Welcome
Current Infrastructure, Funding & Commodities
Upper Mississippi Inland Waterway

- 27 Locks and Dams
  - St. Paul District: L/Ds 1 – 10 (11 sites)
  - Rock Island District: L/Ds 11 – 22 (12 sites)
  - St. Louis District: L/Ds 24 – 27 (4 sites)
- 750 miles of 9-foot navigation channel
- 1,200-foot locks at Locks 27, Mel Price & 19
- Remaining sites are 600-locks
- Primary construction in the 1930’s

- Note: Illinois Waterway (8 locks and dams) is a part of the UMIW navigation system.
Locks & Dams 101
Inland Navigation Funding

- US Army Corps of Engineers’ inland navigation funding accounts:
  - **General Investigations (GI)** – funds planning and feasibility studies
  - **Operations & Maintenance (O&M)** – funds day-to-day operation and maintenance costs plus the Major Maintenance program (maintenance projects < $21 million)
  - **Construction General (CG)** – funds design and construction of new projects and Major Rehabilitation program (rehabilitation projects > $21 million)
  - **Inland Waterway Trust Fund (IWTF)**
    - Provides 50%-50% cost-sharing on CG funded Inland Navigation new project construction and Major Rehabilitation projects.
Navigation Infrastructure Funding

- 3-leg Navigation Infrastructure stool
  - O&M including Major Maintenance
  - Major Rehabilitation
  - New Improvements
    - UMR&IWW Navigation & Ecosystem Sustainability Program (NESP)
    - WRDA 2007 Authorization of NESP projects

- UMIW Waterway has been operating on one leg for the past 10+ years (O&M $s)
O&M Funding for UMR Waterway

- Good News! O&M funding has been trending upward over the past 6 years
  - FY 2013: $118.5 million (~ $4.4 million per site)
  - FY 2018: $222.4 million (~ $8.2 million per site)
O&M Accomplishments since FY13

- Rock Island District Priority O&M Navigation Projects in 2013:

<table>
<thead>
<tr>
<th>Work / Project</th>
<th>Funding Account</th>
<th>Status (as of March 2018)</th>
</tr>
</thead>
<tbody>
<tr>
<td>UMR Lock Miter Gates @ 3 Locks</td>
<td>O&amp;M</td>
<td>Funded – Completed</td>
</tr>
<tr>
<td>UMR Bulkhead Slots @ 7 Locks</td>
<td>O&amp;M</td>
<td>Funded – Completed</td>
</tr>
<tr>
<td>UMR Dam 18 – Concrete Repairs</td>
<td>O&amp;M</td>
<td>Funded - Under Contract</td>
</tr>
<tr>
<td>UMR Lock 19 – Concrete Repairs</td>
<td>O&amp;M</td>
<td>Not Funded</td>
</tr>
<tr>
<td>UMR L&amp;D 15, 21 &amp; 22 – Dam Gate Repairs</td>
<td>O&amp;M</td>
<td>Partially Funded - Dam 22 Under Contract, Dams 15 &amp; 21 in Design</td>
</tr>
<tr>
<td>IWW LaGrange Lock – Major Maintenance</td>
<td>O&amp;M</td>
<td>Potential for FY18 Work Plan</td>
</tr>
<tr>
<td>IWW LaGrange Lock – Replace Miter Gates</td>
<td>O&amp;M</td>
<td>Funded – Completed</td>
</tr>
<tr>
<td>IWW Peoria Lock – Replace Miter Gates</td>
<td>O&amp;M</td>
<td>Funded – Completed</td>
</tr>
<tr>
<td>IWW – Joliet Channel Wall Concrete Repairs</td>
<td>O&amp;M</td>
<td>Not Funded</td>
</tr>
<tr>
<td>IWW Dresden Dam – Replace Gates</td>
<td>O&amp;M</td>
<td>Funded - Under Contract</td>
</tr>
<tr>
<td>IWW O’Brien Lock – Major Maintenance</td>
<td>O&amp;M</td>
<td>Funded – Completed</td>
</tr>
</tbody>
</table>
## O&M Accomplishments since FY13

- St. Paul District Priority O&M Navigation Projects in 2013:

