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Humboldt Bay
Harbor, Recreation and Conservation District

(707) 443-0801

P.O. Box 1030

Eureka, California 95502-1030



STAFF REPORT - HARBOR DISTRICT MEETING

July 26, 2018

TO: Honorable Board President and Harbor District Board Members

FROM: Larry Oetker, Executive Director

DATE: July 20, 2018

TITLE: Authorize Staff to Release of a Request for Proposal to Dredge Woodley Island Marina and Fields Landing Boat Yard and Other Actions Required to Finance the Proposed Multi-year Dredging Program.

STAFF RECOMMENDATION: It is recommended that the Board: Direct the Executive Director to:

1. Utilize Alternative 4 in the Scope of Work and to release a Request for Proposals seeking a one-year contract with disposal at HOODS.
2. Come back to the Board with a Resolution which would authorize a future multiyear dredge Program which would establish:
 - a. The dredging depths, frequency, and other program parameters.
 - b. a mechanism to establish a Dredge Surcharge Fee for the Fields Landing Boat Yard and King Salmon Fisherman's Channel which would be utilized along with the Woodley Island Dredge Surcharge Fee to partially fund the multi-year dredging program.
 - c. the total common Dredge Fund balance, including all sources, as of July 1, 2018 at \$1,568,290;
 - d. a segregated account with annual audit "Note" section which tracks the income and expenditures of the Dredge Fund to verify the annual fund balance.
 - e. that the funds deposited into Dredge Fund through the Dredge Surcharge Fee would be utilized first to pay off the proposed dredge loan.
 - f. an annual appropriation of "additional funds" as specified in the multi-year program to support the multi-year dredging program until the properties self-fund the dredging. The source of the "additional funds" is intended to come from the properties that require the dredging. The Board would be authorized to amend the multiyear program to adjust the Dredge Surcharge Fee, "additional funds" or any other portion of the Program as may be required.
 - g. other revenue generating mechanisms from the Woodley Island Marina, Fields Landing Boat Yard and Fisherman's Channel so that in the long term, the multi-year dredging program can be self-sustaining and not be required to be subsidized from other funding sources.

3. Continue the underwriting of the I-Bank Loan to fund the multiyear dredging program.

BACKGROUND: The Woodley Island Marina was dredged in 1988 (131,000 CY), 1998 (226,238 CY), and 2006/07 (230,065 CY) with a cutterhead suction dredge with disposal on the Samoa Beach. According to a September 18, 2007 power point presentation to the Board, the total cost of the 2006/07 Woodley Island dredging was \$2,443,102. Of that amount, \$2,080,102 was for dredging; \$290,000 on beach monitoring and \$73,000 on sampling.

The records document that since 2007, the Harbor District has been consistently meeting with Agency Staff and industry experts to come up with a way to obtain the required permits that are required to utilize a suction head dredge and beneficially reuse the dredge material. For one reason or another the District has been unable to complete the required actions. Within the last six months, the District has shifted the strategy and has followed the City of Eureka's lead and obtained all the required permits to dredge using a clamshell bucket with disposal into the Humboldt Open Ocean Disposal Site (HOODS) (Refer to Permit material in Agenda Item # 10 b.) Although the District strongly believes that the suction dredge with beach/upland beneficial reuse is the far superior method, and we have and/or are in the process of acquiring the mitigation property required to utilize the cutterhead dredge, the District needs to dredge now and cannot wait two or more years to complete the mitigation and obtain the required permits.

The regulatory agencies have been very supportive of our efforts and have been diligently working to analyze the dredging project and issue the required permits so that we can try to dredge this season. As Executive Director, I would like to take this opportunity to thank the US Army Corps of Engineers, Coastal Commission, NOAA, USF&W and North Coast Water Quality Control Board Staff for their assistance. Without their efforts we would not have obtained the permits so quickly.

DISCUSSION:

A. Dredging Method: Clam shell bucket operated by excavator or crane with disposal into HOODS.

B. Dredge Volumes: Woodley Island Marina was originally permitted and constructed with a depth of 14 feet and an overdraft allowance of 1 foot for the entire Marina. The permit depth allows the District to dredge to a specified depth, but do not require the District to dredge to that depth. During the last dredging cycle, the actual dredging depth was 14 feet from the end tie to dock E and 10 feet from Docks E to I. Today if the District utilized the same 14 -10 feet strategy, the Marina would require approximately 130,000 CY of material to be removed. A revised strategy has been developed which reduces the volume to approximately 91,000 CY.

