



City of Wood Dale

Appendix 7 - Engineer's Opinion of Probable Construction Cost
Proposed Improvements for Area 6 - Alternate 2

Item	Location Type	Depth, feet	Quantity	Unit	Unit Price	Item Cost
12" RCP Storm Sewer	Downtown Street	0 - 5	87	Foot	\$ 275	\$ 23,925
24" RCP Storm Sewer	Downtown Street	0 - 5	633	Foot	\$ 350	\$ 221,550
24" RCP Storm Sewer	Downtown Street	5 - 8	633	Foot	\$ 385	\$ 243,705
36" RCP Storm Sewer	Downtown Street	0 - 5	46	Foot	\$ 385	\$ 17,710
36" RCP Storm Sewer	Downtown Street	5 - 8	29	Foot	\$ 425	\$ 12,325
48" RCP Storm Sewer	Downtown Street	5 - 8	312	Foot	\$ 535	\$ 166,920
60" RCP Storm Sewer	Downtown Street	5 - 8	618	Foot	\$ 630	\$ 389,340
5' Diameter Manhole	Downtown Street	0 - 5	9	Each	\$ 6,250	\$ 56,250
5' Diameter Manhole	Downtown Street	5 - 8	9	Each	\$ 7,000	\$ 63,000
7' Diameter Manhole	Downtown Street	0 - 5	1	Each	\$ 8,500	\$ 8,500
7' Diameter Manhole	Downtown Street	5 - 8	1	Each	\$ 9,750	\$ 9,750
8' Diameter Manhole	Downtown Street	5 - 8	8	Each	\$ 11,500	\$ 92,000
Inlet	N/A	N/A	60	Each	\$ 1,250	\$ 75,000
Connect to Existing	N/A	N/A	1	Lump Sum	\$ 10,000	\$ 10,000

Construction Subtotal \$ 1,389,975

Construction Contingency 20% \$ 277,995

Construction Total \$ 1,667,970

Design Engineering 7.5% \$ 125,098

Construction Observation 7.5% \$ 125,098

Project Total \$ 1,918,166

Notes

1. Prices include sanitary sewer and water service relocation/adjustment, trench backfill, pavement or lawn restoration, traffic control, erosion control, construction layout, mobilization and permitting.
2. Prices do not include right-of-way acquisition, temporary or permanent easements, or relocating other utilities.
3. Prices are current for 2012.



City of Wood Dale

Appendix 8 - Engineer's Opinion of Probable Construction Cost
Proposed Improvements for Area 8 - Alternate 1

Item	Location Type	Depth, feet	Quantity	Unit	Unit Price	Item Cost
30" RCP Storm Sewer	Residential Street	0 - 5	680	Foot	\$ 265	\$ 180,200
7' Diameter Manhole	Residential Street	5 - 8	4	Each	\$ 8,250	\$ 33,000
High Capacity Inlet	Side Yard	N/A	1	Each	\$ 3,250	\$ 3,250
Excavate Channel	Forest Preserve	3	1926	CY	\$ 30	\$ 57,780
Detention Pond Increase	N/A	N/A	8.9	Ac-ft	\$ 48,000	\$ 427,200
Connect to Existing	N/A	N/A	1	Lump Sum	\$ 25,000	\$ 25,000

Construction Subtotal		\$ 726,430
Construction Contingency	20%	\$ 145,286
Construction Total		\$ 871,716
Design Engineering	7.5%	\$ 65,379
Construction Observation	7.5%	\$ 65,379
Project Total		\$ 1,002,473

Notes

1. Prices include sanitary sewer and water service relocation/adjustment, trench backfill, pavement or lawn restoration, traffic control, erosion control, construction layout, mobilization and permitting.
2. Prices do not include right-of-way acquisition, temporary or permanent easements, or relocating
3. Prices are current for 2012.



