

COUNCIL ACTION FORM

SUBJECT: NORTHRIDGE PARKWAY SUBDIVISION FLOOD MITIGATION

BACKGROUND:

As reported at numerous City Council meetings, Public Works staff originally submitted 11 projects for consideration under the Federal Emergency Management Agency's (FEMA) Hazard Mitigation Grant Program (HMGP); however, nine of the projects have been denied due to failure to achieve a benefit cost ratio greater than 1.0. One of the projects still active in the HMGP process is the Northridge Parkway Subdivision Flood Mitigation Project.

Public Works and Clapsaddle-Garber Associates (CGA) staff have held five neighborhood project meetings (August 2011, January 2012, October 2012, November 2012, and April 2013) to gather information and feedback from residents. Additionally, staff and CGA have held numerous individual meetings with residents to gather additional information and answer questions, including results of analysis for additional alternatives to fix the flooding in the neighborhood.

At the October/November 2012 meetings, Alternate 1 (see description below and information in attached April 29, 2013 presentation) was presented. During those meetings, there was a lot of resistance from residents to this alternative. In analyzing this alternate, staff recognized that the resistance was to work in the existing green (open) spaces, especially those living adjacent to proposed Basin 4. Although the areas where work was proposed are covered by existing utility and/or drainage easements held by the City of Ames (COA), it was still recognized that support for the project through Alternate 1 was unlikely to achieve a consensus from the residents. Residents felt that having a detention basin in their "back yard" would negatively impact the value of their home.

Immediately following the October/November 2012 meetings, staff and CGA met to start developing a new alternative that would also achieve flood mitigation for the 100-year storm events that cause the majority of the problems in the area. Several solutions were evaluated and ultimately Alternate 2 (see description below and information in attached April 29, 2013 presentation) was created and presented on April 29, 2013. Comment forms were completed by those who attended (and two others who met individually with COA or CGA staff), which resulted in unanimous support (of 26 residents) for Alternate 2. Two of the residents adjacent to Basin 1 indicated they would also like this Alternate 2 to include some grading work to increase capacity of that existing basin. If this is included in Alternate 2, staff would need to ensure that residents adjacent to the area are supportive of this part of the solution.

The alternatives presented at the April 29, 2013 neighborhood meeting include:

Alternate 1 (originally presented in October/November 2012): Provide additional upstream storage by reshaping existing Detention Basins 1, 2, and 3, as well as creating a new Basin 4 north of Maplewood Road within existing open space. Overland flow paths would be created at the two low points within the street at the intersection of Northridge Parkway and Valley View Road and the intersection of the pedestrian trail with Ridgetop Circle. The trail on the north side of Moore Memorial Park would be lowered. Minor storm sewer modifications would be included in Alternate 1.

Alternate 2: Install a new storm sewer system beginning at the low point of Northridge Parkway east of the intersection with Valley View Road, then running east to the west ditch of George Washington Carver Avenue, and then running south within the GW Carver right-of-way until it daylights in the ditch between the two electrical sub-stations. Overland flow paths would be created at the two low points within the street at the intersection of Northridge Parkway and Valley View Road and the intersection of the pedestrian trail with Ridgetop Circle. The trail on the north side of Moore Memorial Park would be lowered. Storm sewer modifications would occur in Basin 2. The existing channel between the substations would be reshaped and the existing culvert under the trail would be modified as needed. Moore Memorial Park Pond would be drained, cleaned of silt, reshaped to accommodate more storage, and the outlet would be modified as needed to maintain current flows.

In addition to the Alternates, timeline and funding have been part of the flood mitigation project discussions. Though staff continues to pursue FEMA funding, the delayed achievement of a resident supported solution has put us in a position where the State of Iowa would need to experience another Presidentially-declared disaster (this would not have to be in Ames) before FEMA funding will be available again. With this unknown, **residents attending the April 29, 2013 meeting indicated that they prefer for City Council to authorize Alternate 2 to move forward with local funds.** If FEMA funds are pursued, there is no definitive answer that this project will be funded. If it does, it could be several years before the project would be under construction. If local funds are approved, the project construction could commence possibly in fall 2013 with completion in 2014.

Since 2010, CGA has been working on this project so they have a vast amount of knowledge about the project and have developed relationships with the stakeholders. With that in mind, it is recommended to establish a new contract with CGA, if local funding is authorized, so that detailed design (through bid letting) can commence immediately.

Included in the 2012-2017 Capital Improvements Plan (CIP) is a program entitled Flood Response and Mitigation Projects that includes \$820,000 in General Obligation Bonds and \$325,000 in Storm Sewer Utility Funds. As part of the 2009-2014 CIP, Moore Memorial Park basin improvements were included in the Storm Water Facility Rehabilitation Program with funding in the amount of \$100,000 from Storm Sewer Utility

Funds. The unspent portion of these funds (\$98,998) have continued to be carried forward with budget amendments in anticipation of still making the necessary maintenance improvements to the basin once a flood mitigation project solution is created. The maintenance improvements include removing excess silt from the basin including cleaning out the inlet pipes, removing volunteer trees in the basin embankment/outlet area, and creating some water quality features since duckweed was a significant problem in the basin. This funding can be combined with this flood mitigation project to make all of the improvements at once.

Below is a **summary of expenses** in the Flood Response and Mitigation CIP Program:

Projects Currently Proposed	City Cost
Utah Drive Landslide (combined with 2010/11 Storm Water Facility Rehabilitation Program -Spring Valley Subdivision) est. of necessary funding from this program	\$175,000
Trail Ridge Landslide (est.)	\$500,000
Stuart Smith Park Bank Stabilization project -est. (\$695,000 project estimate)	\$120,000 (Local Match)
Northridge Parkway Subdivision Flood Mitigation Project (est.)	\$385,000
N. Riverside Water Main (actual)	\$ 62,755 (Local Match)
TOTAL	\$1,242,755

Below is a **summary of funding**:

Funding Source Proposed	Funding Amount
2009/10 Storm Water Facility Rehabilitation Program (Storm Sewer Utility Funds)	\$98,998
2012/13 Flood Response and Mitigation Projects (G.O. Bonds)	\$820,000
2012/13 Flood Response and Mitigation Projects (Storm Sewer Utility Funds)	\$325,000
TOTAL	\$1,243,998

ALTERNATIVES:

1. Direct staff to pursue Alternate 2 using local funds identified from Storm Sewer Utility Funds and G.O. Bonds and withdraw the FEMA application.

The first step under this alternative will be for the staff to enter into an agreement with Clapp Saddle Garber to complete the engineering design work for Alternate 2.

2. Direct staff to pursue Alternate 2 using FEMA (HMGP) funds, at such point in the future when application for such funds is available.

This option would require the City to wait until the next Presidential Disaster Declaration to submit a grant application.

3. Direct staff to pursue Alternate 1 using local funds identified from Storm Sewer Utility Funds and G.O. Bonds.
4. Direct staff to pursue Alternate 1 using FEMA (HMGP) funds, at such point in the future when application for such funds is available.
5. Reject the project.

MANAGER'S RECOMMENDED ACTION:

City staff and CGA have put forth great effort to work with Northridge Heights residents to develop a project that is effective in mitigating neighborhood flooding and also is acceptable to the residents. Alternate 2 achieves the mitigation goal and has support of the neighborhood. While this project may be eligible for FEMA funding, the timing for application for such funds is dependent upon a Presidentially Declared Disaster. As shown above, local funding is available for this project and would enable construction to likely commence in 2013.

Therefore, it is the recommendation of the City Manager that the City Council adopt Alternative No. 1, thereby directing staff to pursue Alternate 2 using local funds identified from Storm Sewer Utility Funds and G.O. Bonds and withdrawing the FEMA application.

Northridge Parkway Flood Mitigation Project Public Meeting

City Hall Council Chambers
April 29, 2013
5:30 PM

Presented by:
Mindy Bryngelson, P.E.
Clapsaddle-Garber Associates, Ames, Iowa



Northridge Parkway Flood Mitigation Project Public Meeting

- Project History
- Existing Flood Conditions
- Proposed Alternate Solutions
 - Alternate 1 (October/November 2012 Presentation)
 - Alternate 2
- FEMA HMGP vs. Public Funding
- Summary
- Questions

Project History

- 1993 - 1996
 - Mitigation measures investigated after 1993 flood
 - Mitigation solution could not be decided upon
 - Upstream storage implemented in remainder of subdivision development

Project History



Localized Flood History

- 1993
- 2008
- 2010



Project History

- 2010 - 2011
 - August 2010: Federal Disaster Declaration
 - December 2010: City began to investigate the use of FEMA HMGP funds
 - January 2011: Initial contact made with homeowners who had reported damage with the 2010 flood event
 - February 2011: Notice of Interest for Hazard Mitigation Grant Funding submitted to FEMA



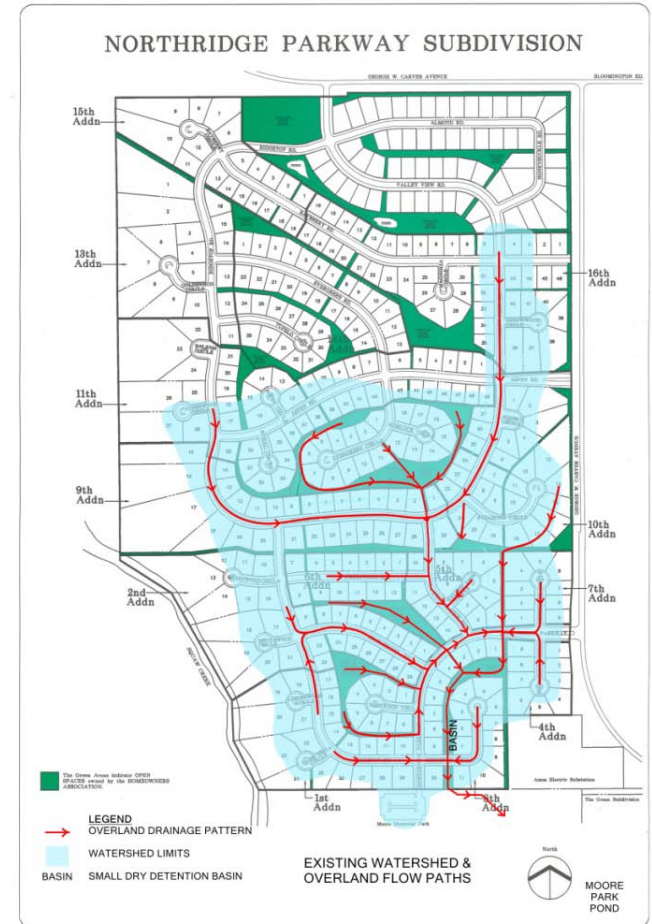
Project History

- 2011 - 2013
 - August 2011: 1st Public Meeting and request for damage documentation
 - September 2011: Began Hydraulic and Hydrologic Study
 - January 2012: 2nd Public Meeting
 - August and September 2012: Meetings with individual homeowners
 - October 2012: 3rd Public Meeting
 - November 2012: 4th Public Meeting at HOA
 - December 2012 through April 2013: Meetings with individual homeowners



