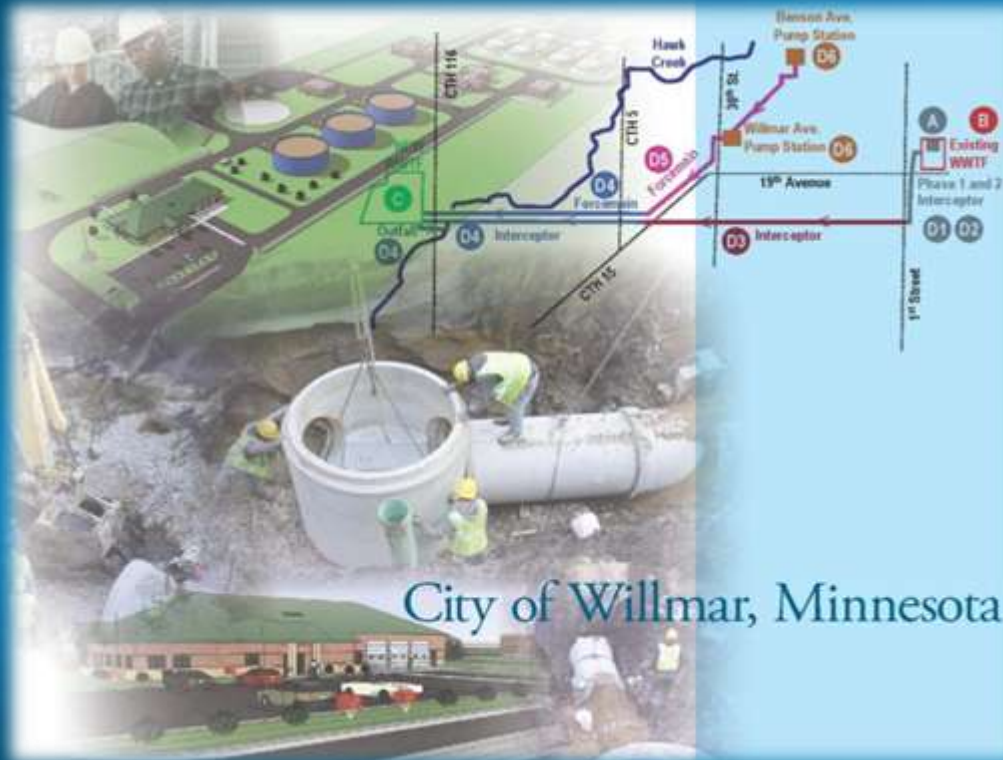


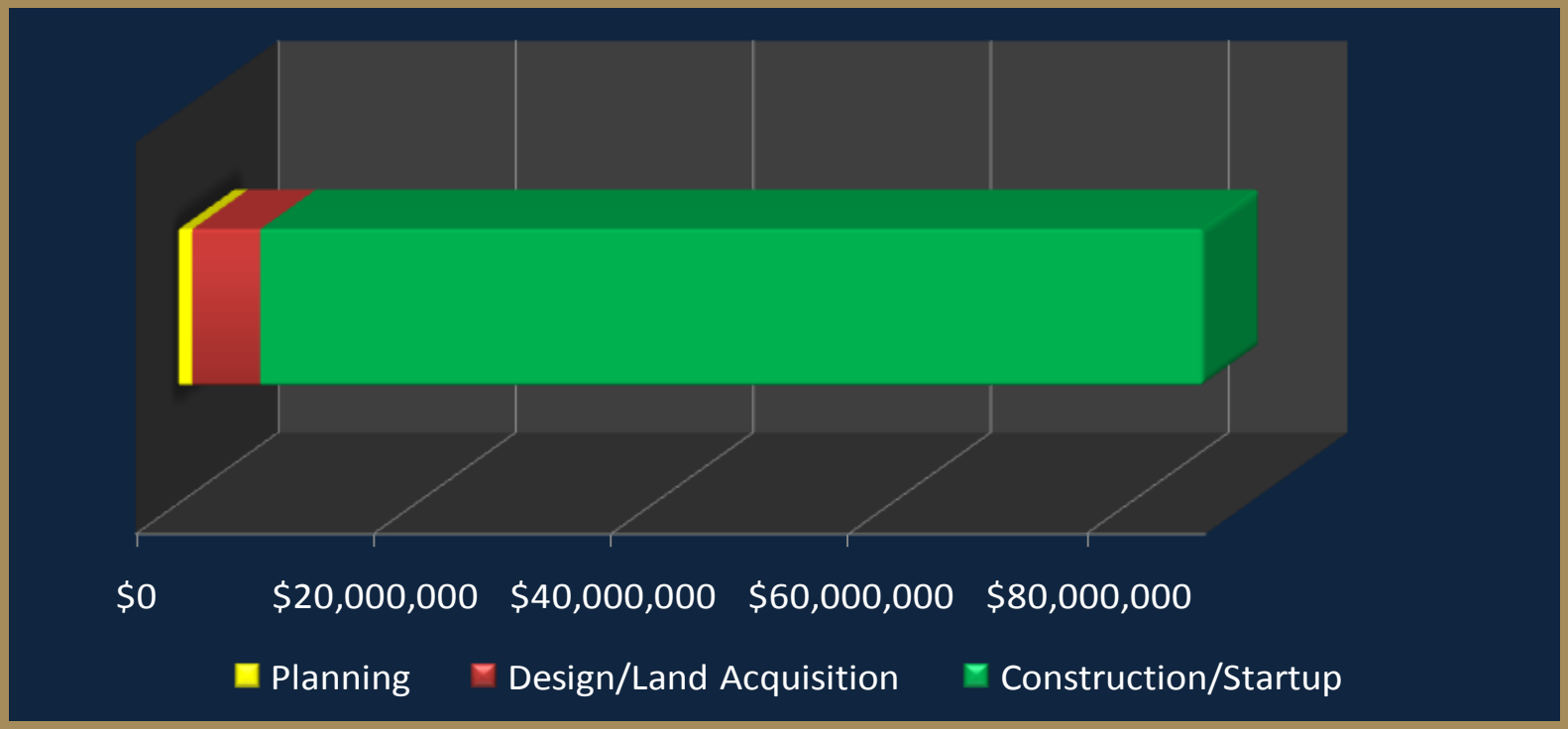
Wastewater Program Update

December 2009

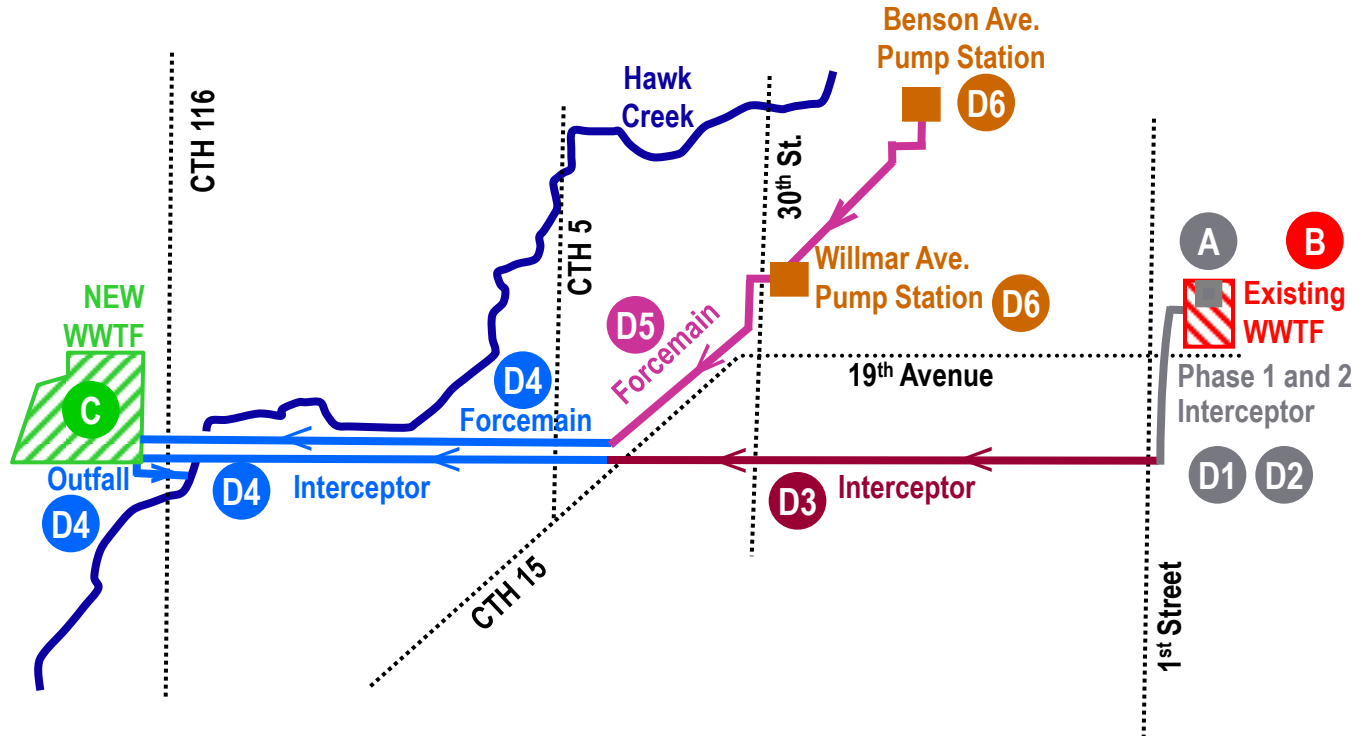


Construction & Startup

Program Cost: \$86.2 million



WASTEWATER PROGRAM PROJECT PLAN



- | | | |
|--|---|---|
| <p>CONTRACT A Excess Flow Pump Station</p> <p>CONTRACT B Decommissioning</p> <p>CONTRACT C New WWTF</p> | <p>CONTRACT D1 Interceptor – Phase 1</p> <p>CONTRACT D2 Interceptor – Phase 2</p> <p>CONTRACT D3 Interceptor – Phase 3</p> | <p>CONTRACT D4 Interceptor, Forcemain, Outfall</p> <p>CONTRACT D5 & D5c Forcemain</p> <p>CONTRACT D6 Pump Stations</p> |
|--|---|---|

Conveyance System

- **37,000 ft. of 36-, 48- and 54-in. interceptor sewer**
- **Falls 18 ft. from existing WWTF to new WWTF**
- **Eliminated two existing and one proposed pump station + future**
- **Open excavation, tunneling and directional drilling**
- **Deepest excavation – 42 ft.**
- **Two pump stations**
- **30,000 ft. of force main**
- **2,800 ft. of outfall to Hawk Creek**



