



Iowa City Gateway

City Council Work Session

October 1, 2013



Gateway Project

Tonight's Objectives:

- Work Session
 - Answer Questions asked at the September 17th Work Session and correspondence
 - Review Staff Recommendations
 - Answer Additional Questions from Council
- Formal Meeting
 - Outline Staff Recommendations
 - Provide Opportunity for Public Input
 - No formal action will be taken tonight



Follow up Questions

- Roadway elevations
- Flooding issues
- Construction
- Design considerations / footprint reduction

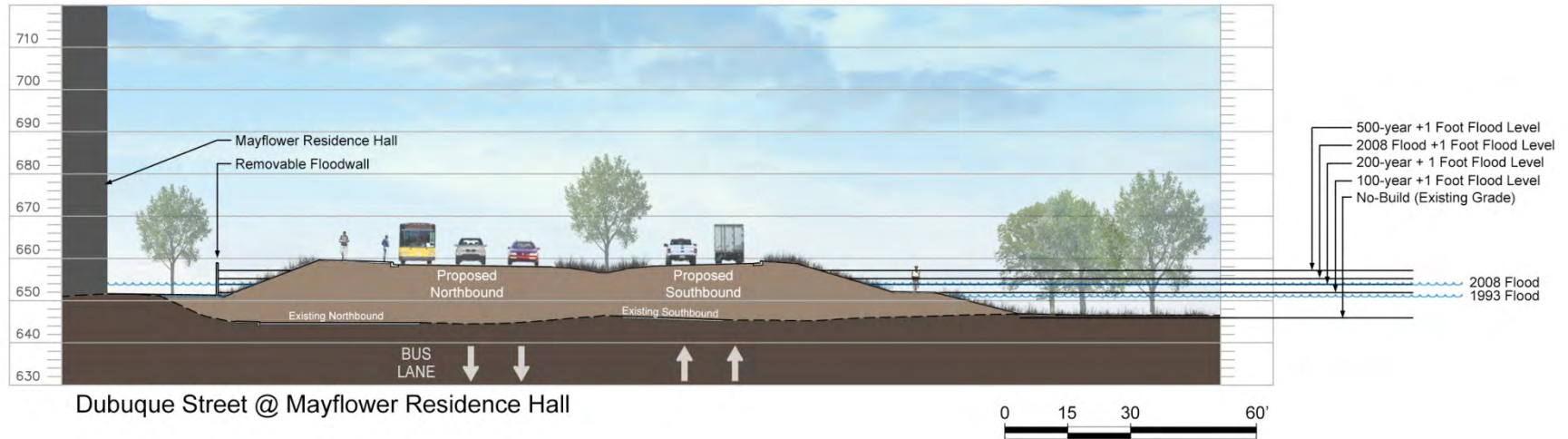


Roadway Elevations

- Is it correct that Dubuque Street has been closed 150 days in the last 20 years due to flooding? Would Dubuque street have been closed only 6 days if the road/bridge were at a 100 + 1 elevation?
 - Both statements are correct
 - Does not include closures from local heavy rains
- Have you assessed any other intermediate flood levels?
 - Looked at 200+1 elevation
 - Approximately 3.4 feet higher than 100+1 elevation
 - Updated comparisons for backwater, cost and cross sections in council packet

