

# Long Range Water Study



- Scope & Objectives
  - Historical Data Evaluation
  - Estimate Future Water Demands
  - Analyze 5-year CIP
  - Analyze Future Improvements
  - Summary Report

# Historical Evaluation



- Customer Growth (1997 to 2007)
  - Residential increase of 3.1%
  - Commercial increase of 5.5%
- Trends
  - Per customer usage has decreased

# Current & Future Water Production

Year	Current Average Day MGD	Current Peak Day MGD	Future Average Day MGD	Future Peak Day MGD
2002	12.45	19.09		
2003	13.07	21.35		
2004	12.79	17.52		
2005	13.83	23.69		
2006	13.91	22.56		
2007	13.69	23.83		
2008			<b>14.62</b>	<b>24.55</b>
2009			15.09	25.53
2010			15.58	26.56
2011			16.09	27.65
2012			16.62	28.80
2013			<b>17.17</b>	<b>30.01</b>
2014			17.75	31.30
2015			18.35	32.66
2016			18.97	34.09
2017			19.63	35.62
2018			<b>20.31</b>	<b>37.23</b>
2019			21.02	38.95
2020			21.76	40.77
2021			22.53	42.70
2022			23.34	44.76
2023			<b>24.18</b>	<b>46.95</b>
2024			25.06	49.28
2025			25.98	51.72
2026			26.93	54.41
2027			27.94	57.23
2028			<b>28.98</b>	<b>60.25</b>

# 2003 Water Bond – Breakdown of Major Projects

<b>Production Related Projects</b>	<b>Funding</b>	<b>Status</b>
8 Million Gallon Addition to Water Treatment Plant	\$8,731,400	Complete
Well #15	\$350,000	Complete
Aquifer Storage Project #2	\$400,000	Complete
36" Transmission Main from McBaine to Columbia	\$7,038,600	Complete
36" Well Supply Main	\$2,300,000	Complete
Water Supervisory and Data Acquisition System	\$450,000	Construction
<b>Total - Production</b>	<b>\$19,270,000</b>	
<b>Annual and Other Projects</b>	<b>Funding</b>	<b>Status</b>
Paint Shephard Water Tower	\$310,000	Construction
North East Pressure Zone	\$4,059,000	Construction
Highway Crossings	\$250,000	Planning
Close Loops	\$300,000	Complete
Main Relocations for Streets & Highways	\$1,045,000	Complete
Fire Hydrant & Valve Replacement	\$580,000	Construction
New & Replace Services	\$945,000	Construction
Upgrade Downtown 4" Mains	\$510,000	Complete
Main Replacements	\$601,000	Complete
<b>Total - Annual and Other</b>	<b>\$8,600,000</b>	
<b>Total of 2003 Water Bond Project Funding</b>	<b>\$27,870,000</b>	

## 2008 Water Bond Issue Proposal Improvement & School Fire Flow Projects

(Improvement Projects)	FY09	FY10	FY11	FY12	FY13	FY14	TOTAL
Back-Up Generators (4) for ASR's and Pump Stations						\$500,000	\$500,000
New Well Metering	\$150,000						\$150,000
16" Mains South of Nifong	\$450,000						\$450,000
Drill Alluvial Well #16	\$315,000						\$315,000
Paint Basins @ Water Treatment Plant	\$600,000	\$300,000					\$900,000
Sludge Removal Land			\$750,000				\$750,000
Gas Chlorination System Conversion			\$750,000	\$750,000			\$1,500,000
Drill Alluvial Wells 17 & 18		\$700,000					\$700,000
<b>Subtotal</b>	<b>\$1,515,000</b>	<b>\$1,000,000</b>	<b>\$1,500,000</b>	<b>\$750,000</b>	<b>\$0</b>	<b>\$500,000</b>	<b>\$5,265,000</b>

(School Fire Flow Projects)	FY09	FY10	FY11	FY12	FY13	FY14	TOTAL
Jefferson Junior High School	\$355,175						\$355,175
West Junior High School	\$277,200						\$277,200
West Blvd Elementary	\$222,750						\$222,750
Field Elementary	\$225,225						\$225,225
New Haven Elementary	\$113,750						\$113,750
Ridgeway Elementary	\$113,750						\$113,750
<b>Subtotal</b>	<b>\$1,307,850</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$1,307,850</b>

# 2008 Water Bond Issue Proposal

## Fire Flow Projects

(Fire Flow Projects)	FY09	FY10	FY11	FY12	FY13	FY14	TOTAL
Cliff Dr - Hawthorne to University - Close Loops	\$50,000						\$50,000
Rosemary - College to William - Main Replacement	\$184,800						\$184,800
Country Club Dr S - Old 63 East - Main Replacement	\$208,000						\$208,000
Walnut - William to Old 63 - Main Replacement	\$142,500						\$142,500
Anthony St - College to William - Main Replacement	\$195,000						\$195,000
Wilson Av - E of College to William - Main Replacement	\$120,000						\$120,000
Providence Rd - Locust to Elm - Main Replacement	\$90,000						\$90,000
Rangeline St - Smith St - Main Relocation	\$32,000						\$32,000
Cliff, Univ, Hilltop, Hawthorne, Rock Hill - Main Replacement	\$370,000						\$370,000
Providence N @ Douglass HS - Main Replacement	\$62,000						\$62,000
Washington - Hickman to Wilkes - Main Replacement	\$160,000						\$160,000
<b>Subtotal</b>	<b>\$1,614,300</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$1,614,300</b>

