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Public Meeting #2 Summary February 28, 2019 – 7:00 pm to 9:00 pm

1. Participant List – Attachment #1

2. Welcome and Introductions

a. Mike Nearing, Senior Project Manager, City of Ann Arbor - Engineering introduced the Project Team: Andy Kilpatrick, Project Lead, Northwest Consulting; Jay Zawacki, Hydraulic Modeling Lead, CDM Smith; Teresa Newman, Public Involvement Lead, Project Innovations; Andrea Wright, City of Ann Arbor.

3. Project Background – Why are we here and what are we doing?

- a. Based on previously performed stormwater analysis projects, the City identified this as a highly flood prone area.
- b. Previous survey of residents provided information regarding property flooding.
- c. Address issues or concerns with proposed improvements.

4. Overview of Stormwater Alternatives

- a. Alternatives to alleviate the problem have been explored and further analyzed to determine the right solution to reduce flooding in the area via storage, conveyance, and infiltration.
- b. The stormwater model was used to analyze impacts on flows and water levels.
- c. The design target is to keep the peak hydraulic grade line (HGL) one foot below ground level.
- d. Based on modeling, the design target for volume requirements is 120,000 to 140,000 cubic feet of storage to meet a 10-year, 12-hour storm standard.
- e. The Capital Improvement Project (CIP) budget includes an estimated construction budget of about \$1.5M for this project.
- f. It has been determined that designing for a 100-year, 24-hour storm standard would require over 3X that amount of volume.
 - i. Question: What was the storm of March 15, 2012 considered? Answer: It was considered a 10-year storm. Harry Sheehan of the Washtenaw County Water Resource Commissioner's Office explained that it was 2-hours in duration.
 - ii. Question: Would designing to the 10-year, 12-hour storm standard manage the amount of flooding in the 2012 event? Answer: Yes, it would handle storms of that magnitude and smaller.
 - iii. Mike Nearing explained that this design target is to manage standard storms and that storms of greater magnitude could occur in the future but would flood this area to a lesser extent depending upon the severity of the storm encountered.

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5. Presentation of Alternatives

- a. Alternative #1 Snyder Right-of-Way (ROW) Storage
 - i. Four areas were identified where underground storage basins could be built to store a total of 103,000 cubic feet of stormwater. This assumes an 18" covering of soil over the basins.
 - ii. Modeling shows that flooding would be reduced to 1 foot of water at the lowest spot (intersection of Snyder and Edgewood) in a 10-year storm.
 - iii. Considerations:
 - 1. The volume requirement for a 10-year, 12-hour design standard is 135,000 cubic feet.
 - 2. Need for relocation of other utilities (gas main) and hydrant.
 - 3. Temporary driveway access would be limited during construction.
 - 4. The trees in the basin areas would need to be removed.
 - iv. Q: What is the risk of the basins breaking apart and water escaping. A: There is virtually no risk. If the storm exceeded the basin capacity, the excess water would flow out of the catch basins and over land.
- Alternative #2 Alt #1 ROW Storage but with deeper discharge across W.
 Stadium
 - i. Deeper basins allow for storage of more water (134,700 cubic feet).
 - ii. The basin outlet would go under a 15" sanitary sewer pipe on W. Stadium.
 - iii. Considerations:
 - a. Potential conflict with sanitary sewers and house leads.
 - b. Construction likely requires excavation support, leading to more significant access limitations and longer duration of construction.
- c. Alternative #3 Snyder In-line Storage
 - i. Modification to Alternative #1 by constructing flatter, deeper pipes along Snyder.
 - ii. Increases Alternative #1 storage by 48,750 cubic feet without changing conveyance downstream.
 - iii. Considerations:
 - a. Linear approach results in more surface disruption, restoration, and expense.
 - b. Pipe size increases may lead to utility conflicts.

