

## Public Information Meeting Well 11 Project

Town of Hull  
Town Hall  
January 28, 2010

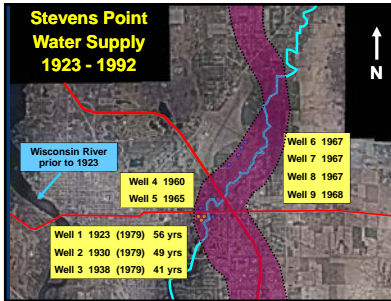
### Meeting Outline

- ◆ Introductions
- ◆ Stevens Point Water Supply
- ◆ Well 11 Project History & Background
- ◆ Well Site Plan & Design
- ◆ Project Schedule
- ◆ Area Water Level Data
- ◆ Will Water Levels be Affected?
- ◆ Groundwater Quality
- ◆ Questions

### Supply and Demand

- ◆ Water Demand:
  - ◆ Average Day: 7.3 mgd
  - ◆ Maximum Day: 13.4 mgd
- ◆ Reliable Supply Capacity: 12.6 mgd
- ◆ Additional Capacity Needed: 0.8 mgd
- ◆ Projected Needs by 2025: 2.6 mgd
- ◆ Concerns at other older wells:
  - ◆ #4, #5, #6 & #7 = 7.1 mgd

Source: 2007 Utility Master Plan Report



### City's Water Supply System is Relatively Old

- ◆ Well 4 1960 Age: 50 years
- ◆ Well 5 1965 Age: 45 years
- ◆ Well 6 1967 Age: 43 years
- ◆ Well 7 1967 Age: 43 years
- ◆ Well 8 1967 Age: 43 years
- ◆ Well 9 1968 Age: 42 years
- ◆ Well 10 1993 Age: 17 years
- ◆ City has built only one well in past 42 years
- ◆ Maximum water demand in 1968: 6.8 mgd
- ◆ Projected maximum 2025 demand: 15.21 mgd

### Well 11 Project History & Background

- ◆ North Well Field identified in the City's 1991 Water System Master Plan
- ◆ Majority of City water supply comes from Airport Well Field
- ◆ Well 10 recommended in 1991 and constructed in 1993
  - ◆ Horizontal Collector well similar to Well 11
  - ◆ Well yield = 5 mgd
  - ◆ Close to the Plover River
  - ◆ Very efficient, low drawdowns (1,250 gpm/ft)
  - ◆ Very good water quality

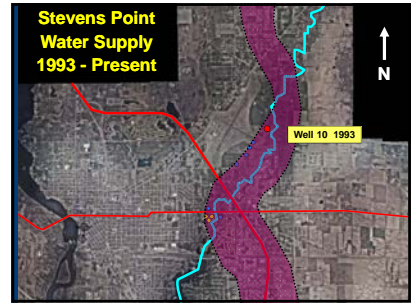
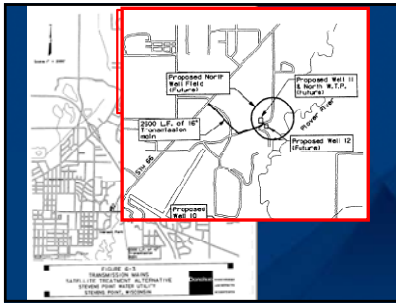
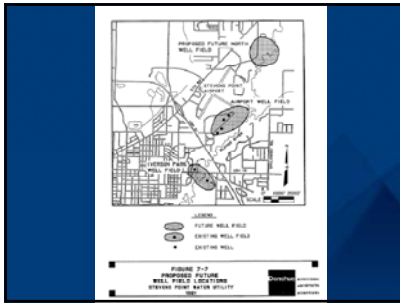
### Recent City Water Utility Master Planning Efforts



1991 1996 2001 2007

### 1991 Master Plan

- ◆ Well 10
- ◆ New control system
- ◆ Water main improvements



**1996 Master Plan**

- Well 4 Water Treatment Plant
- New water tower
- Water transmission main improvements

