

Case Study

CAMERON DAVIS: Well, thank you very much, Therese. It was a very nice introduction. We also want to thank Kelly O'Brien and Jeanette Mayo for the invitation, and the idea today that helped the deputy commander at the Chicago District, Kevin, to launch this. So I also want to just recognize too Gina McCarthy, the administrator of the EPA, who's been very supportive of all the work we're trying to do here in the Great Lakes Region.

How many of you have heard of Asian carp?

MALE SPEAKER: Nobody.

MALE SPEAKER: Okay.

MR. DAVIS: All right. We can all go home. No. This is a story that's not about Asian carp. Well, actually it is but only insofar as these fish are the main character of a story. The story is really about how the region has been pulling together to be able to do something good for the ecology of the region. That is, to try to keep Asian carp from becoming self established in the Great Lakes but also to help turn this threat, this very serious ecological threat into an economic opportunity for the region as well; something that has economic benefits across -- across the board.

So I'm going to start out by laying the groundwork for the story that John and Kevin and I are going to tell by giving you a little bit of context, little bit of history. John is going to talk about basically what's -- I'm talking about the past. John will talk about where we are today, and Kevin will chat a little bit about some of the efforts by the Corps of Engineers which are front and center in trying to help with the dynamic that we're -- that we're talking about.

So first and foremost, I want to give you a little bit of a sense of what we're dealing with here. Very nice, placid water body; kind of place you might want to go paddling or you know, go -- go on a vacation until that.

(Whereby, audio was played).

MR. DAVIS: These things really don't like the sound of outboard engines. They're silver carp, and they've been known to hit people in the face as they jet ski along water bodies, break noses, things like that. So this isn't just an ecological threat. It really is a public safety threat as well -- one of the many reasons that we want to try to combat these fish and keep them from getting into the Great Lakes.

In 2009, President Obama proposed and established the Great Lakes Restoration Initiative, and luckily, we had

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strong bipartisan support for the establishment of this program. Why? Because helping to restore the Great Lakes is good for the region's economy. We know this. It's a truth, and thank goodness that we had the Great Lakes Restoration Initiative in place because in August of 2009, two months after my appointment was announced, environmental DNA started to pop in the Chicago area waterway system or CAWS as we call it -- suggesting that these fish that had never been close to the Great Lakes now were actually a lot closer than we thought that they were going to be. Clearly, that is not a good situation to be in.

In December of 2009, the Corps of Engineers had to take down one of the our most important, if not really our only barrier standing in the way of Asian carp migrating up the CAWS and getting into Lake Michigan. The electric -- the electric barrier that exists under CAWS, they had to take it down for maintenance. So that mobilized many of us to get ready to defense (sic) the waterway system, so that carp could not migrate while that key defense was down and that resulted in the application of Rotenone that basically killed fish life, aquatic life in a very discernible stretch. We detoxified the river afterwards. It's not the kind of the thing that we want to keep doing.

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In 2009 also, some of the region's attorneys general filed suit to basically shut down the Chicago River system by closing the locks, and in February 2010, we saw something that we very rarely see in government. We saw federal agencies, state agencies, municipal agencies come together within basically a six-week period to create a strategy for keeping Asian carp from becoming established in the Great Lakes -- six weeks. It's hard enough for our federal agencies to do that by themselves but let alone throw in the mix states and municipalities as well, and we formed what's called the Regional Coordinating Committee for Asian carp that John Goss manages right now.

By May of 2010, that strategy had been finalized. This was our battle plan. In June 2011, we actually found a big head carp -- kind of a cousin to what you see here in Lake Calumet, which is connected to the Lake Michigan waterway. There's a great deal of effort to hunt for these fish, to try to capture them and make sure that we were thinning and eliminating their populations before we could get -- before they could get into the Great Lakes.

By 2011 and 2012, other states, not just the Illinois Department of National Resources, but other states and provinces were added to that RCC, so that we could make this a truly regional partnership to help beat back these

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fish, and today, the Great Lakes Restoration Initiative continues to underwrite much of the effort that we have to try to not only keep Asian carp from getting into the Great Lakes but to make sure that we're finding ways to suppress their populations, and those can include economic opportunities as well such as processing these fish for fertilizer or as a protein source, things like that. So with that, I'll turn it over to John to take it away from where we are.

