

# Dyersville - Tegeler Pond Project



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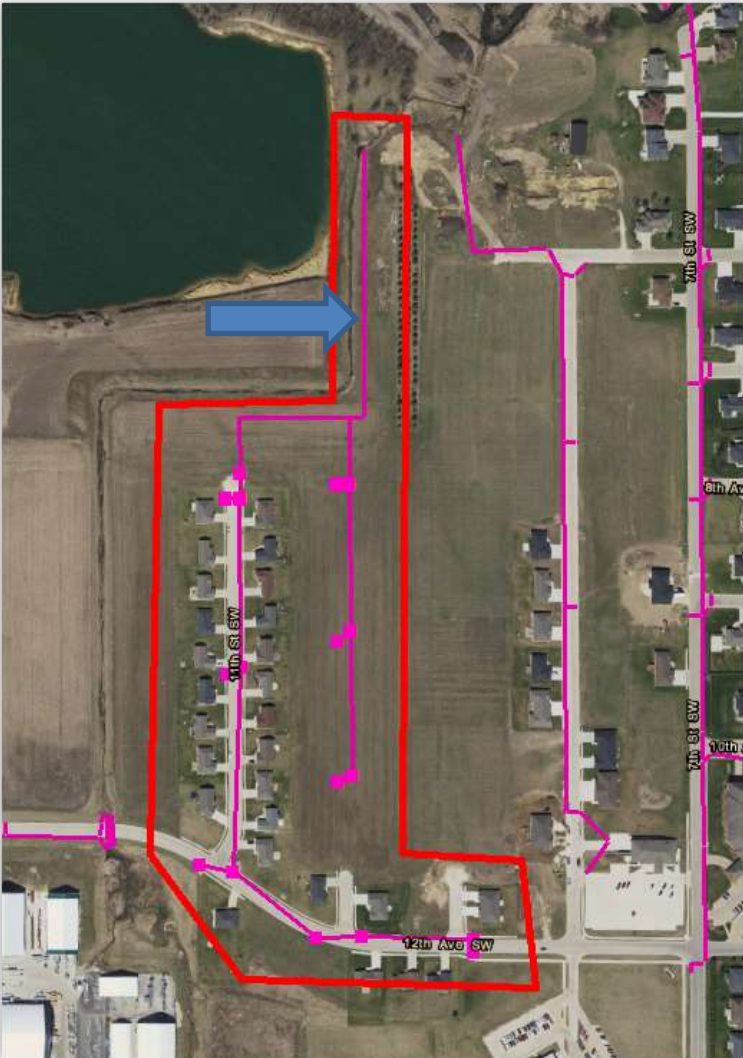


# Site Overview



- Existing Storm System
- Retention Evaluation
- Proposed System Layout
- Wetland Vision
- Relative Costs
- WHKS Recommendation
- Land Owner-City in Agreement

