



East Ravine Master Plan

March 13, 2006

Prepared for:
City of Cottage Grove

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Over the past 50 years, many of the residential neighborhoods in Cottage Grove have been developed by large scale home builders.



Construction of the regional sanitary sewer interceptor in 2004 opened up the East Ravine area for staged development.

Background

Over the past 50 years, the city of Cottage Grove has seen considerable growth and development. Urban scale residential development began in the 1950s in the Thompson Grove Additions on the southwest side of Highway 61. Over the next three decades, residential growth moved across Highway 61 in the east central portion of the community extending near the Woodbury border on the north. Residential neighborhoods, for the most part, were created by a small number of large scale builders. The resulting housing pattern is one of consistency. Traveling through many of the Cottage Grove neighborhoods, one observes homes of approximately the same size and scale reflecting their times of construction.

Commercial development in Cottage Grove largely followed residential growth. The old adage that commercial development follows rooftops certainly has been the case. As residential neighborhoods were built along and north of Highway 61, a major commercial node took root at Jamaica Avenue. That commercial node became the retail center of the community attracting big box stores, retail strip centers and freestanding retail and service businesses.

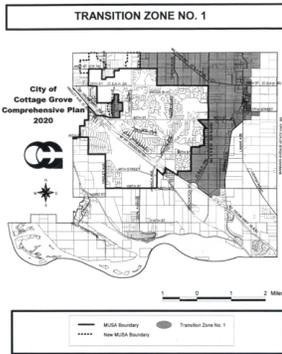
More recently, the City has been focusing its efforts on expanding commercial development on the north side of the 80th Street/Highway 61 interchange. That interchange is now one of contrasts, the south side contains some of the oldest commercial uses in Cottage Grove while the north side contains some of the newest. Businesses like Kohl's and Home Depot have added to the variety of goods available in the community.

Recent transportation improvements have also helped spotlight Cottage Grove's potential for additional residential and commercial growth. When complete, the reconstruction of Highway 61 and the Wakota Bridge will offer significantly improved access to the community. Improved access will make it easier than ever to live in Cottage Grove and commute to places of employment outside of the city. That same access will enhance the attractiveness of Cottage Grove's commercial areas along Highway 61 including the area adjacent to the intersection of 61 and Keats Avenue (County Road 19).

Future housing and commercial growth are also impacted by other regional changes that have been occurring in and around Cottage Grove. Woodbury, Cottage Grove's neighbor to the north experienced record breaking residential construction in the 1990s. In reaction to the growth, Woodbury imposed limits on building permits thereby slowing the rate of residential home construction. Despite a tempered rate of growth, significant portions of Woodbury have either been developed or have been purchased to accommodate future development. As a result, the development community is looking to the south with ever increasing interest, to Cottage Grove and to the area generally known as the East Ravine.

Comprehensive Plan

The Cottage Grove Comprehensive Plan that was adopted in 2000 examined future development areas and labeled them as transition zones. Transition Zone No. 1 closely corresponds to the borders of the East Ravine area. The Comprehensive Plan states, "This area is the largest transition zone in the City approximating 4,200 acres. The boundaries of this zone were developed in recognition of the area that will be available over time for urbanized development. This development pattern is consistent with the Regional Blueprint adopted by the Metropolitan Council. At the present time (1999), a good portion of this property is unable to be served by public systems due to limited sewage capacity at the existing regional wastewater treatment plant. Met Council Environmental Services has initiated a process for expansion of the existing plant to provide additional service to these areas of Cottage Grove, and it is anticipated



The East Ravine area was shown as a Transition Zone in the 2000 Comprehensive Plan.

that the new plant will be on-line by 2003. A key component of the treatment plant upgrade is the installation of an interceptor system that brings sewage from Woodbury and will also service the unserved areas of eastern Cottage Grove. The ability and ultimate staging of future development is dependent upon the interceptor alignment chosen. The alignment will also significantly impact the phasing of development within this transition zone. Due to the complexity of the issue, the City is not prepared at this time to designate this entire zone as urban reserve. It is expected that the City will initiate future comprehensive plan amendments that will provide a more complete phasing plan and will define near-term areas for urbanized development."

Many of the initiatives that were referenced in the 2000 Comprehensive Plan have been implemented. Most notably, the interceptor sanitary sewer was constructed along Keats Avenue in 2004. The installation of the interceptor pipe provides sewer service to the eastern portion of Cottage Grove, opening the area for future development and paving the way for more detailed planning efforts.

East Ravine Area

With construction of the new regional interceptor sanitary sewer eminent, the City of Cottage Grove in 2002 initiated an unprecedented effort to create a plan to proactively guide the future development of the East Ravine Area. The project known as the East Ravine Pre-Design has three primary components: 1) a master plan for the area, 2) an Alternative Urban Areawide Review (AUAR) and appropriate comprehensive plan amendments. This document represents the first component, the master plan. Both the AUAR and comprehensive plan amendments are documented separately.

The East Ravine Master Plan addresses 4,007 acres of land that is expected to develop over the next couple of decades. The overall project area is divided into two distinct zones, Neighborhood 1 and Neighborhood 2. Consistent with overall city policy and the logical extension of utilities, Neighborhood 1 is expected to develop prior to Neighborhood 2. Accordingly, consistent with the city's proactive stance with the Master Plan, near preliminary plat level of detail was developed for both the northern and southern portions of Neighborhood 1. The level of detail for Neighborhood 1 depicts specific layouts for future roads, parks, and most importantly, residential lot configurations. Additionally, the plan contains specific utility layout and sizing information, specific locations for local and regional roads, and a detailed storm water treatment and conveyance system. The Master Plan is intended to provide specific and detailed guidance to property owners and developers as to the City's vision for the development of the area. While it is not an exact roadmap for the future, it is a strong statement of the City's intent.

The Master Plan addresses Neighborhood 2 in a more general manner. Since the development of the area is further out in time, market conditions and other influencing factors are expected to change. Accordingly, the Master Plan depicts general land use patterns, types and densities for the area. Utilities and transportation infrastructure are also depicted in a more general manner.

Guiding Principles

In the early stages of the East Ravine Master Plan, a set of guiding principles evolved as an expression of the community's vision for the area. Creating a plan within the context of an agreed set of guiding principles greatly enhances implementation efforts. The guiding principles provide an important basis of understanding that will transcend any one specific devel-

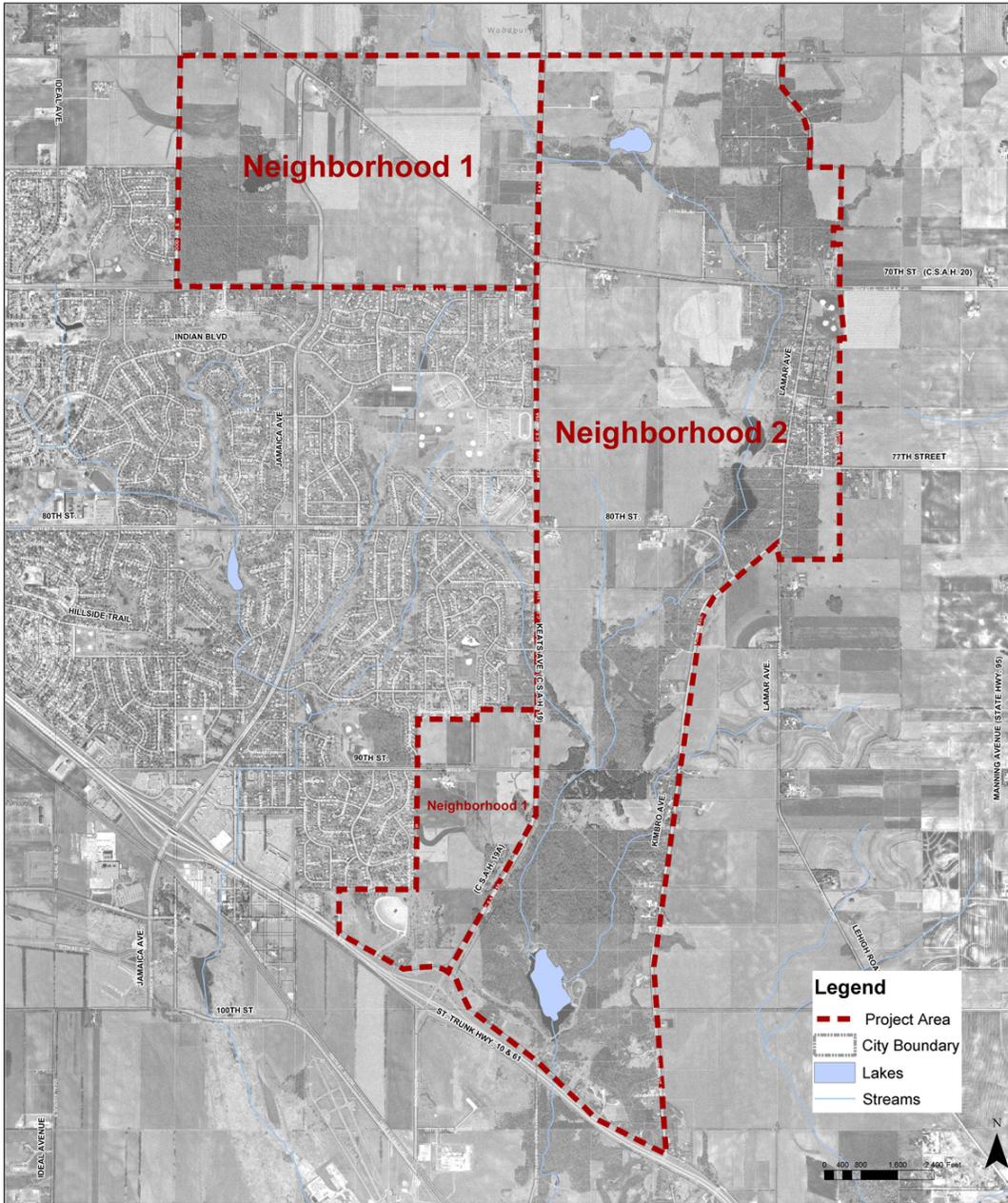


Figure 1-1
Project Area

opment proposal or issue. They will act as the memory of the plan; reminding future community leaders, residents, property owners and developers about the core values of this significant community planning endeavor.

The guiding principles of the East Ravine Master Plan include the following:

1. **Natural Resources as a Basis for Planning:** Future development should reflect natural features, views and open space.
2. **Add Value to the Community:** Development in the East Ravine Area should add

value to the community by reflecting high standards of development and by creatively interweaving natural systems into the built environment. The conveyance and treatment of storm water can be done in a manner that provides unique open space opportunities that enhance both the attractiveness and value of residential neighborhoods.

3. **Provide Diverse Housing Opportunities:** The East Ravine Area provides extensive opportunities for move-up housing in Cottage Grove. Neighborhood centers should provide opportunities for varying densities of attached housing including housing for seniors.
4. **Expand Commercial Opportunities:** Plan for expanded areas for neighborhood and regional commercial opportunities within the East Ravine area.
5. **The East Ravine Should Convey the Community's Vision:** While providing a mix of housing and commercial development opportunities, the development pattern of the East Ravine should convey historical elements of the community including open space and an agricultural heritage.
6. **Conduct a Participatory Planning Process:** If the East Ravine Master Plan is to reflect the vision of the community, it must have the benefit of input from local residents, businesspeople and community leaders.
7. **Improve Transportation and Transit Options:** Design a roadway network that reflects local and regional mobility needs and ensures opportunities for future transit connections.
8. **Foster Intergovernmental Cooperation:** Future development of the East Ravine will involve a variety of local, regional and State agencies. Work with entities such as the School District, South Washington Watershed District, Washington County, Mn/DOT, the Metropolitan Council, the DNR and adjacent communities in creating a long-term Master Plan for the area.



A market analysis was conducted to determine demand for retail and residential development in the East Ravine study area. The study area adjoins the northern and eastern edge of the development portion of Cottage Grove and extends to the border with Woodbury on the north. Potential development in the East Ravine area includes residential and commercial uses.

Retail Development

Two potential commercial areas at Cottage View and Cedarhurst have been identified.

Cottage View Retail Development Potential

The proposed Cottage View commercial development location lies on the southeastern edge of the Twin Cities urbanized area at the intersection of Highway 61 and Keats Avenue. The Cottage View trade area includes residential areas to the north and west and agricultural areas to the south and east. It takes its name from the Cottage View outdoor theater which is somewhat of a landmark in the area. The East Ravine master plan area is to the north. Factors that support retail and service potential at Cottage View include:

- Continuing household growth within the primary and secondary trade areas.
- Cottage Grove's existing commercial areas at 80th Street and Jamaica Avenue have limited potential for expansion.
- Average household income in the primary trade area was estimated at \$75,333 in 2002 and is expected to increase to \$84,677 in 2007.

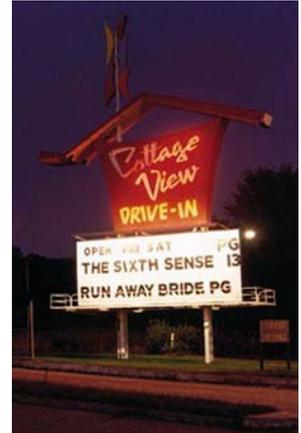
This retail area has the opportunity to serve incremental growth in the trade area as retail demand increases. Some stores may choose Cottage Grove as a location to take pressure off their Woodbury stores.

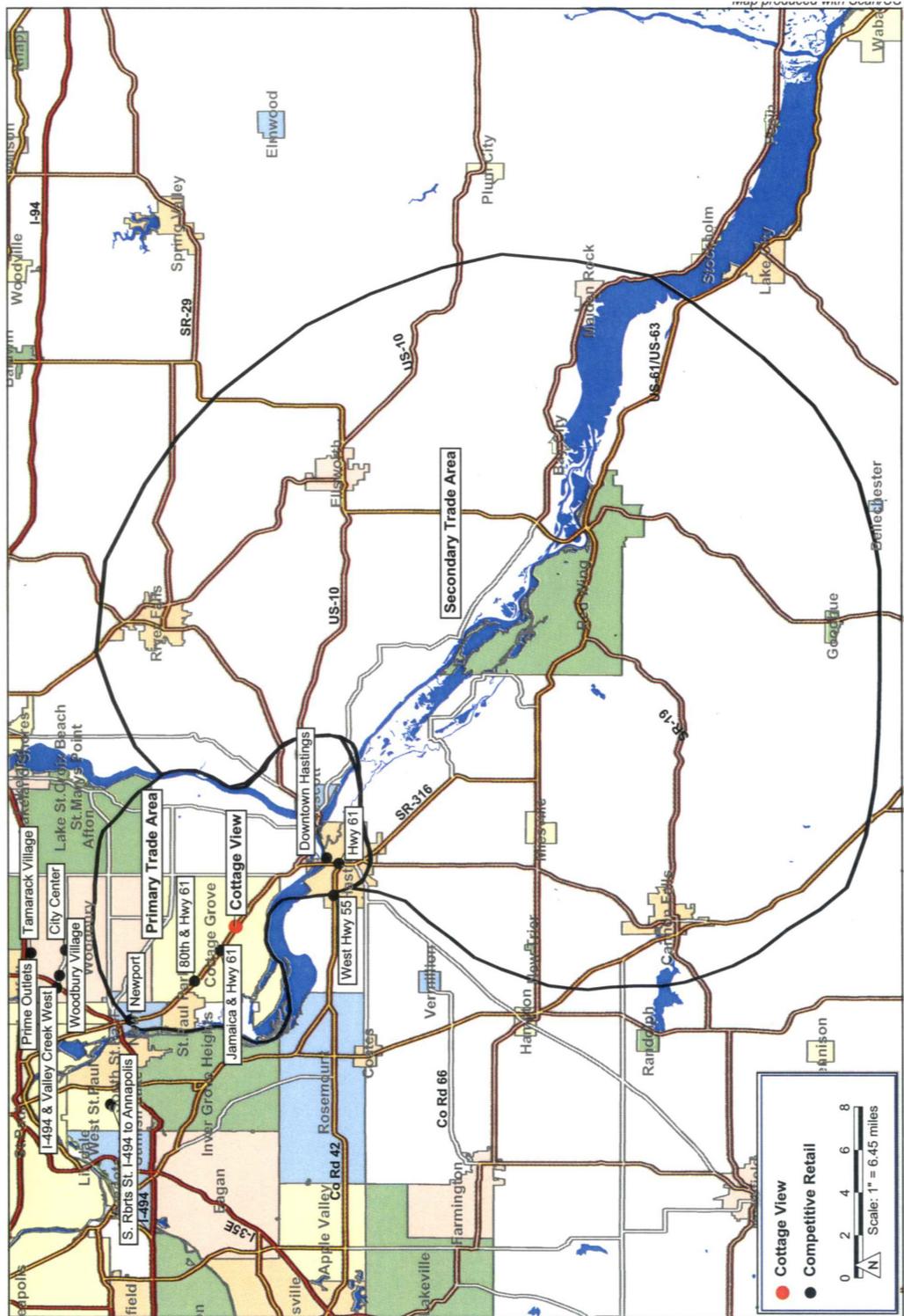
Cottage View development potential for retail stores, food service, and services is closely related to trade area household growth. Trade area households are shown at the top of Figure 2-1 and illustrate how trade area residential development is projected to increase. Households are estimated to increase from 28,478 in 2010 to 39,794 in 2025. Household growth projections are based on market demand development estimates. If residential development exceeds or is below this estimate, development potential will be higher or lower than projected.

Categories of retail stores and services, and square footages that are possible at Cottage View

Merchandise Category	2010	2015	2020	2025
Households	28,478	31,906	35,617	39,794
Convenience Goods	29,700	96,100	98,600	98,600
Food Service	10,500	19,000	30,000	39,000
Convenience/Gas	5,000	10,000	10,000	10,000
Shopping Goods	192,600	243,100	270,100	272,600
Building Materials & Garden Supplies	19,000	19,000	139,000	139,000
Auto Parts	6,500	9,000	11,500	11,500
Services	25,600	34,700	42,700	51,700
Medical	7,000	15,400	18,400	24,400
Total	295,900	446,300	620,300	646,800

Figure 2-1
Cottage View Supportable Space
By Merchandise Category 2010, 2015, 2020 and 2025
(Square Feet of Gross Leasable Area)
SOURCE: McComb Group, Ltd.





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Figure 2-2
Cottage View Commercial Area Primary and Secondary Trade Areas

Establishment Type					Typical Size	
	2010	2015	2020	2025	Median	Range
Convenience Retail						
Supermarket		X	X	X	48,775	29,000 - 65,000
Specialty Food Store			X	X	3,140	1,100 - 23,000
Drug Store	X	X	X	X	11,153	7,500 - 32,100
Hardware	X	X	X	X	7,857	3,100 - 25,000
Liquor	X	X	X	X	4,000	1,300 - 6,700
Florist	X	X	X	X	1,700	700 - 4,500
Food/Health Supplement Stores		X	X	X	1,400	1,100 - 2,200
Food Service						
Full Service Restaurant	X	X	X	X	5,124	2,100 - 9,275
Limited Service	X	X	X	X	3,113	1,645 - 9,575
Snack & Beverage	X	X	X	X	1,500	750 - 2,500
Convenience Store/Gasoline	X	X	X	X	2,250	1,500 - 5,100
Shopping Goods						
Discount Store	X	X	X	X	110,000	28,000 - 125,000
Women's Clothing	X	X	X	X	3,000	1,000 - 8,800
Family Clothing	X	X	X	X	6,000	2,200 - 26,225
Other Clothing Stores	X	X	X	X		
Furniture	X	X	X	X	4,860	2,400 - 24,200
Floor Coverings	X	X	X	X	3,826	1,100 - 11,500
Home Furnishings	X	X	X	X	3,500	1,800 - 19,200
Radio, TV, Electronics		X	X	X	3,013	1,400 - 7,100
Music		X	X	X	3,432	1,300 - 7,100
Sporting Goods	X	X	X	X	5,100	1,700 - 42,600
Jewelry Store	X	X	X	X	1,350	600 - 2,500
Card Shop	X	X	X	X	3,000	1,500 - 9,600
Optical Shop	X	X	X	X	1,500	900 - 3,400
Camera/Photo Supply	X	X	X	X	1,501	1,000 - 3,400
Pet Store	X	X	X	X	3,600	1,200 - 24,800
Frame Store	X	X	X	X	1,400	800 - 3,000
Cosmetics/Beauty Supplies		X	X	X	1,527	750 - 2,950
Other Retail Stores						
Home Center			X	X	115,000	80,000 - 135,000
Nursery, Lawn and Garden	X	X	X	X	15,000	10,000 - 25,000
Paint, Glass, Wallpaper	X	X	X	X	3,233	N/A - N/A
Auto Parts & Accessories	X	X	X	X	6,000	1,800 - 11,400
Tire Dealers		X	X	X	1,950	1,800 - 4,100
Services						
Beauty/Nail/Tanning	X	X	X	X	1,400	900 - 2,100
Dry Cleaning	X	X	X	X	1,750	1,000 - 2,600
Interior Decorator*	X	X	X	X	1,500	1,000 - 2,500
Travel Agent*	X	X	X	X	1,200	800 - 3,100
Film Processing*	X	X	X	X	1,150	650 - 1,900
Mailing Package*	X	X	X	X	1,400	1,000 - 2,000
Copy Shop*	X	X	X	X	3,200	1,100 - 6,300
Video Rental	X	X	X	X	6,000	3,400 - 7,500
Community						
Daycare*	X	X	X	X	4,800	4,000 - 7,000
Physical Fitness	X	X	X	X	6,000	1,350 - 12,400
Financial						
Bank*	X	X	X	X	3,500	1,500 - 7,500
Insurance*	X	X	X	X	1,000	600 - 2,300
Real Estate*	X	X	X	X	1,800	600 - 5,000
Income Tax Preparation*	X	X	X	X	1,600	1,000 - 2,500
Finance Company*	X	X	X	X	1,560	1,150 - 2,500
Other						
Legal	X	X	X	X	1,705	1,000 - 3,000
Accounting	X	X	X	X	1,600	1,000 - 2,500
Employment Agency	X	X	X	X	1,300	900 - 1,900
Medical						
Medical Practitioners/Clinic	X	X	X	X	1,800	900 - 5,400
Dentist	X	X	X	X	1,800	900 - 5,400
Chiropractors	X	X	X	X	1,600	900 - 5,400
Physical Therapists		X	X	X	1,600	900 - 5,400

N/A: Not Available.

* Other potential stores based on trade area size and sales potential in other categories.

Figure 2-3
Cottage View Potential Retail Tenants

are based on trade area sales potential. These estimates are summarized in Figure 2-2 for each target year (2010, 2015, 2020 and 2025). Support square footage estimates are based on stabilized operations, which normally occur three to four years after opening.

Sales potential analysis indicates that additional stores most likely to locate at Cottage View represent convenience goods, shopping goods, services, and health care. Estimated supportable square footage is 295,000 in 2010 increasing to about 650,000 in 2025. The largest components of this potential are a grocery store, discount store, and home center representing a total of about 300,000 square feet or 47 percent of the total potential. If these stores do not choose to locate at Cottage View, the amount of other space supportable in the area will also diminish. The grocery and discount store potential is likely to be satisfied by a superstore such as Wal-Mart. In the shopping goods category, furniture and electronics represent potential for category killer type stores. An additional home center in Cottage View will depend on somebody like Lowe's choosing to locate in the area since Menards and Home Depot already have stores in Cottage Grove. However, there is a trend for these stores to congregate to feed off each other's draw.

Retail, food service, services and professional office development potential at Cottage View is likely, over the long term, to include businesses that are new to Cottage Grove and businesses that choose to relocate from other locations within the community as their space needs increase. Figure 2-3 lists those business types that can be accommodated within the Cottage View trade area as households increase. This table identifies the store type, median store size, and the store size range in each category.

Cedarhurst

The area of Cottage Grove surrounding the intersections of 70th Street, Military Road, and Keats Avenue is identified as a potential commercial area in the Master Plan. The Cedarhurst area takes its name from the historic Cedarhurst property. Development in the general area has already begun with the opening of The Shoppes at Alamar.

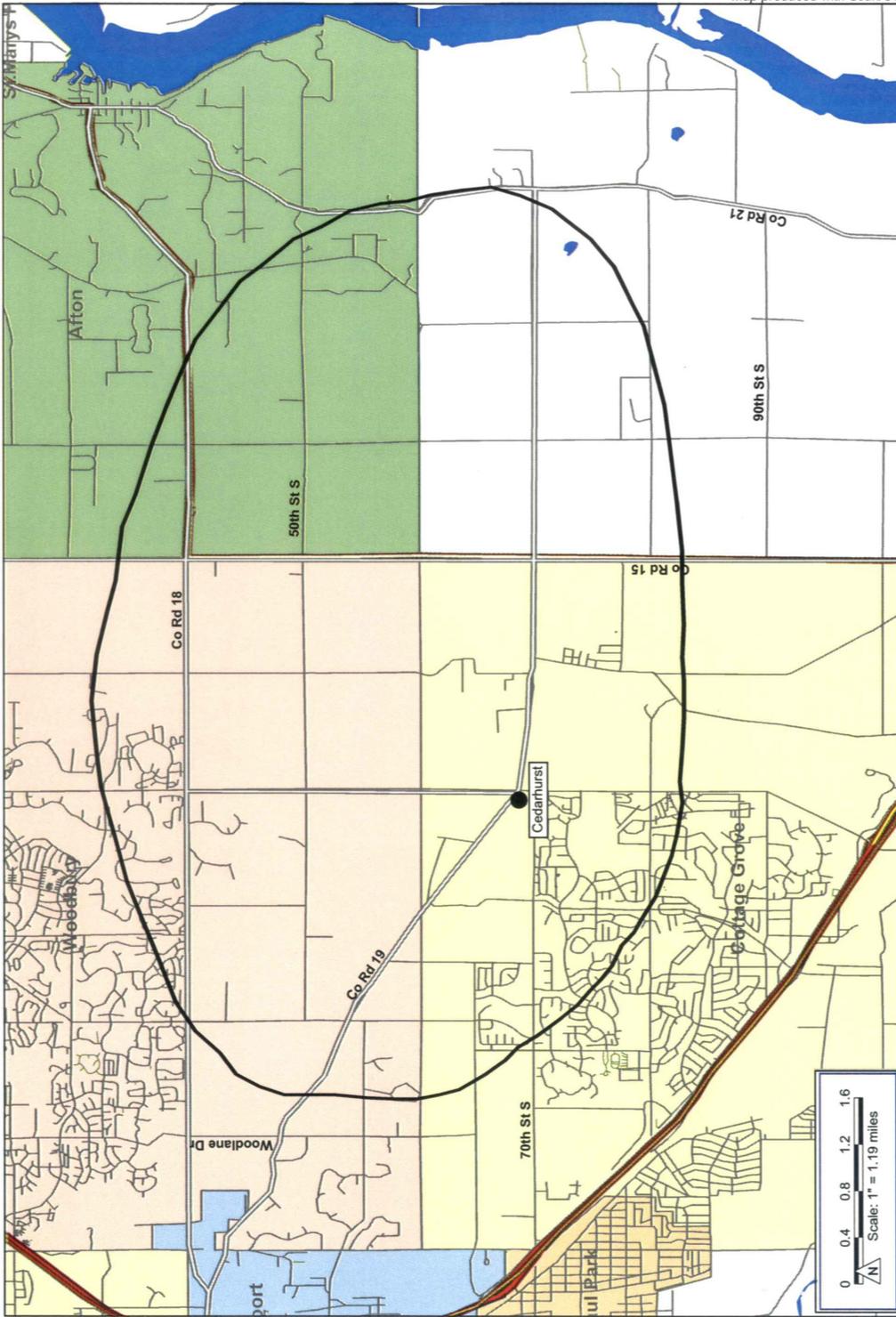
Trade area development potential is enhanced by future development in the East Ravine and Woodbury. The portion of the trade area in Woodbury is scheduled for phased MUSA expansion between now and 2010. Woodbury development coupled with East Ravine development provides support for a convenience/neighborhood shopping area. Factors that support retail and service potential at Cedarhurst include:



Merchandise Category	2005	2010	2015	2020	2025
Households	5,494	9,637	15,148	21,015	26,799
Convenience Goods	3,500	19,700	64,700	64,700	64,700
Food Service	3,500	13,500	16,500	27,000	27,000
Convenience/Gas	3,000	7,000	7,000	7,000	7,000
Shopping Goods		5,500	18,000	20,500	23,500
Auto Parts		9,000	9,000	9,000	9,000
Services	4,400	8,400	21,700	27,000	31,200
Medical	3,600	13,600	32,300	37,800	41,800
Total	18,000	76,700	169,200	193,000	204,200

Source: McComb Group, Ltd.

Figure 2-4
Cedarhurst Supportable Space
By Merchandise Category 2005, 2010, 2015, 2020 and 2025
(Square Feet of Gross Leasable Area)



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Figure 2-5
Cedarhurst Trade Area

Establishment Type	2005	2010	2015	2020	2025	Typical Size	
						Median	Range
Convenience Retail							
Supermarket			X	X	X	48,775	29,000 - 65,000
Drug Store		X	X	X	X	11,153	7,500 - 32,100
Liquor	X	X	X	X	X	4,000	1,300 - 6,700
Florist		X	X	X	X	1,700	700 - 4,500
Food Service							
Full Service Restaurant			X	X	X	5,124	2,100 - 9,275
Limited Service	X	X	X	X	X	3,113	1,645 - 9,575
Snack & Beverage			X	X	X	1,500	750 - 2,500
Convenience Store/Gasoline	X	X	X	X	X	2,250	1,500 - 5,100
Shopping Goods							
Home Furnishings		X	X	X	X	3,500	1,800 - 19,200
Radio, TV, Electronics		X	X	X	X	3,013	1,400 - 7,100
Sporting Goods		X	X	X	X	5,100	1,700 - 42,600
Jewelry Store		X	X	X	X	1,350	600 - 2,500
Card Shop		X	X	X	X	3,000	1,500 - 9,600
Optical Shop		X	X	X	X	1,500	900 - 3,400
Pet Store		X	X	X	X	3,600	1,200 - 24,800
Other Retail Stores							
Auto Parts & Accessories		X	X	X	X	6,000	1,800 - 11,400
Tire Dealers		X	X	X	X	1,950	1,800 - 4,100
Services							
Beauty/Nail/Tanning	X	X	X	X	X	1,400	900 - 2,100
Dry Cleaning		X	X	X	X	1,750	1,000 - 2,600
Interior Decorator*		X	X	X	X	1,500	1,000 - 2,500
Travel Agent*		X	X	X	X	1,200	800 - 3,100
Mailing Package*		X	X	X	X	1,400	1,000 - 2,000
Video Rental			X	X	X	6,000	3,400 - 7,500
Community							
Daycare*		X	X	X	X	4,800	4,000 - 7,000
Financial							
Bank*		X	X	X	X	3,500	1,500 - 7,500
Insurance*		X	X	X	X	1,000	600 - 2,300
Real Estate*		X	X	X	X	1,800	600 - 5,000
Income Tax Preparation*		X	X	X	X	1,600	1,000 - 2,500
Finance Company*		X	X	X	X	1,560	1,150 - 2,500
Other							
Legal		X	X	X	X	1,705	1,000 - 3,000
Accounting		X	X	X	X	1,600	1,000 - 2,500
Medical							
Medical Practitioners/Clinic	X	X	X	X	X	1,800	900 - 5,400
Dentist	X	X	X	X	X	1,800	900 - 5,400
Chiropractors		X	X	X	X	1,600	900 - 5,400
Physical Therapists			X	X	X	1,600	900 - 5,400

N/A: Not Available.

* Other potential stores based on trade area size and sales potential in other categories.

Source: McComb Group, Ltd.

Figure 2-6
Cedarhurst Potential Retail Tenants

- Anticipated residential development within the Cottage Grove and Woodbury portion of its trade area.
- Convenient Access by way of Keats Avenue, 70th Street and Military Road.
- Existing and future high income household that will prefer a supermarket alternative to Cub and Rainbow.

The proposed Cedarhurst retail area has the opportunity to capitalize on future trade area growth and also residents of Afton to the east.

Cedarhurst development potential for retail stores, food service, and services is closely related to trade area household growth. Household growth based on market demand is estimated to increase from 5,494 in 2005 to 26,800 in 2025. If residential development exceeds or is below this estimate, development potential will be higher or lower than projected.

Categories of retail stores and services, and square footages that are possible at Cedarhurst are summarized in Figure 2-4 for each target year (2005, 2010, 2015, 2020 and 2025).

Stores most likely to locate at Cedarhurst represent convenience goods, food service, services, and health care. The largest components of this potential are a grocery store and drug store. A supermarket of 40,000 to 45,000 square feet is possible in about 2015 and a drug store would be possible by 2010.

Businesses that can be accommodated within the Cedarhurst retail area are contained in Figure 2-6.

Residential Development

Metropolitan area residential development has changed dramatically over the past ten years. These changes include:

- Increasing levels of homeownership stimulated by low interest rates during the past three years.
- Low interest rates made higher priced homes more affordable.
- Developers responded by producing more entry level housing, both single family and townhomes.
- Low interest rates enabled many additional households to qualify for home mortgages. This permitted many former renters to become homeowners.
- This shift reduced the demand for rental housing.
- Increasing land values reinforced townhome development trends as developers strove to maintain low entry level home prices.
- More expensive townhome and multi-family product was constructed in response to lifestyle changes by empty nesters and other households that preferred a maintenance-free lifestyle.

These changes resulted in an increase in the proportion of multi-family housing units constructed in the metropolitan area, Washington County, and Cottage Grove.

Single Family and Multi-Family Trends

Cottage Grove multi-family units represented 6.8 percent of all building permits in 1990. Since 1994, multi-family units have exceeded ten percent in all but one year. Multi-family housing units increased to 45.2 and 50.7 percent in 2001 and 2002, respectively.

Cottage Grove has experienced declining single family housing development since 2000 when single family represented 90.9 percent of all housing units. This declined to 49.3 percent in 2002. Clearly the trend is toward a higher level of townhome and twinhome development.

Cottage Grove Housing Stock

Cottage Grove had 9,926 occupied housing units in 2000 according to the U.S. Census: 9,100 owner-occupied and 826 renter-occupied units. Single family owner-occupied homes pre-

dominate totaling 90.0 percent of all single family housing units. Renter-occupied housing represented ten percent of the dwelling units.

Cottage Grove had 2,176 owner-occupied households age 55 and over in 2000. Based on metropolitan area housing trends, many of these older home owners are and will be seeking maintenance-free lifestyles provided by for-sale housing such as townhomes, twinhomes, and other forms of multi-family housing. Experience has shown that these households prefer to remain in their community close to friends, churches, and other social activities. The East Ravine provides an opportunity to accommodate these households in new homes consistent with their lifestyle desires.

For sale multi-family developments have experienced greater acceptance over the past two years averaging over 40 percent of total building permits in the metropolitan area. Since apartment construction has slowed, most of these are for sale multi-family units. Cottage Grove has experienced increased multi-family housing construction over the past few years. In the future single family is estimated to be about 50 percent of building permits. Multi-family is also estimated at 50 percent with about 80 percent (40 percent of all building permits) to be townhomes, twinhomes, and other medium density developments. Higher density multi-family would total about 1,200 units.

Of the many forces that stimulate the increase in multi-family home production, only interest rates represent a cyclical event. Interest rates are sure to rise in the future. As they do, this will place increasing pressure of developers to maintain affordable monthly payment in each of their market segments. This will most likely result in higher proportions of multi-family development, although higher interest rates may reduce overall residential development.

East Ravine Residential Development

East Ravine development is unlikely to begin prior to 2006 with anticipated home occupancy in 2007. Residential development increases in the East Ravine area as developable land in other parts of Cottage Grove is reduced.

This analysis indicates that the East Ravine development could total as much as 10,750 units by 2025, equally divided between single family and multi-family as shown in Figure 2-7. The allocation between single family and multi-family in any year is arbitrary and is designed to reflect an average over a longer period of time. East Ravine housing should reflect a variety of home prices and housing styles to accommodate changing lifestyles of Cottage Grove residents and contemporary development trends.

Single Family and Multi-Family Home Prices

The East Ravine area is an opportunity for Cottage Grove to expand the types of housing and range of prices available within the community. For sale prices of single family and multi-family housing development in Cottage Grove and other selected metropolitan area cities are contained in Figure 2-8. Single family homes in Cottage Grove range from \$225,000 to \$552,100 excluding upgrades. Multi-family housing ranges in price from \$149,000 to \$300,000 excluding upgrades. In Woodbury, single family home prices range from \$246,000 to \$792,000 while multi-family home prices are \$184,900 to \$389,900. Home prices in other communities similar to Cottage Grove in Dakota and Scott Counties show single family home prices that start at levels similar or somewhat higher than Cottage Grove, but extend up to the \$800,000 to \$900,000. Multi-family home prices in these communities start at entry level prices; however, multi-family home prices approach \$600,000 in some communities.

Year	Total	Other Cottage Grove	East Ravine		
			Total Households	Single Family	Multi- Family
2003	196	196	-	-	
2004	199	199	-	-	
2005	236	236	-	-	
2006	308	192	116	58	58
2007	382	115	267	134	134
2008	458	138	321	160	160
2009	537	115	422	211	211
2010	545	100	445	223	223
2011	554	25	529	264	264
2012	563	10	553	276	276
2013	571	5	566	283	283
2014	580	5	575	288	288
2015	589	5	584	292	292
2016	598	5	593	297	297
2017	608	5	603	301	301
2018	617	5	612	306	306
2019	626	5	621	311	311
2020	636	5	631	316	316
2021	646	5	641	321	321
2022	656	5	651	326	326
2023	666	5	661	331	331
2024	677	5	672	336	336
2025	687	5	682	341	341
		1,390	10,746	5,373	5,373

Source: McComb Group, Ltd.