<table>
<thead>
<tr>
<th>Work / Project</th>
<th>Funding Account</th>
<th>Status (as of March 2018)</th>
</tr>
</thead>
<tbody>
<tr>
<td>UMR Lock &amp; Dam 9 – Winter Maintenance</td>
<td>O&amp;M</td>
<td>Funded – Completed</td>
</tr>
<tr>
<td>UMR Lock &amp; Dam 1 – Dam Scour Repair</td>
<td>O&amp;M</td>
<td>Funded - Under Contract</td>
</tr>
<tr>
<td>UMR Locks 4 &amp; 6 – Tow Haulage Repair</td>
<td>O&amp;M</td>
<td>Funded - Under Contract</td>
</tr>
<tr>
<td>UMR Locks &amp; Dams 3-10 – Permanent Bulkheads for Aux Chamber</td>
<td>O&amp;M</td>
<td>L&amp;D 7 Funded - Completed</td>
</tr>
<tr>
<td></td>
<td></td>
<td>L&amp;D 2 &amp; 5 Funded</td>
</tr>
<tr>
<td>UMR Dams 3, 9 &amp; 10 – Pier House Roofs</td>
<td>O&amp;M</td>
<td>Not Funded</td>
</tr>
<tr>
<td>UMR Dams 3, 5A &amp; 10 – Dam Bulkhead Repairs &amp; Painting</td>
<td>O&amp;M</td>
<td>Not Funded</td>
</tr>
<tr>
<td>UMR Dam 5 – Dam Gates Painting</td>
<td>O&amp;M</td>
<td>Funded - Under Contract</td>
</tr>
<tr>
<td>UMR Lock 2 – Miter Gate Replacement</td>
<td>O&amp;M</td>
<td>Not Funded</td>
</tr>
<tr>
<td>UMR Dam 5A – Dam Painting</td>
<td>O&amp;M</td>
<td>Funded – Completed</td>
</tr>
<tr>
<td>UMR Lock and Dam 4 – Concrete Repairs</td>
<td>O&amp;M</td>
<td>Funded – Completed</td>
</tr>
<tr>
<td>UMR Lock 7 – Guidewall Crib Repairs</td>
<td>O&amp;M</td>
<td>Funded – Completed</td>
</tr>
</tbody>
</table>
## Top 10 O&M Projects – FY17

### UMIW Waterway FY17 Prioritization of Maintenance (POM) – Top 10

<table>
<thead>
<tr>
<th>FY17 POM Ranking</th>
<th>District</th>
<th>Waterway</th>
<th>Project Name</th>
<th>Work Package Title</th>
<th>Range of Funding Requirement</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>MVR</td>
<td>Mississippi</td>
<td>Lock No. 18</td>
<td>Lock 18 – chamber dewatering &amp; maintenance repairs</td>
<td>$5M-$10M</td>
</tr>
<tr>
<td>2</td>
<td>MVS</td>
<td>Mississippi</td>
<td>Lock No. 27</td>
<td>Lock 27 – lift gate counterweight basket modifications</td>
<td>$100K-$1M</td>
</tr>
<tr>
<td>3</td>
<td>MVS</td>
<td>Mississippi</td>
<td>Lock No. 27</td>
<td>Lock 27 – lift gate hoisting chain rehab</td>
<td>$1M-$5M</td>
</tr>
<tr>
<td>4</td>
<td>MVS</td>
<td>Mississippi</td>
<td>Lock No. 25</td>
<td>Lock 25 – miter gate anchorage replacement (4)</td>
<td>$5M-$10M</td>
</tr>
<tr>
<td>5</td>
<td>MVP</td>
<td>Mississippi</td>
<td>Lock No. 10</td>
<td>Lock 10 – miter gate replacement</td>
<td>$5M-$10M</td>
</tr>
<tr>
<td>6</td>
<td>MVR</td>
<td>Mississippi</td>
<td>Lock No. 20</td>
<td>Locks 20, 21, &amp; 22 – replace embedded anchorages</td>
<td>$1M-$5M</td>
</tr>
<tr>
<td>7</td>
<td>MVS</td>
<td>Mississippi</td>
<td>Lock No. 24</td>
<td>Lock 24 – miter gate anchorage replacement</td>
<td>$5M-$10M</td>
</tr>
<tr>
<td>8</td>
<td>MVP</td>
<td>Mississippi</td>
<td>Lock No. 5a</td>
<td>Lock 5A – miter gate replacement</td>
<td>$5M-$10M</td>
</tr>
<tr>
<td>9</td>
<td>MVR</td>
<td>Mississippi</td>
<td>Lock No. 15</td>
<td>Lock 15 – replace upstream monolith bullnose</td>
<td>$1M-$5M</td>
</tr>
<tr>
<td>10</td>
<td>MVP</td>
<td>Mississippi</td>
<td>Lock No. 5</td>
<td>Lock 5 – auxiliary chamber closure</td>
<td>$1M-$5M</td>
</tr>
</tbody>
</table>