JOHN GOSS: I'm going to jump right into a map to get you oriented. Of course, around the Chicago area here, you can see that there are five different points where there's a water -- open water connection from the lake, coming in to the Calumet area on the south and into the downtown area and then up through -- around Evanston at the Wilmette Pumping Station, and Chicago drains to the Mississippi side because of a man-made system that was built over 100 years ago to develop the ship canals and to get that drainage out of downtown and out of the rest of the region.

So also on this map you can see about 35 miles inland there a yellow star and a box. That's where the electric barrier is located, and about 60 miles downstream is where the Asian carp population is still hanging out. They haven't moved right up to the barrier, but in that area

down on the Illinois River they do make up 60 to 80 percent of the fish.

We do have a coordinated strategy, an effective redundant electric barrier system, extensive monitoring and response program, developing the research teams for new control technologies, and the Corps of Engineers is doing the Great Lakes-Mississippi River Interbasin Study to come up with a long-term solution. The things that we have been able to pull together as Cam mentioned from the team efforts are pretty significant.

Asian carp are not established in downtown Chicago or in the Chicago area above the barrier or anywhere in the Great Lakes. We have full partnerships including the Canadians have joined and appropriated funds and have joined all of our programs, and a lot of new techniques have been developed for capturing carp, new technologies for herding fish, capturing fish, water guns to keep fish out of certain areas or to control them and toxins that would be Asian carp specific that would not kill other fish but just kill Asian carp. Also, commercial fishing down on the Illinois River is keeping that population down and keeping it from expanding dramatically.

Hope you can see the -- the representation of all Great Lakes states. That includes the natural resources

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professionals from all those states that work on these teams, doing the research projects and the monitoring and response efforts, and the key federal agencies that have worked really more like a single agency. As Cam mentioned, it's very unique to have a seamless smooth operation when you have multiple agencies involved, but in this case there have been very, very little disagreements or discussions beyond, "How do they work together?"

Also, there have been a lot of meetings around the Great Lakes states involving the public to keep the public informed about progress. We've had briefings on the Hill and Congress every couple of months and that has kept the bipartisan support strong. Also, the governors have been great supporters along with the rest of the states' administration groups, and so as Cam mentioned, only the attorney generals have had a difference of opinion with the program that we're doing at this time.

Now, I want to talk about the rest of the people involved here. Let me hit this one first. These stakeholder groups have been really significant contributors to the effort, and several of them are represented here today. I think you probably heard that there was an independent study completed in 2012 by the Great Lakes Commission and the Great Lakes Cities

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Initiative, and they identified possible options for separation of the two basins. Cost estimates ranged from \$4 billion dollars to \$10 billion dollars with a timeline of possibly up to 20 years to complete the task. So that's one of the alternatives that the Corps of Engineers is analyzing.

They are also going to look at several other possibilities that Kevin is going to talk about, but I just wanted to give credit to all of these different organizations that have participated in advisory groups including lots of significant business groups. I'll just name a few environmental coalitions and other groups: The Alliance for the Great Lakes, The Chicago Metropolitan Planning Agency, Council of Great Lakes Industries, Friends of Chicago River, Illinois Chamber of Commerce, Illinois River Carriers, Northwest Indiana Forum, Wendella Boats. Just to give you a feel for this, these folks take time to meet on a regular basis and discuss what the progress is on these projects and to -- to have input and give their critiques as we go along. So I think that's been a very important part of the process. We do plan to continue that, and as we move into the core report which will be out this January, we're going to need continuing discussion on what to do next and that's where all of you can come in to

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help us.

There will be public meetings. There will be advisory groups formed, and as you can see, this does have impact on the topics you're talking about today. Transportation, infrastructure, jobs are going to be affected by the possible changes in transportation by water in the Chicago area or in storm water, waste water, paths to the Mississippi or whether it would have to be treated -- to put into Lake Michigan. So all of this is going to be some major discussion.

Other states around the Great Lakes a little farther away are always good at voicing their opinions. We really need Indiana, Illinois, Wisconsin talking as a team thinking about what's going to work for this region long-term and helping us determine what the next best steps are.

So I'm going to turn it over to Lieutenant Kevin Lowell to take over.

