October 24, 2022

I-380 Widening and Wright Brothers Blvd. Interchange

Constructability and Update

Greetings and Intros

IOWA DOT

I-380 from N of 120th St. to near US 30

General Project Overview

PRELIMINARY SUBJECT TO CHANGE

IOWA DOT

I-380 from N of 120th St. to near US 30

General Project Overview

Adjacent City Projects to be defined; proposed to be tied and coordinated with interchange construction

PRELIMINARY SUBJECT TO CHANGE

I-380 from N of 120th St. to near US 30

General Project Overview

Adjacent Rest Area Parking/Pavement project proposed to be tied and coordinated with mainline widening

IOWA DOT

I-380 from N of 120th St. to near US 30

High Level Schedule

Prior to July 2024

- Clearing & Grubbing in interchange area and in available ROW (Oct 2023 through March 2024)
- Utility relocations, including DOT-ICN FO (spring/early summer 2024)

July 2024 Letting

Late Summer/Fall

- Remaining C&G start on October 1
- Settlement mitigation (if needed)
- Bridges to be designed for down-drag; begin new bridge(s) with traffic on existing
- Begin mainline grading and culvert extensions

2025

Construction Season

- Interchange:
  - Two-way traffic maintained on Wright Brothers Blvd.
  - Construct two new bridges while maintaining traffic on the existing bridge.
  - Demolish existing bridge
  - Complete interchange, ramps, and side road
- Mainline: Temp Widening and NB reconstruction

2026

Construction Season

- Mainline:
  - Finish NB
  - Construct SB
  - SB Rest Area parking

2027

Construction Season

- Final erosion control
- Landscaping
- Final punch-list items

PRELIMINARY SUBJECT TO CHANGE

Utilities

IOWADOT

I-380 from N of 120th St. to near US 30

Utility Coordination – Overview of Utilities

- ITC – Overhead Electric transmission
- Alliant Energy – Electric distribution

- MidAmerican – Gas distribution

- Aureon – Fiber Optic
- IADOT/ ICN – Fiber Optic
- Lumen – Fiber Optic
- Windstream – Fiber Optic

- IMON- New installation request
- UPN – New installation request

PRELIMINARY SUBJECT TO CHANGE

IOWA DOT

I-380 from N of 120th St. to near US 30

Utility Coordination – Proposed Crossing Corridors at interchange

Proposed Designated Public Utility Crossing Locations

PRELIMINARY SUBJECT TO CHANGE

Wright Brothers Blvd. Interchange

PRELIMINARY SUBJECT TO CHANGE

Interchange Staging and Maintenance of Traffic

Interchange Staging and Maintenance of Traffic

Refer to Handout

Interchange –Bridge Information

Bridge TS&Ls

IOWA DOT

I-380 from N of 120th St. to near US 30

Interchange Bridge TS&Ls

Situation Plan

Refer to Handout

PRELIMINARY SUBJECT TO CHANGE

IOWA DOT

I-380 from N of 120th St. to near US 30

Interchange Bridge TS&Ls

Refer to Handout

PRELIMINARY SUBJECT TO CHANGE

IOWA DOT

I-380 from N of 120th St. to near US 30

Side Road Major Bid Item Quantities (not including City projects)

Item	Quantity	Unit
Roadway (449) Side Road and Ramps:		
Embankment in place	144,280	CY
Excavation Class 10, Rdwy+Borrow	106,150	CY
Retaining Wall	3,550	SF
Modified Subbase	18,270	CY
Paved Shld, PCC, 10.5"	5,800	SY
Std/S-F PCC Pav't, CL C CL 3, 10.5"	44,150	SY
Detour Pav't	3,000	SY
Removal of Pav't	34,580	SY
Trail, PCC, 6"	3,120	SY
Drainage	TBD	
Traffic Control (staged under traffic), IWZ	TBD	
Signing	TBD	

