



The Village of Deerfield, Illinois

## Deerfield Wastewater Reclamation Facility Design Report Update

### Public Informational Meeting No. 2

November 12, 2008



## Presentation Outline

- Project Goals
- WRF History
- WRF Needs and Project Drivers
- Key Consideration
- Recommended Plan and Costs
- Next Steps & Schedule



## Goals of WRF Project

- Meet environmental requirements for the lowest practical cost to the ratepayers.
- Improve efficiencies and reliability by replacing outdated treatment processes and equipment.
- Provide confident direction for the next several decades.
- Maintain or improve aesthetics for neighbors
- Flexibility for future regulations

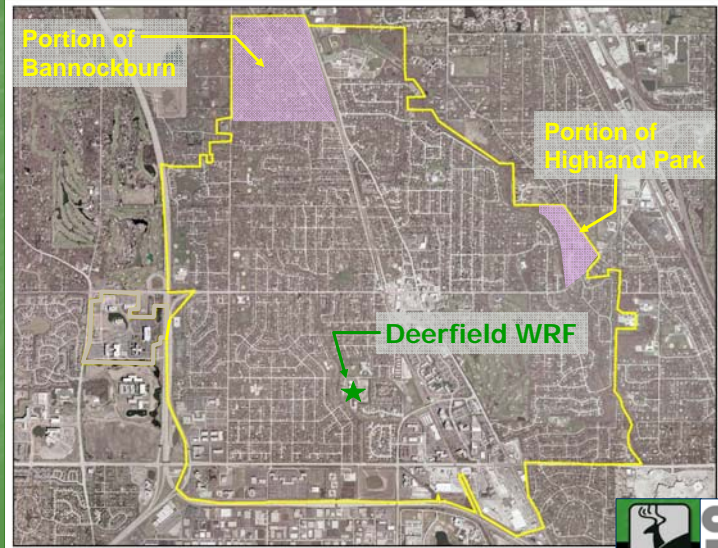


## Village Involvement

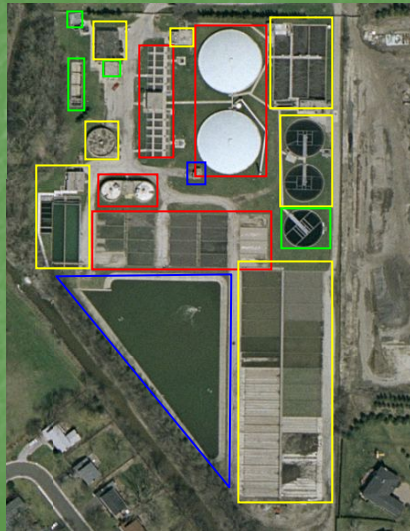
- Planning effort began in late February
- 5 Staff Review Meetings
- Several Field Trips To Similar Plants
- 3 Committee-of-the-Whole Meetings
- 2 Public Meetings (including tonight)



# Deerfield WRF Service Area



# Wastewater Reclamation Facility History of Construction



- 1950s
- 1960s
- 1970s
- 1980s

*Most of the plant  
is more than 30  
years old!*



# Project Need and Drivers

1. Plant age and deficiencies
2. Space needs, controls/automation
3. Regulatory changes



# The WRF is Showing Its Age



## The WRF is Showing Its Age



## Storage, Maintenance, and Office Spaces are Limited



## System Controls are Outdated and Unreliable



## Regulatory Concerns

### Existing Concerns:

- Minor deficiencies with respect to current regulations

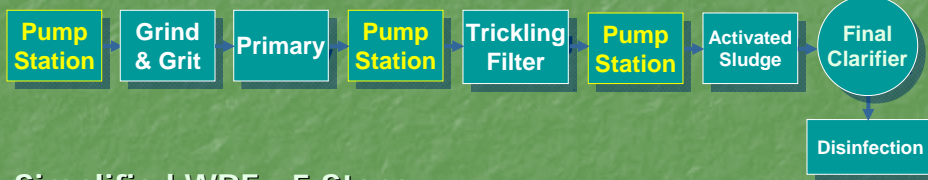
### Future Concerns:

