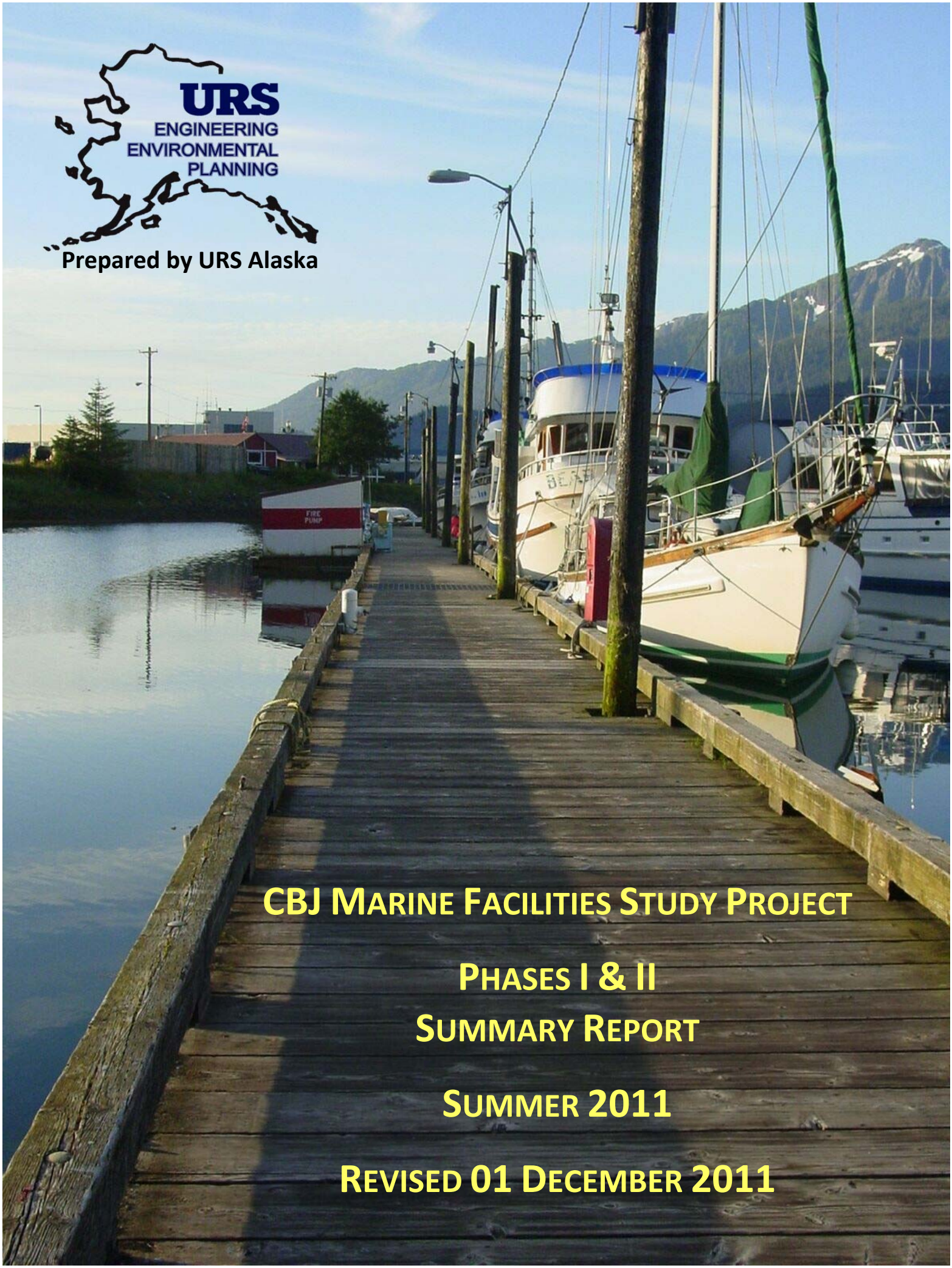

URS
ENGINEERING
ENVIRONMENTAL
PLANNING
Prepared by URS Alaska
CBJ MARINE FACILITIES STUDY PROJECT
PHASES I & II
SUMMARY REPORT
SUMMER 2011
REVISED 01 DECEMBER 2011

TABLE OF CONTENTS

PROJECT BACKGROUND

The CBJ Marine Facilities Study project included a two phase effort to examine the feasibility of new Marine Support Facilities at various locations in the Juneau area. Phase I was performed in 2007 by Tryck Nyman Hayes (TNH) and included an examination of six potential sites that resulted in two short listed sites. The sites were selected based upon public input and a value engineering process. In early 2011, two additional sites were selected for consideration. A second phase of work was performed by URS Alaska (formerly TNH) to examine the feasibility of these two new sites, which included cost estimates and site conceptual designs. In addition, the opinion of probable cost (OPCC) for the original short-listed sites was updated to 2011 costs to allow the sites be compared at current prices. Following are descriptions of the four sites currently under consideration and recommended improvements.

SITE DESCRIPTIONS

EXISTING UNIVERSITY PROPERTY SITE

The University property site, located northwest of downtown Juneau along Egan Drive, is owned by the University of Alaska Southeast (UAS). The waterfront area is approximately 140,000 square feet in size. UAS leases the property to the City and Borough of Juneau (CBJ).

CBJ utilizes the site primarily for marine support maintenance operations. There are eight buildings and a 35-ton travel lift station located on property. The buildings have a combined footprint of 6,000 square feet. Two buildings to the north of the property function as the Harbormaster's offices. The remaining four buildings are sublet to commercial marine support operations; Juneau Marine Services and Maritime Hydraulics. Juneau Marine Services (JMS) leases three buildings from CBJ, one of which sits on the southeast pier and is used for general supply storage. The two remaining JMS buildings are located to the southeast of the Harbormaster's offices and are utilized as boatyard repair and office buildings. Maritime Hydraulics sublets the building to the south of the property along the southwest pier for hydraulic fluid storage. Adjacent to the east boundary of CBJ's leased property, are two UAS buildings and a parking area designated as additional high school student parking.

PROPOSED UNIVERSITY PROPERTY SITE IMPROVEMENTS

The proposed improvements to this site include the installation of two sheet pile bulkheads to create approximately 1.4 acres of new uplands, which will allow eleven vessels ranging from 58' to 80' in length to be stored and maintained. These vessels will be serviced by a 150 metric tonne marine travelift which utilizes a pile supported haulout bay. In addition, the existing boat yard is retained and will be serviced by a self-propelled hydraulic trailer operating from the existing Harris Harbor launch ramp. Due to the physical size of the machine and the space available between the existing buildings, the 150 metric tonne marine travelift will not be able to service the existing marine facility. A wash down area with water treatment will be provided at the travelift bay to capture and treat water from boat maintenance operations. A 12'x200' concrete work float will be installed within the Aurora Harbor basin to accommodate in-water repair work.

EXISTING NORWAY POINT SITE

The Norway Point site, located northwest of the University property along Egan Drive and adjacent to the boat harbor, is owned by the CBJ. The property is approximately 85,000 square feet in size with one building on property located along the southeast corner. For the past 30 years, the CBJ has leased the property to the Juneau Yacht Club.

The Norway Point site is primarily utilized by the yacht club as a boat launch access area; however, during the winter season the CBJ uses the area along the south boundary as a snow dump. The only building currently on property is utilized by the City and the Yacht Club primarily as a multipurpose/meeting hall facility. The building footprint is approximately 4,500 square feet. The property is currently not paved. There is a pier located along the southwest corner of the property as well as an access roadway to the site along the northeast corner. A jetty extends from the southeast boundary of the property and out past the southeast corner of the property.

PROPOSED NORWAY POINT SITE IMPROVEMENTS

The proposed improvements to this site include a three acre expansion to the existing Norway Point parking area, which will allow eleven vessels ranging from 58' to 80' in length to be stored and maintained. These vessels will be serviced by a 150 metric tonne marine travelift which utilizes a pile supported haulout bay. A one acre portion of the expanded uplands will be used for parking for the existing Yacht Club, while the remainder will be used as a boatyard. In addition to the uplands improvements, a 12'x200' concrete work float will be installed to accommodate in-water repair work. The existing Yacht Club float will be relocated to a position within the Aurora Harbor basin.

EXISTING AUKE BAY LOADING FACILITY

The Auke Bay Loading Facility consists of a newly constructed 52 foot wide commercial launch ramp and a drive down work float. The associated 2.2 acres of uplands were recently paved and a new security system was installed. The site is located adjacent to Alaska Glacier Seafoods north of the Ferry Terminal.

PROPOSED AUKE BAY LOADING FACILITY IMPROVEMENTS

The proposed improvements include the purchase of a self-propelled 45 ton hydraulic trailer, construction of a washdown slab with recirculating water treatment, and basic modifications to the existing storm drains to install filter screens. Of the paved 2.2 acres of uplands, one acre will be available for boat storage and repair. The completed facility would be capable of storing sixteen vessels ranging from 25 to 55 feet. The hydraulic trailer chosen for this site is the four-wheel drive model, due to the steeper than usual launch ramp. In addition to the 45 ton hydraulic trailer, a 75 ton hydraulic trailer was examined for use at this site. For the final concepts, the larger trailer was rejected because the physical size of the trailer would have made handling smaller vessels more challenging.

EXISTING STATTER HARBOR SITE

The existing Statter Harbor facility consists of an existing boatyard, an unpaved boat storage area, a 15 metric tonne travelift, and a timber travelift trestle. The existing facility is approximately one acre in size. The existing boatyard will be partially removed to make room for the proposed Auke Bay Launch Ramp facility, which is currently in the planning stages. The existing property is owned by CBJ and is leased to Juneau Marine Services who operates the existing boatyard.

