

Flood Insurance and Levees

- NFIP Requirements are found in 44 (CFR) Section 65.10
 - General Requirements—65.10(a)
 - Design Criteria—65.10(b)
 - Operation Plans and Criteria—65.10(c)
 - Maintenance Plans and Criteria—65.10(d)
 - Certification Requirements—65.10(e)
- FEMA requires a responsible entity for data & documentation, i.e. the levee owner, sponsor, and/or community to document compliance

General Requirements – 65.10(a)

- General Requirements include:
 - Meeting minimum
 - design,
 - operation,
 - and maintenance standards
 - Design, operation, and maintenance standards are outlined in 44 CFR 65.10(b)-(d)

Design – 65.10(b)

- Design Criteria:

- Freeboard – levees must be a minimum of three feet above the Base Flood Elevation - 1% chance or 100 year flood event

- This project was authorized at the 0.5% or 200 yr event

- Profile of River elevations at these events with the project

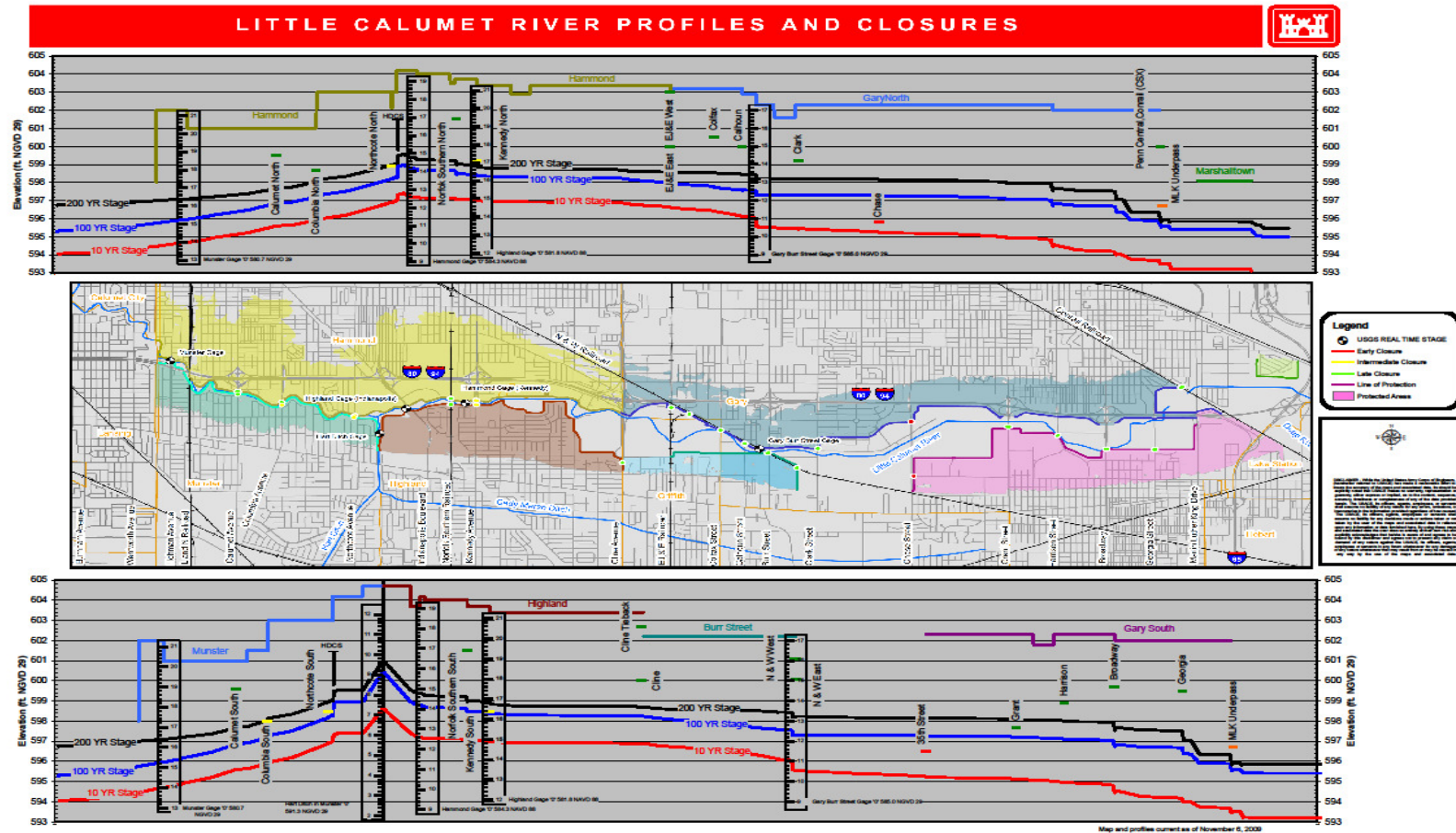
- Additional levee freeboard requirements apply within 100ft of structures and at the upstream and downstream ends of the levee