Construction Progress

July 2009



Construction Progress September 2009



Construction Progress – Admin. Building

November 2009





Biosolids Storage/Truck Loading to Land Application

Biosolids Thickening

Industrial Biosolids Storage

Industrial Influent Selector

Industrial Oxidation Ditches

Industrial Clarifier

Chemical Feed Systems

Municipal Clarifiers

UV Disinfection

Municipal Oxidation Ditches

Electrical Power Building

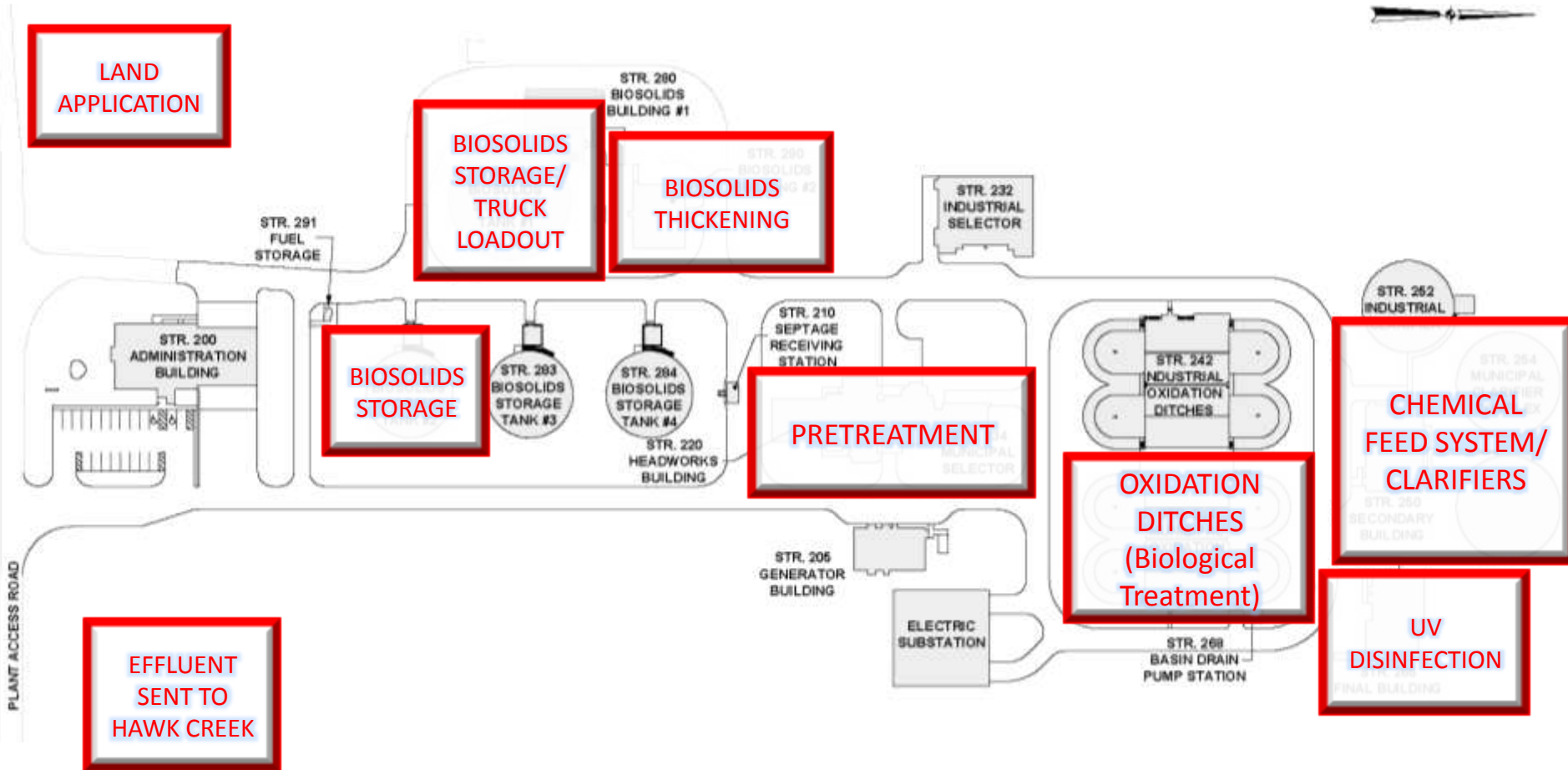
Municipal Pretreatment

Municipal Biosolids Storage

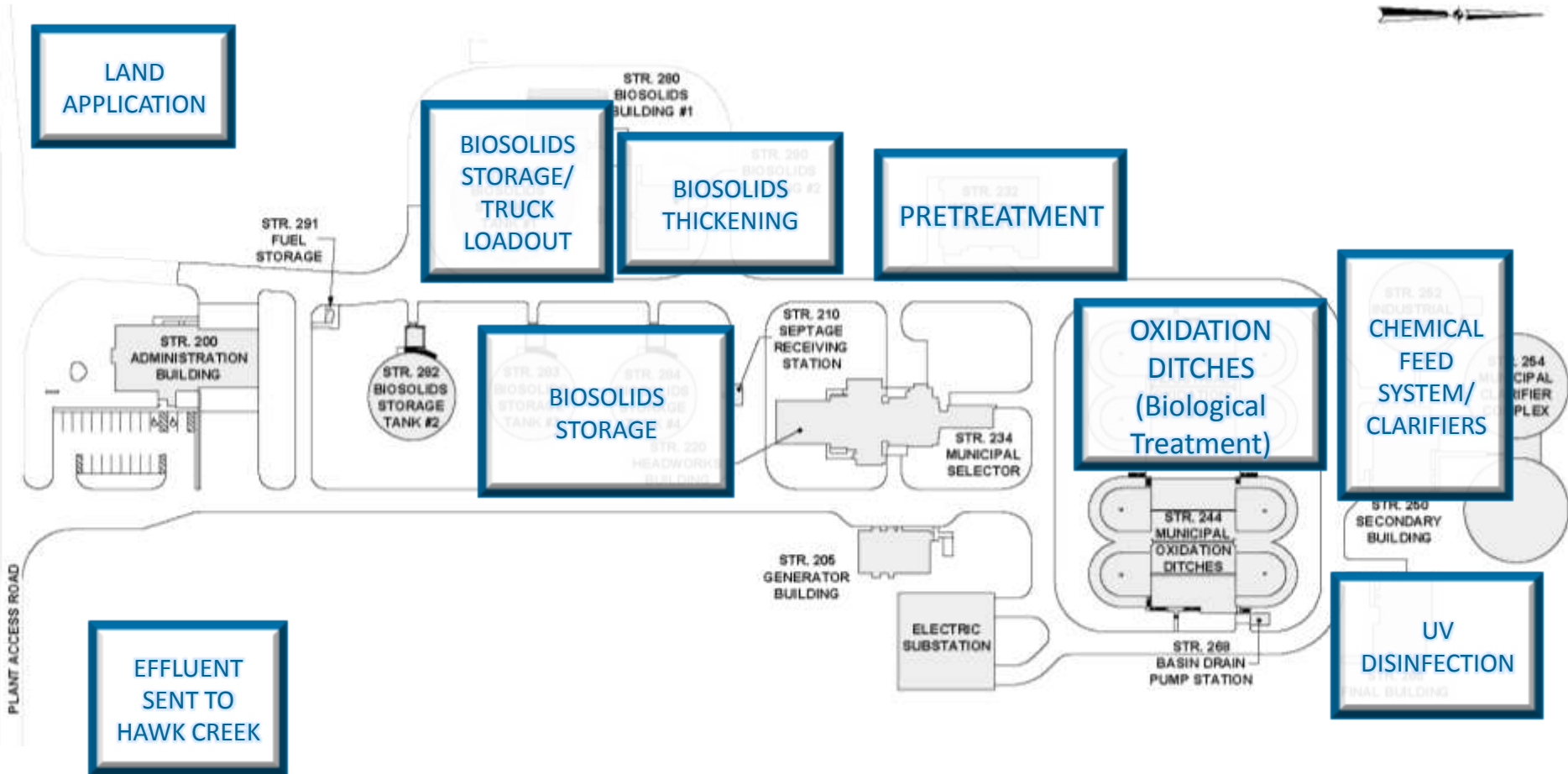
Admin. Building (Maintenance, Laboratory, Control Systems, Personnel)

