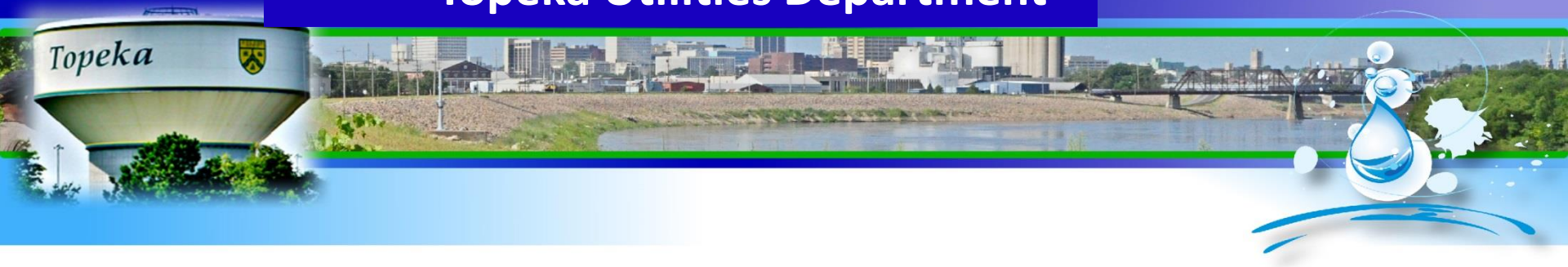


Topeka Flood Control Project

2017 Governor's Conference

Kelly Ryan, Levee Engineer

Part 1, 1939 Project Features

TOPEKA FLOOD CONTROL PROJECT

COMPLETED LEVEE PAVEMENT AND WALL LOOKING EAST TOWARD END OF PROJECT.