- Closures – all openings must have closures in accordance with sound engineering practice

- Sandbags are accepted practice, but we need to do better

- Embankment Protection

Little Calumet River Profile



Operation – 65.10(c)

- Operation Criteria:
 - Operations must be under the jurisdiction of:
 - an agency created by Federal or state law,
 - an **agency of a community participating in the NFIP**
 - Operations plans must be in place for Closures, Interior Drainage Systems, and Other features and contain, at a minimum:
 - Flood Warning System
 - Formal operation plan specifying actions & responsible parties
 - Provision for manual backup of automatic systems
 - Periodic inspection and operation of mechanized portions

Maintenance – 44 CFR 65.10(d)

- Maintenance criteria include:
 - All maintenance activities under the jurisdiction of:
 - an agency created by Federal or **state law**,
 - or **an agency of a community participating in the NFIP**
 - Plan must ensure:
 - overall levee stability, integrity, height and
 - functionality of associated structures
 - Plan must address minimum levels of frequency and the responsible entities for the maintenance activities to be performed

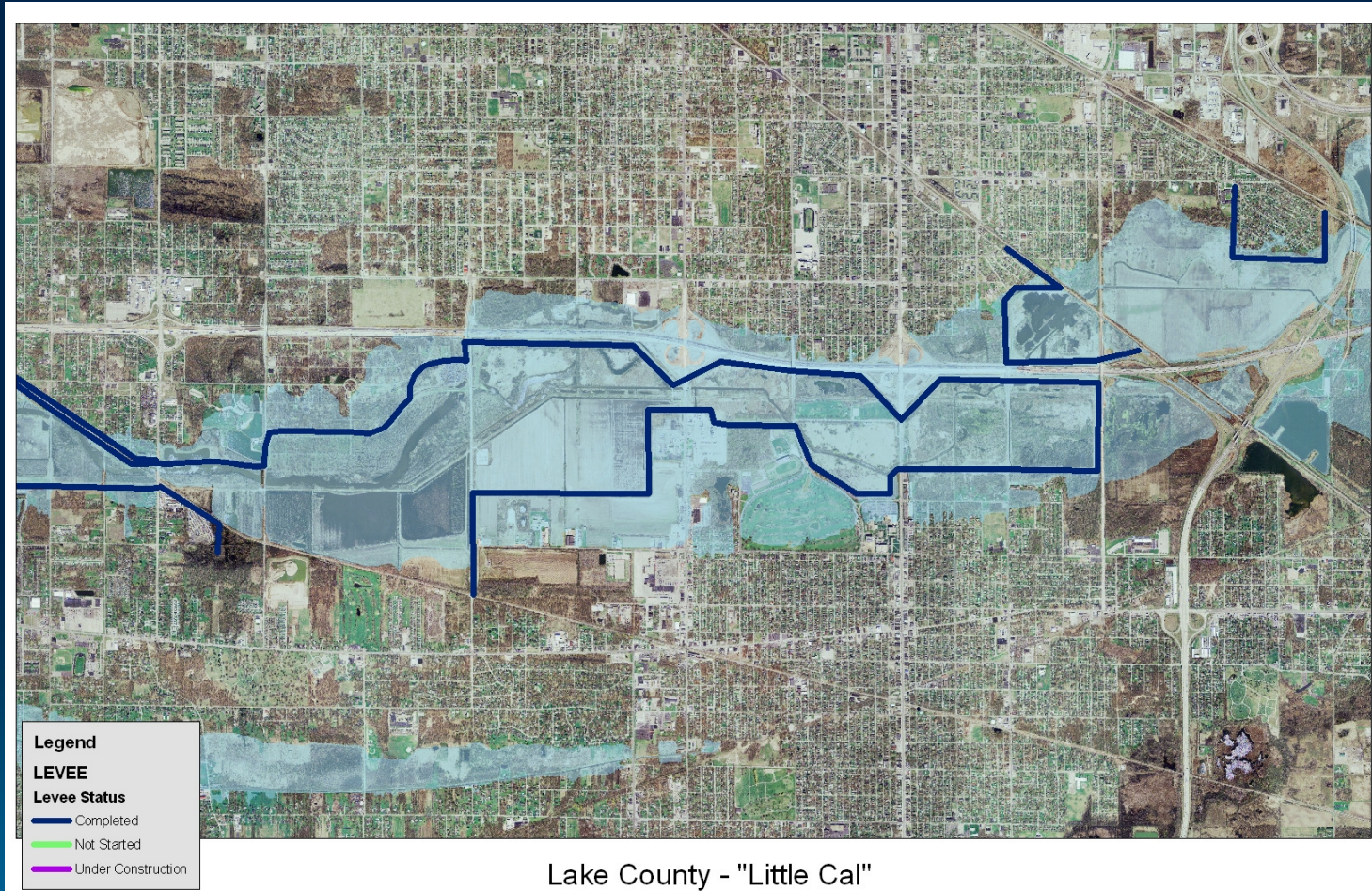
Certification - 44 CFR 65.10 (e)