C. New Dredging Strategy: Over the last 6 months, we have reviewed several dredging strategies for Marina's throughout the world and have come to the following conclusions:

1. **Define your dredging objective.** The District's objective is to: *Dredge the least amount of material to allow the fleet to utilize the marina at low tide without draft restrictions.*
2. **Dredge depths should match the Marina fleet draft.** (Dredging to 14 feet in areas where the fleet only needs 8 or 10 feet is a waste of time, money, and resources. Conversely

Dredging to 10 feet in an area where the fleet needs 12 or 14 feet does not meet the needs of the fleet.

3. **Use the natural bay's flushing action to maintain marina depth as much as possible.**

A. Move the fleet to match natural contours. Don't dredge to match the fleet unless absolutely required. The slips closest to the Eureka Channel are naturally deeper than the slips closest to the shore. Previously, docks E – I near the Eureka Channel were only maintained at 10 feet. These areas are naturally scoured and should be managed at deeper depths. Modifying the dredging to match the contours reduces the required dredging from 131,000 CY to 91,000 CY (41,000 CY reduction). This results in significant cost reductions (Attachment B).

B. Annually take soundings to establish a model on how the Marina naturally scours and accretes. Adjust dredging to account for recurring problem areas; modify slip leases as required; and research/permit/implement engineering design alternatives to increase natural scour and reduce accretion rates. After approximately 4 to 5 years the District will begin to have enough data where we can begin to have a better understanding of the natural forces and refine our Marina dredging management strategy.

4. **Minimize tenant disruptions by dredging more frequently.** Dredging the entire Marina at one time may be more cost effective, however it is highly disruptive to the tenants. Other marinas have found that smaller focused 1 – 4-year dredging cycles instead of larger 8 – 10-year cycles provide consistently much more reliable fleet operations and is less disruptive to tenants.

5. **Never let maintenance dredging permits expire.** Getting a permit renewal is relatively simple, especially if you are following all the conditions of your permit and have a proven track record that you follow the rules. Having smaller more frequent events enables staff and contractors to have experience with dredging. Whereas 8 to 10-year dredging cycles generally results in a "new project feel" where the District has little practical experience with what it actually takes to dredge. When you have a 10-year permit plan to dredge in year 9 or 10 to prolong the benefits of the permit beyond the ten-year permit period. New regulations will inevitably come, and future dredging events will likely be more expensive.

6. **Dredging is a never-ending project.** The second you stop dredging; the Marina is starting to fill again. Every boat owner, contractor, government agency, property owner, or business will tell you that in the long run it is much cheaper to keep your property regularly maintained. If you wait until your property needs to be completely rebuilt, then it results in major disruptions and loss of revenues. The District needs to have a plan in place for the next dredging event before we have finished the current dredging project. Performing consistent and more frequent dredging cycles will result in a better managed marina and a healthier fleet. Once we have successfully implemented the successful multi-year dredging program, we can then begin the process to plan, finance, and implement an overall marina maintenance program for the topside.

D. Dredge Alternatives: As previously discussed, the District's preferred alternative is to use the suction dredge with beach/upland beneficial reuse. However, given the current condition of the Marina and permitting issues, this alternative is not realistic in the short term. The District must

select an alternative that is permissible now, financially feasible, and can be completed soon. Although we firmly believe that it is a waste to take the material out into the ocean and dump it when there are many beneficial uses around the bay; it will take several years to obtain the required permits for those sites and it is unlikely that the timing of the projects will coincide with the required dredging event. Without a permitted upland disposal site, it is simply not an option.

1. **Alternative 1:** This alternative is composed of a one to two year “catch up” period where the Marina is dredged, and the material disposed of at HOODS. Upon the completion of the initial “catch up” dredging, an annual dredging program would be implemented where less than 20,000 CY would be removed every year from both Woodley Island and Fields Landing Boat Yard. Under Alternative 1, the entire marina would be dredged every three years. The cost to mobilize equipment to dredge this small amount would be cost prohibitive. Therefore, approximately \$1,150,000 of equipment would be purchased and a portion of the Samoa Lagoons would be lined with an impermeable membrane to prevent groundwater contamination (Attachment A 1).

The cost to implement Alternative 1 are higher in the first 10 years primarily due to higher loan payments. However, after year ten, the loan is paid off; overall expenses significantly decrease; and the District owns the equipment and an operable upland disposal site free and clear. Because Alternative 1 utilizes an upland disposal site instead of HOODS, after the initial “catch up” dredging, the material can be stored for up to one year before it is beneficially reused. Under Alternative 1: a one dredging cycle contract would be issues for the “catch up” dredging; the District would manage the Samoa Lagoons upland dewatering site; and would contract out for the dredging utilizing the District’s purchased work barge. Utilizing the District’s work barge and having the District manage the upland dewatering site would greatly expand the number of potential local contractors and reduce mobilization costs.