ITEMS ON THIS PAGE PRELIMINARY SUBJECT TO CHANGE

IOWA DOT

I-380 from N of 120th St. to near US 30

Interchange Bridge Major Bid Item Quantities

Item	Quantity	Unit
Bridge		
EB Bridge	17,700	SF
WB Bridge	21,400	SF
Macadam Stone protection and armoring	110	SY
Excavation Class 20	230	CY
Concrete Barrier Rail / possible Aesthetic	430	LF
Approach Pavement	1,000	SY
Conc Barrier, Reinf	110	LF
Bridge Removal	1	EA
Aesthetic Bridge Treatments		
Lighting , Signals, ITS		

PRELIMINARY SUBJECT TO CHANGE

I-380 from N of 120th St. to near US 30

Greatest Fill and Preliminary Estimate of Settlement

Location	Fill Height
1	23.5'
2	22.0'
3	19.5'
4	18.8'
5	18.2'
6	15.7'
7	15.5'
8	15.3'
9	15.1'

Refer to Handout

PRELIMINARY SUBJECT TO CHANGE

IOWA DOT

I-380 from N of 120th St. to near US 30

Greatest Fill and Preliminary Estimate of Settlement

Table 1: Abutment Settlement Summary

Approx. Station	Approx. Maximum Fill Height (feet)	Estimated Settlement (inches)		
		Embankment Soil	Foundation Soil	Total
822+50/922+50	15 to 20	1-1/2 to 2-1/2	2-1/2 to 3	4 to 5-1/2
825+50/925+50	20 to 25	2-1/2 to 4-1/2	3 to 4	5-1/2 to 8-1/2

Table 2: Anticipated Paving and Pile Driving Delays

Approx	Estimated Paving Delay (days)*	Estimated Delay for Pile Installation (days)**
822+50/922+50	30 to 45	90 to 120
825+50/925+50	45 to 60	120 to 150

*Delay to achieve less than 1-inch of remaining estimated settlement.

**Delay to achieve less than 0.4-inch of remaining estimated settlement.

Preliminary findings based on preliminary data, subject to change

Refer to Handout

PRELIMINARY SUBJECT TO CHANGE

IOWA DOT

I-380 from N of 120th St. to near US 30

Greatest Fill and Preliminary Estimate of Settlement

Table 3. Bridge Approach and Ramps Settlement Summary

Approx. Station	Alignment**	Approx. Maximum Fill Height (feet)	Estimated Embankment Soil Settlement (inches)	Estimated Foundation Soil Settlement (inches)	Total Settlement (inches)	Estimated Paving Delay* (Days)
819+00 to 820+00	WRT EB	12 to 13	1-1/2 to 2	1-1/2 to 2-1/2	3 to 4-1/2	30 to 45
919+00 to 920+00	WRT WB	13 to 15	1-1/2 to 2	1-1/2 to 2-1/2	3 to 4-1/2	30 to 45
821+00 to 822+00	WRT EB	15 to 19	2 to 2-1/2	2-1/2 to 3-1/2	4-1/2 to 6	30 to 45
921+00 to 922+00	WRT WB	13 to 17	1-1/2 to 2-1/2	2 to 3	3-1/2 to 5-1/2	30 to 45
826+00 to 827+50	WRT EB	20 to 23	2-1/2 to 4	3 to 4	5-1/2 to 8	45 to 60
926+00 to 927+50	WRT WB	15 to 20	2 to 2-1/2	3 to 4	5 to 6-1/2	45 to 60
828+50 to 829+00	WRT EB	15 to 20	2 to 2-1/2	2 to 3	4 to 5-1/2	30 to 45
928+50 to 929+00	WRT WB	22	3-1/2 to 4	2 to 3	5-1/2 to 7	30 to 45
1108+50 to 1110+50	Ramp A	15	1-1/2 to 2	2-1/2 to 3-1/2	4 to 5-1/2	30 to 45
1110+50 to 1111+00	Ramp A	11 to 15	1-1/2 to 2	2 to3	3-1/2 to 5	30 to 45
2100+00 to 2101+50	Ramp B	12 to 15	1-1/2 to 2	1-1/2 to 2-1/2	3 to 4-1/2	30 to 45
2102+00 to 2104+00	Ramp B	11 to 13	1-1/2 to 2	2 to 2-1/2	3-1/2 to 4-1/2	30 to 45
3102+50 to 3103+50	Ramp C	15	1-1/2 to 2	2 to 2-1/2	3-1/2 to 4-1/2	30 to 45
4108+00 to 4110+00	Ramp D	11 to 18	1-1/2 to 2-1/2	2 to 3	3-1/2 to 5-1/2	30 to 45

