IN RE: GREAT LAKES AND MISSISSIPPI RIVER

INTERBASIN STUDY

PUBLIC MEETING

January 16, 2014 4:04 p.m.

Taken at: Cleveland Public Library 325 Superior Avenue Cleveland, Ohio 44114

APPEARANCES:

Dave Wethington, GLMRIS CAWS Project Manager

Colonel Frederic A. Drummond, Jr., Commander, Chicago District

John Goss, Council on Environmental Quality

Kendall Zaborowski, Planner

Kyle Shaw, Office of Counsel - Lakes and Rivers Division

```
2
 1
                     PROCEEDINGS
 2
                MR. ZABOROWSKI: All right.
                                             Again, good
    afternoon, ladies and gentlemen.
 3
                                     My name is Kendall
    Zaborowski, I'm with the U.S. Army Corps of Engineers
 5
    Chicago District, and I will be moderating this
 6
    evening's public meeting. I would like to welcome
    you all to today's Great Lakes and Mississippi River
 7
    Interbasin Study, or GLMRIS as we'll refer to it,
 8
 9
   public meeting.
10
                Again, I'd like to ask everyone to
11
    silence any cell phones, and then also I'd like to
    mention if you want to have a side conversation, if
12
13
    you wouldn't mind stepping out back into the lobby so
14
    as -- you don't distract anything. We've got some
15
    microphones and a stenographer trying to record
16
    things, we don't want to distract from that.
17
                Before beginning the meeting, I'd like
    to mention to everybody that the bathrooms are
18
19
    located -- if you go back out the doors you came in
20
    and just to your left-hand side, there's both men and
21
    women's restrooms; and also in the event of an
22
    emergency, you can exit through the doors that you
23
    came in or to the right or the left side of the stage
24
    there are emergency exits as well.
25
                So when you arrived here this evening,
```

- 1 you were given some materials. The first is a green
- 2 meeting agenda, and that's going to be our schedule
- 3 for this evening's meeting. The next form is this
- 4 yellow comment registration form. If you'd like to
- 5 ask a question or submit a comment or make a comment
- 6 here tonight, we need you to fill out this, if you
- 7 haven't already done so, and turn it in at the front
- 8 desk. It also has instructions on how to submit a
- 9 written comment to us. You can fill that out and
- 10 drop it off with, again, our front desk tonight
- 11 before you leave.
- 12 The next piece of paper that you were
- 13 given was this blue paper, and it's frequently asked
- 14 questions about GLMRIS and what other aquatic
- 15 nuisance species efforts that's being undertaken by
- 16 the Army Corps of Engineers. And then the last
- 17 handout that you were given when you came in was this
- 18 booklet, and this is a summary of the GLMRIS report,
- 19 and it contains information that we will be
- 20 presenting here tonight.
- Now, I'd like to take a moment to
- 22 introduce tonight's panel. Starting to your left,
- 23 farthest away from me, is Mr. John Goss, he is with
- 24 the White House Council on Environmental Quality.
- 25 Next to him is Colonel Frederick Drummond, he is the

commander of the Chicago District U.S. Army Corps of Engineers, and then closest to me is Dave Wethington, he is the GLMRIS project manager, also from the Chicago District U.S. Army Corps of Engineers. 5 And before we move on, I'd like to mention -- or thank Lieutenant Colonel Beaudoin, the commander of the Buffalo District, we're in his area 7 of responsibility tonight, so he is our host this 8 9 evening. 10 For those of you wishing to speak at our 11 meeting, please note if you preregistered on the 12 project website and did not sign in at our welcome 13 table, please do so now. Also, if you have not registered at our project website and wish to give an 14 15 oral comment, please go out and sign up now. 16 The Corps of Engineers is hosting several public meetings throughout the study area in 17 18 an effort to give opportunities for those of you in 19 the study area to learn about the GLMRIS report and 20 to also give us comments about the GLMRIS report. 21 this is our third meeting of several and we're really 22 glad to have you guys with us. 23 The GLMRIS report in its entirety can be 24 viewed and downloaded on the GLMRIS website, which is

http://GLMRIS.anl.gov, and that should be on several

of the materials that you have tonight. So our GLMRIS team has organized this 2 public meeting to accomplish two goals: 3 The first goal is to present the information contained in the 5 GLMRIS report. The second goal is to solicit input from you on the information that is presented in the The Army Corps of Engineers will be 7 GLMRIS report. collecting comments on the GLMRIS report through March 3rd of this year. Comments then will be 10 compiled and posted on the GLMRIS website. 11 For comments to be formally included, 12 they need to be given during an oral comment period 13 at one of our public meetings, submitted as a written 14 comment either through mail or at one of our public 15 meetings, or they need to be submitted through our 16 project website. You can get on-line and there's a 17 form where it's easy to submit comments that way. 18 So if you have any questions or concerns 19 during any of the presentations or during the comment 20 period, you know, find somebody with a red lanyard, 21 we'll do our best to help you out with anything you 22 might need. 23 And, again, I'd like to mention that the 24 oral comment -- or that the -- excuse me, that the

comment period runs through March 3rd of this year.

```
6
 1
                So if you'll take a look at your
    agendas, now we're going to -- the public meeting is
    going to begin with a few speakers over here, we'll
    give a presentation on the GLMRIS report, and then
 5
    we'll begin our public comment period. And the
   public comment period is scheduled to end at 7 p.m.
 7
    tonight.
 8
                I'd now like to turn it over to Mr.
    John Goss and he will give you some more information.
 9
10
                          Thanks everyone for coming
                MR. GOSS:
11
    out on a winter day to help us work on the next steps
12
    for this very important project. I am John Goss, I
13
    report to the Environmental Policy office at the
14
    White House, and this is an office that coordinates
15
    federal agencies in projects like this.
16
                Fortunately on the team for this project
    we have very active state partners. Also, I want to
17
    thank Ohio DNR for being a very involved contributor,
18
19
    and also they have done significant work on Ohio
20
    Rivers -- or Ohio River Asian Carp Control Program
21
    and Ohio Asian Carp Control Program, which has been
22
    very helpful for us on this program.
23
                We do have a team that works together,
24
    communicates regularly and work in a coordinated
25
    fashion called the Asian Carp Regional Coordinating
```

I want to give you just a quick update on progress and a kind of a current status on the carp control plans at this point. 3 It is a four-part strategy. We have the 4 electric barriers in the Chicago Waterway System, the 5 third barrier is being constructed right now, which is -- learning from previous barriers that have been built, this is going to be an even more effective block in the Chicago Ship Canal. We have extensive 9 10 monitoring, that's fishing sample, electrofishing, continuing both lakeside of the barrier and south of 11 the barrier area, have sampled over 50,000 fish in 12 13 that area this past year, no Asian carp have been 14 found near the barrier or lakeside of the barrier. 15 Also, new control technologies that are 16 not in the GLMRIS report are still being worked on by research teams, and we're making progress with those, 17 and then the GLMRIS project certainly is the 18 19 long-term strategy. 20 Just a few things to mention. I think 21 we are continuing to test carbon dioxide as a 22 possible use with an additional barrier, it does 23 repel carp we know from pond tests, and we are

looking at other applications, water cannons and

other things that we know will help control Asian

24

carp. We're working with those areas that are infested with Asian carp. Commercial harvesting continues in that 3 50-mile stretch south of the barrier. Certainly another 50,000 Asian carp have been taken out this 5 past year, bigheads and silvers, to reduce that pressure on the barrier, and we will continue that monitoring on both sides for the foreseeable future. We've got a new budget approved for another year of 10 projects. 11 Also, I want to mention some things that 12 are not in the report today. What we've been calling 13 the other pathways, of which Ohio has three that are getting some continuing work, that's Little Killbuck 14 15 Creek and the Ohio and Erie Canal at Long Lake in 16 particular, those are in further evaluation for what 17 could be the best permanent way to separate the headwaters of both basins so that we could not -- we 18 19 would not have any future connections for invasive 20 species transfer. 21 Also, the number one site that was found 22 in the study of all the 18 possible connections at 23 Eagle Marsh over near Fort Wayne, Indiana, does have

a plan that we expect to be completed in 2014, and,

hopefully, construction soon after that will -- will

24

25

(866) 448 - DEPO

- 1 divide things for the Wabash and Maumee headwaters
- 2 there at Fort Wayne. So that's another block that
- 3 will be in place we believe within the year to -- to
- 4 help us protect Lake Erie and your side of the Great
- 5 Lakes.
- Also, there's a natural carp control
- 7 program being worked on by states up and down the
- 8 Ohio River, Mississippi River. Teams of people are
- 9 looking at ways to slow the spread, stop the spread
- 10 and reduce the threat, and certainly we're looking
- 11 forward to progress on all of those areas.
- 12 And beyond the Great Lakes states, that
- 13 means that we've got a number of states that have a
- 14 stake in this. So if we are stopping invasive
- 15 species from getting out of the Great Lakes, we're
- 16 helping protect all of these other states that are
- 17 colored in on the map here. And as we look to
- 18 Congress to funding for the long-term solution, it
- 19 will require a partnership and bipartisan efforts to
- 20 continue in all of these states as well.
- 21 We've had some excellent success in the
- 22 Great Lakes when all -- all of the interested parties
- 23 have pulled together, certainly starting back in the
- 24 1950s with sea lamprey control, it continues as an
- 25 effective way to manage an invasive species that's

- 1 already established. The Great Lakes Water Quality
- 2 Initiative with our Canada partners is very important
- 3 for keeping water quality in -- in control, under
- 4 control. The Great Lakes Compact, as you remember,
- 5 was a fairly unexpected development that we got
- 6 everyone to agree to -- to accomplish something
- 7 together. Also, the Great Lakes Restoration
- 8 Initiative continues to fund the ongoing efforts.
- 9 Congress just approved another \$300 million for this
- 10 year's budget to keep those projects moving along.
- 11 So keep in mind that even though the
- 12 project we're talking about today for Asian carp
- 13 control is fairly long on the timeline, it's fairly
- 14 expensive and fairly complicated, the Great Lakes
- 15 states have proven they can do these kind of
- 16 projects, and so we look forward to your help.
- 17 As we take a little pause here for the
- 18 next 60 days and get comments and recommendations, we
- 19 are very interested in hearing from you about any
- 20 specific suggestions. If you could direct your
- 21 comments to a particular alternative, that would be
- 22 also helpful as we're evaluating what the next best
- 23 -- best steps will be.
- Ideally a consensus will emerge for one,
- 25 maybe two alternatives to move farther along with

- 1 design with, hopefully, support from lots of
- 2 different interested parties and stakeholder groups
- 3 around the Great Lakes. So there's no single
- 4 recommendation today, but we're hoping to move that
- 5 in the discussion in the next few weeks looking for a
- 6 consensus to move forward.
- 7 So, again, thank you for your help on
- 8 this. We would appreciate comments coming in in the
- 9 next few weeks and look forward to trying to get an
- 10 agreement on the next steps going forward.
- 11 Next I'm going to turn it over to Dave
- 12 Wethington -- excuse me, to Colonel Drummond from the
- 13 Chicago District.
- 14 COLONEL DRUMMOND: Thank you, John, I
- 15 appreciate it.
- Good afternoon, I think we'll get into
- 17 the evening before we're done tonight. As mentioned
- 18 earlier, my name is Colonel Frederic A. Drummond,
- 19 I'm current commander of the Chicago District and
- 20 responsible for the greater metropolitan area of
- 21 Chicago, about 9.1 million people, and a whole host
- 22 of other things that go on there.
- I would like to thank the library here
- 24 for allowing us to host this very important
- 25 discussion. As John had mentioned, we are interested

- 1 in your dialogue. Later on I think Congresswoman
- 2 Kaptur will be here. We'll have the fortune and
- 3 pleasure to have the Ohio Attorney General,
- 4 Mr. DeWine, he is present tonight. So thank you,
- 5 sir, very much for attending this.
- 6 So the Corps is excited to have another
- 7 -- to have achieved another milestone in the mission
- 8 to prevent the movement of aquatic invasive species,
- 9 or ANS as we call it. This achievement is the
- 10 submission of the Great Lakes Mississippi River
- 11 Interbasin Study report to Congress that happened on
- 12 the 6th of January, we call this document GLMRIS --
- 13 you can see it up here -- for short.
- 14 GLMRIS is a very complex study that
- 15 examines the opportunities to prevent the aquatic
- 16 transfer of many ANS, not just fish like Asian carp,
- 17 but also other species, and you'll hear tonight 13 of
- 18 them, along the Great Lakes and Mississippi River
- 19 Basin divide.
- In GLMRIS Congress asked the Corps to
- 21 study a range of options and technologies available
- 22 to prevent ANS movement between the Great Lakes and
- 23 the Mississippi River Basin through aquatic
- 24 connections. The GLMRIS report outlines a variety of
- 25 potential prevention methods and presents an

- 1 evaluation criteria to help readers distinguish among
- 2 the various alternatives.
- 3 The purpose of the GLMRIS report is to
- 4 paint what I call an objective picture of several
- 5 alternatives to offer decision-makers and
- 6 stakeholders and the public information about those
- 7 alternatives. The GLMRIS report does not make
- 8 recommendations, nor does it prioritize the plans.
- 9 Our GLMRIS team is one that spreads
- 10 across country. In fact, there's 19 different
- 11 districts involved, well over a hundred different
- 12 personnel with various backgrounds. I might add that
- 13 many of the folks in the Chicago District live along
- 14 Lake Michigan and they have the same amount of
- 15 passion as each and every one of you do to prevent,
- 16 you know, the aquatic transfer and to prevent the
- 17 rise of Asian carp into Lake Michigan.
- This report's unique in comparison to
- 19 other most Corps of Engineer reports in that it
- 20 identifies a range of options and is adaptable for
- 21 the incorporation of future technologies. For
- 22 example, many of the nonstructural measures outlined
- 23 in the GLMRIS report could be implemented immediately
- 24 by various federal, state and local agencies subject
- 25 to applicable authorities and the availability of

- 1 resources.
- 2 Apart from GLMRIS the Corps will
- 3 continue to address the issues of invasive species by
- 4 participating in the Asian Carp Regional Board --
- 5 Coordinating Committee, which John runs, operating
- 6 the existing barriers, which John had just mentioned,
- 7 and participating in the research and extensive
- 8 monitoring of the waterways with our various federal
- 9 and state partners.
- 10 The prevention and the spread of aquatic
- 11 nuisance species is, what you will hear tonight, a
- 12 shared responsibility among federal, state and local
- 13 agencies, as well as the public. The Corps remains
- 14 dedicated to working alongside our partners moving
- 15 forward as our authorities allow.
- So I put a few numbers in here I'd like
- 17 to mention. The GLMRIS report, since the 6th of
- 18 January, has been transmitted to well over 7,000 news
- 19 and media stations. So the information's getting out
- 20 there and we are receiving some very good input back.
- 21 The executive summary that most of you
- 22 have, it's a small little summary, 25 pages long,
- 23 it's sort of what I call a primary -- a primer. You
- 24 know, it will get you going, and then you're going to
- 25 want to open up the website and go to a -- the next

- 1 step, which is the report itself, 232 pages of more
- 2 detail. And then along with that report there's 14
- 3 appendices, and many of you -- of you in here will be
- 4 interested in the appendices as well, and they run --
- 5 range roughly about 10,000 pages, so a whole lot of
- 6 information out there. But, you know, the early
- 7 going report is that it's -- it's good reading,
- 8 especially 25 pages and the 232. So please take a
- 9 hard look at this book, and you will hear later on
- 10 that we have several avenues that you can take to
- 11 provide us information.
- 12 You're going to hear the interbasin
- 13 spread of 13 aquatic nuisance species, we call them
- 14 (inaudible). You're also going to hear the eight
- 15 potential alternatives in the back of the room that's
- 16 laid out on the banners. If you have time, please
- 17 take a look at it, it explains it very well.
- 18 Ninety different technologies were looked at to
- 19 prevent the ANS transfer. And then most of this, you
- 20 know, is very much focused tonight on the CAWS, which
- 21 is located in Chicago.
- So, you know, my goal here tonight is to
- 23 listen. You know, I'm accompanied by Dave
- 24 Wethington, he is going to get up here and he is
- 25 going to talk to you about 18 slides to give you

- 1 another quick look at the enormity and the very
- 2 complex nature of this feasibility which we had
- 3 undertaken. So without further delay, what I'd like
- 4 to do is introduce Dave Wethington.
- 5 Dave.
- 6 MR. WETHINGTON: Well, thank you, sir,
- 7 and thank you all tonight for coming out and
- 8 participating in this public meeting. It's really
- 9 great to see so many faces here tonight and I see we
- 10 have more coming in as we speak. So we look forward
- 11 to listening to all of your comments.
- 12 As Colonel Drummond introduced, I just
- 13 want to spend a few minutes talking a little bit
- 14 about what we did in GLMRIS, how we came up with the
- 15 range of alternatives that we presented within the
- 16 report, and I hope that everyone has had the
- 17 opportunity to grab one of those books, if not, there
- 18 are more copies outside. That 25-page book is really
- 19 an excellent way for you to kind of follow along with
- 20 the presentation today.
- We set out at the beginning of the study
- 22 to identify a range of options and technologies that
- 23 are available to prevent the transfer of aquatic
- 24 nuisance species between the Great Lakes and
- 25 Mississippi River Basin. That aquatic boundary, that

- 1 watershed line is identified for you on the slide
- 2 behind me. That line is this brown line, it spans
- 3 from Minnesota to New York, and it spans over 1,500
- 4 miles of potential pathways.
- 5 The goals of our study were twofold.
- 6 They were to prevent the transfer of aquatic nuisance
- 7 species, while look at what kind of potential impacts
- 8 we may have to existing uses and users of the system
- 9 -- of the Chicago Area Waterway System if we were to
- 10 implement one or more of these alternatives.
- 11 Stakeholder engagement has been a very
- 12 important piece of this study and it's the reason why
- 13 we're here tonight. Since its inception back when I
- 14 started as a project manager, in about midyear of
- 15 2009 is when we first received funding, all the way
- 16 through today and looking out into the future,
- 17 stakeholder engagement is a key part of the GLMRIS
- 18 process.
- 19 We received legislation in 2012 which
- 20 asked us to do a couple things. Number one, it
- 21 expedited the completion of the GLMRIS report to a
- 22 duration of 18 months. We received this legislation
- 23 on July 6th of 2012, and 18 months later on January
- 24 6th of 2014, we completed this report.
- This legislation asked us also to look

- 1 at a little bit more specifically the Chicago Area
- 2 Waterway System. Mr. Goss and Colonel Drummond
- 3 mentioned in brief that there are other aquatic
- 4 pathways along that basin divide behind me. Now
- 5 there are 18 of them, and we have a lot of great
- 6 information on our website that Kendall gave out at
- 7 the beginning at GLMRIS.anl.gov. There are
- 8 individual pathway reports on each of those 18 sites,
- 9 as well as a couple of different aquatic species
- 10 control reports on some of the -- the sites that
- 11 (inaudible) further to this date.
- 12 What I'm going to spend time talking
- 13 about today is primarily the Chicago Area Waterway
- 14 System. The CAWS, as we call it for short, is a
- 15 complex waterway. I think the -- what the team did
- 16 is look at the existing uses of the Chicago Area
- 17 Waterway System in trying to identify the range of
- 18 alternatives and the impacts that those alternatives
- 19 may have to these uses.
- As you can see behind me, navigation,
- 21 commercial cargo navigation, recreation, those are
- 22 significant uses of the system. Water supply and
- 23 conveyance, for those of you who aren't from the
- 24 Chicagoland area, you probably would be surprised to
- 25 learn that about 65 to 85 percent of the total volume

- 1 of the Chicago River on any given day is municipally
- 2 treated wastewater. So the Chicago Area Waterway
- 3 System acts as a conveyance stream for municipally
- 4 treated wastewater to move down away from the city.
- 5 It also serves -- the CAWS itself serves
- 6 as a significant flood-risk management tool for the
- 7 Chicago area -- for the Chicago area for those 9.1,
- 8 9.2 million residents that live within the city
- 9 proper, as well as the extending suburbs.
- 10 The Chicago Area Waterway System,
- 11 currently water flows in from Lake Michigan down
- 12 through the system away from the lake. When we have
- 13 significant precipitation events in the Chicago area,
- 14 we have the ability to move water in both directions,
- 15 both out towards the lake and both downstream in
- 16 order to relieve that significant flood pressure
- 17 which would build up on the industries and the
- 18 businesses of the downtown area, as well as the
- 19 adjacent suburbs.
- The Chicago Area Waterway System serves
- 21 as the primary connection between the two basins. We
- 22 mentioned the other aquatic pathways, those 18 other
- 23 potential connections, but when you look at this
- 24 connection that is highly utilized, it is there 24
- 25 hours a day, seven days a week, and it is a very

- 1 complex primarily pathway for aquatic nuisance
- 2 species, that's why our focus of the report was on
- 3 the Chicago Area Waterway System.
- 4 The report itself is really best used as
- 5 a tool for decision-making. It -- it's a great
- 6 report and it has a lot of information. I'll speak
- 7 near the conclusion of my discussion with regard to
- 8 the evaluation criteria in the report, but what we
- 9 have done is come up with a conceptual level of
- 10 design of that range of different alternatives which
- 11 could be applied to -- with the goal to prevent
- 12 aquatic nuisance species transfer.
- We also identify, to a conceptual level
- 14 of design, what kind of mitigation would be
- 15 necessary, what kind of compensation for adverse
- 16 impacts to navigation, to flood-risk management, to
- 17 water quality and water conveyance would be necessary
- 18 with the implementation of any one of these
- 19 alternatives.
- 20 We've also looked at costs. We used
- 21 traditional Corps of Engineers cost estimating
- 22 techniques to come up with the range of costs that
- 23 would be applicable with each alternative. Now, we
- 24 haven't done it to the nth degree that would, for
- 25 example, be used for congressional authorization;

- 1 however, what we have done is done a comprehensive
- 2 job at ensuring that we can look at the costs for
- 3 each one of those on kind of a conservative level and
- 4 be able to use them to compare among the
- 5 alternatives. So we can look and see if one -- one
- 6 -- one particular alternative is X amount of dollars
- 7 and compare that to the cost of another.
- 8 For any single one of these alternatives
- 9 there would be additional work that would be required
- 10 to move on to a construction phase. We -- within our
- 11 expedited timeline, we were able to come up with that
- 12 conceptual level of design and we feel we've done an
- 13 excellent job. We want to present this information
- 14 to help further the conversation to get the ideas out
- 15 there. Hydraulic separation, application of
- 16 different technologies, the -- the implementation of
- 17 nonstructural measures, these all have certain
- 18 trade-offs, certain benefits. So we wanted to get
- 19 this information to all of you, to federal and state
- 20 resource agencies, to the decision-makers out there
- 21 for further analysis and further consideration.
- 22 When we look at how to break down
- 23 GLMRIS, it was a very complex study, but it was
- 24 really three basic steps that we took. We identified
- 25 the connections: What are the interbasin connections

- 1 between Great Lakes and Mississippi River Basin?
- 2 Here we focused on the Chicago Area Waterway System.
- We then looked at: What are the species
- 4 of concern? Colonel Drummond mentioned 13. Well,
- 5 actually we started out with over 200 species we
- 6 looked at, refined that list down to 35 of potential
- 7 concern, which are also listed on our website, and
- 8 performed a risk assessment and looked at, you know,
- 9 quantity -- I'm sorry, qualitatively whether they are
- 10 a high, medium or low risk.
- 11 We also then looked at a range of
- 12 available controls. Colonel Drummond mentioned we
- 13 had over 90 different controls which are identified
- 14 ranging from physical barriers, to application of
- 15 aquatic herbicides, to ideas of like freezing or
- 16 boiling the canal, and we took all of this
- 17 information and really whittled it down to what are
- 18 the most appropriate, most implementable available
- 19 controls that could be implemented with regard to
- 20 these species of concern.
- 21 We took all this information, the
- 22 information about the pathways, about the species and
- 23 about the controls, as well as background
- 24 information, including economic, environmental and
- 25 another data, and put it together to come up with the

- 1 alternatives that we have in the report.
- 2 Before I get into the alternatives
- 3 themselves, I want to talk a little about the
- 4 technologies that we implemented, that we -- that we
- 5 utilized within our report. Some of them you may be
- 6 quite familiar. The concept of a physical barrier, a
- 7 physical solution, whether it's a dam or a sheetpile
- 8 wall or a mound of stones in a waterway to prevent
- 9 the interbasin transfer of untreated surface waters,
- 10 concepts like that are pretty similar -- or pretty
- 11 simple.
- 12 Electric barriers, that's something that
- 13 we've used currently, but in the report we've
- 14 expanded on the idea, come up with additional
- 15 information based on lessons learned and combined
- 16 traditional electric barriers with something like an
- 17 engineered channel where we can construct a
- 18 purpose-built navigation channel at a certain depth
- 19 with certain perhaps inflative properties or
- 20 conductive properties that would help better focus
- 21 and tune the electric barriers within those -- those
- 22 canals.
- 23 We've also come up with more novel ideas
- 24 such as those -- the GLMRIS lock or the aquatic
- 25 nuisance species treatment plant. The GLMRIS lock

- 1 very simply is a flushing lock that would exchange
- 2 water from -- from inside the lock with clean water
- 3 that has been treated by aquatic nuisance species
- 4 treatment plants. And so we use combinations of some
- 5 or all of these controls behind me to recommend a --
- 6 to recommend a variety of different alternatives.
- 7 So I'm going to start with Alternative
- 8 1 -- you can kind of follow along the lower left-hand
- 9 corner down here, I'm on Alternative Plan 1, and in
- 10 your books feel free to flip to Alternative Plan 1,
- 11 and at the conclusion we'll certainly look forward to
- 12 any of your questions about any of these
- 13 alternatives, as well as your comments.
- 14 So Alternative Plan 1 is the baseline
- 15 condition, it's what we call traditionally the no new
- 16 federal action, but as opposed to no new federal
- 17 action, I'd much prefer the sustained activities
- 18 alternative.
- No new federal action implies that
- 20 nothing is being done currently with regard to
- 21 aquatic nuisance species, and that is certainly not
- 22 the case. There is a great amount of work being done
- 23 at the state level, at the federal level at combating
- 24 a range of aquatic nuisance species, as well as the
- 25 work that is being accomplished by the Corps of

- 1 Engineers, specifically with regard to Asian carp,
- 2 construction and operation of existing and new
- 3 barrier systems.
- 4 We also look at the range of other
- 5 activities that is sponsored by the Great Lakes
- 6 Restoration Initiative and other funding mechanisms.
- 7 This baseline alternative serves as a measuring
- 8 stick, a yardstick with which to compare other
- 9 alternatives in the additional risk reduction, the
- 10 additional benefits gained in trying to achieve that
- 11 prevention as compared to what we are currently doing
- 12 today.
- 13 Alternative 2 are nonstructural
- 14 alternatives. So these are any type of alternatives
- 15 that could be implemented, that could be promulgated
- 16 without building a physical structure. Some examples
- 17 are behind me: Active management, ideas like fishing
- 18 down populations of invasive carp or applying aquatic
- 19 herbicides to individual plant species that could be
- 20 isolated and located in certain areas such that we
- 21 prevent the transfer before they even make it to the
- 22 basin divide.
- Other activity such as public education
- 24 or the promulgation of new laws and regulations are
- 25 all good ideas. I would stand here and argue that

- 1 it's an excellent idea to inform the public that
- 2 maybe dumping bait buckets over the side of your boat
- 3 is a bad idea or that cleaning your boat once you
- 4 pull it out of the water before putting it into
- 5 another adjacent waterway is certainly a best
- 6 management practice.
- 7 So since each of these nonstructural
- 8 methods are best management practices, we have
- 9 conveyed them, we have implemented them as elements
- 10 of each of the following alternatives. Now, I won't
- 11 stand here today and tell you that each one of these
- 12 nonstructural measures are going to certainly prevent
- 13 the transfers. In fact, they're most effective at
- 14 delaying transfer of species, specifically aquatic
- 15 plants, fish, et cetera; however, again, as I
- 16 mentioned, they are best management practices, so we
- 17 do include them as elements of each of the following
- 18 alternatives.
- 19 Alternative Number 3 is the first of our
- 20 two strictly technology-based alternatives. I know
- 21 we've got some maps and some figures up here that may
- 22 be a little bit harder to see for those of you in
- 23 back, but these are similar diagrams as to the
- 24 banners which are behind you. So after the
- 25 presentation and the comments today, feel free to

- 1 spend a little more time with them and get to know
- 2 them a little bit better.
- 3 The flow bypass alternative takes the
- 4 technology concept and looks at applying the
- 5 prevention of the transfer of species at a single
- 6 choke point -- in this case, actually, two single
- 7 choke points. So we're trying to stop the
- 8 bidirectional flow of species at a point here and a
- 9 point here. These two points take up the entire --
- 10 I'm sorry, they account for the -- the entire flow of
- 11 the system.
- The concept for the flow bypass, as the
- 13 name suggests, is that we treat the water that's
- 14 coming down this canal through an aquatic nuisance
- 15 species treatment plant. Water would flow, as it
- 16 currently does today, from the Lake Michigan basin
- 17 down through this aquatic nuisance species treatment
- 18 plant, and out.
- Now, the aquatic nuisance species
- 20 treatment plant is not a -- like a traditional
- 21 wastewater treatment plant where you're trying to
- 22 take contaminants out of the water, it is
- 23 specifically addressing species of concern. It's
- 24 based, however, on traditional water purification,
- 25 water treatment practices, and uses a combination of

- 1 screens, filters and UV light to inactivate any
- 2 species that come through the plant or come through
- 3 the system.
- 4 In order to maintain navigation, we
- 5 apply this GLMRIS flushing lock concept, bookended by
- 6 a pair of electric barriers, to allow vessels to
- 7 continue to transfer at each of those points.
- 8 Now, the size of these aquatic nuisance
- 9 species treatment plants are really one of the
- 10 drivers for this entire -- this entire alternative.
- 11 When we have significant precipitation events in the
- 12 Chicagoland area, you're going to see a significant
- 13 increase in the flow of water down the stream such as
- 14 orders of magnitude, such that the treatment plants
- 15 would maybe need to be 20 or 50 times larger than
- 16 they would be on a normal everyday basis.
- 17 Instead of building all that
- 18 infrastructure and having it sit to quite literally
- 19 rust, we instead chose to capture and hold that
- 20 excess precipitation, that excess flood-risk water in
- 21 a series of tunnels and reservoirs that would
- 22 alleviate any sort of flood risk for the existing
- 23 residents of the Chicagoland area.
- Now, the cost associated with this
- 25 particular alternative at an estimated cost of about

- 1 15 and a half billion dollars is very significantly
- 2 associated with those mitigation needs, that need to
- 3 offset a flood risk for the residents of the City of
- 4 Chicago and surrounding suburbs.
- 5 The second of the two technology
- 6 alternatives takes the idea of species prevention,
- 7 instead of having two bidirectional points, so two
- 8 kind of two-way checkpoints, we've taken them and
- 9 split them so that you introduce one-way checkpoints
- 10 along or adjacent to the shores of Lake Michigan and
- 11 a second one-way checkpoints down at the bottom of
- 12 the system, we call this the Brandon Road checkpoint.
- 13 So each of those checkpoints along the
- 14 lake or adjacent to the lake are responsible for
- 15 preventing the one-way transfer of species that
- 16 currently exists in Lake Michigan into the system.
- 17 This Brandon Road checkpoint prevents species
- 18 currently down in the Mississippi River Basin down
- 19 here from moving up into the Chicago Area Waterway
- 20 System.
- 21 So what we've created that's highlighted
- 22 in white along the waterway there is what we call the
- 23 buffer zone, hence where we get the buffer zone
- 24 concept, and the idea is that this buffer zone is an
- 25 aquatic nuisance species controlled zone.

1 Currently we do not believe that there are any aquatic nuisance species of concern within this buffer zone. So if we can maintain these one-way barriers to ensure that none get in there, we can continue to operate the buffer zone area, monitor 5 it to ensure that there's not passage of species, and operate the systems, including water conveyance and 7 flood-risk management, the same way we do today. 8 9 If, for example, we have a significant precipitation event somewhere in the City of Chicago 10 11 or adjacent suburbs and you need to move water in 12 both directions, you still can because the water in 13 that buffer zone does not contain aquatic nuisance species and the water introduced is precipitation. 14 15 So it's just taking rain water, it's not moving 16 aquatic nuisance species or ANS, into either of the 17 basins. 18 Because you don't need as significant of 19 flood-risk management infrastructure -- and we do need some because we choose to put two physical 20 21 barriers at the lower parts of the system, and the 22 reason for that is because the two channels which 23 those physical barriers would block are primarily 24 nonnavigable and aren't highly utilized, they -- we 25 would construct flood-risk management infrastructure

- 1 in the -- including tunnels and reservoirs except at
- 2 a much smaller scale. And so because of that smaller
- 3 scale the time to complete is much shorter, about ten
- 4 years, and the cost is also significantly less.
- 5 I will note something with regard to
- 6 this particular alternative, that there are
- 7 opportunities for early risk reduction. If you are
- 8 interested, for example, in only preventing species
- 9 or controlling species coming from the Mississippi
- 10 River Basin towards the lakes, this is the only
- 11 particular ANS control that you would need to
- 12 implement to control those species.
- Obviously our intent was to prevent
- 14 transfer in either direction, but -- so we have also
- 15 recommended the remainder of these potential control
- 16 points.
- 17 The next alternative, Alternative Plan
- 18 Number 5, is the first of two hydrologic separation
- 19 alternatives. This one is the lakefront hydrologic
- 20 separation because we've placed physical barriers
- 21 along or adjacent to the lakefront along Lake
- 22 Michigan.
- There would be significant flood risk
- 24 associated with the construction of these physical
- 25 barriers because we are no longer allowed to move

- 1 water in both directions during significant
- 2 precipitation events. So having physical barriers at
- 3 these points doesn't allow water to come out;
- 4 otherwise, you will be kind of undoing the whole
- 5 purpose of the physical barrier, which is preventing
- 6 surface water from mixing. So we again have to
- 7 capture and store until we can obviously
- 8 appropriately continue to discharge the significant
- 9 precipitation events, which again leads to
- 10 significant costs.
- 11 So with regard to lakefront separations,
- 12 the large cost of mitigation is specifically for
- 13 flood-risk management. So the team analyzed this and
- 14 thought: "Where could we put barriers that will
- 15 alleviate the significant risk management costs?"
- We've seen it in the flow bypass, now we
- 17 see it here again with the lakefront. So we came up
- 18 with the idea of the mid-system hydrologic
- 19 separation. The mid-system hydrologic separation
- 20 places barriers at points in the middle of the system
- 21 where approximately the hydrologic divide used to be
- 22 back in the, you know, mid to late 1800s.
- Now, Chicago is a very flat region, so
- 24 there wasn't, by any means, any type of a mountainous
- 25 or continental divide, it's a very flat and marshy

- 1 system, but this is approximately where we had that
- 2 high point.
- Now, in this case, we've very
- 4 successfully been able to alleviate any kind of flood
- 5 risk impacts. The necessary reservoirs and tunnels
- 6 would be very small in comparison to the other
- 7 alternatives; however, the mitigation for this is
- 8 because now all of a sudden we've opened up a large
- 9 portion of the Chicago River and existing
- 10 infrastructure such as water reclamation plant
- 11 outfalls, combined sewer outfalls and existing
- 12 contaminated sediments directly to Lake Michigan.
- 13 So everything that is to the lakeside of
- 14 this barrier or this barrier down here would need to
- 15 be mitigated for appropriately. What we've chosen to
- 16 do in this particular scenario is to reroute the
- 17 effluent discharge from water reclamation plants to
- 18 points downstream of the barriers. That's what those
- 19 green tunnels -- the green line indicate is cap -- is
- 20 essentially rerouting water reclamation plant
- 21 discharges to points downstream of the barrier.
- We did that for two reasons: Number
- 23 one, we could potentially clean them up to an extreme
- 24 level, make the water so clean that we could put it
- 25 back into Lake Michigan. Well, the total cost of

- 1 doing that and the annual operation and maintenance
- 2 costs of doing that would be very significant.
- 3 Number two, you'd be taking a
- 4 significant flow of water on the order of 600, 700
- 5 million gallons per day and removing it from the
- 6 Illinois Waterway System and the Mississippi River
- 7 System. As one of the Corps' missions is navigation,
- 8 removing a significant percentage of that water,
- 9 approximately 40 percent of the total water that
- 10 comes downstream, would have a significant impact on
- 11 navigation.
- Now, some of you may say, "Well, why
- 13 don't you just clean it up like the rest of the" --
- 14 "the Great Lakes discharges do, cities like Milwaukee
- 15 or Detroit, clean it up to that level, because
- 16 Chicago's been very dirty in the past?"
- Well, in the past perhaps that's the
- 18 case, but today -- and with the -- the new impending
- 19 advances on water reclamation plant discharges that
- 20 are anticipated within this timeline, we would still
- 21 have a significant load of pollutants to Lake
- 22 Michigan. Even cleaning to the same levels as other
- 23 cities that discharge to the Great Lakes would add a
- 24 significant load, a total amount of contaminants that
- 25 currently does not go anywhere near Lake Michigan.

