2012 AAHPA CONFERENCE
HARBOR MASTER PLAN – SITKA MODEL

October 24, 2012

30 YEARS Northern Economics 2012

PND ENGINEERS, INC.

Introductions

Dick Somerville, P.E. – PND Engineers, Inc.

Principal & manager of PND SE AK Operations since 1996

Alaska resident since 1973.

Graduated University of Alaska with BSCE

30 years engineering experience - all in Alaska

Specializes in Port and Harbor Facility Design & Contract Admin.

Mike Fisher – Northern Economics

Project manager and economist at Northern Economics (Anchorage) for last 11 years.

Graduated University of Alaska with MS Project Management

Graduated Western Washington University with MBA

Specializes in Port and Harbor Economic Assessments & Rate Studies

This Morning's Quiz

1. How many Harbormasters & Port Administrators have deferred maintenance issues or capital project needs?
2. How many have sufficient budgets to fund all operations, maintenance and capital improvements?
3. How many have prepared a Master Plan that assesses facility conditions, long term life cycle costs and a financial plan that assesses both costs & revenues to remain operational?

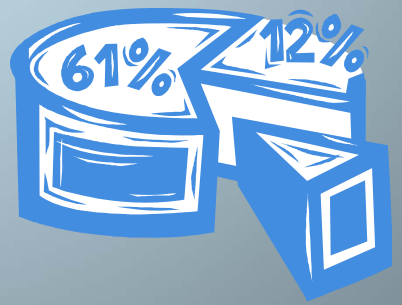
Harbor Master Plan
Sitka's Approach

- 1. Inventory all harbor facilities (marine and uplands) and provide a general overview of their current condition and remaining service life.
- 2. Prepare budget estimates for the replacement of facilities over time.
- 3. Prioritize projects into a Capital Improvements Plan.
- 4. Assess Harbor Department revenues and full life cycle costs of harbor operations, maintenance and replacement of facilities.
- 5. Prepare guidance and recommendations for planning moorage rates to fund the anticipated life cycle costs.

Two Part Study

Part 1: Condition Inventory & CIP Plan – PND

Part 2: Moorage Rate Study – Northern Economics

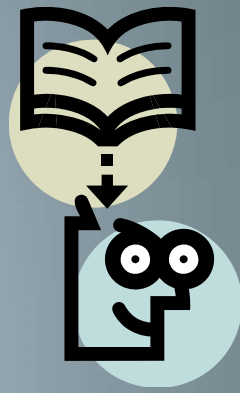


Part 1 – Condition Inventory

Sixteen port and harbor facilities operated and maintained by the CBS Harbor Department were included in this study.

1. Crescent Harbor	7. O'Connell Bridge Lightering Float	13. Crescent Harbor High Load Dock & Net Shed
2. Thomsen Harbor	8. Crescent Harbor Lightering Float	14. Boat Grids
3. Sealing Cove Harbor	9. Fisherman's Work Float	15. Marine Service Center Bulkhead
4. Eliason Harbor	10. Fish Cleaning Float	16. Seaplane Float
5. ANB Harbor	11. Crescent Harbor Boat Launch Ramp	
6. Sitka Transient Float	12. Sealing Cove Harbor Boat Launch Ramp	

Approach to Condition Inventories



- Reviewed available maps, aerial photos, design drawings and construction records related to Sitka's harbors.

- Developed a base map of each harbor to organize and identify specific features – both offshore and onshore in the adjacent uplands.

- Civil, structural, electrical, mechanical and architectural consultants inspected the primary components of each facility and the findings were discussed and confirmed with harbor staff.

- Reports were prepared to summarize the general conditions observed, construction materials utilized, facility age, remaining service life and budgets for the in-kind replacement of each facility.

Safe and Usable Service Life

- "Safe and usable service life" is generally defined as the duration that a facility is fit to safely perform its intended purpose.

- In the past, 30 years was commonly used for planning the service life of marine facilities without significant maintenance or rehabilitation during their lifespan.