City of Wood Dale

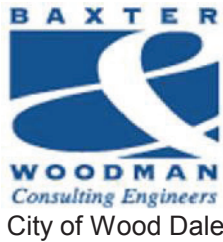
Appendix 9 - Engineer's Opinion of Probable Construction Cost
Proposed Improvements for Area 8 - Alternate 2

Item	Location Type	Depth, feet	Quantity	Unit	Unit Price	Item Cost
24" RCP Storm Sewer	Residential Street	5 - 8	871	Foot	\$ 265	\$ 230,815
30" RCP Storm Sewer	Residential Street	5 - 8	785	Foot	\$ 295	\$ 231,575
5' Diameter Manhole	Residential Street	5 - 8	9	Each	\$ 5,750	\$ 51,750
6' Diameter Manhole	Residential Street	5 - 8	6	Each	\$ 7,000	\$ 42,000
24" FES	Forest Preserve	N/A	1	Each	\$ 1,898	\$ 1,898
Inlet	Residential Street	N/A	5	Each	\$ 1,000	\$ 5,000
Wet Bottom Detention	N/A	N/A	8.9	Ac-ft	\$ 48,000	\$ 427,200
Connect to Existing	N/A	N/A	1	Lump Sum	\$ 25,000	\$ 25,000

Construction Subtotal		\$ 1,015,238
Construction Contingency	20%	\$ 203,048
Construction Total		\$ 1,218,286
Design Engineering	7.5%	\$ 91,371
Construction Observation	7.5%	\$ 91,371
Project Total		\$ 1,401,028

Notes

1. Prices include sanitary sewer and water service relocation/adjustment, trench backfill, pavement or lawn restoration, traffic control, erosion control, construction layout, mobilization and permitting.
2. Prices do not include right-of-way acquisition, temporary or permanent easements, or relocating other utilities.
3. Prices are current for 2012.



Appendix 10 - Engineer's Opinion of Probable Construction Cost
Proposed Improvements for Area 10 - Alternate 1

Item	Location Type	Depth, feet	Quantity	Unit	Unit Price	Item Cost
12" Storm Sewer	Residential Street	0 - 5	347	Foot	\$ 200	\$ 69,400
18" Storm Sewer	Residential Street	0 - 5	80	Foot	\$ 220	\$ 17,600
4' Diameter Manhole	Residential Street	0 - 5	4	Each	\$ 4,000	\$ 16,000
5' Diameter Manhole	Residential Street	0 - 5	1	Each	\$ 5,000	\$ 5,000
Inlet	N/A	N/A	10	Each	\$ 1,000	\$ 10,000

Construction Subtotal		\$ 118,000
Construction Contingency	20%	\$ 23,600
Construction Total		\$ 141,600
Design Engineering	7.5%	\$ 10,620
Construction Observation	7.5%	\$ 10,620
Project Total		\$ 162,840

Notes

1. Prices include sanitary sewer and water service relocation/adjustment, trench backfill, pavement or lawn restoration, traffic control, erosion control, construction layout, mobilization and permitting.
2. Prices do not include right-of-way acquisition, temporary or permanent easements, or relocating other
3. Prices are current for 2012.



City of Wood Dale

Appendix 11 - Engineer's Opinion of Probable Construction Cost
Proposed Improvements for Area 10 - Alternate 2

Item	Location Type	Depth, feet	Quantity	Unit	Unit Price	Item Cost
24"	Residential Street	0 - 5	435	Foot	\$ 250	\$ 108,750
30"	Residential Street	0 - 5	233	Foot	\$ 265	\$ 61,745
36"	Residential Street	0 - 5	183	Foot	\$ 295	\$ 53,985
5' Diameter Manhole	Residential Street	0 - 5	9	Each	\$ 5,000	\$ 45,000
Inlet	N/A	N/A	31	Each	\$ 1,000	\$ 31,000
36" FES	N/A	N/A	1	Each	\$ 2,310	\$ 2,310

Construction Subtotal		\$ 302,790
Construction Contingency	20%	\$ 60,558
Construction Total		\$ 363,348
Design Engineering	7.5%	\$ 27,251
Construction Observation	7.5%	\$ 27,251
Project Total		\$ 417,850

Notes

1. Prices include sanitary sewer and water service relocation/adjustment, trench backfill, pavement or lawn restoration, traffic control, erosion control, construction layout, mobilization and permitting.
2. Prices do not include right-of-way acquisition, temporary or permanent easements, or relocating other utilities.
3. Prices are current for 2012.



