.

ii. Consider interagency coordination to develop a statewide comprehensive plan for integrating transportation demands between the harbor, airport, and ground transportation.

iii. Access to the Pier 19 Ferry Terminal Building is limited due to the one-way direction of traffic along Nimitz Highway. This is a constraint that will need to be considered if Pier 19 is developed as a cruise ship terminal.

e. Staging Areas for Baggage and Supplies
   i. Operationally, the cruise line needs to identify strategies to more efficiently reconnect passengers with their luggage.
   ii. Ensure that there is adequate space for staging luggage and provisions at the cruise terminal.
   iii. Consider the spatial demands for passengers, luggage and provisions, and related ground transportation needs, for future increases in ship size (e.g., 4,000 to 5,000 passengers).

f. Disembarkation
   i. The disembarkation process for passengers exiting the ship and terminal takes approximately 2 hours. Delays in the process occur with filling out passenger forms, screening and processing passengers, finding baggage, determining transportation and destinations, etc. US Customs and Border Protection (CBP) has developed standard operating procedures and sent them to the cruise operators to try and expedite the disembarkation process. Other strategies to improve efficiency include installing a biometric system to process passengers and have cruise staff help passengers complete their security forms correctly.
   ii. The Disney cruise line conducted a test to see if the existing cruise terminal could accommodate their anticipated passenger count. They brought in their own staff to role-play passenger arrival scenarios in order to prepare operations accordingly. This is an example of how the cruise industry could anticipate and plan for passenger circulation and general operations.
   i.

g. Gangway
   i. The Pier 2 cruise terminal was developed without an elevated gangway. To address this, a private company funded the construction of an elevated gangway and charges cruise lines

for usage. The elevated gangway separates the disembarkation and provisioning processes. The upper level of the cruise terminal is used for the disembarkation of passengers and crew. The lower level of the cruise terminal is used for provisioning and baggage.

ii. The Pier 19 Ferry Terminal Building only has a ground level gangway.

h. Passenger Support Services
   i. There is not a consistent passenger welcome program to provide assistance with orientation, wayfinding, directions, or educational programming regarding Hawai'i's maritime history or local and native Hawaiian cultures. Norwegian Cruise Line (NCL) provides their own welcome program, but other cruise lines do not. The Hawai'i Tourism Authority (HTA) is evaluating ways to create a welcoming and wayfinding program for tourists as they disembark cruise ships. Consider coordinating with the City's TOD Wayfinding project.

i. Case Studies
   i. DOT-H should look at other ports on how to improve efficiency on a small footprint. Honolulu Harbor has enough space compared to other ports with small footprints, but improvements to circulation and traffic are needed to alleviate congestion. An example is the Vancouver ferry terminal, which is smaller than Honolulu Harbor, but they are able to handle 3 ships and approximately 18,000 passengers a day. Other cities with small cruise terminal footprints to reference are Seattle and Los Angeles.

6. Inadequate accommodations for anticipated increases in vessel size / passenger count and related needs (port infrastructure, supplies, hotels, ground and air transportation)
   a. Shore Side Infrastructure
      i. Next year the cruise industry may try bringing in 5,000-passenger ships for two-night stays. In addition to the passengers, the larger cruise ships will have approximately 3,000 staff members. One of the biggest challenges for these vessels is the shore side infrastructure to accommodate the passengers. It is a logistical and infrastructural challenge to manage that quantity of passengers and requires improvements to widen sidewalks, increase staging areas for containers and service trucks to restock provisions, develop taxi/bus queueing areas and circulation, provide bathrooms, install water fountains, etc. It also creates a security and logistical challenge for CBP to process and screen all of the passengers and baggage.
   b. Dredging

i. Regular maintenance dredging should occur more frequently on shorter intervals. Maintenance dredging is critical to accommodate the increasing size of ships. However, regular maintenance dredging of the channels may be limited due to a decreased dredging budget for US Army Corps of Engineers (USACE) operations. Due to limited funding, USACE may only be able to dredge portions of the Honolulu and Kalaeloa Barber's Point Harbors. DOT-H is responsible for dredging the areas near the piers and is making plans for more regular maintenance dredging.

7. Excursion Operations
    a. Bollard size is also a concern for excursion vessels. They are not ocean-going vessels; in severe weather, it is preferable to tie up excursion vessels instead of going out to sea.
    b. Excursion vessels have similar shoreside infrastructure needs as larger cruise ships, e.g., sewage pump outs, electrical power.
    c. Excursion operators place a priority on ensuring passengers have a pleasant experience from their hotel to the cruise and back, including transportation, parking, pedestrian experience, adjacent attractions, etc.
    d. Hawai'i Pacific University (HPU) informed the excursion operators that they do not want cruise and excursion passengers to be directed to the retail areas at Aloha Tower; those retail shops are targeted toward the student population.
8. Other general comments
    a. Balance the Interests of Residents and Tourists
        i. There are negative sentiments from residents towards the visitor industry because of existing impacts on communities. Consider the potential impact of 5,000 cruise passengers to adjacent communities and residents.
        ii. Since the cruise industry is seasonal, it's important to develop facilities that do not only cater to cruise passengers, but residents as well so that the facilities don't sit vacant for months out of the year.
    b. Interisland Ferry
        i. There is potential to revive the interisland ferry service; however, it would have to be heavily subsidized by up to approximately 90 percent. If the interisland ferry service is not revived, the Pier 19 Ferry Terminal Building should be repurposed for other operations.
    b. Other
        i. In planning and designing for the cruise and excursion industry facilities and operations, consider the plans from a human experience perspective. Many visitors have been saving and planning for a trip to Hawai'i their entire lives; it's a big deal for them to be here. We need to always keep that in mind and

develop the plans to ensure that operations run smoothly and that the operators can provide a good experience. If passengers have an otherwise great experience on a dinner cruise, but encounter poor conditions or inconvenience related to parking or ground transportation, it affects their entire impression of their visit and they will criticize the entire cruise operation on social media, which impacts operators' business.

ii. Consider developing an elevated bridge from the Pier 2 cruise terminal to Restaurant Row through a Public Private Partnership. This would provide another location for cruise passengers to visit and could improve pedestrian circulation generally.

iii. Improve the pedestrian connectivity from Waikīkī to Aloha Tower ("Lei of Green" concept) and integrate the pedestrian improvements with the cruise terminal facilities.

B. Closing / Next Steps

1. Next meeting: Cruise and Excursion Operations Meeting #2 on Friday, November 16, 2018, 8:30 am to 10:30 am at Homer Maxey Conference Center.
2. The HHMP website will be updated with the agenda and meeting notes (www.honoluluharbormp.com/subtac).

Cruise and Excursion Operations Sub-TAC

CONTACT LAST NAME	CONTACT FIRST NAME	ORGANIZATION	DIVISION/BRANCH/SECTION	CATEGORY	EMAIL	SUB-TAC MTG #1 ATTENDANCE
Bannon	John	US Coast Guard	Sector Honolulu	Federal	John.E.Bannon@uscg.mil	
Cole	Noelle	Department of Planning and Permitting	Development and Zone Change Branch	City and County of Honolulu	noelle.cole@honolulu.gov	
Davison	Richard	Star of Honolulu		Business / Orgs	Rdavison@StarofHonolulu.com	
Escajeda	Summer	Transmarine Navigation Corporation		Business / Orgs	honolulu@transmarine.com	
Funakoshi	Rodney	Department of Business, Economic Development and Tourism	Office of Planning	State	rodney.y.funakoshi@hawaii.gov	
Goshi	Laci	Department of Business, Economic Development and Tourism	Hawai'i Tourism Authority	State	laci@gohta.net	
Grune	Randy	Hawaii Stevedores, Inc.		Business / Orgs	rgrune@hawaiistevedores.com	
Guard	Matt	McCabe, Hamilton & Renny Co., Ltd.		Business / Orgs	mguard@mhrhawaii.com	
Hamasu	Tsurumi	Department of Business, Economic Development and Tourism	Hawaii Foreign-Trade Zone No. 9	State	tsurumi.hamasu@ftz9.org	
Heatherly	Scott	US Customs and Border Protection		Federal	scott.k.heatherly@cbp.dhs.gov	
Hernandez	Katherine	Department of Planning and Permitting	Community Planning Branch	City and County of Honolulu	k.hernandez@honolulu.gov	
Jose	Ferdinand	US Customs and Border Protection		Federal	ferdinand.a.jose@cbp.dhs.gov	
Ma	Sandy	Department of Business, Economic Development and Tourism	Office of Planning, Coastal Zone Management Program	State	sandy.s.ma@hawaii.gov	
MacDonald	Michael	Young Brothers/ Foss Maritime - Hawaii		Business / Orgs	mac@htbyb.com	
Martin	Dane	Young Brothers/ Foss Maritime - Hawaii		Business / Orgs	dmartin@htbyb.com	
McKee	Shannon	Access Cruise	Access Cruise	Business / Orgs	shannon@accesscruiseinc.com	
Mullins	Ulysses	US Coast Guard	Sector Honolulu	Federal	ulysses.s.mullins@uscg.mil	
Neupane	Deepak	Department of Business, Economic Development and Tourism	Hawai'i Community Development Authority	State	deepak.neupane@hawaii.gov	
Okamoto	Barbara	Hawai'i Visitors and Convention Bureau	O'ahu Visitors Bureau	Business / Orgs	bokamoto@hvcb.org	
Sikkink	David	Department of Business, Economic Development and Tourism	Hawaii Foreign-Trade Zone No. 9	State	david.j.sikkink@ftz9.org	
Toguchi	Charles	Cruise Lines International Association - North West & Canada (CLIA-NWC)		Business / Orgs	cttoguchi@aol.com	
Velez	Eric	US Coast Guard	Sector Honolulu	Federal	Eric.J.Velez@uscg.mil	

Cruise and Excursion Operations Sub-TAC

CONTACT LAST NAME	CONTACT FIRST NAME	ORGANIZATION	DIVISION/BRANCH/SECTION	CATEGORY	EMAIL	SUB-TAC MTG #1 ATTENDANCE
Weir	Sandi	Norwegian Cruise Line Holdings, Ltd. (NCL)	Destination Development & Governme	Business / Orgs	sweir@ncl.com	
Whitworth	Tiffanie	Young Brothers/ Foss Maritime - Hawaii		Business / Orgs	twhitworth@htbyb.com; tiff@htbyb.com	
Zane	Jimmy					
Sullivan	Sean	CBP			seanic.sullivan@cbp.dhs.gov	
AWANA	KAREN	DOT HAR	HAR		karen.l.awana@hawaii.gov	

Kalihi

Kalihi Kai

Kapalama Terminal

Iwilei

Ke'ehi Lagoon

Chinatown

Sand Island Terminal

Downtown Business District

Kaka'ako

Mamala Bay

Fort Armstrong Terminal

Narrow channel
large cruise/container ship alongside
water channel 2 Sand Island

Emphasize dredging pier 12 Harbor for bigger cruise ships

DEPARTMENT OF TRANSPORTATION
HARBORS DIVISION

HONOLULU HARBOR 2050 MASTER PLAN

DEPARTMENT OF TRANSPORTATION
HARBORS DIVISION

HONOLULU HARBOR 2050 MASTER PLAN

MEETING NOTES

Project:	Honolulu Harbor Master Plan (HHMP)
Date/Time:	Friday, November 16, 2018; 8:30 a.m. HST
Location:	Homer A. Maxey International Trade Resource Center 521 Ala Moana Blvd, Honolulu, HI 96813, USA
Purpose:	Cruise and Excursion Operations Sub-TAC, Meeting #2
Attendees:	See attached sign-in sheet

A. Recap of Meeting #1

1. Issues and opportunities discussion from Meeting #1:
    a. Inadequate berths and moorings for cruise ships and excursion vessels that call in Honolulu Harbor:
        i. Consider designing and installing properly sized and spaced bollards for cruise and excursion vessels based on operator input.
        ii. Consider upgrading cruise terminal piers (aprons, fenders) to accommodate new ship classes.
        iii. Consider obtaining USCG approval for use of standoff moorings for securing excursion vessels during hurricane events.
    b. Risk of large cruise ships with large sail area grounding in Honolulu Harbor entrance channel due to wind drift:
        i. Consider re-opening a second harbor entrance to allow an alternative ship access.
        ii. Consider installing monitors to provide real time information on wind, currents, wave and tide conditions in the harbor entrance channel.
        iii. Consider increasing frequency of pier-side maintenance dredging to avoid berthing constraints.
    c. Cruise ships and other large vessels create congestion in the harbor entrance channel:
        i. Consider improving DOT-H's online system for scheduling and managing vessel movements in and out of the channel.
        ii. Consider requiring cruise vessels to berth with the bow toward the channel to reduce exit time during departure.
    d. Inadequate / inefficient terminal service capabilities to accommodate ship turns and resupply (e.g., staging areas for baggage and supplies, ground transportation, sewer discharge, passenger support services):
        i. Consult with cruise operators regarding facility needs for larger class vessels.
        ii. Consider providing shore-side power for "cold ironing" cruise vessels.

iii. Consider providing dedicated connection for discharging gray water to municipal wastewater collection system.
iv. Ensure that gangway facilities are adequate to efficiently move passengers off larger class vessels.
v. Consider including bathrooms, drinking fountains, taxi/bus/ride share queueing areas in pedestrian facilities connected to cruise terminals.
vi. Consider constructing a pedestrian bridge over Ala Moana Boulevard between the cruise terminal and Restaurant Row.
vii. Recommend that the *Hawaii Statewide Transportation Plan* include addressing the demands on air, ground and water transportation to support the cruise industry.

e. Additional issues:
   i. Inadequately sized and spaced bollards for cruise and excursion vessels.
   ii. Inadequate pier infrastructure for anticipated larger sized vessels.
   iii. Lack of secure berths for excursion vessels during storm and hurricane events.
   iv. Pier side sedimentation can restrict cruise vessel operations.
   v. Consider landside improvements to improve parking/circulation and provide amenities (e.g. pedestrian pathways, benches, bathrooms, etc.) to enhance the passenger / visitor experience.

B. Facilitated Group Discussion – Cruise and Excursion Operations Issues and Ideas

1. One of the participants had a question regarding item B.2.c.i. in the Sub-TAC #1 meeting notes: "Consider developing an online system to schedule the entrance/exit of vessels and ships." The participant noted that there already is an existing scheduling system, PortCall, and asked for clarification regarding the meeting note. DOT-H acknowledged that PortCall exists and asked participants on how PortCall could be improved.
   a. The PortCall system exists and works well, but could be improved. Scheduling for cruise lines will never be perfect because it is so long range with cruise operators scheduling multiple port calls approximately 24 months in advance. There are very tight berthing windows and scheduled calls can be upset by weather, mechanical issues, other vessels operating in the harbor and other variables.
      i. Sometimes agents overbook or double book to block out competitors.
      ii. Poor weather conditions (wind, swells, currents) impact scheduling. If a cruise line is scheduled for a certain date/time/location, but there are poor environmental conditions that make operations unsafe, agents will try to do a last minute booking at another port.

b. Cargo ships have priority for bookings; however, sometimes cruise lines will ask Matson or other operators to delay their ships so the cruise ship can stay on schedule. Cruise lines are almost always on time, similar to airplanes; however, sometimes they need to call earlier for emergencies.
c. The cruise industry develops strategic plans that are 10 – 15 years in advance, but they do not disseminate the information because it is a highly competitive industry. The Project Team should encourage the cruise industry to participate and share information re: long-term planning that may inform or impact the HHMP. The Project Team could give the assurance that their proprietary information would be aggregated before being integrated into the HHMP.