- **Range of Funding Requirement:** $29 - $71 million
Emergency repairs were on the embedded miter gate anchorages.

Cracking on one of the gate anchorages resulted in a 1-day unscheduled lock closure.

A full failure of the gate anchorage would result in displacement of the miter gate and a multiple day lock closure.

Source: USACE – Rock Island, Tower Times, May/June 2018
UMIW Investment Needs

• O&M Program:
  • Funding at ~ $90 million annually addresses routine Operational needs (O of O&M).
  • Funding above $90 million addresses priority Maintenance needs (M of O&M).
  • FY18 at $222 million should result in funding of Top 10 POM (Major Maintenance) projects plus some additional projects.

• Major Rehabilitation Program:
  • Recapitalization of the existing locks and dams will be needed in the near future. CG and IWTF funding of $45 million per site is anticipated, or a total of $1.2 billion spread over the next 25 years.
  • Assumption is each Major Rehabilitation project will include an additional $15 million of O&M funded work.

• Navigation and Ecosystem Sustainability Program (NESP):
  • 1,200-foot locks @ 5 sites @ $450 million per lock = $2.2 billion
  • Mooring cells @ 10 sites @ $2 M per cell = $20 million
Commodity Forecast

• Informa Economics IEG
  • Specialized agribusiness experience
  • Access to barge fleet profile and commodity data

• General approach:
  • Based on government data
  • Multiple geographic views (world, US, region, state)
  • Balance sheet approach (surplus/deficit)

• Also considers economic factors, modal shares, drivers of barge movement
Mississippi River System and Corn Production

Density, Locks, Barge Loading Elevators, and Export Elevators
Regional (5-State) Barge Commodity Share

- Other Commodities: 27%
- Corn: 25%
- Soybeans: 17%
- Crude Petroleum: 6%
- OILSEEDS NEC: 5%
- FERT. & MIXES NEC: 3%
- CEMENT & CONCRETE: 4%
- Animal Feed, Prep.: 6%
- Nitrogenous Fert.: 7%
Regional (5-State) Barge Commodity Flows
Providing a Robust & Reliable System
Upper Mississippi River Waterway – Three Pilot Project Scenarios

• Scenarios that upgrade or improve the efficiency, reliability and capacity of the existing system of locks and dams:

  • Efficiency - Micro Upgrade
    • Small scale stand-alone navigation efficiency improvement project that can be replicated on the UMIW Waterway.

  • Reliability - System Improvements
    • Projects that improve the long-term durability and sustainability of the existing locks and dams on the UMIW Waterway.

  • Capacity – Large Scale Upgrade
    • Major recapitalization projects that expand the ability of the existing UMIW Waterway locks to meet future traffic demands.
Efficiency – Micro Upgrade

• Mooring Cells
  • Mooring cells provide for a more efficient and environmentally friendly location for tows to moor while waiting for the lock approach channel and lock chamber to become available.

• Lock 14 Mooring Cell
  • Existing wait area => River Mile 489.7
  • Mooring cell wait area => River Mile 491.9
  • Moves wait area 2.2 miles closer to Lock 14
Pilot Project - Lock 14 Mooring Cell

- Approach time savings (maximum)
  - 55 minutes for exchange lockages

- Mean time savings (mean)
  - 20 minutes for across all exchange lockages

- Annual time savings
  - 217 hours / 9 days
  - Based upon 2016 traffic data for Lock 14