PROPOSED STATTER HARBOR SITE

The proposed Statter Harbor Site includes approximately 1.3 acres of uplands, plus a reconfigured launch ramp near the location of the existing ramp. A self-propelled 45 ton hydraulic trailer is proposed to replace the existing 15 metric tonne travelift. Additional site improvements include security lighting and camera, paving, and storm water controls. A washdown slab with room for two vessels is proposed, along with a washdown water treatment system. The completed facility would be capable of storing thirteen vessels ranging from 25 to 55 feet.

WATER TREATMENT AND PERMITS

The water treatment concept outlined below is intended to provide a closed loop treatment system which does not require discharge into either an existing sewer treatment system, or the water body adjacent to the facility. By using a self-contained treatment system, the City may avoid the difficult task of obtaining a permit to discharge washdown water.

In order to avoid the requirement for a wastewater discharge permit at the sites, a combination of in-slab grit containment and closed loop water treatment is proposed. The in-slab containment consists of a three part system of settlement, filtration, and treatment. The settlement system consists of baffled trench drains which are designed to trap solids, such as marine growth, so that they can be cleared with a shovel and the solids sent to the dump. The filtration system consists of a box screen placed in the slab drain sump, which collects floating particles. This screen is removable and the solids may be sent to the dump. The final stage is treatment; in which a specially designed treatment system separates oil, heavy metals, and organics from the water using a variety of methods, such as sand filtration through specialized media, UV sterilization, or air injection.

The treated water is then stored in tanks for reuse. Washdown operations reuse the treated water and the filtration system is only operated during actual use of the slab. When not in operation, the trench drains are allowed to fill with rainwater and drain to the existing storm drain system. Washdown water cannot enter the storm drain system because the treatment system must be turned on and operational to provide washdown water. The treatment system may be provided by the manufacturer in a shipping container for security and transportability or a specially designed structure may be built for it.

ACCESSIBILITY

The Phase I sites include the University Site and the Norway Point site, which are both accessible to downtown Juneau and would serve the needs of boaters operating out of the south end of the Juneau harbor system. These include the patrons of Douglas, Harris and Aurora Harbors as well as the intermediate vessel float. Typical users from these facilities would include commercial fishing vessels, privately owned vessels, and a small number of charter operators.

The Phase II sites include the Statter Harbor site and the Auke Bay Loading Facility, which are both accessible from Auke Bay, and would serve the needs of boaters operating out of the north end of the Juneau harbor system. These include patrons of Statter, Deharts, Fisherman's Bend and Tee Harbor. Typical users from these facilities would include charter fishing, sightseeing vessels, privately owned vessels, and some commercial fishing vessels.

OPINION OF PROBABLE CONSTRUCTION COST (OPCC)

The OPCC included in the appendix is based upon the work completed in Phase I of the Juneau Marine Support Facilities project, with the costs being updated to 2011 values. Contingencies vary between sites due to differing conditions and are much lower at the Auke Bay Loading Facility, as this site requires the least work from a design perspective. Not included in the OPCC table is the cost of the 75 ton hydraulic trailer, which was considered during concept development, but ultimately rejected. The cost of the 75 ton hydraulic trailer is $790,000 in 2011 dollars.

SUMMARY

URS is pleased to provide the City with conceptual layouts and opinions of probable construction costs for each of the identified boat yard locations in the Juneau area. Based upon the information included in this and previous reports prepared for this project, the City should have sufficient information available in order to make an informed decision regarding the siting of a new marine support facility, should the need for such a facility arise, and the funding be found to construct it.

APPENDICES

APPENDIX A: ENGINEER'S OPINION OF PROBABLE CONSTRUCTION COST

APPENDIX B: PHASE I DRAWINGS

- ***UNIVERSITY PROPERTY***
- ***NORWAY POINT***

APPENDIX C: PHASE II DRAWINGS

- ***STATTER HARBOR***
- ***AUKE BAY LOADING FACILITY***

APPENDIX D: PHASE I PRESENTATION TO THE DOCKS AND HARBORS BOARD

APPENDIX E: PHASE II PRESENTATION TO THE DOCKS AND HARBORS BOARD

APPENDIX A: ENGINEER'S OPINION OF PROBABLE CONSTRUCTION COST

CBJ Marine Support Facilities
Engineer's Opinion of Probable Construction Cost
Reference: Conceptual Layouts

Item	Units	Unit Price	University Property Quantity	University Property Total	Norway Point Quantity	Norway Point Total	Auke Bay Loading Facility Quantity	Auke Bay Loading Facility Total	Statter Harbor Quantity	Statter Harbor Total
Mobilization & Demobilization			Allow	$ 350,000.00	Allow	$ 250,000.00	Allow	$ 50,000.00	Allow	$ 250,000.00
Demolition & Removals			Allow	$ 235,000.00	Allow	$ 35,000.00	-	-	Allow	$ 75,000.00
Relocate 10' x 200' Float			-	-	Allow	$ 70,000.00	-	-	-	-
150T (+4') Marine Travel Lift	EA	$ 770,000.00	1	$ 770,000.00	1	$ 770,000.00	-	-	-	-
45T Hydraulic Trailer (2WD)	EA	$ 425,000.00	1	$ 425,000.00	-	-	-	-	1	$ 425,000.00
45T Hydraulic Trailer (4WD)	EA	$ 505,000.00	-	-	-	-	1	$ 539,500.00	-	-
Anchored SSP Bulkhead	LF	$ 5,000.00	940	$ 4,700,000.00	110	$ 550,000.00	-	-	-	-
6' x 80' Travel Lift Pier	EA	$ 230,000.00	1	$ 230,000.00	2	$ 460,000.00	-	-	-	-
Backfill (General, Type A & Compacted D1)	CY	$ 35.00	138,300	$ 4,840,500.00	117,700	$ 4,119,500.00	-	-	3,600	$ 126,000.00
Riprap Slope Protection	CY	$ 150.00	-	-	3,500	$ 525,000.00	-	-	900	$ 135,000.00
Dredging & Disposal	CY	$ 30.00	2,600	$ 78,000.00	1,500	$ 45,000.00	-	-	-	-
12' x 200' Concrete Work Float (50A, fire water)	SF	$ 165.00	2,400	$ 396,000.00	2,400	$ 396,000.00	-	-	-	-
6' x 80' Gangway	EA	$ 75,000.00	1	$ 75,000.00	2	$ 150,000.00	-	-	-	-
Launch Ramp Concrete Billets	SF	$ 30.00	-	-	-	-	-	-	7,600	$ 228,000.00
Site Access Improvements			Allow	$ 45,000.00	Allow	$ 45,000.00	-	-	Allow	$ 122,250.00
Electrical Service Extension			Allow	$ 150,000.00	Allow	$ 300,000.00	Allow	$ 25,000.00	Allow	$ 25,000.00
Water Service Extension			Allow	$ 60,000.00	Allow	$ 120,000.00	-	-	Allow	$ 50,000.00
Stormwater Treatment (incl. Wash-down Area)			Allow	$ 260,000.00	Allow	$ 260,000.00	Allow	$ 139,000.00	Allow	$ 150,400.00
Security Lighting			Allow	$ 100,000.00	Allow	$ 225,000.00	-	-	Allow	$ 150,000.00
Signage			Allow	$ 20,000.00	Allow	$ 20,000.00	Allow	$ 10,000.00	Allow	$ 15,000.00
Security Fencing & Gates			Allow	$ 45,000.00	Allow	$ 140,000.00	-	-	-	-
Landscape Buffer			-	-	Allow	$ 45,000.00	-	-	-	-
		Subtotal		**$ 12,780,000.00**		**$ 8,526,000.00**		**$ 764,000.00**		**$ 1,752,000.00**
Design Contingency		Allow	20%	$ 2,556,000.00	20%	$ 1,705,000.00	3%	$ 23,000.00	20%	$ 350,000.00
Construction Contingency		Allow	10%	$ 256,000.00	10%	$ 171,000.00	3%	$ 23,000.00	10%	$ 35,000.00
Environmental Mitigation		Allow	-	-	10%	$ 853,000.00	-	-	-	-
Professional Fees (Design, Permitting)		Allow	10%	$ 1,278,000.00	10%	$ 853,000.00	5%	$ 38,000.00	10%	$ 175,000.00
CBJ Administration		Allow	3%	$ 383,000.00	3%	$ 256,000.00	3%	$ 23,000.00	3%	$ 53,000.00
Preliminary Estimate: Construction Cost (2011 dollars)				**$ 17,250,000.00**		**$ 12,360,000.00**		**$ 870,000.00**		**$ 2,370,000.00**

APPENDIX B: PHASE I DRAWINGS

- **UNIVERSITY PROPERTY**
- **NORWAY POINT**

UNIVERSITY PROPERTY CONCEPT

WASH DOWN PAD 90'X44'

150T TRAVELIFT

DREDGE TO -14' MLLW
LIMITS ARE APPROXIMATE

150T TRAVELIFT BAY

6'X80' GANGWAY

6'X80' PIER

12'X200' CONCRETE WORK FLOAT

ARMORED SLOPE AT 1.5H:1V (TYP)

780'

WORK YARD

LIMITS OF YACHT CLUB ROAD,
FLOAT ACCESS & PARKING AREA

35'

RELOCATED YACHT
CLUB PARKING

FUTURE FILL AREA FOR
UPLANDS EXPANSION

140'

160'

6'X80' GANGWAY

RELOCATED YACHT CLUB
FLOAT 10'X200'

70'
70'
58'
80'
70'
70'
58'
58'
58'
58'

GRAPHIC SCALE
40' 0 20' 40' 80'
(IN FEET)