2. Future industry trends and needs:
    a. Cruise ships are trending towards increased size: from 2,500 to 5,000 passengers:
        i. There is a tendency for the cruise industry to build bigger ships because it reduces their costs. They are being built longer, wider and higher, but are not getting deeper, with drafts remaining approximately 32 ft.
            a. Royal Caribbean's Ovation of the Seas will call in Honolulu Harbor in May 2019. This will be the largest cruise ship ever to call in Honolulu.
                i. 1,142 foot (ft) length, 135-ft waterline beam and 160 ft maximum beam, 28-ft draft, 168,666 gross tons, 4,905 passengers (max).
                ii. Hawaii Pilots Association (HPA) will conduct virtual simulations to practice safe navigation for the large 5,000-passenger cruise ships in preparation for the Ovation of the Seas' arrival.
            b. As the Alaska market is trending toward 5,000 passenger cruise ships, cruise lines may call less and less to Hawai'i, especially if Hawaii's ports cannot accommodate the larger cruise ships.
            c. The Alaska cruise season is May to September, after which the ships are repositioned for warmer climate voyages, including calls to Hawai'i. However, the large cruise ships don't have to call in Hawai'i. Honolulu Harbor functions as a fueling stop for transpacific cruise ships, but they have other options.
        ii. The State needs to consider the infrastructural and service demands generated by the large cruise ships debarking 5,000 passengers and 3,000 crew, and then embarking the same quantity of people within a short period of time.
            a. Cruise ships will need landside area to restock their food and other provisions.

b. Ground transportation services and roadway infrastructure needs to be adequate to avoid congestion near the port, and to ensure that transportation services that the rest of the population relies on aren't absorbed by the cruise operation.
c. Air transportation and hotel accommodations need to be coordinated to absorb a "turn" of 8,000 people (passengers and crew).
d. The priority function of Honolulu Harbor to handle cargo cannot be compromised.

iii. For the cruise industry to substantially grow (aside from a 2nd homeported ship) and accommodate 5,000 passenger cruise ships requires the neighbor island's to redevelop their harbor infrastructure/capacity for the larger ships. Otherwise, 5,000 passenger ships will only likely come to Honolulu Harbor as one-off cruises.
iv. If the State decides to accommodate 5,000 passenger cruise ships on a regular basis in Honolulu Harbor (and therefore statewide), DOT-H should develop contingency plans to manage scenarios where poor weather conditions prohibit a cruise ship from entering or exiting the port, e.g., alternative ports at Neighbor Islands and/or anchorages. Anchorage ports such as Kona are susceptible to being blown out by winds and swell which make it unsafe for tendering operations, so the ships move to another port.
v. Consider the corollary to cargo vessels: what level of investment is the State putting into Honolulu Harbor and the Neighbor Islands to accommodate larger TEU cargo ships? The just-in-time hub-and-spoke model for cargo delivery (with a continuous conveyor belt of 2-3 ships in transit to Hawai'i and 2-3 ships returning to the west coast) developed in response to land costs/constraints that limit warehousing, operator costs and diminished returns in making multiple port calls, and the high costs to the State to develop and operate container terminals at Neighbor Island ports. For cargo operations, the investment doesn't make economic sense at present. Similarly, it may not make economic sense to develop Honolulu Harbor and have Neighbor Islands expand their ports to accommodate a 5,000-passenger ship.
    a. Currently, 2 to 3 cruise ships from the North American West Coast market call in Honolulu Harbor. A typical cruise from the West Coast is 15 days, including a 4.5-day sea crossing, and 5 or 6 days in Hawai'i with harbor calls at Honolulu, Hilo, Nāwiliwili, and an anchorage call at Kona or Lahaina. Honolulu Harbor might see 1 or 2 round-the-world cruises call per year and stay for 1 day.

Consider the investment to accommodate larger cruise ships in relation to the anticipated number of calls and their economic benefit to Hawaii.

vi. Community Impacts
    a. Consider the carrying capacity of the port communities and their ability and willingness to handle the influx of cruise passengers. For example, there have been occasions when two medium-sized cruise ships called at the same time at Hilo and Lahaina. The number of passengers overwhelmed the towns' amenities (restaurants, sights, services, public restrooms and other conveniences) and ground transportation.
    b. Neighbor Island ports were built almost 100 years ago during the plantation days and cannot support the larger cruise ships. DOT-H should consider the physical carrying capacity and community impacts on Neighbor Islands when planning for the cruise industry.
    c. Downtown Honolulu was not designed to function as it now does as a residential area, which creates potential conflicts with unloading 8,000 people into the area.
    d. Be careful about creating economic dependencies in the community. For example, Volcano on the Big Island shut down economically when the cruise industry stopped calling during the Kīlauea eruption.
    e. The Kauaʻi Visitors Bureau requested that HTA stop adding flights to the island because they are at capacity and can't absorb more visitors.

b. Scheduling
    i. The cruise industry prefers to offer multi-island tours since it takes approximately ten days to travel to/from the West Coast. However, the Neighbor Islands' ports are not capable of accommodating the larger ships, which will limit the cruise industry's ability to do multi-island tours.
    ii. Transpacific world tour cruises occasionally call to Honolulu and/or Hilo harbors.

c. Additional homeported ships in Honolulu:
    i. Hawaiʻi is a niche market. It's an ideal location to do interisland cruises and cruise "within" rather than cruising "to" because there are short traveling distances that provide passengers with a diverse array activities and locations. In addition, the trend is toward more frequent, shorter vacations and the interisland cruises can concentrate a complete Hawaiʻi experience at a comfortable pace within a shorter duration of a week to 10 days.
    ii. Hawaiʻi doesn't need to accommodate larger cruise ships to remain a viable cruise market. Hawaii will continue to create market demand for smaller/mid-sized cruise ships that are able

to call at the neighbor islands and not overwhelm the port communities. However, there is a carrying capacity constraint and impacts on the Neighbor Islands need to be considered, whether from a larger ship or a smaller, second home-ported ship.
    a. Neighbor island ports don't have enough room to accommodate two ships at one time.
iii. There are opportunities for Norwegian Cruise Lines (NCL) or another company to operate a second or even third home-ported cruise ship that operates interisland cruises, especially since NCL has been successful at operating interisland tours for 20 years.
iv. NCL's Pride of America is home-ported in Honolulu Harbor and makes fifty-two weekly voyages throughout the islands each year.
    a. The Pride of America is 921 lf in length, 106-lf beam, 26-ft draft, 80,439 gross tons, 2,186 passengers.
v. Approximately 10 – 12 years ago, NCL announced it was going to build 4 new ships, but in the process of planning and announcing to grow, other industries left because there was not adequate space in the harbor. Ultimately, NCL did not pursue building the additional cruise ships.

d. Smaller "expedition" cruise ships
    i. There are smaller expedition cruises that visit Maui, Hawaii Island, Lāna'i, and Moloka'i; it's a small, high-end market. Hawai'i may see an increase in "expedition" cruises, but this is a trend that won't stress the system due to the smaller scale and lower frequency of these cruises due to the high price point.
        a. Typically 140-lf vessels with 30 to 50 passengers.
    ii. Typically, the expedition cruises don't call to Honolulu because the passenger demographic doesn't want to go on vacation to a commercial industrial city center; they prefer visiting culturally immersive or natural environments. They generally sail from east to west direction (Hilo to O'ahu) because the seas are smoother in that direction.

3. Existing Cruise Facilities
    a. Pier 2
        i. The Pier 2 Cruise Terminal is a world-class port facility in terms of functionality and ambience. It has ample room for embark/disembark operations (for around 2,000 passengers), it's designed to keep incoming/outgoing passengers separate, accommodates multiple transportation modes and shade cover.
    b. Piers 10/11
        i. The Piers 10/11 Cruise Terminal is too small, congested, and inadequate to accommodate modern cruise ships. The berth can accommodate ships up to 965 ft long; however, the terminal

facilities are cramped and concentrated ground transportation area and poor passenger orientation makes for unsafe conditions.

ii. To better accommodate port calls, DOT-H should consider:
    a. Redeveloping the Pier 10/11 building as a modern facility with improved circulation.
    b. Convert the road from two-way to one-way in and one-way out to improve circulation and safety.

iii. The Piers 10/11 Cruise Terminal is an attractive location with connection to downtown for disembarking passengers.

iv. Piers 9/10/11 occasionally accommodate mega-yachts.

c. Piers 19/20
    i. Piers 19/20 have potential to accommodate cruise ships, but the connection to Nimitz Highway is problematic due to the inability for tour buses/vehicles to make a left turn.

4. Excursion Operations
    a. Star of Honolulu would like to be located at Pier 7, but they have already invested a lot of money to install a special fendering system at Pier 8. HPU would also prefer them to relocate from Pier 8.
        i. The Pier 8 staging area for parking and circulation needs to be improved. Currently, buses and other transportation for the 900 – 1,500 passengers that sail daily on the Star of Honolulu spill over to the Piers 5/6 parking area.
        ii. The biggest need for Star of Honolulu operations is space for ground transportation.
    b. Atlantis operates tour submarines off of the Hilton Hawaiian Village, but berths and maintains their fleet at Pier 26. They also operate small nightly cruises at Pier 6. Atlantis advocated for years to operate from the Ala Wai Harbor, but was unsuccessful. They have now installed specialized electric charging stations at Pier 26 and will likely remain there until they need to renew their lease or modify their electrical charging system.
    c. Ali‘i Kai operated a dinner cruise at Pier 5; however, their operations were suspended due to additional requirements requested by the US Coast Guard (USCG).
    d. Day excursion vessels and cargo operations don’t mix. Day excursions have fewer security requirements.
    e. Day excursion vessels ideally should be relocated at Kewalo Basin, which is closer to their market in Waikīkī. However, during Kona weather conditions, Kewalo Basin is a dangerous channel to enter/exit. The Kewalo Channel should be improved by widening the channel and installing better navigation lights.
        i. Kewalo Basin is owned by the Office of Hawaiian Affairs (OHA). Hawai‘i Community Development Authority (HCDA) holds the contract, and Howard Hughes privately controls the harbor.

5. Infrastructure
    a. Sewage
        i. Consider coordinating with the City and County of Honolulu (CCH) to develop pier-side manhole connections to the CCH sewer system. Obtaining permits and approvals from the CCH, Department of Environmental Services to temporarily connect and discharge into the system would be the responsibility of the vessel operators on an as-needed basis.
            a. Cruise ships have about a 30-36 hour wastewater stowage capacity, after which it needs to discharge.
            b. Connection to the CCH sanitary sewer system would be advantageous for other sectors besides the cruise industry.
        ii. Every second day, the Star of Honolulu travels 13 miles offshore to dump their sewage since there are no CCH sewer connections near Pier 8.
    b. Shore side power
        i. Consider developing shore side power connections to reduce air emissions from running onboard generators.
    c. Gangways
        i. Need to improve the gangway to support the embark/disembark flow of passengers. Disembark all happens at the same time. Embark is staggered. [Note: The existing Pier 2 gangway, which is oriented perpendicular to the ship and pier within a relatively narrow apron, is affected by tidal fluctuations that increase the gangway slope, frequently in excess of Americans with Disability Act (ADA) accessibility standards, and therefore render it unusable. McCabe Hamilton & Renny Co, Ltd. is currently designing a new gangway based on a switch-back design oriented parallel to the ship and pier, which will allow for longer ramp runs and vertical adjustability to adapt to tidal fluctuations.]
    d. Anchorages
        i. When cruise ships were smaller, they would use anchorages off of Kailua-Kona and Lahaina when Honolulu Harbor was at capacity. As cruise ships increased in size, they overwhelmed the Neighbor Island's infrastructure, amenities and services.
    e. Security
        i. Excursion and cruise operations do not mix. Excursion vessels do not require the same level of security that is required for the cruise ships by the US Coast Guard. Cruise ships need to have an approved facility that meets security requirements.
6. Prioritizing funding
    a. The State needs to determine what level of investment it will make to improve waterside and landside infrastructure to accommodate the cruise industry, particularly to accommodate the trends toward larger

ships and/or greater frequency of port calls. DOT-H should communicate with the cruise industry to understand their projections for scheduling, frequency/duration of calls, destinations, passenger loads, and cruise ship specifications. This will help determine the level of investment needed to implement infrastructural improvements and decide whether to commit finances.

i. Investment decisions need to be made with a state-wide perspective. Neighbor Island ports will have to be improved to support the State's plans and policies for the cruise industry. If Honolulu Harbor is improved to accommodate larger cruise ships, similar improvements will need to be considered in the Neighbor Island ports where those larger ships will also call: at a minimum at Hilo, Nāwiliwili, Lahaina and Kona.
ii. Will there be a sustained market for these larger cruise ships? State shouldn't make improvements for these larger cruise ships if its only needed sporadically.

b. Honolulu Harbor is a commercial hub that supports the entire state with vital goods and services. Investments should focus on supporting the State's lifeline. If the cruise and tourism industry want more investment in the harbor, they will need to lobby on behalf of the cruise and passenger industry. DOT-H should also consider whether they want to invest in infrastructure for a transient tourist population that may create seasonal "ghost towns" during the off-peak cruise season.

7. Other
   a. Cruise lines prefer not to call to Hawai‘i because the strict State laws prohibit shipboard gambling. Shipboard gambling generates approximately 30 percent of the cruise lines' income, so it is less profitable for the cruise lines to offer tours to Hawai‘i. While arriving, visiting, and departing Hawai‘i, cruise lines must close down the entire casino floor. In addition, during that period, employees that work in the casino are idle. The cruise lines need to make up the lost revenue through shore excursions.
   b. When NCL couldn't go to Hilo due to the volcanic activity, the socioeconomic impact was felt by the community. The cruise industry is an important part of the local economy. The State should consider using cruise industry investments in a targeted fashion to boost communities that want and would economically benefit from cruise-related employment and business.
   c. Passengers that book their flight or shore excursions through the cruise line are guaranteed that the ship will wait if they arrive late due to delays from traffic, airline arrival, tour bus scheduling. To compensate for the delay, the cruise ship has to burn more fuel to stay on schedule. If a passenger is missing, the captain will directly call the tour bus operator, rental car company or other contact to find out where the passenger is. The cruise ship will not wait for passengers that book their flight or shore excursions independently.

d. In the long-term, DOT-H needs to protect all working pier space for essential maritime functions of the harbor.
e. The Hawaii's harbors are a system. The HHMP needs to look at the interconnectedness of the ports statewide.