- More Stringent Effluent Limits Are Certain
  - Phosphorus
  - Nitrogen
- Flexibility for future unknown limits



## Key Considerations - Simplify the WRF

### Existing WRF - 9 Steps



### Simplified WRF - 5 Steps

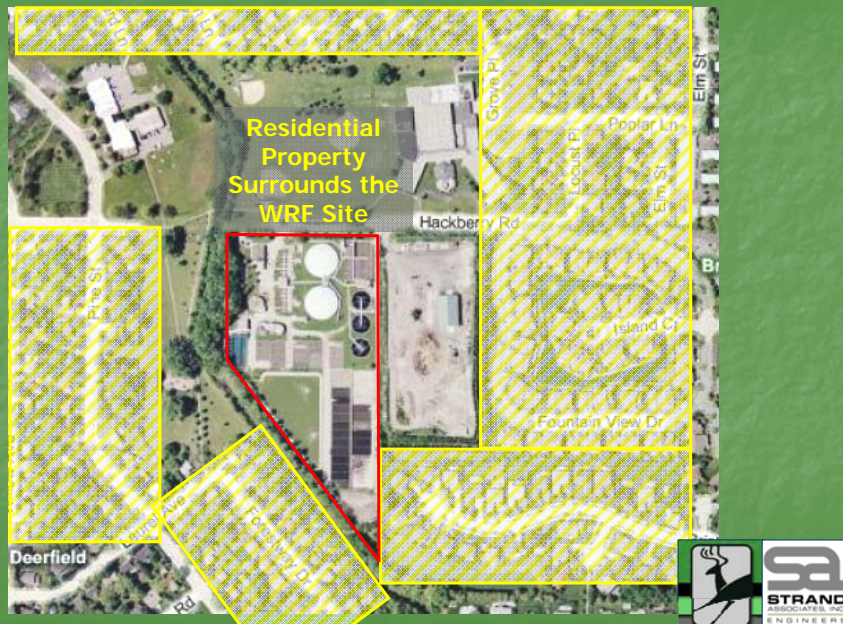


- Lower Capital \$
- Lower Operating \$
- Lower Maintenance \$

- Easier to Operate
- Easier to Maintain
- Improved Flexibility



## Key Considerations – Nearby Residences



## Key Considerations - School and Parks



## Key Considerations – Construction Noise, Traffic, Access



## Construction Impacts and Controls

- Approximate 18-month construction project
- Traffic, Parking, Access, Safety Concerns:
  - 200+ concrete trucks – primarily duration the 1<sup>st</sup> year
    - Up to 20 trucks in a single day
  - Several hundred dump trucks over duration of the project
    - Greatest concentration during the 1<sup>st</sup> year
  - Dozens/hundreds of semi-trucks carrying equipment, rebar, pipe, etc. spread over 18-month duration
  - Personal vehicles for 20 to 50 workers daily
- Related Aesthetic Concerns During Construction
  - Noise
  - Dust
  - Vibration



## Construction Impacts and Controls

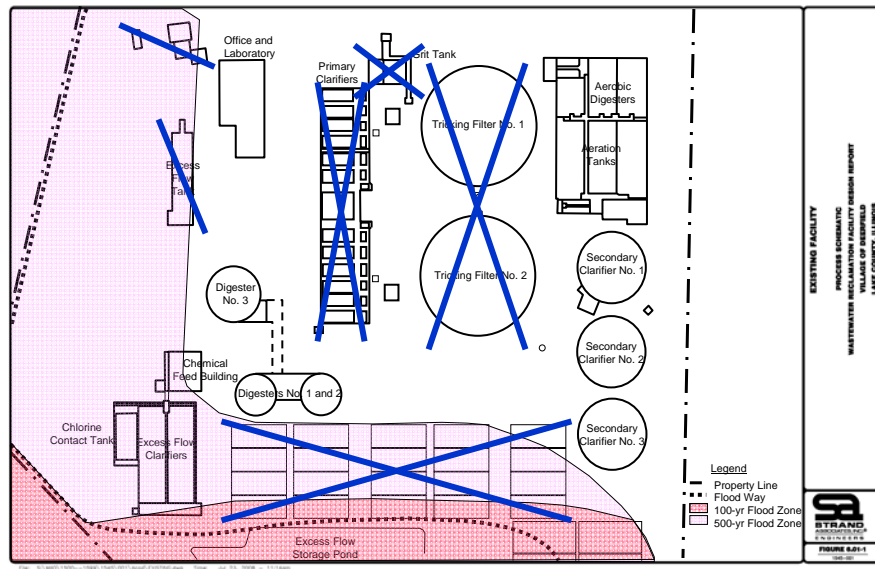
- Construction Meetings for Local Residences and Businesses
- Time-of-Day Controls
  - Construction
  - Deliveries
- Dust Control Measures
- Street Maintenance and Cleaning
- Special Requirements
  - Local Festivals
  - Holidays
  - Others Identified