NORWAY POINT CONCEPT

APPENDIX C: PHASE II DRAWINGS

- **STATTER HARBOR**
- **AUKE BAY LOADING FACILITY**

AUKE BAY MARINE SUPPORT FACILITIES SITE CONCEPTS

JUNEAU, ALASKA

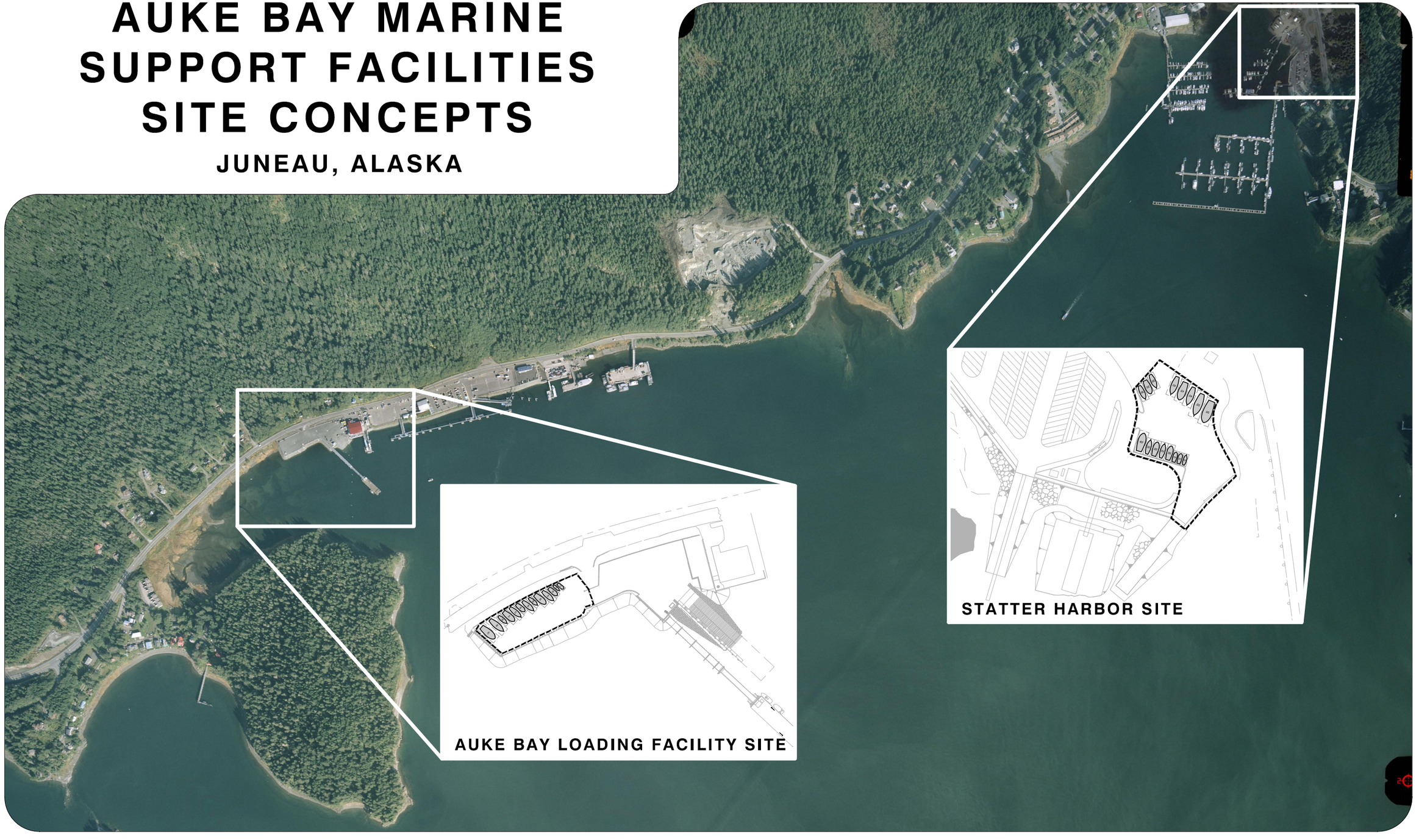


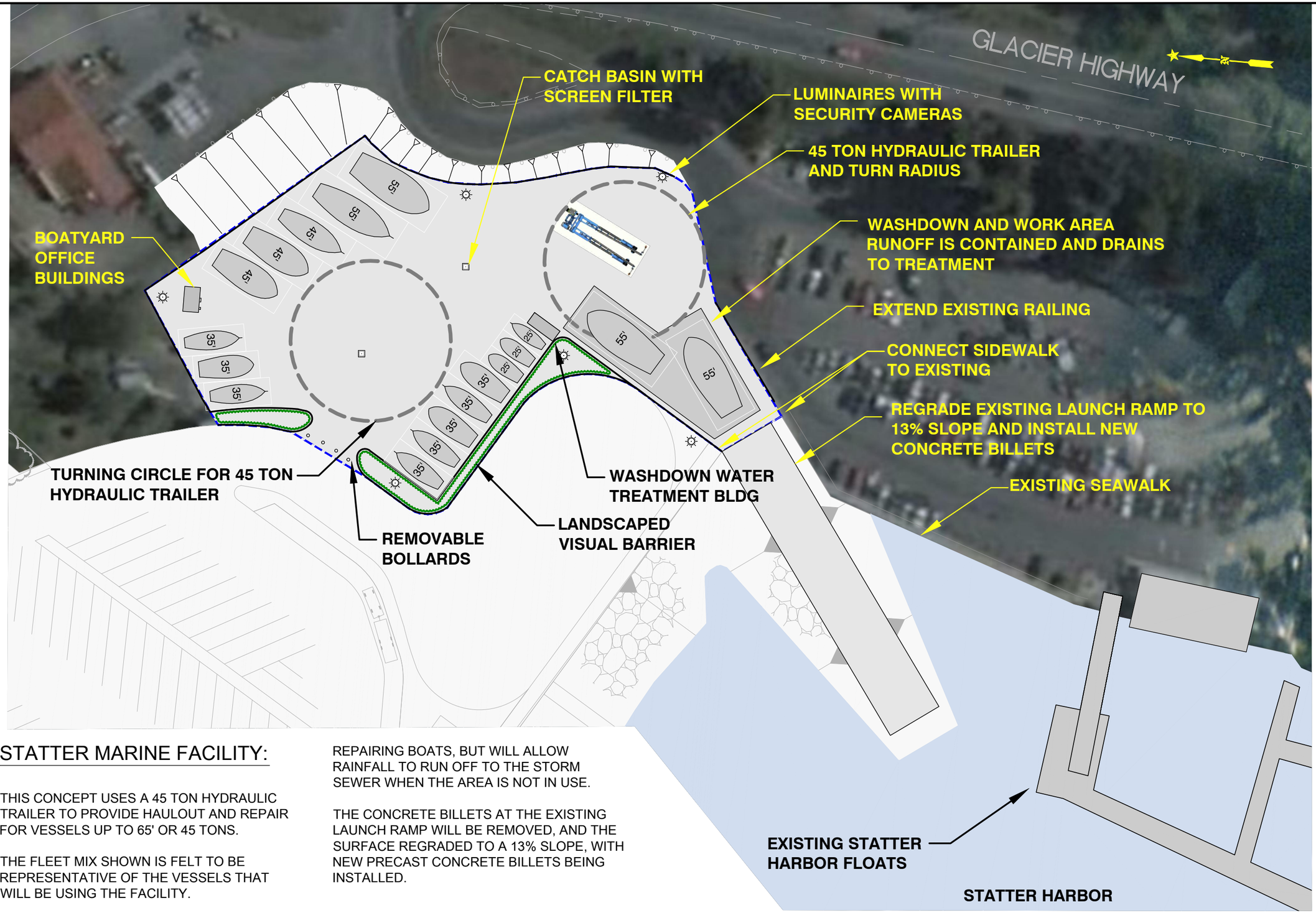
Photo Dated 9/29/2009

PREPARED BY:

URS
217 2nd STREET, SUITE 207
JUNEAU, AK 99801
TEL: (907) 463-4915 FAX: (907) 523-0449

CITY/BOROUGH OF JUNEAU
ALASKA'S CAPITAL CITY
DOCKS & HARBORS DEPARTMENT

SUBMITTAL DATE: 10/7/2011



STATTER MARINE FACILITY:

THIS CONCEPT USES A 45 TON HYDRAULIC TRAILER TO PROVIDE HAULOUT AND REPAIR FOR VESSELS UP TO 65' OR 45 TONS.

THE FLEET MIX SHOWN IS FELT TO BE REPRESENTATIVE OF THE VESSELS THAT WILL BE USING THE FACILITY.

THE COMBINED WASHDOWN AND WORK AREA IS DESIGNED TO CAPTURE WATER USED IN THE COURSE OF CLEANING AND REPAIRING BOATS, BUT WILL ALLOW RAINFALL TO RUN OFF TO THE STORM SEWER WHEN THE AREA IS NOT IN USE.

THE CONCRETE BILLETS AT THE EXISTING LAUNCH RAMP WILL BE REMOVED, AND THE SURFACE REGRADED TO A 13% SLOPE, WITH NEW PRECAST CONCRETE BILLETS BEING INSTALLED.

