

# Village of Waterloo: Levee Improvement Design

Second Public Meeting

**John Callen, PE/CFM**  
**Mark Augustine, PE**  
**Lalit Jha, PE/CFM**



February 26<sup>th</sup>, 2009

# Levee Improvement Design



Copyright 2009 © JEO Consulting Group, Inc.



# Agenda

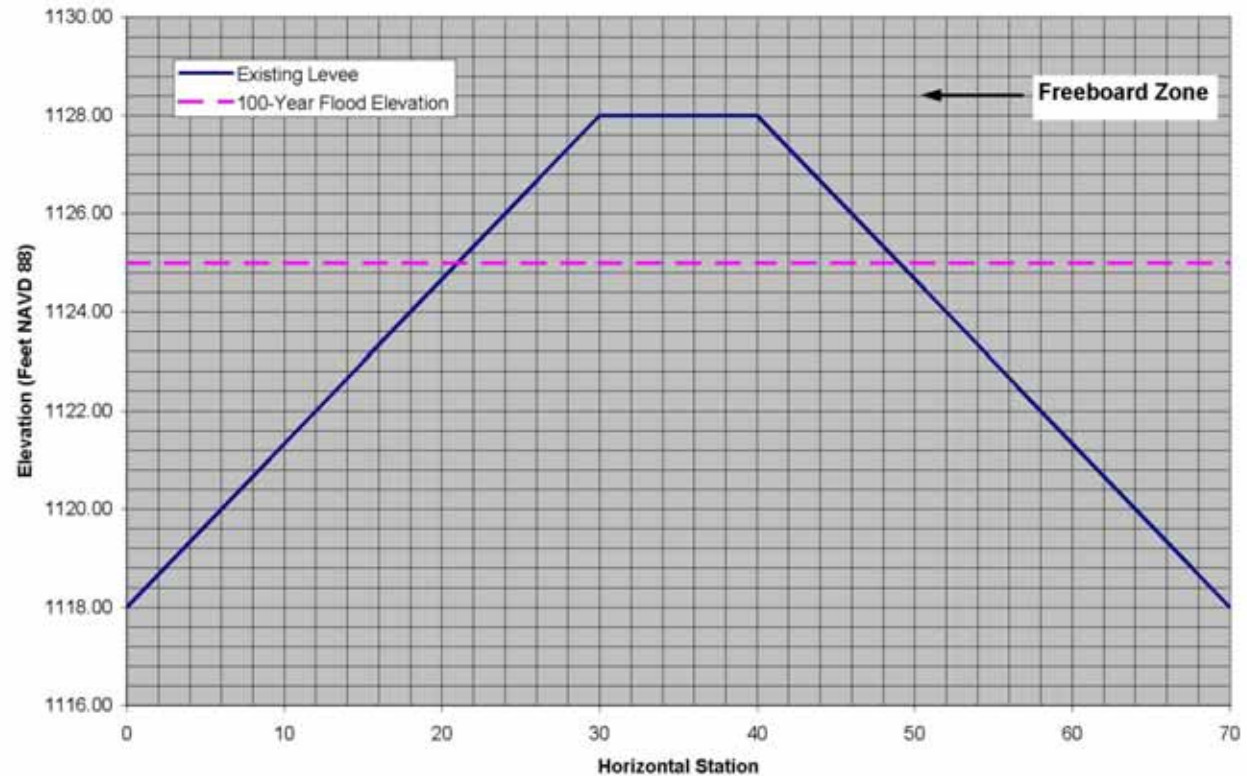
---

- Introductions
- Project history
- Costs and financing options
- Overview of levee improvement design plans
- Construction timeline
- Next steps

# Important Frequently Used Terms

- 100-year flood
- Base flood elevation
- Freeboard

Freeboard Example



# Project History

---

- FEMA Provisional Accreditation
- Levee evaluation
- Flood study
- Levee improvements

# Levee De-accreditation Implications

---

- Mandatory purchase of Flood Insurance
  - Federally backed loan = mandatory flood insurance
- Development restrictions
  - New structures must be one foot above the flood elevation or floodproofed (non-residential only)
- Property value/re-sale concerns

# Costs – Flood Insurance

---

- Hypothetical Flood Insurance Premiums\* –
  - Residential:
    - \$950 - \$1500 per home/year
    - 400 homes at \$100,000 valuation = \$415,000 annually
    - Over 20 years - \$8.3 million
  - Non-residential:
    - \$2000 - \$3300 per structure/year
    - 75 structures at \$100,000 valuation = \$160,000 annually
    - Over 20 years - \$3.2 million

*\* This is intended to give a representative range of costs. Certain rating factors are assumed, actual costs may vary.*