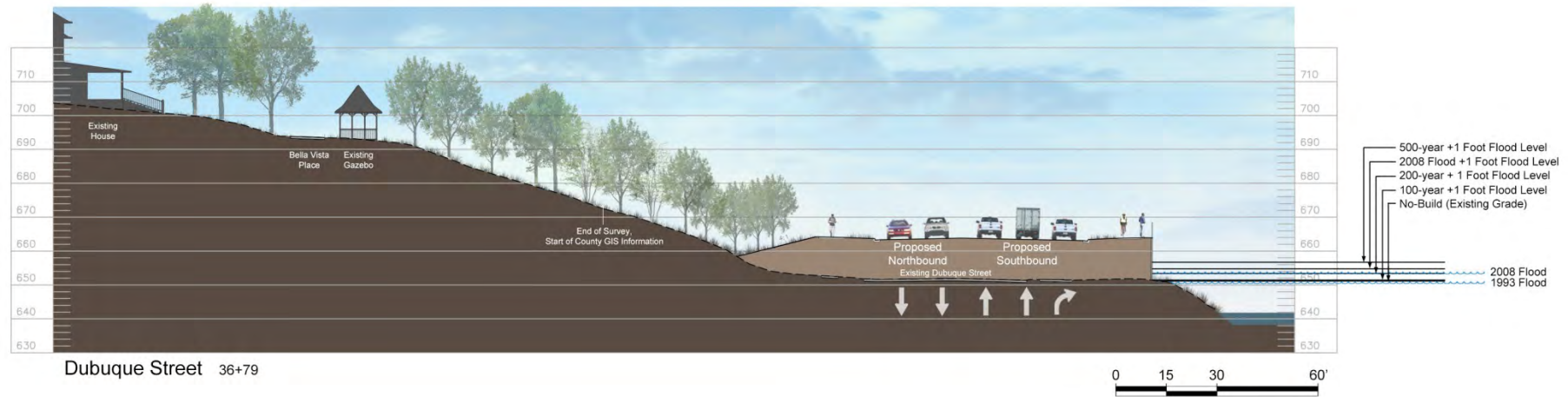


Dubuque Street at Mayflower





Dubuque Street at Bella Vista





Roadway Elevations

Why is the use of Hesco barriers in combination with a lower roadway elevation not a reasonable option?

- Risk to keep Dubuque Street open with temporary measures
- Impacts to traffic during deployment / removal
- Pedestrian / bicycle traffic not possible
- Estimated cost of approx. \$690,000 to deploy per event
- 85% reimbursable for federally declared disaster deployment



Roadway Elevations

How will water runoff from the east side of Dubuque Street be handled?

- Runoff conveyed from east to west to river
- Will still use open ditches and cross-culverts
- Project will reconstruct and upsize both for better conveyance
- Will not be a certified levee when complete



Flooding issues

Can more information be provided on future road closures by various impact levels?

- Can only look to past events

What is the economic impact when Dubuque Street closes?

- Staff working with Economic Development Division, Summer of Arts and the Chamber of Commerce to try to develop impact of 2008 and 2013

How will the project relate to the Corps operation plan for the Coralville Reservoir?

- Maximum release of 20,000 cfs could be achieved without impact to elevated Dubuque Street



Construction Issues

How would cost overruns during construction be paid for?

- Current estimate includes 20% contingency
- Cost overruns paid for by G.O. Bond proceeds
- Wastewater project is over 70% complete with 1% change orders

Cost clarification between Gateway and No Build options?

- Cost estimates presented for Gateway options were for construction only and did not include Final Design, Construction Admin and Inspection Fees
- Trunk sewer not included
- No Build cost estimate did include the Final Design, Construction Admin and Inspection Fees



Design Considerations

Travel lanes in the Preferred Alternative are 12' wide. Can this width be reduced and if so, what will the affects be?

- This is the standard for Iowa DOT Design Manual, Statewide Urban Design and Specifications, and AASHTO Green Book
- Accommodates all vehicles that currently use the corridor
- Reducing lane width could lead to an increase in crashes



Design Considerations

To increase safety on Dubuque St and Park Rd, would it be better to reduce speed from 35 mph to 25 mph?

Would a reduction in lane width result in a reduction in speed?

- Currently an Arterial street at 35mph
- Speed management will be studied during design
- Lane width reduction could lead to reduced speed, but lane width reduction could also lead to increase in crashes
- I-80/Dubuque is now signal controlled as is Foster/Dubuque



Design Considerations

Could a pedestrian-activated signal be installed at Mayflower?

- Will be considered during final design
- Could have positive impact on ped safety and speed control
- Other locations with pedestrians crossing in corridor
- Would have a negative impact of traffic delay



Design Considerations

The Preferred Alternative recommends wide sidewalks on both sides of Dubuque Street. Can these widths be minimized or perhaps eliminated on the east side?

- Purpose and Need to maintain and enhance amenities
- Brown to Foster walk was frequent request at public meetings
- Reducing widths or eliminating east sidewalk counter to goals
- Would reduce walkability of corridor
- Iowa River Trail most heavily used in the metro area
- North of Kimball, roadway shifted west to reduce impact



Design Considerations

Can parkway widths be reduced?

- Would create winter maintenance issues
- Would reduce safety buffer

Can the median width be reduced from 0 – 25' to 0 – 12'?