- With good design practices followed by rigorous maintenance, the service life of most marine facilities can be extended. In Sitka, where routine maintenance is performed well, it appears that 40 years of safe and usable service life is readily achievable.

In Kind Replacement Budgets

- "In kind replacement" refers to a new facility considered to have a similar functional and geometric configuration as compared to the existing facility.

- Elements of each facility that were found to be out dated by code or common practice were budgeted with components that meet modern industry standards.

- When the time comes to replace a facility, additional planning efforts will be necessary to address current operational requirements such as the makeup of the anticipated fleet. This may warrant some logistical or geometric changes to existing harbor layouts to meet current demand.

- 2012 unit prices were utilized for preparing the replacement budgets. Marine facility costs have increased considerably over the last 20 years. As an example, timber floats installed in the early 90's bid at $25/SF and they currently bid around $80/SF.

Capital Improvement Projects Plan

Following completion of the Condition Inventories, PND and NEI worked with Sitka to establish project replacement priorities based on facility condition, available funding and perceived community need.

Replacement budgets were prepared for all offshore and onshore facilities managed and maintained by the CBS Harbor Department and a CIP Plan was developed.

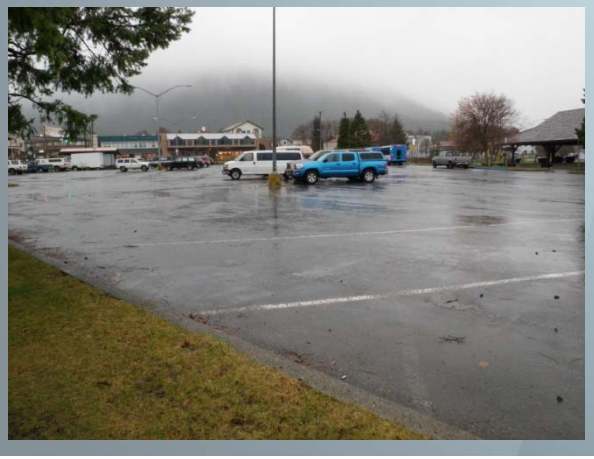
Many different types of facilities fall under the Harbor Department's responsibility.

Building Facilities

Master Plan Facility ID	Remaining Service Life (Years)	Recommended Project Budget ($)	Grant Funding ($)	Sitka Harbor Capital Cost ($)	Project Year
1. Thomsen Restroom	14	$213,543		$213,543	2024
2. ANB Restroom	24	$226,741		$226,741	2037
3. Eliason Restroom	24	$304,425		$304,425	2036
4. Sealing Cove Restroom	24	$272,884		$272,884	2036
5. Harbor Office	32	$371,725		$371,725	2044
6. O'Connell Restroom	50	$197,505		$197,505	2062
Total Buildings		**$1,586,823**		**$1,586,823**	

Roads, Utilities & Parking Lots

Master Plan Facility ID	Remaining Service Life (Years)	Recommended Project Budget ($)	Grant Funding ($)	Sitka Harbor Capital Cost ($)	Project Year
1. Crescent Multi-Use Lot	10	$1,288,052	$1,288,052	$0	2013
2. Thomsen Parking Lot	5	$638,550		$638,550	2014
3. Sealing Cove Parking	10	$748,440		$748,440	2020
4. Lincoln Street Lots	10	$248,923		$248,923	2020
5. Eliason Harbor Parking	10	$993,094		$993,094	2021
6. ANB Harbor Parking	10	$496,733		$496,733	2021
Total Roads, Util., Pkg		**$4,413,792**		**$3,125,740**	

