

CITY of CRYSTAL

2040 COMPREHENSIVE PLAN

POLICY AND LAND USE GUIDE

ADOPTED BY CRYSTAL CITY COUNCIL ON OCTOBER 2, 2019

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CHAPTER A: PROCESS OVERVIEW

As a municipality within the seven-county metropolitan planning area, Crystal is required to submit an updated Comprehensive Plan to the Metropolitan Council in 2018. The Comprehensive Plan is the city's policy document and guide for land use and related decision-making used by the Planning Commission and City Council when it makes decisions related to zoning, subdivision (platting), public facilities and redevelopment. While the plan does not include detailed development concept plans for particular sites or designs for public facilities improvements, it does set the stage and provide guidance for such plans and designs to be developed later.

The Planning Commission was the body tasked with reviewing the proposed updates to the Plan. The Commission met regularly between November 2017 and April 2018 to discuss the plan and held a meeting on April 9, 2018 to receive public input. Public input was also solicited in the city's newsletter and on its website and social media. On June 5, 2018, the City Council approved the plan for submittal to other governmental jurisdictions and agencies for a six month review and comment period, as required by Metropolitan Council. The plan was also sent to the Metropolitan Council for a preliminary review.

The following affected jurisdictions received the proposed Crystal 2040 Comprehensive Plan on June 6, 2018, with their responses noted below:

1. **City of Brooklyn Center** – Did not submit comments
2. **City of Brooklyn Park** – Had no comments
3. **City of Golden Valley** – Had no comments
4. **City of Minneapolis** – Did not submit comments
5. **City of New Hope** – Did not submit comments
6. **City of Robbinsdale** – Did not submit comments
7. **Hennepin County** – Comments were incorporated in the plan document
8. **School District 281** – Did not submit comments
9. **Minnesota Department of Transportation** – Had no comments
10. **Minnesota Department of Natural Resources** - Comments were advisory in nature and no policy changes were made in the plan document
11. **Metropolitan Airports Commission** – Comments were incorporated in the plan document
12. **Three Rivers Park District** – Comments were incorporated in the plan document
13. **Bassett Creek Watershed Management Commission** – Did not submit comments
14. **Shingle Creek Watershed Management Commission** – Did not submit comments

After comments were received from the Metropolitan Council and adjacent jurisdictions, the Planning Commission held a public hearing on December 10, 2018 on the proposed 2040 plan. At the December 18, 2018 City Council meeting, the Council directed that the final 2040 plan be submitted to the Metropolitan Council.

CHAPTER B: COMMUNITY DESIGNATION

In the “Thrive MSP 2040” document, the Metropolitan Council has established several different community designations for different parts of the region. Crystal is among the areas classified as **Urban** (see Figure B-1), which is described as those communities:

“...developed primarily during the economic prosperity between the end of World War II and the economic recession of 1973-1975. These cities, adjacent to the Urban Center communities, experienced rapid development to house the growing families of the baby boom era. With considerable growth and development along highways, the Urban communities exhibit the transition toward the development stage dominated by the influence of the automobile.”

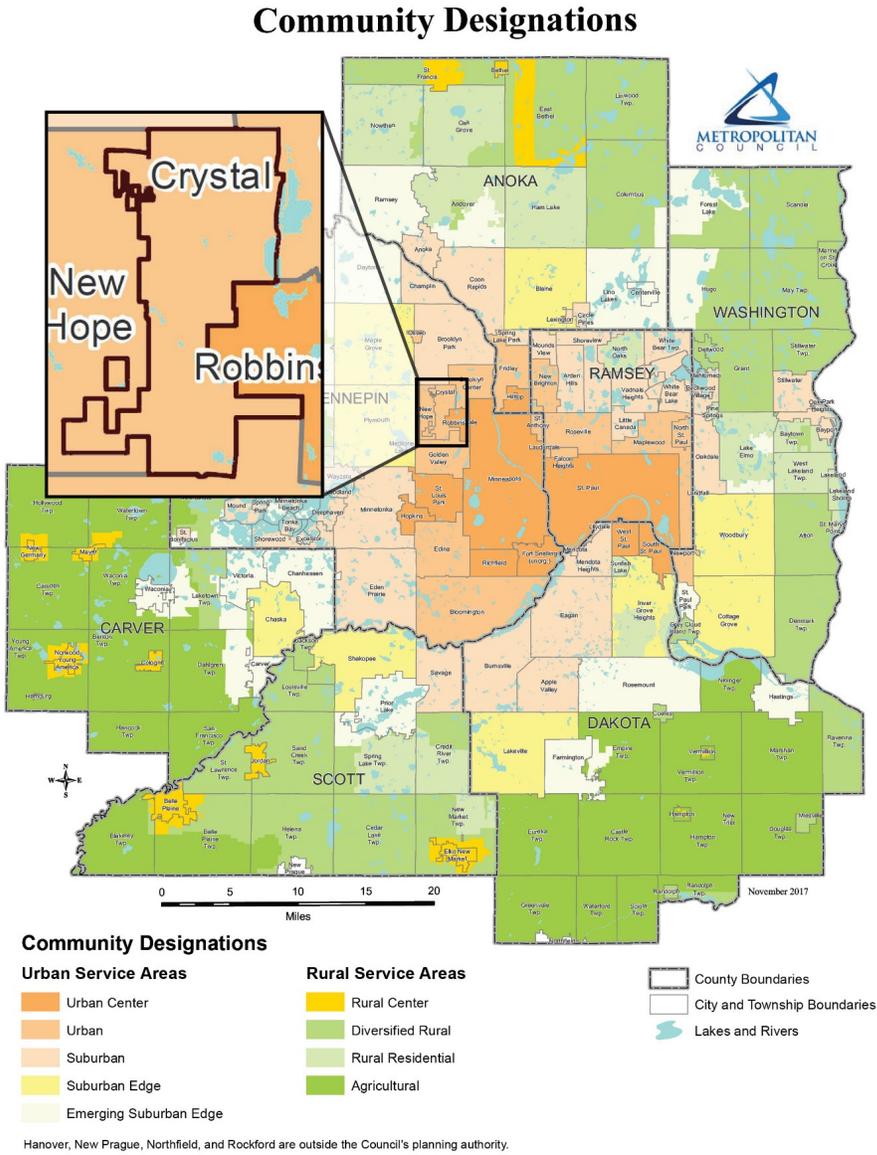


FIGURE B-1 METROPOLITAN COUNCIL COMMUNITY DESIGNATION

LAND USE STRATEGIES AND POLICIES

In the “Thrive MSP 2040” document, Metropolitan Council has established general policy goals for all communities in the seven-county area and specific policy goals for Urban communities. The following are those policy goals, with comments from the city detailing how the policy is being implemented, or is planned for implementation:

Policy 1: Align land use, development patterns and infrastructure to make the best use of public and private investment.

STRATEGIES FOR ALL COMMUNITIES

- Plan for development to support forecasted growth at appropriate densities as articulated in the land use policies for the Urban designation. *Comment: The 2040 land use map and table will support forecasted growth through a variety of strategies, including allowing accessory dwelling units, reducing residential lot sizes and widths, promoting residential infill, and identifying redevelopment areas in the city.*
- Plan and develop interconnected and well-connected local streets, adequate stormwater infrastructure, adequate water supply, and properly managed subsurface sewage treatment systems to support local growth forecasts. *Comment: As development is proposed, the city reviews these site plan elements to ensure that streets and utilities are adequately providing these necessary services.*
- Develop plans to improve conditions for and encourage walking and bicycling where appropriate. *Comment: The non-motorized transportation chapter of the Plan provides strategies for encouraging walking and biking on city streets.*
- Maintain, replace, or expand local facilities and infrastructure to meet growth and development needs. *Comment: As development is proposed, the city reviews these site plan elements to ensure that infrastructure adequately provides these necessary services.*
- Adopt and implement the local comprehensive plan following Metropolitan Council review. *Comment: The city intends to adopt a Comprehensive Plan as required by Minnesota statute 473.175.*

STRATEGIES FOR URBAN COMMUNITIES

- Plan for forecasted population and household growth at average densities of at least 10 units per acre for new development and redevelopment. Target opportunities for more intensive development near regional transit investments at densities and in a manner articulated in the 2040 Transportation Policy Plan. *Comment: The 2040 land use map and table will support forecasted growth through a variety of strategies, including allowing accessory dwelling units, reducing residential lot sizes and widths, promoting residential infill, and identifying redevelopment areas in the city.*
- Identify areas for redevelopment, particularly areas that are well-served by transportation options and nearby amenities and that contribute to better proximity between jobs and housing. *Comment: The 2040 land use map shows potential redevelopment areas in proximity to the city’s main commercial areas at West Broadway and Bass Lake Road and Douglas Drive and 42nd Avenue, as well as proximity to the planned expansion of the Blue Line light rail transit (LRT).*
- Lead detailed land use planning efforts around regional transit stations and other regional investments. *Comment: The past several years the city has worked with Metro Transit and Hennepin County to implement the proposed extension of the Blue Line LRT system. The city is working to implement a transit-oriented development (TOD) overlay zoning regulation within the proposed station area.*

- Plan for and program local infrastructure needs (for example, roads, sidewalks, sewer, water, and surface water), including those needed for future growth and to implement the local comprehensive plan. *Comment: As development is proposed, the city reviews these site plan elements to ensure that infrastructure adequately provides these necessary services.*
- Recognize opportunities for urban agriculture and small-scale food production. *Comment: The city currently allows raising of chickens, beekeeping, and community gardens.*

Policy 2: Conserve, restore, and protect the region’s natural resources to ensure availability, support public health and maintain a high quality of life.

STRATEGIES FOR ALL COMMUNITIES

- Include goals, priorities and natural resource conservation strategies in the local comprehensive plan to protect and enhance natural resources identified in regional and local natural resource inventories. *Comment: The Park and Recreation System Master Plan, referenced in Chapter L of the Comprehensive Plan, has identified some parks as “natural area/passive park.”*
- Conserve, protect and interconnect open space to enhance livability, recreational opportunities and habitats. *Comment: The Park and Recreation System Master Plan has identified some parks as “natural area/passive park.”*
- Adopt and implement ordinances for the conservation and restoration of natural resources within the community. *Comment: The Park and Recreation System Master Plan has identified some parks as “natural area/passive park.”*
- Work with regional partners and regional park implementing agencies to identify, plan for, and acquire natural areas and resources prime for preservation and protection. *Comment: The city works with Three Rivers Park District to construct regional trails and also on restoration efforts at MAC Wildlife Area, which is on land owned by the Metropolitan Airports Commission (MAC).*

STRATEGIES FOR URBAN COMMUNITIES

- Integrate natural resource conservation and restoration strategies into the local comprehensive plan. *Comment: The Park and Recreation System Master Plan has identified some parks as “natural area/passive park”, which are areas set aside for preservation of natural resources and open space.*
- Identify lands for reclamation, including contaminated land, for redevelopment and the restoration of natural features and functions. *Comment: The land use chapter of the Comprehensive Plan has identified areas for future redevelopment. On some of these sites it may be necessary to address contamination issues and improve the natural features of the site.*
- Develop programs that encourage the implementation of natural resource conservation and restoration. *Comment: The Park and Recreation System Master Plan has identified some parks as “natural area/passive park”, which are areas set aside for preservation of natural resources and open space.*

Policy 3: Conserve, restore, and protect the quality and quantity of the region’s water resources to ensure ongoing availability, support public health, and maintain a high quality of life.

STRATEGIES FOR ALL COMMUNITIES

- Collaborate and convene with state, regional and local partners to protect, maintain, and enhance

natural resources protection and the protection of the quality and quantity of the region's water resources and water supply. *Comment: The Joint Water Commission (JWC) owns and operates the potable water supply for the cities of Crystal, New Hope and Golden Valley. The JWC has a water supply plan, which is included in this Comprehensive Plan by reference. The city is also a member of both the Bassett Creek Watershed Management Commission and the Shingle Creek Watershed Management Commission.*

- Prepare and implement local water supply plans and source water (wellhead) protection ordinances, consistent with Minnesota Rules 4720, in all communities with municipal water supply. *Comment: The city is expecting to adopt these ordinances in 2018.*
- Plan land use patterns that facilitate groundwater recharge and reuse, and reduce per capita water use to protect the region's water supply. *Comment: A significant water infiltration project is planned to be constructed in Becker Park in Crystal in 2019.*
- Plan for sustainable water supply options and groundwater recharge areas to promote development in accordance with natural resources protection and efficient use of land. *Comment: The city is fully developed, but is working on ordinances to allow for land use intensification in appropriate areas. The city's water source is surface water that is purchased from the city of Minneapolis and only has wells for emergency backup use.*
- Prepare and implement local surface water plans as required by Minnesota Rules Chapter 8410, the Metropolitan Land Planning Act, and the 2040 Water Resources Policy Plan. *Comment: The city has a surface water management plan which is currently being updated.*
- Reduce the excess flow of clear water into the local wastewater collection system (inflow and infiltration). Participate in inflow/infiltration grant programs as available. *Comment: The city has been actively reducing inflow and infiltration (I & I) in a number of ways. In 2018 the city completed replacement of all sanitary sewer manhole lids with solid covers. Sanitary sewer lining and replacement have also occurred over the last few years.*
- Adopt and enforce ordinances related to stormwater management and erosion control. *Comment: The city has recently updated the entire City Code, which included updates to the storm water management and erosion control provisions.*
- Adopt and implement best management practices for abating, preventing, and reducing point and nonpoint source pollution. *Comment: These practices were included in the recent updating of the City Code related to storm water management and illicit discharge.*
- Integrate drinking water source protection into local land use decisions, particularly in Drinking Water Supply Management Areas. *Comment: The city's potable water is purchased from the city of Minneapolis, which draws water from the Mississippi River. The only Drinking Water Supply Management Area (DWSMA) that includes Crystal is a small area located in the northeast corner of Brooklyn Center.*
- Develop programs that encourage stormwater management, treatment, and infiltration. *Comment: The city has a stormwater management ordinance in its unified development code, and coordinates with the city's watershed commissions in the review of proposed development.*

STRATEGIES FOR URBAN COMMUNITIES

- Implement best management practices to control and treat stormwater as redevelopment opportunities arise. *Comment: The city has a stormwater management ordinance in its unified*

development code and coordinates with the city's watershed commissions in the review of proposed development.

- Explore alternative water supply sources to ensure alternative water resources beyond 2040.
Comment: The primary source of potable water is from the Mississippi River purchased from the city of Minneapolis. The Joint Water Commission has three wells that are available for emergency use only.
-

Policy 4: Promote housing options to give people in all life stages and of all economic means viable choices for safe, stable and affordable homes.

STRATEGIES FOR ALL COMMUNITIES

- Prepare a local comprehensive plan that addresses the affordable housing plan requirements of the Metropolitan Land Planning Act, including guiding sufficient land to support a community's share of the regional affordable housing need and an implementation section that identifies the programs, fiscal devices, and official controls to be employed to address a community's share of the regional need for affordable housing. *Comment: These housing issues are addressed in the housing and land use chapters of the Comprehensive Plan.*
- Review local ordinances, policies and partnerships to ensure they encourage and facilitate the opportunity for the development or preservation of affordable and lifecycle housing. *Comment: Much of Crystal housing is considered affordable, but the city has recently implemented ordinances to encourage affordable housing such as reducing residential lot areas and widths and allowing accessory dwelling units.*
- Identify and analyze local markets, location, condition, and availability of affordable units, both publicly subsidized and naturally occurring, to inform the housing element of the local comprehensive plan. *Comment: The city has completed a housing gap analysis to inform future housing needs. This analysis is summarized in the housing chapter of the Plan.*
- Participate in Livable Communities Act programs by negotiating affordable and lifecycle housing goals that support regional and local housing needs, and prepare a Housing Action Plan to address those goals and become eligible to access grant funding to address local development and redevelopment objectives. *Comment: As noted in the housing chapter of the Plan, the city participates in the Livable Communities program.*
- Collaborate with partners, especially counties, to rehabilitate and preserve existing housing. *Comment: As noted in the housing chapter of the Plan, the city currently provides these housing programs.*

STRATEGIES FOR URBAN COMMUNITIES

Comment: The city's housing stock is considered very affordable, such so that the Metropolitan Council has identified that 25 affordable units are to be built in Crystal between 2021 and 2030 to assist in meeting the region's affordable housing needs. Nevertheless, the city has identified redevelopment areas in the land use chapter of the Plan that will address higher density housing that may be defined as affordable. The city has implemented ordinances to encourage affordable housing such as reducing residential lot areas and widths and allowing accessory dwelling units.

- Designate land in the comprehensive plan to support household growth forecasts and address the community's share of the region's affordable housing need through redevelopment at a range of

densities. *Comment: The land use chapter of the Plan identifies redevelopment areas that will support household growth forecasts.*

- Plan for a mix of housing affordability in station areas along transitways. *Comment: The city has identified redevelopment areas in the land use chapter of the Plan where affordable housing may occur.*
- Plan for affordable housing that meets the needs of multigenerational households. *Comment: Redevelopment areas have been identified in the land use chapter of the Plan where affordable housing could be constructed. The city has implemented ordinances to encourage affordable housing such as reducing residential lot areas and widths and allowing accessory dwelling units.*
- Use state, regional, and federal sources of funding, and/or financing and development tools allowed by state law to facilitate the development of new lifecycle and affordable housing. *Comment: The city has demonstrated its willingness to partner with other organizations to provide funding to build new affordable housing. Most recently in 2015, this funding assisted in the construction of a 130-unit affordable senior apartment building in Crystal.*

Policy 5: Sustain and improve a multi-modal transportation system to support regional growth, maintain regional economic competitiveness, and provide choices and reliability for the system’s users.

STRATEGIES FOR ALL COMMUNITIES

- Consider travel modes other than the car when reviewing land development plans to better connect and integrate choices throughout all stages of planning. *Comment: When reviewing proposed development plans, the city looks for opportunities to make pedestrian and bicycle connections.*
- Plan for and construct an interconnected system of local streets, pedestrian, and bicycle facilities that is integrated with the regional system to minimize short trips on the regional highway system. *Comment: The city is fully developed but in reviewing development proposals, looks for opportunities to connect new streets to the existing network and to pedestrian and bicycle facilities.*
- Adopt access management standards that support state and county highway access and mobility needs. *Comment: The city works cooperatively to adhere to County and State access standards and mobility needs.*
- Plan for compatible land uses and air space adjacent to the system of regional airports. *Comment: The city has zoning regulations in place that provide for future compatible development adjacent to the Crystal Airport.*
- Participate in regional transportation planning activities to ensure that the metropolitan planning process and regional transportation systems reflects local needs. *Comment: The past several years, Crystal has worked with Metro Transit and Hennepin County to implement the proposed extension of the Blue Line LRT.*
- Work with partners in communities, counties, and the region at large to coordinate transportation, pedestrian, bicycle, and trail connections within and between jurisdictional boundaries. *Comment: Crystal has worked cooperatively with Three Rivers Park District and Hennepin County for the extension of regional trails and to plan future pedestrian and bicycle facilities.*

STRATEGIES FOR URBAN COMMUNITIES

- Develop comprehensive plans that focus on growth in and around regional transit stations and near

high-frequency transit services, commensurate with planned levels of transit service and the station typologies (for example, land use mix, density levels) identified in the 2040 Transportation Policy Plan.