- South of Kimball – No median proposed
- Kimball to Ridge – alignment shifted west
- Same as current medians to maintain character of corridor
- Provides storage for Cambus and turning vehicles



Design Considerations

It has been indicated that a right turn lane from southbound Dubuque to westbound Park is warranted by the MPOJC. Why is a new turn lane necessary?

- Right turn lane warranted threshold is apx. 300 vehicles/hour
- Current traffic is 715 SB right turns on to Park Rd in morning
- Right turn lane will increase function and safety
- Lane would not impact the wooded bluff



Design Considerations

Are dual left turn lanes required on eastbound Park Road? Can we have a shared right and left-turn lane to reduce the width of the new bridge?

- Dual left needed to obtain acceptable service levels
- Will help anticipated growth in Hancher traffic turning NB
- Will analyze more closely during final design

Is the 3rd lane on Park Road really needed?

- Recommended by MPOJC in 2008
- Part of approved CIP
- Helps Park Road and Hancher traffic operate at acceptable service levels



Design Considerations

Are there additional options available for shrinking the horizontal footprint and minimizing impact along the Bella Vista hillside at Dubuque and Park Road?

- Retaining walls along east side of sidewalk
- Steeper slopes
- Tree wells for protecting mature trees
- Tree replacement
- Native plantings along affected hillside and slope



Design Considerations

What are the design criteria affecting clear zone and the use of barriers?

- Look to Iowa DOT Design Standards for clear zone and barrier requirements
- Setback of retaining wall in the Preferred Alternative greater than required clear zone
- The top of wall does not require a crash worthy barrier if it is outside the required clear zone
- Clear zone will be verified and analyzed in more detail during design



Recommendations

- Level of Protection for Dubuque Street
- Backwater Reduction Goals
- Structural Type of the Bridge



Recommendation for Elevation of Dubuque Street

Recommended minimum level of protection for Dubuque Street: One foot above the 2008 flood.

Protection Option	# of Days Closed from Past Flood Events	Inches Above/Below the 2008+1' Protection Level
Existing	150	NA
100 year +1'	7*	- 39"
200 year +1'	5*	- 11"
2008 flood +1' (Recommended)	0	0"
500 year +1' (EA Preferred)	0	+ 19"

* Including one day for cleaning, inspection and repair



Post Flood of '93 Projects to Consider, All Designed to 100 year + 1'

- Rocky Shore Drive / Highway 6 Flood Gate
- Riverside Drive Lift Station
- South Gilbert / Stevens Drive Flood Gate
- Floodplain Map Update



Rocky Shore Drive / Highway 6 Flood Gate



2008



2013

After 2008 we are now implementing a \$6.6M upgrade that is part of a 5 project \$26.9M collaborative regional effort to protect this area.



Riverside Drive Lift Station



2008



2013

After 2008 the University installed a temporary flood wall to protect the Art Building. Also, a \$1M joint project to upgrade to the lift station is planned.



South Gilbert / Stevens Drive Flood Gate



After 2008 upgrades to the existing level of protection were investigated, but the estimated cost exceeded funding that was available.



Floodplain Map Update



After 2008 the Floodplain Management Ordinance was amended to require protection to 1' above the 500 year event.



Bridge Comparisons

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Deck Arch	200yr + 1'	4.7"	1.1"	661.52	27.8"		\$37.96 M	\$38.34 M	
Deck Arch	2008 + 1'	5.2"	0.5"	662.45	11.1"	\$36.71 M		\$38.48 M	
Deck Arch	500yr + 1'	5.6"	0.4"	664.03	19.0"	\$36.94 M	\$38.33 M	\$38.66 M	\$39.98 M
Through Arch	100yr + 1'	3.4"		656.87		\$35.99 M		\$37.58 M	
Through Arch	200yr + 1'	4.9"	1.5"	659.02	25.8"		\$37.93 M	\$38.31 M	
Through Arch	2008 + 1'	5.2"	0.3"	659.95	11.1"	\$36.70 M		\$38.47 M	
Through Arch	500yr + 1'	5.8"	0.6"	661.53	19.0"	\$36.90 M	\$38.30 M	\$38.63 M	\$39.60 M