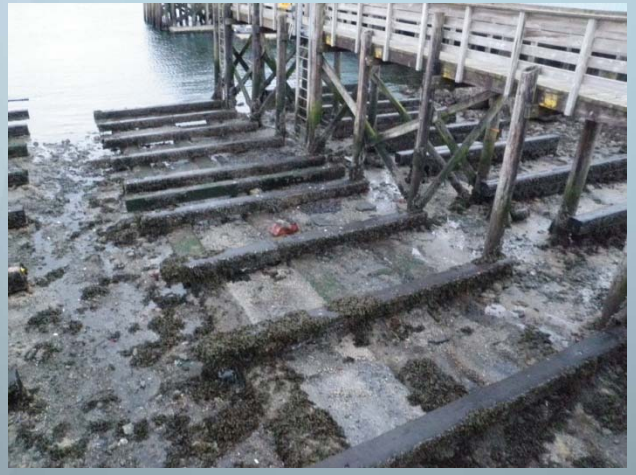


Boat Launch, Trailer Parking & Fish Cleaning Facilities

Master Plan Facility ID	Remaining Service Life (Years)	Recommended Project Budget ($)	Grant Funding ($)	Sitka Harbor Capital Cost ($)	Project Year
1. Crescent Harbor Boat Launch and Parking	10	$447,914	$117,501	$330,413	2013
2. Sealing Cove Harbor Boat Launch & Parking	10	$1,235,520		$1,235,520	2019
3. Fish Cleaning Float	10	$280,108		$280,108	2021
Total Boat Launch, Pkg & Fish Cleaning Float		**$1,963,542**	**$117,501**	**$1,846,041**	

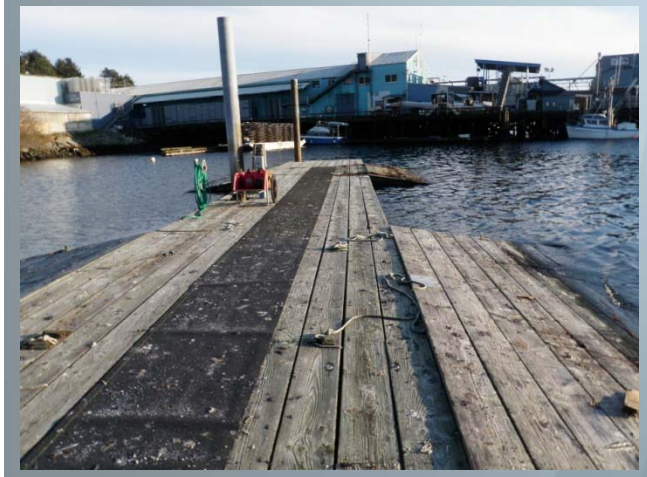
Docks, Grids & Bulkheads

Master Plan Facility ID	Remaining Service Life (Years)	Recommended Project Budget ($)	Grant Funding ($)	Sitka Harbor Capital Cost ($)	Project Year
1. Marine Service Center Bulkhead	5	$5,862,780		$5,862,780	2017
2. Katlian St. Boat Grid	20	$3,166,020		$3,166,020	2032
3. Crescent Harbor High Load Dock & Net Shed	25	$4,980,441		$4,980,441	2037
Total Docks, Grids & Bulkheads		**$14,009,241**		**$14,009,241**	



Specialty Floats

Master Plan Facility ID	Remaining Service Life (Years)	Recommended Project Budget ($)	Grant Funding ($)	Sitka Harbor Capital Cost ($)	Project Year
1. Seaplane Float	5	$11,200,000	$10,640,000	$560,000	2014
2. Sitka Transient Float	5	$4,948,169		$4,948,169	2015
3. Fisherman's Work Float	10	$2,619,540		$2,619,540	2022
4. Crescent Lightering Float	15	$2,084,198		$2,084,198	2027
5. O'Connell Lightering Float & Uplands	25	$1,854,394		$1,854,394	2037
Total Specialty Floats		**$22,706,301**	**$10,640,000**	**$12,066,301**	

