

Land Capacity Analysis

City of Minneapolis Land Capacity Analysis

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Submitted to:

City of Minneapolis
Community Planning & Economic Development





Community Attributes tells data-rich stories about communities that are important to decision-makers.

Community Attributes
1402 Third Avenue
Suite 930
Seattle, Washington
98101

Project Manger:

Chris Mefford, President

Project Analysis:

Michael Forsyth
Tyler Schrag

Community Attributes, founded in 2005, supports all phases of community development. The firm analyzes land use and economic opportunities, to integrate community development and economic development. The firm's market and feasibility analysis, economic analysis and strategic planning consulting reduces risk and expedites decision making for both private and public sector stakeholders. The firm focuses on implementation by connecting community decision-makers with each others' needs and interests.

We are a Seattle-based firm with a concentration of clients in Western Washington and a growing list of clientele throughout the world. Our Urban Land and Regional Economics practices have served primarily Washington State municipalities and private and non-profit organizations. Our other practice areas span Philanthropic & Non-Profit Services and Strategic Planning.

Our practice in Urban Land routinely incorporates land capacity analyses and considerations. Land use planning practices in Washington State have emphasized an understanding of land capacity since the inception of the state's Growth Management Act in 1990. The state of the land capacity analysis practice has evolved considerably in recent years, keeping pace with advancements in desktop analytical software and data systems. CAI's contributions have advanced the practice considerably, particularly in the area of identifying lands potentially suitable for re-development.

EXECUTIVE SUMMARY

This report presents the results of the Minneapolis Land Capacity Analysis for the City of Minneapolis's Community Planning and Economic Development Department (CPED). The goal of this analysis is to inform conversations about land supply and demand throughout the City in support of a broad range of planning and economic development initiatives.

The City of Minneapolis is a vibrant city with continual change in housing and employment patterns. Some areas of the city have seen strong growth in recent years, in terms of the number of residents and jobs located there. Other areas have declined in population, either with increased vacant housing or through diminishing household size. Employment has increased in some areas, even throughout the current recession, and other employment areas have lost jobs and increased building vacancies.

Near-term and long-term forecasts show continued growth in residents and employment citywide, which will require housing and employment space. Some areas in the City are forecasted to add jobs and residents and some areas are forecasted to lose jobs or residents (or both). Within each of the City's Planning Sectors, a similar scenario will play out, with new development and demand for land in some areas within each Planning Sector, and decreases in residents or jobs in other areas.

During the next 20 years, forecasts for the City and current land supply data suggest that city will have more than enough developable land to accommodate growth (**Exhibit S-1**). Demand for new space would be expected to require between 316 and 568 acres of land, depending on how densely developers build, in terms of housing units per acre, or building square feet per acre of land. Vacant land (779 acres), excess land on developed lots (or infill land, 287 acres) and land that ranks high for redevelopment (includes demolitions or expansions, 163 acres) total 1,229 acres, resulting in surplus land through 2030 of 661 to 914 acres.

The density at which land is developed will depend on market demand for space throughout the City. This Land Capacity Analysis produced two scenarios, shown in **Exhibit S-1**. The first scenario, the Policy-Based Scenario, assumes development densities described and allowed by the City's comprehensive plan and zoning code. This scenario could be thought of as a "build-out" scenario, resulting in lower demand for land with higher density of development. The other scenario, the Trends-Based Scenario, assumes land is developed at the densities achieved by new development since 2000. The latter scenario has higher demand for land, with development occurring at densities lower than the maximum allowed by zoning.

Demand for land within the City will vary by use (**Exhibit S-2 and S-3**). The supply of developable land may accommodate residential or non-residential development or both depending on allowed uses prescribed by zoning.

New development reflects demand for built space beyond that which current vacancies could accommodate (maintaining a lower vacancy rate than exists today, for a “natural” vacancy rate, by building type). Residential forecasts show gains in new multifamily housing expected throughout the City and net decreases in single-family housing (**Exhibit S-2**). Multifamily land uses are expected to drive the greatest demand for land Citywide. Land demand driven by employment growth is concentrated in Downtown and the East Planning Sectors. (**Exhibit S-3**).

**Exhibit S-1. Land Demand and Available Supply, 2010 to 2030,
City of Minneapolis**

	Downtown	East	North	South	Southwest	TOTAL
Baseline Forecasts Scenario 2010 - 2030						
Households	10,736	3,717	(2,142)	(1,131)	4,610	15,790
Jobs	28,700	4,800	(1,000)	(2,800)	(200)	29,500
Land Required to Accommodate New Housing						
At Current Zoning Densities (acres)	101	75	22	44	73	316
At Achieved Densities (acres)	240	154	37	53	83	568
Land Available for New Development (acres)						
Vacant Land	129	211	178	138	122	779
Surface Parking Lots	112					
Infill Land	41	63	29	57	97	287
Redevelopable Land	117	15	-	-	31	163
Total	287	289	207	196	250	1,229
Surplus Land Capacity (acres)						
At Current Zoning Densities	186	213	185	152	177	914
At Achieved Densities	47	135	170	143	167	661

Source: Community Attributes (2010) based on data from City of Minneapolis, Metropolitan Council and Moody's Economy.com.