GRAPHIC SCALE
30 0 15 30 60
(IN FEET)

URS
560 EAST 34TH, AVENUE SUITE 100
ANCHORAGE, AK 99503
TEL: (907) 279-0543
FAX: (907) 276-7679

REVISIONS

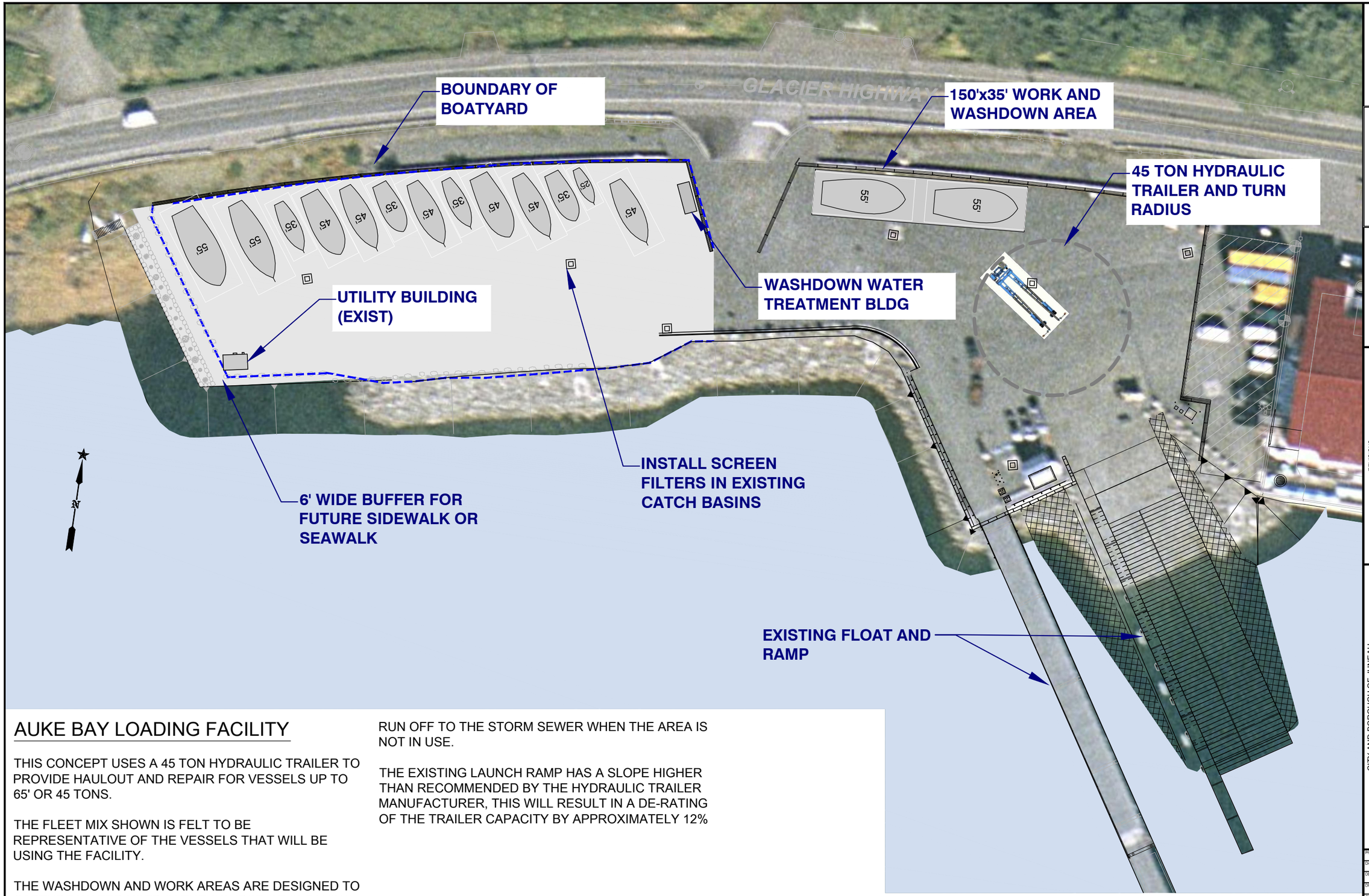
NO.	BY	DESCRIPTION	DATE

CITY AND BOROUGH OF JUNEAU
DOCKS AND HARBORS DEPARTMENT

AUKE BAY MARINE SUPPORT FACILITIES
JUNEAU, AK

STATTER HARBOR 45 TON CONCEPT

PROJECT No: 26220916
DATE: 4/8/2011
DESIGNED:
DRAWN BY: MDS
CHECKED BY:
SHEET: G2
PAGE: 2 OF 5



AUKE BAY LOADING FACILITY

THIS CONCEPT USES A 45 TON HYDRAULIC TRAILER TO PROVIDE HAULOUT AND REPAIR FOR VESSELS UP TO 65' OR 45 TONS.

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THE EXISTING LAUNCH RAMP HAS A SLOPE HIGHER THAN RECOMMENDED BY THE HYDRAULIC TRAILER MANUFACTURER, THIS WILL RESULT IN A DE-RATING OF THE TRAILER CAPACITY BY APPROXIMATELY 12%

GRAPHIC SCALE
30 0 15 30 60
(IN FEET)

URS
560 EAST 34TH, AVENUE SUITE 100
ANCHORAGE, AK 99503
TEL: (907) 279-0543
FAX: (907) 276-7679

REVISIONS

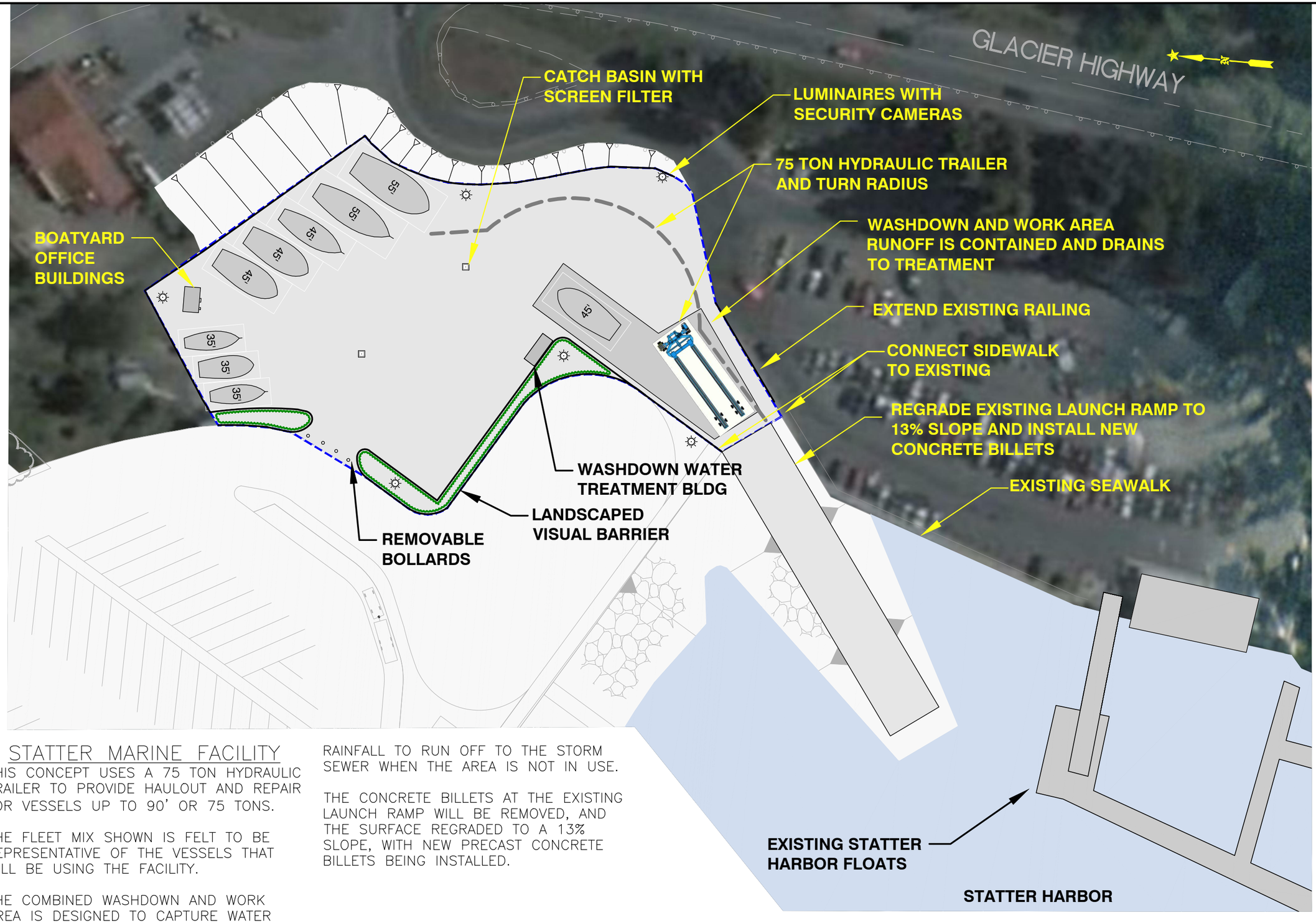
NO.	BY	DATE	DESCRIPTION

CITY AND BOROUGH OF JUNEAU
DOCKS AND HARBORS DEPARTMENT

AUKE BAY MARINE SUPPORT FACILITIES
JUNEAU, AK

AUKE BAY LOADING FACILITY
45 TON CONCEPT

PROJECT No: 26220916
DATE: 4/8/2011
DESIGNED:
DRAWN BY:
CHECKED BY:
SHEET: G3
PAGE: 3 OF 5



STATTER MARINE FACILITY

THIS CONCEPT USES A 75 TON HYDRAULIC TRAILER TO PROVIDE HAULOUT AND REPAIR FOR VESSELS UP TO 90' OR 75 TONS.

THE FLEET MIX SHOWN IS FELT TO BE REPRESENTATIVE OF THE VESSELS THAT WILL BE USING THE FACILITY.

THE COMBINED WASHDOWN AND WORK AREA IS DESIGNED TO CAPTURE WATER USED IN THE COURSE OF CLEANING AND REPAIRING BOATS, BUT WILL ALLOW RAINFALL TO RUN OFF TO THE STORM SEWER WHEN THE AREA IS NOT IN USE.

THE CONCRETE BILLETS AT THE EXISTING LAUNCH RAMP WILL BE REMOVED, AND THE SURFACE REGRADED TO A 13% SLOPE, WITH NEW PRECAST CONCRETE BILLETS BEING INSTALLED.