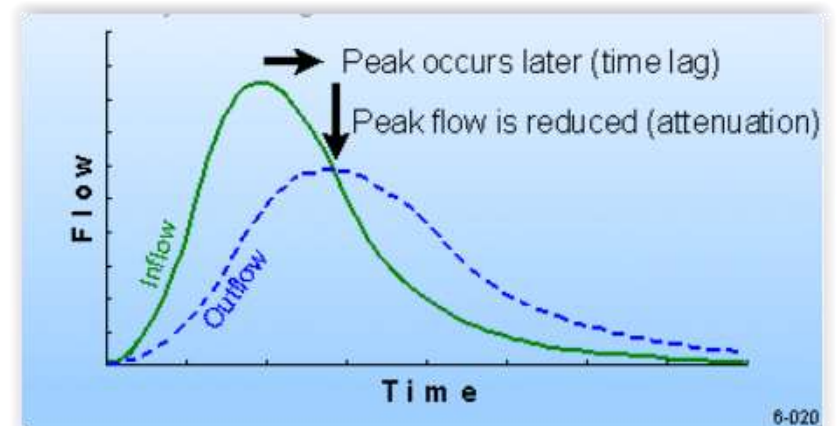
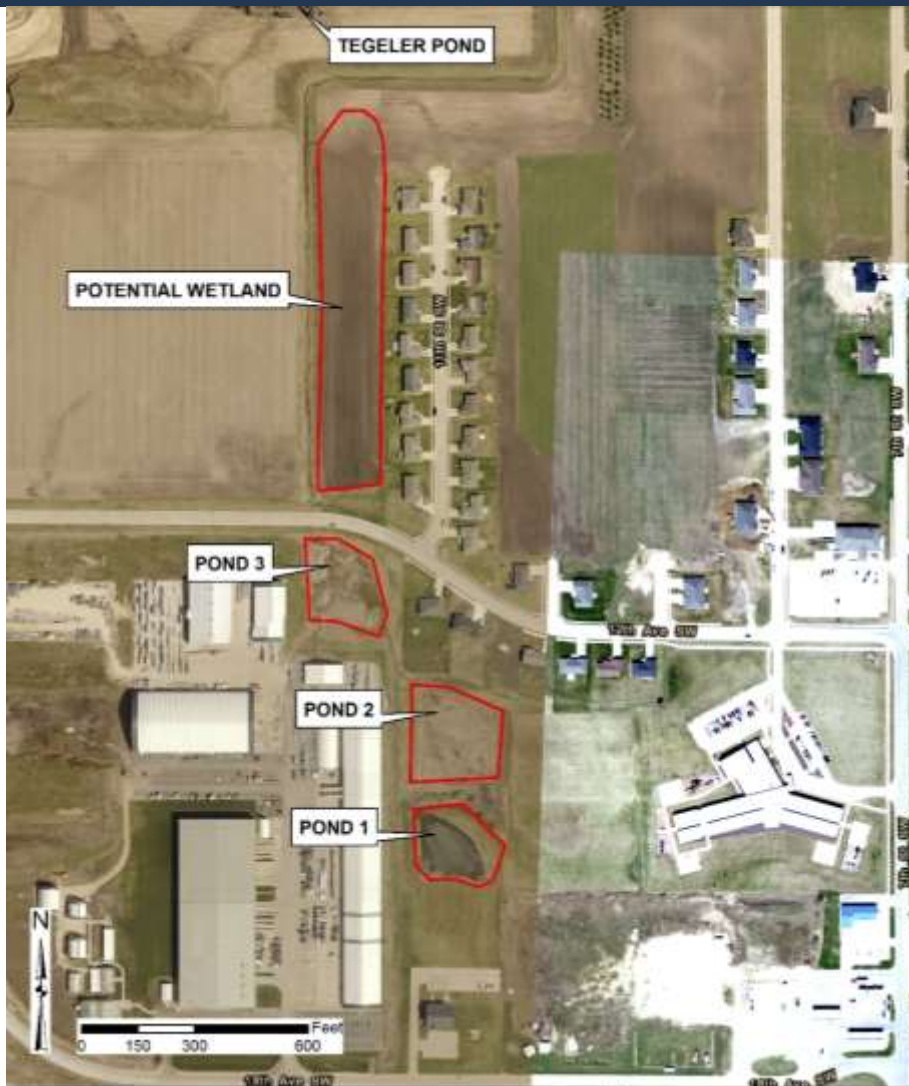
# Existing Storm System



- Existing storm main is a 36" pipe
- Evaluated for a 10-yr 24-hr runoff event
- Existing pipe cannot convey design event
- No additional capacity available
- Existing storm sewer layout does not allow for the proposed development



# Retention Evaluation



# Proposed Storm System Layout



- Realignment of sewer will be required regardless of conveyance from the south
- Minimum 48" pipe required to convey design event for existing, w/ existing 36" pipe relayed
- Proposed subdivisions should consider large storm overland routes
- Additional capacity needed for rerouted flow

# Capacity Analysis

Pipe Size	Capacity*	Correlating Event (stand alone pipe)	Correlating Event (combined pipe)
36 in	58	<2	<2
48 in	124	~10	~2
54 in	170	~25	~10
60 in	225	~50	~25
66 in	290	~100	~50
72 in	366	>100	~100

\*Several Assumptions

# Wetland Options



- **Wetland as an Alternative**
- **Would Provide Water Quality Benefits & Sediment Control**
- **Provided limited factor of safety**
- **Aesthetics and Recreation consideration**
- **Without wetland, small pond needed**
- **Without wetland, ditch or pipe conveyance still required**



# Wetland Vision





# Recommendations

- **Project needs must be coordinated with the developer**
- **Additional developments will need detention ponds**
- **Construct 54" equivalent RCP trunkline**
- **Alternative: 48" RCP with developer relaying 36" pipe with overflow to Tegeler Pond (dual trunklines)**
- **Depending on grading, low profile pipe may be required (cost increase)**
- **Pond impacts reduced by providing sedimentation area and removing nutrients with wetland**

## **Future Culvert across Proposed East-West Avenue (overflow)**

- **~80 L.F. of 12' x 5' Culvert:**
- **\$120 - \$150K**

# Relative Cost

- **New 48" RCP main: \$330,000 (\$220/ft)**
- **New 54" RCP main: \$390,000 (\$260/ft)**
- **New 60" RCP main: \$427,000 (\$285/ft)**
- **New 66" RCP main: \$457,500 (\$305/ft)**
- **New 72" RCP main: \$525,000 (\$350/ft)**
  
- **New Wetland: \$200K to \$300K+ (however)**
  
- **This does not include relaying of private 36" storm sewer or structures**
- **Length of the proposed storm sewer pipe is estimated at 1,500 feet**

# Other Considerations

## Reconstruction Pond Outlet





# Discussion

- Questions
- Comments
- Direction