**Exhibit S-2. Residential Land Demand and Available Supply, 2010 to 2030,
City of Minneapolis**

	Downtown	East	North	South	Southwest	TOTAL
Baseline Household Growth Scenario 2010 - 2030						
Single-family Households	-	(164)	(2,506)	(2,510)	(236)	(5,416)
Multifamily Households	10,736	3,881	364	1,379	4,846	21,206
Total Household Growth	10,736	3,717	(2,142)	(1,131)	4,610	15,790
Vacant Built Units						
Multifamily Housing Units	1,450	480	240	1,440	1,530	5,140
Growth Requiring for New Development (Dwelling Units)*						
	10,410	3,980	780	2,420	4,880	22,470
Land Required to Accommodate New Housing						
At Current Zoning Densities (acres)						
At Current Zoning Densities (acres)	87	62	21	42	72	285
FAR Required	3.6	2.1	1.5	2.0	2.1	2.5
At Achieved Densities (acres)						
At Achieved Densities (acres)	204	75	35	50	80	443
FAR Required	1.5	1.7	0.8	1.7	1.9	1.6
Land Available for New Development (acres)						
Vacant Land	106	124	175	129	105	640
Infill Land	41	63	29	57	97	287
Redevelopable Land	60	-	-	-	27	86
Total	207	187	204	187	228	1,013
Surplus Land Capacity (acres)						
At Current Zoning Densities	120	125	182	145	156	728
At Achieved Densities	3	113	169	137	148	570

*Assumes natural vacancy rate of 7.5%

Source: Community Attributes (2010) based on data from City of Minneapolis, Metropolitan Council and Moody's Economy.com.

Exhibit S-3. Employment-Based Land Demand and Available Supply, 2010 to 2030, City of Minneapolis

	Downtown	East	North	South	Southwest	TOTAL
Baseline Job Growth Scenario 2010 - 2030	28,700	4,800	(1,000)	(2,800)	(200)	29,500
Estimated Vacant Built Space						
Office	6,179,000	510,000	44,000	460,000	302,000	7,495,000
Retail	1,725,000	546,000	716,000	2,131,000	2,828,000	7,946,000
Industrial	124,000	1,019,000	179,000	205,000	66,000	1,593,000
Jobs Accommodated in Vacant Built Space	13,770	420	90	540	520	15,340
Job Growth Requiring New Development*	14,250	6,060	190	860	660	22,020
Land Required to Accommodate New Development (acres)						
At Current Zoning Densities (acres)	14.8	13.4	0.4	1.6	1.2	31.4
FAR Required	8.3	3.7	3.9	4.5	4.4	5.7
At Achieved Densities (acres)	36.7	79.6	2.4	3.6	3.3	125.6
FAR Required	3.3	0.7	0.7	2.0	1.7	1.5
Existing Blended FAR (Office, Commercial, Industrial)	4.7	0.4	0.4	0.7	0.7	0.9
Land Available for New Development (acres)						
Vacant Land	127	150	57	56	64	453
Surface Parking	112.4					
Infill Land	41	60	28	57	94	280
Redevelopable Land	111	15	-	-	9	135
Total	278	225	85	113	167	868
Surplus Land Capacity (acres)						
At Current Zoning Densities	264	211	85	111	166	837
At Achieved Densities	242	145	83	109	164	743

*Assumes natural vacancy rate for each land use; some jobs not shown expected to go into non-market buildings

Source: Community Attributes (2010) based on data from City of Minneapolis, Metropolitan Council and Moody's Economy.com.

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CONTENTS

1.0 Introduction	1
2.0 Historic Trends and Context.....	3
2.1 Population and Housing Trends	3
2.2 Employment Trends	7
3.0 Current Land Supply	9
3.1 Overview	9
3.2 Vacant Lands	15
3.3 Infill Lands.....	19
3.4 Redevelopable Lands	24
4.0 Land Demand Forecasts.....	30
4.1 Population and Housing Forecasts	30
4.2 Employment Forecasts.....	32
4.3 Development Demand for Land.....	38
5.0 Conclusions and Areas for Further Analysis.....	42
Appendix A: Data Sources	47
Appendix B: Methods and Assumptions	48
Appendix C: Developable Lands Summary Tables.....	56

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1.0 INTRODUCTION

Background and Purpose

This report presents the results and methods of the Minneapolis Urban Land Capacity Analysis for the City of Minneapolis's Community Planning and Economic Development Department (CPED). The report provides analysis and data for a broad range of applications for planning and economic development. The report will have immediate application in the development of the City's Urban Agriculture Plan, in development in 2010.

The findings are intended to inform conversations about land supply and demand throughout the City. The analysis cannot be used alone and directly to determine whether "enough" land exists throughout the City or even in any particular sub-area within the City. Substantial judgment and additional context will be necessary to apply this analysis to each program or plan discussion that would benefit from an understanding of land supply and demand. Thus, care must be taken to consider the technical findings based on the assumptions and drivers of the analysis, and to not overreach for conclusions about any particular local decisions.

