

Memorandum

To: Councilwoman Sabra Pierce Scott
Councilman Ed Rybka
Director Chris Ronayne

From: Bill Gruber
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February 7, 2003

Re: Dike 14 Opportunities & Comparative Case Study

Although my contract with Council has ended (and thus I am no longer billing Council for my work), I promised that I would provide a report on several subjects that were discussed the last time that I met with you. Therefore, I am providing this memorandum to follow-up our last meeting, which occurred some time ago, concerning the future of Dike 14 at Gordon State Park. At that meeting I was asked to proceed with research and fact-finding concerning several subjects:

1. The environmental issues raised by any future use of Dike 14 for public access;
2. Examples of other Confined Disposal Facilities (CDFs) or contaminated areas used as public parks; and
3. Potential sources of funds for uses of CDFs like Dike 14.

I apologize that this report has taken so long in coming. Since our meeting I traveled to Buffalo to meet with the Army Corps of Engineers at their regional headquarters, and to visit a CDF that is being turned into a nature preserve and a formerly contaminated park owned by the City that is operated by their science museum. I also met several times with science educators in this area about potential opportunities for non-profit groups to step forward to provide support or services at Dike 14, if they are asked. I hope this information is useful to you in your consideration of future uses of Dike 14.

Note, that in order to be concise, I have not included all the possible information that I have gathered. Some additional information is included in the attachments. Also, if you have specific questions I would be happy to try to answer them.

Please let me know if I can be of help or if you have any questions. Also, I am available if you need my services on this or another project.

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1. The Environmental Issues Raised By Any Future Use of Dike 14 for Public Access.

Dike 14 was created from the deposition of dredgings from the Cuyahoga River and Cleveland Harbor by the Army Corps of Engineers. These dredgings are considered polluted, and may not be deposited out into the Lake. Although testing has already been conducted of the soils of Dike 14, no risk assessment has been performed. Such an assessment, and possibly additional testing, must be done before Dike 14 can be officially opened for public access and before improvements can be made to enhance its accessibility to the public. It should also be noted, however, that there is absolutely no evidence from Dike 14, or any other Army Corps CDF built from dredgings, that Dike 14 poses any danger to any nearby neighborhood, or to occasional visitors to Dike 14.

A. Sampling and Testing Already Done

The Army Corps conducted regular sampling and testing of the River and Lake bottom materials at the locations of dredging activity over the life of Dike 14. I have these sampling and testing reports, and they have been reviewed by Dr. Aaron Jennings of CWRU, a member of the ODNR Working Review Committee process. (He reported to the Working Review Committee in its process of taking public input for the future use of Dike 14.)

More importantly, the Army Corps conducted soil and water sampling and testing of the Dike materials themselves shortly before it closed the Dike to further dredge deposit activity. This sampling and testing is reported in the Corps' "Final Report for Soil and Water Sampling and Chemical Analysis at Cleveland Harbor Confined Disposal Facility #14," dated December 1997. Padia Environmental, Inc. of Worthington, Ohio, prepared the Report for the Corps. *A copy of this Report is attached to this Memorandum.*

The environmental consultant for the Corps took 18 water samples on and around the Dike (in Lake Erie), and 14 soil samples. No pesticides or PCBs were detected in the soil. As to other contaminants the results vary. Dr. Jennings analyzed the results. He was most concerned about metals contamination. He noted that the levels of metals contamination overall are not dissimilar to the levels found in the soils at various locations around the City, including public parks. He also noted that anyone going on to the site to walk around on it does NOT need to wear protective clothing. This is consistent with the Army Corps' conclusions, as discussed with the Corps in meetings with the City, and is evidenced by the fact that neither Corps employees nor their contractors have worn protective clothing when they have worked on Dike 14. Dr. Jennings does believe there are risks associated with public activities on the Dike that should be addressed in a risk assessment.