Figure 2-7
Cottage Grove
Building Permit Potential; 2002 to 2025
Seven-County Area and Trade Area

The East Ravine area provides the opportunity for Cottage Grove to broaden the range of single family and multi-family sales prices by offering a planned development area that contains amenities and features that support higher priced housing.

Cities	Sales Price Range					
	Single Family			Multi-Family		
Cottage Grove	\$ 255,000	-	\$ 552,100	\$ 149,000	-	\$ 300,000
Woodbury	246,000	-	792,000	184,900	-	389,900
Lakeville	216,000	-	814,500	150,000	-	398,900
Rosemount	200,000	-	764,900	120,000	-	584,900
Apple Valley	395,000	-	658,500	170,000	-	589,700
Prior Lake	300,000	-	929,000	94,600	-	415,900
Savage	300,000	-	534,900	160,000	-	336,000
Shakopee	190,000	-	985,900	140,000	-	463,500

Source: Parade of Homes 2003.

Figure 2-8
Sales Prices New Housing Communities; 2003
Select Metropolitan Area Cities

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Development of the East Ravine area over the next couple of decades will have a significant impact on the future form and image of the City of Cottage Grove. In order for the East Ravine Master Plan to be a valid expression of the community's interests and vision, the planning process required broad participation. The active involvement of area residents, businesspersons, elected officials, appointed officials and other interested parties was viewed as being essential to creating a plan that reflects the values of the local community and their collective aspirations for the future.

In the two year planning process for the preparation of the East Ravine Pre-Design, approximately 500 people were involved in a variety of meetings and venues that sought input. Input ranged from simply informing people about the project to gaining specific feedback on future development planning alternatives. The following is a brief overview of some of the ways in which people were involved in the planning process.

Property Owner Meetings

At the beginning of the planning process, members of the consulting design team met with a number of property owners in both Neighborhood 1 and Neighborhood 2 in what were termed "kitchen table" discussions. These discussions were intended to provide insight on the plans and interests of some of the area's larger property owners. As a general rule, comments offered focused more on when development might occur rather than if development would occur. In many cases, property owners had interests in the conversion of agricultural uses to urban development with time frames that ranged from immediate to ten to twenty years. These meetings were helpful in gaining a better understanding of the interests of these owners as well as insight into the physical features and histories of their properties.

Technical Advisory Team

The eventual development of the East Ravine area will involve the City of Cottage Grove and a number of other different governmental agencies. For the Master Plan and particularly for the AUAR that was part of the Pre-Design process, involving personnel from key state and regional agencies was important. Their involvement was important due to the roles that their agencies will play in future permits and approvals. Additionally, the expertise and knowledge of agency personnel lead to a more informed planning process.



The Technical Advisory Team (TAT) for the East Ravine Master Plan was comprised of staff members from the following agencies:

- Metropolitan Council
- Department of Natural Resources
- Washington County Transportation
- Washington County Parks
- Department of Natural Resources
- Minnesota Department of Transportation
- Minnesota Environmental Quality Board
- South Washington Watershed District
- South Washington County School District #833

Citizen Advisory Team

In order to obtain broad community input as part of the Master Plan, the Cottage Grove City Council established the East Ravine Citizen Advisory Team (CAT). The role of the 21 member Citizen Advisory Team was to act as a sounding board throughout the project. The Team was made up of Cottage Grove residents, both living within the project area and within other areas of the community. During the planning process, the Citizen Advisory Team met on six occasions to review information and provide input into the Master Plan.

Community Meetings

General community meetings were also an important part of the planning process. On three occasions, large scale open houses were held. The first open house which was held on August 7, 2003 focused on background information on the project. The agenda for that meeting included an introduction to the project, opportunities for one-on-one conversations with the project consulting team and City staff and the collection of general thoughts and ideas about the project area.

Open House #2 which was held on January 8, 2004 presented background analysis information on the physical features of the project area, the preliminary results of the market analysis, roadway alternatives, land use typology information and three alternative land use concepts. A comment card was used to gather community input on each of the alternative concepts. The comments received were used along with other community input to refine the concepts and to ultimately select a preferred land use alternative.

The final project open house was held on November 15, 2004. The purpose of Open House #3

The image shows a comment card for the City of Cottage Grove - East Ravine Pre-Design. It is divided into three columns, each representing a different area: Neighborhood 1 North, Cedarhurst Area, and Cottage View Area. Each column contains a map of the area and a section for 'General Comments'. Below the maps, there are lines for writing comments. At the bottom of the card, there is a 'COMMENTS' section and a date of 'NOVEMBER 2004'. The card also includes a logo for the City of Cottage Grove and a logo for HKS.

This comment card from the November 2004 Open House is an example of the tools used to obtain public input during the planning process.

was to present the principal directions of the plan and to seek additional feedback. The preferred land use concept was presented along with key plan elements addressing development forms, roadways and open space. Detailed lot layouts for Neighborhood 1 were presented along with general future land use patterns for Neighborhood 2. Specific plans for both the Cedarhurst and Cottage View areas were also shown and a written comment card was used to gather additional feedback.

Development Tour

In recent years, all of the communities in the Twin Cities area have seen increased diversity in new housing construction and particularly, an increase in the percentage of attached housing. The market analysis that was completed as part of the planning process clearly identified that this trend will continue both regionally and in Cottage Grove. Since different forms and densities of housing were viewed as likely components of future housing growth in Cottage Grove, the City Council and the Citizen Advisory Team decided to examine some of the emerging trends in housing firsthand. Two tours were organized to examine new developments in the Twin City Metro area. Bus tours were conducted of new neighborhood projects with locations ranging from Apple Valley to Stillwater. The tours were effective in showcasing new housing styles and in examining differing community development standards addressing open space and building materials as well as street widths.



Development tours were used to introduce the City Council and CAT members to real world examples of development patterns and styles.



CC/PC Workshops

Throughout the planning process, a series of City Council and Planning Commission workshops were held to review planning concepts and to define policy directions in the Master Plan.

Developer Forums

On two occasions during the planning process, the consulting team and City staff met with a panel of developers to review emerging planning concepts and to give ideas a "real world" test. Input from the development community focused on housing types and densities, lot sizes, neighborhood characteristics, public and private open space and street patterns.

Newsletters

Newsletters in both electronic and printed form were used to keep all Cottage Grove residents informed about the planning process. Newsletters were prepared at key stages of the process, typically just preceding the open houses that were held.



EAST RAVINE NEWS
Issue One

A Project of the
City of
Cottage Grove

Contacts:
If you would like further information about this project, please contact one of the following:
Kim Lindquist
Community Development Director
City of Cottage Grove
651-458-2824
klindquist@cottage-grove.org
Mark Koegler
Project Manager
Housing/Koegler Group Inc.
612-338-0800
mkoegler@hkj.com

Important Project for City's Future Growth Set to Begin

Public Input Essential to Success of Planning Process

What is the East Ravine Planning District, a massive 3,500-acre portion of largely undeveloped land stretching along County Road 19 from Highway 61 north to the City of Cottage Grove's border with Woodbury, going to look like thirty years from now? How do the city's residents and landowners want to see the area developed, and how can the City establish a framework to ensure that development occurs efficiently and complies with the vision that Cottage Grove residents and landowners articulate? These are some of the most pressing questions that the East Ravine Community Pre-Design project will need to address during the next eighteen months.

As the availability of developable land in those parts of the city already built up begins to disappear, developers and the City have turned their sights towards the land in the East Ravine Planning District. The City of Cottage Grove, with a population of slightly more than 30,000, wants to avoid the out-of-control growth that other metropolitan communities have experienced, because such rapid growth can be accompanied by a host of problems such as traffic congestion and inadequate amenities and infrastructure. Such difficulties could become unmanageable without an effective planning process because of the unusual size of the area. Although no firm development figures have been established yet, the size of the

(continued on p. 2)

A series of newsletters were used to keep the public informed about the planning process and about opportunities to participate.

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Gaining an understanding of the context of the East Ravine area was accomplished at both the qualitative and quantitative levels. Both were essential to a complete understanding of the constraints and opportunities posed within the 4,000 acre project area.

Qualitative Analysis

The qualitative analysis stemmed from tours and photographic studies of the project area. It was based largely on first-hand visual observations. Figure 4-1 graphically depicts the results of the visual analysis.

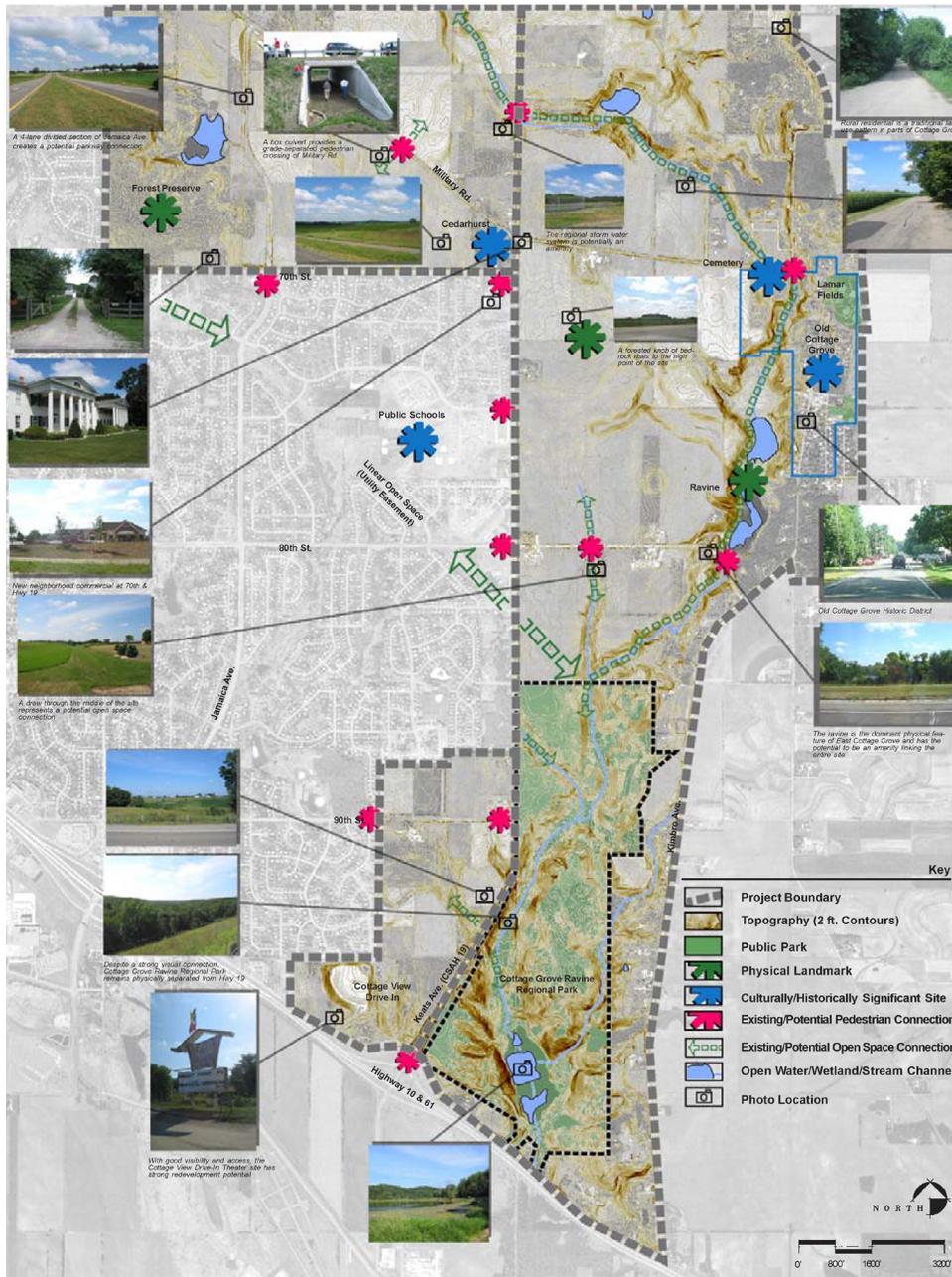


Figure 4-1
Qualitative Analysis

Items of note in this analysis include:

Neighborhood One (North)

- The Cedarhurst mansion, which is on the National Register, is one of the most noteworthy buildings in the region. It has the potential to set the tone for the architectural "look" of the Cedarhurst neighborhood center area.
- The Wilder Foundation forest in the southwest corner of Neighborhood 1 North is a significant natural resource and a great community open space amenity.
- A large box culvert under Military Road has the capacity to accommodate a recreational trail in addition to storm water.
- The South Washington Watershed District has acquired land for future storm water retention.
- Almar Village has established the beginnings of a community retail node just south of the 70th Street and Keats Avenue intersection.

Neighborhood One (South)

- A significant change in topography occurs from Highway 61 up to 90th Street.
- The Cottage View Drive-In is an icon for the area.
- Direct visibility into portions of Neighborhood 1 from Keats Avenue is limited due to existing topography.

Neighborhood Two

- The extreme northeast portion of Neighborhood 2 contains large lot, rural subdivisions.
- Much of Neighborhood 2 is used for agricultural row crops.
- Old Cottage Grove, the remnant of the original community center, is located on the extreme eastern edge of Neighborhood 2. The area, which contains a mix of residential and commercial properties, is a historic district.
- The ravine topography that meanders through Neighborhood 2 from Highway 61 to 70th street is the most dominant physical form in the project area.
- Cottage Grove Ravine Regional Park is an existing regional recreational facility in the southern portion of Neighborhood 2.

Quantitative Analysis

The East Ravine Master Plan utilized traditional information sources and Geographic Information Systems (GIS) to document and analyze the physical characteristics of the project area. Physical characteristics are important because they directly influence future development. Figures 4-2 through 4-27 illustrate some of the resource information that was used as a basis for the Master Plan.

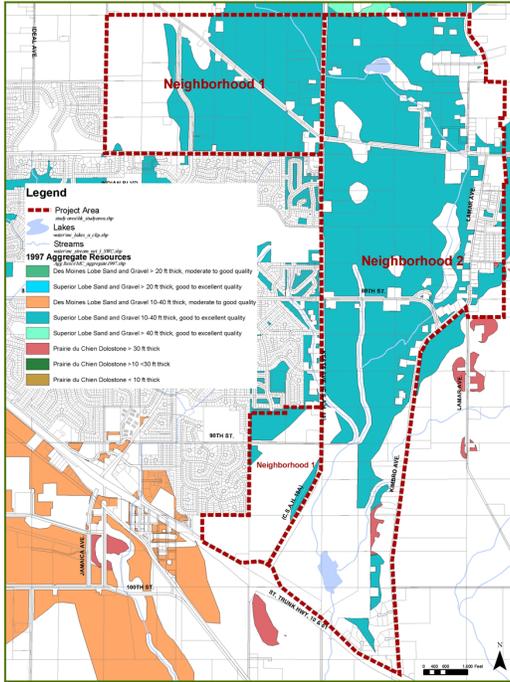


Figure 4-2
1997 Aggregate Resources



Figure 4-3
Bedrock Geology

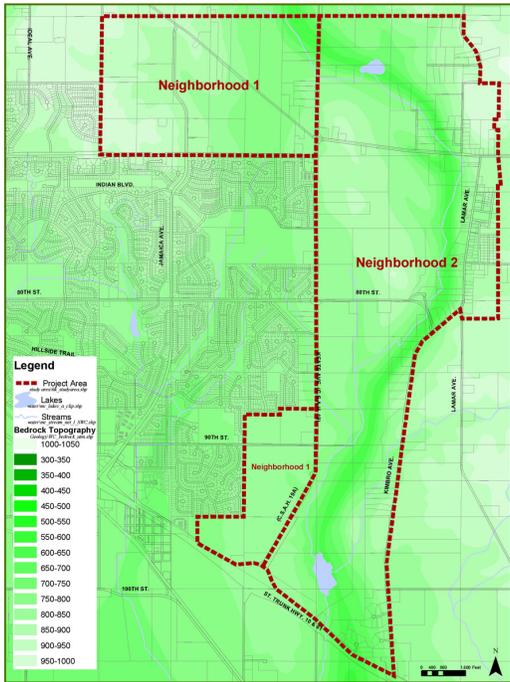


Figure 4-4
Bedrock Topography

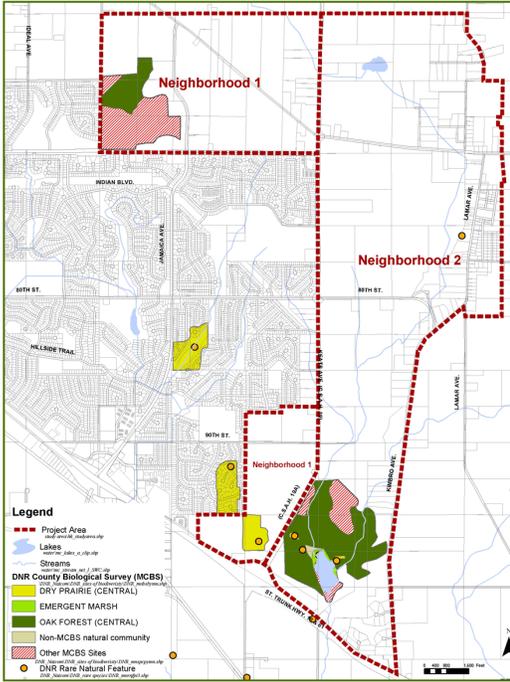


Figure 4-5
DNR County Biological Survey



Figure 4-6
DNR Sites of Regional Significance

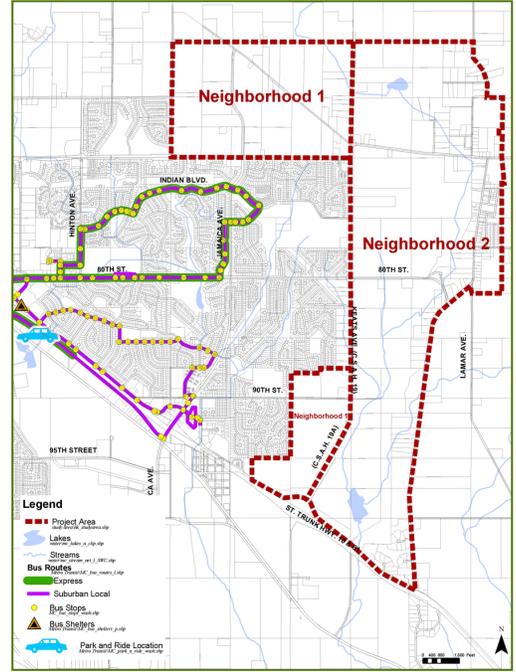


Figure 4-7
Existing Bus Service

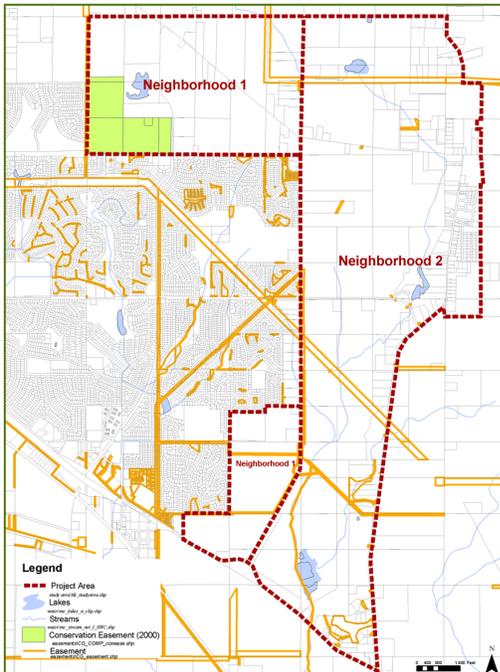


Figure 4-8
Easements

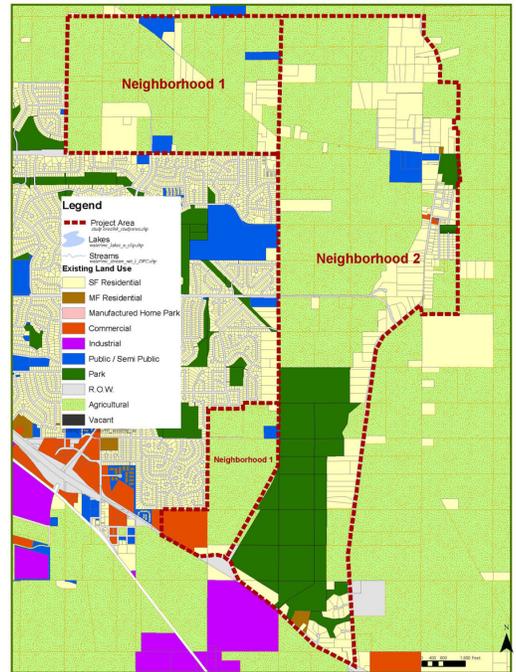


Figure 4-9
Existing Land Use

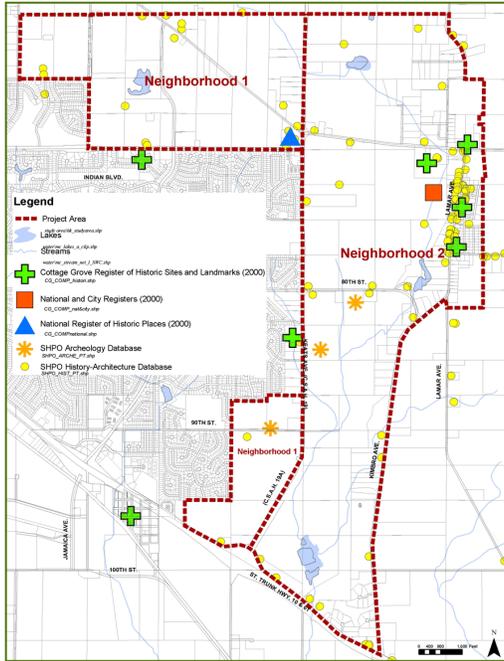


Figure 4-10
Historical Sites

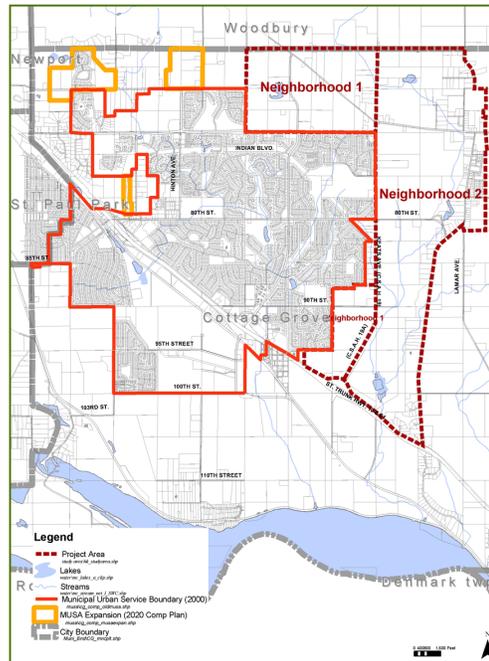


Figure 4-11
Municipal Urban Service Boundary

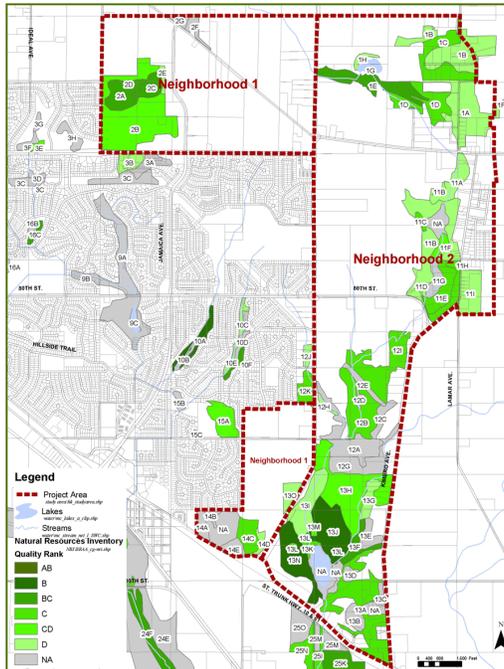


Figure 4-12
Natural Resource Inventory

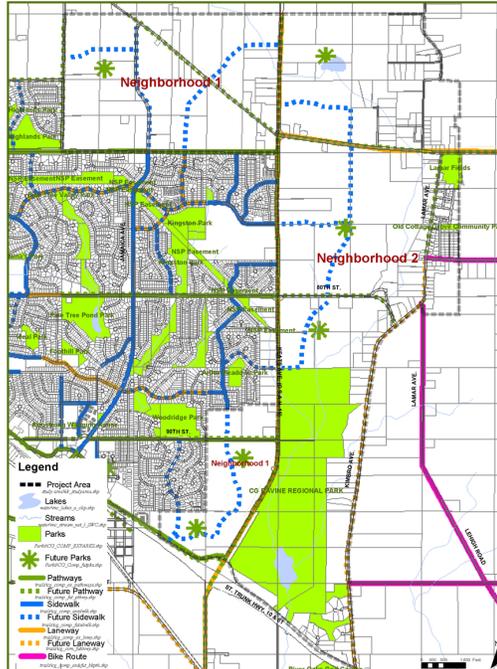


Figure 4-13
Existing Bus Service

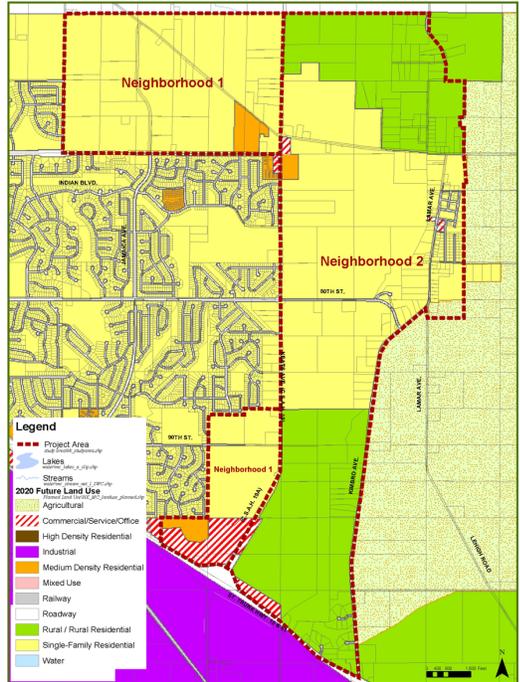


Figure 4-14
Future Land Use - 2020 Comprehensive Plan

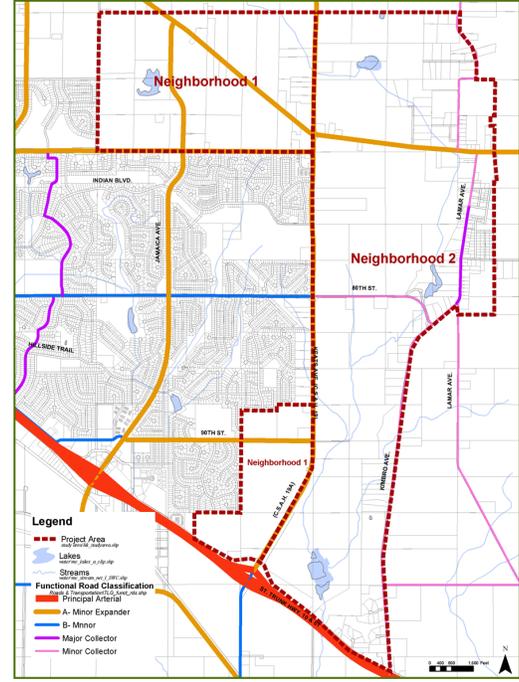


Figure 4-15
Major Roads - Functional Classification

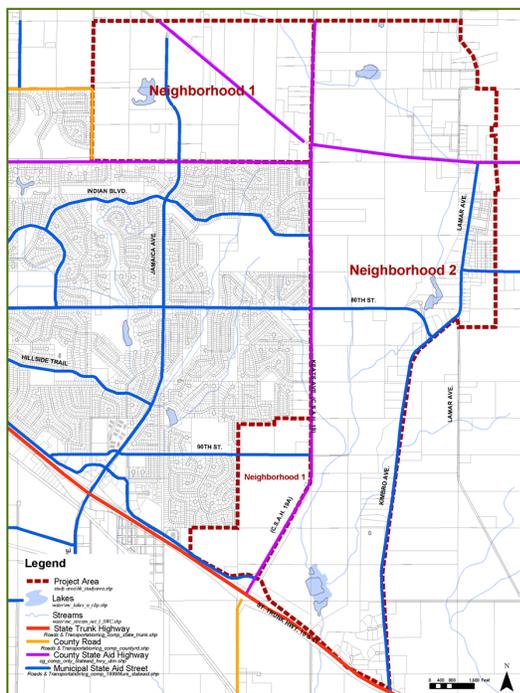


Figure 4-16
Jurisdictional Road Classifications

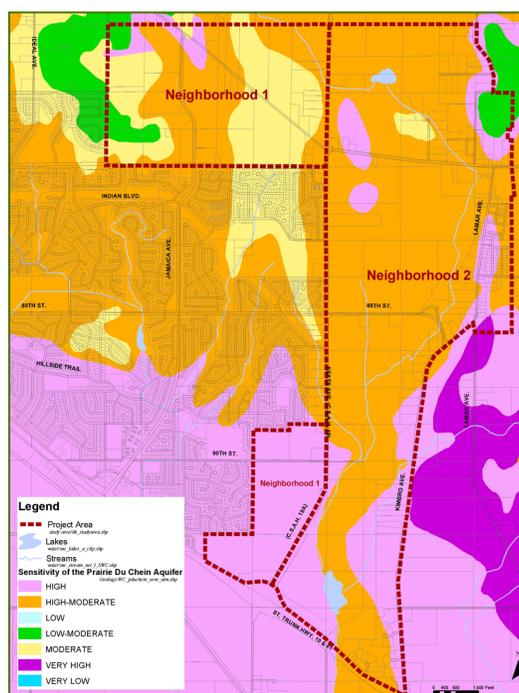


Figure 4-17
Sensitivity of the Prairie Du Chien - Jordan Aquifer to Pollution

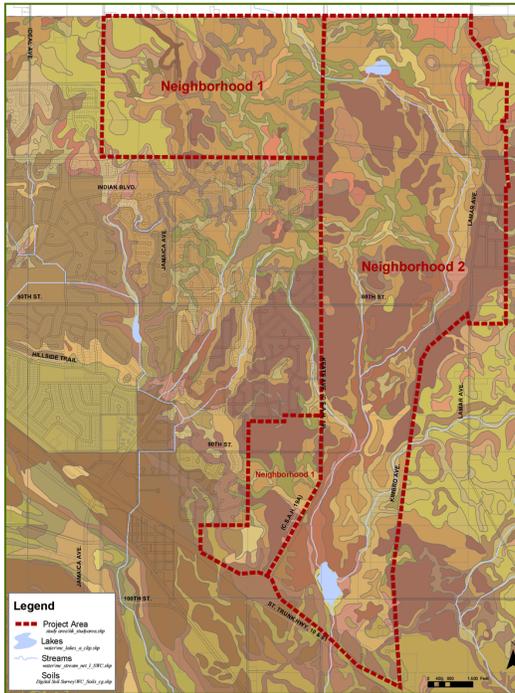


Figure 4-18
Soils

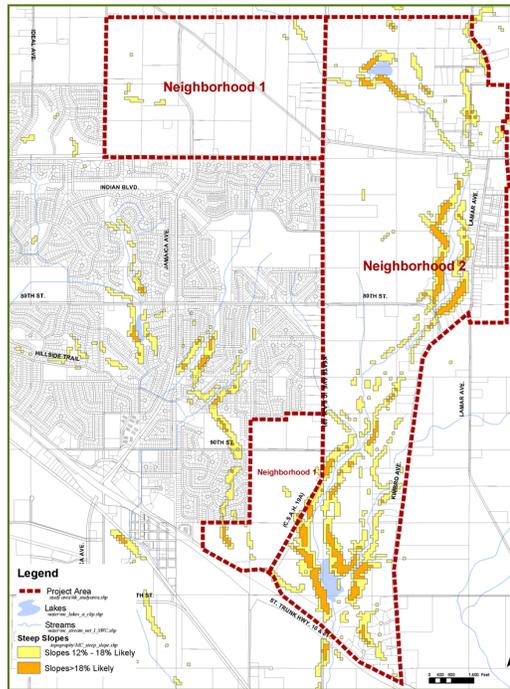


Figure 4-19
Steep Slopes

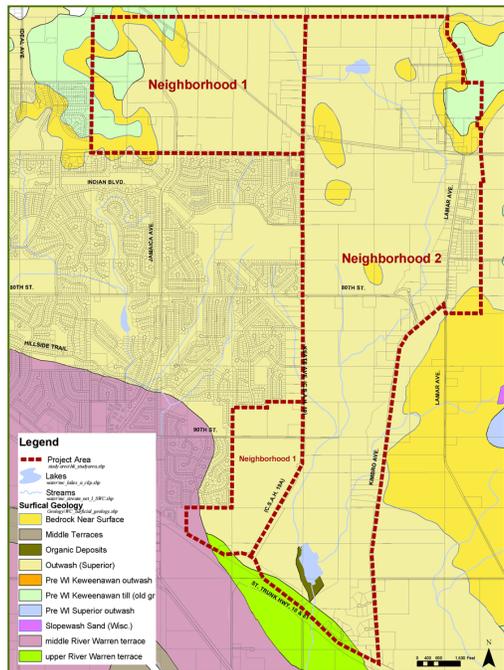


Figure 4-20
Surficial Geology

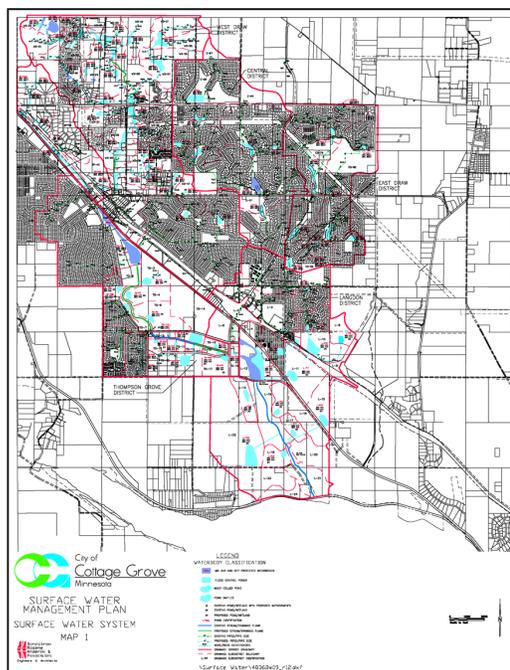


Figure 4-21
Surface Water Management

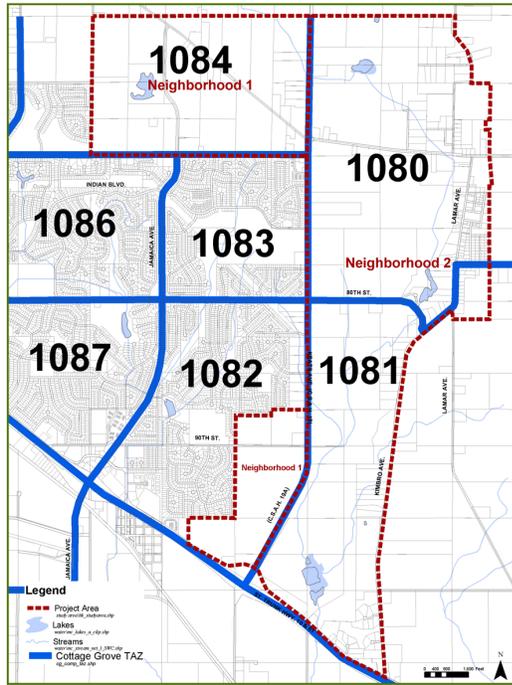


Figure 4-22
Cottage Grove Transportation Analysis Zones

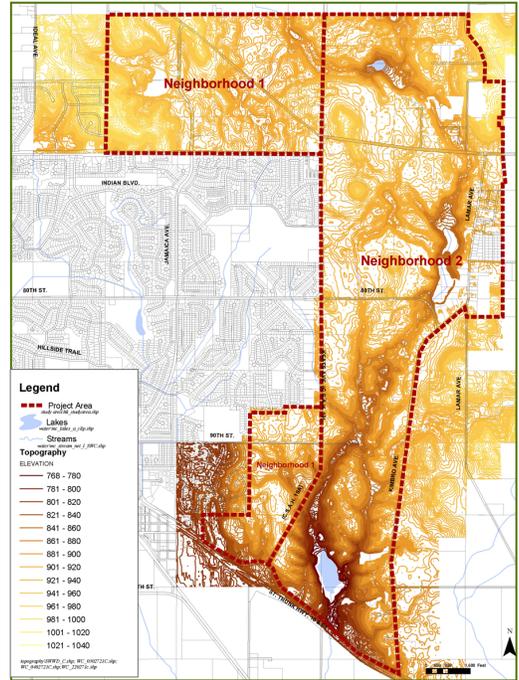


Figure 4-23
Topography

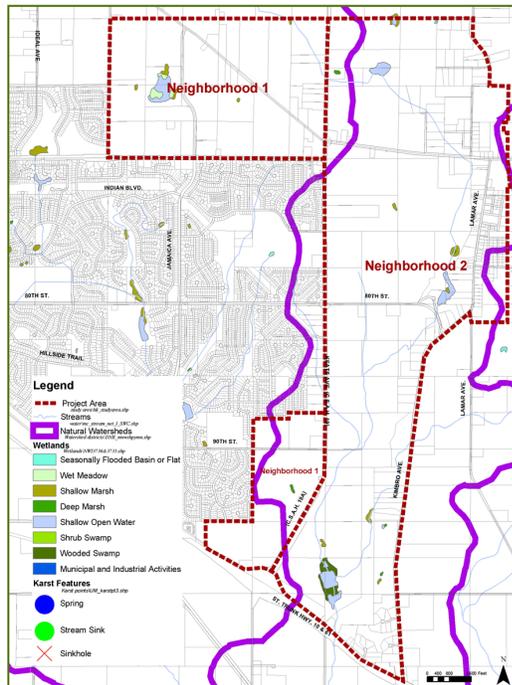


Figure 4-24
Wetlands, Karst Features & Watersheds

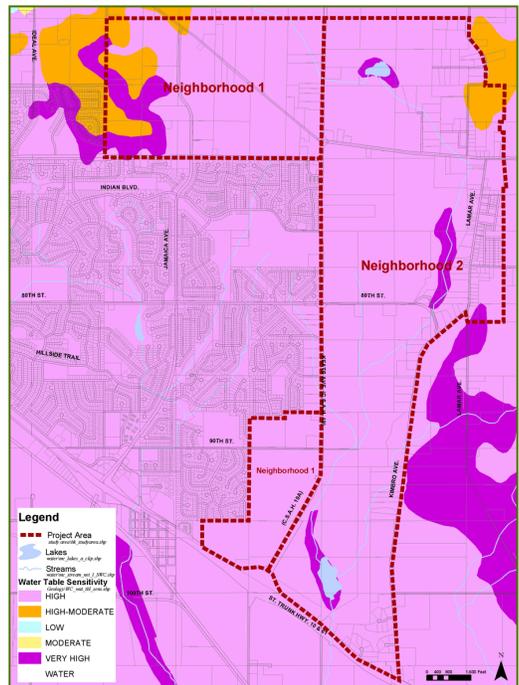


Figure 4-25
Water Table Sensitivity

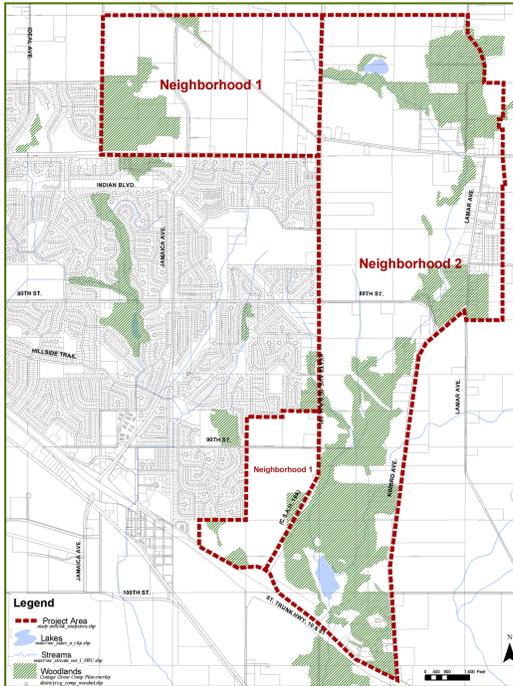


Figure 4-26
Woodlands

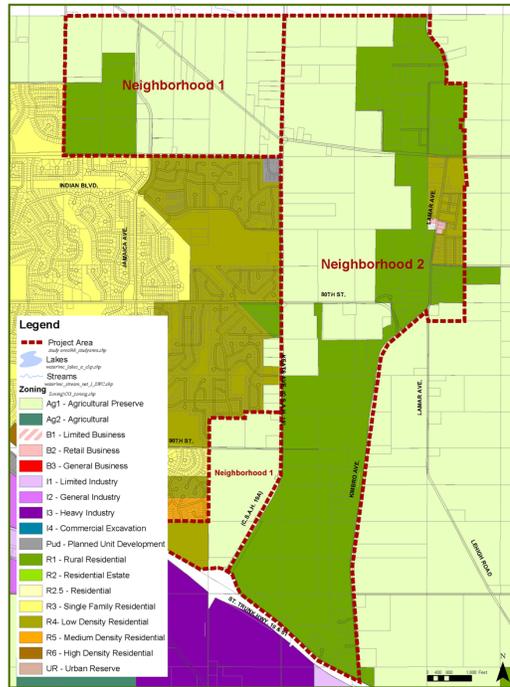


Figure 4-27
Zoning

Environmental Resource Composite

Based on GIS information sources (many of which are referenced in Appendix 1) a composite map of environmental resources was assembled. The map depicted areas that have a low environmental influence, a medium environmental influence or a high environmental influence. Factors used in categorizing sites in each of the three categories included:

- Open water or wetlands
- Hydric and flood prone soils
- Slopes
- Rare natural features
- Biodiversity
- Bedrock
- Native plant communities
- Cottage Grove Natural Resources Inventory (NRI)
- Local and national historic designations
- State Historic Preservation Office Archeology Database

Figure 4-28 depicts Environmental Influences. Generally, the portions of the study area that are most influenced by natural features are areas within the southern and eastern sections of Neighborhood 2. Areas designated as either of moderate influence or of high influence are not necessarily undevelopable. Those designations and particularly areas of high influence need to be examined more closely as part of detailed site design. Significant areas shown as high influence will never be developed due to topography or the fact that they lie within the Cottage Grove Ravine Regional Park.