The New WWTF

Municipal Wastewater Flow



Industrial Wastewater Flow



Wastewater 101

Oxidation Ditch



Pollutant



*Microorganism
(Zooglea)*

Clarifier

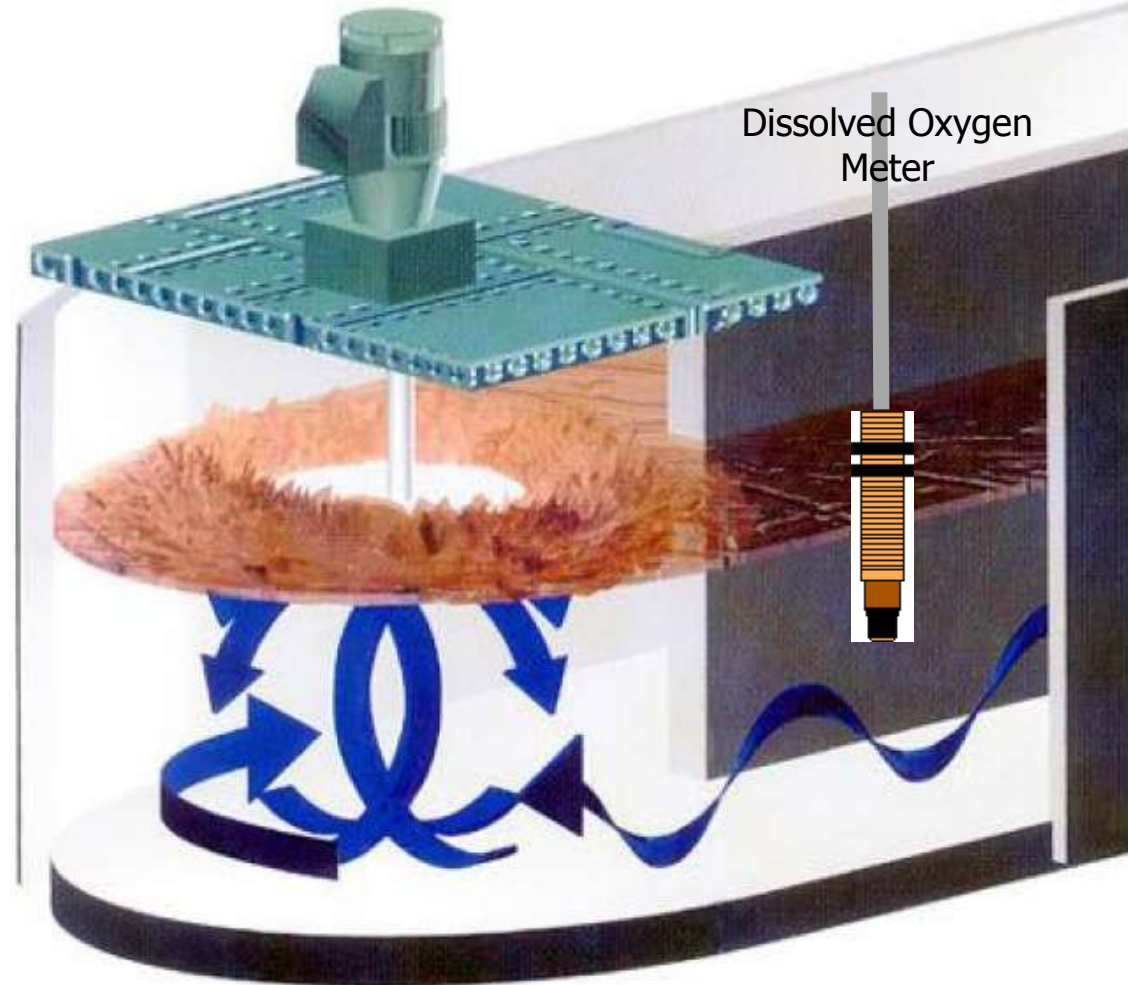


Construction Progress – Screw Pump

November 2009