Comment: In the land use chapter of the Comprehensive Plan, the city has identified a redevelopment area around the proposed Bass Lake Road LRT station. The city is proposing to adopt new zoning regulations that will focus redevelopment opportunities in this area.

- Develop local policies, plans, and practices that improve pedestrian and bicycle circulation, including access to regional transit services, regional trails, and regional bicycle corridors. *Comment: The city works cooperatively with Three Rivers Park District and Hennepin County to improve and plan for regional pedestrian and bicycle connections, such as the Crystal Lake and Bassett Creek Regional Trails.*
- Consider implementation of travel demand management (TDM) policies and ordinances that encourage use of travel options and decrease reliance on single-occupancy vehicle travel. *Comment: Although Crystal does not have what would be considered a larger employer that brings many workers into the city at specific times, the city works to create an environment to reduce congestion at peak travel times. These strategies include providing opportunities to bike or walk to work, and improving pedestrian crossing through pavement markings.*
- Engage private sector stakeholders who depend on or are affected by the local transportation system to address local business needs such as routing, delivery, and potential land use conflicts. *Comment: The city has partnered with the traffic routing app, Waze, and is participating in the Connected Citizens Program. This program brings citizens and cities together to provide current road and traffic conditions. The vast majority of commercial areas in Crystal are along County highways of higher functional classification.*
- Adopt development standards that improve the user experience, circulation, and access for bicyclists and pedestrians. *Comment: As a fully developed city, Crystal has fewer opportunities to create new bicycle and pedestrian infrastructure. However the city is actively working with Hennepin County and Metro Transit to plan for improved pedestrian and bicycle connections around the proposed Bass Lake Road LRT station.*
- Adopt Complete Streets policies that improve safety and mobility for all road users. *Comment: The city is currently in the process of developing a number of policies to improve traffic safety and mobility, which may include a Complete Streets policy.*

Policy 6: Foster connected land use options to provide businesses and industries with access to materials, markets, and talent.

- Strategies for all communities. *Comment: The Plan identifies four redevelopment areas in the land use chapter where redevelopment will lead to an intensification of land use, whether commercial or residential redevelopment. The city has completed a market analysis (Appendices B and C) to inform the proposed transit-oriented development zoning regulations. The market analysis included input from potential developers of the redevelopment areas.*
- Plan for the further development and intensification of existing and emerging job concentrations. *Comment: In the land use chapter of the Plan, the city has identified redevelopment areas where land use intensification could occur. Many of these areas are currently zoned for commercial uses, and redevelopment could assist in business expansion.*
- Consider completing a community-based market analysis to better understand real estate needs for commercial and industrial land. *Comment: As part of planning for the proposed extension of the Blue*

Line of the LRT, the city has completed a market analysis to inform the redevelopment of the area around the proposed Bass Lake Road LRT station.

- Consider addressing economic competitiveness in the local comprehensive plan. *Comment: The market analysis note above addresses Crystal's commercial strengths in attracting specific businesses.*
- Preserve sites for highway and rail-dependent manufacturing and freight transportation. *Comment: Crystal is fully developed so this is not applicable.*
- Engage with businesses and other employers to ensure their input is provided to the local comprehensive plan. *Comment: The city has engaged the business community in discussions relating to the proposed transit-oriented development overlay area noted in the land use chapter of the Plan. As the city continues to develop plans for these redevelopment areas, business stakeholders will continue to be solicited for their input on the plans.*

Policy 7: Promote sensitive land use and development patterns to achieve Minnesota's adopted greenhouse gas emissions goal at the regional scale, and to develop local resiliency to the impacts of climate change.

- *Comment: The city is amending its land use ordinances to allow market-driven land use intensification within the redevelopment areas identified in the land use chapter of the plan and by allowing for higher residential densities generally. This intensification reduces dependence on the automobile.*

CHAPTER C: DEMOGRAPHIC BASELINE

Crystal is a predominantly single family detached residential community. It is largely a product of the period immediately following World War II. As recently as 1945 the community was semi-rural with some scattered subdivisions, but by 1970 the transition to suburban development was essentially complete. After 1970 new housing occurred by infill of remaining vacant parcels or redevelopment of existing land uses (see Figure C-1).

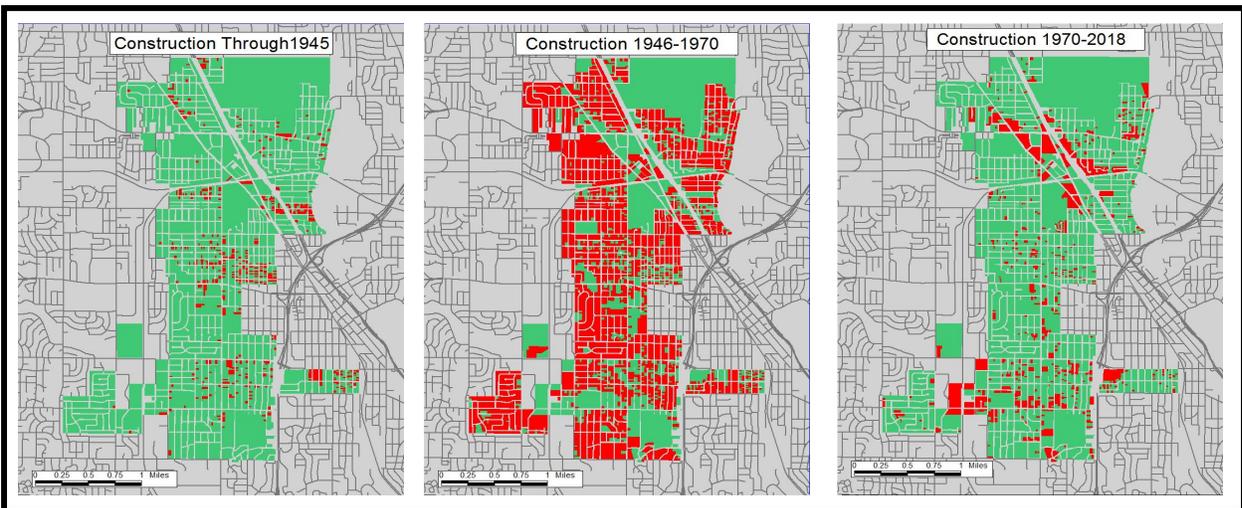


FIGURE C-1 CRYSTAL DEVELOPMENT HISTORY (HOUSING IN RED WAS BUILT DURING THE PERIOD)

Crystal has some of the lowest cost suburban housing in the Twin Cities regional market. This is generally true for all housing types (single family, townhouse, apartments), for units of comparable size/features, and for units with similar occupancy status (ownership vs. rental) when compared to most other suburbs in the metropolitan region.

Census 2010 showed Crystal having 9,634 housing units:

- 7,280 (75.6%) were single family detached homes.
- 263 (2.7%) were single family attached (such as townhouses).
- 236 (2.4%) were in buildings with 2-4 living units.
- 1,855 (19.2%) were in buildings with more than 5 living units.

From April 1, 2010 through Dec. 31, 2017, the city has seen a net gain of 193 housing units:

- 63 single family detached homes.
- 130 in one apartment building (The Cavanagh).

Therefore as of January 1, 2018, Crystal is estimated to have 9,823 housing units:

- 7,343 (74.7%) single family detached (houses).
- 263 (2.7%) single family attached (townhouses).
- 232 (2.4%) in buildings with 2-4 units.
- 1,985 (20%) in buildings with more than 5 units.

Growth during the period 2010-2017 was due to the construction of single-family homes, including infill development, and the construction of a 130-unit apartment building.

In terms of housing unit occupancy, Census 2010 indicated that Crystal had a 95.3% occupancy rate, with 9,183 occupied housing units. Of these, 6,847 (74.5%) were owner occupied and 2,336 (25.4%) were renter occupied. The state average was 73% owner/27% renter; the U.S. average was 65% owner/35% renter.

In terms of population, Crystal’s peak census year was 1970. The decrease in the average number of persons per household (“Persons/HH” below) is the reason for the city’s population decline since 1970. This has been occurring in most fully developed communities. In Crystal’s case, these trends appear to be leveling out: Household size in the 2010 census was 2.39 persons per household – the same number as in the 2000 census.

YEAR	HOUSEHOLDS	PERSONS/HH	POPULATION
1950	1,591	3.59	5,713
1960	5,922	4.10	24,280
1970	8,313	3.72	30,925
1980	8,994	2.84	25,543
1990	9,292	2.56	23,788
2000	9,389	2.39	22,698
2010	9,183	2.39	22,151

TABLE C-1 CENSUS DATA SUMMARY

CHAPTER D: METROPOLITAN COUNCIL FORECASTS

In 2017 Metropolitan Council forecast the change in population, households and employment for each planning jurisdiction in the region through 2040. Their forecasts for the region, each county, and each municipality in Hennepin County are summarized below (see Figure D-1).

Thrive MSP 2040 - Forecasts as of Sept. 1, 2017												
2040 forecasts were adopted May 28, 2014 and updated July 8, 2015. Forecasts are periodically revised through Council action. This table includes all revisions through August 2017.												
(pt) denotes part of a city; remainder of city is in neighboring county.* ◊ = Rogers annexed Hassan Township in 2012; Census counts are combined. # = SMSC forecasts are accounted separate from the balance of Prior Lake and Shakopee. † = Laketown Township will be fully annexed before 2040; forecast has been reassigned to neighboring cities.												
= Forecast revised by Council action in August-December 2015 ** = Forecast revised by Council action in 2016 *** = Forecast revised by Council action in 2017												
	POPULATION				HOUSEHOLDS				EMPLOYMENT			
	2010	2020	2030	2040	2010	2020	2030	2040	2010	2020	2030	2040
ANOKA CO.	330,844	360,880	401,950	440,420	121,227	136,860	155,300	171,930	106,387	126,660	136,100	145,420
CARVER CO.	91,042	108,520	135,960	161,240	32,891	40,940	52,180	62,590	31,836	42,190	48,100	53,840
DAKOTA CO.	398,552	436,570	475,370	514,650	152,060	171,240	188,220	204,950	170,192	203,130	219,660	236,300
Bloomington	82,893	86,100	89,400	93,300	35,905	38,100	39,700	41,250	86,530	98,700	104,300	109,700
Brooklyn Center	30,104	31,400	33,000	35,400	10,756	11,300	12,300	13,300	11,001	13,000	13,800	14,600
Brooklyn Park	75,781	86,700	91,800	97,900	26,229	30,000	32,200	34,300	24,084	32,100	36,100	40,200
Champlin	23,089	23,200	24,200	24,000	8,328	8,800	9,500	9,600	4,012	4,400	4,600	4,800
Chanhassen (pt)	-	-	-	-	-	-	-	-	1,159	2,000	2,100	2,200
Corcoran	5,379	6,700	8,900	11,300	1,867	2,500	3,570	4,700	1,093	1,700	2,010	2,300
Crystal	22,151	22,700	23,200	23,800	9,183	9,500	9,600	9,700	3,929	4,400	4,640	4,900
Dayton (pt)	4,617	5,900	7,900	10,400	1,619	2,200	3,200	4,400	921	2,000	2,490	3,000
Deephaven	3,642	3,560	3,490	3,470	1,337	1,360	1,380	1,400	688	830	880	900
Eden Prairie	60,797	67,900	75,200	82,400	23,930	27,400	30,400	33,300	48,775	57,700	62,100	66,600
Edina **	47,941	51,200	53,900	54,400	20,672	22,600	24,400	25,100	47,457	51,800	54,000	56,100
Excelsior	2,188	2,280	2,430	2,420	1,115	1,200	1,300	1,300	2,220	2,500	2,600	2,700
Fort Snelling (unorg.)	149	150	290	490	135	140	240	340	23,215	24,900	25,400	26,000
Golden Valley	20,371	21,300	22,000	22,900	8,816	9,300	9,600	9,800	33,194	36,000	37,500	38,900
Greenfield	2,777	3,030	3,460	3,880	936	1,100	1,360	1,600	613	750	780	800
Greenwood	688	680	670	650	290	300	300	300	82	110	120	130
Hanover (pt)	609	610	570	560	196	210	210	210	36	50	60	60
Hopkins **	17,591	18,900	19,600	20,100	8,366	9,300	9,800	10,100	11,009	14,700	15,500	16,200
Independence	3,504	3,830	4,040	4,290	1,241	1,400	1,560	1,700	587	680	740	770
Long Lake	1,768	1,810	1,960	1,990	732	790	870	900	1,093	1,190	1,310	1,400
Loretto	650	650	680	700	269	280	290	300	366	370	370	370
Maple Grove	61,567	70,900	80,500	89,700	22,867	26,600	29,900	33,100	29,877	38,400	42,600	47,000
Maple Plain	1,768	1,870	2,090	2,320	723	790	890	1,000	1,579	2,000	2,180	2,300
Medicine Lake	371	390	400	400	160	170	170	170	15	60	80	100
Medina ***	4,892	6,600	7,700	8,900	1,702	2,300	2,840	3,400	3,351	4,980	5,300	5,500
Minneapolis	382,578	423,300	439,100	459,200	163,540	183,800	194,000	204,000	281,732	315,300	332,400	350,000
Minnetonka	49,734	53,200	58,000	61,500	21,901	24,200	26,600	28,300	44,228	54,400	58,900	63,200
Minnetonka Beach **	539	520	490	510	201	200	200	210	174	180	180	180
Minnetrista	6,384	8,000	9,800	12,000	2,176	2,900	3,870	5,000	665	720	730	740
Mound	9,052	9,000	9,300	9,400	3,974	4,200	4,460	4,600	1,165	1,500	1,720	1,900
New Hope	20,339	21,100	22,000	23,100	8,427	8,900	9,200	9,600	11,080	11,800	12,300	12,600
Orono	7,437	8,100	8,800	9,500	2,826	3,200	3,560	3,900	1,562	1,700	1,780	1,800
Osseo	2,430	2,730	2,940	3,170	1,128	1,300	1,400	1,500	1,749	1,920	2,120	2,300
Plymouth	70,576	75,400	80,200	83,600	28,663	31,200	33,000	34,200	46,227	53,900	57,700	61,500
Richfield	35,228	35,700	35,600	35,900	14,818	15,600	16,000	16,400	15,604	16,600	17,100	17,500
Robbinsdale **	13,953	14,750	15,100	15,300	6,032	6,300	6,600	6,800	6,858	7,000	7,100	7,200
Rockford (pt)	426	460	550	620	184	210	260	290	94	240	310	390
Rogers ◊	11,197	14,200	18,400	22,800	3,748	5,000	6,700	8,500	7,907	11,400	13,100	14,800
St. Anthony (pt)	5,156	5,100	5,200	5,200	2,210	2,300	2,350	2,400	1,626	1,800	1,870	1,900
St. Bonifacius	2,283	2,160	2,150	2,170	863	870	880	900	478	490	500	500
St. Louis Park ***	45,250	48,200	49,600	51,800	21,743	23,600	24,800	25,700	40,485	43,400	45,200	46,700
Shorewood	7,307	7,400	7,500	7,600	2,658	2,800	2,910	3,000	1,113	1,300	1,340	1,400
Spring Park	1,669	1,730	1,860	1,950	897	960	1,040	1,100	583	600	600	600
Tonka Bay **	1,475	1,520	1,550	1,560	586	630	660	680	298	340	370	400
Wayzata	3,688	4,140	4,520	4,650	1,795	2,100	2,310	2,400	4,567	4,800	4,920	5,000
Woodland	437	450	440	440	169	180	180	180	8	-	-	-
HENNEPIN CO.	1,152,425	1,255,520	1,330,480	1,407,640	475,913	528,090	566,560	600,930	805,089	924,710	981,800	1,038,140
RAMSEY CO.	508,640	548,220	570,610	593,320	202,691	223,460	236,090	246,050	316,937	356,130	375,220	393,070
SCOTT CO.	129,928	153,750	176,260	199,520	45,108	55,160	64,510	74,130	41,534	55,100	62,190	68,640
WASHINGTON CO.	238,136	268,410	299,130	330,200	87,859	102,280	116,210	130,090	71,897	88,880	97,460	105,410
METRO AREA	2,849,567	3,160,000	3,459,000	3,738,000	1,117,749	1,264,000	1,402,000	1,537,000	1,543,872	1,828,000	1,910,000	2,039,000

FIGURE D-1 THRIVE MSP 2040 FORECASTS

CHAPTER E: LAND USE

The Land Use chapter's main component is the 2040 planned land use map, which is the primary basis for the city's zoning map. In this chapter actual land use in 2018 is contrasted with the 2040 planned land use map.

LAND USE CATEGORIES

- The following land use categories are shown on Tables E-1 and E-3 and Figures E-1 and E-4, which are the 2018 existing and 2040 planned land uses in Crystal. On Table E-1, the comparison of the 2010 land uses of the 2030 Comprehensive Plan is not an exact comparison to the 2018 existing land uses. This is due to redefining the institutional category for the 2040 plan, the classification of undeveloped parcels into an appropriate future land use, and the reclassification of the MAC Wildlife Area from the airport category to the park category.
- **Low Density Residential.** Not less than 1 unit per acre nor more than 6 units per acre. This category typically includes single and two-family dwellings.
- **Medium Density Residential.** Not less than 6 units per acre nor more than 16 units per acre. This category typically includes single and two-family dwellings, but also multi-family dwellings.
- **High Density Residential.** Not less than 16 units per acre nor more than 40 units per acre. This category typically includes multi-family dwellings.
- **Commercial.** Retail, offices, restaurants, and some automobile-oriented businesses (on certain corridors designated in the city's unified development code).
- **Mixed Use.** Mixed use is a new category for the 2040 planned land use map. The category includes a vertical or side-by-side mixture of multiple family residential institutional, commercial and industrial uses. Residential uses may be not less than 25 units per gross acre nor more than 50 units per gross acre. The city expects that approximately 50 percent of land within this guidance will develop as residential. The city is proposing to create new zoning regulations for this area that will allow for this use mixture, as well as reduced parking ratios and building placement guidelines.
- **Industrial.** Manufacturing, storage, and some automobile-oriented businesses (on certain corridors designated in the city's unified development code).
- **Park.** Includes both active and passive outdoor recreation. If these properties are redeveloped for other uses, then the properties would be planned for low residential development.
- **Institutional.** This category includes churches, schools, cemeteries, and publicly-owned properties. If these properties are redeveloped for other uses, then the properties would be planned for low residential development.
- **Rail Corridor.** Property owned by Canadian Pacific or Burlington Northern Santa Fe for their respective railroad tracks and related facilities.
- **Crystal Airport.** Property owned by Metropolitan Airports Commission (MAC) for the operation of the Crystal Airport.
- **Roadway Right-of-Way.** This category includes not only right-of-way dedicated by plat or easement, but also parcels used for right-of-way purposes.