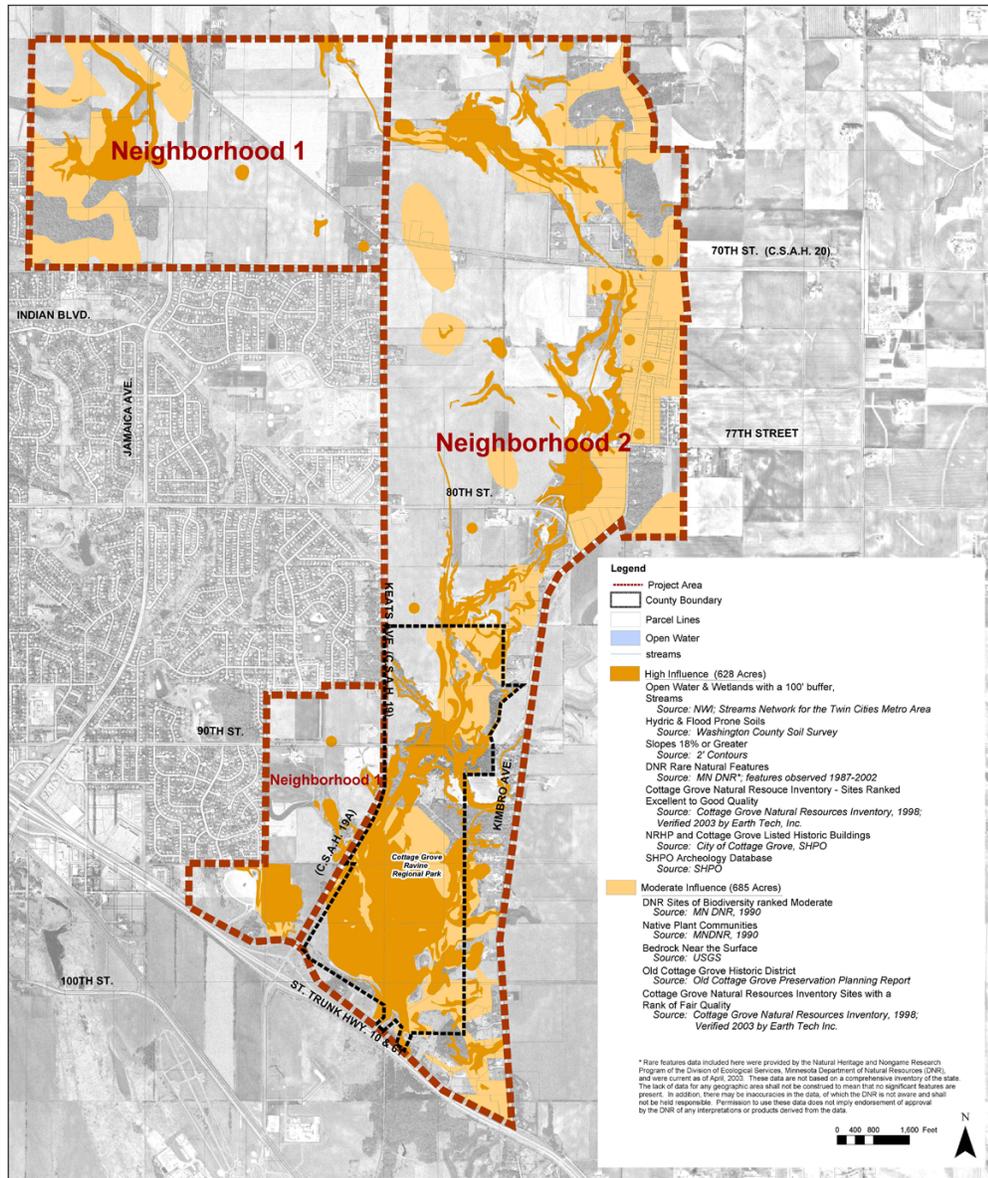


Figure 4-28
Environmental Influences

Development Constrained Land

Based on the Environmental Influences shown on Figure 4-29, land within the project area was defined as either constrained or unconstrained for development purposes. In the northern portion of Neighborhood 1, land classified as having development constraints resulted from areas having open water, forested areas under conservation easements or land planned as part of the regional storm water system. Land in this last category was classified as having indefinite boundaries because the exact permanent boundaries of the areas owned and controlled by the South Washington Watershed District will be further refined as development and utility planning becomes more detailed.

In the southern portion of Neighborhood 1, the only areas classified as development constrained resulted from areas of steep slopes.

In Neighborhood 2, most of the development constrained areas resulted from land either within the existing regional park, areas of open water and areas of steep slopes. Utility easements also limit development along certain corridors in the area.

From a resource standpoint, the vast majority of the East Ravine area can accommodate future development. The network of development constrained land and undevelopable land has the potential to serve as buffers and linkages between developed uses. Having a system of open spaces and preserved natural features will add to the attractiveness and value of the East Ravine area.

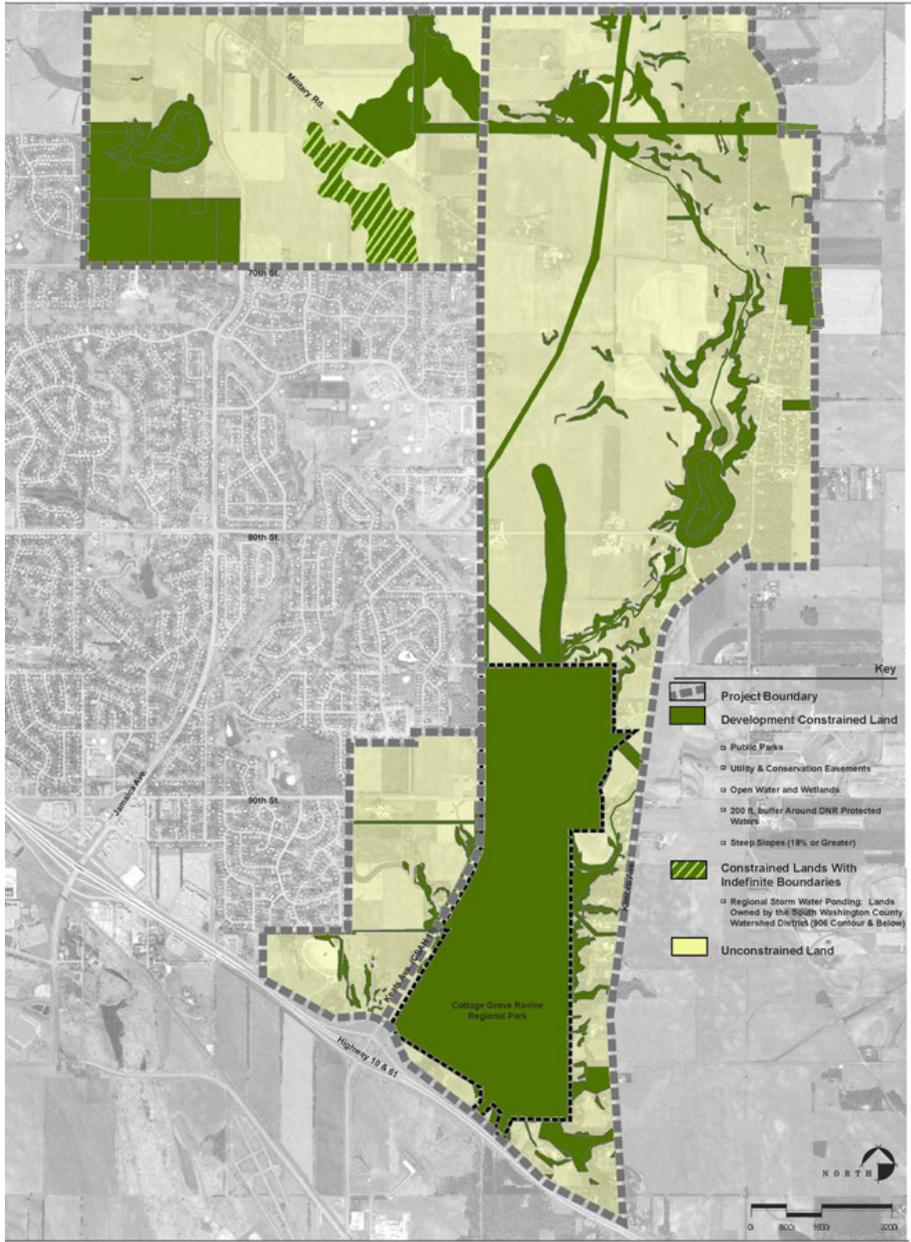


Figure 4-29
Environmental Influences

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The East Ravine Master Plan depicts Cottage Grove’s detailed vision for future development. The components of the Master Plan work together to identify the future land use pattern and infrastructure necessary to support added residential and commercial growth.

The Master Plan begins with a focus on land use. The land use section starts with a discussion of land use typologies. The typologies provide photographic illustrations of the that are depicted in varying colors on the map. With an understanding of the types of development envisioned by the City, the plan next begins to address the spatial arrangement of development forms and densities.

Decisions on land use planning directions were not made in a vacuum. As land use alternatives were developed and tested, simultaneous investigations were occurring pertaining to transportation needs, potential parks and other infrastructure systems including storm water treatment, sanitary sewer and municipal water. Each of these infrastructure systems are discussed later in this section.

This Master Plan by itself is a strong statement of City policy. However, equally important, it is the basis for two other components of the East Ravine Pre-Design, the Alternative Urban Areawide Review and the necessary Comprehensive Plan amendments.

Land Use

Land Use Typologies

In order to better understand the patterns of land use within the Master Plan, general categories of specific use and intensity were established. These land use typologies indicate the types of residential or commercial built forms that one would envision for the areas indicated in the Master Plan.

Less than 1 unit per acre

This category comprises large lot single-family uses and the potential for clustered housing. A clustering approach to development creates a feeling of neighborhood for the residents, while maintaining low overall density and preserving the largest amount of open space and rural character.



Rural character preserved through clustered housing

1 to 5 units per acre

This category consists of primarily single-family residential with small pockets of attached housing. A combination of diversity of housing styles and lot sizes, proximity to high quality amenities, and quality/character of housing stock all add value to these residential neighborhoods. Streets within this category are envisioned to not be overly wide nor dominated by garages, and all four sides of the house would receive equal levels of finish / workmanship to further the value of these neighborhoods.

Low density, single family residential with quality workmanship located by nearby amenities provide a high quality housing stock



6-12 units per acre

In today's busy world, many home buyers do not want to worry about property and exterior building maintenance. The attached housing signified by this category allows for a maintenance free lifestyle and comes in many shapes, sizes and styles from townhomes to rowhouses and represent a rapidly growing segment of the owner-occupied market.

Attached housing is a market driven housing type with a maintenance free lifestyle.



More than 12 units per acre

Higher density housing consisting primarily of owner-occupied condominiums and market rate apartments offers housing to a wide range of ages and income levels and achieves a variety of goals. This greater concentration of population also supports commercial uses, focuses local traffic volumes by concentrating density in relatively small areas and consequently has the ability to preserve large areas of open space.

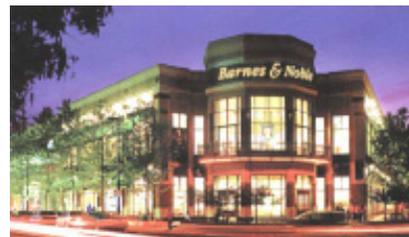
Low density, single family residential with quality workmanship located by nearby amenities provide a high quality housing stock



Commercial / Retail

Commercial buildings come in variety of forms and sizes, from small footprint "Main-Street" type shops to large footprint "Big-Box" retail. While there is room and demand in the marketplace for each, creating a safe and inviting experience for pedestrians and designing structures with high quality materials and detailed articulation will create places which last and are continually successful.

Low density, single family residential with quality workmanship located by nearby amenities provide a high quality housing stock



Mixed Use

A popular trend in today’s market is mixing uses – residential or office above commercial. It is an efficient use of valuable land that generates a concentrated activity at all times of the day. Typically more urban in nature, the variety of uses and attractions within walking distance of one another reinforces a sense of place and community, creating an identity that makes these districts unique.



Low density, single family residential with quality workmanship located by nearby amenities provide a high quality housing stock

Alternative Concepts

The development of concept plan alternatives for the East Ravine explored varying patterns in land use, the built infrastructure consisting of transportation and utility systems, the green infrastructure established by the natural environmental systems, parks and designated open space. Broad ideas included in these concepts addressed various growth patterns that grew either from the existing development patterns, or broke down the existing framework to define a new pattern. While some concepts allowed the transportation system to drive the development patterns, natural systems and landscape features directly informed others. Each concept also looked at varying degrees of development intensity, or town centers, focused at Highway 61 and County Road 19 or the Cottage View and again at 70th Street and County Road 19, labeled the Cedarhurst Area

Land Use Concept A

Beginning with the built infrastructure, the roadway network in concept A explores at a “neighborhood parkway” integral to the development pattern and serving as a connecting loop street through the residential uses. The current Military Road intersection would be realigned to an adequate spacing distance north of Cedarhurst and connected to this neighborhood parkway. This concept allows for a destination ‘big box’ retail use at the Cottage View area along Highway 61 with a medium-density neighborhood to both support the commercial area and buffer the existing neighborhood to the west. The Cedarhurst area has the smallest amount of commercial area of any of the three concepts and would be a single-use district, rather than mixed use, and again, medium density surrounding the commercial area. The far southeast and northeast areas of the study area would be guided for “rural residential”. The open space areas in this concept are essentially active park spaces as well as land deemed unsuitable for development.

Land Use Concept B

Like Concept A, this concept focuses commercial activity at two nodes, Cedarhurst and Cottage View. In this alternative, the Cedarhurst area comprises a more linear strip of commercial land along 70th street east of CR. 19 with a variety of high and medium density housing surrounding. Cottage View contains a larger, destination commercial area with a broader medium and high-density residential district to the north of the commercial area. The internal roadway network is similar to Concept A, including the neighborhood parkway &

realigned Military road. The option also utilizes Jamaica Avenue as a major north / south transportation route. Similar to Concept A, the open space is regulated to active park spaces and undeveloped land either designated by conservation easements or dictated by topographic constraints.

Land Use Concept C

This concept looked at an inter-connected approach of natural greenways and active parks as the framework for the development patterns. Combined with the broad preservation of open space connections a continuous “ridgeline parkway” meanders through the entire development area adjacent to the ravine topography providing a public edge and connections to the open space network. Cottage View consists of a destination ‘Big-box’ retail area along Highway 61 and a “Main Street” mixed use district extending north. Both supporting this retail - commercial area and serving as buffer to the adjacent existing single family residential is a broad stretch of medium density housing with pockets of high density housing near Keats Ave. Again at Cedarhurst, a mixed-use district intermingles commercial and residential uses to form a village center for the northern portion of the study area. The realignment of the Military Road intersection and the stronger reliance of Jamaica Avenue as a north south transportation route would also be utilized. Finally, green corridors or wide areas of natural preservation and enhancement along the major roadways would be implemented to further the rural characteristics of the existing east ravine landscape.



A Preferred Concept - Land Use Concept D

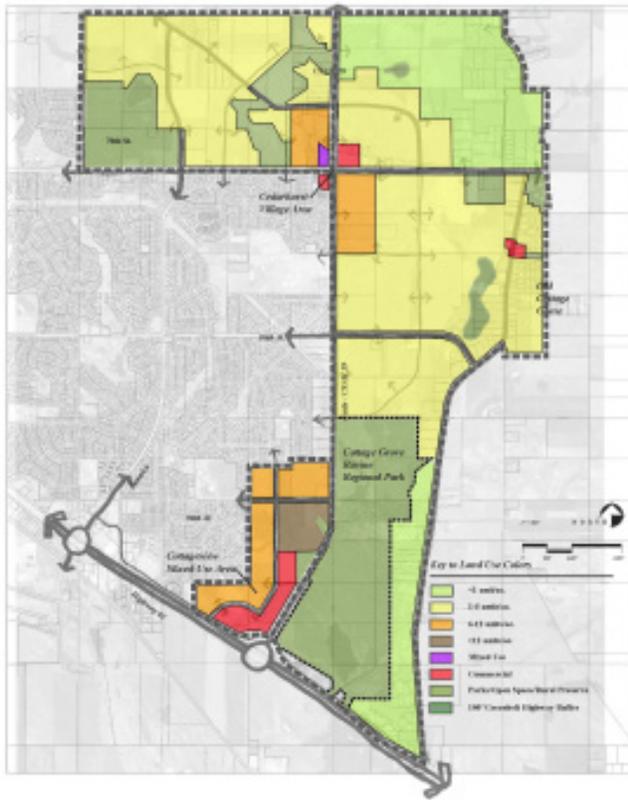
A preferred land use plan began to grow out of input received from various sources during the concept plan review process. Beginning with public open house in November 2003, all three preliminary concepts, A, B & C were presented. Local residents were asked to fill out evaluation forms on each of the three concepts asking participants about their individual likes and dislikes on specific aspects each plan related to green infrastructure, built infrastructure, and land use. In addition to the public open houses, numerous review meetings were held with the Citizens Advisory Team (CAT), and a Technical Advisory Team (TAT), along with workshops engaging the community leaders and on-going review and discussion with city staff.

Throughout this series of public open houses, CAT and TAT meetings and City official and staff review on the individual concepts, a consensus on a number of key plan elements was emerging. The majority of participants responded positively to Concept C, due in large part to the idea of an inter-connected network of open space and the overall land use patterns. Another positive aspect of Concept C was the “ridgeline” parkway and the way this roadway could be utilized as an amenity to surrounding development connecting to the broader open space framework. Many agreed with idea of the Cedarhurst area developing into a mixed-use “village center” surrounded with high and medium density housing, while the Cottage View area would consist of a combination of destination “Big-Box” retail along Highway 61 and a “Main-Street” mixed-use district just to the north.

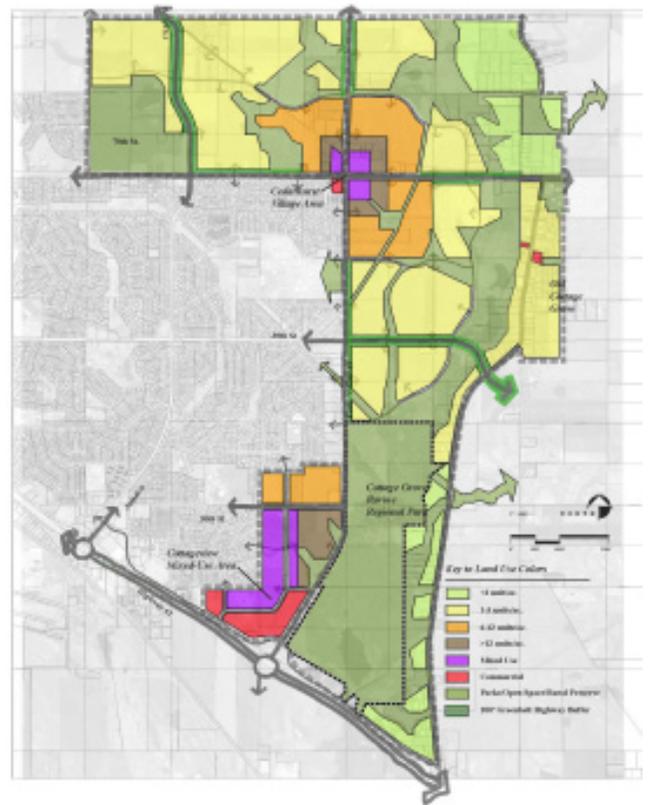


Another idea receiving positive feedback was the idea of utilizing expanded green corridors along major roadways in order to screen development and provide recreational corridors with an enhanced rural character. Generally, many agreed with the realignment of Military road from a traffic and safety standpoint, and relying more on Jamaica Avenue for more north / south traffic. Another general comment from review of the concept plans was that the Master Plan should find an appropriate balance of overall development densities between the more focused areas of development intensity or attached housing the with broader areas of high quality single-family residential neighborhoods.

Concept A



Concept C



Concept B

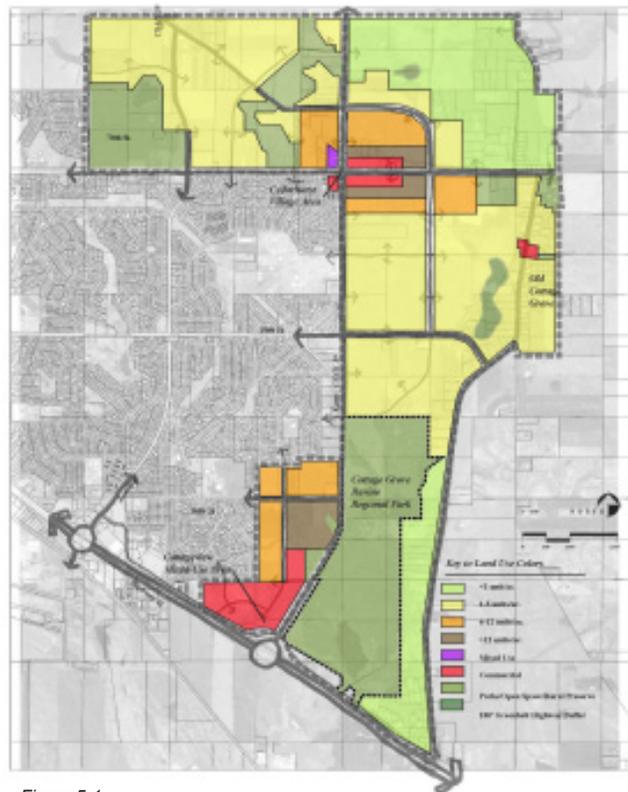


Figure 5-1
Concept Alternatives A, B and C

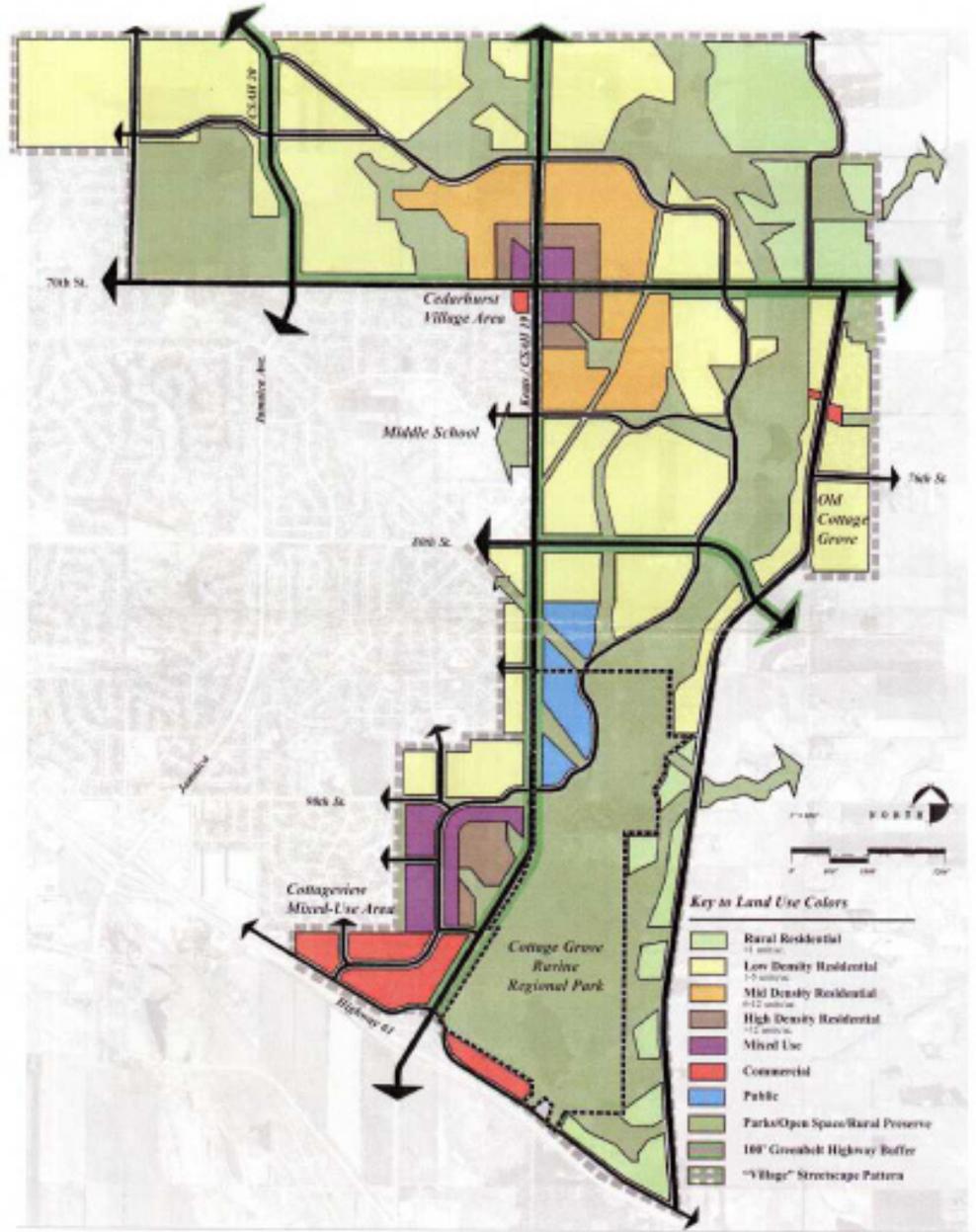


Figure 5-2
 CONCEPT PLAN D
 The preliminary consensus land use plan for the East Ravine. This plan was the foundation for the development of further detail on land use and overall development patterns.

A Preferred Approach - The Master Plan

While the Land Use Concept D laid the foundation for the appropriate use, transportation patterns and the open space framework for the East Ravine, more detailed exploration, analysis and input was required to develop the final Land Use Plan component of the Master Plan. The Land Use Plan depicts a general allocation of uses by land use type at a level of detail appropriate for comprehensive planning. Accordingly, it is the land use plan that will be used as the basis for the amendment of the amendment of the Cottage Grove Comprehensive Plan. The following is an overview of the plan.

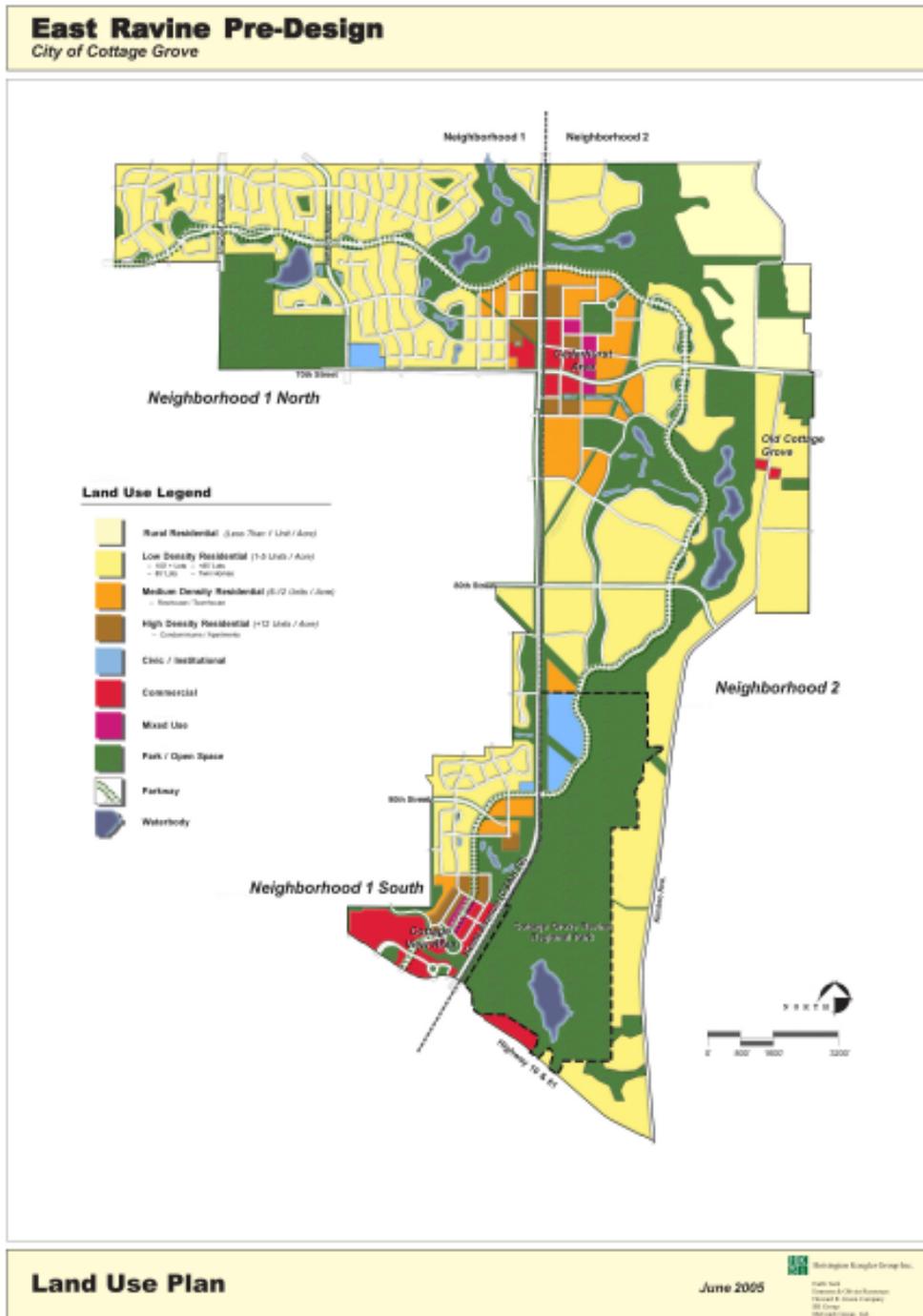


Figure 5-3
Land Use Plan

Land Use Plan

The East Ravine area has been broken down into two broad “neighborhoods” for purposes of this Master Plan study. Neighborhood 1, which includes all of the project area lying east of Keats Avenue (County Road 19) and Neighborhood 2, the remaining project area lying east of Keats Avenue. Neighborhood 1 was further broken down into a northern portion, consisting primarily single-family residential and a southern portion including the Cottage View area. Neighborhood 1 has been envisioned as Cottage Grove’s next phase of development. Accordingly, the project addresses an increased level of detail in neighborhood 1 – developing a near preliminary plat level for both the northern and southern sections of this area. Neighborhood 2, which is envisioned as having longer-range development potential, is shown in a more general land use manner.

As indicated in Concept D, The Land Use Plan emphasizes a focus on density at two locations, Cedarhurst and Cottage View. In these areas, commercial uses are integrated with mixed-use development and medium / high-density housing. Outside of these areas, lower density housing is shown consisting principally of single-family detached homes and twin homes. The northeast corner of the project area accommodates rural density housing, with densities of at least one unit per acre.

Neighborhood 1

Neighborhood 1 North consists principally of lower density housing. During the planning process, lot size and residential density were given careful consideration. Tours of Twin City development projects provided examples of contemporary densities and housing forms. Based on that review, it was determined that a “standard” Cottage Grove single-family lot required 85’ of width. To encourage housing variety and varying price points, lots both larger and smaller than the standard are also included in the plan. The lot patterns shown are intended to convey the City’s expectation of the development pattern in Neighborhood 1. It is expected that some level of deviation from the lot pattern shown may occur as individual developers prepare preliminary plats in the future. The general locations of streets, overall lot patterns, open space areas and the parkway, however, are not expected to change significantly. The Neighborhood 1 North Master Plan is a strong indicator of the layout and design qualities that Cottage Grove expects for this new neighborhood area.

On the east side of Neighborhood 1, the low density residential pattern terminates in a large open space area accommodating both storm water treatment basins and parks. Southeast of the open space area is a medium and higher density residential area near the Cedarhurst site. This area has a functional connection to the larger Cedarhurst mixed-use area east of County Road 19 in Neighborhood 2.

The southern portion of Neighborhood 1 contains a mix of residential uses and a significant amount of new commercial development as shown on the Neighborhood 1 South (Cottage View) Master Plan. Neighborhood 1 South has a significant change in topography with an 80-foot elevation difference in some areas. As a result, commercial uses occur on terraces that move up the hill from south to north. The parkway passes through the area, providing access to the commercial areas in the south, then connecting to a mixed-use area before continuing northward into the residential area. The northern portion of Neighborhood 2 South contains residential densities and lot patterns that reflect those found in Neighborhood 1 North.

The land use pattern in Neighborhood 1 South generally follows the land use designations in the current comprehensive plan with some shift in the higher density residential area to locate

it contiguous with the mixed-use area. Existing single-family neighborhoods are located west and north of Neighborhood 1 South. The plan responds to these neighborhoods by locating similar uses on the east side of the interceptor sewer easement in the northern portion of the area and by using grade changes and buffering between the existing neighborhood and the new commercial area to the south.