- 1 And so that's kind of why we decided to instead
- 2 reroute that is to protect that significant natural
- 3 resource.
- 4 We also include elements of sediment
- 5 remediation and capture and conveyance of combined
- 6 sewer outfalls for this particular alternative to
- 7 mitigate for those adverse impacts to Lake Michigan,
- 8 the significant natural resource. Hence we have the
- 9 timeline of about 25 years and cost of about \$15.5
- 10 billion.
- 11 The last two alternatives are basically
- 12 combinations of physical separation and technologies.
- 13 You may have kind of caught on to it over the past
- 14 couple slides, but you can really break up the
- 15 Chicago Area Waterway System into a upper part and
- 16 lower part depending on where you put a barrier.
- So as the name suggests, this particular
- 18 hybrid puts a physical barrier on the Chicago
- 19 Sanitary and Ship Canal and leaves the Cal-Sag
- 20 Channel open. The next hybrid alternative we put the
- 21 physical barrier on the Cal-Sag Channel while leaving
- 22 the Chicago Sanitary and Ship Canal open.
- So you're basically switching out and
- 24 applying a barrier on one of the systems to try and
- 25 buy down as much risk as possible, while leaving the

- 1 other one open to existing uses like navigation, like
- 2 water conveyance and like flood-risk management.
- 3 I'll go back for a second to the
- 4 previous Cal-Sag open, and you will see that the cost
- 5 there is approximately \$15.1 billion while the cost
- 6 of the CSSC open one is about half that, and that's
- 7 primarily because of that need for mitigation.
- 8 I mentioned at the outset that the kind
- 9 of the beauty of the report is that it provides
- 10 information for decision-makers -- decision-makers
- 11 like elected officials, like federal and state
- 12 resource agencies, like members of the public just as
- 13 yourselves, and really what we've done is try and
- 14 capture this information and discuss it in sufficient
- 15 detail for each one of these alternatives so that the
- 16 conversation can continue so we can look at: What
- 17 are the tradeoffs, what are the benefits of any one
- 18 of these alternatives compared to what are the costs,
- 19 and we understand that costs will be perceived
- 20 different depending where your interests lie. So we
- 21 present evaluation criteria and summarize it in
- 22 tables within the report to help facilitate that
- 23 decision-making.
- 24 Before I conclude today, there are a
- 25 couple of things I want to make sure that everyone

- 1 kind -- we have a mutual understanding of. You
- 2 probably have gathered it from my description of the
- 3 different alternatives, but mitigation, making up for
- 4 those adverse impacts through existing uses like
- 5 flood-risk management, like water quality, are the
- 6 significant costs and significant drivers for the
- 7 timeline and the resources that are necessary to
- 8 implement any one of these alternatives.
- 9 I'm not going to stand here today and
- 10 tell you it's going to take me or our organization 25
- 11 years to build a dam in the channel. What I will say
- 12 is that it will take approximately that time and
- 13 approximately that cost to ensure that we don't have
- 14 adverse impacts to the residents of the Chicagoland
- 15 area and induced flooding or have adverse impacts to
- 16 our significant natural resources in the Great Lakes.
- 17 No matter what, with any one of these
- 18 alternatives there will be residual risks, there will
- 19 be risks of aquatic nuisance species transferring
- 20 between the basins outside the aquatic pathway. Our
- 21 focus in this report and our focus in all of these
- 22 efforts is specifically on the aquatic pathway.
- 23 There are ways -- human-mediated transport, I
- 24 mentioned bait buckets, avian transport, animal,
- 25 birds, et cetera, transporting species inadvertently

- 1 between the basins which will still exist.
- 2 There's also the very real expectation
- 3 or probability that it may take too long to construct
- 4 one of these before one of the species of concern
- 5 moves between the basins. So that's why we want to
- 6 look at a -- kind of a combined what kind of interim
- 7 steps can taken -- what kind of nonstructural
- 8 measures and what kind of interim steps can be taken
- 9 to mitigate that risk if we want to go toward a
- 10 long-term goal of total separation between the
- 11 basins. It's part of why we had this conversation.
- 12 With regard to any of the alternatives
- 13 within the report, we do look at adaptive management.
- 14 I mentioned the one alternative where you could
- 15 achieve risk reduction sooner if you're looking at
- 16 just prevention or trying to control species from one
- 17 basin just in one direction such as from the
- 18 Mississippi River Basin up to the Great Lakes.
- 19 If I leave you with nothing else
- 20 tonight, I'd like to impart the understanding that
- 21 aquatic nuisance species control is a shared
- 22 responsibility. I believe the Corps of Engineers has
- 23 done an excellent job in providing information for
- 24 decision-makers, but any single one of these
- 25 alternatives, whether it's nonstructural measures or

- 1 a full physical separation, will require significant
- 2 resources and significant investments and significant
- 3 consensus among a variety of different stakeholders,
- 4 including yourselves.
- 5 So your continued engagement in this is
- 6 very important. This is why we're doing these public
- 7 meetings. We're hosting these at several different
- 8 cities around the region. Today I believe we've
- 9 announced we're actually adding two additional
- 10 meetings. We're going to be adding an additional
- 11 meeting in Erie, Pennsylvania, to kind of further --
- 12 go a little bit further east to ensure that we have
- 13 as many stakeholders from the New York and
- 14 Pennsylvania area as we can, as well as go all the
- 15 way down to New Orleans to ensure that we -- we hear
- 16 the voice of our navigation stakeholders who've asked
- 17 us to come down to -- to that region.
- 18 Your engagement, your input through the
- 19 website, through your comments today are very
- 20 important to us and so we look forward to hearing
- 21 your comments.
- 22 By all means, please stay in touch with
- 23 GLMRIS. If you have any questions that you think of
- 24 after today that we're not able to answer perhaps,
- 25 feel free to e-mail us, follow us on Facebook and

- 1 Twitter to stay involved on the latest breaking news
- 2 and happenings with regard to the study.
- 3 Thank you so much for you time and we
- 4 look forward to opening up the public comment period.
- 5 MR. ZABOROWSKI: Thanks, gentlemen.
- Before beginning the oral comment
- 7 period, I'd just like to reiterate that the GLMRIS
- 8 report in its entirety can be viewed and downloaded
- 9 on the GLMRIS website and you can see the address up
- 10 here.
- 11 So now we're going to move into the oral
- 12 comment period of tonight's meeting. So those who
- 13 indicated on-line or through the yellow comment
- 14 registration form today that they'd like to make a
- 15 three-minute statement or ask a question will now
- 16 have the opportunity to do so.
- 17 So if a person wants to ask a question,
- 18 we request that you manage your three minutes to
- 19 allow for your question, any comments, and then the
- 20 Corps of Engineers or panel response. So the Corps
- 21 of Engineers is going to answer whichever -- the
- 22 questions that they are able to today.
- So, as you can see, many people have
- 24 joined us tonight, and to be respectful of each
- 25 other's time and to give everybody the opportunity to

© 2014

- 1 speak, we're going to ask you to keep to that
- 2 three-minute timeline.
- 3 So after everyone has had an opportunity
- 4 to address the panel and if time permits, those who
- 5 have additional comments or questions will be given
- 6 the opportunity to speak again. We'll open it up for
- 7 second comments.
- 8 So -- and if time does not allow, please
- 9 note that you could enter your remaining comments on
- 10 the GLMRIS website, mail them to the Corps of
- 11 Engineers, or write them on those yellow forms and
- 12 hand them in today. I'd like to state that, you
- 13 know, we're not weighting comments given to us in one
- 14 form over another. So if you don't get a chance to
- 15 speak today, that doesn't mean your comment won't be
- 16 held as -- equally as comments sent in on the
- 17 website.
- So I've got a visual set of slides
- 19 that's going to help manage our time here tonight
- 20 during this oral comment period. So, as you can see,
- 21 we're going to start out with a green slide when you
- 22 come up to speak, and then after two minutes it's
- 23 going to change to a yellow slide, and then every 15
- 24 seconds after that it's going to update you on your
- 25 time that you have remaining. And then when it gets

- 1 to the 30 seconds, I'm going to remind you that you
- 2 have 30 seconds left, and then when it gets -- when
- 3 it turns red, I'm going to ask you that, you know,
- 4 you should guit your statement.
- 5 So I mentioned earlier that we have a
- 6 stenographer with us tonight, she's going to be
- 7 reporting your comments so that we make sure that we
- 8 capture everything as best as we can. So we have two
- 9 microphones here, one on either side of the aisles,
- 10 come to whichever one's convenient to you when I call
- 11 your name.
- 12 When you come to the microphone, though,
- 13 I ask that you first give your name, any organization
- 14 that you might represent, and then speak your ZIP
- 15 code. So when you come to the microphone, please say
- 16 those things slowly. If you do not give your name
- 17 and ZIP code, we won't be able to formally record
- 18 your comment in our comment period, so I just want to
- 19 let you know that. After you give your name and ZIP
- 20 code, that's when I'm going to start the timer, so to
- 21 speak.
- So first we're going to hear from those
- 23 that preregistered on the project website and those
- 24 that indicated on the their registration form that
- 25 they wanted to make an oral comment. So for those of

© 2014

- 1 you that preregistered on the website, you should
- 2 have been given a blue index card, I'll call those
- 3 names in order and ask you to kind of queue up, and
- 4 those who registered to speak today, you should have
- 5 been given a yellow index card. And after hearing
- 6 the presentation, if you decided that you wanted to
- 7 make a comment and haven't signed up, you can go back
- 8 out to the welcome table and we'll get your
- 9 information and make sure that we accurately record
- 10 who are you.
- 11 So I apologize in advance if I
- 12 mispronounce any of your names, that's one of the
- 13 reasons that we ask you to give them when you come up
- 14 here. So at this time --
- 15 MALE SPEAKER: (Inaudible) get a yellow
- 16 card, are we supposed to go out and get one or --
- 17 MR. ZABOROWSKI: Yes, if you -- if you
- 18 haven't done that.
- 19 MALE SPEAKER: Well, I've registered,
- 20 they didn't give me a card.
- 21 MR. ZABOROWSKI: They didn't give you a
- 22 card or they didn't -- well, let's -- if -- I'll call
- 23 your name, and if that didn't happen, we'll just ask
- 24 for you to come up to the microphone, give your name
- 25 and ZIP code, and we'll -- we'll record it that way.

44 1 All right. So at this point in time the Attorney General for Ohio, Mr. Mike DeWine, indicated that he'd like to make a comment. So same rules apply, sir, if you would 4 give your name. 5 6 ATTORNEY GENERAL DeWINE: My name is Mike DeWine, I'm the Attorney General of the State of 7 Ohio. I want to thank the Army Corps for coming here, we appreciate them allowing me to speak even 10 though I'm one of the attorney generals (inaudible) I 11 can sue you all over this issue, but we love having 12 you here. 13 As I look around this -- first, let me say I have a written statement which I'll just make 14 15 part of the record and save time. 16 MR. ZABOROWSKI: Okay. Thank you. 17 ATTORNEY GENERAL DeWINE: As I look 18 around this room, I see many people who have been 19 involved in our battle to preserve Lake Erie and the 20 Great Lakes. 21 When I was in the United States Senate, 22 we put together a bipartisan group and -- of all the 23 Great Lakes states and, I think, really made a lot of 24 great progress.

I think we've come a long, long way, but

- 1 I just want to be -- if I can, I come to this meeting
- 2 with a great deal of frustration. I went back and
- 3 looked at some of the statements I made in the
- 4 Senate. Back in -- in 2005, 2006 we were warning
- 5 about the Asian carp and the other problems. While
- 6 some things have been done, quite frankly, I don't
- 7 think there's been a sense of urgency, and what I
- 8 hope, after this very comprehensive study that has
- 9 been done, is that you and all decision-makers in --
- 10 in this regard develop a real sense of urgency,
- 11 because I will tell you as I travel around Ohio,
- 12 people really get, they understand the importance of
- 13 the Great Lakes.
- 14 Sometimes we think it's only the
- 15 fishermen, it's only the people that come to Lake
- 16 Erie every year from all over Ohio, all over the
- 17 country to fish, or people like to boat, but it's
- 18 amazing to me how the average person who doesn't do
- 19 either one of those really understands the importance
- 20 of -- of the Great Lakes.
- So my one message is urgency. Some of
- 22 us feel, as we looked at the different alternatives,
- 23 that nothing, frankly, is going to work other than a
- 24 complete separation. Whether that is what you end up
- 25 and whether the decision-makers make that decision,

© 2014

46 we will -- we will see, but whatever you do, we hope 2 you move very, very quickly. People of this state really do 3 understand the economic importance. We do not want to be in a position where we no longer have sport 5 fishing in the Great Lakes, fishing really of any 6 kind, and that may sound like a -- a horrible 7 scenario, but we've seen this Asian carp progress and progress, we don't believe, quite frankly, most 10 people I talked to, that the current methods are 11 going to do it or are doing it and we need something 12 done. 13 So please, after you get through these 14 hearings -- we appreciate you doing the hearings --15 please move forward, give us a specific alternative, 16 and then let's move and we all get behind an 17 alternative. Thank you very much. 18 MR. ZABOROWSKI: Thank you, sir. 19 actually, can I get a ZIP code for the formal record? 20 ATTORNEY GENERAL DeWINE: I have a 21 written statement, so I'm going to hand you it. 22 MR. ZABOROWSKI: Not too painful, right? 23 Okay. So next -- is Congresswoman Marcy 24 Kaptur here yet? 25 No? Okay.

```
47
 1
                So next on those that preregistered, I
   believe Mr. Bill Ginn and John Stark indicated that
    they'd like to make a joint statement. After them I
   have Kristy Meyer and then Walter Dean Dabson after
 5
    that -- after that -- after that.
 6
                So, gentlemen, again, when you come, can
    you please identify yourselves, an organization and
 7
    then ZIP code, and then we'll start your time.
 9
                MR. GINN: I'm Bill Ginn, and ZIP code
10
    is 44026.
11
                MR. STARK: And I'm John Stark, and my
    ZIP code is 43017, and I represent -- well, we
12
13
    represent The Nature Conservancy in Ohio.
14
                MR. ZABOROWSKI:
                                 Thank you.
15
                Please begin.
                              Sorry.
16
                MR. GINN: Start?
17
                MR. ZABOROWSKI: Yes.
18
                MR. GINN: As I indicated, my name is
19
   Bill Ginn and I'm a lawyer by trade, although long
20
    retired, and in my 50 years of practice -- plus years
21
    of practice I represented largely construction
22
    companies, engineering companies, architects in their
23
   multiple problems of building infrastructure and
24
    dealing with all the issues that -- that were
25
   presented.
```

48 1 I appeared at the beginning of this session back about three years ago when our --Mr. Goss came to Cleveland, and I didn't register, I didn't know it was happening until that day, and I asked to speak at the end and they very kindly let me 5 do that. 6 I was there because I was struck as a citizen that this monstrous threat of the Asian carp needed to be addressed effectively and soon, and today I'm privileged to address that issue on behalf 10 11 of The Nature Conservancy. 12 Our statement, which we will file as a 13 part of the record, details adequately The Nature 14 Conservancy: A worldwide, nonpartisan, 15 science-oriented organization with a mission of 16 preserving the lands and waters on which all life 17 depends. 18 Now, first we are pleased that the 19 report itself is comprehensive in its scope. 20 The Nature Conservancy are all in favor of a solution 21 that addresses all invasive species in the two 22 watersheds and considers it as a two-way street 23 rather than just as a one-way issue. But since a

unfortunately, at this time in dealing with Asian

good chunk of my 90 years has been spent,

24

```
1 carp, that's the focus of my remarks. None of us
```

- 2 would be here today if it wasn't for the Asian carp.
- 3 Also, you rightly dealt with the
- 4 multiple stakeholders that are affected by what we
- 5 do. Any comprehensive solution has to respect and
- 6 deal with the interest of those stakevoters, it's
- 7 part of your report to do that, and we commend you
- 8 for that.
- 9 MR. ZABOROWSKI: Thirty seconds.
- 10 MR. GINN: Specifically there are
- 11 certain fundamentals we believe must be sorted out.
- 12 First is that hydrological separation is for us the
- 13 only sensible effective goal in thwarting the
- 14 invasive species that we know as the Asian carp. We
- 15 can't allow that to happen, particularly, we in Lake
- 16 Erie where it's warm sometimes and most vulnerable
- 17 habitat suitable for Asian carp and we have the most
- 18 here on Lake Erie to lose.
- 19 But you've pointed that out at least in
- 20 the form --
- 21 MR. ZABOROWSKI: Sir, if I could ask you
- 22 to conclude you statements, please.
- 23 MR. GINN: -- in the form of two options
- 24 to achieve the goal, and we -- we -- which we
- 25 appreciate the price tags that you've put on it. If

- 1 that happens to be the investment that we have to
- 2 make, that investment is well worth it, because the
- 3 price of failure is simply too great for any of us to
- 4 bear in Lake Erie and on the Great Lakes.
- 5 MR. ZABOROWSKI: Thank you, sir.
- 6 COLONEL DRUMMOND: Kendall, just start
- 7 the time clock over.
- 8 MR. ZABOROWSKI: Okay. So, yeah,
- 9 Mr. Stark, if you could just again state your name,
- 10 ZIP code and organization.
- 11 MR. STARK: My name is John Stark, I
- 12 represent The Nature Conservancy in Ohio, I'm the
- 13 freshwater conservation director here with them, and
- 14 ZIP code is 43017.
- MR. ZABOROWSKI: Thank you.
- MR. STARK: I also have a written
- 17 statement I'll hand you at the end of this.
- MR. ZABOROWSKI: Thank you.
- 19 MR. STARK: (Inaudible) getting some
- 20 kind of feedback.
- 21 As we have talked about, it's in the
- 22 national interest to invest the needed resources at
- 23 key locations and in the most effective manner to
- 24 prevent the introduction and spread of Asian carp and
- 25 more than a dozen other highly damaging aquatic

- 1 invasive species that would otherwise be able to
- 2 travel across these massive freshwater systems
- 3 spanning 32 states and 2 provinces.
- 4 So I'm going to summarize very quickly,
- 5 given the lack of time that we have. Some of the
- 6 things that we need to think about with GLMRIS is the
- 7 cost of doing nothing is not zero, but it's rather
- 8 snowballing losses and ecological destruction.
- 9 Unchecked these invaders will spread and impose
- 10 economic and recreational losses that would mount up
- 11 year after year.
- 12 It has cost businesses and consumers in
- 13 the Great Lakes region hundreds of millions of
- 14 dollars annually in direct costs and even more from
- 15 indirect costs related to the removal, maintenance
- 16 and management of these species.
- 17 The sport and commercial fisheries which
- 18 could be devastated by Asian carp and other invasives
- 19 is valued at over \$7 billion each year. In this
- 20 context, the cost of the containment through
- 21 ecological separation are imperative to prevent
- 22 greater damage.
- The Chicago Area Waterway System is a
- 24 two-way highway for AIS. The study limits its
- 25 assessment to 13 species of current concern, but it

- 1 is possible in the future that we'll have other AIS
- 2 species that make their way here as well.
- 3 Stopping AIS moving in both directions
- 4 is about protecting two of the world's largest and
- 5 most important fresh water resources. Any solution
- 6 to the passage of AIS through CAWS must: A, stop AIS
- 7 from moving through CAWS in both directions; B, stop
- 8 all invasives, not only Asian carp; C, must have the
- 9 highest reliability of containment over the long
- 10 term, e.g., lowest risk of mechanical, electrical or
- 11 structural failure, and, D, must be implemented in a
- 12 timely manner and in concert with effective interim
- 13 measures to be able to reduce the risk of AIS moving
- 14 through CAWS.
- 15 The GLMRIS study demonstrates that there
- 16 are viable long-term options that would achieve
- 17 effective separation in both watersheds. In the near
- 18 term, utilizing the combination of structural and
- 19 nonstructural methods involved -- identified in the
- 20 report would provide a measure of interim control.
- 21 It is clear that there are workable alternatives to
- 22 two-way control within the report that maintain
- 23 essential local transportation and economic activity.
- 24 MR. ZABOROWSKI: Thirty seconds.
- 25 MR. STARK: Stakeholder involvement and

- 1 buy-in from a large region of the country will be
- 2 essential to reaching the best solution. Thank you.
- 3 MR. ZABOROWSKI: Thank you, Mr. Stark.
- Now we have Ms. Kristy Meyer.
- 5 So I apologize, we're having some
- 6 feedback problems with some of our microphones.
- 7 MS. MEYER: I noticed that
- 8 Representative Kaptur is here, so maybe she wants to
- 9 go before me.
- 10 CONGRESSWOMAN KAPTUR: You go right
- 11 ahead (inaudible).
- MS. MEYER: Okay. I can talk loud, I'm
- 13 a loud talker. They actually put me in my own
- 14 office.
- 15 MR. ZABOROWSKI: I think (inaudible) was
- 16 trying to hold you back.
- 17 MS. MEYER: My name is Kristy Meyer and
- 18 I'm the managing director of agricultural, health and
- 19 clean water programs at the Ohio Environmental
- 20 Council and we're based out of 43212.
- 21 The Ohio Environmental Council's mission
- 22 is to secure healthy air, land and water for all who
- 23 call Ohio home, and on behalf of the OEC, I'd like to
- 24 thank you for holding this meeting tonight. I'd also
- 25 like to thank everybody that's here.

1 I think it's pretty indicative, as we have heard from Attorney General and also TNC about how important Lake Erie is to Ohio and how important the Great Lakes are to this region, and if the Great Lakes were its own country, it would be the fourth 5 6 largest GDP in the world. 7 In fact, Lake Erie is vitally important to Ohio, not just to the people that reside in Lake Erie, but to the whole state. Tourism is a \$40 9 billion industry in Ohio and nearly a third of that 10 11 comes from seven of the counties along the lake. 12 -- it supplies 1.5 billion in federal, state and 13 local taxes and supports more than 17,000 jobs in 14 Ohio. 15 And as Dave talked about earlier, you 16 know, the legislation that directed this study also 17 directed you guys, as you -- as you pointed out, to 18 prevent aquatic invasive species from getting in 19 either watershed, and the only way that that will 20 happen is if we restore the natural divide. And we need -- as Attorney General 21 22 DeWine said, we need to move quickly. We need to 23 start with interim steps and put those interim steps 24 into action, and then that will lead to alternately 25 hydrological separation, at the same time we need to

© 2014

- 1 -- need to employ those technologies and other
- 2 measures to keep those invasive species at bay.
- 3 You know, I agree with John. It's
- 4 funny, I -- I'm sure you will hear a lot of the same
- 5 comments, but \$18 billion seems to be a sticker shock
- 6 for everybody, but it's over a very long time, as
- 7 well, the cost of not doing something far exceeds the
- 8 cost of -- you know, of actually restoring the -- the
- 9 divide.
- I will be submitting more detailed
- 11 written comments, but I -- I don't have them with me
- 12 tonight. I do -- since I have a moment, would like
- 13 to thank ODNR for the work that they're doing to
- 14 sever those pathways in Ohio and really appreciate
- 15 all that work, but thank you and that's all.
- MR. ZABOROWSKI: Thank you very much.
- Mr. Dabson, actually, if you wouldn't
- 18 mind. Congresswoman, would you like to make your
- 19 statement at this point in time?
- 20 CONGRESSWOMAN KAPTUR: I -- let the
- 21 people who have been waiting testify. That's okay.
- 22 Thank you very much.
- 23 MR. ZABOROWSKI: Okay. All right. So,
- 24 Mr. Dabson, name, ZIP code, three minutes.
- MR. DABSON: Right.

```
56
 1
                Dean Dabson, Mentor, Ohio, Lake County,
    ZIP code 44 --
 3
                COLONEL DRUMMOND:
                                   Dave, could you move
   up a little closer, please?
 5
                MR. DABSON:
                             Sorry.
 6
                Dean Dabson, Mentor, Ohio, Lake County,
 7
    volunteering as a consultant on -- on carp issues in
    collaboration with West Michigan Strategic Alliance,
    ZIP code is 44060. In addition, I collaborated for
    nine years on a film that was viewed in Toronto and
10
11
    part of it's on environmental issues.
12
                The reason I got involved in this in the
13
    first place, I've been in the Coast Guard Auxiliary
14
    for over 25 years out of Fairport Harbor and have a
15
    love of the lake and also the fishing and the -- the
16
    local restaurants that deal in perch and walleye.
17
                So, basically, what we're looking at is
18
    we don't exist in a vacuum. There's a lot of special
19
    interests that tie -- you know, tie up these efforts
20
    and influence these efforts. So what I -- I did
21
    originally was -- I actually was asked by Steven
22
    LaTourette's chief of staff to come up with some
23
    ideas on -- you know, try to find out where in the
24
   world that actually we had some invasive species
25
    control that was actually working.
```

1 So I looked at Canada, the Trent-Severn Waterway System, and they have been able to, excuse me, keep the lamprey eel out of the Trent-Severn for 3 over a hundred years by employing a marine rail Now they have a natural barrier there, and 5 rather than put in a traditional lock, they maintain a marine rail system. 7 Now, the problem -- the problem with --8 with marine rail is it may not handle the type of barge configuration that we have on the CSSC. 10 11 you want to look at my comments on lift systems --12 marine lift systems -- and it's a bypass so you can 13 maintain the barge traffic at the current level and up to speed, you can look at my report or my comments 14 15 on GLMRIS RPT 552. 16 Okay. And what that basically is, is that to handle this one tug nine-barge configuration 17 18 on -- on the CSSC, you build a marine lift adjacent 19 to and open simultaneously with the permanent closing 20 of the traditional lock -- style lock at Lockport 21 which would keep the barges flowing. 22 The closed lock would form the 23 separation in the waters and the lift system loaded 24 with barges, with caissons, stern gate open upon 25 ascending, water rushes out and this would discharge

```
58
    the carp back into the waters immediately below the
    lift.
 2
                The results would be --
 3
                MR. ZABOROWSKI: Thirty seconds,
   Mr. Dabson.
 5
                             Okay. The results would be
 6
                MR. DABSON:
 7
    instantaneously visibly and verifiable, and any
    remaining carp, invasives on the lift could be
 8
    flushed or blasted off using water cannons.
10
                So this is -- this has worked for the
11
    lamprey eel on -- where it's -- you know, this
12
    history of the lamprey eel in the Great Lakes,
13
    they've used electric barriers, they've used
14
    chemicals to try to, you know, take care of the
15
    lamprey and -- and that hasn't worked.
16
                So I recommend that you contact your
    congressman and don't accept the argument that, you
17
18
    know, we'll just close it down, because the Supreme
19
    Court says you can't close it down.
20
                MR. ZABOROWSKI: If you can conclude
21
    (inaudible) please.
22
                MR. DABSON: That will never happen.
23
                Okay. So thank you very much.
24
                MR. ZABOROWSKI: Thank you, Mr. Dabson.
25
                So next in line we have Joy Mulinex and
```

- 1 Kathryn Hanratty and George Goudreau. So if Joy
- 2 Mulinex can make your way and then the next people
- 3 are on deck.
- 4 MS. MULINEX: All right. My name is Joy
- 5 Mulinex and my ZIP code is 44060. My family and I
- 6 live outside of Cleveland in Lake County and I work
- 7 for Western Reserve Land Conservancy. I serve on the
- 8 board of the Alliance for the Great Lakes and the
- 9 board of the Cleveland Water Alliance, and I'm a
- 10 member of EPA's Great Lakes Advisory Board. I've
- 11 worked on Great Lakes policy for about 15 years and
- 12 the health of the Great Lakes is very important to
- 13 me.
- I'm here today to put a human face on
- 15 this issue. You've heard a lot about the economic
- 16 value of Lake Erie to Ohio, but my family and I spend
- 17 a lot of our time in the summer on the beach here,
- 18 and my six-year-old daughter and my three-other-old
- 19 son swim and fish, and I want to make sure that the
- 20 opportunities that are afforded to me and them right
- 21 now remain throughout their lives.
- 22 Preventing Asian carp and other invasive
- 23 species from invading the Great Lakes is critically
- 24 important. These species disrupt the food chain and
- 25 compete with our native fisheries. The Great Lakes

- 1 has been ground zero for invasive species for far too
- 2 long and I also stress the sense of urgency to do
- 3 something now.
- 4 We've known about Asian carp for quite a
- 5 while. The GLMRIS was authorized back in 2007. So,
- 6 again, I'd like to reiterate the need for urgency.
- 7 If you look at the history of Asian carp
- 8 in the Mississippi River, they're making up over 90
- 9 percent of the biomass there. So I'm very concerned
- 10 that if they invade the Great Lakes and become
- 11 established then they will most definitely
- 12 dramatically change our fishing opportunities here.
- 13 And I certainly appreciate the efforts
- 14 of the Corps and everyone in the federal agencies and
- 15 the state agencies who have worked so hard to slow
- 16 the progression of Asian carp; however, the only real
- 17 solution is physical separation. Current efforts
- 18 have certainly slowed the Asian carp, but the Corps'
- 19 own research shows that these are simply Band-Aid
- 20 solutions.
- I also hope that Congress is able to
- 22 understand the urgency and is able to work with the
- 23 administration in finding the necessary funding to
- 24 move forward with a solution. I'm encouraged to hear
- 25 there may be some steps that can be taken in the near

61 term to continue to slow the progression. I believe that our \$11 billion tourism industry, as well as the opportunities for my --3 MR. ZABOROWSKI: 4 Thirty seconds. 5 MS. MULINEX: -- six year old and three year old are worth it. Thank you. 7 Thank you, ma'am. MR. ZABOROWSKI: So next we'll hear from Ms. Kathryn 8 9 Hanratty, and I apologize, Mr. Goudreau, I think, if you don't mind, we're going to ask Congressman Kaptur 10 11 to come up after her. So --12 MS. HANRATTY: Hi. My name is Kathryn Hanratty, I'm from Chardon, Ohio, my ZIP code is 13 44024. I'm offering my comments today as a lifelong 14 15 resident of the Lake Erie watershed, and I thank you 16 very much for this opportunity to speak to you. 17 The Great Lakes, and Lake Erie in 18 particular, have been an important part of my life 19 for as long as I can remember. I grew up on the 20 lakeshore swimming and hiking along the beaches. I'm 21 one of the thousands of people who boat and sail on 22 Lake Erie and also canoe and kayak on the rivers that 23 flow into the lake. 24 I love the lake. I'm proud that once in

my lifetime we were able to bring the lake back from

- 1 near destruction, now our lake is at risk again and
- 2 we must not wait until the brink of destruction this
- 3 time before we take the action to save the lake.
- 4 We have a very short window of
- 5 opportunity to address the threat of Asian carp. As
- 6 the most biologically productive of the Great Lakes,
- 7 Lake Erie is at the greatest risk of biological
- 8 collapse due to these invasive species.
- 9 Asian carp can and will dominate our
- 10 lakes and rivers if they're allowed to become
- 11 established, and as few as ten reproducing
- 12 individuals can establish a breeding population.
- 13 Each female can produce up to a million eggs, and
- 14 they grow so fast that our native predators can't
- 15 keep them in check.
- 16 If established, they will outcompete
- 17 native fish for food and habitat. In some places
- 18 where they have already invaded, they comprise more
- 19 than 95 percent of the biomass.
- 20 A healthy diversity of species is vital
- 21 to a functioning ecosystem. Each native species that
- 22 we lose makes our ecosystem poorer and less
- 23 resilient. Fast action is needed to keep this
- 24 invasive species from taking hold.
- The current system of defense against

- 1 this onslaught is inadequate. Recent studies show
- 2 that small fish are able to pass through the electric
- 3 barriers, and the Corps' own shows -- study shows
- 4 that physical separation is the most effective
- 5 solution.
- I believe that we must restore the
- 7 natural divide and physically separate Great Lakes
- 8 watershed from the Mississippi River watershed. Our
- 9 lakes are just too important to be risked on anything
- 10 less than the most effective solution.
- 11 Yes, it will be expensive to separate
- 12 the watersheds and restore the natural divide, but
- 13 doing nothing or doing this wrong will ultimately
- 14 cost much, much more. In places where these fish
- 15 have taken over, it is costing government, businesses
- 16 and taxpayers hundreds of million dollars in revenue,
- 17 direct and indirect costs every year. We -- the
- 18 longer we wait the worse this problem --
- MR. ZABOROWSKI: Thirty seconds.
- 20 MS. HANRATTY: -- problem will become.
- 21 The potential for economic damage caused by this fish
- 22 warrants the cost of implementing the proper
- 23 solution, I ask you to act quickly to implement a
- 24 solution and restore the natural divide, please act
- 25 now. Thank you very much for your attention.

```
64
 1
                MR. ZABOROWSKI: Thank you, Ms.
 2
   Hanratty.
                I'd like to remind any of you that may
 3
   have prepared a written comment, if you wouldn't
   mind, you know, leaving it with us tonight. I mean,
 5
    we can ensure that we -- we captured everything that
    you wanted to say tonight if you feel that you didn't
    get that done. You can leave it at our welcome desk
    or drop it off with me and we'll make sure we get it
    turned in.
10
                So at this point, Congresswoman.
11
12
                CONGRESSWOMAN KAPTUR: Thank you.
    afternoon, thank you for bringing this hearing to
13
14
    Cleveland and for all the citizens who have come here
    on the shores of the most productive fishery in our
15
16
    entire Great Lakes.
17
                The health of Lake Erie is absolutely --
18
                MR. ZABOROWSKI: Sorry to interrupt,
19
   ma'am. Can I please get you name --
20
                CONGRESSWOMAN KAPTUR: ZIP code?
21
                MR. ZABOROWSKI: -- and ZIP code?
22
                CONGRESSWOMAN KAPTUR:
23
    Congresswoman Marcy Kaptur.
24
                MR. ZABOROWSKI:
                                 Thank you.
25
                CONGRESSWOMAN KAPTUR: -- K-a-p-t-u-r,
```

65 and I suppose you could use 22315 (inaudible). 2 MR. ZABOROWSKI: Thank you, ma'am. CONGRESSWOMAN KAPTUR: The health of 3 Lake Erie is absolutely pivotal to the future of our nation, as well as this region. 5 The availability of abundant freshwater 6 7 is our region's most strategic advantage, and the Great Lakes, of course, being the largest body of freshwater on the face of the earth. That's why 9 protecting Lake Erie and the Great Lakes ecosystem is 10 11 crucial to our region and nation's economic and 12 ecological future. 13 The two major threats to the lake are 14 the algal blooms and Asian carp, and preventing Asian 15 carp from entering the Great Lakes system demands immediate attention and action, not waiting 25 years. 16 We don't really need another study or another delay, 17 18 we need action, and I'm not sure the Corps can do it 19 I think it's going to involve other 20 instrumentalities of the federal government working 21 in conjunction with local as well. 22 I wish I could say the Corps understands 23 the importance and urgency of the situation, but, 24 alas, one can question whether that is true because

the Corps was negligent in addressing this issue.

- 1 took a bill in Congress to wake the Corps up from its
- 2 hibernation. The Corps' done this region a
- 3 disservice in failing to make a final and firm
- 4 recommendation about the best course of action to
- 5 prevent an Asian carp invasion in our lakes. When
- 6 the going got tough, the Corps, for whatever reason,
- 7 seems to have punted.
- 8 But here in Cleveland and in neighboring
- 9 Lorain and Sandusky and Port Clinton and Toledo, our
- 10 people know that the best defense is a good offense.
- 11 And it's time, well past time, to take the offensive
- 12 by supporting the hydrological separation of the
- 13 Great Lakes from the Mississippi River watershed, the
- 14 only credible solution. That is hard for the Corps
- 15 to do because one of every six of their new dollars
- 16 goes to the Everglades. So they are looking for the
- 17 budget to do this as well.
- The Corps has attached some dollar
- 19 figures to several options for separation, but those
- 20 numbers are suspect at best. So what do we know? We
- 21 know that the Asian carp represents a clear and
- 22 almost present danger to Lake Erie. We know that
- 23 hydrological separation is the most effective
- 24 response to that danger. We know that separation
- 25 makes the most sense environmentally, and we know

- 1 that the project will not be cheap, although be sure
- 2 it will create thousands of jobs in the construction
- 3 industry, and, most of all, we know we cannot afford
- 4 not to pursue separation.
- 5 Our job will not be easy. We have to
- 6 summon the political will to meet this challenge and
- 7 we have to devise a strategy that will build a
- 8 movement to break down the barriers of those who are
- 9 reflexively opposed.
- 10 MR. ZABOROWSKI: Thirty seconds.
- 11 CONGRESSWOMAN KAPTUR: We think you may
- 12 have to start with a consensus among elected
- 13 officials, community leaders, cities and counties,
- 14 environmentalists, business and labor, the
- 15 faith-based community to save our lake.
- In closing, we have to build a movement
- 17 to save our lake, we've done it before and now we
- 18 have to do it again. What we have to do is just the
- 19 opposite of what the Corps of Engineers has done.
- 20 The U.S. Army Corps of Engineers ran from the battle
- 21 when the horizon looked turbulent. Lake Erie and our
- 22 citizens don't have that luxury. We have to meet
- 23 this challenge head on, we have to save this lake and
- 24 the others. Thank you very much for allowing me to
- 25 talk.