Construction Progress – Oxidation Ditch November 2009



Construction Progress – Clarifier

November 2009



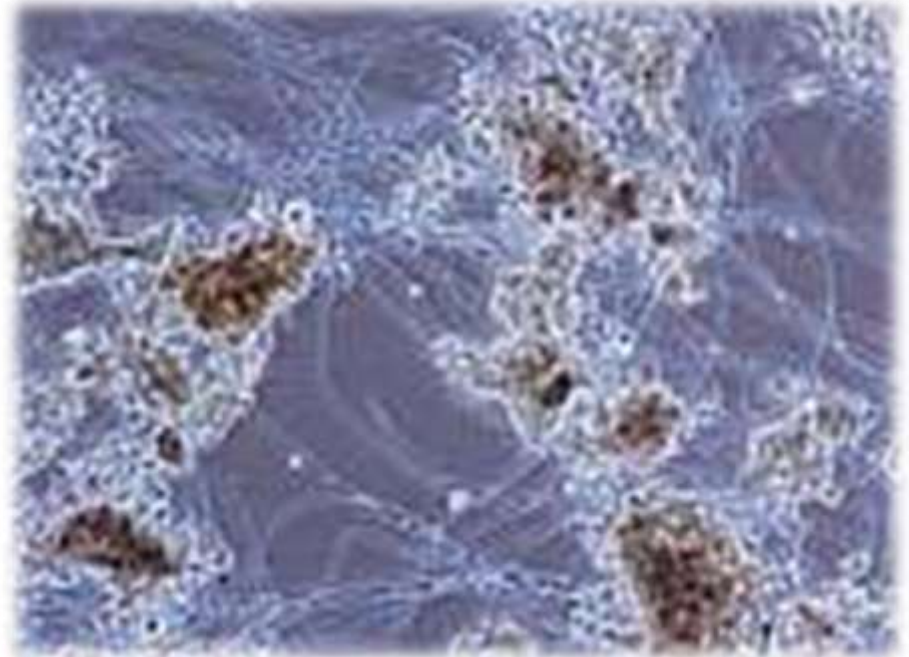
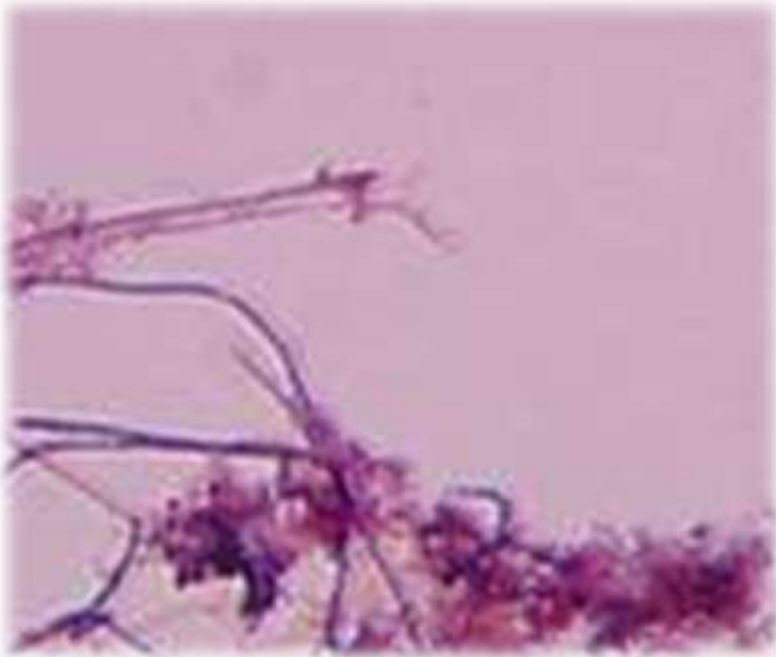
Treated (Clarified) Water to Hawk Creek after UV Disinfection