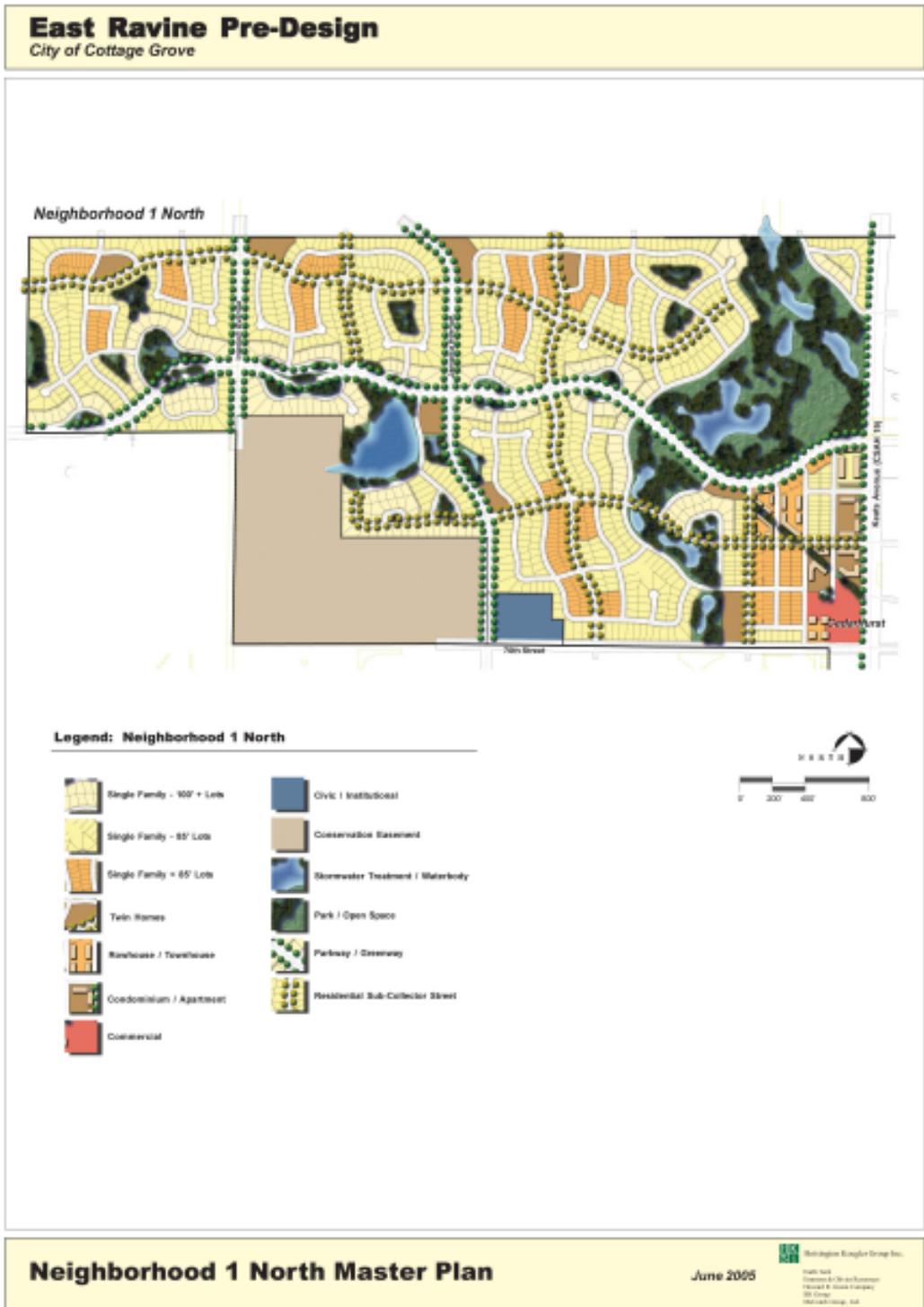


Figure 5-4
Neighborhood 1 North Master Plan

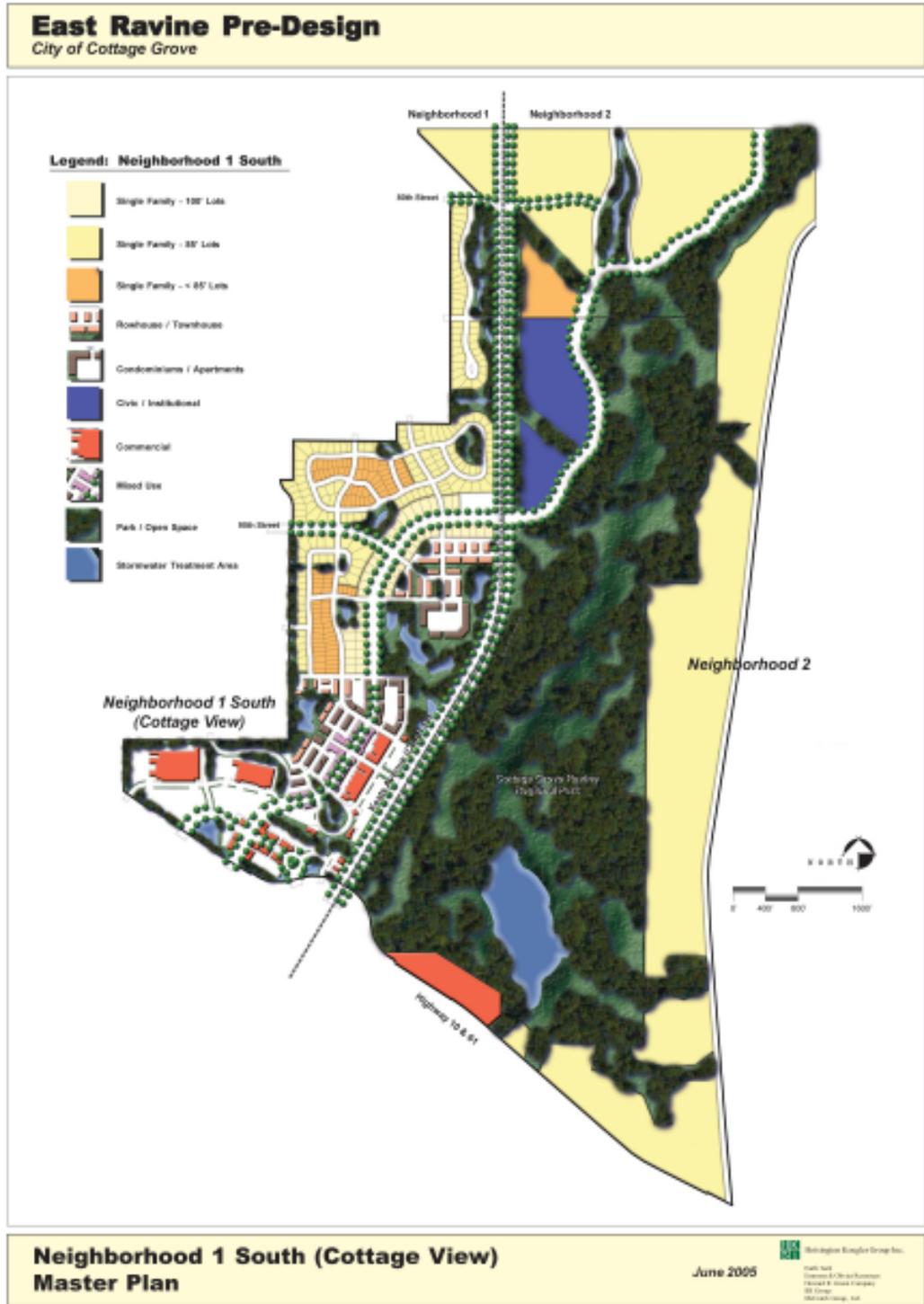


Figure 5-5
Neighborhood 1 South (Cottage View)

Neighborhood 2

Less detailed planning has been completed for Neighborhood 2 as part of the Master Plan. In general, Neighborhood 2 has three primary components: the Cedarhurst area, new low-density residential areas and the existing Old Cottage Grove neighborhood. Consistent with the results of the market analysis, the Cedarhurst area is planned as a new mixed-use neighborhood at

more of a “village” scale. The character and architecture of the existing Cedarhurst building is expected to be a model for building forms in the area. The intersection of 70th Street and County Road 19 is the location for commercial uses. Radiating around the commercial area are mixed-use areas, higher density residential areas and medium density residential areas. All of these uses are connected to the parkway system and the open space system via trail segments and greenways.

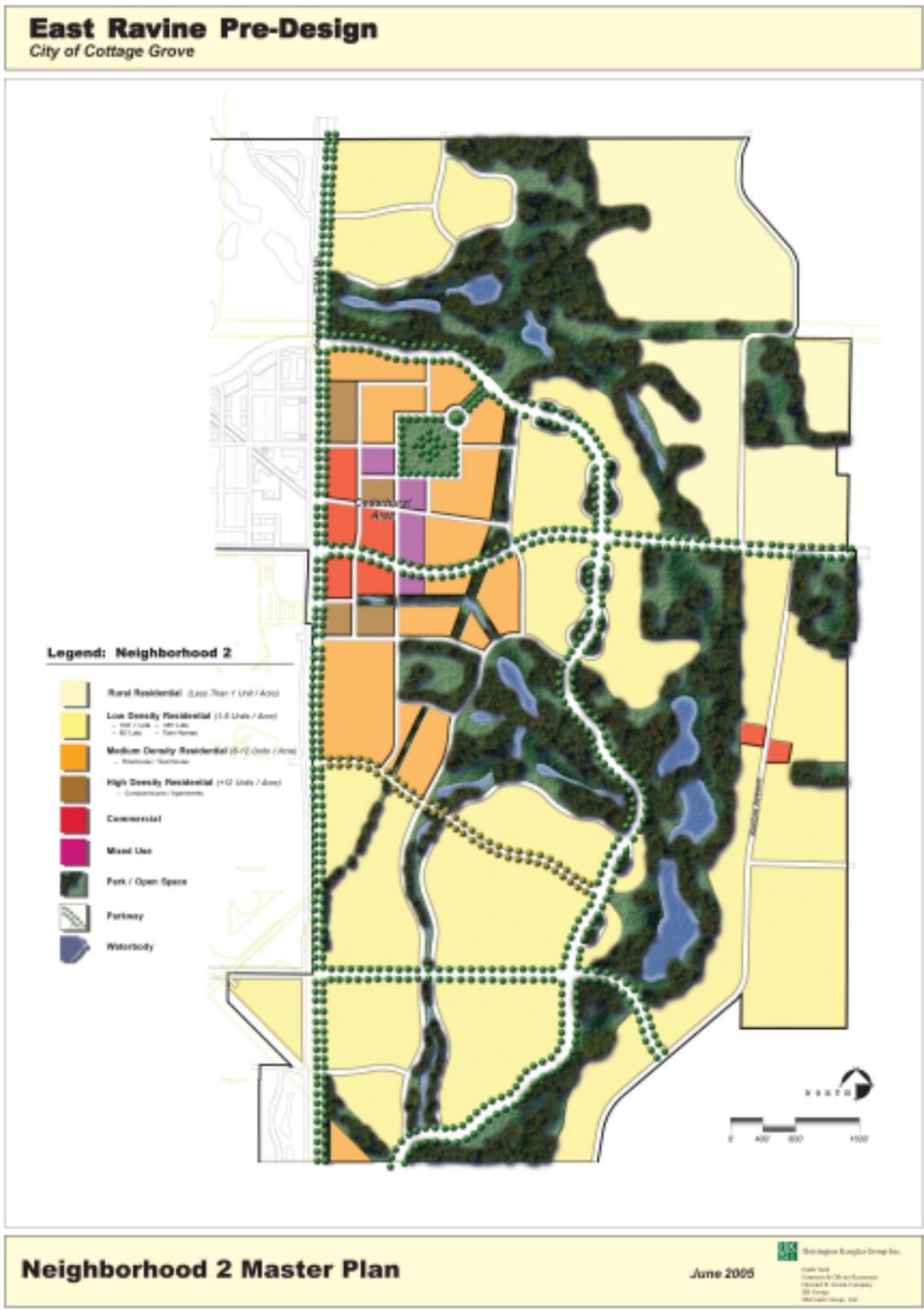


Figure 5-6
Neighborhood 2 Master Plan

The major roadway network shown on the plan defines new residential neighborhood areas. All of the new neighborhood pockets have connecting access either to the parkway or to open space areas. An extensive trail network along the parkway and open space areas will connect Neighborhood 2 with Neighborhood 1 as well as with the greater Cottage Grove community and the surrounding area.

The Old Cottage Grove neighborhood lies along Kimbro Avenue generally south of 70th Street. This area is the home of five properties that are listed on either the City Register of Historic Sites and Landmarks or the National Register of Historic Places. The Old Cottage Grove neighborhood is not presently served with either municipal water or sanitary sewer. The East Ravine project has the potential to serve this area in the future with full municipal utilities if deemed necessary. Water and sanitary sewer service to this area is not a priority of the plan but could be accommodated in the future, particularly in light of the fact that some of the wells in the area have been reported with high nitrate levels.

As the parkway passes through Neighborhood 2, it both provides access to new neighborhood areas and it passes near or through the ravine open spaces shown on the plan. In doing so, it will provide motorists, pedestrians and bicyclists with a variety of vistas, some across the natural ravine and some focused on new residential neighborhoods.

The vast network of open space and storm water conveyance and treatment areas is looked at as a significant amenity for new housing. The interrelated open space system combined with the ravine topography in the area has the potential to attract upscale housing in the future. Neighborhood 2 has great potential to become an attractive living environment for a wide range of housing from the new mixed-use, village neighborhood in the Cedarhurst area to attractive new neighborhoods in the mid section of the area to the historic feel of the Old Cottage Grove neighborhood on the eastern edge.

Lot and Unit Summary

The Metropolitan Council guidelines encourage new development areas in the Twin Cities to range from four to six units per acre. The regional density calculations are for residential land only and do not include land for regional parks, major collector roadways and regional storm water treatment areas. The Land Use Plan depicts a density of 3.93 units per acre for Neighborhood 1, a density of 4.49 units per acre for Neighborhood 2 and a combined density for the entire project area of 4.20 units per acre.

	Number of Units	Percentage of Overall Totals
Neighborhood 1		
Single Family	1599	49.9%
100 + Lots	208	13.0%
85' Lots	1006	62.9%
< 85' Lots	385	24.1%
Twin Homes	152	4.7%
Townhouse / Rowhouse	264	8.2%
Condominium / Apartments	1192	37.2%
Total "Neighborhood 1 "	3207	
Neighborhood 2		
Single Family	1395	41.7%
Townhouse / Rowhouse	1186	35.4%
Condominium / Apartments	766	22.9%
Total "Neighborhood 2"	3347	
Total Project Area Units	6554	

Total Project Area Housing Units	Units	Percent of Overall Total
Single Family Detached	2,994	46%
Multi-Family Attached	1,602	24%
Multi-Family Stacked	1,958	30%
Total Units	6,554	100%

Figure 5-7
Lot and Unit Summary

Plan Features

The following are more in-depth descriptions of the focused areas of the Master Plan information on the Cottage View and Cedarhurst areas provides more insight into the development pattern and philosophy. Also discussed is the intent of the residential neighborhood patterns and how these areas relate to the critical design elements and components such as the parkway and green corridors, which form primary features of the Master Plan for the Cottage Grove East Ravine.

Residential Patterns

Housing in the East Ravine Master Plan can be articulated in two distinct patterns and uses, low density housing in broader neighborhoods and medium and high-density housing located in the village-scale nodes.

Neighborhoods - Low Density Housing

With the over-riding notion of allowing the existing natural systems and the critical open space features of the plan to guide the placement of development, the lower-density single-family neighborhoods fit well within that context. A modified-grid network of residential streets allows the developed areas to respond to the existing topography and drainage patterns. The detailed development plan for Neighborhood 1 North illustrates how this pattern of streets and lots loosely rise and fall across the landscape. This pattern effectively feeds traffic from these neighborhoods to collector roads and similarly, directs pedestrians to the central amenity and open space feature of the parkway and the series of small greens and neighborhood parks to which are it is linked. This development pattern provides an efficient use of land and infrastructure, while still providing for the types of single-family housing products the Twin Cities metro area market demands.

The community's vision for well-articulated, higher-end homes would be realized with large lots fronting on the parkway eyebrow lanes which spin off of the parkway to form small enclaves of high amenity housing. Beyond these larger estate size lots, the primary single-family house in these neighborhoods would sit on an 85 foot plus lot. This dimension allows for a wide range of housing styles within the move-up housing category. Areas of narrower lots ranging from 65'-75' in width and small pockets and are also identified on the plan in areas where the patterning of topography and drainage only allow for a certain width or depth in the block pattern.

Parks and community gathering areas are located in the fronts of homes, rather than the rear yards or "leftover" areas. This "front porch" approach to neighborhood design allows for a neighborhood and community focus to parks and open space, further strengthening the recreational amenities within the community. These areas inherently become gathering locations, which is often lost when public parks are located in someone's backyard.

Villages - Medium & High Density Housing and Mixed Use

In the more focused areas of development at Cottage View and Cedarhurst higher densities of attached housing are envisioned. The utilization of townhomes and rowhouses to gain a rear garage orientation to the public street keeps unsightly trash collection and surface parking in the rear of the homes, while individual units would still have a public walk-up, front door access.

Similarly, higher density condominiums and apartment buildings would have underground parking or internalized surface parking courts, allowing the architecture of the building to take



Figure 5-8

prominence on the street rather than a broad expanse of asphalt. Detailed articulation of these buildings is also envisioned through the use of design guideline which will work to keep a pedestrian scale to these buildings



Figure 5-9
Villages Residential Pattern

Market Analysis

The information generated in the market analysis by McComb Group, Inc. ultimately helped shape the land use designations in the Master Plan. The market analysis looked at the overall residential market in both the single family and multi family areas and indicated that the East Ravine development could attract as many as 10,750 residential units by 2025, equally divided between single family and multi-family products. The allocation between single family and multi-family in any given year is arbitrary, the projections are meant to reflect an average over a longer period of time. The study also concluded that the East Ravine area provides the opportunity for Cottage Grove to broaden the range of single family and multi-family sales prices by offering a planned development area that contains amenities such as the parkway and numerous parks and features that support higher priced housing.

Commercial Nodes

Cottage Grove

The Cottage View area takes its name from the Cottage View Drive-in along Highway 61. The area lies northeast of the interchange between Highway 61 and County Road 19 and represents Cottage Grove's last major area of retail expansion.

The market study indicated several factors that support retail and service potential commercial at Cottage View including continued household growth in the primary and secondary trade areas, the limited areas for commercial expansion at 80th Street and Jamaica Avenue, and strong household income growth in the area. This retail area has the opportunity to serve incremental growth in the trade area as retail demand increases. Some stores may choose Cottage Grove as a location to take pressure off of their Woodbury stores. Sales potential analysis indicated that additional stores likely to locate at Cottage View represent convenience goods, shopping goods, services and health care. Estimated supportable square footage is 295,000 in 2010 increasing to as much as 650,000 sq. ft. in 2005.

Initially, the design plan called for all big box retail along Highway 61 for visibility. These

stores, which include a grocery store, discount store and home center, are the largest components of the overall square foot potential indicated in the market, representing roughly half of the total amount. With areas in the southwest corner of the site along Highway 61 nearly 80 feet lower in elevation than the commercial areas along Keats Avenue, the topography was an obvious concern for the development of these larger big box uses. Initial concepts studies looked at three large boxes on what would be a lower terrace with a few satellite commercial pads. Ultimately, the amount of parking and stormwater treatment areas would need to be increased forcing a slight shift to this pattern.



The end result is a commercial development plan that combines a big box and lifestyle shopping area on the southern and lowest portions of the site and midsize box strip and mixed-use district along the parkway on the northern and highest area of Cottage View. The big box commercial uses on the lower terraces have been modeled after current footprints and parking needs for a super discount store and a home improvement store. In order to overcome the steep topography, these two large big box users have been sited in the flatter areas of the site, the western, rear portion. The two buildings and parking lots occupy two distinct terraces roughly 15-20' apart in grade. The creation of these terraces by cutting back the hillside and landscaping allows the large buildings to remain out of site lines from the existing residential homes atop the hill, while still maintaining site lines from Highway 61 and the interchange at Keats Avenue for much needed commercial visibility. The intersection sits high enough topographically that these uses can be seen through the lifestyle shopping area in the foreground. Another reason for the specific location of the large box users aside from the topography was the energy these uses create. All the activity and traffic generated from the shopping trips now has the ability to pass through the lifestyle center adding to the commercial support and viability of these more specific shopping destinations. Without these big box anchors, the smaller specialized retail stores could struggle. A small area of convenience goods / gas is situated at the intersection of Keats Avenue and the frontage road.

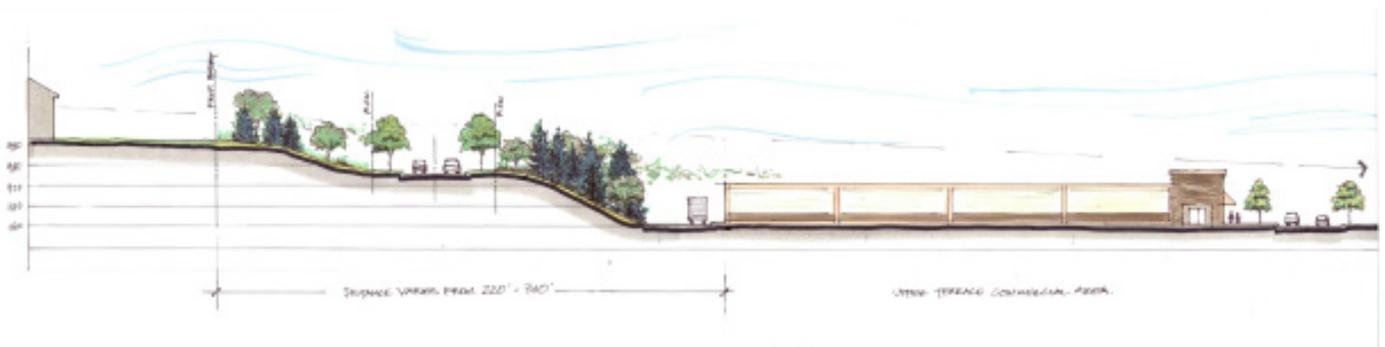


Figure 5-10
Commercial Street Section Study

The other commercial component to the Cottage View area includes a modest size commercial strip and a mixed-use area stretching along the East Ravine Parkway. Spanning two blocks, commercial retail stores front toward Keats Avenue with a primary access off of Keats Avenue at the top of the hill through the center of the commercial strip serve as a destination for more local trips rather than the regional center below. Uses like a grocery store, drug store, pet store, office supply etc. form the anchors to the commercial activity. The mixed use district running north and south along the East Ravine parkway is geared toward specialty retail, service, medical and office uses. A unique urban streetscape is planned for this stretch of the parkway with parking on both sides and fronts of building set against the street right-of-way. A unique district of sit-down restaurants is located along loop road off of

the parkway. At the center of this restaurant area is a large park with portions of the ravine with constantly cycling water features cascading down the hillside to the lower ponds in the foreground of the lifestyle center. This public amenity component is envisioned to become the iconic entry feature to the entire retail district at Cottage View.

Surrounding the mixed-use district to the north and west is urban village scaled mix of high and medium density housing. Primarily owner occupied townhomes and condominiums with a few for rent apartments, these uses provide a needed component to the overall housing stock and gently transition in density and intensity toward the existing single family uses to the west.



Figure 5-11
Cottage View Commercial

Cedarhurst

The Cedarhurst area takes its name from the Cedarhurst estate that is listed on the National Register. The Cedarhurst neighborhood lies around and somewhat east of the intersection of County Road 19 and 70th Street.

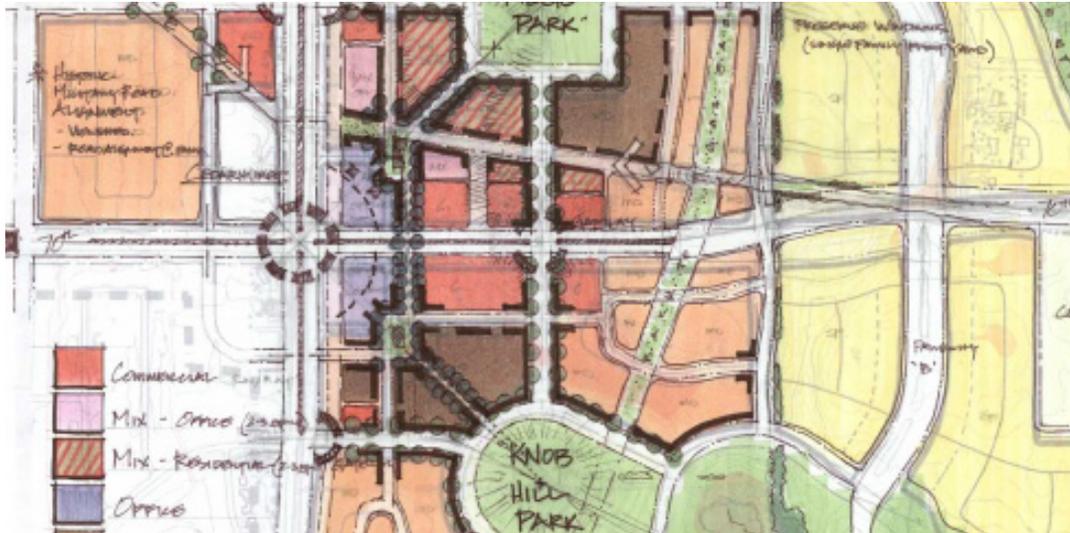


Figure 5-12
Cedarhurst Core

According to the market study, factors that support retail and service potential at Cedarhurst include the anticipated development within Cottage Grove East Ravine, convenient roadway access, and existing and future high-income households that prefer different types of goods and services. Cedarhurst's trade area would also be enhanced by future development in Woodbury. The portion of the trade area in Woodbury is scheduled for phased MUSA expansion between now and 2010.

Stores most likely to locate at Cedarhurst represent convenience goods, food service, services and health care. The largest components of this potential are a grocery store (more upscale) and a drug store. By 2025, the area may be able to attract approximately 204,000 square feet of additional retail and service commercial businesses.

The village scale, mixed-use node envisioned here would primarily locate commercial activity east of County Road 19 and would likely reflect some of the historic character of the Cedarhurst estate's architecture and grounds. A mixed-use district would exist along a street receiving full vehicular access off of 70th Street leading to two large park areas. The parks located northeast and southwest Cedarhurst's core and would serve the surrounding residential areas recreational needs. Situated atop large bedrock knobs, these parks reach out and physically connect to the parkway and open space network, which winds around the Cedarhurst village.

These bedrock areas also impact the realignment of 70th Street. East of Keats Avenue, 70th swings to the south to avoid the physical barrier in order to create better sightlines to the Keats Avenue intersection and overall access to commercial and residential areas on the east side. The western area of Cedarhurst shows the realignment of Military Road in terms of vehicular movement, but still preserves the current alignment in the form of a recreational trail corridor moving through the medium density area west of Keats Avenue.

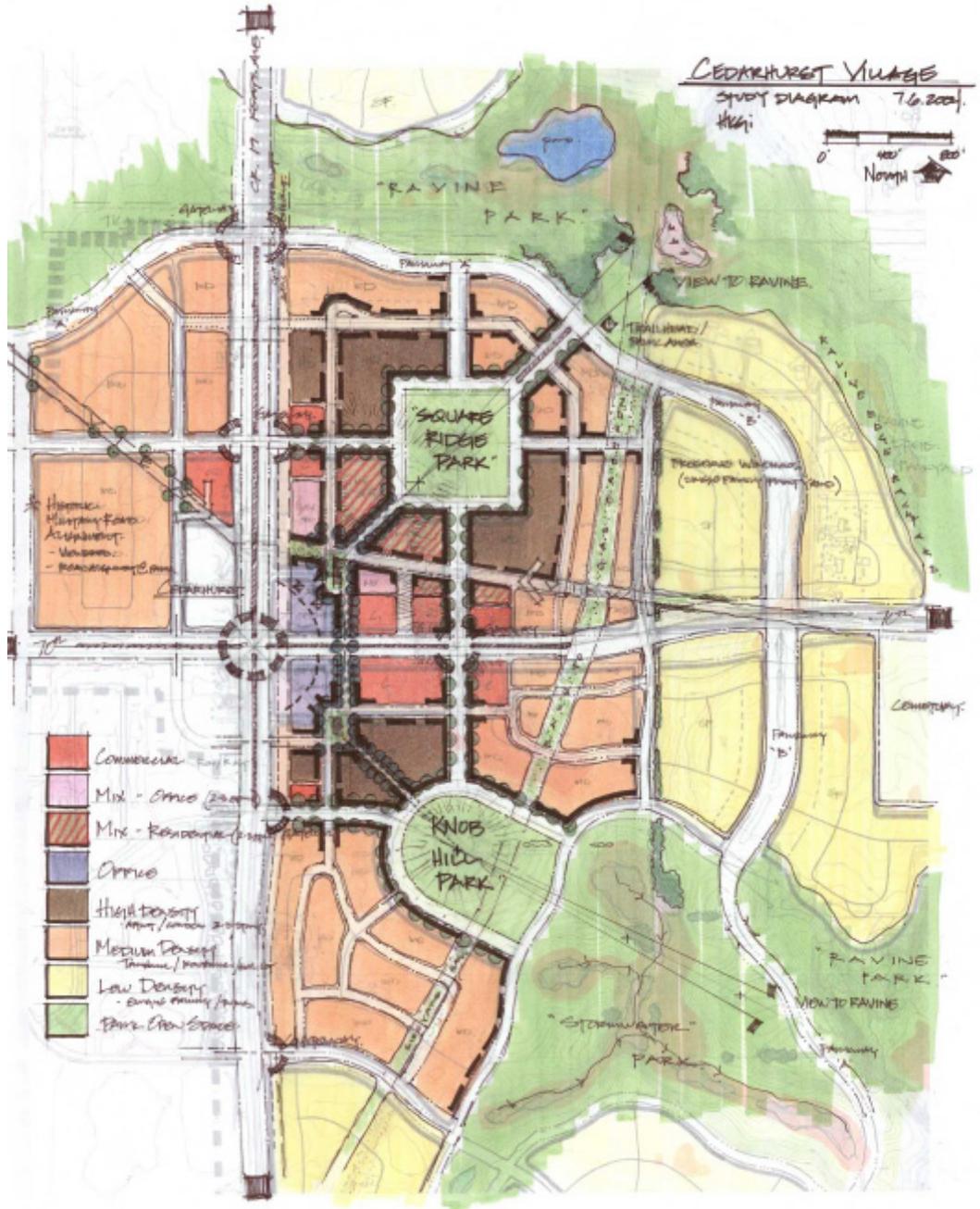


Figure 5-13
Cedarhurst Village Study

Parkway

One of the critical features of the Master Plan is the creation of the parkway, which establishes a central spine through the entire project area. This roadway serves an important function in carrying traffic to the collector roads but also establishes both a literal and figurative link for the entire project area. The parkway, which begins at the far northwest corner of the project area meanders its way east and south terminating at the frontage road along Highway 61, just west of County Road 19. Depending location and adjacent land uses, the parkway itself is envisioned with different sections. It will however, have harmonious design elements such as lighting, plantings, walk colors and textures. For example, as the parkway passes through the residential areas, it is expected to have a more open roadway section and

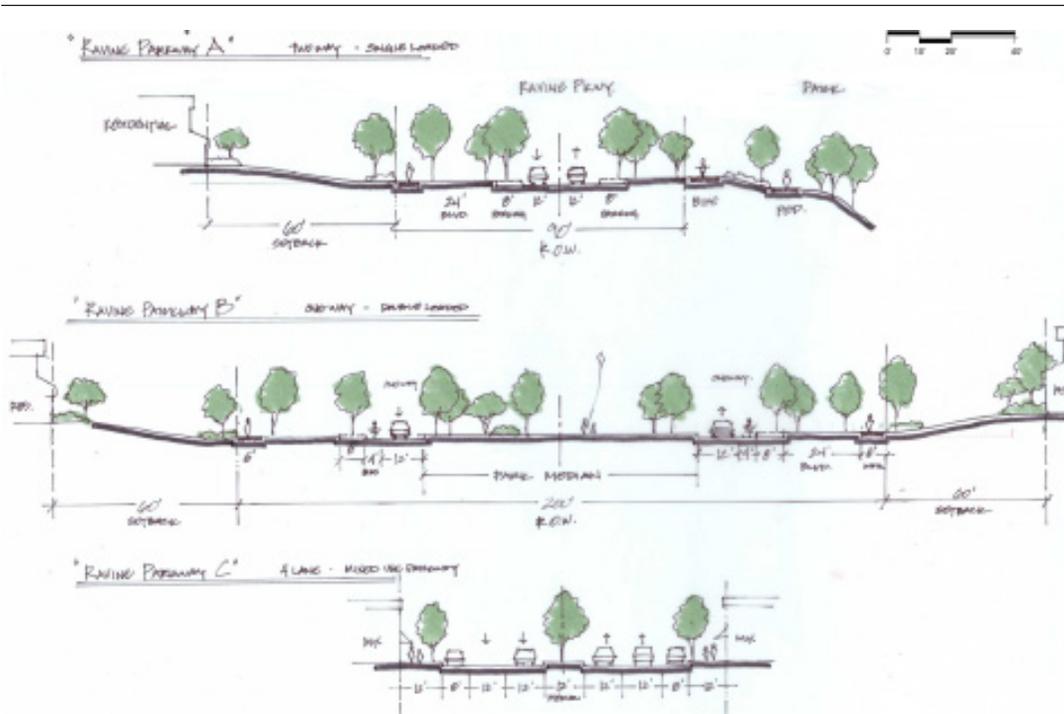


Figure 5-14
Street Sections

larger structure setbacks. While in commercial and mixed-use areas, the parkway will fit within a narrower, more urban type of roadway section.

The parkway was studied in detail in the residential neighborhoods. A handful of concepts were explored varying the orientation and access to the homes through the use of alleys and side loading homes, as well as the testing the local street pattern and block orientation for the surrounding neighborhoods. Discussions with residential developers in the Twin Cites found that an “eye-brow” scheme where small enclaves would be created by pulling off narrow local streets from the main parkway would most effectively add value to the residential homes immediately adjacent to the parkway. These small enclaves would create broader areas of green space for neighborhood parks and stormwater treatment areas.

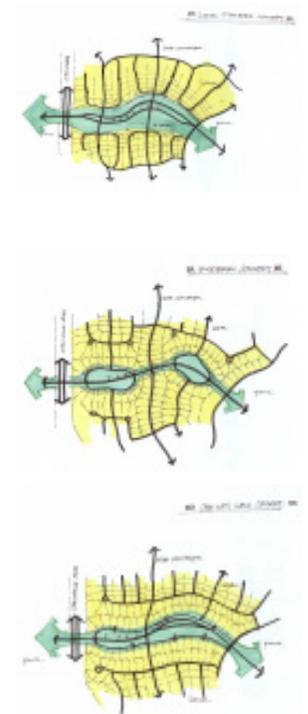


Figure 5-15
Residential Parkway Patterns

Green Corridors

Another key element to the Master Plan and open space network are the green corridors suggested within large rights-of-way along the major roadways of 70th Street, 80th Street and Keats Avenue. In order to maintain a visual connection to open space and aspects of the rural character exiting in the East Ravine, these broad expanses will be landscaped with natural plant materials and utilize topography to effectively screen the development areas. Large utility easements in-conjunction with expansion of right-of-way would allow for slightly more than a football field's width of space along portion of Keats Avenue presenting opportunities to provide meandering paths for bicycles and pedestrians.

Similar to the parkway, as these areas make transition between differing land uses the character of these green corridors may change. For example in the Cedarhurst area along Keats Avenue and 70th Street the green corridors may be more urban in nature, more characteristic of the building relationships in the area and would help to further signify the sense of place.

