

THE CLEVELAND HARBOR DREDGING SUMMIT 2010

Cleveland Harbor DREDGING SUMMIT **2010**

February 2-3, 2010



Prepared for:

U.S. Army Corps of Engineers, Buffalo District
Cleveland-Cuyahoga County Port Authority
City of Cleveland

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PREFACE

Cleveland is facing a dredging crisis. The existing confined disposal facilities (CDFs) that service Cleveland Harbor dredging operations are projected to run out of capacity in 2014, and construction of a new CDF cannot be completed before 2017, at the earliest. Alternatives for placement of dredged material need to be identified and implemented such that dredging can continue to keep the harbor and river channels open.

Hosted by the U.S. Army Corps of Engineers with the Cleveland-Cuyahoga County Port Authority and the City of Cleveland, the 140 participants in the February 2-3, 2010, Cleveland Harbor Dredging Summit were charged with finding solutions to the dredging and dredged material management issues.

This report provides a summary of the presentations, discussions, recommendations, and next steps developed during the Summit.



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EXECUTIVE SUMMARY

Cleveland Harbor, Cuyahoga County, Ohio, is located on the south shore of Lake Erie at the mouth of the Cuyahoga River. Cleveland Harbor is a major commercial port on Lake Erie.

The harbor today consists of a lakefront, breakwater protected outer harbor, and an inner harbor. The inner harbor is the lower reach of the river with deep draft authorized channel depths. The outer harbor is a breakwater-protected area 5 miles long covering about 1,300 submerged acres. The lakefront is very well protected by the breakwater (identified as the east and west breakwater separated by the arrowhead jetty channel).

The primary cargo shipped or received at Cleveland Harbor is bulk commodities. This includes iron ore, limestone, cement and concrete, salt, sand and gravel, general cargo, and liquid bulk. In 2007, the level of tonnages moving through Cleveland Harbor was approximately 13 million tons per year. The Port ships more than 1 million tons of salt annually. Bulk commodities that passed through Cleveland Harbor generated approximately \$151 million in 2007. This supported over 2,495 jobs that generated over \$92 million per year in personal revenue.¹

A significant amount of recreational boating occurs both within and outside the Harbor area. Major marinas are located on the east end of the Harbor, at the westerly part of the west breakwater and at the end of the Old River.

Dredging of the Harbor and Dredged Material Management

Over the last ten years, dredging of Federal and non-Federal channels has averaged 330,000 cubic yards per year. However, since 2007 the amount dredged has been reduced to 250,000 cubic yards per year due to limited confined disposal facility (CDF) capacity. Smaller channel dimensions are now in place as a result of the decreased dredging.

The failure to implement critical interim and long term CDF capacity measures will lead to a further reduction in annual dredging quantities and the inability to dredge once CDF capacity is exhausted. The eventual loss of between 1 and 2 feet of channel depth would result in increased transportation costs of \$2.6 million to \$6.7 million annually. The harbor is at risk of remaining an economically viable port.

The earliest a new CDF can be operational is 2017 and that could be further delayed. As a result, actions are needed to identify and pursue other uses and disposal alternatives for dredged material from the Cuyahoga River. Those alternatives could include brownfield restoration, upland placement, mine reclamation, or other alternatives such as restoration or creation of habitat.

The immediate issue is to determine the short term and long term solutions for dredged material disposal and placement for beneficial uses. The approach to finding those solutions is to work together with all interested stakeholders to identify potential alternatives and obstacles, and collaborate and communicate to determine the next steps toward resolution.

¹ Based on 2009 data, approximately \$159 million annually in direct revenue passes through Cleveland Harbor which supports over 2,611 jobs. This generates over \$96 million per year.

The Cleveland Harbor Dredging Summit

The Summit was designed to provide maximum opportunity for participation by Summit attendees. The meeting format highlighted the issues specific to Cleveland Harbor, provided examples of successful beneficial use alternatives, and supported idea sharing and constructive dialogue.

With a mixture of presentations in plenary sessions and separate breakout groups to encourage discussion, the Summit was a significant step to finding implementable solutions to Cleveland's dredging crisis. This report provides a summary of the presentations, discussions, recommendations, and next steps developed during the Summit, and will become a reference guide to future collaborations.

Conclusions and Recommendations from the Summit

The general conclusion was that the annual dredging of navigation channels is paramount in the continued growth and development of the Port and the City of Cleveland, and that there are no simple, easy solutions. The identified solutions include a combination of disposal alternatives as well as potential beneficial uses of dredged material for such placement options as restoration of brownfields, mine reclamation, and habitat restoration/creation. In addition, sediment reduction in the watershed through sediment control and management was considered an essential part of the overall approach.

Short Term Dredged Material Management

Short term solutions included developing additional capacity at existing CDFs (i.e., fill management plans) and placing dredged material on brownfield sites. Additional capacity at CDF 10B (and possibly other CDFs) can be generated by raising the dikes, within FAA limitations as it is near the airport, and excavating material from the CDF for use on brownfield sites. Characteristics of the CDF material including geophysical properties, chemical qualities, and if the material requires dewatering would need to be evaluated for the potential end use. Other potential uses may include sale of sediment as a commodity for urban gardens, housing, and recreational development. If dewatering of the material is needed, this may require an additional temporary material placement location that allows for effective dewatering activity.

Another potential option for disposal would be to collaborate with the stakeholders of Dike 14 to determine if placement of dredged material in the remaining capacity of Dike 14 could be conducted in such a manner to enhance the overall habitat and nature preserve of Dike 14. This is a sensitive issue because so many stakeholders are involved in continuing to create and enhance the natural habitat characteristics of Dike 14.

The disposal of short term maintenance dredging could also consider placement at existing brownfield sites. At this time, there is no formal inventory listing of current brownfield sites that could be used for this evaluation. Two sites were considered to have a strong potential to receive and use dredged sediments. They were:

- Pershing Road “Coke Plant” Site (estimated 1.0 million cubic yard capacity)
- Site at Harvard Road (West side of river, ArcelorMittal, approximately 20 acres)

Issues identified that would delay or prevent implementation of the short term dredging and disposal alternatives included determination of the non-Federal sponsors. Also, the ownership of the brownfield property, the level of contamination, and geophysical properties (including the need for dewatering) could dictate the use or non-use of a site.

Long Term Dredged Material Management

A number of long term solutions were identified which include continuing the short term actions but also looking to build another CDF(s), evaluating other beneficial use options including mine reclamation, and emphasizing sediment management in the Cuyahoga watershed to reduce sediment loadings and to control the sources of contamination. The alternatives presented in the USACE Draft Cleveland Harbor Dredged Material Management Plan (DMMP) identified several possible sites for a new CDF.

In addition, on December 17, 2004, the City of Cleveland Planning Commission adopted “Connecting Cleveland: The Waterfront District Plan.” This was a comprehensive planning effort to develop a community consensus for the Lake Erie shoreline between Edgewater Park and Gordon Park. This plan identifies four large peninsulas proposed to be constructed for creation of land north and south of the breakwater. The plan would require a confined disposal facility to be filled with dredged material prior to development by the non-Federal sponsor. The proposed land masses would likely provide approximately 20 years capacity for dredged material.

Confined aquatic disposal (CAD) cells are the construction of a large disposal hole or pit in a river, lake, or estuary, with placement of dredged material in the pit, and final capping after the site is filled. In Cleveland Harbor, the clean sediment dredged to create a CAD cell could be used to create habitat around the breakwater wall, and could be used as a cap to cover the contaminated dredged material. The initial discussion was summarized in the following comment: “*In Ohio we are trying to restore the Great Lakes. Why would we want to put more contaminated sediments in a place we want to restore?*” Some thought that public perception may be too strong and negative to gain approval to implement this disposal option. It was noted that this very same approach is being implemented with success at other locations around the country where the public was able to grasp and eventually accept this solution for dredged material. CAD cells are likely to become one of the alternatives in the DMMP.

Beneficial Use of Dredged Material

The primary emphasis regarding beneficial uses of dredged material at the Summit was upon brownfields restoration, but also noted the importance of habitat restoration and creation. Developing a market for the dredged material was considered important, such that commercial applications could be identified. Matching the source and quality of the material (i.e., supply) with the end users (demand) was considered another key action, and one that would fall to the leadership of the Corps of Engineers. In particular, Frank O’Connor, the USACE Cleveland Harbor Program Manager, was provided a new title by Summit attendees, “director of marketing

dredged material.” It is expected that the USACE will work closely with Ohio Voluntary Action Program (VAP) staff when approaching brownfields projects. Another recommended action was to be more aggressive in outreach and messaging that dredged material is available and can be used as a resource. This outreach and marketing effort should include an assessment of current incentives and potential new incentives to use the material in a beneficial manner.

Overcoming potential obstacles to use of dredged material in a beneficial manner was considered the key to future placement of dredged material for use in brownfields restoration or in habitat creation/restoration. While questions were raised about who is liable during the transportation of the dredged material and liability of the end use, the primary concern was about the suitability of the dredged material for particular end uses. This raised questions regarding the geophysical properties, the level of contamination, and the planned end uses.

An overall conclusion of the Summit was that an inventory of potential end uses/sites should be prepared. Once that is completed, the characteristics of the dredged material could be identified and assessed for appropriate applications for restoration efforts at the identified sites. State regulatory criteria are needed to determine what level of contamination is acceptable for a particular end use. The ideal situation would be to have a regulatory framework that would test the dredged material before dredging or in a CDF and identify the appropriate end users for that quality of material. Clarification is needed of the existing Ohio Environmental Protection Agency (OEPA) guidelines and regulations for dredged material applications(s).

Sediment Management to Reduce the Need for Dredging

The reduction of upstream sediment and contaminants is an important part of the long term solution. The main source of sediment loading was considered to be the Cuyahoga Valley National Park. The highly erosive riverbank soils in the park are subject to increased runoff volumes caused by increasing urbanization of surrounding areas, leading to increased erosion rates and larger volumes of sediment deposition.

There are numerous potential nonpoint sources of contamination: old landfills, industrial areas, urbanized areas, and that the area around the navigation/ship channel is primarily old industrial fill that may contain legacy contaminants. The USACE sampling of river sediments indicates varying levels/types of contaminants, such as polychlorinated biphenyls (PCBs), polycyclic aromatic hydrocarbons (PAHs), and metals with concentrations that vary by type/location and year sampled with no identified pattern. The USACE samples the Cuyahoga River Channels and Harbor sediments every five years.

Regulatory controls through OEPA’s storm water management permit system were considered to be essential to achievement of sediment reduction in the watershed. Potential actions include better state and local enforcement of current regulations as well as adopting stricter controls/requirements for communities and construction sites, including requiring riparian and wetland buffers/setbacks in new permits. In addition, the Northeast Ohio Regional Sewer District (NEORS) has a key role in these efforts. Funding was identified as the main reason for delaying/preventing such actions to occur on a timely basis.

One element of sediment management is the assistance of up-river participants, but it is difficult at best because many of the players in the upstream arena (such as watershed groups) are without ownership of the issue, specific authorities, or funding.

Communications and Outreach

While the Summit participants are significant players in achieving positive results, the public needs to understand the dredging and dredged material management situation. The group recommended that a concentrated communications and outreach effort be initiated to provide understanding and involvement of the public and other stakeholders.

Funding Issues:

- Budget constraints locally.
- Ongoing USACE budget constraints.
- Difficulty in identifying non-Federal partners for beneficial use; while there are a great number of interested stakeholders, as witnessed by the meeting turnout, the list of entities with capability and resources to solve the hardest problems is much shorter.
- Urgency; severely limiting options is the dwindling time before inadequate CDF capacity affects port operations negatively and creates hardship and economic loss.

Cleveland Harbor Task Force

The Summit concluded that a task force is needed to address Cleveland Harbor dredging issues. In seating a task force to address this issue, necessary participants on various committees of the task force would include, but not be limited to, the Port, City, USACE, USEPA, private industry, the local Remedial Action Program (RAP) administrators, the State [OEPA, Ohio Department of Natural Resources (ODNR), Ohio Department of Transportation (ODOT), Commerce and Development], Natural Resources Conservation Service (NRCS), academics, environmental interest groups, other stakeholders, and, importantly, representatives of Senators, Congressmen, the Governor's office, and State legislators. While the task force should be broad and inclusive, it should be driven by a smaller, more nimble Executive Committee.

The key issues for the task force are:

- Find short and long term solutions for dredged material management that are feasible and can be implemented. In the short term, identify dredged material management alternatives that can sustain dredging through at least 2017
- Identify and implement management alternatives that beneficially use dredged material for such actions as brownfield restoration, mine reclamation, and habitat restoration or creation;
- Implement a sediment and contaminant management program that minimizes the sediment load and contaminant sources in the watershed;
- Identify project proponents, non-Federal sponsors, and funding sources; and
- Ensure excellent communication and maintain a transparent process with stakeholders.

In the closing plenary session of the Summit, LTC Dan Snead announced that an Executive Committee for the Cleveland Harbor Dredging Task Force was identified during Day 1 of the Summit; members include USACE, Port Authority, City of Cleveland, ArcelorMittal Steel, OEPA, ODNR, and staff representing Congresswoman Fudge, Senator Brown, and Senator Voinovich. Summit participants enthusiastically agreed that a task force should be initiated to

address the Cleveland dredging crisis. The Executive Committee will develop a charter and plan for the way ahead. The Port Authority offered to be Chair of the Task Force. They will reach out to ODOT for involvement in the issues.

The executive session participants created a draft vision for the Cleveland Harbor Dredging Task Force:

“Identify and execute short term interim dredged material placement measures to sustain dredging through 2016 and lead to long term dredged material management solutions.”

The Summit Recommendations

The Cleveland Harbor Dredging Task Force

1. Initiate a multi-faceted task force with leadership of the USACE, Port, and City and include a broad range of stakeholders with an objective to coordinate and collaborate in development and implementation of short and long term solutions. The broad and inclusive task force should be driven by a smaller, more nimble Executive Committee.
 - Members from the Corps of Engineers, Port Authority, City of Cleveland, OEPA, ODNR, and ArcelorMittal Steel will serve as the Cleveland Harbor Dredging Task Force Executive Committee. The Executive Committee will develop a charter and plan for the way ahead.
 - The Port Authority will Chair the Task Force. They will reach out to ODOT for involvement in the issues.
 - The Task Force will prepare and implement an outreach and communications plan to reach the public, other stakeholders, local citizens, and elected officials to ensure understanding of the issues and the work of the task force.

What short term and long term alternatives are really available for Cleveland Harbor?