KEVIN J. LOWELL: So first, anybody see the Trib today, right? So if you pay reporters, you can get on the front page right 'cause I knew I was going to brief today, so now that's a joke. I don't have enough money. I'm a civil servant to pay a reporter.

Hey, so the Corps of Engineers, we are given the responsibility by Congress to help manage our navigable

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waterways. Okay. It was given to us a long time ago because we had a significant repository of engineers. It might have something to do with the fact that the first professional engineering school in our nation was at United States Military Academy at West Point. I would've preferred it to be at my alma mater at Marquette, but you know, we'll deal with that.

So we have -- the Corps of Engineers pride itself on being a team of teams, right. Because together everyone achieves more. Well, we have a four-prong strategy that we execute with our partners, and the first part of that is operating the electric barriers, and I'm going to talk a little bit more about that in a second.

We also execute a significant amount of Asian carp monitoring with our partners to show and track where Asian carp are and where their movement is. Okay. We do that with the Fish and Wildlife Service and all of the rest of the folks really and players that John talked about a second ago. We also have some folks that are detailed from our organization to Fish and Wildlife Service to help with that tracking and monitoring.

Together as a team, we have executed over 200 plus hours of electronic fishing to help keep the Asian carp population at bay as John talked about, and we've tagged

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over 200 fish and have collected 6 -- over 6 million points of data to track where the -- the main populations are kind of front, leading of the population is at right now.

Check that. Sorry about that.

We study the effectiveness of our own operations. Every great organization wants to track itself with metrics, right, become a learning organization, see how well, how efficient and how effective we are and the Corps of Engineers, the Chicago District, we are no different ladies and gentlemen. We execute extensive work in that regard and that kind of falls into our efficacy study.

We also have executed a couple of projects. You see there the Des Plaines River bypass and modified structural operations. The Des Plaines Bypass Project was a \$9 million dollar project paid with Great Lakes Restoration Initiative funds, so it's always nice when we can bring federal dollars back to the region.

This bypass barrier along the Des Plaines River was designed and constructed to prevent Asian carp from moving from the Des Plaines River to the sanitary and shipping canal in a flood event. Okay. Because at that region, those two waterways are very close and then finally, we executed a study to look at the risk reduction in the O'Brien Canal. You see the O'Brien Lock and -- and Dam.

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That lock and dam is operated by our partners in the Metropolitan Water Reclamation District. We don't operate that one, but we identify as a partner in the ACRCC that maybe can do some things to reduce the risk and the potential that Asian carp could use that lock and dam in the waterway as a pathway.

So we conducted a study that recommended bar screens that were -- and placed by the Water Reclamation District and then finally there's the Great Lakes and Mississippi River Interbasin Study.

So the first three phases or legs of our strategies ladies and gentlemen are things that we're executing right now and those are buying us time, so we can execute an in-depth look at technologies and policies that are going to help us -- that are going to help us in the future or in the out years if you will. So the report as John mentioned is due this January to Congress. It will present a range of alternatives and a range of costs and schedules. There's no possible way that any organization could give you a no kidding dollar amount for projects or a series of projects that might take us decades, and if somebody did, I would not buy a used car from them. Okay.

It's also going to talk about the evaluation criteria, so we are full and openly transparent not just to our

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elected leaders but to the citizens of this region, the citizens of our nation as well as the citizens of Canada who are our bi-national partners in the ACRCC, so they can see what our thought processes were and where we came to arrive at our conclusions.

Our interim product -- products that we have developed in reference to GLMRIS are various white papers in coordination with the commercial cargo and non-cargo navigation organizations. We received stakeholders input during federal agency scoping as well as NEPA scoping. NEPA, ladies and gentleman, is National Environmental Protection Act that requires not only the Corps of Engineers but most or many agencies to determine if there's any environmental impact to their large construction projects and that includes potential impacts to the environment, to wildlife and to potential -- and to endangered species and then finally, we executed some further planning in a hydrologic separation charrette it. Term charrette it is a fancy engineer term for planning session.

Okay. So here are the alternatives, and they run from everything on one side of the spectrum from, "Let's continue doing everything that we're doing right now. That's the no new federal action." Okay. Let me -- let me

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highlight that. That's a standard term when the Corps of Engineers executes a feasibility study. We start with opposite ends of the spectrum. Don't do anything. That's no new federal action. So that means doing everything that we're doing right now, continuing to operate the fish barrier and implement policy that the ACRCC recommends. Okay. So that's no new federal action all the way to complete separation of the two basins, right -- the Mississippi River basin and the Great Lakes.