C. Closing / Next Steps

1. Sandi Weir or Charlie Toguchi / NCL was selected as the primary PAC representative. [Note: Sandi Weir has agreed to serve as the primary PAC representative.] Laci Goshi / Hawai'i Tourism Authority was selected as the back-up representative.
2. The HHMP website will be updated with the agenda and meeting notes (www.honoluluharbormp.com/subtac).

Cruise and Excursion Operations Sub-TAC

CONTACT LAST NAME	CONTACT FIRST NAME	ORGANIZATION	DIVISION/BRANCH/SECTION	CATEGORY	EMAIL	SUB-TAC MTG #1 ATTENDANCE
Awana	Karen	Department of Transportation	Harbors Division	State	karen.l.awana@hawaii.gov	
Bannon	John	US Coast Guard	Sector Honolulu	Federal	John.E.Bannon@uscg.mil	
Davison	Richard	Star of Honolulu		Business / Orgs	Rdavison@StarofHonolulu.com	
Escajeda	Summer	Transmarine Navigation Corporation		Business / Orgs	honolulu@transmarine.com	
Funakoshi	Rodney	Department of Business, Economic Development and Tourism	Office of Planning	State	rodney.y.funakoshi@hawaii.gov	
Goshi	Laci	Department of Business, Economic Development and Tourism	Hawai'i Tourism Authority	State	laci@gohta.net	
Grune	Randy	Hawaii Stevedores, Inc.		Business / Orgs	rgrune@hawaiistevedores.com	
Guard	Matt	McCabe, Hamilton & Renny Co., Ltd.		Business / Orgs	mguard@mhrhawaii.com	
Hamasu	Tsurumi	Department of Business, Economic Development and Tourism	Hawaii Foreign-Trade Zone No. 9	State	tsurumi.hamasu@ftz9.org	
Heatherly	Scott	US Customs and Border Protection		Federal	scott.k.heatherly@cbp.dhs.gov	
Hernandez	Katherine	Department of Planning and Permitting	Community Planning Branch	City and County of Honolulu	k.hernandez@honolulu.gov	
Jose	Ferdinand	US Customs and Border Protection		Federal	ferdinand.a.jose@cbp.dhs.gov	
Ma	Sandy	Department of Business, Economic Development and Tourism	Office of Planning, Coastal Zone Management Program	State	sandy.s.ma@hawaii.gov	
MacDonald	Michael	Young Brothers/ Foss Maritime - Hawaii		Business / Orgs	mac@htbyb.com	
Martin	Dane	Young Brothers/ Foss Maritime - Hawaii		Business / Orgs	dmartin@htbyb.com	
McKee	Shannon	Access Cruise	Access Cruise	Business / Orgs	shannon@accesscruiseinc.com	
Miyasaki	Rob	Department of Transportation	Statewide Transportation Planning Office	State	robert.miyasaki@hawaii.gov	
Mullins	Ulysses	US Coast Guard	Sector Honolulu	Federal	ulysses.s.mullins@uscg.mil	
Neupane	Deepak	Department of Business, Economic Development and Tourism	Hawai'i Community Development Authority	State	deepak.neupane@hawaii.gov	
Okamoto	Barbara	Hawai'i Visitors and Convention Bureau	O'ahu Visitors Bureau	Business / Orgs	bokamoto@hvcb.org	
Sikkink	David	Department of Business, Economic Development and Tourism	Hawaii Foreign-Trade Zone No. 9	State	david.j.sikkink@ftz9.org	
Sullivan	Sean	US Customs and Border Protection		Federal	sean.i.sullivan@cbp.dhs.gov	

Cruise and Excursion Operations Sub-TAC

CONTACT LAST NAME	CONTACT FIRST NAME	ORGANIZATION	DIVISION/BRANCH/SECTION	CATEGORY	EMAIL	SUB-TAC MTG #1 ATTENDANCE
Toguchi	Charles	Cruise Lines International Association - North West & Canada (CLIA-NWC)		Business / Orgs	cttoguchi@aol.com	CTT
Velez	Eric	US Coast Guard	Sector Honolulu	Federal	Eric.J.Velez@uscg.mil	
Weir	Sandi	Norwegian Cruise Line Holdings, Ltd. (NCL)	Destination Development & Governme	Business / Orgs	sweir@ncl.com	
Whitworth	Tiffanie	Young Brothers/ Foss Maritime - Hawaii		Business / Orgs	twhitworth@htbyb.com; tiff@htbyb.com	
Zane	Jimmy	McCabe, Hamilton & Renny Co., Ltd.		Business / Orgs	jzane@mhrhawaii.com	
ENOS	ED	HAWAII PILOTS			capt.edenos@gmail.com	
Wheeler	Noelani	OVB/HVCB				

Vessel Operations and Maritime Support

Meeting Notes # 1, September 26, 2018
Meeting Notes # 2, October 18, 2018

MEETING NOTES

Project:	Honolulu Harbor Master Plan (HHMP)
Date/Time:	Wednesday, September 26, 2018; 8:30 a.m. HST
Location:	Marine Education & Training Center (METC) 10 Sand Island Parkway
Purpose:	Vessel Operations & Maritime Support Sub-TAC, Meeting #1
Attendees:	See attached sign-in sheet

A. HHMP Overview

1. Sub-TAC Process
    a. The purpose of the Sub-TAC is to provide technical expertise and experienced observations about harbor operations, issues and needs. Input from the Sub-TAC will be used to develop preliminary alternatives for review by a Planning Advisory Committee (PAC). The PAC will be comprised of DOT-H Administration, representatives from each Sub-TAC, selected State agencies and others as determined by DOT-H. The preliminary alternatives will be refined based on PAC input prior to presenting the information to the public during public information meetings (PIM). Three iterations of review by the PAC and PIM will be undertaken before finalizing the HHMP.
    b. The first PAC and PIM will be held during the first quarter of 2019.
    c. Sub-TACs are by-invitation only. It's okay to substitute representatives from your organization, but please let the Project Team know.
    d. The Sub-TACs and PAC are advisory, not decision-making bodies. The Project Team, under advisement of the PAC, will provide recommendations to DOT-H Administration for acceptance. Decisions about master plan alternatives and improvements will ultimately be made by the DOT-H.
    e. Each Sub-TAC will select a primary and back-up representative to represent the Sub-TAC on the PAC. The selection process will occur at the end of meeting #2.
2. HHMP Mission Statement, Goals and Evaluation Criteria
    a. The HHMP is focused on supporting commercial maritime uses, guided by the DOT-H Mission Statement:

    To effectively improve and manage a commercial harbors system that facilitates safe and efficient operations of commercial cargo, passenger, fishing, and other commercial maritime-related services and support activities within the State of Hawaii and which serves to sustain and enhance the State's economic prosperity and quality of life.

b. The Project Team defined basic goals for the HHMP to guide the planning work and ensure each Sub-TAC stays focused on DOT-H's mission. Goals include:
    i. Meet current and future maritime needs.
    ii. Optimize use of the Harbor's finite land resources.
    iii. Balance stakeholders' competing needs and interests.
    iv. Ensure resiliency in the face of natural and human-made disasters, and climate change.
    v. Consider emerging technologies and trends.
    vi. Consider public access and waterfront development opportunities in select locations.

3. Evaluation Criteria
    a. The criteria provide a basic framework to guide decision making during the development of alternatives. Additional or more focused criteria may be added over the course of the project. Stakeholders are invited to provide additional criteria for consideration. Evaluation criteria include:
        i. To what extent does it align with the HHMP Goals?
        ii. To what extent is it economically reasonable and feasible – can we afford it?
        iii. To what extent do the costs justify the benefit to the Harbor and the State – do we need it?
        iv. To what extent does it improve harbor function?
        v. To what extent does it benefit or adversely impact the environment?
4. Master Plan Phasing
    a. The planning period is to 2050. The purpose of the HHMP is to guide future decision-making for Honolulu Harbor's use and development to best serve the State of Hawaii. The HHMP will consider current requirements and challenges facing Honolulu Harbor, and also project future demands and formulate a strategic plan to guide facility and infrastructure improvements and harbor usage to meet those demands over the 30-year planning horizon.
    b. The HHMP will include recommendations for short- (10-year), medium- (20-year) and long-term (30-year) improvements.
    c. Projects do not have to wait for the HHMP to be completed. Short-term projects needed in the next 1 to 6 years can be recommended to DOT-H for immediate implementation through the Capital Improvements Program, Special Maintenance Projects Program, or other programs.

B. Facilitated Group Discussion – Issues and Ideas (Vessel Operations)

1. Need for additional/enhanced navigational aids
    a. Monitoring Buoys and Equipment
        i. Harbor infrastructure has not been updated to accommodate the increasing size of vessels. Honolulu Harbor's narrow channels (i.e., main entrance and inner) and limited maneuvering area

presents operational and navigational challenges for large vessels. Larger vessels have more surface area above the water line, called "free board," that acts as a sail in windy conditions, making navigation in the harbor more challenging. Trained pilots and updated tugboat technology have helped operators accommodate these challenges; however, it would be beneficial to install wind monitors to gauge atmospheric conditions and deploy buoys to understand water currents that capture accurate real-time environmental information to assess and understand how existing environmental conditions may affect navigation. The data collected could be used to develop minimum and maximum parameters for environmental conditions to ensure safe navigation. The safety parameters should be calculated and determined in coordination with operators.

1. Wind monitors are recommended at Pier 1 near the harbor entrance channel, and at the top of the Matson building to provide real-time data to aid navigation.
2. The installation and maintenance of buoys and navigational aids is generally the responsibility of the U.S. Coast Guard (USCG). Consider also Public Private Partnership between a public agency (e.g., National Oceanic and Atmospheric Administration [NOAA], DOT-H, or other agency) and private entity to provide gauging/monitoring devices and related data management and use. Another option for such equipment is to distribute costs among the harbor users.

ii. DOT-H should research potential cost savings by purchasing a large quantity of monitoring buoys and equipment to install at all the State commercial harbors. This would benefit and improve operations and navigation between all the State harbors since unfavorable environmental conditions at one harbor can delay or affect operations at another State harbor, e.g., bunker barges are unable to deliver fuel to the cruise vessels at Honolulu Harbor if there is a surge, which delays the vessels waiting for fuel.

b. Other Navigational Aids
   i. Night ranges with light markers for inbound and outbound transit would improve safety during nighttime navigation.
   ii. Automatic Identification System (AIS) for Aids to Navigation (AtoN) could provide an additional tool to improve safe navigation. Aids should be placed in locations that will provide useful information and not contribute to radar clutter. The AIS AtoN radars should be one of many options for navigational aids in case a hurricane destroys the radar system.
   iii. In general, more nighttime lighting would improve visibility and navigational safety.

2. Need for consistent maintenance dredging/high spots
    a. High Spots
        i. The priority high spots are located at Piers 1/2, 19/20, 23/25, and 51; however, in general all the piers need more routine maintenance dredging.
    b. Dredging
        i. DOT-H has a reactive approach to maintenance dredging, where pier side dredging occurs after a ship cannot access a pier due to high spots. It is preferable that DOT-H anticipates and dredges problem areas before they prevent operators from using the piers. This would provide value and benefit to all harbor users. Generally, maintenance dredging should be done at shorter intervals, e.g., every 2 to 3 years.
        ii. A periodic survey of sedimentation should be done every 4 to 6 years to determine the rate of sediment build-up for all the piers. Piers could then be prioritized for maintenance dredging based on the rate of sedimentation. Over time, this data would assist DOT-H to identify varying rates of sedimentation throughout the harbor and program dredging schedules based on anticipated problem areas.
        iii. Maintenance dredging can be done to the design depths; otherwise it is considered new dredging and requires new permits.
        iv. Maintenance dredging should be coordinated between DOT-H and the US Army Corps of Engineers (USACE) for areas within the Federal Project Area; DOT-H is responsible for areas outside the Federal Project Area.

3. Bollards, Fending and Other Pier Infrastructure
    a. Some bollards in the harbor are old and substandard for modern cargo operations. Historically piers, bollards and fenders were designed for specific uses, but with the repurposing of piers, these components are not sufficient as they were not designed for current usage. Old bollards have been known to pop loose from the pier under stress and become a projectile hazard to equipment, vessels, cargo and personnel. Old and substandard bollards create a very dangerous condition for the workforce and cargo.
    b. When pier facilities are damaged, the operators are required to install replacement infrastructure (e.g., bollards, fendering, etc.) according to DOT-H specifications, which may or may not be suitable for the operations. In some cases, DOT-H requires that operators install bollards that exceed specifications/strength limitations of the underlying pier structure. Operators do not want to install unnecessarily robust infrastructure and incur the associated costs. Operators prefer to install infrastructure appropriate for their operations. Replacement infrastructure is a huge cost for operators.

c. DOT-H should consider the types of vessels and operations that occur on a pier and consult with operators before determining bollard rating, interval placement, and distance from the piers to ensure bollards are appropriate for users' operations. DOT-H should also consider the strength and weight limitations of the underlying structure so that users aren't required to install hardware that exceed the limitations of pier.
d. DOT-H needs a preventive maintenance plan and regular monitoring. The integrity of the harbor's bollards should be regularly assessed to systematically identify and replace underrated or damaged bollards before workforce injuries or damage to cargo occurs. This is a priority and should occur as soon as possible.

4. Vessel scheduling/lack of berthing.
   a. Pier-specific Activities
      i. The piers and pier faces are in poor condition and there are limited locations that support the use of heavy equipment and mobile cranes. Piers 19/20 are the only piers capable of supporting heavy lift crane activities and only in limited locations.
      ii. Land access to berthed vessels for basic servicing or for routine vessel repairs that do not require a dry dock are limited. In addition, many piers are not strong enough for fuel tank trucks to access vessels for fueling.
      iii. DOT-H should consider developing multiuse piers that have adequate land access, and support heavy equipment and mobile cranes. Strengthening the piers should be done as soon as possible. It was suggested that every pier be designed for multi-use.
      iv. Many of the harbor piers and associated yards are built to 500 lbs per square foot (PSF). Matson's and Pasha's piers are designed/built to 1,000 PSF. The new standard is 1,500 PSF. Heavy lift areas require stronger piers.
      v. Young Brothers cannot relocate all its tugs to Piers 39-40, it's already too congested. Those piers can only fit three tugs.
   b. Scheduling
      i. Scheduling is a problem because there are a finite number of berthing places. Many piers have operational restrictions due to poor pier conditions, which further limit berthing options. To address these scheduling challenges, every pier should be upgraded to current standards which will allow flexible multiuse operations to occur at all piers. The piers would also be available to service distressed vessels that need emergency repair.
      ii. The Port Call system is used to schedule berthing; however, it would be a more helpful tool if it also showed what is happening on the landside (e.g., cargo operations, etc.).

iii. Due to limited available berthing, sometimes small work boat activities are mixed with large cargo vessel operations, which can complicate operations for both operators. Shallow draft vessel operations should be relocated outside of the harbor as much as possible.

c. Emergency Berthing
   i. Hawai'i's location in the middle of the Pacific Ocean makes it a potential refueling port and vital emergency port for vessels crossing the Pacific. Recently, several vessels have lost use of their engines due to poor quality fuel and had to be towed into Honolulu Harbor for emergency repairs. Some stranded vessels were too large to enter Honolulu Harbor due to draft restrictions (Vessels with 50'+ draft). For humanitarian reasons, there should be infrastructure available to accommodate vessels in need of unplanned and emergency services.
   ii. DOT-H has submitted a request to the US Army Corps of Engineers (USACE) to start a feasibility study to evaluate the deepening of the harbor. Widening of channels can be included in the study if the HHMP recommends it. DOT-H is waiting for federal funding to USACE to start this project.