Methods

The analysis draws from existing parcel data and growth forecasts to frame future estimates of land demand and supply. Population, households and employment published by the Metropolitan Council and adopted in the City of Minneapolis Comprehensive Plan are used to determine land demand from 2010 to 2030. Parcel level attribute data from the City of Minneapolis Assessor and Community and Economic Development Department is used to determine the supply of developable lands available to accommodate growth. In some cases, the analysis relies on assumptions that rely on supplementary analysis and published data sources to the extent possible. Assumptions and limits of the analysis are presented and discussed for further analysis by the City.

Organization of Report

This report is organized as follows:

- **Historic Trends and Context.** This section provides important context that explains growth trends in recent years that have contributed to current land use patterns in the City.
- **Land Supply.** This section presents the analysis and findings of existing land capacity, presenting analysis of vacant, infill and redevelopable land that can accommodate growth.

- **Land Demand.** This section translates household and economic forecasts into scenarios of land demand.
- **Conclusions and Areas for Additional Research.** This last section frames the findings of land supply and demand, including a comparison of supply and demand by Planning Sector. Considerations for additional research are also presented.

2.0 HISTORIC TRENDS AND CONTEXT

2.1 Population and Housing Trends

From 2000 to 2008, the City population changed from 382,600 to 390,130, growing at average annual rate of 0.2%. During this time, population grew in some parts of the City and declined in other parts of the City, as shown in Exhibits 1 and 2.

Exhibit 1

Estimated Population by Planning Sector, 2000 and 2008

Planning Sector	2000	2008	CAGR
Downtown	24,149	27,225	1.51%
East	70,353	73,771	0.59%
North	67,674	67,116	-0.10%
South	119,213	121,871	0.28%
Southwest	101,229	100,148	-0.13%
TOTAL	382,618	390,131	0.24%

Source: US Census, Metropolitan Council, ESRI, Community Attributes (2010).