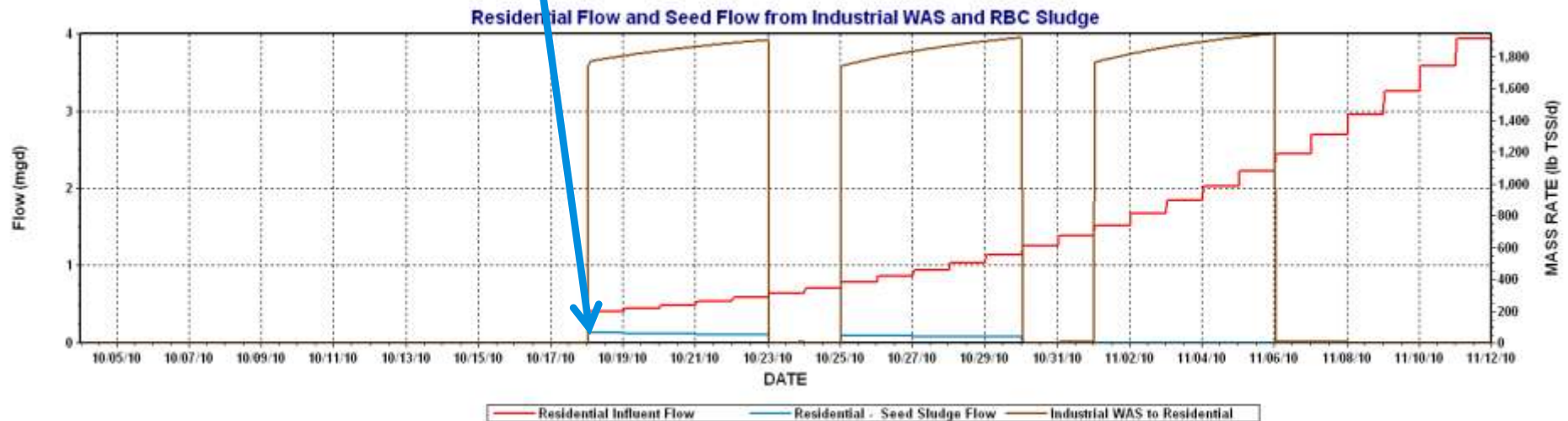
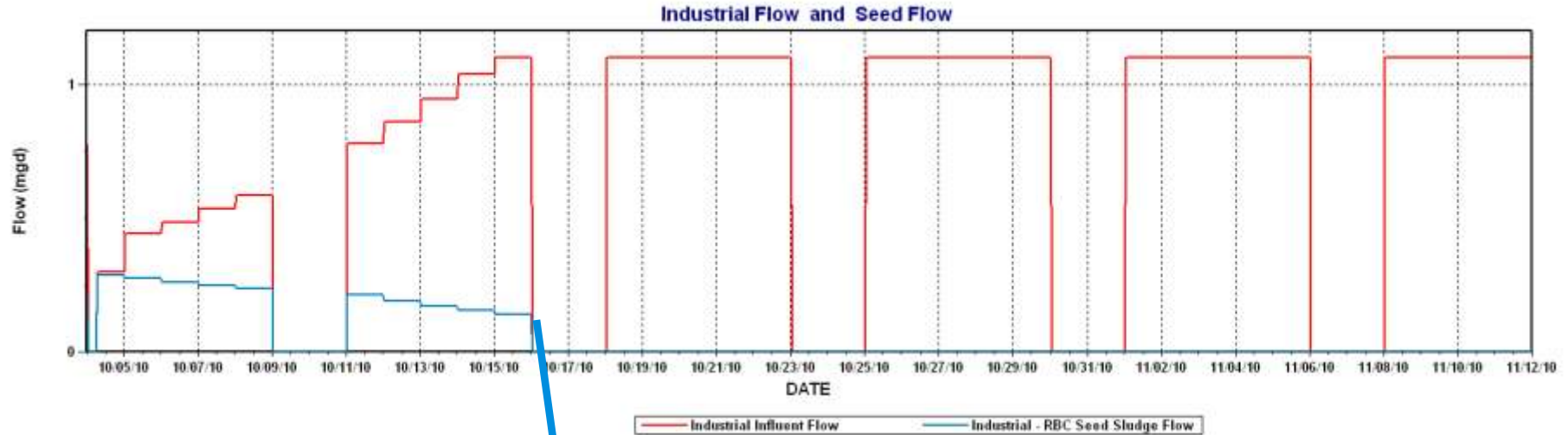
Biological Process Startup - Sept. 2010