City of Wood Dale

Appendix 12 - Engineer's Opinion of Probable Construction Cost
Proposed Improvements for Area 11 - Alternate 1

Area 11-1

Item	Location Type	Depth, feet	Quantity	Unit	Unit Price	Item Cost
12" RCP Storm Sewer	Residential Side Yard	0 - 5	75	Foot	\$ 180	\$ 13,500
4' Diameter Manhole	Residential Street	0 - 5	1	Each	\$ 4,000	\$ 4,000
Inlet	N/A	N/A	1	Each	\$ 1,000	\$ 1,000
Location Construction Subtotal=						\$ 18,500

Area 11-2

Item	Location Type	Depth, feet	Quantity	Unit	Unit Price	Item Cost
12" RCP Storm Sewer	Residential Street	0 - 5	350	Foot	\$ 200	\$ 70,000
18" RCP Storm Sewer	Residential Street	0 - 5	244	Foot	\$ 225	\$ 54,900
24" RCP Storm Sewer	Residential Street	0 - 5	745	Foot	\$ 240	\$ 178,800
4' Diameter Manhole	Residential Street	0 - 5	12	Each	\$ 4,000	\$ 48,000
Inlet	N/A	N/A	14	Each	\$ 1,000	\$ 14,000
Location Construction Subtotal=						\$ 365,700

Construction Subtotal	\$ 384,200
Construction Contingency	20% \$ 76,840
Construction Total	\$ 461,040
Design Engineering	7.5% \$ 34,578
Construction Observation	7.5% \$ 34,578

Project Total **\$ 530,196**

Notes

- Prices include sanitary sewer and water service relocation/adjustment, trench backfill, pavement or lawn restoration, traffic control, erosion control, construction layout, mobilization and permitting.
- Prices do not include right-of-way acquisition, temporary or permanent easements, or relocating other utilities.
- Prices are current for 2012.



City of Wood Dale

Appendix 13 - Engineer's Opinion of Probable Construction Cost
Proposed Improvements for Area 11 - Alternate 2

Area 11-1

Item	Location Type	Depth, feet	Quantity	Unit	Unit Price	Item Cost
12" RCP Storm Sewer	Residential Side Yard	0 - 5	75	Foot	\$ 180	\$ 13,500
4' Diameter Manhole	Residential Street	0 - 5	1	Each	\$ 4,000	\$ 4,000
Inlet	N/A	N/A	1	Each	\$ 1,000	\$ 1,000
Location Construction Subtotal=						\$ 18,500

Area 11-2

Item	Location Type	Depth, feet	Quantity	Unit	Unit Price	Item Cost
12" RCP Storm Sewer	Residential Street	0 - 5	121	Foot	\$ 200	\$ 24,200
18" RCP Storm Sewer	Residential Street	0 - 5	957	Foot	\$ 220	\$ 210,540
24" RCP Storm Sewer	Residential Street	0 - 5	599	Foot	\$ 240	\$ 143,760
24" RCP Storm Sewer	Residential Street	5 - 8	657	Foot	\$ 265	\$ 174,105
30" RCP Storm Sewer	Residential Street	5 - 8	280	Foot	\$ 295	\$ 82,600
36" RCP Storm Sewer	Residential Street	0 - 5	858	Foot	\$ 295	\$ 253,110
36" RCP Storm Sewer	Residential Street	5 - 8	242	Foot	\$ 330	\$ 79,860
4' Diameter Manhole	Residential Street	0 - 5	3	Each	\$ 4,000	\$ 12,000
5' Diameter Manhole	Residential Street	0 - 5	8	Each	\$ 5,000	\$ 40,000
6' Diameter Manhole	Residential Street	5 - 8	3	Each	\$ 7,000	\$ 21,000
7' Diameter Manhole	Residential Street	0 - 5	3	Each	\$ 7,000	\$ 21,000
7' Diameter Manhole	Residential Street	5 - 8	5	Each	\$ 8,250	\$ 41,250
Inlet	N/A	N/A	15	Each	\$ 1,000	\$ 15,000
Connect to Existing	N/A	N/A	1	Lump Sum	\$ 5,000	\$ 5,000