Within Urban Service Area	Allowed Density Range Housing Units/Acre		Land Area Existing (in acres and percentage of land use)	Land Area Existing (in acres and percentage of land use)
	Minimum	Maximum	2010	2018
Low Density Residential	1	6	1,767.64 (47.8%)	1786.93 (48.3%)
Medium Density Residential	6	16	27.87 (.75%)	26.39 (.71%)
High Density Residential	16	40	91.27 (2.5%)	96.51 (2.6%)
Commercial			149.15 (4%)	149.65 (4.1%)
Industrial			91.15 (2.5%)	98.48 (2.7%)
Park			195.56 (5.3%)	246.50 (6.7%)
Institutional/Undeveloped			238.19 (6.4%)	N/A
Institutional			N/A	191.86 (5.2%)
Rail Corridor			47.48 (1.3%)	46.89 (1.3%)
Crystal Airport			334.46 (9.1%)	286.66 (7.8%)
Roadway Right of Way			753.78 (20.4%)	767.13 (20.8%)
TOTAL (all sewered; there are no unsewered areas in Crystal)			3,696.55	3,697

TABLE E-1 2018 EXISTING LAND USE

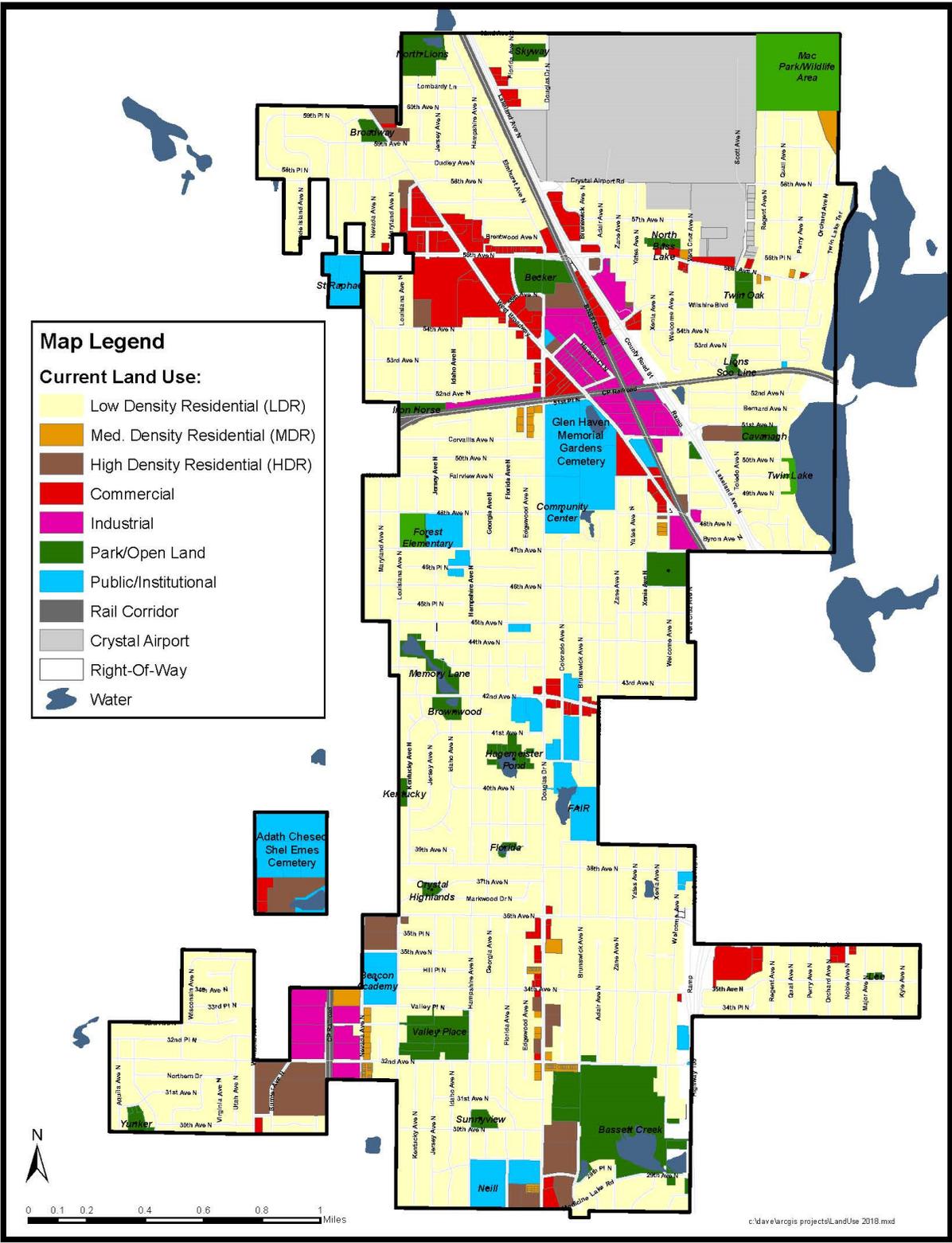


FIGURE E-1 2018 EXISTING LAND USE MAP

RESOURCE PROTECTION ITEMS RELATED TO LAND USE

Historic Sites. There are no properties in Crystal listed on the National Register of Historic Places. Hennepin County has identified 64 homes in Crystal built prior to 1919. All of these houses are currently in private ownership. The homeowners will necessarily make the decisions regarding preservation of these buildings. The city requires that buildings be maintained and provides incentives for home improvements.

Environmental Sustainability. The city has adopted the following policies to encourage environmental sustainability:

1. The city’s unified development code contains an explicit declaration allowing variances which are necessary for solar energy systems to have access to direct sunlight.
2. In 2018 the city also adopted a new zoning regulation that made it easier for property owners to install solar energy systems.
3. In 2014, the city began implementation of best practices as established by the Minnesota GreenStep Cities program.
4. The city participates in Xcel Energy’s Community Energy Reports program.

The city does have solar resources, shown in Table E-2, available for alternative energy production, as calculated by the Metropolitan Council in 2017 based on exposure to sunlight. The gross solar generation potential and the gross solar rooftop generation potential are estimates of how much electricity could be generated using existing technology and assumptions on the efficiency of conversion. The values in the table are not intended to demonstrate the amount of solar likely to develop within Crystal. Instead the calculations estimate the potential resource before removing areas unsuitable for solar development or factors related to solar energy efficiency. Figure E-2, also from the Metropolitan Council, shows gross solar potential for Crystal.

Community	Gross Potential (Mwh/yr)	Rooftop Potential (Mwh/yr)	Gross Generation Potential (Mwh/yr) ¹	Rooftop Generation Potential (Mwh/yr) ¹
Crystal	6,437,129	811,022	643,712	81,102

¹ In general, a conservative assumption for panel generation is to use 10% efficiency for conversion of total insolation into electric generation. These solar resource calculations provide an approximation of each community’s solar resource. This baseline information can provide the opportunity for a more extensive, community-specific analysis of solar development potential for both solar gardens and rooftop or accessory use installations. For most communities, the rooftop generation potential is equivalent to between 30% and 60% of the community’s total electric energy consumption. The rooftop generation potential does not consider ownership, financial barriers, or building-specific structural limitations.

TABLE E-2 POTENTIAL SOLAR RESOURCES IN CRYSTAL

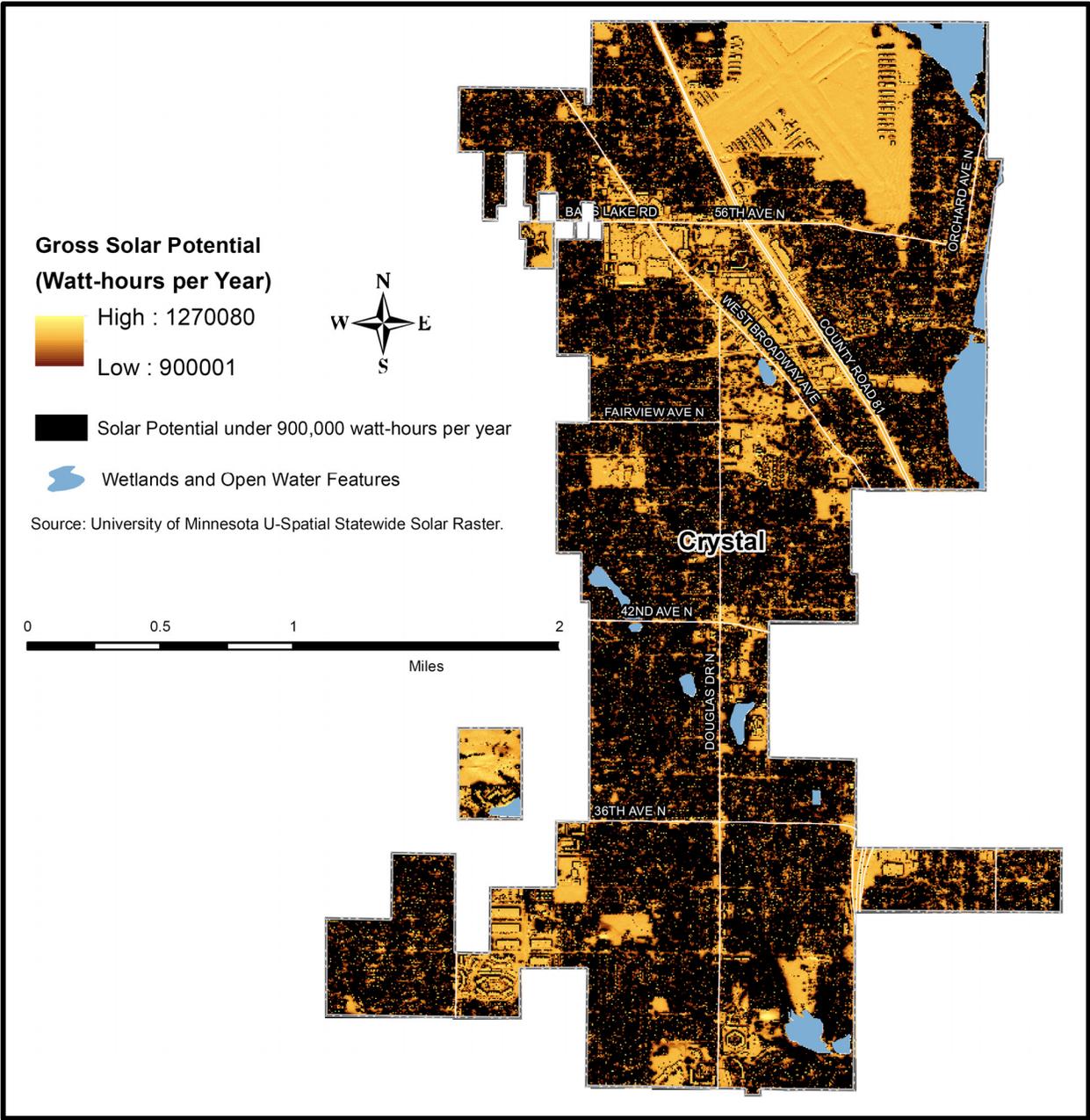


FIGURE E-2: CRYSTAL’S GROSS SOLAR POTENTIAL

Aggregate Deposits. Information Circular #46 from the Minnesota Geological Survey indicates that there are no natural aggregate deposits in Crystal.

REDEVELOPMENT

This section identifies areas of the city, shown on the 2040 planned land map, where there is a significant potential for redevelopment to occur. The city believes that there is strong potential for redevelopment to occur in any number of these areas due to natural market forces, the city's desire to replace blighted or functionally obsolete land uses, or a combination of both.

GENERAL REDEVELOPMENT GOALS

There are areas of the city where redevelopment is likely to be considered at some point in the future. The identification of these areas does not mean that it is definite that redevelopment would occur within the time frame of this plan. Depending on the specific site characteristics and market forces at the time of redevelopment, the physical extent of redevelopment activities may be greater or less than the area shown in this plan. Key parcels have been identified that appear to be most likely to trigger redevelopment in each area, but they are not absolutely essential for redevelopment to occur in most of these areas. Areas not indicated as potential redevelopment areas in this plan are not precluded from being redeveloped.

Many of the descriptions of the potential redevelopment areas indicate that the likely new use would be medium or high density residential. This is a function of the cost of redevelopment in that the new use must be of higher density for the project to be financially feasible. Each project would have to be examined on its own merits and with due consideration to the characteristics of the surrounding area and community input.

Redevelopment projects may be completely privately financed, or receive some assistance from the city and its Economic Development Authority (EDA). Such assistance may take the form of tax increment financing, tax abatement, housing tax credits, grants from other units of government, or other funding sources. Each request for financial assistance will be evaluated in accordance with the policies and procedures governing each respective funding source.

Due to a combination of market realities, financial constraints, limited eminent domain powers and community concerns about density, traffic, change in general and other issues, it would be unrealistic to expect that all of the areas described in this section will be redeveloped within the time frame of this plan. Instead, this plan should be viewed as a menu from which citizens, developers, the Planning Commission, the EDA and the City Council may compare and contrast various redevelopment opportunities within the city, and select the best project sites for redevelopment.

Redevelopment projects may trigger, or be triggered by, adjacent public improvements such as roadway reconstruction, water and sewer upgrades, or streetscaping. In cases where near-term public improvements are being considered in a potential redevelopment area, but no redevelopment project is imminent, due consideration will be given to the impact of said improvements on the future redevelopment potential of the area.

DESCRIPTIONS OF SPECIFIC POTENTIAL REDEVELOPMENT AREAS

The following is a description of four potential redevelopment areas in Crystal as shown on the 2040 planned land use map (see Figure E-3).

Areas A and C. These existing commercial areas may see redevelopment within the timeframe of this plan as a result of the planned extension of the Blue Line of the region's light rail line (LRT) transit system. As discussed in more detail in chapter J of this plan, Metro Transit is planning a LRT station at the intersection of Bass Lake Road and Highway 81 (Bottineau Boulevard) in Crystal. In addition, a LRT

station is planned at 42nd Avenue North and Bottineau Boulevard in downtown Robbinsdale, about one mile from area C. Both redevelopment areas are also accessed by Metro Transit bus routes. As of the writing of this plan, the city is considering new development zoning regulations for its proposed redevelopment areas. These regulations could include allowing a mix of commercial and residential uses, reduced parking ratios, and building placement guidelines. Area A has been guided on the 2040 map for mixed use development.

Although a small portion, approximately 31 acres, of the 63rd Avenue station area lies within Crystal a majority of the station area lies within Brooklyn Park. The City of Crystal did not participate in the creation of the 63rd Avenue station area plan. The 63rd station area within Crystal consists of a 13 acre city-owned community park and single-family homes, neither of which provides favorable redevelopment opportunities. As such, the portion of the 63rd station area within Crystal is not designated as a redevelopment area.

A station area plan (Appendix A) for the Bass Lake Road LRT station was completed in 2016 to envision new land uses within ½ mile of the proposed station. This plan designated potential “opportunity sites” in what is proposed as area A that have redevelopment potential under the right set of circumstances. Decisions to participate in redevelopment would be made by individual property owners based on market opportunity. However since 2016 the city has undertaken projects to improve the public realm that were first described in the station area plan. These projects include a streetscape plan along Bass Lake Road between Highway 81 (Bottineau Boulevard) and West Broadway Avenue, and a redevelopment of Becker Park to transition the park from a sports facility use to a community gathering area with improved pedestrian connections to both the LRT station and the surrounding commercial area. It is hoped that improving the public realm in these ways will spur redevelopment in the station area.

The Bass Lake Road LRT station area plan has policy recommendations for the city’s 2040 comprehensive plan. The following are those policy recommendations, with comments from the city detailing how the policy is being implemented, or is planned for implementation. Detailed information about these recommendations are found in the relevant chapters of this plan.

1. **Prioritize development opportunities around the station area.** The city has created redevelopment Area A surrounding the proposed station. The boundary of the redevelopment area adjacent to the LRT station is based on the “opportunity sites” described in the station area plan.
2. **Allow flexibility for higher densities in the station area.** This plan requires that any residential development in Area A be at least 25 units per gross acre, and states as a policy goal to create new zoning regulations that will allow a mix of uses, including multiple-family development, within Area A. These new regulations will also reduce parking ratios and reduce building setbacks from the street.
3. **Emphasize streetscape improvements in the station area.** In 2018 the city completed streetscape improvements on the north side of Bass Lake Road within the station area. In 2019 the city is reconstructing Becker Park which will include connections to existing and planned regional trails.
4. **Prioritize pedestrian and bicycle connections in the station area.** The improvements described in number 3, above, will improve the pedestrian experience through better connections from the proposed station to the city’s main commercial area.
5. **Make Becker Park an important element of the station area.** The city has completed a master plan for Becker Park and construction on improvements to the park are slated to

begin in 2019. The goal of the improvements is to create a community gathering area in the park, which is adjacent to the proposed station. The city also has a goal of creating new zoning regulations that will allow a mix of commercial and higher density residential land uses around Becker Park that will further contribute to the community's use of the park and LRT transit system.

In 2018 a market analysis was completed for four of the five cities along the proposed 13-mile LRT corridor (Appendices B and C). A station area development assessment was completed that provided input from several developers on how LRT service may impact the various station areas. Developers stated that the strength of the Bass Lake Road station area is its abundance of retail, anchored by the recently renovated Crystal Shopping Center. The demographic make up and condition of some properties were seen as challenges. This plan proposes to offset these challenges by making improvements to the public realm as described above.

Area B. This site is the Former Canadian Pacific Railway (CPRR) property west of Douglas Drive and north of the CPRR tracks and contains existing commercial uses adjacent to a single-family residential neighborhood. The zoning of the site no longer allows new commercial uses, but the existing uses may continue in their present form. The following are considerations for re-use, expansion or redevelopment of this area.

1. Any expansion of existing uses or redevelopment of the property shall be compatible with adjacent residential land uses, including but not limited to issues of traffic, parking, noise, hours of operation, buffering, screening, impervious coverage, building size, form and materials. Uses that are considered incompatible with the adjacent area are those that are customer-intensive commercial uses such as retail or medical office, and auto-related businesses, such as vehicle wash, sales or repair.
2. The site development standards in the city's unified development code shall be applicable to any re-use, expansion or redevelopment of the site. However, no building's height shall exceed any of the following: 3 stories, 40 feet, or the building's setback from the east, west or north boundaries of the property.
3. Vehicular access shall be primarily from Douglas Drive and access from Idaho Avenue shall be minimized.

Area D. This area mostly contains a mix of smaller commercial uses and vacant parcels, adjacent to low density residential. There is some potential for redevelopment along the east side of Douglas Drive, but it would be challenging due to topographic conditions and a need to acquire some houses to assemble an optimally sized site. Redevelopment of the west side, along the unimproved Edgewood Avenue north of 34th Avenue, is mainly limited by fragmented property ownership but otherwise appears to be a good candidate for infill development. The city is considering new development zoning regulations for area D. These regulations could include allowing a mix of commercial and residential uses, reduced parking ratios, and building placement guidelines.

LAND USE CHANGES TO ACCOMMODATE DEVELOPMENT BY 2040

It is expected that redevelopment of some existing land uses will occur in addition to the land use changes anticipated on the 2040 map (see Figure E-3). Redevelopment will be driven by market forces, owners' willingness to sell, and input from the community on specific land use proposals. In 2010, the city had 9,183 households and is projected to grow to 9,700 households by 2040. This represents a growth of 517 households during this 30 year period. Table E-3 provides a scenario

under which housing units could be constructed to meet the needs of this projected population increase. Some of the projected population growth can be accommodated by accessory dwelling units. In 2018 the city revised its zoning regulations to allow more property owners to construct this type of residential living space.

