

Cost Implications of Beneficial Reuse through the use of Unloaders

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Outline

1. Cost History of Dredge Disposal Options in SF Bay
2. Drivers of Upland Beneficial Reuse Premium
3. Impact of additional unloader being available



Cost History of Dredge & Disposal Options in SF Bay

1. In-water, In Bay (SF-11) +/- \$8 to \$14 per cy
2. Deep Ocean Disposal (DODS) +/- \$20 to \$25 per cy
3. Upland Beneficial Reuse (Montezuma) +/- \$30 to \$40 per cy
4. FY15 National Average, Fed Maint, Contr, Non-Hopper - \$7.63



Example Hypothetical Unit Cost Breakdown for Various Disposal Options

Example Hypothetical Unit Cost Breakdown - Port O&M Disposal Options \$/cy												
	Dredging			Towing			Unloading			Total		
	Labor	Eq	Operating	Labor	Eq	Operating	Labor	Eq	Operating	Labor	Eq	Operating
SF-11	\$2.25	\$1.00	\$2.75	\$1.00	\$1.25	\$1.50				\$3.25	\$2.25	\$4.25
	\$6.00			\$3.75			\$0.00			\$9.75		
DODS	\$4.00	\$1.75	\$4.50	\$2.75	\$3.25	\$4.75				\$6.75	\$5.00	\$9.25
	\$10.25			\$10.75			\$0.00			\$21.00		
Upland	\$3.50	\$1.50	\$4.00	\$2.50	\$3.00	\$4.00	\$5.00	\$4.50	\$6.00	\$11.00	\$9.00	\$14.00
	\$9.00			\$9.50			\$15.50			\$34.00		

Upland Premium +/- \$13/cy, only 30% (+/- \$4) of that delta is the cost of the unloader itself. The rest is the labor and operating cost of the unloading operation.

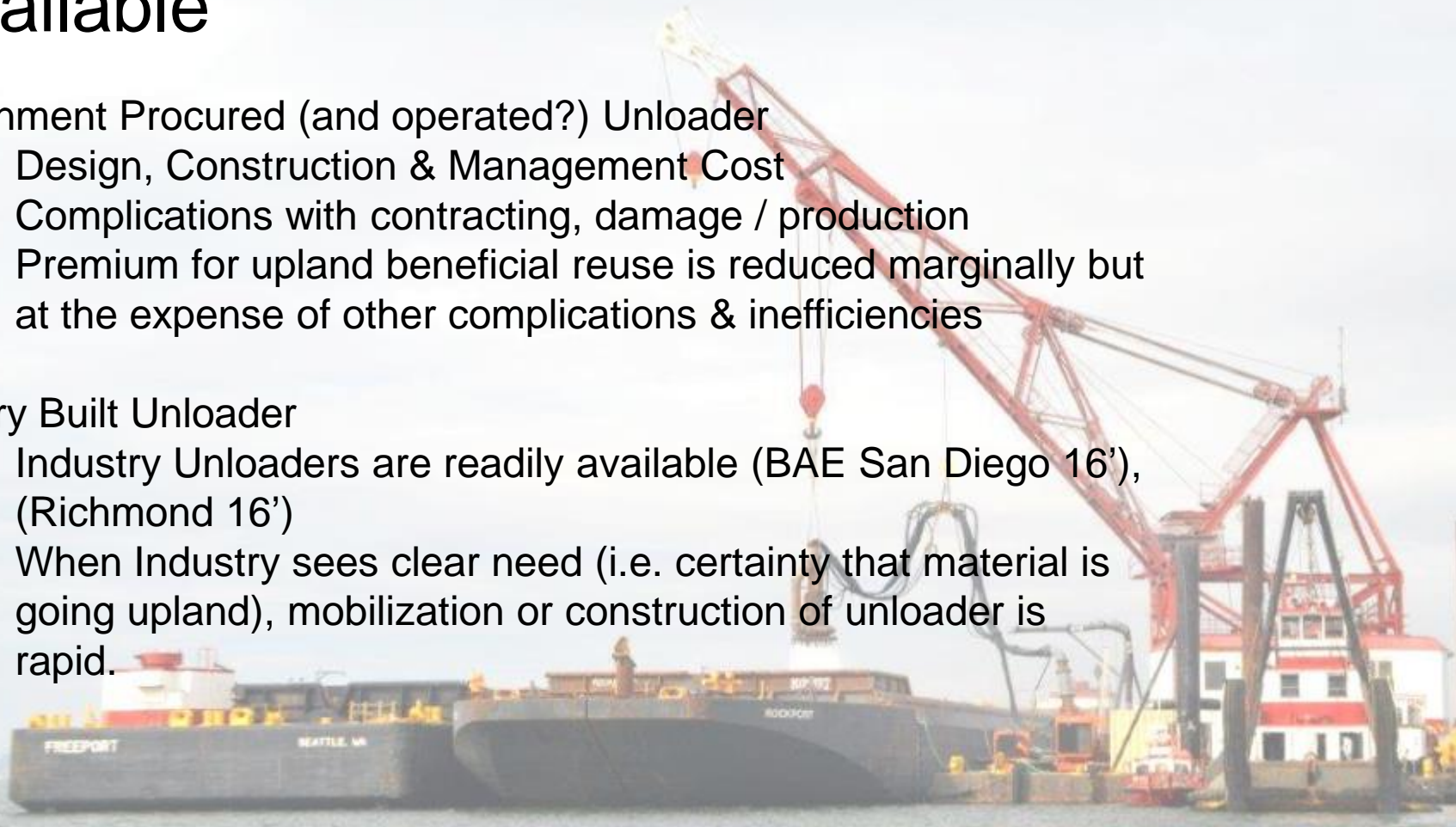
Impact of Additional Unloader Being Available