2. The USACE, Port, and City should pursue near term sediment placement to enhance Dike 14 via a partnership with Dike 14 stakeholders. Potential for remediation of the 5 acres on Dike 14 should be pursued, as well as the possibility of excavating material that now exists in Dike 14 and replace it with new dredged material.
3. Fill management plans should continue to be enhanced and implemented, including but not limited to, berm raising where possible, removal of sediment previously placed in CDF 10B, and evaluation of the use of wick drains.
4. The disposal of short term maintenance dredging should also consider placement at existing brownfield sites; an inventory of potential sites is needed.
5. In the long term, the location of a future CDF must be further assessed, including, but not limited to, sites already listed in the Draft DMMP, the City’s Waterfront District Plan, and the City’s Harbor Study Plan.
6. CAD cells should be evaluated with the consideration that constructing the cell would occur in the riverbed or lakebed that has 120 feet of sediment below the bed surface without hard rock.
7. Two sites should be pursued that have a strong potential for near term receipt and use of dredged sediments:

- a. Pershing Road “Coke Plant” Site (estimated 1.0 million cubic yard capacity)
 - b. Site at Harvard Road (West side of river, ArcelorMittal, approximately 20 acres)
8. Upland site(s) should be identified that could serve to dewater the material and temporarily store the material for future removal and use.

How can dredged material be used for upland reclamation, habitat creation, and habitat restoration?

9. Create a regulatory roadmap for different end uses. This informal guidance would provide a step-by-step process to assist the USACE, Port, City, end user, and stakeholders to determine how to effectively meet regulatory requirements for restoration and creation efforts with dredged material. The USACE would have the lead and would need to work closely with the State on this issue.
10. As part of the regulatory roadmap effort listed above, clarify the available OEPA regulatory framework for standards of use that could be applied to beneficial uses of dredged material.
11. Initiate an aggressive outreach and marketing effort that dredged material is a resource. The USACE volunteered for the lead, working closely with the State; OEPA VAP should identify dredged material as a resource that should be considered in restoration efforts.
12. Create an inventory of potential dredged material user sites (e.g., brownfield, Port, recreational, and habitat).
13. Assess the characteristics (i.e., testing) of material in CDFs and to be dredged.
14. As part of the marketing effort, initiate a program to match the inventory of users (i.e., the demand) with the characteristics and availability of dredged material (i.e., the supply) (i.e., the key to success is a continuous and reliable supply).

How can we minimize sediment loading into the river and manage contamination at the source?

15. Implement a multi-faceted sediment management and control program in the Cuyahoga River watershed. The program should address both sediment and contaminants at the source and involve watershed stewardship groups and consideration of local watershed action plans.
16. Identify and implement natural solutions to reducing sedimentation to the river through upriver streambank and wetland restoration projects. Successful projects that have been completed in the watershed should be highlighted and similar efforts encouraged.
17. Investigate the potential for stricter regulatory requirements through OEPA storm water permits and/or local regulations. This would include stricter controls/requirements for communities and construction sites, and riparian and wetland buffers/setbacks in new permits.
18. Identify specific watershed areas to target for stormwater/erosion controls through updating/improving the USACE sediment transport models and working with regional/State/local stormwater management entities and local watershed groups.

What funding opportunities are available and which entities could be project proponents and non-Federal sponsors of beneficial use projects?

- 19.** Explicit efforts should be initiated to access funding created by the Great Lakes Restoration Initiative (GLRI). The GLRI has five focus areas, three of which may have potential for application to the Cleveland harbor sediment removal and dredged material management: toxic areas of concern (AOCs), non-point source pollution, and habitat restoration.
- 20.** Potential non-Federal partners for beneficial use projects should be pursued, and in addition to obvious partners like the Port Authority and ODOT, the extensive list of agencies and organizations involved with northeast Ohio Metroparks should be evaluated; there are a great number of interested stakeholders, but the list of entities with capability and resources to solve the more difficult problems is much shorter.
- 21.** The federal interest in maximizing the economic and environmental benefits of the underutilized Great Lakes/St. Lawrence Seaway system should also be leveraged, as well as working with ODOT Office of Maritime.
- 22.** In terms of funding at the congressional level, the short and long term dredged material management plan should be developed with specific recommended alternatives for beneficial use, developed to include broad-based support by stakeholders; outreach to State and Federal legislators should then be conducted, but, of course, congressional contacts should be informed of progress along the way.

I. INTRODUCTION: CLEVELAND HARBOR & DREDGING

1. CLEVELAND HARBOR AND THE NAVIGATION CHANNELS

Cleveland Harbor, Cuyahoga County, Ohio, is located on the south shore of Lake Erie at the mouth of the Cuyahoga River. Cleveland Harbor is a major commercial port on Lake Erie.

The harbor today consists of a lakefront, an outer harbor protected by a breakwater, and an inner harbor. The inner harbor is the lower reach of the river with deep draft authorized channel depths. The outer harbor is a breakwater-protected area 5 miles long covering about 1,300 submerged acres. The lakefront is well protected by the breakwater (identified as the east and west breakwater separated by the arrowhead jetty channel).

Recreational boating is the most visible form of vessel activity in the harbor area. Major marinas are located on the east end of the Harbor, at the westerly part of the west breakwater and at the end of the Old River. A significant amount of recreational boating occurs both within and outside the Harbor area.

Historically, the primary cargo shipped or received at Cleveland Harbor is bulk commodities. This includes iron ore, limestone, cement and concrete, salt, sand and gravel, general cargo, and liquid bulk. In 2007, the level of tonnages moving through Cleveland Harbor was approximately 13 million tons per year. The Port ships more than 1 million tons of salt annually. Bulk commodities that passed through Cleveland Harbor generated approximately \$151 million in 2007. This supported over 2,495 jobs that generated over \$92 million per year in personal revenue.²

The Federal dredging project has been authorized and modified by numerous River and Harbor Acts starting in 1875 through 1962, and the 1976 Water Resources Development Act (WRDA). Further improvements of the navigation channel for commercial and recreational navigation were authorized in the 1985 Supplemental Appropriations Act. The commercial navigation improvements of the 1985 authorization are on hold.

Project improvements that have been authorized by Congress are considered to be 90 percent complete. This does not include inactive and deferred portions of the project. The work remaining includes enlarging and deepening to 31 feet the east entrance channel, and deepening the east basin to 27 feet. The project authorized channel depths in the two entrance areas are 29 feet. The authorized channel depths in the remaining portions of the Cuyahoga River project are 23 feet. The Old River navigation channel is maintained to 23 and 21 feet.

2. THE NEED FOR DREDGING

Over the last two decades, dredging of Federal and non-Federal channels has averaged 330,000 cubic yards per year. However, since 2006 the amount dredged has been reduced to 250,000 cubic yards per year due to limited confined disposal facility (CDF) capacity. While the Corps

² Based on 2009 data, approximately \$159 million annually in direct revenue passes through Cleveland Harbor which supports over 2,611 jobs. This generates over \$96 million per year.

of Engineers has an open-lake placement site option located approximately 9 miles offshore and north of the project, the sediment quality of the dredged material is considered unsuitable for open-lake placement. Subsequently, no dredged material has been placed in the open-lake placement site since 1970.

In 1970, two confined disposal sites were approved for an expected 10 year disposal life. These sites were CDF 12 and 14 opposite Gordon Park. Dike 14 is an 88 acre facility that is considered 95 percent filled. This site was turned over to the non-Federal sponsor (Cleveland-Cuyahoga County Port Authority) in 1999, and is now a nature preserve.

CDF 10B was constructed in the 1990s and started receiving dredged material in 1998. It is immediately north and adjacent the Burke Lakefront Airport. CDF 10B covers 68 acres, with usable acreage for placement of dredged materials estimated at 58 acres, and an originally estimated volume capacity of 2.9 million cubic yards. The site was forecast to have been filled in 2008, but dredging has been reduced to 250,000 cubic yards per year and “fill management plans” have been put in place to extend the life of the CDF. These efforts have extended the useful life of the CDF, but at the cost of reduced channel maintenance. CDF 10B is expected to reach capacity in 2014.



The failure to implement critical interim and long term CDF capacity measures will lead to a further reduction in annual dredging quantities and the inability to dredge once CDF capacity is

exhausted. The eventual loss of between 1 and 2 feet of channel depth would result in increased transportation costs of \$2.6 million to \$6.7 million annually.

II. OVERVIEW OF THE SUMMIT

1. THE AGENDA

The Summit was designed to provide maximum opportunity for participation in discussions of the issues and solutions by Summit attendees. The Summit agenda is included in Appendix 1.

Featured in the opening ceremonies of the Summit were statements of concern and charges to the Summit attendees by LTC Dan Snead, District Commander of the Corps of Engineers, Buffalo District; Valarie McCall, Chief of Government Affairs for the City of Cleveland; and Peter Raskind, Interim Director for the Cleveland-Cuyahoga County Port Authority.

Following the opening presentations, the key issues of Cleveland's dredging crisis and a broad overview of the existing Cuyahoga River navigation project conditions were presented by speakers from the Corps of Engineers, Port Authority, City of Cleveland, and Cuyahoga River Community Planning Organization.

During the remainder of the morning and the initial part of the afternoon, meeting attendees heard from a number of speakers on experiences from around the country, in the Great Lakes, and in Cleveland on beneficial use of dredged material. The speaker presentations were limited to 10-15 minutes with a 5 minute time for response to questions.

Summaries of the speaker presentations are included in Section 3 of this report, as well as the questions and answers following each speaker. Copies of the full presentations in power point are available from Lynn Greer of the Corps of Engineers, Buffalo District.

The speaker presentations were followed by breakout groups in the late afternoon. The breakout meetings were intended to address and identify the facts and issues and provide the opportunity for meeting participants to fully engage in discussions. The majority of the 140 plus attendees were pre-assigned to one of four breakout groups. Each breakout group had the same list of questions to be addressed with the intention to initiate and focus discussion within each group. The primary question addressed by all the breakout groups was: "What are the short and long term dredging and dredged material placement/disposal solutions to continue the viability of the Port of Cleveland?"

On Day 2 of the meeting, a summary of the results of the four breakout groups was presented in plenary session. The results of the Day 1 breakout groups are provided in Section 4 of this report.

Four new breakout groups were formed in the morning of Day 2 and took on the following issues:

1. What are the short and long term viable confined disposal alternatives for Cleveland Harbor (examples: CDFs, fill management plans, and confined aquatic disposal)?
2. How can dredged material be used for upland reclamation, habitat creation, and habitat restoration?

3. How can we minimize sediment loading into the river and manage contamination at the source?
4. What is the cost share component, and funding opportunities available, to support beneficial use projects?

The results of the discussion from each of the breakouts were presented by each breakout group's facilitator in plenary session in the late morning of Day 2. The summaries of each breakout group are included in Section 4 of this report.

The final session of the summit brought the attendees together and determined the actions and next steps as discussed during Day 1 and Day 2.

2. THE CHARGE FROM THE USACE, CITY, AND PORT

The Charge from the USACE, City, and Port:

LTC Dan Snead P.E., District Commander of the Buffalo District Army Corps of Engineers

Each year, the Corps of Engineers, Buffalo District, dredges the Cuyahoga River Channel. In order to provide minimal functionality for the Federal navigation channel, approximately 330,000 cubic yards of sediment should be removed. Since 2006, approximately 250,000 cubic yards has been dredged annually resulting in a growing backlog of material to be dredged from the harbor. The backlog is now nearing 1.5 million cubic yards of sediment.

The reduced dredging negatively impacts the shipping industry, which is an integral component of this region's economic viability.³

- Bulk commodities that pass through Cleveland Harbor generate approximately \$151 million annually in direct revenue which supports over 2,495 jobs.
- These jobs generate over \$92 million per year in personal income.

The dredging crisis is a problem for all of us. What would the city of Cleveland be without the breakwater structure, built in the 1880's? The breakwater provides silent protection that has allowed the City to grow and ensures commercial vessels can get upstream, and the steel mill to be functional and profitable. Toledo and Cleveland Harbor are a priority for General Peabody, the Lakes and River Division Commander. Both harbors are at risk of not remaining viable. The Corps of Engineers is seeing a delay in the long term plan to build a vitally needed new CDF. We need to identify other alternatives to place material because the CDFs (adjacent to Burke Lakefront Airport) are nearly filled to capacity. There is a 5-7 year gap in which we now have no place to store dredged material. I challenge you to help us find solutions and move ahead for dredged material management.

³ Economic analyses have been updated since the Summit. Based on 2009 data, approximately \$159 million annually in direct revenue passes through Cleveland Harbor which supports over 2,611 jobs. This generates over \$96 million per year.

So why are we here?

- Cleveland Harbor is in crisis. The quantity of material to be dredged annually exceeds the capacity at the existing CDFs.
- The earliest a new CDF can be operational is 2017 and that could be further delayed. As a result, we need to actively identify and pursue other uses and disposal alternatives for dredged material from the Cuyahoga River. Those alternatives could include brownfield restoration, upland placement, mine reclamation, or other uses. But, we need to collaborate with all of you in this room to assess the feasibility of these other alternatives and find means to make it happen.
- I challenge us all to identify and work cooperatively in order to manage dredged material in Cleveland Harbor, including identifying financial resources. And, I invite you to be part of a new initiative, the Cleveland Harbor Task Force, to help make the solutions we identify over the next two days a reality.
- I look forward to working with you, and hearing your recommended alternatives for beneficial use of dredged material.



Valarie McCall, Chief of Government Affairs, on behalf of Mayor Frank Jackson, City of Cleveland

This summit is very important to the City of Cleveland. Our aviation and maritime activities, and our lakefront are considered to be the “living room” of Ohio and our nation. And, the first thing people see when they visit our “regional house.” It is absolutely necessary to keep the living room clean and presentable. The house is built, the foundation is there; this is a Partnership that will allow us to take things to the next level – to keep the living room presentable. Aviation and maritime activities are the economic engines of the present day and the future. We have to find solutions to the dredging and disposal crisis and to ensure lakefront development.



The City of Cleveland charges the meeting attendees to go to breakout sessions and give the City and the USACE a plan. Mayor Jackson states that this is a priority, and he considers everyone at the Summit to be an ambassador for Cleveland.

Cleveland is not a part of the rust belt; it is the green belt and water belt of Lake Erie. The Corps of Engineers should receive a budget for something we know is critical for the future of Cleveland. The City is part of the solution, we are at the table. We are working on this together.

Peter Raskind, Interim Port Director: Cleveland –Cuyahoga County Port Authority

As many people in Cleveland are aware, the Port Authority has spent time refocusing its priorities, which include:

1. Focus on competitiveness and viability of the Port, which includes planning for disposal of dredged material
2. Economic development finances (fees earned by bond financing also help finance maritime related activities)
3. Waterfront development



I am very appreciative of the interest by everyone at the Summit to identify potential solutions to the pressing issues (dredged material management) facing Cleveland Harbor, and I look forward to working with you during the Summit and in our future collaborations.