LAND USE IMPLEMENTATION ITEMS

The official controls for Crystal is its Unified Development Code (UDC), which are the zoning and subdivision regulations for the city. These official controls serve as a measure of employment-bearing land use intensity by regulating the following:

1. **Commercial building height.** In 2018 the City Council approved an amendment to the zoning regulations to increase the allowable building height in commercial and industrial areas to 5 stories or 60 feet, whichever is less. Taller buildings may be allowed with a conditional use permit approved by the City Council.
2. **Lot coverage.** The city has zoning requirements that allow 85 or 90 percent of a property to be impervious surface in commercial and industrial areas.
3. **Building setbacks.** The city has long-standing regulations in place to require that commercial buildings meet specific locational (setback) standards. In 2019 the City Council is expected to consider additional UDC amendments relating to building placement for its commercial areas.
4. **Lot area, width and depth.** The city has regulations in place as minimum standards for lot area, width and depth for commercial and industrial properties.

In 2018 the City Council approved a complete update to the UDC, which is found in Appendix D, along with the city’s Official Zoning Map. The 2018 update included regulations to allow more dwelling units in the city, such as new regulations for accessory dwelling units and reduced lot size requirements.

In 2019 the City Council is expected to consider additional UDC amendments to create new regulations governing the redevelopment areas described in this chapter. These proposed changes would allow a mix of residential and commercial uses, reduced parking ratios, alternative building placement, and higher densities.

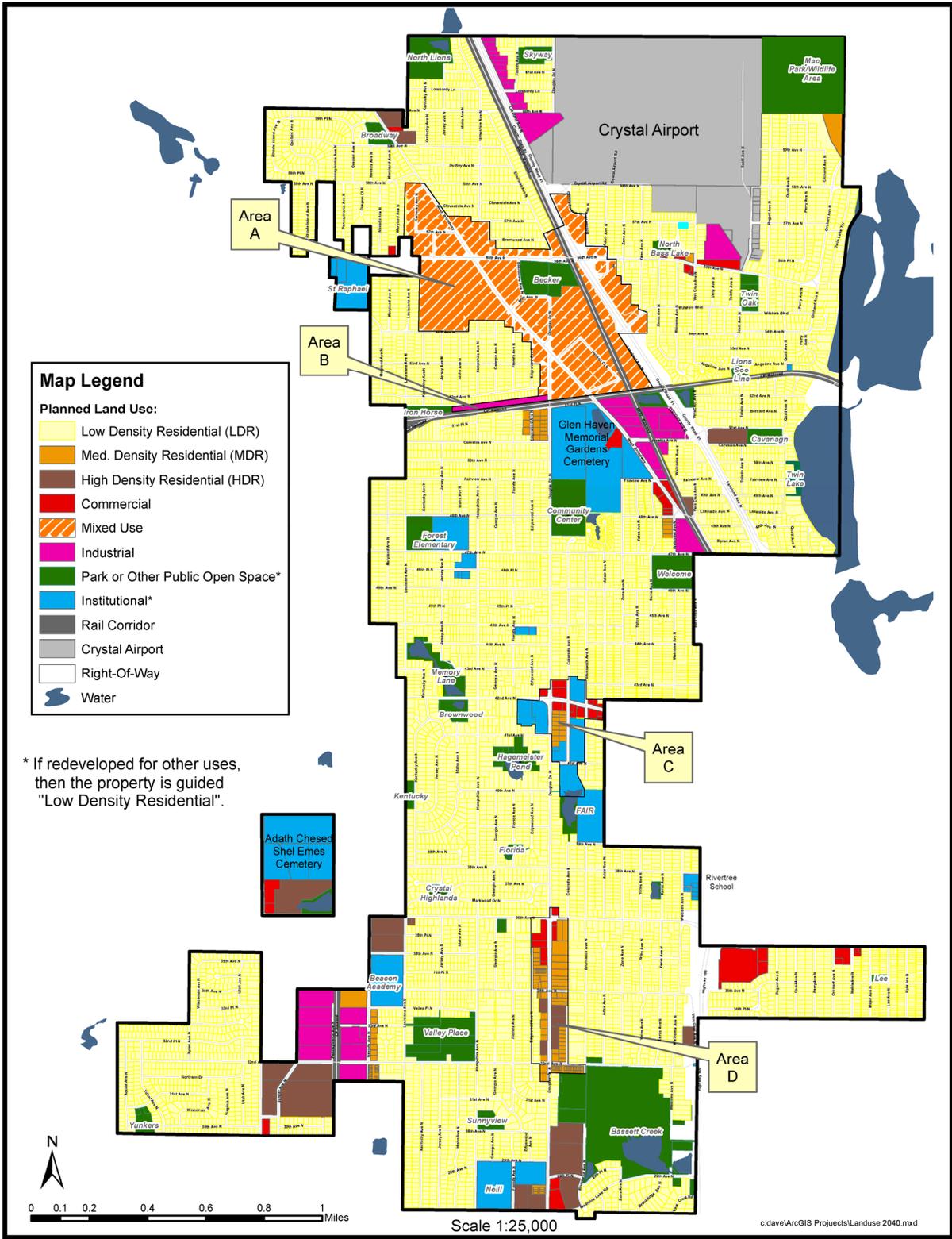


FIGURE E-3 2040 PLANNED LAND USE MAP

Number of Housing Units	Time period	Description of growth
193	April 1, 2010 to December 31, 2017	Net gain of units during this period based on building permits issued.
20	January 1, 2018 to April 1, 2020	Number of single-family homes anticipated based on historic trends and available lots.
74	Present to 2040	Number of accessory dwelling units that could be constructed based on a conservative estimate that 1% of homes would add such a unit by 2040.
+230	Present to 2040	The city has identified four redevelopment areas in the 2040 plan, totaling 276 acres. Area A has been guided for mixed use development and the city is expecting to adopt new zoning regulations in 2019 that will allow for multi-family residential development at minimum density of 25 units per acre within that area. While it is impossible to predict which sites within those 276 acres will redevelop by 2040, the household forecast would be met with redevelopment of less than 10 acres by 2040.

TABLE E-3 HOUSING UNIT GROWTH TO MEET METROPOLITAN COUNCIL’S PROJECTIONS

Within Urban Service Area	Allowed Density Range Housing Units/Acre		Land Area Existing (in acres) and percentage of land use	Land Area Planned (in acres) and percentage of land use	Land Area Planned (in acres) and percentage of land use	Land Area Planned (in acres) and percentage of land use	Number Change (in acres)	Percent Change	Estimated percentage of land in residential use (2040)
	Minimum	Maximum	2018	2020	2030	2040	2018-2040	2018-2040	
Low Density Residential	1	6	1786.93 (48.3%)	1786.13 (48.3%)	1772.29 (47.9%)	1758.45 (47.56%)	- 28.48	- 1.59	90
Medium Density Residential	6	16	26.39 (.71%)	26.92 (.73%)	35.64 (.99%)	44.35 (1.2%)	17.96	68.06	90
High Density Residential	16	40	96.51 (2.6%)	94.57 (2.5%)	88.98 (2.4%)	83.39 (2.3%)	-13.12	-13.59	90
Commercial			149.65 (4.1%)	146.65 (9.9%)	94.07 (2.5%)	41.48 (1.12%)	- 108.17	-72.28	20
Mixed Use	25	50	Not Applicable	6.0 (.02%)	77.70 (2.1%)	149.39 (4.04%)	Not Applicable	Not Applicable	50
Industrial			98.48 (2.6%)	96.51 (2.6%)	82.41 (2.2%)	68.30 (1.8%)	-30.18	- 30.65	0
Park			246.50 (6.7%)	246.74 (6.7%)	252.74 (6.8%)	258.74 (6.99%)	12.24	4.97	0
Institutional			191.86 (5.2%)	191.03 (5.1%)	190.73 (5.2%)	190.42 (5.2%)	-1.44	-0.75	0
Rail Corridor			46.89 (1.3%)	46.89 (1.3%)	46.89 (1.3%)	46.89 (1.3%)	0	0	0
Crystal Airport			286.66 (7.8%)	286.66 (7.8%)	278.66 (7.6%)	286.66 (7.4%)	0	0	0
Roadway Right of Way			767.13 (20.8%)	769.13 (20.8%)	769.13 (20.8%)	769.13 (20.8%)	2	.26	0
TOTAL (all sewered; there are no unsewered areas in Crystal)			3,697	3,697	3,697	3,697	0	0	

TABLE E-4 2040 PLANNED LAND USE

CHAPTER F: HOUSING

The housing chapter describes the current housing types found in the city and forecasts changes in the number of housing units and population for the planning period through 2040. It also contains the city's goals and policies related to housing preservation and new development.

EXISTING HOUSING CONDITIONS

As described in chapter E, the city has four classifications for residential development:

- Low Density Residential. A minimum of 1 unit per acre.
- Medium Density Residential. A minimum of 6 units per acre.
- High Density Residential. A minimum of 16 units per acre.
- Mixed Use. The mixed use category will allow multi-family residential at a minimum density of 25 units per acre. The city expects that approximately 50 percent of land within this guidance will develop as residential.

In 2016 Metropolitan Council conducted an existing housing assessment for Crystal. The following are those findings, based on total housing units of 9,763 and total households of 9,461:

Affordability:

- 295 units affordable to households with income at or below 30% of Average Medium Income (AMI)
- 2,261 units affordable to households with income 31% to 50% of (AMI)
- 6,624 units affordable to households with income 51% to 80% of (AMI). Figure F-1 is a map identifying estimated market value for Crystal homes in 2018. Those homes at or below \$243,500 are affordable for a household earning 80% AMI.

Owner-Occupied versus rental units:

- Owner-occupied: 6,866 units (70%)
- Rental units: 2,897 units (30%)

Publicly subsidized units: 215 units

Cost-burdened households:

- Income at or below 30% of AMI: 790
- Income 31 to 50% of AMI: 687
- Income 51 to 80% of AMI: 733

HOUSING NEEDS

One of the most important needs is to preserve the bulk of the city's existing, relatively affordable housing stock while encouraging development of additional housing to meet needs not addressed by the city's existing housing stock.

In 2018 a housing gaps analysis (Appendix E) was completed for four of the five cities along the proposed 13-mile corridor for the extension of the Blue Line of the light rail transit (LRT) system. The extension of the LRT transit service is described in more detail in chapter J. The first part of the report

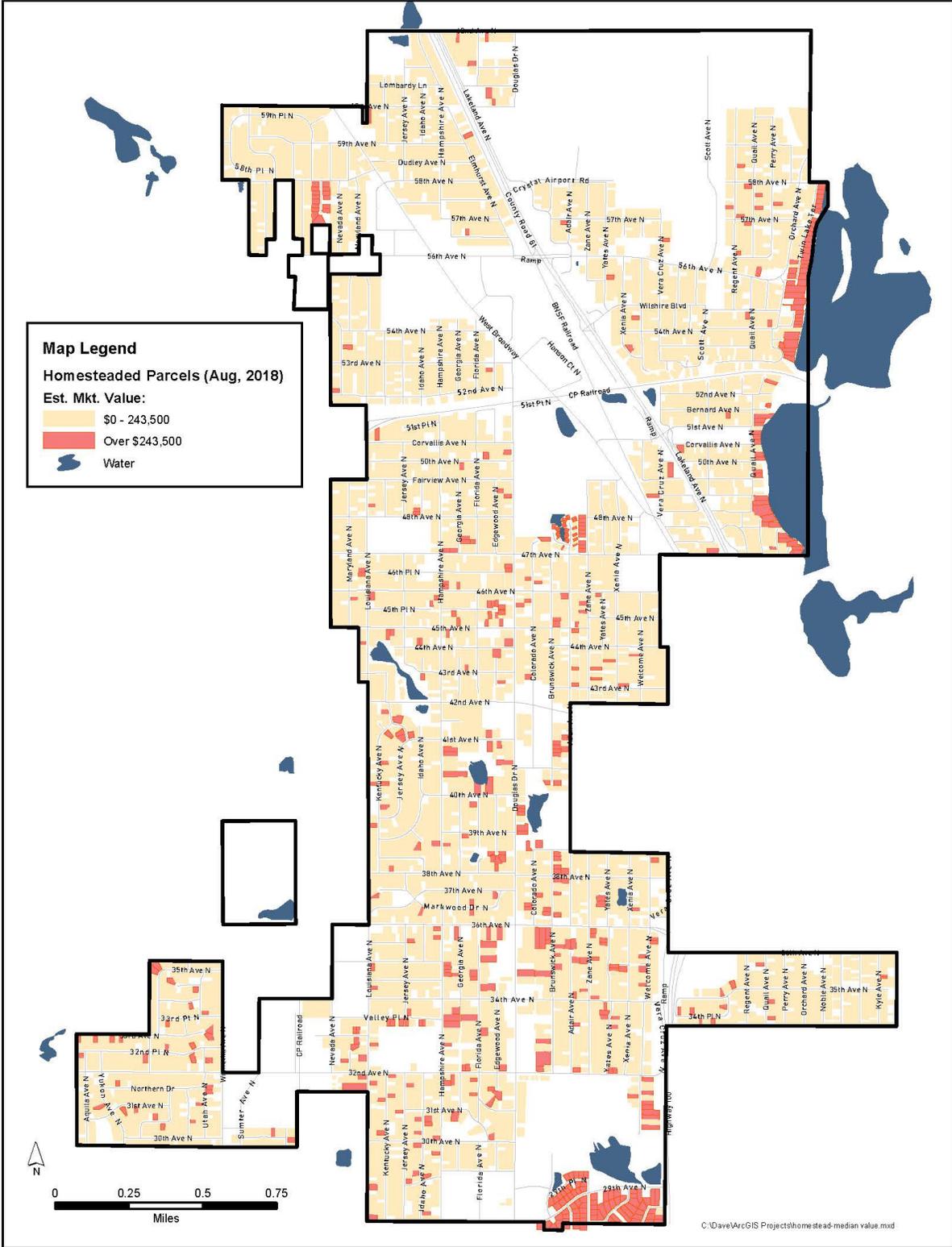


FIGURE F-1 2018 ESTIMATED HOUSING MARKET VALUES MAP

provided information about existing conditions about the corridor, including the types of existing housing and demographic characteristics. Other sections of the report include interviews with real estate professional and community stakeholders to determine the future housing needs along the corridor.

For the proposed LRT Bass Lake Road station in Crystal, a future housing demand of 400-600 units was identified in the report. This housing would be primarily multifamily in the form of rental apartments, senior housing, and multifamily condominiums. With several potential redevelopment sites within the ½ mile radius of the station, the station area could accommodate most of Crystal’s projected household growth through 2040, and meet the city’s goal of a minimum of 25 dwelling units per acre within the proposed Bass Lake Road station area.

TOOLS TO ADDRESS HOUSING NEEDS

The following are several tools that city has used and will continue to consider using to address housing needs at all levels of affordability within the community:

1. **Economic Development Authority (EDA).** The city has an established EDA that functions to address housing needs in two capacities. First, through its lot sale program in which structurally substandard or functionally obsolete homes are purchased, the building demolished, and the lot sold for the construction of a new home. Second, the EDA provides home improvement assistance to residents to maintain and improve their homes. The EDA will continue to participate in these two programs.
2. **Metropolitan Livable Community Act (LCA).** The city participates in the livable communities program which is administered by the Metropolitan Council. In 2013 LCA funding was used to assist in the development of a 130-unit affordable senior apartment building by removing hazardous asbestos material from the building that previously occupied the site.
3. **Tax Increment Financing (TIF).** The city has used TIF financing to advance various commercial and residential projects. Most recently TIF financing was used for the Bass Lake Road streetscape improvements within the proposed Bass Lake Road LRT station area.
4. **Zoning and subdivision ordinances.** In 2018 the City Council adopted ordinances to reduce lot sizes for single-family homes and duplexes and to allow accessory dwelling units, both of which provide options for creating new and affordable housing options.
5. **Rental licensing and inspection programs.** The city’s program has been helpful to preserve the quality of naturally occurring affordable rental housing through annual license renewal, consistent code enforcement and regular inspections, and effective handling of tenant complaints.
6. **Center for Energy and the Environment (CEE).** The city participates in CEE programs designed to preserve the city’s affordable housing by offering home improvement assistance to households below 110% of area median income.
7. **Housing bonds and Low Income Housing Tax Credits.** The city has acted as a pass-through for housing bonds and low income housing tax credits for multiple projects.
8. **Community Development Block Grant Funds (CDBG).** Low income homeowners with home repair needs are eligible for a no-interest, deferred loan.

The following additional tools are available to address housing needs. The city may use some or all of these tools, dependent upon a specific development project. The city will make a determination by the end of 2027 if these tools will be used or not.

1. Housing bonds

2. Tax abatement
3. Programs administered by the U.S. Department of Housing and Urban Development (HUD):
 - a. HOME Investment Partnerships
 - b. Project Based Rental Assistance
4. Community Development Block Grant Funds (CDBG)
5. Affordable Housing Incentive Fund (AHIF) administered by Hennepin County
6. Homes Within Reach and other community land trusts
7. Site assembly, either through the city's EDA or by partnering with the Land Bank Twin Cities.
8. Consolidated Request for Proposals coordinated by the Minnesota Housing Finance Agency
9. Providing affordable housing resources and referrals to existing or future residents including first time homebuyer, down payment assistance and foreclosure prevention programs
10. Housing Improvement Areas (see Minnesota State Statutes, sections 428A.11 to 428A.21)
11. Participation in housing-related organizations, partnerships and initiatives

HOUSING POLICIES

1. Preserve most of the city's existing single family detached houses. About 75% of the city's housing units are detached single family houses, and these are relatively affordable when compared to houses in other suburbs in the Twin Cities metropolitan region. The vast majority of the city's existing houses will remain, making preservation critically important. Preservation activities may include not only repairs and maintenance but also major renovations and additions that significantly transform and update an existing house.
2. Preserve most of the city's other housing types, such as townhouses, duplexes and apartments, and also seek opportunities to eliminate blighted, structurally substandard or functionally obsolete properties.
3. Increase the availability of new housing of the type currently underrepresented in Crystal's housing stock, such as move-up single family houses, multi-family apartments, and senior independent living rental or co-op units. This policy recognizes that redevelopment will be controlled and limited by market demand, physical constraints, financial and political realities, and a limited legal environment for the use of eminent domain.
4. Metropolitan Council has established the city's share of the region's needed additional affordable housing for 2021-2030 as 25 units. The following is a breakdown of the number of these units by area median income (AMI):
 - At or below 30% of AMI – 14 units
 - From 31-50% of AMI - 1 unit
 - From 51-80% of AMI – 10 units

The city expects to meet this need with construction of additional multi-family housing. Consistent with Table E-4, the city expects that 78 acres of land guided as Mixed Use will be available for development by 2030.