B. More Testing and A Risk Assessment Needed

Obviously, more analysis must be done of the Corps' test results, and perhaps additional testing will be required. In addition, a risk assessment is needed to determine what, if any, remediation activity is necessary to safely allow public access. A risk assessment requires a focus on a particular type of proposed activity or set of activities. That is, a risk assessment considers the likely risks associated with a set of assumed activities. A risk assessment could be

conducted by the Army Corps, Ohio EPA or a private consultant hired by the City, State or another party. *See more about risk assessments below in Section 2.A.(3).*

Risk from pollution to the public would NOT likely result from simply walking around on the site on an occasional basis. Potential risk, if any, is most likely to result from (1) inhaling contaminants – if they become airborne, such as if soil is bare, dries out and blows around, or (2) ingesting contaminants – which is generally only a worry with small children who may ingest soil while playing.

C. Remediation – What it Means on Dike 14

If remediation is required for the activity the City desires to allow on Dike 14, it will not be the type of remediation generally seen on Brownfield sites. This is because Dike 14 was built to contain the contaminated dredgings, and thus they must remain in place indefinitely. This also means that the City, or any other entity taking possession and/or control of Dike 14, will NOT be required to “clean up” the site. The owner or party in control does not need to worry about liability to the EPA to clean the site, as may exist at Brownfield sites. The potential liability to users of the site is a different issue.

Remediation, if any were found to be necessary, would likely be in the form of maintaining vegetation that covers the soils, or removing vegetation and placing clean soil on top of the dredged soil beneath. Paving over contaminated soils is also sometimes used on Brownfield sites to contain contamination, but usually only where there will be parking or commercial or industrial activity. Paving has other drawbacks and can be more expensive than other measures.

The least costly alternative is likely to include leaving as much of the existing vegetative cover as possible, minimizing disruption of the soils by construction or other activities, and managing access at the site to minimize human contact with the soils.

D. Recommendation

The City can take two steps immediately, and simultaneously, to move the matter of planning for future public access to Dike 14 forward WITHOUT ANY EXPENSE TO THE CITY, and WITHOUT TAKING ON ANY LIABILITY for the site. In addition, the City can take these steps without promising any particular future ultimate use for Dike 14.

- (1) **Ask the Ohio EPA in Twinsburg to review the data already compiled by the Army Corps** (and possible additional testing conducted by Professor Jennings), and provide an analysis of:
 - a. whether they believe additional testing is required; and
 - b. what they see as the potential risks to the public from exposure to the site.

Ohio EPA may be willing to conduct additional testing, if needed.

- (2) **Apply to Army Corps for the Environmental Restoration Program - “Section 1135 Program.”** *See the discussion of this Program below in Section 2.A., and the attached materials on this Program.* The City may apply by simply sending a letter to the Army Corps, even though the City is not the owner or party in control of the site. Also, the City would incur no liability by applying for this Program. Under this Program, the Army Corps would conduct, and pay for, additional sampling, testing and a risk assessment. The risk assessment must be related to a use that would include the “restoration of a degraded ecosystem to a more natural condition.” It is intended for the consideration of public access and use of a site.

2. Example Of Another Confined Disposal Facility (CDF) And A Public Park on a Formerly Contaminated Site.

An example of what could occur in Cleveland at Dike 14 is provided in Buffalo, at Times Beach CDF. *See a description of the Times Beach CDF Nature Preserve Plan, attached to this Memorandum.* There the City of Buffalo and Erie County have joined together to open the former CDF as a nature preserve with public access. The neighborhoods and the City have embraced the idea of preserving Times Beach CDF as a natural area on their lakefront. The City’s plans for the neighborhood around Times Beach include improving access to Times Beach and linking this lakefront park with the Tifft Nature Preserve in the City. Tifft and its nature center building are owned by the City but operated by the Buffalo Museum of Science. The Science Museum is proposing to offer environmental education at Times Beach CDF as well. *See more on Tifft in Section 2.B. below.*

Times Beach is a CDF, just like Dike 14, and was formed in the same manner as Dike 14. Unlike Dike 14, however, Times Beach was only used for dredge fill for part of its planned life, and has remained unused for about 20 years. Like Dike 14, Times Beach has become naturalized with vegetation and wildlife.

