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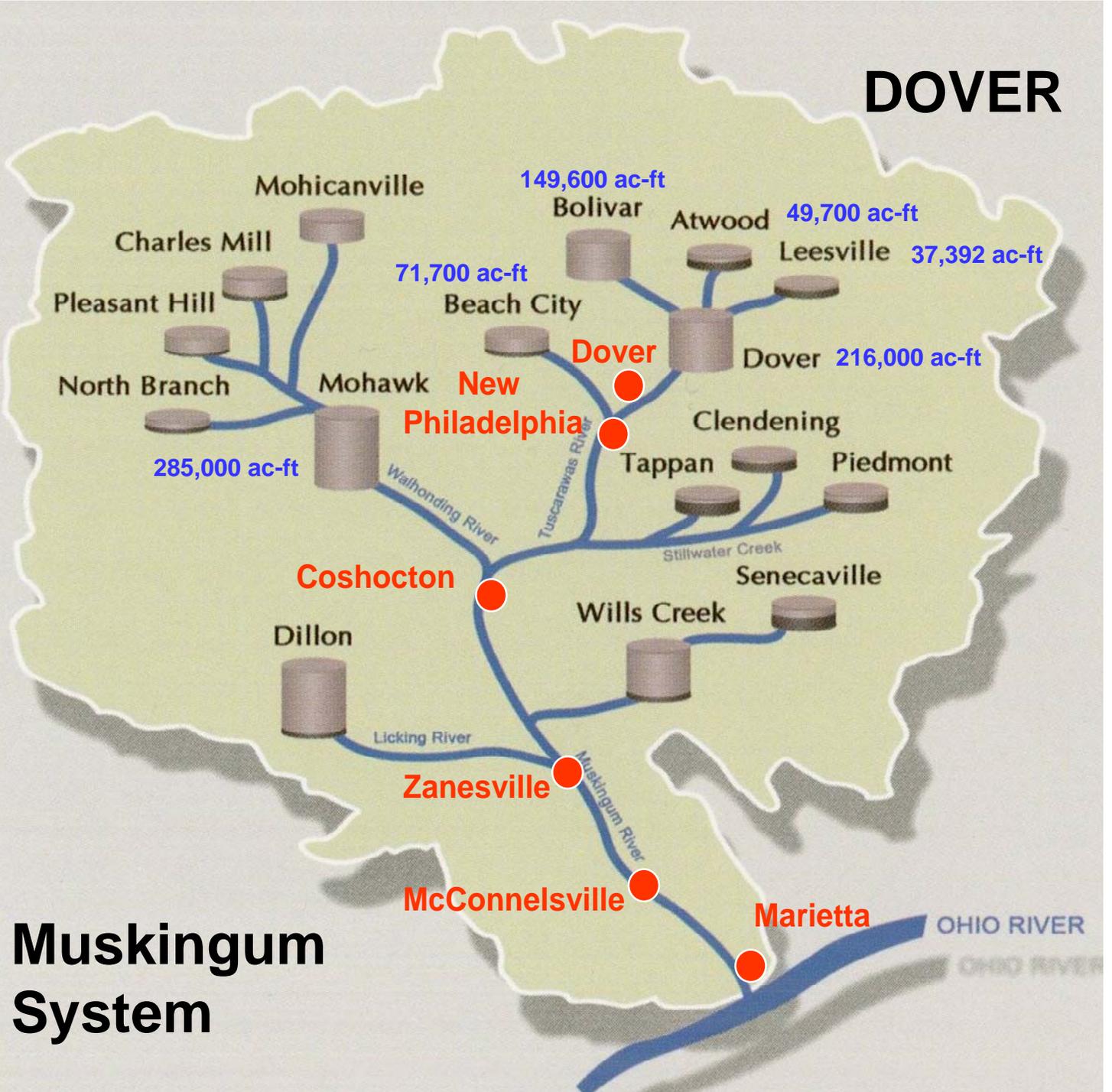
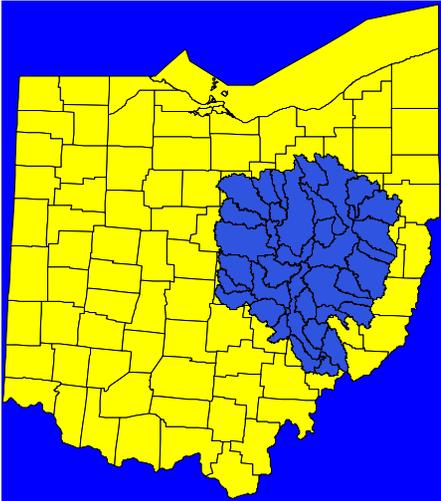