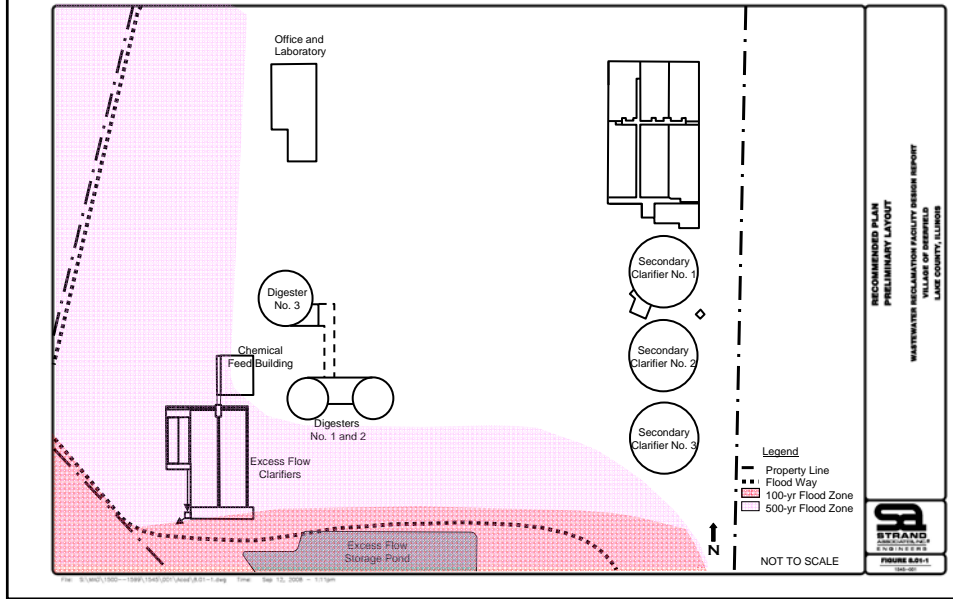
# Recommended Project



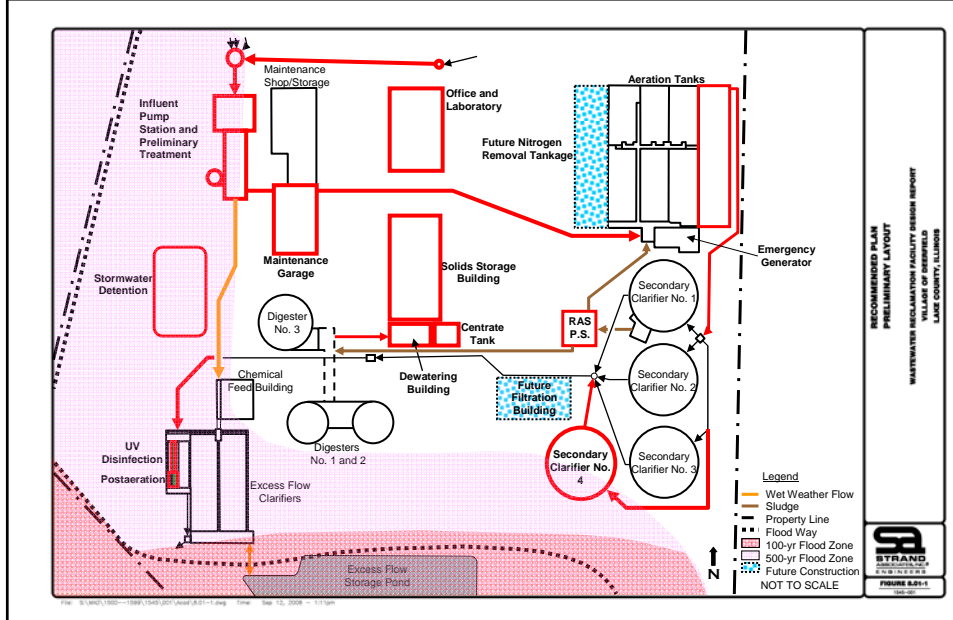
# Existing Site Layout



# Recommended Plan Layout



# Recommended Plan Layout



## Major Changes to WRF

- Simplified treatment and operations
- Increased capacity for wet weather
- Improved reliability
- Improved flexibility
- Improved efficiency
- Reduced energy and carbon footprint



## Opinion of Probable Project Cost

	<u>Total Cost</u>
Influent Pumping Station-Preliminary Treatment	\$2,571,000
UV Disinfection, Postaeration and Outfall	\$681,000
Wet Weather Flow Improvements	\$792,000
Emergency Generator	\$324,000
Stormwater Management	\$150,000
Site Demolition	\$340,000
Biological Treatment Modifications	\$3,553,000
Biosolids Management Modifications	\$1,128,000
Subtotal	<u>\$9,539,000</u>
Mechanical (20 percent of subtotal)	\$1,908,000
Electrical (25 percent of subtotal)	\$2,385,000
HVAC (5 percent of subtotal)	\$477,000
Site (8 percent of subtotal)	\$763,000
Administration Building Allowance	\$875,000
Office Renovation/Garage Addition Allowance	\$732,000