This Alternative would require an amendment to our Dredging permits and upland disposal site to allow for a change in disposal locations. Permits amendments would be applied and if not approved by the regulatory Agencies within the 12 months, the District could abandon the upland disposal and issue a new multi-year RFP for HOODS disposal. If the District, were not drowning in the backlog of deferred maintenance dredging, Alternative 1 would have been the clear preferred alternative.

2. **Alternative 2:** Similar to Alternative 1, This alternative is composed of a one to two year “catch up” period with disposal at HOODS. Upon the completion of the “initial catch up” dredging, a multi-year dredging program with approximately 60,000 CY of material removed in years four and five and an additional 60,000 CY in years nine and ten. Dredging in years nine and 10 has the effect of deferring the next permit period until years 13 – 14. This cycle would be repeated under a new 10-year permit (Attachment A 2). Awarding a contract for the full 10-year permit would provide surety that:
 - a. the multi-year dredging program will get implemented;
 - b. the District has fixed expenses that can be budgeted; and

- c. contractors can purchase/amortize dump scows, barges and other equipment expenses over a longer period with the goal of reducing overall expenses.

All material dredged over the 10-year period would follow the existing permit to use the clamshell bucket and dispose at HOODS. No beneficial reuse would occur during the next 10 years. The first ten-year costs of Alternative 2 are estimated to be significantly lower than Alternative 1. However, after year ten, the benefits in Alternative 1 of having the upland disposal site and equipment paid for are not realized, and dredging expenses are estimated to continue to be higher than Alternative 1.

3. **Alternative 3:** This alternative is the same as Alternative 2 with the exception that the dredging contract would be for five years (Attachment A 3). Similar to Alternative 1, upon the completion of the “initial catch up” dredging, a multi-year dredging program with approximately 60,000 CY of material removed in years four and five. As the District is in the process of completing a Sediment Management Plan which covers all dredging, disposal, and beneficial reuse in the Bay for through at least 2040, Alternative 3 enables the district to get back on track, and allows flexibility to adjust dredging strategies in year 6. If permits were obtained and funds available, the District could switch to the Alternative 1 or another strategy in year 6. This Alternative provides five years of surety but does not provide contractors with a long-term equipment amortization period for equipment expenses.
4. **Alternative 4:** This Alternative, similar to all other alternatives does the “initial catch up” dredging and permitting/mitigation/dredging of Woodley Island Marina, Fields Landing Boat Yard; and Fisherman’s Channel. However, it does not implement a multi-year dredging program at this time. The intent of this alternative is to “catch up”, complete the sediment management plan, get the Districts finances in order, finalize a long-term dredging strategy.

Sell Cutterhead Dredge: If we cannot use the cutterhead then we must sell it. The District needs the revenue from the sale to pay for the multi-year dredging program. The District cannot afford to have a million-dollar piece of equipment sitting on land and providing no benefit. The cost of mitigation the potential impact to long term smelt from the cutterhead dredge makes this alternative financially infeasible. If the District shifts to an annual dredging cycle as outlined in Alternative 1., for less than \$225,000 the District could purchase a new excavator cutterhead suction dredging attachment. Our dredge is bigger than is needed to dredge 20,000 CY annually but is ideal for dredging the entire marina and taking 91,000 CY at one time.

Fisherman’s Channel: All Alternatives include funding to mitigate eel grass in Fisherman’s Channel. The District is in the process of acquiring property and will begin to develop mitigation plans/permits once the properties are acquired. All Alternatives include \$24,000 of revenue from the Fisherman’s Channel tideland properties. Recommendation 2b above proposes to establish a mechanism for assessing/collecting a dredge surcharge fee from the King Salmon Fisherman’s Channel which would be utilized along with the Woodley Island and proposed new Fields Landing Boat Yard Dredge Surcharge Fee to partially fund the multi-year dredging program.

The estimated cost to dredge Fisherman's Channel, after removing the mitigation costs, over the 10-year period is over \$242,000. This would mean that a dredge surcharge fee of approximately \$24,200 annually should be assessed/collected from the property owners and users surrounding Fisherman's Channel. If the Board approves the recommendation, Staff will come back to the Board with a recommendation and notify property owners. After the initial dredging event, the District will not be able to afford including Fisherman's Channel in the Multi-Year Dredging Program unless sufficient revenues are collected to offset expenses. Due to the eel grass and past proposed dredging by cutterhead suction dredge, the District does not have the required permits. The proposed RFP would include 9,000 CY of Dredging contingent upon obtaining the permits and authorization to proceed.