In between there are a range of hybrid solution types that we are examining and working through right now with our partners. That includes using non-structural alternatives, which are kind of the implementation of best practices that include the integration of technological alternatives that you see there in the third bullet along with some hydrological separation which is just short of full basins separation.

Okay. The electric barrier. Ladies and gentlemen, the electric barrier in itself is an engineering marvel. It's a combination of electrical and mechanical engineering systems. Okay. That's the gee whiz speak. Here's the real great thing for this audience. Okay. We got multiple agencies to come together and agree and fund holy smokes, yes. You see on my -- my -- my diagram there, barrier 2A

was funded in a coalition effort by the Great Lakes states led by Illinois but by the Great Lakes states to fund that because we identified as -- as regional -- state governments that this was in the best interest of all of the state governments to execute a group effort here. This barrier is the -- to my knowledge, the largest and the only one of its kind and has a unique application of its technology.

During our not only design but also during our operations and maintenance, we maintain constant contact with the U.S. Coast Guard, the Metropolitan Waterway District -- excuse me -- the Metropolitan Water Reclamation District, the City of Chicago. The funny thing is that this barrier you see in my -- my picture there, the installation of the parasitic structure at barrier 2B, if you look to the right hand side, that's a Citgo refinery, so if they have problems, we want to know about it. We don't find out when -- when things are bad. So we maintain some really close coordination with them, and there's also a railroad that runs right through there. So we talked about rail traffic, right. "Chicago," as Carl Sandburg said, "is the freight king of the world," and we execute a lot of coordination to make sure that our operations there do not effect the signal traffic and rail and commerce

work.

We also have executed a significant amount of coordination with the non-governmental organizations and private -- private organizations with regard to shipping. Okay. All right. I have a couple of more points that I'd like to make. No, I don't. Okay. Sorry about that ladies and gentlemen.

So we had -- we had a super start, magnificent -- medal and Cam is going to bring us in for a fantastic finish. Thank you.

MR. DAVIS: Great. Thanks. I was perfectly happy with you delivering these last points if you wanted to though.

So I think what you heard from -- from Kevin and John is that we have a significant threat to the Great Lakes region. We have a sports fishery just the east of us that is valued between \$4 and \$7 billion dollars just on the U.S. side alone annually. We have a significant ecological threat, but embedded within that significant ecological threat are also some opportunities that are associated with beating back that threat, and I'll start or close with these questions since we're going to -- Kevin talked about, could that be used not just to try to mitigate the threat of invasive species transferring between the Mississippi

and Great Lakes basins, but could it actually be planned and used to help facilitate the faster movement, the more effective movement of commercial navigation? Could it? Could our work to try to suppress fish populations, so that they never get to the Great Lakes -- could our work to fish these carp out result in those fish being used as a protein source or for fertilizer or could we create some other kind of value out of them, so that we're jiu jitsuing the threat into an economic benefit for the region? Could we? And I'll leave you with those questions as we turn to Q & A. Thank you very much.

MALE SPEAKER: Answer?

Q. I have a question. I was talking to someone that told me that Asian carp, they drop their eggs in water, but they need kind of a muddy bottom to it, and I was told that Lake Michigan doesn't offer that muddy bottom where they -- so is there -- is there some built in protection that maybe exists already in their ability to reproduce in Lake Michigan, or was that just wishful thinking on my partner?

A. They're not likely to reproduce in the lake, but they're going to go to tributaries that have significant flow, particularly in spring flooding times is when they're going to be ready to spawn. They're going to be in that fast movement water. The eggs have to stay suspended for a

period of time, probably about two days. So there has to be enough water, enough depth that they stay suspended before they turn into larvae. So those are only a few -- a few times a year where the conditions are right but they are very prolific at putting out millions and millions of eggs. So they're really the fastest reproducing fish that we know in the U.S. right now.

A. Let me add on to that very quickly. The U.S. Geological Survey has done studies to try to predict just how much the Great Lakes could accommodate Asian carp, and for the lakes proper, we think that that's right. They're probably not places that would be too hospitable for these fish, but we're not worried about those as much as we are the embayments and the shallow or coastal areas around the Great Lakes. At the end of the day, to me it's a false debate. This team is vehemently dedicated to keeping these fish out of the Great Lakes because if they get in, the debate is over.