Times Beach is 50 acres in size (Dike 14 is 88 acres). It is near downtown, but somewhat isolated at the mouth of the Buffalo River. It is popular with birders and bike riders (who use the site unofficially.) The City owns the site. About 5 years ago people with clout in the City, including a representative of the African American community, went to the Mayor and asked that the City develop Times Beach CDF as a nature preserve with public access.

The City found that there is “limited access to environmental resources...in the Buffalo River Community,” a low income neighborhood of Buffalo, despite the fact that “the Community is located adjacent to a number of key waterfront resources.” See Draft Comprehensive Plan, Buffalo River, City of Buffalo, at www.ci.buffalo.ny.us/city/index.html, “Comprehensive Plan” link.

A. Buffalo Application to Corps for 1135 Program Review of Times Beach CDF

The City applied to the Army Corps under the Section 1135 Program. *See the attached materials on this Program (i.e. a description of the Program and a sample letter that can be*

used to apply to the Corps to get started.) Under this program, the Corps prepares a Preliminary Restoration Plan and conducts a Feasibility Study. These steps are covered 100% by federal funds.

(1) The Times Beach Plan (Section 1135 Program)

The first step in the Section 1135 Program is creating a Plan that is intended to provide an outline for the “restoration” of a degraded ecosystem, including the modification of an existing Corps project, like Times Beach CDF or Dike 14. The planned modifications must have as their goal the improvement of the environment. Although the Section 1135 Program is called “environmental restoration,” the Corps has made it clear that the program is intended to improve the environmental quality and habitats at existing Corps projects, even if they are artificially created CDFs. The Plan briefly describes the proposed project, the environmental benefits and approximate future costs. The Plan is supposed to take about 2 to 6 months to be completed from the time the request is submitted.

The Times Beach CDF Plan has been completed, even though the City has not yet committed to carrying out the full plan. *See the Fact Sheet summarizing the Project Plan attached to this memorandum.* The Plan would involve spending \$5.5 million (\$4.125 million from the Corps, and \$1.375 million from local or state sources) to restore the 30-acre wetland area of the CDF. At Dike 14, a similar project could involve creating/restoring wetlands on the northeast corner of the Dike—about 20 acres—including a pumping system to maintain clean water and flow in the Dike’s wetland. *See the attached Dike 14 Plan Map.* That is what is being proposed at Times Beach.

(2) The Times Beach Feasibility Study (Section 1135 Program)

The next step is for the Corps to conduct a feasibility study and issue a report. This is to be completed within 12 months. In Buffalo, the Times Beach Feasibility Study was completed in July 2002. It was prepared by URS Consultants, who were hired and paid by the Corps. *See a copy of this Feasibility Study, attached to this Memorandum.*

The Times Beach Study says that since the Corps abandoned the CDF, “significant varieties of wildlife, vegetation and aquatic habitats” have developed, and “the steady growth and healthy succedance of onsite vegetation as well as the various wildlife inhabiting Times Beach CDF have caused the site to become a nature sanctuary. In fact, the Times Beach area was formally designated as a nature preserve by the City of Buffalo in 1991 for the sole purpose of being used as a natural and educational public resource.” See the Feasibility Study, pp. 1-2, for the previous and the following quotes.

The Study found that over the years, Times Beach CDF developed eight (8) different ecosystems, the most significant of which “include the essentials for flora and fauna to survive.” The Army Corps conducted environmental testing that found that the site is “moderately contaminated with heavy metals and organo-chlorine compounds.” Yet the City proceeded forward with creating a plan for public access; establishing the entire site as a nature preserve, “while providing passive recreation and education programs.”