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# Dover Dam Safety Assurance (DSA)

## Public Meeting 6 April 2006

### Colonel William Bulen



## Muskingum System

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# Muskingum Basin

## ◆ An aging system

- 14 reservoirs constructed in the 1930's
- 2 reservoirs constructed in the 1960's
- Area covers 20% of the state of Ohio
- Population of 1.9M



**Dover DSA Project**

**Tuscarawas River**

**Dover Dam – Final  
construction: 1938**



338 feet wide spillway

6 25 102



**Elevation 931.0**

**Spillway Elevation 916.0**

**River Elevation 870**

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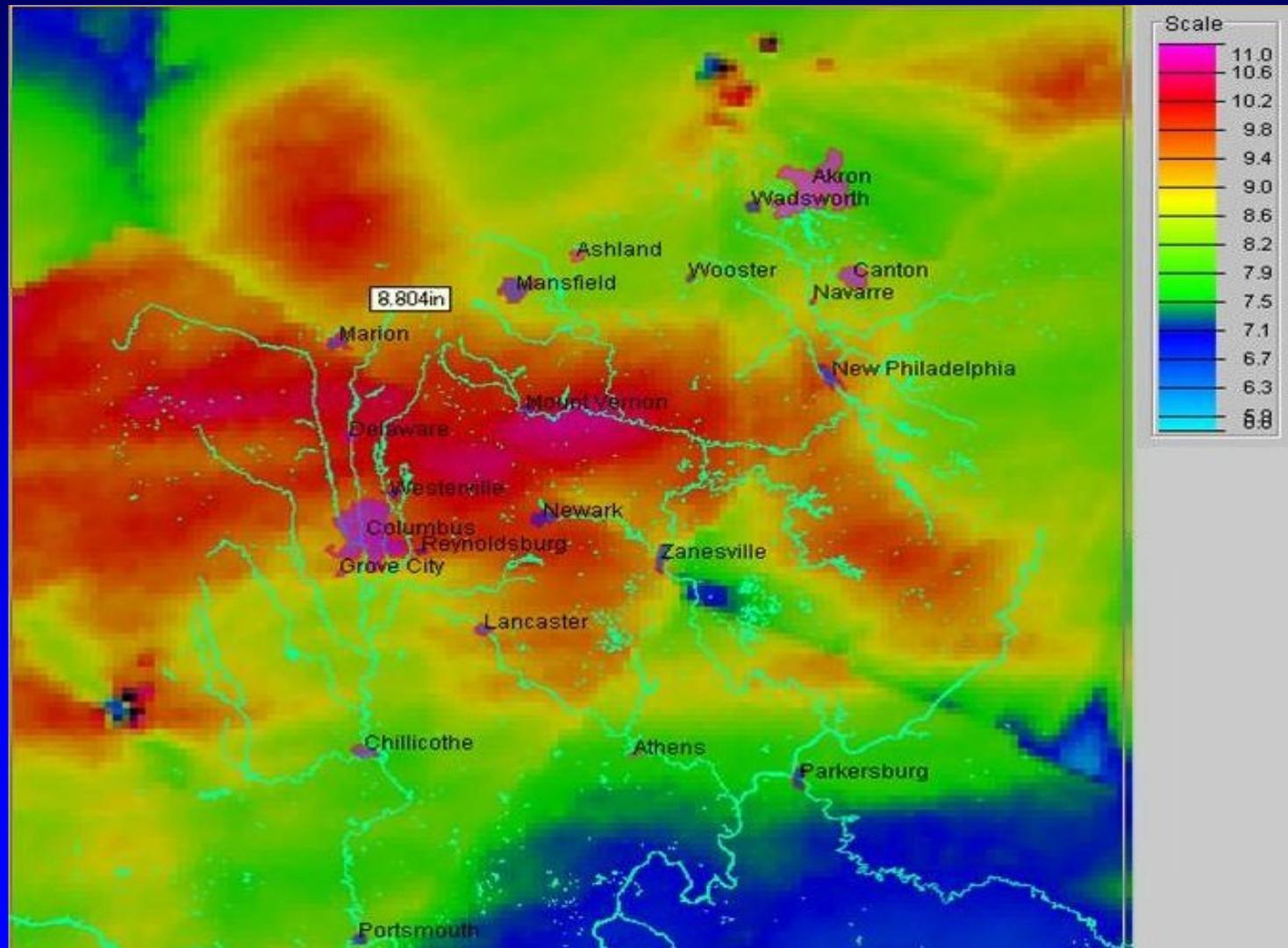
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# Winter Storm 2005