Bridge Comparisons

Bridge Type	Low Steel Elevation	Backwater Reduction at Idyllwild	Incremental Improvement in Backwater Reduction	Deck Elevation	Incremental Height of Bridge Deck	Construction Cost Estimate with Dubuque at 100yr + 1'	Construction Cost Estimate with Dubuque at 200yr + 1'	Construction Cost Estimate with Dubuque at 2008 + 1'	Construction Cost Estimate with Dubuque at 500yr + 1'
Deck Girder	100yr + 1'	3.4"		660.20		\$32.67 M		\$34.26 M	
Deck Girder	200yr + 1'	6.1"	2.7"	662.52	27.8"		\$34.63 M	\$35.01 M	
Deck Girder	2008 + 1'	6.6"	0.5"	663.45	11.2"	\$33.41		\$35.17 M	
Deck Girder	500yr + 1'	7.0"	0.4"	665.03	19.0"	\$34.20 M	\$35.01 M	\$35.34 M	\$36.65 M EA Preferred Alternative
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Deck Arch	500yr + 1'	5.6"	0.4"	664.03	19.0"	\$36.94 M	\$38.33 M	\$38.66 M	\$39.98 M
Through Arch	100yr + 1'	3.4"		656.87		\$35.99 M		\$37.58 M	
Through Arch	200yr + 1'	4.9"	1.5"	659.02	25.8"		\$37.93 M	\$38.31 M	
Through Arch	2008 + 1'	5.2"	0.3"	659.95	11.1"	\$36.70 M		\$38.47 M	
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Bridge Comparisons

Bridge Type	Low Steel Elevation	Backwater Reduction at Idyllwild	Incremental Improvement in Backwater Reduction	Deck Elevation	Incremental Height of Bridge Deck	Construction Cost Estimate with Dubuque at 100yr + 1'	Construction Cost Estimate with Dubuque at 200yr + 1'	Construction Cost Estimate with Dubuque at 2008 + 1'	Construction Cost Estimate with Dubuque at 500yr + 1'
Deck Girder	100yr + 1'	3.4"		660.20		\$32.67 M		\$34.26 M	
Deck Girder	200yr + 1'	6.1"	2.7"	662.52	27.8"		\$34.63 M	\$35.01 M	
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Through Arch	100yr + 1'	3.4"		656.87		\$35.99 M		\$37.58 M	
Through Arch	200yr + 1'	4.9"	1.5"	659.02	25.8"		\$37.93 M	\$38.31 M	
Through Arch	2008 + 1'	5.2"	0.3"	659.95	11.1"	\$36.70 M		\$38.47 M	
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Bridge Comparisons

Bridge Type	Low Steel Elevation	Backwater Reduction at Idyllwild	Incremental Improvement in Backwater Reduction	Deck Elevation	Incremental Height of Bridge Deck	Construction Cost Estimate with Dubuque at 100yr + 1'	Construction Cost Estimate with Dubuque at 200yr + 1'	Construction Cost Estimate with Dubuque at 2008 + 1'	Construction Cost Estimate with Dubuque at 500yr + 1'
Deck Girder	100yr + 1'	3.4"		660.20		\$32.67 M		\$34.26 M	
Deck Girder	200yr + 1'	6.1"	2.7"	662.52	27.8"		\$34.63 M	\$35.01 M	
Deck Girder	2008 + 1'	6.6"	0.5"	663.45	11.2"	\$33.41		\$35.17 M	
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Through Arch	2008 + 1'	5.2"	0.3"	659.95	11.1"	\$36.70 M		\$38.47 M	
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Bridge Comparisons

Bridge Type	Low Steel Elevation	Backwater Reduction at Idyllwild	Incremental Improvement in Backwater Reduction	Deck Elevation	Incremental Height of Bridge Deck	Construction Cost Estimate with Dubuque at 100yr + 1'	Construction Cost Estimate with Dubuque at 200yr + 1'	Construction Cost Estimate with Dubuque at 2008 + 1'	Construction Cost Estimate with Dubuque at 500yr + 1'
Deck Girder	100yr + 1'	3.4"		660.20		\$32.67 M		\$34.26 M	
Deck Girder	200yr + 1'	6.1"	2.7"	662.52	27.8"		\$34.63 M	\$35.01 M	
Deck Girder	2008 + 1'	6.6"	0.5"	663.45	11.2"	\$33.41		\$35.17 M	
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Through Arch	100yr + 1'	3.4"		656.87		\$35.99 M		\$37.58 M	
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Through Arch	2008 + 1'	5.2"	0.3"	659.95	11.1"	\$36.70 M		\$38.47 M	
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Bridge Comparisons