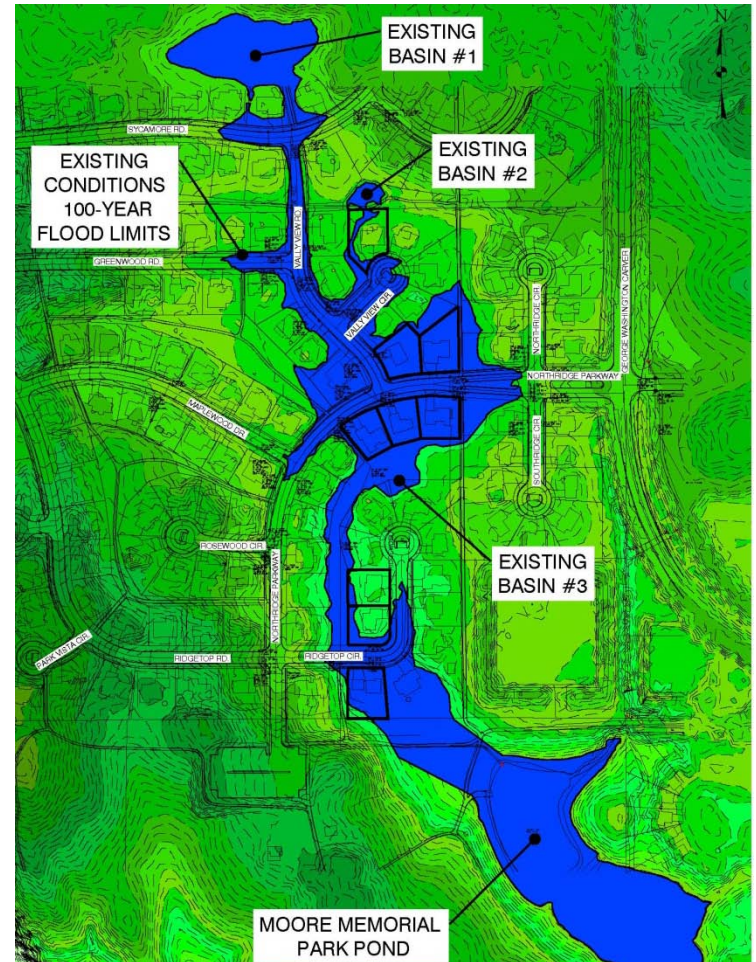
Existing Flood Conditions

- 97.86 Acres of Northridge Parkway Subdivision drain to Moore Memorial Park Pond.
- Moore Memorial Park Pond receives an additional 40 acres of runoff from Somerset and the Park.



Existing Flood Conditions

- 100-Year Storm
 - Northridge & Valley View ponds to a depth of 2.6'
 - Ridgetop Circle ponds to a depth of 2.5'
 - Moore Memorial Park Pond overtops berm by approximately 2"



Proposed Alternate 1 Solution

(October/November 2012 Presentation)

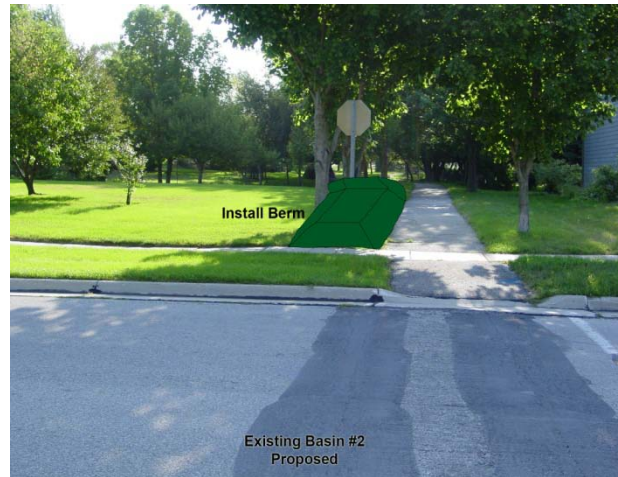
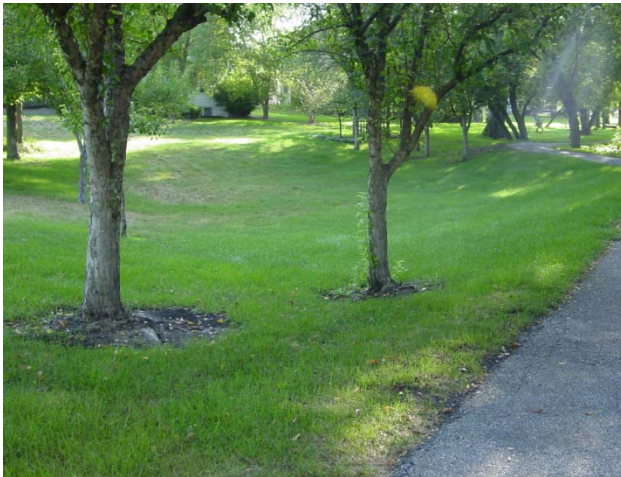
- Deepen Basin #1
- Modify Intake



Proposed Alternate 1 Solution

(October/November 2012 Presentation)

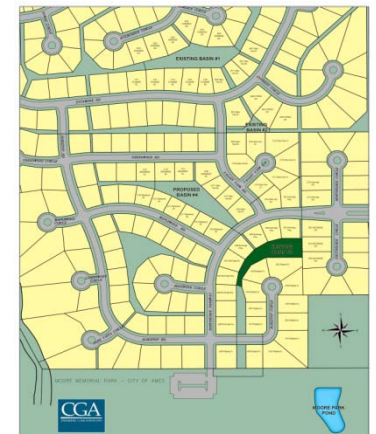
- Reshape and widen Basin #2
- Install berm along trail at Basin #2



Proposed Alternate 1 Solution

(October/November 2012 Presentation)

- Reshape and widen Basin #3 to the east



Proposed Alternate 1 Solution

(October/November 2012 Presentation)

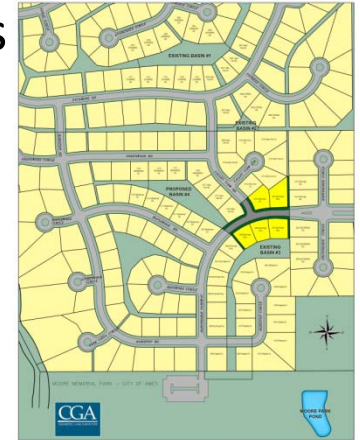
- Create Basin #4 by lowering open space approximately 2.3 feet
- Install intake and storm sewer
- Relocate trail to east



Proposed Alternate 1 Solution

(October/November 2012 Presentation)

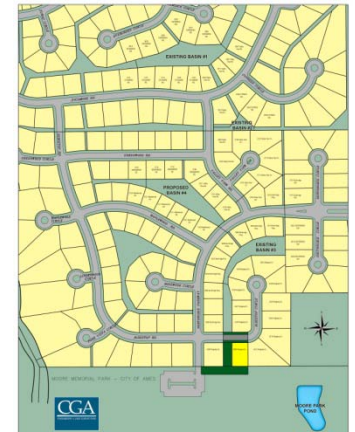
- Replace two existing single intakes with double intakes at Valley View Rd and Northridge Pkwy Intersection
- Reshape east overflow by lowering area approximately 0.8'
- Reshape west overflow by lowering trail approximately 1' and placing retaining walls on both sides.
- Lower 100-year ponding elevation by approximately 1'



Proposed Alternate 1 Solution

(October/November 2012 Presentation)

- Replace two existing single intakes with double intakes at Ridgetop Circle low point
- Reshape the overflow on the east and west sides of 2406 Ridgetop Circle
- Lower trail and add retaining wall on west and berm on east
- Lower trail in park



Proposed Alternate 1 Solution

(October/November 2012 Presentation)

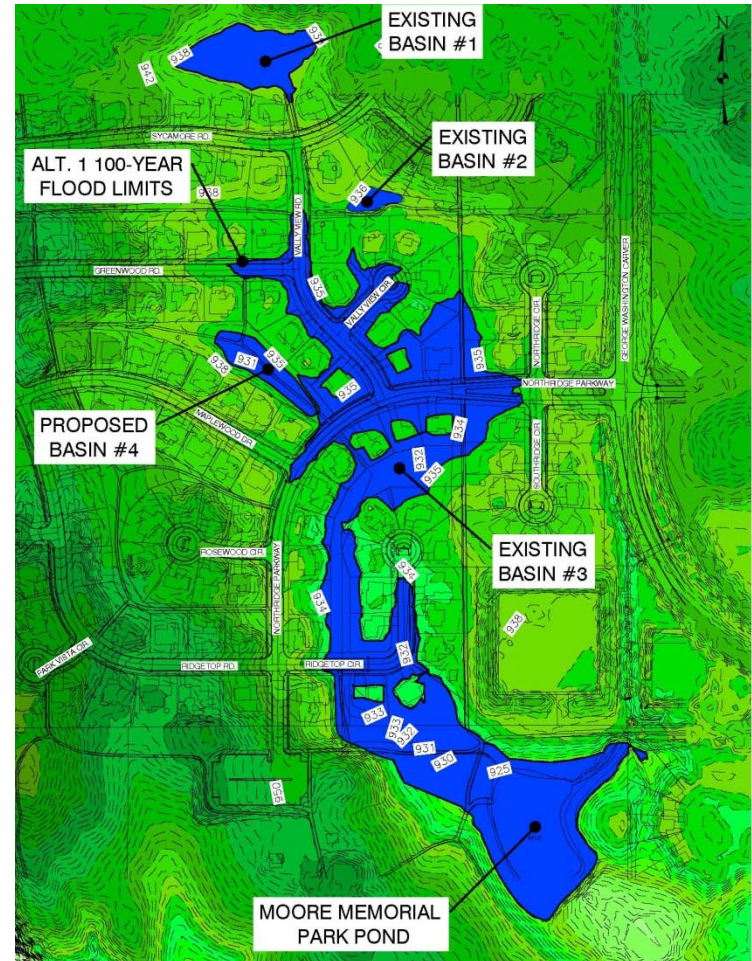
- Raise south berm of Moore Park Pond 3'
- Existing outlet to remain