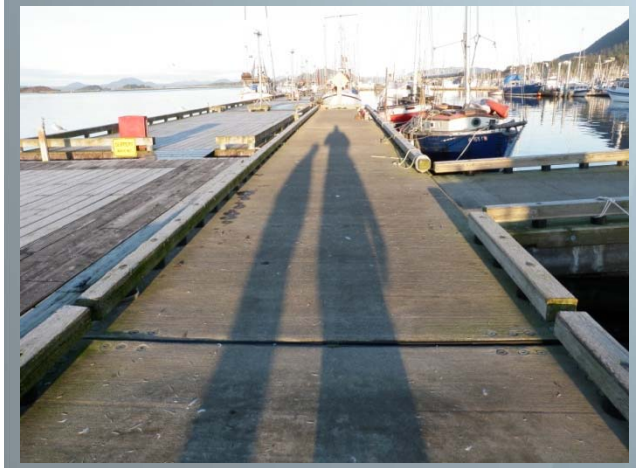


Interim Repairs & Improvements

Master Plan Facility ID	Remaining Service Life (Years)	Recommended Project Budget ($)	Grant Funding ($)	Sitka Harbor Capital Cost ($)	Project Year
1. Net Shed Roof Repairs	2	$139,108		$139,108	2013
2. Eliason Harbor Electrical Replacement	5	$2,309,175		$2,309,175	2017
3. Sealing Cove Harbor Maintenance Repairs	10	$700,000		$700,000	2017
Total Interim Harbor Improvements		**$3,148,283**		**$3,148,283**	

Boat Harbors

Master Plan Facility ID	Remaining Service Life (Years)	Recommended Project Budget ($)	Grant Funding ($)	Sitka Harbor Capital Cost ($)	Project Year
1. ANB Harbor	5	$8,245,166	$4,122,583	$4,122,583	2013
2. Crescent Harbor (2 Phases)	5-15	$15,951,499		$15,951,499	2016
3. Sealing Cove (2 Phases)	15	$10,729,660		$10,729,660	2027-8
4. Eliason Harbor (5 Phases)	20	$26,012,894		$26,012,894	2032-6
5. Thomsen Harbor	35	$8,940,947		$8,940,947	2047
Total Boat Harbors		**$69,880,166**	**$4,122,583**	**$65,757,583**	



Total Sitka Harbor CIP Plan

The total cost of the CIP Plan in 2012 dollars amounts to $118 M with only $16M in grant funds identified to date.

All Port and Harbor Facilities	Total Recommended Project Budget ($)	Anticipated Grant Funding to Date ($)	Anticipated Sitka Harbor Capital Cost ($)
TOTAL	**$117,708,148**	**$16,168,136**	**$101,540,012**

How can Sitka afford these high costs?

Part 2 – Economic Analysis & Financial Recommendations

30 YEARS
Northern Economics
2012

Sitka Harbor System Master Plan: Financial Planning

Presentation to

2012 Annual Conference

of the

Alaska Association of Harbormasters and Port Administrators

Mike Fisher

October 24, 2012

Agenda

- Approach
- Findings for the Sitka Harbor System
- Options for Moving Forward
- Our Recommendations
- Funding Assumptions and Options
- Rates and the Competitive Environment

Life Cycle Cost Analysis: Process

- Look at all cash costs incurred over time
  - Planning, construction, operations and maintenance, repair and major maintenance, replacement, and decommissioning
- "Discount" the costs to 2012 dollars
  - A dollar today is more valuable than a dollar received in the future.
- Find the total discounted cost today
- Find the equivalent uniform annualized cost
  - Costs that need to be covered each year, in 2012 dollars

Life Cycle Cost Analysis: Caveats

- Life Cycle Costing
  - … takes a long-term view rather than focus on immediate needs.
  - … is not a cash flow analysis and does not account for cash reserves and needs.
  - … assumes future increases in excess of inflation to cover debt payment requirements.

Findings for the Sitka Harbor System

- Current moorage rates at the time of the study:

Moorage Type	Vessel Size	Rate
Permanent	All	$1.90 per foot per month
Transient	0’-80’	$0.35 per foot per day
	81’-150’	$0.60 per foot per day
	>150’	$0.90 per foot per day

Findings for the Sitka Harbor System

- Current revenue situation at the time of the study:

