PRAIRIE DU PONT LEVEE REHABILITATION INITIATIVE

A

PRO-ACTIVE APPROACH BY THE PRAIRIE DU PONT LEVEE DISTRICT
PRAIRIE DU PONT LEVEE REHABILITATION INITIATIVE

- Gary Hoelscher, P.E., CFM
  Hoelscher Engineering, P.C.

- Bryan Martindale, P.E., CFM
  Hoelscher Engineering, P.C.
PRAIRIE DU PONT LEVEE DISTRICT IS LOCATED IN ST. CLAIR AND MONROE COUNTIES IN ILLINOIS
15.3 TOTAL MILES OF LEVEE

9 MILES OF RIVERFRONT LEVEE
  2000 to 3200 FT. FROM RIVER

6.3 MILES OF FLANK LEVEE
  4.1 MILES NORTH (PRAIRIE DU PONT CANAL)
  2.2 MILES SOUTH (COLUMBIA CREEK)
LEVEE BASICS

TYPICAL RIVERFRONT SECTIONS

PRAIRIE DU PONT DISTRICT  10.4 MILES
18 FT HEIGHT
20 TOP WIDTH
40 RIVER SIDE BERM
3:1 SIDE SLOPES

FISH LAKE DISTRICT  4.9 MILES
27 FT HEIGHT
20 TOP WIDTH
40 FT RIVER SIDE BERM; 50 FT LANDSIDE BERM
3:1 SIDESLOPES
PROTECTION PROVIDED BY LEVEE

- INTERSTATE 255
- VILLAGE OF DUPO (POP 4000)
- VILLAGE OF EAST CARONDELET (POP 300)
- 10,000 ACRES OF PRIME FARMLAND
- CRITICAL RAILROAD CORRIDOR
- MASSIVE STORAGE WAREHOUSE AND SHIPPING RELATED BUSINESSES

CENSUS SHOWS 10% GROWTH FROM 1990 TO 2000
LEVEE HISTORY

- PRIOR TO 1936 LOCAL CONTROL & EXPERIENCE DICTATED LEVEE PROTECTION HEIGHT

- FLOOD CONTROL ACT OF 1936 = 45.5 ST. LOUIS GAGE; FLOODS OF ‘43 & ‘44 CAUSED REVISIONS

- 1944 TO 1954 LEVEE RAISED TO 47 GAGE

- FISH LAKE LEVEE BUILT IN 1956 & 1957

- 1958 TO 1959 LEVEE RAISED TO ~52 GAGE
PRAIRIE DU PONT LEVEE
REHABILITATION INITIATIVE

- LEVEE DEFICIENCIES
- FIXING THE LEVEES
- BENEFITS OF WORK
LEVEE DEFICIENCIES

HOW DID WE GET HERE?

RESULTING IMPACTS

IMPACT MITIGATION

ULTIMATE GOAL
LEVEE DEFICIENCIES

HOW DID WE GET HERE?

Congressionally mandated FEMA MAP MODs Program

FEMA requested COE involvement

COE noted UNDER SEEPAGE problems

NOTE: 25% of current maps have levees!
LEVEE DEFICIENCIES

RESULTING IMPACTS

De-accreditation & Floodplain Mapping

Flood Insurance Rates

Development Criteria
LEVEE DEFICIENCIES

IMPACT MITIGATION

The AR Zone Designation

Provisionally Accredited Levees

Legislation
LEVEE DEFICIENCIES

IMPACT MITIGATION

The AR Zone Designation
LEVEE DEFICIENCIES

IMPACT MITIGATION

Provisionally Accredited Levees
LEVEE DEFICIENCIES

IMPACT MITIGATION

Legislation

Public Law 110-329, the Consolidated Security, Disaster Assistance and Continuing Appropriations Act of 2009

“delay the flood risk mapping process for the Metro East Illinois counties....”
LEVEE DEFICIENCIES

ULTIMATE GOAL

FEMA Accreditation and Mapping Process

Protection

Insurance

Development
MAJOR PROBLEM:

COE STATES IT WILL REQUIRE 10 YEARS TO REPAIR AND CERTIFY
FIXING THE LEVEES
CHALLENGES FOR THE DISTRICT

ENGINEERING

DISTRICT

FINANCIAL

POLITICAL
FIXING THE LEVEES - CHALLENGES FOR THE DISTRICT

ENGINEERING

01/19/2009
FIXING THE LEVEES
ENGINEERING

FEMA ACCREDITATION REQUIREMENTS
i.e. 100-YEAR PROTECTION

FEMA 44CFR65.10 = “Identification and Mapping of Special Hazard Areas”

End Result is
FEMA 44CFR65.2
“CERTIFICATION”
CERTIFICATION ALTERNATIVES

Private Sector - 44CFR65.10
Registered Engineering Items b) 1) – 7) Levee District Items c) & d)

Corps of Engineers
Item e) "In Lieu of.."
FIXING THE LEVEE ENGINEERING

CERTIFICATION ALTERNATIVE “DILEMMA”

Private Sector
COMPLETION 2012

Corps of Engineers
ORIGINAL COMPLETION 2018
REVISED COMPLETION 2014
FIXING THE LEVEE ENGINEERING

FUNDED BY DISTRICT

- Base Mapping for Design
- Freeboard Analysis
- Subsurface Exploration and Lab Work
- Internal Drainage
- Comprehensive Inspections
- Phase I Environmental Studies

FUNDED BY COE

- Under seepage Analysis
- Limited Reevaluation Report
BASE MAPPING
SUBSURFACE EXPLORATION AND LAB WORK
INTERNAL DRAINAGE
PHASE I ENVIRONMENTAL
FIXING THE LEVEE ENGINEERING

HOELSCHER SCHEDULE
100-YEAR CERTIFICATION

<table>
<thead>
<tr>
<th>TASK</th>
<th>COMPLETION</th>
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<tbody>
<tr>
<td>Preliminary Design</td>
<td>7/1/09</td>
</tr>
<tr>
<td>Design/Bids Documents</td>
<td>12/31/09</td>
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<tr>
<td>Construction</td>
<td>12/31/11</td>
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<tr>
<td>Certification Package</td>
<td>12/31/12**</td>
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** MAPS WILL BE FINALIZED IN EARLY 2012**
FIXING THE LEVEES – CHALLENGES FOR THE DISTRICT

FINANCIAL
## FIXING THE LEVEE

### FINANCIAL PRELIMINARY WORK

<table>
<thead>
<tr>
<th>PRELIMINARY DESIGN WORK</th>
<th>COE REQUISITE FEASIBILITY STUDIES</th>
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<tbody>
<tr>
<td><strong>ST. CLAIR COUNTY</strong></td>
<td>$800,000 FOR LRR</td>
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<td>$1.25 MILLION</td>
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<td><strong>PRAIRIE DU PONT LEVEE DISTRICT</strong></td>
<td>$450,000 FEDERAL</td>
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<td>$750,000</td>
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<tr>
<td><strong>ST. CLAIR</strong></td>
<td>$125,000</td>
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<tr>
<td><strong>CO FPD</strong></td>
<td><strong>MONROE</strong></td>
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<tr>
<td><strong>CO FPD</strong></td>
<td><strong>$225,000</strong></td>
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FIXING THE LEVEE

FINANCIAL

FINAL DESIGN & CONSTRUCTION

TOTAL COST OF REPAIRS – TBD

SOURCES OF FUNDING

WRDA FUNDING .....MAYBE!

65% Federal
35% Non-Federal

STIMULUS MONIES .....WHO KNOWS?

NEW COUNTY SALES TAX

DISTRICT BUDGET
FIXING THE LEVEES-CHALLENGES FOR THE DISTRICT

POLITICAL
FIXING THE LEVEE POLITICAL

COE
FEMA
US Congressional and Senate Delegates
County Officials
East-West Gateway Council of Governments
St. Clair Co. FPD
Monroe County FPD
Missouri Communities
FIXING THE LEVEE POLITICAL

PRAIRIE DU PONT LEVEE DISTRICT

St. Clair County

MONROE COUNTY ILLINOIS

ewgateway.org

HOELSCHER ENGINEERING
BENEFITS OF THE WORK

Protection for Existing Residents & Infrastructure
Future Development
Insurance Advantages
Accurate Floodplain Mapping
PRAIRIE DU PONT LEVEE
REHABILITATION
INITIATIVE

QUESTIONS