2 FEBRUARY 1939 NEG. NO. 5893

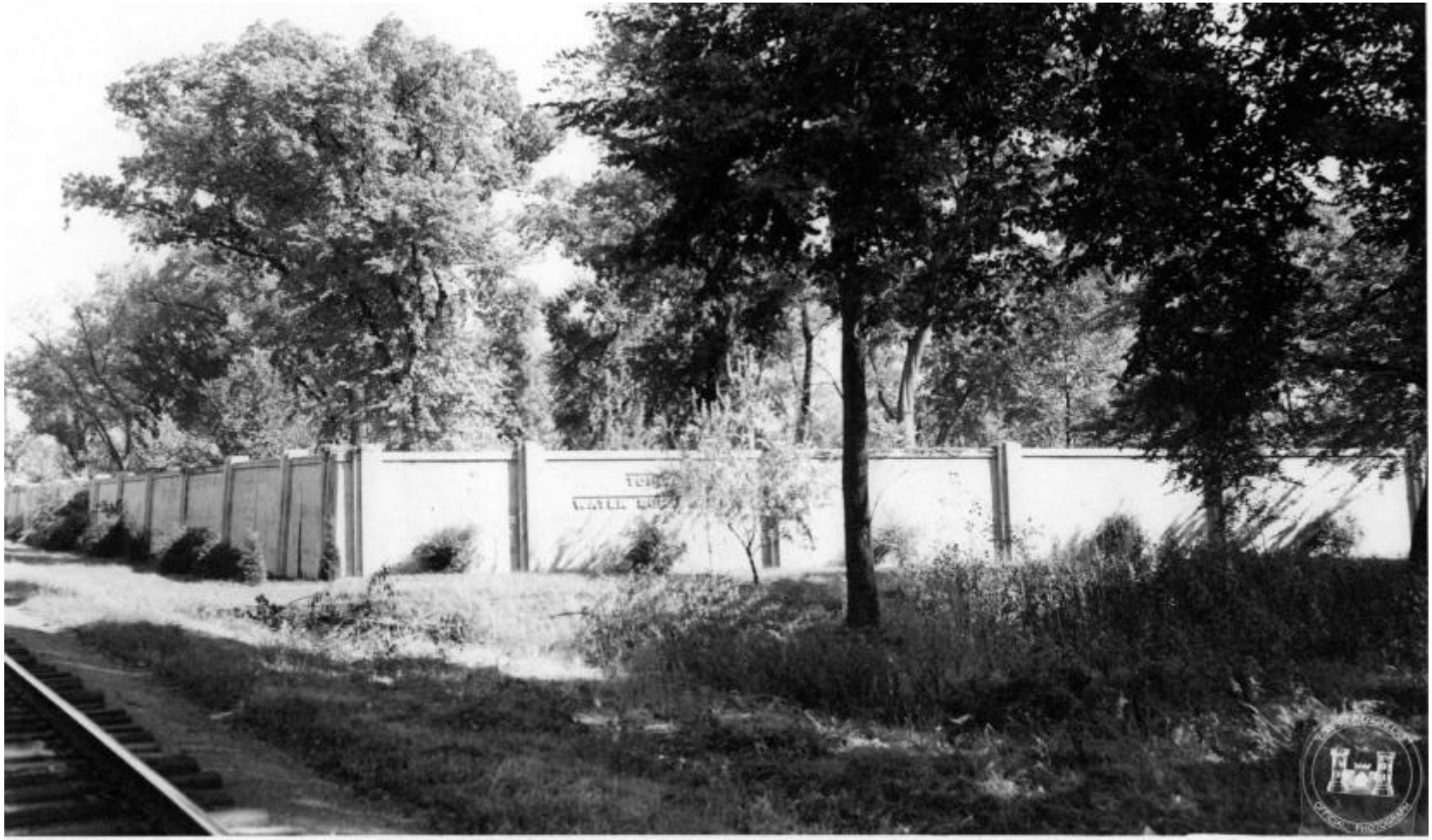
Part 1, 1939 Project Features

TOPEKA FLOOD CONTROL PROJECT

LEVEE PAVEMENT ADJACENT TO KANSAS AVENUE BRIDGE.

6 JANUARY 1939 NEG. NO. 5767

Part 1, 1939 Project Features



TOPEKA FLOOD CONTROL PROJECT

WALL CITY WATERWORKS LOOKING SOUTHEAST.

16 OCTOBER 1944 NEG. NO. 22387

Historic River Crests

	Stage	Date	CFS
1	47.2	6/01/1844	
2	40.8	7/13/1951	469,000
3		5/30/1903	300,000
4		6/9/1908	200,000
5	34.97	7/24/1993	170,000
6	33.9	6/30/1951	
7	32.7	6/5/1935	154,000
8	32.29	10/12/1973	130,000
9		7/7/1904	130,000
10	31.8	6/17/1943	101,000

Historic River Crests

	Stage	Date	CFS
1	47.2	6/01/1844 ★	
2	40.8	7/13/1951	469,000
3		5/30/1903 ★	300,000
4		6/9/1908 ★	200,000
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7	32.7	6/5/1935 ★	154,000
8	32.29	10/12/1973	130,000
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Historic River Crests