Deep Sewer Replacement Allowance	\$404,000
Subtotal	<u>\$17,083,000</u>
Contractor's General Conditions	<u>\$1,367,000</u>
Subtotal	<u>\$18,450,000</u>
Contingencies and Professional Services	<u>\$6,458,000</u>
Total Opinion of Probable Cost (3rd Quarter 2008)	<u>\$24,908,000</u>
Opinion of Probable Bid Cost (4th Quarter 2009)*	<u>\$26,474,000</u>

\*Includes 5 percent annual inflation rate.



## Opinion of Probable O&M Costs

	2007/2008 Budget	2011/2012 Budget (2008 dollars)	2011/2012 Budget (2011 dollars)
Personnel Services	\$925,750	\$810,000	\$885,100
Training and Development	\$4,800	\$4,800	\$5,200
Contractual Services - Biosolids	\$35,400	\$68,000	\$74,300
Commodities	\$148,000	\$148,000	\$161,700
Utilities	<u>\$288,000</u>	<u>\$240,000</u>	<u>\$262,300</u>
	\$1,402,000	\$1,270,800	\$1,388,600

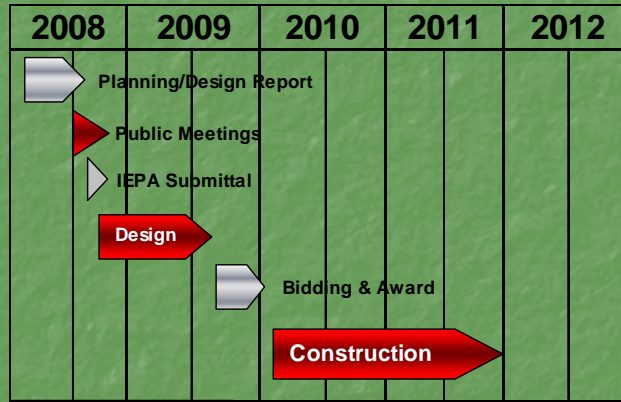


## Upcoming/Future Tasks

- Stakeholders Meeting – Parks and School
- Board Acceptance of Design Report – Dec. 1
- Submittal of Design Report to IEPA



# Preliminary Project Schedule



The Village of Deerfield, Illinois

*Questions and Answers*