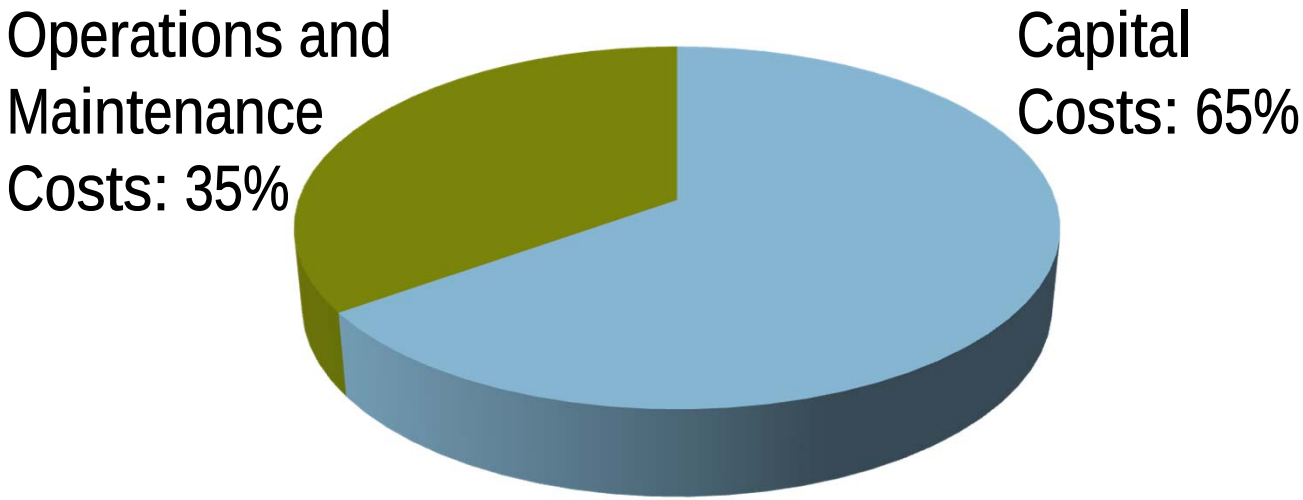
Moorage Revenue	$ 1,300,000
Other Operating Revenues:	$ 300,000
Non-Operating Revenues:	$ 84,000
Raw Fish Tax Revenues (average):	$ 800,000
Fish Box Tax Revenues (average):	$ 41,000
Total:	$ 2,525,000

Note: We omitted selected revenues, such as those that appeared to be atypical or non-recurring.

Sitka Harbor System Costs

- Costs over the next 50 years
  - Capital costs (CIP): variable, up to $11.2 million each year
  - Operations and Maintenance cost: $1.5 million each year

- Split of lifetime costs between capital and O&M:



Sitka Harbor System: The Complete Picture

- Looking Forward

Annual Revenues	$ 2,525,000
Annualized Cost	$ 4,480,000
Annual Shortfall	- $ 1,955,000

- Moorage and other revenues need to cover all costs.

- Most non-moorage revenues are either minor sources or are not under the Harbor Fund's control.

Options for Moving Forward

- Implementing the needed rate increase
  - Single, large increase
  - Multi-year set of increases
- Distribution
  - Flat, across-the-board rate increase
  - Addition of tiered rates for permanent moorage
  - Selective increases
- Inflation adjustments
  - Annual adjustments
  - Less frequent but larger adjustments

Full Increase Today: 2.49× Current Rate

Moorage Rates with a Full Increase

Vessel Class	Current Rates per Foot ($)			Recommended Rates per Foot ($)		
	Daily	Monthly	Annual	Daily	Monthly	Annual
Permanent		1.90	22.80		4.73	56.76
Transient						
0–80 Feet	0.35			0.87		
81–150 Feet	0.60			1.49		
>151 Feet	0.90			2.24		

Example Vessel Size	Permanent Moorage Current Rates ($)			Permanent Moorage Recommended Rates ($)		
	Daily	Monthly	Annual	Daily	Monthly	Annual
25' Vessel		47.50	570.00		118.25	1,419.00
40' Vessel		76.00	912.00		189.20	2,270.40
60' Vessel		114.00	1,368.00		283.80	3,405.60

CBS Five-Year Implementation Plan

- Since a large increase could adversely affect demand, we worked with CBS staff to develop an alternative rate plan with a five-year implementation.