III. THE SUMMIT PRESENTATIONS

1. SESSION 1----KEY ISSUES

Dredging requirements, Capacity issues, and Disposal Alternatives

Frank O'Connor P.E., U.S. Army Corps of Engineers, Cleveland Harbor Program Manager

The Corps of Engineers expects to run out of dredged material disposal capacity before a new CDF is on line, and dredging cannot continue if we do not have somewhere to place the material. Here is what we know:



- Cleveland and Toledo are priority harbors because channel viability is threatened in the next five years; this is a priority issue for the Division General.
- A reduction of 1-2 feet in channel depth from the lack of dredging would result in increased transportation costs of \$2-\$7 million annually, and thus, our analyses show that dredging and construction of a new CDF are economically justified.
- We have at least a two year delay in construction of the new CDF, and that two year delay poses a threat as well an opportunity to find new ways to manage sediment. Our top priority is to keep the channels open.

Historically, the Corps of Engineers dredges 330,000 cubic yards of sediment annually, but that has been decreased to 250,000 cubic yards per year due to limited CDF capacity. The dredging backlog continues to increase, and smaller channel dimensions are in place as a result of decreased dredging.

- Three active CDFs on the waterfront have exceeded their original design capacity, and the USACE has implemented fill management plans to increase capacity. We are limited at how high we can raise the berms due to Federal Aviation Administration (FAA) runway safety criteria, and that limits the additional capacity of the CDFs.
- The USACE is planning to harvest dredged material from the CDFs for beneficial use purposes to create capacity at existing CDFs using stimulus funds in 2010, approximately 300,000 cubic yards is expected to be removed from CDF 10B.

Regional sediment management provides viable alternatives for dredged material management in controlling the sources of the sediment; the USACE is also working with OEPA and ODNR to consider viable alternatives for beneficial use projects.

The Commander has challenged us to find a solution. Let's work together to lower the backlog and increase the capacity and annual dredging quantities.

Looking forward: The future direction of the Port

Eric Johnson: Cleveland-Cuyahoga County Port Authority, Real Estate Director

Given the change in leadership and other changes at the port, and including the national recession, the first point to emphasize is that the Port is not in financial trouble. The role of the port in being the local sponsor for construction of a new CDF is a significant task, and this is something the Port cannot handle by itself.



The Port Authority has identified seven key priorities:

1. Interim dredging – will work with the City and the USACE to address the situation to maintain the ship channel, maritime operations, and growth of the community.
2. Long term CDF – continue to explore the viability, scope, and size of construction of a CDF at the East 55th Street site, as well as evaluating available data and research supporting the growth sectors of the maritime industry.
3. Maritime operations – core function of the Port is maritime operations. Create a more competitive maritime industry.
4. Evaluate port economic, environmental, and competitiveness issues --stakes are high in Cleveland.
5. Develop finance programs as a core entity for the Port.
6. Implement the Waterfront Development Plan over the next 20 years.
7. Outreach and community engagement. Seek to engage the community and stakeholders to talk about long term solutions.

Brownfield Restoration,

Tracey Nichols, City of Cleveland, Director of Economic Development

There is an active Brownfield Restoration Program in Cleveland. Mayor Jackson's vision is to find sustainable ways of implementing projects: a Green City on a Blue Lake. Brownfield restoration works by bringing material to a site for cover from somewhere else or removing material from a brownfield and sending to another location (e.g., landfill).

The existing Coke Plant Site (Pershing Road on Route 77 South) requires 1.1 million cubic yards of fill for 54 acres, and has highway access. Currently, the brownfield site is mixing dirt with slag to make material that is stable for building. But,



a better approach would be to use dredged material from USACE CDFs; where else can you get 1.1 million cubic yards that is VAP compliant? The City has a great relationship with the USACE, and has worked with the USACE to test the material. The sediment in the CDF is benign and great for industrial reuse, and the cost to move the fill is less than new construction.

By removing sediment, there will be more space in the CDF for future dredged material disposal. Uncertainties include:

1. Geotechnical properties of the material;
2. Obtaining dry material on a regular basis and in sufficient quantities, (e.g., double handling the material---excavate the material from the CDF, let it dry and then remove);
3. Leaching issues: chemicals can become mobile and contaminate ground water through leaching;
4. Liability issues need to be addressed regarding material transport;
5. Regulatory issues need to be addressed including testing regimes (e.g., test the material once or test the material in every truck)----continue to work with the OEPA/VAP to characterize dredged sediment for brownfield restoration; and
6. The USACE has budget constraints. The current project is being funded through stimulus funds which may not be available in the future.

Cleveland Harbor Study

Sandra Ambris, City of Cleveland, Harbor Master

The City of Cleveland in collaboration with multiple organizations such as the Port Authority, Corp of Engineers, Coast Guard, EPA, Flats Oxbow, and Cuyahoga Remedial Action Plan (RAP) are working collectively on reviewing the operations and uses of the Cuyahoga River shipping channel. Efforts to keep the channel working for maritime commerce can go hand in hand with restoration of fish habitat and, in most cases bring both nature and humans back to Lake Erie and the Cuyahoga River.



Complex issues such as the management of sediment in the Cuyahoga River Navigation Channel require multi-organizational thinking that examines how we may economically dispose of sediment, how it could be reused, and what procedures are used to remove sediment.

A comprehensive Harbor Study is being conducted. The study includes Cleveland Harbor and Cuyahoga River Maritime Operations and Properties, and will produce the foundation for a Harbor Strategic Plan that will offer revenue generating opportunities and waterfront development.

The primary objective in the Harbor Study is to improve land use and support change to better the riverfront and lakefront, and successfully fund repairs of bulkheads and Riverbed Road. Identified conflicts include commercial verses recreational use of the harbor. The study found that 20 percent of bulkheads in the river are in good condition, which means 80

percent are failing. It is important to assess repairs of the bulkheads through implementation of green bulkhead initiatives. Martin Associates is preparing the Harbor Strategic Plan which will look at maritime trade, economics, real estate development, and environmental components. This may include surveillance systems to monitor fuel farms and petroleum facilities along the waterfront to protect against terrorism. The plan will fully evaluate harbor operations (including such entities as the Rock & Roll Hall of Fame and Voinovich Park). Recommendations could include ship traffic monitoring; identify revenue needs and potential methods to meet revenue flow (including renegotiate waterfront leases), infrastructure, and river users.

The Economic Imperative for Sustainable Sediment Management
Jim White, Cuyahoga River Community Planning Organization

The solution is at our fingertips. There is value to maritime trade and costs of current sediment management. Lack of shipping would have devastating consequences to maritime commerce. There are no viable truck/train alternatives. Dredging and disposal of sediment is critical for economic prosperity for our region.

Creating a green, sustainable solution requires a team approach. Last year, 1,142 annual freshwater shipments (does not include salt water shipments) carried 13,871,000 tons of cargo into the Port of Cleveland. Construction industry supplies come to the region by boat. ArcelorMittal receives 12,000 tons/per day of iron ore, and generates \$36 million dollars in local and State taxes. The ship channel is a link of the river with the lake. Lack of access, due to reduced dredging, or storm events, could close the river and shut down operations causing \$6-\$12 million revenue loss. Dredging is approximately \$2.0 million in annual expenses. Cost of a new CDF is around \$400 million for capacity to dredge 6.0 million cubic yards of sediment for 20 years. *At a cost of \$35 - \$80 per cubic yard, dredged material is the most valuable commodity moving up the river.*



Direct placement of dredged material from the river would eliminate a lot of trucking costs and impacts to the community. We need to address other means to use this commodity.

Assets have value because they sustain or improve our prosperity; the sediment is our asset/resource to develop and sustain our prosperity! Sediment is not a cost, it is not a burden; it is an asset. I challenge you to treat sediment like a bulk commodity and develop uses for it which has value. We need to intercept the sediment and keep as much out of the Ship Channel as possible, develop new markets for beneficial upland sediment use, develop engineered reclamation soils for mines, pump sediment into an adjacent pre-constructed dewatering facility and systematically de-water and recover the sediment for planned uses, and develop a new engineered-soil economic benefit.

To make this happen, the City of Cleveland has an important leadership role to develop a sustainable model, and there is a need to engage ODOT and State Economic Development Resources. We all share an urgent need to develop a sustainable sediment management system.

Cuyahoga River is in enormous recovery; the Remedial Action Program has proposed delisting the river as an Area of Concern. There are now thousands of fish in the river including 43 different species. With this great progress, the State should recognize the importance of their role to preserve the shipping corridor.

Session 1 Questions & Answers:

Q: Steve Pfeiffer, Interested Citizen – How many cubic yards are we looking at to address short term solutions?

A: Frank O'Connor, USACE – should consider finding capacity for historic numbers, 330,000 cubic yards per year.

A: Ron Kozlowski, USACE - a 5-7 year solution would require 1.0 million cubic yard capacity.



Q: Joseph Ditchman, Colliers Ostendorf-Morris – Is the sediment or the water contaminated?

A: Josh Feldmann, USACE – The sediment is contaminated not the water.

Q: Christy Meyer, Ohio Environmental Council: Is the sediment tested every time? Who assesses point source/non point source contaminants?

A: Tracey Nichols, City of Cleveland: The City tests sediment upon removal at the CDF, and prior to placement at a Brownfield. There are potential problems using wet material due to leaching of contaminants and we would need to dewater prior to placement in the CDF.

A: Frank O'Connor, USACE: The City is doing thorough characterization of sediments through sampling and testing.

A: Karen Keil, USACE: The USACE completes testing of harbor sediments every five years. Characterization determines if material can be safely placed in the lake or if it requires confinement. We assess specific parameters (e.g., PAHs, heavy metals, PCBs).

Q: Chris Alvarado, Cuyahoga County Planning Commission: Please verify we are looking at both short and long term solutions to dredged material management. Will there be an opportunity at the Summit to address innovative solutions to be managed by the USACE and others?

A: Greg Hartman, Facilitator: Absolutely. The goal is to work with everyone here.

2. SESSION 2----_BENEFICIAL USE OF DREDGED MATERIAL I

Overview of Beneficial Use Projects Throughout the Country

Dave Knight, Great Lakes Commission, Special Projects Manager, Ports and Beneficial Use of Dredged Material Specialist

We need to change the perception of dredged material to consider it a commodity. Beneficial use includes engineering uses, agricultural, environmental, and construction applications.

Various beneficial alternatives include habitat development, mine reclamation, and river and lake



bank stabilization. Many of these have been implemented in the Great Lakes. Over 3,000 national examples exist for habitat development through beneficial use of dredged material. Island building is very relevant to the Great Lakes and an opportunity for beneficial use of dredged material.

A potential project for Cleveland, with mines located in southeast Ohio and West Virginia, would be to use sediment mixed with coal ash to provide structural integrity and low permeability to support mine reclamation. The

Great Lakes Commission (GLC) database has the capability to identify sources of dredged material for potential beneficial use at various sites.

There is growing use of dredged material for beneficial purposes around the country and in the Great Lakes region. Critical to successful beneficial use projects, in addition to economic, environmental, and technological feasibility, are broad collaboration, extensive outreach and education, and public acceptance. With existing CDF capacity diminishing in the Great Lakes, and costs to build new CDFs escalating, beneficial use of dredged material can be a valuable strategy for long term sustainability of a harbor dredging program.

Beneficial Use of Dredged Material in the New Jersey

Suzanne Dietrick, New Jersey Department of Environmental Protection, Chief of the Office of Dredging and Sediment Technology

With the closing of the ocean disposal site in the late 1990s, known as the Mud Dump Site, the State of New Jersey was forced to embark on a path of finding an alternative disposal or beneficial use location for 2-3 million cubic yards annually of fine grained, contaminated (PAHs, PCBs, metals, and dioxin) dredged material. A team was formed of State representatives, the Port Authority, the Corps of Engineers, USEPA and other stakeholders to address beneficial use of dredged material.

Concurrently, a Joint Dredging Plan by the team and a DMMP were prepared by the USACE, New York District to assess dredging needs and least cost alternatives. The short term solution included a CAD cell in Newark Bay while the agencies focused on beneficial use alternatives.



Through legislative backing, stakeholder support, and changes in the regulatory framework in the management of dredged material, the State of New Jersey was able to initiate a program in which dredged material, once treated, has been able to be beneficially used in the remediation of brownfield sites and landfills in the State. The process, known as solidification/stabilization, mixes dredged material with Portland Cement, which serves to improve the structural integrity of the material to allow for its use as a grading material and a low permeability cap at brownfield sites and landfill remediation.



Material was tested in situ, in a lab as blended material, and then completed leachate tests prior to placement at beneficial use sites. The processing facility has a capacity of a minimum 500,000 cubic yards per year. Material can be loaded by rail or truck from the processing operations. At Bark Camp, no more than one foot lift can go on a site at a time and each lift is required to cure for 24-48 hours before additional material can be placed. Bark Camp used 500,000 cubic yards of sediment. Golf course development used 2 million cubic yards of sediment. NY/NJ is preparing its fourth golf course with dredged material. Capacity is not a factor, as there is no minimum or maximum capacity requirement for beneficial use of dredged material. Brownfield redevelopment is a benefit and NJ has partnered with others to restore brownfields with a capacity as little as 60,000 cubic yards. The motto is: “Clean on clean, dirty on dirty.”

Dredged material goes to sites that have institutional and regulatory controls to manage materials. The New Jersey Department of Environmental Protection (NJDEP) delisted dredged material as a listed waste and has relisted it as a resource to be used for beneficial use. The end use of these sites has ranged from golf courses to warehouse facilities.

The use of dredged material in this manner has resulted in environmental impacts from dozens of underutilized, contaminated sites, to be properly remediated and has allowed for these sites to be redeveloped to support the economy in the State.

Confined Aquatic Disposal Cells

Tom Fredette, Corps of Engineers, New England District

Confined aquatic disposal cells (CADs) are an approach to managing contaminated sediments by placing them into a natural or human-made depression in the floor of an aquatic system (e.g.,

ocean, bay, lake, harbor, or river). A CAD cell provides isolation and lateral containment for the sediments and may also be capped using cleaner materials to increase the isolation from the environment.

CAD cells are in water CDFs where you excavate a hole in deep water, place sediment, and cap (if necessary). CAD cells were dug to negative 110 feet in Boston Harbor. CAD cell capacities can be of various sizes. A Boston Harbor CAD cell has a capacity of 1.2 million cubic yards



excavated 60 feet below harbor bottom.

Considerations when implementing CAD cells include: geology, cost, capacity, future channel deepening, and does it need to be capped. Surges can occur as you near capacity at a CAD cell.

Sediment consolidation affects calculated volumes. Dewatering is affected by surrounding geomorphology (sand/till vs. clay).

In Boston, where some CAD cells required a cap, it was determined best to cap within 4-6 months of disposal at a CAD (this was agreed upon by State agencies and the USACE, New England

District). CAD cells are a reasonable cost when compared to upland disposal and treatment facilities. CAD cells are an effective solution to upland/treatment containment of contaminated sediments.