Bridge Type	Low Steel Elevation	Backwater Reduction at Idyllwild	Incremental Improvement in Backwater Reduction	Deck Elevation	Incremental Height of Bridge Deck	Construction Cost Estimate with Dubuque at 100yr + 1'	Construction Cost Estimate with Dubuque at 200yr + 1'	Construction Cost Estimate with Dubuque at 2008 + 1'	Construction Cost Estimate with Dubuque at 500yr + 1'
Deck Girder	100yr + 1'	3.4"		660.20		\$32.67 M		\$34.26 M	
Deck Girder	200yr + 1'	6.1"	2.7"	662.52	27.8"		\$34.63 M	\$35.01 M	
Deck Girder	2008 + 1'	6.6"	0.5"	663.45	11.2"	\$33.41		\$35.17 M	
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Deck Arch	100yr + 1'	3.6"		659.20		\$36.01 M		\$37.59 M	
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Deck Arch	2008 + 1'	5.2"	0.5"	662.45	11.1"	\$36.71 M		\$38.48 M	
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Through Arch	100yr + 1'	3.4"		656.87		\$35.99 M		\$37.58 M	
Through Arch	200yr + 1'	4.9"	1.5"	659.02	25.8"		\$37.93 M	\$38.31 M	
Through Arch	2008 + 1'	5.2"	0.3"	659.95	11.1"	\$36.70 M		\$38.47 M	
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Bridge Comparisons

Bridge Type	Low Steel Elevation	Backwater Reduction at Idyllwild	Incremental Improvement in Backwater Reduction	Deck Elevation	Incremental Height of Bridge Deck	Construction Cost Estimate with Dubuque at 100yr + 1'	Construction Cost Estimate with Dubuque at 200yr + 1'	Construction Cost Estimate with Dubuque at 2008 + 1'	Construction Cost Estimate with Dubuque at 500yr + 1'
Deck Girder	100yr + 1'	3.4"		660.20		\$32.67 M		\$34.26 M	
Deck Girder	200yr + 1'	6.1"	2.7"	662.52	27.8"		\$34.63 M	\$35.01 M	
Deck Girder	2008 + 1'	6.6"	0.5"	663.45	11.2"	\$33.41		\$35.17 M	
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Through Arch	100yr + 1'	3.4"		656.87		\$35.99 M		\$37.58 M	
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Bridge Comparisons

Bridge Type	Low Steel Elevation	Backwater Reduction at Idyllwild	Incremental Improvement in Backwater Reduction	Deck Elevation	Incremental Height of Bridge Deck	Construction Cost Estimate with Dubuque at 100yr + 1'	Construction Cost Estimate with Dubuque at 200yr + 1'	Construction Cost Estimate with Dubuque at 2008 + 1'	Construction Cost Estimate with Dubuque at 500yr + 1'
Deck Girder	100yr + 1'	3.4"		660.20		\$32.67 M		\$34.26 M	
Deck Girder	200yr + 1'	6.1"	2.7"	662.52	27.8"		\$34.63 M	\$35.01 M	
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Deck Arch	500yr + 1'	5.6"	0.4"	664.03	19.0"	\$36.94 M	\$38.33 M	\$38.66 M	\$39.98 M
Through Arch	100yr + 1'	3.4"		656.87		\$35.99 M		\$37.58 M	
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Bridge Comparisons

Bridge Type	Low Steel Elevation	Backwater Reduction at Idyllwild	Incremental Improvement in Backwater Reduction	Deck Elevation	Incremental Height of Bridge Deck	Construction Cost Estimate with Dubuque at 100yr + 1'	Construction Cost Estimate with Dubuque at 200yr + 1'	Construction Cost Estimate with Dubuque at 2008 + 1'	Construction Cost Estimate with Dubuque at 500yr + 1'
Deck Girder	100yr + 1'	3.4"		660.20		\$32.67 M		\$34.26 M	
Deck Girder	200yr + 1'	6.1"	2.7"	662.52	27.8"		\$34.63 M	\$35.01 M	
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Through Arch	100yr + 1'	3.4"		656.87		\$35.99 M		\$37.58 M	
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Bridge Comparisons