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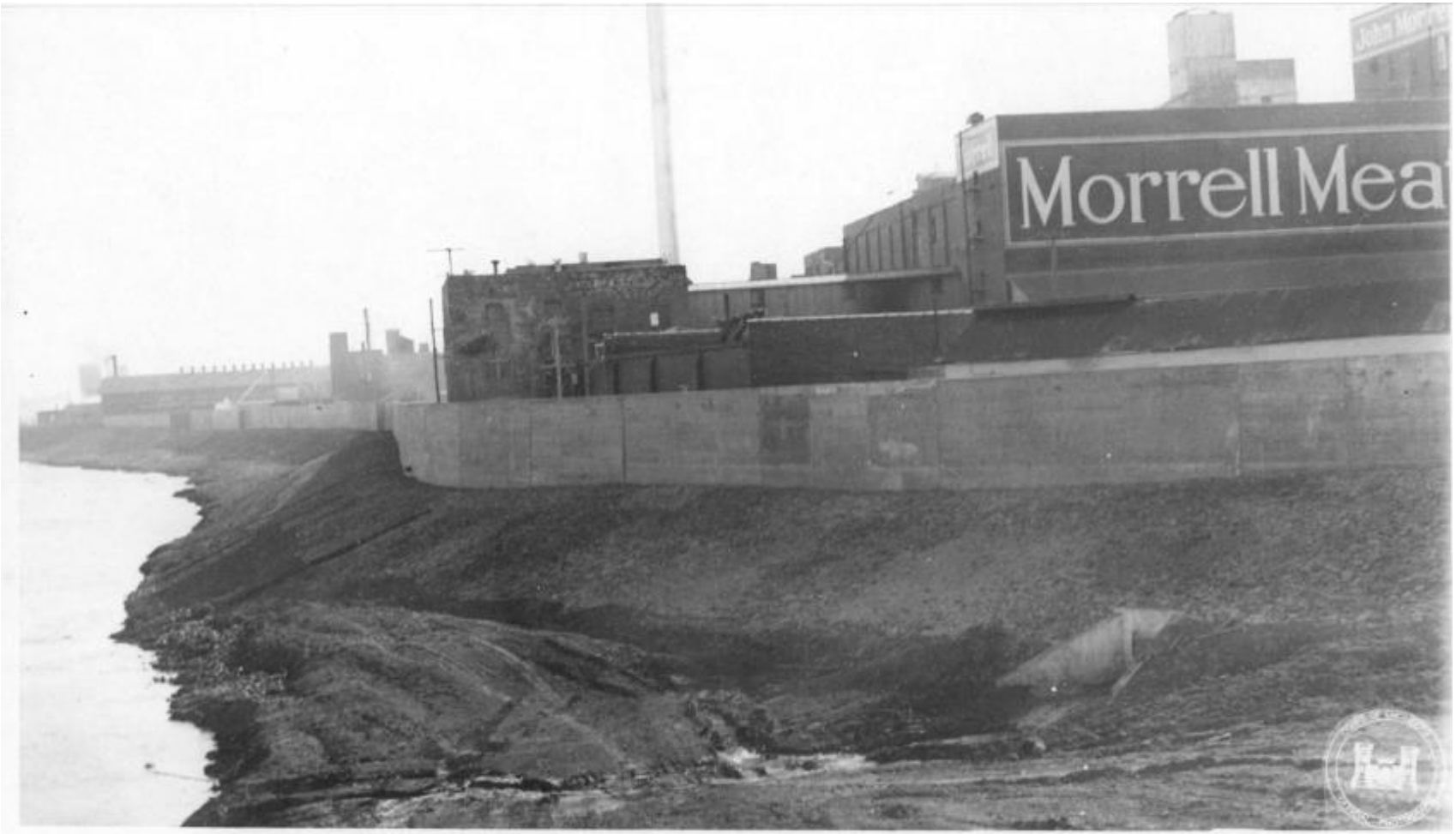
9		7/7/1904 ★	130,000
10	31.8	6/17/1943 ★	101,000

Part 1, Post 1943 flood



TOPEKA FLOOD CONTROL PROJECT

LOOKING EAST FROM KANSAS AVENUE BRIDGE SHOWING BANK PAVEMENT AND WALL.

2 FEBRUARY 1944 NEG. NO. 5894

Historic River Crests

	Stage	Date	CFS
1	47.2	6/01/1844	
2	40.8	7/13/1951 ★	469,000
3		5/30/1903	300,000
4		6/9/1908	200,000
5	34.97	7/24/1993	170,000
6	33.9	6/30/1951 ★	
7	32.7	6/5/1935	154,000
8	32.29	10/12/1973	130,000
9		7/7/1904	130,000
10	31.8	6/17/1943	101,000

1951 Flood

1951 Flood

1951 Flood

1951 Flood

1951 Flood

The Goodyear Tire & Rubber Plant, looking toward the north
(photo courtesy of G.L. Sardou, Topeka, Kansas).

