CITY OF ames

City of Ames Flood Mitigation Study

Welcome!

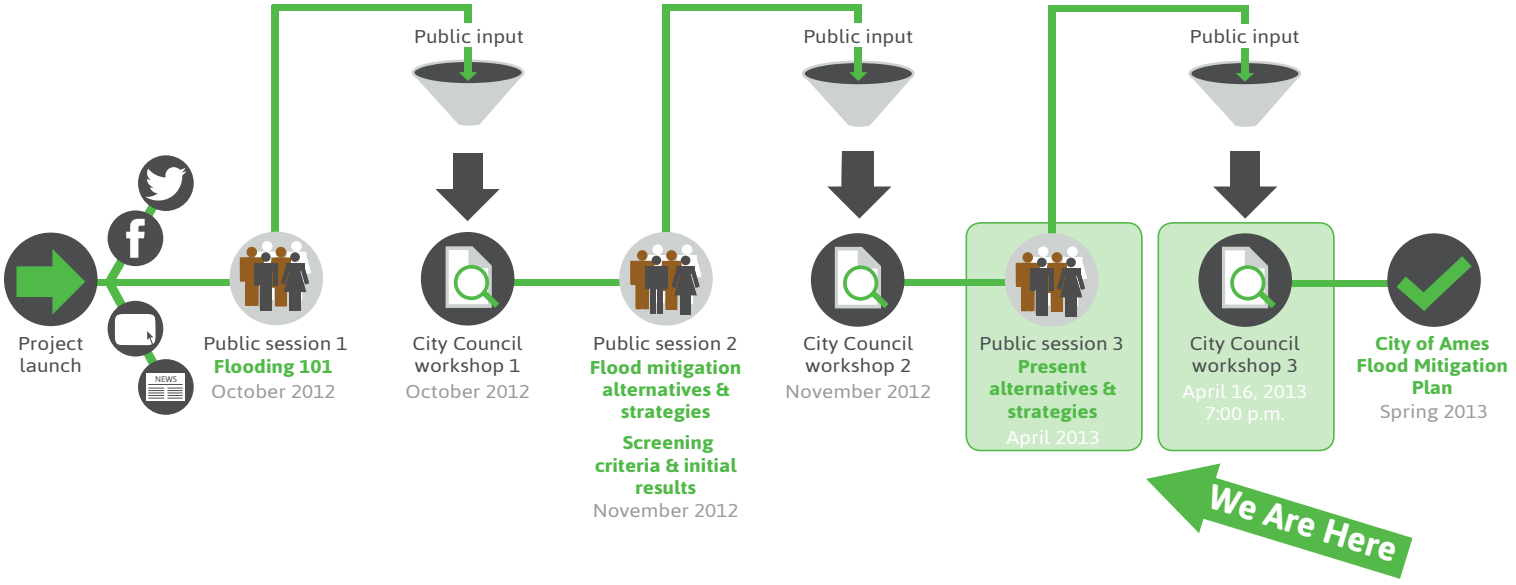
The purpose of this meeting is to discuss the City of Ames Flood Mitigation Study, present the detailed screening evaluation of flood mitigation alternatives and strategies for the Ames Community, and gather feedback on the strategies to present to City Council.

City of Ames Flood Mitigation Study

The Ames community's location at the confluence of Squaw Creek and South Skunk River has created challenges with flooding over the years. Major floods occurred in 1965, 1975, 1990, twice in 1993, 1996, 2007, 2008, and 2010. The most recent flood was severe and affected many residents and businesses. The flood of 2010 motivated the Ames City Council to pursue the Ames Flood Mitigation Study. The goal of this study is to develop a list of alternatives and strategies to reduce the impact of future flooding on the greater Ames community.

The Study Process

Information gathered from the public throughout the entire Study Process was used to identify the best alternatives and strategies. As the timeline indicates below, this is your third opportunity to participate in this study.



Get Involved!