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- iv. Q: How would this construction compare to the proposed Prescott water main project? A: They would both be significant projects. The width at the top of the trench may require that most of the road is impacted by construction. By comparison, water main construction is easier because it is a pressurized system and the pipe can vary in elevation. Stormwater relies on gravity and the construction design is much more difficult to maintain the proper pipe elevation.
- d. Alternative #4 Future Green Streets
 - i. Future stormwater controls in the tributary areas.
 - ii. Considerations:
 - a. The project design and construction schedule would be on-going and indefinite.
 - b. The stormwater reduction would be long-term.
 - c. Would be coordinated with other neighborhood projects.
 - iii. Q: Could this be coordinated with the other alternatives? A: Yes, however much depends on the soil in the area. This area is mostly clay and doesn't infiltrate as much as other areas.
- e. Alternative #5 Expanded storage with utility relocations
 - i. Relocate water mains and/or sanitary sewers.
 - ii. Larger basins would be constructed while maintaining utility clearances.
 - iii. Increases volume that could be stored by 43,000 cubic feet. Combined with Alternative #1 the total volume would be 147,000 cubic feet.
 - iv. Considerations:
 - a. Increases the likely possibility of additional temporary service disruptions
 - v. Comment: There is a memorial tree at Birk and Snyder that should be considered. It was acknowledged by the City that the existence of this tree would be confirmed and worked around to the greatest extent possible.
- f. Alternative #6 Expanded Storage with Traffic Changes at Snyder/Edgewood and Franklin/Snyder/Birk Intersections
 - i. Requires changes roadway layout (lanes, curbs) to expand basin.
 - ii. Provides additional space for potential open basins (stormwater storage ponds).
 - iii. Considerations:

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- a. Driveways may need to be longer in some areas.
- b. Traffic changes could be beneficial to calm traffic.
- c. Open ponds are a significant change to the neighborhood aesthetics (visibility, maintenance, safety).
- d. The modeling for the Franklin re-routing resulted in a loss of storage.
- iv. Q: How long would dewatering of the ponds take? A: Approximately 48 hours.
- v. Q: Why was Franklin chosen for re-routing? A: Franklin has fewer underground utilities to work around.
- g. Alternative #7 Expanded Storage on Private Property Areas
 - i. This option is solely based on whether private property owners approached the City regarding sale of property. No property owners have been or will be approached.
 - ii. Consider where easements or property acquisition could provide storage at strategic locations.
 - iii. Four properties were chosen for evaluation of potential storage for discussion purposes: Three in Edgewood/Snyder area and one west of 7th St.
 - iv. Considerations:
 - a. Property acquisition (acceptability, cost).
 - b. Locations away from main drainage pathway are less effective and could require additional conveyance improvements.
 - v. Comment: There is a house for sale in the low point of Snyder/Edgewood.
- h. Alternative #8 Downstream Storage at Pioneer High School
 - i. Larger pipe conveying flow from Snyder/Edgewood.
 - ii. New basin would be located under practice soccer field, west of existing stormwater infiltration basin.
 - iii. Storage volume is 121,800 cubic feet. The HGL is at ground level or below.
 - iv. Considerations:
 - a. Deeper basin but more open work area.
 - b. Requires AAPS approval and coordination.
 - v. Comments:

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- a. You could also consider adding a basin at the end of Edgewood in this project.
- i. Alternative #9 Downstream Storage with UM Golf Course Pond
 - Requires major pipeline reconstruction from Edgewood to the pond, tunneling under the golf course would be required and construction of retaining walls on the pond. It would eliminate two 90 degree turns to reduce head loss.
 - ii. Design Targets:
 - 1. Edgewood peak HGL 1 ft below ground
 - Maintain existing condition peak outflow at Golf course pond (200 cfs)
 - iii. Considerations:
 - a. Construction across Ann Arbor Golf & Outing property in easement would be highly disruptive and cost prohibitive.
 - b. Increased flows would require physical changes to UM golf course pond, potentially affecting 18th hole and/or new clubhouse.
 - c. Conveyance out of the pond would require much scrutiny.
- j. Alternative #10 In-line Storage along W. Stadium.
 - i. Build pipes to 13-foot box culverts to create 80,200 cubic feet of storage.
 - ii. Considerations:
 - a. Would be combined with planned improvements to W. Stadium (likely 2023 or later).
 - b. Causes changes to performance of UM Golf Course pond, but likely avoids need for significant physical improvements.
 - iii. Q: Why would that increase flow to the pond? A: This conveys water out of the neighborhood and allows it to flow unchecked and quicker to the pond. There isn't enough space in W. Stadium to increase storage for retention.
 - iv. Q: Could this alternative be considered if the chosen alternative doesn't prove to be effect in reducing flooding? A: Yes, it could be but we want to choose the right one from the beginning!
 - v. Q: Is there a savings if the project is coordinated with other construction? A: Yes, there is economies of scales to be achieved.

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6. Summary of Alternatives

	Alternative	Description	Cost Projection	Volume (ft³)	Other Considerations
1	Snyder Right-of-Way (ROW) Stora	ge Underground basins, minimal utility relocations	Medium	103,000	Driveway disruption
2	ROW Storage with deeper dischar	ge discharge across Stadium	High	135,000	Utility conflicts
3	Snyder In-line Storage	Larger, flatter pipes along Snyder with discharge controls	Medium	48,750	Utility conflicts
4	Future Green Streets	Future stormwater controls in tributary areas	Various	Various	Coordination with other projects
5	Expanded Storage – Utility Relocations	Underground basins, significant utility relocations (water and sewer)	High	147,000	Service disruptions
6	Expanded Storage – Traffic Changes	Underground or open basins, possible traffic changes	High	108,000	Neighborhood aesthetics
7	Expanded Storage – Private Property Areas	Underground or open basins, extended into areas outside of ROW; easement or property acquisition	High	30,000 - 140,000	Cost, acceptability
8	Downstream Storage - Pioneer	Conveyance (larger pipes) with new storage on Pioneer HS property	Medium	121,800	Easement needed
9	Downstream Storage - UM Golf	Conveyance (larger pipes) with modifications to existing UM golf pond	Very High	161,500	Easement needed
10	In-Line Storage along W. Stadium	In-line storage in W. Stadium ROW; minor modifications to UM golf pond	Medium	80,200	2023 or later

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7. Question/Answer:

- a. Q: What is the source of funds for this project? A: Primarily and perhaps exclusively from the Stormwater Utility Fund.
- b. Q: What is the timeline for Alternatives 1-9? A: Most would be in the 2020 timeframe. These alternatives would be designed and budgeted for implementation in the immediate future.

8. Group Discussion

- a. Consider a hybrid of #1 and #8 with #8 as primary. This comment was seconded by another participant.
- b. Realignment of the road layout is attractive.
- c. Open pond concept is a big issue and did not appear to receive much support from the meeting participants.
- d. J. Zawacki asked participants whether it would be acceptable if Alternative #1 didn't completely fulfill the design standard? The participants said no.
- e. If you expand the subterranean basin at Edgewood/Snyder, the Moore's would consider discussing an easement to increase the basin size.
- f. Participants were asked to provide requests for additional information at future meetings. Requests included:
 - i. Construction timeline of all projects.
 - ii. Construction impacts to community.
 - iii. Projected timeline for interruption of service.
 - iv. Traffic considerations defined further.

9. Polling of Alternatives and Results

- a. Participants used a polling device to cast a "yes", "no", or "no preference" choice for each alternative.
- b. Participants were asked to choose viability criteria for each alternative.
- c. Polling was anonymous.
- d. Compiled results are shown in Attachment #2.