GRAPHIC SCALE
30 0 15 30 60
(IN FEET)

URS
560 EAST 34TH, AVENUE SUITE 100
ANCHORAGE, AK 99503
TEL: (907) 279-0543
FAX: (907) 276-7679

REVISIONS

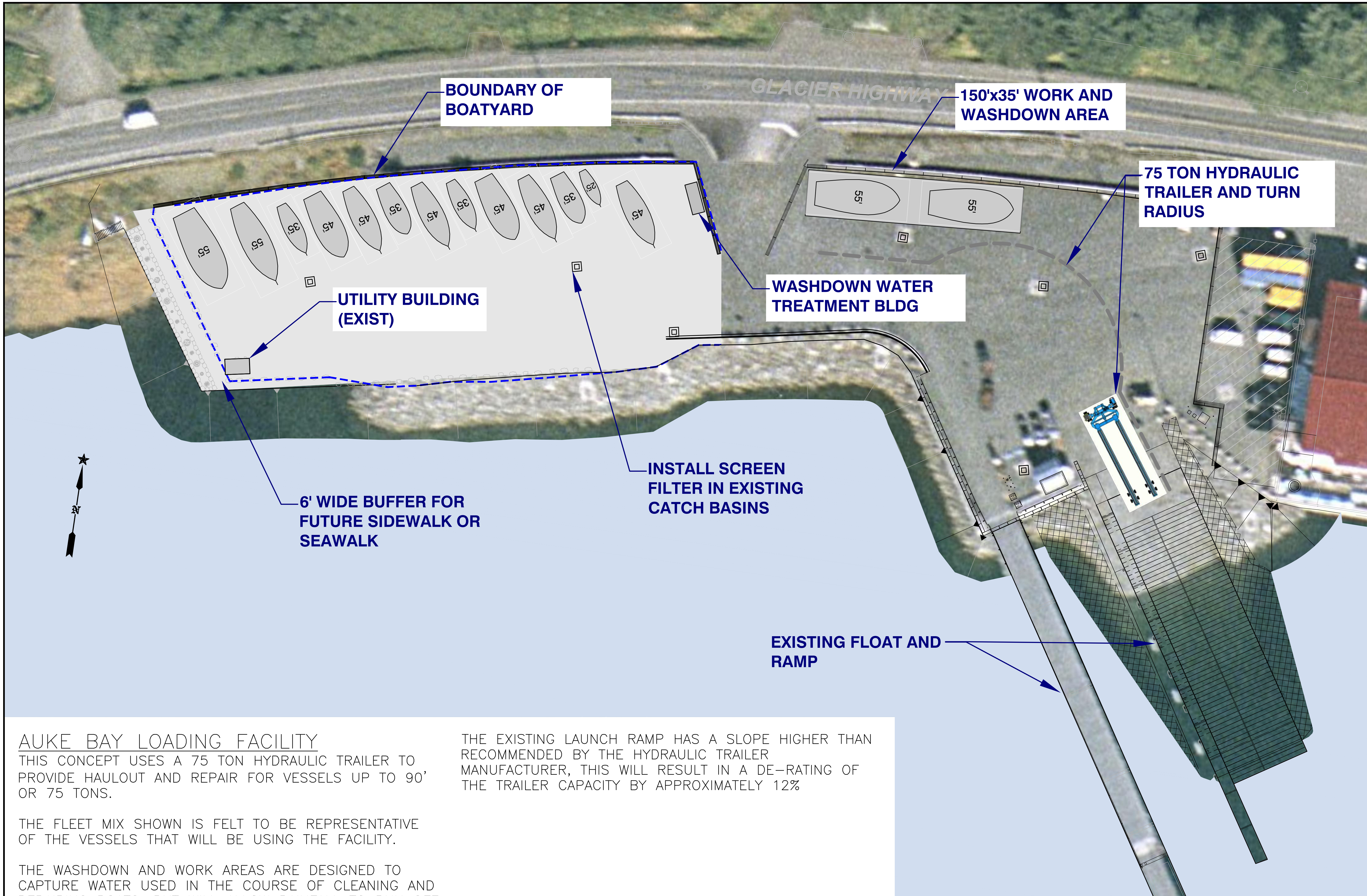
NO.	BY	DATE	DESCRIPTION

CITY AND BOROUGH OF JUNEAU
DOCKS AND HARBORS DEPARTMENT

AUKE BAY MARINE SUPPORT FACILITIES
JUNEAU, AK

STATTER HARBOR
75 TON CONCEPT

PROJECT No: 26220916
DATE: 4/8/2011
DESIGNED:
DRAWN BY: MDS
CHECKED BY:
SHEET: G4
PAGE: 4 OF 5



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(IN FEET)

URS
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ANCHORAGE, AK 99503
TEL: (907) 279-0543
FAX: (907) 276-7679

NO.	BY	DATE	DESCRIPTION

REVISIONS

CITY AND BOROUGH OF JUNEAU
DOCKS AND HARBORS DEPARTMENT

AUKE BAY MARINE SUPPORT FACILITIES
JUNEAU, AK

AUKE BAY LOADING FACILITY 75 TON CONCEPT

PROJECT No: 26220916
DATE: 4/8/2011
DESIGNED:
DRAWN BY:
CHECKED BY:
SHEET: G5

APPENDIX D: PHASE I PRESENTATION TO THE DOCKS AND HARBORS BOARD

CBJ Downtown Marine Support Facilities
Project No. DH07-022

Project Update:

Tasks 3 & 4
SITE SELECTION & LAYOUT

Presentation to:

CBJ Docks & Harbors Board
April 26, 2007

CBJ Downtown Marine Support Facilities
Project No. DH07-022

- Task 1: Project Management (January-June)
- Task 2: PIP, Phase I & Short Listing (January-February)
- Task 3: Site Selection (March)
- Task 4: Site Layout (April)

CBJ Downtown Marine Support Facilities
Project No. DH07-022

SITE SELECTION PROCESS

- Refine & finalize (10) site selection criteria

CBJ Downtown Marine Support Facilities
Project No. DH07-022

SITE SELECTION CRITERIA

- ✓ Marine Climate
- ✓ In-water Fill
- ✓ Dredging
- ✓ Available Services
- ✓ Road Access
- ✓ Proximity to Harbors
- ✓ Preliminary Environmental Screening
- ✓ Public Impacts
- ✓ Site Ownership
- ✓ Conflicts with Existing & Proposed Site Uses

CBJ Downtown Marine Support Facilities
Project No. DH07-022

SITE SELECTION PROCESS

- ➢ Refine & finalize (10) site selection criteria
- ➢ Value engineering analysis
  - ✓ Paired comparison of criteria
  - ✓ Matrix weighting of alternatives
  - ✓ Sensitivity analysis to confirm selection

CBJ Downtown Marine Support Facilities
Project No. DH07-022

Value Engineering Paired Comparison

Project: Downtown Marine Support Facilities (05029.000)
Study Item: Alternative Site Selection
Date: 27-Mar-07

Importance Factors
3 = High Preference
2 = Medium Preference
1 = Low Preference

	B	C	D	E	F	G	H	I	J
A			2	1			2	2	
B	2	2		1	1	1			1
B		1	2	1	2	1	1	2	1
C						1			
C		1		1	1	1	1	2	1
D						1			
D					1				1
E		1	1	2	1	1	1	1	
E				2	1	1	1	1	1
F					1				
F						2	2	1	1
G							2	2	2
H									1
H								1	1
I									1
I									
J									

Criteria		Score	Percent
Marine Climate	A	7	10%
In-water Fill	B	13	19%
Dredging	C	10	15%
Available Services	D	2	3%
Road Access to Site	E	8	12%
Proximity to Harbors	F	2	3%
Environmental Screening	G	14	21%
Other Impacts	H	4	6%
Site Ownership/Lease Status	I	4	6%
Potential Site Conflicts	J	3	4%
Total:		67	100%

TRYCK NYMAN HAYES, INC.

CBJ Downtown Marine Support Facilities
Project No. DH07-022

Alternative Ranking
Matrix Weighting of Alternatives

Project: Downtown Marine Support Facilities (05029.000)
Study Item: Alternative Site Selection
Date: 27-Mar-07

Scoring
7-10 Significant advantages and/or opportunities
4-6 Potential issues and/or unknown impacts
0-3 Significant disadvantages and/or constraints

Alternative / Criteria Weight	A Marine Climate 10%	B In-water Fill 19%	C Dredging 15%	D Available Services 3%	E Road Access to Site 12%	F Proximity to Harbors 3%	G Environmental Screening 21%	H Other Impacts 6%	G Site Ownership/Lease Status 6%	H Potential Site Conflicts 4%	Score	Rank
1 University Property	5 0.5	4 0.8	9 1.3	10 0.3	6 0.7	8 0.2	5 1.0	8 0.5	6 0.4	6 0.3	6.0	2
2 Norway Point	8 0.8	8 1.6	7 1.0	7 0.2	6 0.7	8 0.2	8 1.7	6 0.4	8 0.5	7 0.3	7.4	1

TRYCK NYMAN HAYES, INC.