We want to hear from you:

- Complete a comment form today
- Visit us at ***www.cityofames.org*** and click the Flood Mitigation Study link
- Email us at: ***amesfloodstudy@cityofames.org***
- Send mail to:
  City of Ames
  Attn: John Dunn
  300 E. 5th Street
  Ames, IA 50010

Alternative/Strategy		Description	Benefit Cost Analysis				Performance Criteria		
			Construction Costs	Annual Cost (including O&M)	Annual Benefits	BCR	Does it meet at least a 500-year level of protection?	Do the benefits outweigh the cost?	Is this alternative free of major environmental impacts?
Conservation Measures in the Watershed		The Conservation Measures in the Watershed alternative evaluates small detention sites that could contribute to flood reduction, and the construction of wetlands administered under the Iowa Department of Agriculture and Land Stewardship Conservation Reserve Enhancement Program.	**$2,025,000**	**$122,230**	**$0**	**0.00**	☒ (Note 1)	☒	☑
Centralized Flood Storage		The Centralized Storage alternative includes the evaluation of Squaw Creek Dry Detention facility and Ames Lake Reservoir.	**$198,243,000**	**$11,966,036**	**$3,250,900**	**0.27**	☑ (Note 2)	☒	☒
Regional Flood Storage		The Regional Flood Storage alternative includes the evaluation of 14 storage sites.	**$145,339,000**	**$8,777,727**	**$3,217,000**	**0.37**	☒ (Note 3)	☒	☒
Floodplain Storage		The Floodplain Storage alternative achieves additional floodplain storage by raising 3 roads by 5 feet, and modifying 3 bridges/culverts.	**$41,000,000**	**$2,474,778**	**$2,786,900**	**1.13**	☒ (Note 4)	☑	☒
Diversion 1		The Diversion 1 alternative includes diverting flood waters around Ames by diverting Squaw Creek at Cameron School Road to the Skunk River via the Ada Hayden Reservoir.	**$49,243,000**	**$2,972,329**	**$3,042,700**	**1.02**	☒ (Note 5)	☑	☒
Diversion 2		The Diversion 2 alternative includes diverting flood waters around Ames by diverting Squaw Creek upstream from Cameron School Road, to the Skunk River downstream from the Ames Municipal Airport.	**$1,095,000,000**	**$66,094,687**	**$3,192,300**	**0.05**	☒ (Note 6)	☒	☑
Conveyance Improvements	**Clear Channel**	The Conveyance Improvements alternative involves the clearing or excavating of river channel improvements and/or the removal of bridge obstructions.	**$2,943,000**	**$177,641**	**$2,436,700**	**13.72**	☒ (Note 7)	☑	☒
	US Hwy 30 Bridge Improvement		**$7,740,000**	**$467,190**	**$2,097,300**	**4.49**	☒ (Note 8)	☑	☑
	South Duff Bridge Improvement & Clear Channel		**$4,715,000**	**$284,599**	**$2,086,900**	**7.33**	☒ (Note 9)	☑	☑
Levee Protection 100-Year		The Levees alternatives evaluates protection to the 100-year flood level protecting property areas along Skunk River and Squaw Creek by constructing a levee (berm/floodwall) combination.	**Skunk River $4,818,000** **Squaw Creek $6,079,000**	**Skunk River $290,817** **Squaw Creek $366,931**	**Skunk River $121,400** **Squaw Creek $174,600**	**Skunk River 0.42** **Squaw Creek 0.48**	☒ (Note 10)	☒	☑
Levee Protection 500-Year		The Levees alternatives evaluates protection to the 500-year flood level protecting property areas along Skunk River and Squaw Creek by constructing a levee (berm/floodwall) combination.	**Skunk River $5,333,000** **Squaw Creek $7,668,000**	**Skunk River $321,902** **Squaw Creek $462,844**	**Skunk River $198,100** **Squaw Creek $174,600**	**Skunk River 0.62** **Squaw Creek 0.38**	☑	☒	☑

Key: ☑ = Yes; ☒ = No

Study Progress To Date

The City of Ames hosted Public Meeting 1 and 2 in 2012 to present the study and gather input from the greater Ames community. As of March 31, 2013 the City of Ames Flood Mitigation Study website had 1,095 unique visitors, generating 2,151 hits, 540 online meeting views, and 173 online comment form submissions. Thank you for your feedback!

Several flood management alternatives and strategies have been evaluated by the study team and have received input from the public. These alternatives and strategies were then screened based on a set evaluation criteria. Based on feasibility and input from the public, the detailed analysis is presented at this final stage of the study. The study will end with a presentation of the best alternatives and strategies to City Council on April 16, 2013 at 7:00 p.m.