Relative to other management techniques such as upland CDFs, treatment, or open-water capping, the experience with and use of CAD cells has a much shorter and less extensive history. CAD cell use began in the early 1980s and continued with sporadic use at various locations around the globe through the mid-1990s. In the late 1990s to the present, CAD cells became much more frequently used for a number of relatively large projects including sites in the USA such as, Newark Bay, Boston Harbor, the Puget Sound Naval Shipyard, and Providence Harbor, and sites around the world such as Hong Kong, Norway, and Australia. Experience at these and other sites indicates that CAD cells can successfully be created, filled, and capped as a cost-effective alternative for management of contaminated sediments.

Planning for CAD cell use should consider existing and future uses of the waterway, sub-bottom geology, capacity, logistics, and capping needs. CAD cells are typically of an intermediate cost compared to other alternatives. Environmental assessments have also typically found them to have relatively low risk to both human health and the environment. The environmental, logistical, public acceptance, and cost advantages of CAD cells, along with the recent body of experience, is leading to rapidly increasing use in the United States and abroad.

Q: Are there examples of freshwater CADs?

A: Tom Fredette, USACE: I am not aware of any freshwater CADs. However, freshwater CADs will have more opportunity for beneficial use of sediment harvested to create a CAD cell because a lack of salt.

Q: Josh Feldmann, USACE: How do you continually develop markets for brownfield restoration? Have you established a unit cost for upland sites?

A: Suzanne Dietrick, NJDEP: Brownfield redevelopment sites are paid per cubic yard to accept dredged material at a cost of \$8-\$17. NJDEP has become an advocate for beneficial use of dredged material. NJDEP promotes use of dredged material and questions users why they are not using dredged material for beneficial use. Costs have been as high \$97 per cubic yard which was at the height of a cost increase associated with Portland cement.

Q: Suzanne Dietrick, NJDEP: What is the requirement to determine if a cap is required on a CAD cell?

A: Tom Fredette, USACE: Capping is needed if it is determined to isolate material or provide habitat creation, but in many situations natural sedimentation will provide a very good cap.

A: Craig Vogt, Facilitator: Besides the scientific reasons for capping or not, there is also public perception that capping is beneficial.

3. *LUNCH PRESENTATION*

City of Cleveland Waterfront Development Plan

Bob Brown, Director of the Cleveland City Planning Commission

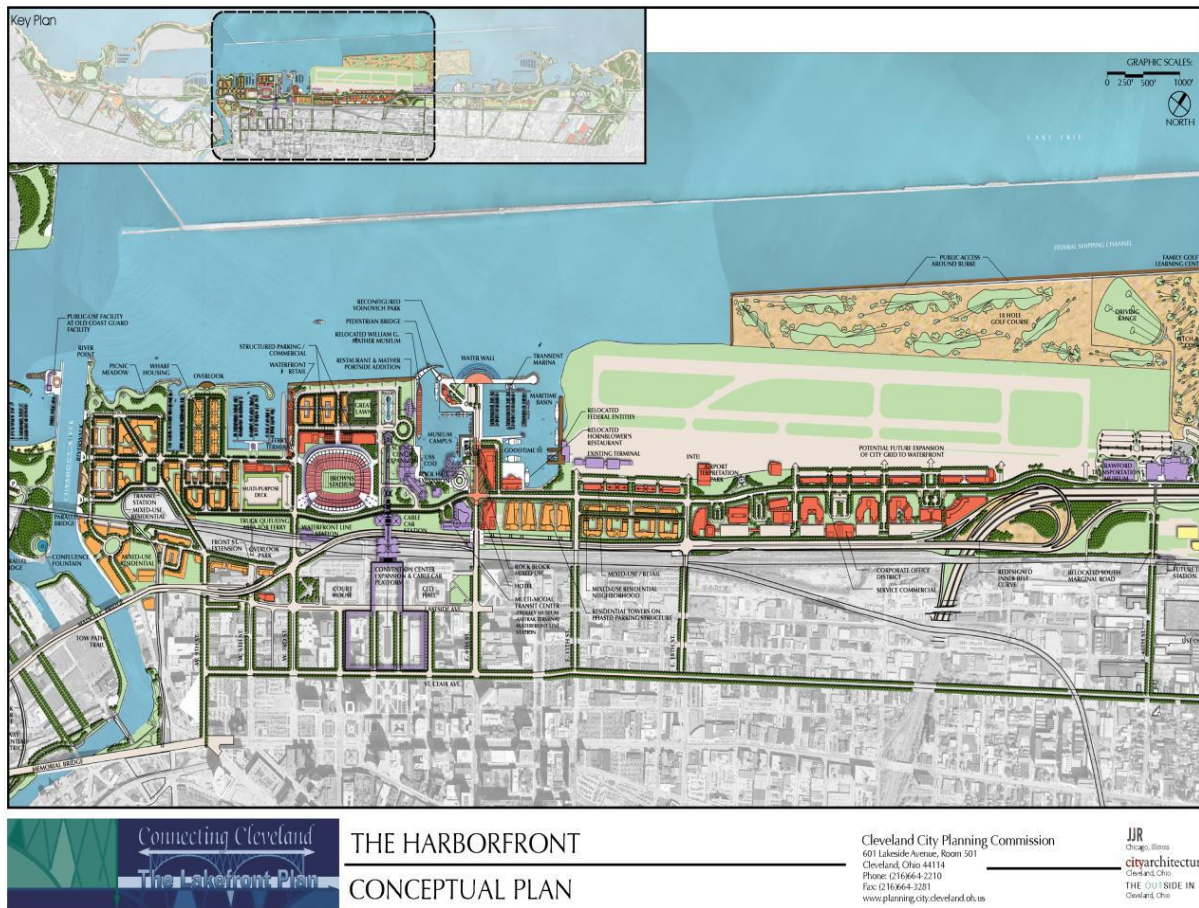


Cleveland was founded at this location because of the water, because of where the Cuyahoga River meets Lake Erie. In 2004 the City adopted the Waterfront District Plan which proposed mixed use development along the waterfront. The premise of the plan was based on Port relocation. Selecting site 2 for a CDF to be converted to a Port was controversial due to its proximity to Whiskey Island. The plan included a connection route for truck traffic. Problems have since arisen, including failure of Riverbed Road. Therefore, the City worked with the Port and USACE to identify other potential sites. On March 7, 2008, the City

identified an east side CDF/port relocation site at East 55th that is currently under study. Updated plans include a proposed relocation of the East 55th Street Marina.

The Port hired EEK to develop a phased construction plan for the downtown area where existing port operations are located at the mouth of the river. The plan includes mixed residential, office, and shopping including a lakefront promenade. The plan would green the area with a ‘greenway’ that includes a waterway through the site which would serve for stormwater management as well. The consultant has developed a ‘water plan’ in addition to the land plan

that would include docking space for other vessels and cruise ships. The plan would provide opportunities for recreation use including paddle boats, bike paths, and tow path trails, and a proposed pedestrian bridge in North Coast Harbor with a dramatic appearance.



4. SESSION 3—BENEFICIAL USE OF DREDGED MATERIAL II

Geotubes and Other Case Studies: Fox River, Port of Los Angeles, and Hylebos Waterway
 Greg Hartman, Hartman Associates, Engineering Consultant

We are really talking about DISPOSAL. There cannot be dredging unless you have disposal locations. Various options for beneficial use include upland placement, shoreline and near shore CDF, offshore CAD sites, mine reclamation, recreational and habitat development, and Port development. The Port may and is also considering the options for disposal of dredged material that is considered unsuitable for in-lake disposal. This means the sediment to be dredged does not meet open water disposal with an open material release to the bed of the lake.

The consideration for a confined disposal alternative, however, would appear acceptable if the material disposal is controlled and literally buried in an offshore CAD site. Also, the consideration of a shoreline or island creation via dredged material is also an option provided adequate burial, by capping of the problem sediment dredged from the river channel, and future protection of near shore and off shore disposal sites is provided by design. This is not a new approach to disposal of problem sediment, and can provide habitat development, recreation property, or new shore facilities for Port operations.



Recent examples of problem sediment disposal have been accomplished using geotubes for handling sediment, dewatering sediment, and transporting sediment to acceptable disposal locations. A few project examples are provided for general background knowledge:

- Hylebos Waterway(Tacoma, Washington) which included rail hauling sediment 150 miles. Slurry material was pumped directly into geotubes. The geotubes were filled and held 7-10 days prior to relocation/shipping. The dry (30 percent moisture) sediment was then transported by rail to an inland disposal site over 100 miles from the project.
- Fox River Wisconsin included geotube application for direct pumping of dredged material. Once the material was dry, tubes were cut open and the material was transported by truck and rail to other upland sites.

Another approach, already touched upon by Dr. Fredette, is the creation of confined aquatic disposal projects. This has been used successfully in Puget Sound, along with learning what not to do. A CAD cell design was sized adequately to create a disposal depth, and contain problem sediment with post capping by clean sediment. The release of the problem sediment by split hull barge dumping caused release and movement of a fluid sediment up to a 2 mile radius from the designated site. Revision of the placement methods, and an increase in the disposal site area and depth worked to allow completion of the submerged disposal site. The area was and still is a very popular salmon fishing area.

Wetlands and intertidal habitat development is a viable beneficial use alternatives for shoreline and offshore contained disposal. This same approach was initiated at the Port of Los Angeles more than 8 years ago. The Port today has over 800 additional acres of Port land created by shoreline confined disposal facilities, and over 200 acres of shallow intertidal and sub tidal habitat area created by the disposal of clean sediments over problem sediments.



The use of geotubes for dewatering of dredged sediments is a viable approach for conditioning sediment that is to be placed on brownfield sites, or for long transport to upland disposal sites. The application for nearshore and confined aquatic disposal is a real method for enhancement of submerged lake habitat areas, and for nearshore development of habitat, recreational and Port development.

Ohio's Voluntary Action Program and Applicable Standards for Soil and Sediment

Susan Netzly-Watkins, OEPA's Northeast District Office, Environmental Specialist and VAP Coordinator

Vanessa Steigerwald-Dick: OEPA's Northeast District Office, Environmental Specialist and Risk Assessor

The Ohio Voluntary Action Program (VAP) was created in 1994 to investigate and clean up environmental contamination. VAP was created to allow volunteers a method to evaluate properties to determine if they may require cleanup or if they can be safely used for a reasonably anticipated future use. VAP removed legal barriers that stall development. The VAP maximizes resources and expertise by using qualified experienced professionals and laboratories certified by OEPA. VAP requires Phase I and Phase II Property Assessments. Cleanup standards are dependent on the proposed end use of property (i.e. residential or commercial). A certified professional submits a 'Covenant Not to Sue' letter to the Director, OEPA, once the process has been successfully completed releasing the property owner from liability.

Placement of dredged material at upland locations for beneficial use must comply with Section 404 of the Clean Water Act, ORC 6111 (dredged material cannot cause adverse impacts to waters of the state), and hazardous waste rules. The VAP has generic numerical standards for land based application of direct contact with soils. Residential assessment addresses impacts to adults and children through such routes as inhalation, dermal contact, and ingestion. Commercial values are less stringent because they are based on an 8-hour day mainly for adult populations while recognizing that children may visit. Background concentrations are taken into consideration for all applications. Property specific standards are used for various examples such as recreational use (i.e., Dike 14). Dredged material to be used on a brownfield site will be required to meet the applicable direct contact soil standards for the receiving property. However, if beneficial use of dredged material is to be used along or adjacent to water bodies, the dredged material must meet applicable sediment standards. VAP does not certify soils for structural fill.

Dike 14 Case Study

Janine Rybka, Cuyahoga Soil and Water Conservation District (SWCD), District Administrator

Dike 14 was an 88 acre CDF which stopped receiving dredged material in 1999. It has become (naturally) a rich habitat. Dike 14 combined the economics of commerce and industry with a place for people. In 1962, James J. Hill and William Edendborn of the US Steel Fleet were sunk to create a reef near the Cleveland Lakefront Dump. Adjacent to that site, Dike 14 was constructed and operational from 1979 to 1999. In 1999, the site was transferred to the local sponsor, the Cleveland-Cuyahoga County Port Authority, who is responsible for CDF maintenance. However, the City of Cleveland is the Upland Land Owner while the State of Ohio is the owner of the submerged lands lease which makes development very complicated.

The site naturally vegetated, migratory birds inhabited the area, and other wildlife arrived. Dike 14 is now home to a wide variety of plants, trees, birds, butterflies, and other wildlife. It is



designated as an Important Bird Area. The site hosts two open houses per year. There is now the Dike 14 Nature Preserve Committee and Dike 14 Education Collaborative which was formed to seek funding for assessments, provide educational opportunities at the facility, and increase awareness. The education collaboration is a partnership of 11 organizations. Grants were received to complete a brownfield assessment and background assessment (VAP Phase I, wetlands delineation, VAP Phase II, Property Specific Human Health Risk Assessment, Level 1-3 Ecological Risk Assessment, and background soil determination).

In the Dike 14 case study, we take a look at the closed 88-acre combined disposal facility in Cleveland and how the community's desire for a nature preserve fueled the efforts to investigate Dike 14 for this end use. A USEPA funded environmental assessment was conducted on the Dike to determine if it could be safely used as a nature preserve. The assessment focused primarily on the top four feet of soil across the property to evaluate concentrations of chemicals of concern in soil. The evaluation was geared to focus on soil exposures that may affect people visiting the Dike as well as evaluate ecological receptors living on the Dike. Additionally, a background study for metals was conducted to determine the naturally occurring concentrations of metals in this area of Cleveland. The data were compared using the Voluntary Action Program standards found in OAC 3745-300.

Overall, the results of the assessment show most of the Dike can safely be used as a nature preserve. About 5 of the 88 acres require some remedial actions to meet the VAP applicable soil direct contact standards for the anticipated future greenspace land use. Additionally, the background metal data set collected for this study can be used as a comparison standard for background metals concentrations for other properties in the region with similar soils present.

Jan Rybka: The next open house is May 22, 2010 7:30 – 2:00 pm.

Q: Jim White, Cuyahoga River Community Planning Organization: Were sediment samples taken at active CDFs as a comparison to what is in CDF 14?

A: Vanessa Stegerwald-Dick, OEPA: The study only looked at sediment at Dike 14 and then background samples at adjacent towns. Recent material placed in CDF 10B has not necessarily been cleaner. The sediment is variable.

A: Susan Netzley-Watkins, OEPA: The VAP precludes taking background samples from other places.

Q: When did the Dike 14 group coalesce?

A: Jan Rybka, Cuyahoga County SWCD: The Dike 14 Educational Collaborative began in 2001.