5. Vessel operations / activities that affect navigation and safety in the harbor.
   a. Fishing Operations
      i. Honolulu Harbor is a deep draft harbor with extremely limited space for deep draft vessels, so it does not make sense to have shallow draft fishing vessels berthed in the harbor. In addition, to occupying deep-draft space, the fishing fleet contributes to navigational challenges due to communication/language barriers, concerns about vessel conditions, congestion and potential for collision. Consider consolidating and relocating the fishing fleet and fish auction operations to the other side of the Sand Island Bridge to open up harbor berthing and landside areas for deep draft vessel operations. This may improve the fishing fleet operations by eliminating long wait times to enter the harbor.
         1. The Fishing Village landside areas are under a Condominium Property Regime (CPR), managed by the Fishing Village Association of Apartment Owners (AOAO), which has a long-term lease to 2064. Consider creating incentives to encourage the Fishing Village AOAO and fishing fleet to relocate outside of the harbor. It may be more cost effective to relocate the fishing fleet than to expand the deep draft harbor facilities.

b. Other Topics
    i. The Harbor Traffic Control Unit located in Aloha Tower has the sole responsibility for managing all the vessel traffic in the harbor. They are understaffed and need more support.
    ii. DOT-H should consider reopening the second entrance/exit to the harbor to improve vessel movement efficiencies.

6. Fire protection service capabilities
    a. There is limited capacity to fight a major fire at the harbor. Clean Islands Council used to provide firefighting services and Mokihana, the fire boat, has been sold. PENCO has some firefighting capability.
    b. Some tugboats are equipped with fire hoses and the crews have limited training as first responders to a fire. However, fighting a marine fire requires specialized training and equipment; tugboat operators do not have adequate fire training or equipment to extinguish a marine fire, which can put the tugboat crew in danger. There are also liability concerns for tug operators. There is a very limited number of properly trained maritime firefighters and limited maritime firefighting equipment available to respond to marine fires in Honolulu Harbor. Tugboat operators are developing contingency plans to adequately provide fire protection to their fleets; however more fire protection services are needed.
7. Need for improved vessel support and infrastructure
    a. Ballast Water and Hull Fouling
        i. The State has strict regulations for discharging ballast water, administered by Department of Land and Natural Resources (DLNR), Division of Aquatic Resources (DAR) Hawai‘i pursuant to Hawaii Administrative Rules (HAR) Chapter 13-76).
        ii. DOT-H should consider installing shore side systems that allow vessels to pump their ballast water onshore, where it can be cleaned and recycled. Some vessels are equipped with freshwater ballasts where they store and transfer onboard to an internal tankage system. The vessels then deposit the tankage ballast water at sea.
        iii. The National Oceanic and Atmospheric Administration (NOAA) helps operators manage and correct issues with biofouling. Currently in-water cleaning of biofouling is not permitted.
        iv. To reduce introduction of invasive species from biofouling, DOT-H should consider creating facilities for containment, removal and disposal of biofouling, or consider accommodating new methods of in-water biofouling cleaning in Honolulu Harbor. In general, commercial operations vessels maintain clean hulls; private recreational boats are more likely to introduce alien species on their hulls.
    b. Sewage Infrastructure
        i. Vessels would benefit from having the option to connect to the municipal sanitary sewage system.

8. Safety and port / terminal security
    a. Regarding the idea of modifying the security zones at various locations in the harbor, such as at Pacific Shipyards International's ship repair operations at Piers 24/25 (e.g., shipbuilding and ship repair may not need to be within the maritime security zone), the maritime community is trained to expect that certain activities take place within certain areas. Generally, people should not have access to a pier without the right training. The current security system has established a standard and accepted practice to ensure that people stay safe and the port stays secure by requiring that people are properly trained before accessing the piers. The security fence and protocols should remain as-is.
9. Other topics
    a. DLNR, Division of Boating and Ocean Recreation (DOBOR) (Ed Underwood)
        i. DOBOR's *Recreational Renaissance Plan* proposed developing a new recreational marina in the underutilized area located makai and at the 'Ewa end of Sand Island with an internal connection to the Sand Island State Park. DOBOR requested $11 million in infrastructure upgrades, but received resistance from the canoe paddling community. DOBOR offered to revise the proposal and only build half a marina to allow the rest of the area for continued use by the paddling community; however, the Legislature did not support the request.
        ii. DOBOR supports turning over marina operations to a private operator.
        iii. After listening to the discussion regarding the fishing fleet, DOBOR is open to replacing the proposed recreational marina with a fishing vessel marina.
        iv. La Mariana's lease is expiring mid-next year. DOBOR is open to entering another long-term lease with La Mariana and possibly adding an additional finger pier to the small boat harbor. It was suggested that adding another finger pier in that area would affect the turning basin.
        v. Honolulu Marine assessed the possibility of developing a submerged dry dock facility on the makai / 'Ewa side of the Sand Island Bridge. The proposal was based on the idea that the Sand Island Bridge would not be reopened and the contemplated facility would therefore not be impacted by vessel traffic through Kalihi Channel. Ultimately, Honolulu Marine decided not to go forward with the proposal due to the time and cost required to obtain necessary environmental permits.
        vi. Due to the limited space in the harbor, one of the large crane barges has moored at DOBOR's offshore moorings.

vii. When DOT-H told vessels to leave the harbor due to Hurricane Lane, many vessel operators asked if DOBOR had space available at Keehi to moor their vessels.
viii. Slipper Island is under DOBOR's rules. Moored vessels are limited to 65 feet. DOBOR's rules currently only allow mooring of recreational boats, but they are in the process of trying to change the rules to allow mooring of workboats.

b. It is anticipated that the tug fleet in the harbor will expand. P&R is currently building two tugs and has plans to build two per year.
c. Pier 60 channel should be widened to accommodate a sand barge.

C. Facilitated Group Discussion – Issues and Ideas (Maritime Support)

1. Berthing and pier facility assignments are unpredictable and inequitable
   a. Honolulu Harbor is the essential hub of State commerce and its function as a commercial deep draft harbor should not be compromised. Honolulu Harbor is not like other harbors that have ample area to support both maritime and non-maritime operations. Honolulu Harbor has extremely limited space for maritime uses and all available space should remain in support of maritime operations, which is the lifeline of Hawai'i. Operations that should be relocated outside of the commercial, deep draft harbor include:
      i. In the long-term, the USCG will relocate their Pier 4 operations and Prevention Training Program to their Sand Island facility. The pier space is currently underutilized for maritime functions.
         1. Note - there is no chance that the USCG will relocate from Sand Island to Pearl Harbor. The USCG is currently programming and funding major improvements at the Sand Island base, including facilities to accommodate the operations currently located at Pier 4, and improvements to replace the floating piers near Pier 53 with fixed piers.
      ii. The water bottling plant located at Pier 24 is a non-maritime use that should be relocated outside of the harbor.
      iii. The Aloha Tower Marketplace has not been successful as a commercial/retail center and should be restored for maritime uses. All of the structures on Piers 8 to 11 should be demolished and new structures built to support modern maritime operations.
      iv. Piers 5/6 should not be considered for developing a condo or hotel. Its position overlooking the harbor entrance creates a security risk. The landside and waterside should be used for maritime uses, e.g., maritime offices, DOT-H administration offices, tug boats, etc. The berthing can be used by service and work boats,
   b. Potential acquisition areas
      i. DLNR-DAR facility on Sand Island.

ii. Sand Island State Recreation Area (area near the TYCO pier) is prime waterfront for maritime use. There is extensive linear footage of waterfront that could serve as berthing space. There is substantial landside area to support yard operations. The area hasn't been dredged and there is coral present, but the area has potential.

c. Because of the congestion in the harbor, DLNR-DOBOR is considering going to the Board of Land and Natural Resources to talk about an additional offshore mooring. These moorings could be used for crane barges and more.

2. Long-time maritime support service operators in the harbor lack permanent or secure home locations
   a. Anyplace that there's water frontage or pier space, don't even consider non-maritime uses.
   b. Repair services, welders, chandlers, suppliers, waste services, fuel services and similar companies should be located at the harbor or have some accommodation at the harbor as they provide support to the maritime operators.
3. Re-open the Kalihi Channel entrance into the harbor
   a. Bridge considerations:
      i. Construct a new lift bridge that would operate on a schedule during off-peak periods when truck traffic is lowest.
      ii. Build fixed bridge with a high enough air draft to accommodate smaller vessels, such as fishing vessels, work boats, and tug and barge traffic.
      iii. A fixed bridge that could accommodate cargo vessels would be too tall and require extended approaches that likely couldn't be accommodated on Sand Island. The bridge height would create a conflict with the air traffic at Honolulu International Airport.

D. Closing / Next Steps

1. Meeting #2 is scheduled on October 18, 2018, 8:30 – 10:30 a.m. at the Marine Education and Training Center.
2. The HHMP website will be updated with the agenda and meeting notes (www.honoluluharbormp.com/subtac).

Kalihi
Kalihi Kai
Kapalama Terminal
Iwilei
Chinatown
Downtown Business District
Kaka'ako
Sand Island Terminal
Mamala Bay
Ke'ehi Lagoon
POTENTIAL MOORING AREA (85 AC)
POTENTIAL MOORING AREA (100 AC)
MARINA SITE (515' X 6,130')
SEAPLANE 'A' (150' X 3,000')
SEAPLANE 'B' (300' X 5,000')
TYCO
Need to capitalize on all of Kaehi use
Fishing fleet
Future traffic impacting Commerce
- 3 groundings in 1 yr
around waterways
Aloha tower traffic control
- more support
- joint cso / state
Mix use
stretch TYCO real estate for deep draft per use
Partnership w/ west side Pearl Harbor use / renovate
Share wwy
real time
- current readings
- wind speed direction
Private / gov partnership
DEPARTMENT OF TRANSPORTATION
HARBORS DIVISION
HONOLULU HARBOR 2050 MASTER PLAN

Maritime Support & Vessel Operations Sub-TAC

CONTACT LAST NAME	CONTACT FIRST NAME	ORGANIZATION	DIVISION/BRANCH/SECTION	EMAIL	SUB-TAC	SUB-TAC MTG #1 ATTENDANCE
Bannon	John	US Coast Guard	Sector Honolulu	John.E.Bannon@uscg.mil	Vessel Operations	
Bond	Robin	HOST (Hawaii Ocean Safety Team)			Vessel Operations	
Buelsing	Mike	Pacific Shipyards International, LLC / Navatek		mbuelsing@navatekltd.com	Maritime Support	
Collins	Tom	Hawaii Pilots Association (HPBS, Inc.)		tomc.pilot20@gmail.com	Vessel Operations	
Edsall	Julie	Kirby Offshore Marine	Hawaii Division	julie.Edsall@kirbycorp.com	Maritime Support & Vessel Operations	
Grune	Randy	Hawaii Stevedores, Inc.		rgrune@hawaiistevedores.com	Maritime Support & Vessel Operations	
Heatherly	Scott	US Customs and Border Protection		scott.k.heatherly@cbp.dhs.gov	Maritime Support	
Hopkins	Ryan	Hawaii Pilots Association (HPBS, Inc.)		ryanhopkins14@msn.com	Vessel Operations	
Iida	Todd	Hawaii Stevedores, Inc.		tiida@hawaiistevedores.com	Vessel Operations	
Jose	Ferdinand	US Customs and Border Protection		ferdinand.a.jose@cbp.dhs.gov	Maritime Support	
MacDonald	Michael	Young Brothers/ Foss Maritime - Hawaii		mac@htbyb.com	Maritime Support & Vessel Operations	
Martin	Dane	Young Brothers/ Foss Maritime - Hawaii		dmartin@htbyb.com	Maritime Support & Vessel Operations	
Morita	Steve	P&R Water Taxi LLC		smorita@pmtugs.com	Maritime Support	

Maritime Support & Vessel Operations Sub-TAC

CONTACT LAST NAME	CONTACT FIRST NAME	ORGANIZATION	DIVISION/BRANCH/SECTION	EMAIL	SUB-TAC	SUB-TAC MTG #1 ATTENDANCE
Mullins	Ulysses	US Coast Guard	Sector Honolulu	ulysses.s.mullins@uscg.mil	Vessel Operations	
Rimell	Brad	Sause Bros., Inc.		bradr@sause.com	Vessel Operations	BR.
Rocheleau	Andrew	Sea Engineering, Inc.		arocheleau@seaengineering.com	Maritime Support	AR
Shimabukuro	Eric	HC&D, LLC		eric.shimabukuro@hcdhawaii.com	Maritime Support	
Smith	Thomas	US Army Corps of Engineers	Honolulu District, Civil Works Technical Branch	thomas.d.smith@usace.army.mil	Vessel Operations	
Statts	Meghan	Department of Land and Natural Resources	Division of Boating and Ocean Recreation	meghan.l.statts@hawaii.gov	Vessel Operations	MS
Tanaka	Lance	Par Hawaii, Inc.		lance.tanaka@parpacific.com	Maritime Support & Vessel Operations	
Toves	Patrick	Honolulu Freight Service		ptoves@hfsnet.com	Maritime Support	
Tsuji	Russell	Department of Land and Natural Resources	Land Division		Vessel Operations	
Underwood	Edward	Department of Land and Natural Resources	Division of Boating and Ocean Recreation	ed.r.underwood@hawaii.gov	Maritime Support	ERU
Velez	Eric	US Coast Guard	Sector Honolulu	Eric.J.Velez@uscg.mil	Vessel Operations	
Wang	Ali	Inchcape Shipping Services		ali.wang@iss-shipping.com	Vessel Operations	
Whitworth	Tiffanie	Young Brothers/ Foss Maritime - Hawaii		twhitworth@htbyb.com; tiff@htbyb.com	Maritime Support & Vessel Operations	

Maritime Support & Vessel Operations Sub-TAC

CONTACT LAST NAME	CONTACT FIRST NAME	ORGANIZATION	DIVISION/BRANCH/SECTION	EMAIL	SUB-TAC	SUB-TAC MTG #1 ATTENDANCE
Yocum	Janet	US Department of Homeland Security	Federal Emergency Management Agency	janet.yocum@fema.dhs.gov	Maritime Support	
Yoshimoto	Milton	US Army Corps of Engineers	Honolulu District, Civil and Public Works Branch	milton.t.yoshimoto@usace.army.mil	Vessel Operations	
Zane	Jimmy	McCabe, Hamilton & Renny Co., Ltd.		jzane@mhrhawaii.com	Maritime Support	
HEBERLE	TOM	PILOTS		TOM.HEBERLE	VESSELOPS @GMAIL.COM	
ENOS	ED	PILOTS		capt.edenos@gmail.com		
Roer	Mik	Kirby		mik.roer@kirbycorp.com		

Welcome

VESSEL OPERATIONS

AND

MARITIME SUPPORT

Technical Advisory Sub-Committee Meeting #1

September 26, 2018

Department of Transportation
Harbors Division

Marine Education and Training Center
10 Sand Island Parkway
Honolulu, HI 96819

Harbors Mission Statement

Supports DOT-H's Mission

To effectively improve and manage a commercial harbors system that facilitates safe and efficient operations of commercial cargo, passenger, fishing, and other commercial maritime-related services and support activities within the State of Hawaii and which serves to sustain and enhance the State's economic prosperity and quality of life.