Capital Reporting Company Great Lakes and Mississippi River Interbasin Study Public Meeting 01-16-2014

```
68
 1
                MR. ZABOROWSKI: Thank you.
                So next on my list is Mr. George
 2
    Goudreau and then following him Mr. Jared Bartley.
 3
                MR. GOUDREAU: Good evening.
 4
 5
                COLONEL DRUMMOND:
                                   Yes, sir, you're
    good, just tilt it up a little bit, I think you'll be
    just fine
 7
 8
                MR. GOUDREAU: I'm such a short person.
                Good evening, ladies and gentlemen, my
 9
    name is George Goudreau, and I'm here tonight wearing
10
11
    four different hats for four different groups that
    I'm involved with.
12
13
                I'm here first as a member of OGNR's
14
   Office of Coastal Management, Coastal Resources
15
   Advisory Council, and I'm a member of that council
16
    and I'm past chair of that council.
17
                I'm also representing the National
   Association of Home Builders of the United States, of
18
19
    which I'm a senior life director, member of the
20
   Executive Committee and past chair of the Land Use
21
    and Development Committee.
22
                MR. ZABOROWSKI: Sir, can I get your ZIP
23
    code, please?
24
                MR. GOUDREAU: I'm sorry. 44040.
25
                MR. ZABOROWSKI:
                                 Thank you.
```

69 1 MR. GOUDREAU: And the Ohio Home Builders where I'm a life director, member of the executive committee, and the Home Builders Association of Greater Cleveland, where I'm a life 5 director and past president. I'm also here representing -- those are 6 7 the professional affiliations. I'm also here representing the private citizens, the Great Lakes 8 Cruising Club, where I'm a member and a port captain 9 10 for Catawba Island, Ohio, and the Georgian Bay 11 Association in Ontario, Canada, where I'm a member, 12 and I also have a cottage at the top of the Georgian 13 Bay. 14 During my 40 plus years that I've been 15 involved professionally in real estate development and in recreational boating and fishing, I've had the 16 17 unique opportunity through my associations and my personal activities to observe the changes in the 18 19 Great Lakes and its ecosystems. 20 All the organizations that I'm here 21 representing this evening today share the concerns about invasive species into your Great Lakes and its 22 23 ecosystems, there's multiple systems. 24 Of the five Great Lakes, Lake Erie is

© 2014

southerly most, it is the shallowest, and it is the

- most prolific fishery of all the five Great Lakes. The Ohio Department of Natural 2 Resources, and, obviously, Office of Coastal 3 Management has been very involved with the lake and what happens to the lake, whether it be economic, 5 whether it be boating, whether it be commercial fishing, whether it be recreational fishing. 7 Generally it is -- it is -- has moved to 8 prevent the movement of Asian carp into the Great Lakes, it's critical to protect the health and value 10 11 of Ohio's world-class fisheries. The department has 12 consistently supported hydraulic separation. Ohio 13 will encourage and assist in any effort to ultimately 14 help determine a specific separation practice from 15 the recommendations that the Corps makes -- Corps' 16 report. 17 Some things that the -- that Ohio has 18 done, the ODNR, it's actively and routinely testing 19 and monitoring Lake Erie for the presence of Asian 20 carp. ODNR, Michigan DNR and the Wildlife Service 21 have found live Asian carp in Lake Erie --22 MR. ZABOROWSKI: Thirty seconds. 23 MR. GOUDREAU: -- except grass carp.
- Ohio has developed an Asian carp
- 25 tactical plan. This program where we have all the

71 five -- eight states that border the Great Lakes and the two provinces of Canada, time is of the essence, this cannot wait, you've heard other speakers say that. We do not believe that a 25-year program is realistic. We think that it's so critical that it 5 should be a five- to seven-year program. 7 MR. ZABOROWSKI: If I could ask you to conclude your statements, sir. 9 MR. GOUDREAU: We must, must be proactive, and we look to a containment closest to 10 11 the original boundaries that God created in the 12 basin. Thank you. 13 MR. ZABOROWSKI: Thank you, sir. 14 Mr. Bartley? 15 MR. BARTLEY: I'm Jared Bartley, Cleveland, Ohio, ZIP code 44105, I'm the Rocky River 16 17 watershed coordinator. 18 I just want to reiterate what some of 19 the other commenters have said, that complete 20 hydrologic separation is absolutely necessary to 21 restore the original watershed divide to avoid 22 current risk and any future threats as far as ANS are 23 concerned.

and redundancy, especially with any threats from

Also, I want to encourage both urgency

24

- 1 future severe weather -- intense weather that we see
- 2 with climate change, we need to make sure that we're
- 3 taking those kind of things into consideration, and
- 4 then also have a stepwise process.
- 5 Some of you say it will take 25 years,
- 6 say, with, like, Alternative 6 with the complete
- 7 separation that restores -- more closely restores the
- 8 natural divide. If we could also include some of the
- 9 near term practices similar to the GLMRIS lock at
- 10 Brandon Road in Alternative 4 that can potentially be
- 11 completed more quickly to give -- buy some more time
- 12 to complete the further separation.
- 13 And then also even if -- you know,
- 14 whatever solution is made, just redundancy in the
- 15 system so any failure -- single failure would not
- 16 necessarily constitute a breach of the system.
- And just to wrap up, it's been stated,
- 18 but the ecological and economic benefits far outweigh
- 19 the cost of any alternatives or all the alternatives
- 20 combined. So thank you.
- MR. ZABOROWSKI: Thank you very much,
- 22 Mr. Bartley.
- 23 Next I have Hyle Lowry, if you could
- 24 make your way to the microphone, and then following
- 25 them I have Mr. Edward Yandek and then Mr. Dennis

Capital Reporting Company Great Lakes and Mississippi River Interbasin Study Public Meeting 01-16-2014

```
73
   Block.
                So, sir, were either of those your name?
 2
                              (Inaudible).
                MALE SPEAKER:
 3
                MR. ZABOROWSKI: Mike Stansberry?
 5
                MALE SPEAKER: (Inaudible).
 6
                MR. ZABOROWSKI: What?
                MALE SPEAKER: Did you say Dennis Block,
 7
    the third one?
                MR. ZABOROWSKI: Yes. I wanted to make
 9
10
    sure I got you.
11
                When you're ready, ma'am.
12
                MS. LOWRY: Hi.
                                 This keeps moving.
13
                MR. ZABOROWSKI: Just name and ZIP code,
14
   please.
15
                MS. LOWRY: Kyle Lowry, 44022.
16
    about my voice, I'm sick, but I wanted to be here.
17
                I am with the Alliance for the Great
18
   Lakes, and I represent the State of Ohio.
                                                I spend
19
   most of my days, like a lot of us, taking care of my
    kids, my home and I -- my job that I work at.
20
21
    for my career I've been dedicated to protecting the
    Great Lakes, specifically Lake Erie.
22
23
                As you know, the Alliance in based in
24
   Chicago, so this issue is very important to us there,
   but as well in all the Great Lakes states, and it's
25
```

- 1 great tonight to see so many familiar faces. There's
- 2 a lot of people out here that care and they're very
- 3 smart people, and from what they've said and from
- 4 what further comments I'm sure people will be saying,
- 5 as well as submitting, and I encourage people who
- 6 don't get that opportunity to talk, submit your
- 7 comments, because they will be heard and we need to
- 8 be proactive about this.
- 9 So my comments: We don't have time to
- 10 waste. Recent study confirmed that the electric
- 11 barrier, currently the last line of defense to keep
- 12 Asian carp out of the Great Lakes, may not be a
- 13 barrier at all because it allows small fish to pass
- 14 through. The status quo is not acceptable and we
- 15 need quick action on separation, it's urgent.
- The cost of what's happening -- the cost
- 17 of what happens if aquatic invasive species get into
- 18 the Great Lakes because we didn't take strong enough
- 19 prevention measures will be many times higher than
- 20 the cost of implementing physical separation of the
- 21 basins. These waterborne invaders are already
- 22 causing hundreds of millions of dollars in damage
- 23 each year to health, commerce, recreation and the
- 24 environment.
- 25 Lastly, the health of the Great Lakes

© 2014

- 1 and Mississippi River, as well as the communities and
- 2 jobs they support, are really worth it. We can't put
- 3 a price tag on our region's quality of life and we
- 4 can't afford to undermine the investments we are
- 5 making in the protection of Great Lakes, we need to
- 6 do it now. Thank you for your time.
- 7 MR. ZABOROWSKI: Thank you, ma'am.
- 8 So next, name and ZIP code, please, when
- 9 you're ready.
- 10 MR. YANDEK: My name is Edward Yandek,
- 11 Y-a-n-d-e-k, ZIP code 44118 and ZIP code 44089, two
- 12 different counties both on the lake. Thank you for
- 13 the opportunity to speak.
- My perspective is one of an engineer and
- 15 a longtime project manager. I've worked for a major
- 16 Fortune 50 company and have a lot of experience with
- 17 looking at risk analysis, which is -- which is what
- 18 you gentlemen have been doing, and I think you've
- 19 done a very good job identifying the various types of
- 20 solutions. I won't try and address many of the
- 21 comments that have been made by others more
- 22 eloquently on why we must do that, but I want to talk
- 23 to you as an engineer.
- Working for a major corporation, when I
- 25 would propose a project, whether it was 1 million or

```
1 10 million or 50 million or whatever, to a series of
```

- 2 vice presidents, the first question I would always
- 3 get, when I had thought I had come up with a really
- 4 good timeline, aggressive, was always, "Yandek, this
- 5 has got to be done faster."
- And I'm sure you guys have been in the
- 7 same situation, the question they would always ask me
- 8 is not can you do it faster, but what will it take
- 9 for you to do it faster. So does the \$15 billion
- 10 project become 20?
- But the question really is this 25 years
- 12 is very, very much too long. We went from a standing
- 13 stop to put a man on the moon in ten, because we had
- 14 the will to do it and we funded it. And the question
- 15 here is much the same, assuming we have the will and
- 16 the funding, the question back to you from one
- 17 engineer to another is: Tell me what it takes to do
- 18 it in less than ten years. Thank you very much.
- MR. ZABOROWSKI: Thank you, sir.
- 20 And then after Mr. Dennis Block, David
- 21 Redfield, you will be next.
- MR. BLOCK: Okay?
- 23 MR. ZABOROWSKI: Yes, give your name.
- MR. BLOCK: Name, Dennis Block, I'm a
- 25 retired financial officer, CPA. I'm representing

```
77
   myself, I have no prepared remark or anything, it's
   more directional because of my background as an
    accountant, financial person.
 3
                So -- 44122.
 4
 5
                MR. ZABOROWSKI: Perfect.
 6
                MR. BLOCK: Reading through the
 7
    frequently asked questions, seeing statements such as
    the schedule assumes this completion, when will it be
 8
 9
    implemented, assumes a nonfederal sponsor receives
10
    capability funding, completes required land
11
    acquisitions, et cetera et cetera, et cetera.
12
                Obviously being financially oriented I
13
    wonder where we're going to pay for all this and not
14
    diminishing the need, that's why I'm here, I'm
15
    concerned, I want to see this happen.
                I've been living a lifelong -- life in
16
    Cleveland on the lake, a powerboater, and seeing the
17
18
    city go through the zebra mussel, you know, mess and
19
    all that stuff, I quess I just wonder and apologize
20
    in advance where I'm not familiar with all the
    structures in place at the local, federal and state
21
22
    level for assessing certain kind of fees and
23
    collecting monies, I do pay my taxes and I do know
24
    the general tax structure, but I'm not comfortable
25
    with all the other mechanisms for getting money
```

- 1 accumulated for this, but it seems to me that somehow
- 2 waiting or observing long distance the dysfunction of
- 3 the various government levels with handling budgets
- 4 and deficits and collecting money and sorting through
- 5 priorities and knowing that California is going
- 6 through a major drought right now and the Colorado
- 7 River is running dry and muddy at certain parts, I
- 8 don't know that we'll be the top of the list knowing
- 9 how northeast Ohio and the Great Lakes region doesn't
- 10 necessarily always have the same glamour associated
- 11 with it than the coast, but I wonder -- and, again,
- 12 I, as I say, apologize in advance, what is being done
- 13 to accumulate some of this money in other vehicles or
- 14 mechanisms right now.
- 15 For example, as a former recreational
- 16 boater, a minimal amount, nonprohibitive attachment
- 17 to licensing of recreational vehicles or dollars
- 18 associated with rights to move down the St.
- 19 Lawrence and commercial shippers or commercial
- 20 fishing. I mean, begin getting money together, you
- 21 know you're going to need it, it softens the blow
- 22 with wherever we can or can't go in terms of
- 23 collection -- or using the monies from the general
- 24 revenue sources that everybody has trouble allocating
- 25 and prioritizing.

79 So it seems to me that somebody has to 1 be creative starting building some money, building some funds and setting something aside as big as it may get or as small as it may be to help fund this. It's a very important issue, and, again, it's just my 5 personal opinion. So --7 MR. ZABOROWSKI: Thank you very much, sir. 8 MR. WETHINGTON: Dennis, thank you for 9 your comments. I just want to take a quick moment to 10 11 address them. 12 I think that having this conversation, like we are today, and taking the information that's 13 14 in the report and having this conversation with 15 regard to the collaborative path forward is really 16 the most important next step. 17 Before we can put money away, as you put 18 it, we really need to figure out what we're putting 19 our money -- what are we saving for and who is going 20 to be part of that ultimate solution. So I think 21 that having this conversation and being able to speak 22 your mind as a member of the public, decision-maker, 23 et cetera, I think that's really important. So thank 24 you for your comments.

Thank you.

MR. ZABOROWSKI:

80 1 Next I have Mr. David Redfield and then following him Mike Stansberry. MR. REDFIELD: Good evening, gentlemen, 3 how are you? 5 MR. ZABOROWSKI: Name and ZIP code, please. 7 MR. REDFIELD: David Redfield, 48230. I'm honored and humbled to be a part of 8 this process that the Corps has provided for input. 10 I'm from Grosse Pointe, Michigan, I'm a physicist and 11 engineer by education and co-owner of a manufacturing 12 business in Michigan. I was not able to speak in 13 Michigan due to a travel commitment so I have 14 traveled to Ohio to speak. I have been listening and following the 15 issue of the silver and bighead carp making their way 16 17 to the Great Lakes for some time, but it stopped 18 becoming an abstract balance of shipping interests 19 and sport fishing economics, it became extremely 20 personal to me this past fall. 21 In the fall I look forward to the 22 arrival of migratory ducks over winter in both Lake 23 St. Clair and Lake Michigan and I developed a hypothesis that the introduction of these large 24 predators, the bighead and silver carp, into this 25

- 1 ecosystem could be devastating.
- 2 My hometown of Grosse Pointe is located
- 3 on Lake St. Clair at the source of the Detroit River,
- 4 and I also regularly visit Sleeping Bear Dunes
- 5 National Lakeshore, and both are parts of the Great
- 6 Lakes basin.
- 7 I'm a birder and a life -- life list of
- 8 nearly 300 species, and I was out last Sunday with my
- 9 scope on a beautiful, sunny day and saw nearly 20 to
- 10 30,000 waterfowl, including swans, gulls, mergansers,
- 11 goldeneye, canvasbacks, scaups and two bald eagles.
- If you've not have the opportunity to
- 13 have this experience, it can change your life, it
- 14 changed mine. I've see many of the same species in
- 15 Sleeping Bear Bay in the months of January and
- 16 February. These ducks feed on small fish, clams,
- 17 crustaceans, as well as plant material. The
- 18 voracious appetites of the ANS, referring to these
- 19 carp as a nuisance is an insult to even the most
- 20 amateur of ecologists such as myself, would, I
- 21 assert, upset the native fish and cascade the
- 22 ecosystem in the Great Lakes that all the animals
- 23 depend upon. This is no let -- no less a threat than
- 24 that of DDT to the public consciousness by Rachel
- 25 Carson.

1 The specter of this ecological catastrophe frightens and sickens me. The most expensive of the separation alternatives proposed by 3 the Corps costs upwards of \$20 billion, which considering the alternatives for these funds, is a 5 6 small price to pay, in my opinion, to protect that 7 which is irreplaceable, the habitat of these beautiful creatures. 8 9 This is a potential trophic cascade of significant proportions that we must avoid with a 10 11 permanent separation. Have you seen the courtship 12 display of the bufflehead? Have you seen the plumage 13 of the hooded merganser in the sunlight? Have you 14 put your observational powers to work to distinguish 15 between the common and red breasted merganser? 16 MR. ZABOROWSKI: Thirty seconds. 17 MR. REDFIELD: If not, I encourage every 18 member of the Corps and all those who have worked on 19 this comprehensive study to find a bay or a cove in 20 one of our Great Lakes, grab your binoculars and take 21 15 minutes to experience the ducks, this is what is 22 at risk. 23 Thank you for listening. I encourage 24 the Corps to permanently separate the Mississippi 25 River and the Great Lakes Basin. Thank you.

Capital Reporting Company Great Lakes and Mississippi River Interbasin Study Public Meeting 01-16-2014

```
83
 1
                MR. ZABOROWSKI: Thank you.
 2
                Next on my list is Mike Stansberry.
 3
                MR. STANSBERRY:
                                 My name is Matt
    Stansberry --
                MR. ZABOROWSKI:
 5
                                  Oh.
 6
                MR. STANSBERRY: Brecksville, Ohio
 7
            I'm an angler and members of my family also
   make a living fishing. My brother is sitting up
    there, he is a captain, does guided fishing trips on
10
   Lake Erie.
11
                I live, I don't know, a half mile from
12
    the Cuyahoga River and I'm on it every day with my
13
    sons, and I've been on it since college at Kent State
14
    and growing up as a kid in Portage County.
15
                I'm, obviously, an advocate for complete
16
    separation from the Mississippi watershed, whatever
17
    the most effective means is, and I'm not going to, by
18
    any means, tell you that I've studied the issue to
19
    the level that you guys have.
                                   But the most effective
20
   means possible is what I'm an advocate for.
21
                I want to echo what -- what
22
    Congresswoman Marcy Kaptur said earlier.
                                               I -- I --
23
    I've never been so proud to be sitting in any kind of
24
   public thing, so you have my vote and whatever
25
    support I can give you.
```

84 1 I'm also committed -- you know, committed to getting whatever political will that needs to be done. You heard the -- the last 3 gentleman who spoke, you know, talking about things 5 that are irreplaceable, and I feel like we need to 6 summon here -- we're going to summon, with or without 7 the Corps, political will to get something through; because there are people, like the person who drove here from Michigan who just spoke before me, or me, 10 who see the natural ecosystem and the wildlife here 11 as irreplaceable, and if 95 percent of the biomass in 12 the Great Lakes are Asian carp, this place will 13 literally be uninhabitable for people like me who are 14 here and are part of the wildlife. This place will 15 become uninhabitable. Thanks. 16 MR. ZABOROWSKI: Thank you, sir. 17 At this point in time is there anybody 18 that registered at our welcome table that -- whose 19 name I have not called? 20 Sir, if you could make your way to the 21 microphone, I apologize for that, I must have 22 misplaced your name. 23 MR. SPECK: Right. I'm Sam Speck, I am 24 former director of Natural Resources in Ohio, most

recently served as one of the three U.S. members on

```
85
    the International Joint Commission between the United
    States and Canada.
                My short speech --
 3
                MR. ZABOROWSKI: Sir, can I get your ZIP
 4
    code, please?
 5
 6
                MR. SPECK: Oh, sure.
                                        43805.
 7
                MR. ZABOROWSKI:
                                 Thank you very much.
 8
                MR. SPECK: My -- my short speech is
    "Ditto," but I would first like to say that from
 9
    everything I have seen to date that a -- the
10
11
    comprehensive approach is the one that it takes to be
12
    certain that we're going to get what we expect and
13
    what we clearly need.
14
                I'm concerned about the 25 years that it
15
   may take to do that and would urge that if there are
16
    things that we can do along the way that may not be a
17
    part of that but that would give us additional
18
   protection along the way that we should certainly
19
    consider that.
20
                Hearing that $18 billion is just an
21
    awful lot of money, we're talking about 18 billion
22
    that would be spent over 25 years, that's less than a
23
   billion a year. We have been giving, I noticed,
24
   Egypt over a billion a year. When you look at what
   we can do elsewhere for other people, hopefully, we
25
```

- 1 can do this to protect the Great Lakes, which
- 2 involves 20 percent of the world's fresh surface
- 3 water.
- 4 You know, we've been talking about the
- 5 impact of this on the Great Lakes, what we need to do
- 6 here, but we're also talking about what the Great
- 7 Lakes can shed off in terms of invasive species
- 8 outside the Great Lakes, and your report, I think,
- 9 lays that out usefully; but we're talking about not
- 10 merely the good that can be done by this for the
- 11 Great Lakes, but we're talking about the good that
- 12 could be done for much of the rest of the country.
- 13 If you look at where the other rivers
- 14 come down and ultimately get into the Mississippi but
- 15 they come from us up to them, it goes clear out to
- 16 Montana. So this is a much bigger issue, with much
- 17 greater benefits, than simply in the Great Lakes
- 18 which we care so much about.
- 19 It's for those reasons I would simply
- 20 urge that we do move ahead, that the 18 billion is
- 21 really not that big of a deal when you consider all
- 22 that is involved and all that will be lost, which is
- 23 much, much greater than \$18 billion. Thank you.
- MR. ZABOROWSKI: Thank you, sir.
- 25 Is there anyone else that registered out

at our table whose name I did not call? 2 Checking all corners, that being said, we still have plenty of time until 7:00, and so if 3 anyone has -- that has already made a comment or has not made a comment and hasn't registered would like 5 to come up and, you know, offer a comment or ask a question of the panel, I'd like to open this up now to -- I'm going to keep to the three minutes because, 9 again, we still have a lot of people, I just want to 10 be upfront about that. If you've already made a 11 comment, I will ask you again to give your name and ZIP code before you speak. 12 13 So I saw two hands. Mr. Dabson, I saw 14 yours first, so if you'd like to come back up, and 15 then, again, please state your name and ZIP code, and 16 we'll keep it to three minutes, if you don't mind. 17 MR. DABSON: Dean Dabson, ZIP code is 44060. 18 19 The question of cost always comes up, 20 and originally when I did the White Paper for Dino 21 DiSanto, chief of staff for Steven LaTourette -- I 22 quess he's chief of staff for David Joyce now, who's 23 the representative in Congress, and I -- I mentioned

the infrastructure bank, and this is something that

the Chamber of Congress, Bailey Hutchinson, John

24

- 1 Kerry, there's quite a few other congressmen really
- 2 wanted an infrastructure bank, and an investment of
- 3 \$30 billion would yield about 600 billion in
- 4 infrastructure investment in the United States, and
- 5 we have fallen now to -- I think it's 14th in the
- 6 world as far as infrastructure.
- 7 And I had also talked to one of the
- 8 staffers for -- I think it's Bob Gibbs from southern
- 9 Ohio, and he seemed to be interested, but the problem
- 10 is these people never call you back and these things
- 11 die. So, you know, this needs to be done, and, of
- 12 course, it's going to cost money.
- So I thought of something else. Since
- 14 the administration -- you know, when they discovered
- 15 that this sounded like a good Republican idea, they
- 16 proposed it, and then it died, so -- because anything
- 17 he proposes gets shot down. So perhaps another
- 18 Republican could, if we can find one willing to do
- 19 it, or a Democrat working with Republicans, since
- 20 they seem to control the purse strings.
- 21 Regional infrastructure banks, that
- 22 might be an idea to help finance projects like this.
- 23 So it's just -- just a thought, and seemed like a
- 24 good idea at the time, but, again, unless -- unless
- 25 the public really gets on these things -- we have to

- 1 compete in the world, and infrastructure is one thing
- 2 that other countries are really heavily investing in
- 3 and we're falling behind on it, and this could be one
- 4 project where an infrastructure bank would definitely
- 5 help and would help the employment as well.
- Just one quick thing, and I put this in
- 7 my comments, in the GLMRIS report was that this is an
- 8 employee light system. You know, they talk about,
- 9 you know, this is important with the jobs on the
- 10 barges, it's, you know, one crew and one tug pushing
- 11 all of these barges. In Belgium where they have --
- MR. ZABOROWSKI: Thirty seconds.
- 13 MR. DABSON: -- where they have this
- 14 huge lift system that carries barges up a 200-foot
- 15 lift to -- and forms a barrier between a lower lock
- 16 and an upper lock, that one -- you know, each barge
- 17 has a crew, and the same thing in Russia with their
- 18 marine rail system in Eurasia, 1,800 barges up a
- 19 300-foot incline, each barge has a crew.
- 20 So, again, this makes our problem -- our
- 21 situation more difficult, but don't -- don't buy the
- 22 argument that it's all about employment with the
- 23 barge industry, et cetera, et cetera. So that's just
- 24 my comments on that.
- MR. ZABOROWSKI: Thank you again,

```
90
   Mr. Dabson.
                MR. SHAW: Kendall?
 2
                MR. ZABOROWSKI: Congresswoman, would
 3
    you like to come up again?
 5
                Sir, after -- if you want to make your
    way to a microphone.
 7
                CONGRESSWOMAN KAPTUR: Never met an
    elected official that didn't want to say something.
 9
                Yes, following the last speaker --
                                 I apologize, but --
10
                MR. ZABOROWSKI:
11
                CONGRESSWOMAN KAPTUR: You know, I'm
12
    trying to remember the ZIP code of the Rayburn
13
    Building in Washington and I can't remember it.
14
    just put "Rayburn Building."
15
                MR. ZABOROWSKI:
                                 Okay.
16
                CONGRESSWOMAN KAPTUR: I wanted to just
    say with the Corps here, and I've been speaking with
17
18
    several people in Washington about this challenge, I
19
    serve on the Energy and Water Committee, which has
20
    the Corps' budget under it, and I'm the ranking
21
    member on my side of the aisle on that committee, but
22
    as I do the work of our committee -- and this is
23
    important for those of us who live in this region to
24
    know and the general Great Lakes to know, over a
25
   hundred years ago 17 states in the west, about 1902,
```

- 1 decided that with the help of the whole nation that
- 2 they were going to be developed, and they created an
- 3 instrumentality, and the name of it is the Bureau of
- 4 Reclamation, and every year -- every year those 17
- 5 states get an appropriated dollar amount of \$1.1
- 6 billion.
- 7 We have nothing like it in this region
- 8 of the country. The Corps works out there, too, it
- 9 helps them. They're not a part of that budget, the
- 10 Corps adds their money to that. And over the years
- 11 if one looks at what has happened, we've electrified
- 12 the west and we have built the modern equivalent of
- 13 an aqueduct system like no other place on earth.
- 14 California cannot stay alive, Colorado
- 15 cannot stay alive, et cetera, without this
- 16 very intricate system being in place. And I find the
- 17 name Bureau of Reclamation a very interesting name.
- 18 I believe our country needs to be -- our part of the
- 19 country needs to be reclaimed, because the corridor
- 20 from Duluth to Buffalo truly has a number of
- 21 challenges now in this new millennium very different
- 22 from what the nation faced over a hundred areas ago
- 23 as we developed the west, and some of those
- 24 challenges involve environmental -- unmet
- 25 environmental cleanup, whether it's our combined

- 1 sewer overflows or whether it's the cleanup of
- 2 contaminated sites that relate to our defense
- 3 industry and some of the brownfields as a result of
- 4 our manufacturing.
- 5 And when I travel those parts of the
- 6 country, and I go with the Corps many times, I am
- 7 just absolutely in awe of what happens in other parts
- 8 of the country, whether you look at the Hoover Dam or
- 9 whether you look at the way that the water moves from
- 10 the snow melt in California all the way down to Los
- 11 Angeles and from over in parts -- points east of
- 12 there. So you think about what we've done in other
- 13 parts of America and then you look at us.
- MR. ZABOROWSKI: Thirty seconds.
- 15 CONGRESSWOMAN KAPTUR: With the most
- 16 magnificent freshwater system on the face of the
- 17 earth. We do not have an instrumentality. The Corps
- 18 cannot do this job alone. And so I just wanted to
- 19 say in front of the Corps, and I spoke with the
- 20 Secretary of Energy today, I have spent quite a bit
- 21 of time with General Bostick from the Corps, and try
- 22 -- just with the new administrator of the St.
- 23 Lawrence Seaway Development Corporation, Betty
- 24 Sutton, who came from Akron, Ohio, and now heads the
- 25 Seaway, we need a development instrumentality like

- 1 those 17 western states had over a hundred years ago
- 2 to reclaim this part of America, and we hope the
- 3 Corps can be a part of helping us vision what that
- 4 might be, and that would include some of the
- 5 financing mechanisms that some people have referenced
- 6 here today. Thank you again all for coming.
- 7 MR. ZABOROWSKI: Thank you, ma'am.
- 8 Name and ZIP code first, please.
- 9 MR. DUNN: My name is Lucas Dunn, 44135,
- 10 Cleveland.
- I first heard about this issue when I
- 12 was in Hocking College, and I thought I had the
- 13 solution then but it didn't seem reasonable, but it
- 14 still seems like a good idea.
- The separation seems like the long-term
- 16 plan, but when people say they want immediate action,
- 17 I think one of the solutions would just be to
- 18 monetize the Asian carp.
- 19 We can use them in fish food, we can use
- 20 them in poultry food, we can use them in -- in
- 21 livestock feed, why don't we make a false high price
- 22 for them and encourage fishermen to go out.
- 23 Like, I don't know how many pounds of
- 24 carp they -- are actually out there, has anybody ever
- 25 figured that out? Is it a billion pounds, because

© 2014

- 1 that would be a dollar a pound. That would give
- 2 people jobs, you can go out, catch 10-, 20-pound carp
- 3 and come home with 200 bucks at the end of the day.
- 4 You know, how long would it take? I
- 5 think we can eliminate the perch population in -- in
- 6 two years in Lake Erie if we didn't regulate how many
- 7 that people could take. And I think, if you've ever
- 8 been to Maumee during the salmon run, you can see how
- 9 eager people are to catch those, and they -- all they
- 10 get is salmon -- or not salmon but --
- 11 MALE SPEAKER: Steelhead.
- 12 AUDIENCE: Walleye.
- MALE SPEAKER: And the Walleye.
- MR. DUNN: Walleye. Yeah, the walleye
- 15 around here.
- MALE SPEAKER: Maumee.
- 17 MALE SPEAKER: Yeah.
- MR. DUNN: Sorry.
- MALE SPEAKER: Walleye.
- 20 MR. DUNN: So, you know, the rivers and
- 21 banks would be crowded with people trying to make that
- 22 money and get that stuff, and like you're talking \$15
- 23 billion, that might be a good long-term, plan, but
- 24 maybe just \$1 billion and a little bit of
- 25 infrastructure and some refrigerated tanks in some

© 2014

- 1 places, some different things to move the fish to the
- 2 mills, the processing plants, and it wouldn't be a
- 3 permanent solution, but it would be enough to knock
- 4 them back far enough that they wouldn't be this
- 5 instant immediate threat that they're at right now.
- 6 Thank you.
- 7 MR. ZABOROWSKI: Thank you, sir.
- 8 Actually I believe the gentleman behind
- 9 you was first, I'll get you next, sir.
- Name and ZIP code, please.
- 11 MR. STANSBERRY: All right. Captain
- 12 Nate Stansberry, 44107.
- I've been involved in commercial fishing
- 14 for over ten years and I'm probably one of the
- 15 younger audience members. You guys are getting beat
- 16 up pretty bad up there and that's -- that's okay.
- 17 That's okay. These people care, we all care.
- 18 My brother and I, we've traveled the
- 19 country on the East Coast and West Coast chasing
- 20 fishing all our lives. We came back home to start
- 21 families, own houses, and I can promise you if you're
- 22 having budget problems, try getting a mortgage being
- 23 a fishing guide. It's almost impossible.
- But the question I ask you, and maybe
- 25 this will be a chance for you guys to shed some

- 1 positive light on all of this, has the Corps ever
- 2 been successful in prohibiting invasive species in
- 3 any type of fishery, ecosystem in the history of the
- 4 Corps? Thank you.
- 5 MR. WETHINGTON: Thanks, Nate. Let me,
- 6 I quess, take -- take a quick stab and answer that.
- 7 I know aquatic nuisance species or
- 8 invasive species in general are very difficult to
- 9 deal with. And so, you know, this specific issue
- 10 with regard to aquatic nuisance species is relatively
- 11 new for the Corps of Engineers. We are traditionally
- 12 a water resources organization. We maintain harbors
- 13 and waterways, we, you know, protect shorelines, we
- 14 build infrastructure to help with power generation,
- 15 hydropower.
- 16 So we're the nation's engineers. Our --
- 17 our -- really our expertise is in specific
- 18 engineering. So now we are getting in a little bit
- 19 to biology with invasive species and aquatic nuisance
- 20 species. And, you know, the reason why we were
- 21 brought into this is because of our engineering
- 22 expertise in looking at building barriers and trying
- 23 to innovate.
- And so we're -- we're certainly an
- 25 adaptable agency. We may be big and ponderous and

- 1 slow like a lot of folks have said, but really we try
- 2 to serve in that role as best as we possibly can.
- We do do a lot of work in the Everglades
- 4 with regard to species control. We have our invasive
- 5 species center of expertise down in Jacksonville
- 6 District and have done a lot of work with trying to
- 7 restore the Everglades, but, again, a lot of that has
- 8 to do with restoring waterways and the flow of water
- 9 within the Everglades.
- 10 So our -- our mission that we're trying
- 11 to kind of implement here, specifically as a Corps of
- 12 Engineers, is ecosystem restoration, or with GLMRIS
- 13 it's really ecosystem protection. And so, again, I
- 14 hate to kind of say it's not necessarily just the
- 15 Corps's responsibility, but it is really a shared
- 16 responsibility.
- We have had success in projects like the
- 18 Everglades, but with regard to looking at species and
- 19 how they are managed, it -- you know, it's your
- 20 responsibility, my responsibility, as well as other
- 21 state agencies', other federal agencies'
- 22 responsibility, because, you know, as someone who is
- 23 familiar with fishing is familiar with the -- the
- 24 introduction of bait buckets and, you know, dumping
- 25 bait buckets from one body of water to the other is a

- 1 -- is a bad idea. And so we -- we all have to
- 2 understand that, and, you know, you and I may
- 3 understand that but others may not.
- 4 So, again, going back to the successes
- 5 we've experienced as an organization have been
- 6 primarily with regard to those large water resource
- 7 infrastructure projects, and, you know, we're --
- 8 we're trying to work with our partners on this very
- 9 unique, kind of relatively new -- we've been doing it
- 10 for a number of years, but a relatively new issue.
- 11 So we appreciate everyone's comments.
- 12 You know, you mentioned that we've been getting beat
- 13 up, and I -- I kind of don't feel as if it's being
- 14 beat up, it's really hearing your voice, and I think
- 15 that's the important thing. You know, what we hear
- 16 in Chicago, what we hear in New Orleans might be very
- 17 different from what we hear here in Cleveland.
- So it's really important for us to hear
- 19 this and for your voices to be heard, not just by
- 20 ourselves, but by those important decision-makers,
- 21 whether they be, you know, locally elected officials,
- 22 national elected officials, as well as other resource
- 23 agencies. So thank you so much to all of you, and
- 24 particularly Nate and your brother for coming out
- 25 tonight.

```
99
 1
                MR. ZABOROWSKI: I believe the
    gentleman, yes, sir.
                Name and ZIP code when you're ready,
 3
   please.
 5
                                     Thank you. Home
                MR. FLETCHER: Yes.
    ZIP code is 44846 and work ZIP code is 43452, which
    is Port Clinton, Ohio, also known as the walleye
 7
    capital of the world, if you didn't know that.
 8
 9
                I'm going to submit some -- some written
    testimony but I'm just going to put a couple of
10
11
    numbers out.
12
                MR. ZABOROWSKI: Sir, can I get your
13
    name, please?
14
                MR. FLETCHER: Larry Fletcher.
15
                MR. ZABOROWSKI: Thank you.
16
                MR. FLETCHER: Larry Fletcher, I'm
    sorry, and I'm the director of the Ottawa County
17
   Visitors Bureau. Just a few numbers that haven't
18
19
   been mentioned tonight which will be on -- on a
20
    statement that I will give you.
21
                According to the Ohio Division of
22
   Wildlife, these are figures for 2013, 721 Ohio based
23
    licensed charter boat captains on the lake, 856,474
24
    fishing licenses were sold in Ohio last year, large
25
   percentage of those anglers do fish on Lake Erie,
```

- 1 that's a lot of fishing licenses.
- 2 The Division of Wildlife data also shows
- 3 that trips booked by the charter captains that I
- 4 mentioned, along with the harvest from private boats
- 5 fishing Lake Erie's Ohio's waters resulted in a
- 6 harvest of 5.1 million pounds of walleye, yellow
- 7 perch, steelhead, trout and other species.
- 8 Commercial fishing adds another 4.8 million pounds
- 9 last year.
- 10 The American Sport Fishing Association
- 11 estimates that Lake Erie sport fishing expenditures
- 12 topped \$1 billion annually. So this is -- these are
- 13 dollars that are spent, not only by those anglers on
- 14 their fishing activities, but then you have all the
- 15 spending that is done for the fuel, for the overnight
- 16 stays, for the restaurants, et cetera, et cetera.
- 17 Of course, there's a number -- another set of
- 18 statistics for the boating activities.
- 19 Really, the birding is something I had
- 20 not thought about and -- and the interrelationship
- 21 between those species, our area of Ohio, the western
- 22 basin of Lake Erie, one of the top ten birding spots
- 23 in the world -- in the world, and huge amounts of
- 24 money spent by those birders, and some of that
- 25 certainly is at risk as well.