Location Construction Subtotal= \$ 1,123,425

Construction Subtotal \$ 1,141,925

Construction Contingency 20% \$ 228,385

Construction Total \$ 1,370,310

Design Engineering 7.5% \$ 102,773

Construction Observation 7.5% \$ 102,773

Project Total \$ 1,575,857

Notes

- Prices include sanitary sewer and water service relocation/adjustment, trench backfill, pavement or lawn restoration, traffic control, erosion control, construction layout, mobilization and permitting.
- Prices do not include right-of-way acquisition, temporary or permanent easements, or relocating other utilities.
- Prices are current for 2012.



City of Wood Dale

Appendix 14 - Engineer's Opinion of Probable Construction Cost
Proposed Improvements for Area 11 - Alternate 3

Area 11-1

Item	Location Type	Depth, feet	Quantity	Unit	Unit Price	Item Cost
12" RCP Storm Sewer	Residential Side Yard	0 - 5	75	Foot	\$ 180	\$ 13,500
4' Diameter Manhole	Residential Street	0 - 5	1	Each	\$ 4,000	\$ 4,000
Inlet	N/A	N/A	1	Each	\$ 1,000	\$ 1,000
Location Construction Subtotal=						\$ 18,500

Area 11-2

Item	Location Type	Depth, feet	Quantity	Unit	Unit Price	Item Cost
12" RCP Storm Sewer	Residential Street	0 - 5	686	Foot	\$ 200	\$ 137,200
18" RCP Storm Sewer	Residential Street	0 - 5	229	Foot	\$ 220	\$ 50,380
24" RCP Storm Sewer	Residential Street	0 - 5	197	Foot	\$ 240	\$ 47,280
48" RCP Storm Sewer	Residential Street	5 - 8	91	Foot	\$ 430	\$ 39,130
60" RCP Storm Sewer	Residential Street	5 - 8	315	Foot	\$ 630	\$ 198,450
4' Diameter Manhole	Residential Street	0 - 5	3	Each	\$ 4,000	\$ 12,000
5' Diameter Manhole	Residential Street	0 - 5	6	Each	\$ 5,000	\$ 30,000
8' Diameter Manhole	Residential Street	5 - 8	5	Each	\$ 9,750	\$ 48,750
Inlet	N/A	N/A	12	Each	\$ 1,000	\$ 12,000
Location Construction Subtotal=						\$ 575,190

Construction Subtotal		\$ 593,690
Construction Contingency	20%	\$ 118,738
Construction Total		\$ 712,428
Design Engineering	7.5%	\$ 53,432
Construction Observation	7.5%	\$ 53,432
Project Total		\$ 819,292

Notes

- Prices include sanitary sewer and water service relocation/adjustment, trench backfill, pavement or lawn restoration, traffic control, erosion control, construction layout, mobilization and permitting.
- Prices do not include right-of-way acquisition, temporary or permanent easements, or relocating other utilities.
- Prices are current for 2012.



