Technical Memorandum

Date:	Monday, August 20, 2018
Project:	Sanitary Sewer Master Plan Update
To:	City of Cedar Rapids
From:	Anthony Vecchi, EIT/HDR David Haugen/HDR David Dechant/HDR
Subject:	TM 7.5 South Growth Area Service Plan

This Technical Memorandum presents information regarding the sanitary sewer service needs and associated sanitary sewer extension fees for the south growth area. The study area for this report is contiguous with the South Growth area as identified in EnvisionCR and can be viewed in Figure 1.

The intent is to recognize needed extensions of the sanitary sewer lines in the growth area to provide sanitary sewer service and to recognize the associated costs.

This Technical Memorandum is organized as follows.

- Objective
- Summary
- Background
- Service Area
- Future Conveyance Improvements
- Flow Development
- Capital Costs

Objective

The objective of this TM 7.5, South Growth Area Service Plan is to determine typical sanitary sewer flows for the future south growth area based upon the anticipated future development conditions presented in EnvisionCR. Upon development of the flows, a sewer service area plan will be developed with associated extension fees.

Summary

The South Growth Area includes developing land currently within City limits and developing land outside of City limits. Based on the extent of the existing sanitary sewer network in this area, and the sewer extensions outlined in this memorandum, the City has the opportunity to provide service to the developing area within City limits before servicing the portion of the growth area outside of City limits.

The sanitary service plan for the South Growth Area involves extending sewers at several locations throughout the area. Due to hilly terrain and three nearby streams, four lift stations will

be required to provide service to the southern and eastern portions of the growth area that are outside of current City limits. The estimated capital cost for these trunk extensions is $11.6 million. On a per acre basis, the South Growth Area is lower in cost compared to the other areas studied as part of the Sanitary Sewer Master Plan efforts. Servicing only the portion of the growth area within current City limits would require a capital cost of $2.3 million. A future Technical Memorandum will investigate recovering this cost through the use of a special connection fee district.

Background

In January of 2015 the City of Cedar Rapids adopted EnvisionCR, the City's new comprehensive plan. The EnvisionCR plan identified the City's ability for growth as vital to the future. Growth areas were identified as part of that plan. This Technical Memorandum will focus on the South Growth Area.

Growth in the South Area is expected to be driven by office development along Wright Brothers Boulevard and its proximity to the airport and Kirkwood Community College. Portions of the South Growth Area to the south and east will require lift stations to connect to the existing sanitary sewer network.

South Growth Area

The South Growth Area as defined by the EnvisionCR plan is shown below in Figure 1. This area is located between the Eastern Iowa Airport and Ely Road, south of Highway 30.

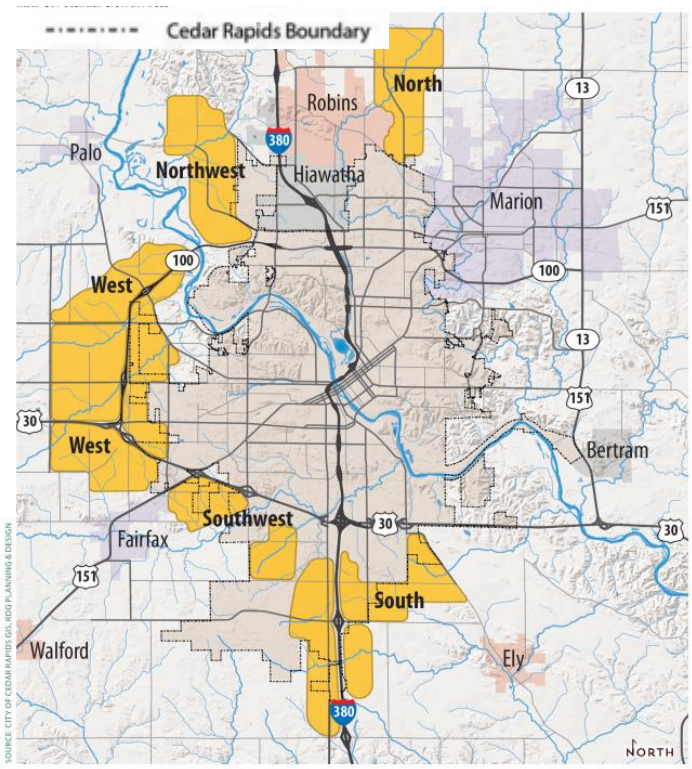

Figure 1: Growth Areas from Envision CR

The area includes developing land inside and outside of current City limits. Per the GrowCR initiative, planned future development consists of approximately 5,560 acres segmented into five different land use types as outlined in Table 1. The southern and eastern portions of the growth area are predominantly residential while industrial land occupies the western portion. Public land reserved for Prairie High School and Kirkwood Community College are located near the center of the growth area.

Table 1: Land Use

Proposed Land Use	Acres
Urban High Intensity	490
Urban Medium Intensity	2410
Urban Low Intensity	1130
Industrial	650
Public, Semi-Public	880

The proposed zoning for the developable area is shown in Figure 2 below. This figure also highlights the hilly terrain in this area, evidenced by the proximity to Pheasant Run, Hoosier Creek, and South Hoosier Creek. These creeks all run to the east, away from existing sanitary sewer. Three existing lift stations near the intersection of each creek with City limits are too far upstream to serve developing areas.

Two of these existing lift stations, the South Hoosier lift station on Walford Rd and the Hoover lift station on Ely Rd, may be removed and replaced at a new location to serve developed areas downstream along South Hoosier Creek and Pheasant Run respectively.

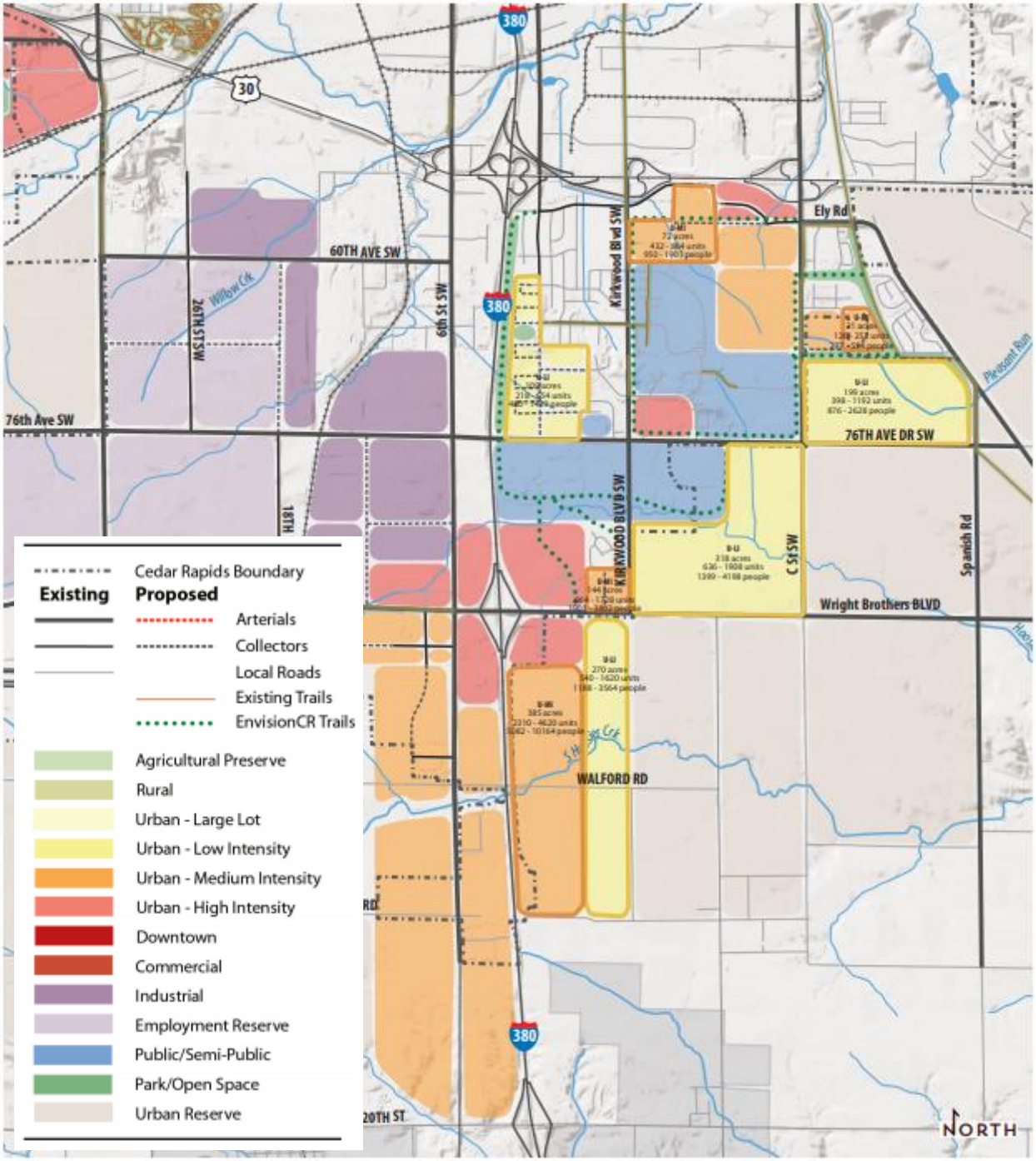

Figure 2: Envision CR Plan

Service Area

The South Growth Area is located south of Highway 30, extending to County Rd F12 to the south, 18th St SW to the west, and Ely Rd to the East. Developing areas that are not currently serviced by sanitary sewer will be evaluated as part of this study. The South Growth Area is shown in Figure 4, outlined with a dashed blue line, in relation to existing sanitary sewer infrastructure and City limits.

The developing area outside of current City limits to the south and east will require lift stations to connect to the sanitary sewer network. Creeks in these areas flow away from existing sanitary sewer lines, making it impossible to connect via new gravity sewers. The remaining portion of the growth area lies within current City limits and can be connected to the existing sanitary sewer network by minor trunk extensions.

The portion of this growth area within City limits is benefitted by the existing sanitary sewer lines serving the Eastern Iowa Airport, Prairie High School, and Kirkwood Community College. Two areas within the growth area are already developed to their planned development, as shown in green in Figure 3 below. The first area is located near the intersection of Kirkwood Blvd SW and Wright Brothers Blvd. The second area is located near the intersection of C St SW and Ely Rd. These areas, and developed land adjacent to the South Growth Area, that are currently connected to City sanitary sewer service will not be included in this evaluation.

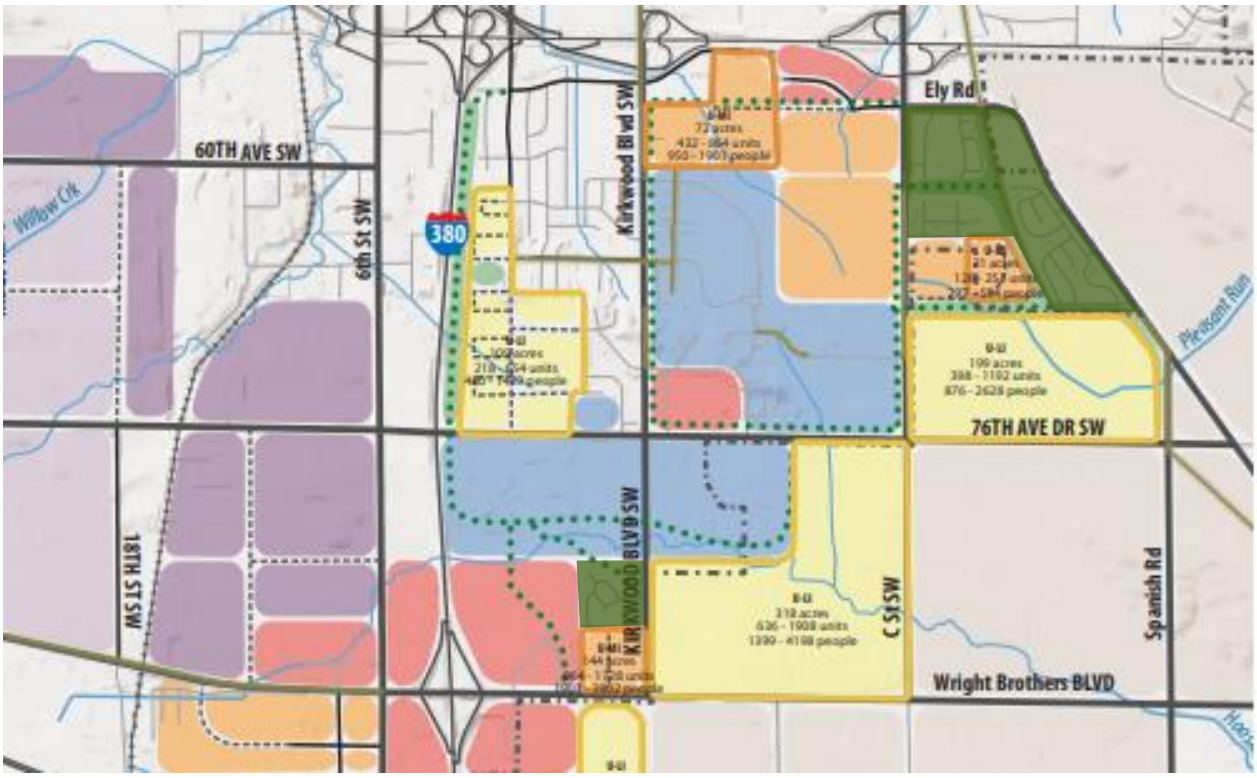

Figure 3: Fully Developed Areas

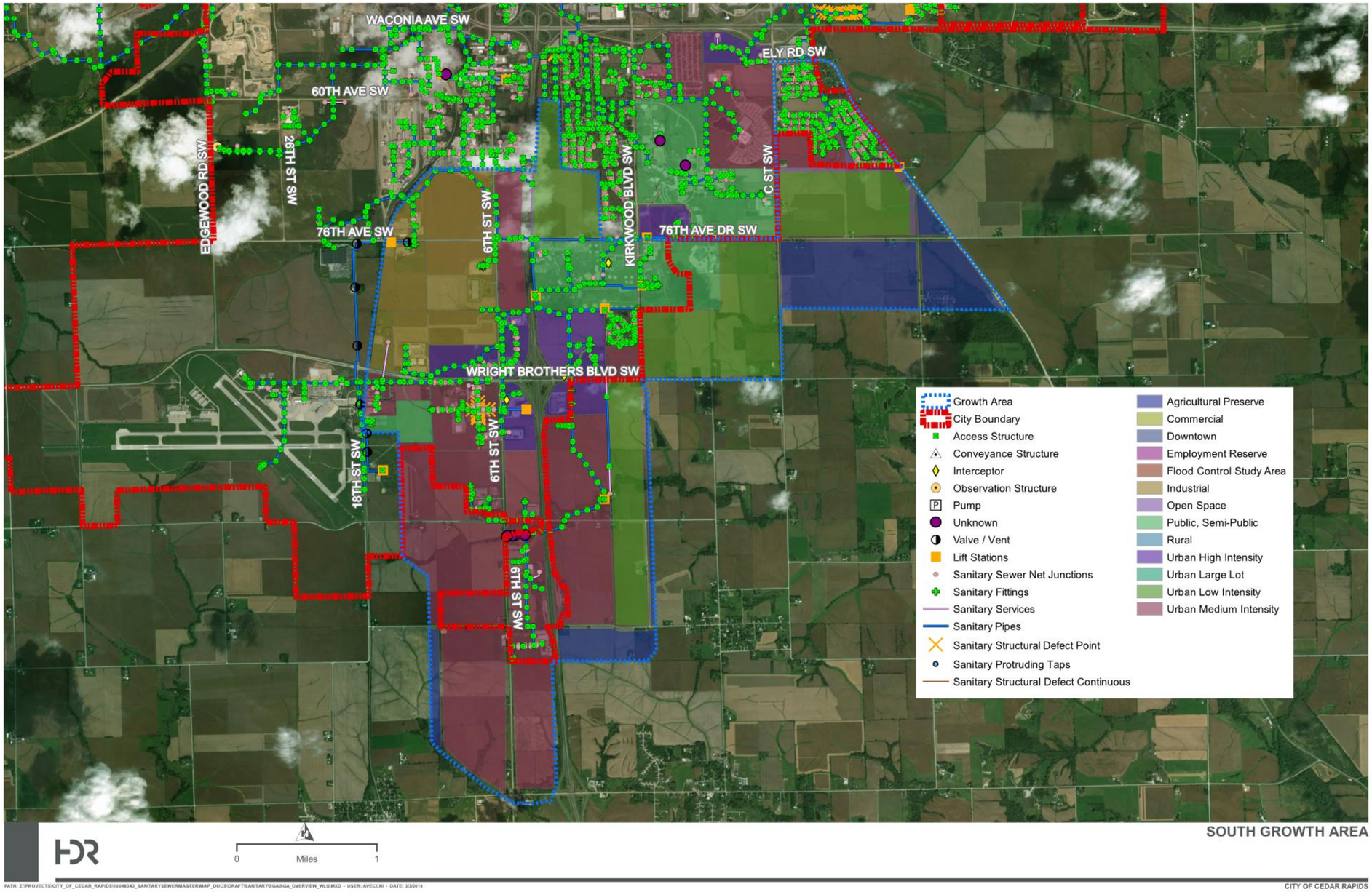

Figure 4: South Growth Area

Future Conveyance Improvements

The sanitary sewer conveyance improvements required to serve the South Growth Area involve a combination of extending neighborhood service lines, extending sewers, and constructing lift stations. The area in Figure 8 within the yellow boundary is able to be serviced by the extension of minor neighborhoodservice lines provided by a developer due to local topography and proximity to existing infrastructure.