Moorage Type	Moorage Rate ($ per Foot)				
	Year 1	Year 2	Year 3	Year 4	Year 5
Permanent Annual	31.68	40.44	49.20	57.96	66.72
Transient Daily, 0-80 Feet	0.87	0.91	0.96	1.01	1.06
Transient Daily, 81-150 Feet	1.49	1.56	1.64	1.72	1.81
Transient Daily, 151 Feet or Longer	2.24	2.35	2.47	2.59	2.72

How to address cash flow requirements

- The life cycle cost model looks at long-term cash needs, not short-term needs.
- Due to the number of short-term projects in the CIP and the Harbor Fund's low working fund balance, we were asked to develop a cash flow model and financing plan to carry out the CIP while maintaining a minimum balance of $4 million.

Projected Working Capital and Cash Needs with a Single-Year Increase and the Five-Year Plan

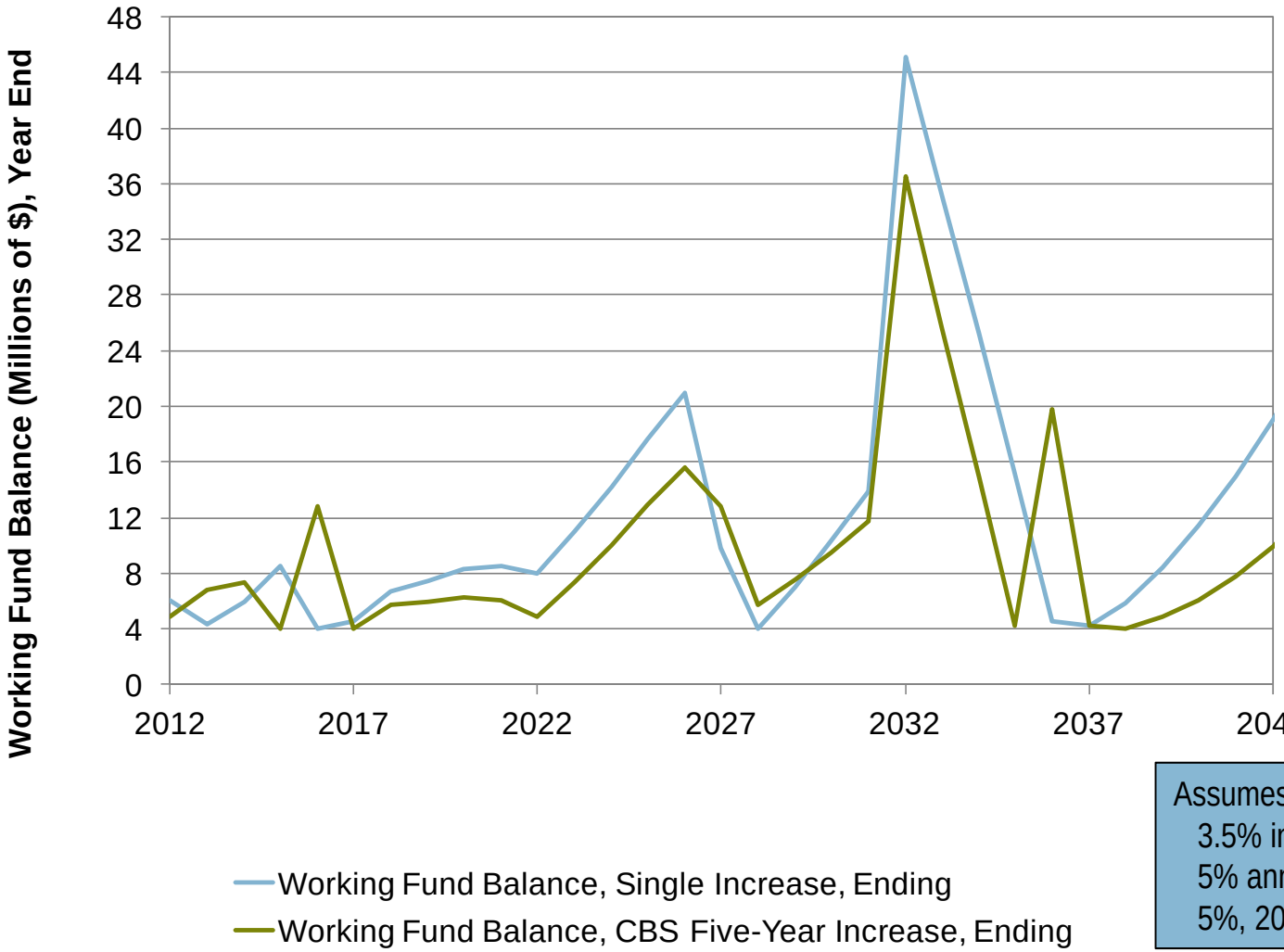


Chart assumes:

$110 million of debt issues for a single-year rate increase

$190 million for a five-year rate increase

Assumes:
- 3.5% inflation
- 5% annual rate increases
- 5%, 20-year debt

Our Recommendations

- Adopt a rate structure to accomplish the capital improvements plan
  - Sitka's Port and Harbors Commission supported a five-year implementation plan for permanent moorage (using a new port development fee for the increases) and a single-step increase for transient moorage
- Reevaluate assumptions, needs, and funding periodically
  - At least every 5–10 years
  - Before major facility replacements

Issues to Keep in Mind

- Our analysis is built around assumptions. If assumptions change, the results change.
- Even with recommended rate changes and annual inflation increases, it is possible that further changes will be needed.
- The benefit of the rate and fee increases is that users will see their moorage payments go to work in the harbor enterprise fund according to the Capital Improvement Plan.

Funding Assumptions

- We assumed modest support from grants:
  - About $5.5 million from the state for harbor improvements
  - About $10.6 million for the $11.2 million seaplane float
- When we looked at different levels of grant funding, we found, at best:
  - Base level of grant funding led to 2.5× current rates
  - Additional funding (25% of cost) led to 2× current rates
  - Even more funding (50% of cost) led to 1.4× current rates

Could We Get More Grants?