1951 Flood

Figure 1. Women and children evacuated from ruined North Topeka were carried ashore at the north end of Topeka Avenue bridge by rescue workers (photograph courtesy of Topeka Capital Journal).

Part 2, 1974 Project Features

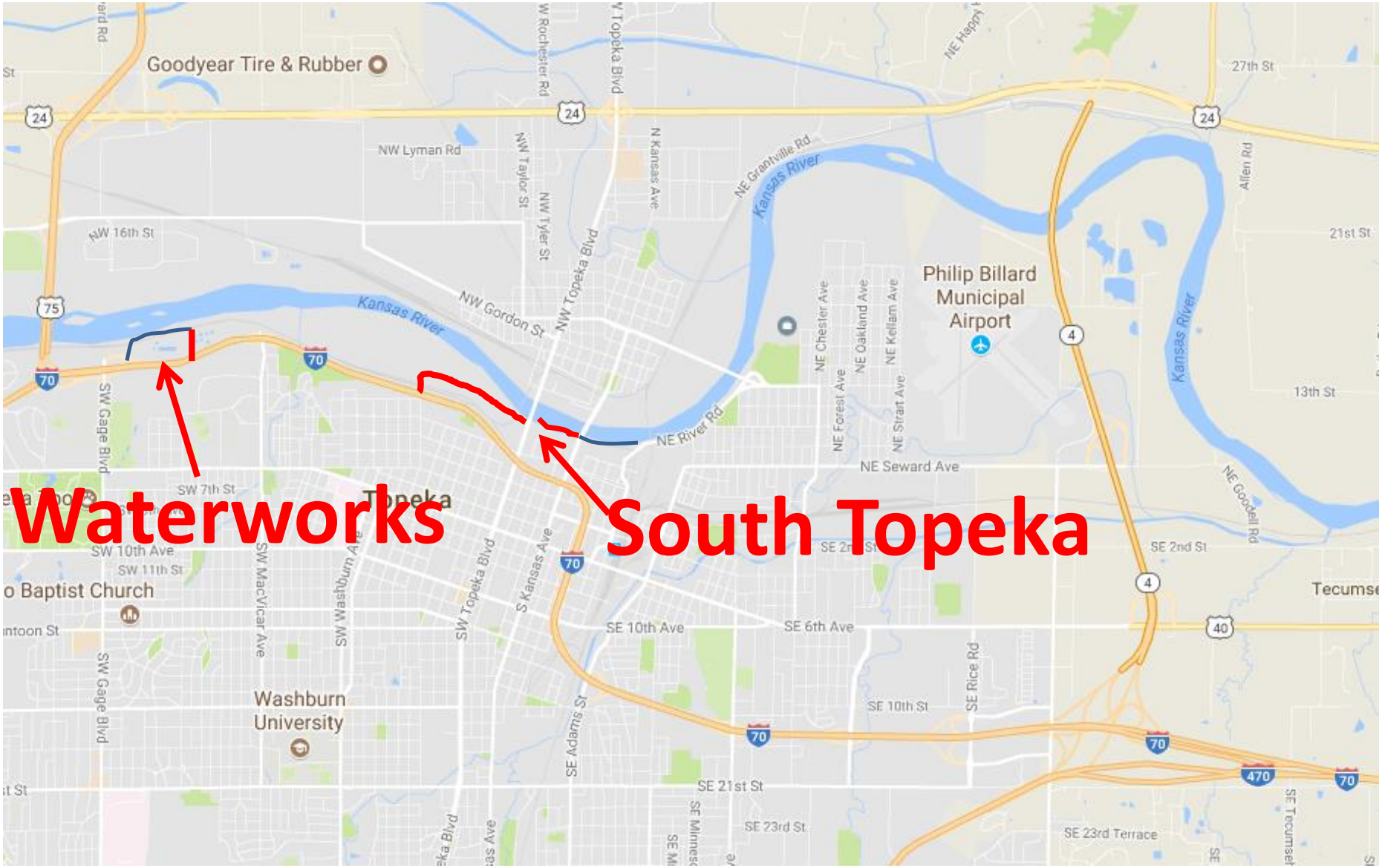
Topeka Flood Control project authorized by Congress in Flood Control Act of 1954.