Dredge Surcharge Fee: There has been a great deal of discussion about what the Dredge Surcharge Fee Balance was in 2010 and what it is today. Recommendation 2d. proposes to establish a segregated account with an annual audit "Note" section which tracks the income and expenditures of the Dredge Fund to verify the annual fund balance. A common Dredge Fund would be established for the revenues and expenditures associated with Fields Landing Boat Yard and King Salmon Fisherman's Channel, and Woodley Island Marina Dredge Surcharge Fee.

When looking at what is the current balance of the funds, it is necessary to define what it is we are trying to balance. Generally, when discussing this topic it has been common practice to comingle the amount of funds that have been collected from the "Dredge Surcharge Fee" with other funds that the Board may have allocated from other sources into the "Dredge Fund". However, from an accounting perspective, these are two separate sources of revenue. When a segregated ("enterprise fund") is established it is intended to be self-sufficient. Any additional appropriations into the fund would be "loaned" and would therefore be expected to be repaid. The same would be true for additional funds deposited into the funds in prior years.

The Dredge Surcharge Fee was established in 2010. Going back to at least FY2001/02 and to FY 12/13, the annual budget maintained a Fund Balance Designation titled "WI Marina Dredging". At the top of the table was a statement that read: "The following section reflects the designation/reservation of funds set aside for future major projects."

Attachment B Option 1. Looked at every budget from FY 2001/02 to FY 2017/18. Option 1 projects an ending fund balance for both the Dredge Surcharge Fee and WI Marina Dredging fund of \$846,237. One interesting note is when carefully looking at FY 2007/08. This budget shows an addition of \$826,062 in the year following the last 2006 and 2007 dredging event when the prior year audited expenditure reflected a \$2,150,087 expenditure and an ending balance of \$50,000. The math does not add up and the actual balance should have been a negative (\$1,024,533). An even more perplexing question is that this \$826,062 additional appropriation came during a budget period when the District was facing severe financial distress and the Board considered leasing the entire Woodley Island Marina and Fields Landing Boat Yard. The power point presentation for the 2007-08 Budget DREDGE ONLY workshop for March 8, 2007 shows the Dredge Fund allocation of \$876,062 and a corresponding negative balance of (\$989,448) was charged to the Woodley Island Marina Budget.

Option 2 utilized the annual audit which as of June 30 ,2017 documented an ending balance of \$1086,013. Option 3 ignores the accounting irregularities described in Option 1 and just assumes that the \$826,062 beginning balance in FY 2007-08 is correct. This would make the current ending balance \$1,568,290. Option 4 assumes that the Board had the authority to appropriate the original \$826,062 and they also have the authority to remove the balance of the additional appropriation. Option 4 tracks all the Dredge Surcharge Fees collected and estimates that the fund has an ending Dredge Fund balance of \$1,037,903.

From an accounting perspective, it is my opinion that Option 1 is the most accurate. From a political/transparency perspective, even if the accounting indicates otherwise, the community has been told in prior budgets that there was a balance of \$530,387 in FY 2010/11 and therefore the balance in Option3 should be utilized (\$1,568,290).

I bank loan: Since there is insufficient funds in the Dredge Surcharge Fund to complete even the initial “catch up” dredging, it is necessary to borrow funds. The Executive Director has been working with State I-Bank to secure a loan from their program. The proposed loan would have a 10-year term; 3.7% interest; 1% loan origination fee; and a 0.003% annual monitoring fee based on principal balance. There will also be 60-90 days of additional underwriting associated with this loan. The actual loan details would come back to the Board for approval.

ATTACHMENTS:

- A. Dredging Alternative
 - 1. Alt 1
 - 2. Alt 2
 - 3. Alt 3
- B. Dredge Surcharge

ALTERNATIVE 1. LOAN HOODS One year catch up, then annual dredging program 3 year cycle with upland disposal

Year					2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
Dredge Area (Docks)	Current Projected Volumes	Projected Volumes with 1 Foot Accumulation	Projected Accumulation in 1 year (6" Depth)	Current Accumulation Depth (ft)	1	2	3	4	5	6	7	8	9	10
End Tie to A	11,439	4,169	2,084	2.7	11,439	2,084		4,169				6,253		
A to B	10,681	3,417	1,709	3.1	10,681	1,709			5,126			5,126		
B to C	12,493	3,240	1,620	3.9	12,493	1,620			4,860			4,860		
C to D	6,448	2,561	1,280	2.5	6,448		2,561			3,841			3,841	
D to E	9,475	2,654	1,327	3.6	9,475		2,654			3,981			3,981	
E to F	10,201	2,613	1,307	3.9	10,201		2,613			3,920			3,920	
F to G	12,265	2,728	1,364	4.5	12,265		2,728			-	5,457			4,092
G to H	7,501	2,161	1,081	3.5	7,501			3,242			3,242			3,242
H to I	5,723	1,991	996	2.9	5,723			2,987			2,987			2,987
I to End	4,317	1,552	776	2.8	4,317			2,328			2,328			2,328
TOTAL WOODLEY ISLAND CY	91,002				90,542	5,413	10,556	12,726	9,986	11,741	14,014	16,239	11,741	12,650
Misc. Shoaling			1,500		1,500	1,500	1,500	1,500	1,500	1,500	1,500	1,500	1,500	1,500
Fields Landing	12,120	1,000	500		7,000				2,000				2,000	
Fisherman's Channel	5,000	500	250			5,000		750				1,000		
			TOTAL CUBIC YARDS		99,042	11,913	12,056	14,976	13,486	13,241	15,514	18,739	15,241	14,150