- Cost
  - $1.9 million

- Timeline: 2 years
  - 1 year Design and Permitting
  - 1 year Construction

Source: USACE – Rock Island
## Recommended UMR & IWW Mooring Cells – 10 Sites

<table>
<thead>
<tr>
<th>Site</th>
<th>Pool Location</th>
<th>Priority</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lock &amp; Dam 14</td>
<td>Lower pool (upbound)</td>
<td>1</td>
</tr>
<tr>
<td>IWW LaGrange Lock &amp; Dam</td>
<td>Upper pool (downbound)</td>
<td>2</td>
</tr>
<tr>
<td>Lock &amp; Dam 24</td>
<td>Upper pool</td>
<td>3</td>
</tr>
<tr>
<td>Lock &amp; Dam 15</td>
<td>Lower pool</td>
<td>4</td>
</tr>
<tr>
<td>Lock &amp; Dam 11</td>
<td>Upper pool</td>
<td>5</td>
</tr>
<tr>
<td>Lock &amp; Dam 19</td>
<td>Lower pool</td>
<td>6</td>
</tr>
<tr>
<td>Lock &amp; Dam 21</td>
<td>Lower pool</td>
<td>7</td>
</tr>
<tr>
<td>Lock &amp; Dam 18</td>
<td>Lower pool</td>
<td>8</td>
</tr>
<tr>
<td>Lock &amp; Dam 20</td>
<td>Lower pool</td>
<td>9</td>
</tr>
<tr>
<td>Lock &amp; Dam 24</td>
<td>Lower pool</td>
<td>10</td>
</tr>
</tbody>
</table>
Reliability - System Improvements

- Reliability – improving the long-term durability and sustainability
  - A scenario that resets the design life of the existing UMR locks and dams
  - Major Rehabilitation Program – USACE’s program for reliability improvements

- Major Rehabilitation – Locks and Dams
  - Individual locks and dam project costs must exceed $21 million
  - Cost-shared at 50% Federal and 50% Inland Waterway Trust Fund (user fuel tax @ $0.29 /gallon)

- Fuel tax generates about $110 million

- Inland Waterways User Board is a panel that provides advisory oversight for the trust fund.
Pilot Project – UMIW’s Major Rehabilitation Program

- One cycle of system wide rehabilitation has occurred (1986 – 2008)
- No new major rehabilitation projects have been approved on the UMIW in the past 15 years.
- Indexing historical UMIW project costs yield an average project cost of $45 million per site.
- Total cost: $1.2 billion for the 27 UMIW locks and dams
  - $600 million – Federal / $600 million - IWTF
Capacity – Large Scale Upgrade

• Capacity – expand the UMIW’s ability to meet future traffic volumes in an efficient and reliable manner with new 1,200-foot locks.

• Improves lock processing times
  • 600-foot Lock: 1 hour 48 minutes
  • 1,200-foot Lock: 46 minutes

• 1,200-foot locks also provide
  • Reduced lock wait/queuing times
  • Redundancy when coupled with the existing 600-foot lock
  • Improved safety for deckhands

Note: Approx. lockage time is hour:minutes by step. Diagram shows an exchange approach followed by a turnback lockage.
Double Cut Lockage

Source: Google Earth
Pilot Project - 1,200-Foot Locks @ UMIW Locks 22, 24 and 25

- UMIW Locks 22, 24 and 25 were selected for the 3 Lock Large Scale Upgrade Scenario (*no Lock 23*)

- Cost: $1.35 billion

- Timeline: 13 years
  - 9 years per 1,200-foot lock (4 years design, permitting & contract award + 5 years construction)
  - 2 year interval between project starts at Locks 25, 24 and 22.

<table>
<thead>
<tr>
<th>Site</th>
<th>1,200-Foot Lock Project Cost (March 2016)</th>
<th>Lift (feet)</th>
<th>Foundation Condition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lock &amp; Dam 25</td>
<td>$543 million</td>
<td>15</td>
<td>Sand</td>
</tr>
<tr>
<td>Lock &amp; Dam 24</td>
<td>$434 million</td>
<td>15</td>
<td>Mixed</td>
</tr>
<tr>
<td>Lock &amp; Dam 22</td>
<td>$372 million</td>
<td>10.5</td>
<td>Rock</td>
</tr>
</tbody>
</table>
1,200-Foot Lock @ UMIW Lock 22

Existing 600-Foot Lock Chamber

Location 3 - Auxiliary Miter Gate Bay

New 1200-Foot Lock Chamber
Economic Impact Analysis & Benefit-Cost Analysis

Preliminary Results
Approach to Economic Impact Analysis

- **Approach** used for baseline economic analysis:
  - Derive value-per-ton for each commodity under a baseline scenario
  - Monetize commodity forecast volumes
  - Obtain baseline IMPLAN results on an industry basis