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# Winter Storm 2005

- ◆ Four weather events resulted in major flooding
  - 23-24 Dec, 1-2 inches rainfall and 4 inches snowfall
  - 3-8 Jan, 4 inches rainfall
  - 12 Jan, 1-2 inch rainfall
  - 14 Jan, up to  $\frac{3}{4}$  inch rainfall
- ◆ 11 projects reached pools of record

824 feet



# Pool of Record, Jan 2005



Pool el. 907.4

Normal River Elevation 870

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# January 2005 Flood Probability at Downstream Control Locations

	<u>Observed</u>	<u>Without Reservoirs</u>
New Philadelphia	70 year	500+ year
Uhrichsville	20 year	500+ year
Newcomerstown	10 year	500+ year
Coshocton	11 year	375 year
Zanesville	34 year	500+ year

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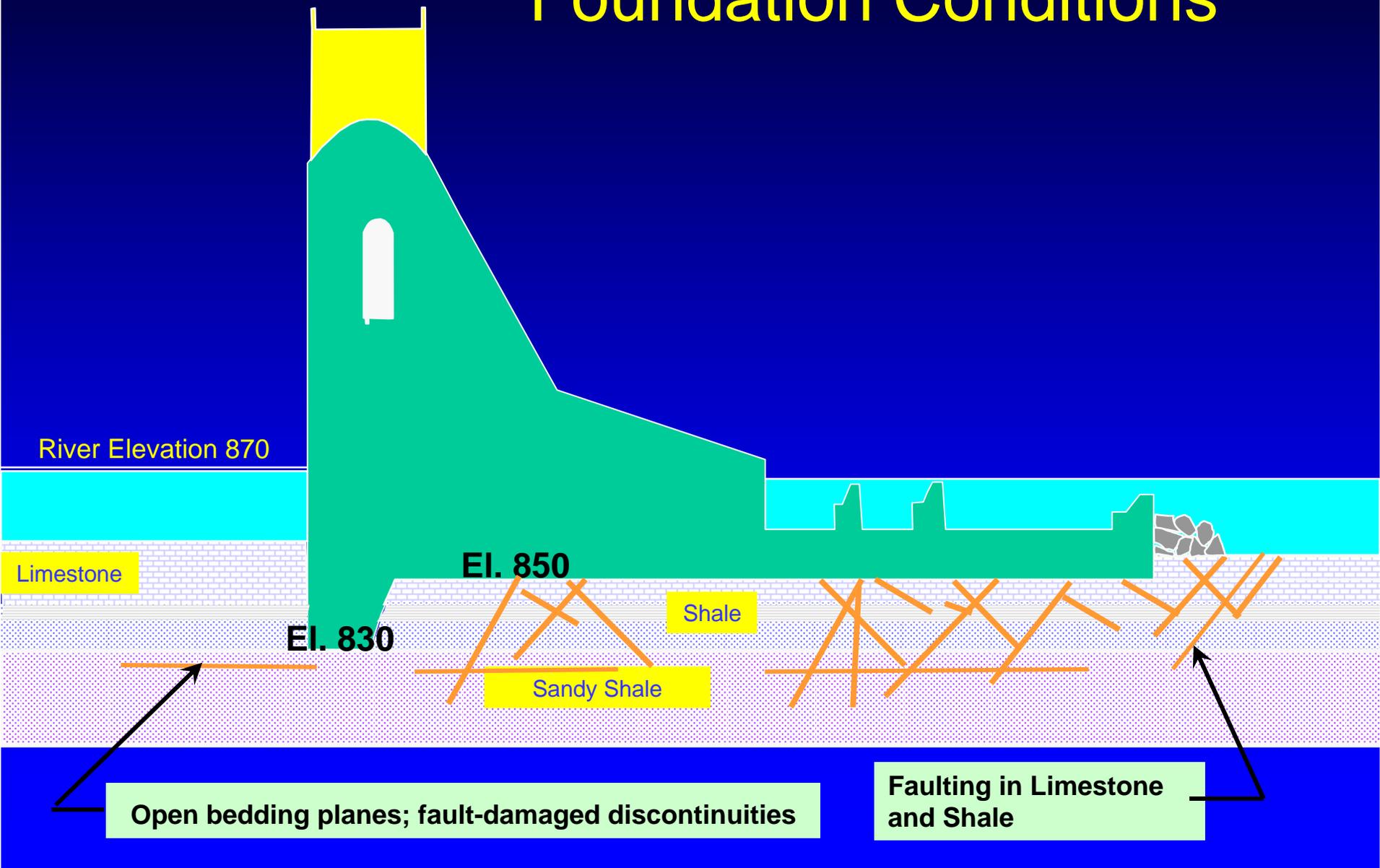
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# January 2005 Flood Reductions at Downstream Gage Locations