Portions of the growth area outside of this yellow boundary can be serviced by the extension of new sewers. These areas correspond to 10 of the 37 landuse areas that comprise the South Growth Area as shown in Figure 9 below.

Areas 37 and 36 will be serviced by sewers that include a lift station and associated force main. The force main is proposed to connect to the existing 8-Inch sewer along 6th St SW near the southern edge of City limits.

Five developing areas, area 35, 34, 33, 30, and 29, connect to the existing 24-Inch sewer running along Walford Rd, as shown in Figure 5. Area 30 requires a lift station along South Hoosier Creek, downstream of the existing 600 gallon per minute (gpm) capacity South Hoosier Lift Station, and associated force main to connect to the existing sewer. The proposed lift station at this location would replace the existing South Hoosier Lift Station.

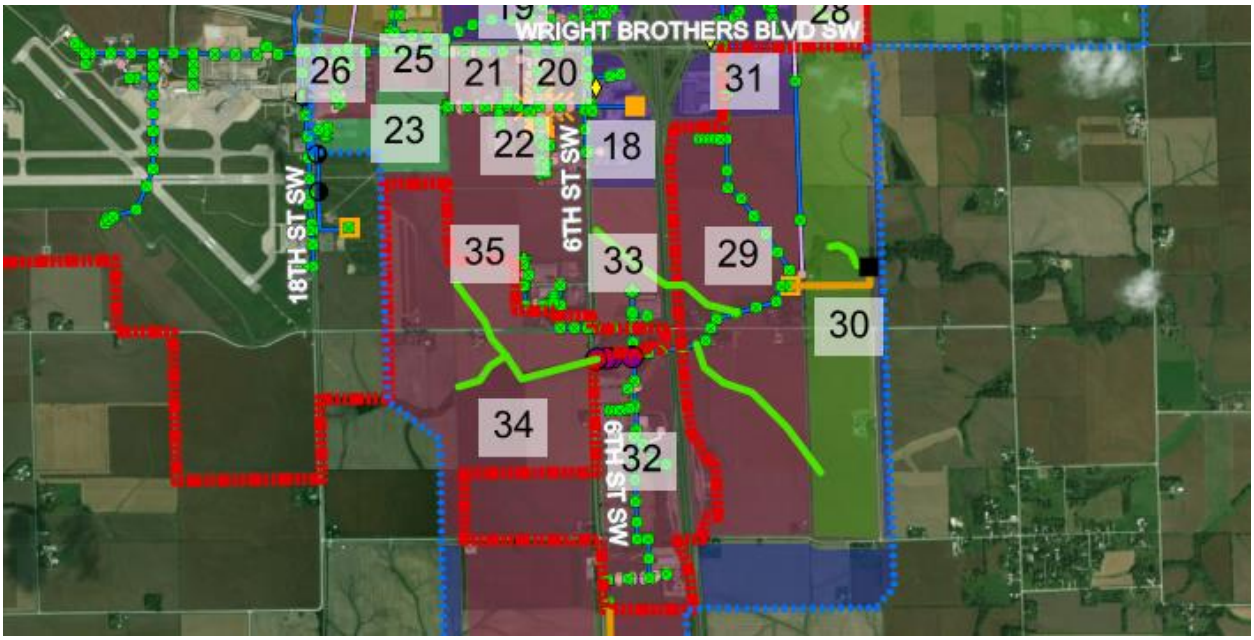

Figure 5: Land Use Areas 35, 34, 33, 30, and 29

Two developing areas on the eastern side of the growth area require gravity sewers, lift stations, and force main to connect to existing sewers, as shown in Figure 6. Area 14 requires a lift station along Hoosier Creek, downstream of an existing lift station near Kirkwood Blvd, and associated force main to connect to the existing sanitary sewer at the existing upstream lift station. Area 5 requires a lift station near the Ely Rd crossing of Pheastant Run, southeast of the

existing 200 gpm Hoover Lift Station on Ely Rd, and associated force main to connect to an existing 12-Inch sewer to the north. The proposed lift station at this location would replace the existing Hoover Lift Station.

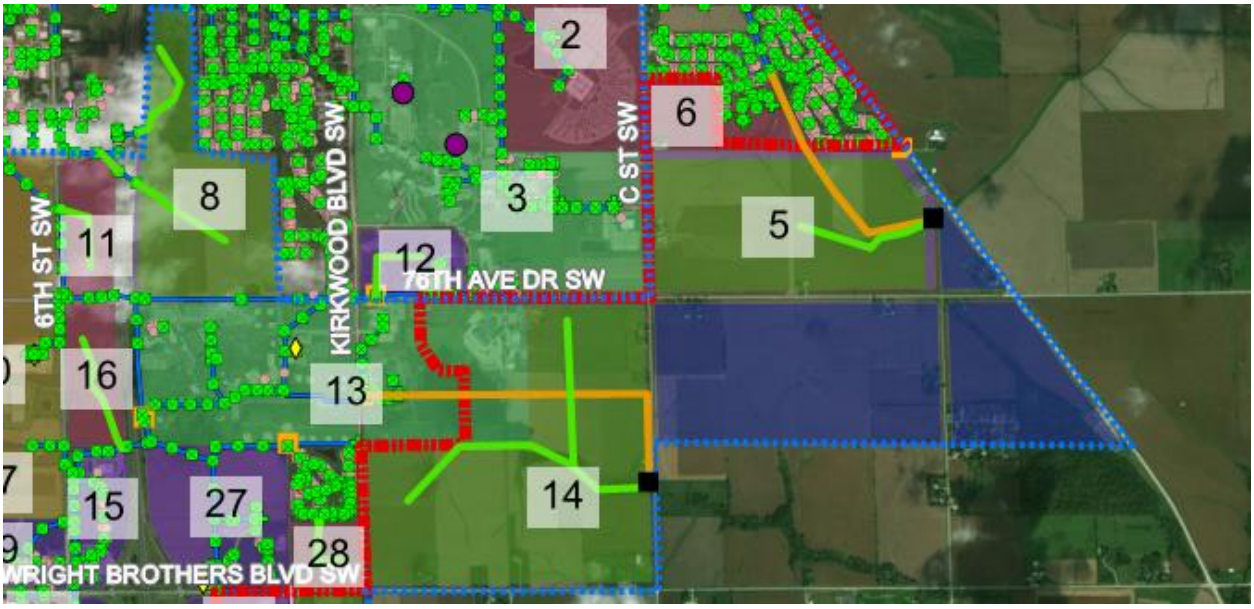

Figure 6: Land Use Areas 14 and 5

Area 8 will be serviced by two sewer extensions that cross I-380 at existing 8-Inch and 12-Inch crossings and connect to an existing 12-Inch sewer between 4th St SW and 6th St SW. This area is shown in Figure 7.

Figure 7: Land Use Area 8

The alignment for all proposed sanitary sewer extensions is shown in Figure 9, where green lines indicate proposed gravity sewers, orange lines indicate proposed force mains, and black squares indicate proposed lift stations. Additional detail is presented in the Flow Development section and Figure 10.

8-Inch neighborhood sewers servicing the growth area were not considered as part of this TM. The alignment of these neighborhood service lines is driven by development and may be determined at the time of development. The sewer alignment shown below was developed from topography data only.

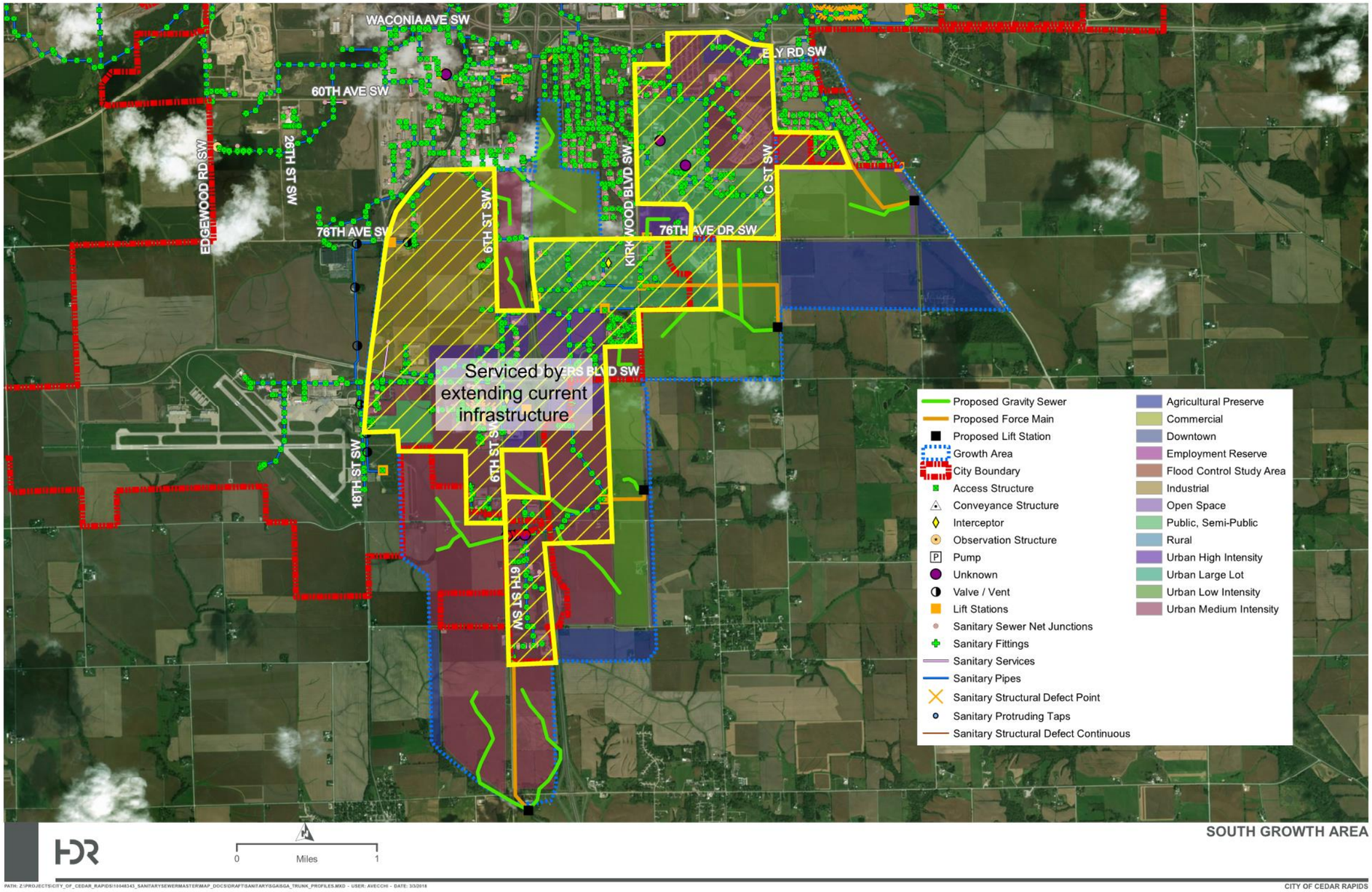

Figure 8: South Growth Area Trunk Extension Alignment

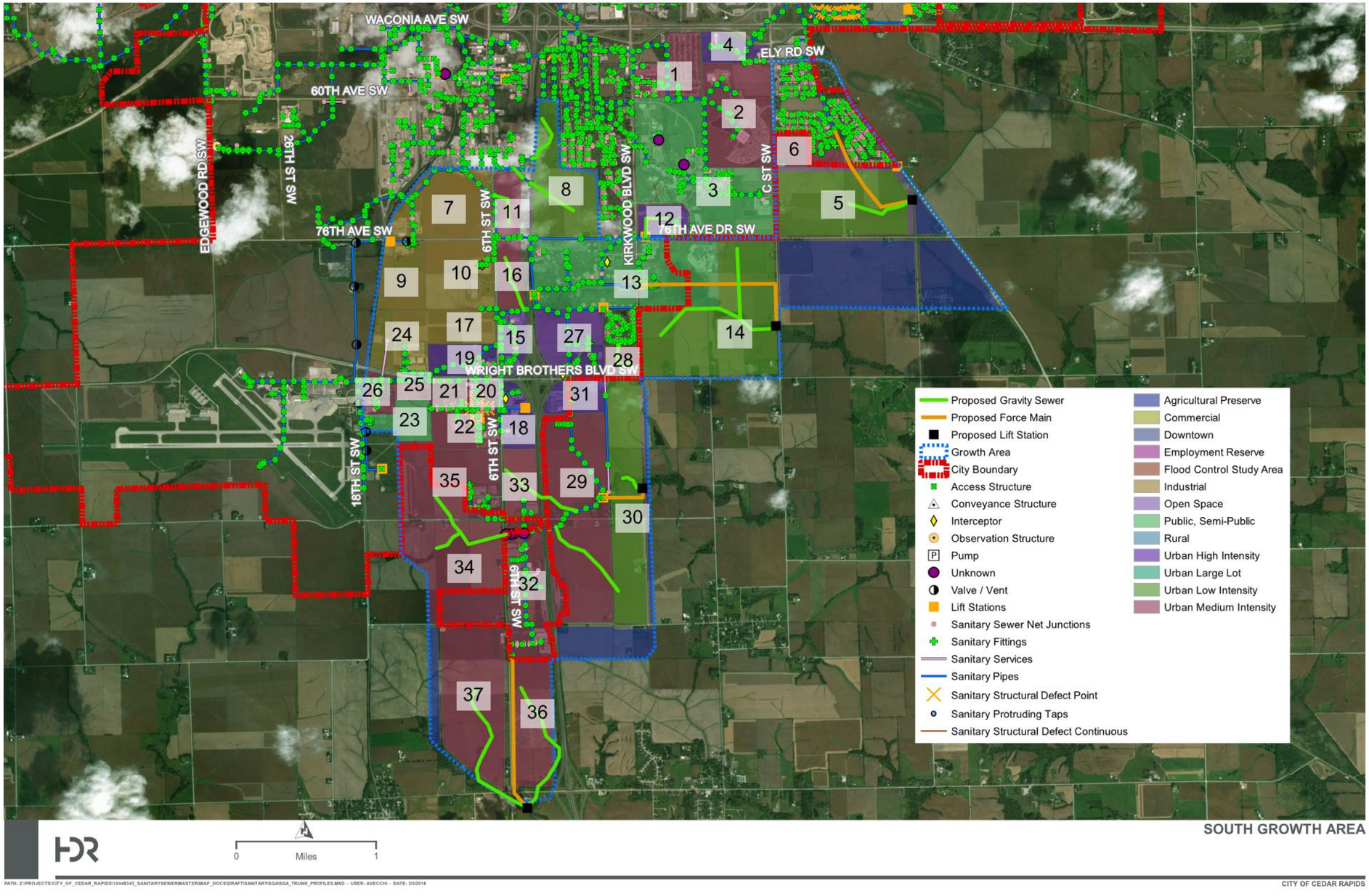

Figure 9: South Growth Area Land Use Areas

Flow Development

Future flows for the basin were developed based upon City of Cedar Rapids Design Standards. Land use designations were per the EnvisionCR long term planning document. Population densities were established using Table 1 from EnvisionCR and Table 3.1 from the City of Cedar Rapids Design Standards Manual shown below. A full copy of the manual can be seen in appendix A.

LAND USE TYPOLOGY AREA SUMMARY

Table 1: Land Use Typology Areas

Land Use Typology Area	Description/Purpose	Residential density (du/A)	Non-residential or Mixed-use intensity (FAR)
AP Agricultural Preserve	Areas preserved for permanent farming and agricultural production.	1 unit/40 acres max	NA
R Rural	Areas that are unlikely to receive urban services. Agriculture and very low-density development will be the probable final use.	1 unit/2 acres max	NA
U-LL Urban-Large Lot	Areas with urban services including very low-density residential constrained by environmental elements, such as steep slopes, waterways, and woodlands.	0-6	0.50 max.
U-LI Urban-Low Intensity	Areas with urban services including relatively low-density residential and neighborhood commercial and service uses.	2-12	0.50 max.
U-MI Urban-Medium Intensity	Areas with urban services including medium-density residential and neighborhood and community commercial, office, and service uses.	4-24	1.0 max.
U-HI Urban-High Intensity	Areas with urban services including medium and high-density residential, major commercial, office, and service uses, and limited industrial in suitable locations.	8-40	3.0 max.
DT Downtown	High-intensity mixed uses focused on Downtown and immediate environs.	20 and up	1.0 and up
C Commercial	Areas dominated by major community and regional commercial development that are both large in scale and have high traffic impact. May include high-density residential use.	16-40	1.0 max.
I Industrial	Areas dominated by large-scale industrial uses.	NA	NA
ER Employment Reserve	Areas reserved for future large employers.	NA	NA
P Public, Semi-Public	Areas with major, typically land-intensive public,semi-public, or other civic uses.	NA	NA
OS Open Space	Areas intended to provide open space recreational uses, such as local and regional parks and for the preservation of environmentally sensitive areas. May include accessory or complementary uses if permitted by flood plain or other environmental regulations.	NA	NA
UR Urban Reserve Overlay	Areas that are unlikely to be served by urban infrastructure during the planning period but will be feasibly served and needed for urban development in the long-term.	1 unit/40 acres max	NA
EC Environmental Conservation Overlay	Areas will remain undeveloped due to sensitive environmental features and habitat.	NA	NA
FC Flood Control Study Area	Areas of the community currently under study for planned flood control project.	NA	NA

The table displays the range of typology areas that apply to Cedar Rapids. The majority of the city's area falls into U-LI, U-MI, and U-HI.