SITE SELECTION PROCESS

- Refine & finalize (10) site selection criteria
- Value Engineering analysis
- Site Pros & Cons

CBJ Downtown Marine Support Facilities
Project No. DH07-022

UNIVERSITY PROPERTY – PROS

- Minimal dredging required
- All required services currently available
- Close to all Downtown harbors
- Already a working boat yard; expanding operations unlikely to trigger Public impact concerns

UNIVERSITY PROPERTY – CONS

- Strong channel currents impairs operation of current (35T) travel lift; will have greater impact on larger vessels
- Building demolition needed to optimize yard space
- Road access from Egan Drive; high school traffic in area
- Historical environmental issues will need to be addressed
- Currently owned by UAS, property should be acquired
- Current boatyard operations impacted by construction
- Current and future fish handling not compatible with co-location of a boat yard

CBJ Downtown Marine Support Facilities
Project No. DH07-022

NORWAY POINT – PROS

- Space is flexible for optimizing site layout
- No stated marine climate concerns
- Significant upland footprint available
- Adequate access from road adjacent to Egan Drive
- Close to all Downtown harbors
- Minimal historical environmental issues on the property
- Owned by CBJ Docks and Harbors Department
- Future expansion of site for boat harbor is compatible

CBJ Downtown Marine Support Facilities
Project No. DH07-022

NORWAY POINT – CONS

- City sewer not available at site (JYC on septic system)
- Views and noise impacts to residents on adjacent bluff
- Potential conflict with JYC & Youth Sailing Club
- Development could preclude other future uses at the site such as multi-use real estate development

CBJ Downtown Marine Support Facilities
Project No. DH07-022

SITE SELECTION PROCESS

- Refine & finalize (10) site selection criteria
- Value Engineering analysis
- Site Pros & Cons
- Site Layout analysis
  - ✓ Iterative concepts (4) for development at each site
  - ✓ Work session with CBJ Harbors Staff & D&H Board members
  - ✓ Quantity take-offs & comparative cost estimate of site layouts

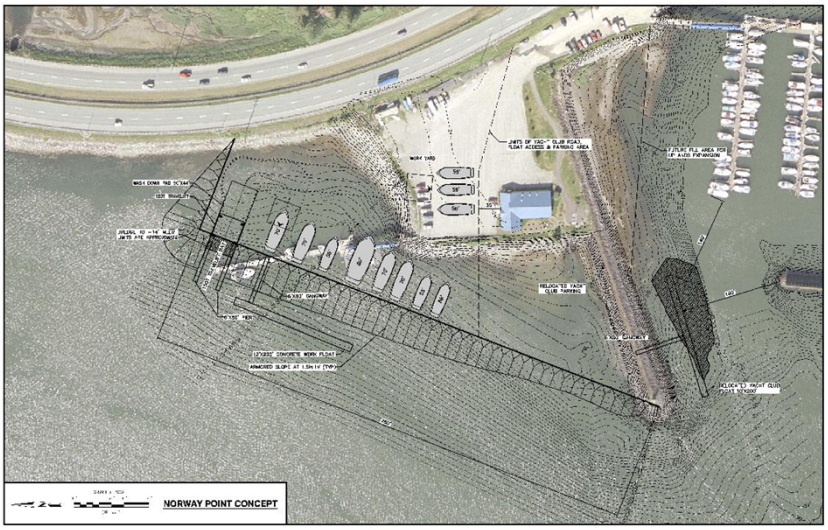
CBJ Downtown Marine Support Facilities
Project No. DH07-022

SITE LAYOUTS – COMMON FEATURES

- 150T (+ 4 ft beam) marine travel lift
- 200 ft long concrete side-tie work float
- Haul-out vessels up to 80 ft long x 30 ft beam
- Upland work yard ~ 2.7 Acres
- Compacted granular surface
- Maintain existing operations & adjacent site uses

CBJ Downtown Marine Support Facilities
Project No. DH07-022

CBJ Downtown Marine Support Facilities
Project No. DH07-022



TRYCK NYMAN HAYES, INC.

CBJ Downtown Marine Support Facilities
Project No. DH07-022

SITE LAYOUTS – UNIQUE FEATURES

University Property

- 20T hydraulic trailer needed for Work Area #1
- Significant demolition including buildings

Norway Point

- Relocate JYC float & parking
- Physical separation needed between boat yard & JYC

TRYCK NYMAN HAYES, INC.

SITE SELECTION PROCESS

- Refine & finalize (10) site selection criteria
- Value Engineering analysis
- Site Pros & Cons
- Site Layout analysis
- Comparative cost for site development

CBJ Downtown Marine Support Facilities
Project No. DH07-022

Downtown Marine Support Facilities
Preliminary Estimate: Construction Cost
Reference: Conceptual Layouts, Rev. 3 (4/20/07)

			University Property		Norway Point	
Item	Units	Unit Price	Quantity	Total	Quantity	Total
Mobilization & Demobilization			Allow	$300,000	Allow	$220,000
Demolition & Removals			Allow	$210,000	Allow	$30,000
Relocate 10' x 200' Float			-	-	Allow	$70,000
150T (+4') Marine Travel Lift	EA	$660,000	1	$660,000	1	$660,000
20T Hydraulic Trailer	EA	$140,000	1	$140,000	-	-
Anchored SSP Bulkhead	LF	$4,300	940	$4,042,000	110	$473,000
6' x 80' Travel Lift Pier	EA	$230,000	1	$230,000	2	$460,000
Backfill (General, Type A & Compacted D1)	CY	$30	138,300	$4,149,000	117,700	$3,531,000
Riprap Slope Protection	CY	$40	-	-	3,500	$140,000
Dredging & Disposal	CY	$25	2,600	$65,000	1,500	$37,500
12' x 200' Concrete Work Float (50A, fire water)	SF	$160	2,400	$384,000	2,400	$384,000
6' x 80' Gangway	EA	$60,000	1	$60,000	2	$120,000
Site Access Improvements			Allow	$40,000	Allow	$40,000
Electrical Service Extension			Allow	$125,000	Allow	$250,000
Water Service Extension			Allow	$50,000	Allow	$100,000
Stormwater Treatment (incl. Wash-down Area)			Allow	$250,000	Allow	$250,000
Security Lighting			Allow	$100,000	Allow	$225,000
Signage			Allow	$20,000	Allow	$20,000
Security Fencing & Gates			Allow	$40,000	Allow	$120,000
Landscape Buffer			-	-	Allow	$40,000
		Subtotal		**$10,865,000**		**$7,171,000**
Design Contingency		Allow	20%	$2,173,000	20%	$1,434,000
Construction Contingency		Allow	10%	$217,000	10%	$143,000
Environmental Mitigation		Allow	-	-	10%	$717,000
Professional Fees (Design, Permitting)		Allow	10%	$1,087,000	10%	$717,000
CBJ Administration		Allow	3%	$326,000	3%	$215,000
Preliminary Estimate: Construction Cost (2007 dollars)				**$14,670,000**		**$10,400,000**
				+40%		

CBJ Downtown Marine Support Facilities
Project No. DH07-022

- Task 1: Project Management (January-May)
- Task 2: PIP, Phase I & Short Listing (January-February)
- Task 3: Site Selection (March)
- Task 4: Site Layout (April)
- Task 5: PIP, Phase II (April)

CBJ Downtown Marine Support Facilities
Project No. DH07-022

PUBLIC INFORMATION PROCESS (PIP), Phase 2

Public Workshop #2 (4/25)

Problems with Norway Point layout:

- JYC parking doesn't work as shown
- Road access from Egan Drive
- Views & noise will impact adjacent JYC & residences
- Relocated JYC float in poor location
- Strong current reported in vicinity of travel lift
- Not enough upland space: need 3.5 Acres minimum
- Need support building for boatyard
- Large sailboats have problem accessing site under bridge

CBJ Downtown Marine Support Facilities
Project No. DH07-022

PUBLIC INFORMATION PROCESS (PIP), Phase 2
Public Workshop #2 (4/25) (continued)

Problems with University Property layout:

- Doesn't use some areas (student parking, buildings)
- Not enough upland space: need 3.5 Acres minimum
- Layout could be improved: fill in bay, relocate cranes

Advantages of Norway Point layout:

- More upland development potential

CBJ Downtown Marine Support Facilities
Project No. DH07-022

PUBLIC INFORMATION PROCESS (PIP), Phase 2
Focus Group Work Session #2 (4/26)

University Property:

- Current is more of a concern for this site
- Reconfigured layout should include:
  - ✓ Building demolition
  - ✓ Student parking (to be vacated by HS relocation)
  - ✓ Program shops, harbor office into existing buildings
  - ✓ Additional marine cranes (2 or 3)

CBJ Downtown Marine Support Facilities
Project No. DH07-022

PUBLIC INFORMATION PROCESS (PIP), Phase 2
Focus Group Work Session #2 (4/26) (continued)

Norway Point:

- Site is flexible & expandable
- Uplands view shed & noise disturbance issues
- Biggest problem: highway access
- Suggest east-west orientation or travel lift
- Need provisions for private lease hold facilities
- Splitting access to 150T and 35T travel lifts not ideal
- More manageable current than University Property
- Preferred by 3 of 4 Focus Group members

CBJ Downtown Marine Support Facilities
Project No. DH07-022

PUBLIC INFORMATION PROCESS (PIP), Phase 2
Focus Group Work Session #2 (4/26) (continued)

Additional feedback:

- Prefer CBJ to operate facility
- Prefer fast start-up with future expansion
- Upland storage & marine cranes are needed
- Work float of secondary importance (a convenience)

SITE SELECTION - CONCLUSION

Study has identified two viable sites with preference for development at Norway Point, based on:

- Value Engineering Analysis
- Site Development Pros & Cons
- Workable Conceptual Layout
- Lower Development Cost
- Focus Group assessment

CBJ Downtown Marine Support Facilities
Project No. DH07-022

CBJ Downtown Marine Support Facilities
Project No. DH07-022

NEXT STEPS

- Budget-level cost estimates for current conceptual layouts (both sites)
- Draft study report memorializing study for review by CBJ Harbors (May)
- Final study report (June)


LEMON/SWITZER CREEK
TWIN LAKES
DOUGLAS
ISLAND
DOWNTOWN
WEST JUNEAU
DOUGLAS
Downtown Marine Support Facilities
Norway Point