Proposed Alternate 1 Solution

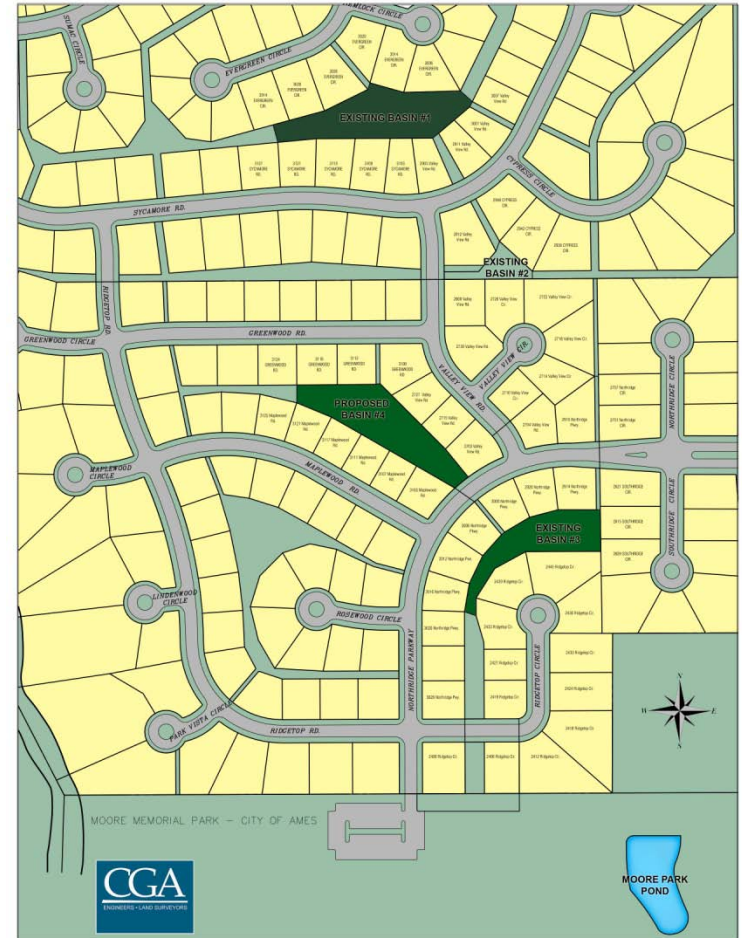
(October/November 2012 Presentation)

- 100-Year Storm
 - Lowers ponding depth at both intersections
 - Increases ponding at Moore Memorial Park Pond
 - All improvements happen within City ROW and easement areas



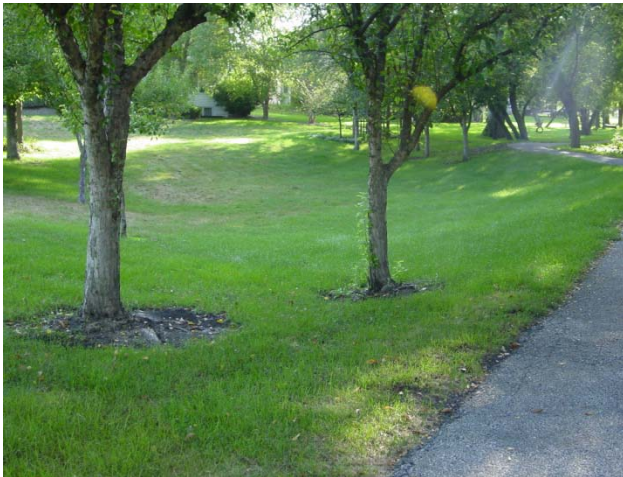
Proposed Alternate 2 Solution

- No change to the open areas highlighted. These open spaces will remain as they are today.



Proposed Alternate 2 Solution

- Install additional storm sewer at Basin #2. No change to basin size.



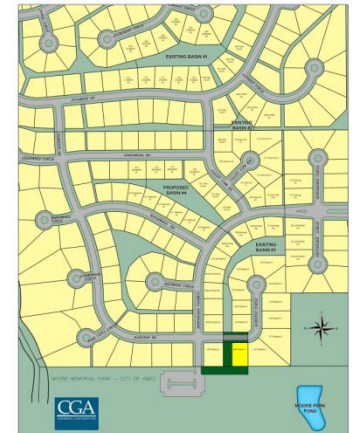
Proposed Alternate 2 Solution

- Replace two existing single intakes with double intakes at Valley View Rd and Northridge Pkwy Intersection
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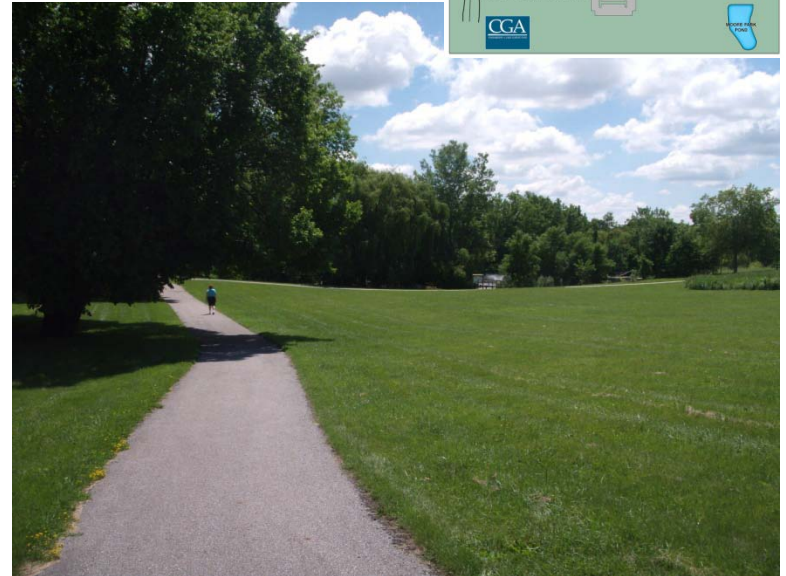
Proposed Alternate 2 Solution

- Replace two existing single intakes with double intakes at Ridgetop Circle low point
- Reshape the overflow on the east west side of 2406 Ridgetop Circle
 - If using FEMA funds
 - Lower trail and add retaining wall on west and berm on east
 - If using local funds
 - Explore Grading on private property

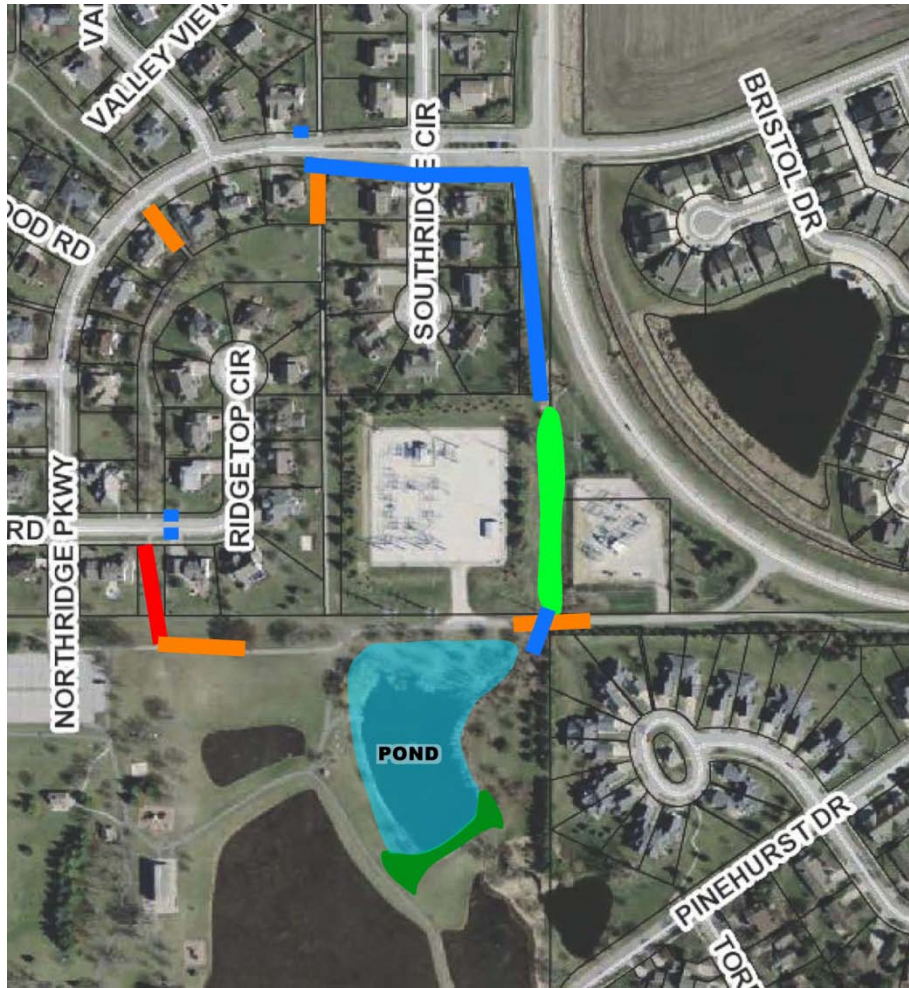


Proposed Alternate 2 Solution

- Lower trail in park to eliminate low point



Proposed Alternate 2 Solution



- Install new storm sewer from Northridge Parkway to outlet in George Washington Carver Right of Way.
- Regrade area between electrical substations



Proposed Alternate 2 Solution

- Install new storm sewer from Northridge Parkway to outlet in George Washington Carver Right of Way.