HOUSING IMPLEMENTATION ITEMS

1. Continue participation in the Metropolitan Livable Communities Act (LCA), including compliance with the 1995 housing goals agreement. Crystal is already meeting the goals contained within that agreement. If the housing goals of this program are amended in the future, the city will consider

how it may continue to participate in the program. The city will also consider adopting a Fair Housing Policy when it considers continuing LCA participation for the 2021-2030 decade.

2. Use regulatory tools to protect life and property, and to preserve the existing housing stock. Crystal is currently using the following regulatory tools:
 - Rental licensing and inspections program.
 - General code enforcement activities to promote community maintenance and upkeep including enforcement actions necessary to gain compliance with city code.
 - Continue incentives for preservation of the of the city's existing single family detached houses. Specific city-funded programs limited to households below 110% of area median income including:
 - Crystal grant program which provides grants for 20% of eligible home improvement costs.
 - The Community Fix-Up Fund.Both programs are administered by the Center for Energy and the Environment, which also provides technical assistance.
3. Acquire blighted, structurally substandard and functionally obsolete residential property for demolition and replacement with new houses in accordance with the city's Economic Development Authority's (EDA) on-going program, budget parameters and market conditions.
4. Work with developers to incorporate the construction of new housing consistent with the city's housing goals into redevelopment projects as appropriate for the redevelopment site. Through this policy, the city intends to meet the need for development of at least 25 new affordable units, and 25 dwelling units per acre within the proposed Bass Lake Road station area, as well as meet new housing needs based on demographic projections. It is likely that such development would occur in one or more of the potential redevelopment areas identified in Chapter E. Based on the assumed densities described at the beginning of this chapter, the affordable housing need could be accommodated on one or two potential redevelopment sites totaling less than 10 acres. The city will continue to work with developers to find appropriate sites for such housing as market conditions dictate.
5. As roadway congestion continues to increase, promote Crystal's locational advantage as a first ring suburban community, including its relative proximity to employment concentrations, activity centers and regional attractions.

CHAPTER G: ROADWAY JURISDICTION

This chapter focuses on the question of which government entity is responsible for each roadway, and identifies anticipated changes to roadway jurisdiction. The following acronyms are used throughout this chapter and throughout this Comprehensive Plan:

- **Municipal State Aid (MSA).** A roadway that the city has identified as having significant importance to the overall transportation network. The roadway must meet certain state requirements on design and the city is eligible to spend its allocation of state aid funding on maintenance and reconstruction of that road segment.
- **County State Aid Highway (CSAH).** Like MSA streets, but owned, managed and maintained by Hennepin County.
- **Trunk Highway (TH).** Owned, managed and maintained by the Minnesota Department of Transportation (“MnDOT”).

JURISDICTION OF CITY ROADWAYS

The following is a description of the roadways that are under the jurisdiction of either Hennepin County or MnDOT (see Figure G-1).

1. CSAH 8 (West Broadway Ave.) was originally called Territorial Road and was the main route northwest from Minneapolis. In the 1940s its role as a trunk highway was supplanted by what is now CSAH 81.
2. CSAH 9 (42nd Ave. /Rockford Rd.) was a trunk highway (TH 55) until that designation was shifted to Olson Memorial Highway in the 1950s.
3. CSAH 10 (56th Ave./Bass Lake Road) has always been a county road.
4. CSAH 81 (Bottineau Boulevard) was a trunk highway (TH 52 then TH 169) until approximately 30 years ago, when MnDOT turned it over to Hennepin County as part of an exchange for the current alignment of TH 169.
5. CSAH 70 (27th Ave./Medicine Lake Road), CSAH 102 (Douglas Dr.) and CSAH 156 (Winnetka Ave.) are section line roads, meaning that they follow the “square mile” survey lines established under the township-range survey system used throughout most of the U.S.
6. TH 100 was built in the 1930s and 1940s as Minneapolis’ first beltway. The segments through and adjacent to Crystal were reconstructed to modern freeway standards in the early 2000s.

ROADWAY JURISDICTION POLICIES

The city is in the process of adopting a roadway jurisdictional transfer policy. Hennepin County has in the past expressed their interest in eliminating CSAH 8 from their road system by turning it over to the city. The city would accept responsibility for this roadway only after it is reconstructed to the city’s urban standards with municipal consent or the county provides the city with the funds to accomplish same. The city is unsure whether the segment north of CSAH 10 (56th/Bass Lake Rd) is a good candidate for turnback and would not consider such a change without further study and consultation with the cities of New Hope and Brooklyn Park.

FREIGHT

There are not any barge, truck/intermodal freight terminals in Crystal. Canadian Pacific and Union Pacific do have railways through the city. The large commercial area located at West Broadway Avenue and 56th Avenue North (Bass Lake Road) is well served by Hennepin County roadways. There are no known issues for good movements in Crystal on the city's State Aid Municipal system.

CHAPTER H: ROADWAY FUNCTIONAL CLASSIFICATIONS

This chapter describes how each roadway fits into the regional transportation system and hierarchy of different types of roadways. It also considers specific changes to roadway configurations including increasing or reducing the number of lanes on some arterial or major collector roadways. The following terms are used frequently throughout this chapter:

- **Principal arterial.** In the metropolitan area principal arterials are typically trunk highways owned by the Minnesota Department of Transportation (“MnDOT”). Most are freeways, which have controlled access with grade-separated interchanges, or expressways, which have limited access with at-grade, signalized intersections at major cross streets. Principal arterials tend to favor maximum mobility to promote traffic flow and minimal access points.
- **Minor arterial.** These roadways are generally county roadways balancing mobility and access. Older minor arterials typically favor access more than more recently constructed minor arterials.
- **Major collector.** These roadways are typically city streets but also include some county facilities. Major collectors slightly favor access over mobility.
- **Minor collector.** These roadway are city streets that typically have been designated as Municipal State Aid (“MSA”) routes. They favor access over mobility.
- **Other local streets.** These roadways represent the majority of mileage in the city’s roadway system. They also favor access over mobility.

CLASSIFICATION OF CITY ROADWAYS

Functional classification designations help identify which routes are most worthy of federal funding, guide local decisions regarding mobility versus access, and in developing areas identify needs for right-of-way preservation and land use regulation for future routes. These designations are based on parameters established by Metropolitan Council. This comprehensive plan established the following functional classifications (see Figure H-1):

- TH 100 is a principal arterial.
- The following routes are minor arterials:
 - Part of CSAH 8 (West Broadway Avenue) from Douglas Drive to 56th Ave.
 - CSAH 9 (42nd Ave.)
 - CSAH 10 (56th Avenue/Bass Lake Road)
 - CSAH 70 (Medicine Lake Road)
 - CSAH 81 (Bottineau Boulevard)
 - CSAH 102 (Douglas Drive south of West Broadway)
 - CSAH 156 (Winnetka Avenue from 30th Avenue to 39th Avenue)
- The following routes are major collectors:
 - CSAH 8 (West Broadway) north of 56th Avenue
 - CSAH 8 (West Broadway) south of Douglas Drive
 - 36th Avenue
- The following routes are minor collectors:
 - 32nd Ave. from Welcome Ave. to New Hope border.
 - 34th Ave. from Welcome Ave. to Hampshire Ave.
 - 38th Ave. from Welcome Ave. to Hampshire Ave.
 - 47th Ave. from Welcome Ave. to Louisiana Ave.

- 47th Ave. from CSAH 81 (Bottineau Blvd) to CSAH 8 (W. Broadway).
- Fairview Ave. west of CSAH 102 (Douglas Drive) to New Hope.
- Corvallis Ave. from CSAH 8 (West Broadway) to CSAH 81 (Bottineau Boulevard).
- 54th Ave. from CSAH 8 (West Broadway) to Nevada Ave.
- 55th Ave. from Douglas Drive to Sherburne Ave.
- Wilshire Boulevard from Regent Ave. to CSAH 81 (Bottineau Blvd).
- 58th Ave. from CSAH 10 (Orchard Ave.) to Regent Ave.
- 58th Ave. from Elmhurst Ave. to Sumter Ave.
- Winnetka Ave. from 58th Ave. to 60th Ave.
- Sumter Ave. from 58th Ave. to CSAH 10.
- Nevada Ave. from CSAH 10 to 54th Ave.
- Sherburne Ave. from CSAH 10 to 55th Ave.
- Douglas Dr. from 55th Ave. to CSAH 8.
- Regent Ave. from 58th Ave. to Wilshire Blvd.
- Welcome Ave. from 42nd Ave. to 46th Ave. and 47th Ave. to CSAH 8
- Noble Ave.
- Hampshire Ave. from 38th Ave. to 47th Ave.
- Hampshire Ave. from CSAH 70 (Medicine Lake Road) to 36th Ave.
- Adair Ave. from 36th Ave. to 47th Ave.
- Louisiana Ave. from CSAH 9 (42nd Ave.) to Fairview Ave.
- Xenia Ave. from 46th Ave. from 46th to 47th Ave.
- 46th Ave. from Welcome Ave. to Xenia Ave.

● Forecasted 2040 traffic volumes for principal and minor arterials were developed by Hennepin County in 2016 for its 2040 Transportation Systems Plan. The city accepts and incorporates these annual average daily traffic (AADT) forecasts into this plan as shown in italics in Figure H-1.

● The city has allocated the 2040 employment, housing and population forecasts from Chapter D to specific Traffic Analysis Zones (TAZ) based on reasonable expectations for infill development and redevelopment consistent with Chapter E (see Figures H-2 and H-3). A traffic analysis zone is a unit of geography used in transportation planning models. The TAZ used in this plan was determined by the Metropolitan Council.

● All existing principal and minor arterial roadways are owned and maintained by either the Minnesota Department of Transportation or Hennepin County. Information on the existing number of lanes and future number of lanes is available through their Comprehensive Planning documents. Additionally, heavy commercial traffic volumes is available from the respective jurisdictions.

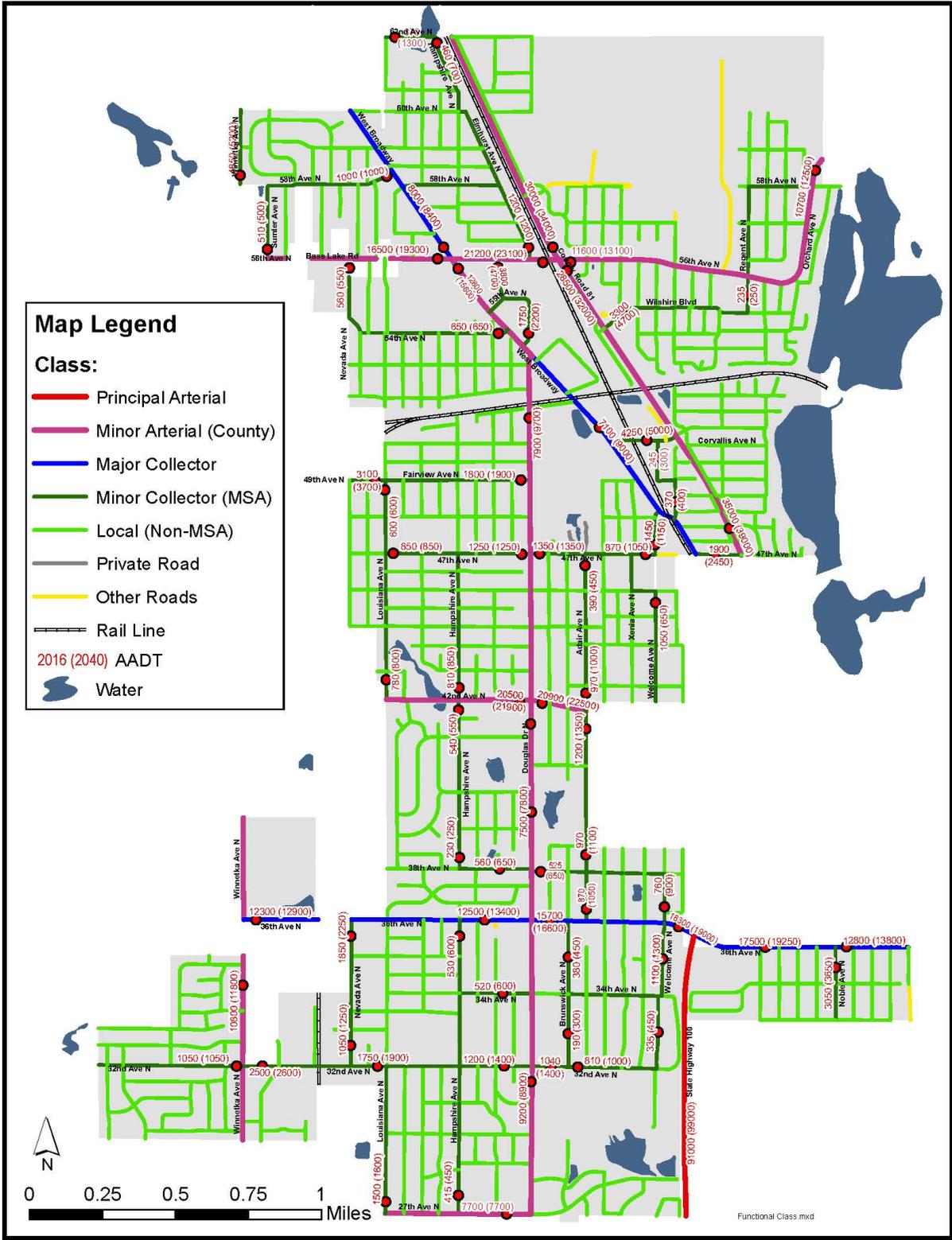


FIGURE H-1 CRYSTAL ROADWAY FUNCTIONAL CLASSIFICATIONS

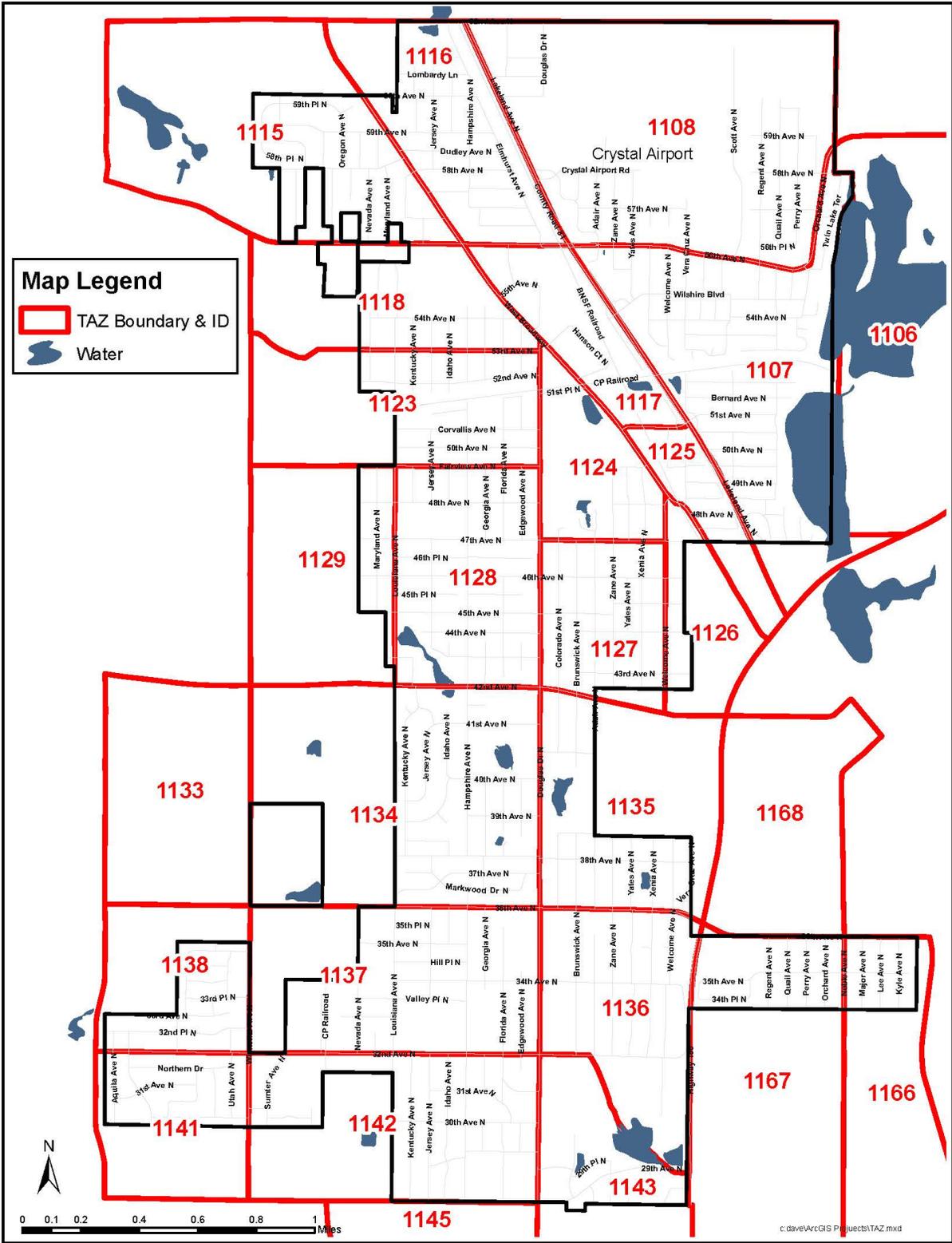


FIGURE H-2 TRAFFIC ANALYSIS ZONES

ORIGINAL MET COUNCIL FORECAST from Met Council's Regional Development Framework as of April 5, 2018

TAZ	POPULATION Change 2010-2040						HOUSEHOLDS Change 2010-2040						EMPLOYMENT Change 2010-2040					
	2010	2020	2030	2040	Number Change	Percent Change	2010	2020	2030	2040	Number Change	Percent Change	2010	2020	2030	2040	Number Change	Percent Change
	1107	2243	2338	2425	2517	274	12.2	885	921	946	970	85	9.6	209	234	245	259	50
1108	1429	1491	1506	1532	103	7.2	594	606	602	600	6	1	119	268	270	269	150	126
1115	957	930	979	1015	58	6.1	395	425	441	450	55	13.9	253	356	450	559	306	121
1116	1096	1026	1052	1081	-15	-1.3	453	482	491	500	47	10.3	285	289	295	299	14	4.9
1117	430	571	621	668	238	55.3	228	250	266	280	52	22.8	689	848	902	968	279	40.5
1118	734	664	704	743	9	1.2	257	274	287	300	43	16.7	751	609	627	639	-112	-15
1123	963	1058	1128	1199	236	24.5	414	443	467	490	76	18.3	56	53	57	60	4	7.1
1124	397	415	424	436	39	9.8	165	172	176	180	15	9.1	36	56	58	60	24	66.7
1125	292	303	333	362	70	24	119	131	141	150	31	26.1	28	36	37	40	12	42.9
1126	136	144	144	145	9	6.6	58	60	60	60	2	3.4	10	13	11	10	0	0
1127	1129	1102	1114	1132	3	0.3	436	452	455	460	24	5.5	118	126	128	130	12	10.2
1128	1799	1727	1737	1757	-42	2.3	694	711	710	710	16	2.3	61	90	90	90	29	47.5
1129	394	350	347	345	-49	-12.4	143	145	142	140	-3	-2.1	6	1	1	0	-6	100
1134	1687	1849	1865	1889	202	12	750	758	753	750	0	0	201	178	185	190	-11	-5.5
1135	759	764	781	802	43	5.6	305	317	323	330	25	8.2	154	171	200	239	85	55.2
1136	1381	1248	1274	1309	-72	-5.2	504	514	511	510	6	1.2	204	192	202	210	6	3
1137	1416	1533	1546	1574	158	11.1	623	635	632	630	7	1.1	366	518	514	509	143	39.1
1138	616	584	580	577	-39	-6.3	251	255	253	250	-1	-0.4	20	22	21	20	0	0
1141	687	605	600	596	-91	-13.2	262	266	264	260	-2	-0.8	4	9	9	10	6	150
1142	2214	2395	2422	2474	260	11.7	980	1001	999	1000	20	2	144	73	72	70	-74	-51.4
1143	581	750	759	774	193	33.2	338	344	342	340	2	0.6	122	146	154	160	38	31.2
1166	391	409	409	412	21	5.3	158	161	160	160	2	1.3	35	32	31	30	-5	-14.3
1167	420	443	449	457	37	8.8	171	176	178	180	9	5.3	58	80	81	80	22	37.9
TOTALS	22,151	22,700	23,200	23,800	1,649	7.4	9,183	9,500	9,600	9,700	517	5.6	3,929	4,400	4,640	4,900	972	24.7

FIGURE H-3 2040 METROPOLITAN FORECASTS BY TRAFFIC ANALYSIS ZONES (TAZ). Unless noted otherwise, numbers are positive.