© 2014

101 1 And then as Kristy Meyer mentioned earlier, economic impact not only for the -- the lake counties in Ohio, there are eight counties that border the lake, and -- and \$11.5 billion was spent in those counties -- just in those counties. 5 are 88 counties in the State of Ohio, and eight counties, as Kristy said, almost a third of all the 7 tourism spending was just in eight counties. 8 9 So that is a testament to the power of the lake and the importance of the lake, not only to 10 -- to those counties that border the lake and those 11 12 residents, but the entire state. 13 So, again, I will submit these comments. 14 I also invite any of you to come over to our area. 15 know Mr. Goss has been over there. We'll go down to 16 a waterfront dining establishment, we'll have a nice 17 meal, and you can gaze out onto that beautiful body 18 of water that we're all here trying to protect with 19 your help. Thank you very much. 20 MR. WETHINGTON: Thank you. 21 COLONEL DRUMMOND: Thanks. 22 MR. GOSS: Thanks, Mr. Fletcher. 23 MR. ZABOROWSKI: I have you, sir, first 24 and then we'll go up here.

MR. BLOCK: Dennis Block, 44122.

1 Having heard Congresswoman Kaptur and the person that just spoke from the tourism office, it seems like -- I just heard \$856,000 in additional 3 -- a dollar fee for fishing license, I mean, we're -we're just talking about local areas in Ohio and then 5 6 you expand it to other states. 7 I didn't understand your reply to me saying, "Well, we have to define the mission, we have 8 to identify the priorities, we have to define the 9 task and then we worry about money." 10 Why don't we worry about getting as much together as possible to 11 put together a reclamation fund that can be used to 12 13 defend a number of different things in the area, 14 whether it be pollution or it be the invasive species 15 or beachline erosion or whatever. It seems like the 16 sooner you put money together, the more options you 17 have down the road. 18 So that's my question. I just didn't 19 understand your reply when you said, "Well, we can't 20 collect any money or decide on any mechanism for 21 collecting money until we know how we are going to 22 spend it." Every year in Congress they spend money 23 before they have budgets. So it's no big deal, they 24 do it everywhere. 25 MR. WETHINGTON: And let me just

103 clarify, I quess, my response. I appreciate exactly what you're saying, it makes sense. 2 With regard to us, Corps of Engineers 3 sitting here, we don't collect money. 5 traditionally we partner with other agencies, nonfederal sponsors is how we refer to them. And so 6 they are consortiums or they are either individual 7 states or governmental agencies or consortiums of these nonfederal agencies to work together toward 9 10 completing a project. 11 And so if you were to -- you know, 12 obviously our congressional representatives can 13 authorize us and legislate us to do something a 14 hundred percent on our own, a hundred percent 15 federally funded, which is, obviously, you know, way 16 beyond my control; but I guess all I was trying to 17 kind of bring to the understanding is that it's not the Corps of Engineers specifically who would collect 18 19 money. We don't have a money collecting --20 MR. BLOCK: I wasn't implying that. 21 MR. WETHINGTON: Okay. Well, yeah, 22 exactly. So --23 MR. BLOCK: I was just saying anywhere 24 we can, whoever knows how to do it, start getting

some money together and let's have it at our

104 1 (inaudible). 2 MR. WETHINGTON: And, again, you guys are probably going to get tired of me saying "shared 3 responsibility," but, you know, it's really something we need to discuss and we need to -- you know, this 5 is how that conversation starts, that's how we get these groups together who want to collect this money 7 and come forward and say, "Hey, we want to build this project," and then we find ways to -- to make it So thank you so much for your comments. 10 11 MR. ZABOROWSKI: The gentleman up here 12 indicated that -- so when you're ready, sir, if we 13 can get your name and ZIP code. 14 MR. BUNSEY: I know the protocol here. 15 It's Bob Bunsey, B-u-n-s-e-y, ZIP code 16 44839, that's in Huron. 17 I happen to be a 30-year homeowner on 18 the lake, and if you were to look at Lake Erie and 19 see where the most southern point of Lake Erie is, 20 you will see where our house is, and over that period 21 of time I have seen a lot of changes in the lake, 22 some good, some bad. 23 Some of the good ones are we have seen 24 the waterfowl, as other commenters have mentioned,

we've seen great -- we've seen bald eagles fly by our

- 1 house, which we have never seen in the past. If you
- 2 want to get your hair on your arms stood on end you
- 3 just have a bald eagle fly over your head and it goes
- 4 (making noise) with his wings, it's awesome.
- 5 And I've seen bad things like the -- the
- 6 inky waters that is caused by the algae plume, that
- 7 stinks. I've seen tons and tons of zebra mussel,
- 8 it's almost like somebody with a front-end loader
- 9 dropped mountains of zebra mussels on our beach.
- 10 Okay?
- 11 So that gives you an idea of where I am
- 12 coming from as a resident on the lake, also as a
- 13 protector of the environment. I'm a member of the
- 14 Ohio Lakefront Group, we have -- I'm a director
- 15 there. We have 5,000 to 6,000 members of the
- 16 Lakefront Group that live on the lake, and they are
- 17 protectors of the lake as well.
- 18 Listening to these various comments that
- 19 have been made today, it -- it -- it gave me an idea,
- 20 and -- I -- I also am a president of a technology
- 21 company -- small technology company, and you may have
- 22 heard the term "big data" before. Big data is
- 23 collecting information at a mountainous rate, and not
- 24 knowing exactly what you're going to do with it, but
- 25 you're going to make a coordination analysis with it.

106 Okay? It doesn't tell you causality, but it does tell you correlation. Now, what if we had, as the Ohio 3 Lakefront Group, our 6,000 members as observers 5 reporting conditions on the lake in real time 6 directly against a giant database, a website that would be created, and what if we had those 12,000 7 eyeballs not only on that, but also on lake vessels, on powerboats, on sailboats. I'm a master captain 9 10 myself, I also was a commodore of the Sandusky Yacht 11 If we can get the yacht clubs --12 MR. ZABOROWSKI: Thirty seconds. 13 MR. BUNSEY: -- energized to report things in real time as they are out on the lake, and 14 15 all of this would not cost a whole lot of money, but 16 it will give us something right now that we can get 17 data that we can make correlations against, and that 18 would help us, I think, spawn some -- some funding 19 ideas, and that may be what we need to get going 20 sooner than later. Thank you. 21 COLONEL DRUMMOND: Thank you. 22 MR. ZABOROWSKI: Thank you, sir. 23 Yes, sir. 24 Bill, if you can give your name and ZIP I know you're probably tired of me saying 25 code.

Capital Reporting Company Great Lakes and Mississippi River Interbasin Study Public Meeting 01-16-2014

107 1 that. MR. GINN: Bill Ginn, 44026. 2 We heard tonight, I think, and I'm 3 pleased that we did and I'm sure that the Corps is listening, that a long-term solution that separates 5 these two watersheds is the thing that all of us, 6 mostly us here in the room and elsewhere, believe is 7 necessary and appropriate and possible. 8 9 One of the things that we heard was the cost of doing nothing or the cost of doing something, 10 11 that doesn't meet the necessary criteria for 12 combating the Asian carp. 13 And one thing that we didn't hear 14 tonight, but it was inherent in that, is the number 15 of jobs currently on Lake Erie alone that are at risk 16 if these costs and revenue streams are expunged by 17 the Asian carp; and there is data that shows that at least 900,000 jobs are currently involved in the 18 19 Great Lakes -- in Lake Erie because of the present 20 condition that we're trying protect. 21 I think jobs is a big thing in this 22 country and in this here area, and we ought to think about the jobs that might be wiped out, if you will, 23 24 by the Asian carp. Thank you. 25 MR. ZABOROWSKI: Thank you, Bill.

108 1 MR. STARK: John Stark, 43017. So I was thinking as we were going 2 through this, one of the things that we had put 3 briefly in our written comments is that this particular process needs to be a really widespread 5 6 stakeholder process. 7 And so I'm sitting here thinking about an answer in Chicago on how to proceed versus an answer in New Orleans versus an answer in the west 9 10 might be completely different, and so I'm kind of 11 curious and the question I guess I'm really posing to 12 one of you, I don't know if it's most appropriate for 13 John or the Colonel, but in any case, what's the next 14 step? 15 You know, we're all thinking how do you 16 select the best process, how do you go through that? 17 How is the stakeholder process going to be 18 structured, how are you going to pull in that broad 19 representation we're talking about, because 20 theoretically you're dealing with 32 states and 2 21 provinces when you get right down to it. So there 22 might even be an international component to all this. 23 MR. GOSS: There -- there is no 24 established process for this consensus discussion

because this is a very unique project, and as -- as

you recognize the range of stakeholder groups that are very, you know, deeply concerned, it's pretty 3 wide. However, there are some forums where 4 those groups are conducting conversations, and over 5 6 the course of the next several weeks in meetings, we've already started those with -- with several 7 stakeholder groups, we're getting suggestions, like we have today, for what would be the next best steps 10 so that we can try to reach what -- what would be 11 valuable to the long term that could be done in the short term that would make a difference while we 12 13 continue to work on the best long-term solution. 14 So I think we do not have an established 15 consensus building agreement from agencies or 16 anything, but I think we need to have faith in the 17 discussion process continuing and the commitment from -- I know from many groups that are represented here 18 19 to this discussion process to keep working on what 20 can we agree on and what can we build momentum for 21 funding. 22 As Congresswoman Kaptur is so aware, 23 we're going to have to translate that into action 24 with broad-based support. So we appreciate everyone 25 working through your networks to send messages that

Capital Reporting Company Great Lakes and Mississippi River Interbasin Study Public Meeting 01-16-2014

```
110
    this can be accomplished. It will take some serious
   work by all of us.
                        Thanks.
                MR. ZABOROWSKI: We'll go -- you might
 3
    (inaudible) I haven't seen you up here before.
 5
                MALE SPEAKER: I think he was before me.
                MR. ZABOROWSKI: Sir?
 6
                MALE SPEAKER: (Inaudible).
                MR. ZABOROWSKI: Sorry. If you'd like
 8
 9
    to come up first.
10
                MR. MILLIKAN: I can wait.
11
                MR. ZABOROWSKI: No, I haven't seen you
12
    up here yet. It's dark out there.
13
                MR. MILLIKAN: There's a lot of really
    smart people in here tonight and nice to see
14
15
    everybody, a lot of nice comments.
16
                I have a comment --
17
                MR. ZABOROWSKI: Sir --
18
                MR. MILLIKAN: Scott Millikan, 44111.
19
                Obviously, I'm not one of the smart
20
    ones.
21
                I have a question to propose for the --
22
    for whoever wants to answer this from the Corps of
23
   Engineers. Whereas the Chicago waterway is the clear
24
   and present danger for the invasion of this fish,
   we'll call it that, I understand that there are other
25
```

- 1 areas of concern such as the Wabash River in Indiana,
- 2 and are there any other entry points other than the
- 3 Chicago River that the Corps needs to be very
- 4 concerned about and is there being anything addressed
- 5 to that end?
- 6 MR. WETHINGTON: Excellent question,
- 7 Scott. Appreciate that.
- 8 At the beginning of my conversation I --
- 9 we outlined that there's a nearly 1,500 mile basin
- 10 divide between the Great Lakes and the Mississippi
- 11 River Basin, and along that divide we've identified
- 12 18 other sites outside of the Chicago Area Waterway
- 13 System.
- 14 GLMRIS, as authorized by the original
- 15 legislation, looked at a comprehensive evaluation of
- 16 the transfer of species between the Great Lakes and
- 17 Mississippi River Basin. So we looked at that entire
- 18 pathway. It was only the more recent legislation
- 19 that focused this particular report on the Chicago
- 20 waterway.
- 21 So prior to receiving that legislation,
- 22 we had a much wider net, and some of that work still
- 23 continues. We were successful in identifying those
- 24 18 other pathways, but what -- you know, the piece of
- 25 good news around those 18 other pathways is that when

- 1 you look at their comparison, and you and others have
- 2 called it a clear and present danger with regard to
- 3 the Chicago Area Waterway System.
- 4 As we look at the comparison of
- 5 significance or the likelihood of species transfer at
- 6 those other sites, it's much, much reduced. Reason
- 7 for that is twofold. First is that many of the sites
- 8 themselves are episodic. That means that they only
- 9 form an aquatic connection when there's significant
- 10 precipitation, rainfall, in that area. So most of
- 11 the time they're dry. So there's no way for species
- 12 to really transfer. And a lot of those areas there
- 13 aren't species immediately, I guess, perched, ready
- 14 to make that basin jump.
- The other kind of good news part of that
- 16 story is that when it comes to addressing these and
- 17 taking care of them in a long-term manner, it's
- 18 really a lot simpler than the Chicago Area Waterway
- 19 System, which is why we've worked very extensively
- 20 with John here and the states and the local resource
- 21 agencies, because, you know, if it's a matter of
- 22 dumping, you know, a few hundred cubic yards into a
- 23 farmer's ditch and that being the way to seal off one
- 24 of those 18 sites, you know, in kind of my opinion
- 25 there's no need for that to become a federal project,

- 1 that can be taken care of very easily at the state or
- 2 the local level.
- 3 So we've tried to advance -- you know,
- 4 the Corps has partnered with state representatives to
- 5 try and advance the movement of kind of assessments
- 6 and prioritization of each of those sites, and there
- 7 are a number of sites that are currently being taken
- 8 care of. Eagle Marsh and the intersection between
- 9 the Wabash and Maumee, that one is currently being
- 10 assessed by the Natural Resources Conservation
- 11 Services, in collaboration with the state and the
- 12 Corps of Engineers providing some technical detail
- 13 engineering-level support.
- 14 So John can speak a little bit more if
- 15 I've missed anything, but really we have done a lot
- 16 of work trying to identify those sites. If you want
- 17 to read more about them, there's actually information
- 18 on our website about each one of those site-specific
- 19 pathway assessment reports that can tell you a lot
- 20 more about what could potentially transfer at those
- 21 sites.
- 22 MR. GOSS: One additional comment. The
- 23 Corps often is faulted for being slow, but on this
- 24 particular project they completed those risk
- 25 assessments and the evaluations in about a year, and

- 1 since that was over a year and a half ago that we got
- 2 those reports, the DNRs in each state now are taking
- 3 the lead on coming up with what is the best solution.
- 4 And certainly in Indiana we will likely have it
- 5 funded by sometime in 2014 to separate the Wabash
- 6 from the Maumee connection in Fort Wayne, and in Ohio
- 7 we have some additional modeling work to do on the
- 8 hydrology on their sites, but we're committed to
- 9 getting those funded and blocked off also.
- 10 So we're -- we're making real progress,
- 11 we're just a little bit quiet about it.
- MR. ZABOROWSKI: Thank you.
- Next, Kristy, if you'd like to come
- 14 back, and then I have a gentleman that actually
- 15 registered at our table, so , if you're
- 16 available after Kristy goes.
- 17 MS. MEYER: Thank you. I'm Kristy Meyer
- 18 again, 44 -- wow, I just forgot my ZIP code.
- 19 MR. ZABOROWSKI: There's a lot of
- 20 pressure on you now.
- MS. MEYER: 43212. Sorry. Yeah.
- 22 Well, that's my work address.
- 23 But I just quickly want to note that
- 24 some -- I just got a text from people in Toledo,
- 25 they are stuck because of weather and there's lot of

- 1 people off the road. So if you're driving back that
- 2 way, please be careful.
- But I did want to note that, you know,
- 4 we're talking about taking in consideration people
- 5 from, you know, various parts of the country, and
- 6 certainly we should -- and -- and John's right, it --
- 7 it -- and Sam's right, too, that it isn't just the
- 8 Great Lakes, it's also the Mississippi River, it's
- 9 also the Ohio River.
- 10 MALE SPEAKER: Ohio River.
- MS. MEYER: And a lot of us here, you
- 12 know, are worried about the Ohio River as well.
- But the USGS, as you guys know, put out
- 14 a report stating that really that the Grand, the
- 15 Maumee and the Sandusky River are prime habitat for
- 16 Asian carp, and I think that was confirmed this year
- 17 when we saw grass carp, you know, establish
- 18 population in the Sandusky River.
- 19 So it really worries me that -- you
- 20 know, maybe there's not a process for figuring out,
- 21 you know, public comments and how to figure out how
- 22 to move forward. And I'm sure it worries a lot of --
- 23 a lot of people in the room.
- 24 But I did want to touch briefly on the
- 25 funding, and, you know, urge you guys to start

- 1 working -- obviously you're going to have to work
- 2 with a cost share, you need somebody to share this
- 3 cost with you, and start working with the Chicago
- 4 folks in trying to figure out how we can come up with
- 5 a funding source.
- I also really want to urge that we don't
- 7 raid the Great Lakes Restoration Initiative. It's
- 8 doing really fantastic work across the Great Lakes to
- 9 do very important work, and so I really don't want to
- 10 see it raided.
- 11 And then I have a question. So I -- I
- 12 did quickly, I'll admit -- so you guys put this
- 13 report out when I was on vacation, I quickly got back
- 14 and tried to scour through it, and I noticed in
- 15 there, if I'm correct, and if I'm not I apologize,
- 16 but in there you talk about the aquatic nuisance
- 17 species treatment plants, right?
- MR. WETHINGTON: Mm-hmm, right.
- 19 MS. MEYER: You talk about using UV, but
- 20 you note that you never -- that this has never been
- 21 used before to kill aquatic invasive species. So I'm
- 22 wondering are you testing it now, are there other
- 23 options, what happens if it doesn't work, just kind
- 24 of those type questions.
- 25 MR. WETHINGTON: Perfect. So the

- 1 aquatic nuisance species treatment plant that we kind
- 2 of conceptualize -- and, again, these are 5 percent
- 3 level designs, we believe that they are implementable
- 4 and we believe that they are feasible, we believe
- 5 they will work.
- 6 UV treatment is actually widely used for
- 7 drinking water treatment. The State of New York
- 8 recently built a multibillion dollar -- close to a
- 9 billion dollar treatment facility specifically for
- 10 drinking water using UV treatment.
- 11 So the way UV works is it inactivates or
- 12 kills, in very similar terms -- inactivates
- 13 microorganisms, other things in the waterway. So
- 14 using a -- kind of a series of screens to get rid of
- 15 the larger fish, and then filters to get rid of, you
- 16 know, plants and other things, anything that makes it
- 17 through -- if you have some algae, if you have some
- 18 virus like the viral hemorrhagic septicemia virus get
- 19 through, they run it through that UV treatment
- 20 system, and we firmly believe that this is a very
- 21 strong concept for inactivating those particular
- 22 species of concern.
- 23 If it's good enough for human potable
- 24 water, for drinking water, then we believe that it
- 25 will also serve to inactivate those aquatic nuisance

118 species of concern. So that's the concept. 2 I know we haven't done any specific work, but it's widely utilized in drinking water infrastructure. -- you know, it's commonly accepted in that sense. 5 6 MS. MEYER: If I may, just to follow up. 7 So I'm just wondering do we have any proof from maybe New York that this does kill all biological species 8 that maybe are going through? 9 10 I guess just a concern, as I'm sure --11 you know, I -- I agree with you, the big screens will 12 take out the big stuff, right, or the screens will 13 take out the big fish and so forth, but the little 14 micro -- you know, the microorganisms or eggs or so 15 forth, do we have any data that shows that it has worked? 16 17 MR. WETHINGTON: There's a lot of good evidence of that, and if we were to choose to further 18 19 develop that treatment train as part of a long-term 20 solution, we would certainly do the research and do 21 the testing, you know, bench-scale, field-scale testing to ensure that what we put out there would be 22

- MS. MEYER: And how long would that
- 25 take? Okay.

effective.

Capital Reporting Company Great Lakes and Mississippi River Interbasin Study Public Meeting 01-16-2014

```
119
 1
                MALE SPEAKER: (Inaudible).
 2
                MS. MEYER:
                            Okay.
                MR. WETHINGTON: It all --
 3
                MS. MEYER: I'm sorry.
 4
 5
                MR. WETHINGTON: You know, it's very
    difficult for us to kind of examine what specifically
    -- if we were trying to do something on that, I mean,
 7
    18 months, a couple years is likely what it takes to
 8
   move something from laboratory scale to a bench-
 9
10
    scale, and then if you want to do a field test, that
11
    may take longer to look at, you know, what kind of
12
    permits do you need from the Environmental Protection
13
    Agency or state agencies. I mean, one to three years
14
    is probably a pretty safe estimate.
15
                MS. MEYER: And I know that in the past
16
    they talked about using UV for ballast water
17
    treatment.
18
                MR. WETHINGTON:
                                 Yes.
19
                MS. MEYER: And maybe -- and I don't
20
    remember off the top of my head, but maybe there's
21
    some data out there to show how -- how accurate it
22
    was.
23
                MR. WETHINGTON: Absolutely.
24
                MS. MEYER: Thank you.
25
                MR. WETHINGTON:
                                 Thanks, Kristy.
```

Capital Reporting Company Great Lakes and Mississippi River Interbasin Study Public Meeting 01-16-2014

```
120
 1
                MR. ZABOROWSKI:
                                  Thank you.
                                   who had signed up.
 2
                I had
    I'm sorry, Cheryl, I'll get to --
 3
 4
                             My name is
    ZIP code is 44072.
 5
                                          can you speak
 6
                COLONEL DRUMMOND:
    closer to the mike, please?
 7
 8
                             Yes.
                                    That's better there?
 9
                My name is
                                        the ZIP code is
10
    44072, sort of a comment I've had with previous
    interactions with the Corps, the comment and then
11
12
    just some specifics on that.
                I'll read it here: Based on its
13
14
    lackadaisical approach to the indiscriminate feeling
    of wetlands in Geauga County where I live, I am not
15
    so sure the Army Corps should be entrusted to
16
17
    supervise the -- this critical Great Lakes project.
                Time after time in the past I've called
18
19
    the branch in charge of Geauga County, it takes
20
    several calls and leaving messages to get a response,
21
    and then more calls to get a site visit, and then
    there's no action.
22
23
                The Corps is too busy with dams and
24
   massive engineering projects to create their own --
25
    that create their own severe environmental impact.
```

- 1 That's my general comment.
- 2 The specific event most relative to this
- 3 comment about -- occurred around 1998 to 2000 or so
- 4 when the wetland behind the then named Clark Gasoline
- 5 Station, 8247 Mayfield Road in Chesterland, Ohio,
- 6 44026 was filled in, backfilled with 8 to 10 or more
- 7 feet of rubble, the fill was dumped to the very edge
- 8 and in some cases directly into Griswold Creek which
- 9 runs along the edge of the property.
- 10 It took several phone calls, as detailed
- 11 above, and the Corps drive-by apparently
- 12 eventually was made but nothing happened. Subsequent
- 13 to this filling and other changes and insults to the
- 14 Griswold Creek watershed, flooding events have become
- 15 more frequent and severe in the Russell Township
- 16 portion of the watershed, which is south of the
- 17 Chesterland address given above.
- More recently, about three years ago,
- 19 severe erosion resulted in Russell Township along
- 20 Griswold Creek following the Memorial Day severe rain
- 21 event that even made the 6:00 TV news.
- 22 Geauga County (inaudible) a source of at
- 23 least three rivers that flow into Lake Erie, its
- 24 rolling terrain consists of high and low areas with
- 25 many valley wetlands, and more and more discriminate

```
1 care is needed of these as development occurs slowly
2 in that county. But where's the Corps been? I mean,
3 in our own township we have meetings where developers
```

- 4 come and they refer to the Corps floodplain, but it's
- 5 often ignored.
- I just wanted to say you need some more
- 7 -- some more local input, and I call on other
- 8 flooding and filling events I've seen throughout the
- 9 county since that period of time. That's just a
- 10 general comment.
- 11 Meetings like this, I guess, are a
- 12 start, but -- I mean, it's not all infrastructure,
- 13 it's going to take a lot of -- many, many
- 14 stakeholders, as stated here today, to solve this.
- 15 That was just a bad case with bad results.
- MR. WETHINGTON: Thank you.
- 17 MR. ZABOROWSKI: Thank you, sir.
- : What -- what is your
- 19 control of wetland filling in places like Geauga
- 20 County, which is the source of the Cuyahoga, the
- 21 Grand and these -- all rivers, we're sort of the
- 22 tabletop of the area. All the water flows from
- 23 there.
- 24 MR. WETHINGTON: Our regulatory
- 25 department does have regulatory, I guess, control of

```
123
    dredging and filling, and I would refer your question
    specifically to your local Corps of Engineers office
                I apologize, sir, we're here to discuss
 3
    the -- the larger question of aquatic nuisance
    species.
 5
 6
                             Yeah, but the -- the larger
 7
    question:
               Should you be entrusted with that?
                MR. WETHINGTON: I appreciate your
 8
 9
    comment. Thank you.
10
                             Okay.
11
                MR. ZABOROWSKI:
                                 Thank you, sir.
12
                Your turn at the microphone. So I'm
    going to go one, two, three afterwards.
13
    (Indicating.)
14
15
                When you're ready, sir.
16
                MR. GOUDREAU: Thank you. George
    Goudreau, 44040.
17
                Thank you for admitting that the Corps'
18
19
   primary directive has been to build structures and
20
   harbors and not has been -- not to be the biologist
21
    or eco guardians, that has not been your charge and
22
    you're being forced into that situation by some of
23
    things you're going to do.
24
                But saying that -- I'm -- I'm saying --
25
   by the way, I'm speaking as an individual now, George
```

- 1 Goudreau, a boater, a fisherman, somebody that's been
- 2 on the water for his entire life, whose relatives
- 3 came from Upper Peninsula Michigan, and I enjoy
- 4 Canada -- our Canadian waters, as well as on Lake
- 5 Huron -- as well as the Michigan waters of Lake
- 6 Huron, somehow they're the same.
- 7 When the Native Americans were here,
- 8 which became known as Indians, and the -- and the
- 9 First Nation People, as they're called in Canada,
- 10 were here, they never wanted to own the land, but
- 11 they thought that they had to be -- they were the
- 12 stewards of the land. We are the stewards of the
- 13 land, that means water, that means earth, and that --
- 14 that is something that we have to consider whenever
- 15 we do anything.
- I've -- you know, I've sat here and I --
- 17 because you're the Chicago Corps, not the Buffalo
- 18 Corps or Detroit, I know that you're based in Chicago
- 19 -- I was president of the U.S. Ski Association,
- 20 Central Division, and I was -- our office was in
- 21 Chicago, so I've been in and out of Chicago my entire
- 22 life -- adult life.
- What concerns me is if you go
- 24 historically, and I like history, you go back to 18
- 25 -- the late 1890s and -- the political machine of

- 1 Chicago and Illinois are the ones that reversed
- 2 unilaterally the flow in the Chicago River, obviously
- 3 for health reasons, but they did it without the
- 4 approval of any of their regional partners, if you
- 5 would, because they didn't believe in partners at the
- 6 time, nor the federal government, and that whole
- 7 thing ended up in a lawsuit against the State of
- 8 Illinois by the seven surrounding states and was
- 9 handled by a Supreme Court decision in the '30s which
- 10 was a consent decree.
- 11 And the Chicago River may not travel
- 12 more out of the lake than 3,200 cubic feet per second
- 13 of water. Of that 3,200 cubic feet of water that
- 14 travels out of Lake Michigan, 5 to 7 -- only 5 to 7
- 15 percent statistically and seasonally are reverted to
- 16 the Chicago River, which is also known as the
- 17 Sanitary Ship Canal.
- MR. ZABOROWSKI: Thirty seconds.
- MR. GOUDREAU: The other 90 to 95
- 20 percent goes into the Chicago water inlet system.
- 21 So I guess I'm sitting here in
- 22 Cleveland, Ohio, or in Detroit, Michigan, or Duluth
- 23 Minnesota, and I really don't care specifically about
- 24 Chicago -- the Chicago canal. I consider it a Great
- 25 Lakes issue personally, and I hope you will look at

- 1 it disinterestedly as that, and I know the
- 2 politicians are very strong from that area. Thank
- 3 you.
- 4 MR. ZABOROWSKI: Thank you again, Mr.
- 5 Goudreau.
- 6 MR. SHIELDS: I'm Bob Shields, sorry,
- 7 ZIP 44100 is my home, work is 44115.
- I come here wearing two hats. The first
- 9 one is chair of the Ohio Chapter of the Sierra Club,
- 10 and I -- we will be sending in our comments later,
- 11 written comments, but we endorse all the comments
- 12 that have been said here this evening, whether it's
- 13 from the congresswoman, the Attorney General, our
- 14 friends from the TWC or from OEC, a lot of the
- 15 smaller groups here, individuals, we, too, endorse
- 16 hydrologic separation, and we'll get into that in
- 17 greater detail.
- 18 What I do want to speak to right now,
- 19 though, is a sense of urgency. The Corps of
- 20 Engineers knows what to do, the Corps of Engineers
- 21 has proven this time and again, and this country also
- 22 knows what to do. We heard that eloquently from our
- 23 friend who mentioned that with regard to the man on
- 24 the moon under ten years. I believe the Corps of
- 25 Engineers built the Pentagon in, what, one year,

- 1 something like that. It is doable where there is a
- 2 will. The Corps of Engineers knows the -- knows the
- 3 situation, it has a mission. The Corps of Engineers
- 4 definitely knows how to execute, logistics is a
- 5 problem.
- Now, I understand you are from Chicago,
- 7 but we know as officers that we have to take care of
- 8 our people. When you take care of your people, good
- 9 things happen. We don't put it that way in
- 10 leadership training, but we know that from experience
- 11 and in our hearts.
- 12 Your people are not Chicago, your people
- 13 are from Duluth, Minnesota to the west, to Messina,
- 14 New York in the east, the eight Great Lakes states
- 15 and two provinces, and I heard this a couple times
- 16 from TWC is that we have an additional 24 states. We
- 17 are all of your people, look after us, good things
- 18 will happen. That is the sense of urgency.
- 19 Now, I've heard also, "Well, we need to
- 20 get all of these people together." The other thing
- 21 that we do as leaders is we ask who can help, "What
- 22 are you going to do for us?" Let me throw that back
- 23 to you. The Sierra Club, what can we do to help?
- 24 I'll leave it at that.
- 25 MR. WETHINGTON: If I can take a second

- to respond. I guess one thing that you or anyone else can do is certainly come out to -- and raise your voice tonight, as well as raise your voice with your elected officials. I think that's a very strong 5 way to do it. 6 As you note, we are good at doing what 7 we are told to do. For the Corps of Engineers to do anything, we need two things: We need authority, 8 which was given to us by our elected officials, by 9 10 Congress, and we need appropriations, or money. 11 essentially that is how we get all of our business 12 done. We have existing -- we have authorities and we 13 have appropriations. 14 And another comment just as a side note, 15 we've heard from a couple folks that we're Chicago, and I think that maybe I kind of unhinged us a little 16 bit when I was responding to the gentleman's question 17 about the regulatory department. I was merely 18 19 trying to direct him to the appropriate agency to 20 best answer it. I unfortunately can't answer it.
- We are one Corps. We are one Corps of
- 22 Engineers. We have different district offices, but,
- 23 you know, here regionally we're under one division,
- 24 but we are one Corps of Engineers. They -- there
- 25 were over 19 different Corps offices that helped put

- 1 this report together stretching from Alaska District
- 2 all the way to Jacksonville District.
- 3 So there were over a hundred people who
- 4 touched this report in some sense. So we are by no
- 5 means parochial in the sense of it being Chicago. We
- 6 tried to approach this, you know, problem from a very
- 7 unbiased perspective and really appreciate all of
- 8 your input and all of your comments, and we -- we
- 9 completely understand where you are coming from. So
- 10 thank you.
- MR. ZABOROWSKI: Sir, when you're ready.
- MR. ECKMAN: Thank you.
- 13 My name is Mark Eckman, my ZIP code is
- 14 44026, I'm a lifelong Ohio resident, and I wanted to
- 15 say that Lake Erie is part of our way of life here
- 16 and that it's a priceless jewel of a lake and we
- 17 should do all that we can to protect it.
- 18 You mentioned that with your report
- 19 being done, the responsibility is now the Department
- 20 of Natural Resources in each of the states, and I'm
- 21 wondering if the decisions about the Chicago shipping
- 22 canal will be made by the Illinois Department of
- 23 Natural Resources, and I wonder if they are -- should
- 24 really be entrusted with that decision. Is that my
- 25 understanding?

Capital Reporting Company Great Lakes and Mississippi River Interbasin Study Public Meeting 01-16-2014

130 1 MR. GOSS: I may have misspoke. intended that to be directed at the other pathway connections across the states, not the Chicago waterway. 5 However, the State of Illinois is 6 responsible for the Illinois River, Chicago waterway, and they are a very important local partner. 7 will be asking Illinois, Chicago, the water reclamation district that manages the water systems 9 10 there and the canal system there to weigh in with their recommendations, much like we're asking folks 11 in Cleveland to weigh in with their recommendations 12 13 and across all the rest of the states. 14 MR. ECKMAN: My question to you, sir --15 MR. GOSS: We are -- we are not turning 16 the decisions over to Illinois or to Chicago, though. 17 So please do not misinterpret what I said. 18 MR. ECKMAN: Who can I, as a citizen, 19 put pressure on to ensure that the right decision is 20 made about the Chicago shipping canal? 21 MR. GOSS: As it was stated earlier, 22 that's why we have elected officials. There is no 23 one person that's going to make this decision. 24 MR. ECKMAN: Okay. So you're saying no 25 one?

MR. GOSS: We're in the midst of a

- 2 process of getting everyone's input. We want to
- 3 continue that for the next few weeks. We're looking
- 4 for some common ground from the interest groups, from
- 5 the states, from the communities, from everyone
- 6 interested here, and we'll try to make a
- 7 determination about the next step forward.
- 8 MR. ECKMAN: I can appreciate that. And
- 9 that being said I would just like to be -- I would
- 10 just like to say that, you know, this whole process
- 11 is very curious. You know, if oil was leaking into
- 12 our lake, there would not be a moment's hesitation to
- 13 fix the leak and purify our water. But this invasion
- 14 of Asian carp is much more insidious than oil, they
- 15 can get into our water and they can reproduce. And
- 16 once they get into Lake Erie and reproduce, they can
- 17 clog our water intake outlets, they will die in the
- 18 algae blooms, and these dreadful fish, up to 60
- 19 pounds each --

- MR. ZABOROWSKI: Thirty seconds.
- 21 MR. ECKMAN: -- will wash up on our
- 22 shore, they will destroy our boating industry. As
- 23 Marcy Kaptur said, it's the third largest boating
- 24 industry in the country. They will destroy our
- 25 recreational fishing industry, and I'm very fretful

```
1 and quite worried about what's going to happen when
```

- 2 these fish get in.
- 3 And also that the -- the \$18 billion to
- 4 prevent this is such a tiny fraction of the cost of
- 5 the damage they will cause. And just one more short
- 6 comment, that the \$18 billion is a tiny, tiny
- 7 fraction of 1 percent of what this government spends
- 8 annually. So in that case, the cost looks completely
- 9 reasonable, and I -- I fail to understand why no one
- 10 would move forward with separating these watersheds
- 11 immediately. I don't understand it.
- MR. ZABOROWSKI: Thank you.
- MR. WETHINGTON: Thank you, sir.
- 14 MR. ZABOROWSKI: Mr. Dabson, we have
- 15 another man in front of you, but is there anyone else
- 16 that --
- 17 COLONEL DRUMMOND: Down here.
- 18 CONGRESSWOMAN KAPTUR: Let him go first
- 19 and I have a comment at the end.
- MR. ZABOROWSKI: Okay.
- 21 MR. YANDEK: Ed Yandek again, 44118.
- 22 I'll be quick. Two questions really and I'll sit
- 23 down so I can get your answers.
- 24 Procedurally again, other agencies have
- 25 been involved at the federal level, typically after a

- 1 hearing like this or looking for comments. There's a
- 2 way that we can go on and see all the comments from
- 3 all of the people from other regions as well as our
- 4 own. I'd like someone to address how we do that and
- 5 when that would be available, and, secondly, is it
- 6 possible to get the summary slides that you gentleman
- 7 presented here tonight? I thought they were very
- 8 good, I think they can be shared -- we can share them
- 9 with other people. I assume they're a PowerPoint
- 10 somewhere that we can download.
- And then the other question I have would
- 12 be: Based on the reading I've done so far, I admit I
- 13 haven't read every single page, am I wrong in my
- 14 assumption that the -- that the solutions you've been
- 15 proposing so far retained the functionality of what
- 16 would be important to Chicago, including the use of
- 17 the waterway for commercial purposes?
- I didn't see anything in your
- 19 recommendations that indicated even the most extreme
- 20 hydrological separation would be an immediate serious
- 21 issue for the commercial navigation people in the
- 22 Chicago area, if you could talk to that.
- 23 MR. WETHINGTON: Absolutely. It's Ed,
- 24 correct?
- MR. YANDEK: Yes.