- Analysis conducted at a **regional level** (combined, 5-state study area)
- Iowa results estimated by taking long-term average forecast of waterborne tonnage share in 5-state study area

<table>
<thead>
<tr>
<th>State</th>
<th>Average Share</th>
</tr>
</thead>
<tbody>
<tr>
<td>Minnesota</td>
<td>43.7%</td>
</tr>
<tr>
<td>Iowa</td>
<td>18.5%</td>
</tr>
<tr>
<td>Illinois</td>
<td>18.3%</td>
</tr>
<tr>
<td>Wisconsin</td>
<td>11.8%</td>
</tr>
<tr>
<td>Missouri</td>
<td>7.7%</td>
</tr>
</tbody>
</table>

*Source: IEG Forecasts*
Evolution of State Shares

• State shares predominantly due to **agricultural commodities** (corn, soybean, and animal feed) – 70% of total commodity volume

• **Iowa’s share** of waterborne agricultural tonnage is **expected to expand** relative to other states in region
  • Increase in **corn volumes** (5.4% average growth 2018-2060)

• Shares for other states (Missouri, Wisconsin, and Minnesota) expected to remain fairly constant
The following economic impacts were estimated using IMPLAN:

- **Direct Effects** - Initial economic effects of capital expenditures, transportation cost savings, and increased demand
- **Indirect Effects** - Additional economic activities from purchases of production inputs, goods, and services
- **Induced Effects** - Extra economic activity from greater employment income and consumption
Baseline Contributions to Economy

- Results capture contributions to the regional economy of commodities transported along the inland waterway system
  - If nothing changes, this is what we expect...
- Economic impact results are shown in terms of:
  - **Gross Regional Product** - value added of all final (finished) goods and services
  - **Employment** - total number of part- and full-time jobs measure in job-years
Major Impact of Inland Waterway System on Regional Economy

**Gross Regional Product, Region (M 2018$)**

- **2018**: $6,754
- **2030**: $8,594
- **2060**: $15,415

**Employment, Region (Jobs)**

- **2018**: 66,675
- **2030**: 92,727
- **2060**: 175,481
Major Impact of Inland Waterway System on Regional Economy

- Oilseed farming (soybean), grain farming (corn), and agricultural chemicals are directly affected by the Inland Waterway System
- Create indirect impacts in wholesale trade and real estate
- Also lead to employment in agricultural support activities
- In terms of employment, crude petroleum is also affected (but low value added)

<table>
<thead>
<tr>
<th>Industry</th>
<th>Direct</th>
<th>Indirect</th>
<th>Induced</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oilseed farming (soybean)</td>
<td>$970.5</td>
<td>$84.6</td>
<td>$0.3</td>
<td>$1,055.4</td>
</tr>
<tr>
<td>Wholesale trade</td>
<td>$0.0</td>
<td>$470.0</td>
<td>$109.8</td>
<td>$579.9</td>
</tr>
<tr>
<td>Real estate</td>
<td>$0.0</td>
<td>$373.0</td>
<td>$155.4</td>
<td>$528.4</td>
</tr>
<tr>
<td>Grain farming (corn)</td>
<td>$403.8</td>
<td>$21.3</td>
<td>$0.5</td>
<td>$425.6</td>
</tr>
<tr>
<td>Pesticide &amp; other ag. chemical</td>
<td>$142.8</td>
<td>$142.9</td>
<td>$0.7</td>
<td>$286.4</td>
</tr>
</tbody>
</table>
Three Scenarios

- **Micro Upgrade** – Lock 14 mooring cell
- **System Reliability** – Major rehabilitation on UMR locks and dams
- **Large Scale Upgrade** – 1,200-foot locks at Locks 25, 24 and 22
  - Low impact
  - High impact

Results capture economic impacts as a result of improvements to inland waterway system
Regional Results by Scenario (2018-2060 average year)

- Impacts for scenarios much smaller than baseline contributions to economy
- System-wide reliability improvements generate largest impacts
- Large-scale upgrades (on three locks) generate about half the impacts of reliability improvements
  - Low and high estimates similar, but show range of results
- Mooring cell impacts are small (but, so are the investments)
Similar Results for Iowa (2018-2060 average year)

Gross Regional Product, Iowa (M 2018$)

- Mooring Cell: $0.1
- System Reliability: $23
- Large Scale Upgrade (Low): $9
- Large Scale Upgrade (High): $12

Employment, Iowa (Jobs)

- Mooring Cell: 1
- System Reliability: 254
- Large Scale Upgrade (Low): 102
- Large Scale Upgrade (High): 131
• Inland waterway improvements create up to 600 jobs by 2060...