Exhibit 2 Population Change, 2000 - 2008

Citywide

N



0 1 2 Miles

Population Change, 2000 - 2008

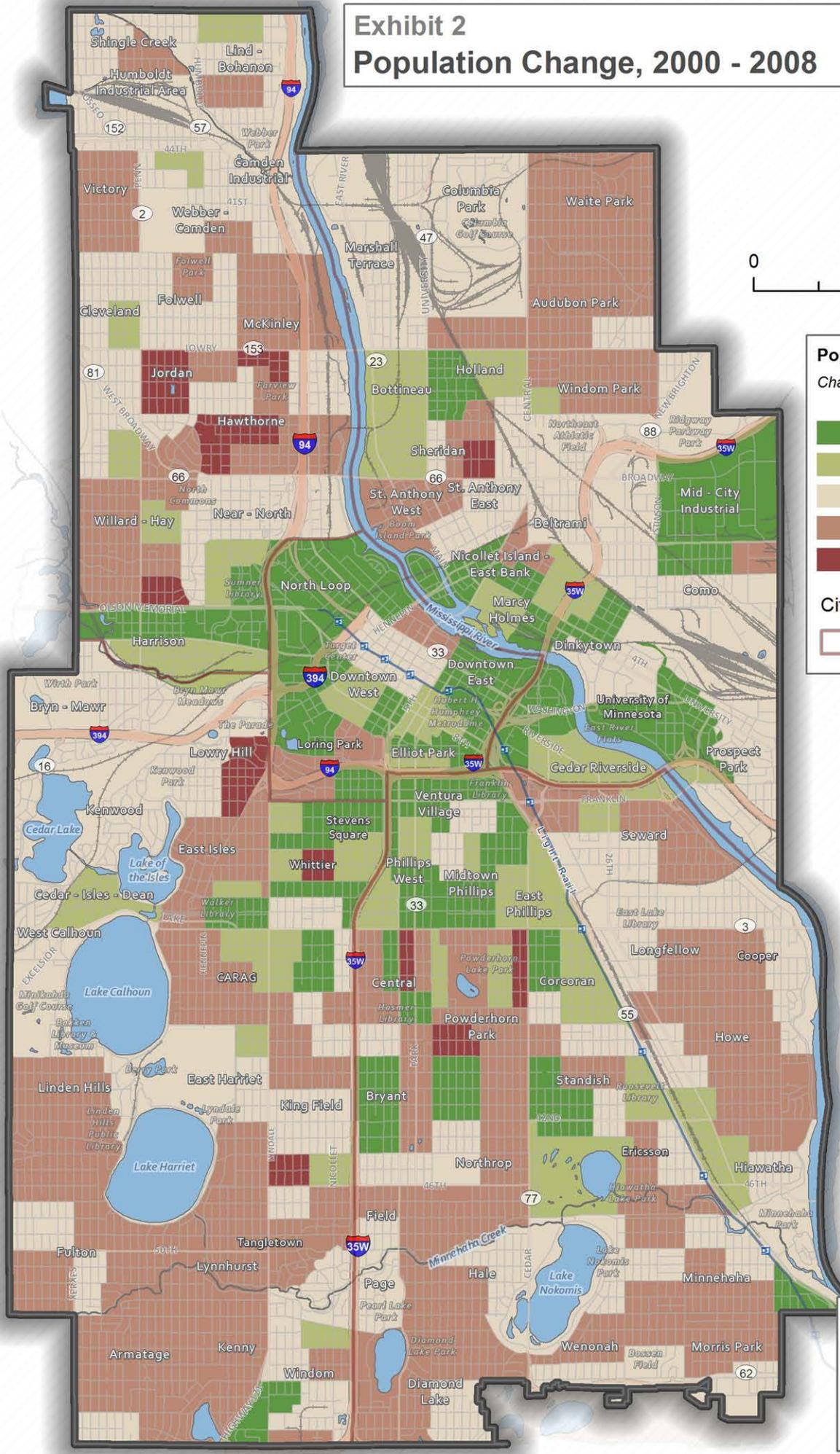
Change in Population Per Acre

By Block Group

- More than 1.0
- 0.2 to 1.0
- 0.2 to 0.2
- 0.2 to -1.0
- Less than -1.0

Citywide Change: 0.3

Planning Sector Boundaries

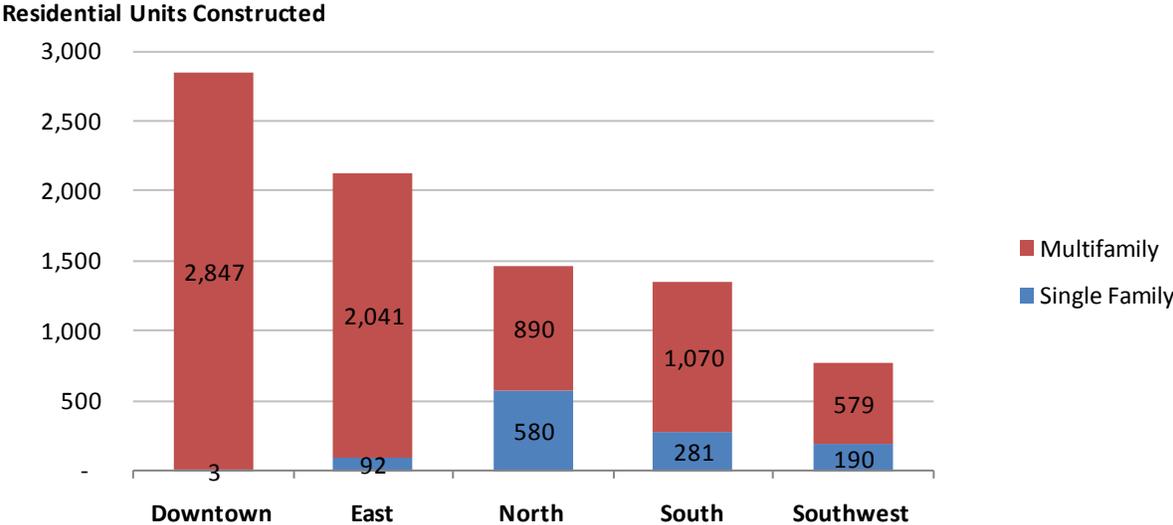


Map Date: June, 2010
 Source: City of Minneapolis (2010),
 Hennepin County (2010), ESRI (2010)

Multifamily housing development accommodated the majority of new household growth throughout the City, with some new single-family units built as well (Exhibit 3). Since 2000, multifamily households have accounted for 85% of new housing development Citywide. Residential building permits have been issued throughout the City, with multifamily permits concentrated in central parts of the City (Exhibit 4).

Exhibit 3

Residential Units Constructed by Planning Sector, 2000 – 2010 Q1



Source: Minneapolis Assessor, Minneapolis CPED, Community Attributes (2010).

Note: Includes projects completed and registered with the Assessor by March 2010.