ROADWAY FUNCTIONAL CLASSIFICATION POLICIES

The following are the city’s policies relating to roadway functional classification.

1. MSA routes except 36th Avenue are classified as “minor collectors.”
2. No new roadways should be constructed with more than one travel lane in each direction unless they also have a center left turn lane or, preferably, a median with left turn lanes.
3. Streetscape improvements should be used to enhance the visual appeal of the community for visitors and residents alike. Enhanced streetscaping, while taking into consideration maintenance needs and costs, should be a consideration for any major new roadway construction or existing roadway reconstruction project. Also, such improvements may be implemented along existing roadways where reconstruction is not anticipated for some time, provided that the streetscaping will not substantially conflict with anticipated long term improvements for the roadway or have significant maintenance requirements or cost implications.
4. The city will work with Hennepin County in applying its access management guidelines (from its 2040 Transportation Systems Plan) to any areas of new development or significant redevelopment in the city where such areas abut a minor arterial roadway. MnDOT Access Management Guidelines are not applicable because the only principal arterial roadway in the city, Trunk Highway 100, is a freeway with no direct access except at the 36th Avenue interchange.

ROADWAY FUNCTIONAL CLASSIFICATION IMPLEMENTATION ITEMS

The following are the city’s implementation strategies relation to roadway functional classifications.

1. Continue to monitor and evaluate the road network system to align traffic demands on the system with the design, maintenance, and operation of the roadway system.
2. Hennepin County has in the past expressed their interest in eliminating CSAH 8 from their road system by turning it over to the city. The city would accept responsibility for this roadway only after it is reconstructed to the city’s urban standards with municipal consent or the county provides the city with the funds to accomplish same. The city is unsure whether the segment north of CSAH 10 (56th/Bass Lake Rd) is a good candidate for turnback and would not consider such a change without further study and consultation with the cities of New Hope and Brooklyn Park.
3. Consider specific streetscape improvements along existing roadways that are not likely to be subject to major roadway improvements, such as full reconstruction and/or widening, for the foreseeable future. Take maintenance expectations and costs into consideration when evaluating any potential improvements.

CHAPTER I: NON-MOTORIZED TRANSPORTATION

This chapter addresses the need for facilities to accommodate pedestrian and bicycle travel. The following terms are used frequently throughout this chapter:

- **Sidewalk** - A facility primarily for pedestrians, and typically (but not always) constructed of concrete. Sidewalks may be placed directly behind the curb or may be separated from the roadway by a boulevard area.
- **Multi-use trail** - A facility for both pedestrians and bicyclists, and typically (but not always) constructed of bituminous pavement. Multi-use trails may be placed in the same manner as sidewalks or substantially further separated from the roadway; for example, trails are sometimes located in separate right-of-way or in a public park.
- **Bike lane** - A facility primarily for bicyclists. Bike lanes may be shared as a roadway shoulder (“breakdown lane”). The city of Crystal does not currently have any dedicated bike lanes, although these can be found on some county roads.

BACKGROUND

Most of Crystal was developed in an era when little thought was given to long-term planning in general and non-motorized transportation facilities in particular. This means that the city’s natural, obvious potential routes typically along lowlands, lakefronts, and creeksides were mostly platted and developed many decades ago. Today Crystal has limited opportunities to create a system of facilities for non-motorized transportation. In addition, the city’s resources are limited and the city will not have the sort of complete, interconnected system found in many of the more recently developed suburbs.

An existing and proposed sidewalk and trail plan is Figure I-1. This figure includes regional trails under the jurisdiction of the Three Rivers Park District as well as the planned and existing facilities proposed for the Regional Bicycle Transportation Network (RBTN) by the Metropolitan Council. In some cases, trails may be under multiple jurisdictions. For example, Hennepin County may provide the right-of-way for a trail, but the trail itself is constructed and maintained by Three Rivers Park District.

The following is a description of existing and proposed regional trail facilities referenced on Figure I-1:

- Crystal Lake Regional Trail. 4.3 miles of this trail are complete through Robbinsdale and Crystal. Ultimately the trail will continue through the northwest metro area cities of Brooklyn Park, Osseo, and Maple Grove to Elm Creek Park Reserve.
- Bassett Creek Regional Trail. The 7 mile trail connects French Regional Park in Plymouth to Theodore Wirth Regional Park in Minneapolis through the cities of New Hope, Crystal and Golden Valley.
- CP Rail Extension Regional Trail Search Corridor. This regional search trail corridor is proposed by Metropolitan Council, and a portion of the trail would connect through Crystal. The search process is being managed by Three Rivers Park District.

NON-MOTORIZED TRANSPORTATION POLICIES

1. Due to the city’s limited resources, a culture should be created that the city’s streets are an important part of its non-motorized transportation system. Not only do streets connect people

to the places they want to go, but they are also used as a gathering space for neighborhood bonding.

2. Take advantage of low-cost opportunities to improve and publicize existing non-motorized transportation opportunities. Examples include designating striped shoulders or parking lanes as bike lanes and adoption of an official sidewalk, trail and bike lane map.
3. In some areas where a multi-use trail is desired, it may be more practical to utilize a combination of a sidewalk and a bike lane.
4. Explore the potential to create additional non-motorized transportation opportunities where remnants of the pre-development landscape remain.

NON-MOTORIZED TRANSPORTATION IMPLEMENTATION ITEMS

1. Adopt an official sidewalk and trail map showing existing and proposed facilities.
2. Consider options for improving safety at the marked pedestrian crosswalk on CSAH 102 (Douglas Drive) at Fairview Avenue near the Crystal Community Center / pool complex.
3. Where feasible, roadways with existing striped shoulders or parking lanes on both sides of the street could be designated as bike lanes. These existing segments are as follows:
 - CSAH 10 (56th Avenue a.k.a. Bass Lake Road) east of Yates Avenue.
 - Noble Avenue south of 36th Avenue.
 - 32nd Avenue from Nevada Avenue to Winnetka Avenue.
 - Louisiana Avenue from CSAH 70 (27th Avenue a.k.a. Medicine Lake Rd) to 32nd Avenue.
 - CSAH 70 (27th Avenue a.k.a. Medicine Lake Road) west of CSAH 102 (Douglas Drive).
4. As additional roadways are re-striped or reconstructed with shoulders or parking lanes on both sides of the street, they too could be designated as bike lanes. These potential segments include but are not limited to the following:
 - West Broadway north of 57th Avenue (reconstruction).
 - West Broadway south of Fairview Avenue (reconstruction).
 - 36th Avenue west of CSAH 102 (Douglas Drive)
 - 36th Avenue east of Regent Avenue
5. Study the feasibility of a ped/bike bridge in the general vicinity of CSAH 81 (Bottineau Boulevard) and CSAH 10 (56th Avenue / Bass Lake Road).

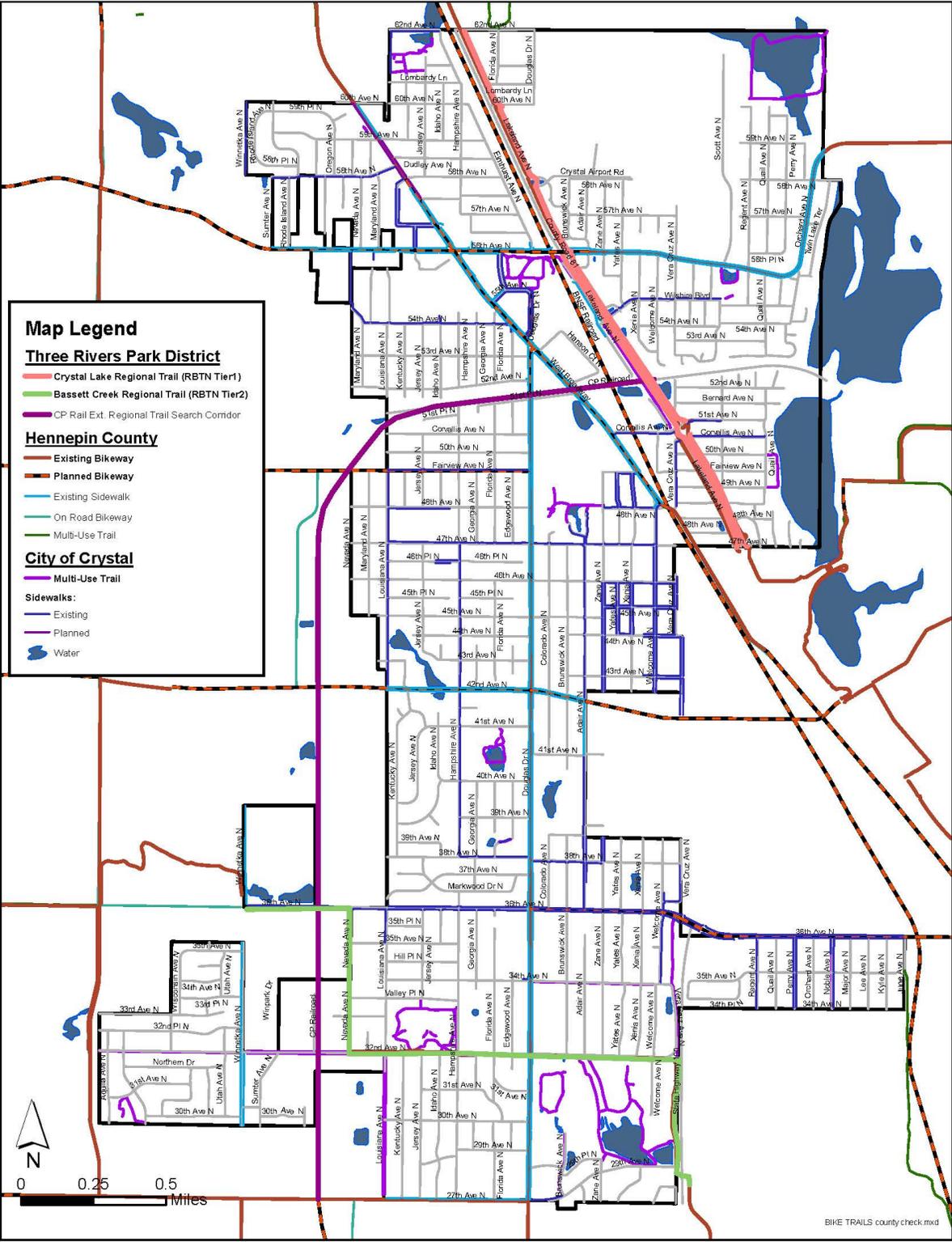


FIGURE I-1 EXISTING AND PLANNED SIDEWALKS AND TRAILS

CHAPTER J: PUBLIC TRANSIT

This chapter discusses Metro Transit’s current service in Crystal and the potential to extend the Blue Line of the metropolitan area light rail system (LRT) from downtown Minneapolis through Crystal to end in Brooklyn Park. This regional transit route would pass through Crystal generally parallel to CSAH 81 (Bottineau Boulevard), and includes a station in the vicinity of CSAH 10 (56th Ave. a.k.a. Bass Lake Road). Figure J-1 shows the current public transit system in Crystal, with the proposed extension of the Blue Line LRT.

BACKGROUND

Crystal is served by Metro Transit, an arm of the Metropolitan Council. Therefore route locations and frequency and type of service are determined by another government agency beyond the city’s control. Crystal has been identified by Metro Transit as being located in Transit Market Area III, which is described as having:

“...moderate density but tends to have a less traditional street grid that can limit the effectiveness of transit. It is typically urban with large portions of suburban and suburban edge communities. Transit service in this area is primarily commuter express bus service with some fixed-route local service providing basic coverage. General public dial-a-ride services are available where fixed-route is not viable.”

The following Metro Transit bus routes currently serve Crystal:

- **14:** follows 36th and Douglas in Crystal; connects to the Robbinsdale transit center (Hubbard Marketplace) and serves Honeywell in Golden Valley as well as downtown Minneapolis via West Broadway.
- **705:** Follows Winnetka Avenue intermittently through Crystal; connects to the Starlite transit center in Brooklyn Park and the Louisiana Avenue transit center in St. Louis Park.
- **716:** Follows Douglas Drive and West Broadway in Crystal; connects to the Robbinsdale transit center and serves the 63rd Avenue & Bottineau Boulevard park-n-ride facility as well as the Zane Avenue corridor in Brooklyn Park.
- **717:** Follows 42nd Avenue through Crystal; connects to Cub Foods at Nathan Lane in Plymouth and the Robbinsdale transit center (Hubbard Marketplace).
- **721:** Follows 56th Avenue North (Bass Lake Road) in Crystal; connects to the Brooklyn Center transit center (Brookdale) and serves Hennepin Technical College in Brooklyn Park.
- **755:** Follows Winnetka Avenue in Crystal with a limited service loop to Nevada Avenue; serves New Hope as well as downtown Minneapolis via Golden Valley and TH 55.
- **758:** Follows Douglas Drive and West Broadway and a short segment of Noble Avenue in Crystal; connects to the Robbinsdale transit center (Hubbard Marketplace) and serves Honeywell in Golden Valley.
- **764:** Similar to 715, except that instead of connecting to the Robbinsdale transit center (Hubbard Marketplace), it provides express service to downtown Minneapolis via TH 100 and I-394.
- **767:** Follows 56th Avenue (Bass Lake Road) and West Broadway on its way from New Hope to the 63rd Avenue & Bottineau Boulevard park-n-ride facility and express service from there to downtown Minneapolis via I-94.

Metro Mobility also operates a non-fixed route within the twin cities metropolitan area, including Crystal. Transit Link dial-a-ride service is available in Crystal, but there are not any transit hubs in Crystal connecting to regular bus routes.

In addition to the bus service in Crystal, the potential extension of the Blue Line LRT would pass through Crystal on an alignment parallel to CSAH 81 (Bottineau Boulevard) and the BNSF railroad. This facility is indicated in Metropolitan Council's 2040 Transportation Policy Plan and is a 13-mile route with eleven proposed stations (see Figure J-1). In early 2018 engineering plans were completed to represent 90% design for this LRT project. Construction of the proposed line is expected to begin in 2020, with service starting in 2024. A station area plan was completed in 2016 for the Bass Lake Road LRT station (see chapter E for more information about this planning effort).

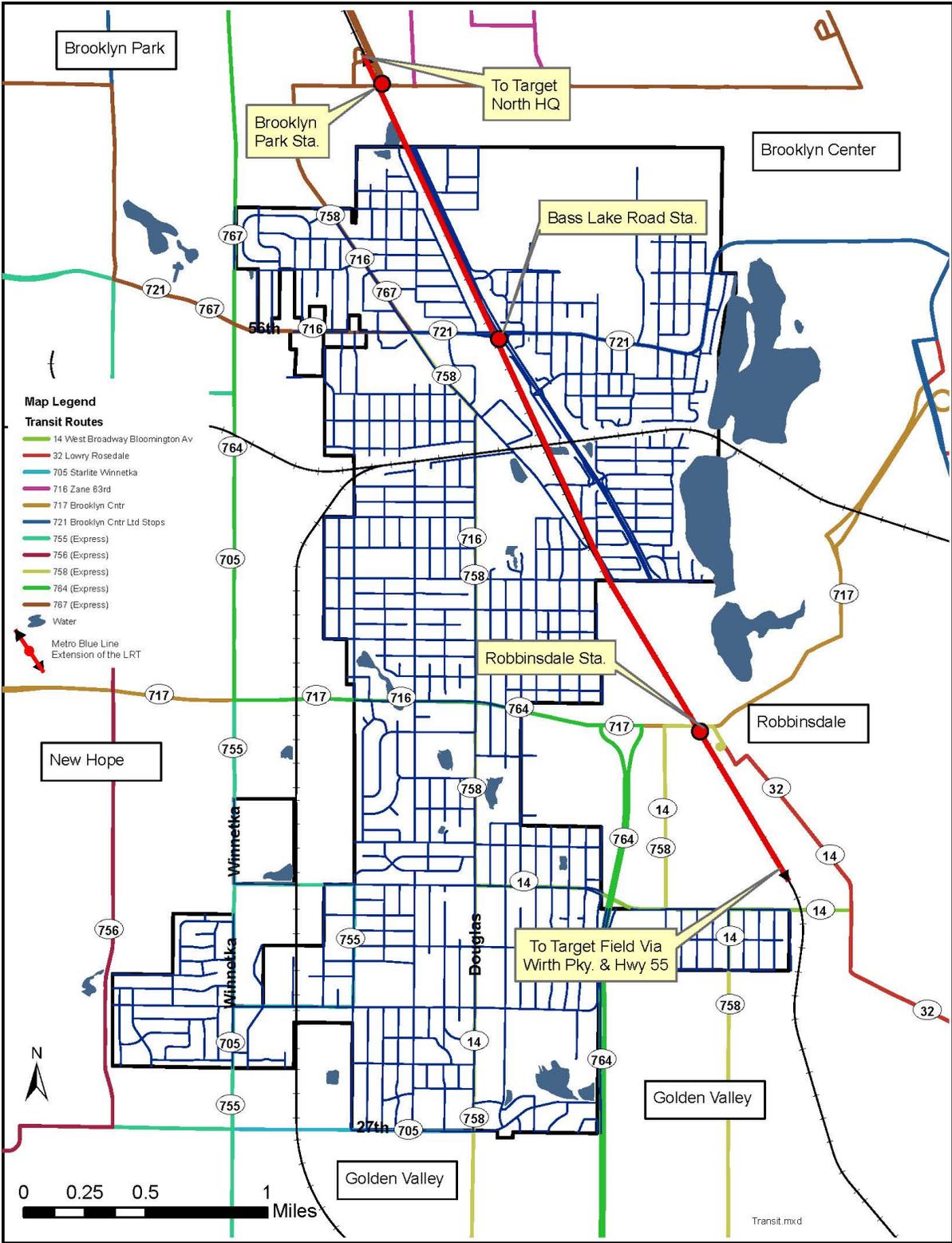


FIGURE J-1 EXISTING PUBLIC TRANSIT ROUTES, WITH PROPOSED BLUE LINE LRT EXTENSION

PUBLIC TRANSIT POLICIES

1. Because the city does not have the resources or authority to operate its own public transit service, and is dependent on a regional agency (Metro Transit) for that service, there is little for the city to do in terms of policy regarding the bus route system.
2. It is the policy of the city to assist Metro Transit in the development of the Blue Line Extension LRT project. The city's assistance will take the form of staff participation in design and related work but not direct financial participation.