• And generate annual GRP gains of up to $51 million by 2060

### Employment, Iowa (Jobs)

<table>
<thead>
<tr>
<th>Scenario</th>
<th>2018</th>
<th>2030</th>
<th>2060</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mooring Cell</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>System Reliability</td>
<td>72</td>
<td>144</td>
<td>575</td>
</tr>
<tr>
<td>Large Scale Upgrade (Low)</td>
<td>29</td>
<td>58</td>
<td>231</td>
</tr>
<tr>
<td>Large Scale Upgrade (High)</td>
<td>29</td>
<td>65</td>
<td>330</td>
</tr>
</tbody>
</table>

### Gross Regional Product, Iowa (M 2018$)

<table>
<thead>
<tr>
<th>Scenario</th>
<th>2018</th>
<th>2030</th>
<th>2060</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mooring Cell</td>
<td>$0.0</td>
<td>$0.1</td>
<td>$0.2</td>
</tr>
<tr>
<td>System Reliability</td>
<td>$7.3</td>
<td>$13.4</td>
<td>$50.8</td>
</tr>
<tr>
<td>Large Scale Upgrade (Low)</td>
<td>$2.9</td>
<td>$5.4</td>
<td>$20.4</td>
</tr>
<tr>
<td>Large Scale Upgrade (High)</td>
<td>$3.0</td>
<td>$6.1</td>
<td>$29.2</td>
</tr>
</tbody>
</table>
Benefit-Cost Analysis

- Simple calculation (differs from USACE methodology)
  - Benefits include barge operator and fuel consumption costs
  - Annual operating and maintenance (O&M) cost assumed to be 3% of capital expenditures
  - Benefits and costs estimated from 2018 to 2060 and discounted at 7%

<table>
<thead>
<tr>
<th>Scenario</th>
<th>B/C Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mooring Cell</td>
<td>3+</td>
</tr>
<tr>
<td>System Reliability Improvements</td>
<td>1-2</td>
</tr>
<tr>
<td>Large Scale Upgrade (Low Impact)</td>
<td>Near 1</td>
</tr>
<tr>
<td>Large Scale Upgrade (High Impact)</td>
<td>Near 1</td>
</tr>
</tbody>
</table>
Break

Come back at 10:30!
Breakout Groups

- Assign a note-taker to write on notebooks
- Brainstorm within the following categories:
  - Navigation Infrastructure, Economics, Alternative Financing, Governance
- Round Robin
- Vote on top three issues per category by placing color dots next to the issues you would like to vote for
Lunch

Eat, take a break, and come back at 1:00!
Governance and Alternative Financing Options
Regional Authority

- Focused on system needs
- Can be defined based on economic zones
- Avoids many of the Federal barriers to alternative financing
- More Flexible
Iowa Code 28J and 28K

Dictates...

• What Port Authorities are allowed to spend on,
• How they can spend their money,
• And how they do contracting.
Existing Port Authorities

- The Southeast Iowa Regional Economic and Port Authority (SIREPA) is established in Lee County, Iowa.
- Iowa Code 28K provides for the creation of the Mid-America Port Commission. Includes 26 counties in Iowa, Missouri, and Illinois.
- SIREPA and Mid-America Port Commission highlight the need to create **public-private partnerships** to advance their missions.
Revenue Capture Under Existing Authorities

• Under current federal law, inland waterway improvements are the responsibility of the federal treasury and the Inland Waterway Trust Fund.
Existing Fuel Taxes

- The Inland Waterway Trust Fund fuel tax is a self-reported by commercial vessels.
- Non-commercial vessels are exempt from the Inland Waterway Trust Fund fuel tax.

$0.29/gallon
Other Existing Taxes

• Non-commercial users pay other federal taxes and local/state licensing fees, but this revenue goes to non-navigation purposes or comes back through the U.S. treasury’s general fund.