10. Next Steps

- a. Preliminary review of alternatives.
- b. Select alternatives for detailed evaluation.
- c. Provide additional analysis of selected alternatives.
 - i. Stormwater modeling.
 - ii. Preliminary cost estimating.
- d. Present selection criteria and evaluation results at Public Meeting #3.

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11. Proposed Timeline

- a. February 28, 2019
 - i. Model Updates & Alternatives
 - ii. Public Meeting #2
- b. Early Spring 2019
 - i. Basis of Design Report
 - ii. Public Meeting #3
- c. Late Spring 2019
 - i. 30% Design Model Analysis
 - ii. Public Meeting #4
- d. June 2019
 - i. 30% Plan Submittal
- e. July 2019
 - i. Finalize 30% Plan

12. Meeting Feedback Form

- a. One feedback form received:
 - i. "7 people are not a statistical representation"



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ATTACHMENT #1 – Participant List

NAME	ADDRESS	AFFILIATION OR ORGANIZATION
Jack Eaton		Council Member
David Ferguson	1301 Prescott	Resident
Diane Ferguson	1301 Prescott	Resident
Andrew Kilpatrick		Northwest Consultants
Carol Mohrlock	1306 Prescott	Resident
J.B. Moore	1304 Edgewood Ave.	Resident
Timothy Muffitt	1210 Birk Ave.	Resident
Michael Nearing		City of Ann Arbor
Elizabeth Nelson	1319 Ardmoor Ave.	Council Member
Teresa Newman		Project Innovations
Harry Sheehan		Washtenaw County Water Resources
Cindy Straub	406 Snyder Ave.	Resident
Andrea Wright		City of Ann Arbor
Andrea Zastrow	521 Berkley Ave.	Resident
Jay Zawacki		CDM Smith



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ATTACHMENT #2 – Polling Results





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Alternatives Summary

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4	Future Green Streets	Future stormwater controls in tributary areas	Various	Various	Coordination with other projects
5	Expanded Storage – Utility Relocations	Underground basins, significant utility relocations (water and sewer)	High	147,000	Service disruptions



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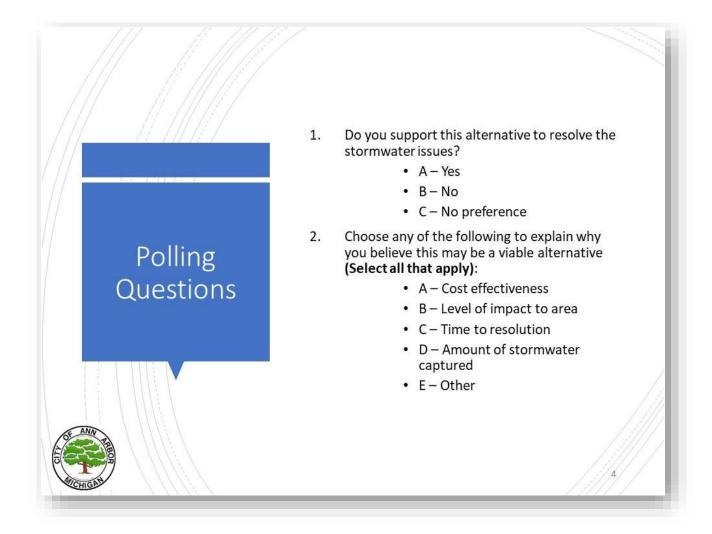
Alternatives Summary

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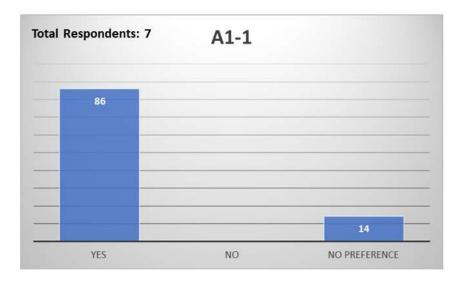