134 1 MR. WETHINGTON: Well, Ed, thank you for I'll take the easy ones first. your comments. The slides that we have produced today, 3 displayed today we will have up on our website. 5 actually something that just kind of came to my 6 attention, they weren't up there. So if you go to that website, the GLMRIS.anl.gov, you should be able 7 to go onto the GLMRIS report page and then download the slides as a -- probably the PDF will be the --9 10 the simplest way. 11 Pertaining to these comments, we have a 12 court reporter, stenographer here today who is 13 recording everything that everyone says, and we will 14 receive that information, go through the process of 15 making sure it's correct technically, I guess, and 16 then post that information on our website. It will 17 probably take at least a month in order to get those 18 final transcripts up there, and then we'll also have 19 a report, we're going to put together a summary of 20 what we heard in general at these various meetings, 21 and we hope to use that summary as another piece of 22 information for decision-makers. 23 So we'll be able to kind of capture, 24 memorialize what we've all heard today, as well as in

25

the other cities.

1 The functionality of the waterway with hydrologic separation would be impacted. There would be significant impacts to navigation. If you have a physical barrier in the waterway, navigation cannot continue as it does today. So perhaps it's something 5 that you haven't had a chance to read through just 6 yet, but there are other alternatives to try and 7 maintain that functionality. 9 We looked at the three primary uses of the system, navigation, water conveyance, water 10 11 quality and flood-risk management, and so we tried to maintain those uses while trying to achieve that goal 12 13 of aquatic nuisance species control or prevention. 14 And so in a scenario such as hydrologic 15 separation, you do have a lot of compromises for 16 those existing uses. Navigation essentially goes 17 A lot of materials that would normally be moved on the Chicago waterway via barge would likely 18 19 be moved via rail or via truck. 20 Flood-risk management would be compromised, but that's why we are recommending in 21 22 that particular alternative to construct that tunnel 23 and conveyance infrastructure, same thing for water 24 quality, whether it's sediment remediation or capture 25 of combined sewer outfalls just to ensure that we

- 1 protect those significant natural resources, not for
- 2 any new benefits but just to at least maintain what
- 3 we have today.
- 4 MR. ZABOROWSKI: I saw Mr. Dennison,
- 5 then Congresswoman, and then, ma'am, if you're ready
- 6 to go after, if everyone is okay with that order.
- 7 Mr. Dabson?
- MR. DABSON: Okay. I had mentioned --
- 9 MR. ZABOROWSKI: Sorry. Name and ZIP
- 10 code.
- MR. DABSON: I am Dean Dabson, 44060.
- I had mentioned, you know, the Canadian
- 13 system --
- 14 COLONEL DRUMMOND: You're going to have
- 15 to speak into the microphone.
- MR. DABSON: Okay. It was turned down.
- 17 Sorry.
- I had mentioned the Canadian system and
- 19 I also had mentioned the Eurasian system of bypass.
- 20 If -- if you put a separation in as far as getting,
- 21 you know, the shipping that -- that's vital to that
- 22 area, and the Supreme Court ruled you can't interfere
- 23 with that shipping.
- Now, when I had talked to various people
- 25 -- I'm not saying, you know, which people, because

- 1 you have to deal with them, but I -- over the past
- 2 three years they have talked about, "Well, you can't
- 3 use the word 'Russia,' you have to find some other
- 4 word because that's not going to be palatable in
- 5 Congress." So I came up with your Eurasian.
- Also, you know, they said, "Well,
- 7 Canada, well, "you know, "isn't there anything in the
- 8 United States that's like this?" and I had to say
- 9 "No," you know. So you're -- you get into all of
- 10 these really strange attitudes that I thought we were
- 11 past those, but apparently we're not. So just be
- 12 prepared.
- And, you know, three years has gone by
- 14 since I talked about this at Great Lakes when they
- 15 had the last, you know, major Army Corps talk there,
- 16 and three years has gone by.
- Now, the Belgian -- one of the Belgian
- 18 systems, I think it took about -- anywhere from four
- 19 to six years to -- to complete. So three years has
- 20 gone by already if you were going to put one of these
- 21 systems in which would allow for, you know, a
- 22 closure. And -- so the longer we delay this, the --
- 23 the worse it's going to get.
- 24 And now this particular system I looked
- 25 at to handle one barge -- one tug, nine barges at a

- 1 time would be about a \$1.9 billion project. Okay.
- 2 If you only did one -- push one barge through at a
- 3 time, it would be approximately 2 to 300 million, and
- 4 the cost of our bridge over here, 600 million, just
- 5 to give you by comparison.
- 6 So these things -- these things are
- 7 doable, but you run into all of these roadblocks,
- 8 and, you know, you just have to be aware that these
- 9 things do exist, and that was my purpose of getting
- 10 involved. And I -- I want to thank Colonel Drummond
- 11 personally because he's really -- he really inspires
- 12 confidence because he really wants to get this job
- 13 done, but you have to realize that the politicians
- 14 are where a lot of these roadblocks are coming about,
- 15 whether in Chicago or in the Congress, and those are
- 16 the people we have to get to.
- So I'm really happy that we have a
- 18 congresswoman here tonight that has a reputation for
- 19 getting things done, and, again, that's the cost.
- Now, the other gentleman that spoke was
- 21 a young guy, and I hear this a lot from young people,
- 22 but very gung-ho on making profit, and, you know, why
- 23 can't we just fish these things out. Well, it would
- 24 take --
- 25 MR. ZABOROWSKI: Come to a complete

139 statement, please. 2 MR. DABSON: It would take large trawlers with large nets to engage in that kind of fishing, and that's a factory-fishing model, and this is the type of thing that destroys the character of 5 -- of our Great Lakes, which is the charter captains. 7 So thank you. 8 MR. ZABOROWSKI: Thank you. So it is currently, let's see, 6:55. 9 have -- two people have indicated that they would 10 11 like to speak and we're scheduled to run to 7. 12 right now, we'll ask those two people to come speak 13 and then -- yes, and then we'll ask the panel for 14 closing comments. 15 Congresswoman, if you'd like to come up, 16 and then so I don't cut you off, name and ZIP code, 17 please. 18 CONGRESSWOMAN KAPTUR: Congresswoman 19 Kaptur, I'm going to use the same one which is 20 probably wrong, 22315, but it's the Rayburn Building 21 in Washington, which belongs to you, not to me. 22 Let me just ask the Colonel: How far 23 from the electronic barrier are the fish now, the 24 Asian carp? I was told in Washington about a month 25 ago they're about 30 miles; is that true?

1 COLONEL DRUMMOND: Yeah. I'd like to characterize it from Lake Michigan, I think that it would help a little bit, then I can touch on it from 3 the barrier itself. 5 From Lake Michigan 131 miles down is the small fish. So the larvae, the eggs. Approximately about 55 miles down is what we call the leading edge, 7 the front edge of the bigger sized carp. One thing that's been unique and over the last six years we 10 have not seen any substantial movement at all of the 11 leading edge of the Asian carp. 12 Now, there can be a whole bunch of 13 different reasons. Dave talked a little bit about it could be because of the design of the canal. 14 15 some ongoing studies, not only with the Corps, but as 16 well as the DNR that's taking a hard look at that. Haven't quite figured out what that is, but we're --17 18 we're studying that. 19 CONGRESSWOMAN KAPTUR: Does anyone in 20 any of the DNRs from the various states or do you 21 have an actual mapping of the volume -- your 22 estimates of volume from fish from Mississippi on up? 23 COLONEL DRUMMOND: Yep, we have a map, and I think we can probably get that to you. 25 CONGRESSWOMAN KAPTUR: Right. I didn't

- know if that was in your slide show or not. I wasn't present for the slide show, but I think we would be interested in that so we get a sense of numbers and rate of passage north. 5 Second point, one of the witnesses here, one of the -- mentioned the political and commercial interests in Illinois. There's a great book called 7 "Rivers of Grain," and I don't think I'm incorrect in 8 my impression that from Minnesota, from the Red River 9 10 Valley, all the grain that moves down the Mississippi 11 to New Orleans is carried somehow. And it would be 12 very interesting to look at that volume, because I 13 feel politically, based on meetings I've been 14 involved in in Washington, that that is really what 15 we're up against, and it is one of the reasons that
- 18 And I mentioned it because if we're

16

17

force.

19 going to solve the ecological problem, we have to

this is progressing slowly, and it's a very powerful

- 20 understand the magnitude of that. So if you have
- 21 figures for shipping volumes down the Mississippi,
- 22 that would be very -- I think very interesting, from
- 23 points north all the way down through Chicago and --
- 24 and south, because I've heard criticisms of some of
- 25 the mechanisms that would lift the ships and then

- 1 move them to another channel as interrupting that
- 2 trade. So I just wanted to make that request if --
- 3 if that is available.
- 4 And then, finally, I just wanted to
- 5 develop a little bit more if I could very quickly,
- 6 give me 15 extra seconds if you can, if you think
- 7 about the money -- because I'm looking for the
- 8 structure for this part of America that could rival
- 9 what I see existing in other places in our country.
- 10 And if I look at the \$1.1 billion that goes to the
- 11 Bureau of Reclamation annually, that is only a small
- 12 part of the funds they have to expend, because they
- 13 have worked on arrangements with local water systems
- 14 when -- these water contracts are how they make their
- 15 money.
- So that 1.1 billion is augmented by
- 17 water contracts and -- with a whole variety of users,
- 18 municipalities, agricultural interests, et cetera,
- 19 and the financing of some of that is most interesting
- 20 because they use the federal funds rate over a
- 21 hundred years, we're trying to get a cost accounting
- 22 of that so we can share it with the Corps.
- As we look for a new management model
- 24 for the Great Lakes, for this project and perhaps
- 25 others -- because we have more combined sewer

- 1 overflows here than any other part of the country,
- 2 not just in the Cleveland area, but in the Great
- 3 Lakes in general.
- 4 So we have to find a financing
- 5 mechanism, and if I compared the Bureau of
- 6 Reclamation to the St. Lawrence Seaway Development
- 7 Corporation, which is the only development
- 8 corporation we have that is an umbrella over this
- 9 region, their annual appropriation is \$30 million,
- 10 and they have none of the instrumentalities -- the
- 11 management instrumentalities, the funding
- 12 instrumentalities that exist in the other -- for the
- 13 other 17 states in the west.
- So I'm saying this because there are
- 15 many intelligent people here today. We need to study
- 16 that and we need to think -- there are a couple
- 17 lawyers that spoke that were just brilliant.
- 18 We need to think about how we now, in this
- 19 millennium, develop that umbrella for the St.
- 20 Lawrence Seaway System, which is a binational system
- 21 and how we use the mechanisms and modernize the
- 22 mechanisms that we have to meet some of the
- 23 challenges that are quite serious.
- In Chicago we might have to build
- 25 another channel. My gosh, in California they got two

© 2014

- 1 aqueduct systems that are serving that state financed
- 2 in different ways and they managed to work out the
- 3 contracting over many years.
- 4 So I thank you for -- for listening.
- 5 But I think that is one of our biggest challenges.
- 6 It's a -- it's a management challenge that needs an
- 7 instrumentality through which to do everything that
- 8 we would hope to do working with you.
- 9 So I thank you for your time and I thank
- 10 everyone who has come here today and thank you for
- 11 giving me an extra 15 seconds.
- MR. ZABOROWSKI: You get the dubious
- 13 distinction of going last.
- MS. RAINKEY: Joyce Rainkey (phonetic
- 15 spelling) 44118.
- 16 One of you mentioned that there are
- 17 decision-makers who will decide this, and I would
- 18 like to know, besides the citizens and state and
- 19 federal representatives, who these decision-makers
- 20 are in the Corps and other organizations that are
- 21 going to make these decisions.
- 22 MR. WETHINGTON: Ultimately decisions
- 23 are made by our elected officials with regard to
- 24 specifically how the Corps of Engineers does our
- 25 business. As I explained a little bit earlier, we

145 need two things in order to proceed on any project. As the Corps of Engineers organization, we need authority, and that comes from Congress, and we need 3 appropriations, which, again, come from Congress. So those are, for the Corps of Engineers specifically, 5 the ultimate decision-makers. 6 7 MS. RAINKEY: Okay. Thank you. MR. ZABOROWSKI: 8 Thank you, ma'am. Okay. I would like to thank everyone that 9 came out here tonight and for all of your input. 10 11 think --12 MR. SHAW: Excuse me, Kendall. 13 MR. ZABOROWSKI: Yes. 14 MR. SHAW: She has one more. 15 MR. ZABOROWSKI: One more. 16 MS. KAPTUR: Too many things. 17 MR. ZABOROWSKI: You know what I'm going 18 to say, right? 19 MS. KAPTUR: The correct ZIP code is 20 20515, but I thought I should mention in the 21 Congress, in the House, the gentleman who heads the 22 WRDA committee on the Republican side of the aisle is 23 Bob Gibbs from Ohio. 24 Bob and I have talked about traveling --

I had on my side of the aisle the Energy and Water

25

146

- 1 Committee, and I've talked to the Republican on my
- 2 committee who handles the appropriations, Mike
- 3 Simpson of Idaho, who I'm not sure's ever been to the
- 4 Great Lakes, but I've gotten him to agree to land in
- 5 Chicago, and Bob Gibbs wants to take his committee
- 6 there. So if we take both committees there, and
- 7 maybe the Corps helps us arrange that, you'd have the
- 8 two key committees in the Congress that deal with
- 9 this issue and the whole Great Lakes. Okay?
- 10 So -- and we need to have the Great
- 11 Lakes Restoration Initiative, the gentleman that has
- 12 that, Cam Davis, he's got to be a part of all this,
- 13 because we need an interagency working group at the
- 14 federal level to handle the magnitude of what we are
- 15 talking about here and try to ameliorate the problems
- 16 inside the Illinois delegation if we start tampering
- 17 with things inside of Chicago and the State of
- 18 Illinois.
- 19 It's quite complicated, but at least we
- 20 have some of the chairmen lined up. Okay? And -- so
- 21 we're already talking, we're trying to figure this
- 22 out. The great news as I said to Bob Gibbs, I said,
- 23 "Hey, Bob, we can't wait five years for a WRDA bill."
- 24 I said, "This is too serious, we've got to move
- 25 quickly."

```
147
 1
                He said, "Marcy, I've got authority.
                                                       I
    can do a bill every year."
                So he was even willing -- so Bob Gibbs
 3
    is a good person for you all to talk to if you
   haven't done that yet. And -- so the chairmen are
 5
    thinking with us, we just need to push them in that
 7
    direction. Okay?
 8
                MALE SPEAKER: You go, girl.
                MR. ZABOROWSKI: All right. Thank you
 9
10
    again, Congresswoman.
11
                At this point I'd like to ask the panel
12
    if they have any additional comments for tonight's
13
    audience.
14
                COLONEL DRUMMOND:
                                   Well, first of all,
15
    Congress -- Congresswoman Kaptur, thank you, ma'am,
    thank you for coming out here and helping us. You
16
17
    certainly provide due diligence to the whole process.
18
                I think you all -- you know, it's --
19
    it's evident to me, I -- I sit back here and I told
20
    you at the beginning I was going to listen.
21
    that.
           There was a lot of critical information.
22
    applaud each and every individual in here because you
23
   have talked everything about the history, 37 mile
24
    sanitary/ship canal, you understand what you're
25
    talking about, and that says a lot to me and the
```

148

- 1 individuals that are here in the room with me.
- I might add that in the beginning I said
- 3 there was 19 different district offices involved,
- 4 Dave had mentioned all the way from Seattle all the
- 5 way down to Jacksonville, who is intimately involved
- 6 in the Everglades.
- 7 I just wanted to highlight a few things.
- 8 You know, the unique thing about being a uniform
- 9 military guy is I get to see a lot, 32 years of being
- 10 around, and there's a few things I -- I want to
- 11 mention. One, this is probably the flattest
- 12 organization that I've seen over time. Working with
- 13 John Goss and the ACRCC in the last two years was
- 14 absolutely critical in helping deliver this. Great
- 15 Lakes Initiative, GR (inaudible) all of that was
- 16 absolutely essential in this.
- 17 So it is working, it is very difficult,
- 18 it is very complex. We understand the need and the
- 19 criticality of moving this ahead. We're hearing it
- 20 firsthand from everybody.
- 21 You know, our goal, you heard early on
- 22 it's about preventing, you know, and our job is to
- 23 prevent the risk to the maximum extent possible.
- Lastly, before I move on, as I walked
- 25 around in my building, which is, yes, I'm on the 16th

149

- 1 floor, this one gentleman had mentioned earlier, I
- 2 will attest that the individuals working on this
- 3 project, Dave Wethington to the left of me, is -- and
- 4 many others, they live -- their kids, like my kids,
- 5 swim in Lake Michigan and we have the same exact
- 6 passion as you do.
- 7 Every day I walk into my office and Dave
- 8 is tugging on me for one reason or another trying to
- 9 get us to move ahead and try to do the right thing.
- 10 This is a very, very -- as Ms. Kaptur had mentioned,
- 11 a very complex dilemma, but I think we have it within
- 12 our resolve in the next couple of months to come to
- 13 some very good discussion points to try to move this
- 14 ahead.
- 15 And so with that I appreciate everybody
- 16 coming out tonight. We -- your voice is important.
- 17 The ASA, Ms. Darcy, in Chicago the other day looked
- 18 at everybody and said, "It's" -- "it's your voice
- 19 that we need to hear from." And so thank you very
- 20 much for coming out here and being patient as we work
- 21 through this process.
- 22 Dave, do you have any other --
- MR. WETHINGTON: Thank you, sir, I
- 24 appreciate it. I appreciate everyone coming out
- 25 tonight and look forward to continuing to work with

```
150
    all of you as we try and move this -- this forward.
 2
                MR. ZABOROWSKI: Thank you, panel.
                MR. GOSS: Thanks everyone. We've had
 3
    36 individual comments tonight for approximately 180
   minutes of testimony from all of you. So I'd like to
 5
 6
    thank you all for that.
 7
                And I'd like to remind everyone that our
   public comment period runs until March 3rd of this
           If there's anything that you didn't get a
 9
10
    chance to say, you can mail something to us to our
11
    office, you can go to our website and submit comments
12
    that way, or if you have written something down on a
13
    yellow comment form, you know, drop it off with one
14
    of us before you leave.
15
                If you didn't receive a copy of meeting
16
   materials or if you would like an extra copy, feel
17
    free to grab some on your way out, and at that point
    this concludes this public meeting for the Great
18
19
    Lakes and Mississippi River Basin study. Time is now
20
    7:08.
21
             (Thereupon, the hearing was
22
              concluded at 7:08 o'clock p.m.)
23
24
25
```

		151
1	CERTIFICATE	
2		
3	I, Carina C. Meszaros, RMR, do hereby certify	
4	that as such Reporter I took down in Stenotypy all of	
5	the proceedings had in the foregoing transcript; that	
6	I have transcribed my said Stenotype notes into	
7	typewritten form as appears in the foregoing	
8	transcript; that said transcript is the complete form	
9	of the proceedings had in said cause and constitutes	
10	a true and correct transcript therein.	
11		
12		
13		
14	Carina C. Meszaros, RMR Within and for the State of Ohio	
15		
16		
17	My commission expires March 11, 2014.	
18		
19		
20		
21		
22		
23		
24		
25		

	Pag	,6 1	
\$	17 90:25 91:4 93:1	24 19:24 127:16	121:6 129:14
\$1 94:24 100:12	143:13	25 14:22 15:8 35:9	44040 68:24
\$1.1 91:5 142:10	17,000 54:13	37:10 56:14	123:17
\$1.9 138:1	18 8:22 15:25	65:16 72:5 76:11 85:14,22	44060 56:9 59:5
\$11 61:2	17:22,23 18:5,8 19:22 85:21	25-page 16:18	87:18 136:11
\$11.5 101:4	86:20	25-year 71:4	44072 120:5,10
\$15 76:9 94:22	111:12,24,25	25-year /1.4	44089 75:11
\$15.1 36:5	112:24 119:8	3	44100 126:7
\$15.5 35:9	124:24	3 26:19	44105 71:16
\$18 55:5 85:20	180 150:4	3,200 125:12,13	44107 95:12
86:23 132:3,6	1800s 32:22	30 42:1,2 139:25	44111 110:18
\$20 82:4	1890s 124:25	30,000 81:10	44114 1:10
\$30 88:3 143:9	19 13:10 128:25 148:3	300 81:8 138:3	44115 126:7
\$300 10:9	1902 90:25	300-foot 89:19	44118 75:11
\$40 54:9	1950s 9:24	30s 125:9	132:21 144:15
\$7 51:19	1998 121:3	30-year 104:17	44122 77:4 101:25
\$856,000 102:3	1550 121.5	32 51:3 108:20	44135 93:9
	2	148:9	44141 83:7
1 24 0 0 10 14	2 25:13 51:3	325 1:10	44839 104:16
1 24:8,9,10,14 75:25 132:7	108:20 138:3	35 22:6	44846 99:6
1,500 17:3 111:9	20 28:15 76:10 81:9 86:2	36 150:4	48230 80:7
1,800 89:18	200 22:5 94:3	37 147:23	
1.1 142:16	2000 121:3	3rd 5:9,25 150:8	5 31:18 117:2
1.5 54:12	2005 45:4		125:14
10 76:1 94:2 121:6	2006 45:4	4 4 72:10	5,000 105:15
10,000 15:5	2007 60:5	4.8 100:8	5.1 100:6
11 151:17	2009 17:15	4:04 1:8	50 28:15 47:20
12,000 106:7	200-foot 89:14	40 34:9 69:14	75:16 76:1
13 12:17 15:13	2012 17:19,23	43017 47:12 50:14	50,000 7:12 8:5
22:4 51:25	2013 99:22	108:1	50-mile 8:4
131 140:5	2013 33.22 2014 1:7 8:24	43212 53:20	55 140:7
14 15:2	17:24 114:5	114:21	552 57:15
14th 88:5	151:17	43452 99:6	6
15 29:1 41:23	20515 145:20	43805 85:6	6 72:6
59:11 82:21	20-pound 94:2	44 56:2 114:18	6,000 105:15 106:4
142:6 144:11	22315 65:1 139:20	44022 73:15	6:00 121:21
16 1:7	232 15:1,8	44024 61:14	6:55 139:9
16th 148:25		44026 47:10 107:2	

	Pag	36.2	
60 10:18 131:18 600 34:4 88:3	119:23 133:23 148:14,16	100:14,18 activity 25:23	administrator 92:22
138:4 65 18:25	abstract 80:18 abundant 65:6	52:23 acts 19:3	admit 116:12 133:12
6th 12:12 14:17	accept 58:17	actual 140:21	admitting 123:18
17:23,24	acceptable 74:14	actually 22:5 27:6	adult 124:22
7	accepted 118:5	39:9 46:19 53:13	advance 43:11
7 6:6 125:14	accompanied	55:8,17 56:21,24,25	77:20 78:12 113:3,5
139:11	15:23	93:24 95:8	advances 34:19
7,000 14:18	accomplish 5:3	113:17 114:14 117:6 134:5	advantage 65:7
7:00 87:3 7:08 150:20,22	10:6 accomplished	adaptable 13:20	adverse 20:15 35:7 37:4,14,15
700 34:4	24:25 110:1	96:25	Advisory 59:10
721 99:22	According 99:21	adaptive 38:13 add 13:12 34:23	68:15
	account 27:10	add 13:12 34:23 148:2	advocate 83:15,20
8	accountant 77:3	adding 39:9,10	affected 49:4
8 121:6	accounting 142:21 accumulate 78:13	addition 56:9	affiliations 69:7
8247 121:5	accumulated 78:1	additional 7:22	afford 67:3 75:4
85 18:25	accurate 119:21	21:9 23:14	afforded 59:20
856,474 99:23	accurately 43:9	25:9,10 39:9,10 41:5 85:17 102:3	afternoon 2:3
88 101:6	achieve 25:10	113:22 114:7	11:16 64:13
9	38:15 49:24	127:16 147:12	afterwards 123:13
9.1 11:21 19:7	52:16 135:12	address 14:3 40:9 41:4 48:10 62:5	against 62:25 106:6,17 125:7
9.2 19:8	achieved 12:7	75:20 79:11	141:15
90 22:13 48:24	achievement 12:9	114:22 121:17	agencies 6:15
60:8 125:19	acquisitions 77:11	133:4	13:24 14:13 21:20 36:12
900,000 107:18	ACRCC 148:13	addressed 48:9 111:4	60:14,15 97:21
95 62:19 84:11 125:19	across 13:10 51:2 116:8 130:3,13	addresses 48:21	98:23 103:5,8,9
	act 63:23,24	addressing 27:23	109:15 112:21 119:13 132:24
A ability 19:14	action 24:16,17,19	65:25 112:16 adds 91:10 100:8	agency 96:25 119:13 128:19
able 21:4,11 33:4	54:24 62:3,23 65:16,18 66:4	adequately 48:13	agenda 3:2
39:24 40:22	74:15 93:16	adjacent 19:19	agendas 6:2
42:17 51:1 52:13 57:2 60:21,22	109:23 120:22	26:5 29:10,14	aggressive 76:4
61:25 63:2 79:21	active 6:17 25:17	30:11 31:21	ago 48:2 90:25
80:12 134:7,23	actively 70:18	57:18	91:22 93:1 114:1
absolutely 64:17 65:4 71:20 92:7	activities 24:17 25:5 69:18	administration 60:23 88:14	121:18 139:25
03.4 /1.20 92./	25.5 07.10		agreement 11:10

	Pag	36.3	
109:15	24:7,9,10,14,18	animal 37:24	appendices 15:3,4
agricultural 53:18	25:7,13 26:19 27:3 28:10,25	animals 81:22	appetites 81:18
142:18	31:6,17 35:6,20	announced 39:9	applaud 147:22
ahead 53:11 86:20	38:14 46:15,17	annual 34:1 143:9	applicable 13:25
148:19 149:9,14	72:6,10 135:22	annually 51:14	20:23
air 53:22	alternatives 10:25	100:12 132:8	application 21:15
AIS 51:24	13:2,5,7 15:15	142:11	22:14
52:1,3,6,13	16:15 17:10	ANS 12:9,16,22	applications 7:24
aisle 90:21	18:18 20:10,19 21:5,8 23:1,2	15:19 30:16	applied 20:11
145:22,25	24:6,13 25:9,14	31:11 71:22	apply 28:5 44:4
aisles 42:9	26:10,18,20 29:6	81:18	11 0
Akron 92:24	31:19 33:7 35:11	answer 39:24	applying 25:18 27:4 35:24
alas 65:24	36:15,18	40:21 96:6 108:8,9 110:22	
Alaska 129:1	37:3,8,18	108.8,9 110.22	appreciate 11:8,15 44:9 46:14 49:25
	38:12,25 45:22 52:21 72:19	answers 132:23	55:14 60:13
algae 105:6 117:17 131:18	82:3,5 135:7		98:11 103:1
	am 6:12 73:17	anticipated 34:20	109:24 111:7
algal 65:14	84:23 92:6	anybody 84:17	123:8 129:7
alive 91:14,15	105:11,20	93:24	131:8 149:15,24
alleviate 28:22	120:15 133:13	anyone 86:25 87:4	approach 85:11
32:15 33:4	136:11	128:1 132:15 140:19	120:14 129:6
Alliance 56:8	amateur 81:20		appropriate 22:18
59:8,9 73:17,23	amazing 45:18	anything 2:14 5:21 63:9 77:1 88:16	107:8 108:12 128:19
allocating 78:24	ameliorate 146:15	109:16 111:4	
allow 14:15 28:6	America 92:13	113:15 117:16	appropriated 91:5
32:3 40:19 41:8	93:2 142:8	124:15 128:8	appropriately 32:8 33:15
49:15 137:21	American 100:10	133:18 137:7	
allowed 31:25 62:10	Americans 124:7	150:9	appropriation 143:9
	among 13:1 14:12	anywhere 34:25 103:23 137:18	
allowing 11:24 44:9 67:24	21:4 39:3 67:12		appropriations 128:10,13 145:4
	amount 13:14 21:6	Apart 14:2	146:2
allows 74:13	24:22 34:24	apologize 43:11	approval 125:4
alone 65:19 92:18 107:15	78:16 91:5	53:5 61:9 77:19 78:12 84:21	approved 8:9 10:9
	amounts 100:23	90:10 116:15	• • •
alongside 14:14	analysis 21:21	123:3	approximately 32:21 33:1 34:9
already 3:7 10:1	75:17 105:25	apparently 121:11	36:5 37:12,13
62:18 74:21 87:4,10 109:7	analyzed 32:13	137:11	138:3 140:6
137:20 146:21	Angeles 92:11	APPEARANCES	150:4
alternately 54:24	8	1:13	aquatic 3:14
1	angler 83:7	appeared 48:1	12:8,15,23 13:16
alternative 10:21 20:23 21:6	anglers 99:25	appears 151:7	14:10 15:13
20.23 21.0	100:13	пррошь 151./	16:23,25 17:6

	Pag	ge 4	
18:3,9 19:22 20:1,12 22:15 23:24 24:3,21,24 25:18 26:14 27:14,17,19 28:8 29:25 30:2,13,16 37:19,20,22 38:21 50:25 54:18 74:17 96:7,10,19 112:9 116:16,21 117:1,25 123:4 135:13 aqueduct 91:13 144:1 architects 47:22 area 4:7,17,19 7:12,13 11:20	arrange 146:7 arrangements 142:13 arrival 80:22 arrived 2:25 ASA 149:17 ascending 57:25 Asian 6:20,21,25 7:13,25 8:2,5 10:12 12:16 13:17 14:4 25:1 45:5 46:8 48:8,25 49:2,14,17 50:24 51:18 52:8 59:22 60:4,7,16,18	assumption 133:14 attached 66:18 attachment 78:16 attending 12:5 attention 63:25 65:16 134:6 attest 149:2 attitudes 137:10 attorney 12:3 44:2,6,7,10,17 46:20 54:2,21 126:13 audience 94:12 95:15 147:13	awe 92:7 awesome 105:4 awful 85:21 B backfilled 121:6 background 22:23 77:2 backgrounds 13:12 bad 26:3 95:16 98:1 104:22 105:5 122:15 Bailey 87:25 bait 26:2 37:24 97:24,25
7:12,13 11:20 17:9 18:1,13,16,24 19:2,7,10,13,18, 20 20:3 22:2 28:12,23 29:19 30:5 35:15 37:15 39:14 51:23 100:21 101:14 102:13 107:22	62:5,9 65:14 66:5,21 70:9,19,21,24 74:12 84:12 93:18 107:12,17,24 115:16 131:14 139:24 140:11 aside 79:3	augmented 142:16 authorities 13:25 14:15 128:12 authority 128:8 145:3 147:1 authorization 20:25 authorize 103:13	balance 80:18 bald 81:11 104:25 105:3 ballast 119:16 Band-Aid 60:19 bank 87:24 88:2 89:4
111:12 112:3,10,18 122:22 126:2 133:22 136:22 143:2 areas 8:1 9:11 25:20 91:22 102:5 111:1 112:12 121:24	assert 81:21 assessed 113:10 assessing 77:22 assessment 22:8 51:25 113:19 assessments 113:5,25 assist 70:13	authorized 60:5 111:14 Auxiliary 56:13 availability 13:25 65:6 available 12:21 16:23 22:12,18 114:16 133:5 142:3	banks 88:21 94:21 banners 15:16 26:24 barge 57:10,13 89:16,19,23 135:18 137:25 138:2 barges 57:21,24 89:10,11,14,18
aren't 18:23 30:24 112:13 argue 25:25 argument 58:17 89:22 arms 105:2 Army 2:4 3:16 4:1,4 5:7 44:8 67:20 120:16 137:15	associated 28:24 29:2 31:24 78:10,18 Association 68:18 69:4,11 100:10 124:19 associations 69:17 assume 133:9 assumes 77:8,9 assuming 76:15	Avenue 1:10 avenues 15:10 average 45:18 avian 37:24 avoid 71:21 82:10 aware 109:22 138:8 away 3:23 19:4,12 79:17 135:17	137:25 barrier 7:6,11,12,14,22 8:4,7 23:6 25:3 32:5 33:14,21 35:16,18,21,24 57:5 74:11,13 89:15 135:4 139:23 140:4 barriers 7:5,7 14:6 22:14

	Pag	ge 5	
23:12,16,21 28:6 30:4,21,23 31:20,25 32:2,14,20 33:18 58:13 63:3 67:8 96:22 Bartley 68:3 71:14,15 72:22 based 23:15 27:24 53:20 73:23 99:22 120:13 124:18 133:12 141:13 baseline 24:14 25:7 basic 21:24 basically 35:11,23 56:17 57:16 basin 12:19,23 16:25 18:4 22:1 25:22 27:16 29:18 31:10 38:17,18 71:12 81:6 82:25 100:22 111:9,11,17 112:14 150:19 basins 8:18 19:21 30:17 37:20	82:8 101:17 beauty 36:9 became 80:19 124:8 become 60:10 62:10 63:20 76:10 84:15 112:25 121:14 becoming 80:18 begin 6:3,5 47:15 78:20 beginning 2:17 16:21 18:7 40:6 48:1 111:8 147:20 148:2 behalf 48:10 53:23 behind 17:2 18:4,20 24:5 25:17 26:24 46:16 89:3 95:8 121:4 Belgian 137:17 Belgium 89:11 believe 9:3 30:1 38:22 39:8 46:9 47:2 49:11 61:1 63:6 71:4 91:18	109:9,13 114:3 128:20 better 23:20 27:2 120:8 Betty 92:23 beyond 9:12 103:16 bidirectional 27:8 29:7 bigger 86:16 140:8 biggest 144:5 bighead 80:16,25 bigheads 8:6 bill 47:2,9,19 66:1 106:24 107:2,25 146:23 147:2 billion 29:1 35:10 36:5 51:19 54:10,12 55:5 61:2 76:9 82:4 85:20,21,23,24 86:20,23 88:3 91:6 93:25 94:23,24 100:12 101:4 117:9 132:3,6 138:1 142:10,16	bit 16:13 18:1 26:22 27:2 39:12 68:6 92:20 94:24 96:18 113:14 114:11 128:17 140:3,13 142:5 144:25 blasted 58:9 block 7:9 9:2 30:23 73:1,7 76:20,22,24 77:6 101:25 103:20,23 blocked 114:9 blooms 65:14 131:18 blow 78:21 blue 3:13 43:2 board 14:4 59:8,9,10 boat 26:2,3 45:17 61:21 99:23 boater 78:16 124:1 boating 69:16 70:6 100:18 131:22,23 boats 100:4
38:1,5,11 74:21 basis 28:16 bathrooms 2:18	95:8 99:1 107:7 117:3,4,20,24 125:5 126:24 belongs 139:21	binational 143:20 binoculars 82:20 biological 62:7	Bob 88:8 104:15 126:6 145:23,24 146:5,22,23 147:3
battle 44:19 67:20 bay 55:2 69:10,13 81:15 82:19 beach 59:17 105:9 beaches 61:20 beachline 102:15 bear 50:4 81:4,15 beat 95:15 98:12,14 Beaudoin 4:6 beautiful 81:9	bench 119:9 bench-scale 118:21 benefits 21:18 25:10 36:17 72:18 86:17 136:2 besides 144:18 best 5:21 8:17 10:22,23 20:4 26:5,8,16 42:8 53:2 66:4,10,20 97:2 108:16	biologically 62:6 biologist 123:20 biology 96:19 biomass 60:9 62:19 84:11 bipartisan 9:19 44:22 birder 81:7 birders 100:24 birding 100:19,22 birds 37:25	body 65:8 97:25 101:17 boiling 22:16 book 15:9 16:18 141:7 booked 100:3 bookended 28:5 booklet 3:18 books 16:17 24:10 border 71:1 101:4,11