Goals of the Master Plan

- Identify current and meet future maritime needs
- Optimize use of the Harbor's finite land resources
- Balance stakeholders' competing needs and interests
- Ensure resiliency in the face of natural and human-made disasters, and climate change
- Consider emerging technologies and trends
- Consider public access and waterfront development opportunities in select locations

Source: Star Compass, Polynesian Voyaging Society

Evaluation Criteria

- To what extent does it align with the Master Plan Goals?
- To what extent is it economically reasonable and feasible, and beneficial to the Harbor and the State?
- To what extent is the project needed and does it improve harbor function?
- To what extent does it benefit or adversely impact the environment?

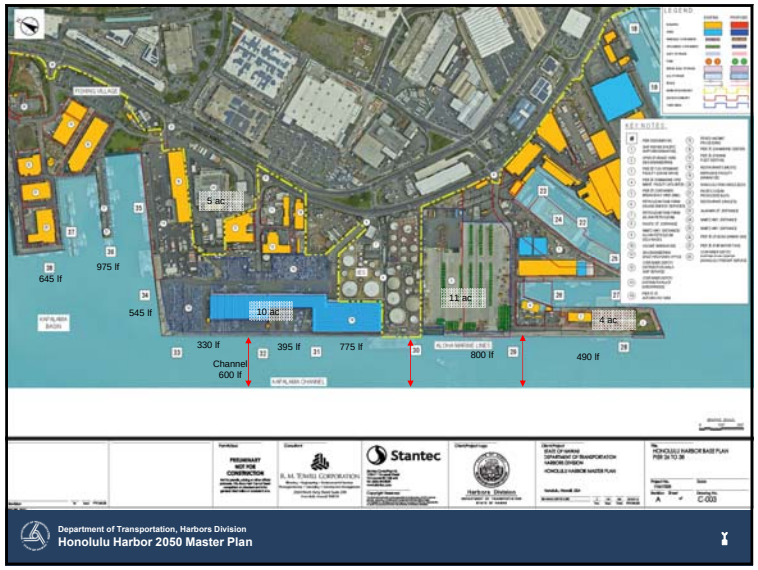
EXISTING FACILITIES AND OPERATIONS

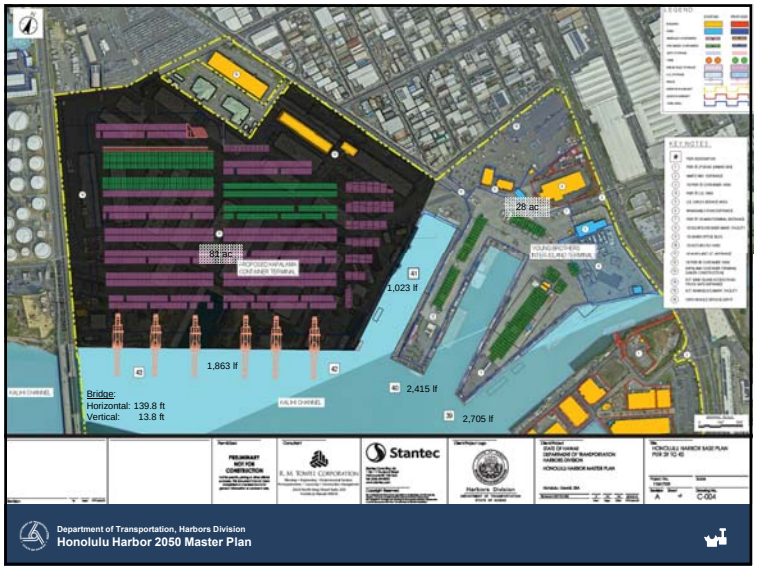
Department of Transportation, Harbors Division
Honolulu Harbor 2050 Master Plan

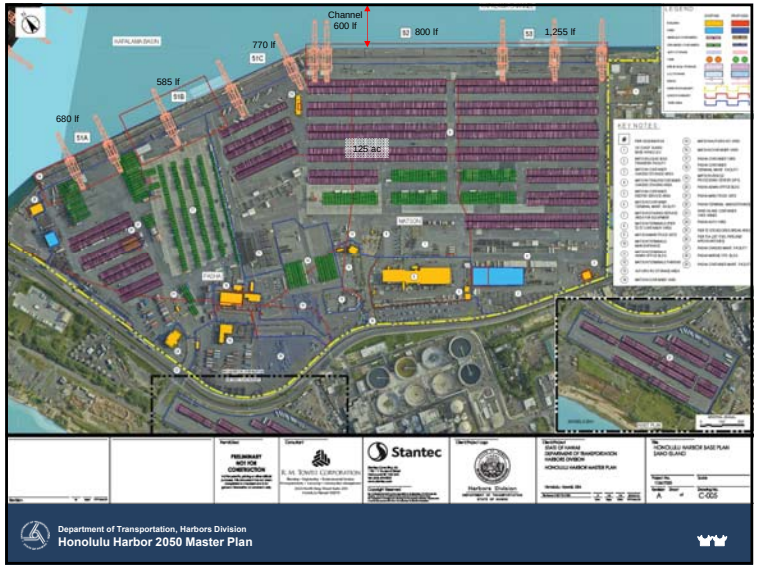
Department of Transportation, Harbors Division
Honolulu Harbor 2050 Master Plan

Department of Transportation, Harbors Division
Honolulu Harbor 2050 Master Plan

Department of Transportation, Harbors Division
Honolulu Harbor 2050 Master Plan



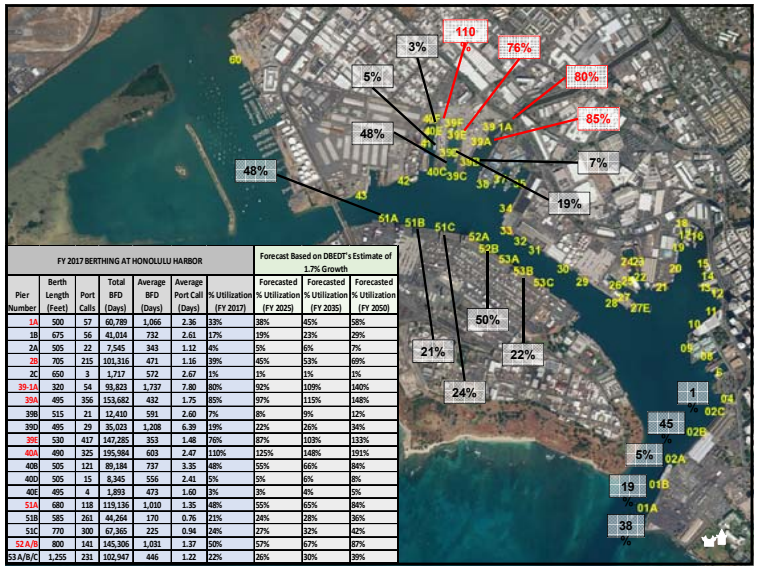




PRELIMINARY

BERTH UTILIZATION ANALYSIS

Department of Transportation, Harbors Division
Honolulu Harbor 2050 Master Plan



FY 2017 BERTHING AT HONOLULU HARBOR							Forecast Based on DBEDT's Estimate of 1.7% Growth		
Pier Number	Berth Length (Feet)	Port Calls	Total BFD (Days)	Average BFD (Days)	Average Port Call (Days)	% Utilization (FY 2017)	Forecasted % Utilization (FY 2025)	Forecasted % Utilization (FY 2035)	Forecasted % Utilization (FY 2050)
1A	500	57	60,789	1,066	2.36	33%	38%	45%	58%
1B	675	56	41,014	732	2.61	17%	19%	23%	29%
2A	505	22	7,545	343	1.12	4%	5%	6%	7%
2B	705	215	101,316	471	1.16	39%	45%	53%	69%
2C	650	3	1,717	572	2.67	1%	1%	1%	1%
39-1A	320	54	93,823	1,737	7.80	80%	92%	109%	140%
39A	495	356	153,682	432	1.75	85%	97%	115%	148%
39B	515	21	12,410	591	2.60	7%	8%	9%	12%
39D	495	29	35,023	1,208	6.39	19%	22%	26%	34%
39E	530	417	147,285	353	1.48	76%	87%	103%	133%
40A	490	325	195,984	603	2.47	110%	125%	148%	191%
40B	505	121	89,184	737	3.35	48%	55%	66%	84%
40D	505	15	8,345	556	2.41	5%	5%	6%	8%
40E	495	4	1,893	473	1.60	3%	3%	4%	5%
51A	680	118	119,136	1,010	1.35	48%	55%	65%	84%
51B	585	261	44,264	170	0.76	21%	24%	28%	36%
51C	770	300	67,365	225	0.94	24%	27%	32%	42%
52 A/B	800	141	145,306	1,031	1.37	50%	57%	67%	87%
53 A/B/C	1,255	231	102,947	446	1.22	22%	26%	30%	39%

FY 2017 BERTHING AT HONOLULU HARBOR							Forecast Based on DBEDT's Estimate of 1.7% Growth		
Pier Number	Berth Length (Feet)	Port Calls	Total BFD (Days)	Average BFD (Days)	Average Port Call (Days)	% Utilization (FY 2017)	Forecasted % Utilization (FY 2025)	Forecasted % Utilization (FY 2035)	Forecasted % Utilization (FY 2050)
1A	500	57	60,789	1,066	2.36	33%	38%	45%	58%
1B	675	56	41,014	732	2.61	17%	19%	23%	29%
2A	505	22	7,545	343	1.12	4%	5%	6%	7%
2B	705	215	101,316	471	1.16	39%	45%	53%	69%
2C	650	3	1,717	572	2.67	1%	1%	1%	1%
39-1A	320	54	93,823	1,737	7.80	80%	92%	109%	140%
39A	495	356	153,682	432	1.75	85%	97%	115%	148%
39B	515	21	12,410	591	2.60	7%	8%	9%	12%
39D	495	29	35,023	1,208	6.39	19%	22%	26%	34%
39E	530	417	147,285	353	1.48	76%	87%	103%	133%
40A	490	325	195,984	603	2.47	110%	125%	148%	191%
40B	505	121	89,184	737	3.35	48%	55%	66%	84%
40D	505	15	8,345	556	2.41	5%	5%	6%	8%
40E	495	4	1,893	473	1.60	3%	3%	4%	5%
51A	680	118	119,136	1,010	1.35	48%	55%	65%	84%
51B	585	261	44,264	170	0.76	21%	24%	28%	36%
51C	770	300	67,365	225	0.94	24%	27%	32%	42%
52 A/B	800	141	145,306	1,031	1.37	50%	57%	67%	87%
53 A/B/C	1,255	231	102,947	446	1.22	22%	26%	30%	39%

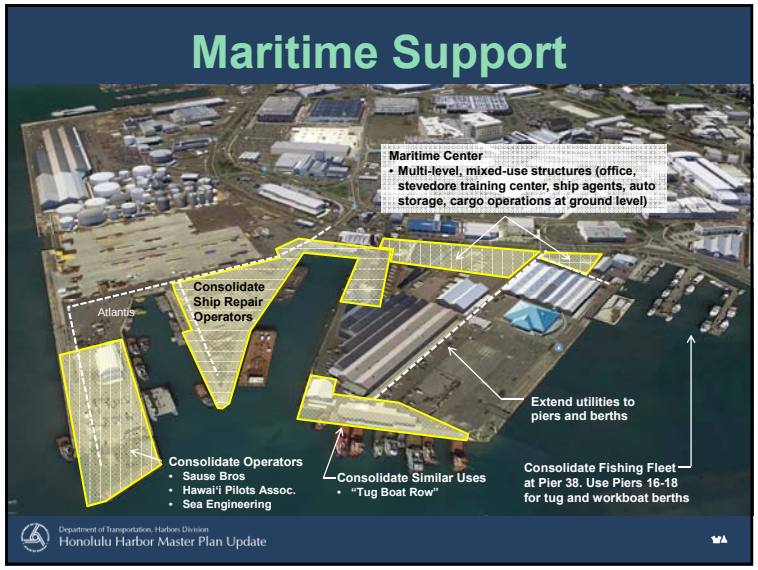
Department of Transportation, Harbors Division
Honolulu Harbor 2050 Master Plan

PRELIMINARY STAKEHOLDER INPUT

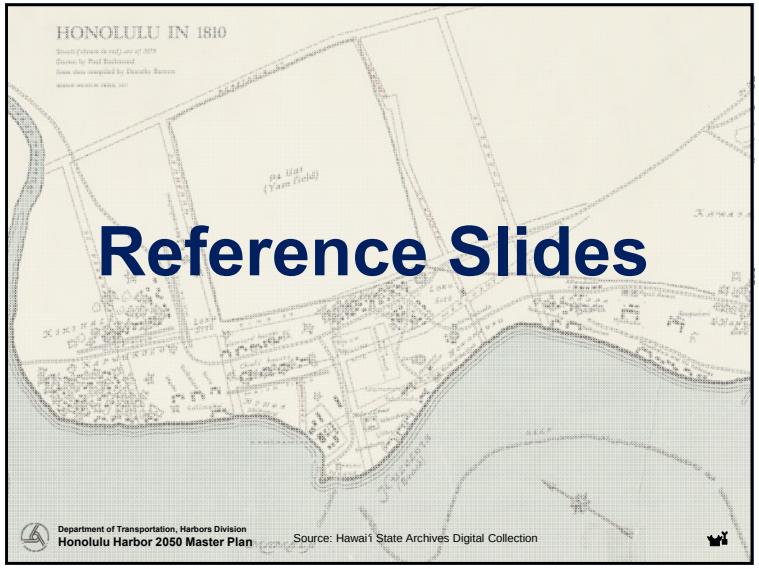
Department of Transportation, Harbors Division
Honolulu Harbor 2050 Master Plan