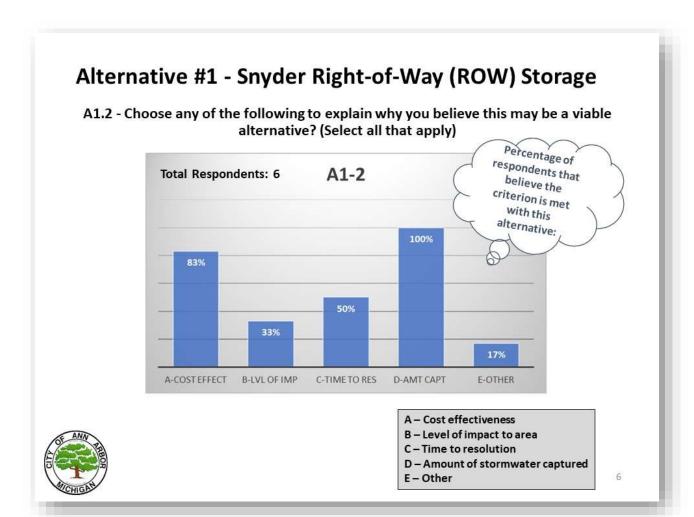
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Alternative #1 - Snyder Right-of-Way (ROW) Storage





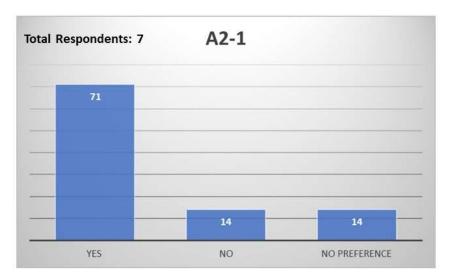






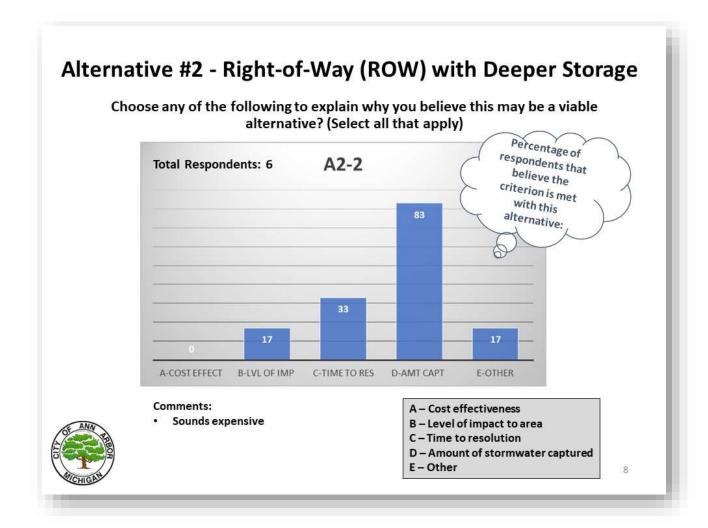
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Alternative #2 - Right-of-Way (ROW) with Deeper Storage