NOTES
[1]Provide no flood level reduction.
[2]Skunk River only; 100-year level on Squaw.
[3]100-year level on Squaw; 100-year level on Skunk.
[4]Reduced 100-year flood height of 2-ft on Squaw.
[5]Reduced 100-year flood height of 5-ft on Squaw.
[6]Reduced 100-year flood height of 5-ft on Squaw; 100-year protection on Skunk.
[7]Reduced 100-year flood height of 1-ft on Squaw.
[8]Reduced 100-year flood height of 2.5-ft on Skunk.
[9]Reduced 100-year flood height of 2-ft on Squaw.
[10]The alternative meets the 100-year protection on both Squaw and Skunk.

Environmental Concerns

Environmental Concerns	Alternatives / Strategies						
	Conservation Measures in the Watershed	Centralized Flood Storage	Regional Flood Storage	Floodplain Storage	Diversion	Conveyance Improvements	Levees along Skunk River and Squaw Creek
Land Use	Impacts to Agricultural land. (1,326 acres)	Impacts to residential & agricultural land uses NW of Ames. Residential, agricultural and Public Lands NE of Ames & Story City. Housing developments in Western Story County and Eastern Boone County. Scattered farm residences in both counties. (10,660 acres)	Impacts to residential developments, cemeteries, and agricultural land. (7,355 acres)	Impacts to residential area (ISU housing), recreation land, parks and conservation land, and agricultural land uses. (709 acres)	Impacts to small areas of residential and commercial, southern edge of Ames Municipal Airport, recreation, conservation, and agricultural land. (1,370 acres)	Impacts to small areas of commercial land adjacent to South Duff Road Bridge, open space, agricultural land adjacent to US 30 bridge. (70 acres)	Impacts to commercial and agricultural land. (10 acres)
Farmland	Impacted.	Impacted.	Impacted.	Impacted.	Impacted.	Impacted.	No impact.
Parks, Recreation Areas & Conservation Areas	No impact.	Impacts to Story City Park, River Bend Municipal Golf Course, 12 conservation and recreation areas between Ames and Story City.	Impacts to the Bob Pyle Marsh WMA.	Impacts to Skunk River Greenbelt WMA, Crooked Bend WMA, Bear Creek Area, and Soper's Mill County Park, Veenker Memorial Golf Course, part of the Ames High Prairie State Preserve, the Furman Aquatic Park in Ames, and the ISU Stable Run Disc Golf Course.	Would divide the Ames Golf and Country Club and the Ada Hayden Heritage Park by creating a channel through these areas.	No impact.	No impact.
Wetlands	Would increase existing wetland conservation areas in partnership with the Iowa Dept of Agriculture and Land Stewardship.	Impacts to approximately 840 acres.	Impacts to approximately 800 acres.	Impacts to approximately 540 acres.	Impacts to approximately 10 acres.	No impact.	No impact.
Surface Water	No impact.	Impacts to approximately 15 miles of Skunk River and approximately 7.5 miles of Squaw Creek.	Impacts to approximately 5.5 miles of Skunk River; approximately 5.3 miles of the Keigley Branch of the Skunk River; approximately 3.0 miles of Bear Creek, and approximately 2.8 miles of Long Dick Creek. This alternative would also flood approximately 10.5 miles of Squaw Creek, approximately 2.7 miles of Montgomery Creek, and approximately 2.6 miles of Onion Creek.	Impacts to approximately 6.5 miles of Squaw Creek and approximately 2.5 miles of Skunk River.	No impacts to existing streams; however construction of these diversions would create a total of 17 miles of new stream channel. Construction of these diversions would affect flow in both the Skunk River and Squaw Creek.	Impacts to short stretches of stream channel near the South Duff Bridge and the Highway 30 Bridge during construction.	No impact.
Threatened & Endangered Species	No impact.	Potential impacts.	Potential impacts.	Potential impacts.	Potential impacts.	Potential impacts.	Potential impacts.
Cultural Resources – Historical & Archaeological	No impact.	Impacts to 93 archaeological sites and 17 historic structures with the construction of SR-1, and 17 archaeological sites and 46 historic structures with the construction of SC-1.	Impacts to 18 archaeological sites and 22 historic structures.	Impacts to 66 archaeological sites and 5 historic structures.	Impacts to 9 archaeological sites and 7 historic structures.	Impacts to 3 archaeological sites and 2 historic structures.	Impacts to 3 archaeological sites and 24 historic structures.