PUBLIC TRANSIT IMPLEMENTATION ITEMS

1. Monitor and, as needed, participate in any Metro Transit consideration of modifying, expanding or eliminating transit service to the city.
2. Exercise the city's land use authority and any applicable municipal consent powers regarding any such changes in service or new facilities proposed by Metro Transit.
3. Continue to assist with the development of the Blue Line Extension LRT project.

CHAPTER K: AVIATION

This chapter addresses the role of the Crystal Airport in the regional aviation system and describes the city's policies for accommodating the continued operation of the facility by the Metropolitan Airports Commission.

BACKGROUND

Crystal Airport (airport identifier "MIC") is owned and operated by the Metropolitan Airports Commission (MAC), a public corporation. The airport also operates five other reliever airports and Minneapolis-St. Paul International Airport. MAC's other five reliever airports are:

- St. Paul Downtown in the city of St. Paul (airport identifier "STP")
- Flying Cloud in the city of Eden Prairie (airport identifier "FCM")
- Anoka County in the city of Blaine (airport identifier "ANE")
- Airlake in the city of Lakeville (airport identifier "LVN")
- Lake Elmo in central Washington County (airport identifier "21D")

MAC classifies Crystal, Airlake and Lake Elmo as minor relievers which mainly serve personal aviation. MAC classifies its other three reliever airports, St. Paul Downtown, Flying Cloud and Anoka County, as primary relievers which mainly serve corporate and business aviation. Total annual operations for MAC-operated reliever airports for the past several years are found in Figure K-1. MAC's Crystal Airport property is approximately 436 acres, of which 336 are within Crystal, 80 within Brooklyn Park and 20 within Brooklyn Center.

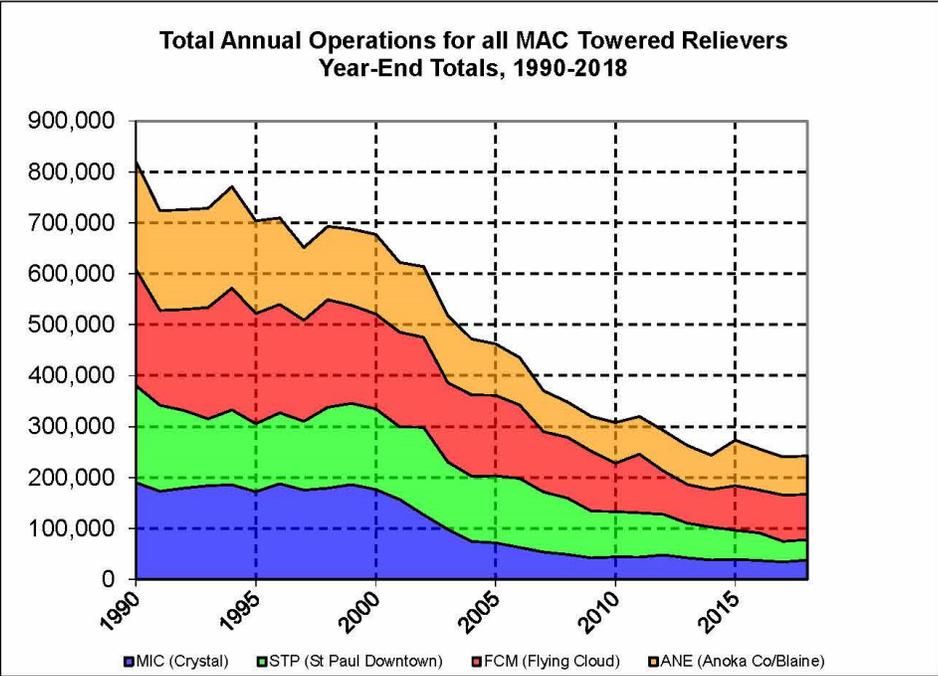
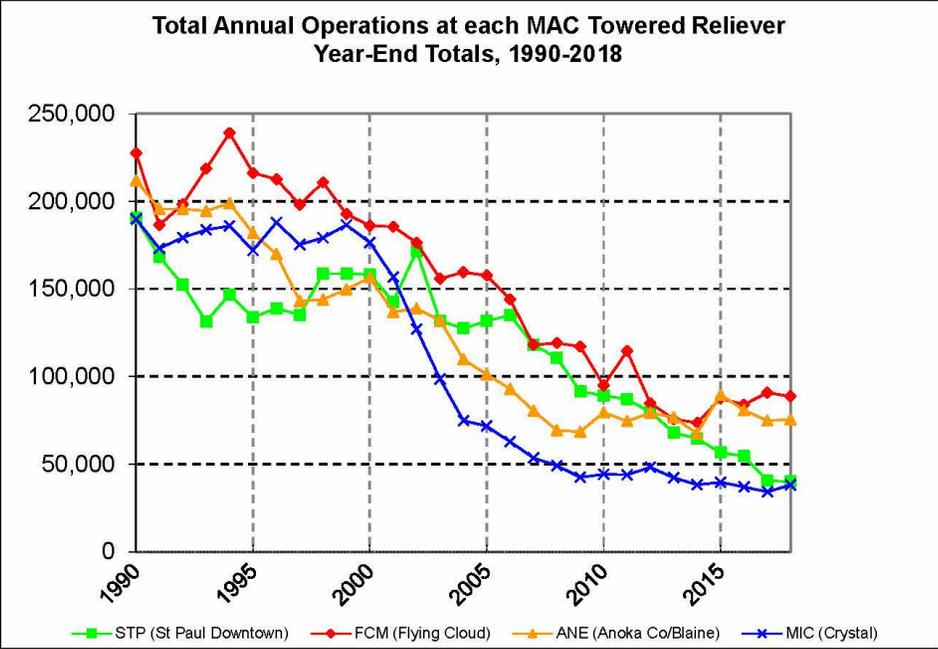


FIGURE K-1 TOTAL ANNUAL OPERATIONS AT MAC-OPERATED RELIEVER AIRPORTS

Crystal Airport was established in the 1940s, immediately prior to development of the surrounding residential areas. The airport was subsequently expanded with longer runways, additional runways and larger taxiways and hangar areas. These expansions occurred after the surrounding neighborhoods had been developed.

The state subsequently adopted regulations defining safety zones and limiting or even precluding certain land uses in each zone. These regulations were adopted by the city in its 1983 Airport Zoning Ordinance. In Safety Zone A, nearly all development is prohibited. At this time, within the city of Crystal there are 114 single family houses and 14 multi-family dwelling units in Safety Zone A. In Safety Zone B, houses are only permitted in an ultra-low-density, rural residential setting. At this time, within the City of Crystal there are 144 single family houses and 2 multi-family dwelling units in Safety Zone B. Because these areas were fully developed prior to the state's creation of airport safety zones, they are allowed to remain as established residential neighborhoods and new structures may be built to replace existing structures.

In 2017 MAC adopted the 2035 Long-Term Comprehensive Plan (LTCP) for the Crystal Airport that would continue operation of the facility. However, the following are two of the more significant changes to the airport proposed by MAC in the LTCP (a summary of the changes is found on Figure K-2):

- Convert portions of the existing paved blast pads on Runway 14L-32R to usable runway. This increases the published runway length from 3,267' to 3,750' and shifts this entire runway approximately 115' to the northwest which will locate all of the runway protection zones (RPZs) on MAC property rather than on private residential property. The 65 DNL (Day-Night Sound Level) for the primary Runway 14/32 noise contour associated with the refined preferred alternative contains four net new residential parcels when compared to the original preferred alternative. However when compared to the baseline (existing) condition, there is only one net new residential parcel in the 65 DNL noise contour (see Figure K-3). The Federal Aviation Administration (FAA) considers the 65 db DNL contour line as the threshold of significance for aircraft noise impact.
- Retain a portion of the existing turf runway and operate it in a manner that will reduce runway crossing points, airfield complexity and incursion potential while preserving turf operational capabilities.
- Decommission Runway 14R/32L and convert it to a full parallel taxiway for primary Runway 14/32, extended to the new runway ends.

Starting in 2018, MAC began a more detailed noise analysis as part of the environmental review required to implement the LTCP. Figure K-4 is found in the LTCP and is a comparison of the proposed airport changes in relation to Crystal's 2030 Comprehensive Plan.

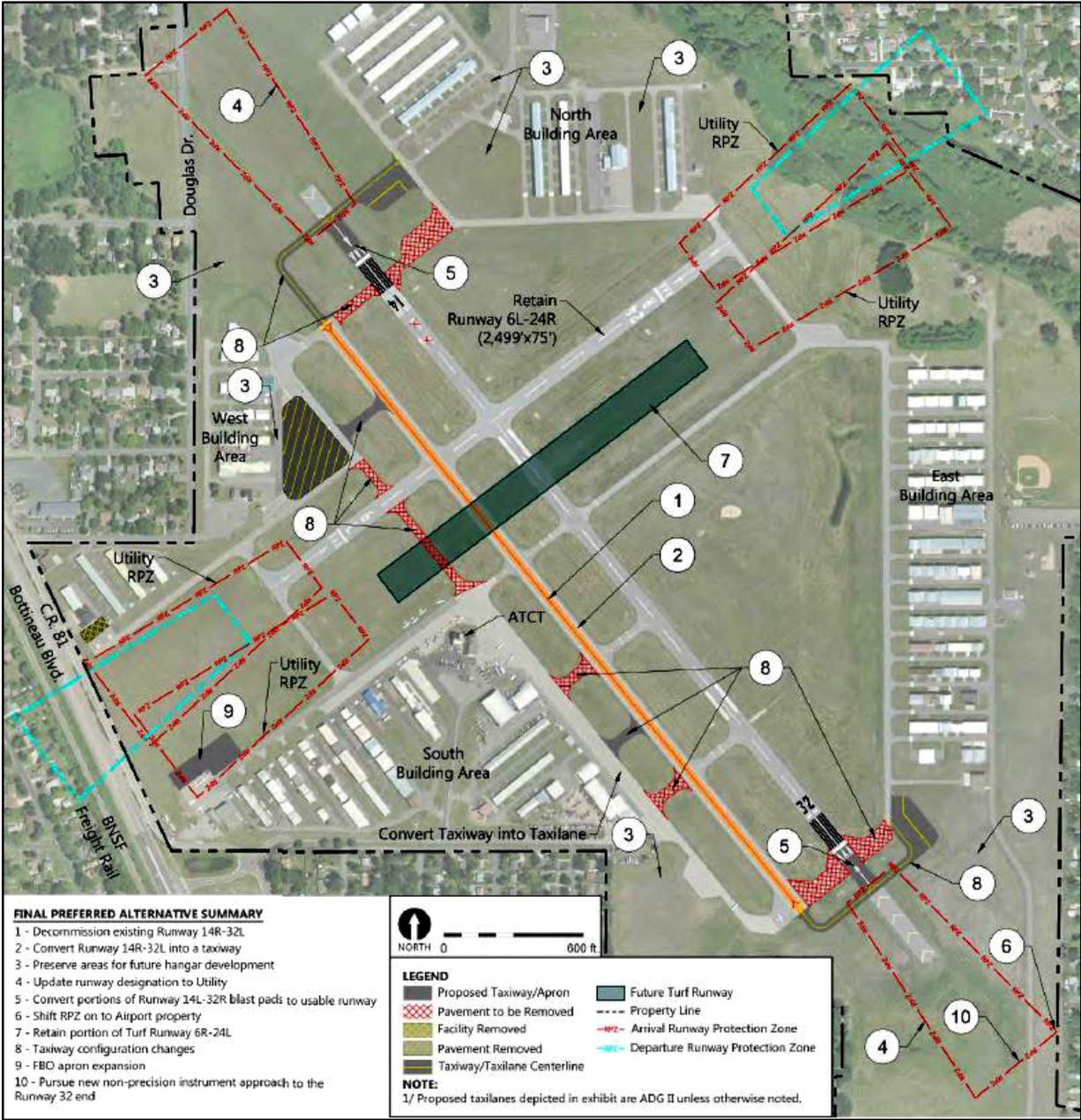


FIGURE K-2 FINAL PREFERRED ALTERNATIVE OVERVIEW FROM MAC'S 2035 LONG-TERM COMPREHENSIVE PLAN



FIGURE K-3 FINAL PREFERRED ALTERNATIVE DNL NOISE CONTOURS FROM 2035 MAC'S LONG-TERM COMPREHENSIVE PLAN

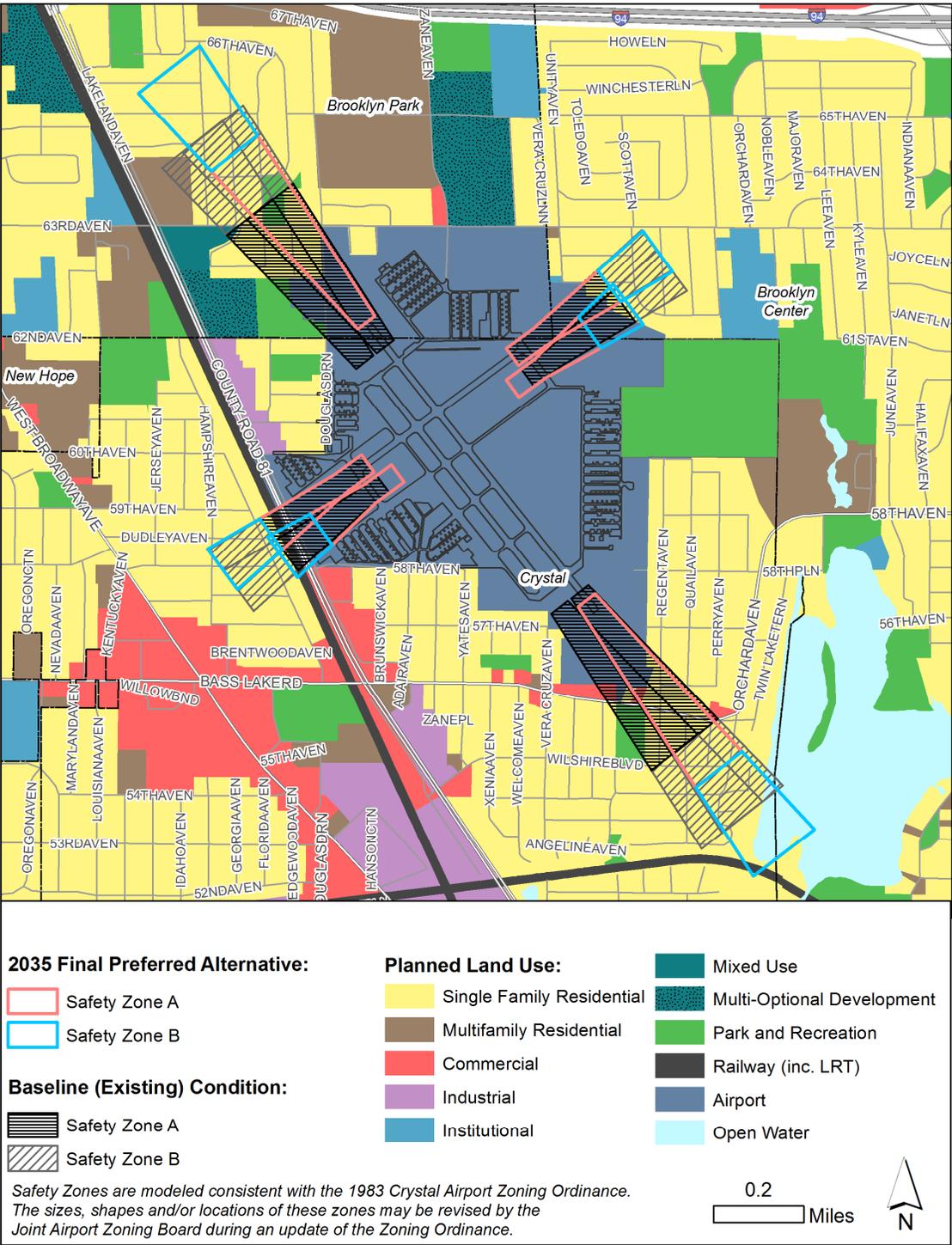


FIGURE K-4 FINAL PREFERRED ALTERNATIVE IN MAC'S 2035 LONG-TERM COMPREHENSIVE PLAN COMPARED TO CRYSTAL'S 2030 PLANNED LAND USE

AVIATION POLICIES

- 1.** Notify the Federal Aviation Administration (FAA) in accordance with CFR - Part 77, using the FAA Form 7460-1 "Notice of Proposed Construction or Alteration". This requirement is currently located in Crystal's unified development code.
- 2.** Continue to protect airspace in accordance with the 1983 Joint Airport Zoning Ordinance, as amended.
- 3.** All airport property is currently zoned as "Airport" land with no other noted land use. Consistent with MAC's 2035 LTCP, if MAC proposes non-aeronautical uses on part of the airport site, and a modification is required for zoning MAC will then work with the City to make changes as appropriate.

AVIATION IMPLEMENTATION ITEMS

- 1.** Continue to assist MAC in the implementation of the preferred alternatives in the 2035 Long Term Comprehensive Plan.

CHAPTER L: PARKS AND OPEN SPACE

The City of Crystal went through a year-long park system master planning process that resulted in the approval of a Park System Master Plan by the City Council in 2017 (see Appendix F). As a fully-developed city, there is very little property that can be dedicated for new parks. Therefore the Park Plan proposes to re-imagine the existing parks to meet the changing needs of Crystal’s residents. Elements of the Park Plan document are incorporated into this chapter, but a more thorough discussion of park related topics can be found in that document. This chapter describes the existing parks and trails system, and provides goals and policies necessary to achieve the planned system of parks and trails in the city.

EXISTING PARKS AND TRAIL SYSTEM

The Crystal park system consists of 27 individual park units (see Figure L-1). Individually, each park provides certain features that serve a niche within the overall system plan. Collectively, the parks provide a comprehensive set of facilities and amenities to serve the local population.