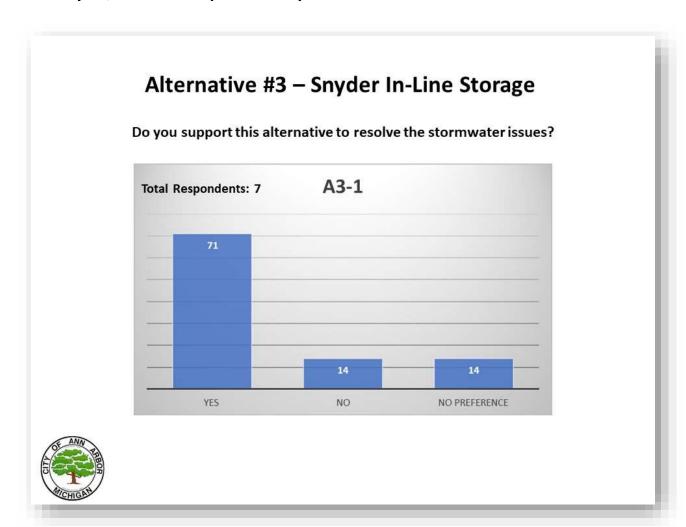




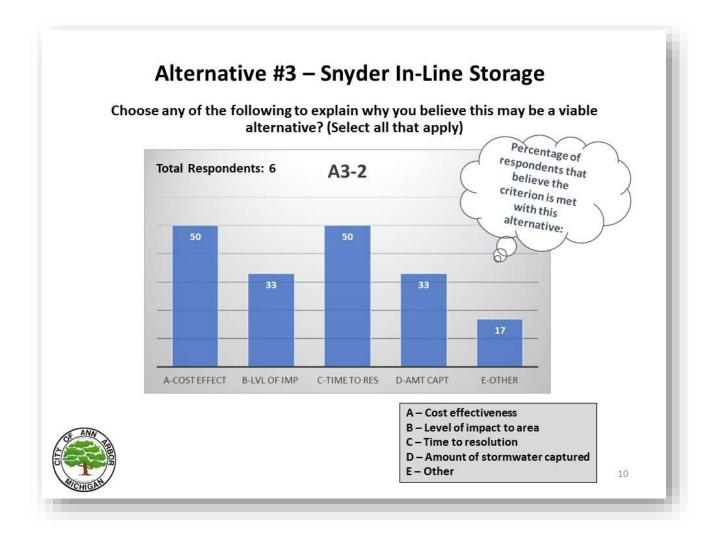








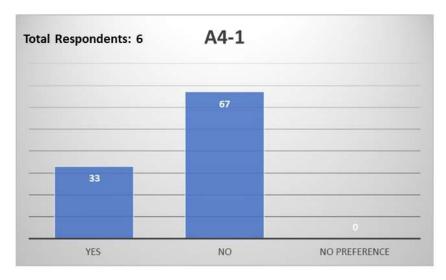






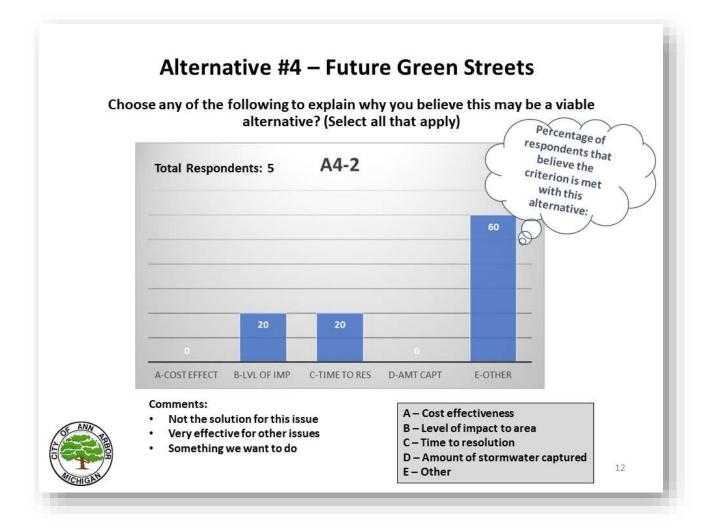
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Alternative #4 - Future Green Streets