APPENDIX E: PHASE II PRESENTATION TO THE DOCKS AND HARBORS BOARD

JUNEAU MARINE FACILITIES

Project Update
Presentation to CBJ Docks & Harbors Board
May 26, 2011

Matthew Sill, EIT
URS Alaska, Juneau

JUNEAU MARINE FACILITIES

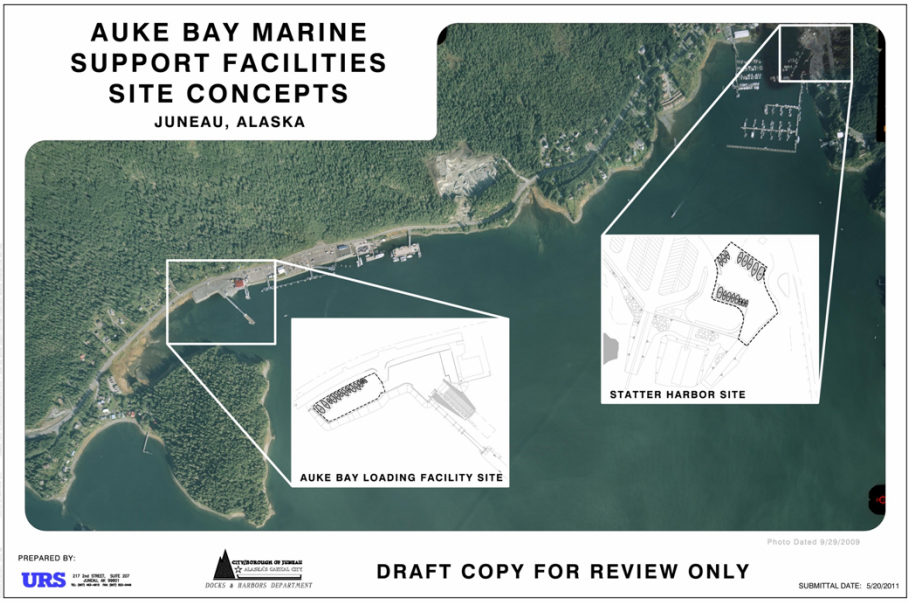
- Project Overview
- Hydraulic Trailers
  - 45-ton Lift
  - 75-ton Lift
- Site Features
  - Statter Small Boat Harbor
  - Auke Bay Loading Facility
- Washdown Water Treatment
- Rough Order of Magnitude (ROM) Cost Estimates
- Next Steps
- Questions

Project Overview

Explore siting, operation & support services for 45-ton or 75-ton hydraulic trailer at:

- Statter Small Boat Harbor
- Auke Bay Loading Facility

2 sites x 2 Hydraulic Trailers = 4 Concepts



Hydraulic Trailers

Common Features:

- Launching efficiency
- Minimal infrastructure needed (no trestle or boarding float)
- Portability between sites

Two sizes/capacities considered for Juneau:

- 45-ton
- 75-ton

JUNEAU MARINE FACILITIES

45-ton Lift

Pros:

- Hauls up to 45 tons / 60-foot vessels
- Easy maneuvering (both sites)
- Lower cost than 75-ton lift

Cons:

- Larger commercial fishing vessels are beyond lifting capacity

45-ton Lift

JUNEAU MARINE FACILITIES

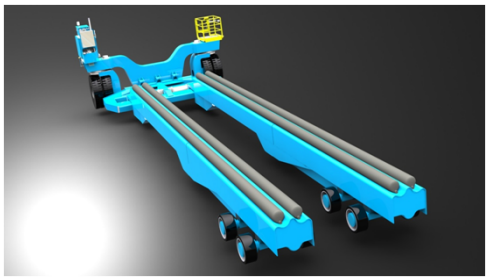
75-ton Lift

Pros:

- Hauls up to 75 tons / 90-foot vessels
- Could service nearly every vessel in Juneau

Cons:

- Difficult to maneuver at both sites
- Higher cost compared to 45-ton lift
- Lowest operating position has vessel over 6-feet above ground → difficult with smaller vessels



75-ton Lift

JUNEAU MARINE FACILITIES

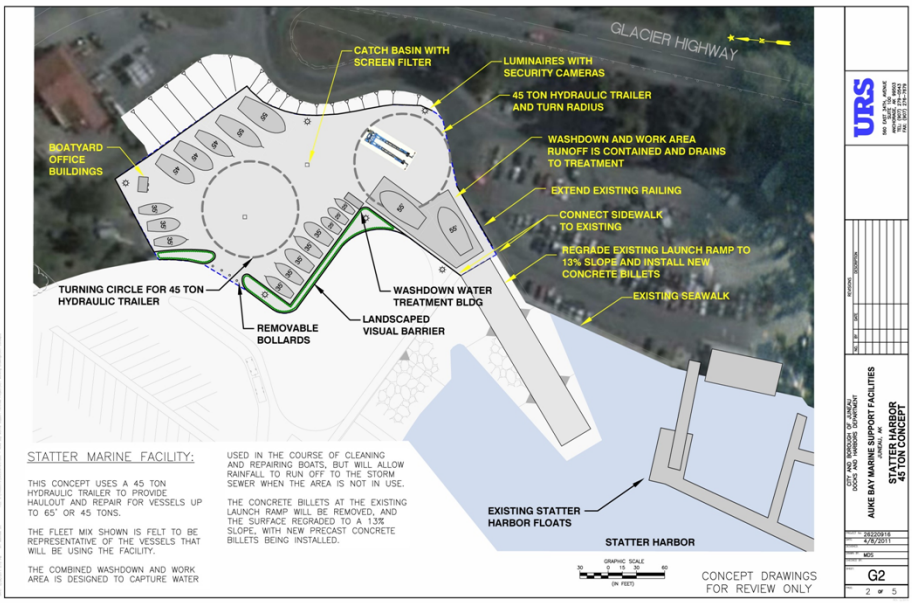
Statter Small Boat Harbor

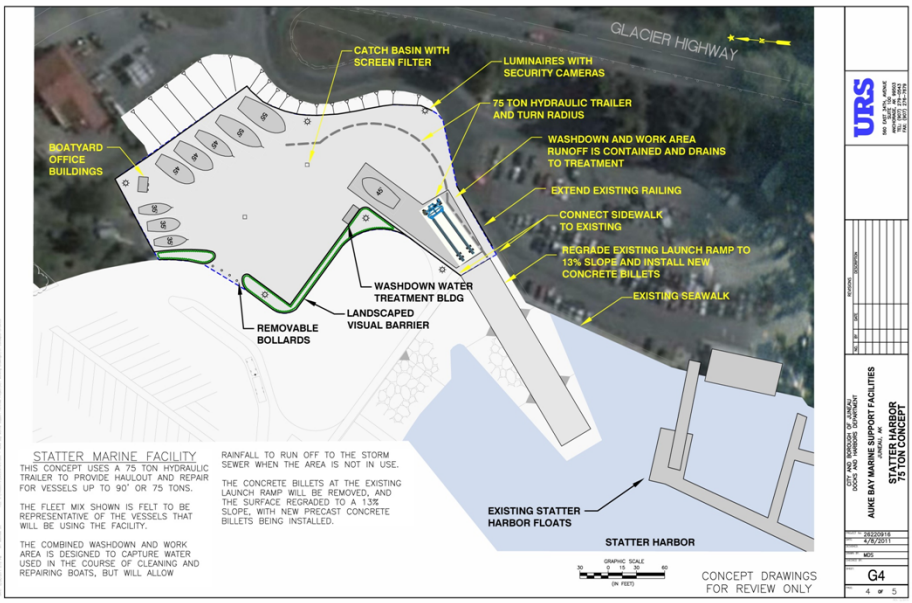
Pros

+ Near parking & Statter Harbor
+ Site geometry allows for ~ 3 more vessels in boatyard
+ Protected, all-weather location
+ Washdown area close to top of haulout ramp → cleaner

Cons

- Substantial site improvements needed
- Harbor is already congested → new boatyard will exacerbate
- Pedestrian traffic cuts across boatyard ramp


GLACIER HIGHWAY
CATCH BASIN WITH SCREEN FILTER
LUMINAIRES WITH SECURITY CAMERAS
45 TON HYDRAULIC TRAILER AND TURN RADIUS
WASHDOWN AND WORK AREA RUNOFF IS CONTAINED AND DRAINS TO TREATMENT
EXTEND EXISTING RAILING
CONNECT SIDEWALK TO EXISTING
REGRADE EXISTING LAUNCH RAMP TO 13% SLOPE AND INSTALL NEW CONCRETE BILLETS
EXISTING SEAWALK
BOATYARD OFFICE BUILDINGS
TURNING CIRCLE FOR 45 TON HYDRAULIC TRAILER
REMOVABLE BOLLARDS
LANDSCAPED VISUAL BARRIER
WASHDOWN WATER TREATMENT BLDG
EXISTING STATTER HARBOR FLOATS
STATTER HARBOR
STATTER MARINE FACILITY:
THIS CONCEPT USES A 45 TON HYDRAULIC TRAILER TO PROVIDE HAULOUT AND REPAIR FOR VESSELS UP TO 65' OR 45 TONS.
THE FLEET MIX SHOWN IS FELT TO BE REPRESENTATIVE OF THE VESSELS THAT WILL BE USING THE FACILITY.
THE COMBINED WASHDOWN AND WORK AREA IS DESIGNED TO CAPTURE WATER USED IN THE COURSE OF CLEANING AND REPAIRING BOATS, BUT WILL ALLOW RAINFALL TO RUN OFF TO THE STORM SEWER WHEN THE AREA IS NOT IN USE.
THE CONCRETE BILLETS AT THE EXISTING LAUNCH RAMP WILL BE REMOVED, AND THE SURFACE REGRADED TO A 13% SLOPE, WITH NEW PRECAST CONCRETE BILLETS BEING INSTALLED.
GRAPHIC SCALE
(IN FEET)
CONCEPT DRAWINGS FOR REVIEW ONLY
URS
AUKE BAY MARINE SUPPORT FACILITIES
JUNEAU, AK
STATTER HARBOR
45 TON CONCEPT
G2
2 of 5