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Table 3.1 Minimum Values			
LAND USE	AREA DENSITY	UNIT DENSITY	RATE
Low Density (Single Family) Residential	10 people/Ac.	3.3 people/unit	100 gpcd*
Medium Density (Multi-Family) Residential	12 to 15 people/Ac.	3.3 people/unit 6.0 people/duplex	100 gpcd*
High Density (Multi-Family) Residential	20 to 75 people/Ac.	2.5 people/unit	100 gpcd*

The values from the City's Design Standards manual were compared to values presented in the EnvisionCR plan and inserted into Table 2 below for development of the flow. Peaking factors for population were developed using the Fair and Geyer equation of (18+P^1/2)/ (4+p^1/2). An additional inflow and infiltration allowance was added at 200 gal/day/inch of pipe diameter.

Pipe slopes are based upon the minimum allowable to maintain scour velocity or the slope of the existing terrain, depending on which was larger. Pipes were sized to carry the peak flow at a depth of no more than 67% of the pipe diameter for pipes 15-Inch or smaller, and 75% of the pipe diameter for pipes larger than 15-Inch. The flows estimated for each area, and the necessary pipe size to carry that flow, are tabulated in Table 2 below.

Sewer Extension Sizing

The area in Figure 8 within the yellow boundary is able to be serviced by the extension of 8-Inch neighborhood service lines due to local topography and proximity to existing infrastructures. The remaining portion of the South Growth Area will be serviced by gravity sewer ranging in size from 10-Inch to 18-Inch, four lift stations, and associated force mains ranging in size from 8-Inch to 12-Inch. The proposed size of sewer extensions in this growth area are shown in Figure 10 and Figure 11 below.

Areas 37 and 36 will be serviced by a combination of gravity sewer and force main. A 12-Inch gravity sewer from area 37 and 10-Inch gravity sewer from area 36 drain to a lift station near 6th St at the southern edge of the growth area. A 12-Inch force main connects this lift station to the existing sanitary sewer network, adding 2.4 million gallons per day (MGD) to the system.

Areas 35 and 34 will be serviced by gravity sewer ranging in size from 15-Inch at the upstream branches and 18-Inch downstream. This extension ties into the existing sanitary sewer along Walford Rd, adding 2.5 MGD to the network. To the east, areas 33 and 29 will be serviced by two 12-Inch gravity sewers that connect to the same trunk line along Walford Rd, adding 1.9 MGD to the system. Area 30 will be serviced by a combination of gravity sewer and force main. A 12-Inch gravity sewer drains to a lift station along South Hoosier Creek. An 8-Inch force main then connects to the Walford Rd trunk line, adding 0.9 MGD to the system.

Areas 14 and 5 both are serviced by a combination of gravity sewer and force main. In Area 14, a 15-Inch gravity sewer drains to a lift station near Hoosier Creek. A 10-Inch force main connects to an existing lift station along Kirkwood Blvd, adding 1.4 MGD to the system. In Area 5, a 12-Inch gravity sewer drains to a lift station near the Ely Rd crossing of Pheasant Run. An 8-Inch force main connects to an existing sanitary sewer line to the north near Ely Rd, adding 0.9 MGD to that line.

Lastly, area 8 will be serviced by two 10-Inch gravity sewers that cross I-380 via existing pipe crossings and connect to existing sanitary sewer near 6th St SW, adding 0.7 MGD to the system.

In total, growth in the South Area will add up to 41 MGD to the existing sanitary sewer system. Downstream pipe capacity was not evaluated as part of this study, but should be evaluated prior to development in this area as part of the City's ongoing Sanitary Sewer modeling efforts. Flow

estimates were based on the highest density estimate for each land use type, therefore resulting in sanitary flow estimates that are conservative. This also results in conservative flow estimates for industrial and public land use areas in the South Growth Area.

Table 2: Flow Development and Pipe Sizing

Area Location	Area Description (Zoning)	Area (Acres)	Density (persons/Acre)	Population	Approximate Length of service pipe (Miles)	Inflow Allowance (200 gpdpmpi)	Aggregate Population	Diurnal Peaking Factor	Flow (MGD)	Aggregate Flow (MGD)	Pipe Diameter (Inches)	Slope %	
1	Urban Medium Intensity	111.52	15	1,673	-	-	5,203	3.2	0.540	5.8	-	-	North
2	Urban Medium Intensity	235.35	15	3,530	-	-	3,530	3.4	1.194	5.2	-	-	
3	Public, Semi-Public	403.19	-	-	-	-	-	-	4.032	4.0	-	-	
4	Urban High Intensity	51.66	75	3,875	-	-	7,580	3.1	1.191	2.5	-	-	Northeast
5	Urban Low Intensity	265.19	10	2,652	2	8400	2,652	3.5	0.933	0.9	12	0.5	
6	Urban Medium Intensity	70.21	15	1,053	-	-	1,053	3.8	0.399	0.4	-	-	
7	Industrial	202.14	-	-	-	-	71,244	-	2.021	33.0	-	-	North west
8	Urban Low Intensity	197.86	10	1,979	1	4200	1,979	3.6	0.714	0.7	10	0.6	
9	Industrial	99.69	-	-	-	-	-	-	0.997	1.0	-	-	
10	Industrial	156.01	-	-	-	-	-	-	1.560	1.6	-	-	
11	Urban Medium Intensity	75.81	15	1,137	-	-	1,137	3.8	0.428	0.4	-	-	
12	Urban High Intensity	51.55	75	3,866	-	-	3,866	3.3	1.294	1.3	-	-	
13	Public, Semi-Public	411.96	-	-	-	-	4,154	-	4.120	5.5	-	-	
14	Urban Low Intensity	415.37	10	4,154	1.5	6300	4,154	3.3	1.385	1.4	15	0.2	
15	Urban High Intensity	51.62	75	3,872	-	-	17,235	2.7	1.052	8.0	-	-	Southwest
16	Urban Medium Intensity	37.90	15	569	-	-	569	3.9	0.224	0.2	-	-	
17	Industrial	78.93	-	-	-	-	-	-	0.789	0.8	-	-	
18	Urban High Intensity	61.80	75	4,635	-	-	4,635	3.3	1.518	1.5	-	-	
19	Urban High Intensity	69.94	75	5,246	-	-	8,160	3.0	1.596	4.4	-	-	
20	Urban Medium Intensity	17.44	15	262	-	-	2,160	3.6	0.093	1.4	-	-	
21	Urban Medium Intensity	38.84	15	583	-	-	1,899	3.6	0.210	1.3	-	-	
22	Urban Medium Intensity	87.74	15	1,316	-	-	1,316	3.7	0.490	1.1	-	-	
23	Public, Semi-Public	64.15	-	-	-	-	-	-	0.642	0.6	-	-	
24	Industrial	110.81	-	-	-	-	754	-	1.108	1.4	-	-	
25	Urban Medium Intensity	18.23	15	273	-	-	754	3.9	0.106	0.3	-	-	
26	Urban Medium Intensity	32.02	15	480	-	-	480	4.0	0.191	0.2	-	-	
27	Urban High Intensity	138.52	75	10,389	-	-	42,874	2.3	2.418	12.5	-	-	Southeast
28	Urban Medium Intensity	34.52	15	518	-	-	518	4.0	0.205	0.2	-	-	
29	Urban Medium Intensity	426.25	15	6,394	0.5	2100	31,967	2.5	1.569	1.6	12	1.3	
30	Urban Low Intensity	255.31	10	2,553	0.5	2100	2,553	3.5	0.896	0.9	12	0.5	
31	Urban High Intensity	61.72	75	4,629	-	-	4,629	3.3	1.516	1.5	-	-	
32	Urban Medium Intensity	171.94	15	2,579	-	-	18,391	2.7	0.694	5.9	-	-	
33	Urban Medium Intensity	73.68	15	1,105	0.5	2100	5,434	3.2	0.357	1.7	12	1.1	
34	Urban Medium Intensity	288.59	15	4,329	0.5	2100	7,901	3.1	1.325	2.5	18	0.29	
35	Urban Medium Intensity	238.12	15	3,572	0.5	2100	3,572	3.4	1.208	1.2	15	Minimum	
36	Urban Medium Intensity	162.47	15	2,437	1	4200	2,437	3.5	0.861	0.9	10	2.0	
37	Urban Medium Intensity	291.28	15	4,369	1	4200	4,369	3.3	1.445	1.4	12	1.3	

Notes:

1 Maximum density used for each zoning type.

2. Force main flow velocity targeted to be between 2 fps and 8 fps. 5 fps used for sizing.

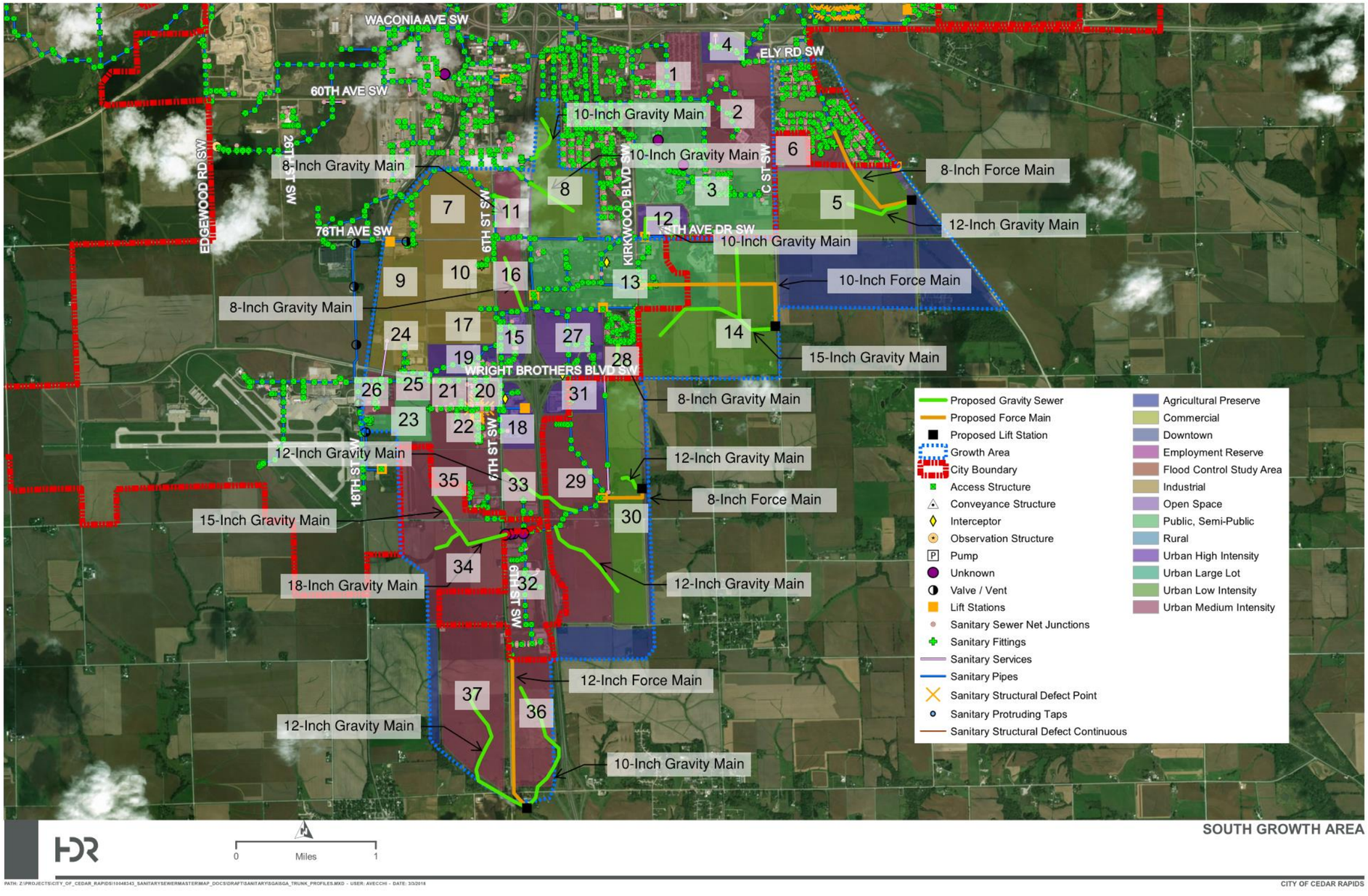

Figure 10: South Growth Area Trunk Extension Sizes by Land Use Area

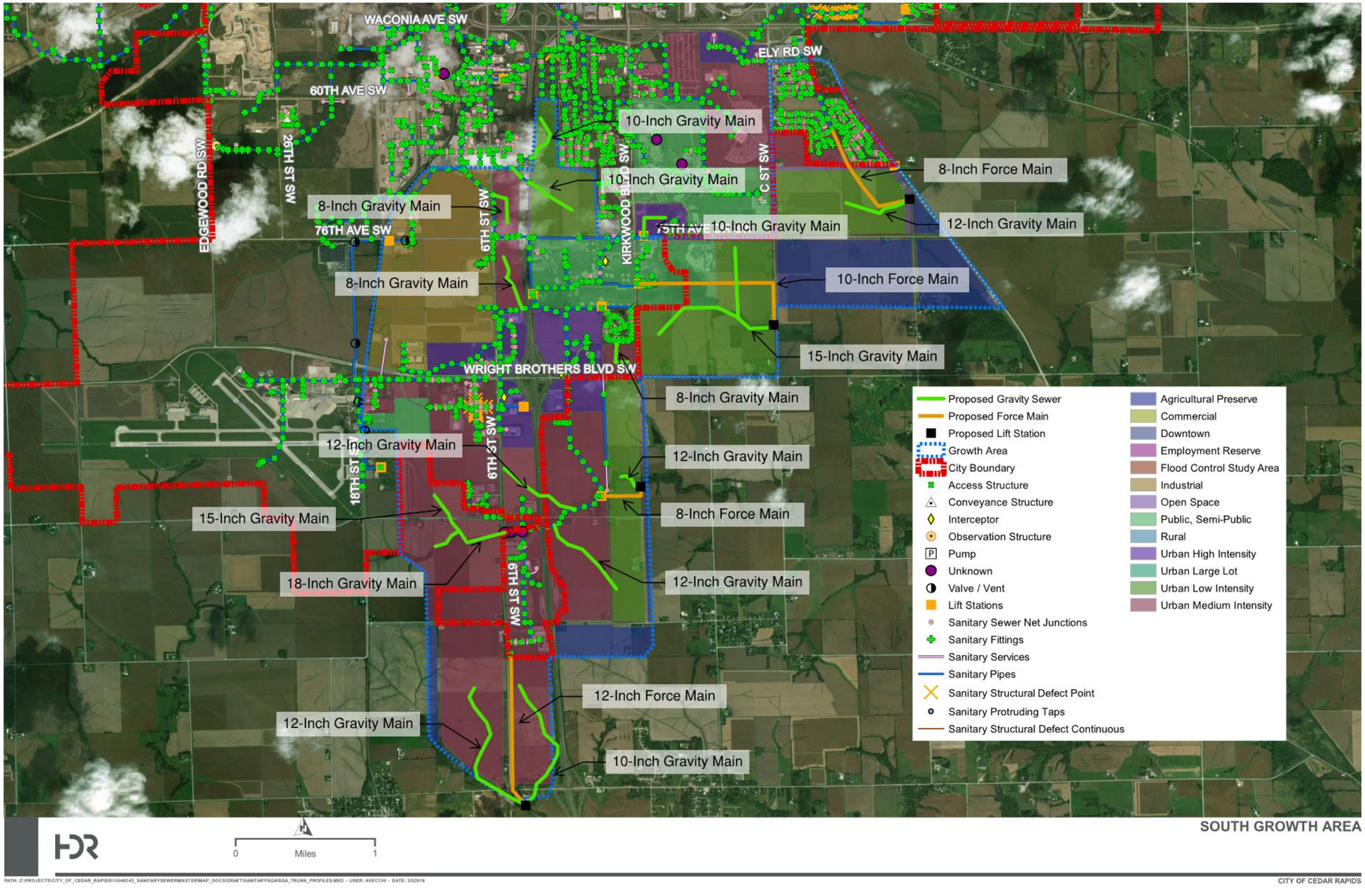

Figure 11: South Growth Area Trunk Extension Sizes

Capital Costs

Cost estimates were developed based on the alignments shown above for servicing the entire South Growth Area and for servicing only the portion of the South Growth Area within City limits. Additionally, the estimated cost for servicing the entire South Growth area was broken down into the five regions shown in Figure 12. The estimated cost to provide sanitary sewer service to the entire South Growth Area is $11.6 million. This estimate does not include the cost of 8-Inch diameter neighborhood sanitary service lines. Table 3 below outlines this cost estimate. Connection costs to the proposed sanitary sewer are assumed to be paid by homeowners in the service area.