MR. DICKERT: Thank you for doing this today. I'm Mayor John Dickert. We have one of those tributaries right up the -- right up the lakeshore. We're obviously on Lake Michigan, and I work with the Great Lakes St. Lawrence Seaway, Board of Directors and working with you to get this done. I just want to make a comment. I don't know if it's

necessary -- question -- that this is one of these areas and Lieutenant Colonel and I were talking about this earlier. This is one of these areas where we, as Wisconsin, and hopefully all the other states 'cause I know that the Great Lakes states are there and the Canadians are with us. This is one of these areas where we have to have a regional cooperative agreement and development. We are all but willing to help out in anyway possible. We know that there's infrastructure demands on Chicago to make this happen. We are willing to help in anyway humanly possible to make this happen because as you said they may not necessarily breed and live in Lake Michigan, but what they will do is shutdown our boating completely and our tourism completely. So we -- we have 1400 boats in Racine. We cannot afford to have this happen. Nobody else can.

So we're just saying that this is a great regional cooperative opportunity, but I will -- I will say this speaking for the Great Lakes St. Lawrence Sea Seaway, we have to get this done. People that are working on this for 20 years. This has to get done because I can't accept as a mayor or on the board of directors to come back one day Cam and say, "Well, we tried." That's not acceptable. So I appreciate what you're doing today. I'm glad you presented, and I'm hoping we can get this done very, very

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soon.

MR. DAVIS: Thanks for your offer to help coordinate the resources. We appreciate that.

Q. Stand up? Oh, hi. I am Ed Wolking with Detroit Regional Chamber, and I work with two other organizations that are interested in this: The Great Lakes Manufacturing Council, which is a bi-national group and also the Great Lakes Metro Chambers Coalition, which is a lobbying group on behalf of things that will help manufacturing in the Great Lakes on Washington issues, but a question. We talked about the lakes themselves, but the fish as we understand it are all through the Ohio and Mississippi River systems in those basins. So -- so what are we going to do about that?

A. More than 10 years ago, the Fish and Wildlife Service worked with all the states that have carp -- Asian carp populations in the Ohio and Mississippi basin and created a plan and actually, we're working from that plan right now as far as the different tools we're developing. They recommended barriers to try to cut off expansion, to develop tools for early detection, which we have with EDNA, constant monitoring with netting and electro fishing to watch for the carp population.

The rest of the story, down river, is going to take a

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while to develop. There are no resources -- significant resources appropriated for that right now. Those states meet and talk and are working on a plan. Commercial fishing at this point looks like the most likely attack to take down the population. There are very few river fish processors still functioning on the Mississippi and Ohio, only a half dozen. There used to be dozens. Now, there's a half dozen. In fact, there was a meeting in Peoria on Wednesday where they worked on a business model for that community to support a processing plant that would look at what are all the possible products from Asian carp? As Cam mentioned, it's a very high protein. Higher even than salmon for omega-3s, and how could those all be extracted and put into good use? So that's probably the best hope that we have for the down river situation.

MR. DAVIS: It looks like we are out of time. I'm wondering if we can just -- I always want to give people a heads up. Do we have 15 seconds for one more question and answer? Okay. If we don't -- no -- we do. One back here.

Q. Marcia Schurer, Culinary Connections. Is anyone commercially trying to use it as a protein or fertilizer? Because the cost of fish today has like doubled in cost -- price for consumer consumption and if carp had an application to that or even as a fertilizer that didn't

have antibiotics used in it, there might be some economic benefits to it.

A. There's no high volume processor right now. I think it's an opportunity for potential business development. There are a few. There's one processor making a liquid fertilizer, organic that's a good product and there are a number of university people looking at how to do the extractions of these amino acids, Omega-3 and other beneficial uses for the high protein meat, so.

A. I read something once recently that on a commercial market, right, so not using as a secondary source but like selling it as a fish. The yield per pound for Asian carp is much less than the other native species. So -- so far the economic models don't support fishermen for -- for fishing for carp to sell it on the commercial market.

MR. DAVIS: Thank you very much everybody. Thanks for your questions.

MALE SPEAKER: Thank you all.

- END -