Vessel Operations

Department of Transportation, Harbors Division
Honolulu Harbor Master Plan Update


Maritime Support
Maritime Center
• Multi-level, mixed-use structures (office, stevedore training center, ship agents, auto storage, cargo operations at ground level)
Consolidate Ship Repair Operators
Atlantis
Extend utilities to piers and berths
Consolidate Operators
• Sause Bros
• Hawai'i Pilots Assoc.
• Sea Engineering
Consolidate Similar Uses
• "Tug Boat Row"
Consolidate Fishing Fleet at Pier 38. Use Piers 16-18 for tug and workboat berths
Department of Transportation, Harbors Division
Honolulu Harbor Master Plan Update

BERTHING
Kalihi
Kalihi Kai
Kapalama Terminal
Iwilei
Ke'ehi Lagoon
Chinatown
Sand Island Terminal
Downtown
Kaka'ako
Fort Armstrong Terminal
Mamala Bay
General Anchorage C
General Anchorage B
General Anchorage A
Legend
Department of Transportation, Harbors Division
Honolulu Harbor 2050 Master Plan


HONOLULU IN 1810
Reference Slides
Department of Transportation, Harbors Division
Honolulu Harbor 2050 Master Plan
Source: Hawai'i State Archives Digital Collection

Kalihi
Kalihi Kai
Kapalama Terminal
Iwilei
Ke'ehi Lagoon
Chinatown
Sand Island Terminal
Downtown Business District
Kaka'ako
Fort Armstrong Terminal
Mamala Bay
Department of Transportation, Harbors Division
Honolulu Harbor 2050 Master Plan

MEETING NOTES

Project:	Honolulu Harbor Master Plan (HHMP)
Date/Time:	Thursday, October 18, 2018; 8:30 a.m. HST
Location:	Marine Education & Training Center (METC) 10 Sand Island Parkway
Purpose:	Vessel Operations & Maritime Support Sub-TAC, Meeting #2
Attendees:	See attached sign-in sheet

A. Recap of Meeting #1

1. Issues and opportunities discussion from Meeting #1:
   See Meeting #1 Notes for additional discussion and detail.
   a. Additional/enhanced navigational aids:
      i. Install monitoring devices in strategic locations at different points in the harbor to capture accurate, real-time environmental information (wind speed and direction, currents, tides) to aid navigation. [Note: A study will be needed to determine the types of monitoring equipment that will be needed and where in the harbor and surrounding waters they should be deployed.]
      ii. Install Automatic Identification System (AIS) on Aids to Navigation (AtoN) in the harbor and nearby waters.[Note: AIS transmitters can be affixed to a floating or fixed AtoN, such as a buoy, beacon, or light. The AIS broadcast provides the position and purpose of an aid, such as a port or starboard lateral buoy, even before it is close enough to be visible from a ship or to provide a radar return. This can help mariners confirm their ship's position or to prepare to make a turn that is based on passing a particular aid.(NOAA website)]
   b. Bathymetric surveys should be done more frequently to establish a data-based guide for maintenance dredging:
      i. Conduct routine surveys of sedimentation (every 2 to 3 years) to determine sedimentation rates at various locations in the harbor.
   c. Larger size vessels (Neo-Panamax) in harbor channel
      i. Deepen the operational draft in Honolulu Harbor to accommodate deeper draft vessels, including the ability to accommodate deep draft vessels in need of emergency fueling or repairs.
   d. Vessel scheduling / lack of berthing
      i. Upgrade all piers to a consistent standard for height and minimum yard strength, which will allow flexible, multi-use operations to occur at all piers.
   e. Fire protection service capabilities

i. Develop capacity at Honolulu Harbor for maritime firefighting, including specialized training and equipment for maritime firefighters. Tug boats were mentioned as possibly being part of a fire fighting solution in the harbor, but the tug operators objected and pointed out that, for many different reasons, they are not able to provide this capability. Reasons cited by tug operators include: tug operators are not trained to fight large fires, only small fires on board their own vessels; maritime firefighting may involve chemical or petroleum fires, which require special training to fight; and equipping tugs for maritime firefighting requires expensive overhauls. [Note: Under the Oil Pollution Act of 1990, 33 U.S.C. 2701-2761, firefighting is the responsibility of the commercial maritime operator.]

f. Pier utilities and infrastructure conditions
   i. Routinely inspect and upgrade bollards to meet current operational standards. Consult with operators about bollard design (strength, location and spacing).
   ii. Strengthen piers and aprons to accommodate service trucks, e.g., fuel, cable, provisions (minimum rating of 1,000 lbs per square foot (PSF), ideal rating of 1,500 PSF), and to support heavy lift cranes.
   iii. Develop dedicated sewer connections to allow vessels to discharge wastewater (black/gray water) to the municipal sewer system. [Note: Facility connections to the City and County of Honolulu (CCH) municipal sewer collection system must be approved by the CCH Department of Environmental Services (ENV). In addition, the quantity of effluent discharge into the City system is regulated and limited by ENV through a temporary sewer connection permit process. Individual vessel operators are responsible for obtaining permission to discharge wastewater to the system of a case-by-case basis.]
   iv. Install pier-side ballast water exchange tanks to facilitate cargo vessel loading/discharge operations. Cargo vessels need to be able to discharge and take on ballast water in the harbor to facilitate cargo loading/offloading operations. [Note: Ballast exchange tanks would be considered maritime operators' equipment to be paid for by the operators. DOT-H would be involved by issuing permits or entering into lease arrangements for the tank locations.]

g. Biofouling poses a threat to Hawai'i's ocean environment and removal and disposal of biofouling is not permitted in Honolulu Harbor.
   i. Create facilities for containment, removal and disposal of biofouling, or consider accommodating new methods of in-water biofouling cleaning in Honolulu Harbor.

A. Presentation: Berth Utilization Analysis (R.M. Towill Corporation [RMTC])

The following is a record of the discussion that accompanied RMTC's PowerPoint slide presentation regarding berth utilization analysis (see attached presentation and handout).

1. Background for berth utilization presentation:
    a. Berthing utilization analysis uses eCIDS data from DOT-H for FY2017 and FY2018 to determine utilization based on annual berth foot days (BFD). BFD is a function of the vessel length and its duration at a specific berth as a percentage of the berth length multiplied by 365 days in a year.
    b. The eCIDS data was reviewed and modified as follows:
        i. corrected errors in the data inputs,
        ii. refined the vessel types and vessel designations to be more accurate,
        iii. added mooring allowances based on vessel type,
        iv. created new records to capture vessel shifts from RO-RO piers to container cargo piers (e.g., from Pier 32 to Pier 52), and designated vessel calls as "lay" or "active" based on select vessel types and pier locations.

        [Note: A detailed description of the methodology is provided in a separate Berth Utilization Analysis document available on the project website: www.honoluluharbormp.com/subtac.]
    c. The analysis is for all piers in the harbor. Cargo Sub-TAC Meeting #2 focused on cargo berths.
    d. Berth utilization forecasts are based on State DBEDT average annual GSP growth projections of 1.7% to 2050.
    e. Berth utilization rates and projections don't account for:
        i. Future improvements to the piers that would increase capacity;
        ii. Changes in future berth operations, e.g., when Pasha moves to KCT and related adjustments to vessel operations and berth assignments in the harbor;
        iii. Active versus lay status. All reported berthing at the cargo piers is considered "active" berthing, with the exception of Pier 60 which assumes the sand barge is in "lay" status approximately 90% of the time.
    f. Industry standard is that utilization rates over 50% for unscheduled and 60% for scheduled berths are considered to be at capacity. Beyond that percentage, the berth is experiencing congestion and the need for additional berth capacity is indicated.
2. Findings
    a. The current overall berth utilization for Honolulu Harbor based on the refined eCIDS data is calculated to be 57.6%, which supports what the Project Team has been hearing from nearly all of the operators, that there is a need for additional berthing in the harbor. The aggregate number doesn't differentiate utilization based on the type of operations at a specific pier.

b. The utilization analysis for cargo operations indicates many of the cargo piers are operating near capacity, particularly at the major cargo terminals (i.e., Young Brothers, Matson and Pasha), but there is still capacity at some of the berths used by other cargo operations, such as Piers 1 and 2, 29 and 31 to 33. The calculated berth utilization rates for these piers ranges from 25% to 35%. The 2050 projections based on straight GSP average annual growth show that berths with a current utilization rate of 30% will be at 50% utilization rate by 2050, which indicates maximum capacity.
c. Calculated current utilization rates, based on eCIDS data from FY 2017 and FY2018 combined, are as follows:
    i. Pier 1 = 30%
    ii. Pier 2 = 25%
    iii. Pier 19 = 22% (This utilization rate would be higher if the pier was not constrained by sediment build-up.)
    iv. Pier 20 = 50%
    v. Pier 29 = 28%
    vi. Pier 31 = 29%
    vii. Pier 32 = 35%
    viii. Pier 33 = 17%
    ix. Piers 39-40 = 50%
    x. Pier 51A = 77% (This higher utilization rate can be explained in part by vessels that overhang the makai end of the berth.)
    xi. Piers 51B-51C = 33%
    xii. Piers 52-53 = 81%
    xiii. Pier 60 = 31% (Active utilization is estimated at 6% while the remaining berth utilization is considered lay berth.)

3. Questions / Discussion
    a. Question: How do you determine the actual vessel usage at a given location?
        i. Response: The Project Team will consult vessel operators and maritime users for their qualitative input regarding actual vessel usage for a specific berth. Without that input, the Project Team has only the eCIDS data. eCIDS data is collected for accounting purposes, not for operational analysis, we will supplement it with qualitative information from operator input and field observations.
        ii. For the lay berth utilization analysis, the Project Team is starting with the assumption that berths used for cargo operations, commercial fishing vessels, and other uses, such as the Pier 21 tug boat berths and PSI's dry docks, are 100% active piers and unavailable for lay berthing.
    b. Question: How do you account for atypical berth utilization caused out of necessity, e.g. the Japanese military vessel that was berthed in front of Gordon Biersch.

i. Response: The Project Team recognizes that there are a lot of exceptions to the rules; however, these exceptions are not well-defined yet. Qualitative information about berth use from the operators will help with this assessment.

c. Comments
   i. The berthing utilization analysis should be studied in conjunction with the shore side operations because the ability to use a berth can be limited by the shore side operations, e.g. non-cargo operators cannot use a berth if the pier is full of containers.

B. Facilitated Group Discussion – Issues and Ideas (Vessel Operations & Maritime Support)

1. Pier-by-pier Input
   a. Piers 1/2
      i. There are seasonal surge conditions in the summer and fall that affect navigation in the entrance channel and can damage vessels berthed at Piers 1 and 2. The piers have blow-out plates in the deck to release pressure and minimize pier damage in extreme surge conditions, and they have been effective. Surge conditions also increase the risk of bollard failure; bollards should be upgraded and strengthened.
         a. Consider measures to protect the harbor entrance from southerly surge conditions, such as breakwater walls. [Note: DOT-H requested USACE to restart a study to improve navigational conditions within Honolulu Harbor. If the project is funded, DOT-H will request the study to evaluate options to attenuate surge conditions.]
   b. Pier 12
      i. The pier is well suited for a single vessel berth; however, the area needs dredging. The Pier 12 landside area is currently vacant, but may not be useful for maritime operations that require shore side space, vehicle access and staging, because of the limited land area and intense traffic conditions along Nimitz Highway. It is a good berth for mid-sized and large visiting vessels and private yachts.
   c. Pier 14
      i. There are existing issues with homeless people coming onto harbor property at Pier 14 to scavenge and for shelter, which creates safety and security issues for harbor users. This is a common occurrence for all harbor properties along Nimitz Highway that aren't within the fenced security areas.
   d. Piers 16 – 18
      i. Consider relocating the commercial fishing vessels to Pier 60. Honolulu Harbor is best suited for use by deep draft commercial vessels. As cargo demand grows in the future, it will be more

costly and difficult to develop deep draft industrial port facilities than to develop shallow-draft pier facilities.

a. The total number of commercial fishing vessels in Honolulu Harbor, berthed at Piers 16 – 18 and the Pier 38 fishing village, is not expected to increase because the number of commercial vessels is limited by permit. The Hawaii longline fishery is a limited entry fishery with a maximum of 164 permits. At present, about 150 permits are issued. However, annual changes/restrictions in permitted fishery species and catch quotas could result in fewer fishing days and more fishing vessels spending time at berth.

ii. Consider replacing and/or extending the existing piers with strengthened finger piers, capable of accommodating greater loads, such as heavy equipment, for commercial utility vessel berthing. The method of construction would be determined during design.

iii. Runoff and sediment from the Nu‘uanu Stream channel affects navigation and related maintenance requirements at these piers.

e. Piers 19/20

i. The berthing utilization is low due to sedimentation and related draft reduction. When the sediment is removed, the berthing utilization rate will increase. [Note: Maintenance dredging at Pier 19 is scheduled to be completed by February 2019. Unconstrained use of the berth will be factored into the berth utilization analysis.]

ii. The operations that occur at Piers 19/20 are dependent on future improvements / standard upgrades to strengthen that yard. The yard should be improved to support cargo operations and an active berth, not lay berth.

iii. After the high spots are dredged, consider using Piers 19/20 for bunkering activities, as an alternative to conducting bunkering activities at Piers 1/2 or Piers 31 to 33 where there is a greater impact on navigation.

f. Pier 21

i. Pier 21 is in poor condition as the bulkhead is deteriorating and the yard has sinkholes.

ii. Consider renovating Pier 21 and creating additional berthing capacity by cutting into the pier and creating a notch or developing finger piers off the end.

a. Finger piers extended off the end of Pier 21 will encroach into the turning basin, which could affect navigation. [Note: Structures can extend into the federal project area, but any encroachments require Rivers and Harbors Act

of 1899, Section 408 (33 USC 408) approval from the USACE].

iii. Consider development of a multi-use maritime center with administrative offices, high cube ground level, storage, parking, and retail shops mauka of Pier 21 adjacent to Nimitz Highway.
iv. Improve and strengthen Pier 21 to accommodate trucks and mobile cranes to service the tug vessels.