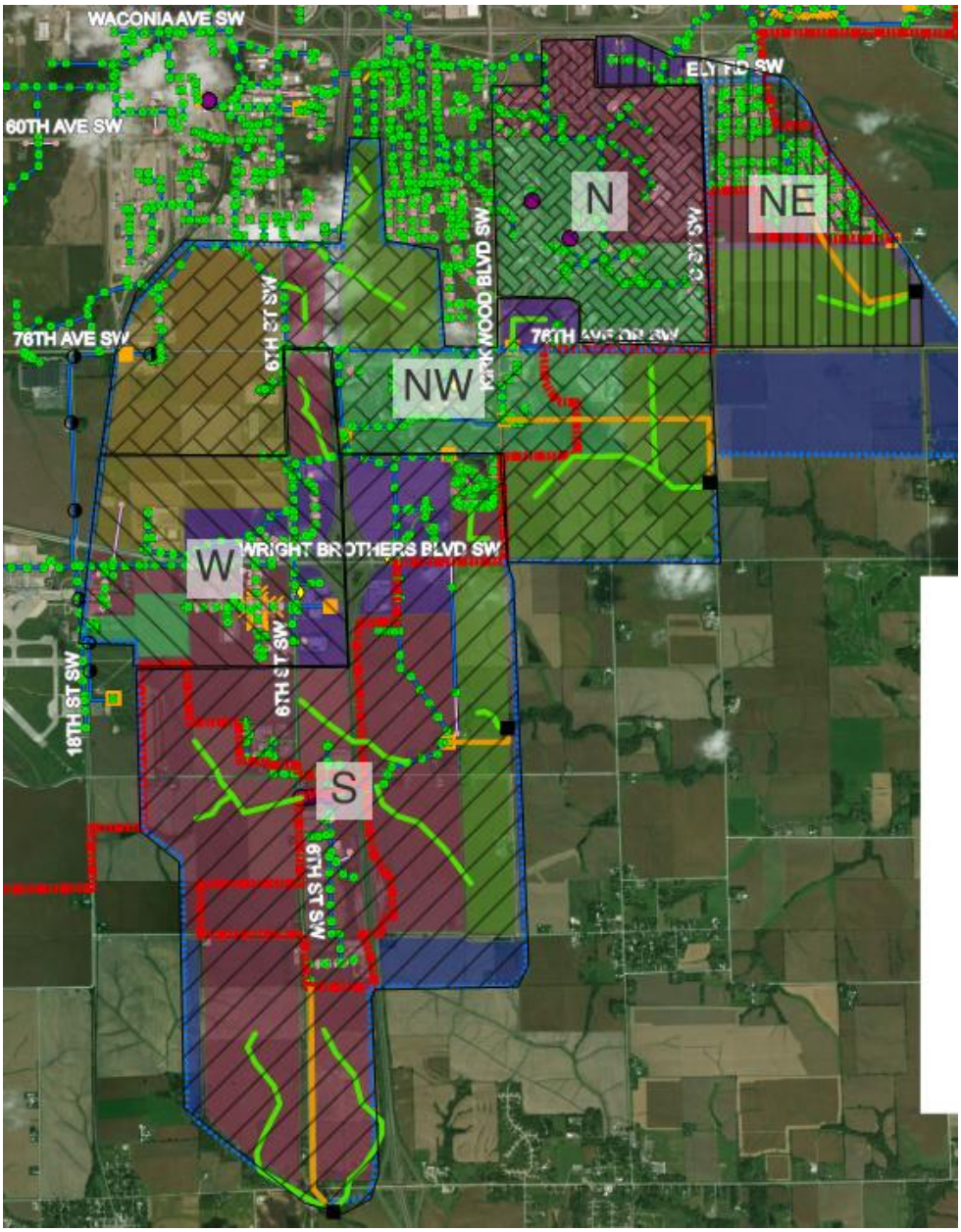

Figure 12: Regions within South Growth Area

Table 3: South Growth Area Service Cost Estimate

		Unit	Quantity	Unit Price	Extended Price	Notes:
	South Growth Area Trunk Line					**Preliminary Estimate of Cost**
1	*Mobilization*	LS	1	$315,000.00	$315,000.00	*4% of construction*
2	*Easement/Property Acquisition*	LS	1	$130,000.00	$130,000.00	*25% of Land Value plus contingency*
3	*Clearing and Grubbing*	LS	1	$50,000.00	$50,000.00	
4	*Dewatering and surface Water Control*	LS	1	$50,000.00	$50,000.00	*Comparison to Prairie Creek*
5	*Excavation and Grading*	LS	1	$25,000.00	$25,000.00	
6	*Service Road*	SY	1,500	$8.00	$12,000.00	*8-Inch Granular Surfacing with Geogrid*
7	*10-Inch Diameter Pipe PVC Trenched*	LF	9,800	$56.00	$548,800.00	*Bid Tabulation Numbers*
8	*12-Inch Diameter Pipe PVC Trenched*	LF	16,200	$60.00	$972,000.00	*Bid Tabulation Numbers*
9	*15-Inch Diameter Pipe PVC Trenched*	LF	10,800	$70.00	$756,000.00	*Bid Tabulation Numbers*
10	*18-Inch Diameter Pipe PVC Trenched*	LF	1,600	$70.00	$112,000.00	*Bid Tabulation Numbers*
11	*8-Inch Diameter Force Main*	LF	6,400	$50.00	$320,000.00	*Bid Tabulation Numbers*
12	*10-Inch Diameter Force Main*	LF	6,800	$56.00	$380,800.00	*Bid Tabulation Numbers*
13	*12-Inch Diameter Force Main*	LF	5,800	$70.00	$406,000.00	*Bid Tabulation Numbers*
14	*48-Inch Diameter Manholes*	Each	192	$6,000.00	$1,152,000.00	*Bid Tabulation Numbers*
15	*Pumping Station (0.9 MGD)*	LS	1	$400,000.00	$400,000.00	
16	*Pumping Station (1.2 MGD)*	LS	1	$500,000.00	$500,000.00	
17	*Pumping Station (1.4 MGD)*	LS	1	$500,000.00	$500,000.00	
18	*Pumping Station (1.8 MGD)*	LS	1	$600,000.00	$600,000.00	
19	*Trenchless Install (I-380)*	LF	300	$850.00	$255,000.00	*Casing Pipe Included*
	CONSTRUCTION				$7,480,000.00	
	Engineering & Leagal				$1,870,000.00	
	Contingency 30%				$2,240,000.00	
	CONSTRUCTION TOTAL				**$11,590,000.00**	

The cost estimate above was broken down into a cost to serve the five regions shown in Figure 12. For comparison, the cost for each region were normalized by area and tabulated in Table 4 below. This comparison highlights the fact that the southern and northeastern regions of the growth area, which include three of the four required lift stations, are the most expensive to service. The northern and western regions, on the other hand, require only the installation of neighborhood service line extensions by a developer and will be the least expensive to serve.

Table 4: South Growth Area Costs by Region

Growth Area	Developable Acres	Flow Generated (MGD)	Cost of Service	Cost Per Gallon	Cost Per Acre	Rank (1-13)
South Growth Area						
Northeast	390	2.5	$1,800,000	$0.66	$4,700	10
North	350	5.8	$0	$0.00	$0	1
Northwest	1,100	12.5	$3,500,000	$0.27	$3,100	6
West	600	8.0	$0	$0.00	$0	2
South	2,140	12.6	$6,300,000	$0.50	$2,900	5

The developing portion of the South Growth Area within City limits could be serviced prior to the remaining portion of the growth area due to the fact that relatively fewer sewer extensions are needed to service this area. For this reason, it is important to understand the cost to service this area independent of other portions of the South Growth Area. The estimated cost to provide sanitary sewer service for only the developing City area is $2.3 million. As before, this cost does not include neighborhood service lines. The details of this cost estimate are shown in Table 5.

Table 5: South Growth Area Service Cost Estimate for Current City Land

		Unit	Quantity	Unit Price	Extended Price	Notes:
	South Growth Area Trunk Line					**Preliminary Estimate of Cost**
1	*Mobilization*	LS	1	$210,000.00	$210,000.00	*4% of construction*
2	*Easement/Property Acquisition*	LS	1	$90,000.00	$90,000.00	*25% of Land Value plus contingency*
3	*Clearing and Grubbing*	LS	1	$30,000.00	$30,000.00	
4	*Dewatering and surface Water Control*	LS	1	$30,000.00	$30,000.00	*Comparison to Prairie Creek*
5	*Excavation and Grading*	LS	1	$20,000.00	$20,000.00	
6	*Service Road*	SY	988	$8.00	$7,902.39	*8-Inch Granular Surfacing with Geogrid*
7	*10-Inch Diameter Pipe PVC Trenched*	LF	4,300	$56.00	$240,800.00	*Bid Tabulation Numbers*
8	*12-Inch Diameter Pipe PVC Trenched*	LF	3,200	$60.00	$192,000.00	*Bid Tabulation Numbers*
9	*15-Inch Diameter Pipe PVC Trenched*	LF	3,100	$70.00	$217,000.00	*Bid Tabulation Numbers*
10	*48-Inch Diameter Manholes*	Each	36	$6,000.00	$216,000.00	*Bid Tabulation Numbers*
11	*Trenchless Install (I-380)*	LF	300	$850.00	$255,000.00	*Casing Pipe Included*
	CONSTRUCTION				$1,510,000.00	
	Engineering & Leagal				$380,000.00	
	Contingency 30%				$450,000.00	
	CONSTRUCTION TOTAL				**$2,340,000.00**	

Based on the tabulated costs above, servicing the entire South Growth Area is shown to be less expensive than most other growth areas. However, normalizing this cost with the area to be developed indicates that the South Growth Area is the least expensive area on a $/acre basis. The difference in cost between the full growth area and the portion of the growth area within City limits is largely due to the need for four lift stations to serve areas currently outside of City limits. For this reason, the City should plan for servicing the portion of the South Growth Area within City limits before extending service to other more expensive areas.

The capital costs estimated for the South Growth Area are shown compared to the other growth areas studied to date in Table 6 below. This comparison illustrates the fact that the South Growth Area is the least expensive in terms cost per gallon and cost per acre.

Table 6: Growth Area Service Cost Estimate Summary

Growth Area	Developable Acres	Flow Generated (MGD)	Cost of Service	Cost Per Gallon	Cost Per Acre	Rank (1-13)
South Growth Area						
Full Area	5,560	41.4	$11,600,000	$0.28	$2,100	3
City Land Only	3,360	31.4	$2,300,000	$0.07	$600	1
Northwest Growth Area						
Outside City Limits	2,550	5.5	$21,100,000	$3.82	$8,300	9
City Land Only	530	1.7	$4,900,000	$2.88	$9,200	10
North Growth Area	1,930	9.3	$5,900,000	$0.63	$3,100	5
West Growth Area						
Upper Ellis	2,750	11.0	$15,000,000	$1.36	$5,500	8
Lower Ellis	2,570	9.1	$5,800,000	$0.64	$2,300	4
Prairie Creek	1430	3.1	$2,200,000	$0.69	$1,500	2
Southwest Growth Area						
Upper Prairie Creek	1480	11.2	$6,500,000	$0.58	$4,400	7
Lower Prairie Creek	790	4.6	$3,400,000	$0.73	$4,300	6

APPENDIX A

CEDAR RAPIDS DESIGN STANDARDS MANUAL

Section 1 – General Information

1.1 Introduction

Sanitary Sewer Systems are essential to the public health and welfare in areas of concentrated population and development. The Sanitary Sewer system collects and conveys wastewater to points of approved discharge or disposal. Uniform and adequate sanitary sewer design criteria is essential for public safety and proper wastewater treatment, maintenance and control.

1.2 Conditions

1. Design

A. The design for sanitary facilities shall conform to the following:

B. Requirements of the Iowa Department of Natural Resources.

C. "Recommended Standards for Sewage Works Great Lakes-Upper Mississippi River Board of State Sanitary Engineers". (Ten State Standards).

D. Design Standards Manual.

E. In case of a conflict between the above standards, the more restrictive requirement shall apply.

2. Construction Standards

Construction standards shall be the most recent revision of the Cedar Rapids Metropolitan Area Standard Specifications and Details and the Jurisdiction's plumbing code.

3. Project Submittals

Construction Permit

A construction permit issued by the DNR or local jurisdiction is required for the construction, extension or modification of any sanitary sewer system. A local jurisdiction with permitting authority may issue permits for systems that primarily serve residential customers and fewer than 250 dwelling units in the ultimate sewer service area.

Permit applications shall include a sanitary service area map. This map shall include existing contours and delineated area that can be drained by gravity to the proposed sanitary sewer. Possible force mains from areas not draining by gravity to the proposed sanitary sewer do not need to be

considered except where the need is previously determined by the project engineer or Jurisdiction.
A construction permit shall not be required for the following sewers:

A. Storm sewers that transport only surface water runoff.

B. Any new disposal system or extension or addition to any existing disposal system that receives only domestic wastewater from a building or housing occupied by fifteen persons or less.

C. Replacement of previously approved construction where the replacement is done with substantially the same slope, capacity and elevations. However, if there is any change in any of the design elements noted herein, the proposed construction will require a construction permit.

D. Sanitary sewer service connections less than eight inches in diameter, defined as any connection from a single property unit to an existing sanitary sewer.

The following engineering services are required to obtain a construction permit and complete the approved construction:

A. Certified Engineering report or facilities plan (not required for minor sewer extensions).

B. Certified improvement plans and specifications.

C. Construction inspection, administration, compliance and acceptance.

Some or all of the services noted above may be provided by the local jurisdiction in some cases.

Unless permits are being issued by the local jurisdiction, engineering reports or facilities plans shall be submitted to the IDNR at least 90 days prior to the date upon which acceptance is desired, or in accordance with the Iowa Operation Permit or other schedules. The final plans and specifications should not be prepared until the engineering report has been approved. This enables the IDNR to review the concept and design, make comments, and indicate to the applicant the general acceptability of the proposal before additional expenses are incurred for developing final plans and specifications. After the engineering report has been approved, the final plans and specifications shall be submitted. Any changes from the approved report must receive prior approval from the IDNR before incorporation into the plans and specifications.

Section 2 – Flow Determination

2.1 Sanitary Sewers

1. Discharge (Q) Average Daily Flow (Minimum)
   Equation 1: Area x Area Density x Rate = Average Daily Flow

   Equation 2: Number of Units x Unit Density x Rate = Average Daily Flow.

2. Discharge (Q) Peak Sewer Flow (Minimum)

   Average Daily Flow x Ratio of Peak to Average Daily Flow
   Ratio of Peak to Average Daily Flow $= \frac{18 + \sqrt{P}}{4 + \sqrt{P}}$
   where P = population in thousands
   population values are to be based on the area which discharges into the sewer

3. Design Density and Rate - See Table 3.1

4. Estimated BOD_5 for construction permit application = 0.17 lb/person/day

2.2 Infiltration and Inflow

The design capacity of a proposed sewer system shall include a reasonable allowance for infiltration and inflow. The design infiltration shall be 200 gal/day/mile/inch of pipe diameter

2.3 Density Table

Land use designations shall be according to the current comprehensive land use plan. If existing land uses provide greater contributions to the design flow than the land use noted in the comprehensive land use plan, the existing land use shall be used.

Table 3.1 Minimum Values

LAND USE	AREA DENSITY	UNIT DENSITY	RATE
Low Density (Single Family) Residential	10 people/Ac.	3.3 people/unit	100 gpcd*
Medium Density (Multi-Family)	12 to 15 people/Ac.	3.3 people/unit 6.0 people/duplex	100 gpcd*

Residential			
High Density (Multi-Family) Residential	20 to 75 people/Ac.	2.5 people/unit	100 gpcd*

If the Design Engineer uses values different than the above table, approval by the Jurisdictional Engineer is required.

Office & Institutional	5,000 gpd/AC (IDNR)	Special Design Density	
Commercial	5,000 gpd/AC (IDNR)	Special Design Density	
Industrial	10,000 gpd/AC (IDNR)	Special Design Density	

* Department of Natural Resources (DNR) - Dry Weather Flow - One hundred gallons per capita per day (gpcd) shall be used in design calculations as the minimum average dry weather flow. This 100 gpcd value may, with adequate justification, include maximum allowable infiltration for proposed sewer lines.

2.4 Special Design Densities

Special design densities shall be subject to approval by the Jurisdictional Engineer based on methodology provided by the Design Engineer.

Section 3 – Facility Design

3.1 Capacity of Pipe

Pipe sizes 15" and smaller shall carry the peak flow at a depth no more than 0.67 of the pipe diameter. Pipe sizes greater than 15" shall carry the peak flow at a depth of no more than 0.75 of the pipe diameter. To calculate 0.67 full and 0.75 full, multiply the full flow values by 0.79 and 0.91 respectively.