Exhibit 4 Residential Building Permits, 2000 - 2010

Citywide

N



0 1 2 Miles

Permit Value

- More than \$3.5M
- \$1.5M - \$3.5M
- \$500k - \$1.5M
- \$100k - \$500k*

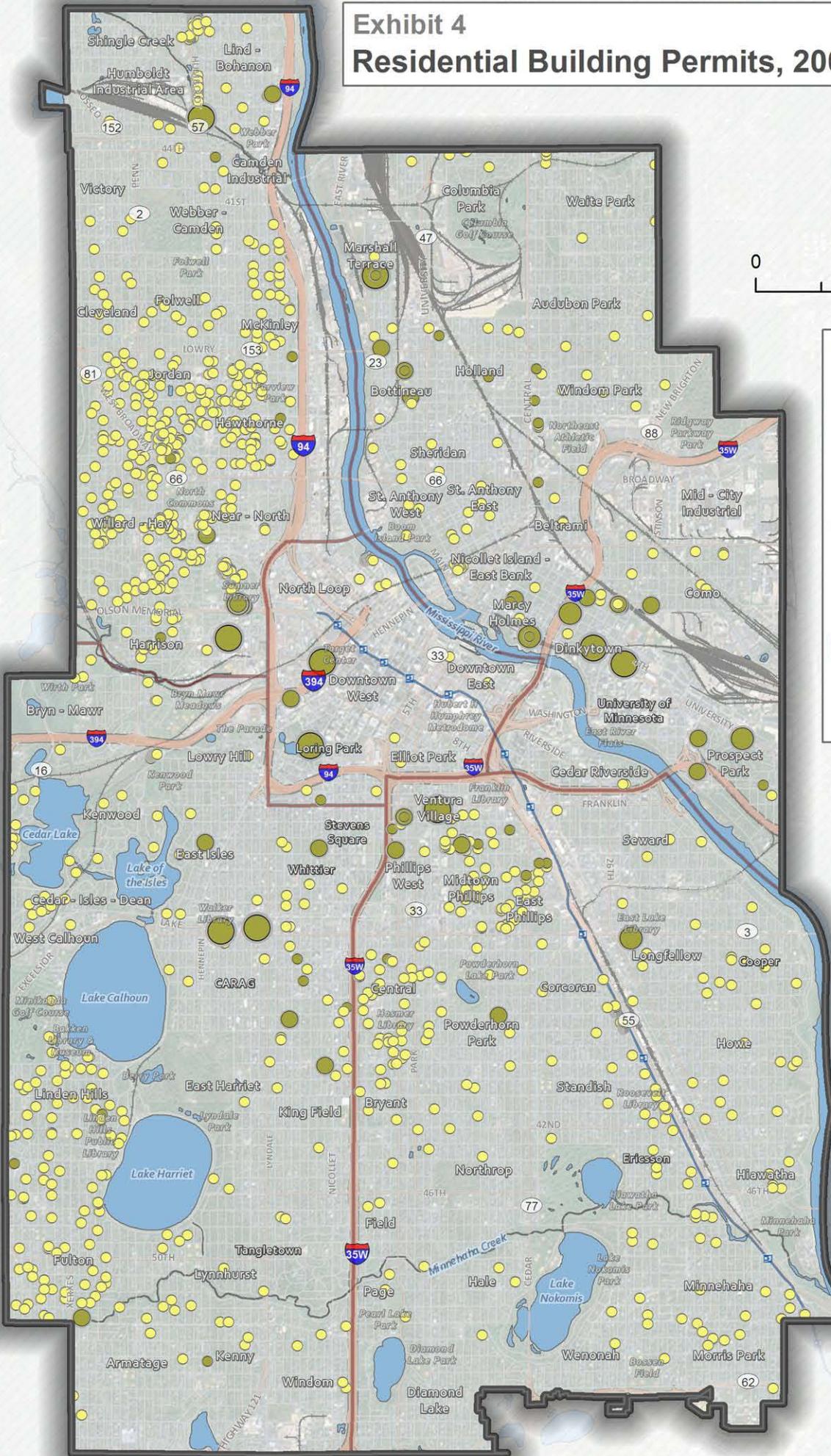
Land Use

- Single Family Residential**
- Multifamily Residential

Planning Sector Boundaries

* Permits with value less than \$100k are not shown.

** Single family residential permits do not show \$ values.



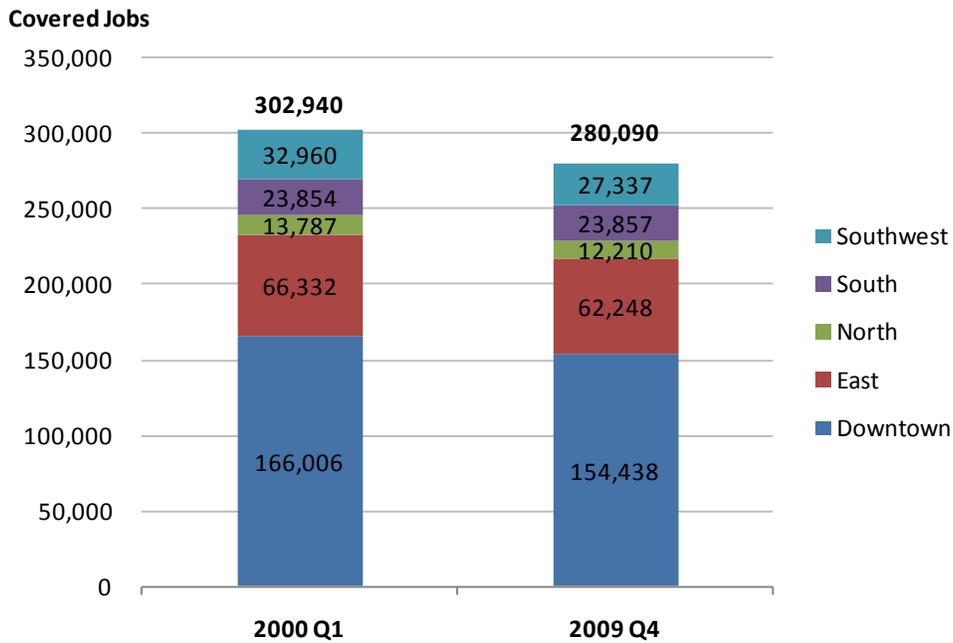
Map Date: June, 2010
 Source: City of Minneapolis (2010),
 Hennepin County (2010), ESRI (2010)

2.2 Employment Trends

Employment from 2000 to 2009 declined by nearly 23,000 jobs, decreasing at an average rate of 0.8% per year. All Planning Sectors, except the South sector, lost jobs during this period (**Exhibit 5**). Some areas within the City and within each Planning Sector added jobs, while others declined in jobs (**Exhibit 6**).