Additional features were installed on existing South Topeka and Waterworks Levee units.

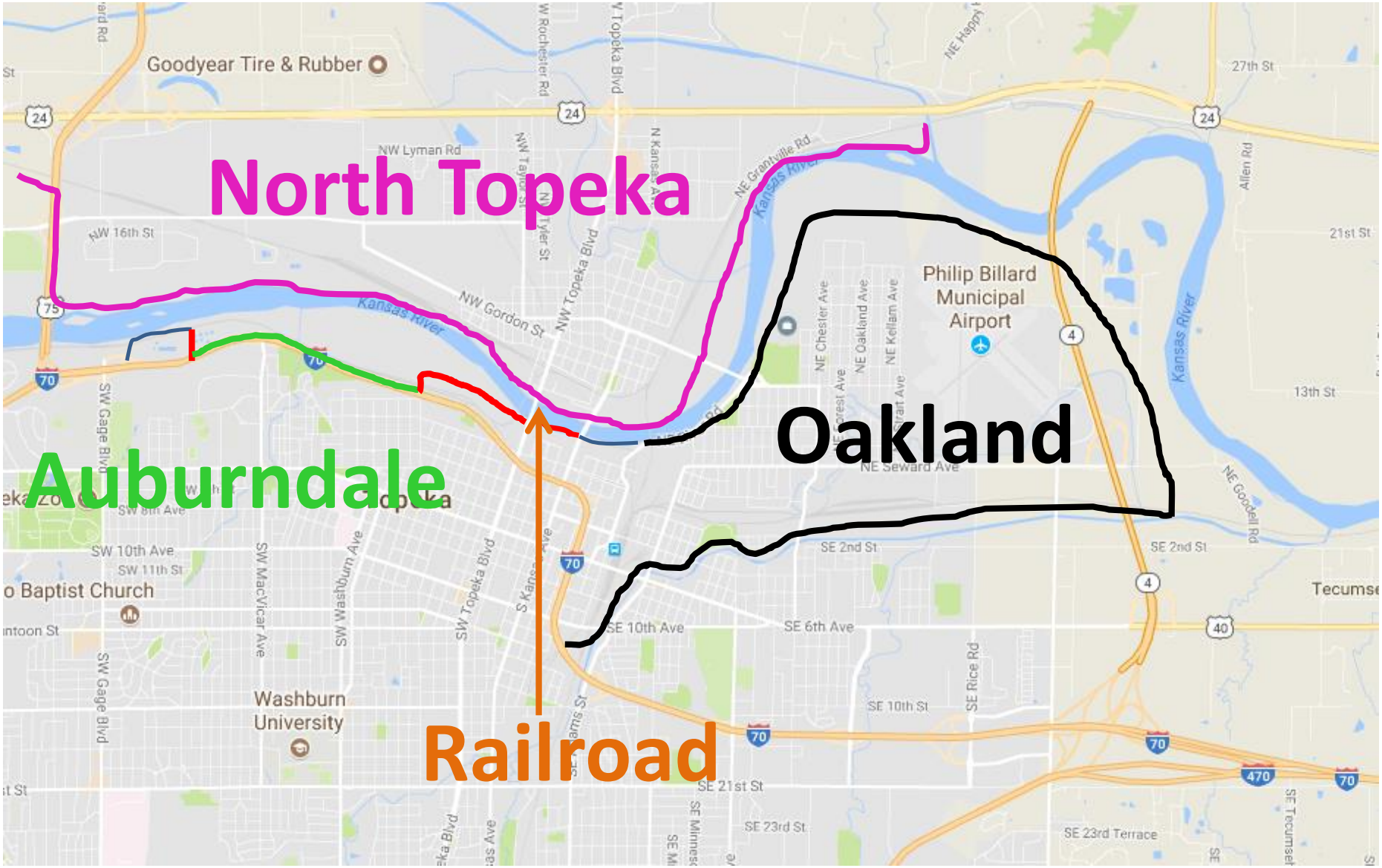
Additional Levee Units were added (Railroad, North Topeka, Oakland, and Auburndale).