3.2 Velocity Within Pipe

Minimum at peak flow = 2 fps

Maximum at peak flow = 14 fps

When this value is exceeded, special measures shall be taken to dissipate energy. These measures shall be reviewed and approved by the Jurisdiction Engineer.

3.3 Pipe Materials

For detailed specifications of pipe materials and installation requirements, the

Design Engineer should reference The Metro Area Construction Specifications.

3.4 Design Formula

In the design of pipe systems flowing part full or under a slight surcharge, Manning's equation shall be used to determine flow rate and velocity. The roughness co-efficient for all types of pipe shall be 0.013.

3.5 Force Mains

Force main design shall be based on the Colebrook or Hazen-Williams equation and shall provide a minimum velocity of three feet per second.

3.6 Minimum Slope

Minimum pipe slope shall be the greater of the below table value or slope that provides a minimum 2 fps peak flow velocity for the upstream service area.

Sewer Size:	Minimum Slope (ft./100 ft.)
8"	0.400
10"	0.300
12"	0.220
15"	0.150
18"	0.120
21"	0.100
24"	0.090
27"	0.080
30"	0.080
36"	0.080

3.7 Pipe Size

Public gravity sanitary sewer mains shall not be less than 8" diameter. The pipe diameter and slope shall be selected to obtain the greatest practical velocities to minimize settling problems. Oversized sewers should not be used to justify flatter slopes. Minimum size of building sanitary sewer service line or stub shall be 4". The size of services will increase based on the proposed number of fixtures that the sewer stub serves.

3.8 Crossings and Clearances

1. Storm Sewers

Sanitary sewer crossings of storm sewers shall have no less than 6 inches of clearance. Special structural support will be required if there is less than

18 inches clearance. The minimum horizontal clearance shall be 5 feet. Clearance refers to the distance from the outside of the sewer pipe to the outside of the storm sewer pipe.

2. Water Supplies as stated in IDNR rules:

A. "Wells: Sewers constructed of standard sewer materials shall not be laid within 75 feet of a public well or 50 feet of a private well. Sewers constructed of water main materials may be laid within 75 feet of a public well and within 50 feet of a private well but not closer than 25 feet to either."

B. "Horizontal Separation of Gravity Sewers from Water Mains: Gravity sewer mains shall be separated from water mains by a horizontal distance of at least 10 feet unless:"

1) "the top of a sewer main is at least 18 inches below the bottom of the water main, and"

2) the sewer is placed in a separate trench or in the same trench on a bench of undisturbed earth at a minimum horizontal separation of 3 feet from the water main. When it is impossible to obtain the required horizontal clearance of three feet and a vertical clearance of 18 inches between sewers and water main the sewer shall be constructed of water main materials meeting both a minimum pressure rating of 150 psi and the requirements of Sections 8.2 and 8.4 of the 'Iowa Standards for Water Supply Distribution Systems'. However, a linear separation of at least 2 feet shall be provided."

C. "Separation of Sewer Force Mains from Water Mains"

Sewer force mains and water mains shall be separated by a horizontal distance of at least 10 feet unless:"

1) "the force main is constructed of water main materials meeting a minimum pressure rating of 150 psi and the requirements of Section 8.2 and 8.4 of the 'Iowa Standards for Water Supply Distribution Systems' and"

2) "the sewer force main is laid at least 4 linear feet from the water main."

D. "Separation of Sewer and Water Main Crossovers"

Vertical separation of sanitary sewers crossing under any water main

should be at least 18 inches when measured from the top of the sewer to the bottom of the water main. If physical conditions prohibit the separation, the sewer may be placed not closer than 6 inches below a water main or 18 inches above a water main. The separation distance shall be the maximum feasible in all cases.

When the sewer crosses over or is less than 18 inches below a water main one full length of sewer pipe of water main material shall be located so both joints are as far as possible from the water main. The sewer and water pipes must be adequately supported and have watertight joints. A low permeability soil shall be used for backfill material within 10 feet of the point of crossing."

E. "Exceptions"

Should physical conditions exist such that exceptions to Sections 3.8.2.B, 3.8.2.C, and 3.8.2.D, of this standard are necessary, the design engineer must detail how the sewer and water main are to be engineered to provide protection equal to that required by these sections."

3. Sewer Crossing Under Waterway as Stated in IDNR Rules:

"The top of all sewers entering or crossing streams shall be at a depth below the natural bottom of the stream bed sufficient to protect the line. One foot of cover over the top of the line is required where the sewer is located in rock or cased and three feet of cover is required in other material. In major streams, more than the three feet of cover may be required.

In paved channels, the top of the sewer line should be placed below the bottom of the channel pavement. Sewer outfalls, headwalls, manholes, gate boxes, or other structures shall be so located that they do not interfere with the free discharge of flood flows of the stream. Sewers located along streams shall be located outside of the stream bed.

Sewers entering or crossing streams shall be constructed of cast or ductile pipe with mechanical joints or shall be so otherwise constructed that they will remain water tight and free from changes in alignment or grade. Sewer systems shall be designed to minimize the number of stream crossings. The stream crossings shall be designed to cross the stream as nearly perpendicular to the stream flow as possible. Construction methods that will minimize siltation shall be employed. Material used to backfill the trench shall be stone, coarse aggregate, washed gravel, or other materials which will not cause siltation.

Upon completion of construction, the stream shall be returned as near as

possible to its original condition. The stream banks shall be seeded and planted, or other methods employed to prevent erosion. The design engineer shall include in the project specifications the method or methods to be employed in the construction of sewers in or near streams to provide adequate control of siltation."

4. Aerial Crossings as Stated in IDNR Rules:

"Support shall be provided at all joints in pipes utilized for aerial crossings. The supports shall be designed to prevent overturning and settlement.

Precautions against freezing, such as insulation and increased slope, shall be provided. Expansion jointing shall be provided between above-ground and below-ground sewers.

For aerial stream crossings the impact of flood waters and debris shall be considered. The bottom of the pipe should be placed no lower than the elevation of the 50 year flood".

3.9 Depth of Sewer

Sanitary sewer services shall be constructed at a sufficient depth to provide three feet between the basement finish floor and the top of the sewer service pipe. The design shall provide for a 2 percent slope for sewer services. In no case shall a sanitary sewer service be assumed to have a slope less than 1 percent. The sewer service shall be well below the frost line in all cases and lower than any water lines placed in the same street. Insulation shall be provided for all sewers that cannot be placed at a depth sufficient to prevent freezing. For sewers greater than 12 feet in depth as measured at the building lines, risers shall be installed on service stubouts. In no case shall the depth of a sewer exceed the maximum depth recommended by the pipe manufacturer.

3.10 Sewer Alignment

The horizontal and vertical alignment of sewers less than 24" in diameter shall be uniform between manholes.

3.11 Manholes

1. Access to Manholes – Manholes in street right of way must be located at street centerline. Manholes shall not be located in the wheel tracks of a driving lane. Manholes located outside street right of way shall be subject to the approval of the Jurisdictional Engineer.

2. Location – Manholes shall be installed at the end of each sewer line, at all changes in pipe size, grade or alignment and all public sewer system

connections. The manhole shall be placed over the centerline or the pipe or on an offset not to exceed 12 inches.

3. Standard Manhole Size – A minimum of 48" diameter manhole is required for sanitary sewers 30" in diameter and smaller.

4. Special Manholes – For square or rectangular manholes, the manhole openings should be over the centerline of the pipes or on an offset not to exceed 12 inches. The distance from the centerline of the manhole opening to the face of the inside manhole wall shall not exceed 30 inches to better facilitate T.V. inspection and maintenance equipment. This may require more than one manhole opening.

5. Maximum Manhole Spacing shall be 400'. On large diameter sewers, the manhole spacing may be modified by the Jurisdictional Engineer. Jurisdictions may require reduced spacing due to maintenance constraints.

6. Minimum Manhole Flowline Drop

   Change in alignment - 0° to 45° - 0.10 ft

   Change in alignment across manhole – greater than 45° - 0.10 ft. (min.), 0.25 ft. (preferred)

   Change in pipe size – match eight-tenths full points.

7. Drop manholes should be avoided when possible. If it cannot be avoided, external drop manholes may be constructed with the approval of the Jurisdictional Engineer.

8. Manhole Frames and Covers

   Bolt-down covers and frames are required on manholes subject to inundation such as flood plains, detention areas, manholes outside the street and storm water easement areas subject to "major storms".

3.12 Sewer Services

1. Connections to Manholes

   Individual services will not be connected to a manhole unless at terminal manholes which cannot possibly be extended in the future. Service line connections to manholes require approval from the Jurisdiction. The services may not enter the manhole at greater than two feet above the invert of the outlet. Sewer flow channels in the manhole bottom must be provided for all services.

2. Regular Services

A. Each structure should be served by a separate service line connected to a public or private sanitary lateral sewer. The service should be perpendicular to the lateral sewer line where possible, with wye connections to the public sewer.

B. Sewer services across one lot to provide service to an adjacent lot in a proposed subdivision should be avoided. If condition exists that requires crossing of an adjacent lot, the following conditions must be met:

1) Proposed subdivision does not exceed two lots.

2) A private utility easement 10 feet in width is provided across the adjacent lot (to be occupied by sewer service only).

3) The Jurisdictional Engineer determines that a sewer main extension will not be necessary to perpetuate the system and in all likelihood no future developing of abutting properties will benefit from a main extension.

3.13 Lift Stations

Lift station design shall include a duplex pump system with each pump having the capacity to pump the design peak flow. The alarm system shall include telemetry to the monitoring jurisdiction, site audible and possible alarms. A stand by power generating set shall be provided with an automatic transfer switch in the event of a power outage. The wet well shall be sized for the recommended minimum pump run time and in accordance with AWWA standards for wet well design.

3.14 Siphons

Sanitary sewer siphons shall be avoided and will only be accepted where no feasible alternative exists and where there will be sufficient flow in the sewer so that maintenance will be held to a minimum. All siphons shall have a minimum of two barrels with a minimum pipe size of 6" diameter. Design provisions shall be made for diversion of normal flow to either barrel for maintenance. Sufficient head shall be provided to insure velocities of at least three feet per second for average flow.

APPENDIX B

CHAPTER 13 - WASTEWATER FACILITIES

13.01 - DEFINITIONS.

Unless the context specifically indicates otherwise, the meaning of terms used in this chapter shall be as follows:

(a) **Federal Government.**

1. The Act: The Federal Water Pollution Control Act, also known as the Clean Water Act, as amended, 33 U.S.C. 1251 et seq.
2. Administrator. The Administrator of the U.S. Environmental Protection Agency.
3. Federal Grant. The U.S. government participation in the financing of the construction of treatment works as provided for by Title II—Grants for Construction of Treatment Works of the Act and implementing regulations.
4. CFR—Code of Federal Regulations.
5. USC—United States Code.

(b) **State Government.**

1. State Act: Chapter 455B of the 1979 Code of Iowa as the same now exists or may hereafter be amended.
2. Executive Director. The Executive Director of the Iowa Department of Water, Air and Waste Management or its successor agency.

(c) **Local Government.**

1. Chapter: Chapter 13 of the Municipal Code of the City of Cedar Rapids, Iowa.
2. City. The City of Cedar Rapids, Iowa and/or its authorized agents.
3. Director. The Water Pollution Control Director of the City of Cedar Rapids, Iowa.

(d) **Person.** Any and all persons, natural or artificial, including any individual, firm, company, municipal or private corporation, association, society, institution, enterprise, political subdivision, governmental agency, trust estate or other legal entity or their legal representatives, agents or assigns.

(e) **National Pollutant Discharge Elimination System or NPDES Permit.** Any permit or equivalent document or requirements issued by the Administrator, or, where appropriate, by the Executive Director to regulate the discharge or pollutants pursuant to Section 1402 of the Act (33 USC 1342).

(f) **Clarification of Wordage.** "Shall" imposes a duty; "must" states a requirement; "may" confers a power.

(g) **Wastewater and Its Characteristics.**

1. "Wastewater" shall mean the spent water of a community. It may be liquid or a combination of liquid and water-carried wastes from residences, commercial buildings, industrial plants, and institutions, together with any ground, surface or storm water.
2. "Sewage" is used interchangeably with "wastewater."
3. "Effluent criteria" are defined in any applicable "NPDES Permit."
4. "Water quality standards" are defined in the Iowa Departmental Rules.

5. Unpolluted water: Water of quality equal or better than the applicable effluent criteria in effect under the State or Federal Act or water that would not cause violation of receiving water quality standards under the applicable act and would not be benefited by discharge to the sanitary sewers and wastewater treatment facilities provided.

6. Milligrams per liter: A unit of the concentration of water or wastewater constituent. It is 0.001 g of the constituent in 1,000 ml of water.

7. "SS" denotes "suspended solids" and shall mean solids that either float on the surface of, or are in suspension in water, sewage or industrial waste, and which are removable by a laboratory filtration device. Quantitative determination of suspended solids shall be made in accordance with procedures set forth in "Standard Methods."

8. "BOD" denotes "Biochemical Oxygen Demand" and shall mean the quantity of oxygen utilized in the biochemical oxidation of organic matter under standard laboratory procedure in 5 days at 20 degrees C., expressed in milligrams per liter.

9. "TKN" denotes "Total Kjeldahl Nitrogen," the concentration of ammonia and organic nitrogen expressed in milligrams per liter.

10. "pH": The logarithm (base 10) of the reciprocal of the hydrogen-ion concentration expressed by one of the procedures outlined in "Standard Methods."

11. Standard Methods: The examination and analytical procedures set forth in the most recent edition of "Standard Methods for the Examination of Water and Wastewater" published jointly by the American Public Health Association, the American Water Works Association and the Water Pollution Control Federation.

12. Garbage: Solid animal and vegetable wastes from the domestic and commercial preparation, cooking, and dispensing of food, and from the handling, storage and sale of produce.

13. Properly shredded garbage: The wastes from the preparation, cooking, and dispensing of food that have been shredded to such a degree that all particles will be carried freely under the flow conditions normally prevailing in public sewers, with no particle greater than one-half inch (1.27 centimeters) in any dimension.

14. Slug: Any discharge of water, sewage or industrial waste which in concentration of any given constituent or in quantity of flow exceeds for any period of duration more than five times the average 24-hour concentration or flows during normal operation and may adversely affect the collection system or performance of the wastewater treatment facilities.

15. Sanitary wastes: Any solid, liquid or gaseous substance discharged from residences, business buildings, institutions, commercial and industrial establishments contributed by reason of human occupancy.

16. "Industrial waste" or "process waste" shall mean any solid, liquid or gaseous substance discharged, permitted to flow or escaping from any industrial, manufacturing, commercial or business establishment or process or from the development, recovery or processing of any natural resource as distinct from sanitary wastes.

(h) **Sewer Types and Appurtenances.**

1. "Sewer" shall mean a pipe or conduit for conveying sewage or any other waste liquids, including storm, surface and groundwater drainage.

2. "Public sewer" shall mean a sewer owned by and subject to the jurisdiction of the city. It shall also include sewers within or outside the city boundaries that serve one or more persons and ultimately discharge into the city sewer system, even though these sewers may not have been constructed with city funds.

3. "Sanitary sewer" shall mean a public sewer that conveys wastewater, and into which storm, surface, ground, and unpolluted waters are not intentionally admitted.

4. "Storm sewer" shall mean a public sewer that carries storm, surface and groundwater drainage but excludes wastewater other than unpolluted water.

5. "Combined sewer" shall mean a public sewer to be used as both a sanitary sewer and a storm sewer.

6. "Building lateral" shall mean the extension from the building sewer, beginning 5 feet (1.5 meters) outside the inner face of the building wall and extending to the public sewer or other place of disposal.

7. "Building sewer" shall mean that part of the lowest piping of a drainage system which receives the discharge from soil, waste, and other drainage pipes inside the walls of the building and conveys it to the building lateral.

(i) **Treatment.**

1. "Pretreatment" shall mean the treatment of wastewaters from sources before introduction into the public sewer.

2. "Water pollution control plant" shall mean a publicly owned arrangement of devices and structures for treating wastewater. Sometimes used as synonymous with "waste treatment plant" or "wastewater treatment plant" or "pollution control plant."

3. "Water pollution control facilities," "wastewater system," or "Publicly Owned Treatment Works (POTW)" shall mean the publicly owned structures, equipment, and processes required to collect, convey, and treat wastewaters.

(j) **Watercourse and Connections.**

1. "Watercourse" shall mean a channel in which a flow of water occurs, either continuously or intermittently.

2. "Natural outlet" shall mean any outlet into a watercourse, pond, ditch, lake, or other body or surface or groundwater.

(k) **User Types.**

1. Residential user: Any user of the water pollution control facilities where permanent residency is established and only sanitary wastes are discharged.

2. Commercial user: Any user of the water pollution control facilities where business or commercial trade is conducted and not classified as an industrial user.