Bridge Type	Low Steel Elevation	Backwater Reduction at Idyllwild	Incremental Improvement in Backwater Reduction	Deck Elevation	Incremental Height of Bridge Deck	Construction Cost Estimate with Dubuque at 100yr + 1'	Construction Cost Estimate with Dubuque at 200yr + 1'	Construction Cost Estimate with Dubuque at 2008 + 1'	Construction Cost Estimate with Dubuque at 500yr + 1'
Deck Girder	100yr + 1'	3.4"		660.20		\$32.67 M		\$34.26 M	
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Bridge Comparisons

Bridge Type	Low Steel Elevation	Backwater Reduction at Idyllwild	Incremental Improvement in Backwater Reduction	Deck Elevation	Incremental Height of Bridge Deck	Construction Cost Estimate with Dubuque at 100yr + 1'	Construction Cost Estimate with Dubuque at 200yr + 1'	Construction Cost Estimate with Dubuque at 2008 + 1'	Construction Cost Estimate with Dubuque at 500yr + 1'
Deck Girder	100yr + 1'	3.4"		660.20		\$32.67 M		\$34.26 M	
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Bridge Comparisons

Bridge Type	Low Steel Elevation	Backwater Reduction at Idyllwild	Incremental Improvement in Backwater Reduction	Deck Elevation	Incremental Height of Bridge Deck	Construction Cost Estimate with Dubuque at 100yr + 1'	Construction Cost Estimate with Dubuque at 200yr + 1'	Construction Cost Estimate with Dubuque at 2008 + 1'	Construction Cost Estimate with Dubuque at 500yr + 1'
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Bridge Comparisons

Bridge Type	Low Steel Elevation	Backwater Reduction at Idyllwild	Incremental Improvement in Backwater Reduction	Deck Elevation	Incremental Height of Bridge Deck	Construction Cost Estimate with Dubuque at 100yr + 1'	Construction Cost Estimate with Dubuque at 200yr + 1'	Construction Cost Estimate with Dubuque at 2008 + 1'	Construction Cost Estimate with Dubuque at 500yr + 1'
Deck Girder	100yr + 1'	3.4"		660.20		\$32.67 M		\$34.26 M	
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Bridge Comparisons

Bridge Type	Low Steel Elevation	Backwater Reduction at Idyllwild	Incremental Improvement in Backwater Reduction	Deck Elevation	Incremental Height of Bridge Deck	Construction Cost Estimate with Dubuque at 100yr + 1'	Construction Cost Estimate with Dubuque at 200yr + 1'	Construction Cost Estimate with Dubuque at 2008 + 1'	Construction Cost Estimate with Dubuque at 500yr + 1'
Deck Girder	100yr + 1'	3.4"		660.20		\$32.67 M		\$34.26 M	
Deck Girder	200yr + 1'	6.1"	2.7"	662.52	27.8"		\$34.63 M	\$35.01 M	
Deck Girder	2008 + 1'	6.6"	0.5"	663.45	11.2"	\$33.41		\$35.17 M	
Deck Girder	500yr + 1'	7.0"	0.4"	665.03	19.0"	\$34.20 M	\$35.01 M	\$35.34 M	\$36.65 M EA Preferred Alternative
Deck Arch	100yr + 1'	3.6"		659.20		\$36.01 M		\$37.59 M	
Deck Arch	200yr + 1'	4.7"	1.1"	661.52	27.8"		\$37.96 M	\$38.34 M	
Deck Arch	2008 + 1'	5.2"	0.5"	662.45	11.1"	\$36.71 M		\$38.48 M	
Deck Arch	500yr + 1'	5.6"	0.4"	664.03	19.0"	\$36.94 M	\$38.33 M	\$38.66 M	\$39.98 M
Through Arch	100yr + 1'	3.4"		656.87		\$35.99 M		\$37.58 M	
Through Arch	200yr + 1'	4.9"	1.5"	659.02	25.8"		\$37.93 M	\$38.31 M	
Through Arch	2008 + 1'	5.2"	0.3"	659.95	11.1"	\$36.70 M		\$38.47 M	
Through Arch	500yr + 1'	5.8"	0.6"	661.53	19.0"	\$36.90 M	\$38.30 M	\$38.63 M	\$39.60 M





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Bridge Recommendations

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Next Steps

- Receive FHWA approval / Finding of No Significant Impact
- Decide on the design parameters:
 - Dubuque Street Elevation
 - Backwater reduction goal
 - Bridge Type
- Begin Final Design



Council Q&A



Dubuque Street Elevations





Renderings of Bridge Options





Preferred Alternative from Boathouse





