Levee Analysis and Mapping Procedures in FEMA Region VII

Lessons Learned and Future Impacts

Presented by
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FEMA Region VII
Major Topics

- **Status of levees in Region VII**
  - Accredited and non-accredited
  - PL84-99 active and non-active
  - Expired Provisionally Accredited Levees (PALs)
  - 65.10 package submittals

- **LAMP projects in Region VII**
  - Project initiation
  - Local Levee Partnership Team (LLPT) meetings
  - LAMP levee plan
  - Data Development
Accreditation Status of RVII Levees

<table>
<thead>
<tr>
<th>Accreditation Status of RVII Levees</th>
<th>Accredited</th>
<th>Non-Accredited</th>
</tr>
</thead>
<tbody>
<tr>
<td>Miles (3544)</td>
<td>1263</td>
<td>2281</td>
</tr>
<tr>
<td>Segments (631)</td>
<td>275</td>
<td>356</td>
</tr>
<tr>
<td>Systems (533)</td>
<td>204</td>
<td>329</td>
</tr>
</tbody>
</table>

Levee Systems Accreditation Percentages

- Accredited: 62%
- Non-Accredited: 38%
## Accreditation Status of RVII Levees

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![Accredited Levees in Region VII](image-url)
Levees in the USACE PL84-99 Program

<table>
<thead>
<tr>
<th>USACE PL84-99</th>
<th>In PL84-99</th>
<th>Not In PL84-99</th>
</tr>
</thead>
<tbody>
<tr>
<td>Miles (3547)</td>
<td>2187</td>
<td>1360</td>
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<tr>
<td>Segments (631)</td>
<td>325</td>
<td>306</td>
</tr>
<tr>
<td>Systems (533)</td>
<td>293</td>
<td>240</td>
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</tbody>
</table>

Levee Systems PL84-99 Percentages

53% 47%
Accreditation of Levees in the USACE PL84-99 Program

<table>
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<tr>
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<th>Accredited</th>
<th>Non-Accredited</th>
</tr>
</thead>
<tbody>
<tr>
<td>Miles (2187)</td>
<td>1159</td>
<td>1028</td>
</tr>
<tr>
<td>Segments (325)</td>
<td>131</td>
<td>196</td>
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<tr>
<td>Systems (295)</td>
<td>124</td>
<td>171</td>
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</tbody>
</table>

Levee Systems Accredited & Active Percentages

- Accredited: 42%
- Non-Accredited: 58%
65.10 Package Status of Expired PAL's

<table>
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<tr>
<th>65.10 Packages</th>
<th>Certified</th>
<th>Waiting Response</th>
<th>No package submitted</th>
</tr>
</thead>
<tbody>
<tr>
<td>PALs (105)</td>
<td>32</td>
<td>23</td>
<td>50</td>
</tr>
</tbody>
</table>

- 48% Certified
- 30% Waiting Response
- 22% No package submitted

65.10 Status of Expired PAL's

- Green: Certified
- Orange: Awaiting Response
- Red: No Package Submitted

RiskMAP
Increasing Resilience Together
Time Levee Sponsors Have Known About Certification Since PAL Notification and Have Not Submitted a 65.10 Package
LAMP Project Status in Region VII

23 total projects
Lessons Learned – R7 Levees

- Difficulty in describing LAMP “project” (multiple levees, levee systems, accredited, non-accredited, study phase, others)
- Nearly one half of both accredited and non-accredited levees are active in PL84-99
- A majority of accredited levees were designed/built by USACE in the 1940s and 50s based on cost-benefit or political reasons
- The total surface area or land use of the protected area is not always an indication of the level of protection the levee was original designed to
Lessons Learned – LAMP Initiation

- Sequencing of LAMP projects have included such factors as age of expired PAL, status of 65.10 package (if any), on-hold mapping, other competing non-levee projects
- During LAMP “Discovery” (to final LAMP Plan), project have only been addressed as potential future mapping projects, with no introduction of Risk MAP vision, goals, or objectives
- Project notification Webinars are the predominant venue and most effective
- Because most projects are associated with expired PALs, sufficient data/information has been available to prepare conduct first-pass-analysis and develop draft LAMP scenario(s)
Lessons Learned – LLPT Meetings

- Meetings are typically held 1 to 2 months after the project notification Webinar
- With one exception, only one meeting is held; last 2-3 hours; and held at, and hosted by, the impacted community
- Attendees (not including FEMA, USACE, or the state) have numbered between 2 and 40 individuals comprised of levee owners and sponsors, community officials, employees, and contractors, and, on occasion, newspaper reporters, Congressional Reps and local landowners
Lessons Learned – LLPT Meetings

- A successful meeting is one that concludes with FEMA saying what LAMP scenario(s) will be in the draft LAMP Plan. And is understood by all attendees why that scenario was chosen.
- The number of LLPT members is not a direct indication of the meetings success
- The happiness of LLPT members is not a direct indication of the meeting’s success
Lessons Learned – LLPT Meetings

- Presenting a notional timeline for future mapping is essential for effectively discussing and identifying the appropriate LAMP scenario(s)

- The LAMP scenario(s) is determined under both current (at final LAMP Plan) and future (based on earliest effective date) conditions
Lessons Learned – LLPT Meetings

- The current or future conditions LAMP scenario(s) is primarily based on ongoing or planned efforts to address 65.10
- Freeboard (any) is secondary
- Because both of these decision factors were known before meeting, making a LAMP scenario determination has been relatively easy
Lessons Learned – LLPT Plan

- The final LAMP Plan has typically been delivered 4 to 6 months after the LLPT meeting
- Of the 23 projects planned, ongoing, or completed, 12 have reaches based on a levee system that protects from more than one flooding source
- Of the 16 projects completed past LLPT, 3 had levees with a hydraulically independent reach. Of those projects, none had a reach-specific LAMP scenario under existing conditions, and only 2 projects under future conditions
Lessons Learned – LLPT Plan

- Of the 16 projects completed past LLPT, Structural Based Inundation was the only LAMP scenario identified under current conditions.
- Of these 16 projects, the future conditions LAMP scenarios included:
  - Full accreditation (6 projects)
  - Sound Reach and Freeboard Deficient (1 project*)
  - Freeboard Deficient (1 project*)
  - Structural Based Inundation (8 projects)

* = R7 FY13 pilot project (3 total)
Data Development

- Projects to be funded in FY15 = 6
- Each project will only be funded to the work map
- Changes in mapping of areas behind levees:
  - 3 projects would result in nearly the entire community being added to the SFHA
  - 1 project would result in portions of community owned property being added to the SFHA
  - 1 project will result in the entire community being mapped as Zone D
  - 1 project will result in the downtown historical district being mapped Zone D
Florence, KS
Osawatomie, KS

LAMP De-Accreditation Procedure for Data Development

[Map showing LAMP De-Accreditation Procedure for Osawatomie, KS]
New Haven, MO
Alexandria, MO
Marengo, IA
Timing is Everything