CITY OF WOOD DALE ENGINEERING DEPARTMENT

MEMORANDUM

DATE: February 3, 2010

TO: Public Works Committee

FROM: David Graff, City Engineer

RE: South Cedar Avenue Flooding
CIP T-04

Last year the City hired Engineering Resource Associates to study the flooding problems on South Cedar Avenue and recommend possible solutions. The problem areas are described as follows:

1. The residence at 301 S. Cedar Avenue experiences flooding of the lower level when water flows down the driveway into the garage, which is located below the street.
2. The street itself floods deep enough so that traffic can not pass through.
3. A stream of water flows between 304 and 310 South Cedar which encroaches over much of the lawns and brings water close to the houses.

Attached are alternative designs and updated cost estimates for alleviating the flooding. A summary of the different alternatives is shown in the following table:

Alt. No.	Description	Cost	Level of Protection ¹	Comments ²
1	Construct a detention basin upstream of the flood prone areas	\$397,000	25 year	Requires acquisition of property and incorporation into Wood Dale
2	Replace the existing storm sewer on Cedar with a larger one	\$355,000	100 year	Would increase flows downstream
3	Construct a drainage swale at 301 S. Cedar	\$337,000	50 year	Requires acquisition of property, would increase flows downstream
4	Construct a detention pond at 301 S. Cedar	\$471,000	25 year	Requires acquisition of property

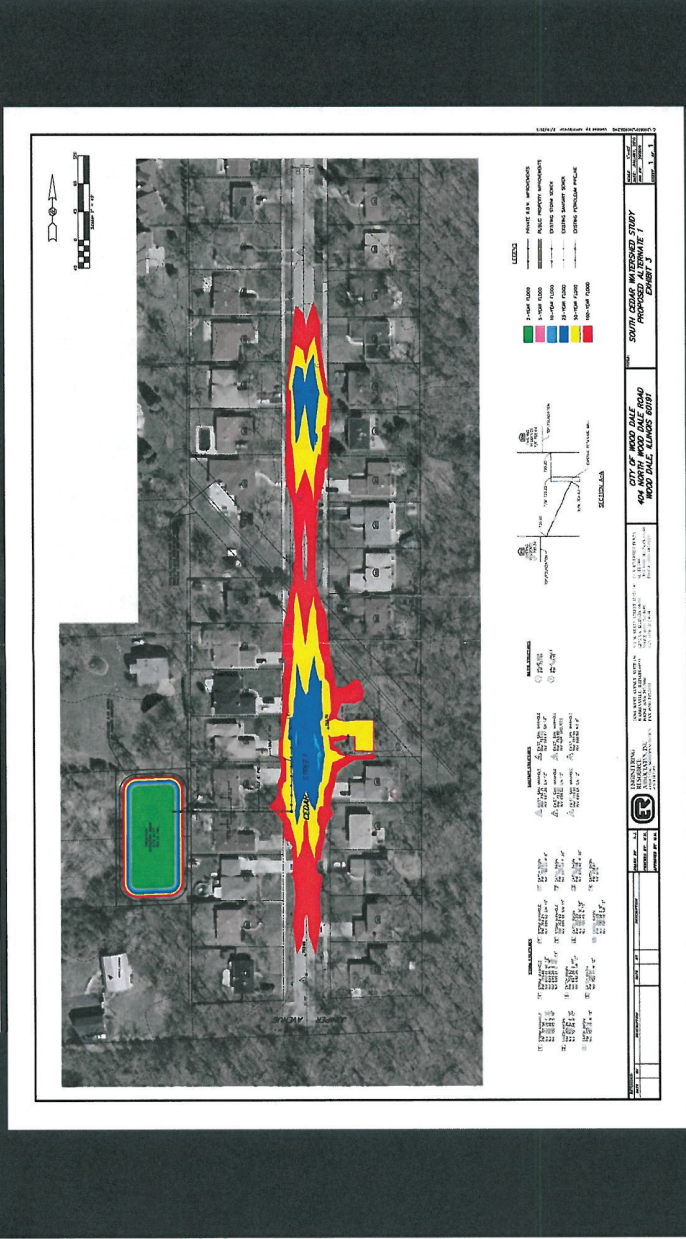
5	Construct a new parallel storm sewer on Cedar	\$322,000	100 year	Similar to Alt. 2, would increase flows downstream
6	Reconstruct the south end of Cedar at a lower elevation	\$312,000	50 year	Would increase flows to the south, flat street could still have localized drainage problems

Notes:

1. This is a measure of the protection against flooding for the structure at 301 S. Cedar, expressed as the average recurrence interval between flood events.
2. The cost estimates for alternatives 3 and 4 assume that the house is re-sold following completion of the improvements.