	Pag	ge 6	
Bostick 92:21	124:17	143:25	cargo 18:21
bottom 29:11	buffer 29:23,24	Cal-Sag 35:19,21	Carina 151:3,14
boundaries 71:11	30:3,5,13	36:4	carp 6:20,21,25
boundary 16:25	bufflehead 82:12	Cam 146:12	7:2,13,23 8:1,2,5
branch 120:19	build 19:17 37:11	Canada 10:2 57:1	9:6 10:12 12:16
Brandon 29:12,17	57:18 67:7,16	69:11 71:2 85:2	13:17 14:4 25:1,18 45:5
72:10	96:14 104:8 109:20 123:19	124:4,9 137:7	46:8 48:8
breach 72:16	143:24	Canadian 124:4	49:1,2,14,17
break 21:22 35:14	Builders 68:18	136:12,18	50:24 51:18 52:8
67:8	69:2,3	canal 7:9 8:15	56:7 58:1,8 59:22
breaking 40:1	building 25:16	22:16 27:14 35:19,22	60:4,7,16,18
_	28:17 47:23 79:2	125:17,24	62:5,9 65:14,15
breasted 82:15	90:13,14 96:22	129:22	66:5,21
Brecksville 83:6	109:15 139:20	130:10,20	70:9,20,21,23,24
breeding 62:12	148:25	140:14 147:24	74:12 80:16,25 81:19 84:12
bridge 138:4	built 7:8 91:12	canals 23:22	93:18,24 94:2
brief 18:3	117:8 126:25	cannons 7:24 58:9	107:12,17,24
briefly 108:4	bunch 140:12	canoe 61:22	115:16,17
115:24	Bunsey 104:15	canvasbacks	131:14 139:24
brilliant 143:17	B-u-n-s-e-y 104:15	81:11	140:8,11
bring 61:25	BUNSEY 104:14	cap 33:19	carried 141:11
103:17	106:13	capability 77:10	carries 89:14
bringing 64:13	Bureau 91:3,17	capital 99:8	Carson 81:25
brink 62:2	99:18 142:11 143:5	captain 69:9 83:9	cascade 81:21 82:9
broad 108:18		95:11 106:9	case 24:22 27:6
broad-based	business 67:14 80:12 128:11	captains 99:23	33:3 34:18
109:24	144:25	100:3 139:6	108:13 122:15 132:8
brother 83:8 95:18	businesses 19:18	capture 28:19 32:7	
98:24	51:12 63:15	35:5 36:14 42:8	cases 121:8
brought 96:21	busy 120:23	134:23 135:24	catastrophe 82:2
brown 17:2	buy 35:25 72:11	captured 64:6	Catawba 69:10
brownfields 92:3	89:21	carbon 7:21	catch 94:2,9
buckets 26:2 37:24	buy-in 53:1	card	caught 35:13
97:24,25	bypass 27:3,12	43:2,5,16,20,22	causality 106:1
bucks 94:3	32:16 57:12	care 58:14 73:19 74:2 86:18 95:17	cause 132:5 151:9
budget 8:9 10:10	136:19	112:17 113:1,8	caused 63:21
66:17 90:20 91:9		122:1 125:23	105:6
95:22	caissons 57:24	127:7,8	causing 74:22
budgets 78:3	California 78:5	career 73:21	CAWS 1:14 15:20
102:23	91:14 92:10	careful 115:2	18:14 19:5
Buffalo 4:7 91:20)1.17 J2.10		

	Pag	56.7	
52:6,7,14	142:1 143:25	141:23 143:24	93:10 98:17
cell 2:11	channels 30:22	146:5,17 149:17	125:22 130:12
center 97:5	Chapter 126:9	Chicagoland	143:2
Central 124:20	character 139:5	18:24 28:12,23 37:14	climate 72:2
certain 21:17,18	characterize 140:2	Chicago's 34:16	Clinton 66:9 99:7
23:18,19 25:20	Chardon 61:13	chief 56:22	clock 50:7
49:11 77:22 78:7	charge 120:19	87:21,22	clog 131:17
85:12	123:21	choke 27:6,7	close 58:18,19
certainly 7:18 8:4 9:10,23 24:11,21	charter 99:23	choose 30:20	117:8
26:5,12 60:13,18	100:3 139:6	118:18	closed 57:22
85:18 96:24	chasing 95:19	chose 28:19	closely 72:7
100:25 114:4	cheap 67:1	chosen 33:15	closer 56:4 120:7
115:6 118:20 128:2 147:17	check 62:15	chunk 48:24	closest 4:2 71:10
CERTIFICATE	Checking 87:2		closing 57:19
151:1	checkpoint	cities 34:14,23 39:8 67:13	67:16 139:14
certify 151:3	29:12,17	134:25	closure 137:22
cetera 26:15 37:25	checkpoints	citizen 48:8 130:18	Club 69:9 106:11
77:11 79:23	29:8,9,11,13	citizens 64:14	126:9 127:23
89:23 91:15	chemicals 58:14	67:22 69:8	clubs 106:11
100:16 142:18	Cheryl 120:3	144:18	coast 56:13 78:11
chain 59:24	Chesterland	city 19:4,8 29:3	95:19
chair 68:16,20	121:5,17	30:10 77:18	Coastal 68:14 70:3
126:9	Chicago 1:15 2:5	Clair 80:23 81:3	code 42:15,17,20
chairmen 146:20 147:5	4:1,4 7:5,9	clams 81:16	43:25 46:19 47:8,9,12
	11:13,19,21 13:13 15:21 17:9	clarify 103:1	50:10,14 55:24
challenge 67:6,23 90:18 144:6	18:1,13,16	Clark 121:4	56:2,9 59:5
challenges	19:1,2,7,10,13,2	clean 24:2	61:13 64:20,21 68:23 71:16
91:21,24 143:23	0 20:3 22:2	33:23,24	73:13 75:8,11
144:5	29:4,19 30:10 32:23 33:9	34:13,15 53:19	80:5 85:5
Chamber 87:25	35:15,18,22	cleaning 26:3 34:22	87:12,15,17
chance 41:14	51:23 73:24		90:12 93:8 95:10 99:3,6 104:13,15
95:25 135:6	98:16 108:8	cleanup 91:25 92:1	106:25 114:18
150:10	110:23 111:3,12,19	clear 52:21 66:21	120:5,9 129:13
change 41:23	112:3,18 116:3	86:15 110:23	136:10 139:16
60:12 72:2 81:13	124:17,18,21	112:2	145:19
changed 81:14	125:1,2,11,16,20	clearly 85:13	collaborated 56:9
changes 69:18	,24 127:6,12 128:15 129:5,21	Cleveland 1:9,10	collaboration 56:8
104:21 121:13	130:3,6,8,16,20	48:3 59:6,9	113:11
channel 23:17,18	133:16,22	64:14 66:8 69:4	collaborative
35:20,21 37:11	135:18 138:15	71:16 77:17	79:15

	rag	, c o	
collapse 62:8	commander 1:15	commitment	17:24 72:11
_	4:1,7 11:19	80:13 109:17	113:24
collect 102:20	[
103:4,18 104:7	commend 49:7	committed 84:1,2	completely 108:10
collecting 5:8	comment 3:4,5,9	114:8	129:9 132:8
77:23 78:4	4:15	committee 7:1	completes 77:10
102:21 103:19	5:12,14,19,24,25	14:5 68:20,21	completing 103:10
105:23	6:5,6	69:3 90:19,21,22	• 0
collection 78:23	40:4,6,12,13	145:22 146:1,2,5	completion 17:21
	41:15,20	committees	77:8
college 83:13	42:18,25 43:7	146:6,8	complex 12:14
93:12	44:3 64:4	ĺ	16:2 18:15 20:1
Colonel 1:15 3:25	87:4,5,6,11	commodore	21:23 148:18
4:6 11:12,14,18	110:16 113:22	106:10	149:11
16:12 18:2	120:10,11	common 82:15	complicated 10:14
22:4,12 50:6	121:1,3 122:10	131:4	146:19
56:3 68:5 101:21	123:9 128:14	commonly 118:5	
106:21 108:13	132:6,19	· ·	component 108:22
120:6 132:17	150:8,13	communicates	comprehensive
136:14 138:10	commenters 71:19	6:24	21:1 45:8 48:19
139:22 140:1,23	104:24	communities 75:1	49:5 82:19 85:11
147:14		131:5	111:15
Colorado 78:6	comments 4:20	community	comprise 62:18
91:14	5:8,9,11,17	67:13,15	•
	10:18,21 11:8 16:11 24:13	ĺ	compromised
colored 9:17	26:25 39:19,21	Compact 10:4	135:21
combating 24:23	40:19	companies 47:22	compromises
107:12	41:5,7,9,13,16	company 75:16	135:15
combination 27:25	42:7 55:5,11	105:21	concept 23:6
52:18	57:11,14 61:14		27:4,12 28:5
combinations 24:4	74:4,7,9 75:21	compare 21:4,7 25:8	29:24 117:21
35:12	79:10,24 89:7,24	25.8	118:2
	98:11 101:13	compared 25:11	
combined 23:15	104:10 105:18	36:18 143:5	concepts 23:10
33:11 35:5 38:6	104:10 103:18	comparison 13:18	conceptual
72:20 91:25	115:21	33:6 112:1,4	20:9,13 21:12
135:25 142:25	126:10,11 129:8	138:5	conceptualize
comes 34:10 54:11	133:1,2 134:2,11		117:2
87:19 112:16	139:14 147:12	compensation 20:15	concern 22:4,7,20
145:3	150:4,11		27:23 30:2 38:4
comfortable 77:24	ĺ	compete 59:25	51:25 111:1
	commerce 74:23	89:1	117:22 118:1,10
coming 6:10 11:8	commercial 8:3	compiled 5:10	, in the second of the second
16:7,10 27:14	18:21 51:17 70:6	complete 31:3	concerned 60:9
31:9 44:8 93:6	78:19 95:13	45:24 71:19	71:23 77:15
98:24 105:12	100:8 133:17,21	72:6,12 83:15	85:14 109:2
114:3 129:9	141:6	137:19 138:25	111:4
138:14 147:16	commission 85:1	157.19 158.25	concerns 5:18
149:16,20,24	151:17		69:21 124:23
		completed 8:24	

	Pag	,e ,	
concert 52:12	conjunction 65:21	consumers 51:12	24:5
conclude 36:24	connection	contact 58:16	convenient 42:10
49:22 58:20 71:8	19:21,24 112:9 114:6	contain 30:13	conversation 2:12
concluded 150:22	connections	contained 5:4	21:14 36:16 38:11
concludes 150:18	8:19,22 12:24	containment 51:20	79:12,14,21
conclusion 20:7 24:11	19:23 21:25	52:9 71:10	104:6 111:8
	130:3	contains 3:19	conversations
condition 24:15 107:20	consciousness	contaminants	109:5
conditions 106:5	81:24	27:22 34:24	conveyance 18:23
conducting 109:5	consensus 10:24 11:6 39:3 67:12	contaminated 33:12 92:2	19:3 20:17 30:7 35:5 36:2
	108:24 109:15		135:10,23
conductive 23:20	consent 125:10	context 51:20	conveyed 26:9
confidence 138:12	Conservancy	continental 32:25	coordinated 6:24
configuration 57:10,17	47:13	continue 8:7 9:20 14:3 28:7 30:5	coordinates 6:14
ĺ	48:11,14,20	32:8 36:16 61:1	Coordinating 6:25
confirmed 74:10 115:16	50:12 59:7	109:13 131:3	14:5
Congress 9:18	conservation	135:5	coordination
10:9 12:11,20	50:13 113:10	continued 39:5	105:25
60:21 66:1	conservative 21:3	continues 8:3 9:24	coordinator 71:17
87:23,25 102:22	consider 85:19 86:21 124:14	10:8 111:23	co-owner 80:11
128:10 137:5 138:15	125:24	continuing 7:11,21	copies 16:18
145:3,4,21 146:8	consideration	8:14 109:17 149:25	copy 150:15,16
147:15	21:21 72:3 115:4	contracting 144:3	corner 24:9
congressional	considering 82:5	contracts	corners 87:2
20:25 103:12	considers 48:22	142:14,17	corporation 75:24
congressman 58:17 61:10	consistently 70:12	contributor 6:18	92:23 143:7,8
congressmen 88:1	consists 121:24	control 6:20,21	Corps 2:4 3:16
	consortiums	7:3,15,25 9:6,24	4:1,4,16 5:7
congresswoman 12:1 46:23 53:10	103:7,8	10:3,4,13 18:10	12:6,20 13:19
55:18,20	constitute 72:16	31:11,12,15 38:16,21	14:2,13 20:21 24:25 34:7 38:22
64:11,12,20,22,2	constitutes 151:9	52:20,22 56:25	40:20 41:10 44:8
3,25 65:3 67:11	construct 23:17	88:20 97:4	60:14,18 63:3
83:22	30:25 38:3	103:16	65:18,22,25
90:3,7,11,16 92:15 102:1	135:22	122:19,25	66:1,2,6,14,18
109:22 126:13	constructed 7:6	135:13	67:19,20 70:15
132:18 136:5		controlled 29:25	80:9 82:4,18,24
138:18	construction 8:25	controlling 31:9	84:7 90:17,20
139:15,18	21:10 25:2 31:24	controls	91:8,10 92:6,17,19,21
140:19,25	47:21 67:2	22:12,13,19,23	93:3 96:1,4,11
147:10,15	consultant 56:7	44.14,13,17,43	97:11 103:3,18

	Pag	e 10	
107:4 110:22	67:13 75:12	criticality 148:19	dams 120:23
111:3	101:3,5,6,7,8,11	critically 59:23	danger 66:22,24
113:4,12,23	countries 89:2	criticisms 141:24	110:24 112:2
120:11,16,23	country 13:10		Darcy 149:17
121:11 122:2,4 123:2,18	45:17 53:1 54:5	crowded 94:21	dark 110:12
123.2,18	86:12 91:8,18,19	crucial 65:11	
126:19,20,24	92:6,8 95:19	Cruising 69:9	data 22:25 100:2
127:2,3	107:22 115:5	crustaceans 81:17	105:22 106:17 107:17 118:15
128:7,21,24,25	126:21 131:24	CSSC 36:6	119:21
137:15 140:15	142:9 143:1	57:10,18	
142:22	county 56:1,6 59:6	cubic 112:22	database 106:6
144:20,24 145:2,5 146:7	83:14 99:17	125:12,13	date 18:11 85:10
· ·	120:15,19 121:22	ŕ	daughter 59:18
Corps's 97:15	121.22	curious 108:11 131:11	Dave 1:14 4:2
correct 116:15	couple 17:20 18:9		11:11 15:23
133:24 134:15	35:14 36:25	current 7:2 11:19 46:10 51:25	16:4,5 54:15
145:19 151:10	99:10 119:8	57:13 60:17	56:3 140:13
correlation 106:2	127:15 128:15	62:25 71:22	148:4 149:3,7,22
correlations	143:16 149:12	currently 19:11	David 76:20
106:17	course 65:8 66:4	23:13 24:20	80:1,7 87:22
corridor 91:19	88:12 100:17	25:13 27:16	Davis 146:12
cost 20:21 21:7	109:6	29:16,18 30:1	day 6:11 19:1,25
28:24,25 31:4	court 58:19 125:9	34:25 74:11	34:5 48:4 81:9
32:12 33:25 35:9	134:12 136:22	107:15,18	83:12 94:3
36:4,5 37:13	courtship 82:11	113:7,9 139:9	121:20 149:7,17
51:7,12,20	cove 82:19	cut 139:16	days 10:18 19:25
55:7,8 63:14,22 72:19 74:16,20	CPA 76:25	Cuyahoga 83:12	73:19
87:19 88:12		122:20	DDT 81:24
106:15 107:10	create 67:2		deal 45:2 49:6
116:2,3 132:4,8	120:24,25	<u>D</u>	56:16 86:21 96:9
138:4,19 142:21	created 29:21 71:11 91:2 106:7	Dabson 47:4	102:23 137:1
costing 63:15		55:17,24,25 56:1,5,6	146:8
costs 20:20,22 21:2	creative 79:2	58:5,6,22,24	dealing 47:24
32:10,15 34:2	creatures 82:8	87:13,17 89:13	48:25 108:20
36:18,19 37:6	credible 66:14	90:1 132:14	dealt 49:3
51:14,15 63:17	Creek 8:15	136:7,8,11,16	Dean 47:4 56:1,6
82:4 107:16	121:8,14,20	139:2	87:17 136:11
cottage 69:12	crew 89:10,17,19	dam 23:7 37:11	decide 102:20
council 1:16 3:24	criteria 13:1 20:8	92:8	144:17
53:20 68:15,16	36:21 107:11	damage 51:22	decided 35:1 43:6
Council's 53:21	critical 70:10 71:5	63:21 74:22	91:1
Counsel 1:18	120:17 147:21	132:5	decision 45:25
counties 54:11	148:14	damaging 50:25	125:9 129:24
Countres 34.11			

	1 45	e 11	
130:19,23 decision-maker 79:22	128:18 129:19,22 depend 81:23	46:20 DeWine 12:4 44:2,7 54:22	director 50:13 53:18 68:19 69:2,5 84:24 99:17 105:14
decision-makers 13:5 21:20 36:10 38:24 45:9,25 98:20 134:22 144:17,19 145:6	depending 35:16 36:20 depends 48:17 depth 23:18	diagrams 26:23 dialogue 12:1 die 88:11 131:17 died 88:16	dirty 34:16 DiSanto 87:21 discharge 32:8
decision-making 20:5 36:23	description 37:2 design 11:1	difference 109:12 different 11:2	33:17 34:23 57:25 discharges 33:21
decisions 129:21 130:16 144:21,22 deck 59:3	20:10,14 21:12 140:14 designs 117:3	13:10,11 15:18 18:9 20:10 21:16 22:13 24:6 36:20 37:3 39:3,7	34:14,19 discovered 88:14 discriminate
decree 125:10 dedicated 14:14	desk 3:8,10 64:8 destroy 131:22,24 destroys 139:5	45:22 68:11 75:12 91:21 95:1 98:17 102:13	121:25 discuss 36:14 104:5 123:3
73:21 deeply 109:2 defend 102:13	destruction 51:8 62:1,2 detail 15:2 36:15	108:10 128:22,25 140:13 144:2	discussion 11:5,25 20:7 108:24 109:17,19
defense 62:25 66:10 74:11 92:2	113:12 126:17 detailed 55:10 121:10	148:3 difficult 89:21 96:8 119:6	149:13 disinterestedly 126:1
deficits 78:4 define 102:8,9	details 48:13	148:17 dilemma 149:11	display 82:12
definitely 60:11 89:4 127:4	determination 131:7	diligence 147:17 diminishing 77:14	displayed 134:4 disrupt 59:24
degree 20:24 delay 16:3 65:17 137:22	Detroit 34:15 81:3 124:18 125:22	dining 101:16 Dino 87:20	disservice 66:3 distance 78:2 distinction 144:13
delaying 26:14 delegation 146:16	devastated 51:18 devastating 81:1	dioxide 7:21 direct 10:20 51:14 63:17 128:19	distinguish 13:1 82:14
deliver 148:14 demands 65:15	develop 45:10 118:19 142:5 143:19	directed 54:16,17 130:2	distract 2:14,16 district 1:15 2:5
Democrat 88:19 demonstrates 52:15	developed 70:24 80:23 91:2,23 developers 122:3	direction 31:14 38:17 147:7 directional 77:2	4:1,4,7 11:13,19 13:13 97:6 128:22 129:1,2 130:9 148:3
Dennis 72:25 73:7 76:20,24 79:9 101:25	development 10:5 68:21 69:15 92:23,25 122:1	directions 19:14 30:12 32:1 52:3,7	districts 13:11 ditch 112:23 Ditto 85:9
Dennison 136:4	143:6,7	directive 123:19	diversity 62:20
department 70:2,11 122:25	devise 67:7 dewine 44:6,17	directly 33:12 106:6 121:8	divide 9:1 12:19 18:4 25:22

	Page 12			
32:21,25 54:20	dozen 50:25	94:8	69:19,23	
55:9 63:7,12,24 71:21 72:8	dramatically 60:12	dysfunction 78:2	Ed 132:21 133:23 134:1	
111:10,11 division 1:19	dreadful 131:18	E	edge 121:7,9	
99:21 100:2	dredging 123:1	e.g 52:10	140:7,8,11	
124:20 128:23	drinking	eager 94:9	education 25:23 80:11	
DNR 6:18 70:20 140:16	117:7,10,24 118:4	eagle 8:23 105:3 113:8	Edward 72:25	
DNRs 114:2	drive-by 121:11	eagles 81:11	75:10	
140:20	drivers 28:10 37:6	104:25	eel 57:3 58:11,12	
doable 127:1	driving 115:1	earlier 11:18 42:5 54:15 83:22	effective 7:8 9:25 26:13 49:13	
138:7	drop 3:10 64:9	101:2 130:21	50:23 52:12,17	
document 12:12	150:13	144:25 149:1	63:4,10 66:23	
dollar 66:18 91:5	dropped 105:9	early 15:6 31:7	83:17,19 118:23	
94:1 102:4 117:8,9	drought 78:6	148:21	effectively 48:9	
dollars 21:6 29:1	drove 84:8	earth 65:9 91:13	effluent 33:17	
51:14 63:16	Drummond 1:15	92:17 124:13	effort 4:18 70:13	
66:15 74:22	3:25 11:12,14,18	easily 113:1	efforts 3:15 9:19	
78:17 100:13	16:12 18:2 22:4,12 50:6	east 39:12 92:11	10:8 37:22	
dominate 62:9	56:3 68:5 101:21	95:19 127:14	56:19,20 60:13,17	
done 3:7 6:19	106:21 120:6	easy 5:17 67:5	ŕ	
11:17 20:9,24	132:17 136:14	134:2	eggs 62:13 118:14 140:6	
21:1,12 24:20,22 36:13 38:23	138:10 140:1,23 147:14	echo 83:21	Egypt 85:24	
43:18 45:6,9		Eckman 129:12,13	9.1	
46:12 64:8 66:2	dry 78:7 112:11	130:14,18,24 131:8,21	eight 15:14 71:1 101:3,6,8 127:14	
67:17,19 70:18	dubious 144:12	eco 123:21	either 5:14 30:16	
75:19 76:5 78:12 84:3 86:10,12	ducks 80:22 81:16	ecological 51:8,21	31:14 42:9 45:19	
88:11 92:12 97:6	82:21	65:12 72:18 82:1	54:19 73:2 103:7	
100:15 109:11	due 62:8 80:13 147:17	141:19	elected 36:11	
113:15 118:3	Duluth 91:20	ecologists 81:20	67:12 90:8	
128:12 129:19 133:12	125:22 127:13	economic 22:24	98:21,22 128:4,9 130:22 144:23	
138:13,19 147:5	dumped 121:7	46:4 51:10 52:23		
doors 2:19,22	dumped 121.7 dumping 26:2	59:15 63:21	electric 7:5 23:12,16,21 28:6	
download 133:10	97:24 112:22	65:11 70:5 72:18 101:2	58:13 63:2 74:10	
134:8	Dunes 81:4	economics 80:19	electrical 52:10	
downloaded 4:24	Dunn 93:9	ecosystem	electrified 91:11	
40:8	94:14,18,20	62:21,22 65:10	electrofishing 7:10	
downstream 19:15	duration 17:22	81:1,22 84:10	electronic 139:23	
33:18,21 34:10	during 5:12,19	96:3 97:12,13	elements 26:9,17	
downtown 19:18	32:1 41:20 69:14	ecosystems	0.7,17	

	Pag	C 10	
35:4	103:3,18 110:23	61:15,17,22 62:7	111:15
eliminate 94:5	113:12 123:2	64:17 65:4,10	evaluations
eloquently 75:22	126:20,25	66:22 67:21	113:25
126:22	127:2,3	69:24 70:19,21	evening 2:25 4:9
	128:7,22,24	73:22 83:10 94:6	11:17 68:4,9
else 38:19 86:25	144:24 145:2,5	99:25 100:11,22	69:21 80:3
88:13 128:2	enjoy 124:3	104:18,19	126:12
132:15	enormity 16:1	107:15,19	
elsewhere 85:25		121:23 129:15 131:16	evening's 2:6 3:3
107:7	ensure 30:4,6		event 2:21 30:10
e-mail 39:25	37:13 39:12,15 64:6 118:22	Erie's 100:5	121:2,21
	130:19 135:25	erosion 102:15	events 19:13 28:11
emerge 10:24		121:19	32:2,9 121:14
emergency 2:22,24	ensuring 21:2	especially 15:8	122:8
employ 55:1	enter 41:9	71:25	eventually 121:12
employee 89:8	entering 65:15	essence 71:2	Everglades 66:16
employing 57:4	entire 27:9,10	essential 52:23	97:3,7,9,18
	28:10 64:16	53:2 148:16	148:6
employment 89:5,22	101:12 111:17		everybody 2:18
,	124:2,21	essentially 33:20	40:25 53:25 55:6
encourage 70:13	entirety 4:23 40:8	128:11 135:16	78:24 110:15
71:24 74:5		establish 62:12	148:20
82:17,23 93:22	entrusted 120:16	115:17	149:15,18
encouraged 60:24	123:7 129:24	established 10:1	everyday 28:16
endorse 126:11,15	entry 111:2	60:11 62:11,16	
energized 106:13	environment	108:24 109:14	everyone 2:10 6:10 10:6 16:16
	74:24 105:13	establishment	36:25 41:3 60:14
Energy 90:19 92:20 145:25	environmental	101:16	109:24 131:5
	1:16 3:24 6:13	estate 69:15	134:13 136:6
engage 139:3	22:24 53:19,21		144:10 145:9
engagement	56:11 91:24,25	estimate 119:14	149:24 150:3,7
17:11,17 39:5,18	119:12 120:25	estimated 28:25	, and the second se
engineer 13:19	environmentalists	estimates 100:11	everyone's 98:11
75:14,23 76:17	67:14	140:22	131:2
80:11			everything 33:13
	environmentally 66:25	estimating 20:21	42:8 64:6 85:10
engineered 23:17		et 26:15 37:25	134:13 144:7
engineering 47:22	EPA's 59:10	77:11 79:23	147:23
96:18,21 120:24	episodic 112:8	89:23 91:15	everywhere
engineering-level	equally 41:16	100:16 142:18	102:24
113:13	equivalent 91:12	Eurasia 89:18	evidence 118:18
engineers 2:4 3:16	Erie 8:15 9:4	Eurasian 136:19	evident 147:19
4:2,4,16 5:7	39:11 44:19	137:5	exact 149:5
20:21 25:1 38:22	45:16 49:16,18	evaluating 10:22	
40:20,21 41:11	50:4 54:3,7,9	evaluation 8:16	exactly 103:1,22
67:19,20	59:16	13:1 20:8 36:21	105:24
96:11,16 97:12	67.10	13.1 20.0 30.21	

	1 ag		
examine 119:6	81:13 82:21	faith-based 67:15	feeling 120:14
examines 12:15	127:10	fall 80:20,21	fees 77:22
example 13:22	experienced 98:5	fallen 88:5	feet 121:7
20:25 30:9 31:8	expertise 96:17,22 97:5	falling 89:3	125:12,13
78:15		false 93:21	female 62:13
examples 25:16	expires 151:17	familiar 23:6 74:1	field 119:10
exceeds 55:7	explained 144:25	77:20 97:23	field-scale 118:21
excellent 9:21 16:19 21:13 26:1	explains 15:17	families 95:21	figure 79:18
38:23 111:6	expunged 107:16	family 59:5,16	115:21 116:4 146:21
except 31:1 70:23	extending 19:9	83:7	figured 93:25
excess 28:20	extensive 7:9 14:7	fantastic 116:8	140:17
exchange 24:1	extensively 112:19	farmer's 112:23	figures 26:21
excited 12:6	extent 148:23	farther 10:25	66:19 99:22
excuse 5:24 11:12	extra 142:6 144:11 150:16	farthest 3:23	141:21
57:2 145:12	extreme 33:23	fashion 6:25	figuring 115:20
execute 127:4	133:19	fast 62:14,23	file 48:12
executive 14:21	extremely 80:19	faster 76:5,8,9	fill 3:6,9 121:7
68:20 69:3	eyeballs 106:8	faulted 113:23	filled 121:6
exist 38:1 56:18		favor 48:20	filling 121:13
138:9 143:12	F	feasibility 16:2	122:8,19 123:1
existing 14:6 17:8 18:16 25:2 28:22	face 59:14 65:9	feasible 117:4	film 56:10
33:9,11 36:1	92:16 Facebook 39:25	February 81:16	filters 28:1 117:15
37:4 128:12		federal 6:15 13:24	final 66:3 134:18
135:16 142:9	faced 91:22	14:8,12 21:19 24:16,19,23	finally 142:4
exists 29:16	faces 16:9 74:1	36:11 54:12	finance 88:22
exit 2:22	facilitate 36:22	60:14 65:20	financed 144:1
exits 2:24	facility 117:9	77:21 97:21 112:25 125:6	financial 76:25 77:3
expand 102:6	fact 13:10 26:13 54:7	132:25 142:20	financially 77:12
expanded 23:14	factory-fishing	144:19 146:14	financing 93:5
expect 8:24 85:12	139:4	federally 103:15	142:19 143:4
expectation 38:2	fail 132:9	fee 102:4	finding 60:23
expedited 17:21 21:11	failing 66:3	feed 81:16 93:21	fine 68:7
expend 142:12	failure 50:3 52:11	feedback 50:20	firm 66:3
expenditures	72:15	53:6	firmly 117:20
100:11	fairly 10:5,13,14	feel 21:12 24:10 26:25 39:25	first 3:1 5:3 17:15
expensive 10:14	Fairport 56:14	45:22 64:7 84:5	26:19 31:18
63:11 82:3	faith 109:16	98:13 141:13	42:13,22 44:13 48:18 49:12
experience 75:16		150:16	40.10 47.14

	1 ag	e 15	
56:13 68:13 76:2	flooding 37:15	84:24	front-end 105:8
85:9 87:14	121:14 122:8	forms 41:11 89:15	frustration 45:2
93:8,11 95:9 101:23 110:9	floodplain 122:4	Fort 8:23 9:2	fuel 100:15
112:7 124:9	flood-risk 19:6	114:6	full 39:1
126:8 132:18	20:16 28:20	forth 118:13,15	functionality
134:2 147:14	30:8,19,25 32:13 36:2 37:5	Fortunately 6:16	133:15 135:1,8
firsthand 148:20	135:11,20	fortune 12:2 75:16	functioning 62:21
fish 7:12 12:16	floor 149:1	forums 109:4	fund 10:8 79:4
26:15 45:17 59:19 62:17	flow	forward 9:11	102:12
63:2,14,21 74:13	27:3,8,10,12,15	10:16 11:6,9,10	fundamentals
81:16,21 93:19	28:13 32:16 34:4	14:15 16:10	49:11
95:1 99:25	61:23 97:8	24:11 39:20 40:4	funded 76:14
110:24 117:15	121:23 125:2	46:15 60:24	103:15 114:5,9
118:13 131:18	flowing 57:21	79:15 80:21 104:8 115:22	funding 9:18
132:2 138:23 139:23 140:6,22	flows 19:11 122:22	131:7 132:10	17:15 25:6 60:23
fisheries 51:17	flushed 58:9	149:25 150:1	76:16 77:10 106:18 109:21
59:25 70:11	flushing 24:1 28:5	four-part 7:4	115:25 116:5
fisherman 124:1	fly 104:25 105:3	fourth 54:5	143:11
fishermen 45:15	focus 20:2 23:20	fraction 132:4,7	funds 79:3 82:5
93:22	37:21 49:1	frankly 45:6,23	142:12,20
fishery 64:15 70:1	focused 15:20 22:2	46:9	funny 55:4
96:3	111:19	Frederic 1:15	future 8:8,19
fishing 7:10 25:17	folks 13:13 97:1	11:18	13:21 17:16 52:1
46:6 56:15 60:12	116:4 128:15	Frederick 3:25	65:4,12 71:22
69:16 70:7 78:20	130:11	free 24:10 26:25	72:1
80:19 83:8,9 95:13,20,23	food 59:24 62:17	39:25 150:17	
97:23 99:24	93:19,20	freezing 22:15	gained 25:10
100:1,5,8,10,11,	force 141:17	frequent 121:15	gallons 34:5
14 102:4 131:25 139:4	forced 123:22 foregoing 151:5,7	frequently 3:13	Gasoline 121:4
five 69:24 70:1	foreseeable 8:8	77:7	gate 57:24
71:1,6 146:23	forgot 114:18	fresh 52:5 86:2	gathered 37:2
fix 131:13	8	freshwater 50:13	gaze 101:17
flat 32:23,25	form 3:3,4 5:17 40:14 41:14	51:2 65:6,9 92:16	GDP 54:6
flattest 148:11	42:24 49:20,23	fretful 131:25	Geauga 120:15,19
Fletcher	57:22 112:9	friend 126:23	121:22 122:19
99:5,14,16	150:13 151:7,8	friends 126:14	general 12:3
101:22	formal 46:19		44:2,6,7,17
flip 24:10	formally 5:11	frightens 82:2	46:20 54:2,21
flood 19:16 28:22	42:17	front 3:7,10 92:19 132:15 140:8	77:24 78:23 90:24 92:21 96:8
29:3 31:23 33:4	former 78:15	132:13 140:8	JU.44 JL.41 JU.8

	Pag	e 16	
121:1 122:10	giving 85:23	65:20 78:3 125:6	86:17,23 126:17
126:13 134:20	144:11	132:7	greatest 62:7
143:3	glad 4:22	governmental	8
Generally 70:8	glamour 78:10	103:8	green 3:1 33:19 41:21
generals 44:10	GLMRIS 1:14 2:8	GR 148:15	
generation 96:14	3:14,18	grab 16:17 82:20	grew 61:19
	4:3,19,20,23,24	150:17	Griswold
gentleman 84:4 95:8 99:2 104:11	5:2,5,7,8,10 6:4	grain 141:8,10	121:8,14,20
114:14 133:6	7:16,18	,	Grosse 80:10 81:2
138:20 145:21	12:12,14,20,24	Grand 115:14 122:21	ground 60:1 131:4
146:11 149:1	13:3,7,9,23	•	group 44:22
gentleman's	14:2,17 16:14	grass 70:23 115:17	105:14,16 106:4
128:17	17:17,21 21:23 23:24,25 28:5	great 1:3 2:7	146:13
gentlemen 2:3	39:23 40:7,9	9:4,12,15,22	groups 11:2 68:11
40:5 47:6 68:9	41:10 51:6 52:15	10:1,4,7,14 11:3	104:7
75:18 80:3	57:15 60:5 72:9	12:10,18,22 16:9,24 18:5	109:1,5,8,18
George 59:1	89:7 97:12	20:5 22:1 24:22	126:15 131:4
68:2,10	111:14 134:8	25:5 34:14,23	grow 62:14
123:16,25	GLMRIS.anl.gov	37:16 38:18	growing 83:14
Georgian 69:10,12	18:7 134:7	44:20,23,24	Guard 56:13
gets 41:25 42:2	goal 5:4,5 15:22	45:2,13,20 46:6	guardians 123:21
88:17,25	20:11 38:10	50:3,4 51:13 54:4 58:12	<u> </u>
getting 8:14 9:15	49:13,24 135:12	59:8,10,11,12,23	guess 77:19 87:22 96:6 103:1,16
14:19 50:19	148:21	,25 60:10 61:17	108:11 112:13
54:18 77:25	goals 5:3 17:5	62:6 63:7 64:16	118:10
78:20 84:2	God 71:11	65:8,10,15 66:13	122:11,25
95:15,22 96:18	goldeneye 81:11	69:8,19,22,24	125:21 128:1
98:12 102:11	gone 137:13,16,20	70:1,9 71:1	134:15
103:24 109:8		73:17,22,25	guide 95:23
114:9 131:2 136:20 138:9,19	gosh 143:25	74:1,12,18,25 75:5 78:9 80:17	guided 83:9
,	Goss 1:16 3:23	81:5,22 82:20,25	gulls 81:10
giant 106:6	6:9,10,12 18:2 48:3 101:15,22	84:12	8
Gibbs 88:8 145:23	108:23 113:22	86:1,5,6,8,11,17	gung-ho 138:22
146:5,22 147:3	130:1,15,21	90:24 104:25	guy 138:21 148:9
Ginn 47.2 0 16 19 10	131:1 148:13	107:19 111:10,16 115:8	guys 4:22 54:17
47:2,9,16,18,19 49:10,23 107:2	150:3	111:10,16 115:8	76:6 83:19
ĺ ,	gotten 146:4	125:24 127:14	95:15,25 104:2 115:13,25
girl 147:8	Goudreau 59:1	137:14 139:6	116:12
given 3:1,13,17	61:9	141:7 142:24	220.12
5:12 19:1	68:3,4,8,10,24	143:2	Н
41:5,13 43:2,5 51:5 121:17	69:1 70:23 71:9	146:4,9,10,22 148:14 150:18	habitat 49:17
128:9	123:16,17 124:1		62:17 82:7
gives 105:11	125:19 126:5	greater 11:20	115:15
gives 103.11	government 63:15	51:22 69:4	