- A question emerging from the Assembly discussion in July was whether Sitka could (and should) expect to get additional grant funding.

- Selected funding sources include:
  - Alaska Municipal Harbor Facility Grant Program
  - Boating and Angler Access Program (ADF&G)
  - U.S. Economic Development Administration
  - U.S. Department of Agriculture

Harbor Facility Grant Program

- 50/50 matching grant program established by the Alaska Legislature in 2006
- Tiered program
  - Tier I: major maintenance and repair of a locally-owned harbor facility that was previously owned by the state
  - Tier II: all other harbor facilities and those harbor facilities which have already received a Tier I grant
- Limit of $5 million per application ($10 million total facility cost based on 50/50 match)

Harbor Facility Grant Program: Scoring Criteria Part 1

- Sufficient revenues to operate and maintain the harbor facility in the future without state aid
- Safety or Emergency factors
- *(Tier I applicants only)* Annual average amount spent on maintenance of the harbor facility by the applicant
- Other options that would reduce or eliminate the need for the proposed project

Harbor Facility Grant Program: Scoring Criteria Part 2

- Project serves the best public interest
- Maintenance (reduce maintenance costs)
- Operational importance
- Importance of the applicant's harbor facility (AMHS, road, air, and other access)
- Local resolution of support

Boating and Angler Access Program

- Established by *Federal Aid in Sport Fish Restoration Act*
- Funded by federal excise taxes and import duties placed on sport fishing equipment, recreational powerboats, and gasoline used in recreational boats
- ADF&G receives funds from the U.S. Treasury, via the U.S Department of Fish and Wildlife Service
- 75/25 matching program
  - Requires a 25% non-federal match
  - Match is often met from sport fishing license revenues

Boating and Angler Access Program

- Grant funds for facilities related to recreational boating and sport fishing
  - Two programs: recreational boating and non-boating angler access
  - Not for subsistence or personal use
    - Alaska-resident-only uses are not public in a federal sense
    - “Methods and means” such as gillnets, set nets, and dip nets are not allowed in sport fishing and are not subject to the excise taxes that support the program
  - Not for commercial fishing groups

