

# RECLAMATION

*Managing Water in the West*

## Assessments of Canals Through Urbanized Areas

**Karl Wirkus**

**Deputy Commissioner - Operations**



U.S. Department of the Interior  
Bureau of Reclamation

# Objective of Session

- **Background on related Reclamation activities**
- **Summaries of recent special reviews conducted**
- **Panel Discussion/ Q and As**
- **Summary of discussions/next steps to take  
(after lunch)**

**RECLAMATION**

# Past/Current Reclamation Activities

- **Review of Operation and Maintenance (RO&M) Program examinations since 1948**
  - Review of representative portions and structures of canal systems
  - Generally 3 to 6 year frequency
  - Collaboration with operating entities on O&M condition, deficiencies, and formal report w/recommendations

RECLAMATION

# Past/Current Reclamation Activities

- **Reclamation-sponsored workshops on urbanization issues**
  - **Research on issue coordinated through John Wilkins-Wells (Colorado State University)**
  - **Workshops held throughout the West during past 10 years**
  - **Involvement by a number of interested water users, municipalities, and other organizations**

RECLAMATION

# Past/Current Reclamation Activities

- **Canals Through Urbanized Areas**
  - **Developed preliminary Reclamation-wide inventory of identified canal reaches (late 1990s)**
  - **Based on knowledge of staff, past RO&M examinations, and special site visits**
  - **Location, capacity, estimated population-at-risk, etc. collected**

RECLAMATION

# Past/Current Reclamation Activities

- **Canals through Urbanized Areas**
  - Began to prioritize inventory, based primarily on location, size, and extent of potential hazard
  - Attempt to prioritize was not based on “condition”
  - Prioritization was to be used to direct attention during RO&M examinations
  - Also developed draft preliminary examination checklist

RECLAMATION

# Current Reclamation Activities

- **Post - Truckee Canal Incident (January, 2008)**
  - Regions updated preliminary inventory of canal reaches
  - Using “condition” from latest RO&M reports/knowledge, attempted to further prioritize canal reaches
  - Identified a preliminary list of 108 canal reaches from inventory that should receive further review attention
  - Revised and updated draft checklist for review purposes

RECLAMATION

# Current Reclamation Activities

- **Conduct of Special Canal Reviews**
  - Collaborate with operating entities to select a representative canal reach through an urbanized area for a special review
  - Use current draft checklist in conducting special reviews (to foster consistency)
  - Intent: To obtain input from operating entities on future activities to take (i.e., as part of future RO&M examinations, etc.)

RECLAMATION

# Current Reclamation Activities

- **Draft Checklist (in your folders)**
  - **Blank draft checklist**
  - **Copies of checklist completed for four of the special reviews**

RECLAMATION

# Draft Checklist

**DRAFT – CANAL ASSESSMENT CHECKLIST**

*Part I – Pre-Inspection Activities*

Project \_\_\_\_\_  
 Feature \_\_\_\_\_  
 Specification No. \_\_\_\_\_  
 Original Construction Date \_\_\_\_\_  
 Major Rehabilitation Date \_\_\_\_\_

Name of canal/pond system: \_\_\_\_\_  
 Purpose & Use (transmission/feeder canal, distribution canal, M&I) \_\_\_\_\_  
 Reach name or location: \_\_\_\_\_ Milepost \_\_\_\_\_ to Milepost \_\_\_\_\_  
 Estimated population at risk \_\_\_\_\_ (from inventory)  
 Reach's last inspection date \_\_\_\_\_

Location of check structure immediately upstream of reach (station or milepost): \_\_\_\_\_  
 No. of check structures in reach: \_\_\_\_\_  
 Check structures locations (station or milepost): \_\_\_\_\_  
 Estimated storage capacity between check structures at design freeboard: \_\_\_\_\_ (ac-ft)

No. of wasteway structures \_\_\_\_\_; Wasteway location: \_\_\_\_\_  
 Wasteway design flow: \_\_\_\_\_ ft<sup>3</sup>/s

Design Canal flow rate: \_\_\_\_\_ ft<sup>3</sup>/s; Mux. Operating flow rate: \_\_\_\_\_ ft<sup>3</sup>/s  
 Is the canal capable of passing designed flow?  No  Yes  
 Are there problems with controlling canal flows?  No  Yes  
 If yes describe problem: \_\_\_\_\_

Design depth \_\_\_\_\_ ft. Closed or Operating depth \_\_\_\_\_ ft.  
 Design inner side slope \_\_\_\_\_: Design outer side slope \_\_\_\_\_  
 Design lining freeboard \_\_\_\_\_ ft. Design earth freeboard \_\_\_\_\_ ft.  
 Design bottom width \_\_\_\_\_ ft.

Type of lining (unlined, earth lined, rock, membrane-, concrete-, etc.): \_\_\_\_\_  
 Embankment materials used (Well graded sands, clays, etc.): \_\_\_\_\_  
 Extent of irrigation season: \_\_\_\_\_ (months/days or year-round)  
 Canal history (failures, seepage, flooding, overtopping, past problems): \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

Any significant incomplete/outstanding O&M recommendations for this canal reach?  No  Yes

Define potential canal concern locations within the reach (station to station, milepost to milepost, etc.): \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

3/25/08 - DRAFT 1

# Current Reclamation Activities

- **Special Canal Reviews recently completed**
  - **Pacific Northwest Region – New York Canal, Boise Project**
  - **Great Plains Region – Helena Valley Canal, Pick-Sloan Missouri Basin Program**
  - **Upper Colorado Region – Strawberry Highline Canal, Strawberry Valley Project**
  - **Lower Colorado Region – Reach 12 of the Central Arizona Project**
  - **Mid-Pacific Region – “V” and “S” Canals, Newlands Project**

**RECLAMATION**