*Delay to achieve less than 1-inch of remaining estimated settlement

**WRT EB – Wright Brothers Boulevard East Bound/ WRT WB – Wright Brothers Boulevard West Bound

Refer to Handout

IOWA DOT

I-380 from N of 120th St. to near US 30

Greatest Fill and Preliminary Estimate of Settlement

PRELIMINARY SUBJECT TO CHANGE

IOWA DOT

I-380 from N of 120th St. to near US 30

Greatest Fill and Preliminary Estimate of Settlement

PRELIMINARY SUBJECT TO CHANGE

I-380 from N of 120th St. to near US 30

Pier Construction in I-380 Median

Refer to Handout

PRELIMINARY SUBJECT TO CHANGE

I-380 from N of 120th St. to near US 30

Pier Construction in I-380 Median

I-380 from N of 120th St. to near US 30

Retaining wall along Wright Brothers Blvd.

PRELIMINARY SUBJECT TO CHANGE

IOWADOT

I-380 from N of 120th St. to near US 30

Retaining wall along Wright Brothers Blvd.

PRELIMINARY SUBJECT TO CHANGE

IOWADOT

I-380 from N of 120th St. to near US 30

Retaining wall along Wright Brothers Blvd.

PRELIMINARY SUBJECT TO CHANGE

I-380 from N of 120th St. to near US 30

Interchange Area Prelim Drainage

PRELIMINARY SUBJECT TO CHANGE

IOWA DOT

I-380 from N of 120th St. to near US 30

Bridge Aesthetics – very preliminary

PRELIMINARY SUBJECT TO CHANGE

I-380 from N of 120th St. to near US 30

Bridge Aesthetics

PRELIMINARY SUBJECT TO CHANGE

I-380 from N of 120th St. to near US 30

Bridge Aesthetics

PRELIMINARY SUBJECT TO CHANGE

Project Overview – Signs

Signs
Refer to Handout

I-380 from N of 120th St. to near US 30

Project Overview – Signals

PRELIMINARY SUBJECT TO CHANGE

Schedule

SCHEDULE

PRELIMINARY SUBJECT TO CHANGE

IOWA DOT

I-380 from N of 120th St. to near US 30

GANTT Chart (Interchange and Side Road construction schedule)

3 Pre-Letting Construction Schedule **Prelim High-Level Estimates for Discussion**

		Calendar 2024					Calendar 2025													
7	Task	A	S	O	N	D	J	F	M	A	M	Jn	Jl	A	S	O	N	D	J	F
9	Interchange/Side-Road/WBB Ramps																			
10	Mobilization																			
11	Project wide C&G																			
12	road																			
13	North bridge foundations, abutments, pier																			
14	North bridge beams and tie steel																			
15	North bridge deck and rail																			
16	North bridge approaches																			
17	North side: side-road and ramps grade and detour pavement																			
18	North side : side road and ramps pave																			
19																				
20	South bridge foundations, abutments, pier																			
21	South bridge beams and tie steel																			
22	South bridge deck and rail																			
23	South bridge approaches																			
24																				
25	Demolition of Existing bridge ? Before south bridge beams or after South Bridge Construction?																			
26																				
27	South side: side-road and ramps final grade																			
28	Final side road paving																			
29																				
30	Permanent Signals																			
31	Final Lighting																			
32	Final Pavement Markings																			
33	Final Signs																			
34																				
35	Final erosion control and landscaping																			
36																				
37	I-380 Mainline NB																			
38	I-380 Mainline SB and SB Rest Area Parking Lot																			