Government Procured (and operated?) Unloader

- Design, Construction & Management Cost
- Complications with contracting, damage / production
- Premium for upland beneficial reuse is reduced marginally but at the expense of other complications & inefficiencies

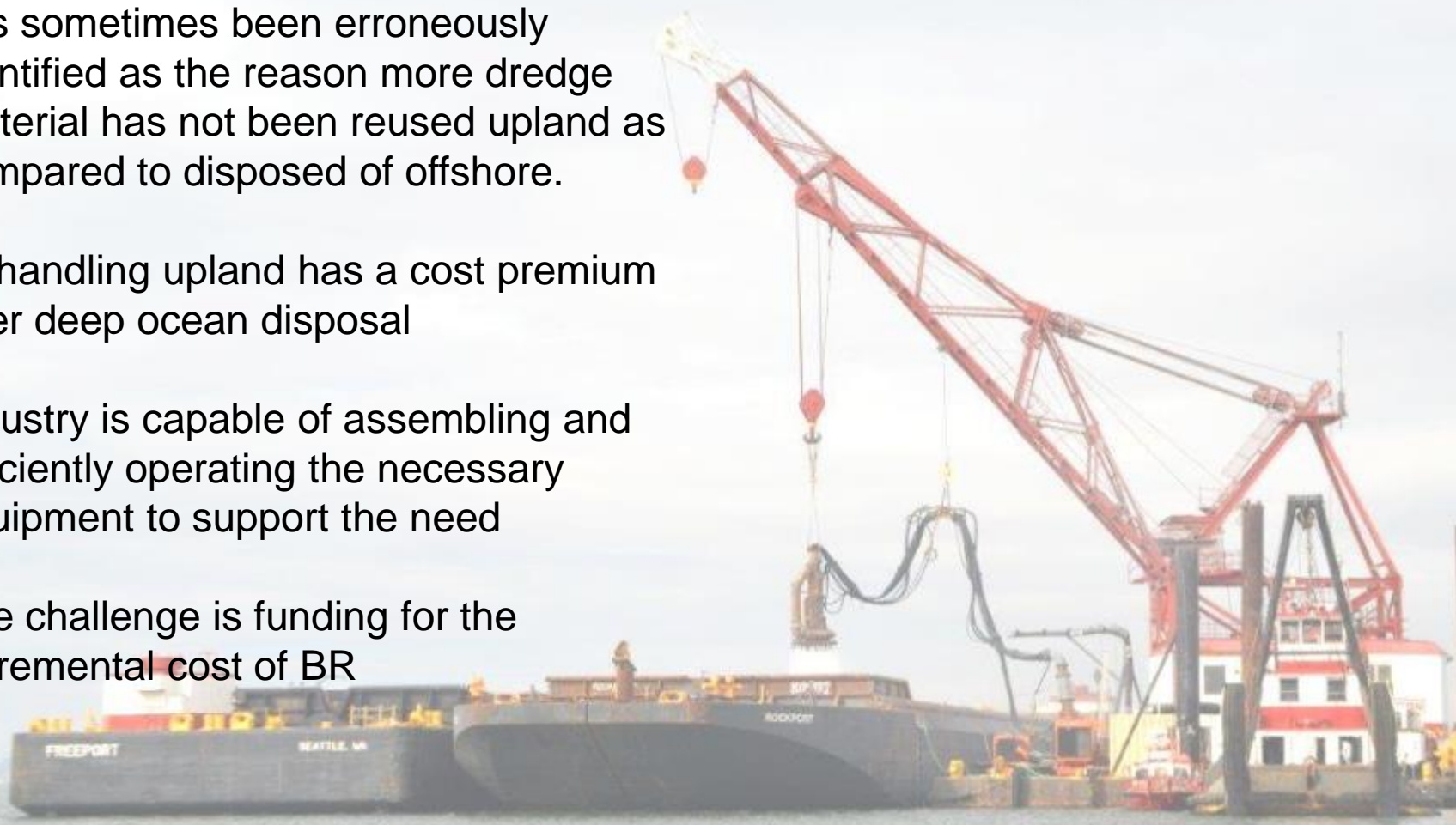
Industry Built Unloader

- Industry Unloaders are readily available (BAE San Diego 16'), (Richmond 16')
- When Industry sees clear need (i.e. certainty that material is going upland), mobilization or construction of unloader is rapid.