The Feasibility Study took into account the different levels of contamination at the site, and assumed the Corps would “implement the most cost-efficient and effective means for restoring and enhancing the site to make Times Beach safe for public access.” Thus, the Study investigated the site and conceptually developed alternatives to “allow the public to access and move around the site safely while enjoying the natural settings and combinations of flora/fauna habitats.”

The Study found that the 13-acre wooded areas of the former CDF “offers a pleasant, almost spiritual and tranquil setting.” Study, p. 4. There is a functioning wetland area that could offer “wetland education experiences and resources with respect to native Western New York lakeside vegetative habitats.” The site has also “become a natural stopover for migratory birds.” Study, at p. 5. The Study highlights the fact that over 186 species of birds have been sighted and documented at Times Beach, including rare and extraordinary species, and found that it offers a “unique setting for viewing wildlife (bird) habitats.” Note that at Dike 14, more than **281 species of birds** have been documented, including **23 of Ohio’s 29 Endangered Species, 3 of Ohio’s 3 Threatened Species, 2 Federally Endangered Species, and 54 out of 68 Audubon Species of Concern.**

The Study for Times Beach is particularly instructive, because it provides descriptions of six (6) different potential plans for public access, with drawings and cost estimates ranging from a little over \$200,000 to over \$3 million. The costs of boardwalks, trails and other site enhancements are provided. The Study ultimately recommends a plan that would cost a little over \$1 million to implement, and says that it would “allow visitors to reap the full benefits the site has to offer while keeping the public safe.” The plan can be implemented in phases, and *can “be started before remediation work begins.”* Study, at p. 18. It concludes that “opportunities for spectacular bird watching and hiking cannot be overstated.”

(3) The Times Beach Risk Assessment (Section 1125 Program)

As a part of its Section 1135 review of Times Beach, and prior to the Feasibility Study, the Army Corps conducted, and paid for, a Risk Assessment for Times Beach. It found that there was a “potential for adverse human health and ecological effects to occur via exposure by humans and wildlife (flora and fauna) to soil and sediment contaminants at this site.” Thus, the report recommended a more in-depth analysis be performed in the form of human health and ecological risk assessments. *See “Screening Level Risk Assessment for Times Beach,” dated July 2001, attached to this Memorandum.*

The human health risk assessment considered both the exposure for the future recreational user and the current trespasser, particularly young adolescents entering to play. The scientist conducting the study stated that exposures to contaminants would be limited by water covering wetland areas and vegetation, both of which minimize the amount of fugitive dust. Those conducting the study used conservative assumptions. For both groups of people using the site, the risks from the contamination were found to be acceptable (i.e. minimal enough not to cause concern). The conclusion was that “recreational use of the site by occasional site visitors would most likely not result in unacceptably adverse human health effects.” *See Human Health*

Risk Assessment of Times Beach, June 2002, attached to this memorandum, particularly at pp. 1-2, and 6.

(4) Next Steps for Times Beach CDF.

Now that the Risk Assessment has found it safe for the public to use Times Beach, the City and County are proceeding with seeking the local funding for the improvements for Times Beach identified in the Feasibility Study. The State of New York has capital funding available (similar to the possibility that ODNR may have capital funds available for Dike 14.)

The City and County want to proceed with the improvements even before the environmental improvements are implemented by the Corps through the Section 1135 Program. The law does not normally allow these locally-paid-for improvements to count as the “local share” for the Section 1135 Program unless they are constructed *after* the final Corps approval of the Section 1135 plan. Thus, through the assistance of their Congressional Representative, the City and County are attempting to get Congress to approve using the State funding for the public improvements as the “local share” of the Section 1135 Program Plan implementation.

The next step in the Section 1135 Program is for the City and/or County to enter into a binding agreement with the Army Corps, by which the local sponsors would agree to pay a share of the cost of the final Plan to be developed for the Times Beach site. That final plan has not yet been completed.