- Projects are built to ADA guidelines and include:
  - Boat launches and parking areas
  - Restrooms
  - Transient moorage
  - Fish cleaning facilities
  - Other fresh water and marine access site improvements

U.S. Economic Development Administration

- Agency within the U.S. Department of Commerce
- Partners with distressed communities throughout the United States to foster job creation, collaboration, and innovation
- EDA helps to improve Alaska ports by providing funding for both infrastructure and equipment

U.S. Economic Development Administration

- Examples of EDA Funding:
  - Sitka's Marine Services Center
  - Port Lions harbor improvements:
    $1.5 million for renovation of 35 slips and addition of 21 slips
  - Bristol Bay Borough dock improvements:
    $2.4 million for the purchase of a crane and two forklifts

U.S. Department of Agriculture

- USDA Rural Development oversees programs intended to improve the social and economic conditions in rural America

- USDA offers business and cooperative loans and grants to promote business and employment

U.S. Department of Agriculture

- Two programs of interest to Sitka's harbor projects:
  - Rural Business Opportunity Grants
    - Improve economic conditions in rural communities with 50,000 of fewer people through technical, planning, and training assistance
  - Business and Industrial Loan Guarantee Program
    - Improve the financing terms smaller communities can get when borrowing money by guaranteeing a portion of the loan, subject to some limitations

Recommended Use of Grant Funds

- We found:
  Grants could reduce the required rate increases

- However, we recommend:
  Use grant funds to reduce debt issues, not rates.
  - Grants are temporary (one-off)
  - Grants are subject to uncertainty in funding, eligibility, and competitive factors (not conducive to long-term planning)
  - Debt has a real cost (interest, maintenance requirements)
  - Debt imposes leverage that works both ways

Do Rates Reflect Full Costs?

- Our rates recommendations are based on Sitka's facilities and financial situation, not the rates in place in other harbors.

- Do other harbors' rates reflect their full cost?

The Challenge of Increasing Rates

"…most cities in [Alaska] would like to raise rates at their municipally owned moorage facilities to pay for needed improvements, but they know they face competitive pressures from one another as well as from harbors in Washington state."

-- John Stark, "Slicing moorage rates to attract fishermen from other harbors," Pacific Fishing, September 2012

Who's the Real Competition?

Harbor	Annual Rate ($ per Foot)
Sitka (current at time of study)	22.80
Sitka (study recommendation)	56.76
Juneau Downtown Harbors *(not including advance payment discount)*	47.40
Juneau Statter and DeHarts Harbors *(not including advance payment discount)*	79.20
Wrangell	22.00
Petersburg	34.08
Ketchikan, within city limits	22.98
Ketchikan, outside city limits	27.58
Port of Bellingham, WA *(after rate cut described in article)*	
Active Commercial Fishing, 0-80 feet	70.80
Active Commercial Fishing, over 80 feet	83.04
Fishermen's Terminal, Port of Seattle, WA	
Active Fishing Vessel, 30-79 feet	76.68
Active Fishing Vessel, 80-125 feet	111.36
Active Fishing Vessel, over 125 feet	132.72

Rate Competition: Alaska, Washington

- We recommend rate increases out of necessity and based on facilities and economics, not the market.
- The least expensive Port of Bellingham moorage rate
  - … is 25% higher than our recommended rate for Sitka.
  - … is higher than every public harbor in Southeast Alaska except for Juneau's Statter and DeHarts Harbors, for vessels up to 80 feet.
- Locally, rates are fairly close.

Rate Competition: Our Take

- Rate competition is local, not with Washington ports.
  - Fuel and other travel costs widen the gap further the farther north a vessel operates.

- Rate and fee increases can affect demand, but a five-year plan can reduce the negative effect and send a signal to the local market.

What Happens without an Effective Plan?

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Thank You – Any Questions?

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Following the conference, this presentation will be posted at *www.harbormodel.com*.