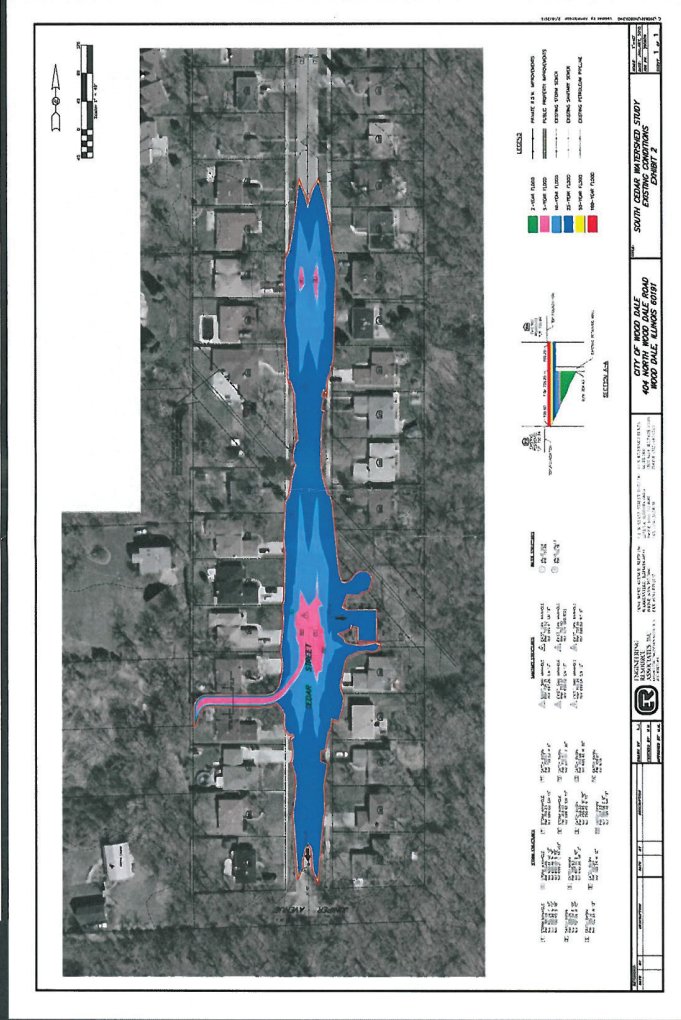
A representative from Engineering Resource Associates will be at the committee meeting of February 11, 2010 to discuss the improvement alternatives and answer questions.