Q: Steve Pfeiffer, Interested Citizen: Data does exist at CDF 10B. I reviewed the history of the CDF which we have in our files, and I would like to remind people there was immense opposition to construction of Dike 14 back in the 1970's, and now there are overwhelming letters of support for that facility.

USACE Examples and Resources for Determination of Beneficial Use of Dredged Material

Karen Keil, Corps of Engineers Buffalo District, Environmental Toxicologist and Risk Assessor



The US Army Corps of Engineers (USACE) has been evaluating the environmental effects of dredged material in its confined disposal facilities (CDFs) for decades, and, therefore, it is well poised to use that experience and knowledge in determining suitability of dredged material for beneficial uses. A USACE Beneficial Uses Testing Manual is currently being drafted, which will be similar to the Upland Testing Manual in that it will use a risk-based, tiered approach. The experience, expertise, and environmental laboratories at the USACE's Engineer Research and Development Center in Vicksburg, Mississippi, are resources that the USACE, Buffalo District can utilize for determining suitability of dredged material

for beneficial use in Cleveland Harbor.

Similar to the Dike 14 case study, Times Beach is a CDF in Buffalo, NY, that is no longer referred to as a CDF but is a Nature Preserve. Times Beach is older than Dike 14; it was operated from 1972 until 1976. There was interest from the Buffalo Science Center, Tift Nature Preserve, and Audubon Society to use the CDF as a Nature Preserve. There is ten years of data (from ERDC) that provides bioaccumulation and surveys of various aspects of the ecosystem created at Times Beach. Similar to Dike 14, it determined minimal negative impacts to recreating visitors. In 2005 through 2006, the County built public access including board walks, bird blinds, and interpretive panels. The site is currently used by the County and City for a nature preserve and bird watching area. Times Beach was a retrospective study to determine the suitability of a CDF for beneficial use.

The USACE, ERDC guidance is a prospective determination of whether or not placement of dredged material in a CDF would be protective of human health and the environment. The Buffalo District used the ERDC guidance manual to study 7 CDFs with the District's area of responsibility including CDF 10B. Results from CDF 10B indicate some uptake through plant and animal bioaccumulation. However, Tier III evaluations for beneficial use determination showed that plants actually grew better in sediment from CDF 10B than in reference material and uptake of metals did not exceed that of uptake from reference material. The concentrations

of constituents measured in CDF 10B dredged material would not preclude its use in a beneficial manner. The material in CDF 10B should be acceptable to use under OEPA's VAP for brownfield reclamation in a construction, industrial, or commercial setting. However, the material in CDF 10B may not be acceptable under OEPA's VAP for brownfield reclamation in a residential setting without further site-specific evaluation.

Brownfield Restoration at Lorain Harbor

Corey Timko, City of Lorain, Director of Utilities Department



Lorain Harbor CDF is 58 acres and nearing capacity. The City of Lorain worked with the USACE to identify long term solutions for dredged material management that did not include building a new CDF. The City and Port plan to redevelop the existing CDF consistent with the City's Waterfront Plan. In lieu of a CDF, the City will create a solids recycling facility that will in part restore a brownfield, handle the solids, create a product to use onsite as cap or sell as a commodity. The City acquired a 130 acre

Brownfield, will green the river, build a new state of the art Black River Wastewater Treatment Plant, Black River Solids Recycling Facility (to be operational for at least 50 years), and develop a steel mill wetlands restoration project in phases. The proposed dredge/fill plan will use geotubes on site for direct pumping of dredged material in a slurry. Two to three months later, the bags will be opened, and the City will use the dry sediment on site or to sell. Sediment will be tested, combined with sewage sludge and yard waste to create a commodity to be sold for profit. The City expects to receive a permit in 2012 that will allow the first placement of dredged material in geotubes in 2014.



Q: Roy Knapp, Consultech, Inc: What is the flocculent in the geotube?

A: Corey Timko, City of Lorain: For sewage sludge, the City uses polymers. The City is conducting testing to see which flocculates will be best.

Q: What is the annual dredging?

A: Corey Timko, City of Lorain/Frank O'Connor, USACE: 50,000 cubic yards every other year.

Q: What is the total acreage for the solids recycling facility?

A: Corey Timko, City of Lorain: About 50 acres but details are still being formulated.

Q: Victoria Peterlin, Dike 14 Nature Preserve Committee: Will this be a low tech mixing process or will it require a lot of additives?

A: Corey Timko, City of Lorain: There will be a lot of testing completed to determine what is necessary. The dredged material has high nutrient content and it is believed this will be an organic process. There may be a lime additive.

Q: How do the contaminants in Black River compare to Cuyahoga River sediment?

A: Corey Timko, City of Lorain: Lorain Harbor sediments were classified for open lake placement.

Q: What is the length of the navigation channel?

A: Rick Novak, Lorain County Port Authority: Three miles.



IV. DREDGING, DISPOSAL, AND BENEFICIAL USE SOLUTIONS

1. DAY 1 BREAKOUT SESSIONS

Question 1. The Port of Cleveland: Are there alternatives to annual dredging of navigation channels for the continued economic health of the Port?

The alternatives to annual dredging were found to be few. The general conclusion from all four breakout sessions was straight forward. There are no simple, easy solutions. The annual dredging of navigation channels is paramount in the continued growth and development of the Port and City of Cleveland.

The alternative to annual dredging did focus on the upstream control of sedimentation. The reduction of sediment transport from upstream sources was considered a possible approach, e.g., sediment traps in the river. A general issue of concern is the State MS4 stormwater program. It was indicated that the program is relying on voluntary and educational efforts in order to realize reduction in the sediment load downstream. Sources of sediment were noted to include the National Park property.

An action expressed was for the Corps of Engineers to develop a sediment transport model (or use the model already developed) to identify and verify upstream owners causing the problem of excess sediment in the Cuyahoga River. Another need that was discussed was to identify the contributors to the sediment load and at what level. The USACE and ODNR need to meet and determine a model approach to target source control.

The overall conclusion to this question was that there are few alternatives, and that there will still need to be dredging, albeit at a reduced volume, if sediment management controls are put in place.

Question 2. What are the short and long term solutions to dredged material management?

Short term dredging solutions between 2010 and 2014 require an estimated placement volume of 330,000 cubic yards per year. This could be reduced to approximately 200,000 – 250,000 cubic yards per year, but that reduction in dredging would not maintain the authorized project depth. The short term solutions that were identified included existing CDFs (Dike 14, CDF 10B) and brownfield sites.

Existing CDFs: The Dike 14 CDF at this time reportedly has 5 acres needing remediation that could use approximately 25,000 cubic yards for fill. Use of the Dike 14 area is a sensitive issue for private citizens and environmental agencies. The site was transferred to the non-Federal sponsor, Cleveland-Cuyahoga County Port Authority, in 1999. An attendee at one of the breakout sessions expressed serious concern about the image of the Corps of Engineers if they took back what they had given at this late date.

In addition to the 25,000 cubic yards capacity over 5 acres, Dike 14 does have a large capacity for placement of sediment, as the site was not completely filled in 1999. Actual additional volume capacity at this time was debated, and is not confirmed. It was recommended that the USACE, with the Port and City, pursue consideration of sediment placement in the near term with a focus on placement to enhance Dike 14 by a partnership with Dike 14 stakeholders.

Another approach to future utilization of Dike 14 was to borrow a volume of material that now exists in Dike 14 and replace it with new dredged material. It is believed that this plan could result in enhancement of the Dike 14 area.



Two of the breakout sessions suggested that an opportunity exists to use CDF 10B for short term dredging until 2012. Some thought that CDF 10B dikes can be raised to allow for additional disposal, while others cautioned that FAA regulations limit raising the berms. The removal of some sediment previously placed in CDF 10B could realize a two year capacity of

approximately 600,000 cubic yards. The material to be removed from CDF 10B may not be completely dry due to recent disposal operations and lake water elevation. The material in Dike 14 is relatively dry and could be rehandled for an upland use. Removal of sediment from Dike 14 would allow immediate replacement of material from CDF 10B or hydraulic placement from dredging operations. Sediment placed in Dike 14 could be dewatered shortly after placement to accommodate passive recreational use of the nature preserve.

Brownfield Sites: The disposal of short term maintenance dredging could also consider placement at existing brownfield sites, but there is no formal inventory listing of current brownfield sites that could be used for this evaluation.

The recommendation is to determine the sites that actually exist; create a list and confirm availability, volume, and potential methods of delivering dredged sediment to each site.

Other Comments: Also mentioned in relation to the upstream sediment control, it was suggested that communities implement a stormwater solution type of approach as part of environmental/green solutions.

Three of the four breakout sessions asked the question “why is open water placement not an option? The primary response was that the material to be dredged does not meet sediment and water quality criteria requirements for open-lake placement. The discussion then turned to the potential construction of an offshore confined disposal. While an island CDF could not be approved and constructed in time to meet the short term 4 year disposal needs, this alternative may be a consideration for long term placement plans.

Long Term: Several ideas were identified for long term consideration including:

- Mining the existing CDFs
- Utilization of geotubes
- Delivering dry sediment to the Pershing Road Coke Plant
- Collection of sediment upstream of the dredging project using sediment traps (i.e., dredge upstream of the Federal Channel, which is not within the USACE authority)
- Coal mine reclamation
- Salt mine reclamation (Cargill)
- Build Cell 1 of the East 55th street CDF

Question 3. Can existing CDFs be better utilized for additional dredged material disposal?

The existing CDF facilities are nearly filled to their design capacity. The USACE is continuing to follow fill management plans to extend the life of CDF 10B. The USACE is also working to enhance and update their existing fill management by raising berms, excavating material, and dewatering the sites by continuous trenching. Wick drains are also being considered, but the benefit is yet to be determined. It has been recommended at this Summit to consider the interim use of Dike 14 as it was never completely filled, and it provides better dewatering opportunity for the dredged sediment.

The ideal solution may be similar to that selected by the New Jersey EPA. They use 99 percent of their dredged material for beneficial use with the majority used on brownfield sites. The obstacles for Cleveland Harbor are similar to New Jersey, and they are simply cost and matching supply and demand. The cost for NJ's beneficial use program is quite high, initially about \$90 per cubic yard but more recently, about \$54 per cubic yard. The supply of dredged sediment does not always equal the project demand. One aspect of the success in NJ was that users were paid a fee to take the sediment, which was considered part of the overall cost of the dredging project.

An inventory of brownfield sites that could use material excavated from the CDFs needs to be completed. The consideration for making the re-use of dredged material a requirement as part of the VAP program from a regulatory standpoint is worthwhile. Liability issues with this must be identified and ironed out.

Question 4. Where can a new CDF(s) be constructed

On December 17, 2004, the City of Cleveland Planning Commission adopted "Connecting Cleveland: The Waterfront District Plan." This was a comprehensive planning effort to develop a community consensus for the Lake Erie shoreline between Edgewater Park and Gordon Park. This plan identifies four large peninsulas proposed to be constructed for creation of land outside and inside the breakwater. They would require a CAD development and filling by river and harbor dredging. After filling, the sites would then be developed for Port, marina, beach access, and recreational facilities.

Consideration has been given to use sediment disposed in Dike 14 and CDF 10B. This same approach can be applied for CDFs 9 and 12. The plan would be to keep the CDF constant, and contribute the sediment to brownfield projects, or other acceptable fill construction.

The Draft Cleveland Harbor DMMP, released in August 2009 by the Corps of Engineers identified nine potential CDF locations. References at the Summit were made to the proposed site in the draft report, specifically sites 2, 3, and 7. These three sites are all relatively large CDFs north of the breakwater structure. It was stated that the proposed sites 2 and 3 are more cost effective in the DMMP report than the proposed disposal cell 4A (East 55th) site.

Noting that it is possible to hydraulically pump sediment and water slurry a distance of 5-10 miles led to the following consideration. It was asked: why not consider potential sites to put dredged materials that are within the hydraulic dredge pumping range?

Also mentioned as potential future CDF sites were the salt mines and the Catholic Cemetery Quarries.

Question 5. Would confined aquatic disposal (CAD) cells be an environmental part of the solution?

Confined aquatic disposal (CAD) cells are the construction of a large disposal hole or pit in a river, lake, or estuary, with placement of dredged material in the pit, and final capping after the site is filled. The initial discussion of a CAD application assumed the site would be cost prohibitive and would cause destruction of habitat. It was countered that the CAD cell alternative has been successfully used in other areas of the country to create shoals for habitat.

The initial discussion was summarized in a comment: *“In Ohio we are trying to restore the great lakes. Why would we want to put more contaminated sediments in a place we want to restore?”* Public perception might be too strong and negative to gain approval to implement this disposal option. It was again noted that this very same approach is being implemented with success at other locations around the country where the public was able to grasp and eventually accept this solution for dredged material.

Very few fresh water CAD sites have been developed. CAD cells have been used mostly in salt water environments, given the ratio of dredging operations and disposal quantities in salt water vs. fresh water coastal environments. While each potential CAD cell site would need detailed engineering analyses, there are not any specific limitations for fresh water applications of CAD cells.

One possible Cuyahoga variation on this concept that was suggested was to adapt the upstream area, above the channel authorization, to become a sediment sinkhole (sediment trap). The questions for this concept design is knowledge about the under channel sediments. Is rock (hard) bottom at a subsurface depth acceptable for sediment trap construction and settling rates for sediments? These approaches require an initial but limited data collection and evaluation of the concept. It was noted that the Federal Channel design and construction has in essence created a sink, or sediment trap at the end of the river.

CAD cells are likely to become one of the alternatives in the DMMP. CAD cells should be evaluated with the consideration that constructing the cell would occur in the riverbed or lakebed

that has 120 feet of sediment below the bed surface without hard rock. The clean sediment dredged to create the CAD cell could be used to create habitat around the breakwater wall, and could be used as a cap to cover the contaminated dredged material. The CAD cell would typically require interim and final capping with clean sediment, but some sites may actually receive sufficient natural sedimentation that would create a cap over time.

Question 6. What beneficial use alternatives are available and could be implemented?

Beneficial use of dredged materials includes brownfield development, habitat restoration and creation, recreational area development, landfill caps, and mine reclamation.

There is a need to inventory the opportunities, with a focus on brownfield development as an initial effort. Also, there is a need to inventory potential mine reclamation opportunities. One possibility: use train cars to move coal to the Port, and dredged material back for mine reclamation. This scenario raises a number of questions which should be evaluated, such as how would train cars be cleaned of dredged material prior to loading with coal.

Landfill caps could be a third item for an inventory.

A final concept was the consideration of segregating the material by size. A hydrocyclone may be available from the Corps of Engineers in Vicksburg (i.e., Engineer Research and Development Center) for testing the ability to separate the coarser sediment (predominantly sand) from the other sediments in the existing CDFs. This material could be placed back into the coastal zone instead of being placed in the upland disposal site.