ALTERNATIVE 1. LOAN HOODS One year catch up, then annual dredging program 3 year cycle with upland disposal

	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
	1	2	3	4	5	6	7	8	9	10
Expenses										
Total Dredge Cost	2,079,892	168,033	171,321	214,418	194,531	192,433	227,153	276,432	226,520	211,876
Equipment		1,150,000								
Ibank Loan	229,757	229,757	229,757	229,757	229,757	229,757	229,757	229,757	229,757	229,757
Loan Origination Fee	19,000									
Loan annual monitoring	5,700	5,700	5,700	5,700	5,700	5,700	5,700	5,700	5,700	5,700
Permitting								75,000	25,000	
401 Permit Fee	1,500								1,500	
401 Annual monitoring Fee (0.328 per CY dredged)	32,486	3,907	3,954	4,912	4,423	4,343	5,089	6,146	4,999	4,641
Equipment Reserve Deposit	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000
Mitigation	100,000	100,000	600,000							
Monitoring /Other Expenses		-	35,000	35,000	35,000	35,000	35,000			
Contingency @ 10%	207,989	16,803	17,132	21,442	19,453	19,243	22,715	27,643	22,652	21,188
TOTAL EXPENSES	2,696,324	1,694,200	1,082,864	531,228	508,864	506,476	545,413	640,679	536,128	493,161

	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
	1	2	3	4	5	6	7	8	9	10
INCOME										
Dredge Fund Initial Deposit	1,568,290									
Dredge Fund Deposit		400,000	400,000	400,000	400,000	400,000	400,000	400,000	400,000	400,000
Sell Cutterhead		950,000								
Initial Deposit From Ibank Loan	1,900,000									
Dredge Surcharge Fees (Woodley Island)	95,000	95,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000
Dredge Surcharge Fees (FL Boat Yard)	3,500	3,500	3,500	3,500	3,500	3,500	3,500	3,500	3,500	3,500
Dredge Surcharge Fees (King Salmon)		24,000	24,000	24,000	24,000	24,000	24,000	24,000	24,000	24,000
TOTAL INCOME	3,566,790	1,472,500	527,500	527,500	527,500	527,500	527,500	527,500	527,500	527,500
CUMULATIVE INCOME	3,566,790	5,039,290	5,566,790	6,094,290	6,621,790	7,149,290	7,676,790	8,204,290	8,731,790	9,259,290
INCOME - EXPENSE	870,466	(221,700)	(555,364)	(3,728)	18,636	21,024	(17,913)	(113,179)	(8,628)	34,339
NET DREDGE FUND BLANCE	870,466	648,765	93,401	89,673	108,309	129,333	111,420	(1,759)	(10,387)	23,952

Loan Calculator	
Loan Amount	\$ 1,900,000
Annual Interest Rate	3.90%
Life of Loan (Years)	10
Number of Payments per year	12
Total Number of Payments	120
Payment per period	\$ 19,146
Sum of payments	\$ 2,297,569
Interest cost	\$ 397,569

DASHBOARD	
Income Multiplier	1%
Expense Multiplier	2%
Reserve Multiplier	0%
Dredge Cost Multiplier	0.75%
401 Annual Dredge Fee	0.328

Clamshell	
Truckable Work Barge	75,000
Hopper Barge(s)	400,000
Eddy Pump Barge	250,000
Upland Dewatering Area	200,000
Miscellaneous Equipment	100,000
Contingency	125,000
TOTAL	1,150,000

ALTERNATIVE 2. LOAN HOODS One year catch up, then annual dredging program with 10 year contract with upland disposal