Socio-Economic Resources	No impact.	Impacts to approximately 150 residences from construction of SR-1 and 75 residences from construction of SC-1. Construction of SR-1 and SC-1 would preclude further development in and near affected areas. Construction of SR-1 would also affect Story City's wastewater treatment plant, a school and associated athletic facilities, and 2-3 businesses in Story City.	Impacts to approximately 110 residences, farms, and acreages.	Impacts to part of the ISU housing area, approximately 25 residences, 2 businesses, a golf course, and a water park.	Impacts to approximately 60 residences, a 25-residence trailer park, approximately 5 businesses, and the approach lighting in the clear zone of the Ames Municipal Airport.	Impacts to businesses adjacent to the South Duff Road bridge and open space and agricultural land adjacent to the US 30 bridge.	Impacts to approximately 10 to 15 businesses.
Environmental Justice	No impacts.	Impacts to minorities, low-income, elderly and LEP populations.	No impacts.	Impacts to minorities, low-income, elderly and LEP populations.	Impacts to minorities, low-income, elderly and LEP populations.	No impact.	Impacts to minorities, low-income, elderly and LEP populations.
Transportation	No impacts.	Impacts to US 69, Broad Street in Story City, 130th, 150th, 170th, 180th, and 190th Streets, as well as local roads with the construction of SR-1. Construction of SC-1 would affect 140th, 150th, 160th, 170th, and 180th Streets. Potential impacts to airspace at the Ames Municipal Airport.	Impacts to 100th, 110th, 120th, 130th, 140th, 150th, and 160th Streets, as well as local roads. Potential impacts to airspace at the Ames Municipal Airport.	Impacts to 150th, 160th, 170th, and 190th Streets. Would also require raising the following roads 5 feet and modifying bridges/culverts at these locations: Boone County Road 160 at Squaw Creek, Story County Road 170 at the Skunk River, and 13th Street in Ames at Squaw Creek. Potential impacts to airspace at the Ames Municipal Airport.	Would cut across several roads in Ames, including US 30, Lincoln Way, South Duff Avenue, George Washington Carver Avenue, 180th Street, 520th Avenue, and 530th Avenue. Bridges would need to be constructed, or in some cases, reconstructed. Potential impacts to the UPRR tracks and airspace at the Ames Municipal Airport.	Temporary impacts to roads within the Project Area. Would also require the lengthening the Hwy 30 Bridge over the Skunk River and the South Duff Bridge over Squaw Creek. Impacts to the approach lighting at the southern end of the runway at Ames Municipal Airport and potential impacts to the airspace.	Temporary impacts to roads within the Project Area. Potential impacts to the UPRR tracks and airspace at the Ames Municipal Airport.
Noise	Construction of any alternatives selected would be temporary and intermittent. It is not anticipated that any acceptable noise levels would be generated by construction of the selected alternatives.						
Regulated Materials	No impacts.	15 leaking UST's within 1 mile of SR-1. 1 leaking UST is within the proposed footprint of SR-1.	15 leaking UST's, 1 Iowa contaminated site and 1 non-NPL Superfund site.	10 leaking UST sites, 1 non-NPL Superfund site, and 1 Iowa contaminated site within 1 mile of the 13th Avenue site in Ames.	5 leaking USTs within 1 mile.	31 leaking UST sites, 2 non-NPL Superfund site, and 6 no leaking USTs within the proposed footprint s are within 1 mile.	45 leaking UST sites, 6 non-NPL Superfund sites, and 6 Iowa contaminated sites are within 1 mile. 1 leaking UST is located within the footprint of the Squaw Creek levee.
Air Quality	No impacts.	Would generate minor amounts of emissions from construction equipment and fugitive dust from soil disturbance.	Would generate minor amounts of emissions from construction equipment and fugitive dust from soil disturbance.	Would generate minor amounts of emissions from construction equipment and fugitive dust from soil disturbance.	Would generate minor amounts of emissions from construction equipment and fugitive dust from soil disturbance.	Would generate minor amounts of emissions from construction equipment and fugitive dust from soil disturbance.	No impacts.
Is this alternative free of major environmental impacts?	☑	☒	☒	☒	☒	☑	☑

Key: ☑ = Yes; ☒ = No