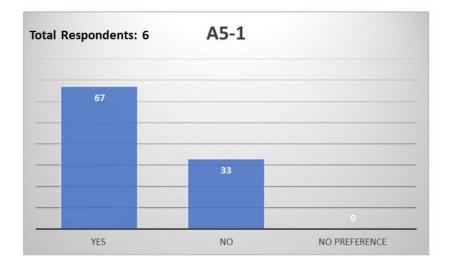






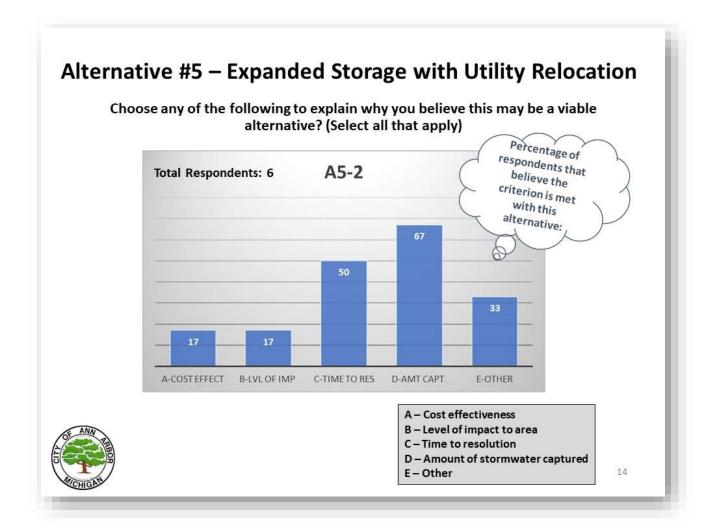
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Alternative #5 - Expanded Storage with Utility Relocation





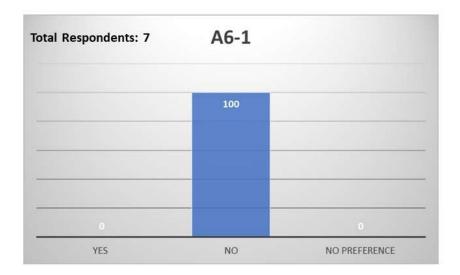






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Alternative #6 – Expanded Storage with Traffic Changes



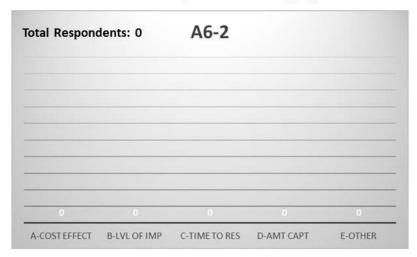




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Alternative #6 – Expanded Storage with Traffic Changes

Choose any of the following to explain why you believe this may be a viable alternative? (Select all that apply)



Comments:

- No polling because all votes were NO
- No interest in open pond concept
- Road reconfiguration is OK

A – Cost effectiveness

- B Level of impact to area
- C Time to resolution
- D Amount of stormwater captured
- E Other

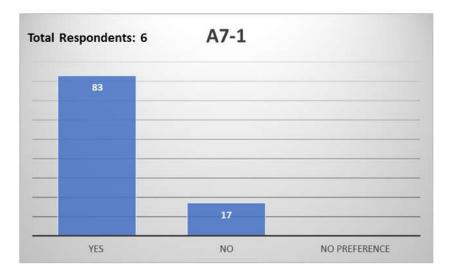






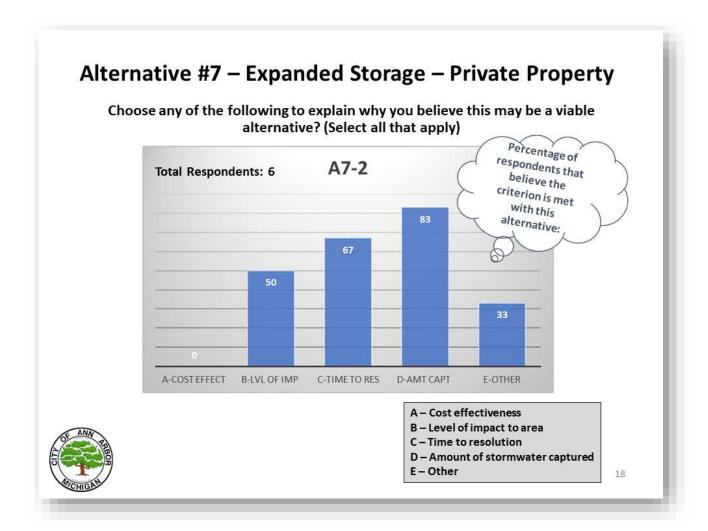
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Alternative #7 – Expanded Storage – Private Property