**1996 Master Plan recommended improvements**

Item	Budget Estimate
Well 4 Water Treatment Plant	\$2,200,000
New Water Tower	\$1,500,000
New Transmission Main	\$1,000,000
Water Transmission Main Improvements	\$1,000,000
<b>Total</b>	<b>\$6,200,000</b>

**2001 Master Plan**

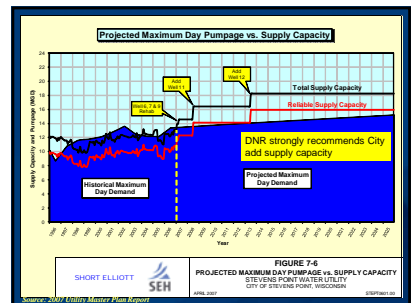
- New water tower
- Airport Well field Treatment Station
- New Well 11
- Well 5 Nitrate Blending

**2001 Master Plan recommended improvements**

Item	Budget Estimate
New Water Tower	\$1,500,000
Airport Well Field Treatment Station	\$1,000,000
New Well 11	\$1,000,000
Well 5 Nitrate Blending	\$1,000,000
<b>Total</b>	<b>\$4,500,000</b>

**2007 Water System Master Plan**

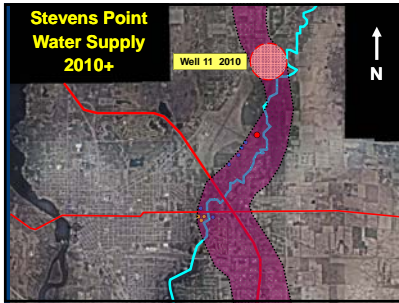
Stevens Point Water Utility  
April 2007



**Wisconsin DNR Concerns with City Supply Capacity**

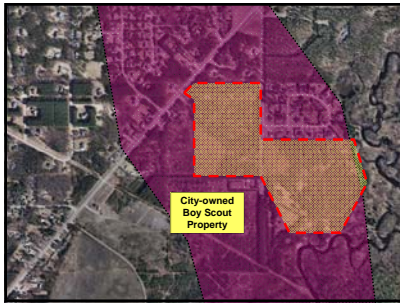
Annual Inspection Report  
May 2008

**“The City must realize that not increasing the source capacity of the water system is not an option.”**



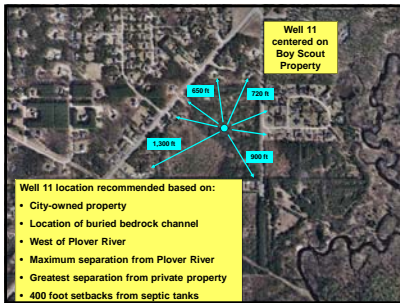
**Water Supply and Treatment Studies**

December 2007



**2008 Detailed Aquifer Study**

December 2008



**DNR Approval of well site received 2/4/2009**

**DNR Approval of well preliminary engineering report 3/18/2009**

**PSC construction authorization of well received 4/23/2009**

**Public Hearing Municipal Well 11 Project**

City of Stevens Point Water Utility  
June 1, 2009

**Project Public Hearing June 1, 2009**

**DNR Approval of well design**  
7/28/2009

**DNR Approval SDWLP funding**  
August 2009  
\$1.4M grant  
\$1.4M loan

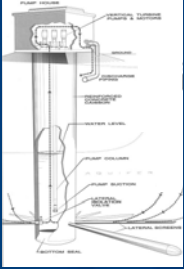
**COMM Approval of CDBG**  
September 2009  
\$750,000 grant



**Well Site Plan and Well Design**

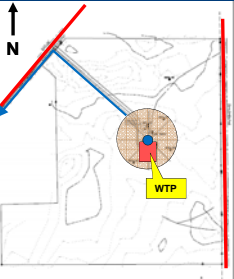
- ◆ Well 11 will be a horizontal collector well very similar to City Well 10
- ◆ Collector wells:
  - ◆ Are more expensive to build
  - ◆ Have greater well yields
  - ◆ Have smaller local area water level drawdowns
  - ◆ Are more cost-effective when water treatment plants are required (economies of scale)