Question 7. How can reduction of upstream sediment and contaminant loadings be part of the solution?

The reduction of upstream sediment and contaminants is an important part of the solution. One element of sediment management is the assistance of up-river participants, but it is difficult at best because many of the players in the upstream arena (such as watershed groups) are without ownership of the issue, specific authorities, or funding.

Question 8. What are the obstacles to the potential solutions?

The lead for waterway development, which provides opportunity as well as a number of obstacles, is the Corps of Engineers. The USACE program authorities, capabilities, and limitations are determined by Congress and the Administration (i.e., the President of the U.S.)

A major obstacle today is the source of funding that would allow channel maintenance as well as local plan development. Local watershed groups should take the lead to coordinate sediment management and work with Federal and State partners. The development of support for the Waterfront District Plan is an example that could provide additional funding.

Another apparent obstacle may be the lack of research or specific criteria regarding the suitability of dredged sediment for upland/brownfield placement, but this needs further evaluation of available information and regulations/guidelines.

Question 9. Who are the players in the short and long term future of the Cuyahoga River Navigation Channel?

The initial response to this question in the short term is every person, agency, private interest group, and private owner that attended the Cleveland Harbor Summit. Also, the obvious short term and long term stakeholders/players are the local industries, such as ArcelorMittal, Cargill, Kurtz Brothers (construction), companies manufacturing soil, and any other industry that requires bulk materials and depends on availability of the navigation channel transport.

Other players include the population and/or industry that are now located upstream where the sediment is originating. This includes those that are involved in ownership and buying and selling of vacant land, such as Cuyahoga County Landbank.

Education and outreach is needed to all stakeholders, including a primary and very important player, the general public. They are always involved short term and long term. Emphasis must be made to work on education and outreach for communication with public entities and individuals.

It was noted that the long term participation of academic partners will greatly assist in finding publicly credible short term and long term solutions. Outreach should also be targeted to ODOT, and development offices of the State and county, such as the NEORS. Of course, Congressional delegations and State legislators are critical to understanding the economic and environmental issues which are critical to the viability of Cleveland Harbor.

Question 10. What are the funding sources?

It was pointed out that the USACE has the direct lead on the maintenance of the channel, but they need input from stakeholders to identify the needs and prepare justifications to successfully budget for a specific project. The USACE prepares its budget two years in advance of a fiscal year which works against the immediate short term (1 year) actions.

One consideration is for a partnership with the State to obtain grants, identify funding sources, and access brownfield funds. A contingent should approach the State and request that they devote a portion of funding to dredging issues in Cleveland Harbor and other locations in the State.

There is a potential \$400 million project in the Cleveland Waterfront District Plan. This project creates land for the general public, the port, and private users. The conclusion was that planning efforts should continue that would create the peninsula CDF(s) which will eventually become useful land for the Waterfront Plan.

In terms of funding at the Congressional level, the suggestions are to develop the dredged material management plan with specific recommended alternatives for beneficial use, including broad-based support by stakeholders, and then provide outreach to State and Federal legislators.

Question 11. How can we make this happen?

A short term plan for 2010 to 2014 includes the USACE evaluating and raising the existing CDF berms to gain a limited volume increase, which will allow dredging at the lower volume (225,000 cubic yards per year) through 2014. In addition, the USACE should continue to evaluate other options to increase capacity at existing CDFs. These include recapturing space of several (2 or more) CDFs through removal of sediment and transport to brownfield sites, and sale of sediment as a commodity for urban gardens, housing, and recreational development which would include dewatering of existing fill. The dewatering option may require an additional temporary material placement location that allows for effective dewatering activity.

The long term plans should include assessment of the three proposed offshore CDFs identified in the USACE Draft Cleveland Harbor DMMP/EIS dated August 2009, and four peninsula land masses identified in the Cleveland Waterfront District Plan, dated 2004. The offshore CDFs, identified as CDFs 2, 3, and 7, would each provide approximately 20 years capacity. The peninsula land masses (identified in the plan as Number 2, Expanded Edgewater Park; Number 21, Dock 32 Promenade; and Number 31(west) and 31(east) both for water related activities) combined could provide a significant contribution toward the 20 year capacity recommendation per USACE guidance (Draft DMMP/EIS, 2009).

In regard to upstream sediment management, suggestions were made that upland sediment controls should be enforced, and that NEORS had a key role in these efforts.

The bottom line of the discussions on how to make this happen was to initiate a multi-faceted task force with leadership of the USACE, Port, and City, and include a broad range of stakeholders with an objective to



coordinate and collaborate in development and implementation of short and long term solutions.

DAY 2 BREAKOUT SESSIONS

Day Two Breakout Session, Group 1: What are short and long term viable confined disposal alternatives for Cleveland Harbor (examples: CDFs, Fill Management Plans, and Confined Aquatic Disposal)?

Greg Hartman, Facilitator

The group quickly agreed that the dredging issues for the Port had reached the crisis stage. The participants and speakers during the meeting more than confirmed the need to be aggressive, and the fact that no disposal sites simply meant no dredging. The deadline date was only four years away, but in effect was really only two years away. The four year horizon occurs only if significantly reduced volumes are dredged (lesser depth maintenance), and the short term implementation of dike raising in CDF 10B area.

The initial group focus was “what short term disposal sites are really available as disposal alternatives.” The long term was important but only after the short term disposal site issue is answered. The group believed that brownfield sites were the only obvious short term alternative that could be considered “really available.” The two sites identified to have a strong potential for near term receipt and use of dredged sediments were:

- Pershing Road “Coke Plant” Site (estimated 1.0 million cubic yard capacity)
- Site at Harvard Road (West side of river, ArcelorMittal, approximately 20 acres)

The group believed there were additional brownfield sites available. Surprisingly, there is no formal inventory listing of current brownfield sites that could be used for this evaluation. The recommendation going forward on the brownfield sites is to determine the sites that actually exist, create a list and confirm availability, volume, and potential methods of delivering dredged sediment to each site.



The key issues identified by the group that would delay or prevent implementation of the dredging and disposal alternatives in the short term was identification of responsible agencies or public lead such as the City of Cleveland and Port Authority. Also, the ownership of the Brownfield property, and the level of contamination could dictate the availability of a site.

The key participants for the brownfield approach were considered to be ArcelorMittal (private owner) and the Corps of Engineers. The ArcelorMittal site may or may not be available for near term disposal of channel dredged sediment. This needs to be confirmed immediately with ArcelorMittal.

When asked the question, “Is it time to initiate development of a task force or committee to provide coordination and communication on dredging and disposal issues,” the response was yes.



The lead could best be from the Mayor of Cleveland, and/or the Director of the Port Authority. It was suggested that task force or committee meet with the Great Lakes Dredging Team on or near May 18, 2010 during the Team’s scheduled meeting in Cleveland. The focus would be on CDF management, and implementation of beneficial use.

It was pointed out by one member of the session, and confirmed by several others, that an acceptable long term plan was the Waterfront District Plan prepared and released in 2004. It is one of two plans that now exist for longer term (more than 4 years) development of future disposal facilities. The other is the Dredged Material Management Plan released by the USACE, Buffalo District for public comment. The public comments on the DMMP were not yet available for input to this Summit effort.

The cost of these initiatives is high and Federal funding is a constraint. It is absolutely necessary to communicate the requirements of the short and long term solutions to Congressional members as the project concept is developed and implemented.

Day Two Breakout Session, Group 2: How can dredged material be used for upland reclamation, habitat creation, and habitat restoration?

Craig Vogt, Facilitator

The group agreed that the dredging issues for the Port had reached the crisis stage and the meeting was an important call to action to determine the next steps in dredged material management. However, a key point was that while the summit participants were significant players in the achieving positive results, the public needed to understand the dredging and dredged material management situation. The group recommended that a concentrated communications and outreach effort be initiated to provide understanding and involvement of the public and other stakeholders. No suggestions were made for who should take the lead for developing and implementing an outreach and communications plan.



The primary emphasis of the group was upon brownfield restoration, but also noted the importance of habitat restoration and creation. Developing a market for the dredged material was considered important, such that commercial applications could be identified. A suggestion was made to use dredged material on brownfield sites and grow commercial crops (i.e., green business initiatives), such as bamboo or poplar trees; this suggestion raised the question on the suitability of the material and how any toxic chemicals in the dredged material might be taken up by the

plants and become a potential human exposure pathway. Another area that was raised was the need to minimize the handling of the dredged material from dredging to dewatering to placement at a site for beneficial use. Identification of an upland site that could serve to dewater the material and temporarily store the material for future removal and use would be a good first step.

Overcoming potential obstacles to use of dredged material in a beneficial manner was considered the key to future placement of dredged material for use in brownfields restoration or in habitat creation/restoration. While questions were raised about who is liable during the transportation of the dredged material and liability of the end use, the primary concern was about the suitability of the dredged material for particular end uses. This raised questions regarding the geophysical properties, the level of contamination, and the planned end uses. The group felt that an inventory of potential end uses/sites should be prepared. Once that is completed, the characteristics of the dredged material could be identified and assessed for appropriate applications for restoration efforts at the identified sites. At this point, the discussion turned to the availability of State regulatory criteria to determine what level of contamination was acceptable for a particular end use.

The participants in the group felt that current State regulations would result in testing each truck load of dredged material delivered to the site and conducting an on-site risk assessment. The ideal would be to have a regulatory framework that would test the dredged material from a dredging project or the material to be excavated from an existing CDF and identify the appropriate end users for that quality of material. Thus, testing would be done once before dredging began (or in an existing CDF) and not at each end use site. These types of new State regulations would take from 3-5 years to develop. In the plenary discussion of the break out group results, an OEPA representative felt the agency already had a useful framework for standards of use that could be applied to beneficial use of dredged material. Clarification of this issue was a definite action item.

Another key action recommended by the group was to be more aggressive in outreach and messaging that dredged material is available and can be used as a resource. This outreach and marketing effort should include an assessment of current incentives and potential new incentives to use the material in a beneficial manner. It was suggested that the Ohio VAP should identify dredged material as a resource that should be considered in restoration efforts.

Matching the source and quality of the material (i.e., supply) with the end users (demand) was considered another key action, and one that would fall to the leadership of the USACE. It is expected that the USACE would work closely with Ohio VAP staff when approaching brownfield projects. The specific recommendation was that Federal and State regulators should be “ambassadors” that recommend beneficial use of dredged material. One element noted was the need for some projects to have a continuous and reliable supply of dredged material that meets their needs.

In regard to the key players that need to be involved in beneficial use of dredged material, recommendations included Federal, State, and local government agencies, private industry (e.g., the Kurtz Brothers that make soil from dredged material), the Great Lakes Commission, and the Regional Dredging Team.

The key action items to assist in making beneficial use of dredged material a reality include:

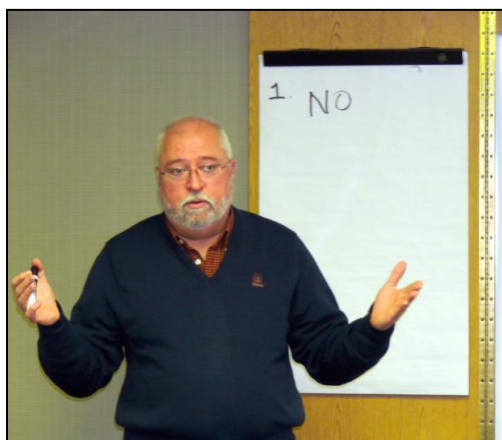
1. Create a regulatory roadmap for different end uses. This informal guidance would provide a step-by-step process to assist the USACE, Port, City, end user, and stakeholders to determine how to effectively meet regulatory requirements for restoration and creation efforts with dredged material. The USACE would have the lead and would need to work closely with the State on this issue.
2. Clarify the available OEPA regulatory framework for standards of use that could be applied to beneficial uses of dredged material.
3. Create an inventory of potential uses/sites for beneficial use of dredged material.
4. Assess the characteristics (i.e., testing) of material in CDFs and sediment to be dredged.
5. Market dredged material as a resource. The USACE volunteered for the lead, working closely with the state; the Ohio VAP should identify dredged material as a resource that should be considered in restoration efforts.
6. Prepare and implement an outreach and communications plan to reach the public and other stakeholders.



The group was fully in agreement that some mechanism should be initiated such as a task force that would take leadership to further identify the issues and implement the actions needed to enhance the beneficial use of dredged material.

Day 2 Breakout Session, Group 3: How can we minimize sediment loading into the river and manage contamination at the source?

Kelvin Rogers, Facilitator



The reduction of sediment loading to the river and subsequently the navigation/ship channel was not identified as an immediate solution in the Day 1 breakout sessions, but was the major point of discussion during Day 2. The Day 2 breakout group focused on this issue during its discussion and did not look at the additional issue of managing possible sources of contamination. During the Day 1 breakout, it was noted that contamination of river sediments persists despite years of dredging. This appears to be due to the navigation/ship channel being the low point of the

Cuyahoga River watershed, and the natural place for sediments/contaminants to accumulate. It was noted in Day 1 that there are numerous potential nonpoint sources of contamination – old landfills, industrial areas, urbanized areas – and that the area around the navigation/ship channel is primarily old industrial fill that may contain legacy contaminants. The USACE sampling of river sediments indicates varying levels/types of contaminants, such as PCBs, PAHs, and metals with concentrations that vary by type/location and year sampled with no identified pattern.

Some time was spent discussing the source of sediment to the river; it was noted that there is little agricultural activity in the Cuyahoga River watershed, and that the main source of sediment loading was considered to be the Cuyahoga Valley National Park. The highly erosive riverbank soils here are subject to increased rainfall volumes caused by increasing urbanization of surrounding areas, leading to increased erosion rates and larger volumes of sediment deposition downstream.

As the focus of the Day 2 session discussion was on controlling or minimizing sediment loading to the river, the group explored various actions to accomplish that objective. Much time was spent on issues involving regulatory controls through OEPA's storm water management permit system. Potential actions under this discussion included better State and local enforcement of current regulations as well as adopting stricter controls/requirements for communities and construction sites, including requiring riparian and wetland buffers/setbacks in new permits. Money issues and funding were identified as the main reasons for delaying/preventing such actions to occur on a timely basis.

Discussion was held on identifying and implementing natural solutions to reduce sedimentation to the river through streambank and wetland restoration projects. Several projects have been completed throughout the watershed; these should be highlighted and similar efforts encouraged. Updating the USACE sediment transport model was thought to be a critical action to address this item. Involvement of tributary watershed stewardship groups and implementation of local watershed action plans would also be a critical item to consider.

Another item that appeared critical to this issue was the idea of regional storm water management. There is an opportunity to look at this now with the tentative formation of a regional storm water management unit in NEORS.

Key issues or charges that came out of the session included the items noted above, along with an identified need to educate/involve local citizenry, especially elected officials, and get them on board to become an integral part of the task force as we move ahead.