Part 2 Construction 1958 – 1974.

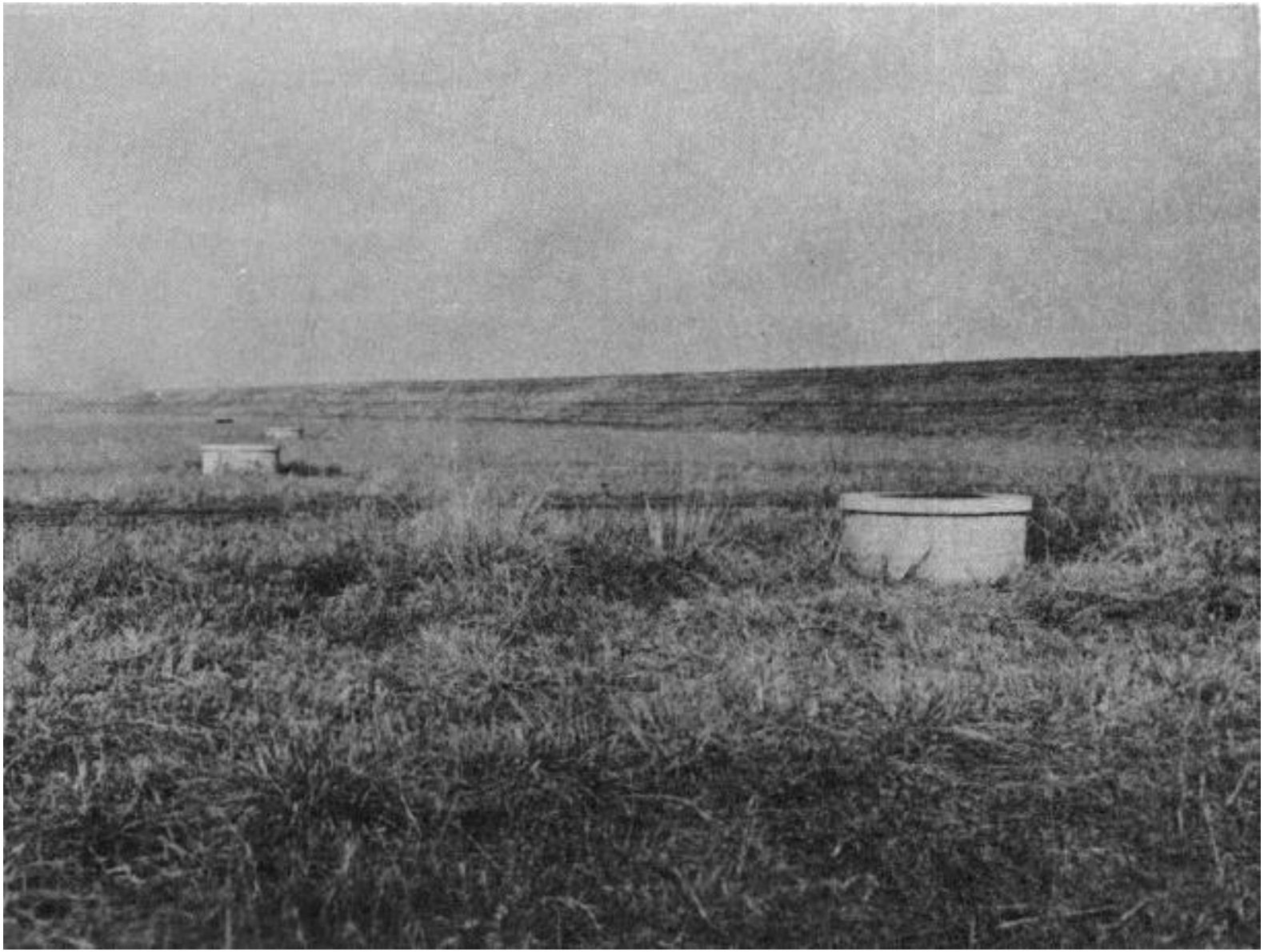
1939 Levee Units



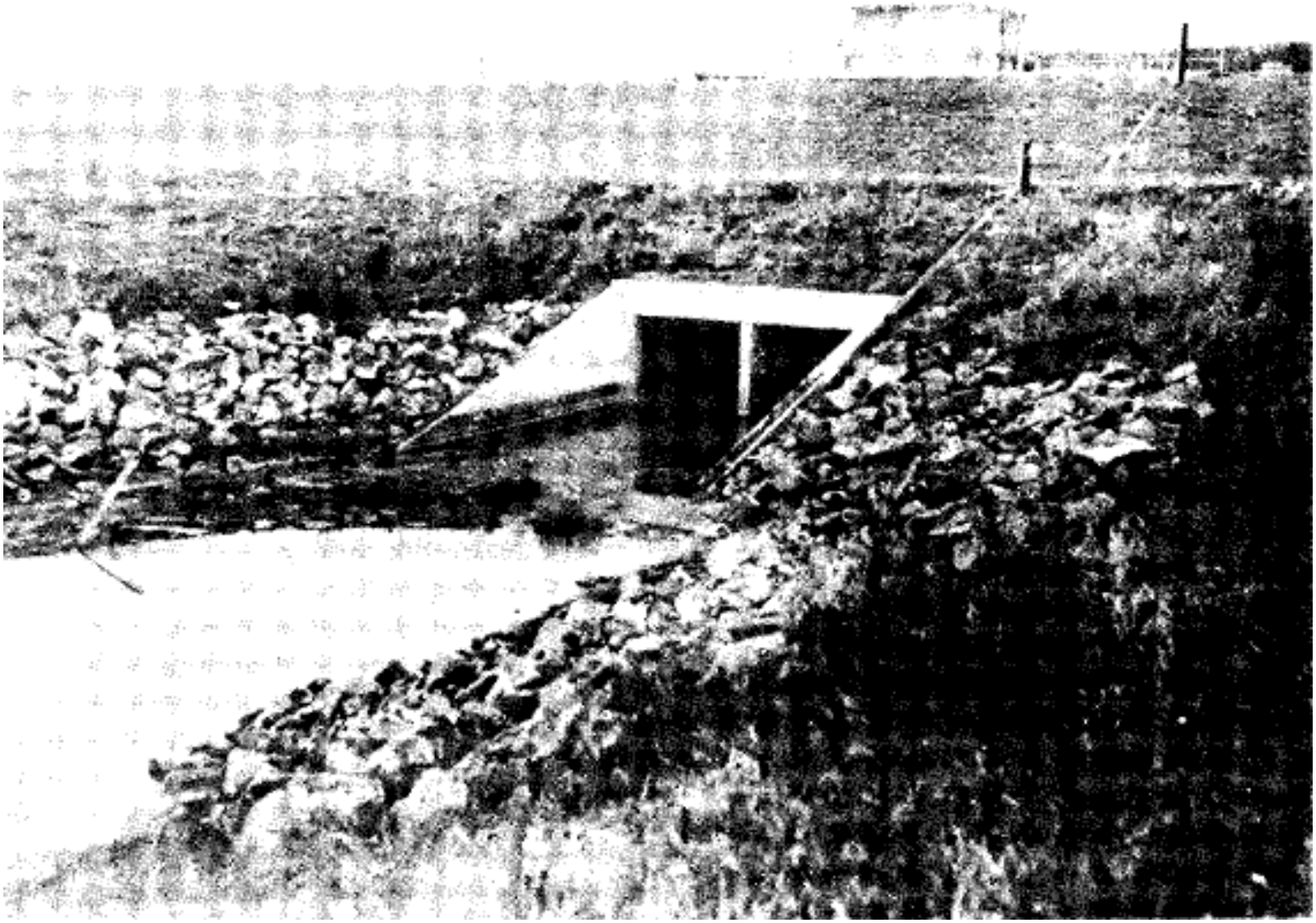
1974 Added Units



1974 Project Features



1974 Project Features



1974 Project Features

Total Levee System		
22	Miles	Earthen Levee
4,122	LF	Concrete Floodwall
8		Pump Stations
14		Pumped Relief Wells
70		Relief Wells (gravity)
9		Closure Structures
58		Interior Drainage Structures
3		Ponding Areas

Historic River Crests

	Stage	Date	CFS
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Design discharge