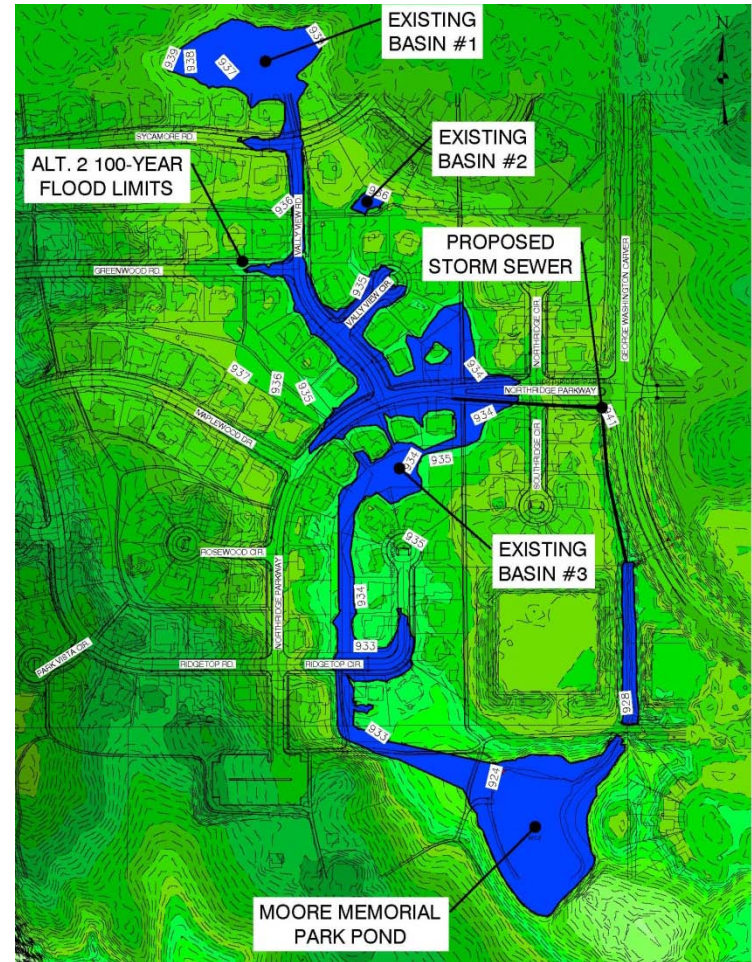
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Proposed Alternate 2 Solution

- 100-Year Storm
 - Lowers ponding depth at both intersections
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Other Alternates Considered

- Disconnecting storm sewer from Ridgetop Road and installing new storm sewer directly to Moore Memorial Park pond.
- Running an additional storm sewer along the 54" to Moore Memorial Park pond.
- Installing intakes in Moore Memorial Park parking lot and routing storm sewer to the west.
- Changing out the type of storm sewer intakes throughout the subdivision.



FEMA HMGP vs. Local Funding



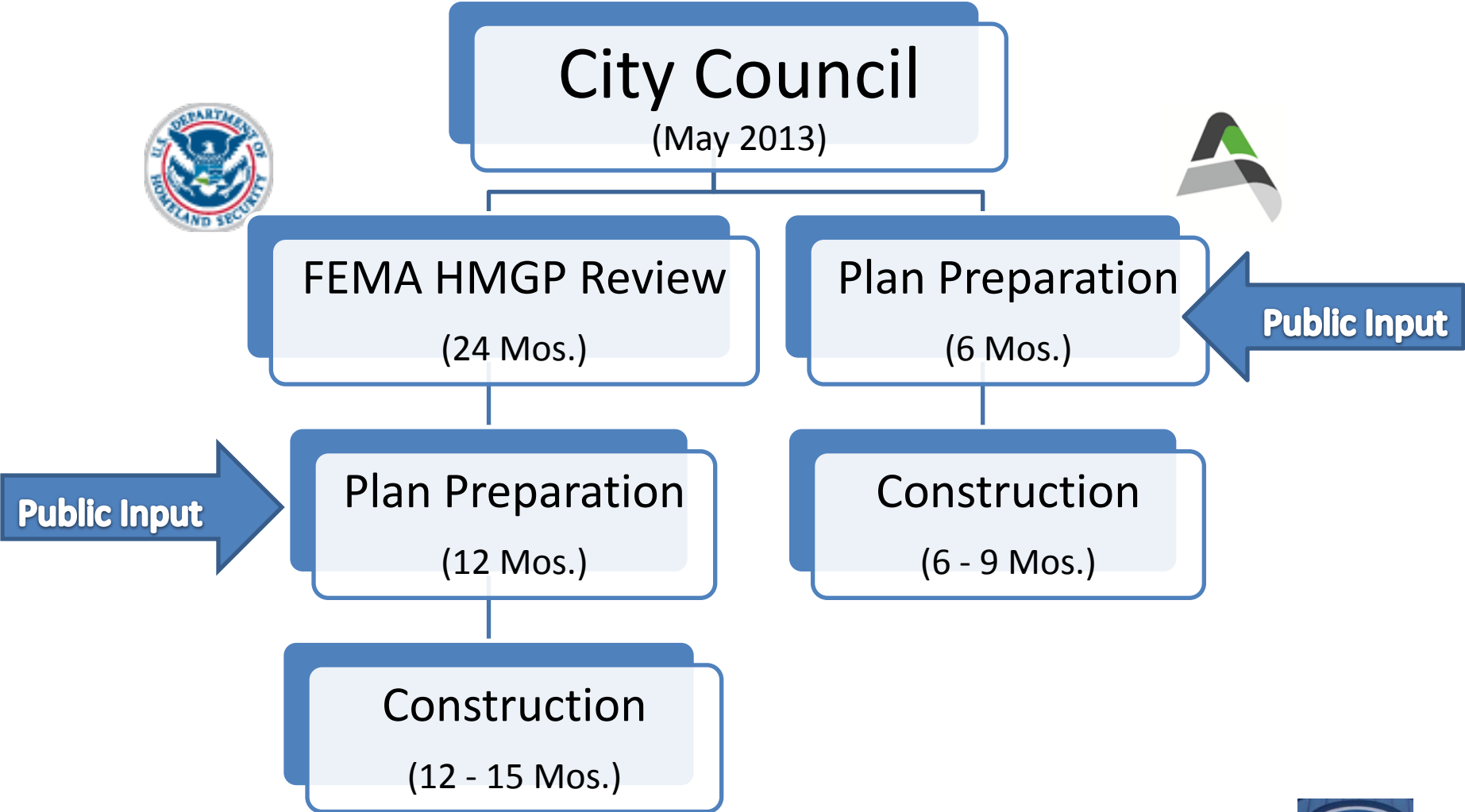
- 15% Local Funds
- Construction 2016 – 2017
- Improvements on public property only



- 100% Local Funds
- Construction 2013 – 2014
- Improvements on public and private property



FEMA HMGP vs. Local Funding



Summary

Alternate 1

- Create additional above ground storage in Basin #1, Basin #2, and Basin #3.
- Create Basin #4.
- Relocate/lower existing trails around Basins.
- Install retaining walls as needed.
- Replace low point storm sewer intakes.
- Modify Moore Memorial Park Pond.

Alternate 2

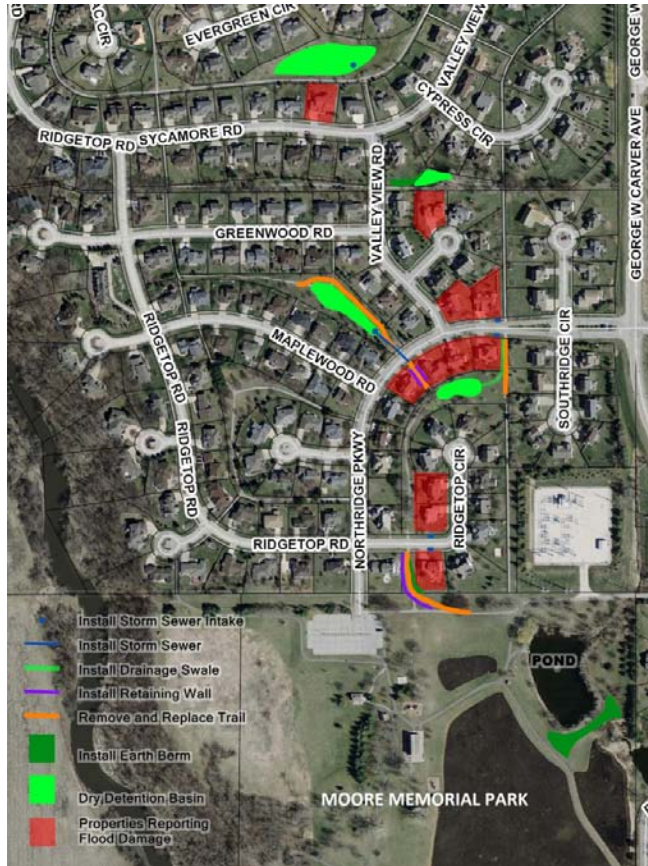
- No changes to Basin #1 and Basin #3.
- Modify storm sewer at Basin #2 outlet.
- Lower existing trails south of Northridge Parkway, add walls as needed.
- Lower existing trail or grade east of Cannon home, add wall as needed.
- Lower trail south of Cannon home.
- Modify (potentially lower) Moore Memorial Park Pond.