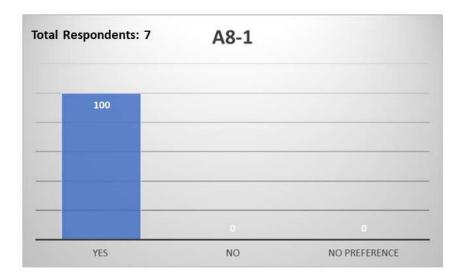






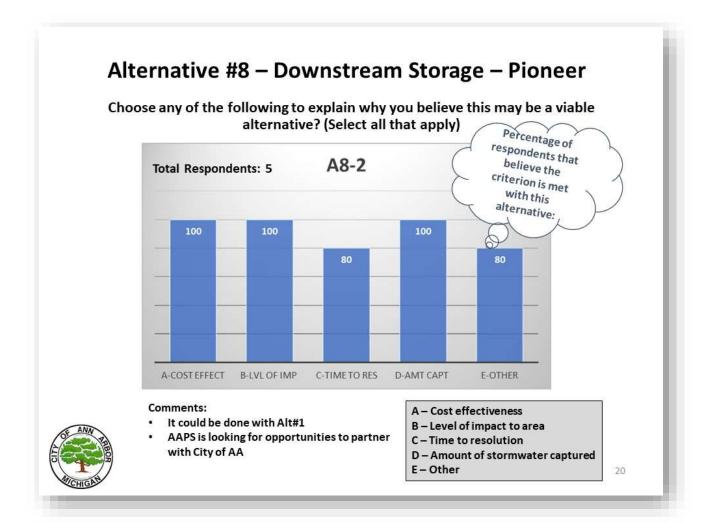
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Alternative #8 - Downstream Storage - Pioneer





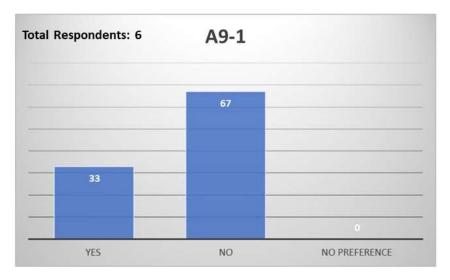






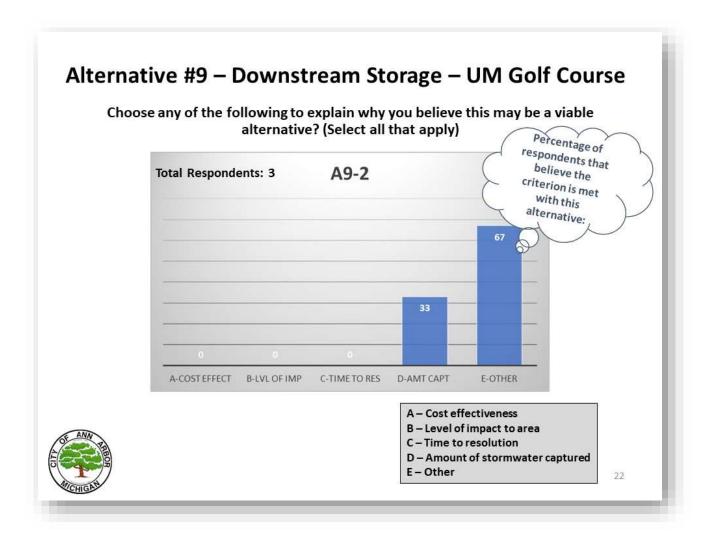
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Alternative #9 - Downstream Storage - UM Golf Course











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Alternative #10 - In-Line Storage Along W. Stadium