## 2008 Water Bond Issue Proposal System Flow Projects

(System Flow Issues)	FY09	FY10	FY11	FY12	FY13	FY14	TOTAL
24" E Transmission Main - 4,200' North Section	\$1,250,000	\$1,250,000					\$2,500,000
24" E Transmission Main - 4,500' South Section			\$1,250,000				\$1,250,000
Highway 763 & I-70 - Close Loops	\$200,000						\$200,000
Providence @ Stewart - Close Loops		\$140,000					\$140,000
Stadium @ Bernadette - Close Loops		\$122,500					\$122,500
Route PP - Main Upgrade - 25,000' of 12" Main		\$1,170,000	\$1,170,000				\$2,340,000
Heller Road (W) - 10,000' of 16" Main				\$1,000,000	\$1,000,000		\$2,000,000
University Ave - Ann St to Rock Hill - Close Loop			\$97,650				\$97,650
Gillespie Bridge Rd - Limestone to Longview - Close Loop			\$66,300				\$66,300
Fairmont Dr - Fieldcrest to Parkridge - Close Loop			\$26,250				\$26,250
Ground Storage @ Hillsdale PS - 1.5 MG Tank	\$1,200,000						\$1,200,000
Hackberry - 6,000' of 12" Main						\$562,000	\$562,000
Smith Dr - Silver Thorne to Scott Blvd - Close Loop				\$450,000			\$450,000
<b>Subtotal</b>	<b>\$2,650,000</b>	<b>\$2,682,500</b>	<b>\$2,610,200</b>	<b>\$1,450,000</b>	<b>\$1,000,000</b>	<b>\$562,000</b>	<b>\$10,954,700</b>

# 2008 Water Bond Issue Proposal

## Reliability, Business Loop 70, and Other Projects

<b>(Reliability Projects)</b>	<b>FY09</b>	<b>FY10</b>	<b>FY11</b>	<b>FY12</b>	<b>FY13</b>	<b>FY14</b>	<b>TOTAL</b>
Upgrade Transformers & Switchgear - Water Treatment Plant		\$160,000					\$160,000
Downtown Valves On Broadway			\$150,000				\$150,000
Conversion of Constant Speed Pumps to Variable Speed				\$700,000			\$700,000
<b>Subtotal</b>	<b>\$0</b>	<b>\$160,000</b>	<b>\$150,000</b>	<b>\$700,000</b>	<b>\$0</b>	<b>\$0</b>	<b>\$1,010,000</b>

<b>(Bus Loop 70 Projects)</b>	<b>FY09</b>	<b>FY10</b>	<b>FY11</b>	<b>FY12</b>	<b>FY13</b>	<b>FY14</b>	<b>TOTAL</b>
Bus Loop 70 Phase 2 Main Replacement - Jackson to Jefferson	\$260,000						\$260,000
Bus Loop 70 Phase 6B Main Replacement - 3,400'		\$935,000					\$935,000
Bus Loop 70 Phase 3 & 4 Main Replacement - 2,600'					\$660,000		\$660,000
<b>Subtotal</b>	<b>\$260,000</b>	<b>\$935,000</b>	<b>\$0</b>	<b>\$0</b>	<b>\$660,000</b>	<b>\$0</b>	<b>\$1,855,000</b>

<b>(Other Projects)</b>	<b>FY09</b>	<b>FY10</b>	<b>FY11</b>	<b>FY12</b>	<b>FY13</b>	<b>FY14</b>	<b>TOTAL</b>
Broadway Main Replacement - Garth to W Blvd		\$730,000					\$730,000
<b>Subtotal</b>	<b>\$0</b>	<b>\$730,000</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$730,000</b>



# 2008 Water Bond Issue Proposal

## Annual Projects

(Annual Projects)	FY09	FY10	FY11	FY12	FY13	FY14	TOTAL
Close Loops				\$250,000	\$250,000		\$500,000
Main Relocate/Replace for Street & Highway	\$500,000	\$500,000	\$500,000	\$500,000	\$500,000	\$600,000	\$3,100,000
Fire Hydrants & Valve Replacements	\$200,000	\$200,000	\$250,000	\$250,000	\$250,000		\$1,150,000
Differential Payments	\$200,000	\$100,000	\$100,000	\$100,000	\$200,000	\$100,000	\$800,000
Main Replacements	\$0	\$1,406,200	\$1,451,950	\$1,520,000	\$1,550,000	\$1,585,000	\$7,513,150
Contingency	\$150,000	\$150,000	\$150,000	\$150,000	\$150,000	\$150,000	\$900,000
<b>Subtotal</b>	<b>\$1,050,000</b>	<b>\$2,356,200</b>	<b>\$2,451,950</b>	<b>\$2,770,000</b>	<b>\$2,900,000</b>	<b>\$2,435,000</b>	<b>\$13,963,150</b>

## 2008 Water Bond Issue Proposal – Category Totals

Improvement Projects	\$5,265,000
Fire Flow Projects	\$1,614,300
School Fire Flow Projects	\$1,307,850
System Flow Projects	\$10,954,700
Reliability Projects	\$1,010,000
Bus Loop 70 Projects	\$1,855,000
Other Projects	\$730,000
Annual Projects	\$13,963,150
<b>Total for Projects</b>	<b>\$36,700,000</b>
Cost of Issuance	\$300,000
<b>Total Bond Proposal</b>	<b>\$37,000,000</b>

# Rate Changes For Debt Service



- FY09 – 5% (Includes 3.5% Prior Bond)
- FY10 – 5% (Includes 3.5% Prior Bond)
- FY11 – 5%
- FY12 – 5%
- FY13 – 5%
- FY14 – 5%