Summary

Alternate 1

Alternate 2

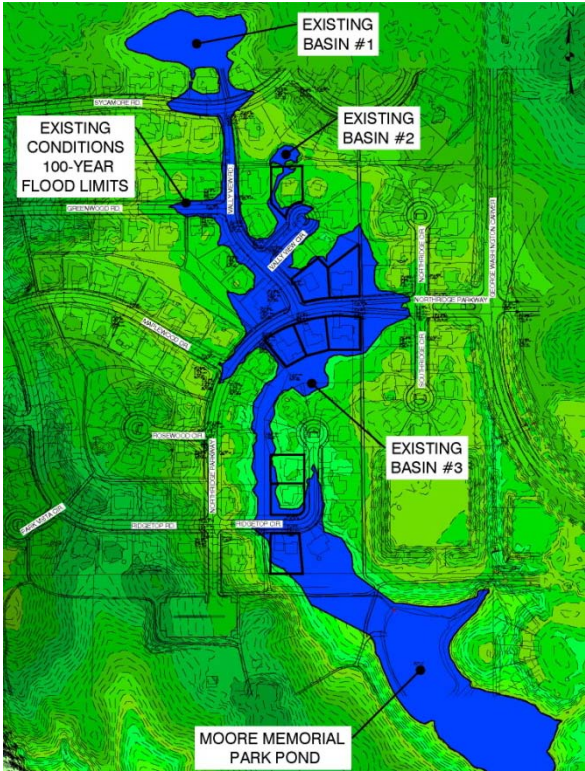


	<u>FEMA</u>	<u>Local</u>
Est. Cost	\$360,000	\$290,000
BCR	0.66	0.82

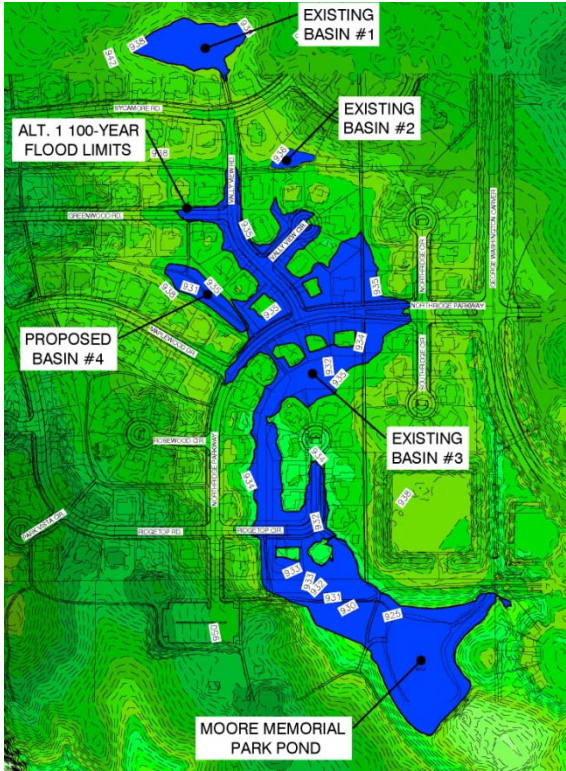
	<u>FEMA</u>	<u>Local</u>
Est. Cost	\$380,000	\$300,000
BCR	0.62	0.80



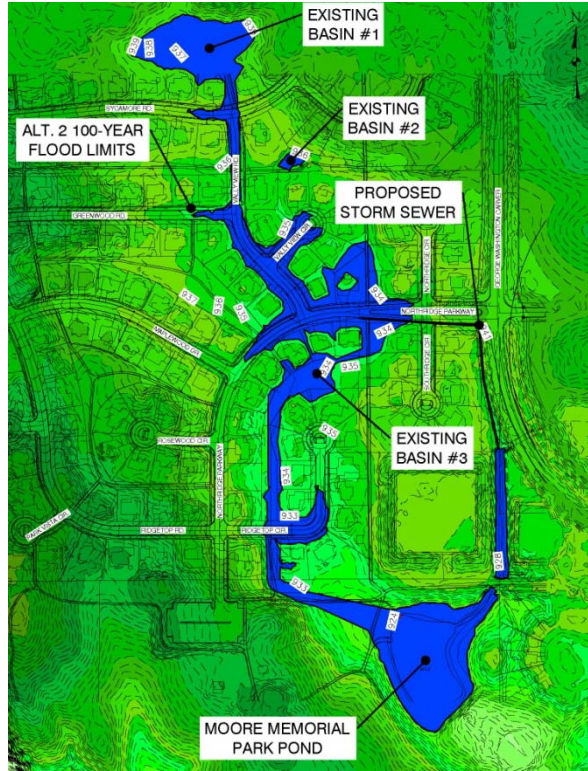
Questions



Existing



Alternate 1



Alternate 2

Northridge Parkway Flood Mitigation Project Public Meeting

City Hall Council Chambers
April 29, 2013
5:30 PM

Presented by:
Mindy Bryngelson, P.E.
Clapsaddle-Garber Associates, Ames, Iowa



Northridge Parkway Flood Mitigation Project Public Meeting

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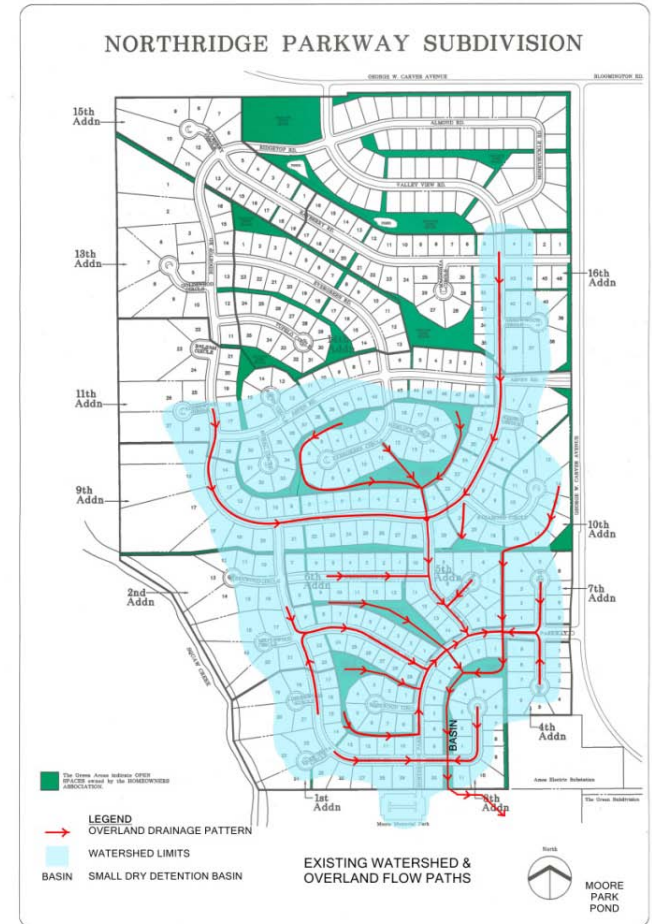
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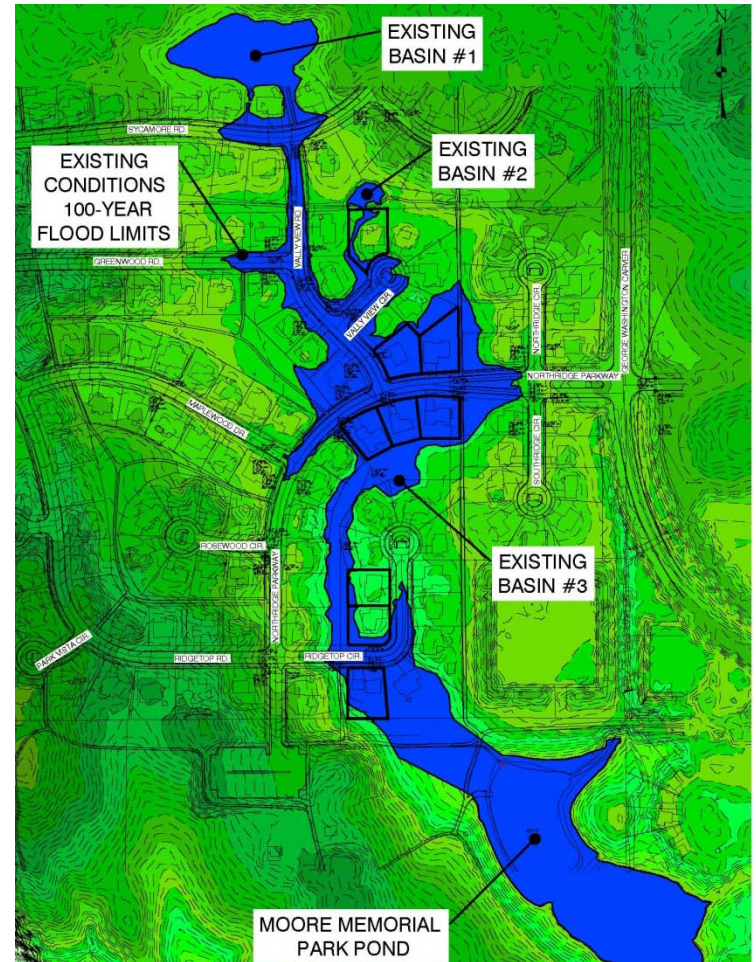
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- 100-Year Storm
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Proposed Alternate 1 Solution

(October/November 2012 Presentation)

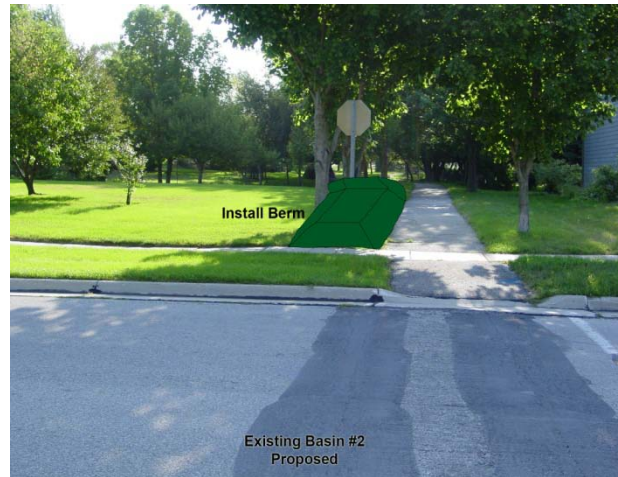
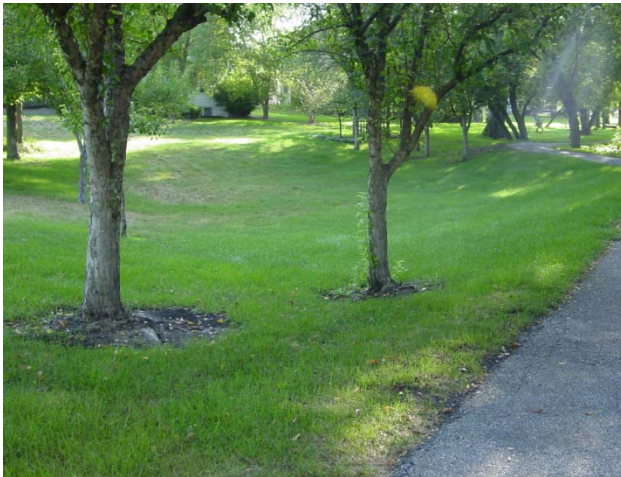
- Deepen Basin #1
- Modify Intake