B. The Tiff Nature Preserve.

The Tiff Nature Preserve, as noted above, is a park owned by the City of Buffalo and located in the City not too far from Times Beach and the waterfront. The site is a formerly contaminated industrial site, containing 264 acres of natural vegetation and wildlife. The park is an example to consider for Cleveland because of the partnership formed to operate the park and because of the way a nature preserve in the midst of the City is viewed in Buffalo.

Tiff is operated by the Buffalo Museum of Science, which has built a nature center at the park, and manages the wetlands and other habitats and wildlife present there. The City sees Tiff as part of a linked series of parks and greenways ending at their lakefront at the Times Beach Nature Preserve. The Museum plans to use the nature center and educational resources of Tiff at Times Beach for educational opportunities. The Times Beach site is not large enough or accessible enough to be able to sustain a nature center and separate educational program. Note that Dike 14 is significantly larger than Times Beach CDF, and through existing infrastructure at Gordon State Park, buildable land adjacent to the Dike, and easy accessibility from highways and the nearby neighborhoods Dike 14 is better situated than Times Beach to sustain both a nature center and educational programs. Dike 14 is really a combination of the Tiff and Times Beach sites, and can be viewed as such for purposes of this comparison.

The Tiff Nature Preserve is touted as “Buffalo’s unique resource linking environmental education, eco-tourism and research.” *See the flier attached to this memorandum.* It provides environmental education through its status as a restored Brownfield. It also provides an authentic

learning experience for school children, a source for urban nature studies for Buffalo's communities, and offers environmentally-friendly fun. Eco-tourism is seen as being offered at Tiffy by it being an important bird area and a unique waterfront destination. Finally, research opportunities exist for student-citizen science research, migratory bird studies, Great Lakes research and wetland aquatic studies. It should be noted that Dike 14 has all of these characteristics, potential uses and opportunities, and possibly more, since it is closer to City neighborhoods and directly on the Cleveland lakefront.

3. Potential Sources Of Funds and Other Assistance for Dike 14 Development.

- A. Federal Section 1135 Funding for Preliminary Plan, Feasibility Study and Risk Assessment.
- B. Ohio Department of Natural Resources (ODNR) – State Capital Improvement funds for State/local portion of Section 1135 Program Plan implementation, and/or to construct nature center at Gordon State Park adjacent to Dike 14, and trails, towers, fishing piers, and other amenities the public has requested through the ODNR Working Review Committee (WRC) process.
- C. Clean Ohio Fund – for a nature center, environmental education, trails, etc.
- D. Regional Alliance for Informed Science Education (RAISE) Fund for planning purposes.
- E. Gund Foundation – particularly to fund a joint/collaborative proposal to develop and operate a nature preserve and center (see Section 4, below).
- F. Martha Holding Jennings Foundation – implement science and environmental education programs and facilities, particularly through a collaborative of educators.
- G. Ohio Environmental Education Fund – rigorous, 2x a year fund cycle, for up to \$50,000, including planning, but also for implementing an educational plan for Dike 14.

4. Contacts and Resources.

A. A Collaborative of environmental and science educators:

A group of educators has begun to meet to discuss the opportunities for environmental, science and other education at Dike 14. This group includes:

Audubon Society of Ohio
Cuyahoga Valley Park Association
Nature Center at Shaker Lakes
Cleveland Municipal School District
ODNR, Cleveland Lakefront State Park

Cleveland Museum of Natural History
Great Lakes Science Center
Lake Erie Nature Center
Representatives who worked on the County Greenspace Plan
And others

This group has discussed creating a collaborative of organizations or a new organization to possibly operate a nature center and preserve at Dike 14, and/or to provide educational programs at the Dike.