Exhibit 5

Estimated Employment by Planning Sector, 2000 and 2009



Source: DEED, QCEW, Community Attributes (2010).

Note: Covered employment refers to jobs covered by State and Federal unemployment insurance programs (excludes proprietors and others). Data in some economic sectors have been suppressed for confidentiality by the State for reporting by Planning Sector; therefore the Planning Sector totals may not exactly match other total citywide covered employment.

Exhibit 6 Employment Change 2000 - 2010

Citywide

N



0 1 2 Miles

Employment Change 2000-2010

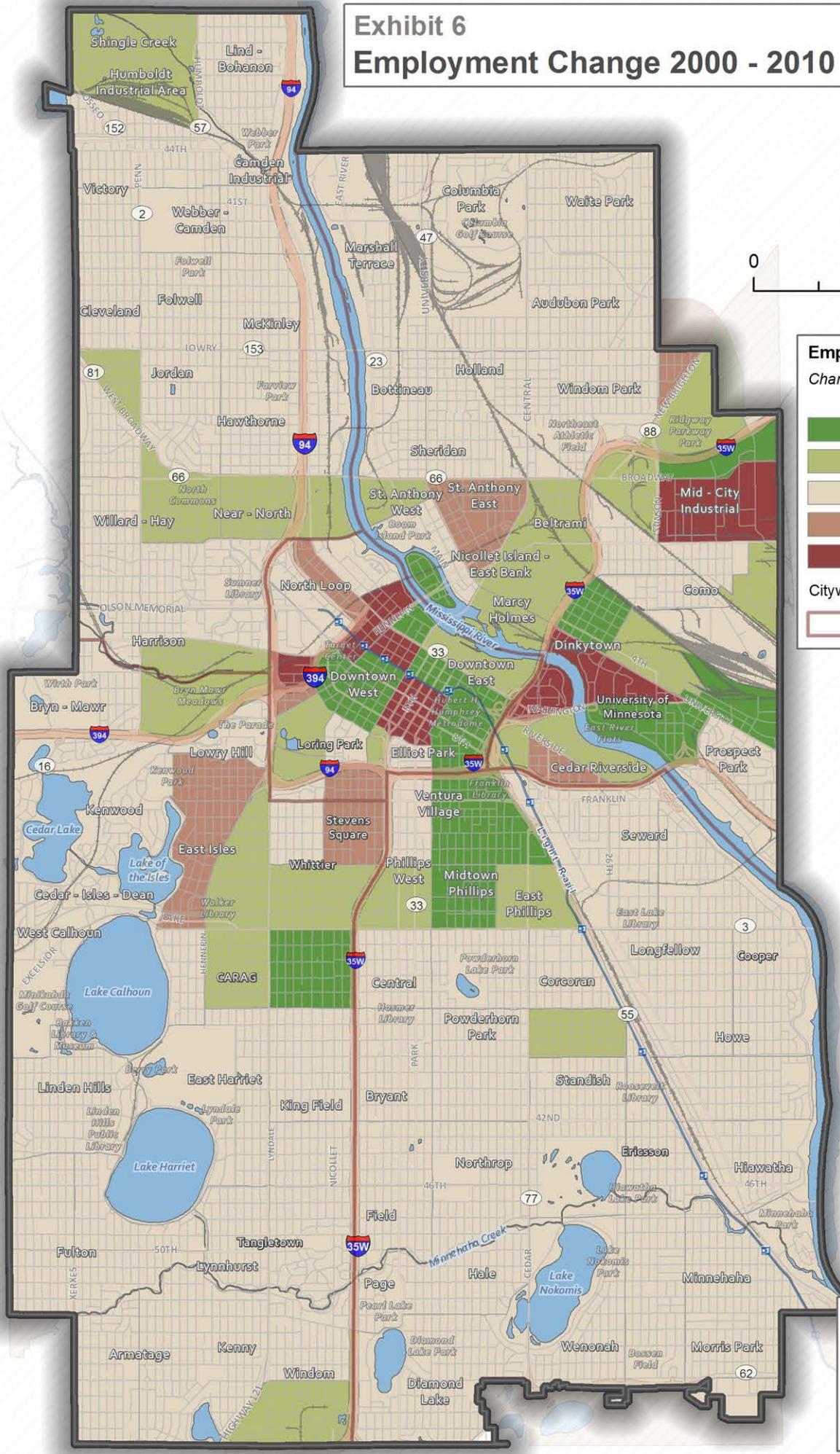
Change in Jobs per Acre

By TAZ

- More than +5
- +1 to +5
- 1 to +1
- 1 to -5
- Less than -5

Citywide Change: +0.26 Jobs Per Acre

Planning Sector Boundaries



Map Date: June, 2010
 Source: City of Minneapolis (2010),
 Hennepin County (2010), ESRI (2010)