Proposed Alternate 1 Solution

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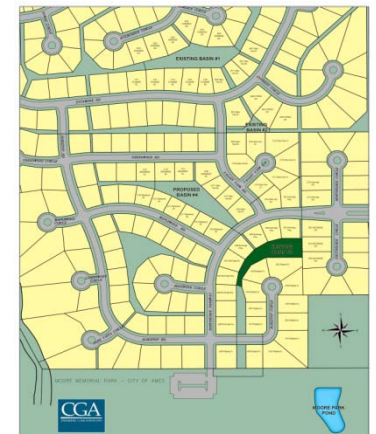
- Reshape and widen Basin #2
- Install berm along trail at Basin #2



Proposed Alternate 1 Solution

(October/November 2012 Presentation)

- Reshape and widen Basin #3 to the east



Proposed Alternate 1 Solution

(October/November 2012 Presentation)

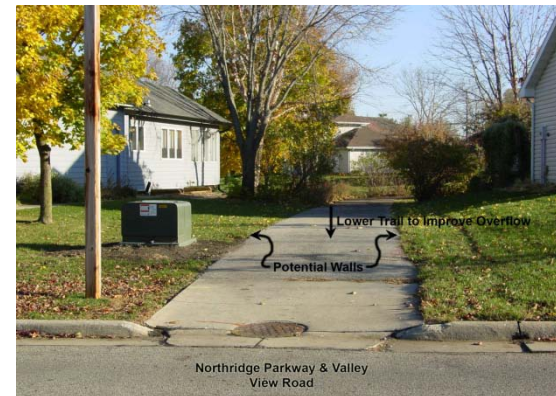
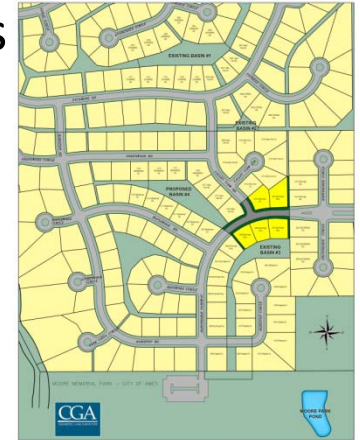
- Create Basin #4 by lowering open space approximately 2.3 feet
- Install intake and storm sewer
- Relocate trail to east



Proposed Alternate 1 Solution

(October/November 2012 Presentation)

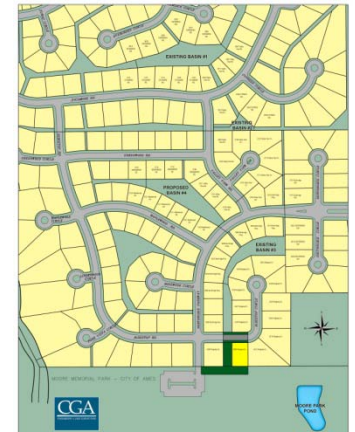
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(October/November 2012 Presentation)

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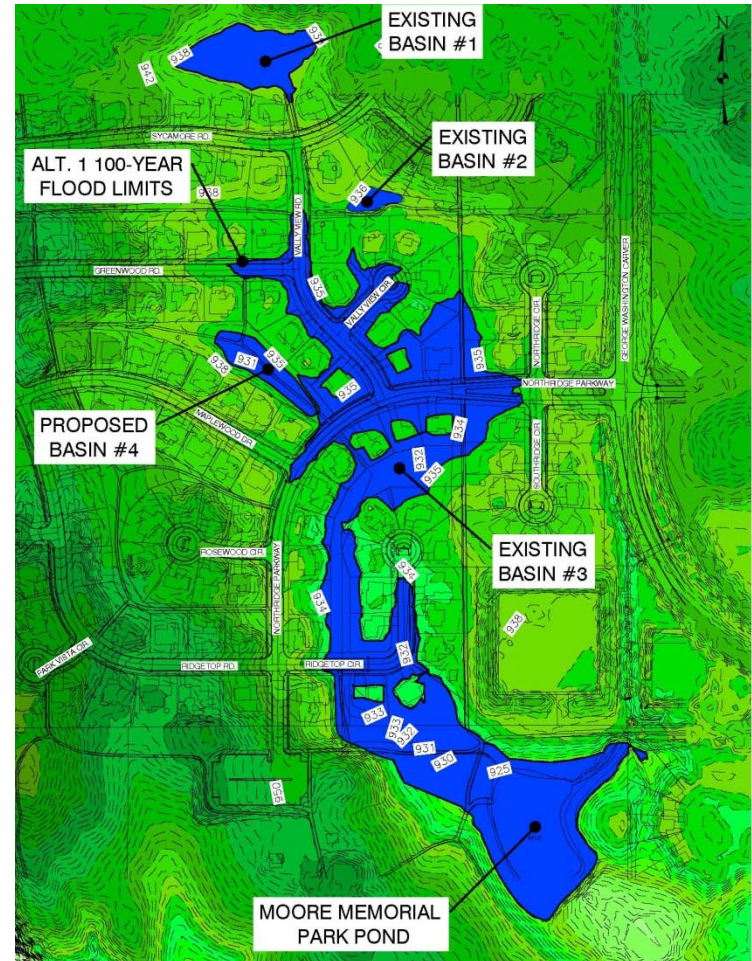
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- Existing outlet to remain



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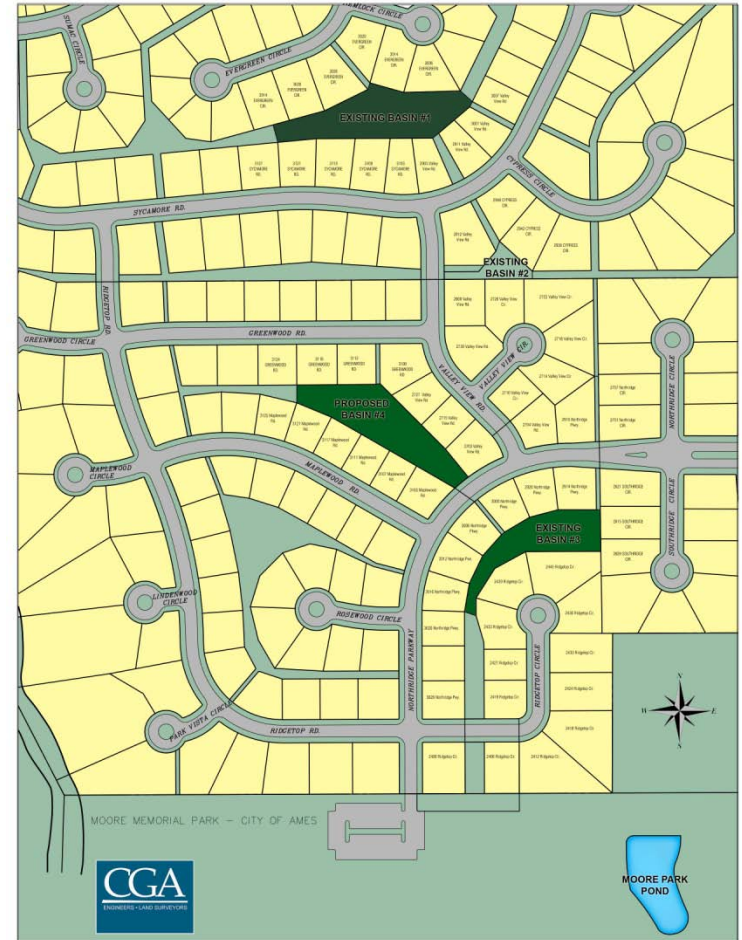
(October/November 2012 Presentation)

- 100-Year Storm
 - Lowers ponding depth at both intersections
 - Increases ponding at Moore Memorial Park Pond
 - All improvements happen within City ROW and easement areas



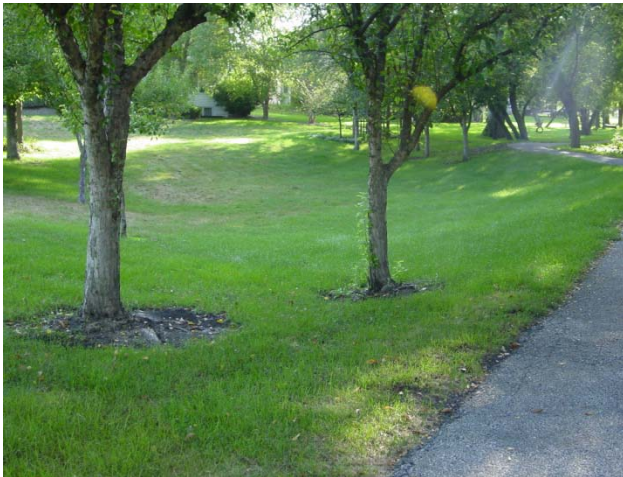
Proposed Alternate 2 Solution

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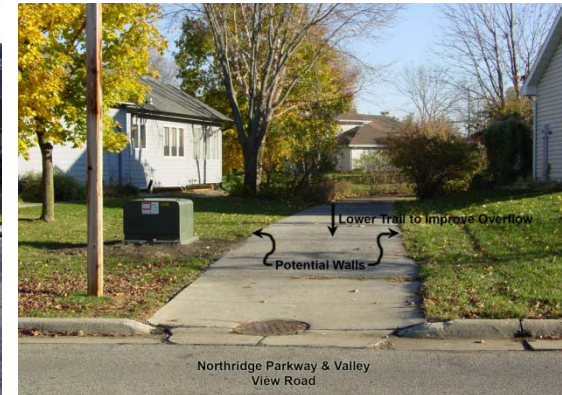
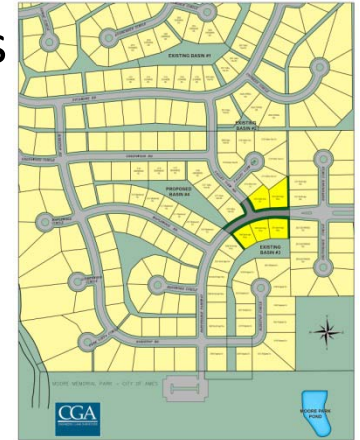
Proposed Alternate 2 Solution

- Install additional storm sewer at Basin #2. No change to basin size.