Conclusions / Recommendations

- The lack of a 2nd unloader in SF Bay has sometimes been erroneously identified as the reason more dredge material has not been reused upland as compared to disposed of offshore.
- Rehandling upland has a cost premium over deep ocean disposal
- Industry is capable of assembling and efficiently operating the necessary equipment to support the need
- The challenge is funding for the incremental cost of BR





FY 2015 ANALYSIS OF DREDGING COSTS

CORPSWIDE SUMMARY TOTALS						
	DOLLAR VALUE	PERCENT		CUBIC YARDS	PERCENT	COST/CY
TOTAL DREDGING	\$1,440,993.1	100.00%		185,604.9	100.00%	\$7.76
	<i>\$1,440,993.1</i>	<i>100.00%</i>		<i>185,604.9</i>	<i>100.00%</i>	<i>\$7.76</i>
TOTAL MAINTENANCE DREDGING	\$922,610.7	100.00%		165,323.0	100.00%	\$5.58
	<i>\$922,610.7</i>	<i>64.03%</i>		<i>165,323.0</i>	<i>89.07%</i>	<i>\$5.58</i>
TOTAL NEW WORK DREDGING	\$253,455.5	100.00%		7,366.0	100.00%	\$34.41
	<i>\$253,455.5</i>	<i>17.59%</i>		<i>7,366.0</i>	<i>3.97%</i>	<i>\$34.41</i>
TOTAL EMERGENCY DREDGING	\$0.0	0.00%		0.0	0.00%	#DIV/0!
TOTAL Hurricane Sandy SUPP DREDGING	\$264,926.9	18.39%		12,915.9	6.96%	\$20.51
TOTAL HOPPER DREDGING	\$484,180.4	33.60%		52,521.9	28.30%	\$9.22
Maintenance	\$230,699.1	16.01%		40,532.5	21.84%	\$5.69
New Work	\$76,523.8	5.31%		3,142.4	1.69%	\$24.35
Emergency	\$0.0	0.00%		0.0	0.00%	#DIV/0!
Hurricane Sandy Supp Work	\$176,957.5	12.28%		8,847.0	4.77%	\$20.00
TOTAL NON-HOPPER DREDGING	\$956,812.7	66.40%		133,083.0	71.70%	\$7.19
Maintenance	\$691,911.6	48.02%		124,790.5	67.23%	\$5.54
New Work	\$176,931.7	12.28%		4,223.6	2.28%	\$41.89
Emergency	\$0.0	0.00%		0.0	0.00%	#DIV/0!
Hurricane Sandy Supp Work	\$87,969.4	6.10%		4,068.9	2.19%	\$21.62
TOTAL GOVERNMENT DREDGING	\$140,151.8	9.73%		26,890.0	14.49%	\$5.21
Hopper	\$79,540.6	5.52%		11,203.7	6.04%	\$7.10
Non-Hopper	\$60,611.2	4.21%		15,686.3	8.45%	\$3.86
Gov't Supp Work	\$2,399.8	0.17%		147.3	0.08%	\$16.29
Gov't Hopper Supp	\$157.5	0.01%		14.5	0.01%	\$10.86
Gov't Non-Hopper Supp	\$2,242.3	0.16%		132.8	0.07%	\$16.88
Gov't Work For Others (WFO)	\$3,672.0	0.25%		2,351.0	1.27%	\$1.56
Gov't Hopper WFO	\$0.0	0.00%		0.0	0.00%	#DIV/0!
Gov't Non-Hopper WFO	\$3,672.0	0.25%		2,351.0	1.27%	\$1.56
TOTAL CONTRACT DREDGING	\$1,300,841.4	90.27%		158,714.9	85.51%	\$8.20
Hopper	\$404,639.8	28.08%		41,318.2	22.26%	\$9.79
Non-Hopper	\$896,201.6	62.19%		117,396.7	63.25%	\$7.63
Contract Supp Work	\$262,527.1	18.22%		12,768.6	6.88%	\$20.56
Contract Hopper Supp	\$176,800.0	12.27%		8,832.5	4.76%	\$20.02
Contract Non-Hopper Supp	\$85,727.1	5.95%		3,936.1	2.12%	\$21.78
Contract WFO	\$73,701.7	5.11%		6,645.2	3.58%	\$11.09
Contract Hopper WFO	\$26,218.6	1.82%		1,575.1	0.85%	\$16.65
Contract Non-Hopper WFO	\$47,483.1	3.30%		5,070.1	2.73%	\$9.37
TOTAL FEDERAL DREDGING	\$1,171,522.0	81.30%		170,976.6	92.12%	\$6.85
TOTAL NON-FEDERAL DREDGING	\$192,097.4	13.33%		5,632.1	3.03%	\$34.11
TOTAL SUPPLEMENTAL DREDGING	\$264,926.9	18.39%		12,915.9	6.96%	\$20.51
TOTAL WORK FOR OTHERS	\$77,373.7	5.37%		8,996.2	4.85%	\$8.60