3. Industrial user: Any nonresidential user of a publicly owned treatment works which discharges process wastes more than the equivalent of 25,000 gallons per day (gpd) of sanitary wastes and which is identified in the Standard Industrial Classification Manual, 1972, Office of Management and Budget, as amended and supplemented under one of the following divisions:

   A. Division A—Agriculture, Forestry, and Fishing.

   B. Division B—Mining.

   C. Division D—Manufacturing.

   D. Division E—Transportation, Communications, Electric, Gas, and Sanitary Services.

   E. Division I—Services.

Any user of a publicly owned treatment works which discharges wastewater to the treatment works which contains toxic pollutants or poisonous solids, liquids or gases in sufficient quantity either singly or by interaction with other wastes, to contaminate the sludge of any municipal system or to injure or to pass through or interfere with any sewage treatment process, or which constitutes a hazard to humans or animals, creates a public nuisance, or creates any hazard in or has an adverse effect on the waters receiving any discharge from the treatment works.

(38-89)

(l) **Sampling Manhole.** "Sampling manhole" shall mean a structure located on a building lateral for the purpose of providing access to sample or measure wastewater discharges.

(m) **User Charges.**

1. "Wastewater service charge" shall be the charge per quarter or month levied on all users of the water pollution control facilities.

2. "Pretreatment Program Costs" shall mean the amount expended to administer the pretreatment program.

3. "Operation and Maintenance" (O&M) shall mean all annual expenditures, including replacement costs, for materials, labor utilities, and other items which are necessary for managing and maintaining the wastewater system to achieve the design capacity and performance.

4. "Replacement" shall mean expenditures for obtaining and installing equipment, accessories, or appurtenances which are necessary during the service life of the water pollution control plant to maintain the capacity and performance for which such plant was designed and constructed.

5. "Useful life" shall mean the estimated period during which the water pollution control facilities will be operated and shall be 30 years from the date of start-up of any water pollution control facilities constructed with a federal grant.

(n) **Authorized Representative of Industrial User.** An authorized representative of an industrial user may be: (1) a principal executive officer of at least the level of vice-president, if the industrial user is a corporation; (2) a general partner or proprietor if the industrial user is a partnership or proprietorship, respectively; (3) a duly authorized representative of the individual designated above if such representative is responsible for the overall operation of the facilities from which the indirect discharge originates.

(o) **Categorical Standards.** National Categorical Pretreatment Standards or Pretreatment Standard.

(p) **Grab Sample.** A sample which is taken from a waste stream on a one-time basis with no regard to the flow in the waste stream and without consideration of time.

(q) **Pass Through or Interference.** The term pass through means a discharge which exits the POTW into water of the United States in quantities or concentrations which, alone or in conjunction with the discharges from other sources, causes a violation of any requirement of the POTW's NPDES permit, and interference means the inhibition or disruption of the treatment processes or operations which contributes to a violation of any requirement of the city's NPDES permit. The term includes prevention of sewage sludge use or disposal by the POTW in accordance with Section 405 of the Act, (33 USC 1345) or any criteria, guidelines, or regulations developed pursuant to the Solid Waste Disposal Act (SWDA), the Clean Air Act, the Toxic Substances Control Act, or more stringent state criteria, (including those contained in any state sludge management plan prepared pursuant to Title IV of SWDA) applicable to the method of disposal or use employed by the POTW.

(r) **National Categorical Pretreatment Standard or Pretreatment Standard.** Any regulation containing pollutant discharge limits published by the EPA in accordance with Section 307(b) and (c) of the Act (33 USC 1347) which applies to a specific category of industrial users.

(s) **National Prohibitive Discharge Standard or Prohibitive Discharge Standard.** Any regulation developed under the authority of section 307(b) of the Act and 40 CFR, Section 403.5.

(t) **New Source.** Any source that commences construction after the publication of the regulations prescribed in Section 307(c) (33 USC 1317) Categorical Pretreatment Standard will be classified as a new source and must comply with the regulations. When a new standard is promulgated, a

new source means any source that commences construction after the date of promulgation of the standard.

(u) **Pretreatment Requirements.** Any substantive or procedural requirement related to pretreatment, other than a National Pretreatment Standard imposed on an industrial user.

(v) **Standard Industrial Classification (SIC).** A classification pursuant to the Standard Industrial Classification Manual issued by the Executive Office of the President, Office of Management and Budget, 1972.

(w) **Toxic Pollutant.** Any pollutant or combination of pollutants listed as toxic in regulations promulgated by the Administrator of the Environmental Protection Agency under the provision of CWA 307(a) or other Acts.

(x) **SWDA.** Solid Waste Disposal Act, 42 USC 6901, et seq.

(y) **Environmental Violation.** An environmental violation is a violation of Chapter 455B or a violation of a standard established by the city in consultation with the Department of Natural Resources, or both. The discharge of airborne residue from grain, created by the handling, drying, or storing of grain by a person, shall not be an environmental violation, unless the person is engaged in industrial production or manufacturing of grain products. The discharge of airborne residue from grain, created by the handling, drying or storing of grain by a person engaged in industrial production or manufacturing of grain products shall not be an environmental violation, if the discharge occurs from September 15 to January 15.

(38-89, 73-90)

13.02 - WATER POLLUTION CONTROL DIRECTOR.

(a) **Appointment and Term.** The Water Pollution Control Director shall be appointed by the City Manager and shall hold office as provided in Section 5.19 of this code.

(b) **Duties.** The Director shall have complete charge of the operation of the Water Pollution Control Plant under the general supervision of the City Manager and subject to such rules and regulations as the Council may prescribe. He shall have direct charge of all employees of the Water Pollution Control Plant.

(c) **Accounts and Reports.** The Director shall keep an accurate and complete record of the transactions of the Water Pollution Control Plant, including all receipts and disbursements. He shall cooperate with the Water Department Director for the city in the preparation of an accurate list of all general and special rentals to be collected as hereinafter provided.

(d) **Separate Sewer Fund.** All moneys received by the City Treasurer from any source on account of the water pollution control facilities shall be kept in a separate fund and shall be paid out by him only upon legal warrants of the city.

(86-05)

13.03 - (Repealed by 68-93).

13.04 - SEWER USE REQUIREMENTS.

(a) **Prohibited Discharge of Wastewater.** It shall be unlawful to discharge to any natural outlet within the City of Cedar Rapids or in any area under the jurisdiction of said city, any wastewater, except where suitable treatment has been provided in accordance with other provisions of this chapter.

(b) **Connection Requirements.** Every structure wherein persons reside, congregate or are employed which abuts a street or alley in which there is a public sanitary sewer available or which is within 250

feet of an existing available sanitary sewer from the nearest point of the lot line, shall be connected to the sewer by the owner of the premises in the most direct manner and with a separate connection for each structure. Structures not covered under this requirement shall be governed by Section 13.05 (Private Sewage Disposal Systems).

(c) **Sewer Connection Charge** . A sanitary sewer connection charge will be due in areas of the City where sanitary sewer was previously constructed by the City at no expense to the abutting property owners. Applications for sanitary sewer connections shall be made with the Public Works Engineering Division by the owner or agent of the property to be served. Such application shall state the street address to be served, the size of pipe required and approximate location where the proposed service line will enter the building. If an application is approved, all connections to the sanitary sewer main will be made in the presence of Public Works Construction Engineering Staff. The applicant shall pay to the City Treasurer a sewer connection charge as described below prior to issuance of a sewer permit.

1. Connection charge for a one-family or two-family residence, regardless of area of. the lot or tract upon which the dwelling is located shall be two thousand dollars ($2,000).

2. Connection charge for all other uses shall be the product of one thousand dollars ($1,000) per acre of land to be served by the sewer connection, with a minimum charge of two thousand dollars ($2,000).

3. The City Engineer or his approved representative is authorized and directed to determine the acreage of land to be served. In areas of the City where a private developer is connecting to an existing sewer and extending public sewer to serve property through the Subdivision Ordinance process, no connection charge will be due, except as provided in Section 4 below.

4. Sanitary sewer may be extended by the City to serve areas not previously served if the sewer extension is consistent with City Council policy, and if agreed to by the City. The cost of sanitary sewer extensions to the land owners shall be called an Extension Charge and is separate from the Connection Charge described above. Costs to be recovered by the City may be recorded in an Extension of Service Area Agreement or other Agreement, and a Water and Sewer Extension Area defining the properties served may be established by ordinance. Any previous written arrangements or contracts for sanitary sewer extensions that pre-date this ordinance update shall remain in effect until expired.

(d) **Minimum Lot Size.**

1. No tract of land within the city which is served by public sanitary sewer facilities shall be used for residence construction unless said tract conforms to the area and width requirements of the zoning district in which the property is located. If a lot has less area or width than required and was of record on May 24, 1955, that lot or tract may be occupied by a use permitted in the zoning district.

2. After August 16, 1954 no tract of land within the city which is not served by public sanitary sewer facilities shall be used for residence construction unless said tract shall have adequate area as determined by the Linn County Health Department for the installation of a private waste disposal system. In no case, however, shall said tract contain less than 15,000 square feet and have less than 75 feet of frontage and less than 130 feet of depth.

3. In no event shall the minimum area or the minimum frontage of any tract of land referred to in this section be less than the minimum requirements provided for the zoning district in which said tract is located.

4. For the purpose of this section the words "tract of land" shall mean a lot which is part of a subdivision, the plat of which is recorded in the office of the County Recorder, or a parcel of land, the deed of which is recorded in the office of the County Recorder.

5. If an owner of a tract of land is aggrieved by the provisions of this section, appeal may be had to the Board of Adjustment which shall have the power to vary the requirements of this section to avoid practical difficulties or unnecessary hardship.

(15-94, 19-04, 21-05, 17-06, 017-07, 005-08, 014-09, 017-10)

(048-14)

13.05 - ON-SITE WASTEWATER TREATMENT AND DISPOSAL SYSTEMS (ADOPTION OF LINN COUNTY ORDINANCE).

The provisions of Chapter 24 of the Linn County Code of Ordinances and Section 69.1, Title 561 of Iowa Administrative Code, as amended from time to time, are hereby adopted in their entirety and incorporated herein by reference as though fully set forth.

(010-12)

13.06 - SEWER CONNECTIONS.

(a) No unauthorized person shall uncover, make any connection with, or opening into; use; alter; or disturb any public sewer or appurtenances thereof without first obtaining a written permit from the city.

(b) Any connection to a public sewer within the jurisdiction of the city shall be subject to the rules and regulations of the city and to the charges, rates, rents, fees and assessments which are or may be established by the city as being applicable, and shall be made under permits issued by the city.

(c) The construction of sewers which are to be connected to and become a part of the public sewer system shall be done in conformance with the city's specifications. Plans shall be submitted to and approved by the City Engineer, and a letter requesting permission to build shall be filed with and approved by the city council prior to commencement of work. Construction of said sewers shall be conducted in the presence of the City Engineer or his authorized representative. A two year maintenance bond shall be placed on file upon completion and prior to acceptance of the work.

(d) No person shall tap any public sewer at any other place than at the regular junction "tee" or "wye" built into the sewer, without specific authority from the City Engineer, nor shall any connection be made with the public sewer except in the presence of the City Engineer or his authorized representative. Connections shall be made in accordance with the specifications of the city.

(e) No connections shall be made to a public sewer for any facility located outside of the corporate limits of the city unless permission is specifically granted by resolution of the City Council.

(f) The construction of and use of combined sewers is hereby prohibited.

(g) When any building or structure is razed or moved, and the sewer service is discontinued, all sewer connections shall be properly stopped or cut off at the curb line, according to the specifications of the city and as approved by an inspector of the city.

(h) Grease, oil or sand interceptors shall be provided upstream from the connection to a public sewer when determined by the director they are necessary for the proper handling of liquid wastes containing grease, any inflammable wastes, sand or other harmful ingredients; except that such interceptors shall not be required for private living quarters or dwelling units.

(i) With the filing of the application for a building permit as required by Chapter 33, the applicant shall provide sufficient information for the director to determine whether an interceptor is required. A permit shall not be issued until such time as the Director makes the determination.

All interceptors shall be of a type and capacity, and installed as required by the City Plumbing Code.

13.07 - USE OF PUBLIC SEWERS.

(a) **Purpose and Policy.** This chapter sets forth uniform requirements for direct and indirect contributors into the wastewater collection and treatment system for the city and enables the city to comply with all

applicable state and federal laws required by the Clean Water Act of 1977 and the General Pretreatment Regulations (40 CFR, Part 403).

The objectives of this chapter are:

1. To prohibit the introduction of pollutants into the municipal wastewater system which will interfere with the operation of the system or contaminate the resulting sludge; (38-89)
2. To prohibit the introduction of pollutants into the municipal wastewater system which will pass through the system inadequately treated, into receiving waters or the atmosphere or otherwise be incompatible with the system; (38-89)
3. To improve the opportunity to recycle and reclaim wastewaters and sludge from the system; and
4. To provide for equitable distribution of the cost of the municipal wastewater system.

This chapter provides for the regulation of direct and indirect contributors to the municipal wastewater system through the issuance of permits to certain nondomestic users and through enforcement of general requirements for the other users, authorizes monitoring and enforcement activities, requires user reporting, assumes that existing customer's capacity will not be preempted, and provides for the setting of fees for the equitable distribution of costs resulting from the program established herein.

This chapter shall apply to the city and to persons outside the city who are, by contract or agreement with the city, users of the city POTW. Except as otherwise provided herein, the Director of the city POTW shall administer, implement and enforce the provisions of this chapter.

(b) **Discharge Prohibited.** No person shall discharge or cause to be discharged any of the following described substances, materials, waters and/or wastes into the designated sewers:

1. **Public Sewers.**

A. Pollutants which create a fire or explosion hazard in the POTW including, but not limited to, wastestreams with a closed cup flashpoint of less than 140 degrees Fahrenheit or 60 degrees Centigrade using the test methods specified in 40 CFR 261.21, for example: gasoline, benzene, naphtha, fuel oil, or other inflammable or explosive liquid, solid or gas. (20-92)

B. Any waters or wastes containing toxic or poisonous solids, liquids, or gases in sufficient quantity, either singly or by interaction with other wastes, to deteriorate any public sewer, injure or interfere with any sewage treatment process, constitute a hazard to humans or animals, create a public nuisance or create any hazard in the receiving waters of the sewage treatment plant, including but not limited to the following list in maximum concentrations established by Categorical Pretreatment Standards, or an industrial wastewater discharge permit, or Table 4-2 of the City of Cedar Rapids Industrial Pretreatment Program adopted October 1983:

Arsenic

Beryllium

Cadmium

Chromium

Copper

Cyanide

Lead

Mercury

Molybdenum

Nickel

Selenium

Zinc

Identifiable chlorinated hydrocarbons

C. Any waters or wastes having a pH lower than 5.5, or having any other corrosive property capable of causing damage or hazard to the public sewer or structures, equipment, and personnel of the water pollution control facilities, or operation thereof.

D. Solid or viscous substances in quantities or of such size capable of causing obstruction to the flow in sewers, or other interference with the proper operation of the Water Pollution Control Plant such as, but not limited to, ashes, cinders, sand, mud, straw, shavings, metal, glass, rags, feathers, tar, plastics, wood, unground garbage, whole blood, paunch manure, hair and fleshings, entrails and paper dishes, cups, milk containers, etc. either whole or ground by garbage grinders.

E. Pollutants which result in the presence of toxic gases, vapors, or fumes within the POTW in a quantity that may cause workers acute health and safety problems.

(20-92)

2. **Storm Sewers.** No wastewaters except unpolluted waters and wastewater allowed by a NPDES permit shall be discharged to storm sewers. Storm waters and other unpolluted water and wastewater allowed by a NPDES permit shall be discharged into such sewers as are specifically designed and designated as storm sewers or to a natural outlet approved by the city.

3. **Sanitary Sewers.** No storm waters, surface water, groundwater, roof runoff, subsurface drainage, cooling water, or unpolluted water shall be discharged to any sanitary sewer. Where a storm sewer or natural outlet is not available, such unpolluted water may be discharged to a sanitary sewer only after written approval of the Director. No person constructing a sanitary sewer, building, or house connection, shall leave same open, unsealed or incomplete in such a fashion to permit storm, surface or subsurface water to enter the sanitary sewer.

4. **Illegal Connections.** Any connections made before or after the effective date of this chapter, which discharge prohibited materials, shall be considered illegal and shall be subject to immediate removal by owner of the premise so connected and at such owner's expense.

   Should the owner of such an illegally connected premise fail to remove the connection within 60 days, the city may cause the connection to be removed and the cost shall be billed to the owner of the premises.

5. **Accidental Discharges.** The accidental discharge of any prohibited liquid, gaseous or solid material into any public sewer or natural outlet, either directly or indirectly, shall be reported to the Director immediately by the person responsible for the discharge.

   Penalties for accidental discharges shall be reviewed by the Director on a case-by-case basis. It shall be understood that the person responsible for the discharge shall not be relieved of its responsibilities and shall be liable for any expense, loss or damage occasioned by the city by reason of such accidental discharge.

(c) **Discharge Prohibited Except by Permit.** No person shall discharge or cause to be discharged, the following described substances, materials, waters, or wastes without a permit issued pursuant to Section 13.08.

1. Any waters or wastes excluding sanitary wastes having:

A. 5-day BOD greater than 42 lbs/day or,

B. Suspended solids greater than 52 lbs/day or,

C. Total Kjeldahl nitrogen greater than lbs/day, or,

D. Average daily flow greater than 25,000 gallons/day (excluding sanitary wastes).

2. Any liquid or vapor having a temperature higher than 120 degrees Fahrenheit (48 degrees Centigrade).

3. Any water or wastes which contain grease, fats, wax, or oil, whether emulsified or not, in excess of 100 mg/l, or other substances that will solidify or become discernibly viscous at temperatures between 32 degrees and 150 degrees Fahrenheit (0 degrees to 65 degrees Centigrade).