	Pag	C 17	
hair 105:2	140:17 147:5	23:20 36:22	holding 53:24
half 29:1 36:6	having 28:18 29:7	41:19 70:14 79:4	home 53:23 68:18
83:11 114:1	32:2 44:11 53:5	88:22 89:5 91:1 96:14 101:19	69:1,3 73:20
hand 41:12 46:21	79:12,14,21	106:18	94:3 95:20 99:5
50:17	95:22 102:1	127:21,23 140:3	126:7
handle 57:9,17	head 67:23 105:3	helped 128:25	homeowner
137:25 146:14	119:20	l •	104:17
handled 125:9	heads 92:24	helpful 6:22 10:22	hometown 81:2
handles 146:2	145:21	helping 9:16 93:3 147:16 148:14	honored 80:8
handling 78:3	headwaters 8:18		hooded 82:13
handout 3:17	9:1	helps 91:9 146:7	Hoover 92:8
	health 53:18 59:12	hemorrhagic	hope 16:16 45:8
hands 87:13	64:17 65:3 70:10 74:23,25 125:3	117:18	46:1 60:21 93:2
Hanratty 59:1	,	hence 29:23 35:8	125:25 134:21
61:9,12,13 63:20 64:2	healthy 53:22 62:20	herbicides 22:15	144:8
		25:19	hopefully 8:25
happen 43:23 49:15 54:20	hear 12:17 14:11 15:9,12,14 39:15	hereby 151:3	11:1 85:25
58:22 77:15	42:22 55:4 60:24	he's 87:22 138:11	hoping 11:4
104:10,17	61:8	146:12	horizon 67:21
127:9,18 132:1	98:15,16,17,18	hesitation 131:12	horrible 46:7
happened 12:11	107:13 138:21	Hey 104:8 146:23	host 4:8 11:21,24
91:11 121:12	149:19	Hi 61:12 73:12	· ·
happenings 40:2	heard 54:2 59:15 71:3 74:7 84:3	hibernation 66:2	hosting 4:16 39:7
happens 50:1 70:5	93:11 98:19	high 22:10 33:2	hours 19:25
74:17 92:7	102:1,3 105:22	93:21 121:24	house 3:24 6:14
116:23	107:3,9 126:22	higher 74:19	104:20 105:1 145:21
happy 138:17	127:15,19		
Harbor 56:14	128:15	highest 52:9	houses 95:21
harbors 96:12	134:20,24 141:24 148:21	highlight 148:7	http://
123:20		highlighted 29:21	GLMRIS.anl.go v 4:25
hard 15:9 60:15	hearing 10:19 39:20 43:5 64:13	highly 19:24 30:24	
66:14 140:16	85:20 98:14	50:25	huge 89:14 100:23
harder 26:22	133:1 148:19	highway 51:24	human 59:14
harvest 100:4,6	150:21	hiking 61:20	117:23
Í	hearings 46:14	historically 124:24	human-mediated
harvesting 8:3	hearts 127:11	history 58:12 60:7	37:23
hate 97:14	heavily 89:2	96:3 124:24	humbled 80:8
hats 68:11 126:8	he'd 44:3	147:23	hundred 13:11
haven't 3:7 20:24		Hocking 93:12	57:4 90:25 91:22 93:1 103:14
43:7,18 99:18	held 41:16	hold 28:19 53:16	112:22 129:3
110:4,11 118:3 133:13 135:6	help 5:21 6:11	62:24	142:21
0.661 61.661	7:25 9:4 10:16 11:7 13:1 21:14		hundreds 51:13
	11./ 13.1 41.14		1141141543 31.13

	1 ag		
63:16 74:22 Huron 104:16 124:5,6 Hutchinson 87:25 hybrid 35:18,20 hydraulic 21:15 70:12 hydrologic 31:18,19 32:18,19,21 71:20 126:16 135:2,14	identify 16:22 18:17 20:13 47:7 102:9 113:16 identifying 75:19 111:23 ignored 122:5 I'll 20:6 36:3 43:2,22 44:14 50:17 95:9 116:12 120:3,13 127:24 132:22 134:2 Illinois 34:6	125:21 126:6 129:14,20 131:25 136:25 138:17 139:19 141:8 142:7 143:14 145:17 146:3 148:25 immediate 65:16 93:16 95:5 133:20 immediately 13:23 58:1 112:13 132:11	54:3,7 59:12,24 61:18 63:9 73:24 79:5,16,23 89:9 90:23 98:15,18,20 116:9 130:7 133:16 149:16 impose 51:9 impossible 95:23 impression 141:9 inactivate 28:1 117:25
hydrological 49:12 54:25 66:12,23 133:20	125:1,8 129:22 130:5,6,8,16 141:7 146:16,18	impact 34:10 86:5 101:2 120:25 impacted 135:2	inactivates 117:11,12 inactivating 117:21
hydrology 114:8 hydropower 96:15 Hyle 72:23	I'm 2:4 11:11,19 15:23 18:12 22:9 24:7,9 27:10 37:9 42:1,3,20	impacts 17:7 18:18 20:16 33:5 35:7 37:4,14,15 135:3	inadequate 63:1 inadvertently 37:25
hypothesis 80:24 	44:7,10 46:21 47:9,11,19 48:10 50:12 51:4 53:12,18 55:4 59:9,14 60:9,24 61:13,14,20,24 65:18 68:8,10,12,13,15 ,16,17,19,24	impart 38:20 impending 34:18 imperative 51:21 implement 17:10 31:12 37:8 63:23 97:11 implementable	inaudible 15:14 18:11 43:15 44:10 50:19 53:11,15 58:21 65:1 73:3,5 104:1 110:4,7 119:1 121:22 148:15
140:1 147:11 150:5,7	69:2,4,6,7,9,11,2 0 71:15,16 73:16	22:18 117:3 implementation	inception 17:13 incline 89:19
Idaho 146:3 idea 23:14 26:1,3 29:6,24 32:18 88:15,22,24	74:4 76:6,24,25 77:14,20,24 80:8,10 81:7 83:7,12,15,17,20	20:18 21:16 implemented 13:23 22:19 23:4 25:15 26:9 52:11	include 26:17 35:4 72:8 93:4 included 5:11
93:14 98:1 105:11,19 Ideally 10:24	84:1,23 85:14 87:8 90:11,20 95:14 99:9,10,16,17	77:9 implementing 63:22 74:20	including 22:24 30:7 31:1 39:4 81:10 133:16 incorporation
ideas 21:14 22:15 23:23 25:17,25 56:23 106:19 identified 17:1	105:13,14 106:9 107:3,4 108:7,10,11 110:19 114:17 115:22	implies 24:19 implying 103:20 importance 45:12,19 46:4	incorrect 141:8 increase 28:13
21:24 22:13 52:19 111:11 identifies 13:20	113:22 116:15,21 118:7,10 119:4 120:3 123:12,24,25	65:23 101:10 important 6:12 10:2 11:24 17:12 39:6,20 52:5	index 43:2,5 Indiana 8:23 111:1 114:4

	1 ag	e 19	
Indians 124:8 indicate 33:19 indicated 40:13 42:24 44:2	33:10 47:23 87:24 88:2,4,6,21 89:1,4 94:25 96:14 98:7 118:4	120:11 interagency 146:13 interbasin 1:4 2:8 12:11 15:12	invasion 66:5 110:24 131:13 invasive 8:19 9:14,25 12:8 14:3 25:18 48:21
47:2,18 104:12 133:19 139:10 Indicating 123:14 indicative 54:1 indirect 51:15 63:17	122:12 135:23 inherent 107:14 Initiative 10:2,8 25:6 116:7 146:11 148:15 inky 105:6	21:25 23:9 interest 49:6 50:22 131:4 interested 9:22 10:19 11:2,25 15:4 31:8 88:9	49:14 51:1 54:18 55:2 56:24 59:22 60:1 62:8,24 69:22 74:17 86:7 96:2,8,19 97:4 102:14 116:21 invasives 51:18
indiscriminate 120:14 individual 18:8 25:19 103:7 123:25 147:22 150:4	inlet 125:20 innovate 96:23 input 5:5 14:20 39:18 80:9 122:7 129:8 131:2 145:10	131:6 141:3 interesting 91:17 141:12,22 142:19 interests 36:20 56:19 80:18	52:8 58:8 invest 50:22 investing 89:2 investment 50:1,2 88:2,4
individuals 62:12 126:15 148:1 149:2 induced 37:15 industries 19:17	inside 24:2 146:16,17 insidious 131:14 inspires 138:11	141:7 142:18 interfere 136:22 interim 38:6,8 52:12,20 54:23	investments 39:2 75:4 invite 101:14 involve 65:19
industry 54:10 61:2 67:3 89:23 92:3 131:22,24,25	instant 95:5 instantaneously 58:7 instead 28:17,19	international 85:1 108:22 interrelationship 100:20 interrupt 64:18	91:24 involved 6:18 13:11 40:1 44:19 52:19 56:12 68:12 69:15 70:4
infested 8:2 inflative 23:19 influence 56:20 inform 26:1	29:7 35:1 instructions 3:8 instrumentalities 65:20 143:10,11,12	interrupting 142:1 intersection 113:8 intimately 148:5 intricate 91:16	86:22 95:13 107:18 132:25 138:10 141:14 148:3,5 involvement 52:25
information 3:19 5:4,6 6:9 13:6 15:6,11 18:6 20:6 21:13,19 22:17,21,22,24 23:15 36:10,14	instrumentality 91:3 92:17,25 144:7 insult 81:19	introduce 3:22 16:4 29:9 introduced 16:12 30:14	involves 86:2 irreplaceable 82:7 84:5,11 Island 69:10
38:23 43:9 79:13 105:23 113:17 134:14,16,22 147:21 information's 14:19	insults 121:13 intake 131:17 intelligent 143:15 intended 130:2 intense 72:1	introduction 50:24 80:24 97:24 invade 60:10 invaded 62:18	isn't 115:7 137:7 isolated 25:20 issue 44:11 48:10,23 59:15 65:25 73:24 79:5 80:16 83:18
infrastructure 28:18 30:19,25	intent 31:13 interactions	invaders 51:9 74:21 invading 59:23	86:16 93:11 96:9 98:10 125:25 133:21 146:9

	Pag	C 20	
issues 14:3 47:24	120:10,18 122:8	109:22 131:23	120:14
56:7,11	124:16,21	139:19 147:15	ladies 2:3 68:9
it's 3:13 5:17	127:19 133:12	149:10	laid 15:16
10:13 14:22,23	141:13,24	K-a-p-t-u-r 64:25	
15:7 16:8 17:12	146:1,4 147:1	KAPTUR 53:10	lake 8:15 9:4
20:5 23:7 24:15	148:12	55:20	13:14,17
26:1 27:23 30:15		64:12,20,22,25	19:11,12,15
32:25 37:10	J	65:3 67:11	27:16
38:11,25	Jacksonville 97:5	90:7,11,16 92:15	29:10,14,16
41:22,24	129:2 148:5	132:18 139:18	31:21 33:12,25
45:14,15,17	January 1:7 12:12	140:19,25	34:21,25 35:7 44:19 45:15
49:6,16 50:21	14:18 17:23	145:16,19	49:15,18 50:4
51:7 54:1 55:3,6	81:15	Kathryn 59:1	54:3,7,8,11
56:11 57:12	Jared 68:3 71:15	61:8,12	56:1,6,15
58:11 65:19		,	59:6,16
66:11 70:10,18	jewel 129:16	kayak 61:22	61:15,17,22,23,2
71:5 72:17 73:25 74:15 77:1 79:5	job 21:2,13 38:23	Kendall 1:17 2:3	4,25 62:1,3,7
86:19	67:5 73:20 75:19	18:6 50:6 90:2	64:17 65:4,10,13
88:5,8,12,23	92:18 138:12	145:12	66:22
89:10,22 91:25	148:22	Kent 83:13	67:15,17,21,23
92:1 95:23	jobs 54:13 67:2	Kerry 88:1	69:24
97:13,14,19	75:2 89:9 94:2		70:4,5,19,21
98:13,14,18	107:15,18,21,23	key 17:17 50:23	73:22 75:12
102:23 103:17	John 1:16 3:23	146:8	77:17 80:22,23
104:4,15 105:4,8	6:9,12 11:14,25	kid 83:14	81:3 83:10 94:6
108:12 109:2	14:5,6 47:2,11	kids 73:20 149:4	99:23,25
110:12	50:11 55:3 87:25		100:5,11,22
112:6,17,21	108:1,13 112:20	kill 116:21 118:8	101:2,4,10,11
115:8 116:7	113:14 114:15	Killbuck 8:14	104:18,19,21
117:23 118:3,4,5	120:2,4,6,9	kills 117:12	105:12,16,17
119:5	148:13	kindly 48:5	106:5,8,14 107:15,19
122:4,12,13	John's 115:6	· ·	107.13,19
126:12 129:16	joined 40:24	knock 95:3	121.23 124.4,3
131:23 133:23		known 60:4 99:7	129:15,16
134:4,15	joint 47:3 85:1	124:8 125:16	131:12,16
135:5,24 137:23 139:20 141:16	Joy 58:25 59:1,4	Kristy 47:4	140:2,5 149:5
139:20 141:16	Joyce 87:22	53:4,17 101:1,7	lakefront 31:19,21
147:18,19	144:14	114:13,16,17	32:11,17
148:22 149:18	Jr 1:15	119:25	105:14,16 106:4
		Kyle 1:18 73:15	,
I've 41:18 43:19	July 17:23	, 1.10 / 5.10	lakes 1:3,18 2:7
56:13 59:10 69:14,16 73:21	jump 112:14		9:5,12,15,22
75:15 77:16		labor 67:14	10:1,4,7,14 11:3 12:10,18,22
81:14	K		16:24 22:1 25:5
83:13,18,23	Kaptur 12:2 46:24	laboratory 119:9	31:10 34:14,23
90:17 95:13	53:8 61:10 64:23	lack 51:5	37:16 38:18
105:5,7 113:15	83:22 102:1	lackadaisical	44:20,23
100.0,7 110.10		100110000010000	11.20,23

	1 48	- — — <u> </u>	
45:13,20 46:6	larvae 140:6	leaves 35:19	141:25
50:4 51:13	last 3:16 35:11	leaving 35:21,25	light 28:1 89:8
54:4,5 58:12	74:11 81:8 84:3	64:5 120:20	96:1
59:8,10,11,12,23	90:9 99:24 100:9		, , , , ,
,25 60:10 61:17	137:15 140:9	left-hand 2:20 24:8	likelihood 112:5
62:6,10 63:7,9	144:13 148:13		likely 114:4 119:8
64:16 65:8,10,15	Lastly 74:25	legislate 103:13	135:18
66:5,13	148:24	legislation	limits 51:24
69:8,19,22,24		17:19,22,25	line 17:1,2 33:19
70:1,10 71:1	late 32:22 124:25	54:16	58:25 74:11
73:18,22,25 74:12,18,25 75:5	later 12:1 15:9	111:15,18,21	
78:9 80:17	17:23 106:20	less 31:4 62:22	lined 146:20
81:6,22 82:20,25	126:10	63:10 76:18	list 22:6 68:2 78:8
84:12	latest 40:1	81:23 85:22	81:7 83:2
86:1,5,7,8,11,17	LaTourette 87:21	lessons 23:15	listed 22:7
90:24 107:19			listen 15:23 147:20
111:10,16 115:8	LaTourette's 56:22	let's 43:22 46:16 103:25 139:9	
116:7,8 120:17			listening 16:11 80:15 82:23
125:25 127:14	Lawrence 78:19	level 20:9,13	105:18 107:5
137:14 139:6	92:23 143:6,20	21:3,12 24:23	144:4
142:24 143:3	laws 25:24	33:24 34:15	
146:4,9,11	lawsuit 125:7	57:13 77:22	literally 28:18
148:15 150:19		83:19 113:2	84:13
lakeshore 61:20	lawyer 47:19	117:3 132:25 146:14	little 8:14 10:17
81:5	lawyers 143:17		14:22 16:13 18:1
lakeside 7:11,14	lays 86:9	levels 34:22 78:3	23:3 26:22
33:13	lead 54:24 114:3	library 1:9 11:23	27:1,2 39:12
lamprey 9:24 57:3		license 102:4	56:4 68:6 94:24
58:11,12,15	leaders 67:13	licensed 99:23	96:18 113:14 114:11 118:13
1	127:21		128:16 140:3,13
land 53:22 59:7	leadership 127:10	licenses 99:24	142:5 144:25
68:20 77:10	leading 140:7,11	100:1	
124:10,12,13 146:4	leads 32:9	licensing 78:17	live 13:13 19:8
		lie 36:20	59:6 70:21 83:11 90:23 105:16
lands 48:16	leak 131:13	Lieutenant 4:6	120:15 149:4
lanyard 5:20	leaking 131:11		lives 59:21 95:20
large 32:12 33:8	learn 4:19 18:25	life 48:16 61:18 68:19 69:2,4	
53:1 80:24 98:6	learned 23:15	75:3 77:16	livestock 93:21
99:24 139:2,3	learning 7:7	81:7,13 124:2,22	living 77:16 83:8
largely 47:21		129:15	load 34:21,24
larger 28:15	least 49:19 107:18 121:23 134:17	lifelong 61:14	loaded 57:23
117:15 123:4,6	136:2 146:19	77:16 129:14	loader 105:8
largest 52:4 54:6	leave 3:11 38:19	lifetime 61:25	
65:8 131:23	64:8 127:24		lobby 2:13
Larry 99:14,16	150:14	lift 57:11,12,18,23 58:2,8 89:14,15	local 13:24 14:12
		30.4,0 09.14,13	52:23 54:13

	1 ag	~ <u> </u>	
56:16 65:21	113:15,19	94:11,13,16,17,1	master 106:9
77:21 102:5	114:19,25	9 110:5,7 115:10	material 81:17
112:20 113:2 122:7 123:2	115:11,22,23 118:17 122:13	119:1 147:8	materials 3:1 5:1
130:7 142:13	126:14	man 76:13 126:23	135:17 150:16
	135:15,17	132:15	Matt 83:3
locally 98:21	138:14,21	manage 9:25	matter 37:17
located 2:19 15:21 25:20 81:2	147:21,25 148:9	40:18 41:19	112:21
	lots 11:1	managed 97:19	Maumee 9:1
locations 50:23	loud 53:12,13	144:2	94:8,16 113:9
lock 23:24,25	love 44:11 56:15	management 19:6	114:6 115:15
24:1,2 28:5 57:6,20,22 72:9	61:24	20:16 25:17 26:6,8,16	maximum 148:23
89:15,16	low 22:10 121:24	30:8,19,25	may 17:8 18:19
Lockport 57:20	lower 24:8 30:21	32:13,15 36:2	23:5 26:21 34:12
_	35:16 89:15	37:5 38:13 51:16	35:13 38:3 46:7
logistics 127:4	lowest 52:10	68:14 70:4	57:9 60:25 64:3
long 8:15 10:13		135:11,20	67:11 74:12 79:4
14:22 38:3 44:25 47:19 52:9 55:6	Lowry 72:23	142:23 143:11 144:6	85:15,16 96:25
60:2 61:19 76:12	73:12,15		98:2,3 105:21 106:19 118:6
78:2 94:4 109:11	Lucas 93:9	manager 1:14 4:3 17:14 75:15	119:11 125:11
118:24	luxury 67:22		130:1
longer 31:25 46:5		manages 130:9	maybe 10:25 26:2
63:18 119:11	<u>M</u>	managing 53:18	28:15 53:8 94:24
137:22	ma'am 61:7 64:19 65:2 73:11 75:7	manner 50:23	95:24 115:20
long-term 7:19	93:7 136:5 145:8	52:12 112:17	118:7,9
9:18 38:10 52:16	147:15	manufacturing	119:19,20 128:16 146:7
93:15 94:23	machine 124:25	80:11 92:4	
107:5 109:13 112:17 118:19	magnificent 92:16	map 9:17 140:23	Mayfield 121:5
		mapping 140:21	meal 101:17
longtime 75:15	magnitude 28:14 141:20 146:14	maps 26:21	mean 41:15 64:5
Lorain 66:9		March 5:9,25	78:20 102:4
Los 92:10	mail 5:14 41:10 150:10	150:8 151:17	119:7,13 122:2,12
lose 49:18 62:22	maintain 28:4	Marcy 46:23	means 9:13 32:24
losses 51:8,10	30:3 52:22	64:23 83:22	39:22
lost 86:22	57:6,13 96:12	131:23 147:1	83:17,18,20
lot 15:5 18:5 20:6	135:8,12 136:2	marine	112:8 124:13
44:23 55:4 56:18	maintenance 34:1	57:4,7,9,12,18	129:5
59:15,17 73:19	51:15	89:18	measure 52:20
74:2 75:16 85:21	major 65:13	Mark 129:13	measures 13:22
87:9 97:1,3,6,7 100:1 104:21	75:15,24 78:6	Marsh 8:23 113:8	21:17 26:12
106:15	137:15	marshy 32:25	38:8,25 52:13
110:13,15	MALE 43:15,19	massive 51:2	55:2 74:19
112:12,18	73:3,5,7	120:24	measuring 25:7

	Pag	29	
mechanical 52:10	99:19 100:4	72:24 84:21 90:6	40:18 41:22
	101:1 104:24	123:12 136:15	55:24 82:21
mechanism 102:20	126:23 129:18		87:8,16 150:5
143:5	136:8,12,18,19	microphones 2:15	,
mechanisms 25:6	141:6,18 144:16	42:9 53:6	misinterpret
77:25 78:14 93:5	148:4 149:1,10	mid 32:22	130:17
141:25	, in the second of the second	middle 32:20	misplaced 84:22
143:21,22	Mentor 56:1,6		mispronounce
media 14:19	merely 86:10	midst 131:1	43:12
medium 22:10	128:18	mid-system	missed 113:15
	merganser	32:18,19	
meet 67:6,22	82:13,15	midyear 17:14	mission 12:7 48:15
107:11 143:22	mergansers 81:10	migratory 80:22	53:21 97:10
meeting 1:5	<u> </u>	e .	102:8 127:3
2:6,9,17 3:2,3	mess 77:18	mike 44:2,7 73:4	missions 34:7
4:11,21 5:3 6:2	message 45:21	80:2 83:2 120:7	Mississippi 1:3 2:7
16:8 39:11 40:12	messages 109:25	146:2	9:8 12:10,18,23
45:1 53:24	120:20	mile 83:11 111:9	16:25 22:1 29:18
150:15,18		147:23	31:9 34:6 38:18
meetings 4:17	Messina 127:13	miles 17:4 139:25	60:8 63:8 66:13
5:13,15 39:7,10	Meszaros 151:3,14	140:5,7	75:1 82:24 83:16
109:6 122:3,11	met 90:7	ŕ	86:14 111:10,17
134:20 141:13		milestone 12:7	115:8 140:22
melt 92:10	methods 12:25	military 148:9	141:10,21
	26:8 46:10 52:19	millennium 91:21	150:19
member 59:10	metropolitan	143:19	misspoke 130:1
68:13,15,19	11:20	Millikan	-
69:2,9,11 79:22	Meyer 47:4	110:10,13,18	mitigate 35:7 38:9
82:18 90:21	53:4,7,12,17	, ,	mitigated 33:15
105:13	101:1 114:17,21	million 10:9 11:21	mitigation 20:14
members 36:12	115:11 116:19	19:8 34:5 62:13	29:2 32:12 33:7
83:7 84:25 95:15	118:6,24	63:16 75:25 76:1	36:7 37:3
105:15 106:4	119:2,4,15,19,24	100:6,8 138:3,4	
Memorial 121:20	Michigan 13:14,17	143:9	mixing 32:6
memorialize	19:11 27:16	millions 51:13	Mm-hmm 116:18
134:24	29:10,16 31:22	74:22	model 139:4
	33:12,25	mills 95:2	142:23
men 2:20	34:22,25 35:7	Milwaukee 34:14	modeling 114:7
mention 2:12,18	56:8 70:20		o o
4:6 5:23 7:20	80:10,12,13,23	mind 2:13 10:11	moderating 2:5
8:11 14:17	84:9 124:3,5	55:18 61:10 64:5	modern 91:12
145:20 148:11	125:14,22	79:22 87:16	modernize 143:21
mentioned	140:2,5 149:5	mine 81:14	
11:17,25 14:6	micro 118:14	minimal 78:16	moment 3:21
18:3 19:22			55:12 79:10
22:4,12 26:16	microorganisms 117:13 118:14	Minnesota 17:3	moment's 131:12
36:8 37:24 38:14		125:23 127:13	momentum
42:5 87:23 98:12	microphone	141:9	109:20
	42:12,15 43:24	minutes 16:13	

	Pag	C 2 1	
monetize 93:18 money 77:25 78:4,13,20	135:18,19 movement 12:8,22 67:8,16 70:9	129:20,23 136:1 nature 16:2 47:13 48:11,13,20	13:22 21:17 25:13 26:7,12 38:7,25 52:19
79:2,17,19 85:21 88:12 91:10	113:5 140:10 moves 38:5 92:9	50:12 navigation	nor 13:8 125:6 normal 28:16
94:22 100:24 102:10,16,20,21, 22 103:4,19,25	141:10 moving 10:10	18:20,21 20:16 23:18 28:4	normally 135:17 north 141:4,23
104:7 106:15 128:10 142:7,15	14:14 29:19 30:15 52:3,7,13 73:12 148:19	34:7,11 36:1 39:16 133:21 135:3,4,10,16	northeast 78:9 note 4:11 31:5
monies 77:23 78:23	muddy 78:7	nearly 54:10 81:8,9 111:9	41:9 114:23 115:3 116:20
monitor 30:5 monitoring 7:10	Mulinex 58:25 59:2,4,5 61:5 multibillion 117:8	necessarily 72:16 78:10 97:14	128:6,14 notes 151:6
8:8 14:8 70:19 monstrous 48:8	multiple 47:23 49:4 69:23	necessary 20:15,17 33:5	nothing 24:20 38:19 45:23 51:7
Montana 86:16 month 134:17	municipalities 142:18	37:7 60:23 71:20 107:8,11	63:13 91:7 107:10 121:12
139:24 months 17:22,23	municipally 19:1,3 mussel 77:18	negligent 65:25 neighboring 66:8	noticed 53:7 85:23 116:14 novel 23:23
81:15 119:8 149:12	105:7 mussels 105:9	net 111:22 nets 139:3	nth 20:24
moon 76:13 126:24	mutual 37:1	networks 109:25 news 14:18 40:1	nuisance 3:15 14:11 15:13 16:24 17:6
mortgage 95:22 mostly 107:7	myself 77:1 81:20 106:10	111:25 112:15 121:21 146:22	20:1,12 23:25 24:3,21,24
mound 23:8 mount 51:10	N Nate 95:12 96:5	nice 101:16 110:14,15	27:14,17,19 28:8 29:25 30:2,13,16 37:19 38:21
mountainous 32:24 105:23	98:24 nation 65:5	nine 56:10 137:25 nine-barge 57:17	81:19 96:7,10,19 116:16 117:1,25
mountains 105:9	91:1,22 124:9	Ninety 15:18	123:4 135:13
move 4:5 10:25 11:4,6 19:4,14 21:10 30:11 31:25 40:11	national 50:22 68:17 81:5 98:22 nation's 65:11	noise 105:4 none 30:4 49:1 143:10	objective 13:4
46:2,15,16 54:22 56:3 60:24 78:18	96:16 native 59:25	nonfederal 77:9 103:6,9	observational 82:14 obviously 31:13
86:20 95:1 115:22 119:9 132:10 142:1	62:14,17,21 81:21 124:7 natural 9:6 35:2,8	nonnavigable 30:24	32:7 70:3 77:12 83:15 103:12,15
146:24 148:24 149:9,13 150:1	37:16 54:20 57:5 63:7,12,24 70:2	nonpartisan 48:14 nonprohibitive	110:19 116:1 125:2
moved 70:8	72:8 84:10,24 113:10	78:16 nonstructural	occurred 121:3

	Pag	C 23	
occurs 122:1	115:9,10,12	opinion 79:6 82:6	other's 40:25
o'clock 150:22	121:5 125:22	112:24	otherwise 32:4
ODNR 55:13	126:9 129:14 145:23 151:14	opportunities 4:18	51:1
70:18,20		12:15 31:7 59:20	Ottawa 99:17
OEC 53:23 126:14	Ohio's 70:11 100:5	60:12 61:3	ought 107:22
offense 66:10	oil 131:11,14	opportunity 16:17 40:16,25 41:3,6	ourselves 98:20
offensive 66:11	okay 44:16	61:16 62:5 69:17	outcompete 62:16
offer 13:5 87:6	46:23,25 50:8 53:12 55:21,23	74:6 75:13 81:12	outfalls 33:11 35:6
offering 61:14	57:16 58:6,23	opposed 24:16	135:25
	64:22 76:22	67:9	outlets 131:17
office 1:18 6:13,14 53:14 68:14 70:3	90:15 95:16,17 103:21 105:10	opposite 67:19	outlined 13:22
102:2 123:2	106:1 118:25	options 12:21	111:9
124:20 149:7	119:2 123:10	13:20 16:22	outlines 12:24
150:11	130:24 132:20	49:23 52:16 66:19 102:16	outset 36:8
officer 76:25	136:6,8,16 138:1	116:23	outside 16:18
officers 127:7	145:7,9 146:9,20 147:7	oral 4:15 5:12,24	37:20 59:6 86:8
offices 128:22,25	old 61:5,6	40:6,11 41:20	111:12
148:3	ones 104:23	42:25	outweigh 72:18
official 90:8	110:20 125:1	order 19:16 28:4	overflows 92:1
officials 36:11	134:2	34:4 43:3 134:17	143:1
67:13 98:21,22	one's 42:10	136:6 145:1	overnight 100:15
128:4,9 130:22 144:23	one-way	orders 28:14	
offset 29:3	29:9,11,15 30:4	organization	<u> </u>
OGNR's 68:13	48:23	37:10 42:13 47:7 48:15 50:10	p.m 1:8 6:6 150:22
	ongoing 10:8	96:12 98:5 145:2	page 133:13 134:8
Oh 83:5 85:6	140:15	148:12	pages 14:22
Ohio 1:10 6:18,19,20,21	on-line 5:16 40:13	organizations	15:1,5,8
8:13,15 9:8 12:3	onslaught 63:1	69:20 144:20	painful 46:22
44:2,8 45:11,16	Ontario 69:11	organized 5:2	paint 13:4
47:13 50:12	onto 101:17 134:8	oriented 77:12	pair 28:6
53:19,21,23 54:3,8,10,14	open 14:25	original 71:11,21	palatable 137:4
55:14 56:1,6	35:20,22	111:14	panel 3:22 40:20
59:16 61:13	36:1,4,6 41:6 57:19,24 87:7	originally 56:21	41:4 87:7 139:13 147:11 150:2
69:1,10	opened 33:8	87:20	
70:2,12,17,24 71:16 73:18 78:9	opening 40:4	Orleans 39:15 98:16 108:9	paper 3:12,13 87:20
80:14 83:6 84:24	• 0	141:11	parochial 129:5
88:9 92:24	operate 30:5,7	others 67:24 75:21	participating
99:7,21,22,24 100:21 101:3,6	operating 14:5	98:3 112:1	14:4,7 16:8
102:5 105:14	operation 25:2 34:1	142:25 149:4	particular 8:16
106:3 114:6	J⊤.1		10:21 21:6 28:25

	Pag	C 20	
31:6,11 33:16	people 9:8 11:21	82:24	plant 23:25 25:19
35:6,17 61:18	40:23 44:18	permits 41:4	27:15,18,20,21
108:5 111:19	45:12,15,17	119:12	28:2 33:10,20
113:24 117:21	46:3,10 54:8		34:19 81:17
135:22 137:24	55:21 59:2 61:21	person 40:17	117:1
	66:10 74:2,3,4,5	45:18 68:8 77:3	
particularly 49:15	84:8,13 85:25	84:8 102:2	plants 24:4 26:15
98:24	87:9 88:10 90:18	130:23 147:4	28:9,14 33:17
parties 9:22 11:2	93:5,16	personal 69:18	95:2 116:17 117:16
partner 103:5	94:2,7,9,21	79:6 80:20	117.10
130:7	95:17 110:14		please 4:11,13,15
	114:24	personally 125:25	15:8,16 39:22
partnered 113:4	115:1,4,23 124:9	138:11	41:8 42:15
partners 6:17 10:2	127:8,12,17,20	personnel 13:12	46:13,15 47:7,15
14:9,14 98:8	129:3 133:3,9,21	-	49:22 56:4 58:21
125:4,5	136:24,25	perspective 75:14	63:24 64:19
partnership 9:19	138:16,21	129:7	68:23 73:14 75:8
pass 63:2 74:13	139:10,12	Pertaining 134:11	80:6 85:5 87:15
•	143:15	phase 21:10	93:8 95:10 99:4,13 115:2
passage 30:6 52:6 141:4	per 34:5 125:12	phone 121:10	120:7 130:17
passion 13:15	perceived 36:19	phones 2:11	139:1,17
149:6	percent 18:25 34:9	phonetic 144:14	pleased 48:18
	60:9 62:19 84:11	physical 22:14	107:4
past 7:13 8:6	86:2 103:14	23:6,7 25:16	plaasuva 12.2
34:16,17 35:13	117:2 125:15,20	30:20,23	pleasure 12:3
66:11 68:16,20	132:7	31:20,24 32:2,5	plenty 87:3
69:5 80:20 105:1		35:12,18,21 39:1	plumage 82:12
119:15 120:18	percentage 34:8	60:17 63:4 74:20	•
137:1,11	99:25		plume 105:6
path 79:15	perch 56:16 94:5	135:4	plus 47:20 69:14
-	100:7	physically 63:7	-
pathway 18:8 20:1		physicist 80:10	point 7:3 27:6,8,9
37:20,22 111:18	perched 112:13	1 0	33:2 44:1 55:19
113:19 130:2	Perfect 77:5	picture 13:4	64:11 84:17
pathways 8:13	116:25	piece 3:12 17:12	104:19 141:5
17:4 18:4 19:22	performed 22:8	111:24 134:21	147:11 150:17
22:22 55:14	perhaps 23:19	pivotal 65:4	Pointe 80:10 81:2
111:24,25	34:17 39:24	placed 31:20	pointed 49:19
patient 149:20	88:17 135:5	-	54:17
pause 10:17	142:24	places 32:20 62:17 63:14 95:1	points 27:7,9 28:7
pay 77:13,23 82:6	period 5:12,20,25	122:19 142:9	29:7 31:16
PDF 134:9	6:5,6 40:4,7,12 41:20 42:18	plan 8:24	32:3,20 33:18,21 92:11 111:2
Peninsula 124:3	104:20 122:9	24:9,10,14 31:17	141:23 149:13
Pennsylvania	150:8	70:25 93:16	policy 6:13 59:11
39:11,14	permanent 8:17	94:23	political 67:6
Pentagon 126:25	57:19 82:11 95:3	Planner 1:17	84:2,7 124:25
1 Chtagun 120.23		plans 7:3 13:8	141:6
	permanently	1	171.0

	Pag	e 27	
politically 141:13	powerboats 106:9	119:14	probably 18:24 37:2 95:14 104:3
politicians 126:2 138:13	powerful 141:16	prevent 12:8,15,22 13:15,16 15:19	106:25 119:14
	PowerPoint 133:9	16:23 17:6 20:11	134:9,17 139:20
pollutants 34:21	powers 82:14	23:8 25:21 26:12	140:24 148:11
pollution 102:14	practice 26:6	31:13 50:24	problem 57:8
pond 7:23	47:20,21 70:14	51:21 54:18 66:5	63:18,20 88:9
ponderous 96:25	practices 26:8,16	70:9 132:4 148:23	89:20 127:5 129:6 141:19
poorer 62:22	27:25 72:9		
population 62:12	precipitation	preventing 29:15 31:8 32:5 59:22	problems 45:5 47:23 53:6 95:22
94:5 115:18	19:13 28:11,20	65:14 148:22	146:15
populations 25:18	30:10,14 32:2,9 112:10	prevention 12:25	Procedurally
port 66:9 69:9		14:10 25:11 27:5	132:24
99:7	predators 62:14 80:25	29:6 38:16 74:19	proceed 108:8
Portage 83:14	001-0	135:13	145:1
portion 33:9	prefer 24:17	prevents 29:17	proceedings
121:16	prepared 64:4 77:1 137:12	previous 7:7 36:4	151:5,9
posing 108:11		120:10	process 17:18 72:4
1 -	preregistered 4:11 42:23 43:1 47:1	price 49:25 50:3	80:9
position 46:5		75:3 82:6 93:21	108:5,6,16,17,24
positive 96:1	presence 70:19	priceless 129:16	109:17,19
possible 7:22 8:22	present 5:4 12:4	primarily 18:13	115:20 131:2,10 134:14 147:17
35:25 52:1 83:20 102:11 107:8	21:13 36:21 66:22 107:19	20:1 30:23 36:7	134:14 147:17
133:6 148:23	110:24 112:2	98:6	processing 95:2
possibly 97:2	141:2	primary 14:23	•
	presentation 6:4	19:21 123:19	produce 62:13
post 134:16	16:20 26:25 43:6	135:9	produced 134:3
posted 5:10	presentations 5:19	prime 115:15	productive 62:6
potable 117:23	presented 5:6	primer 14:23	64:15
potential 12:25	16:15 47:25	prior 111:21	professional 69:7
15:15 17:4,7	133:7	priorities 78:5	professionally
19:23 22:6 31:15 63:21 82:9	presenting 3:20	102:9	69:15
	presents 12:25	prioritization	profit 138:22
potentially 33:23 72:10 113:20	preserve 44:19	113:6	program
	-	prioritize 13:8	6:20,21,22 9:7
poultry 93:20	preserving 48:16	prioritizing 78:25	70:25 71:4,6
pound 94:1	president 69:5 105:20 124:19	private 69:8 100:4	programs 53:19
pounds 93:23,25 100:6,8 131:19	presidents 76:2	privileged 48:10	progress 7:2,17 9:11 44:24
power 96:14 101:9	pressure 8:7 19:16	proactive 71:10	46:8,9 114:10
powerboater	114:20 130:19	74:8	progressing
77:17	pretty 23:10 54:1	probability 38:3	141:16
, , , , , ,	95:16 109:2	•	