Day Two Breakout Session, Group 4: What funding opportunities are available and which entities could be project proponents and non-Federal sponsors of beneficial use projects?

Dave Knight, Facilitator

There was no doubt expressed that the future of the port is jeopardized by the current challenges to ongoing channel maintenance and improvement. One clarification made was that "port" should refer to the entire working harbor, including both the facilities owned and managed by the Cleveland-Cuyahoga County Port Authority, and the privately owned docks and facilities served by water.

There was discussion on whether the situation should be managed as a “crisis” which can sometimes lead to paralysis and be an impediment to action. The preferable response should be



to identify alternatives (more than one...if there is only one solution on the table, it can never become the most cost effective one) with the best chance of success and pursue them vigorously, and not to sacrifice the good for the perfect. “Pick the horses and ride them.”

In the discussion of potential non-Federal partners for beneficial use of dredged material, and the most appropriate types of projects in this area, brownfield reclamation and use of brownfield sites for processing material for reuse were mentioned most prominently. Specifically, the Harshaw Chemical site was referenced as a good candidate for capping.

It was noted that while the Corps of Engineers most often works with states, port authorities and related entities as non-Federal partners for projects involving dredging and dredged material, they can also work with a wide range of other agencies and entities as partners, public and private sectors included, depending on the specific authority.

One suggested approach to developing a CDF was to find an entity to construct the site (“build-to-suit”) with funding, perhaps, from a source like the Troubled Asset Relief Program (TARP), with users paying an assessment fee to use it.

Also discussed were industrial revenue bonds which could finance a CDF just as they are used to finance brick-and-mortar projects like factory buildings. It was noted that the Cleveland-Cuyahoga County Port Authority has a strong history of experience in these types of finance tools. The concepts of federal incentives like tax credits and tax credit bonds were discussed, perhaps involving port users (such as fleets) and port tenants.

The Great Lakes Restoration Initiative (GLRI) was discussed. This Federal program has been funded at \$475 million for the first year of what is hoped to be a five-year program administered through the EPA. The USACE is currently developing an interagency agreement with EPA that will allocate approximately \$46.3 million in GLRI funds to the USACE. The GLRI has five focus areas, three of which may have potential for application to sediment removal and dredged material management in Cleveland: toxic areas of concern (AOCs), non-point source pollution, and habitat restoration.

In one hypothetical scenario, if it can be shown that CDF mining frees up capacity for Great Lakes Legacy Act contaminated sediment, GLRI funds could possibly be leveraged, since that would be cheaper than use of a commercial landfill. Also, in some cases strategic navigation dredging could be integrated with environmental dredging supported by GLRI, thus benefitting both programs.

Potential non-Federal partners for beneficial use projects, in addition to obvious partners like the Port Authority and ODOT, might include the extensive list of agencies and organizations

involved with northeast Ohio Metroparks. There might also be potential among wind energy developers looking for material on which to build off-shore wind turbines.

It was noted that ODOT has indicated a renewed interest in maritime transportation with the establishment of a new ODOT Office of Maritime, which, while small, advocates for Ohio's navigable waterways and is leading the U.S. Maritime Administration's Interstate 90/Marine Highway Corridor Program. The federal interest in maximizing the economic and environmental benefits of the underutilized Great Lakes/St. Lawrence Seaway system should also be leveraged.

Timing emerged as a critical issue in this discussion. USACE personnel noted that the total time required to study, design, and ultimately implement projects, such as under the Section 204 authority, significantly impacts their ability to consider such projects. One USACE representative experienced in these types of projects said the fastest he had ever seen a Section 204 project proceed from study to implementation was five years. This time frame does not adequately address the urgency of the Cleveland Harbor situation; thus, while new and creative thinking about beneficial use should be part of a long-term strategy for Cleveland, the more conventional dredging and dredged material management approaches, such as mining CDF 10B for beneficial use at a brownfield site to create immediate space is the more logical near-term, interim approach to Cleveland's crisis.

In seating a task force to address this issue, necessary participants would include the Port, City, USACE, private industry, the local RAP administrators, the State (OEPA, ODNR, ODOT, Commerce and Development), NRCS, and, importantly, representatives of Senators, Congressmen, the Governor's office, and State legislators. While the task force should be broad and inclusive, it should be driven by a smaller, more nimble Executive Committee.

One good, and nearby, model to explore is the Ashtabula River Partnership.

The key issues for the task force are:

- Budget constraints locally.
- Ongoing USACE budget constraints.
- Difficulty in identifying non-Federal partners for beneficial use; while there are a great number of interested stakeholders, as witnessed by the meeting turnout, the list of entities with capability and resources to solve the hardest problems is much shorter.
- Urgency; severely limiting options is the dwindling time before inadequate CDF capacity affects port operations negatively and creates hardship and economic loss.

V. PLENARY SESSION—MEETING CLOSE

LTC Dan Snead P.E., District Commander of the Buffalo District Army Corps of Engineers

Commander Snead hosted an Executive Session on Day 1 during the afternoon breakout sessions that included:

1. LTC Dan Snead, USACE Buffalo District
2. Ron Kozlowski, USACE Buffalo District
3. Peter Raskind, Cleveland-Cuyahoga County Port Authority
4. Valarie McCall, City of Cleveland
5. Rich Zavoda, ArcelorMittal Steel
6. John Watkins, Ohio Department of Natural Resources
7. Bill Skowronski, Ohio Environmental Protection Agency
8. Diane Downing, Senator Voinovich's Office
9. John Patterson, Senator Brown's Office
10. Skip Brown, Congresswoman Fudge's Office



The meeting participants agreed that a task force should be initiated to address the Cleveland dredging crisis. Members from the Corps of Engineers, Port Authority, City of Cleveland, OEPA, ODNR, and ArcelorMittal Steel will serve as the Cleveland Harbor Dredging Task Force Executive Committee. The Executive Committee will develop a charter and plan for the way ahead. The Port Authority offered to be Chair of the Task Force. They will reach out to ODOT for involvement in the issues.

The executive session participants created a draft vision for the Cleveland Harbor Dredging Task Force:

“Identify and execute short term interim dredged material placement measures to sustain dredging through 2016 and lead to long term dredged material management solutions.”

Q: What can we do to help the USACE with funding for programs and authorities?

A: Ron Kozlowski, USACE: It is all about communication; groups/organizations need to communicate with us about what assistance can be provided.

Q: Mike LaWell, ArcelorMittal: If one of the solutions to the issues is beyond the navigation channel, the USACE would need additional authorization to pursue the project and then appropriation?

A: LTC Snead, USACE: That is correct.

B: Dave Knight, Great Lakes Commission: The immediate opportunity to broaden the authorities is in a Water Resources Development Act (WRDA). Congress is pursuing a WRDA in 2010.

Q: Penney Jeffrey, League of Women Voters: What opportunities are there for citizen engagement?

A: Craig Vogt, Facilitator: The Task Force is a mechanism to communicate with the public-- Penney just challenged the Task Force to reach out to the community.

Q: Victoria Peterlin, Dike 14 Nature Preserve Committee: We have seen how much interest there is. The Task Force is great but the solution needs to be green, sustainable, and Task Force meetings should be open to the public and advertised.

A: Craig Vogt, Facilitator: Transparency is important and information can be shared through such mechanisms as newsletters or websites.

A: LTC Snead, USACE: The Task Force will be charged with finding solutions to dredged material management that will benefit the regional economy. Jobs here in the City of Cleveland are important and the Task Force recognizes the impacts dredging and disposal has on the local economy.

Lynn Greer, U.S. Army Corps of Engineers, Buffalo District, Cleveland Harbor Dredging Summit—Conference Organizer

Lynn thanked the audience for their participation and the overwhelming support for the Summit. The event, planned in just 6 weeks, was possible because of the support from the Summit Steering Committee and respective agencies (Port Authority, City of Cleveland, and OEPA) as well as the facilitators and the Great Lakes Commission. Lynn thanked her supervisors for the opportunity to organize the event.

With eleven years experience at the USACE, always working on a Cleveland Harbor related project, Lynn recognized the passion of the community for the city, river, and lake. She appreciated the passion of everyone at the Summit for becoming part of the solution to dredging and disposal alternatives. Lynn emphasized that the Summit is just a stepping stone of the work to come and bringing the ideas discussed at the Summit to a reality.



Peter Raskind, Port of Cleveland-Cuyahoga County, Interim Director

The dredging crisis backdrop will have to be balanced against several variables and challenges. The Task Force will likely be a triage. Time and resources may impact the ability for all the ideas to be considered. The Task Force should move through the relevant options that will yield the greatest benefit to alleviate the near term crisis, identify the real options, and move them forward to assure the future of our harbor and our access to the waterfront. A lot of great ideas were identified and shared these last two days, but there is a need to stress that not all of the ideas shared will or can be tackled in the interim. The Port is quite encouraged with the interest and participation in this summit, and we hope to continue the enthusiasm and support in the Task Force that is being initiated to work toward the best option for Cleveland and Ohio.



Craig Vogt, Craig Vogt Inc, Meeting Co-Facilitator



Your participation in this meeting demonstrates that Cleveland is a special place, one with people that care and are willing to take the time and effort to make things happen. It was a great two days with many ideas generated to resolve the dredging issues. I applaud you all and wish the task force well. It is an exciting yet challenging time, and I think it is really excellent that the port has stepped forward to lead the task force and take on the issues in a collaborative manner.

Greg Hartman, Greg Hartman Associates, Meeting Co-Facilitator

This was a really good and productive meeting. Thanks everyone for your participation in the Summit and your thoughtful and excellent contributions. I think that you now have the momentum to put in place a new and better dredging, disposal, and placement plan for the future. Keep it going.

The 2010 Cleveland Harbor Dredging Summit is officially closed.



APPENDICES

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Appendix 1 Agenda

Cleveland Harbor Dredging Summit

February 2-3, 2010

Hilton Doubletree

1111 Lakeside Avenue

Cleveland, OH 44114

Tuesday, February 2, 2010 – Day 1 (Lakeside Ballroom)

8:30-9:30 Sign-in

9:30 – 9:45 Welcome

LTC Snead, U.S. Army Corps of Engineers, Buffalo District

Chief Valarie McCall, City of Cleveland

Session 1 Key Issues

9:45 – 11:00

9:45 – 10:00 Dredging requirements, capacity issues, and disposal alternatives - Frank O'Connor, USACE, Buffalo District

10:00 – 10:15 Looking forward: The future direction of the Port -Eric Johnson, Cleveland-Cuyahoga County Port Authority

10:15 – 10:25 Brownfield Restoration, Tracey Nichols, City of Cleveland

10:25 – 10:35 Cleveland Harbor Study, Sandra Ambris, Port Control, Harbor Master

10:35 – 10:50 The Economic Imperative for Sustainable Sediment Management – Jim White, Cuyahoga River Community Planning Organization

10:50 – 11:00 Panel Q&A

Session 2 Beneficial Use of Dredged Material I

11:00 – 11:20 Overview of Beneficial Use Projects Throughout the Country - Dave Knight, Great Lakes Commission

11:20 – 11:40 Beneficial Use of Dredged Material in New Jersey - Suzanne Dietrick, New Jersey Department of Environmental Protection

11:40 -12:00 Confined Aquatic Disposal Cells - Tom Fredette, USACE, New England District

12:00 - 1:00 Lunch (*Lakeside Ballroom*) *Sponsored by the Cleveland-Cuyahoga County Port Authority*

Lunch Presentation: City of Cleveland Waterfront Development Plan - Bob Brown, City Planning Commission

Session 3: Beneficial Use of Dredged Material II

1:05 – 1:25 Geotubes and case studies: Fox River, Hudson River, and Hylebos Waterway - Greg Hartman, Hartman Associates, Inc.

1:25 – 1:45 Ohio's Voluntary Action Program and Applicable Standards for Soil and Sediment - Susan Netzly-Watkins and Vanessa Steigerwald-Dick, OEPA

1:45 – 2:05 Dike 14 Case Study – Jan Rybka, Cuyahoga County Soil and Water Conservation District and Vanessa Steigerwald-Dick, OEPA

2:05 – 2:20 Beverage Break *Sponsored by the City of Cleveland, Department of Port Control*

2:20 – 2:40 USACE Examples and Resources for Determination of Beneficial Use of Dredged Material - Karen Keil, USACE, Buffalo District

2:40 – 3:00 Brownfield Restoration at Lorain Harbor - Corey Timko, City of Lorain

Session 4 Preparation for Break Out Groups

3:00 – 3:05 Peter Raskind, Cleveland-Cuyahoga County Port Authority

3:05 – 3:20 Preparation for Break Out Groups - Greg Hartman and Craig Vogt

3:30– 5:00 Break Out Sessions

(Second Floor Rooms: Euclid, Chester, Prospect, and St. Clair)

What are the short and long term dredging and dredged material placement/disposal solutions to continue the viability of the Port of Cleveland?

5:30 – 7:00 Mixer - Cash Bar *(Hotel Restaurant – Stadium 3 Bar and Grille)*

Wednesday, February 3, 2010 - Day 2 (Lakeside Ballroom)

8:00 – 8:30 Sign in (for participants not present on Day 1)

8:30 – 9:00 Summary of Day 1 Breakouts - Greg Hartman and Craig Vogt

9:00 – 1100 Breakout Groups

(Second Floor Rooms: Euclid, Chester, Prospect, and St. Clair)

Breakout 1 facilitated by Greg Hartman (St. Clair Room)

What are short and long term viable confined disposal alternatives for Cleveland Harbor (examples: CDFs, Fill Management Plans, and Confined Aquatic Disposal)?

Breakout 2 facilitated by Craig Vogt (Chester Room)

How can dredge material be used for upland reclamation, habitat creation, and habitat restoration?

Breakout 3 facilitated by Kelvin Rogers (*Prospect Room*)

How can we minimize sediment loading into the river and manage contamination at the source?

Breakout 4 facilitated by Dave Knight (*Euclid Room*)

What funding opportunities are available and which entities could be project proponents and non-Federal sponsors of beneficial use projects?

11:00-11:30 Beverage Break Sponsored by Hull & Associates, Inc.

(Reconvene in Lakeside Ballroom)

11:30 – 12:15 Panel presentation summarizing break out session discussions

12:15 – 1:15 Lunch (*Superior/Ontario Ballrooms*) Sponsored by the Cleveland-Cuyahoga County Port Authority

(Reconvene in Lakeside Ballroom)

1:15 – 1:30 Summary of Day 1 Executive Meeting and Development of Cleveland Harbor Dredging Task Force - LTC Dan Snead, USACE, Buffalo District

1:30 – 1:55 Q&A

1:55 – 2:00 Closing comments - Lynn Greer, USACE, Buffalo District

2:00 – 2:05 Closing Comments - Peter Raskind, Cleveland-Cuyahoga County Port Authority

2:05 – 2:10 Final Remarks, Craig Vogt

2:10 – 2:15 Final Remarks and Summit Adjourned, Greg Hartman

Appendix 2 Acknowledgements

LTC Dan Snead is recognized for his leadership in hosting the Summit and for looking to the community to assist in identification and implementation of dredging solutions.