4. Any garbage that has not been properly shredded. The installation and operation of any garbage grinder equipped with a motor of ¾ horsepower (0.75 hp metric) or greater shall be subject to the review and approval of the Director.

5. Any water or wastes containing non-edible type oil or grease such as petroleum, mineral oil or grease in amounts that could cause interference or pass-through.

6. Any water or wastes that contain more than .2 parts per million by weight of hydrogen sulfide, or more than 2 parts per million by weight of sulfur dioxide and nitrous oxide.

7. Any water or wastes that contain phenols or other taste and odor producing substances, in excess of 0.5 parts per million by weight.

8. Any water or wastes, acid or alkaline in reaction, and having corrosive properties capable of causing damage or hazard to structures, equipment and personnel of the city.

9. Any water or wastes containing any of the constituents listed in subsection 13.07(b)1.B, or any other objectionable or toxic substances.

10. Any water or wastes containing the discharge of strong acid iron pickling wastes, or concentrated plating solution whether neutralized or not.

11. Any noxious or malodorous gas or substances, which either singly or by interaction with other wastes, is capable of creating a public nuisance or hazard to life or of preventing entry into sewers for their maintenance and repair.

12. Any radioactive wastes or isotopes of such half-life or concentration as may exceed limits established by the Director in compliance with applicable state and federal regulations.

13. Materials which exert or cause:

    Unusual concentrations of inert suspended solids such as, but not limited to, fuller's earth, lime slurries, and lime residues or of dissolved solids (such as, but not limited to, sodium chloride and sodium sulfate).

    Excessive discolorations such as, but not limited to, dye wastes and vegetable tanning solutions.

14. Any water or wastes containing substances which are not amenable to treatment or reduction by the water pollution control processes employed, or are amenable to treatment only to such a degree that the Water Pollution Control Plant effluent cannot meet the requirements of other agencies having jurisdiction over discharge to the receiving water.

15. Any water or wastes which by interaction with the other water or wastes in the public sewer system, releases obnoxious gases or develops color of undesirable intensity; or forms suspended solids in objectionable concentration; or creates any other conditions deleterious to structures and treatment processes, shall be subject to control or shall be banned from the system as determined by the Director.

16. Any wastes, which in the opinion of the Director, may harm either the public sewers, Water Pollution Control Plant, treatment process, equipment, or have an adverse effect on the receiving stream, or can otherwise endanger life, limb, public property, or constitute a nuisance. In forming his opinion as to the acceptability of these wastes, the Director shall give consideration to such factors as the quantities of subject wastes in relation to flows and velocities in the sewers, materials of construction in the sewers, nature of the treatment processes, capacity of the water pollution control facilities, degree of treatability of wastes in question, and other pertinent factors. Factors influencing this ruling and known conditions at the time of this ruling shall be recorded by the Director in the plant file at the time the ruling is made.

17. Any trucked or hauled pollutants, except at discharge points designated by Cedar Rapids Water Pollution Control Department. (20-92)

(d) **Federal Categorical Pretreatment Standards.** Upon the promulgation of the Federal Categorical Pretreatment Standards for a particular industrial subcategory, the Federal Standard, if more stringent than limitations imposed under this chapter for sources in that subcategory, shall immediately supersede the limitations imposed under this chapter. The Director shall notify all affected users of the applicable reporting requirements under 40 CFR, Section 403.12.

(e) **Modification of Federal Categorical Pretreatment Standards.** Where the city's wastewater treatment system achieves consistent removal of pollutants limited by Federal Pretreatment Standards, the city may apply to the Approval Authority for modification of specific limits in the Federal Pretreatment Standards. "Consistent removal" shall mean reduction in the amount of a pollutant or alteration of the nature of the pollutant by the wastewater treatment system to a less toxic or harmless state in the effluent which is achieved by the system in 95 percent of the samples taken when measured according to the procedures set forth in Section 403.7(c)(2) of (Title 40 of Pretreatment Regulations, Part 403)—"General Pretreatment Regulations for Existing and New Sources of Pollution" promulgated pursuant to the Act. The city may then modify pollutant discharge limits in the Federal Pretreatment Standards if the requirements contained in 40 CFR, Part 403, Section 403.7, are fulfilled and prior approval from the Approval Authority is obtained.

(f) **State Requirements.** State requirements and limitations on discharges shall apply in any case where they are more stringent than federal requirements and limitations or those in this chapter.

(g) **City's Right of Revision.** The city reserves the right to establish by ordinance more stringent limitations or requirements on discharges to the wastewater disposal system if deemed necessary to comply with the objectives presented in Section 13.07(a) of this chapter.

(h) **Dilution.** No user shall increase the use of process water or, in any way, attempt to dilute a discharge as a partial or complete substitute for adequate pretreatment to achieve compliance with the limitations contained in the Federal Categorical Pretreatment Standards, or in any other pollutant-specific limitation developed by the city or state, without specific approval by permit.

(20-92, 61-94)

13.08 - PERMITS.

(a) **Requirements.** Any person desiring to discharge the described substances, materials, waters or wastes as defined in subsection 13.07(c) shall file an Application for a Discharge Permit with the Director.

(b) **Application.** The application shall contain the following information:

1. Name and address of owner.
2. Title of official authorized representative making such application.
3. Location of plant.
4. The nature of business conducted in such plant.

5. The volume of industrial waste mixture and sewage discharged by each plant.
6. The average daily number of employees employed in each plant by shifts.
7. The source of water supply of each plant and the volume of water used by each such plant daily, specified separately as to each source.
8. Such additional information as is deemed applicable to ascertain the volume, nature and composition of industrial waste so discharged.

(c) **Choice of Action by Director.** Upon application for a permit, the Director may:

1. Accept the wastes;
2. Reject the wastes;
3. Require pretreatment to an acceptable condition for discharge to the public sewers;
4. Require control over the quantities and rates of discharge; and/or
5. Require payment to cover the added cost of handling and treating the wastes not covered by wastewater service charges under the provisions of Section 13.17.

(d) **Permit Classes.** There shall be three classes of permits issued by the Director, as follows:

Class I

(a) Any waste which is affected by subsection 13.07(b)(2—16) and

(b) Has all quantities (excluding sanitary wastes) less than:

Flow	25,000 gpd
BOD	42 lbs/day
Suspended Solids	52 lbs/day
TKN	6 lbs/day

Class II

Any wastes after excluding sanitary wastes which have any one quantity that is greater than Class I(b) above but less than:

Flow	1,500,000 gpd
BOD	13,000 lbs/day
Suspended Solids	8,000 lbs/day
TKN	3,000 lbs/day

Class III

Any wastes after excluding sanitary wastes which have a quantity that is greater than:

Flow	1,500,000 gpd
BOD	13,000 lbs/day
Suspended Solids	8,000 lbs/day
TKN	3,000 lbs/day

(108-87)

(e) **Terms and Conditions of Discharge Permit.** 1. Terms. All wastewater discharge permits shall be expressly subject to all provisions of this chapter and rates and charges established by the City. Permits may be granted for a period of time not to exceed five years and must be renewed thereafter. The Director shall establish an expiration date for each permit and such expiration date must be stated in the permit. The permittee shall file with the Director an application for renewal of the permit at least 30 days prior to the expiration date of the existing permit. (38-89)

2. Conditions. Wastewater discharge permits may contain any or all of the following conditions:

A. For discharges which will require pretreatment to meet the terms of the permit:

(1) Pretreatment Facilities Approval and Reporting. Users shall provide necessary wastewater pretreatment as required to comply with this chapter and shall achieve compliance with all Federal Categorical Pretreatment Standards within the time limitations as specified by the Federal Pretreatment Regulations. Any facilities required to pretreat wastewater to a level acceptable to the city shall be provided, operated, and maintained at the user's expense. Plans showing the pretreatment facilities and operating procedures shall be submitted to the city for review before construction of the facility. The review of such plans and operating procedures will in no way relieve the user from the responsibility of modifying the facility as necessary to produce an effluent acceptable to the city under the provisions of this chapter. Any subsequent changes in the pretreatment facilities or method of operation shall be reported to the city prior to the user's initiation of the changes.

The Director shall annually have published in the local newspaper, (1) a list of those industrial/commercial users which during the preceding 12 months were significantly not in compliance with the discharge limitations or other requirements and (2) a list of enforcement activities taken during the same time period.

All records relating to compliance with Pretreatment Standards shall be made available to officials of the EPA or Approval Authority upon proper request.

Information and data on a user obtained from reports, questionnaires, permit applications, permits and monitoring programs and from inspections shall be available to the public or other governmental agency without restriction unless the user specifically requests at the time of the submittal and is able to demonstrate to the satisfaction of the city that the release of such information would divulge information, processes or methods of production entitled to protection as trade secrets of the user.

When requested by the person furnishing a report, the portions of a report which might disclose trade secrets or secret processes shall not be made available for inspection by the public but shall be made available upon written request to governmental agencies for uses related to this chapter, the National Pollutant Discharge Elimination System (NPDES) Permit, State Disposal System Permit and/or the Pretreatment Programs; provided, however, that such portions of a report shall be available for use by the EPA or the state or any state control agency in judicial review or enforcement proceedings involving the person furnishing the report. Wastewater constituents and characteristics will not be recognized as confidential information.

Information accepted by the city as confidential shall not be transmitted to the general public by the city until and unless a ten-day notification is given to the user.

(2) Facilities Maintenance and Records. Where such facilities are provided, they shall be maintained continuously in satisfactory and effective operation by the owner at his expense and shall be subject to periodic inspection by the city. The owner shall maintain operating records and shall submit to the city a monthly summary report of the character of the influent and effluent to show the performance of the treatment facilities. Records of all information resulting from monitoring activities required by 40 CFR, 403.12 must be retained for a minimum of three years. This retention period is extended indefinitely during the course of any unresolved litigation regarding the industrial user or the POTW, or upon request by the approval authority.

(3) Pretreatment Compliance Date Report. Within 90 days following the date for final compliance with applicable pretreatment standards or, in the case of a new source, following commencement of the introduction of wastewater into the POTW, a user subject to pretreatment standards and requirements shall submit to the director a report indicating the nature and concentration of all pollutants in the discharge from the regulated process which are limited by pretreatment standards and requirements and the average and maximum daily flow for these process units in the user facility which are limited by such pretreatment standards or requirements. The report shall state whether the applicable pretreatment standards or requirements are being met on a consistent basis and, if not, what additional O&M and/or pretreatment is necessary to bring the user into compliance with the applicable pretreatment standards or requirements. This statement shall be signed and certified to by an authorized representative of the industrial user.

(4) Other Required Pretreatment Reports. Other reports required by federal regulations 40 CFR, 403.12 are baseline monitoring reports, periodic reports on continued compliance and notices of potential problems. The various reports shall comply with the appropriate subsections of 40 CFR, 403.12. The baseline monitoring reports and the periodic reports on continued compliance must be signed and certified to by an authorized representative of the industrial user.

B. Limits on rate and time of discharge or requirements for flow regulations and equalization.

C. Requirements for sampling manhole, including city access to such facilities.

D. Monitoring program which may include: sampling locations; frequency and method of sampling; number, types and standard of tests; and establishing a reporting schedule. The discharger assigned a monitoring program in conformance with this chapter shall pay all applicable city charges.

E. Submission of technical reports or discharge reports.

F. Maintenance of plant records relating to wastewater discharges, as specified by the Director, and affording city access thereto. The city shall also have authority to copy these records while on the premises of the discharger.

G. Other conditions as deemed appropriate by the Director to insure compliance with this chapter or the terms and conditions of the permit. (38-89)

(f) **Change of Discharge Permit Terms and Condition.** The Director may change the terms, conditions or pollutants covered under the industrial wastewater discharge permit, including changing the average or maximum limits on the elements of wastewater strength, from time to time as National Categorical Pretreatment Standards are promulgated in the future or as other circumstances may require. The Director may require the development of a compliance schedule to meet such revised standards and shall allow a discharger reasonable time to comply with any required changes in the permit except that a change in average or maximum limits of wastewater strength shall immediately affect calculation of the sewage service charge. Any significant industrial user or other permittee as defined by federal regulations 40 CFR, 403.3(t), subject to an industrial wastewater discharge permit, shall have the right to appeal provisions of the permit approved by the Director within 30 days to the City Council of the City of Cedar Rapids, and thereafter the District Court within 30 days after the Council decision; the Iowa Rules of Civil Procedures shall thereafter apply to all such appeals. Right of appeal shall not apply to changes implemented as required for new or revised National Categorical Pretreatment Standards or local limits.

(g) **Transfer of Discharge Permit Prohibited.** A wastewater discharge permit shall not be assigned or transferred.

(h) **Termination.** The Director may terminate any wastewater discharge permit for violation of the terms and conditions of the permit or the provisions of this chapter. A person whose permit has been terminated shall apply for a new permit within 30 days of notice termination.

Any person whose permit has been terminated shall pay wastewater service charges based upon his former permit until a new permit has been applied for, approved, and issued.

(61-94)

13.09 - SAMPLING MANHOLE.

Pursuant to subsection 13.08(e)2C a permittee shall be required to provide a suitable sampling manhole, unless this condition is waived by the Director. The sampling manhole shall be located on the building lateral upstream from the connection to the public sewer, and provide for observing, flow measuring, and sampling of all wastes discharged by the permittee.

The sampling manhole shall be provided with such utilities and equipment as required by the Director. Such manhole, when required, shall be constructed by the owner in accordance with plans approved by the Director. The manhole shall be installed by the owner at the owner's expense, and shall be maintained so as to be safe and accessible at all times.

13.10 - FLOW MEASUREMENT.

The volume of flow used in computing wastewater service charges shall be based upon actual in situ flow measurements where available.

In the event the Director finds it is not practical to measure actual wastewater discharge, he may at his discretion, require and/or approve the use of water meters or some other manner of computing or estimating the amount of wastewater discharged to the public sewer.

A person may request consideration for a reduction in wastewater service charges because of metered water excluded from the sanitary sewer by making written application to the Director for such consideration.

13.11 - TESTING WASTES.

All measurements, tests, and analyses of the characteristics of waters and wastes to which reference is made in this chapter shall be determined in accordance with the procedures set forth in 40 CFR, Part 136, for sampling and analyses performed to determine compliance with pretreatment standards. Samples for testing shall be collected at the sampling manhole. In the event that no sampling manhole has been required, the sampling manhole shall be considered to be the nearest downstream control structure in the public sewer to the point at which the building sewer is connected. Sampling shall be carried out by

customarily accepted methods to reflect the effect of constituents upon the water pollution control facilities and to determine the existence of hazards to life, limb and property.

(38-89)

13.12 - POWERS AND AUTHORITY FOR INSPECTION.

(a) **Right of Entry.** The Director and other duly authorized employees of the city bearing proper credentials and identification shall be permitted to enter all properties for the purposes of inspection, observation, measurement, sampling, and testing in accordance with the provisions of this chapter. The Director or his representatives shall have no authority to inquire into any processes including metallurgical, chemical, oil, refining, ceramic, paper, or other industries beyond that point having any bearing on the kind and source of discharge to the public sewers, natural outlets or water pollution control facilities and any bearing in the judgment of the Director or his representatives on the kind and source of discharge. (38-89)

(b) **Indemnity.** While performing the necessary work on private properties referred to in subsection 13.12(a) above, the Director or duly authorized employees of the city shall observe all reasonable safety rules applicable to the premises.

(c) **Easement.** The Director and other duly authorized employees of the city bearing proper credentials and identification shall be permitted to enter all private properties through which the city holds a duly negotiated easement for the purposes of, but not limited to, inspection, observation, measurement, sampling, repair and maintenance of any portion of the water pollution control facilities lying within said easement. All entry and subsequent work, if any, on said easement, shall be done in full accordance with the terms of the duly negotiated easement pertaining to the private property involved.

13.13 - WATER POLLUTION CONTROL FACILITIES FINANCING.

(a) **General.** The cost and expense of financing the construction, maintenance and the operation of the water pollution control facilities as can be so paid shall be paid from a fund accruing from the collection of wastewater service charges hereinafter stipulated.

(b) **Comprehensive Wastewater Service Charge.** Every person whose premises are served by a connection to the sanitary sewer of the city either directly or indirectly, shall pay to the city a comprehensive wastewater service charge for the use of and for services supplied by the water pollution control facilities of the city, which charges may consist of:

1. Basic user charge for O&M of the water pollution control facilities.
2. Basic user charge for maintenance costs of the storm sewer system.
3. A debt-service charge.
4. Charges or fees for administering the city's pretreatment program.

(108-87)

13.14 - USER GROUP.

Wastewater service charge rates as herein established shall be according to User Group:

Group I	Residential users
	Commercial users
	Small industrial without permits
	Class I Permit users
Group II	Class II Permit users subject to a Permit Surcharge Factor (PSF)
	Class II Permit users invoiced for sewer service charges by CRWPCF
Group III	Class III Permit user
Group IV	Special Rates

(017-10)

13.15 - BASIS OF RATES.