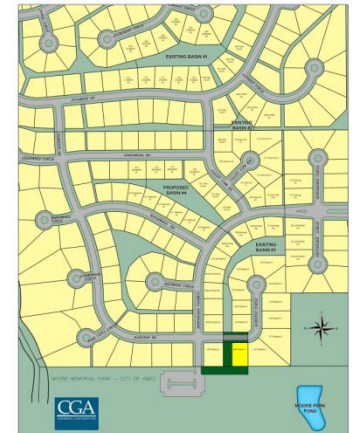
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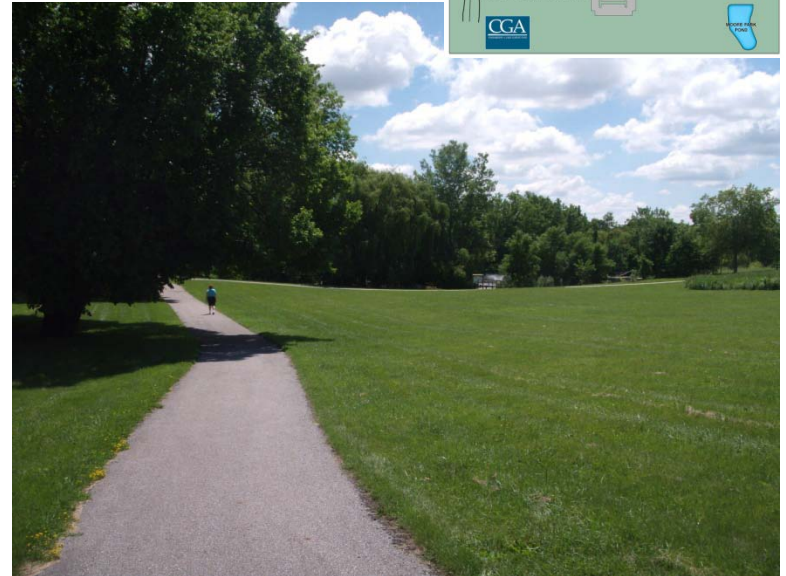
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 - If using FEMA funds
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 - If using local funds
 - Explore Grading on private property

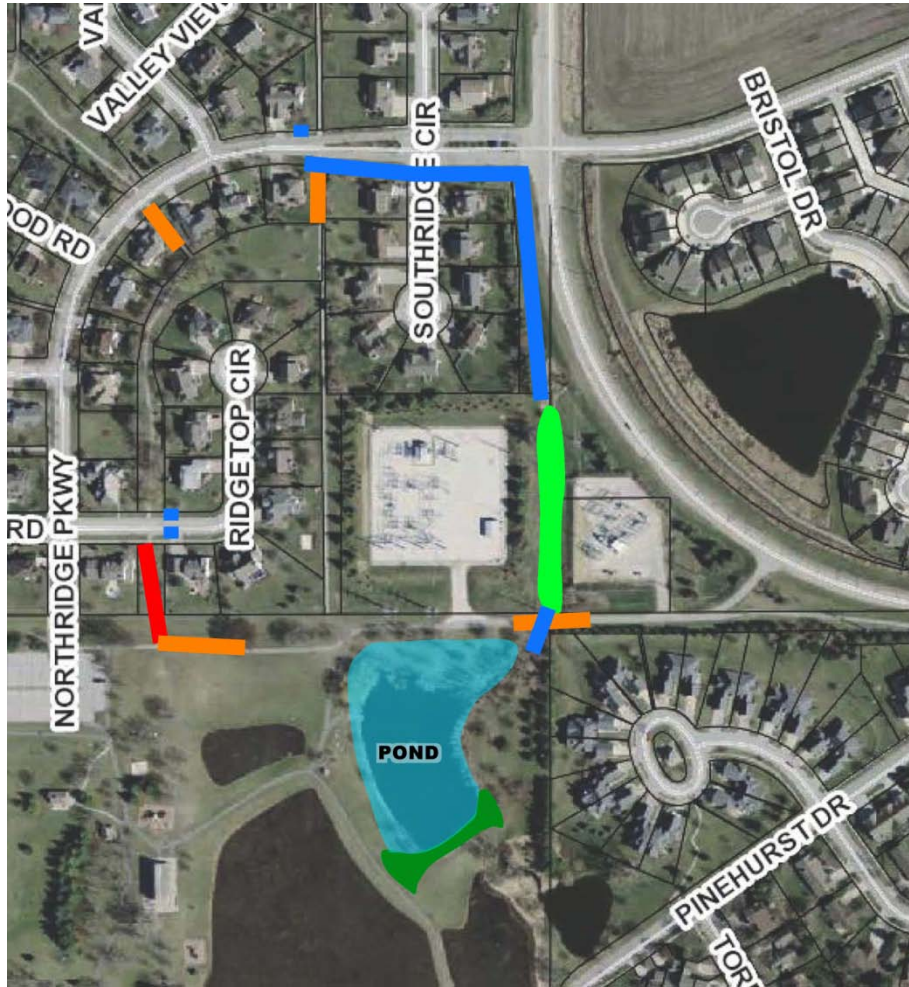


Proposed Alternate 2 Solution

- Lower trail in park to eliminate low point



Proposed Alternate 2 Solution



- Install new storm sewer from Northridge Parkway to outlet in George Washington Carver Right of Way.
- Regrade area between electrical substations



Proposed Alternate 2 Solution

- Install new storm sewer from Northridge Parkway to outlet in George Washington Carver Right of Way.



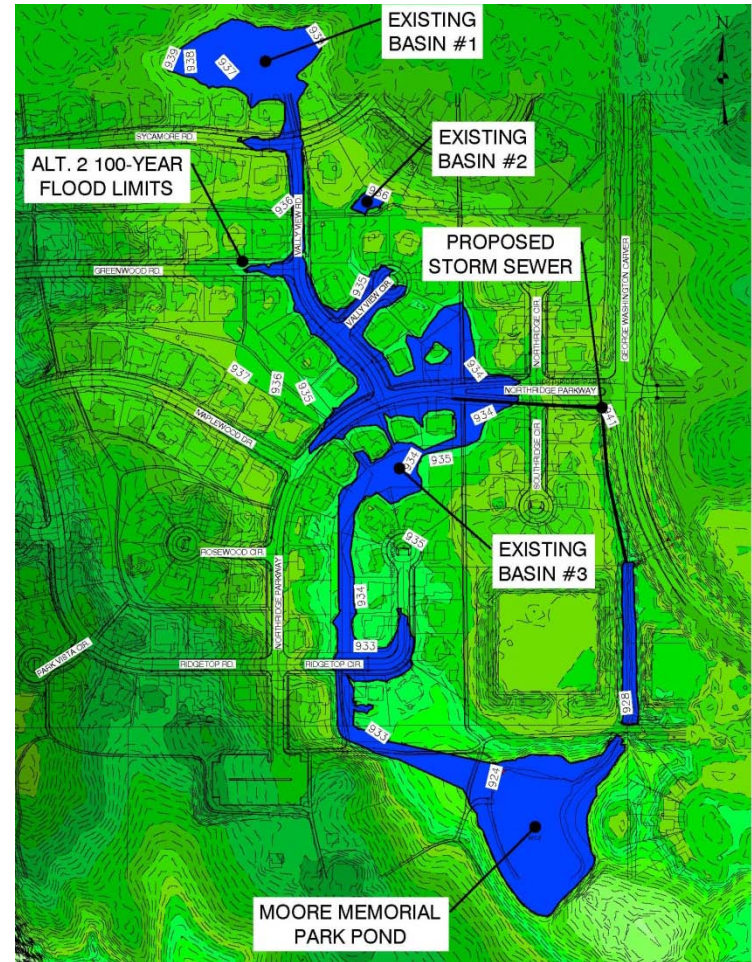
Proposed Alternate 2 Solution

- Install new storm sewer from Northridge Parkway to outlet in George Washington Carver Right of Way.



Proposed Alternate 2 Solution

- 100-Year Storm
 - Lowers ponding depth at both intersections
 - Increases ponding at Moore Memorial Park Pond
 - All improvements happen within City ROW and easement areas



Other Alternates Considered

- Disconnecting storm sewer from Ridgetop Road and installing new storm sewer directly to Moore Memorial Park pond.
- Running an additional storm sewer along the 54" to Moore Memorial Park pond.
- Installing intakes in Moore Memorial Park parking lot and routing storm sewer to the west.
- Changing out the type of storm sewer intakes throughout the subdivision.