	Impact Stage (feet)	Observed (feet)	Without Reservoirs (feet)	Reduction (feet)
New Philadelphia	7.3	8.4	12.9	4.5
Uhrichsville	5.0	8.9	19.4	10.5
Newcomerstown	11.0	10.3	17.7	7.4
Coshocton	18.0	19.5	28.8	9.3
Zanesville	21.5	23.0	38.5	15.0
Marietta	35.0	41.0	50.5	9.5

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# Foundation Conditions



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Probable Maximum Flood 940.5

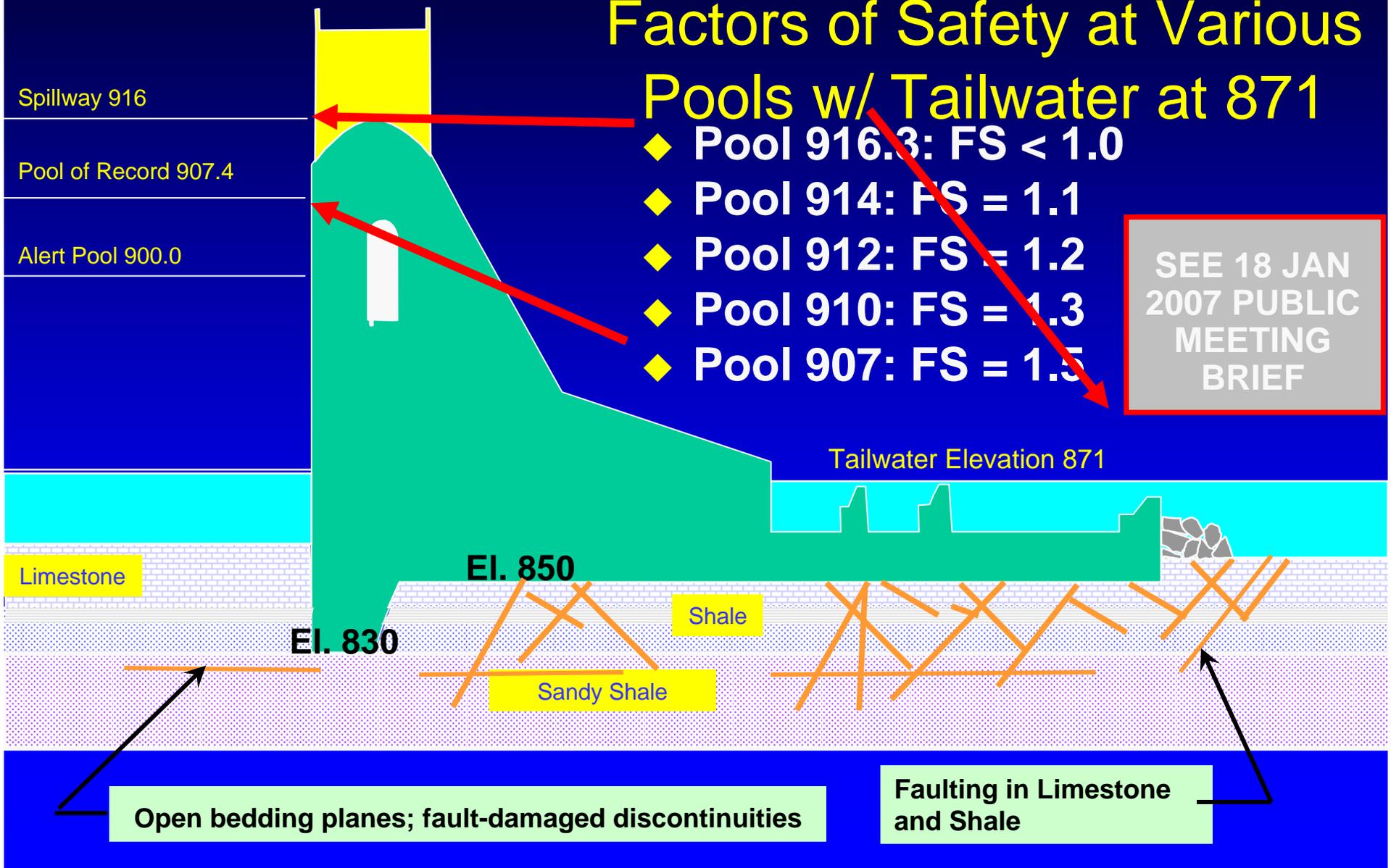
Spillway Design Flood 936.8

AS OF JAN 2007: New data indicates that the dam, under current conditions cannot safely reach spillway. The District would attempt to control the upper pool elevations within a safe range. During extreme events, releases above control downstream may be required.

## Factors of Safety at Various Pools w/ Tailwater at 871

- ◆ Pool 916.3: FS < 1.0
- ◆ Pool 914: FS = 1.1
- ◆ Pool 912: FS = 1.2
- ◆ Pool 910: FS = 1.3
- ◆ Pool 907: FS = 1.5

SEE 18 JAN 2007 PUBLIC MEETING BRIEF



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# Periodic Inspection Program

- ◆ **Project operated, maintained and inspected daily by project personnel**
- ◆ **Project inspected annually by Dam Safety specialists**
- ◆ **Project inspected every five years by team of multi-disciplined specialists, next inspection 2006**

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## Current and Upcoming Efforts

- ◆ **2006 – CG funds received - \$594,000**
  - To be used to complete the DSA Evaluation Report
  
- ◆ **2007 - 2008 – project will continue in CG funds – amount to be determined**
  - To be used for more detailed design
  
- ◆ **2009 - 2010 – Construction Plans & Specifications**

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# Flood Damage Reduction Mission

- ◆ **Protect human life, property and environment by:**
  - **Communicating with community**
  - **Minimizing flooding**
  - **Safely operating dams**
  - **Monitoring and surveillance**
  - **Making necessary repairs**

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# Additional Information

## ◆ Web sites:

- <http://www.lrh-wc.usace.army.mil/wc/musns.htm>
- <http://www.nws.noaa.gov>
  - <http://www.erh.noaa.gov/er/ohrfc>
- <http://www.mwcdlakes.com>