- Design data must be certified by a **Registered PE** or a **Federal agency** compliant with structural requirements in 65.10(b)(1)-(7)
- Certified as-built levee plans must be included in the submittal

Certification Defined 65-2(b)

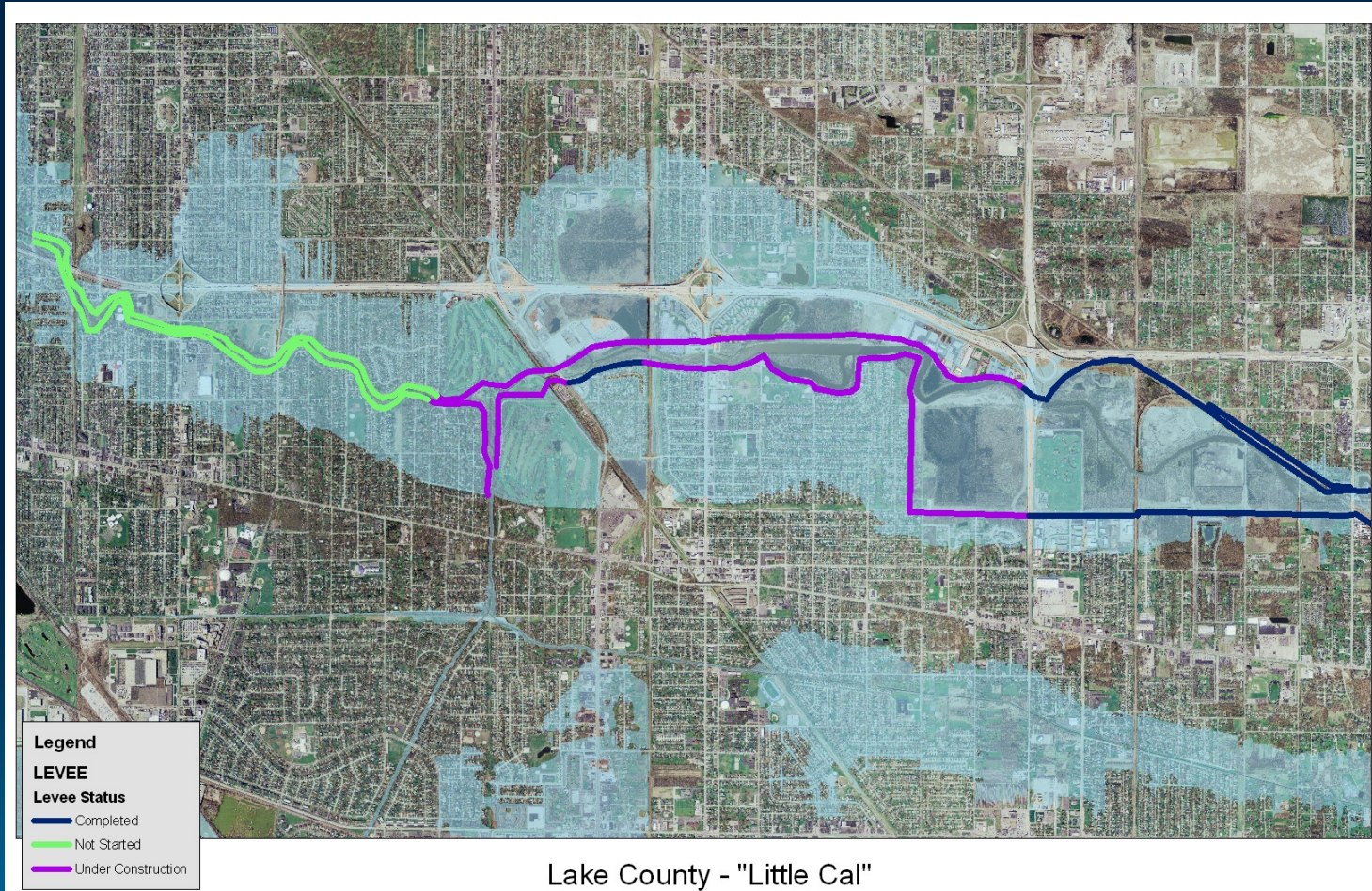
- **Certification by Registered Professional Engineer (PE) or Federal Agency**
 - Does not constitute a warranty or guarantee of performance, expressed or implied
- **Certification of Data**
 - Statement that data are accurate to the best of the certifier's knowledge
- **Certification of Analyses/Structural Works**
 - Statement that analyses were performed correctly and in accordance with sound engineering practices
- **Certification of ``As-Built'' conditions**
 - Statement that structure(s) were built according to the plans being certified, are in place, and are fully functioning

Eastern End - Little Calumet River 1:24,000



Western End - Little Calumet River

1:24,000



At Risk Parcels vs. Flood Insurance Policies in Force

Parcels Impacted by Little Calumet River by Community

Hammond – 4,043
Munster – 1,479
Gary – 3,699
Griffith – 116
Highland – 1,953
Total – 11,290

Total Number of Insurance Policies by Community*

Hammond – 2,255
Munster – 921
Gary – 170
Griffith – 363*
Highland – 1,222
Total – 4,931

Flood Insurance Premium Based on \$100,000 Building Coverage*

- **Average Insurance Premium for House
in Zone X (Protected by Levee)**
 - **\$260.00**
- **Average Insurance Premium for House
in Zone A (Levee De-Accredited)**
 - **\$800.00**

***Slide is for Illustration Purposes Only. Rates will vary based
construction type, construction date, etc.**

Going Forward

- **A-99 Adequate Progress** http://www.fema.gov/plan/prevent/fhm/lv_a99.shtm
- **Accreditation**
- **FAQ** http://www.usace.army.mil/LeveeSafety/KeyDocuments/Documents/ec_6067.pdf
- **Document** <http://140.194.76.129/publications/eng-circulars/ec1110-2-6067/entire.pdf>
- **Certification has consequences** <Http://tribstar.com/news/x1910039807/Loss-of-levee-accreditation-may-mandate-flood-coverage>