• Existing local or state tax paid by waterway users is also used for non-navigation purposes.

Could some % of existing local or state taxes be dedicated to inland waterway financing?
Non-Commercial Gas Taxes

- Using 2016 data, non-commercial and recreational vessels accounted for 20.5 percent of the total lockage on the UMR Inland Waterway.
- This represents about 62,000 total non-commercial vessels that locked through the entire system in 2016.
- If they each used 500 gals a year, that is about $9 million in gas tax at $0.29/gal.
Revenue Capture Models for a Port Authority

- Port Authorities under Iowa Code do not have independent taxing.
- Port authorities can charge various fees and rent for use of port authority facilities.
- Port Authorities can issue debt that is recovered from revenue generated by port authority projects.

Could they finance and build a project and charge a toll?
Any person or persons, corporations, municipal or private, who desire to improve any navigable river, or any part thereof, at their or its own expense and risk may do so upon the approval of the plans and specifications of said proposed improvement by the Secretary of the Army and Chief of Engineers of the Army. The plan of said improvement must conform with the general plan of the Government improvements, must not impede navigation, and no toll shall be imposed on account thereof, and said improvement shall at all times be under the control and supervision of the Secretary of the Army and Chief of Engineers.” (June 13, 1902, ch. 1079, §1, 32 Stat. 371)
Modifying 33 USC 565 to charge tolls to non-commercial and recreational vessels.

22,568 recreational vessel lockage’s representing 53,242 recreational vessels

1,139 non-commercial lockage representing 1,205 non-commercial vessels

- At $15 per lockage per non-commercial vessel, the toll would raise approximately $840,000
- A $150 per lockage per non-commercial vessel would raise approximately $8,400,000
Charging for Water Use

- According to the Upper Mississippi River Basin Association, over 7 billion gallons of water are withdrawn from surface water sources each day in the 60 counties that border the navigable Upper Mississippi River.

<table>
<thead>
<tr>
<th>Water Fee $/gallon</th>
<th>Potential Annual Revenue ($ millions)</th>
<th>Percent Increase in Median Water Rate*</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.00001/gallon</td>
<td>$25.55</td>
<td>0.17</td>
</tr>
<tr>
<td>0.0001/gallon</td>
<td>$255.50</td>
<td>1.7</td>
</tr>
<tr>
<td>0.001/gallon</td>
<td>$2,555</td>
<td>17</td>
</tr>
<tr>
<td>0.01/gallon</td>
<td>$25,550</td>
<td>167</td>
</tr>
</tbody>
</table>
Additional hydropower revenue and revenue capture

- 34 dams in UMRB USACE districts that currently do not have a power station.
- 14 were considered feasible relative to hydropower production using the USACE criteria contained in a USACE report.
Hydropower Development

• A portion of dedicated hydropower revenue could be used towards maintaining inland waterway

\[
\text{2,928,051 MWh} \times \text{\$0.0967/KWh} = \text{\$283 Million}
\]

generated hydropower \quad \text{average retail price} \quad \text{potential revenue}

• Barriers include regulatory burden, developing power purchase agreement, wholesale vs. retail pricing, subsidies of other renewable sources of power
Improving the benefit side of the benefit cost ratio

- Source: American Patriot Holdings LLC & PPHTD Creating Inland Marine Innovation, November 10, 2017 PowerPoint Presentation
State-Federal Governance Framework

- Establishment of a project partnership agreement 
  (http://www.usace.army.mil/Missions/Civil-Works/Project-Partnership-Agreements/) using a contributed funds memorandum of agreement.

- Constructing a Project Under Section 408 Approvals with turn back to USACE
State-Port Authority-Federal Governance Framework

- Mid America Port Authority is an example of a regional, multi-state port authority
- A regional port authority could serve as a sponsor and a mechanism to foster additional public and private investment in the UMR inland waterway
State-Authority-Private-Federal Governance (P4) Framework

- Alternative Project Delivery
- Consistent Funding/Availability Payments
- Long Term Maintenance Contracting
- Revenue Generation
Why is consistent funding important?

Breakout Groups

• Identify the most plausible alternative financing options and determine the pros and cons of each option
• Round Robin
• Voting
Action Items & Future Coordination

Discussion; Next Steps