	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
	1	2	3	4	5	6	7	8	9	10
Other Expenses										
Total Dredge Cost	2,079,892	-	-	610,676	764,401	-	-	-	835,234	803,251
Equipment										
Ibank Loan	205,572	205,572	205,572	205,572	205,572	205,572	205,572	205,572	205,572	205,572
Loan Origination Fee	17,000									
Loan annual monitoring	5,100	5,100	5,100	5,100	5,100	5,100	5,100	5,100	5,100	5,100
Permitting								75,000	25,000	
401 Permit Fee	1,500									
401 Annual monitoring Fee (0.328 per CY dredged)	32,486	-	-	8,226	11,939	-	-	-	13,046	12,546
Mitigation	100,000	100,000	600,000							
Monitoring /Other Expenses			35,000	35,000	35,000	35,000	35,000			
Contingency @ 10%	207,989	-	-	61,068	76,440	-	-	-	83,523	80,325
TOTAL EXPENSES	2,649,539	310,672	845,672	925,642	1,098,452	245,672	245,672	285,672	1,167,475	1,106,794

	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
	1	2	3	4	5	6	7	8	9	10
INCOME										
Dredge Fund Initial Deposit	1,568,290									
Dredge Fund Deposit		350,000	350,000	350,000	350,000	350,000	350,000	350,000	350,000	350,000
Sell Cutterhead		950,000								
Initial Deposit From Ibank Loan	1,700,000									
Dredge Surcharge Fees (Woodley Island)	95,000	95,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000
Dredge Surcharge Fees (FL Boat Yard)	3,500	3,500	3,500	3,500	3,500	3,501	3,502	3,503	3,504	3,505
Dredge Surcharge Fees (King Salmon)		24,000	24,000	24,000	24,000	24,000	24,000	24,000	24,000	24,000
TOTAL INCOME	3,366,790	1,422,500	477,500	477,500	477,500	477,501	477,502	477,503	477,504	477,505
CUMULATIVE INCOME	3,366,790	4,789,290	5,266,790	5,744,290	6,221,790	6,699,291	7,176,793	7,654,296	8,131,800	8,609,305
INCOME - EXPENSE	717,251	1,111,828	(368,172)	(448,142)	(620,952)	231,829	231,830	191,831	(689,971)	(629,289)
NET DREDGE FUND BLANCE	717,251	1,829,079	1,460,907	1,012,765	391,813	623,642	855,472	1,047,303	357,332	(271,957)

Loan Calculator	
Loan Amount	\$ 1,700,000
Annual Interest Rate	3.90%
Life of Loan (Years)	10
Number of Payments per year	12
Total Number of Payments	120
Payment per period	\$ 17,131
Sum of payments	\$ 2,055,719
Interest cost	\$ 355,719

DASHBOARD	
Income Multiplier	1%
Expense Multiplier	2%
Reserve Multiplier	0%
Dredge Cost Multiplier	0.75%
401 Annual Dredge Fee	0.328

ALTERNATIVE 3. LOAN HOODS One year catch up, then annual dredging program with 5 year contract with upland disposal

Year					2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
Dredge Area (Docks)	Current Projected Volumes	Projected Volumes with 1 Foot Accumulation	Projected Accumulation in 1 year (6" Depth)	Current Accumulation Depth (ft)	1	2	3	4	5	6	7	8	9	10
End Tie to A	11,439	4,169	2,084	2.7	11,439	-	-	6,253.07						
A to B	10,681	3,417	1,709	3.1	10,681	-	-	5,125.79						
B to C	12,493	3,240	1,620	3.9	12,493	-	-	4,860.11						
C to D	6,448	2,561	1,280	2.5	6,448	-	-	3,840.84						
D to E	9,475	2,654	1,327	3.6	9,475				5,307.54					
E to F	10,201	2,613	1,307	3.9	10,201				5,226					
F to G	12,265	2,728	1,364	4.5	12,265				5,457					
G to H	7,501	2,161	1,081	3.5	7,501				4,323					
H to I	5,723	1,991	996	2.9	5,723				3,983					
I to End	4,317	1,552	776	2.8	4,317				3,105					
TOTAL WOODLEY ISLAND CY	91,002		1,500		90,542	-	-	20,080	27,400					
Misc. Shoaling/ Overdraft			1,500		1,500			4,000	4,000					
Fields Landing	12,120	1,000	500		7,000				5,000					
Fisherman's Channel	5,000	500	250					5,000						
			TOTAL CUBIC YARDS		99,042	-	-	29,080	36,400	-	-	-	-	-

ALTERNATIVE 3. LOAN HOODS One year catch up, then annual dredging program with 5 year contract with upland disposal