Interim Port Director Peter Raskind stepped up to the plate and is recognized for his contributions during the Summit and in particular, for offering to Chair the Task Force.

Cleveland Mayor Jackson, through a number of very sharp representatives of the City, including Valarie McCall, Tracey Nichols, and Sandra Ambris, is thanked for recognition of the key role that the city plays in finding solutions to Cleveland's dredging crisis.

A special thanks is given to each of the Summit speakers, as they provided some very much needed baseline information from which participants could use to work toward solutions.

Speakers included:

Frank O'Connor

Tracey Nichols

Sandra Ambris

Eric Johnson

Jim White

David Knight

Suzanne Dietrick

Tom Fredette

Greg Hartman

Bob Brown

Susan Netzly-Watkins

Vanessa Steigerwald-Dick

Jan Rybka

Karen Keil

Corey Timko

Also recognized for volunteering to facilitate the breakout groups and doing a great job of it are David Knight of the Great Lakes Commission and Kelvin Rogers of OEPA.

And, a really big thank you goes to those volunteers taking notes during the breakout groups and preparing the power point slides for presentation during the plenary session. A great job.

Thanks to:

Patti McKenna - USACE, Buffalo District (Day 1 and 2)

Christine Cardus - USACE, Buffalo District (Day 1 and 2)

Arlene James - Cleveland-Cuyahoga County Port Authority (Day 1 and 2)

Cindy Haney - City of Cleveland, Port Control (Day 2)

Lynn Greer - USACE, Buffalo District (Day 1)

Thanks also to Patti McKenna, Christine Cardus, and Arlene James in helping with registration.

And, special recognition is well deserved to the Summit Steering Committee that met at least weekly in planning the Summit. The Steering Committee was led by Lynn Greer, Corps of Engineers Buffalo District, with participation by Skip Jacobsen, Cleveland-Cuyahoga County Port Authority, Kelvin Rogers, OEPA, Sandra Ambris, City of Cleveland, and the two meeting facilitators, Greg Hartman and Craig Vogt.



Finally, Lynn Greer was the Summit organizer; working tirelessly and effectively, she pulled together an excellent and productive two day meeting, within six weeks of when the decision was made to do it. An outstanding effort!

Appendix 3 Speaker Bios

Sandra Ambris is a native Clevelander that has 20+ years of project coordinator experience from NASA, PPG, and the U.S. Naval Research Laboratory. Sandra left Cleveland from 2003-2007 to assist in the Navy's Shipyard Preservation Program and was the only female Navy contractor to be certified as a NACE Level III Inspector. In 2007, she was offered the position of Harbor Master for the City of Cleveland, Ohio, and is working on her Masters Degree in Political Science.

Robert Brown is Director of the Cleveland City Planning Commission. He has worked for the Commission for 24 years and has been Director for the past 5 years. Prior to working for Cleveland, Mr. Brown worked for 9 years for the Cuyahoga County Planning Commission.

Suzanne Dietrick is the Chief of the Office of Dredging and Sediment Technology within the New Jersey Department of Environmental Protection. Her Office manages all dredging projects and beneficial use of dredged material in the tidal waters of the State of New Jersey. She has been the lead for the NJDEP in the management of over a dozen brownfields sites and landfill closures involving the placement of 2-3 million cubic yards annually of dredged material and processed dredged material. Suzanne represents her Department in the NY/NJ Harbor Regional Dredging Team, the Delaware Estuary Regional Dredging Team, and two sediment management teams in these estuaries.

Tom Fredette has rejoined U.S. Army Corps of Engineers Engineer Research and Development Center after a 23 year stint at the New England District. There he served as the Program Manager for DAMOS (Disposal Area Monitoring System), the New England District's monitoring program for dredged material disposal sites, from 1986 to 2009.

His experience includes assessment, regulation, and management of dredged material, contaminated sediment management, marine environmental monitoring, environmental impact assessment, and marine benthic invertebrate ecology. He has been an author on more than 80 related technical publications. Tom has been a team member on various contaminated sediment projects including New Bedford Harbor, Palos Verdes Shelf, Pine Street Barge Canal, St. Louis River/Duluth Tar Site, and the Housatonic River as well as many USACE navigation dredging projects.

Greg Hartman is a professional engineer and environmental consultant. He was Chief of Dredging Operations with the US Army Corps of Engineers, Portland District. After leaving the USACE and starting his own company, he has taught the Proponent Sponsored Engineer Corps Training (PROSPECT) Dredging Fundamentals Course to the Corps of Engineers for 28 years, worked on dredging and disposal projects for private owners and public agencies in the Great Lakes Region, and throughout the USA. He has also completed international projects in Africa, Europe, Asia, Australia, Indonesia, and South America. Mr. Hartman is a board member and former Chairman of the Board for the Western Dredging Association (WEDA).

Eric Johnson is the Real Estate Director for the Cleveland-Cuyahoga County Port Authority. He develops comprehensive business plans for current Port maritime properties, and acquisition/development plans for other key business growth sectors targeted in the Port Authority's long-range strategic plan. He directs the financial management of all real estate assets under Port control and supervises the work of real estate project managers.

Karen Keil has been working as an environmental toxicologist and risk assessor for the Corps of Engineers in Buffalo for almost 10 years.

Dave Knight is a Special Projects Manager with the Great Lakes Commission in Ann Arbor, Michigan, specializing in port development and beneficial use of dredged material.

Valarie J. McCall was named Chief of Government Affairs by Mayor Frank G. Jackson at the onset of his administration in 2006. Previously, McCall served as Clerk of Council, the youngest in City history. She streamlined the processing of legislation and reorganized the daily operations of Cleveland City Council to maximize office efficiency. McCall grew up in the Glenville neighborhood and graduated from Cleveland public schools. She has a bachelor's degree in social work from Cleveland State University and a master's degree in public administration from CSU's Levin College of Urban Affairs.

Sue Netzly-Watkins is an environmental specialist and VAP coordinator with the OEPA's Northeast District Office.

Tracey A. Nichols has been the Director of Economic Development for the City of Cleveland since February 2008. She previously was the Assistant Director of Cuyahoga County's Department of Development. She has an expertise in brownfields and has spoken locally and nationally on the subject, including testifying before congressional and statehouse committees on the subject. She is a graduate of Case Western Reserve University with a degree in Business Management.

Frank O'Connor works at the US Army Corps of Engineers in Buffalo. He is the Cleveland Harbor Project Manager. His responsibilities include long term management of dredged material through the dredged material management study.

Peter Raskind is the Interim Port Director and CEO for the Cleveland-Cuyahoga County Port Authority. He is the former Chairman, President, and CEO of National City Bank.

Janine Rybka is the District Administrator of the Cuyahoga Soil and Water Conservation District (SWCD).

LTC Dan Snead is the District Commander of the Buffalo District U.S. Army Corps of Engineers. Lieutenant Colonel Snead was commissioned in the U.S. Army through the ROTC program at Florida Institute of Technology in May 1990. He comes to the Buffalo District from Washington, D.C., where he served at Headquarters, U.S. Army Corps of Engineers as a Special Assistant to the Chief of Engineers planning and coordinating world-wide trips and events.

Lieutenant Colonel Snead has a Bachelor of Science degree in Mechanical Engineering and a Master of Science degree in Environmental Engineering. He is a licensed Professional Engineer in the State of Oklahoma, and is Ranger, Sapper, Senior Parachutist, and Jumpmaster qualified.

Vanessa Steigerwald-Dick is an environmental specialist and risk assessor with OEPA's Northeast District Office.

Corey Timko is the Utilities Director at the City of Lorain Utilities Department. Mr. Timko oversees the Black River Restoration Project, a multi phase project to restore a brownfield site.

Jim White is the Executive Director of the Cuyahoga River Community Planning Organization where he is responsible for programs, funding, and partnerships related to the Cuyahoga River Remedial Action Plan and Cuyahoga American Heritage River Initiative; he also serves as River Navigator for the Cuyahoga American Heritage River Initiative.

Appendix 4 Website Resources

1. U.S. Army Corps of Engineers, Buffalo District: <http://www.lrb.usace.army.mil>
2. Cleveland-Cuyahoga County Port Authority: <http://portofcleveland.com>
3. City of Cleveland: <http://www.city.cleveland.oh.us/CityofCleveland/Home>
4. Ohio Environmental Protection Agency: <http://www.epa.state.oh.us/>
5. Ohio Department of Natural Resources: <http://ohiodnr.com/>
6. This site provides a link to the Draft Cleveland Harbor Dredged Material Management Plan/Environmental Impact Statement:
<http://www.lrb.usace.army.mil/missions/cleveland/index.html>
7. This site provides links to a number of documents regarding beneficial use of dredged material in the Great Lakes. <http://www.glc.org/dredging/benuse/>
8. The purpose of this Corps of Engineers site is to demonstrate potential beneficial uses of dredged material by presenting case studies. Category descriptions, procedural outlines, and reference resources are also provided.
<http://el.erdc.usace.army.mil/dots/budm/budm.cfm>
9. Great Lakes Dredging Team website: <http://www.glc.org/dredging/>
10. National Dredging Team website: <http://www.epa.gov/OWOW/oceans/ndt/>
11. Evaluation of Dredged Material Proposed for Disposal at Island, Nearshore, or Upland Confined Disposal Facilities – Testing Manual. (UTM). January 2003. USACE Engineer Research and Development Center, Vicksburg, MS. ERDC/EL TR-03-1
<http://el.erdc.usace.army.mil/dots/pdfs/trel03-1.pdf>
12. Link to the Ohio Environmental Protection Agency Voluntary Action Program. This Program was created to give individuals a way to investigate possible environmental contamination, clean it up if necessary and receive a promise from the State of Ohio that no more cleanup is needed. <http://www.epa.state.oh.us/derr/volunt/volunt.aspx>
13. Link to the Cuyahoga River Remedial Action Plan (RAP). The RAP partnership is dedicated to restoring and protecting the water quality and resources of the Great Lakes, specifically the Cuyahoga River. <http://www.cuyahogariverrap.org/>

14. Great Lakes Restoration Initiative funding program. The President of the United States and the U.S. Environmental Protection Agency, in conjunction with 15 other Federal agencies, has made restoring the Great Lakes a national priority.

<http://epa.gov/greatlakes/fund/2010rfp01/index.html>

15. Great Lakes Legacy Act provides funding to take the necessary steps to clean up contaminated sediment in “Areas of Concern located wholly or partially in the United States.” The U.S. Environmental Protection Agency’s Great Lakes National Program Office implements the Legacy Act.

<http://www.epa.gov/greatlakes/sediment/legacy/index.html>

Appendix 5 Abbreviations

CAD	Confined Aquatic Disposal
CDF	Confined Disposal Facility
DMMP	Dredge Material Management Plan
ERDC	Engineering Research and Design Center
FAA	Federal Aviation Administration
GLC	Great Lakes Commission
GLRI	Great Lakes Restoration Initiative
NEORS	Northeast Ohio Regional Sewer District
ODNR	Ohio Department Natural Resources
ODOT	Ohio Department of Transportation
OEPA	Ohio Environmental Protection Agency
PAH	Polycyclic Aromatic Hydrocarbon
PCB	Polychlorinated biphenyl
Port	Cleveland – Cuyahoga County Port Authority
RAP	Remedial Action Program
SWCD	Soil & Water Conservation District
USACE	Corps of Engineers, Buffalo District
USEPA	U.S. Environmental Protection Agency
VAP	Voluntary Action Program

Appendix 6 List of Participants

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2010 Cleveland Harbor Dredging Summit

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Appendix 7: The Facilitators

The facilitator team included Gregory Hartman, a civil engineer with Hartman Associates, and Craig Vogt, an environmental engineer recently retired from the U.S. Environmental Protection Agency (EPA), now an environmental consultant with Craig Vogt Inc.

Greg Hartman (ghartman@wavecable.com)

Mr. Hartman was employed by the Corps of Engineers for 11 years and was Chief of the Dredging Operations for the Navigation Division, Portland District. Subsequent to leaving the Portland District, he has worked on navigation and sediment remediation projects for the USACE, for Port Authorities, and for private owners. He has extensive overseas experience completing projects on all continents except Antarctica. He has prepared dredging, disposal, and cap designs and provided construction oversight. This has allowed him the opportunity to learn through project experience what methods and materials are effective and what methods and materials are not. Hartman's staff of engineers has education and expertise in coastal engineering, hydraulics, geotechnical engineering, construction management, and cost estimating. Mr. Hartman's personal expertise in dredging is recognized by the USACE through his selection to teach the USACE PROSPECT dredging fundamentals training program. Mr. Hartman has been the lead instructor for 22 years. A brief overview of the dredging program courses includes estimating, hydrographic surveying, and dredging contract administration.



Craig Vogt (Craig@CraigVogt.com)

Mr. Vogt was employed at EPA where he has worked extensively on dredging and disposal issues. He understands the relationship between dredging and environmental effects and can address the dredging regulator's concerns and issues. Mr. Vogt was the EPA Co-Chair with the Corps of Engineers of the Federal interagency National Dredging Team (NDT) from 1995-2008, which was created to provide a forum for resolution of dredging and dredged material disposal issues. In that position, Mr. Vogt assisted in establishing Regional Dredging Teams (RDTs) and worked closely with those RDTs, composed of State and Federal agencies, ports, and other stakeholders to work through water and sediment quality issues in order to meet Federal and State permitting requirements. Mr. Vogt was the force behind development of the NDT Action Agenda for 2003-2012, which incorporates such actions as revision of the Green Book/Inland Testing Manual, beneficial use of dredged material, and working with states on enforceable policies under Coastal Zone Management.



While at the EPA, Mr. Vogt led a diverse team of Federal government representatives to annual Scientific Group Meetings from the early 1990s to the mid 2000s to negotiate ocean dumping treaty implementation issues and in 2004 was elected Chair of the Scientific Group of the

international ocean dumping treaty agency, i.e., the London Convention (an agency of the UN under the IMO) for four years. In 2000, Mr. Vogt was named Dredger of the Year by the Western Dredging Association (WEDA), a national organization for the exchange of knowledge in fields related to dredging, navigation, marine engineering and construction. In 2008, he was awarded the William R. Murden Award for Lifetime Public Service Achievement by the Dredging Contractors of America. During his tenure at EPA, Mr. Vogt earned the respect of both the regulating and the regulated communities associated with dredging and disposal. He received the Distinguished Career Award, EPA's highest award, in 2008.