g. Piers 22/23
   i. Currently, Pier 23 is essentially unusable due to a coral/rock outcropping, the poor condition of the apron and fendering, and the adjacent dry dock operations, which limit vessel movements in the slipway.
   ii. This is one of the few areas in the harbor that can be redeveloped to support additional berthing.
      a. Consider cutting back the Pier 22/23 face to widen the slipway. Cutting back the pier will involve significant excavation and cost.
         i. If Piers 22/23 were cut back, PSI could reposition their two dry docks side-by-side at the mauka end of the slipway, which would open up additional berthing space at the makai ends of Piers 22/23 and 24/25.
      b. A reconstructed pier could be used for additional berthing; however, the types of vessels that could use the space would be limited by the operational depth in the slipway.
      c. The existing grain silos and sheds should be removed to open the area up for maritime operations. Don't consider Piers 22-23 for cargo; the slipway is too tight for cargo vessel maneuvering.

h. Piers 26/27
   i. Sometimes multiple vessels are rafted together in the slipway; however, this is not desirable or an acceptable practice as it creates safety issues by limiting the maneuvering space.
   ii. Kewalo Basin would have been a better location for Atlantis; however, they have already made a large investment to develop specialized electric power infrastructure for their vessels and have a long-term lease. Expect them to stay in their current location through the 2050 master plan horizon.

i. Piers 27DL
   i. Sea Engineering is considering plans to relocate their landside and waterside operations to Pier 27DL.

j. Piers 21-28
   i. Currently, only utility work vessels are located at these piers.
   ii. All this of the area is committed. Is there anything that warrants changes to this area?

k. Piers 28 – 34
    i. Consider improving navigation through the Kapālama Channel by one or more of the following options:
        a. Cut back Piers 28 through 34 to widen the channel by 50 to 75 feet. As an alternative, consider widening only a segment of the channel, such as at Piers 32-34 to create a notch that can accommodate an auto/RO-RO vessel berth. This would free channel space for navigation. The Harbor Pilots expressed concern about the increasingly constrained conditions in the channel as vessel sizes increase over time. It's reasonable to expect that with larger vessels there will also be an increase in the number of episodes where conditions would prevent navigating the channel (large vessel size, harbor congestion, and wind and current conditions).
        b. Add navigational aids, such as range day boards at the Diamond Head and ʻEwa ends of the harbor aligned with straight line-of-sight through Kapalama Channel.
        c. Consider improving operational protocols instead of expensive port infrastructure changes. For example, prohibit vessels from berthing at Piers 28 – 33 when neo-Panamax class vessels are navigating through the channel.
l. Pier 30
    i. Relocate the IES and Aloha Gas fuel tanks (both of which are privately owned) from Pier 30 to Sand Island. Acquire the land for future expansion of cargo yard and berthing.
m. Piers 36 – 38
    i. Consider relocating the entire commercial fishing fleet out of the deep draft commercial harbor to a new fishing village at or near Pier 60. See discussion regarding Piers 16 – 18 above.
n. Kapālama Container Terminal (KCT)
    i. Once KCT is completed, new gantry cranes will be located on the pier apron.
    ii. During dredging in KCT Phase II, approximately 5,000 coral colonies will be relocated to Piers 5/6.
o. Pier 60
    i. Consider developing a new fishing village at Pier 60. See discussion regarding Piers 16 – 18 and 36 – 38 above.
    ii. The Keʻehi Lagoon channel to Pier 60 is difficult to navigate due to its narrow width, relatively shallow draft, and the presence of private recreational vessels moored in the channel.
p. Keʻehi Lagoon
    i. Various areas within Keʻehi Lagoon could be used as mooring areas for barges or other idle or inactive vessels. The channels and mooring areas will require dredging.

ii. There's concern about mooring vessels in the seaplane runways in Ke'ehi Lagoon; in the event of a hurricane or tsunami, storm surge could push vessels onto the airport runway and render it inoperable.

q. Former-Tyco Pier
   i. DOT-H will acquire the former-Tyco Pier and develop it as additional lay berth.
      a. Consider adding additional dolphins to increase the berthing capacity.
   ii. Consider options for developing landside access and port facilities at the former-Tyco Pier to expand its function from lay berth to active pier facility.

r. Sand Island
   i. Consider developing the sea plane runway channel along the 'Ewa side of Sand Island for bunkering facilities.
      a. Move the Pier 30 fuel tanks to Sand Island.
   ii. Consider developing a shallow draft vessel marina in the sea plane runway channel along the 'Ewa side of Sand Island.
   iii. Consider widening the harbor entrance/exit channel by 100 feet by acquiring land from the Sand Island State Recreation Area (SRA) along the Diamond Head side of Sand Island. If the channel is widened, construct break walls at various intervals along the entrance channel to protect operations inside the harbor from wave swells and surge.

2. Improve port infrastructure
   a. Take into consideration sea level rise (SLR) when improving piers. When improving/reconstructing piers, set new pier elevations at a standard height of 10 feet above the waterline. Barge cargo operators can operate with up to 12 feet of freeboard at the piers, but it requires special handling due to increased slopes on ramps. [Note: Barge cargo operators can operate normally with a pier freeboard ranging from approximately 6 feet minimum to 10 feet maximum.]
   b. Bollard standards (size and location) should be enhanced to support the increasing size of vessels under varying environmental conditions, e.g., during Kona winds and a south shore swell, a 40-ton bollard pulled out of the dock. Look statewide at bollard standards and apply same standard in all ports.
   c. Different users have different size and spacing requirements for bollards. Consult with users when design and locating bollards.
   d. Cargo operators won't put their barges on anchorage between shipments because that's when the operators do their general maintenance. For maintenance, operators need landside space with a strengthened pier that can support a service trucks and mobile cranes.
3. Vessel scheduling / lack of berthing
   a. There are numerous non-operational vessels that occupy berthing space. This adversely affects the harbor function in number of ways: (i)

limits overall harbor capacity, (ii) hinders vessel movements and operations by limiting the berths available to accommodate various vessel activities, and (iii) occupies valuable pier space that could be generating greater amounts of revenue to support harbor operations and maintenance and facility improvements. Non-operational vessels should be repaired and brought into active use or removed from the harbor. DOT-H does not have space to store these non-operational vessels. [Note: As of mid-November, three (3) derelict fishing boats were taken possession by HAR, removed from Pier 17, and are currently being actioned.]

b. Consider coordinating with the Department of Land and Natural Resources (DLNR), Division of State Parks (DSP) to acquire portions of the Sand Island SRA to create additional berthing or pier space. Potential locations include:
    i. The mauka side of Sand Island near the SRA entrance. This area faces the harbor interior and is generally protected by Sand Island. It is a natural extension of the USCG facility and the former-Tyco Pier.
    ii. The Ewa side of Sand Island adjacent to the sea plane runway channel. This area would need to be dredged and hardened or armored to protect against storm surges.
    iii. Sand Island SRA used federal Land and Water Conservation Fund Act (LWCFA) funds. [Note: These funds are administered by the U.S. Department of the Interior. Use of LWCF funds restricts the land use to recreational only unless compensatory recreational facilities are developed elsewhere.]
c. Cargo ships take priority over fuel tankers. As a general practice, fuel tankers and barges schedule their deliveries between the cargo ships' schedule. However, sometimes fuel tankers and barges have to leave the berth in mid-operation to make way for a cargo ship arrival. It is rare for a fuel tanker/barge to get bumped, but it does happen. This is costly due to additional labor, port fees and schedule delays.
d. Routine maintenance dredging is critical to keep berths available for active or lay use. Sedimentation impacts harbor operations and capacity, e.g., the Pier 19 high spot has restricted its use for a variety of vessels.

4. Long-term, critical maritime support service operators in the harbor lack secure, long-term tenure, which disincentives investment in facility improvements.
    a. There is a lack of equity in securing operational space to support vital functions of the harbor. Many key, long-term maritime operators have been occupying harbor land for many years (in some cases a decade or more) under 30-day revocable permits. Maritime uses cannot compete with other highest and best use land values, such as residential or commercial development. Maritime operators need DOT-H to support critical harbor operations and services by negotiating

long-term leases (minimum 30 years) that will incentivize investment and allow operators to secure financing for facility improvements. DOT-H should prioritize the importance of maritime operations as a statewide security issue that supports the livelihood of the islands.

b. There needs to be adequate space for maritime support services and their equipment to provide regular maintenance or emergency repair services to the cargo and vessel operators. Maritime services and equipment are specialized to the type of operations. Each major operator needs to determine the operational area required for the specific maritime support services and equipment that they need.

c. As cargo yards expand, area available for maritime support services will be reduced. This will displace important maritime support services or result in special equipment encroaching on cargo yard space. If equipment is displaced, the cost to maintain or repair ships will increase due to increased costs associated with transporting specialized machinery. Much of the required equipment is large and heavy; it is not permitted to be transported on public streets and highways without special provisions, including permits from the City and/or State, and special preparation along the transportation corridor to ensure there are no hazards or encumbrances such as inadequate vertical clearances, weight restrictions on bridges and culverts, or narrow intersections where obstructions such as light poles or electrical boxes restrict turns and may need to be moved. Transporting large specialized machinery can require a police escort, special trailers, and disassembly/assembly for transport, all of which add time and cost.

5. Other
   a. Nimitz Highway should be maintained as a commercial and industrial thoroughfare. Improvements should not encourage pedestrian and/or bicycle use, which would conflict with the movement of container trucks. The Nimitz Highway corridor should be constructed to carry heavier loads.

C. Closing / Next Steps

1. For Vessel Operations, Julie Edsall / Kirby Offshore Marine was selected as the primary PAC representative. [Note: Julie Edsall is no longer with Kirby Offshore Marine. She has been replaced with Captain Tom Heberle or Ed Enos / Hawai'i Pilots Association (HPA). Whit Olson / FOSS Maritime Company was selected as the back-up representative.]
2. For Maritime Support, Randy Grune / Hawai'i Stevedores, Inc. was selected as the primary PAC representative. Tiffanie Whitworth / Young Brothers was selected as the back-up PAC representative. [Note: Randy Grune / Hawai'i Stevedores and Pasha has been reassigned to represent the Cargo Sub-TAC. A new representative for the Vessel Operations and Maritime Support Sub-TAC seat on the PAC will be selected from the Sub-TAC participants].

3. The HHMP website will be updated with the agenda and meeting notes (www.honoluluharbormp.com/subtac).

Sign-in Sheet

Maritime Support & Vessel Operations Sub-TAC

CONTACT LAST NAME	CONTACT FIRST NAME	ORGANIZATION	DIVISION/BRANCH/SECTION	EMAIL	SUB-TAC	SUB-TAC MTG #1 ATTENDANCE
Bannon	John	US Coast Guard	Sector Honolulu	John.E.Bannon@uscg.mil	Vessel Operations	
Bond	Robin	HOST (Hawaii Ocean Safety Team)			Vessel Operations	
Buelsing	Mike	Pacific Shipyards International, LLC / Navatek		mbuelsing@navatekltd.com	Maritime Support	
Collins	Tom	Hawaii Pilots Association (HPBS, Inc.)		tomc.pilot20@gmail.com	Vessel Operations	
Edsall	Julie	Kirby Offshore Marine	Hawaii Division	julie.Edsall@kirbycorp.com	Maritime Support & Vessel Operations	
Enos	Edward	Hawaii Pilots Association (HPBS, Inc.)		capt.edenos@gmail.com	Vessel Operations	
Fry	Michael	US Fish and Wildlife Service	Environmental Contaminants	michael_fy@fws.gov	Maritime Support & Vessel Operations	
Grune	Randy	Hawaii Stevedores, Inc.		rgrune@hawaiistevedores.com	Maritime Support & Vessel Operations	X
Heatherly	Scott	US Customs and Border Protection		scott.k.heatherly@cbp.dhs.gov	Maritime Support	
Heberle	Tom	Hawaii Pilots Association (HPBS, Inc.)		tom.heberle@gmail.com	Vessel Operations	
Hopkins	Ryan	Hawaii Pilots Association (HPBS, Inc.)		ryanhopkins14@msn.com	Vessel Operations	
Iida	Todd	Hawaii Stevedores, Inc.		tiida@hawaiistevedores.com	Vessel Operations	X
Jose	Ferdinand	US Customs and Border Protection		ferdinand.a.jose@cbp.dhs.gov	Maritime Support	

- print BLR

↑ fix emails

Maritime Support & Vessel Operations Sub-TAC

CONTACT LAST NAME	CONTACT FIRST NAME	ORGANIZATION	DIVISION/BRANCH/SECTION	EMAIL	SUB-TAC	SUB-TAC MTG #1 ATTENDANCE
Lui-Kwan	Randal	Hawaiian Electric Company	Key Accounts Cust. Srvc	randal.luikwan@hawaiianelectric.com	Maritime Support & Vessel Operations	
MacDonald	Michael	Young Brothers/ Foss Maritime - Hawaii		mac@htbyb.com	Maritime Support & Vessel Operations	
Martin	Dane	Young Brothers/ Foss Maritime - Hawaii		dmartin@htbyb.com	Maritime Support & Vessel Operations	
Miyasaki	Robert	Department of Transportation	Statewide Transportation Planning Office		Maritime Support & Vessel Operations	
Morita	Steve	P&R Water Taxi LLC		ulysses.s.mullins@uscg.mil	Vessel Operations	
Mullins	Ulysses	US Coast Guard	Sector Honolulu	bradr@sause.com	Vessel Operations	
Nikaido	Blayne	Department of Transportation	Statewide Transportation Planning Office		Maritime Support & Vessel Operations	
Rimell	Brad	Sause Bros., Inc.		arocheleau@seaengineering.com	Maritime Support	
Rocheleau	Andrew	Sea Engineering, Inc.		mik.roer@kirbycorp.com	Vessel Operations	
Roer	Mike	Kirby Offshore Marine		eric.shimabukuro@hcdhawaii.com	Maritime Support	
Shimabukuro	Eric	HC&D, LLC		thomas.d.smith@usace.army.mil	Vessel Operations	
Smith	Thomas	US Army Corps of Engineers	Honolulu District, Civil Works Technical Branch	meghan.l.statts@hawaii.gov	Vessel Operations	
Statts	Meghan	Department of Land and Natural Resources	Division of Boating and Ocean Recreation	lance.tanaka@parpacific.com	Maritime Support & Vessel Operations	