FEMA HMGP vs. Local Funding



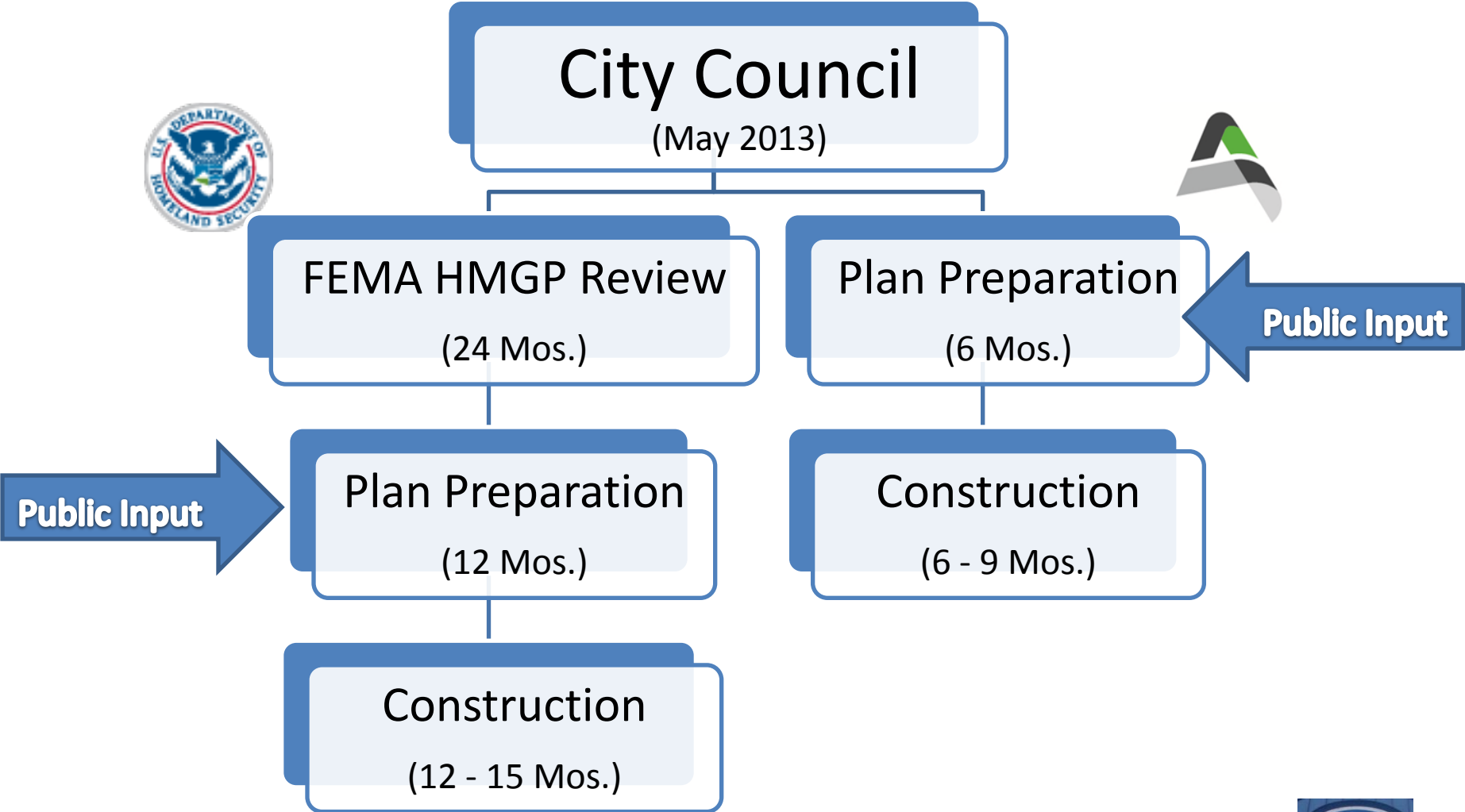
- 15% Local Funds
- Construction 2016 – 2017
- Improvements on public property only



- 100% Local Funds
- Construction 2013 – 2014
- Improvements on public and private property



FEMA HMGP vs. Local Funding



Summary

Alternate 1

- Create additional above ground storage in Basin #1, Basin #2, and Basin #3.
- Create Basin #4.
- Relocate/lower existing trails around Basins.
- Install retaining walls as needed.
- Replace low point storm sewer intakes.
- Modify Moore Memorial Park Pond.

Alternate 2

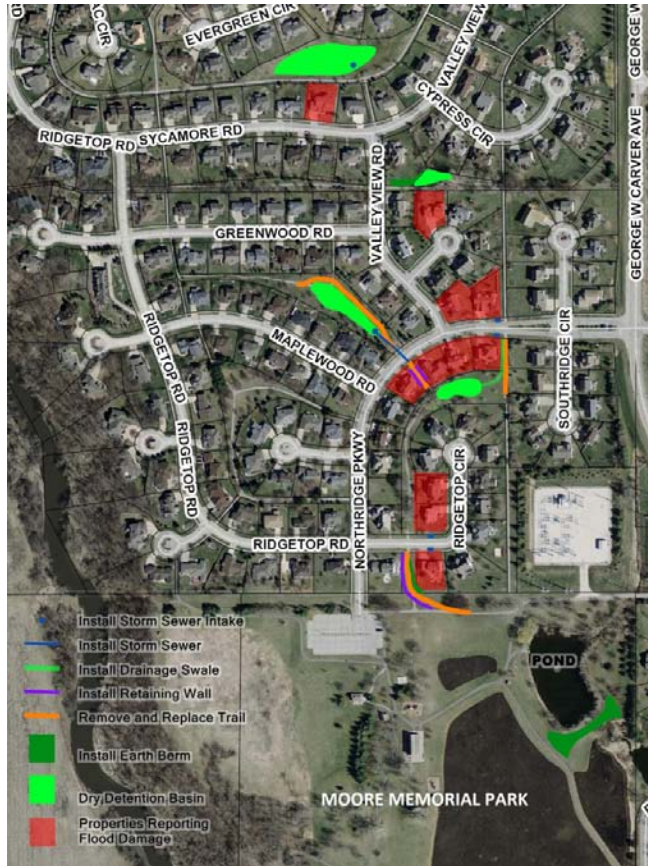
- No changes to Basin #1 and Basin #3.
- Modify storm sewer at Basin #2 outlet.
- Lower existing trails south of Northridge Parkway, add walls as needed.
- Lower existing trail or grade east of Cannon home, add wall as needed.
- Lower trail south of Cannon home.
- Modify (potentially lower) Moore Memorial Park Pond.



Summary

Alternate 1

Alternate 2

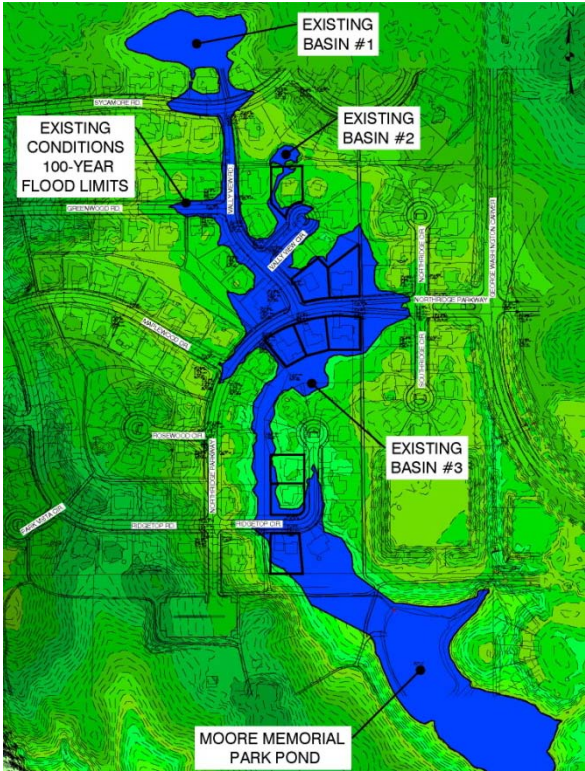


	<u>FEMA</u>	<u>Local</u>
Est. Cost	\$360,000	\$290,000
BCR	0.66	0.82

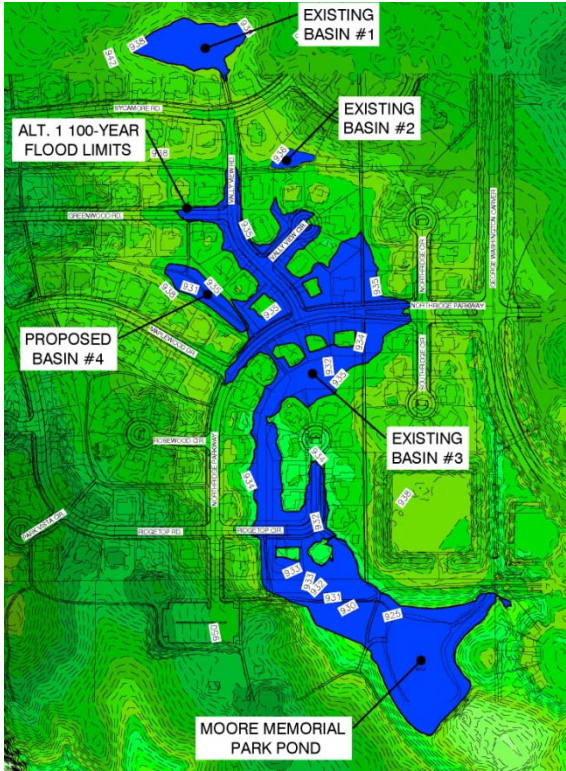
	<u>FEMA</u>	<u>Local</u>
Est. Cost	\$380,000	\$300,000
BCR	0.62	0.80



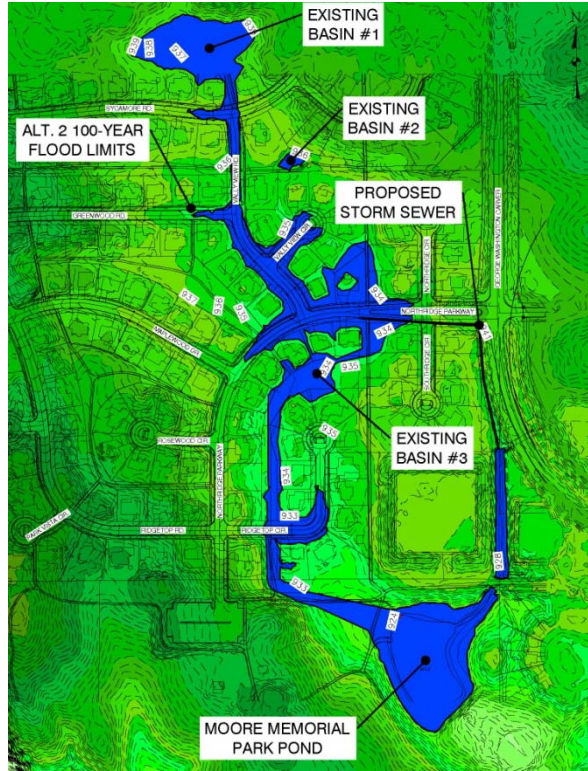
Questions



Existing



Alternate 1



Alternate 2