314,000 cfs

Historic River Crests

	Stage	Date	CFS
1	47.2	6/01/1844	
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9		7/7/1904	130,000
10	31.8	6/17/1943	101,000

Design discharge
314,000 cfs

1993 Flood

Part 3!

Topeka Flood Control project authorized for study in Section 216 of Flood Control Act of 1970.

Purpose of study was to ensure reliability of existing system using current criteria and methodology.

Study concluded in 2009.

Part 3, Project Concerns

Concern	Waterworks	Auburndale	South Topeka	Oakland	North Topeka
Overtopping					
Stability			X		
Underseepage	X		X	X	X

Part 3, Project Improvements

Oakland Unit - underseepage berm, foundation anchoring at SWPS

North Topeka Unit - 30 new relief wells, abandon one existing SWPS, mitigation plantings

Waterworks Unit - underseepage berm, floodwall modifications

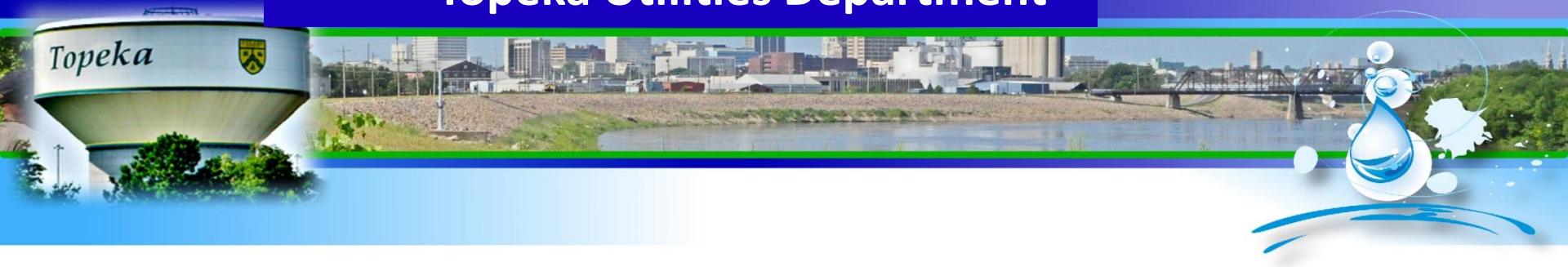
South Topeka Unit - underseepage berm, floodwall modifications

USACE Oakland Underseepage Berm

USACE North Topeka Relief Wells

USACE South Topeka Floodwall

USACE South Topeka Floodwall



Questions?