**Horizontal Collector Well**



- Stevens Point Well 10
- Wisconsin Rapids Wells 1-4
- Manitowoc shore wells
- Calpine Power (Beloit)

**Well 11 Site Plan**



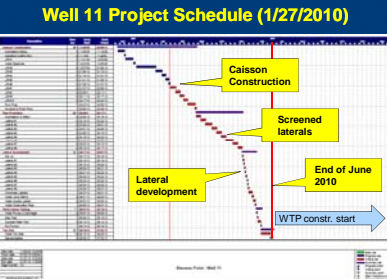
- ◆ WTP will be built over well
- ◆ Temporary access road will be abandoned
- ◆ Permanent access road to STH 66
- ◆ New 24" water main along east ROW to Torun Road

**Water Main Plan**



24" connecting water main

**Well 11 Project Schedule (1/27/2010)**



Key milestones: Caisson Construction, Screened laterals, Lateral development, End of June 2010, WTP constr. start

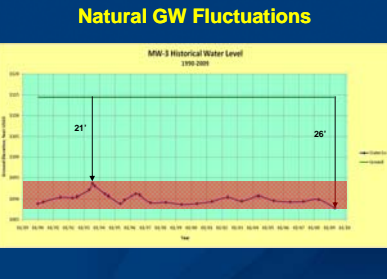
**Well 11 Project Schedule**

- ◆ Well is currently being constructed on the City-owned property
- ◆ 20-foot diameter caisson is 60% complete
- ◆ Caisson should be completed in February
- ◆ Installation of the screened laterals will begin in March, and complete in May.
- ◆ Construction of the WTP will begin this summer and be completed in the latter half of 2011.
- ◆ Well 11 should be operational in later 2011.

**Area Historical Water Levels**

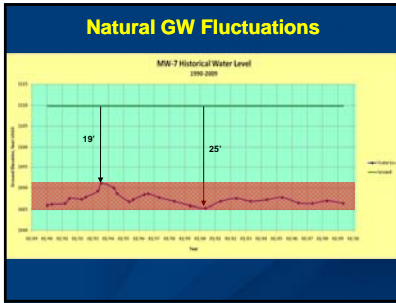
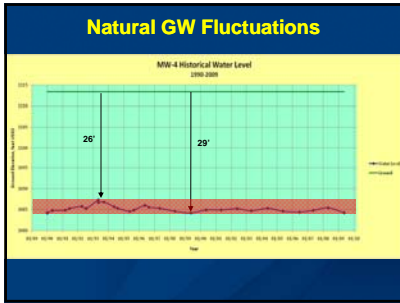
- ◆ City has numerous monitoring wells the STH66 and Airport area
- ◆ Monitoring wells sampled annually for water quality and for water depth
- ◆ Some wells indicate higher nitrate in shallow areas, and iron and manganese in deeper areas
- ◆ Groundwater levels do fluctuate seasonally and with extremely wet or dry conditions
- ◆ Private and high capacity well designs take these normal fluctuations into account when wells are constructed

**Natural GW Fluctuations**

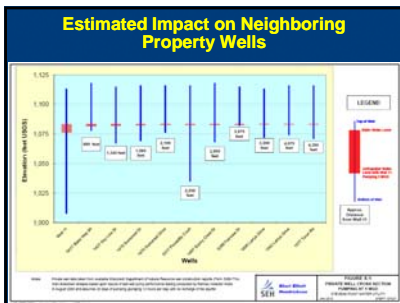
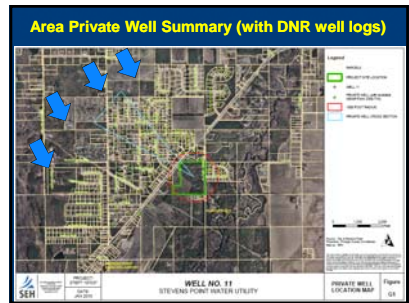
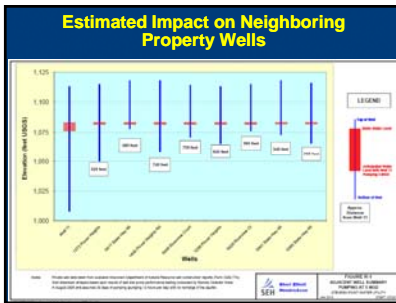
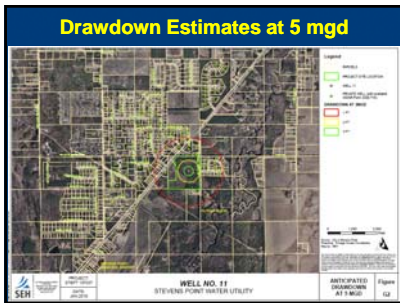