	Pag	e 28	
progression 60:16	65:10 73:21	puts 35:18	raid 116:7
61:1	protection 75:5	putting 26:4 79:18	raided 116:10
prohibiting 96:2 project 1:14	85:18 97:13 119:12		rail 57:4,7,9 89:18 135:19
4:3,12,14 5:16	protector 105:13	qualitatively 22:9	rain 30:15 121:20
6:12,16 7:18	protectors 105:17	quality 1:16 3:24	
10:12 17:14	protocol 104:14	10:1,3 20:17	rainfall 112:10
42:23 67:1	-	37:5 75:3	Rainkey 144:14
75:15,25 76:10 89:4 103:10	proud 61:24 83:23	135:11,24	145:7
104:9 108:25	proven 10:15	quantity 22:9	raise 128:2,3
112:25 113:24	126:21	question 3:5	ran 67:20
120:17 138:1	provide 15:11	40:15,17,19	range 12:21 13:20
142:24 145:1	52:20 147:17	65:24	15:5 16:15,22
149:3	provided 80:9	76:2,7,11,14,16	18:17 20:10,22
projects 6:15 8:10	provides 36:9	87:7,19 95:24 102:18 108:11	22:11 24:24 25:4 109:1
10:10,16 88:22	providing 38:23	110:21 111:6	
97:17 98:7 120:24	113:12	116:11 123:1,4,7	ranging 22:14
	provinces 51:3	128:17 130:14	ranking 90:20
prolific 70:1	71:2 108:21	133:11	rate 105:23 141:4
promise 95:21	127:15	questions 3:14	142:20
promulgated	public 1:5,9 2:6,9	5:18 24:12 39:23	rather 48:23 51:7
25:15	4:17 5:3,13,14	40:22 41:5 77:7	57:6
promulgation	6:2,5,6 13:6	116:24 132:22	Rayburn 90:12,14
25:24	14:13 16:8 25:23 26:1 36:12 39:6	queue 43:3	139:20
proof 118:7	40:4 79:22 81:24	quick 7:1 16:1	RE 1:3
proper 19:9 63:22	83:24 88:25	74:15 79:10 89:6	reach 109:10
properties	115:21 150:8,18	96:6 132:22	reaching 53:2
23:19,20	pull 26:4 108:18	quickly 46:2 51:4	
property 121:9	pulled 9:23	54:22 63:23 72:11 114:23	readers 13:1
proportions 82:10	punted 66:7	116:12,13 142:5	reading 15:7 77:6 133:12
propose 75:25	purification 27:24	146:25	ready 73:11 75:9
110:21	purify 131:13	quiet 114:11	99:3 104:12
proposed 82:3	purpose 13:3 32:5	quit 42:4	112:13 123:15
88:16	138:9	quite 23:6 28:18	129:11 136:5
proposes 88:17	purpose-built	45:6 46:9 60:4	real 38:2 45:10
proposing 133:15	23:18	88:1 92:20 132:1	60:16 69:15
protect 9:4,16 35:2	purposes 133:17	140:17 143:23	106:5,14 114:10
70:10 82:6 86:1		146:19	realistic 71:5
96:13 101:18	purse 88:20	quo 74:14	realize 138:13
107:20 129:17	pursue 67:4		really 4:21 16:8,18
136:1	push 138:2 147:6	Rappel 91.24	20:4 21:24 22:17
protecting 52:4	pushing 89:10	Rachel 81:24	28:9 35:14 36:13
	- 0		44:23 45:12,19

	0		
46:3,6 55:14	142:11 143:6	24:20 25:1 31:5	remainder 31:15
65:17 75:2	recognize 109:1	32:11 38:12 40:2	remaining 41:9,25
76:3,11	S	45:10 79:15	58:8
79:15,18,23	recommend 24:5,6	96:10 97:4,18	
86:21 88:1,25	58:16	98:6 103:3 112:2	remains 14:13
89:2 96:17	recommendation	126:23 144:23	remark 77:1
97:1,13,15	11:4 66:4	region 32:23	remarks 49:1
98:14,18 100:19 104:4 108:5,11	recommendations	39:8,17 51:13	remediation 35:5
110:13	10:18 13:8 70:15	53:1 54:4	135:24
112:12,18	130:11,12	65:5,11 66:2	remember 10:4
113:15	133:19	78:9 90:23 91:7 143:9	61:19 90:12,13
115:14,19	recommended		119:20
116:6,8,9 125:23	31:15	regional 6:25 14:4	remind 42:1 64:3
129:7,24 132:22	recommending	88:21 125:4	150:7
137:10	135:21	regionally 128:23	
138:11,12,17 141:14	record 2:15 42:17	regions 133:3	removal 51:15
reason 17:12	43:9,25 44:15	region's 65:7 75:3	removing 34:5,8
30:22 56:12 66:6	46:19 48:13	register 48:3	repel 7:23
96:20 112:6	recording 134:13	registered 4:14	reply 102:7,19
149:8	recreation 18:21	43:4,19 84:18	report 3:18
reasonable 93:13	74:23	86:25 87:5	4:19,20,23
132:9	recreational 51:10	114:15	5:5,7,8 6:4,13 7:16 8:12
reasons 33:22	69:16 70:7	registration 3:4	12:11,24
43:13 86:19	78:15,17 131:25	40:14 42:24	13:3,7,23 14:17
125:3 140:13	red 5:20 42:3	regularly 6:24	15:1,2,7 16:16
141:15	82:15 141:9	81:4	17:21,24
receive 134:14	Redfield 76:21	regulate 94:6	20:2,4,6,8
150:15	80:1,3,7 82:17	regulations 25:24	23:1,5,13
received	reduce 8:6 9:10	S	36:9,22 37:21
17:15,19,22	52:13	regulatory 122:24,25	38:13 40:8 48:19 49:7 52:20,22
receives 77:9	reduced 112:6	122:24,23	49:7 52:20,22 57:14 70:16
receiving 14:20	reduction 25:9	reiterate 40:7 60:6	79:14 86:8 89:7
111:21	31:7 38:15	71:18	106:13 111:19
recent 63:1 74:10	redundancy 71:25		115:14 116:13
111:18	72:14	relate 92:2	129:1,4,18
recently 84:25	refer 2:8 103:6	related 51:15	134:8,19
117:8 121:18	122:4 123:1	relative 121:2	reporter 134:12 151:4
reclaim 93:2	referenced 93:5	relatively 96:10 98:9,10	reporting 42:7
reclaimed 91:19	referring 81:18	relatives 124:2	106:5
reclamation	refined 22:6		reports 13:19
33:10,17,20	reflexively 67:9	reliability 52:9 relieve 19:16	18:8,10 113:19
34:19 91:4,17 102:12 130:9	refrigerated 94:25		114:2
102.12 130.7	regard 20:7 22:19	remain 59:21	report's 13:18

	Pag	e 30	
represent 42:14	residual 37:18 resilient 62:23 resolve 149:12 resource 21:20 35:3,8 36:12 98:6,22 112:20 resources 14:1 37:7,16 39:2 50:22 52:5 68:14 70:3 84:24 96:12 113:10 129:20,23 136:1 respect 49:5 respectful 40:24 respond 128:1	results 58:3,6 122:15 retained 133:15 retired 47:20 76:25 revenue 63:16 78:24 107:16 reversed 125:1 reverted 125:15 rid 117:14,15 rightly 49:3 rights 78:18 rise 13:17 risk 22:8,10 25:9	road 29:12,17 72:10 102:17 115:1 121:5 roadblocks 138:7,14 Rocky 71:16 role 97:2 rolling 121:24 room 15:15 44:18 107:7 115:23 148:1 roughly 15:5 routinely 70:18 RPT 57:15
represents 66:21 reproduce 131:15,16 reproducing 62:11	responding 128:17 response 40:20 66:24 103:1	28:22 29:3 31:7,23 32:15 33:5 35:25 38:9,15 52:10,13	rubble 121:7 ruled 136:22 rules 44:4
Republican 88:15,18 145:22 146:1 Republicans 88:19	120:20 responsibility 4:8 14:12 38:22 97:15,16,20,22 104:4 129:19	62:1,7 71:22 75:17 82:22 100:25 107:15 113:24 148:23	run 15:4 94:8 117:19 138:7 139:11 running 78:7
reputation 138:18 request 40:18 142:2	responsible 11:20 29:14 130:6 rest 34:13 86:12	risked 63:9 risks 37:18,19 rival 142:8 River 1:3 2:7 6:20	runs 5:25 14:5 121:9 150:8 rushes 57:25 Russell 121:15,19
require 9:19 39:1 required 21:9 77:10 reroute 33:16 35:2	130:13 restaurants 56:16 100:16 restoration 10:7	9:8 12:10,18,23 16:25 19:1 22:1 29:18 31:10 33:9 34:6 38:18 60:8	Russia 89:17 137:3 rust 28:19
rerouting 33:20 research 7:17 14:7 60:19 118:20	25:6 97:12 116:7 146:11 restore 54:20 63:6,12,24 71:21	63:8 66:13 71:16 75:1 78:7 81:3 82:25 83:12 111:1,3,11,17	S safe 119:14 sail 61:21
Reserve 59:7 reservoirs 28:21 31:1 33:5 reside 54:8	97:7 restores 72:7 restoring 55:8 97:8	115:8,9,10,12,15 ,18 125:2,11,16 130:6 141:9 150:19	sailboats 106:9 salmon 94:8,10 Sam 84:23
resident 61:15 105:12 129:14 residents 19:8 28:23 29:3 37:14 101:12	restrooms 2:21 result 92:3 resulted 100:5 121:19	rivers 1:18 6:20 61:22 62:10 86:13 94:20 121:23 122:21 141:8 RMR 151:3,14	sample 7:10 sampled 7:12 Sam's 115:7 Sandusky 66:9 106:10

	Pag	C 91	
115:15,18	70:22 82:16	35:12 38:10 39:1	shallowest 69:25
Sanitary 35:19,22	89:12 92:14	45:24 49:12	share 69:21 116:2
125:17	106:12 125:18	51:21 52:17	133:8 142:22
	131:20 142:6	54:25 57:23	
sanitary/ship	144:11	60:17 63:4	shared 14:12
147:24	Secretary 92:20	66:12,19,23,24	38:21 97:15
sat 124:16	·	67:4 70:12,14	104:3 133:8
save 44:15 62:3	secure 53:22	71:20 72:7,12	Shaw 1:18 90:2
67:15,17,23	sediment 35:4	74:15,20 82:3,11	145:12,14
, ,	135:24	83:16 93:15	shed 86:7 95:25
saving 79:19	sediments 33:12	126:16 133:20	
saw 81:9 87:13	seeing 77:7,17	135:2,15 136:20	sheetpile 23:7
115:17 136:4	9 ,	separations 32:11	she's 42:6
scale 31:2,3	seem 88:20 93:13	septicemia 117:18	Shields 126:6
119:9,10	seemed 88:9,23	series 28:21 76:1	Ship 7:9 35:19,22
scaups 81:11	seems 55:5 66:7	117:14	125:17
scenario 33:16	78:1 79:1		shippers 78:19
46:8 135:14	93:14,15	serious 110:1	**
	102:3,15	133:20 143:23	shipping 80:18
schedule 3:2 77:8	seen 32:16 46:8	146:24	129:21 130:20
scheduled 6:6	82:11,12 85:10	serve 59:7 90:19	136:21,23
139:11	104:21,23,25	97:2 117:25	141:21
science-oriented	105:1,5,7	served 84:25	ships 141:25
48:15	110:4,11 122:8	serves 19:5,20	shock 55:5
scope 48:19 81:9	140:10 148:12	25:7	shore 131:22
Scott 110:18 111:7	select 108:16	Service 70:20	shorelines 96:13
scour 116:14	Senate 44:21 45:4	Services 113:11	shores 29:10 64:15
screens 28:1	send 109:25	serving 144:1	short 12:13 18:14
117:14	sending 126:10	session 48:2	62:4 68:8 85:3,8
118:11,12	senior 68:19		109:12 132:5
sea 9:24		setting 79:3	shorter 31:3
	sense 45:7,10 60:2	seven 19:25 54:11	
seal 112:23	66:25 103:2 118:5 126:19	125:8	shot 88:17
seasonally 125:15	118:5 126:19	seven-year 71:6	shows 60:19 63:3
Seattle 148:4	141:3	sever 55:14	100:2 107:17
Seaway 92:23,25			118:15
143:6,20	sensible 49:13	several 4:17,21,25 13:4 15:10 39:7	sick 73:16
second 5:5 29:5,11	sent 41:16	66:19 90:18	sickens 82:2
36:3 41:7 125:12	separate 8:17	109:6,7 120:20	sides 8:8
127:25 141:5	63:7,11 82:24	121:10	
	114:5	severe 72:1 120:25	Sierra 126:9
secondly 133:5	separates 107:5	121:15,19,20	127:23
seconds 41:24	separating 132:10		sign 4:12,15
42:1,2 49:9 52:24 58:4 61:4	separation 21:15	sewer 33:11 35:6 92:1 135:25	signed 43:7 120:2
63:19 67:10	31:18,20 32:19	142:25	significance 112:5
03.17 07.10	,		

_	Pag	C 32	
significant 6:19 18:22 19:6,13,16	site 8:21 120:21	softens 78:21	source 81:3 116:5 121:22 122:20
28:11,12 30:9,18	sites 18:8,10 92:2	sold 99:24	
31:23	111:12	solicit 5:5	sources 78:24
32:1,8,10,15	112:6,7,24	solution 9:18 23:7	south 7:11 8:4
34:2,4,8,10,21,2	113:6,7,16,21 114:8	48:20 49:5 52:5	121:16 141:24
4 35:2,8 37:6,16		53:2 60:17,24	southerly 69:25
39:1,2 82:10	site-specific	63:5,10,23,24	southern 88:8
112:9 135:3	113:18	66:14 72:14	104:19
136:1	sitting 83:8,23	79:20 93:13 95:3	
significantly 29:1	103:4 108:7	107:5 109:13	spanning 51:3
31:4	125:21	114:3 118:20	spans 17:2,3
silence 2:11	situation 65:23	solutions 60:20	spawn 106:18
silver 80:16,25	76:7 89:21	75:20 93:17	speak 4:10 16:10
	123:22 127:3	133:14	20:6
silvers 8:6	six 61:5 66:15	solve 122:14	41:1,6,15,22
similar 23:10	137:19 140:9	141:19	42:14,21 43:4
26:23 72:9	six-year-old 59:18	somebody 5:20	44:9 48:5 61:16
117:12	size 28:8	79:1 105:8 116:2	75:13 79:21
simple 23:11		124:1	80:12,14 87:12
simpler 112:18	sized 140:8	somehow 78:1	113:14 120:6
simplest 134:10	Ski 124:19	124:6 141:11	126:18 136:15 139:11,12
	Sleeping 81:4,15	someone 97:22	ŕ
simply 24:1 50:3	slide 17:1 41:21,23	133:4	speaker 43:15,19
60:19 86:17,19	141:1,2	sometime 114:5	73:3,5,7 90:9 94:11,13,16,17,1
Simpson 146:3	slides 15:25 35:14		9 110:5,7 115:10
simultaneously	41:18 133:6	somewhere 30:10	119:1 147:8
57:19	134:3,9	133:10	
single 11:3 21:8	slow 9:9 60:15	son 59:19	speakers 6:3 71:3
27:5,6 38:24	61:1 97:1 113:23	sons 83:13	speaking 90:17
72:15 133:13		sooner 38:15	123:25
sir 12:5 16:6 44:4	slowed 60:18	102:16 106:20	special 56:18
46:18 49:21 50:5	slowly 42:16 122:1	sorry 22:9 27:10	species 3:15 8:20
68:5,22 71:8,13	141:16	47:15 56:5 64:18	9:15,25 12:8,17
73:2 76:19 79:8	small 14:22 33:6	68:24 73:15	14:3,11 15:13
84:16,20 85:4	63:2 74:13 79:4	94:18 99:17	16:24 17:7 18:9
86:24 90:5	81:16 82:6	110:8 114:21	20:2,12
95:7,9 99:2,12	105:21 140:6	119:4 120:3	22:3,5,20,22
101:23 104:12	142:11	126:6 136:9,17	23:25 24:3,21,24
106:22,23	smaller 31:2	sort 14:23 28:22	25:19 26:14
110:6,17 122:17	126:15	120:10 122:21	27:5,8,15,17,19,
123:3,11,15 129:11 130:14	smart 74:3		23 28:2,9 20:6 15 17 25
132:13 149:23	110:14,19	sorted 49:11	29:6,15,17,25 30:2,6,14,16
	snow 92:10	sorting 78:4	31:8,9,12
sit 28:18 132:22		sound 46:7	37:19,25
147:19	snowballing 51:8	sounded 88:15	38:4,16,21 48:21
		Sounded 00.13	

	Pag		
street 48:22	successful 96:2	120:16 134:15	tactical 70:25
stress 60:2	111:23	sure's 146:3	tag 75:3
stretch 8:4	successfully 33:4	surface 23:9 32:6	tags 49:25
stretching 129:1	sudden 33:8	86:2	taking 30:15 34:3
strictly 26:20	sue 44:11	surprised 18:24	62:24 72:3 73:19
strings 88:20	sufficient 36:14	surrounding 29:4	79:13 112:17 114:2 115:4
strong 74:18	suggestions 10:20	125:8	140:16
117:21 126:2	109:8	suspect 66:20	talk 15:25 23:3
128:4	suggests 27:13	sustained 24:17	53:12 67:25 74:6
struck 48:7	35:17	Sutton 92:24	75:22 89:8
structural	suitable 49:17	swans 81:10	116:16,19 133:22 137:15
52:11,18	summarize 36:21	swim 59:19 149:5	133.22 137.13
structure 25:16	51:4	swimming 61:20	talked 46:10 50:21
77:24 142:8	summary 3:18 14:21,22 133:6	switching 35:23	54:15 88:7
structured 108:18	134:19,21	system 7:5 17:8,9	119:16 136:24
structures 77:21 123:19	summer 59:17	18:2,14,17,22	137:2,14 140:13 145:24 146:1
	summon 67:6 84:6	19:3,10,12,20	147:23
stuck 114:25	Sunday 81:8	20:3 22:2 27:11 28:3 29:12,16,20	talker 53:13
studied 83:18	sunlight 82:13	30:21 32:20 33:1	talking 10:12
studies 63:1 140:15	O	34:6,7 35:15	16:13 18:12 84:4
	sunny 81:9	51:23	85:21
studying 140:18	Superior 1:10	57:2,5,7,23 62:25 65:15	86:4,6,9,11 94:22 102:5
stuff 77:19 94:22 118:12	supervise 120:17	72:15,16	108:19 115:4
style 57:20	supplies 54:12	89:8,14,18	146:15,21
•	supply 18:22	91:13,16 92:16 111:13 112:3,19	147:25
subject 13:24	support 11:1 75:2	117:20 125:20	tampering 146:16
submission 12:10	83:25 109:24 113:13	130:10 135:10	tanks 94:25
submit 3:5,8 5:17 74:6 99:9 101:13	supported 70:12	136:13,18,19 137:24 143:20	task 102:10
150:11	supporting 66:12		tax 77:24
submitted 5:13,15	supporting 66.12	systems 25:3 30:7 35:24 51:2	taxes 54:13 77:23
submitting 55:10		57:11,12 69:23	taxpayers 63:16
74:5	suppose 65:1	130:9 137:18,21	team 5:2 6:16,23
Subsequent	supposed 43:16	142:13 144:1	13:9 18:15 32:13
121:12	Supreme 58:18 125:9 136:22		teams 7:17 9:8
substantial 140:10	sure 36:25 42:7	table 4:13 43:8	technical 113:12
suburbs 19:9,19	43:9 55:4 59:19	84:18 87:1	technically 134:15
29:4 30:11	64:9 65:18 67:1	114:15	techniques 20:22
success 9:21 97:17	72:2 73:10 74:4	tables 36:22	technologies 7:15
successes 98:4	76:6 85:6 107:4 115:22 118:10	tabletop 122:22	12:21 13:21

	Pag	e 33	
15:18 16:22	93:6,7 95:6,7	therein 151:10	thwarting 49:13
21:16 23:4 35:12	96:4 98:23	there's 2:20 5:16	tie 56:19
55:1	99:5,15 101:19,20	9:6 11:3 13:10	tilt 68:6
technology 27:4	104:10	15:2 30:6 38:2	timeline 10:13
29:5 105:20,21	106:20,21,22	45:7 56:18 69:23 74:1 88:1 100:17	21:11 34:20 35:9
technology-based	107:24,25	110:13 111:9	37:7 41:2 76:4
26:20	114:12,17	110:13 111.5	timely 52:12
ten 31:3 62:11	119:24 120:1	113:17	timer 42:20
76:13,18 95:14	122:16,17	114:19,25	
100:22 126:24	123:9,11,16,18 126:2,4	115:20 118:17	tiny 132:4,6
term 52:10,18 61:1	120.2,4	119:20 120:22	tired 104:3 106:25
72:9 105:22	132:12,13 134:1	133:1 140:14	TNC 54:2
109:11,12	138:10 139:7,8	141:7 148:10 150:9	today 8:12 10:12
terms 78:22 86:7	144:4,9,10		11:4 16:20 17:16
117:12	145:7,8,9	Thereupon 150:21	18:13 25:12
terrain 121:24	147:9,15,16	they'd 40:14 47:3	26:11,25 27:16
test 7:21 119:10	149:19,23	they're 26:13	30:8 34:18 36:24
testament 101:9	150:2,6	55:13 60:8 62:10	37:9 39:8,19,24
	Thanks 6:10 40:5	74:2 91:9 95:5	40:14,22
testify 55:21	84:15 96:5	112:11 124:6,9	41:12,15 43:4 48:10 49:2 59:14
testimony 99:10	101:21,22 110:2 119:25 150:3	133:9 139:25	61:14 69:21
150:5		they've 58:13 74:3	79:13 92:20 93:6
testing 70:18	that's 3:2,15 7:10	third 4:21 7:6	105:19 109:9
116:22	8:14 9:2,25	54:10 73:8 101:7	122:14
118:21,22	15:15 20:2 23:12 27:13 29:21	131:23	134:3,4,12,24
tests 7:23	33:18 34:17 35:1	Thirty 49:9 52:24	135:5 136:3
text 114:24	36:6 38:5 41:19	58:4 61:4 63:19	143:15 144:10
thank 4:6 6:18	42:20 43:12 49:1	67:10 70:22	today's 2:7
11:7,14,23 12:4	53:25 55:15,21	82:16 89:12	Toledo 66:9
16:6,7 40:3	65:9 77:14	92:14 106:12	114:24
44:8,16 46:17,18	79:13,23 85:22	125:18 131:20	tonight 3:6,10,20
47:14 50:5,15,18	89:23 95:16,17	thousands 61:21	4:8 5:1 6:7 11:17
53:2,3,24,25	98:15 100:1 102:18 104:6,16	67:2	12:4,17 14:11
55:13,15,16,22	114:22 118:2	threat 9:10 48:8	15:20,22 16:7,9
58:23,24 61:6,7,15 63:25	120:8 121:1	62:5 81:23 95:5	17:13 38:20
64:1,12,13,24	122:9 124:1	threats 65:13	40:24 41:19 42:6
65:2 67:24	128:4 130:22,23	71:22,25	53:24 55:12 64:5,7 68:10
68:1,25 71:12,13	135:21 136:21	three-minute	74:1 98:25 99:19
72:20,21	137:4,8 138:19	40:15 41:2	107:3,14 110:14
75:6,7,12	139:4 140:9,16	three-other-old	128:3 133:7
76:18,19	themselves 23:3	59:18	138:18 145:10
79:7,9,23,25 82:23,25 83:1	112:8	throughout 4:17	149:16,25 150:4
82:23,25 83:1 84:16 85:7	theoretically	59:21 122:8	tonight's 3:22
0 1.10 05.7	108:20		40:12 147:12
86:23,24 89:25	100.20	throw 127:22	40.12 147.12

	rag	e 36	
tons 105:7	111:16 112:5,12	75:20 92:21	types 75:19
tool 19:6 20:5	113:20	95:22 97:1 109:10 113:5	typewritten 151:7
top 69:12 78:8	transferring 37:19	131:6 135:7	typically 132:25
100:22 119:20	transfers 26:13	146:15 149:9,13	
topped 100:12	translate 109:23	150:1	U
Toronto 56:10	transmitted 14:18	trying 2:15 11:9	U.S 2:4 4:1,4 67:20 84:25
total 18:25 33:25 34:9,24 38:10	transport 37:23,24	18:17 25:10 27:7,21 38:16	124:19
touch 39:22	transportation 52:23	53:16 90:12 94:21 96:22	ultimate 79:20 145:6
115:24 140:3	transporting	97:6,10 98:8	ultimately 63:13
touched 129:4	37:25	101:18 103:16	70:13 86:14
tough 66:6	travel 45:11 51:2	107:20 113:16	144:22
tourism 54:9 61:2	80:13 92:5 125:11	116:4 119:7 128:19 135:12	umbrella 143:8,19
101:8 102:2	traveled 80:14	142:21 146:21	unbiased 129:7
toward 38:9 103:9	95:18	149:8	Unchecked 51:9
towards 19:15 31:10	traveling 145:24	tug 57:17 89:10 137:25	undermine 75:4
township	travels 125:14	tugging 149:8	understand 36:19 45:12 46:4 60:22
121:15,19 122:3	trawlers 139:3	tune 23:21	98:2,3 102:7,19
trade 47:19 142:2	treat 27:13	tunnel 135:22	110:25 127:6
tradeoffs 36:17	treated 19:2,4 24:3	tunnels 28:21 31:1	129:9 132:9,11 141:20 147:24
trade-offs 21:18	treatment 23:25	33:5,19	148:18
traditional 20:21	24:4	turbulent 67:21	understanding
23:16 27:20,24	27:15,17,20,21,2 5 28:9,14 116:17	turn 3:7 6:8 11:11	37:1 38:20
57:6,20	117:1,6,7,9,10,1	123:12	103:17 129:25
traditionally	9 118:19 119:17	turned 64:10	understands 45:19
24:15 96:11 103:5	Trent-Severn	136:16	65:22
traffic 57:13	57:1,3	turning 130:15	undertaken 3:15
	tried 113:3 116:14	turns 42:3	16:3
train 118:19	129:6 135:11	TV 121:21	undoing 32:4
training 127:10	trips 83:9 100:3	TWC 126:14	unexpected 10:5
transcribed 151:6	trophic 82:9	127:16	unfortunately
transcript 151:5,8,10	trouble 78:24	Twitter 40:1	48:25 128:20
transcripts 134:18	trout 100:7	twofold 17:5 112:7	unhinged 128:16 uniform 148:8
transfer 8:20	truck 135:19	two-way 29:8	
12:16 13:16	true 65:24 139:25	48:22 51:24 52:22	unilaterally 125:2
15:19 16:23 17:6	151:10	type 25:14 32:24	uninhabitable
20:12 23:9 25:21	truly 91:20	57:9 96:3 116:24	84:13,15
26:14 27:5 28:7	try 35:24 36:13	139:5	unique 13:18 69:17 98:9
29:15 31:14	56:23 58:14		U7.1 / 70.7

	Tuge		
108:25 140:9	variety 12:24 24:6	113:9 114:5	97:8,25 98:6
148:8	39:3 142:17	114:15	101:18
United 44:21	various 13:2,12,24	120:2,4,8,9	117:7,10,24
68:18 85:1 88:4	14:8 75:19 78:3	122:18 123:6,10	118:4 119:16
137:8	105:18 115:5		122:22 124:2,13
	134:20 136:24	wait 62:2 63:18	125:13,20
unless 88:24	140:20	71:3 110:10	130:8,9
unmet 91:24		146:23	131:13,15,17
untreated 23:9	vehicles 78:13,17	waiting 55:21	135:10,23
	verifiable 58:7	65:16 78:2	142:13,14,17
update 7:1 41:24	versus 108:8,9	wake 66:1	145:25
upfront 87:10	vessels 28:6 106:8	walk 149:7	waterborne 74:2
upon 57:24 81:23	via 135:18,19	walked 148:24	waterfowl 81:10
upper 35:15 89:16	viable 52:16	wall 23:8	104:24
124:3	vice 76:2	walleye 56:16	waterfront 101:1
upset 81:21		94:12,13,14,19	waters 23:9 48:10
upwards 82:4	viewed 4:24 40:8	99:7 100:6	57:23 58:1 100
urge 85:15 86:20	56:10		105:6 124:4,5
115:25 116:6	viral 117:18	Walter 47:4	watershed 17:1
	virus 117:18	warm 49:16	54:19 61:15 63
urgency		warning 45:4	66:13 71:17,21
45:7,10,21	visibly 58:7		83:16 121:14,1
60:2,6,22 65:23	vision 93:3	warrants 63:22	watersheds 48:22
71:24 126:19 127:18	visit 81:4 120:21	wash 131:21	52:17 63:12
urgent 74:15	Visitors 99:18	Washington	107:6 132:10
usefully 86:9	visual 41:18	90:13,18 139:21,24	waterway 7:5 17:
	vital 62:20 136:21	141:14	18:2,13,15,17
users 17:8 142:17			19:2,10,20 20:3
USGS 115:13	vitally 54:7	wasn't 32:24 49:2	22:2 23:8 26:5
utilized 19:24 23:5	voice 39:16 73:16	103:20 141:1	29:19,22 34:6
30:24 118:4	98:14 128:3	waste 74:10	35:15 51:23 57
	149:16,18	wastewater 19:2,4	110:23
utilizing 52:18	voices 98:19	27:21	111:12,20
UV 28:1 116:19			112:3,18 117:1
117:6,10,11,19	volume 18:25	water 7:24 10:1,3	130:4,6 133:17
119:16	140:21,22	18:22 19:11,14	135:1,4,18
	141:12	20:17 24:2 26:4	waterways 14:8
V	volumes 141:21	27:13,15,22,24,2 5 28:13,20	96:13 97:8
vacation 116:13	volunteering 56:7	30:7,11,12,14,15	Wayne 8:23 9:2
vacuum 56:18	voracious 81:18	32:1,3,6	114:6
valley 121:25	vote 83:24	33:10,17,20,24	ways 9:9 37:23
141:10		34:4,8,9,19 36:2	104:9 144:2
valuable 109:11	vulnerable 49:16	37:5 52:5	wearing 68:10
		53:19,22 57:25	126:8
value 59:16 70:10	W Wabash 9:1 111:1	58:9 59:9 86:3 90:19 92:9 96:12	weather 72:1
valued 51:19	vv anasii 7.1 111.1		

	Pag	C 90	
114:25	139:11	Whereas 110:23	wishing 4:10
website 4:12,14,24	140:17,18 141:15,18	where's 122:2	witnesses 141:5
5:10,16 14:25	141.13,18	wherever 78:22	women's 2:21
18:6 22:7 39:19 40:9 41:10,17	148:19	whether 22:9 23:7	wonder 77:13,19
42:23 43:1 106:6	west 56:8 90:25	38:25 45:24,25	78:11 129:23
113:18	91:12,23 95:19	65:24 70:5,6,7	wondering 116:22
134:4,7,16	108:9 127:13	75:25 91:25	118:7 129:21
150:11	143:13	92:1,8,9 98:21	work 6:11,19,24
week 19:25	western 59:7 93:1	102:14 126:12	8:14 21:9
	100:21	135:24 138:15	24:22,25 45:23
weeks 11:5,9 109:6 131:3	Wethington 1:14	whichever 40:21	55:13,15 59:6
	4:2 11:12 15:24	42:10	60:22 73:20
weigh 130:10,12	16:4,6 79:9 96:5	white 3:24 6:14	82:14 90:22
weighting 41:13	101:20 102:25	29:22 87:20	97:3,6 98:8 99:6
welcome 2:6 4:12	103:21 104:2	whittled 22:17	103:9 109:13
43:8 64:8 84:18	111:6 116:18,25	whoever 103:24	110:2 111:22
we'll 2:8 5:21 6:3,5	118:17	110:22	113:16 114:7,22
11:16 12:2 24:11	119:3,5,18,23,25	whole 11:21 15:5	116:1,8,9,23 117:5 118:3
41:6 43:8,23,25	122:16,24 123:8	32:4 54:9 91:1	126:7 144:2
47:8 52:1 58:18	127:25 132:13 133:23 134:1	106:15 125:6	149:20,25
61:8 64:9 78:8	144:22 149:3,23	131:10 140:12	workable 52:21
87:16	ĺ	142:17 146:9	
101:15,16,24	wetland 121:4 122:19	147:17	worked 7:16 9:7
110:3,25 126:16 131:6 134:18,23		who's 87:22	58:10,15 59:11 60:15 75:15
139:12,13	wetlands 120:15	whose 84:18 87:1	82:18 112:19
we're 4:7,21 6:2	121:25	124:2	118:16 142:13
7:17 8:1 9:10,15	we've 2:14 8:9,12	who've 39:16	working 8:1 14:14
10:12,22 11:4,17	9:13,21 20:20		56:25 65:20
17:13 27:7	21:12 23:13,23 26:21 29:8,21	wide 109:3	75:24 88:19
39:6,7,9,10,24	31:20 32:16	widely 117:6 118:3	109:19,25
40:11 41:1,13,21	33:3,8,15 36:13	wider 111:22	116:1,3 144:8
42:22 53:5,20	39:8 44:25 46:8	widespread 108:5	146:13
56:17 61:10 72:2	60:4 67:17 86:4	wildlife 70:20	148:12,17 149:2
77:13 79:18 84:6 85:12,21	91:11 92:12	84:10,14 99:22	works 6:23 91:8
86:6,9,11 89:3	95:18 98:5,9,12	100:2	117:11
96:16,24 97:10	104:25 109:7 111:11 112:19	willing 88:18	world 54:6 56:24
98:7,8 101:18	113:3 128:15	147:3	88:6 89:1 99:8
102:4,5 107:20	134:24 146:24	window 62:4	100:23
108:15,19	150:3		world-class 70:11
109:8,23	whatever 46:1	wings 105:4	world's 52:4 86:2
114:8,10,11 115:4 122:21	66:6 72:14 76:1	winter 6:11 80:22	worldwide 48:14
123:3 128:15,23	83:16,24 84:2	wiped 107:23	worried 115:12
130:11 131:1,3	102:15	wish 4:14 65:22	132:1
134:19 137:11	whenever 124:14		102.1
	!		

Page 39					
worries 115:19,22	young 138:21	105:7,9			
worry 102:10,11	younger 95:15	zero 51:7 60:1			
worse 63:18	yours 87:14	ZIP 42:14,17,19			
137:23 worth 50:2 61:6 75:2	yourselves 36:13 39:4 47:7 you've 49:19,25	43:25 46:19 47:8,9,12 50:10,14 55:24 56:2,9 59:5			
wow 114:18 145:9 wrap 72:17	59:15 71:3 75:18 81:12 87:10 94:7	61:13 64:20,21 68:22 71:16			
WRDA 145:22 146:23	133:14 Z	73:13 75:8,11 80:5 85:4 87:12,15,17			
write 41:11	Zaborowski 1:17	90:12 93:8 95:10			
written 3:9 5:13 44:14 46:21 50:16 55:11 64:4 99:9 108:4 126:11 150:12 wrong 63:13 133:13 139:20	2:2,4 40:5 43:17,21 44:16 46:18,22 47:14,17 49:9,21 50:5,8,15,18 52:24 53:3,15 55:16,23 58:4,20,24	99:3,6 104:13,15 106:24 114:18 120:5,9 126:7 129:13 136:9 139:16 145:19 zone 29:23,24,25 30:3,5,13			
Y yacht 106:10,11	61:4,7 63:19 64:1,18,21,24 65:2 67:10				
Yandek 72:25 75:10 76:4 132:21	68:1,22,25 70:22 71:7,13 72:21 73:4,6,9,13 75:7				
Y-a-n-d-e-k 75:11	76:19,23 77:5 79:7,25 80:5				
YANDEK 75:10 132:21 133:25	82:16 83:1,5 84:16 85:4,7				
yards 112:22	86:24 89:12,25				
yardstick 25:8	90:3,10,15 92:14 93:7 95:7				
year's 10:10	99:1,12,15				
yellow 3:4 40:13 41:11,23 43:5,15 100:6 150:13	101:23 104:11 106:12,22 107:25				
Yep 140:23	110:3,6,8,11,17 114:12,19 120:1				
yet 46:24 110:12 135:7 147:5	122:17 123:11 125:18 126:4				
yield 88:3 York 17:3 39:13 117:7 118:8 127:14	129:11 131:20 132:12,14,20 136:4,9 138:25 139:8 144:12 145:8,13,15,17				
you'll 6:1 12:17 68:6	147:9 150:2 zebra 77:18				