	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
	1	2	3	4	5	6	7	8	9	10
Other Expenses										
Total Dredge Cost	2,079,892	-	-	610,676	764,401	-	-	-	-	-
Equipment										
Ibank Loan	205,572	205,572	205,572	205,572	205,572	205,572	205,572	205,572	205,572	205,572
Loan Origination Fee	17,000									
Loan annual monitoring	5,100	5,100	5,100	5,100	5,100	5,100	5,100	5,100	5,100	5,100
Permitting								75,000	25,000	
401 Permit Fee	1,500								1,500	
401 Annual monitoring Fee (0.328 per CY dredged)	32,486	-	-	9,538	11,939	-	-	-	-	-
Mitigation	100,000	100,000	600,000							
Monitoring /Other Expenses			35,000	35,000	35,000	35,000	35,000			
Contingency @ 10%	207,989	-	-	61,068	76,440	-	-	-	-	-
TOTAL EXPENSES	2,649,539	310,672	845,672	926,954	1,098,452	245,672	245,672	285,672	237,172	210,672

	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
	1	2	3	4	5	6	7	8	9	10
INCOME										
Dredge Fund Initial Deposit	1,568,290									
Dredge Fund Deposit		255,000	255,000	255,000	255,000	255,000	255,000	255,000	255,000	255,000
Sell Cutterhead		950,000								
Initial Deposit From Ibank Loan	1,700,000									
Dredge Surcharge Fees (Woodley Island)	95,000	95,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000
Dredge Surcharge Fees (FL Boat Yard)	3,500	3,500	3,500	3,500	3,500	3,500	3,500	3,500	3,500	3,500
Dredge Surcharge Fees (King Salmon)		24,000	24,000	24,000	24,000	24,000	24,000	24,000	24,000	24,000
TOTAL INCOME	3,366,790	1,327,500	382,500	382,500	382,500	382,500	382,500	382,500	382,500	382,500
CUMULATIVE INCOME	3,366,790	4,694,290	5,076,790	5,459,290	5,841,790	6,224,290	6,606,790	6,989,290	7,371,790	7,754,290
INCOME - EXPENSE	717,251	1,016,828	(463,172)	(544,454)	(715,952)	136,828	136,828	96,828	145,328	171,828
NET DREDGE FUND BLANCE	717,251	1,734,079	1,270,907	726,453	10,501	147,329	284,157	380,985	526,313	698,141

Loan Calculator	
Loan Amount	\$ 1,700,000
Annual Interest Rate	3.90%
Life of Loan (Years)	10
Number of Payments per year	12
Total Number of Payments	120
Payment per period	\$ 17,131
Sum of payments	\$ 2,055,719
Interest cost	\$ 355,719

DASHBOARD	
Income Multiplier	1%
Expense Multiplier	2%
Reserve Multiplier	0%
Dredge Cost Multiplier	0.75%
401 Annual Dredge Fee	0.328

ALTERNATIVE 4. LOAN HOODS One year catch up, then annual dredging program with upand disposal

Year					2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
Dredge Area (Docks)	Current Projected Volumes	Projected Volumes with 1 Foot Accumulation	Projected Accumulation in 1 year (6" Depth)	Current Accumulation Depth (ft)	1	2	3	4	5	6	7	8	9	10
End Tie to A	11,439	4,169	2,084	2.7	11,439	-	-							
A to B	10,681	3,417	1,709	3.1	10,681	-	-							
B to C	12,493	3,240	1,620	3.9	12,493	-	-							
C to D	6,448	2,561	1,280	2.5	6,448	-	-							
D to E	9,475	2,654	1,327	3.6	9,475									
E to F	10,201	2,613	1,307	3.9	10,201									
F to G	12,265	2,728	1,364	4.5	12,265									
G to H	7,501	2,161	1,081	3.5	7,501									
H to I	5,723	1,991	996	2.9	5,723									
I to End	4,317	1,552	776	2.8	4,317									
TOTAL WOODLEY ISLAND CY	91,002				90,542	-	-	-	-					
Misc. Shoaling/ Overdraft			1,500		1,500			4,000						
Fields Landing	12,120	1,000	500		7,000									
Fisherman's Channel	5,000	500	250					5,000						
			TOTAL CUBIC YARDS		99,042	-	-	9,000	-	-	-	-	-	-

ALTERNATIVE 4. LOAN HOODS One year catch up, then annual dredging program with upland disposal

	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
	1	2	3	4	5	6	7	8	9	10
Other Expenses										
Total Dredge Cost	2,079,892	-	-	190,000	-	-	-	-	-	-
Equipment										
Ibank Loan	108,832	108,832	108,832	108,832	108,832	108,832	108,832	108,832	108,832	108,832
Loan Origination Fee	9,000									
Loan annual monitoring	2,700	2,700	2,700	2,700	2,700	2,700	2,700	2,700	2,700	2,700
Permitting								75,000	25,000	
401 Permit Fee	1,500								1,500	
401 Annual monitoring Fee (0.328 per CY dredged)	32,486	-	-	9,538	11,939	-	-	-	-	-
Mitigation	100,000	100,000	600,000							
Monitoring /Other Expenses			35,000	35,000	35,000	35,000	35,000			
Contingency @ 10%	207,989	-	-	19,000	-	-	-	-	-	-
TOTAL EXPENSES	2,542,400	211,532	746,532	365,070	158,471	146,532	146,532	186,532	138,032	111,532