B. Dike 14 Committee Proposal for Dike 14

The Dike 14 Committee has updated its proposed plan for Dike 14, a plan that would fit into the Section 1135 Program of the Army Corps described above. This Plan can be done in phases, and can accommodate other passive recreation uses, such as a bike trail. It could also work well with improvements to Gordon State Park such as playgrounds, picnic and grilling areas, sculpture gardens or scattered sculpture sites, improved landscaping, and other features. The Plan already includes additional amenities in Gordon State Park such as a nature center building, a new park at Lake level, new fishing piers, etc. *A copy of the Plan map is attached to this Memorandum.* This Plan has been endorsed by the following groups:

Cleveland Metroparks
St. Clair Superior Neighborhood Development Association
Earth Day Coalition
Nature Center at Shaker Lakes
Bratenahl Land Conservancy
Audubon Ohio
League of Women Voters
Sierra Club of Northeast Ohio
Tinkers Creek Conservancy
Friends of Whiskey Island

C. Michael Greer, Army Corps of Engineers

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**F. Mayor
City of Columbus, Ohio**

I recommend that Cleveland contact the City of Columbus to consider the project there to create a nature center and preserve at a park near downtown Columbus. Audubon Ohio is close to finalizing a plan to fund and build a nature center in Columbus that the City considers a boon to its citizens and neighborhoods.

4. Final Recommendations:

The best way for the City to determine the future use of Dike 14 is for the City to have clear control of the site. To do this the City should:

A. Start the Section 1135 process with the Army Corps, in order to facilitate the feasibility study, and the environmental analysis and risk assessment that will be needed for future planning.

B. At the same time, ask the Ohio EPA for assistance in looking at the environmental issues and risks.

C. Also at the same time, ask the Army Corps and Port Authority for all data and information relevant to the maintenance responsibility of a Local Cooperating Agency (LCA) for a CDF like Dike 14. In addition, both parties should be asked for the following:

- (1) the past costs of Dike 12 maintenance for the Port Authority and/or Corps.
- (2) an analysis, including an inspection, by Army Corps of Dike 12, and report on any maintenance that should be done by the Port and its cost, and/or any forecasted work that will be needed, the timeframe and cost.
- (3) a report on any maintenance costs incurred by Port Authority for Dike 14.
- (4) an analysis by Army Corps of the most recent maintenance at Dike 14, and an estimate of future maintenance activity that will be needed, a timeframe and potential cost.

D. After this information has been considered, start the process for the City to gain control of Dike 14 through:

- (1) applying for a submerged lands lease for all of Dike 14 from the Army Corps;
- (2) obtaining a release from the Port Authority of its submerged lands lease for part of Dike 14; and

(3) working with the Port and Army Corps to transfer the maintenance responsibility for Dike 14 from the Port to the City.

Submitted by:

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ATTACHMENTS:

- 1. Final Report for Soil and Water Sampling and Chemical Analysis at Cleveland Harbor Confined Disposal Facility #14.**
- 2. Form Letter to Apply for the Army Corps of Engineers' Environmental Restoration - Section 1135 Program.**
- 3. Excerpts from Army Corps of Engineers Manual – Water Resources Program, Including the Environmental Restoration - Section 1135 Program.**
- 4. Fact Sheet, July 9, 2002, Times Beach, Buffalo New York Section 1135 Program.**
- 5. Map of Nature Preserve at Cleveland's Dike 14 With Judicious Public Access – Concept Plan – 2002.**
- 6. Final Report – U.S. Army Corps of Engineers – Buffalo District – Feasibility Study for Public Access to Times Beach, Buffalo, New York, July 25, 2002.**
- 7. Memorandum – Screening Level Risk Assessment for Times Beach Contaminated Soils and Sediment, July 2001.**
- 8. Memorandum – Human Health Risk Assessment of Times Beach Soils and Sediment, June 2002.**
- 9. Tiff Nature Preserve – From Trash to Waterfront Treasure—Flier.**