Refer to Handout

PRELIMINARY SUBJECT TO CHANGE

IOWA DOT

I-380 from N of 120th St. to near US 30

GANTT Chart (Interchange and Side Road construction schedule)

3 Pre-Letting Construction Schedule Prelim H

			Calendar 2026												Calendar 2027							
7	Task	D	J	F	M	A	M	Jn	Jl	A	S	O	N	D	J	F	M	A	M	Jn	Jl	A
9	Interchange/Side-Road/WBB Ramps																					
10	Mobilization																					
11	Project wide C&G																					
12	road																					
13	North bridge foundations, abutments, pier																					
14	North bridge beams and tie steel																					
15	North bridge deck and rail																					
16	North bridge approaches																					
17	North side: side-road and ramps grade and detour pavement																					
18	North side : side road and ramps pave																					
19																						
20	South bridge foundations, abutments, pier																					
21	South bridge beams and tie steel																					
22	South bridge deck and rail																					
23	South bridge approaches																					
24																						
25	Demolition of Existing bridge ? Before south bridge beams or after South Bridge Construction?																					
26																						
27	South side: side-road and ramps final grade																					
28	Final side road paving																					
29																						
30	Permanent Signals																					
31	Final Lighting																					
32	Final Pavement Markings																					
33	Final Signs																					
34																						
35	Final erosion control and landscaping																					
36																						
37	I-380 Mainline NB																					
38	I-380 Mainline SB and SB Rest Area Parking Lot																					

Refer to Handout

PRELIMINARY SUBJECT TO CHANGE

Questions

1. Concerns with demolition of existing bridge between the new bridges?
2. Median Access for median piers?
3. Construction schedule

IOWA DOT

I-380 from N of 120th St. to near US 30

Questions

PRELIMINARY SUBJECT TO CHANGE

Mainline I-380

PRELIMINARY SUBJECT TO CHANGE

I-380 from N of 120th St. to near US 30

Mainline Staging

Refer to Handout

PRELIMINARY SUBJECT TO CHANGE

IOWA DOT

I-380 from N of 120th St. to near US 30

Major Bid Item Quantities

Item	Quantity	Unit
Roadway Mainline I-380		
Special Backfill	20,400	CY
EXCAVATION, CL 10, RDWY+BORROW	450,000	CY
Detour Pavement	104,500	SY
Removal of Pavement	270,500	SY
Modified Subbase	101,300	CY
Pavement Scarification	143,200	SY
Hot Mix Asphalt Mixture Interlayer Base Course	12,080	TON
Hot Mix Asphalt Very High Traffic, Base Course	116,500	TON
Hot Mix Asphalt Very High Traffic, Intermediate Course	90,450	TON
Hot Mix Asphalt Very High Traffic, Surface Course	46,750	TON
TBR	100,000	LF

PRELIMINARY SUBJECT TO CHANGE

I-380 from N of 120th St. to near US 30

Mainline Drainage

Item	Quantity	Unit
Conc Roadway Pipe 24"	600	LF
Concrete Roadway Pipe 30" to 42"	600	LF
RCB Extensions	3	EA

PRELIMINARY SUBJECT TO CHANGE

Discussion

THANK YOU FOR YOUR TIME AND ATTENTION

Meeting notes will be posted to the Iowa DOT Contract's home page a couple weeks after the meeting.

Questions can be e-mailed to Linda Narigon, linda.Narigon@iowadot.us, through November 4, 2022, to be included with the meeting summary.