GLACIER HIGHWAY
CATCH BASIN WITH SCREEN FILTER
LUMINAIRES WITH SECURITY CAMERAS
75 TON HYDRAULIC TRAILER AND TURN RADIUS
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WASHDOWN WATER TREATMENT BLDG
LANDSCAPED VISUAL BARRIER
REMOVABLE BOLLARDS
EXISTING STATTER HARBOR FLOATS
STATTER HARBOR
STATTER MARINE FACILITY
THIS CONCEPT USES A 75 TON HYDRAULIC TRAILER TO PROVIDE HAULOUT AND REPAIR FOR VESSELS UP TO 90' OR 75 TONS.
THE FLEET MIX SHOWN IS FELT TO BE REPRESENTATIVE OF THE VESSELS THAT WILL BE USING THE FACILITY.
THE COMBINED WASHDOWN AND WORK AREA IS DESIGNED TO CAPTURE WATER USED IN THE COURSE OF CLEANING AND REPAIRING BOATS, BUT WILL ALLOW RAINFALL TO RUN OFF TO THE STORM SEWER WHEN THE AREA IS NOT IN USE.
THE CONCRETE BILLETS AT THE EXISTING LAUNCH RAMP WILL BE REMOVED, AND THE SURFACE REGRADED TO A 13% SLOPE, WITH NEW PRECAST CONCRETE BILLETS BEING INSTALLED.
GRAPHIC SCALE
(IN FEET)
CONCEPT DRAWINGS FOR REVIEW ONLY
URS
AUKE BAY MARINE SUPPORT FACILITIES
JUNEAU, AK
STATTER HARBOR
75 TON CONCEPT
G4
4 of 5

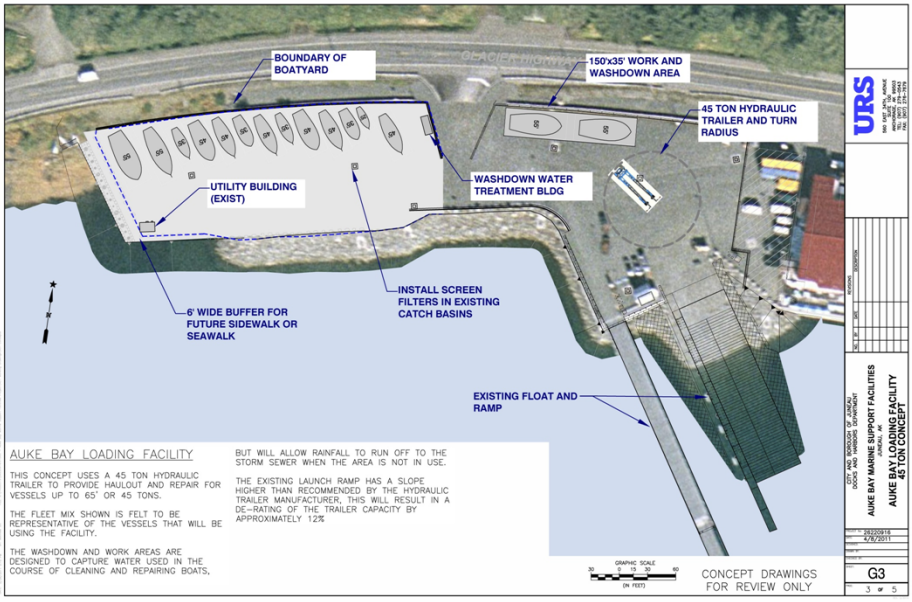
Auke Bay Loading Facility

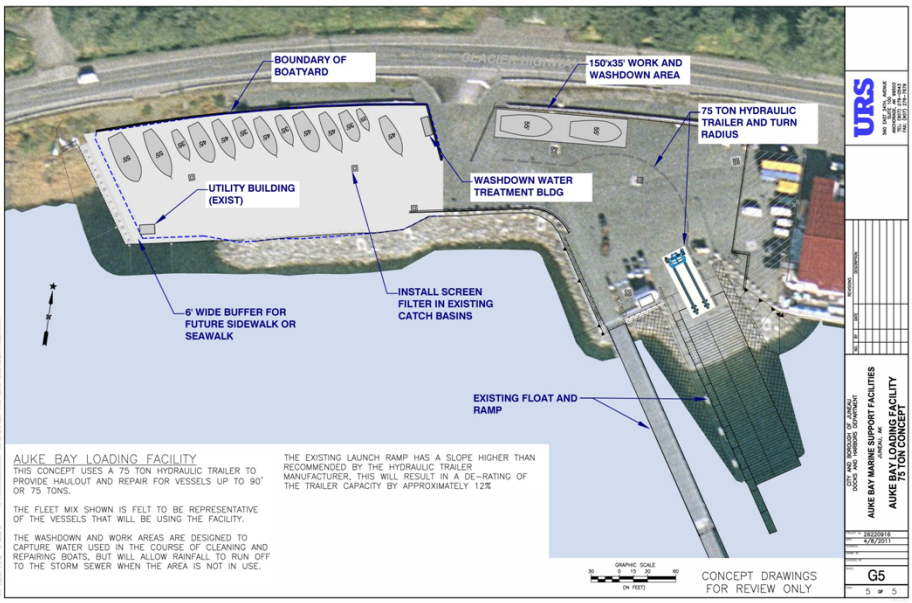
Pros

+ Existing facility → lower site development cost

Cons

- Further from Statter Harbor parking → access less convenient
- Unprotected ramp → difficult in SW winds
- Narrow site restricts number of boatyard vessels
- Likely conflicts between loading & boatyard activities
- Washdown area distant from ramp → runoff on pavement requires periodic hose-down





CITY/BOROUGH OF JUNEAU
ALASKA'S CAPITAL CITY

JUNEAU MARINE FACILITIES

Washdown Water Treatment

Step 1 – Settlement

- Baffled trench drains in slab to settle out large particles
- Clear with standard square-nose shovel
- Dispose solids at dump

URS ENGINEERING ENVIRONMENTAL PLANNING

JUNEAU MARINE FACILITIES

Washdown Water Treatment

Step 2 – Filtration

- Water passes through screen
- Removes small, floating particles

JUNEAU MARINE FACILITIES

Washdown Water Treatment

Step 3 – Treatment

- Oils removed with oil/water separator
- Material collected disposed of in approved waste oil facility
- Heavy metals removed by flowing water through filter w/ treatment media

Washdown Water Treatment

Step 4 – Post-treatment

- After treatment, water can be drained:
  - To sea (with approved Storm Water Discharge Permit)
    - or -
  - To sanitary sewer (with CBJ approval)
    - or -
  - Into on-site tanks for reuse
- Manufacturer can install in insulated 20' shipping container for security & winter storage

JUNEAU MARINE FACILITIES

Rough Order of Magnitude (ROM) Cost Estimates

Auke Bay Loading Facility

$870K (45-ton) to **$1.22M** (75-ton)

Statter Small Boat Harbor

$2.08M (45-ton) to **$2.53M** (75-ton)

* 2011 dollars; includes 25% Contingency

JUNEAU MARINE FACILITIES

Statter Harbor Marine Facility
ROM Cost Estimate (2011-05-25)

Item Description	Units	Quantity	Unit Price	Total Cost		
Mobilization/Demobilization	LS	1	$ 250,000	$ 250,000		
Demolish Existing Ramp & Floats	LS	1	$ 75,000	$ 75,000		
Uplands Civil						
Washdown & Work Slab	SF	5300	$ 18	$ 95,400		
Uplands Paving	SF	48,500	$ 3	$ 121,250		
Landscape Buffer	SF	2400				
Bollards	EA	4	$ 250	$ 1,000		
Storm Drain Manholes	EA	2	$ 2,500	$ 5,000		
Uplands Hardware						
45 Ton Hydraulic Trailer	EA	1	$ 425,000	$ 425,000		
Washdown Slab Water Treatment	LS	1	$ 50,000	$ 50,000		
Security System	LS	1	$ 150,000	$ 150,000		
Launch Ramp Improvements						
Launch Ramp Classified Fill	CY	3,600	$ 35	$ 126,000		
Launch Ramp Riprap	CY	900	$ 150	$ 135,000		
Launch Ramp Concrete Billets	SF	7600	$ 30	$ 228,000		
Alternate 1						
75 Ton Hydraulic Trailer	EA	1	$ 790,000	$ 790,000		
Deduct 45 Ton Hydraulic Trailer	EA	1	$ (425,000)	$ (425,000)		
			Subtotal	$ 1,662,000	to	$ 2,027,000
		25%	Contingency	$ 416,000	to	$ 507,000
			ROM Estimate (Rounded)	**$ 2,080,000**	to	**$ 2,530,000**
				(45-ton Lift)		**(75-ton Lift)**

JUNEAU MARINE FACILITIES

Auke Bay Loading Facility
ROM Cost Estimate (2011-05-25)

Item Description	Units	Quantity	Unit Price	Total Cost		
Mobilization/Demobilization	LS	1	$50,000	$50,000		
45 Ton Hydraulic Trailer	EA	1	$505,000	$505,000		
Uplands Civil						
Washdown & Work Slab	SF	4200	$20	$84,000		
Washdown Slab Water Treatment	LS	1	$50,000	$50,000		
Catch Basin Grit Filters	EA	5	$1,000	$5,000		
Alternate 1						
75 Ton Hydraulic Trailer	EA	1	$790,000	$790,000		
Deduct 45 Ton Hydraulic Trailer	EA	1	$ (505,000)	$ (505,000)		
			Subtotal	$ 694,000	to	$ 979,000
		25%	Contingency	$ 174,000	to	$ 245,000
			ROM Estimate (Rounded)	**$ 870,000**	to	**$ 1,220,000**
				(45-ton Lift)		**(75-ton Lift)**

Next Steps

- Finalize ROM Cost Estimates
- Letter Report to CBJ Harbors including Concept Drawings
- Additional Services request to prepare bid package for hydraulic trailer procurement
- Preliminary & Final Design
- Assistance to CBJ Harbors with grant applications

JUNEAU MARINE FACILITIES

Questions?