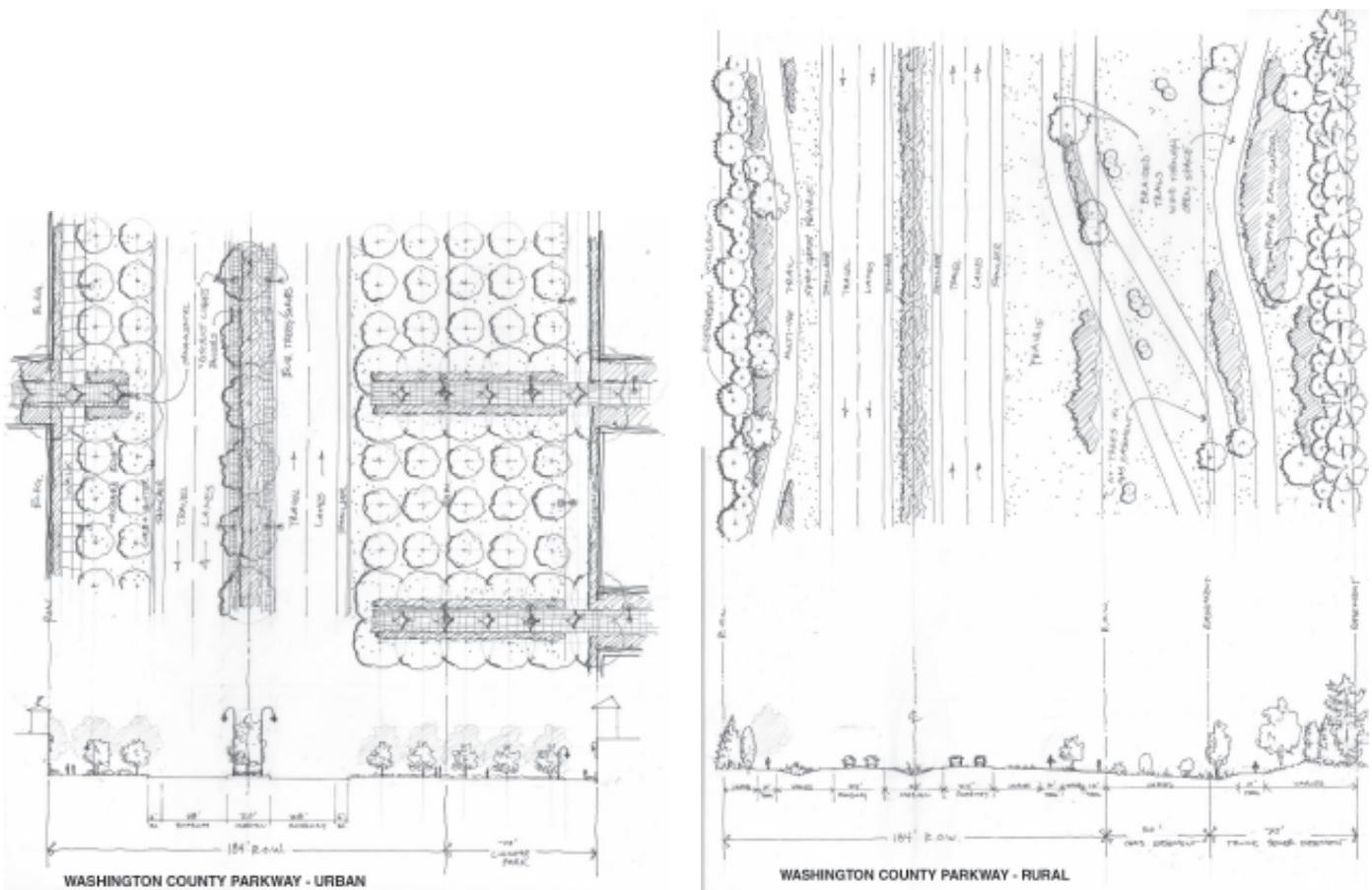


Figure 5-16
Parkway

Figure 5-19
Military Trail Section

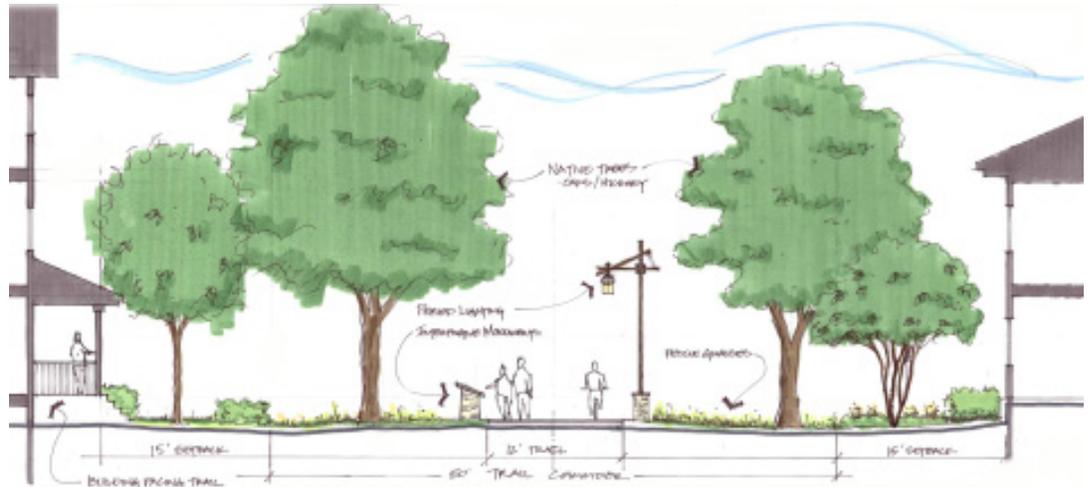


Figure 5-20
Land Use Plan



Parks, Trails and Open Space

The Master Plan broadly depicts parks, trails and open space areas in the East Ravine Area. Implementation of the East Ravine Master Plan will help meet Cottage Grove's overall park system needs for the next twenty years and perhaps more importantly, it will provide new linkages between parks, local trails and regional trails via an extensive system of linear green spaces.

The pattern of land uses depicted on the Land Use Plan was greatly influenced by the existing physical features of the area, the need to accommodate storm water, and the presence of the 500+ acre Cottage Grove Ravine Regional Park. These elements work together to create green fingers that meander throughout the East Ravine Area. These green elements have the ability to accommodate the movement of people, storm water and wildlife. They are also expected to enhance the value of new neighborhoods that in many cases, are nestled in to this rich green patchwork of spaces.

The Parks and Open Space Schematic identifies a range of parks and open space facilities which are both active and passive in nature. At the local level, the system includes neighborhood parks, community parks, parkways and conservation easement areas. Community parks vary in size but in some cases, occupy as much as 80 acres. Community parks are anticipated as the locations for the most intensive recreational activities such as baseball, softball, soccer, tennis, playgrounds and picnicking. Neighborhood parks are generally smaller in size and emphasize less intensive, more spontaneous recreational activities.

In addition to programmed and passive park areas, the Master Plan also preserves key open space areas, both as aesthetic elements in the landscape and in order to serve the functioning storm water conveyance and treatment areas.

The East Ravine area also provides opportunities for an extensive trail network. As was noted earlier in this section, trails are planned along all of the major roadways. Trails along County Road 19 (Keats Avenue) will continue to handle regional bicycle traffic. The trail network along the East Ravine Parkway will provide a central spine of trail and sidewalk connections that will help link neighborhoods as well as park and open space facilities.

As development plans for East Ravine neighborhoods begin to be assembled, the City of Cottage Grove will need to make sure that policies are in place to guide the acceptance of park dedication. The East Ravine Master Plan introduces a number of new park and open space elements including the East Ravine Parkway and the green corridors along major roadways. Portions of the open space lands in these areas are likely appropriate for park dedication credits.

Implementation of the East Ravine Master Plan will also involve private open space. Conservation easements are likely to be used to control land while leaving it in private ownership, in many cases as part of homeowners associations. Public access such as trail easements should be provided in key private open space areas.

Institutional (civic campus)	49 acres
Community Park	207 acres
Existing Conservation Easement	164 acres
Proposed Conservation Easement	356 acres
Water/Ponds	194 acres
Neighborhood Park	51 acres
Regional Corridors (greenways)	136 acres
Regional Park	506 acres

Neighborhood Parks:

- Planning Consideration: Access, Frequency
- 25-30 AC - Total Area of Stormwater Retention

- Playgrounds (Tot Poles)
- Open Fields (Soft Turf)
- Picnic Area
- Shelter
- Restrooms
- Drinking Fountains
- Benches

Community Parks:

- | | | |
|-----------------|--|---|
| A. 11 AC | <ul style="list-style-type: none"> • Field House • Picnic Area • Playgrounds | <ul style="list-style-type: none"> • Soccer Courts • Trails |
| B. 29 AC | <ul style="list-style-type: none"> • 2-4 Soccer Fields • 2-4 Softball Fields • 2 Hockey Rinks | <ul style="list-style-type: none"> • Tennis • B-Ball • Pavilion/Outdoor Food • Restrooms |
| C. 12 AC | <ul style="list-style-type: none"> • Open Field (14 AC) • Open Field (2 Basketball Fields) • Playgrounds | <ul style="list-style-type: none"> • Soccer Courts |
| D. 15 AC | <ul style="list-style-type: none"> • Basketball Pavilion • Restrooms • Open Field (2 Basketball Fields) | <ul style="list-style-type: none"> • Soccer Courts |
| E. 80 AC | <ul style="list-style-type: none"> • Softball/Playground/Field House (30 AC) • Open Field (Pavilion(s)) • Playgrounds (6) | <ul style="list-style-type: none"> • Open Field • Soccer, P-B • Basketball, P-B • Tennis / Outdoor Structures |
| F. 21 AC | <ul style="list-style-type: none"> • Softball/Playground/Field House (10 AC) • Soccer • Playgrounds (4) | |
| G. 29 AC | <ul style="list-style-type: none"> • Softball/Playground/Field House (10 AC) • Open Field • Soccer, P-B | <ul style="list-style-type: none"> • Playgrounds (6) • Picnic/Pavilion/Restroom • Soccer Courts |
| H. 6 AC | <ul style="list-style-type: none"> • Restroom(s) • Picnic/Pavilion | |

	Primary Conservation Elements
	Proposed Conservation Elements
	Regional Park
	Community Park
	Neighborhood Park
	Playway
	Recreational Corridor
	Proposed Stormwater Treatment
	Playway Water
	Civic Center Area

Figure 5-21
Park and Open Space Schematic

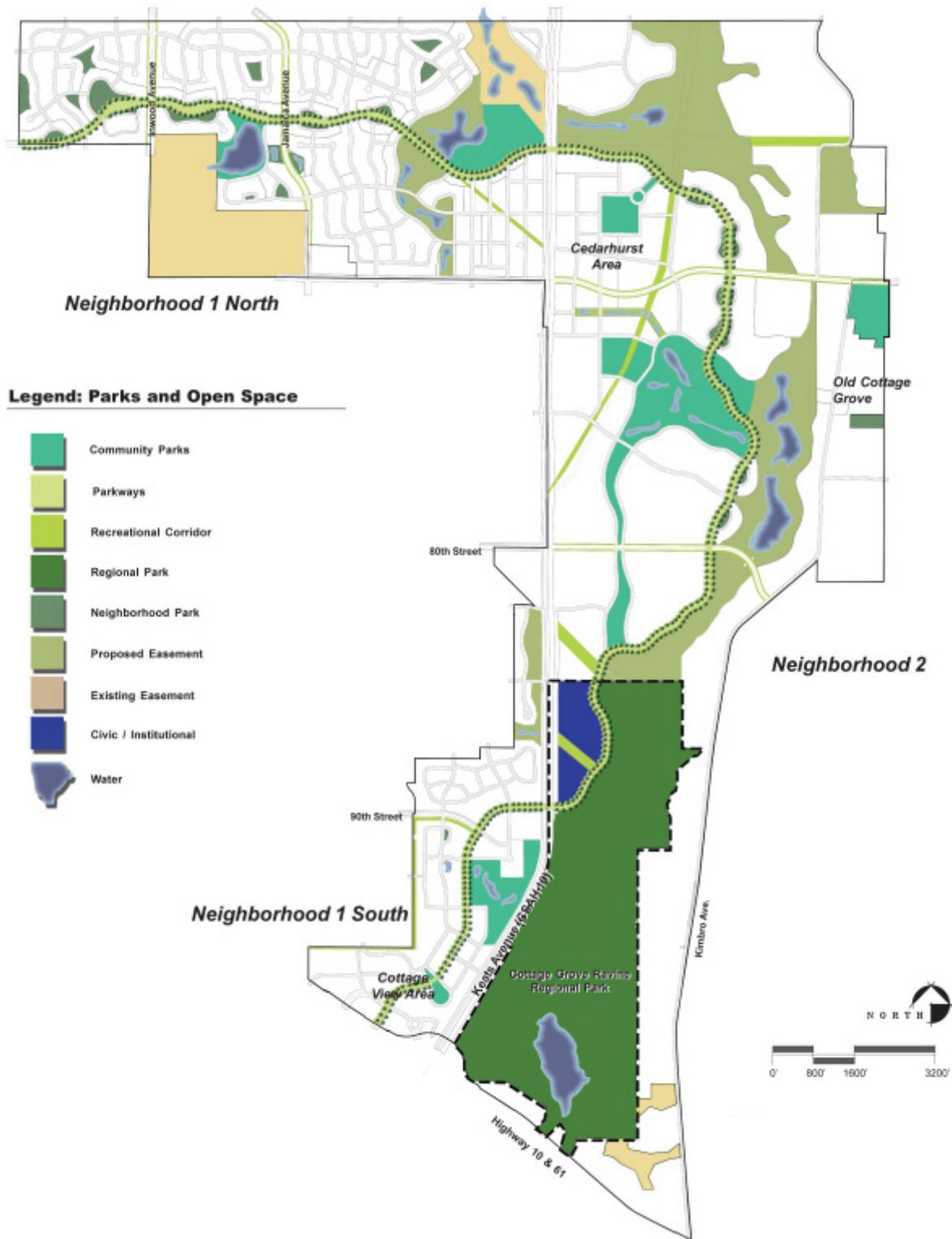


Figure 5-22
Park and Open Space Schematic

Transportation

The East Ravine project area is bisected by a series of County and City roadways. County Road 19 (Keats Avenue) runs north/south through the project area and is a key link to Woodbury and points to the north. Military Road and 70th Street, also County roads, provide increased mobility to points east and west of Cottage Grove. Highway 61 passes along the southern boundary of the project area. As development of the East Ravine area occurs in the years ahead, transportation improvements will need to keep pace with the construction of new residential areas and shopping districts.

The East Ravine Master Plan calls for a number of future roadway improvements. One of the central design features of the plan is the East Ravine Parkway, which establishes a central spine through the entire project area. The parkway is intended to provide two through lanes of traffic with a 35 MPH design speed, and bump-out parking at trailheads and commercial areas. In addition to accommodating vehicles, the parkway will be an important pedestrian and bicycle link through the area. Trails and sidewalks along both sides of the roadway will provide easy access to parks and other neighborhood areas.

Another key transportation change shown on the Land Use Plan is the rerouting of Military Road, west of County Road 19. The Military Road / 70th Street / County Road 19 intersection area has long been slated for improvement. The existing offset of the intersection creates hazardous turning movements and disrupts traffic flow. The roadway pattern on the Land Use Plan shows how Military Road traffic will now be carried by 70th Street and Jamaica Avenue. Discussions are underway with Washington County about adding the section of Jamaica Avenue north of 70th as part of the County Roadway system. The current diagonal alignment of Military Road will be removed. In its place will be either a new greenway trail (near Cedarhurst), part of the East Ravine Parkway or a new local street and residential development.

The Master Plan establishes a hierarchy of streets. A streetscape typology has been created to depict the various classifications of roadways identified in the plan. Roadways range in width and intensity from County Road 19, which is Washington County's large-scale parkway to new local residential streets.

At some point in the future, County Road 19 is likely to become four lanes from Highway 61 to the Woodbury border. As this roadway passes through the Cedarhurst area the roadway may take on a more urban feel with minimal structure setbacks and articulated lighting and landscaped areas, while along the remainder of the roadway, a more rural character is envisioned. Large utility easements in-conjunction with an expanded right-of-way would allow for slightly more than a football field's width of space where opportunities are present to provide meandering paths, development screening and naturalized plantings making these true recreational corridors.

The plan calls for reducing the width of local residential streets to 30 feet back to back.

Further review of the interchange of Highway 61 and County Road 19 will be required to explore required intersection/frontage road spacing and stacking. It will be important that the interchange and the frontage road works effectively at full commercial build-out, to ensure that the area functions at an acceptable level of service.

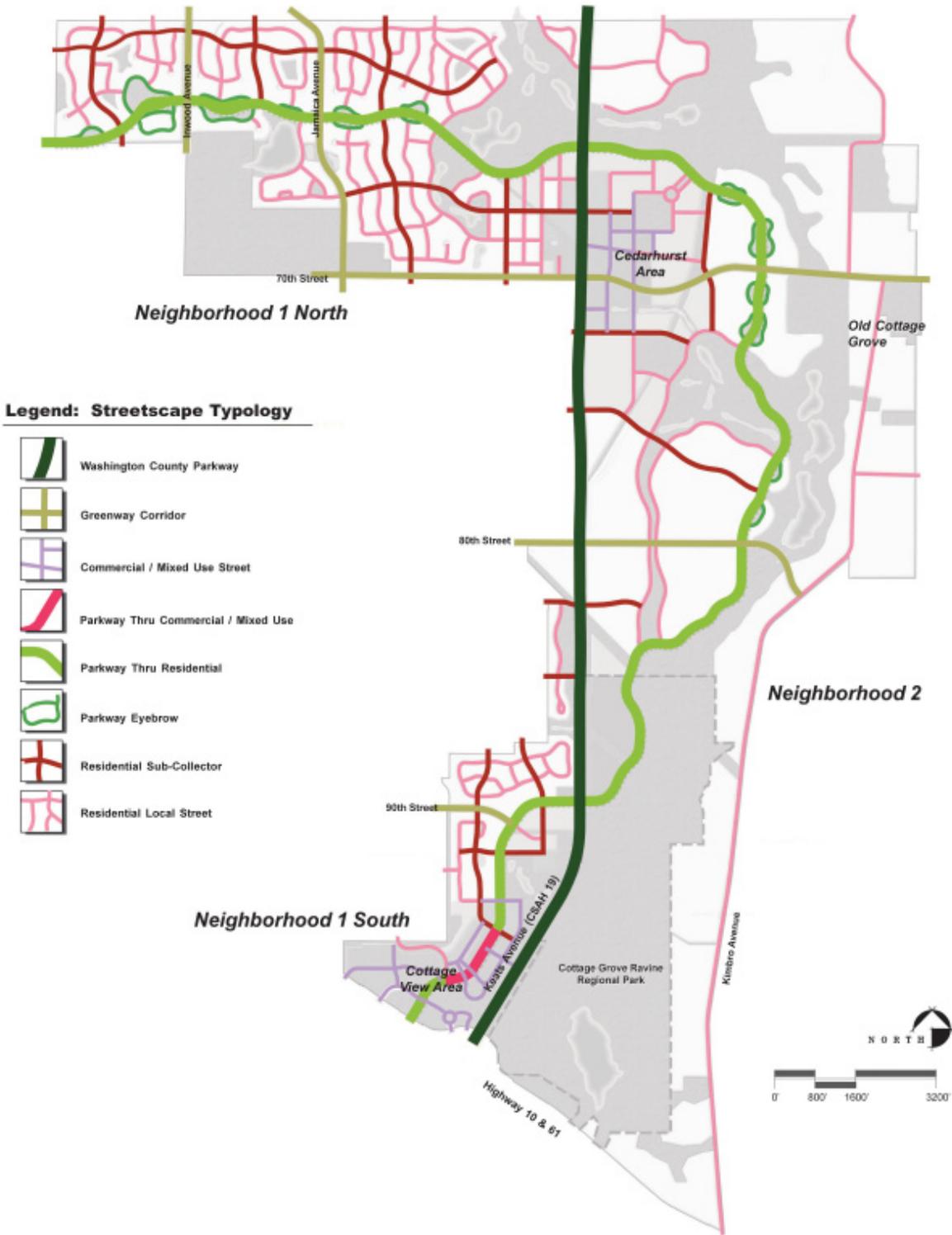


Figure 5-23
Street Typology

More detailed information about traffic and roadway improvements can be found in "Secondary Traffic Impacts - East Ravine Community", which is an appendix to the AUAR prepared as part of the East Ravine Pre-Design process. The traffic study identified key roadways and intersections for detailed analysis. They included:

Key Roadways

- US 61 between Glen Road and Kimbro Avenue
- CSAH 20 (Military Road) between Ideal Avenue and Lamar Avenue
- CSAH 22 (70th Street) between US 61 and CSAH 19
- 80th Street between US 61 and Kimbro Avenue
- Jamaica Avenue between Military Road and US 61
- CSAH 19 (Keats Avenue) between Dale Road and US 61

Key Intersections

- US 61/70th Street Ramps (3 intersections)
- US 61/80th Street Ramps (2 intersections)
- US 61/Jamaica Avenue Ramps (2 intersections)
- US 61/CSAH 19 (Keats Avenue) Ramps (2 intersections)
- US 61/Kimbro Avenue
- 80th Street/Jamaica Avenue
- 80th Street/CSAH 19 (Keats Avenue)
- 80th Street/Kimbro Avenue
- CSAH 20 (Military Road)/Lamar Avenue
- CSAH 22 (70th Street)/CSAH 19 (Keats Avenue)
- CSAH 22 (70th Street)/Jamaica Avenue
- CSAH 20 (Military Road)/Jamaica Avenue
- CSAH 20 (Military Road)/CSAH 19 (Keats Avenue)

The detailed traffic study contained an operation analysis for roadway segments and intersections. Roadway operations were evaluated by comparing average daily traffic counts with level of service bar charts. Intersections were evaluated using the expected intersection delay. At the present time, the intersection of CSAH 22 (70th Street)/Jamaica Avenue is the only intersection operating below the desired level of service.

Forecasted average daily traffic volumes were used to estimate future roadway operations and improvement needs. Forecasts were developed using the Washington County 2020 Travel Demand Model. Assuming the existing geometry, two of the seven roadways operated under congested conditions. Eleven of the eighteen intersections operated below the desired level of service. In order to mitigate roadway impacts due to growth, the Secondary Traffic Impacts - East Ravine Community report recommends the following:

Roadway Improvements

- Reconstruct Military Road (CSAH 20) as a four-lane road with turn lanes
- Reconstruct CSAH 19 (Keats Avenue) as a four-lane facility with turn lanes
- Realign the intersection of CSAH 20 (70th Street) and CSAH 19 (Keats Avenue) to be the major connection to US 61 and close the intersection of CSAH 20 (Military Road) and CSAH 19 (Keats Avenue)
- Discuss the possible closure of US 61 and Kimbro Avenue and a possible future interchange at US 61 and TH 95 (Manning Avenue) with Mn/DOT and other authoritative jurisdictions.

Intersection Improvements (Installation of Traffic Signals at the Following Locations)

- US 61 SB Ramp/CSAH 22 (70th Street)
- US 61 SB Ramp/Jamaica Avenue
- US 61 NB Ramp/Jamaica Avenue
- US 61 SB Ramp/CSAH 19 (Keats Avenue)
- US 61/Kimbrow Avenue, 80th Street/Jamaica Avenue
- 80th Street/CSAH 19 (Keats Avenue)
- CSAH 22 (70th Street)/CSAH 19 (Keats Avenue)
- CSAH 22 (70th Street)/Jamaica Avenue
- Jamaica Avenue/East Ravine Parkway
- CSAH 19 (Military Road)/East Ravine Parkway

Transit

The use of alternative modes of transit in Cottage Grove is limited. Implementation of the East Ravine Master Plan may lead to broader transit service in the future. The concentrations of residential density in the Cottage View and Cedarhurst areas will help build bus transit ridership. Bus connections to these areas may be very viable in the future as neighborhoods become established. In the meantime, Cottage Grove will continue to pursue transit opportunities. The City supports the existing park and ride and has backed the Red Rock Corridor Commuter Rail line that runs through the southern portion of the community. When implemented, the Red Rock Corridor will provide commuter rail service from Hastings to St. Paul. The preliminary planning process for the line is currently underway.

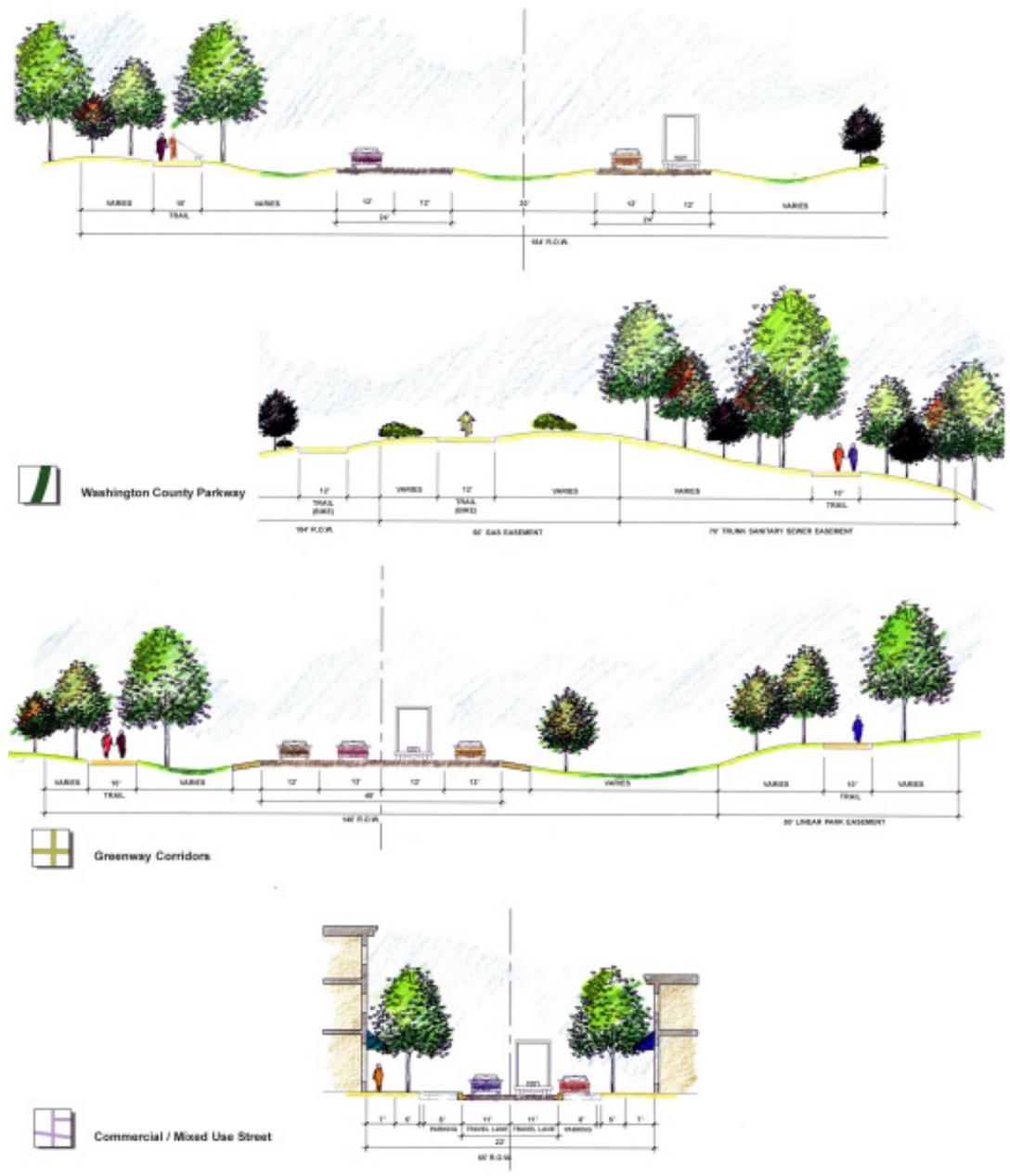


Figure 5-24
Streetscape Sections

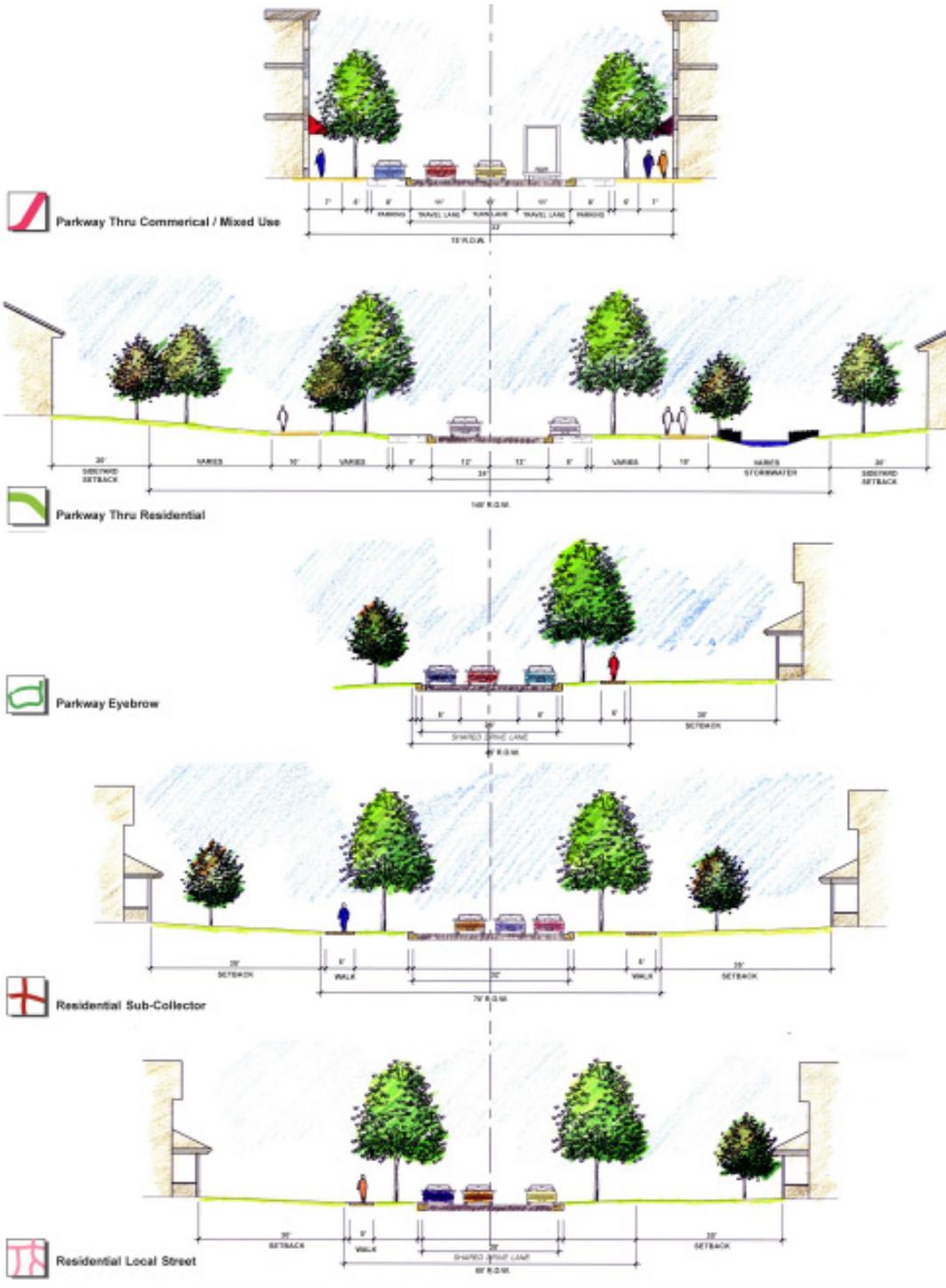


Figure 5-25
Streetscape Sections

Utilities

Sanitary Sewer

The preliminary sanitary sewer plan for the East Ravine Areas was designed in accordance with the Metropolitan Council Environmental Service (MCES) and Ten State Standard guidelines. The majority of the East Ravine area is served by the South Washington County Interceptor flowing north to south along County Road 19. This interceptor sewer line services the eastern 35% of Cottage Grove, as well as sanitary sewer districts in Woodbury other communities to the north in Washington County. Construction plans for Phases 1 and 2 of the interceptor were used to determine existing sewer stubs locations. These stubs were used as much as possible, however, in order to provide an efficient design some new connections to the interceptor needed to be made and are included in this preliminary plan.

The general design parameters for future wastewater flows were based on, 100 gallons per day per capita, 2.5 people per unit, with a peak factor of 2.5 for residential units, while commercial units were based on 1,200 gallons per day per acre. Low Density areas were assigned one unit per property, Medium Density assigned 6 units per acre, and High Density and Mixed Use received 24 units per acre for calculations. The design also mandates all pipe must be within the right-of-way and maintain a minimum of 10 feet of cover over all pipes.

Neighborhood 1 was divided into eight sub areas each connecting to the existing sanitary system at different locations, while Neighborhood 2 on the east side of Keats Avenue is divided into four more general sub areas, each connecting to the interceptor. The sewer system layout utilizes a minimum pipe size of 8 inches, with the sizing of larger pipe based on flows and/or minimum pipe slopes and corresponding sizes (larger than flow demands) to maximize service area. Because of a depression in the landscape, part of Area-A may be difficult to serve with gravity sewer without significant grading, or the installation of a lift station. The study examined three design alternatives for this area with the preferred alternative utilizing oversized pipe, which allows the pipe to be installed at a flatter grade and to maintain adequate cover. Some areas would require filling in order to maintain adequate cover. In order to serve Old Cottage Grove with future sewer service, a trunk line could be extended along 70th street to Lamar Avenue and then South along Lamar Avenue to 80th Street.

Overall, the preliminary layout consists of approximately 242,000 feet (46 miles) of sanitary sewer pipe with a total flow estimate of approximately 5.24 MDG. This flow estimate corresponds to the estimated population of roughly 21,000 people for Neighborhoods 1 & 2. The total estimated construction cost for Neighborhood One is \$6,340,000 and \$4,700,000 for Neighborhood 2. The estimated construction costs include the cost of installing the sanitary sewer pipe only. The construction costs for each sub-area are depicted in the table below, and more detailed information on the design of the sanitary sewer system can be found in the "Technical Memorandum - Cottage Grove East Ravine: Sanitary Sewer" prepared by HR Green as an appendix to the Cottage Grove East Ravine AUAR.

Area	Estimated Cost / Sub Area	Estimated Cost / Area	Totals
Trunk Extension to Area A-1	\$ 390,000		
Lift Station	\$ 200,000		
A-1	\$ 650,000		
A-2	\$ 900,000		
A-3	\$ 700,000		
A-4	\$ 700,000		
A-5	\$ 850,000		
Total Area A		\$ 4,390,000	
B		\$ 310,000	
C		\$ 280,000	
D		\$ 670,000	
F		\$ 100,000	
G		\$ 500,000	
H		\$ 90,000	
Total Neighborhood 1			\$ 6,340,000
I		\$ 340,000	
J-1	\$2,100,000		
J-2	\$ 550,000		
Total Area J		\$ 2,650,000	
K		\$ 1,550,000	
L		\$ 160,000	
Total Neighborhood 2			\$ 4,700,000