The Park System Plan categorized all parks into four classifications. Each park classification serves a particular purpose in meeting local needs. Although some flexibility is warranted, classifying parks is necessary to ensure a well-balanced system that effectively and efficiently meets the needs of residents and recreational programs for the city. The four classifications are as follows:

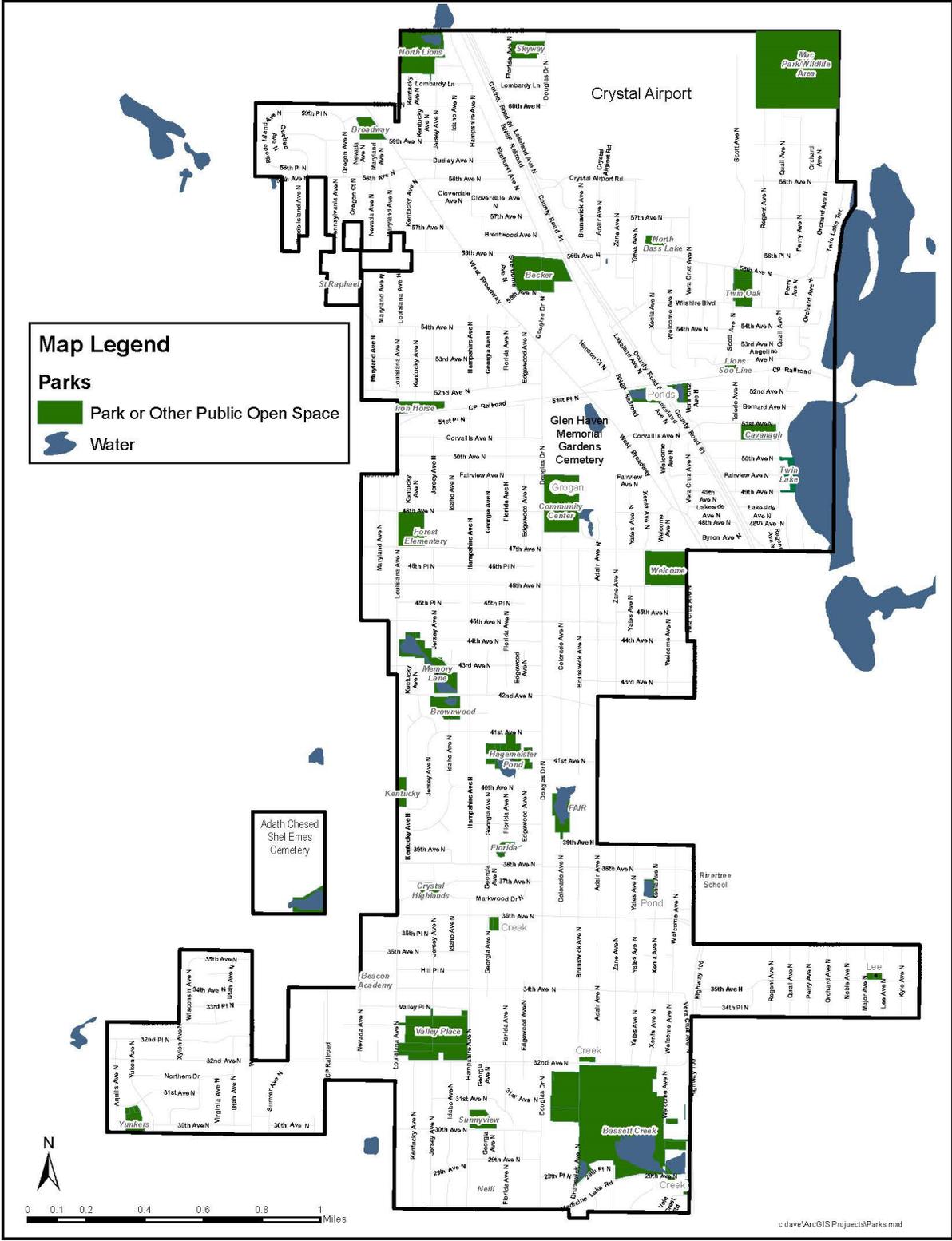


FIGURE L-1: CRYSTAL'S EXISTING PARK SYSTEM

NATURAL AREAS / PASSIVE PARKS

Passive park spaces provide relief in developed areas through the incorporation of nature-based elements. These parks vary in size and may be located in wetlands, floodplains, and an assortment of outlots left as open space. These natural areas may include the following amenities:

- Trails
- Boardwalks
- Benches
- Education opportunities such as interpretative signage
- Community gardens
- Nature play areas
- Stormwater Best Management Practices (BMP's)

The parks within Crystal identified as a natural area / passive park are:

- Brownwood Park
- Florida Park
- Hagemeister Pond Preserve
- MAC Wildlife Area
- Memory Lane Park
- Soo Line Park
- Twin Lake Shores



Typical Natural Area/Passive Park

NEIGHBORHOOD PARKS

Neighborhood parks are intended to serve residents within a half-mile (10-minute walk) of the park and provide basic recreational experiences to meet the needs of the immediate neighborhoods. The 13 parks identified as neighborhood parks range in size and amenities. Neighborhood parks may contain the following amenities:

- Small backstop with no groomed infield
- “Regular” play area

- Small multi-purpose field
- Half-court basketball
- Paved court (such as four square or gaga pit)
- Outdoor fitness equipment
- Small picnic shelter

The parks within Crystal identified as a neighborhood park are:

- Broadway Park
- Cavanagh Park
- Crystal Highlands Park
- Fair School Park
- Forest School Park
- Iron Horse Park
- Kentucky Park
- Lee Park
- North Bass Lake Park
- Skyway Park
- Sunnyview Park
- Twin Oak Park
- Yunkers Park



Typical neighborhood park amenities

COMMUNITY PARKS

Community parks area intended to serve the needs of the adult and youth athletic programs. They are the location for the city’s full size athletic fields and they incorporate additional complementary amenities to meet the recreational needs of the community. Community parks are usually at least 10 acres in size. Below is a list of amenities that are proposed to be in community parks:

- Large multi-purpose rectangle field
- Softball / baseball fields

- Multiple full-sized courts (tennis / pickleball)
- Ballfields and court lighting
- Hockey rinks
- Sledding hills
- Park buildings with restrooms and four-season gathering space
- Picnic shelters
- Sand volleyball
- Disc golf
- Larger community play area
- Dog Park
- Outdoor fitness equipment

The parks within Crystal identified as community parks are:

- Bassett Creek Park
- North Lions Park
- Valley Place Park
- Welcome Park



Typical community park amenities

DESTINATION PARKS

The intended use of destination parks is to provide unique or signature gathering spaces. The size of these parks vary. The following provides a list of specialized facilities:

- Destination / inclusive play area
- Flexible performance area / lawn
- Water feature / fountain
- Ice surface / plaza space
- Community Center
- Aquatic Center

- Skate Park

The parks within Crystal identified as a destination park are:

- Becker Park
- Grogan Park



Typical destination park amenities

TRAIL SYSTEM

The Crystal trail system consists of sidewalks and multi-use paths identified in Chapter I. Some of the trails within the city are under the jurisdiction of Three Rivers Park District. The trail system is intended to make connections among neighborhoods, parks, public or semi-public facilities, shopping areas and workplaces.

PARK POLICIES

1. Optimize existing park and open spaces based on current community needs.
2. Planning for the park system should place an increased emphasis on a community perspective, with a secondary emphasis on neighborhoods.
3. Specific park facility improvements should attempt to maximize adaptive flexibility so that the parks may change as the needs of the neighborhood and community change.
4. Maximize opportunities to make water bodies more appealing, for example, by continuing and expanding the planting of appropriate vegetation adjacent to stormwater ponds, creeks and lakefront in parks or on other public property. In addition to improving the aesthetics of the site, it will help to improve water quality over time.

5. To the extent feasible in a first tier suburb, develop trails to improve the connectivity among park sites, community facilities, residential neighborhoods and commercial areas. Chapter I has a proposed sidewalk and trail plan.
6. Continue to require park dedication or payment-in-lieu, as appropriate, for any new development that results in an increased number of residential dwelling units or acres of other development in the city. Such funds will be used for capital improvements to the parks system including but not limited to land acquisition, clearance and site preparation for parks or open space use; expansion or improvement of existing facilities; and construction of new facilities.

PARK IMPLEMENTATION ITEMS

Future park improvement projects will be funded by the city through its Long Term Plan (Appendix G), with additional outside funding provided through grants, stormwater credits, and other sources of revenue. The initial investments would occur during a time frame of three to five years with a focus on the most immediate needs of the community.

1. The relocation of the Becker Park ballfields to Welcome Park and the redevelopment of Becker Park are the city's top park project priorities.
2. Following the anticipated investment in Becker and Welcome parks, the remaining community parks will be prioritized for development and will be implemented based on available funding. By prioritizing efforts to implement community parks, a larger population can be served. Though a more prevalent effort will be made towards community parks, neighborhood park development funding will be needed to replace specific amenities, taking into account the physical condition of the amenity and needs of the community.

CHAPTER M: WATER RESOURCES

Crystal’s water resources include wastewater and sanitary sewer, surface water and potable water.

WASTEWATER AND SANITARY SEWER PLAN

Crystal is a fully developed community, and as such, the land use changes contemplated in this Comprehensive Plan are not expected to have a insignificant impact on the regional wastewater treatment and disposal system.

The city’s sanitary sewer collection system is complete and the city’s focus will continue to be on maintenance and preservation of the existing system. The city does not anticipate construction of any major sanitary sewer trunk lines or lift stations through 2040. No service agreements have been needed or entered into with adjoining communities after December 1, 2008.

Metropolitan Council forecasts that both average and peak flows will decline slightly through 2030 (see Table M-1). Their forecasts are based on their growth forecasts for population, households and employment (see Chapter D).

SANITARY SEWER FLOW FORECASTS				
	2010	2020	2030	2040
Sewered Population	22,151	22,700	23,200	23,800
Sewered Households	9,183	9,500	9,600	9,700
Sewered Employment	3,929	4,400	4,640	4,900
Average Annual wastewater flow (million gallons per day)	2.19	1.76	1.75	1.65
Allowable Peak Hourly Flow (million gallons per day)	6.13	6	5.8	5.7

TABLE M-1 SANITARY SEWER FLOW FORECASTS

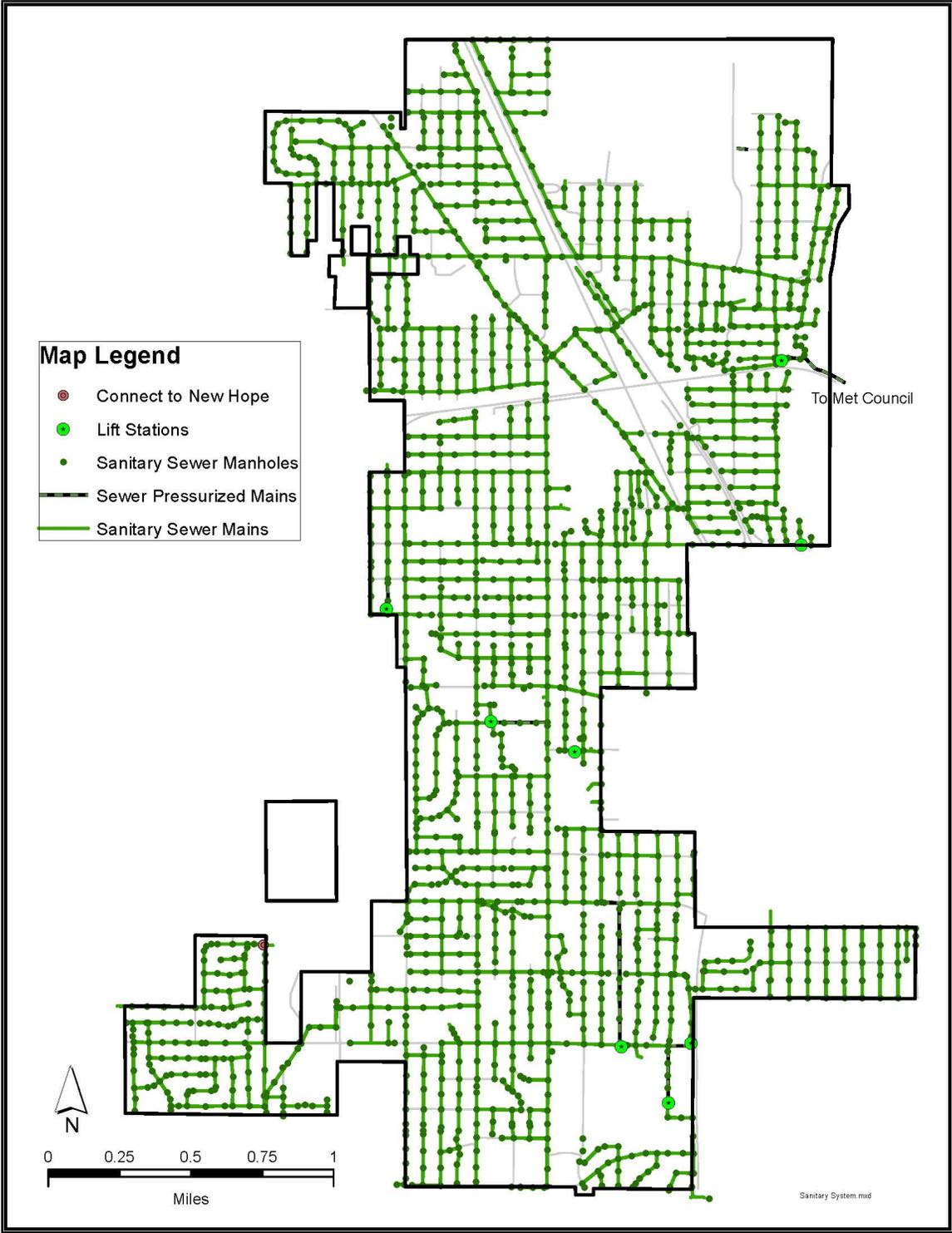


FIGURE M-1 CRYSTAL SANITARY SEWER NETWORK

The sanitary sewer collection system in Crystal discharges to the Metropolitan Council lift station L30 via two trunk sewer lines, one a 24" and the other a 30" line. The average daily flow into the station through the 24" line is 704,000 gallons, while it is 1,056,000 gallons through the 30" line. Table M-2 provides further information about the city's lift stations.

CRYSTAL LIFT STATIONS						
Lift station name	Address	Pump #1, (GPM) [1]	Pump #2 (GPM)	Pump #3, (GPM)	All pumps running – Total pumpage capacity (GPM)	Recorded average daily pumpage (GPD) [2]
East	3203 Vera Cruz Ave N	825	825	Not applicable	1,250	134,905
West	6618 - 41 st Ave N	500	500	Not applicable	750	71,797
Perry	4701 Perry Ave N	100	100	Not applicable	185	2,848
Welcome	3000 Welcome Ave N	225	225	Not applicable	280	56,389
Colorado	6115 – 41 st Ave N	190	190	Not applicable	275	1,449
Maryland	4505 Maryland Ave N	150	150	Not applicable	300	10,619
South	5825 - 32 nd Ave N	770	2,000	2,000	3,400	708,602 [3]
Notes: 15. GPM is gallons per minute 16. GPD is gallons per day 17. The south lift station receives discharge flows from both the east and welcome lift stations. Therefore, the average daily pumpage for the south station reflects the added quantity.						

TABLE M-2 2018 SANITARY SEWER LIFT STATION DATA

The city does not have any Individual Sewage Treatment Systems (ISTS) within its boundaries.

The city is committed to preventing and reducing excessive infiltration and inflow (“I/I”) in the local sewer system. To that end, the city has implemented the following policies:

- In chapter 7 of the city code, the city prohibits connection of sump pumps, foundation drains, and rain leaders to the sanitary sewer.
- Since foundation drains, sump pumps, and roof leaders to the sanitary sewer system are not allowed, any existing connection, if found, would need to be disconnected.
- As part of the street reconstruction program between 1995 and 2017;
 - The city offered to install sump boxes in the boulevard in those locations where drain tile or storm sewer will be located adjacent to the street.
 - The city televised the sanitary sewer mains in each project area and repaired or replaced pipes and manholes that have been severely compromised as project funding allowed. Since 2017, the city proactively televises its sanitary sewer mains to identify future maintenance needs.
 - The city provided residents the option to replace a portion of their lateral sanitary sewer connection, including the wye connection at the main.
- As part of its 2009-2010 water meter replacement program, each home in the city was inspected for prohibited connections to the sanitary sewer and the city ordered removal of any unlawful connections.
- The city replaced sanitary sewer manhole lids with new lids that do not have any holes in them. This project was completed in 2018.
- The city is lining its sanitary sewer mains and has completed a number of sanitary sewer lining projects and will continue to do so.
- Approximately 86% of Crystal homes were constructed prior to 1970. The city is looking into the purchase of flow meters to further investigate/identify locations of potential private I/I. This project is anticipated to start in the next few years and continue indefinitely. The on-going monitoring of sanitary sewer flows will be used to identify problem areas as well as measure the impact of projects on reducing flow.

Inflow and Infiltration (I/I) continues to be a challenge in Crystal. The sources of the I/I include cracks in the existing private lateral services or main sanitary sewer pipes, illegal connections and manhole cracks. Replacement of the sanitary sewer manhole lids with solid covers has resulted in noticeable reduction in inflow during large rain events. Capital projects, including cost and schedule, to reduce I/I are shown in the city’s Long Term Plan (Appendix F). Projects included in the Long Term Plan include the long term replacement of sanitary sewer mains, maintenance and replacement of sanitary sewer lift station equipment, and other routine equipment replacements associated with sewer collection system operation and maintenance.

The city is evaluating the purchase of flow meters to gather more information on the extent and location of I/I within the entire sanitary sewer system. This data collection will be followed by analysis and follow up action where feasible. One of the key aspects of analysis is to measure or estimate the amount of clearwater flow generated by the public and private sewer systems. Once sources are better identified, costs for correction can be determined. That said, the city is not delaying efforts to line the sanitary sewer system and has allocated over a half million dollars a year to this effort. Project efforts and timelines to mitigate I/I are shown in the Long Term Plan. The utility CIP is funded through user fees to all properties in the city.

Based on guidance from the Environmental Protection Agency (EPA), Table M-3 shows the estimated yearly and peak flow I/I into the sanitary sewer system.

Estimated I/I Flow to Sanitary Sewer System				
Year	Average Daily Flow (Million Gallons)	Yearly I/I Percentage	Peak Flow Rate (Million Gallons)	Peak I/I Percentage
2010	1.744	3%	1.92	11%
2011	1.850	14%	2.36	33%
2012	1.642	4%	1.88	16%
2013	1.729	10%	2.11	27%
2014	1.858	19%	2.54	41%
2015	1.548	4%	1.70	13%
2016	1.730	8%	1.88	16%

Table M-3 Estimated I/I Flow to Sanitary Sewer System

SURFACE WATER MANAGEMENT PLAN

Crystal lies within the Bassett Creek and Shingle Creek watersheds. In late 2018 the city completed a draft of its Surface Water Management Plan for review by the two watershed districts in Crystal (see Appendix H). The plan was submitted to the Metropolitan Council for their review.

POTABLE WATER SUPPLY PLAN

The Joint Water Commission (JWC) owns and operates the water supply for the cities of Crystal, New Hope and Golden Valley. The Minnesota Department of Natural Resources (DNR) approved the JWC’s water supply plan template on February 26, 2019. The approved JWC water supply plan is included in this Comprehensive Plan as Appendix I.