# Construction Costs and Financing

---

- Preliminary Levee Upgrade Project Total Costs Based on Design Plans
  - \$3.8 million for construction phase
  - Papio-Missouri River NRD 50/50 cost share to \$2 million
  - Currently it is anticipated that the Village will need to pay the remaining 50%, which necessitates a bond issue

# Construction Costs and Financing

---

- Design Plans Cost Opinion\*, Bonding Scenario –
  - Bond amount at \$2.2 million, 20-year re-payment period
    - Annual bond re-payment costs per \$100,000 property at 5.0%: \$329.05
    - Total annual cost – approximately \$176,550
    - Total over 20 years = \$3.53 million
    - This compares to an estimated flood insurance premium cost over the same period of \$8.3 - \$11.5 million
    - Additionally, completing improvements reduces an unknown amount of development costs due to development restrictions that would be implemented with levee de-accreditation

# Construction Costs and Financing

---

- Process and Timeline for Potential Bond Election
  - Village Board to discuss resolution initiating process at 7:30 special meeting tonight
  - \$2.2 million bond issue anticipated
  - Anticipated bond election for early/mid-May 2009

# Design Plans

---

- Current design plans include:
  - Designed centerline alignment of the improved levee
  - Designed plan and profile of proposed improvements
  - Designed cross sections of proposed improved levee
  - Limitations of required clear zone for accreditation

# Construction Timeline

---

- Construction Factors
- Construction Timing
  - Anticipated summer/fall 2009
  - Actual timing depends on several factors

# Next Steps

---

- Finalize design of levee improvements
- Additional stakeholder coordination
- Final public meeting late spring, prior to bond election
- Bond election late spring
- Construction of improvements

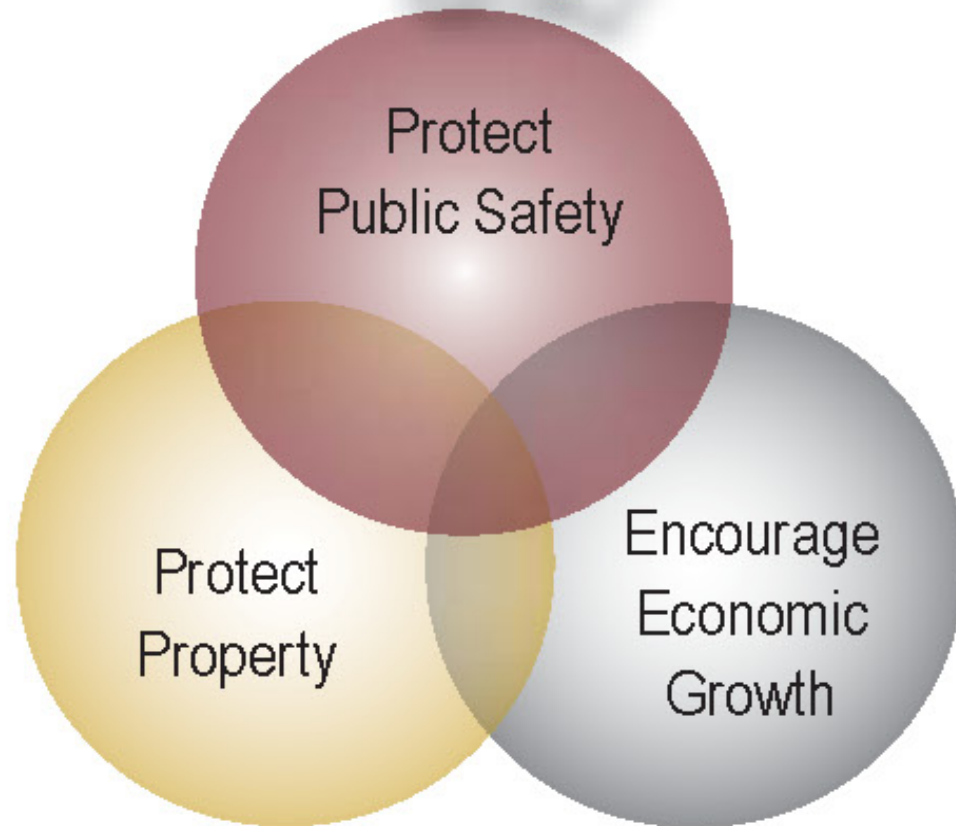
# Village Board Goals

---

## Village Goals:

- ✓ Ensure safety and well being of citizens
- ✓ Protect homes and other property from flood damage
- ✓ Protect property values
- ✓ Encourage economic development

## VILLAGE OF WATERLOO GOALS



# For More Information

---

- Village of Waterloo
  - (402) 779-2292
  - [www.waterloone.com](http://www.waterloone.com)

---

# Thank You!

*Please visit our information stations*