Figure 5-27
Estimated Construction Costs for Sanitary Sewer

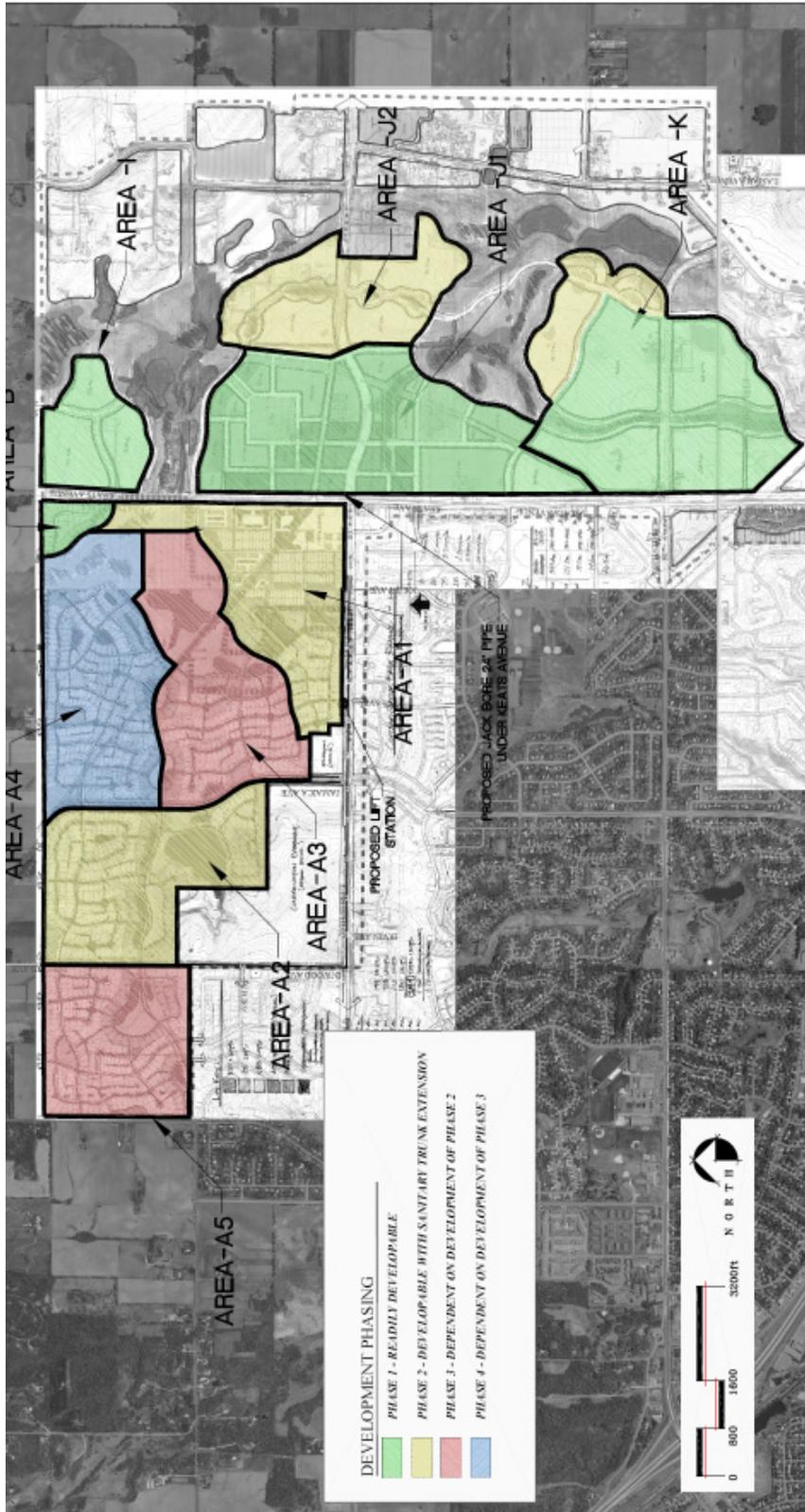


Figure 5-28
Sanitary Sewer Impacts and Improvement Plans

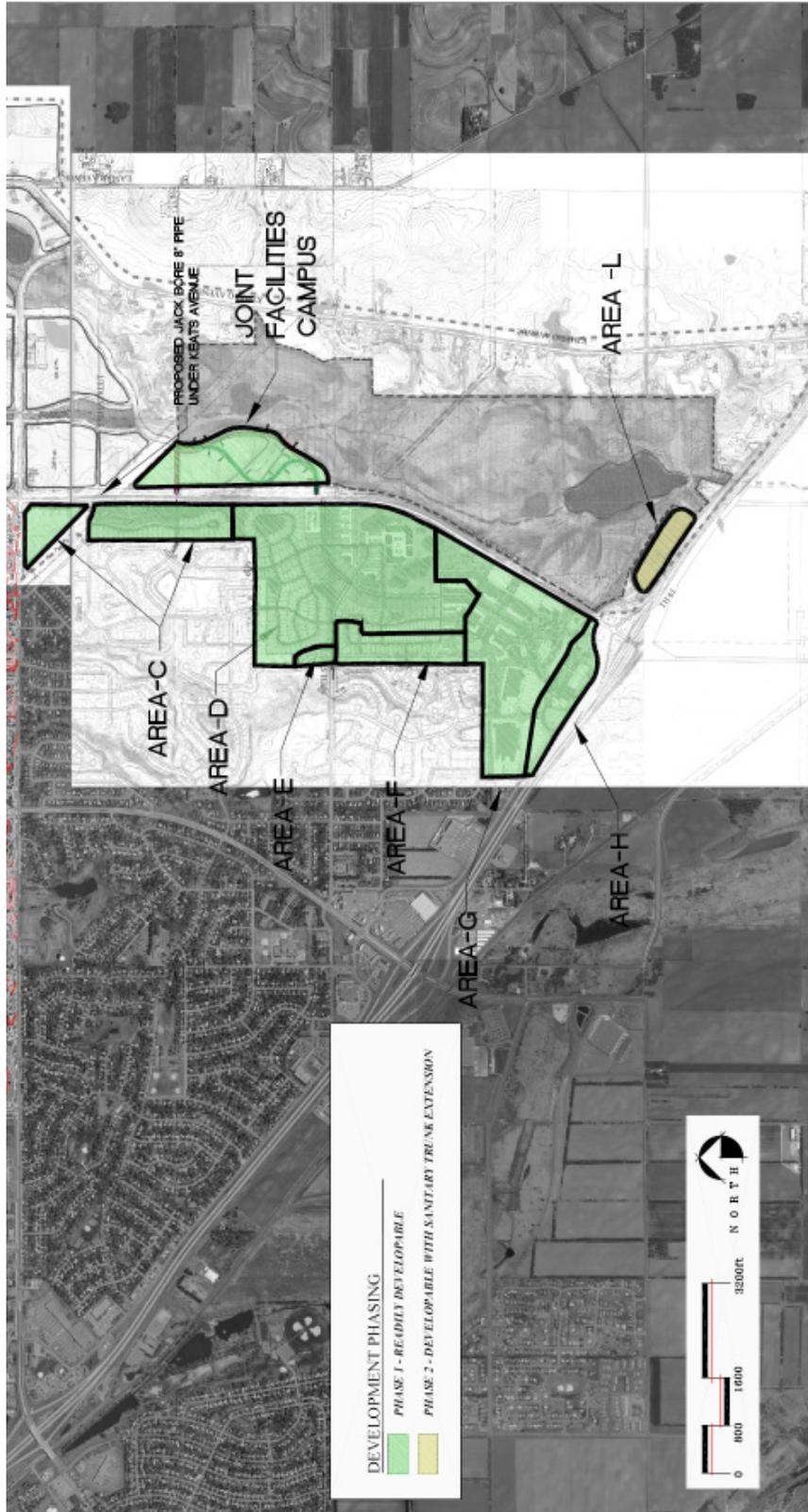


Figure 5-29
Sanitary Sewer Impacts and Improvement Plans

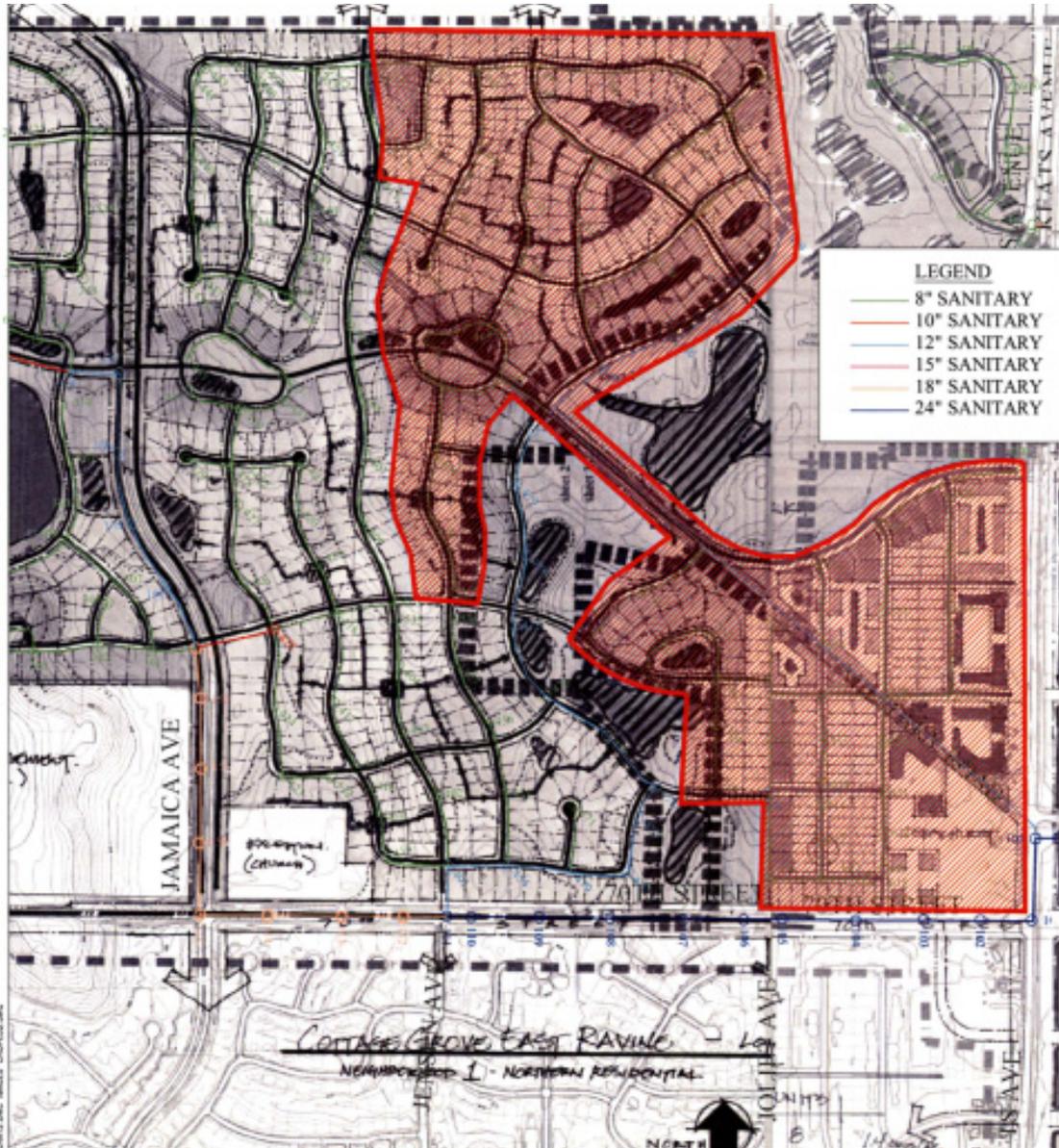


Figure 5-30
Sanitary Sewer Impacts and Improvement Plans - Alternative One (Preferred)

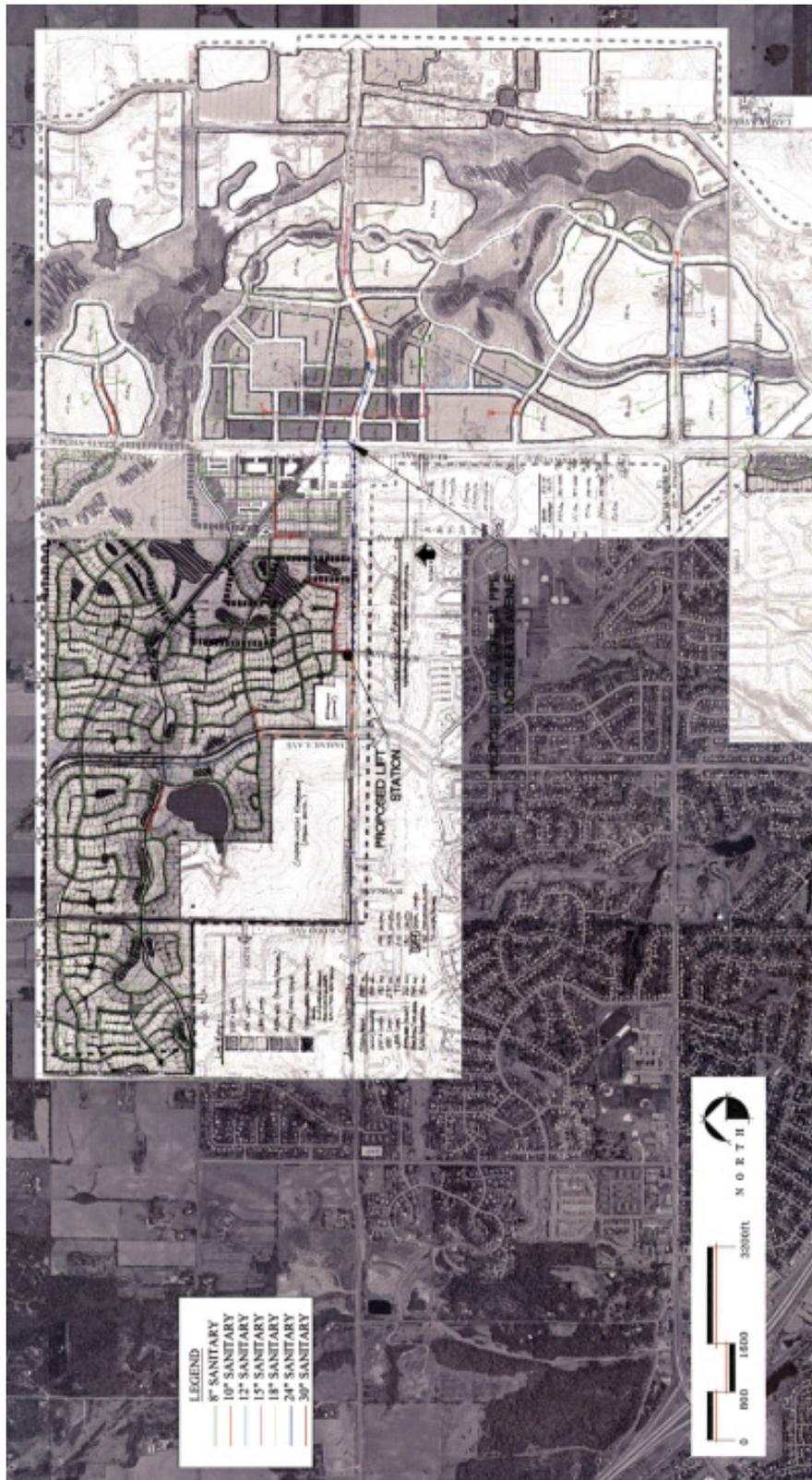


Figure 5-31
Sanitary Sewer Impacts and Improvement Plans

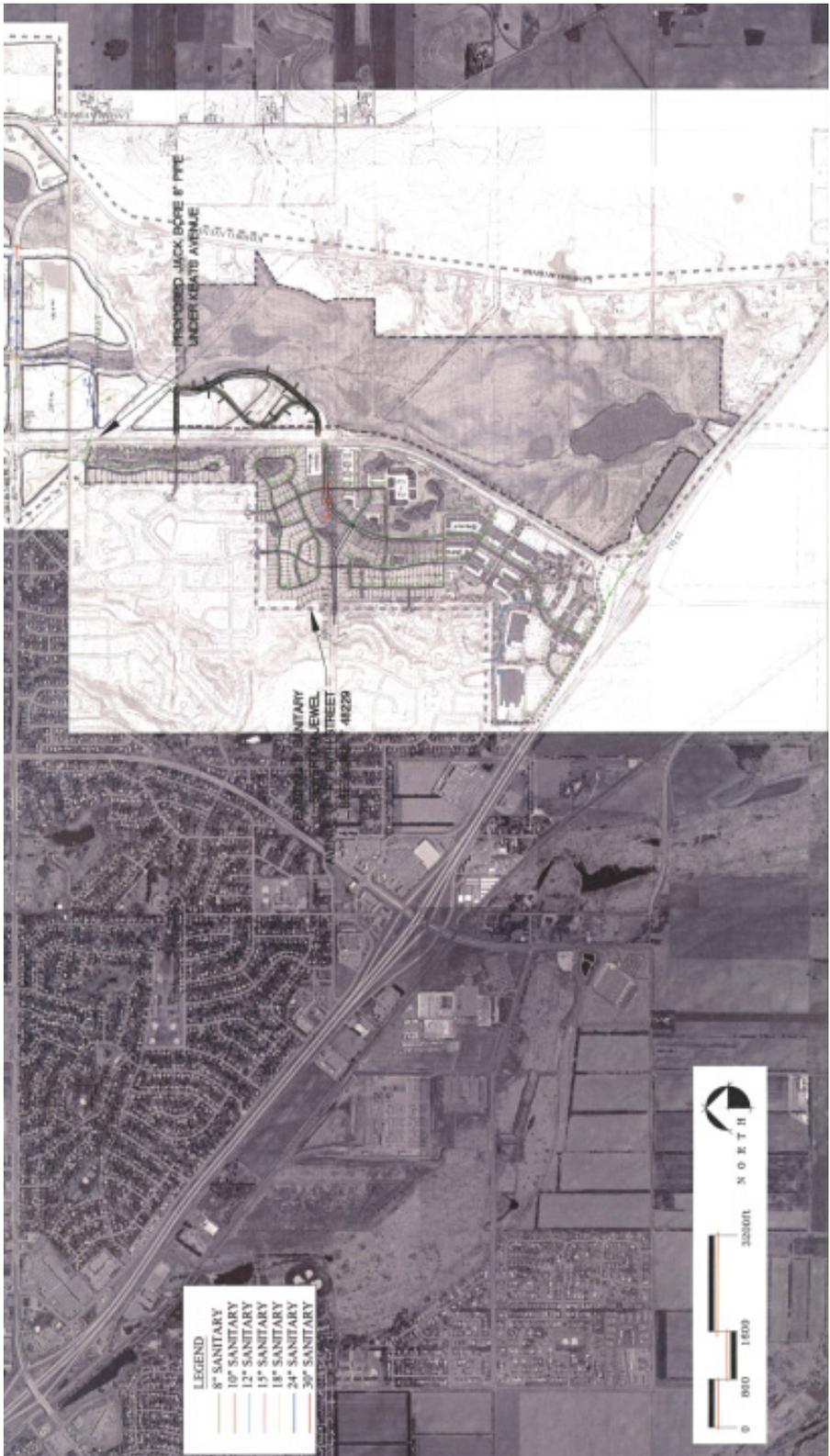


Figure 5-32
Sanitary Sewer Impacts and Improvement Plans

Water

Preliminary plans for the public water supply in the East Ravine Area were prepared as part of the Master Plan. The design echoed the preliminary plat level of detail in Neighborhood 1 and the broader land use level of detail in Neighborhood 2. The Water Supply Distribution Plan dated December 1995, by Bonestroo Rosene Anderlik and Associates (BRAA) was utilized as a guide in locating both existing and future trunk lines and water towers. Overall, the plan consists of approximately 290,000 linear feet (55 miles) of watermain pipe and 3.0 MG of elevated storage to serve the roughly 5400 units. The total cost of the water supply improvements is estimated at \$19,260,000.

Generally, the watermain layout is a looped system that follows the development plan for Neighborhoods 1 & 2 and makes connections to the existing watermain stubs in logical locations. The water supply plan recommends the use of an 8-inch diameter pipe, rather than the current 6-inch diameter pipe predominantly found in the City's residential areas. This larger pipe size will allow for adequate fire flow while still maintaining normal pressure levels for residential service. The commercial and mixed-use areas at Cottage View and Cedarhurst should utilize 12-inch watermain to adequately provide fire flow for larger buildings. In the future, Old Cottage Grove could receive water service through a trunk watermain extended east along 70th Street, 80th Street and then looped north and south along Lamar Avenue.

Two water towers are proposed in the East Ravine. The first, located near 70th Street and Keats Avenue, near the Cedarhurst Area would have a storage capacity of 2.0 MG. The Old Cottage Grove area would house the second tower with 1.0 MG of storage near the intersection of 70th Street and Lamar Avenue. Currently, the existing water supply and treatment for the East Ravine area will be provided outside of the study area at the City's water treatment plant south of Highway 61, and based on the proposed unit numbers the existing well field meets the needs for the future of the East Ravine area. The phasing of the water system is largely dependent upon the sanitary sewer infrastructure, as watermain construction will follow along with the sanitary sewer construction.

More detailed analysis and modeling of the water system will need to be conducted as development projects are brought forward in order to pinpoint the exact location of the two new water towers and timeline for when these would need to be built, as well as to analyze high and low pressure areas and overall system performance.

More detailed information on the future water system can be found in "Technical Memorandum - Cottage Grove East Ravine Planning Study: Watermain" prepared by HR Green as found as an appendix to the Cottage Grove East Ravine AUAR.

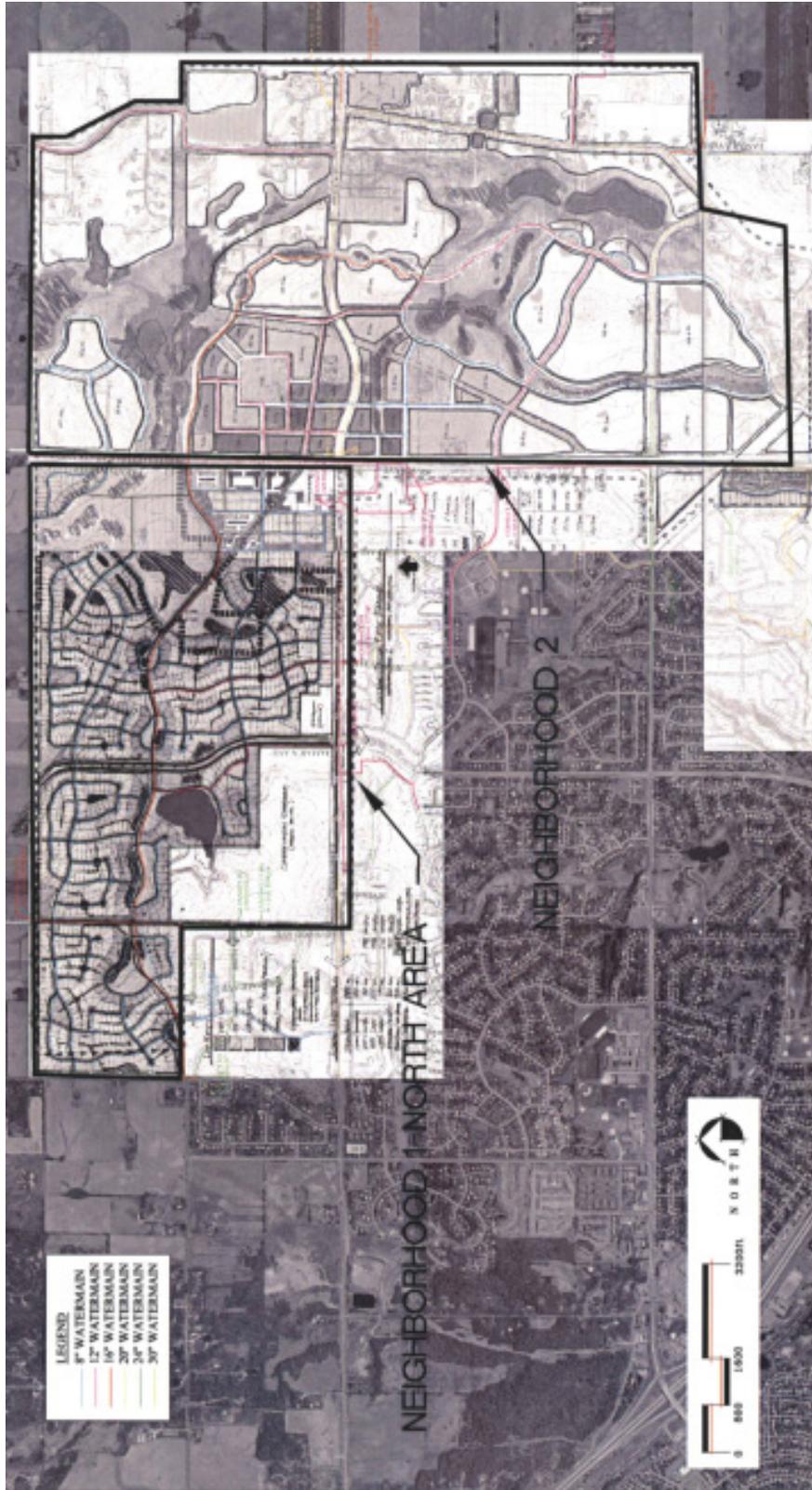


Figure 5-33
Watermain Impacts and Improvement Plans

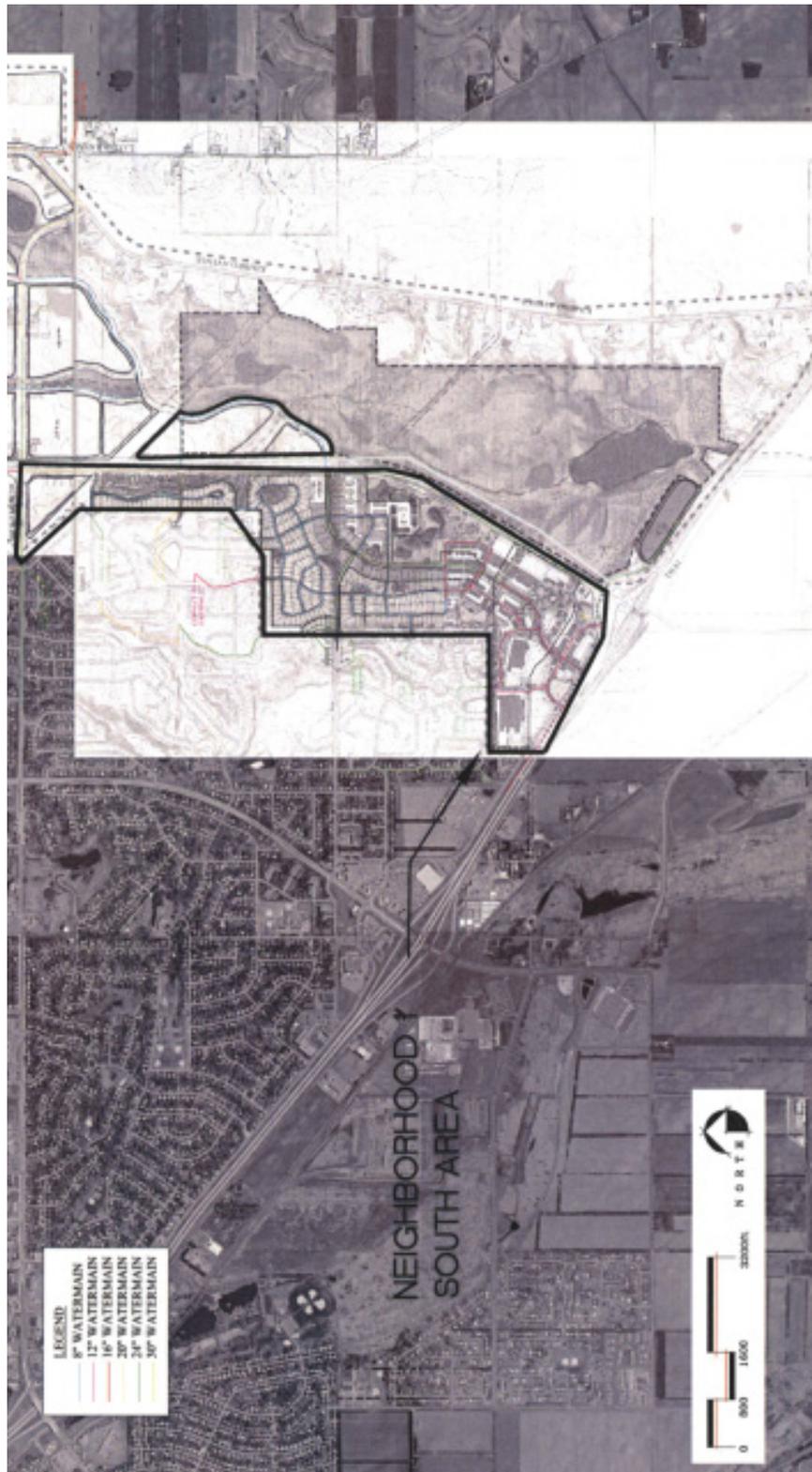


Figure 5-34
Watermain Impacts and Improvement Plans

Storm Sewer

The overall goal of the stormwater management for the East Ravine is to minimize the generation of stormwater runoff created by development and to retain the runoff in a series of natural infiltration basins, rather than concentrating runoff to a single point for collection, treatment and discharge. This approach mimics the current infiltration patterns that presently exist in the East Ravine, which is an area favorable to infiltration due to the sandy soils and the significant depth to any groundwater or bedrock. The end result will be minimization and, in some areas, avoidance of discharge of stormwater to surface waters; which in turn will lessen the overall amount of pollutants associated with the stormwater like the Mississippi River; resulting in less burden on the environment.

The detailed "Stormwater Management Report" found as an appendix to the Cottage Grove AUAR details a combination of efforts to create an effective management strategy for treating stormwater. The goals of the management strategy are to ensure responsible, proactive management of stormwater, to protect local and regional water resources, and also provide a reasonable level of safety for houses and other structures from regional flooding. The approaches are:

- Construct a city-based stormwater management system (ponds and/ infiltration basins) along parkways and in green spaces that utilizes existing infiltration capacities of the soils;
- Cooperate with the South Washington Watershed District (SWWD) towards combined Cottage Grove/SWWD stormwater and infiltration management areas;
- Require developers to include local and on-site infiltration as part of their
- development plans equivalent to approximately 15% of the runoff of the 5-yr event which is approximately 0.2" of runoff; and
- Provide emergency overflow routes from stormwater management basins in the event that a storm occurs which is greater than the design storm for these basins.

In addition to the environmental benefits of this strategy, maintaining natural basins for stormwater management is has positive aspects on phasing of construction. Typically, stormwater management systems of interconnected storm drains and NURP ponds must be phased such that the most downstream area is constructed first. Construction phasing for this system of independent drainage basins can be linked to the phasing needs of the other components of the public infrastructure (sanitary sewer, roads, and/or water distribution). However, the construction within each drainage basin should start with the stormwater basins. In most neighborhoods, this would require that the green spaces and parkways be constructed first. Once the basins are in place and operational, then the storm drains can be connected to each basin. If it is necessary to break the drainage basins into smaller phases, then the lowest stormwater basins should be constructed in the early phases, proceeding to upper stormwater basins in the later phases. The Stormwater Phasing Diagram outlines the areas of each drainage basin that should be considered a single phase.

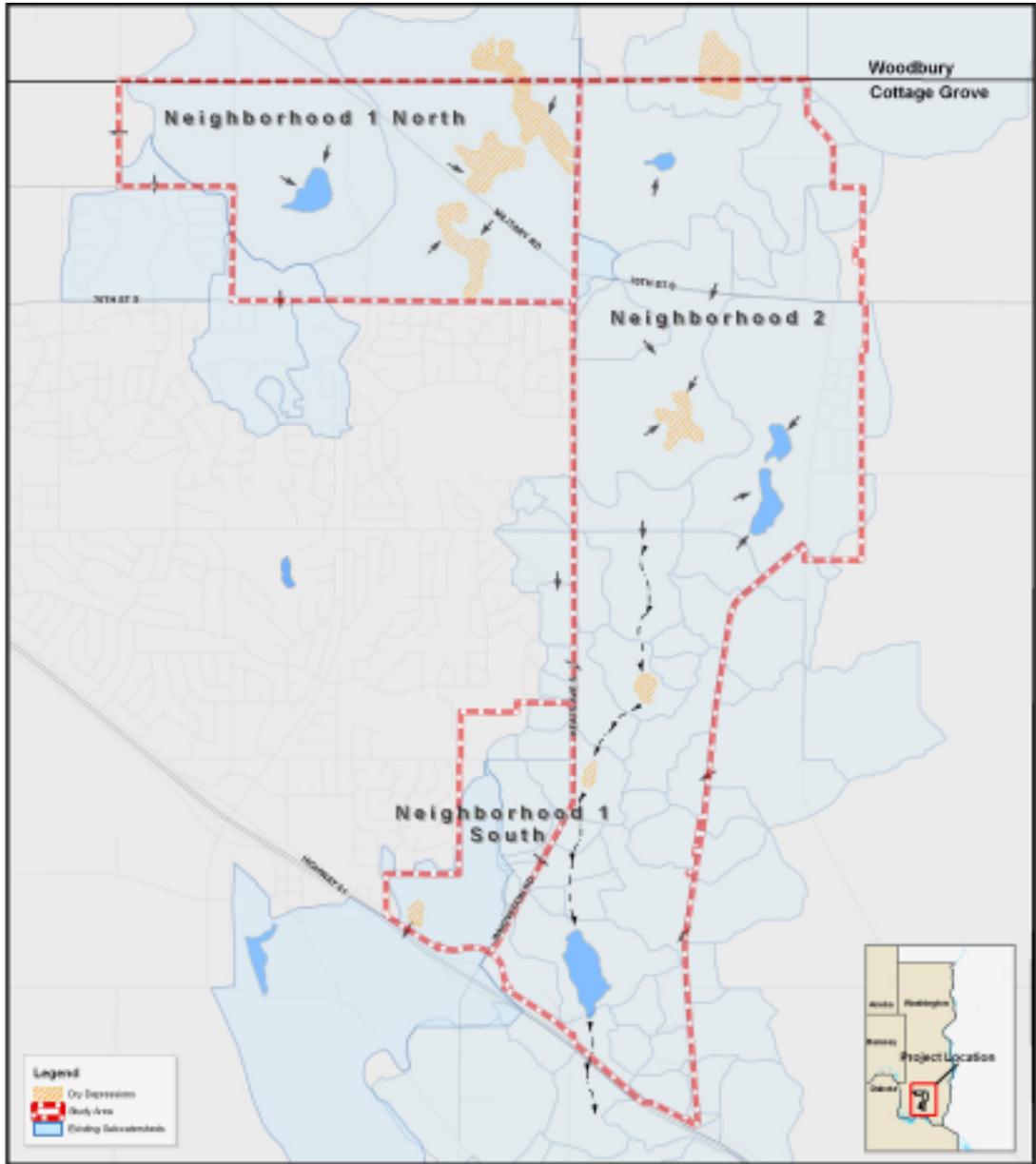


Figure 5-35
Storm Water - Existing Conditions

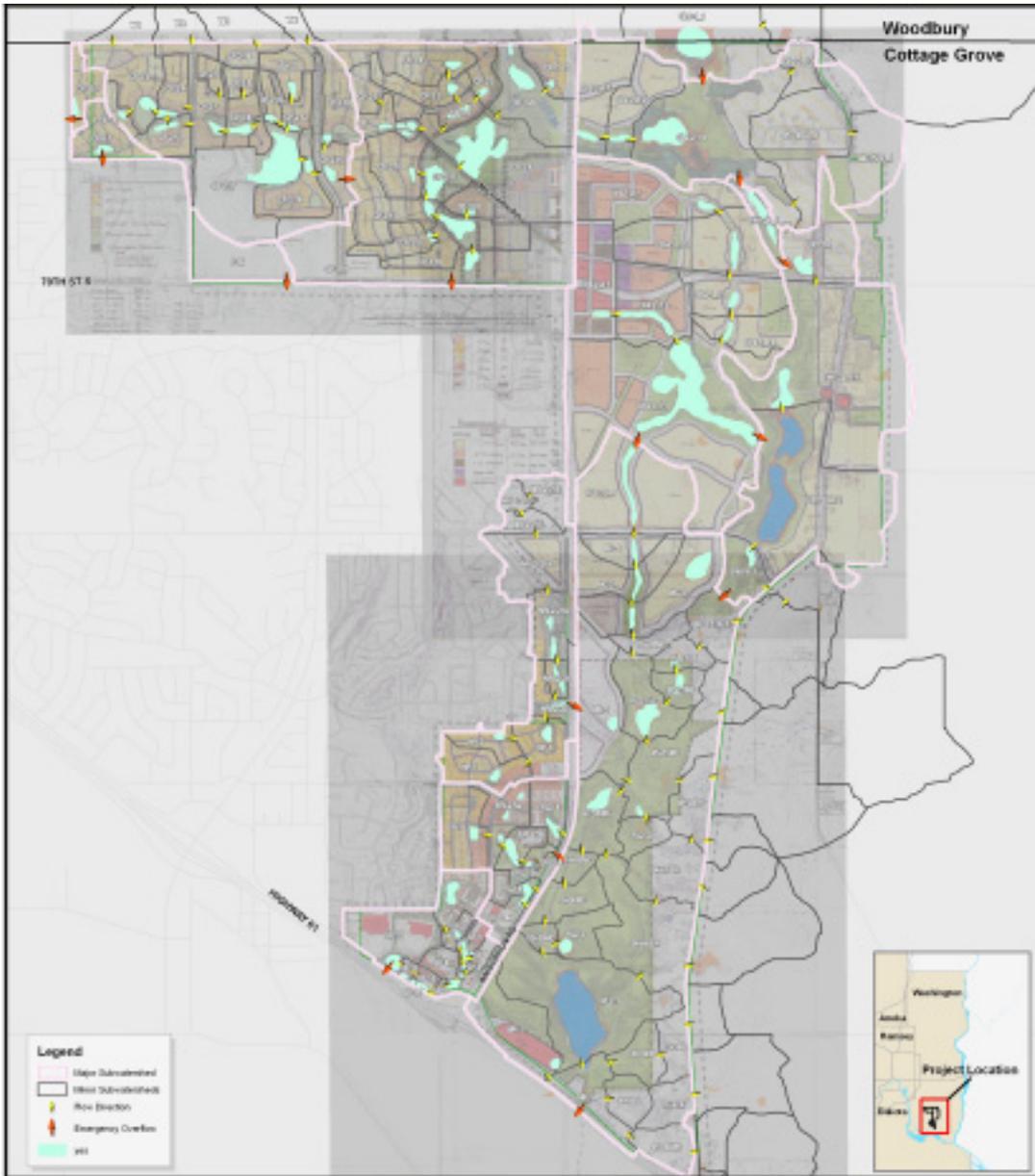


Figure 5-36
Storm Water - Existing Conditions

Generally, stormwater management areas occur along the parkway throughout Neighborhoods 1 and 2. These areas will be utilized to collect, infiltrate and direct any overflow of runoff from adjacent neighborhoods. The overflow from the parkway basin areas will be directed to larger, natural infiltration basins, such as the SWWD basin in Neighborhood 1 North. These larger basins have the capacity to infiltrate all the runoff from a 100-year storm event. Beyond the 100-year event, emergency overflow must be accommodated either through the existing Cottage Grove drainage system (the Central Draw) and / or through the future regional stormwater conveyance system planned by SWWD.

The South Washington Watershed District (SWWD) has begun to implement a regional project which will convey runoff through the East Ravine project area in a system of detention areas and interconnecting pipes. At the present time, the SWWD has completed land acquisition for an approximately 150 acre area of Neighborhood 1 North. When fully complete, the SWWD system will create a stormwater link to the Mississippi River. The SWWD has expressed a willingness to work with the City of Cottage Grove towards a combined City/Watershed District stormwater management system. The proposed Cottage Grove stormwater plan utilizes the natural detention areas acquired by the SWWD, but does not anticipate the need to rely on the proposed connecting storm drains, thereby protecting the Mississippi River and minimizing inputs to the regional park from the effects of local urbanization.

As with the water and sanitary sewer system, construction cost estimates were also prepared as part of the stormwater management plan for the East Ravine. Costs for the construction of storm drains and basins, including mobilization, erosion control, engineering fees and a contingency are included in the estimates. Any projects contained in the Cottage Grove CIP or the Cottage Grove Surface Water Management Plan are not included. The table below summarizes the costs for the stormwater management components of the East Ravine.