3.0 CURRENT LAND SUPPLY

3.1 Overview

Lands suitable for development fall into three categories: vacant, infill lands and redevelopable lands. Lands not suitable for development can potentially be used for urban agriculture applications. Lands not suitable for development include lands with development restrictions (public and institutional uses, sensitive lands, or small parcels) and lands with no demand for development. **Exhibit 7** shows categories of lands below.

Exhibit 7

Developable Land Categories and Definitions

	Suitability for new development	Suitability for urban agriculture
Vacant Land. This category includes developable land where no demolition is required to prepare the land for new construction. Land with minimal demolition required is included.	Generally High. Depends on location, site constraints and market forces.	Generally High. Vacant land suitability for urban agriculture will have different criteria.
Infill Land. This category includes land with surplus area, where the area is large enough to accommodate additional uses.	Moderate to High. Requires parcel splitting or infill. Depends on desired use and current owner support.	Low to Moderate. Depends on desired use and current owner support. May require significant site preparation.
Redevelopable Land. This category includes land where real estate market demand appears sufficient enough to justify demolition and new construction of higher density development.	High. By definition, the land is considered redevelopable if market forces support increased density.	Not suitable. Redevelopable land typically has an existing viable use.

Urban land capacity studies sometimes include a discount factor for market attractiveness, sometimes referred to as a market factor. A market factor is useful to account for slivers of land, steep slopes and other parcel features that prevent development on specific parcels. This study does not include a market factor, and instead relies on threshold criteria (such as minimal lot sizes per zone

requirements) and detailed field studies using aerial photography and local planner review.

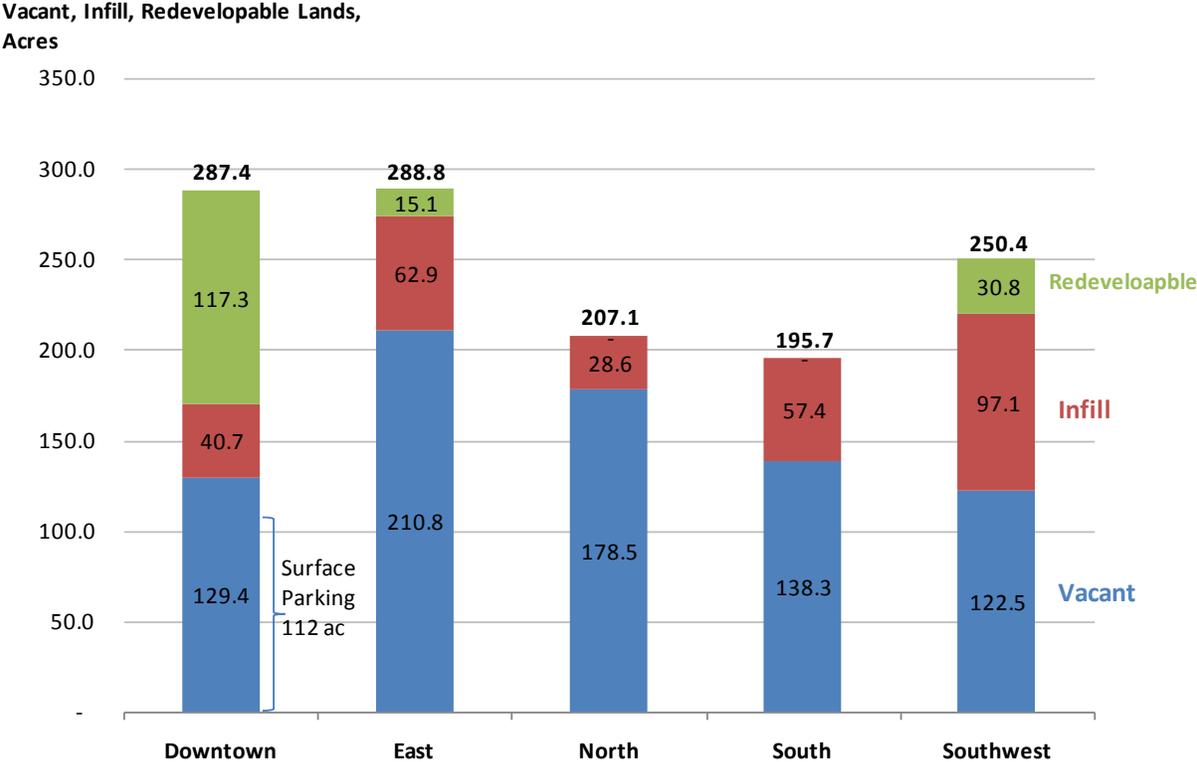
Developable land exists throughout the City (**Exhibits 8 and 9**). Vacant land accounts for approximately 60% of developable lands. Most of the vacant land that is in Downtown is actually occupied by surface parking lots. Surface parking lots require special consideration and can justifiably be considered not vacant. This study includes surfaces parking lots as vacant.