	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
	1	2	3	4	5	6	7	8	9	10
INCOME										
Dredge Fund Initial Deposit	1,568,290									
Dredge Fund Deposit		110,000	110,000	250,000	250,000	250,000	275,000	275,000	275,000	275,000
Sell Cutterhead		950,000								
Initial Deposit From Ibank Loan	900,000									
Dredge Surcharge Fees (Woodley Island)	95,000	95,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000
Dredge Surcharge Fees (FL Boat Yard)	3,500	3,500	3,500	3,500	3,500	3,500	3,500	3,500	3,500	3,500
Dredge Surcharge Fees (King Salmon)		24,000	24,000	24,000	24,000	24,000	24,000	24,000	24,000	24,000
TOTAL INCOME	2,566,790	1,182,500	237,500	377,500	377,500	377,500	402,500	402,500	402,500	402,500
CUMULATIVE INCOME	2,566,790	3,749,290	3,986,790	4,364,290	4,741,790	5,119,290	5,521,790	5,924,290	6,326,790	6,729,290
INCOME - EXPENSE	24,390	970,968	(509,032)	12,430	219,029	230,968	255,968	215,968	264,468	290,968
NET DREDGE FUND BLANCE	24,390	995,358	486,326	498,756	717,784	948,752	1,204,720	1,420,688	1,685,155	1,976,123

Loan Calculator	
Loan Amount	\$ 900,000
Annual Interest Rate	3.90%
Life of Loan (Years)	10
Number of Payments per year	12
Total Number of Payments	120
Payment per period	\$ 9,069
Sum of payments	\$ 1,088,322
Interest cost	\$ 188,322

DASHBOARD	
Income Multiplier	1%
Expense Multiplier	2%
Reserve Multiplier	0%
Dredge Cost Multiplier	0.75%
401 Annual Dredge Fee	0.328

Attachment B
Dredge Surcharge
Ending Dredge Fund Balance

OPTION 1

Budget	Beginning Balance	Transfer to Capital Expenses	Additions	Ending Balance	Audited Expenditure	PG&E GRANT	ESTIMATED ENDING BALANCE
2001-02				1,057,870	834		1,057,870
2002-03	1,057,870	5,000	50,000	1,104,317	2,258		1,105,612
2003-04	1,104,317	20,000		1,105,342			1,105,612
2004-05	1,105,342			1,105,342	30,058		1,075,554
2005-06	1,105,342	1,105,342		958,731			1,075,554
2006-07	958,731	958,731	50,000	50,000	2,150,087		(1,024,533)
2007-08	50,000	-	826,062	876,062	29,134		(227,605)
2008-09	876,062	289,100	53,800	640,762	7,873		(181,678)
2009-10	640,762	107,476		533,286	9,988		(191,666)
2010-11	533,286	66,619		530,387	16,820		(208,486)
2011-12	530,387	-	51,373	593,387	11,684		(168,797)
2012-13	593,387	-	63,658	656,387	-		(105,139)
2013-14			69,843				(35,296)
2014-15			99,663			2,000,000	2,064,367
2015-16			96,325				2,160,692
2016-17			100,000				2,260,692
2017-18			100,000		\$ 1,514,455		846,237
TOTAL					3,773,191		846,237
					Ending Dredge Fund Balance		846,237

OPTION 2

Ending June 30, 2014 Audit PDF Page 31	Ending June 30, 2015 Audit PDF Page 37	Ending June 30, 2016 Audit PDF Page 42	Ending June 30, 2017 Audit PDF Page 42
1,470,000	1,000,000	756,822	1,086,013
Ending Dredge Fund Balance			1,086,013

OPTION 3

INCOME	
2010-11 Beginning Balance	530,387
2011-12	51,373
2012-13	63,658
2013-14	69,843
2014-15	99,663
2015-16	96,325
2016-17	100,000
2017-18	100,000
PG&E Grant	2,000,000
TOTAL	3,111,249
EXPENSE	
Expense 2010 - 2018	1,542,959
TOTAL	1,542,959
Ending Dredge Fund Balance	1,568,290

OPTION 4

INCOME	
2010-2011 Beginning Balance	
2011-12	51,373
2012-13	63,658
2013-14	69,843
2014-15	99,663
2015-16	96,325
2016-17	100,000
2017-18	100,000
PG&E Grant	2,000,000
TOTAL	2,580,862
EXPENSE	
Expense 2010 - 2018	1,542,959
TOTAL	1,542,959
Ending Dredge Fund Balance	1,037,903