Maritime Support & Vessel Operations Sub-TAC

CONTACT LAST NAME	CONTACT FIRST NAME	ORGANIZATION	DIVISION/BRANCH/SECTION	EMAIL	SUB-TAC	SUB-TAC MTG #1 ATTENDANCE
Tanaka	Lance	Par Hawaii, Inc.		ptoves@hfsnet.com	Maritime Support	
Toves	Patrick	Honolulu Freight Service			Vessel Operations	
Tsuji	Russell	Department of Land and Natural Resources	Land Division	ed.r.underwood@hawaii.gov	Maritime Support	
Underwood	Edward	Department of Land and Natural Resources	Division of Boating and Ocean Recreation	Eric.J.Velez@uscg.mil	Vessel Operations	
Velez	Eric	US Coast Guard	Sector Honolulu	ali.wang@iss-shipping.com	Vessel Operations	
Wang	Ali	Inchcape Shipping Services		twhitworth@htbyb.com; tiff@htbyb.com	Maritime Support & Vessel Operations	
Whitworth	Tiffanie	Young Brothers/ Foss Maritime - Hawaii		janet.yocum@fema.dhs.gov	Maritime Support	
Yocum	Janet	US Department of Homeland Security	Federal Emergency Management Agency	milton.t.yoshimoto@usace.army.mil	Vessel Operations	
Yoshimoto	Milton	US Army Corps of Engineers	Honolulu District, Civil and Public Works Branch	jzane@mhrhawaii.com	Maritime Support	
Zane	Jimmy	McCabe, Hamilton & Renny Co., Ltd.				
GARCIA	JOE	HAR-O		JOSEPH.GARCIA@HAWAII.GOV		

Maritime Support & Vessel Operations Sub-TAC						
CONTACT LAST NAME	CONTACT FIRST NAME	ORGANIZATION	DIVISION/BRANCH/SECTION	EMAIL	SUB-TAC	SUB-TAC MTG #1 ATTENDANCE
Olson	Whit	Foss	Marine	Wolson@foss.com		

Welcome

VESSEL OPERATIONS
AND
MARITIME SUPPORT

Technical Advisory Sub-Committee Meeting #2

October 18, 2018

Department of Transportation
Harbors Division

Marine Education and Training Center
10 Sand Island Parkway
Honolulu, HI 96819

PRELIMINARY

BERTH UTILIZATION ANALYSIS

Pier Number	Berth Length (Feet)	Port Calls	Total BFD (Days)	Average BFD (Days)	Average Port Call (Days)	% Utilization (FY 2017)	% Utilization (FY 2025)	% Utilization (FY 2035)	% Utilization (FY 2050)
01A	500	119	133,621	1,123	2.05	37%	42%	49%	63%
01B	675	144	122,037	847	2.20	25%	28%	33%	43%
02A	505	64	56,288	879	2.22	15%	17%	21%	26%
02B	705	390	228,965	587	1.18	44%	51%	60%	77%
02C	650	52	52,478	1,009	1.40	11%	13%	15%	19%
4	325	2	12	6	0.07	0%	0%	0%	0%
5	200	1	859	859	13.86	1%	1%	1%	1%
6	346	928	124,163	134	0.59	49%	56%	66%	85%
07DH	458	1	80,872	80,872	223.40	24%	27%	33%	42%
07EWA	275	4	5,039	1,260	7.78	3%	3%	3%	4%
8	615	1,653	191,971	116	0.38	43%	49%	58%	74%

Pier Number	Berth Length (Feet)	Port Calls	Total BFD (Days)	Average BFD (Days)	Average Port Call (Days)	% Utilization (FY 2017)	Forecasted % Utilization (FY 2025)	Forecasted % Utilization (FY 2035)	Forecasted % Utilization (FY 2050)
9	624	73	78,710	1,078	3.79	17%	20%	23%	30%
10	502	69	88,258	1,279	3.73	24%	27%	33%	41%
11	435	84	135,951	1,618	3.40	43%	49%	58%	74%
12	112	43	91,624	2,131	13.15	112%	127%	151%	193%
13	335	304	263,999	868	6.85	108%	123%	146%	186%
14	420	351	367,934	1,048	6.28	120%	136%	162%	207%
15	485	57	339,125	5,950	25.80	96%	109%	129%	165%
16	930	81	100,352	1,239	11.36	15%	17%	20%	25%

10/18/2018 Vessel Operations and Maritime Support Sub-TAC, Meeting #2

Pier Number	Berth Length (Feet)	Port Calls	Total BFD (Days)	Average BFD (Days)	Average Port Call (Days)	% Utilization (FY 2017)	Forecasted % Utilization (FY 2025)	Forecasted % Utilization (FY 2035)	Forecasted % Utilization (FY 2050)
17	965	1,576	1,524,690	967	9.02	216%	246%	292%	373%
18	210	3	1,163	388	3.76	1%	1%	1%	1%
19	580	57	92,803	1,628	5.70	22%	25%	30%	38%
20	510	78	187,418	2,403	7.71	50%	57%	68%	87%
21	495	592	327,182	553	4.22	91%	103%	122%	156%
22	410	445	170,753	384	3.58	57%	65%	77%	98%
23	425	4	37	9	0.11	0%	0%	0%	0%
24	580	76	96,918	1,275	6.48	23%	26%	31%	39%
25	365	107	145,175	1,357	5.00	54%	62%	74%	94%

10/18/2018 Vessel Operations and Maritime Support Sub-TAC, Meeting #2

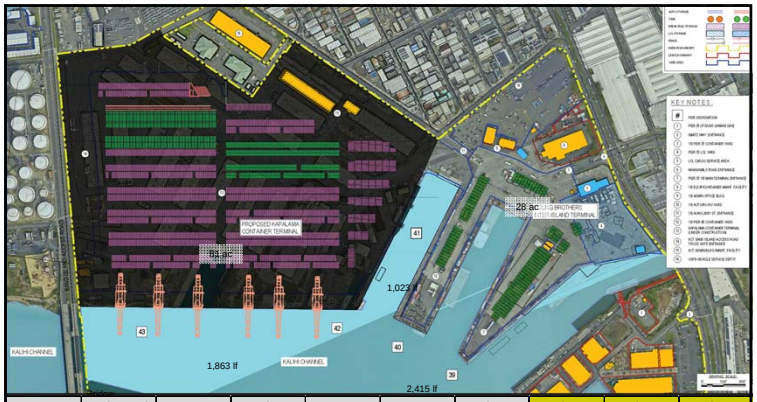
Pier Number	Berth Length (Feet)	Port Calls	Total BFD (Days)	Average BFD (Days)	Average Port Call (Days)	% Utilization (FY 2017)	Forecasted % Utilization (FY 2025)	Forecasted % Utilization (FY 2035)	Forecasted % Utilization (FY 2050)
27 DL	325	3,520	445,066	126	1.21	188%	213%	253%	323%
28	490	168	178,670	1,064	3.93	50%	57%	67%	86%
29	390	69	46,256	670	2.31	16%	18%	22%	28%
29 A	410	165	117,047	709	2.06	39%	44%	53%	67%
30	270	532	195,215	367	1.07	99%	112%	134%	171%
31 A	400	111	93,294	840	2.54	32%	36%	43%	55%
31	375	91	56,969	626	1.46	21%	24%	28%	36%
32	395	163	101,617	623	1.33	35%	40%	48%	61%

10/18/2018 Vessel Operations and Maritime Support Sub-TAC, Meeting #2

Pier Number	Berth Length (Feet)	Port Calls	Total BFD (Days)	Average BFD (Days)	Average Port Call (Days)	% Utilization (FY 2017)	Forecasted % Utilization (FY 2025)	Forecasted % Utilization (FY 2035)	Forecasted % Utilization (FY 2050)
33	330	54	41,043	760	2.89	17%	19%	23%	29%
34	545	27	59,920	2,219	9.31	15%	17%	20%	26%
35	705	122	285,034	2,336	9.65	55%	63%	75%	95%
36DH	545	1,590	676,553	426	4.50	170%	193%	230%	293%
36EWA	430	352	295,728	840	8.59	94%	107%	127%	162%
37	410	441	502,965	1,141	11.89	168%	191%	227%	289%
38	645	901	878,499	975	8.45	187%	212%	252%	321%

10/18/2018 Vessel Operations and Maritime Support Sub-TAC, Meeting #2

Pier Number	Berth Length (Feet)	Port Calls	Total BFD (Days)	Average BFD (Days)	Average Port Call (Days)	% Utilization (FY 2017)	% Utilization (FY 2025)	% Utilization (FY 2035)	% Utilization (FY 2050)
39-1A	320	95	198,527	2,090	6.77	85%	96%	115%	146%
39A	495	694	373,675	538	1.70	103%	117%	140%	178%
39B	515	28	18,918	676	2.13	5%	6%	7%	9%
39D	495	33	53,608	1,624	6.08	15%	17%	20%	26%
39E	530	839	417,959	498	1.54	108%	123%	146%	186%
40A	490	605	431,326	713	2.21	121%	137%	163%	208%
40B	505	289	263,380	911	3.02	71%	81%	96%	123%
40C	250	1	70	70	0.65	0%	0%	0%	0%
40D	505	44	77,345	1,758	4.62	21%	24%	28%	36%
40E	495	4	2,473	618	1.60	1%	1%	1%	1%
40F	170	2	476	238	2.37	0%	0%	1%	1%
39A - 40F TOT	**4,450**	**2,539**	**1,639,230**	**646**	**--**	**50%**	**57%**	**68%**	**86%**

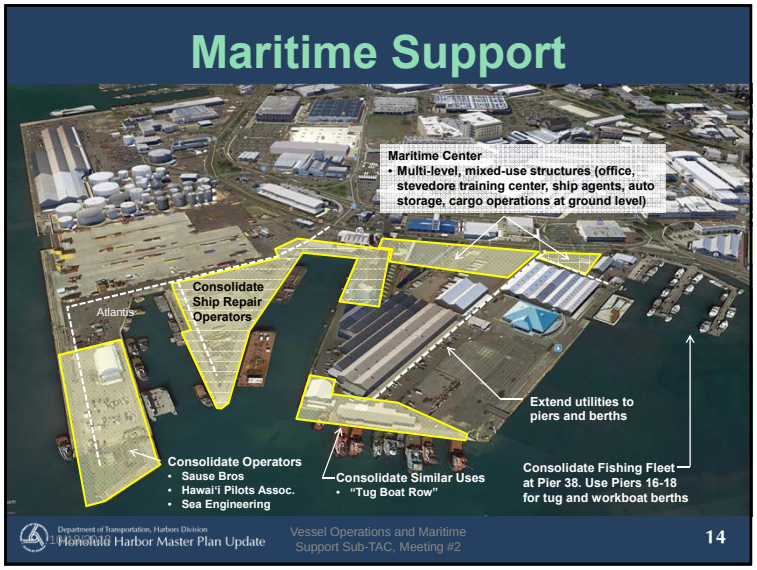


Pier Number	Berth Length (Feet)	Port Calls	Total BFD (Days)	Average BFD (Days)	Average Port Call (Days)	% Utilization (FY 2017)	% Utilization (FY 2025)	% Utilization (FY 2035)	% Utilization (FY 2050)
41	940	178	213,649	1,200	10.07	31%	35%	42%	54%
42	800	23	26,360	1,146	12.40	5%	5%	6%	8%

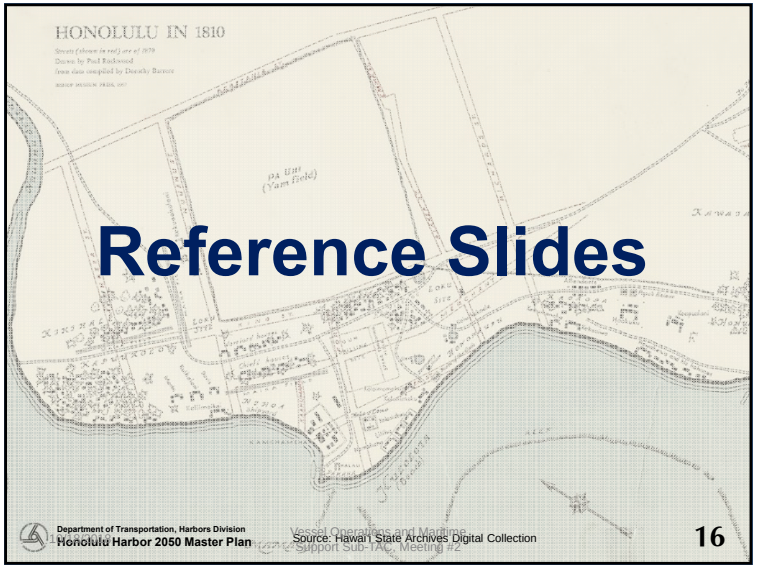
Pier Number	Berth Length (Feet)	Port Calls	Total BFD (Days)	Average BFD (Days)	Average Port Call (Days)	% Utilization (FY 2017)	% Utilization (FY 2025)	% Utilization (FY 2035)	% Utilization (FY 2050)
51A	680	302	381,957	1,265	1.39	77%	87%	104%	132%
51B	585	574	132,927	232	0.75	31%	35%	42%	54%
51C	770	588	192,147	327	1.02	34%	39%	46%	59%
51A-51C TOT	**2,035**	**1,464**	**707,031**	**483**	**--**	**48%**	**54%**	**65%**	**83%**
52A	400	431	483,222	1,121	1.37	165%	188%	223%	285%
53A	490	442	274,762	622	1.23	77%	87%	104%	132%
53B	400	2	623	312	0.99	0%	0%	0%	0%
52A-53C TOT	**1,290**	**875**	**758,607**	**867**	**--**	**81%**	**92%**	**109%**	**139%**
60	452	69	103,378	1,498	4.34	31%	36%	42%	54%

PRELIMINARY STAKEHOLDER INPUT

Vessel Operations
Consolidate fishing fleet
Install range aids for channel navigation
Widen Kapalama Channel 50 to 75 feet
Deepen basin and pier-side draft
Re-open second harbor entrance
Add layberths
600'
Widen Entrance Channel to 590 feet min.
600'
Department of Transportation, Harbors Division
Honolulu Harbor Master Plan Update
Vessel Operations and Maritime Support Sub-TAC, Meeting #2
13


Maritime Support
Maritime Center
• Multi-level, mixed-use structures (office, stevedore training center, ship agents, auto storage, cargo operations at ground level)
Consolidate Ship Repair Operators
Atlantis
Extend utilities to piers and berths
Consolidate Operators
• Sause Bros
• Hawai'i Pilots Assoc.
• Sea Engineering
Consolidate Similar Uses
• "Tug Boat Row"
Consolidate Fishing Fleet at Pier 38. Use Piers 16-18 for tug and workboat berths
Department of Transportation, Harbors Division
Honolulu Harbor Master Plan Update
Vessel Operations and Maritime Support Sub-TAC, Meeting #2
14

BERTHING
Kalihi
Kalihi Kai
Kapalama Terminal
Iwilei
Ke'ehi Lagoon
Chinatown
Sand Island Terminal
Downtown
Kaka'ako
Fort Armstrong Terminal
Mamala Bay
General Anchorage C
General Anchorage B
General Anchorage A
Legend
Department of Transportation, Harbors Division
Honolulu Harbor 2050 Master Plan
Vessel Operations and Maritime Support Sub-TAC, Meeting #2
15


HONOLULU IN 1810
Reference Slides
Department of Transportation, Harbors Division
Honolulu Harbor 2050 Master Plan
Source: Hawai'i State Archives Digital Collection
Vessel Operations and Maritime Support Sub-TAC, Meeting #2
16