Definitions

- A Levee Unit is a complete system of levees, floodwalls, interior drainage facilities, and underseepage control measures (Protective Works).
- A Levee District is a benefit district. Includes the Protective Works and the properties within the protected area.
- A Drainage District is the same as a Levee District except the interior drainage system is part of the operation and maintenance.
- A Local Sponsor is the owner and operator of a Levee District or Drainage District.

Kansas City's Flood Protection

- NE Industrial District (East Bottoms)
- Central Industrial District
- Armourdale
- Riverside / Quindaro Bend
- North Kansas City
- South Kansas City
- Fairview Park
- Mill Creek
North Kansas City Levee District History

- Sunday, May 13, 1903
- Major Flood Event on Kansas River
- North Kansas City Levee District Established in 1908
  - Established by the Landowners
  - Levee Construction of Sand Dredge from River
  - Utilized Existing Railroad Embankments
  - Same General Alignments as Today's Protective Works

- Before Flood Crest
- 1903 Flood

- 1936 - Flood Control Act was Authorized
- 1941 - North Kansas City Levee District becomes a Local Sponsor in the Federal Flood Protection Program
- 1945 - Corps of Engineers begins Design
- 1948 - Construction is Complete

- Before COE Improvements
- After COE Improvements

- July 13, 1951
- Major Flood Event on Kansas River
- North Kansas City Unit was Stressed, but did not Fail
- COE Re-Examines Levee Systems after 1951
- Last of the Major Improvements Completed in 1955

-Warner Studios, Kansas City, MO
North Kansas City Levee District

History

- July 27, 1993
- Major Flood Event on Missouri River
- Peak Discharge of 529,000 cfs
- Levees did not Fail
- Underseepage Problems were Evident
- COE Re-Examines Levee Systems after 1993

North Kansas City Unit

Main Stem Levee (NKCLD Responsibility)

Tie Back Levee (NKCLD Responsibility)

Hillside Levee (NKCLD Responsibility)

North Kansas City Unit

26th Avenue Pump Station (NKC)

Landside Stability Berm

N. Holmes Stop Log Gap

N. Cherry Stop Log Gap

Murray Yard Stop Log Gap

Rock Creek Pump Station (NKCD)

Linn-Jasper & Howell Street Pump Stations (NKC / NKCD)

Atlantic-Erie & Burlington Ave. Pump Stations (NKC / NKCD)
North Kansas City Unit

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<tr>
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<th>Lower Airport Section</th>
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<td>4.58</td>
<td>3.83</td>
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<td>2.14</td>
<td>2.24</td>
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<tr>
<td>sq. mi.</td>
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Responsibilities of Local Sponsors

- 33 CFR Chapter II, Part 208 – Flood Control Regulations
  - Establish a Permanent Committee
  - Appoint a Superintendent
  - Maintain a Reserve of Material
  - Prohibit Encroach or Trespass
  - Review Projects
  - Conduct Flood Fight Activities

North Kansas City Levee District

- City of North Kansas City
- Board of Supervisors
  - Secretary to the Board of Supervisors
  - District Engineer
  - Levee Security
  - Levee Maintenance
  - Pumping Plant Operations
- Full Time Employee
- Part Time Employee
- Service Providers

Oversight
- U.S. Army Corps of Engineers - Kansas City District - Local Protection Branch
Board of Supervisors

► Members
  • Richard Lanning, President  NT Realty
  • Bill Zimmer  Zimmer Real Estate
  • Danny Ray  BNSF Railroad
  • Ed Brown  Cullum and Brown
  • Louis “Bud” Weber  Levee Security

► Appointment
  • 5-year Term
  • Elected by Land Owners

► Responsibility
  The structures and facilities constructed by the United States for local flood protection shall be maintained in such a manner and operated at such times and for such periods as may be necessary to obtain the maximum benefits (33 CFR Chapter II, Part 208 - Flood Control Regulations).

Secretary to the Board

► Withers, Brant, Igoe & Mullennix, P.C.

► Responsibilities
  • General Administration of the District
  • Official Point of Contact
  • Accounting
  • Facilitate Meetings
  • Provide Legal Counsel
  • Administer Financial Holdings
  • Archive of Records

District Engineer

► Burns & McDonnell Engineering Company

► Responsibilities
  • Technical Review of Plans
  • Liaison with U.S. Army Corps of Engineers
  • Quarterly Inspections
  • Oversight of Maintenance Projects
  • Supervise Flood Fight Activities
  • Archive of Records
Levee Security

► Louis “Bud” Weber
► Responsibilities
  • Patrols Levee on a Regular Basis
  • Coordinates Mowing and Small Maintenance
  • Maintains Supplies and Equipment

Pumping Plant Operations

► City of North Kansas City
► Responsibilities
  • District’s Pumping Plants are Leased to the City
  • Operate and Maintain Building
  • Operate and Maintain Pumps & Equipment
  • Provide Insurance
  • Operate Every Week

Maintenance & Small Projects

► Commercial Lawn Care
  • Mowing
  • Gate & Fence Repair
  • Replace Sand Bags
  • Replace Freeboard Gages
  • Stop Log Storage
  • Tree & Brush Removal
  • Storm Cleanup
  • Flap Gates Operations
  • Road Repair
Maintenance Projects

► Stone Slope Protection Overlay, Phase 7
  • R.A. Knapp Construction
  • 2000 feet of Levee
  • 16,850 tons of Riprap
  • Total Cost: $313,700

Maintenance Projects

► Burlington Pumping Plant Outfall Repairs
  • Damon Purcell Construction
  • 425 tons 48” Riprap
  • 130 tons 15” Riprap
  • Total Cost: $27,300