- **Microorganisms from existing plant used as “starter” for new plant biology**
- **Flushed daily from old plant to new plant via new interceptor sewer**
- **Microorganisms multiply in each oxidation ditch**
- **4-6 weeks necessary to grow enough microorganisms to treat incoming wastewater at new plant**

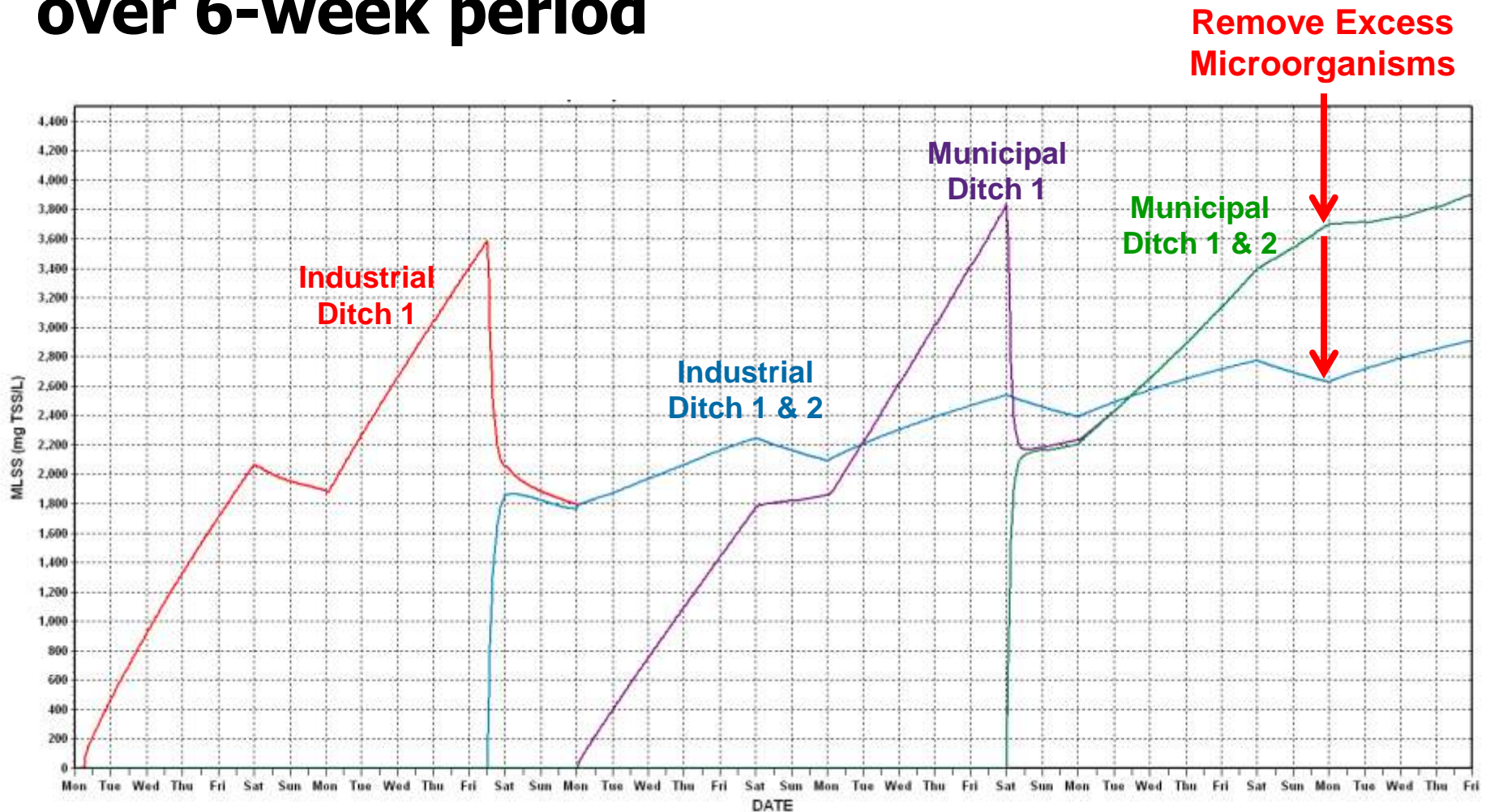
Microorganisms (Zooglea)



Adding Wastewater Incrementally



Startup Period Buildup of microorganisms in oxidation ditch over 6-week period



Training

- Train City personnel in the operation and maintenance of the new facility
- 9-12 months



Questions