MPW-3 Historical Water Level 1998-2008

Graph shows seasonal fluctuations between 21' and 26' depth.



- ### How Will Well 11 Affect Groundwater Levels in the Area?
- ◆ Site aquifer data collected in August 2007 and August 2008
  - ◆ Projections of water level impacts estimated based on 5 mgd pumping capacity
    - ◆ 12 hour per day pumping
    - ◆ No recharge for 30 continuous days
  - ◆ Maximum drawdown within:
    - ◆ 200 feet is 3 feet
    - ◆ 450 feet is 2 feet
    - ◆ 1,400 feet is 1 foot
  - ◆ Drawdowns will be confirmed during test pumping in May/June 2010
- Drawdown estimates are conservative



- ### Existing Groundwater Quality
- ◆ Water quality on project site was sampled in August 2007 and August 2008
  - ◆ Groundwater meets all federal/state primary drinking water standards
  - ◆ Groundwater meets all secondary (aesthetic) drinking water standards except:
    - ◆ Dissolved Iron: 0.42 mg/l 0.30 mg/l SMCL
    - ◆ Dissolved Manganese: 0.33 mg/l 0.05 mg/l

- ### Groundwater Quality Impacts?
- ◆ No significant changes are anticipated to the groundwater quality in the area
  - ◆ Groundwater will be resampled during test pumping this spring
  - ◆ County recommends all private well owners sample drinking water annually for bacteria and nitrate (\$44 at WEAL)

### How Will Any Future Changes in Groundwater Quality be Quantified?

- ◆ City has specific and frequent sampling requirements mandated by DNR.
- ◆ Additional sample testing by WEAL (Homeowner Metals) can be performed for \$42 per sample.
- ◆ City will offer to pay cost of testing for all immediately adjacent property wells for:
  - ◆ WEAL Homeowners Package
  - ◆ WEAL Homeowners Metals Package
  - ◆ Total Dissolved Solids (\$11)

### Water Quality Sampling Will Establish a Baseline

- ◆ Water quality parameters to be tested by Water & Environmental Analysis Lab at UW-SP:
  - ◆ Alkalinity
  - ◆ Arsenic
  - ◆ Calcium
  - ◆ Chloride
  - ◆ Conductivity
  - ◆ Copper
  - ◆ Corrosivity Index
  - ◆ Hardness
  - ◆ Iron
  - ◆ Lead
  - ◆ Magnesium
  - ◆ Manganese
  - ◆ Nitrate
  - ◆ Nitrate + Nitrite
  - ◆ pH (Lab)
  - ◆ Potassium
  - ◆ Sodium
  - ◆ Sulfate
  - ◆ Total Coliform Bacteria
  - ◆ Total Solids
  - ◆ Zinc

### Well 11 Project Summary

- ◆ Project in planning stages for 20 years
- ◆ Addresses current and future City water supply needs
- ◆ Addresses DNR recommendations to increase water supply capacity
- ◆ Provides supply reliability and improved water quality (e.g., Well 5 nitrate)
- ◆ City-owned property
- ◆ Very large aquifer saturated thickness
- ◆ Large separation distances from neighbors
- ◆ Large separation from Plover River

### Questions