Neighborhood	Drainage Basin	Storm Drain Cost	Basin/Pond Cost	Total Cost
1N	CP-2	\$2,400,000	\$4,400,000	\$6,800,000
1N	CP-3	\$4,400,000	\$2,700,000	\$7,100,000
1N	CP-6	\$200,000	\$120,000	\$320,000
1N	CP-25	\$100,000	\$130,000	\$230,000
2	All	\$10,500.00	\$12,500,000	\$23,000,000
1S	NP	\$900,000	\$450,000	\$1,350,000
1S	EP	\$1,100,000	\$370,000	\$1,470,000
1S	SP	\$800,000	\$1,200,000	\$2,000,000
Total		\$20,400,000	\$21,870,000	\$42,270,000

Figure 5-37
Storm Water Cost Estimates

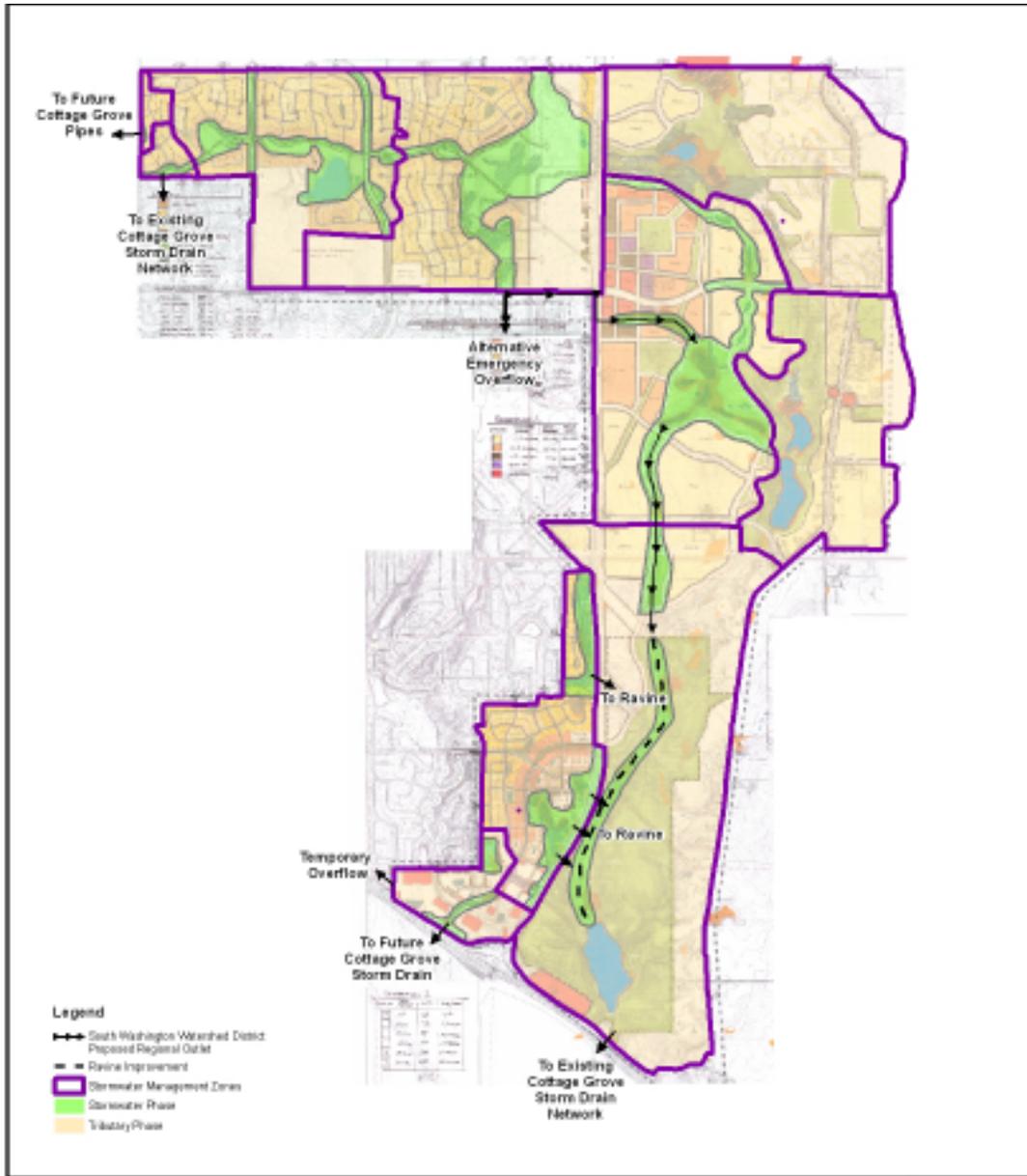


Figure 5-38
Storm Water - Phasing

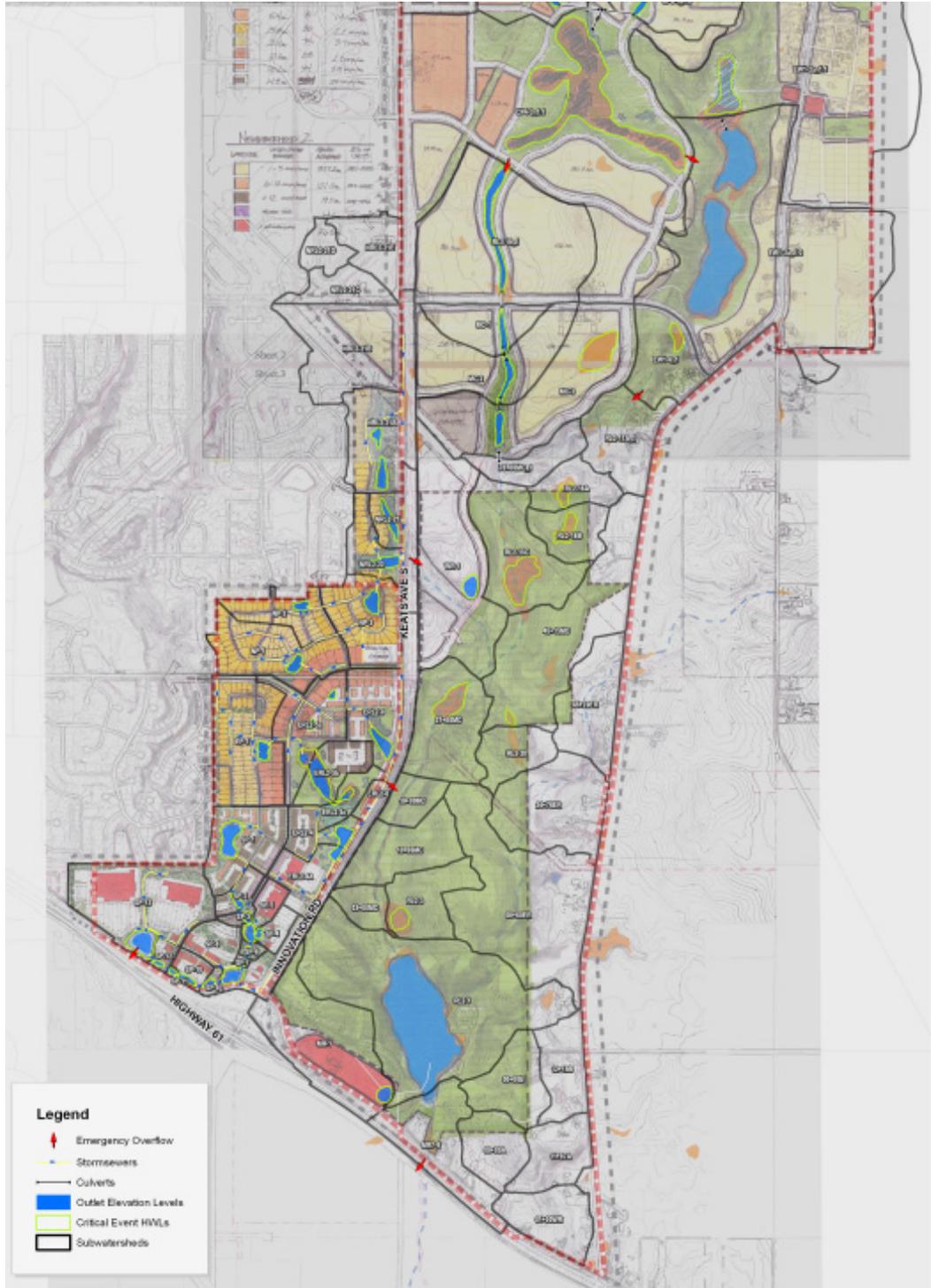


Figure 5-39
Storm Water Management Basins



Figure 5-40
Storm Water Management Basins

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Development in the East Ravine Area is expected to occur over the next twenty years or more. The completion of the regional sanitary sewer interceptor along Keats Avenue sets the stage for phased development.

Development of the East Ravine Area involves both governmental entities and private developers. The role of the governmental entities is to provide the required infrastructure to support new residential and commercial growth. The Metropolitan Council took a big step in enabling development in the East Ravine with the construction of regional sanitary sewer improvements. The South Washington Watershed District has been planning and implementing components of the future storm water system that will serve the area. The City of Cottage Grove has taken a significant step in the provision of infrastructure with the preparation of this Master Plan. Within this document and related Technical Memorandums, engineering detail is provided on required roadway, sanitary sewer, water and storm water improvements.

Implementation of the East Ravine Master Plan will involve a phased approach. Phasing of development typically involves a logical pattern of utility extensions that seek to maximize past system investments and sequence future investments in a sound manner. From the beginning of the East Ravine Master Plan process, the City of Cottage Grove had a general concept of the phasing of the project area. That concept arose from the 2000 Cottage Grove Comprehensive Plan and detailed utility studies. The general concept was to phase development from west to east. Accordingly, the two areas west of Keats Avenue were designated as Neighborhood 1 and the area east of Keats Avenue was designated as Neighborhood 2. These monikers both identified the areas geographically and implied long-term implementation phasing.

As shown on Figure 6-2, the phasing plan for the East Ravine Area includes three phases. Both areas of Neighborhood 1 are shown as part of Phase 1 which is expected to get underway in late 2006. Neighborhood 1 North will see development prior to significant development in Neighborhood 1 South due to utility extensions and likely market conditions. Neighborhood 1 South is the home of an expanded commercial node containing as much as 600,000 square feet of commercial space. The retail market will likely need additional “rooftops” to spur development. Accordingly, portions of Neighborhood 1 South may not fully develop until a substantial number of new housing units are constructed in Neighborhood 1 North and even portions of Neighborhood 2.

The phasing of development in Neighborhood 2 will occur in two stages. The Cedarhurst neighborhood area straddles the line between Neighborhoods 1 and 2. Areas around Cedarhurst are envisioned as developing prior to the remainder of Neighborhood 2. The balance of Neighborhood 2 will be the final phase of the development. The Old Cottage Grove area is located in the final stage, Phase 3. The East Ravine Master Plan reflects the existing development pattern in Old Cottage Grove. Development west of Old Cottage Grove provides the ability to serve the area with sanitary sewer and municipal water should such service be required by environmental considerations or desired by area residents.

Adoption of all of the components of the East Ravine Pre-Design including the East Ravine Master Plan, the East Ravine AUAR and related Comprehensive Plan amendments sets the stage for development of the area. It also establishes the need for a number of other related follow-up actions. Key among those actions are updates to the Cottage Grove Capital Improvement Program (CIP), the establishment of design standards, the modification of zoning provisions, a review of park dedication requirements and the establishment of an acceptable rate of growth. Each of these actions is reviewed as follows:

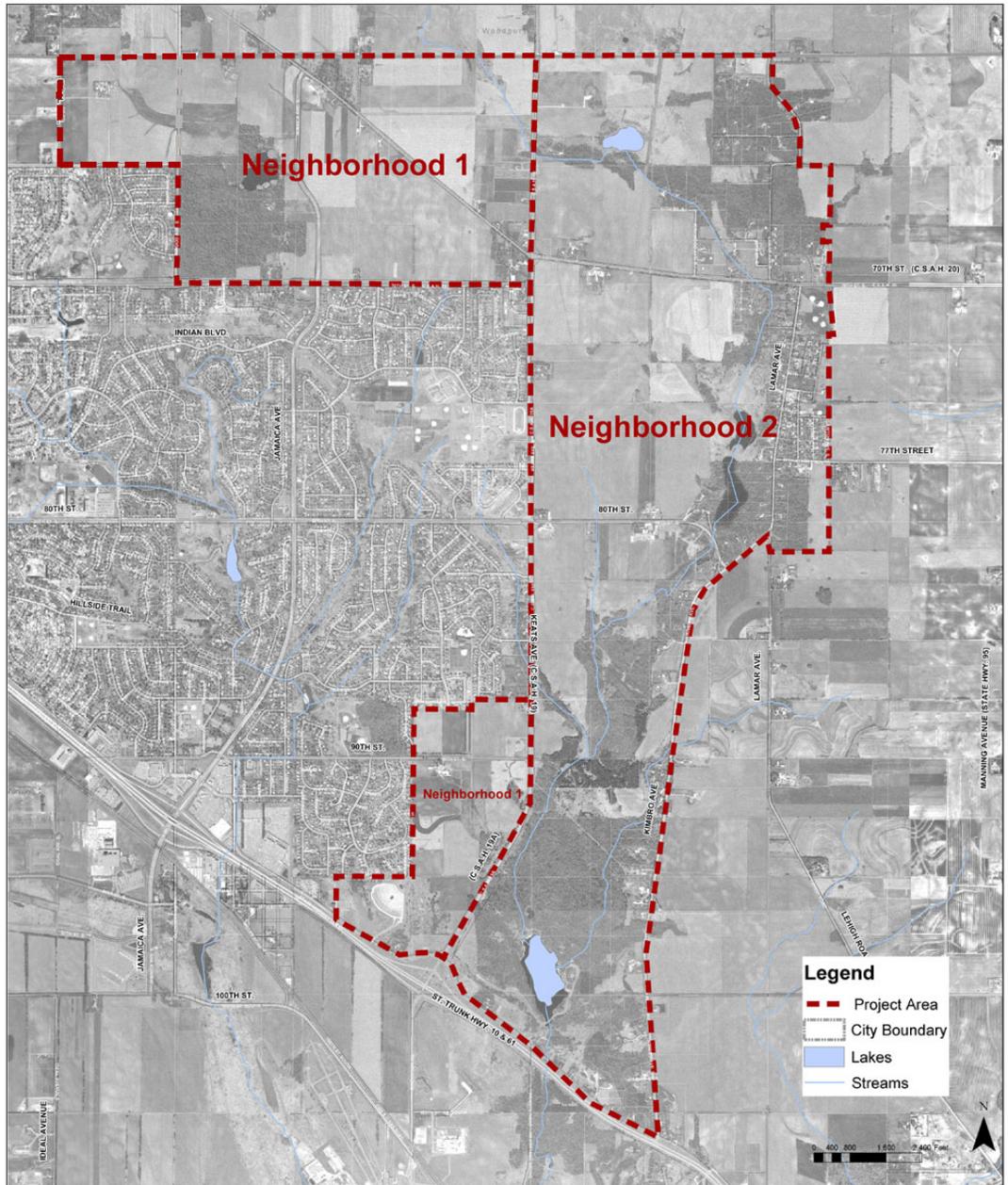


Figure 6-1
Neighborhood Areas

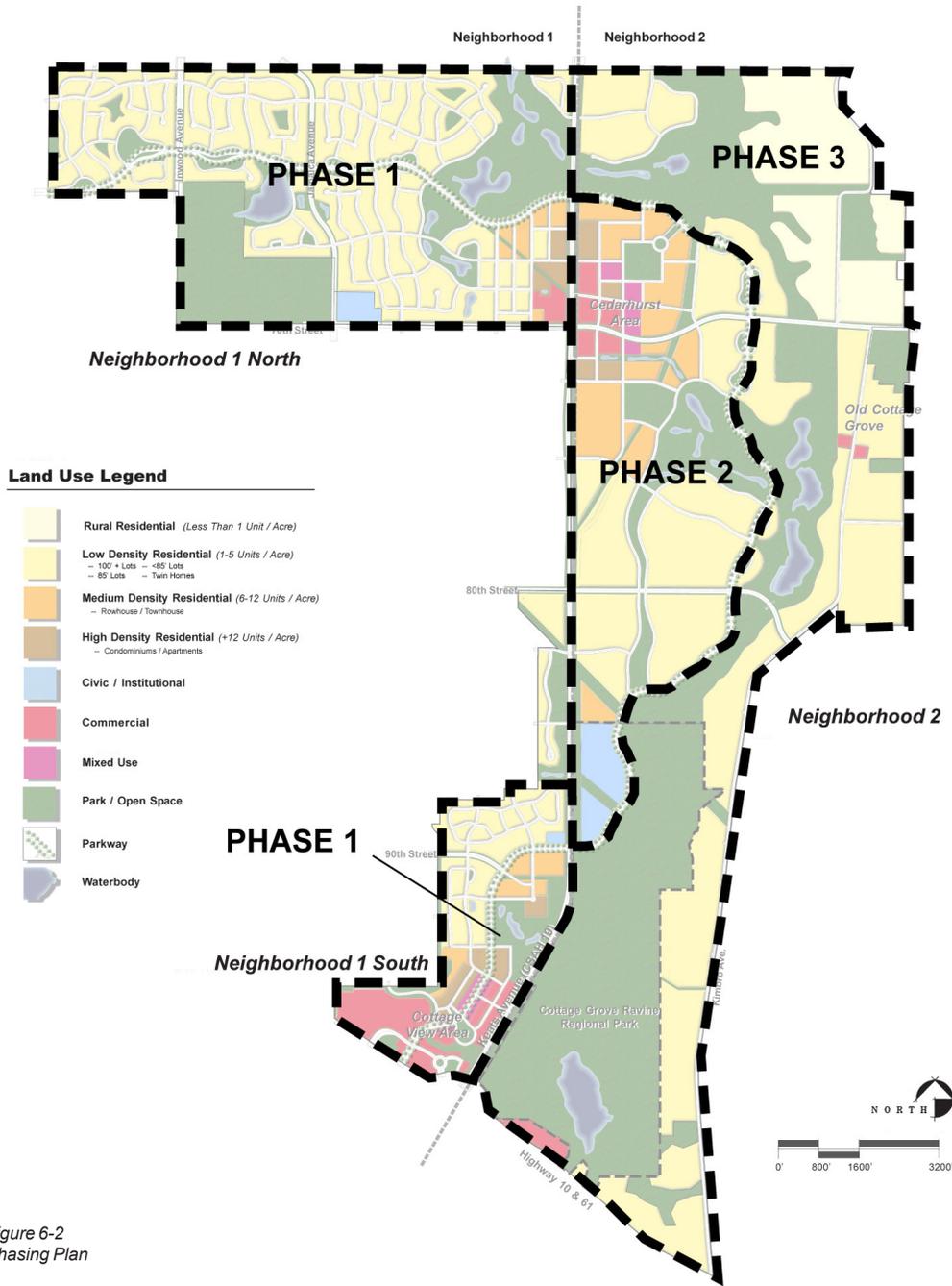


Figure 6-2
Phasing Plan

Capital Improvement Program

The Technical Memorandums accompanying the AUAR provide specific engineering recommendations on the design, phasing and cost of the water, sanitary sewer and storm sewer improvements. This information needs to be incorporated into the Cottage Grove Capital Improvement Program along with identified funding methods and sources.

Design Standards

One of the goals of the East Ravine Master Plan is to provide an attractive residential environment that encourages a range of housing opportunities including move-up housing. In order to establish high quality development and to promote added value, the City of Cottage Grove needs to establish design standards for new development. Design standards should address physical aspects of buildings such as exterior materials as well as aesthetic enhancements such as landscaping, lighting and signage provisions.

Zoning Ordinance

The East Ravine Master Plan creates opportunities for development forms that will be new to Cottage Grove. The Cedarhurst and Cottage View areas are likely to see some mixed use development with commercial uses on the ground floor and residential above. The Cottage Grove Zoning Ordinance should be reviewed to ensure that it accommodates such development forms and contains appropriate standards.

Park Dedication

Parks and open space are major components of the East Ravine Master Plan. The implementation of the East Ravine Parkway and the green corridors along major roadways may require a different approach to park dedication. The City should conduct a comprehensive review of its park dedication requirements to make sure that they adequately address a number of related issues including linear green space, policies on the provision of private open space, land required for active parks and land required for passive open space areas. The City should also explore the use of conservation easements to ensure the perpetual retention of open space areas.

Rate of Growth

The rate of development in the East Ravine will be controlled by two key factors, market demand and City growth policies. Market demand will fluctuate over time due to land supply, land costs, mortgage rates and a number of other external factors. City growth policies can directly control the rate of development. Cottage Grove needs to carefully address the rate of growth in the East Ravine area. Given limited staff and fiscal resources, the City may want to establish appropriate development thresholds that could be implemented through utility phasing or if needed, by imposing reasonable caps on annual building permits.

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Appendix A – Document Summary

The following is a summary of some of the documents that were reviewed as part of the East Ravine Pre-Design process.

Cottage Grove Comprehensive Plan Summary

City of Cottage Grove

Adopted October 18, 2000

Intent of Document

The intent of the Cottage Grove Comprehensive Plan is to guide the long term growth and development of the City.

Key Information and Findings

Land Use

Key Goals & Policies

- Enhance the image of the city as a desirable place to live
- Revitalize residential, commercial & industrial areas where needed to maintain high quality development in the City
- Encourage the development of major commercial and industrial areas in planned and concentrated centers
- Maintain a compact growth pattern, make efficient use of roads and sewers and concentrate urban scale development within the Municipal Urban Service Boundary (MUSA)
- Coordinate Land Use
- Offer a range and mix of housing types
 - Use high density residential as a transition use from single family residential to other more intense uses
 - Encourage moderate increases in densities in new or existing neighborhoods by considering things such as PUD, cluster housing, and zero lot lines.
- Recognize agriculture as a permanent and viable land use
- Make efforts to protect and preserve natural resources and environmental systems

Existing Land Use and the Municipal Urban Service District (MUSA)

- East Ravine Pre-Design Study area is outside of the MUSA and is classified as Commercial Agriculture, Land Participating the Metropolitan Agricultural Preserves Program, and General Rural Use Area
 - The Metropolitan Agricultural Preserves program protects the farmer from urban assessments and property taxes in exchange for a commitment to continue farming for at least 8 years.
 - The Commercial Agriculture Area consists of land that is eligible to participate in the program, regardless of actual participation.
 - General Rural Use Area land uses are agriculture, commercial, industrial, and low-density residential development that does not create a need for urban services. It is anticipated that much of the area will eventually be included in the MUSA and be developed into an urban residential land use.

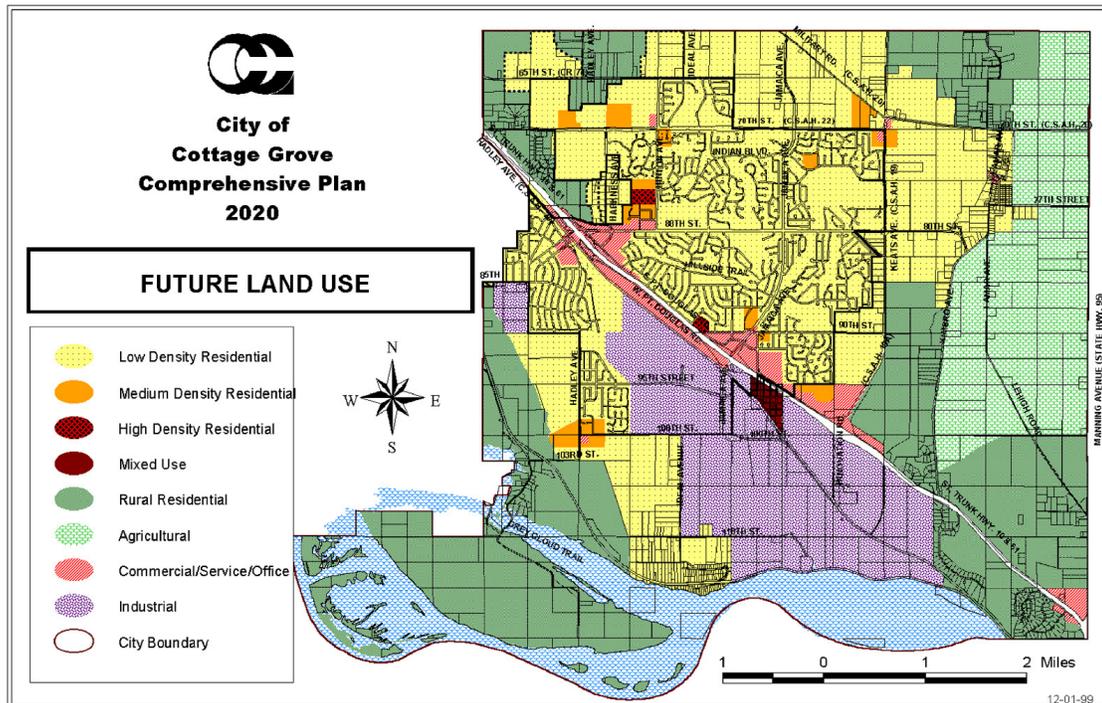
Environmental Resources

Cottage Grove has a commitment to natural resources and based on the Natural Resource Inventory done has created a *Sensitive Environmental Areas Overlay District*. The overlay district is comprised of areas with steep slopes, floodplain or are located in an area that requires

site sensitivity, such as the Mississippi River. Community woodlands and wetlands are not in the overlay district but are regulated by the *City's Tree Preservation Ordinance* and the *Wetlands Conservation Act*. The overlay designation does not forbid development but assumes that a "reasonable use and not a maximum use" will occur. Land uses that may be compatible with these areas are low density or cluster development. The city will investigate development criteria for the overlay district that imposes more stringent standards for grading, erosion control, and hard surface coverage. A significant amount of land in the East Ravine Pre-design study area falls in this overlay district.

Future Land Use

- 2020 land use for most of the study area is designated rural residential and low density residential with small areas of medium density residential and commercial
 - Rural Residential is large lot development outside of the MUSA. The City will encourage clustering to preserve open space and natural amenities. These units will be served by private well and on-site sewer systems
 - Low Density residential is 1-4 DU/acre. These areas are located within the MUSA or in planned expansions of the boundary
 - Medium density residential is defined as (5- 10 DU/acre)
- The study area makes up the bulk of Transition Zone 1. This area will become available for development with the Met Council installation of an interceptor system that will service the eastern areas of Cottage Grove.
- The Development Staging Plan separates the community into reasonably sized increments for development. The entire East Ravine Pre-design study area is in the staging area. Because the planned Met Council sewer interceptor alignment in the eastern part of Cottage Grove had not been determined at the time the comp plan was written, phasing does not depict which segment will developed first and illustrates 50 years of expansion potential.



Transportation

Key Goals & Policies:

- To create and maintain a safe & efficient roadway system which separates traffic according to function, length of trip, speed and volume
 - Use Met Council's Transportation Policy Plan Appendix, Dec. 1996 to guide design and operational characteristics of streets and highways
 - Public roads to all proposed developments shall be constructed to city standards and should improve north/ south traffic movements to centralized commercial areas
- Promote transportation alternatives to the automobile
 - Require developer installed sidewalks and trails within new developments adjacent to multi-family housing, parks, schools, and along collector or minor arterial streets
- Coordinate and stage growth to ensure that existing & future public transportation facilities can adequately accommodate development
 - Maintain a least a level of service D on the road network
 - Plan for a construct pedestrian walkways and bikeways consistent with the Comprehensive plan
- Improve quality of local and regional transportation facilities
- Preserve and enhance the aesthetic qualities of public infrastructure
 - Make efforts to preserve the natural environment when planning and building new roads.

Roads

Of the existing roads in or adjacent to the East Ravine Pre-Deign Study Area, Highway 61 is a principal arterial and Keats Ave (CSAH 19) and 70th Streets are minor arterials. Collector streets are Kimbro Ave, 80th St. Military Rd (CSAH 20), and Jamaica Ave. Military Road, 80th St., Kimbro Ave, Lamar Ave are identified as future minor arterial streets. Several new collector streets are proposed in the interior of the study area and the exact alignment of these streets will be determined as the area develops.

Transit

Transit options available to Cottage Grove Residents are: Ride Sharing; Car/Van Pooling; Taxis; Community Service Transportation; School Buses; Private Bus Lines; Metro Transit Bus Service. It is anticipated that the majority of future transit services will be bus and the City supports the idea of commuter rail on the Red Rock Corridor along Highway 61. The City is exploring expanding park and ride opportunities and the creation of a multi –modal transit hub that would tie local bus service and the potential commuter rail line. A possible location for this would be in the Langdon Neighborhood.

Off-Road Trails

Cottage Grove is working to establish a continuous network of non-motorized trails to offer residents a safe access route for pedestrian and non motorized use. Pathways are planned all collector streets.

Parks and Open Space

Key Goals & Policies:

- Park lands include conservancy open space areas, cultural resources, and environmentally sensitive areas that also have also have recreational potential.
 - Developers are required to dedicate a portion of their land for public use when the development includes areas planned for park acquisition
- The park system should offer a variety of programs and a coordinated system of trails throughout the city for linear recreation and transportation.

Existing Parks

In the East Ravine Pre-Deign Study Area, Cottage Grove Ravine Regional Park is located in the southern part of the study area and there are two parks in Old Cottage Grove.

Future Parks

There are six sites in the study area that are being considered for acquisition and development to meet the City’s future neighborhood park and athletic sports complex needs.

Economic development

Key Goals & Policies:

- Support local industry to attract new jobs to enhance the City’s tax base and bring new capital into the region.
- To address local and regional issues critical to business site locations

Retail and Commercial Areas

There are three areas in the East Ravine Pre-design Study Area that are considered for their retail and commercial potential. Two small neighborhood centers that would provide convenience items are called for at the intersections of CR19 & 70th and CR19& 80th Streets. A larger concentration of retail is planned for the intersection of CR19 and Highway 61.

Housing

Key Goals & Policies

- Offer a range of housing types and price ranges
 - Multi family housing will be dispersed throughout the city
 - Require aesthetic and design standards
 - Encourage “move-up” housing opportunities
- To maintain and improve the existing housing stock

Utilities

Key Goals and Policies

- Develop the urban service area in accordance with the development staging plan to reduce City infrastructure costs, maintain a contiguous growth pattern and protect the environment.
- To put in place a surface water management system that addresses water quality issues within the community. At the time the Comprehensive Plan was adopted, the portion of the City east of CR 19 was not covered in the 1999 Surface Water Plan. Therefore, additional review of ponding and surface water systems will be necessary prior to development.

Historic Preservation

The City is committed to the preservation of the community's historic identity and character for future generations. The Historic Preservation Element of the Comprehensive plan is the Comprehensive Historic Preservation Plan for the City and the authoritative guide for city historic preservation program decisions.

Key Goals & Policies

- Protection of all significant heritage resources on the City Register
 - Applications for city permit for exterior work on a property listed on the City Register or applications for a preliminary plat, rezoning conditional use permit, or variance from the zoning code that may impact an historic site will be reviewed by the Advisory Committee on Historic Preservation.
- Protection of significant sites which are technically not eligible for the register but are still considered a valuable resource.
- The City strives to proactively assist property owners in their efforts to preserve and enhance significant heritage resources
- Heritage Resources Inventory contains significant heritage resources identified by the Cottage Grove Heritage Resources Survey.
- There are 8 designated Historic Sites in the Study area with the greatest concentration in the Old Cottage Grove Area.

Regional Growth Policy Committee Review of Cottage Grove Comprehensive Plan Update

Metropolitan Council
September 5, 2000

Intent of Document

- This report is comments and recommendations stemming from the Metropolitan Council's review of the City of Cottage Grove Comprehensive Plan. The Metropolitan Council concluded that Cottage Grove should put their Comprehensive Plan Update into effect.

Key Information and Findings

- The Cottage Grove Comprehensive Plan identifies several areas that could be brought into the MUSA by 2020 and beyond but no specific timing was outlined beyond 2005 as the final alignment of the new Metropolitan Council sewer interceptor had not yet been decided. Since the alignment has been decided, the City has committed to submit a plan amendment that includes the 2020 staging plan to the Council by 2003.
- The City and the Metropolitan Council mutually agreed to allow new residential density of 2.42 units per acre in the west draw area due to natural resource based development restrictions. This is slightly less than the 3 units/acre outlined in the Regional Blueprint. The city has committed, by resolution, that future plan amendments and MUSA expansion requests will address all Regional Growth Strategy policies and guidelines, which include density standards.
- The comprehensive plan does not state that the overall development density in the rural areas will be 1/10 which is the Regional Blueprint's standard but the city has committed,

- by resolution, that future plan amendments and MUSA expansion requests will address all Regional Growth Strategy policies and guidelines, which include density standards.
- The City will need to forward a copy of its erosion and sediment control ordinance to the Metropolitan Council after its adoption.
 - It is recommended that the City acknowledge the available aggregate resource within the city and consider accessing them before they are encumbered by urbanization.

Water Supply & Distribution Plan for Cottage Grove, Minnesota

Bonestroo, Rosene, Anderlik & Associates
September, 1994, Updated December, 1995

Intent of Document

This report is a Comprehensive Water Supply and Distribution plan which intends to meet the near-term and ultimate needs of the City of Cottage Grove.

Key Information and Findings

Existing Conditions

City of Cottage Grove presently obtains its raw water supply from deep wells in the Prairie du Chien-Jordan aquifer. Water is pumped into the distribution system following chlorination and fluoridation at each well house. At the time the report was written, the existing water supply and distribution system for the City of Cottage Grove was serving the City's water demands.

Ultimate Water Distribution System

The Future Land Use Plan (1992-2000) and the Development Staging Plan (1992-2000) for Cottage Grove and a saturation population estimate of 136,000 served as a basis for the ultimate water supply and distribution system.

Future Supply System

Two well fields are proposed for the City so that it has two distinct water sources and wells are clustered to facilitate possible future central water treatment facilities. The two proposed fields are the North Well Field, located south of 80th Street and west of Jamaica Avenue and the South Well Field proposed north of Highway 61 and to north of 90th east of Keats Avenue. If, in the future, raw water requires treatment, each well field will have a nearby plant where water will be treated prior to distribution.

The South Well Field is located in the southern portion of Neighborhood 1 of the Cottage Grove East Ravine Study Area. To meet ultimate system demands, it is anticipated that 24 wells will be required in this field and additional hydrogeologic studies will be required to determine exact well locations. Study should also be done to explore the feasibility of drawing water from glacial drift wells and the Mt. Simon-Hinckley aquifer in addition to the Prairie Du Chien Jordan Aquifer.

Future Storage

In the Cottage Grove East Ravine Pre-Design Study area 3 future storage reservoirs are proposed. One at Keats Ave south of 70th Street, one near the intersection of 70th Street and Lamar Ave, and

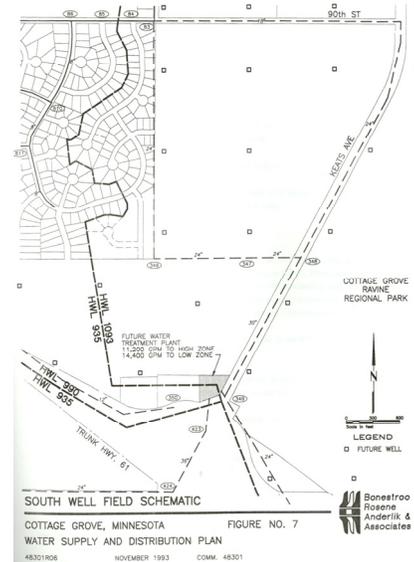
one at 80th Street east of Keats Ave. As it is recommended that storage reservoirs be gravity fed elevated reservoirs, they have been located to take advantage of high ground.

Future Distribution System

A network of trunk water mains extends from the well fields. Major mains connect the storage reservoirs and the well fields and in most cases are looped throughout the system in order to provide reliable service.

Key Recommendations

- Expedite the acquisition of sites for wells, storage facilities, and any easements required to connect these sites to the water system
- Monitor water quality to determine if there is need for water treatment. Until a future decision is made regarding water treatment the City should reserve a 10 acre site at the South Well Field for a potential water treatment plant.
- As the land in the proposed South Well Field is largely undeveloped, there is an opportunity to plan development to minimize the threat of aquifer contamination and it is recommended a wellhead protection plan is included with well field planning.



City of Cottage Grove Minnesota Comprehensive Sewer Policy Plan

Bonestroo, Rosene, Anderlik & Associates
May 1992

Intent of Document

The purpose of the Comprehensive Sewer Policy Plan is to provide the City with an inventory of existing facilities and a guide for the expansion of Cottage Grove's trunk sanitary sewer system to serve its saturation population. The report is based on the data contained in the City's Future Land Use Plan prepared in 1991. The report also serves as the sewer element of the public facilities plan for the Metropolitan Council and the Comprehensive Sewer Policy Plan (CSPP) for the Metropolitan Waste Control Commission (MWCC).

This plan is outdated with regard to the Cottage Grove Ravine Area, as the MWCC Cottage Grove Interceptor, associated treatment facility upgrades, and development of the Cottage Grove Ravine Area were not anticipated in the lifespan of the plan. The memo summary included after the summary of this plan discusses the final alignment and capacity of the MWCC Cottage Grove Interceptor.

Key Information & Findings

Goals and Policies:

- The City will provide service that is adequate for current and future needs and will avoid premature extension of sewer into lands designated for long-term agricultural use
- The extension of sanitary sewers shall be programmed as to achieve maximum benefit from the existing utilities
- The City will work with the Metropolitan Waste Control Commission to expand or upgrade the City's Wastewater Treatment Plant.
- The City will encourage development densities that maximize the use of the existing sanitary system.
- In the Rural Service Area, on site sewer systems shall be allowed as long as they conform to local, state and federal requirements.

Cottage Grove Ravine Area System Description

- There are eight major sanitary sewer districts in the city, each defining the limits of service for a separate trunk system. The Cottage Grove Ravine Pre-Design Project is in the Cottage Grove Ravine District (6,993 acres). It is anticipated that this area will be served by the MWCC Cottage Grove Interceptor which will service the eastern 35% of Cottage Grove, the Central and Cottage Grove Districts in Woodbury, and possibly other communities in Washington County.
- The treatment and disposal of wastewater occurs at the Cottage Grove Treatment Plant which is under the jurisdiction of the MWCC.
- The proposed facility at the end of the Cottage Grove Ravine Interceptor could be a wastewater treatment plant or a pumping station pumping the wastewater flow to the existing wastewater treatment facility.

Memo

Michael King, Metropolitan Council Sector Representative
May 5, 2003

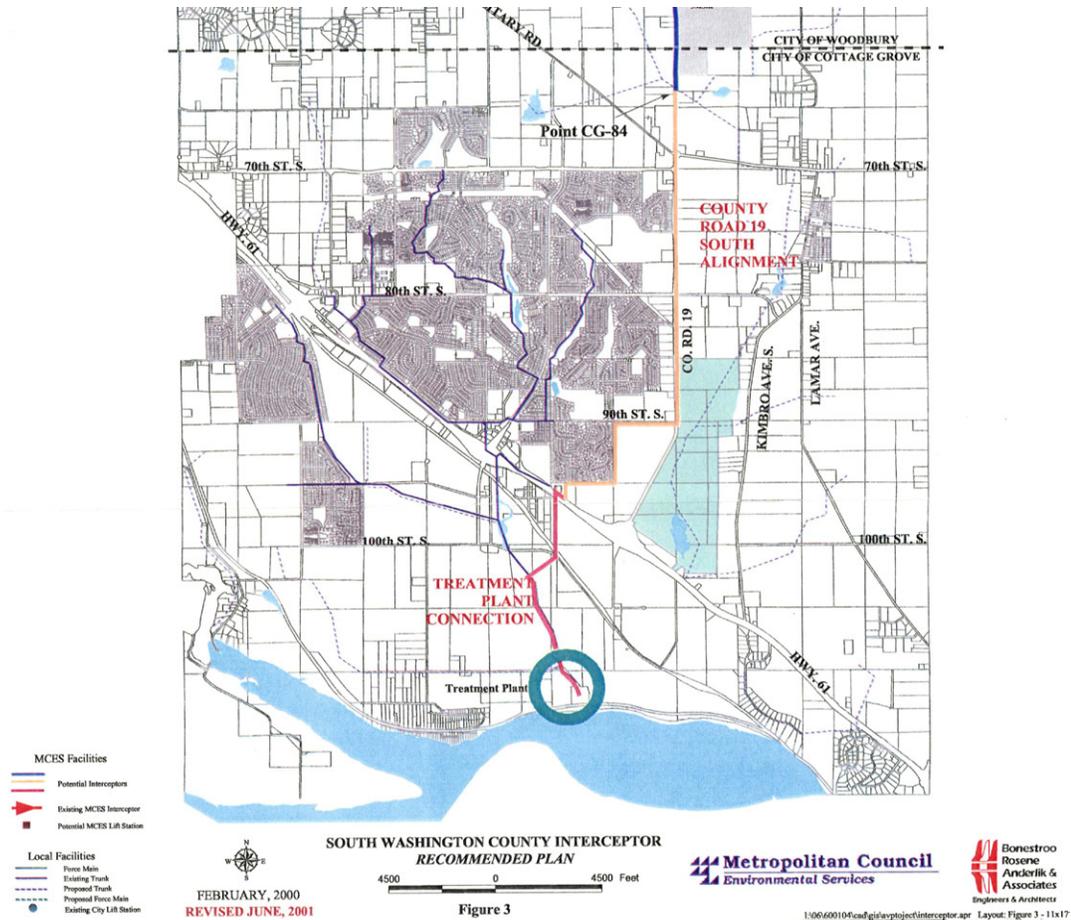
Intent of Document

As part of the data collection effort, Michael King reviewed the parameters used by MCES for planning the Eagles Point Plant and the South Washington County Interceptor Sewer and met with Don Bluhm, MCES Manager, Municipal Services, and Wayne Rikala MCES Project Manager for the South Washington County Interceptor projects in Cottage Grove. The following are his findings.