South Cedar

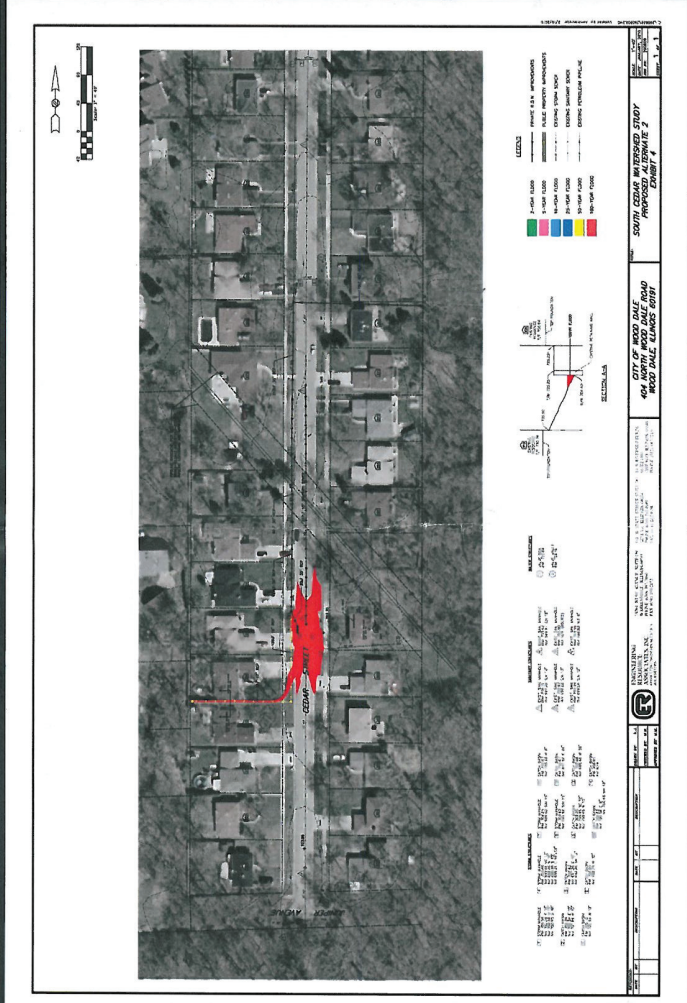


ENGINEERING RESOURCE ASSOCIATES, INC.
Consulting Engineers, Scientists & Surveyors

South Cedar



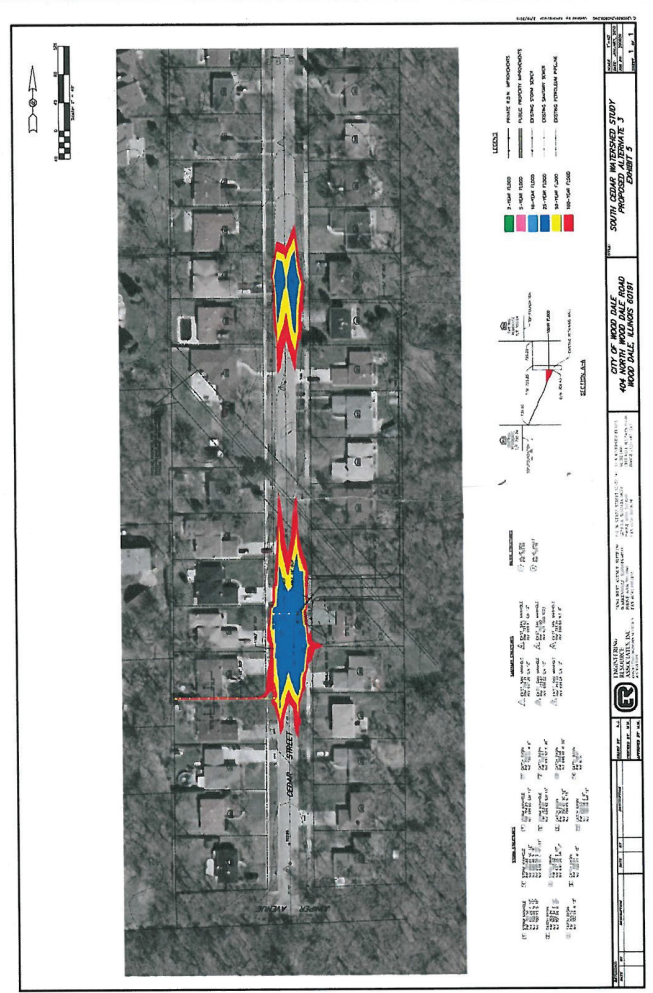
South Cedar



ENGINEERING RESOURCE ASSOCIATES, INC.
 Consulting Engineers, Scientists & Surveyors




South Cedar



ENGINEERING RESOURCE ASSOCIATES, INC.
 Consulting Engineers, Scientists & Surveyors