The rates for comprehensive sewer service charges are established by ordinance by the City Council and shall be as follows:

(a) **O & M—Water Pollution Control.** The basic user charge for the O & M cost of the Water Pollution Control Facilities shall be based upon the quantities of flow, BOD, SS and TKN discharged by a user.

1. Unit Flow Cost. The unit flow cost per 1,000 gallons shall be determined by multiplying the anticipated O & M budget by that percentage attributable to flow-related operations and dividing by the projected yearly total flow to the Water Pollution Control Plant. The unit flow cost per 100 cubic feet of domestic wastewater is obtained by multiplying the unit flow cost by 0.748 gallons.

2. Unit BOD Cost. The Unit BOD cost per pound shall be determined by multiplying the anticipated O & M budget by that percentage attributable to BOD related operations and dividing by the projected yearly total BOD load at the Water Pollution Plant, measured in pounds. The unit BOD cost per 100 cubic feet of domestic wastewater is obtained by multiplying the unit BOD cost per pound by 1.25 pounds.

3. Unit Suspended Solids Cost. The unit SS cost per pound shall be determined by multiplying the anticipated O & M budget by that percentage attributable to SS related operations and dividing by the projected yearly total SS load at the Water Pollution Control Plant, measured in pounds. The unit SS cost per 100 cubic feet of domestic wastewater is obtained by multiplying the unit SS cost per pound by 1.56 pounds.

4. Unit Total Kjeldahl Nitrogen Cost. Unit TKN cost per pound shall be determined by multiplying the anticipated O & M budget by that percentage attributable to TKN related

operations and dividing by the projected yearly total TKN load at the Water Pollution Control Plant, measured in pounds. The unit TKN cost per 100 cubic feet of domestic wastewater is obtained by multiplying the unit TKN cost per pound by 0.19 pounds.

5. Demand Charge. A demand charge may be applied to provide a control mechanism against and compensation for large fluctuations of the daily quantities discharged by Group III users.

6. Infiltration/Inflow Charges. The cost for nonaccountable infiltration and inflow shall be determined by multiplying the total flow related O & M costs by a ratio of the unaccounted flow over the total flow and dividing by the accounted for flow of Groups I and II users.

7. Sanitary Sewer Maintenance. The basic user charge for sanitary sewer maintenance shall be determined by dividing the anticipated budget by the previous year's flow from the Cedar Rapids users only.

(b) **Storm Sewer Maintenance.** The basic user charge for storm sewer maintenance costs shall be shared evenly by all sewer users. The cost per user shall be determined by dividing the anticipated budget by the total number of users which will then determine the total yearly charge to be recovered from each user.

(c) **Debt Service.** A debt service charge shall be collected to pay the city's cost for capital improvements to the water pollution control facilities. The debt service charge may be comprised of separate capital costs for treatment of flow, BOD, suspended solids and TKN. The debt-service charges shall be determined by the City Council for future capital improvement projects or service for the duration as noted:

1. The Group III users connected to the sanitary sewer system prior to January 1, 1979, who paid through June, 1986, for their reserve quantities, shall have established reserve treatment capacity in the original treatment facilities for the normal expected life of the original facilities.

2. For Group III users connected to the sanitary sewer system after January 1, 1979, who have established reserve quantities by resolution of the City Council, and for any increase over the original reserve for the existing Group III industries established by resolution of the City Council, the payments shall commence as established in the resolution and continue for 108 months at the rates shown under column noted 13.15(c)2. of the debt-service charges in Section 13.17(c)2.

3. All Group III users who have not established reserve quantities by resolution of the City Council prior to January 1, 1988, and the existing Group III users who are exceeding their reserve capacity, will be required to participate proportionately with Group I and Group II users in the cost of any expansion project of the treatment facilities to meet the projected needs.

(d) **Pretreatment Program.** Charges or fees for the recovery of costs for the administration of the pretreatment program established herein. The applicable charges or fees which the city may adopt may include:

1. Fees for monitoring, inspections and surveillance procedures.

2. Fees for reviewing accidental discharge procedures and construction.

3. Fees for permit applications.

4. Fees for filing appeals.

5. Fees for consistent removal by the city of pollutants otherwise subject to Federal Pretreatment Standards.

6. Other fees as the city may deem necessary to carry out the pretreatment program requirements contained herein.

(108-87, 43-95)

13.16 - MONITORING.

All Class I, II and III permit holders connected to the Cedar Rapids sanitary sewer shall have their process waste discharge monitored not less than biennially by the city or according to their permit stipulation.

13.17 - SERVICE CHARGES.

(a) **Group I.** The total periodic billing for sewer charges on or after July 1, 2016 shall be the sum of all usage:

1. O & M - A flat charge of $0.4443 per day during the billing period, which will also provide for two (2) ccf of metered usage per month. A fee of $1.7943 per ccf will be charged for all water used in excess of two (2) ccf per month.

2. Residences that have two meters, one measuring inside usage and the other outside usage, will be charged year round for the sewer charges for all water used through the inside meter but will not be charged sewer charges for any usage through the outside meter.

(b) **Group II.** The total periodic billing for Group II sewer charges shall be the following, the rate effective on or after July 1, 2016, multiplied if necessary, by a Permit Surcharge Factor (PSF). The PSF shall be determined by the Director and noted on the Discharge Permit. The PSF shall be calculated by dividing the total O & M charges as set forth in Group III O & M by the O & M charges established in Group I. The PSF shall never be less than 1.0. Minimum monthly invoice charge for any Group II permit user subject to EPA regulation under 40 CFR Part 403 shall be $25 per month per service agreement. Group II or III Industrial Facility Flat Rate for sanitary sewer service shall be calculated using the following formula: # of employees * 25 gallons per day * 30.4 days per month / 748 * $2.0410/ccf.

1. O & M	Group I O&M flat charge + all water usage > 2 units or 4 units (depending on billing cycle) *PSF* $2.0410/ccf

(c) Group III. The total periodic billing for sewer service charges after July 1, 2016, shall be the sum of the items listed in following subsections - 1, 2, 3 (when applicable. Debt service is only applicable to those industries still paying for reserved capacity as approved by resolution of the City Council.

1. O & M - Each month, an O & M charge will be calculated on the daily average values for the month, obtained from in-situ measurements and samples, multiplied by the monthly rate and multiplied by 60%.

AVERAGE DAILY VALUE	MONTHLY RATE
Flow in 1,000s gpd multiplied by	$20.07
BOD in lbs. multiplied by	$4.64
SS in lbs. multiplied by	$3.88
TKN in lbs. multiplied by	$18.42

2. Demand Charge - Each month a three-day average for the daily Flow, BOD, Suspended Solids and TKN quantities shall be calculated for each complete three-day period starting with the first day of the month. For all months that have a day or days that exceed either of nine or ten possible three-day periods, all remaining days will be incorporated into the final three-day averaging period of the month. A demand charge will be calculated on the highest three-day average for the month for each parameter, multiplied by the monthly rate and multiplied by 40%.

HIGHEST THREE-DAY AVERAGE	MONTHLY RATE
Flow in 1,000s gpd multiplied by	$20.07
BOD in lbs. multiplied by	$4.64
SS in lbs. multiplied by	$3.88
TKN in lbs. multiplied by	$18.42

3. Basic Service Charges - Cities with contractual treatment agreements shall be calculated based upon the following rates as set out in (d)4.:

AVERAGE DAILY VALUE	MONTHLY RATE
Flow in 1,000s gpd	$10.78
BOD in lbs.	$4.64
SS in lbs.	$3.88
TKN in lbs.	$18.42

(d) Group IV - Special Rates. When the Director determines, based on applicable standards, that special conditions surround the use of city water to the extent that the application of the basic charges provided herein would be inequitable or unfair to either the city or contributor, a special rate may be established by resolution of the Council. Such rates may include, among others, the following cases:

1. Where the nature of the use of city water is such that the resulting sewage or industrial waste has characteristics making it more difficult to process than ordinary domestic waste.

2. Where a major proportion of the city water is not discharged into or does not reach the sanitary sewer. Filling of residential swimming pools will not qualify because of the cost to verify the quantity used and to make the billing adjustment.

3. Where privately produced water supplies are discharged directly or indirectly into the sanitary sewer. Such rates shall be on an equal basis as nearly as may be with the rates, which would apply to an equal quantity and character of waste originating through the use of city water. It shall be the duty of every person responsible for the production of such private water supply to report forthwith to the Director and further, to cooperate with the Director in the determination of the quantity and character of the waste originating from each such respective private water supply. The Director shall designate in writing any necessary means of measurement of such private water supply or resulting sewage flow. The meter or other means of measurement shall be installed by and maintained at the expense of the contributor.

4. For cities with contractual treatment agreements with Cedar Rapids, the basic rates for O & M shall be as determined by Section 13.15(a)(1-4). Basic rates provided in contractual treatment agreements proposed for Group III users shall be determined by an equivalent method that also includes consideration of additional economic factors, such as the amenability of source wastewater to anaerobic treatment (UASB - Upflow Anaerobic Sludge Blanket), production of methane gas, and the cost of wastewater pretreatment prior to discharge into a UASB treatment process.

5. All users of the sanitary sewer system and wastewater treatment facilities, who are not located in the City of Cedar Rapids or one of the cities with a contractual agreement, shall at the option of the city, be required to annex into the city if the property is contiguous or agree to voluntarily do so at such time that it becomes contiguous. While the property remains outside of the City of Cedar Rapids or a contracting city, the user shall pay 50% more than the charges established by Ordinance. Any wastewater discharged to the sanitary sewer system that originates from a permitted stormwater or groundwater source is subject to a 50% surcharge.

6. All users served by a lift station transferred from Private to City ownership per formal request and agreement, the user shall pay 40% more than the charges established by Ordinance for a period of ten years.

(013-15, 014-16)

13.18 - BILLING; PAYMENT; COLLECTION.

The city shall bill each user of the sanitary sewer on a schedule compatible with the City Water Department.

(a) **Collection of Charges.** The City Water Director shall bill and collect storm water and wastewater service charges in conjunction with billings for other municipal utility service fees and from a schedule of private water supply contributors provided by the Water Pollution Control Director. An accurate and complete record of such billings and collections shall be maintained and all such funds collected shall be turned over to the City Treasurer at least once each month. At the end of each month, the total wastewater and storm water service charges for the month shall be reported to the City Council, the Water Pollution Control Director and the City Engineer. As approved by the City Council, the Water Department's cost for billing and collecting the wastewater and storm water service charges may be charged to the Water Pollution Control and City Engineering Departments.

(b) **Operation and Maintenance Billings.** That portion of the user charge collected for O & M may be deposited in at least 2 separate nonlapsing funds, one being called the "EPA Replacement Fund," which is for the specific purpose of ensuring replacement of mechanical equipment over the 30-year life of the treatment works. An amount of $482,000 shall be deposited in this fund annually from the total O & M collection.

(c) **Delinquent Date and Penalties.** 1. All wastewater and storm water service charges billed and collected by the Water Department shall be subject to the same penalties and rules of delinquency and suspension of service as set out for water service in Chapter 12. 2. All wastewater and storm water service charges billed by the Water Pollution Control Department and City Engineering Department shall become delinquent 20 days after the date of the invoice and shall be subject to the same penalties and rules of delinquency and suspension of service as set out for water service in Chapter 12.

(d) **Failure to Pay Wastewater and Storm Water Service Charges.** In addition to other penalties for delinquencies, the city may initiate a lien upon the property served by such wastewater and storm water services for any and all delinquent service charges in accordance with Section 384.84 of the Code of Iowa. If the delinquent wastewater and storm water charges remain unpaid 30 days after the date of becoming delinquent, the City Clerk may certify to the Linn County Auditor the amount unpaid for the purpose of establishing said lien to be collected in the same manner as taxes.

(15-01)

13.19 - ENFORCEMENT.

(a) **Notice to Correct.** Any person found to be violating any provisions of this chapter, except Section 13.18 may be served by the Director with written notice stating the nature of the violation and providing a reasonable time limit for the satisfactory correction thereof. Such notice may be given by certified mail or by personal service. If given by certified mail, the notice shall be deemed given when mailed. The offender shall, within the period of time stated in such notice, permanently cease all violations specified therein.

(b) **Violations.** Any person who shall violate any provision of this chapter, except Section 13.18, shall be subject to the penalties set forth herein. These penalties include the following:

1. Violation a Misdemeanor. Any person who shall violate any provision of this chapter, except Section 13.18, shall be guilty of a misdemeanor, and on conviction thereof, may be imprisoned for a period not exceeding 30 days or fined in an amount not exceeding $100.00 for each violation. Each day in which such violation shall continue shall be deemed a separate offense.

2. Violation a Municipal Infraction. Violations of this chapter, including those which arise from noncompliance with a pretreatment standard or requirement referred to in 40 CFR Section 403.8 by an industrial user, or which are environmental violations, constitute municipal infractions as defined by the Code of Iowa. A municipal infraction, which is classified an environmental violation, is punishable by a civil penalty of not more than $1,000.00 for each occurrence. However, a person committing an environmental violation is not subject to a civil penalty, if all of the following conditions are satisfied:

   A. The violation results solely from the person conducting an initial start-up, cleaning, repairing, performing scheduled maintenance, testing, or conducting a shutdown, of either equipment causing the violation or the equipment designed to reduce or eliminate the violation.

   B. The person notifies the city of the violation within 24 hours from the time that the violation begins.

   C. The violation does not continue in existence for more than 8 hours.

   The city shall not enforce this section against a person committing an environmental violation, until the city offers to participate in informal negotiations with the person. If the person accepts the offer, the city and the person shall participate in good faith negotiations to resolve issues alleged to be the basis for the violation. If such good faith negotiations fail to resolve those issues, or the person committing an environmental violation does not participate in such negotiations with good faith, the city shall commence enforcement of this section.

An action brought pursuant to this section for a municipal infraction which is an environmental enforcement action including those which may be brought pursuant to Chapter 455B, 455D or 455E.

3. Violation a Nuisance. A violation of any of the provisions of this chapter, except Section 13.18, shall be deemed to be a nuisance and the City Council, after reasonable notice and opportunity for hearing, may:

   A. Order the Director to take necessary measures to correct and abate such violation, and the Director is authorized to enter on private property so to do.

   B. Order the service to the premises involved discontinued and authorize the Director to disconnect any tapping or connection made to the wastewater systems of the city. In the event a violation of any of the provisions of this chapter creates a danger of injury or damage to the Water Pollution Control Facilities, to the environment, or to the health and safety of any person or interferes with the operation of the said facilities, the Director is authorized and directed to perform all necessary acts, including disconnection of service, to correct and abate such violations and may enter on private property so to do. The Director shall provide prior written notice and an opportunity for the discharger to respond, except that where the violation reasonably appears to present an imminent and substantial endangerment to the health or welfare of persons, the Director may provide informal telephone notice in lieu of written notice.

   C. The cost of any measures to return any sewer or structure to its condition prior to the corrective acts of the Director shall be borne by the person seeking to discharge to the sanitary sewer. Any damages to public or private property and damage, whether direct or indirect due to the loss of production, shall be borne by the person whose discharge was alleged to have created an immediate hazard and subsequent corrective action.

      Any cost incurred by the city for any corrective measures required or permitted under the provisions of this section, if not paid by the person causing such expenditure, shall constitute a lien on the property served by the Water Pollution Control Facilities in connection with which such violation has occurred if said cost is certified to the Linn County Auditor by the City Clerk in accordance with Section 384.84 of the Code of Iowa.

4. Other Remedies for Violations. Any person violating any of the provisions of this chapter shall be liable to the city for any damage, loss, cost or expense occasioned by reason of such action.

   In addition to any other remedies provided for in this chapter, the city may bring suit to collect any sums due it, including user charges and industrial cost recovery charges, from the person or persons incurring the liability for the payment of such charges.

(c) **Falsifying Information.** Any person who knowingly makes any false statements, representation or certification in any application, record, report, plan or other document filed or required to be maintained pursuant to this chapter, or Wastewater Discharge Permit, or who falsifies, tampers with, or knowingly renders inaccurate any monitoring device or method required under this chapter, shall, upon conviction, be guilty of a misdemeanor and subject to penalties prescribed under subsection (b).

(73-90)

13.20 - APPEALS.

If the findings, order or decision of the Director made in pursuance of the provisions of Section 13.19 of this chapter are not acceptable to any person, such person may within 30 days from the date of said findings, order or decision, appeal the findings, order or decision to the city, and thereafter the District Court within 30 days after the city's decision. The filing and pendency of an appeal by any person under this section does not affect the validity or viability of any permit or amended permit issued hereunder and does not affect the ability of a permittee to continue to operate under the terms of said permit or amended permit

during the pendency of the appeal. Any right of appeal available under this section prior to its enactment must be exercised within 30 days of the adoption of the ordinance codified in this section.

(86-05)

13.21 - SEVERABILITY.

If any provision, paragraph, word, section or article of this chapter is held unconstitutional or invalidated by any court of competent jurisdiction, the remaining provisions, paragraphs, words, sections, and chapters shall not be affected and shall continue in full force and effect.

(Note: Chapter 13 reenacted by Ordinance No. 55-83, passed September 14, 1983 and published September 19, 1983