Maintenance Projects

► Murray Yard Stop Log Repairs
  • Musselman & Hall Contractors
  • Remove & Replace Existing Wall
  • Install Lighting
  • Repair Sill
  • 7-Day Construction Period
  • Two 10-Hours Shifts
  • Special Concrete Mix
Other Projects

- Web Page
  - Burns & McDonnell
  - Meeting Announcements
  - Description of the Levee District
  - Contact Information
  - Related Links
  - Plan Review Process
  - Access Policy / Permits
  - Collection During Flood Season
  - Access to ftp Server

Interagency Cooperation

- City of North Kansas City
  - No Affiliation with Levee District
  - City Leases Three Pump Stations from NKCLD
  - City Requires Authorization from NKCLD for Work in Critical Zone (voluntary)
  - City Assists / Coordinates with Flood Fight Activities

2005-2006 Annual Budget

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<th>Item</th>
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Future of NKC Levee District

- Kansas City’s Levees Feasibility Study
  - COE Study Initiated after the 1993 Flood
  - Draft Study has been Issued for Public Comment
    - Identified Underseepage as the Primary Concern for North Kansas City Unit
    - Determined that Levees are Sufficiently High


Future of the North Kansas City Levee District

- National Starch
  - Limited Underseepage Berm
  - Risk of Failure from Underseepage
    - Solution: Pressure Relief Well System
    - Estimated Cost: $6.6 million

- Harlem Area
  - No Underseepage Berm
  - Risk of Failure from Underseepage
    - Solution: Underseepage Collection System
    - Estimated Cost: $1.5 million
Future of the North Kansas City Levee District

**Total Cost for Improvements:** $8,168,000
- Levee District (35%): $2,859,000
- Federal Government (65%): $5,309,000

**COE Could Begin Design When Funding is Available**
  - Will Require a Vote of the Land Owners

Emergency Preparedness Plan

**Started with Corps’ O&M Manual (1978)**
**Began Update in 1998 with Experiences Learned in 1993**
- Interviewed Board Members
- Interviewed Burns & McDonnell Personnel
- Interviewed NKC Public Works
- Interviewed NKC Fire Department
- Interviewed U.S. Army Corps of Engineers

Emergency Preparedness Plan

- Section 1 - Introduction
- Section 2 - Organization
- Section 3 - Directory of Key Personnel
- Section 4 - Directory of Contractors
- Section 5 - Emergency Operations Plan
- Section 6 - Information & Logistics
- Section 7 - COE Guidelines for Emergency Operations
- Appendix A - Exhibits
- Appendix B - Inventory Of Materials
- Appendix C - Operations Logs
- Appendix D - U.S. Army Corps Of Engineers, Guidebook
- Appendix E - Emergency Flood Control Activities (USACE)
- Appendix F - Flood Fight Manual
Emergency Preparedness Plan

SECTION 1 - INTRODUCTION
- Authorization
- Purpose
- History
- Description of Features

SECTION 2 - ORGANIZATION
- Defines Six Phases to Emergency Operations
  - Phase 1 - Preliminary Inspections & Monitoring
  - Phase 2 - Potential Flooding Conditions
  - Phase 3 - Flood Protection Measures
  - Phase 4 - Levee Breach
  - Phase 5 - All Clear
  - Phase 6 - Flash Flooding

- Identifies Gage Reading at Hannibal Bridge That Triggers Each Phase
- Defines a Chain of Command for Each Phase
- Assigns Responsibility Major Tasks
  - Levee Patrols, Levee Maintenance, Stop Log Gaps, Volunteers, etc.
- Identifies the Role of the U.S. Army Corps of Engineers
- Defines the Role of the City of North Kansas City Levee District

Emergency Plan Implementation
- NKC Public Works
  - "Bear Kistler"
- U.S. Army Corps of Engineers
  - Mitch Hiles
  - Pumping Plant Operations

Liason with COE
- Bud Weber
- Levee Patrols
- Drainage Structure Patrols
- B&M Coordinator
- Rick Besancon
- District Engineer
- Burns & McDonnell
  - Leon Staab, P.E.

Board of Supervisors
Emergency Preparedness Plan

SECTION 3 - DIRECTORY OF KEY PERSONNEL
- Lists Contact Information for:
  - Board of Supervisors, Secretary to Board, District Engineers, Corps of Engineers, North Kansas City, Kansas City, Missouri, BNSF Railroad, Utilities, Other Levee Districts
- Section Intended to be Updated Most Often

Emergency Preparedness Plan

SECTION 4 - DIRECTORY OF CONTRACTORS
- Directory of Contractors Who Have Worked with the Levee District

Emergency Preparedness Plan

SECTION 5 - EMERGENCY OPERATIONS PLAN
- Outlines the Plan for Each of the Six Phases
  - Initiation Based on River Stage Reading
  - Notifications
  - Action Required for Each Stage
    - Levee Patrols, Pumping Plants, Drainage Structure Patrols, Stop Log Gap Closures, Evacuation, and All Clear
Emergency Preparedness Plan

- SECTION 6 - INFORMATION & LOGISTICS
  - Design Information
  - Forecasting Gages
  - Links to USGS Real Time Data
  - Links to Weather Sites
  - Discusses Logs to be Kept
  - Available Equipment and Materials
  - Instructions for Releasing Flap Gates
  - Volunteer Process
  - Role of the City, BNSF Railroad & Contractors
  - Instructions for Patrols
  - Levee Maintenance During Floods

Questions

- Flap Gate Operations
- Sandbag Supply
- Pumping Plants
- Slope Gage
- Stop Log Container