Key Information and Findings

- The interceptor was designed for the potential future capacity of 11.2 average daily flow from Cottage Grove (current flow is 2.3MGD)
- The treatment plant property and current technology limit the maximum capacity for future expansions to 15 to 20 MGD
- The interceptor is sized for 22 MGD average daily flow (at the south end of the system)
- Project will be complete in late 2004-mid 2005
- Cross over point to serve land east of the ravine would be where 82nd Street would be located

- The north part of Neighborhood 1 has some sewer depth limitations at the bottom of some of the bowls and these limitations were negotiated with the City
- Alignment runs south from Woodbury along CR 19 and jogs west at 90ths St. south along the edge of existing development before crossing Highway 61



Old Cottage Grove Historic District Preservation Planning Report (draft)

Robert C. Vogel, City Preservation Officer
2002

Intent of Document

The report presents documentation supporting the nomination of the Old Cottage Grove Historic District to the City Register of Historic Sites and Landmarks. The intent of historic district designation is to provide a guide for future community development decision making that acknowledges need for change while providing protection for historically significant buildings and sites. The report also contains a comprehensive inventory of all the heritage resources within the district. Though the area has met the criteria to be on the City's Register of Historic Places it has not been nominated to the National Register of Historic Places.

Key Information and Findings

Background

- Old Cottage Grove is in the NW part of the City and extends roughly from 70th Street (CSAH 22) south along Lamar Ave, including side streets, to 77th. The area is also known as Cottage Grove Village and East Cottage Grove.
- Most of the land and buildings in the area are private property. Lamar Ball fields, Old Grove Community Park, and Fire Station No.4 are publicly owned.
- The district has 9 sites of primary significance which are properties that have been individually listed or eligible for nomination to the City Register of Historic Sites and Landmarks. There are also 42 sites of secondary significance. This category consists of properties more than fifty years old and that contribute to the historic character of the district but lack individual distinction.

History

Initial settlement, 1843-1870

- 1843 James S. Norris established a pioneer farmstead just north of 70th Street and Lamar Avenue. Norris's farm is considered the birthplace of commercial agriculture in Minnesota.
- Old Cottage Grove was settled by Germans, Irish, and Canadians. By the 1860s the town was a service center for the surrounding agricultural area
- 1869-70 the railroad was built between St. Paul and Hastings and bypassed Old Cottage Grove.

Farm trade center 1871- 1932

- Old Cottage Grove was first platted in 1871 and grew rapidly despite not being on the railroad. By 1900 there were about 100 residents and development had expanded outside of the original platted area. Lamar Avenue functioned as a "main street" with many commercial establishments.

Rural neighborhood phase 1933-1953

- In the postwar years the area became primarily a residential neighborhood but retained its village-like atmosphere.

Suburban and exurban development – Post 1953 (not a part of the preservation plan)

- By the 1970 the suburban development of Cottage Grove shifted the commercial focus of the City and there were only two commercial properties left in Old Cottage Grove.

District Description

Village Development

The village was platted with a linear plan and a clear distinction between the village and the surrounding countryside. Expansion of the town was constrained by the northern limit of the Cottage Grove Ravine. The original 40 acre plat in 1871 did not allow for a business district or town square, so some of the village's core functions were located outside of the plated area.

The heart of the historic district is Lamar Avenue, which is the old village main street. Traditional streetscape on Lamar Ave includes little or no setback from the street and narrow side

yards. Trees were planted to define property edges and they continue to be one of the defining features of the district.

Architecture

Today, Old Cottage Grove historic district is a mix of residential, commercial, funerary, religious and agricultural buildings. Several preserved architectural landmarks represent Greek Revival, Italian Villa, Queen Anne, Arts and Crafts, and Colonial Revival building styles. There are also modest homes built in the 19th and 20th Centuries. Architectural features include: 1-2 story facades; low to medium pitch gable roof shapes; formal entrances; and one-story porches. Most of the remaining buildings built prior to 1950 are residences as many of the non-residential buildings have been razed or converted. Wood agricultural outbuildings, detached garages, and sheds also contribute to the district's character.

Archeology

No archeological surveys have been conducted within the historic district but there are several potentially significant pioneer home, church, and school sites that need to be considered in development planning.

Preservation Planning Recommendations

General Concepts and Approaches

- Properties that have been individually listed in the City Register of Historic Sites and Landmarks are considered primary heritage resources and design review standards and guidelines are in the Historic Preservation Element of the Comp Plan. Property-specific strategies for the implementation of preservation standards and guidelines are found preservation planning reports adopted for each individually designated historic site.
- Secondary heritage resources within the district boundaries also need consideration in community planning and building code enforcement. However only permits for moving a building, excavation, and new construction require a certificate of appropriateness. For all other work compliance with historic preservation standards is voluntary.

Guidelines

- Design Review Guidelines center on preserving the distinctive historic qualities of the district and important and visible historic architectural features of buildings while still allowing for change and adaptive reuse.
- New construction should be compatible with adjacent historic buildings.
- Removal of primary heritage resources should occur only where public safety is threatened. Demolition of secondary heritage resources is appropriate in cases of threatened public safety, or if it no longer contributes to the historic character of the district as determined by the Advisory Committee on Historic Preservation.
- Open space and natural features of the Cottage Grove Ravine should be maintained and its visual integrity protected from encroachment and changing land uses.
- The historic street pattern of the 1871 grid should be maintained.
- City should develop heritage education and interpretation programs focused on Old Cottage Grove that utilized the city's ongoing Heritage Resources Survey.
- Pedestrian and bicycle access to the heritage resources within the district should be facilitated by sidewalks and trails.

Cottage Grove Natural Resources Inventory

Bonestroo Rosene Anderlik & Associates
1998

Intent of Document

The purpose of the Cottage Grove Natural Resources Inventory is to identify significant natural features, including natural communities, scenic areas, cultural resources, and sensitive resources so the City can guide future development in an environmentally sustainable manner and protect important natural resources.

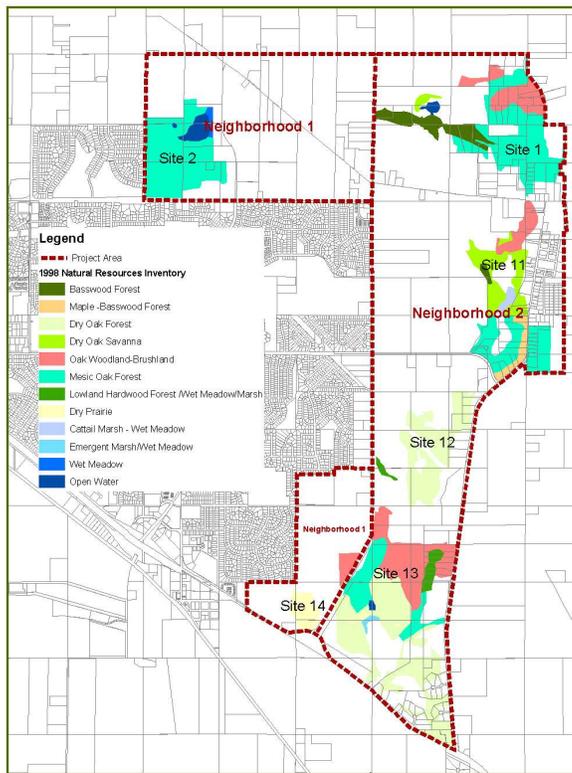
Key Information and Findings

Presettlement Vegetation

At the time that the first settlers arrived, Cottage Grove was made up of wetlands in low areas and oak woodlands, brush lands, and prairies on the drier uplands. In the ravines and on the north facing slopes, denser mixed forests were common. Along the Mississippi River riparian forests and wetlands were dominant with bluff prairies and savannas on the terraces above

Cottage Grove Ravine

The Cottage Grove Ravine is a glacial tunnel valley carved into the bedrock. The ravine runs from Old Cottage Grove south to the 3M facility and is about ½ mile wide. Average depth from the ravine floor to the bluff tops is 80-100 feet. The ravine is partially filled with glacial outwash deposits and several small lakes linked by intermittent streams are located in the ravine. Sediment from the valley walls has created low terraces and alluvial fans and



Natural Resources Inventory

much of the ravine floor has been covered with soil eroded from upland agricultural fields.

Natural Resources in the Study Area

To give the City a qualitative assessment its natural communities, a field inventory was conducted. Native communities were then classified according to “Minnesota’s Native Vegetation, A key to Natural Communities (MNDNR, 1993) and non-native areas were given common descriptive names based on community type. To provide the City with information about the ecological quality of the natural areas each community was ranked based on native species diversity, age of trees, and amount disturbance.

Adjacent natural communities are grouped into sites. Each site was evaluated for Rare Features Value, Natural Community Integrity Value, and Wildlife Habitat Value, and Local Value and was given a rank of High, Moderate, or Low. The Local Value takes into account cultural features and if the resource is a community asset even though the Natural Community Integrity may not be high when compared to pristine conditions. A description of each site in the Cottage Grove Ravine Study Area is included below.

Neighborhood 1- North

Site #2

The site is 172 acre undeveloped area and consists of 7 communities. It is located north of 70th Street and south of Military Road. The site has one of the better quality mesic oak forest communities in the city and the largest good quality wetland in the city. Other communities include a logged oak forest, a small shallow open water / emergent marsh, a degraded wet meadow, a conifer plantation and an old field. The Natural Community Integrity Value and Wildlife Habitat Values are high due to the good quality forest habitat adjacent to the large wetland complex. The area has two historic features; the Shepard Farmstead and the Roger Shepard House both of which are notable for their Colonial Revival architecture.

Neighborhood 1 – South

Site #14

The site is 48 acres and is made up of 5 communities. It is located north of Highway 61 and west of CR19. The site has low-moderate quality, dry, sand-gravel prairie and some old fields grown over with trees, shrubs, and grasses. The Natural Community Integrity Value and Wildlife Habitat Value are low due to low community diversity and poor connectivity to other natural areas. Community 14C is a dry prairie that is listed by the MNDNR as a rare feature. The Cottage Grove Drive –in Theatre located within the community has high historic value due to its social history in the context of postwar suburban development

Neighborhood 2

Site #1

This site is 307 acres and is composed of 8 communities. It is located northeast of Keats Avenue and 70th Street South. This site contains a mixture of mesic oak forest, oak woodland and savannah, a small wetland, and basswood forest. The Natural Community Integrity Value and Wildlife Habitat Value moderate. The area includes a historic landscape associated with the pioneer phase of Cottage Grove Settlement and large European larch trees planted along Lamar Ave that are estimated to be 100 years old.

Site #11

This site is located south of 70th Street South and west of Lamar Avenue. The site has most of the major forest communities in Cottage Grove and includes oak woodland-brush land, dry oak savanna, mesic oak forest, basswood forest and maple-basswood forest. In addition there is a small lake and a wetland. The Natural Community Integrity Value and Wildlife Habitat Values are moderate due to the diversity of the community. There are two historic sites within the community, the Dr. William W. Furber house and St. Matthew's Church Cemetery.

Site #12

This site is 235 acres with 11 communities. It is located in the Cottage Grove Ravine, the oldest glacial landform in the city. The site is dominated by moderate quality oak forest along with conifer plantations, old fields, and lowland hardwood forests. The Natural Community Integrity

and Wildlife Habitat Value are moderate due to the quality oak forest and connectivity to areas to the north and south.

Site #13

This site has 15 communities and is made up of 367 acres and makes up the southern part of the Cottage Gove Ravine and contains prehistoric and historic cultural artifacts. This site has one of the largest and best quality contiguous tracts of forest land in the City of Cottage Grove. The majority of this site contains moderate to good quality mesic and dry oak forest. It also includes several small dry, sand-gravel prairies, a wet meadow/fen wetland and a number of conifer plantations. The Natural Community Integrity and Wildlife Habitat Values rank high due to the quality, size and diversity of the communities. Kitten-talks (*Besseyia bullii*), a state threatened plant species has been documented on the site.

Key General Recommendations

- City ordinances and conservation easements should be considered as a tool for protecting natural resources
- Zoning that is compatible with landscape type, native plant and animal communities and other natural features should be implemented
- Maintain and link large tracts of significant natural areas
- Maintain undisturbed vegetative buffers around natural areas

Key Specific Recommendations

- Several sites with degraded wetlands or with proper hydrology and soils for wetland are suited as wetland restoration or banking sites. Key areas for wetland restoration and banking in the Cottage Grove Ravine Pre-design study area include communities 1G, 2E and 11F
- Much of Shepard Farm (Site 2) has been placed in conservation easement and it provides critical open space to Cottage Grove. A stewardship plan should be developed to guide active management and restoration of this site needed to maintain its quality. The major management concerns are invasion by European Buckthorn and the potential degradation of the wetland community as the adjacent land develops.
- Site 11 links Cottage Grove Ravine Park with large natural areas to the north and is identified as a priority area. It contains grazed oak savannah with good restoration potential.
- The plan proposes a Cottage Grove Ravine Corridor that would link natural resource areas. The corridor would extend from the Mississippi River north to Cottage Grove Ravine Regional Park and then continue northward through Old Cottage Grove and follow a ridgeline to Gables Lake. From Gables Lake, this corridor would connect to Washington County Linear Park System along County Road 19. This corridor would preserve some of the most ecologically significant areas of the city and would be the highest quality corridor in the city. A trail system could also be integrated within the corridor.

South Washington Watershed District CD-P86 Natural Resource Management Plan

South Washington Watershed District
Emmons & Olivier Resources
July 19, 2002

Intent of Document

The purpose of this document is to establish a framework for restoration efforts in the portion of the Watershed District's storm water conveyance route known as CD-P86. The plan provides information on the current condition of the site (2002) and outlines recommendations for site preparation, seeding, planting, wildlife improvement, maintenance and monitoring, cost estimates, and identifies a location of a proposed Washington County Parks regional trail connection.

Goals include:

- To develop an ecologically based Management plan that improves, protects and maintains the ecological functions of CD-P86
- Enhance wildlife habitat
- Provide open space, passive recreation, and environmental education opportunities
- Improve and maintain natural storm water functions including: infiltration, groundwater recharge, rate/volume control, and pollutant sediment reduction.

CD-P86 is located in Woodbury and Cottage Grove and falls in the northern part of Neighborhood One of the Cottage Grove Pre-Design project area. CD-P86 is a component of the larger SWWD Greenway Corridor Plan to create a natural corridor that would link Lake Elmo Park Reserve, Woodbury chain of lakes, and Cottage Grove Ravine Park to the Mississippi River. A conservation easement agreement with the MNDNR will protect the CD-P86 area from development and insure the site will be conserved and managed as a natural area. The Natural Resources Management plan is tied directly to the DNR Conservation Easement document.

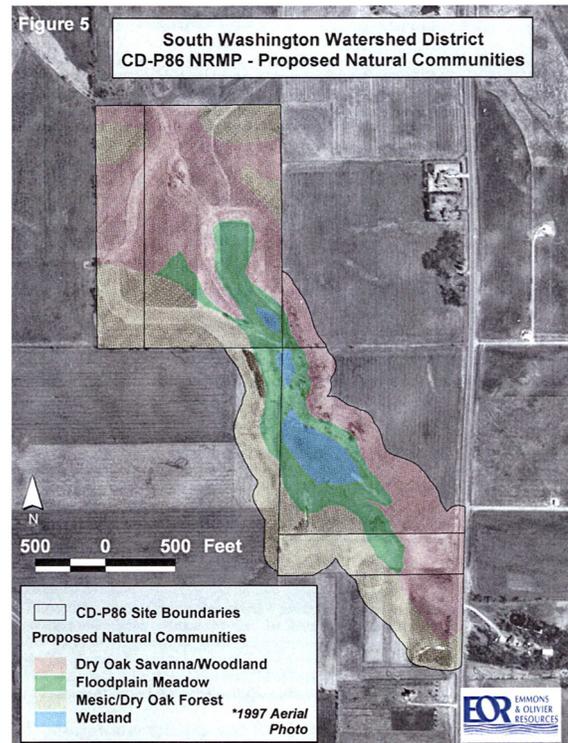
Key Information & Findings

Existing Physical Conditions

- The existing soils provide moderate infiltration and slopes are moderate to flat. Erosion is a concern but dense vegetative cover provides effective protection from erosion.
- The existing plant communities include degraded oak savannah, non-native wet meadow, pine plantation, cornfield, and old field.

Vegetation Management

- Proposed natural communities mimic those that would be expected to occur naturally based on site characteristics. They include woodland, savannah, prairie, wetland and forest.
 - Mesic/ Dry oak forest to be on the east and north facing slopes
 - Dry oak savannah / woodland on the northeast strip of land and on the south and west facing slopes above the lower flat area



- Floodplain Meadow in the lower flat area that is subject to fluctuating water levels due to occasional flood events. A mix of dry and mesic prairie plants is designed to accommodate both water extremes.
- Small ephemeral wetland basins are proposed for the three lowest elevations within CDP-86

Water Resources

- CDP-86 will improve water resources in the district by functioning as a groundwater recharge area.
- Significant buffers of natural vegetation will help protect the site from runoff produced in adjacent area
- When the area becomes a part of the trunk storm water facility for the district, a considerable amount of surface water can be retained and infiltrated within the basin for the benefit of downstream water bodies.

Wildlife Resources

- The reclamation of natural communities with emphasis on woody and herbaceous species with high value for wildlife and food cover is the foundation for wildlife habitat improvements.
- Retaining dead snags, planting trees to maximize visual screening from adjacent land uses, and placing bird nesting boxes within project area will also improve the area as wildlife habitat.
- The habitat created will be large enough function both as a travel corridor for migrants and habitat for permanent and seasonal residents.

Infrastructure

- Recreational opportunities include passive recreation, trail connections, active parks, and interpretive nature areas. A proposed 10' paved trail is planned for the site.
- Storm water conveyance structures may be necessary within the CD-P86 site along with access roads needed to install, maintain and monitor the facilities.

Human Impact Management

- ATV use and off trail biking and walking may be a problem and signage and patrolling will be needed to prevent these use.
- Storm water may need to be controlled to insure surface water is managed properly and the capacity of the basin is not exceeded.
- Dense buffers of tall residual vegetation will help minimize impacts from erosion and herbicide drift.
- As the surrounding area becomes more developed the CDP-86 will a refuge to wildlife and some road crossings such as CR 19 between CDP-86 and Gables Lake will be become more dangerous. Considerations should be given to creating wildlife crossings that will reduce animal/vehicle conflicts.

Lake Management Plan

Department of Natural Resources Fishing in the Neighborhood Program (FiN)
2002

Intent of Document

- The goal of Fishing in the Neighborhood is to increase neighborhood access and community recreation opportunities in Ravine Lake located in Cottage Grove Ravine Park

Key Information and Findings

- The lake has been stocked since 2002 with black crappies and bluegills

Recreation and Open Space System Plan, Washington County Comprehensive Plan to 2015

February, 1996

Intent of the Document

The plan provides a framework for developing and maintaining the County's park system to meet current and future recreation needs. One of the primary goals of the park system plan is the preservation unique or sensitive natural and cultural resources. Therefore, resource protection is a primary consideration when determining the type of use and the intensity of use in the individual parks. Individual park master plans are used to determine park sites, boundaries, uses, and management

Key Information and Findings

Cottage Grove Ravine Regional Park Plan

- The only county/ regional park in the study area is the Cottage Grove Ravine Regional Park. CGRRP is important to the county park system because of its natural resource characteristics and recreational opportunity. Since the area around the park is seeing rapid population growth, its importance is increasing.
- Park acreage (1996) is 506 acres and the proposed park boundaries would encompass 3 more properties and 19 additional acres.
- Actions outlined for the park are to continue with acquisition and development as adopted in the master plan and in the Met Council's capital improvement program and also to correct high water problems by working with Cottage Grove, Woodbury, and the local watershed district.

Linear Park System Plan

- Linear park system is part of the Recreation and Open Space System Plan and is a series of open space and recreational corridors that connect communities, parks, and other trails and accommodate a wide range of outdoor activities. A separate summary of this component of the system plan is provided.

Implementation

- Tools other than acquisition and development that can be used are: land use controls to designate areas as permanent agriculture; land use controls that designate areas as natural resource protection zones; scenic easements

Washington County Linear Park System Master Plan

Adopted February, 1996

Intent of Document

The plan is to be used as a guide in the establishment of a system of coordinated local, county and regional linear open space corridors that will link county and regional parks and trails, provide trails for recreational and transportation use, and create scenic drives. Key goals are to create a linear open space system that compliments the county land use and transportation plans and to preserve and link unique and sensitive environments, geological sites, hydraulic resources, wildlife habitat, historical and cultural resources.

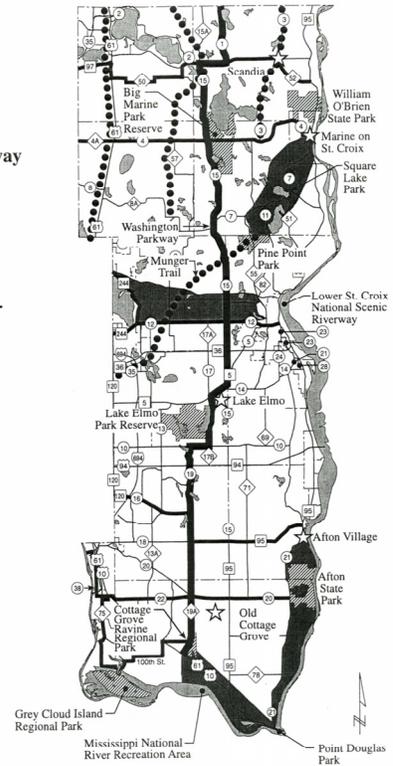
Key Information and findings

Linear Park System Elements

- The Washington Parkway is the “backbone” of the system and would be a signature feature. The parkway will run north/south along CSAH 15 & 19 and provide direct connections between Big Marine Park Reserve, Lake Elmo Park Reserve and Cottage Grove Ravine Regional Park.
 - The parkway would have trees along both road edges, a new median space, bicycle trails, and at key trail intersections there will be locations for resting, picnics, parking, signage, maps and lighting.
 - Trail design along the parkway may include 8’ paved shoulders for bicyclists; 10’ paved off road trail for two-way bicycling, in-line skating, and walking; snowmobile trails in the ditch bottoms or opposite the roadways; additional trees; and support facilities.
- East west trails, or greenways, along roads would intersect with the Washington Parkway to form the “ribs”. In Cottage Grove, CSAH 20 & 22 would be the east / west connections.
 - Design will include two 6’-8’ paved shoulders, a 10’ off-road path on one side of the road, additional trees at selected locations and directional signage.
- To supplement the linear park system the County will promote bike routes along the shoulders of county roads and county state aid highways.
- Local communities are encouraged to coordinate their systems with the County System for broader connections.
- Major trails will connect to the Met Council Regional Trail System.
- In addition to trails along roads, the County will examine existing railroad or utility corridors for off road trails.

Linear Park System Plan

- Washington Parkway
- Greenways
- Off-Road Trails
- Trail Search Area - New Alignment Possible
- ▨ Parks
- ☆ Rural Centers



Washington County Comprehensive Plan

February 1996

FIGURE PP-13

Development Concept

- Current and future activities include: viewing and studying nature; conserving and rehabilitating wildlife habitat; picnicking and trail uses.
- There are two major park activity areas and the remaining land is intended as interpretive / general conservation. The major activity areas are located in disturbed areas and will be connected by a series of trails. Existing and planned park facilities include: trails; viewing blinds; overlook sites; picnic shelters; a play structure; parking areas and several interpretive areas.
- There is concern that the 1988 Watershed Management Plan will allow park area and its pond will be utilized as a ponding/settling area for the entire watershed which would be detrimental to the health of the pond.

Transportation, Urban Design, and the Environment: Highway 61/Red Rock Corridor

Prepared by Lance M. Neckar, Department of Landscape Architecture, University of Minnesota
Published by: Center for Transportation Studies, University of Minnesota

Intent of the Document

This study looks at three consequences of the current development patterns and practices and explores alternative patterns for regional growth in corridors served by commuter rail service, specifically the Highway 61 / Red Rock Corridor. The three trends that are addressed are: the increase in Vehicle Miles Traveled (VMT); the degradation of our natural resources, particularly water resources; and the lack of cooperation of various units of government in decision making about infrastructure in concert with land use, zoning, and urban design.

Three sites are studied at the subdivision scale, one of which is in Cottage Grove, to demonstrate issues of urban and suburban growth related to developing a commuter rail spine from St. Paul to Hastings. The Cottage Grove site looks at 180 acres of developable land at the edge of CR 19 and Cottage Grove Ravine Regional Park that is close to the potential Highway 61 and Jamaica Ave commuter rail station site. Three different development patterns are tested to see VMT and water quality can be positively affected by alternative urban patterns.

Key Information & Findings

Development Concepts

Baseline

This concept reflects a development based on current preferences, patterns, laws, and hydrological practices and uses the Cottage Grove comprehensive plan as a guide for the street network for the site and for the larger community, land use, and development densities. This concept assumes the construction of the Red Rock Corridor Commuter Rail Line. Analysis of the concept provides information and data on base conditions which the alternative development patterns can be compared to.

Design Criteria:

- Low Density residential at 1-4 DU per acre

- Medium Density residential at 5-10 DU per acre
- Community service and office development close to Highway 61
- Internal street network that includes an internal circulation with dominance of cul-de-sacs
- Sub-regional street network consists of collectors and sub collectors as residential streets, upgraded county highways as arterials
- Storm water drainage that is based curb and gutter and current conventions
- Parks partially enclosed by housing

Commuter Rail Oriented Design-High/Med & Commuter Rail Oriented Design -LOW

The two Commuter Rail Oriented Design (CROD) concepts demonstrate how hydrology and transportation networks can be designed to create new patterns of connectivity with regard to rail, street networks and open space and natural systems. The fundamental difference between the alternative concepts and the baseline concepts is this approach to transportation and hydrology

The CROD schemes assume a more connected multi-modal, sub-regional or intermediate road system. The goal of this system is to reduce travel times to the commuter rail station to expand the “commuter shed” which is defined as a 12 minute commute to the rail station. This redesigned system also assumes that the road network will link mixed use destination nodes with a ¼- ½ mile walking radius serving everyday commercial and institutional needs. The theory is that these strategically placed destination nodes will increase the possibility multi-purpose trips and thereby reducing overall VMT.

With regard to hydrology, the CROD schemes rely on a storm water handling system that mimics a natural system in function and performance to recapture runoff into the hydrological cycle. Storm water collection is a new connective infrastructure framework for public streets and open space. Bioinfiltration swales in the ROW of parkways allow for infiltration and exfiltration (filtering storm water through 50’ of sand and returning it to the groundwater as opposed to diverting it to

basins). Local streets that have curb and gutter but the catch basins send water to large perforated pipes under the street that allow for exfiltration. Other specific design components include:

- Lots designed so that water flows from impervious surfaces to absorptive vegetated surfaces where it is allowed to infiltrate.
- Storm water inlets are designed to filter and remove large particles of sediment.
- Connective open space to holds and conveys storm water in the form of a biofilter or enhanced swale.
- Surge areas just before every outlet from the site that are dry basins that are allowed to temporarily fill in large storm events.

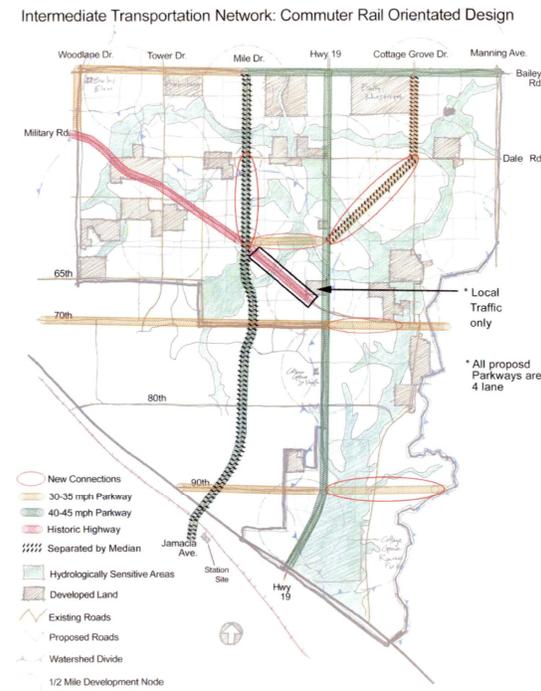


Figure 10.4 Commuter Rail-Oriented Districts & Network Enhancements Cottage Grove Station Commutershed Area(f)

RESIDENTIAL				RETAIL/COMMERCIAL/OFFICE
	Units	Area(acre)	Density	369971 sq. ft.
Single Family	206	31.82	6.44	
Town Homes (3 BR)	715	48.19	14.54	
High Density (2 BR)	660	15.13	43.61	
Mixed Use (2 BR)	152	3.49	43.61	
Totals	1540	99.12	16.54	Net Density 16.44 D.U./Acre Gross Density 7.00 D.U./Acre



Figure 10.7 Cottage Grove Design Number One

RESIDENTIAL		# Units	RETAIL/COMMERCIAL/OFFICE
Single Family	386		417248 sq ft
Town Homes (3 BR)	257		
High Density (2 BR)	120		
Mixed Use (2 BR)	128		
Total	891		Net Density 8.75 Dwelling Units per Acre Gross Density 3.54 Dwelling Units per Acre



Figure 10.9 Cottage Grove Design Number Two

CROD-Med/Hi (7 DU per acre) or Cottage Grove Design #1 adapts LRT – like TOD to a medium density residential pattern. The design, based on gross density for bus ridership, assumes that there would be a MTC loop shuttle bus to the commuter rail station. The concept emphasizes transit accessibility, a connected street system, mixed uses and density to support walkable access to shuttle service to the station.

CROD-Lo Density (3.5 DU per acre) or Cottage Grove Design #2 emphasizes open space, hydrological and street system connectivity while preserving the single-family pattern dominant in Cottage Grove. Connectivity to the station and destinations within the subdivision is enhanced by a network multi-modal parkway. A commuter rail passenger shuttle could run along the parkways at peak commute periods and gain access to the station via the frontage road to Jamaica.

Findings

Vehicle Miles Traveled (VMT):

- The CROD designs produce a positive effect on commuter rail ridership and reduce VMT per household over the baseline
- The redesign of the intermediate transportation network to a more connected commuter rail-oriented design reduces regional VMT but most of the reduction is due to trip shortenings as a result as increased general connectivity not increased commuter rail ridership.
- The effect of creating destination nodes in the CROD concepts was not able to be determined because of limitations in current travel demand forecasting but the presumed effect would be a reduction in VMT. In addition, trip behavior modeling is not well attuned to commuter rail-oriented design in terms of scale and street network patterns adaptable to modeling but it

is likely that multi modal street and path networks with high connectivity in a mixed use setting may reduce VMT.

Water quality implications

- Storm water can be recaptured into the hydrological cycle as opposed to directing it into distant receiving basins. This recapturing approach is in large part possible because of the permeability of soils in this area and the great depth to the water table
- With the CROD approach to storm water, water quality volume showed substantially better performance than baseline development. Both scenarios infiltrate the entire water quality volume so no water leaves the site which compares well to presettlement conditions, existing conditions, and the baseline development concept.
- For 10 year storm events the CROD-Lo and the CROD-Hi/Med both produced less runoff than the baseline scheme. Also, both the CROD-LO and the CROD-Hi/Med produce no peak discharge which is better than presettlement, existing, and baseline conditions.

Institutional Framework

- Local comprehensive plan approval must be coordinated with regional infrastructure investments including transportation, environmental capacity, including hydrological function.
- Integrative policy initiatives on land use and urban and regional design and incentives that allow communities to innovate and protect resources must be provided regionally to shape flexible new development patterns.

Information from the Washington County Department of Transportation

APPENDIX 5 WASHINGTON COUNTY ACCESS SPACING GUIDELINES

TYPE OF ACCESS	FUNCTIONAL CLASSIFICATION OF COUNTY HIGHWAY				
	PRINCIPAL ARTERIAL	MINOR ARTERIAL		COLLECTOR	LOCAL
		> 7,500 ADT	< 7,500 ADT		
A. Private residential driveways	No direct access	No direct access	(3)	(3)	(3)
B. Commercial driveways or non-continuous commercial streets	No direct access	No direct access	1/8 mile	1/8 mile	(3)
C. Non-continuous residential streets	No direct access	1/8 mile with no median opening	1/8 mile	1/8 mile	(3)
D. Continuous local streets and collector streets	1/2 mile	1/4 mile	1/4 mile	1/8 mile	1/8 mile
E. Minor arterials	1/2 mile	1/2 mile	1/2 mile	1/2 mile	1/2 mile

1. See Figure T-11 for functional class function of each County highway.
2. Traffic volumes refer to 20 year forecasts.
3. Determination based on other criteria (sight distance, speed, traffic volume, etc.)
4. Distances shown are minimums.
5. "Non-Continuous" streets refer to cul de sacs or short length streets (less than 1/2 mile) which do not cross the County highway in question.
6. The type of traffic control, turn lanes and bypass lanes required will be determined based upon the projected traffic volumes on the type of access requested.
7. County reserves the right to increase the minimums based on other criteria (sight distance, speed, traffic volume, etc.)

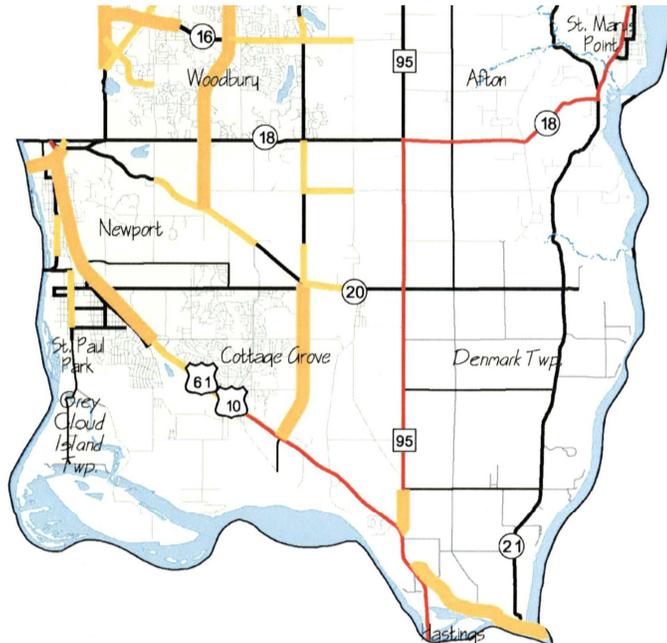
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Year 2020 Highway Capacity Needs

-  Important Volume/Capacity Ratio 1.00-1.24
-  Most Important Volume/Capacity Ratio 1.25+



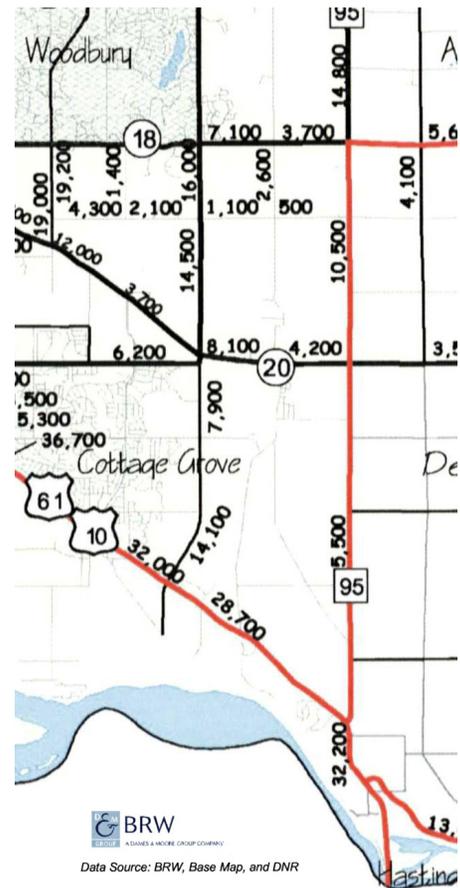
Data Source: BRW, Base Map, and DNR





BRW
A DAVEN & MOORE GROUP COMPANY
 Data Source: 1998 MnDOT Flow Maps, Base Map, and DNR

**Washington County
 1998 Traffic Volumes**



BRW
A DAVEN & MOORE GROUP COMPANY
 Data Source: BRW, Base Map, and DNR

**Washington County
 2020 Traffic Forecast**