Land throughout the City exists for infill. Redevelopment opportunities were only analyzed for select areas in the City where concentrated growth is expected, namely Downtown, Dinkytown and Uptown. The analysis included general ranking of parcels where market data would justify redevelopment opportunities.

See **Appendix C** for a detailed summary of developable lands by category, planning sector, zoning district and lot size.

Exhibit 8

Acres of Developable Land Supply by Planning Sector, 2010



Source: Community Attributes, Minneapolis CPED, Minneapolis Assessor’s Office (2010).

Exhibit 9 Developable Lands by TAZ

Citywide

N



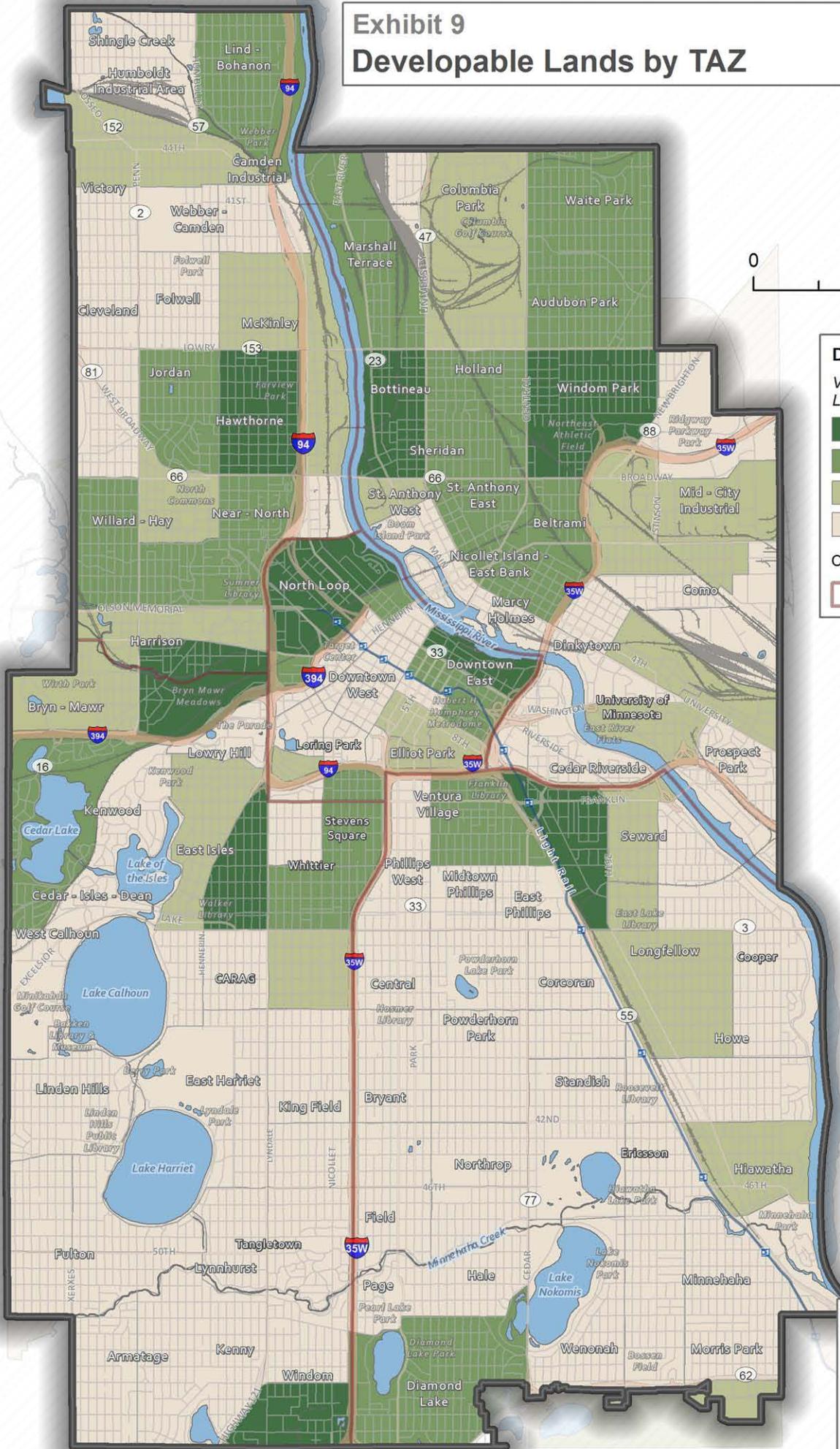
Developable Lands by TAZ

Vacant, Infill and Redevelopable Land by TAZ

- More than 20 Acres
- 15 - 20 Acres
- 8 - 14 Acres
- Less than 8 Acres

Citywide Land: 1,230 Acres

Planning Sector Boundaries



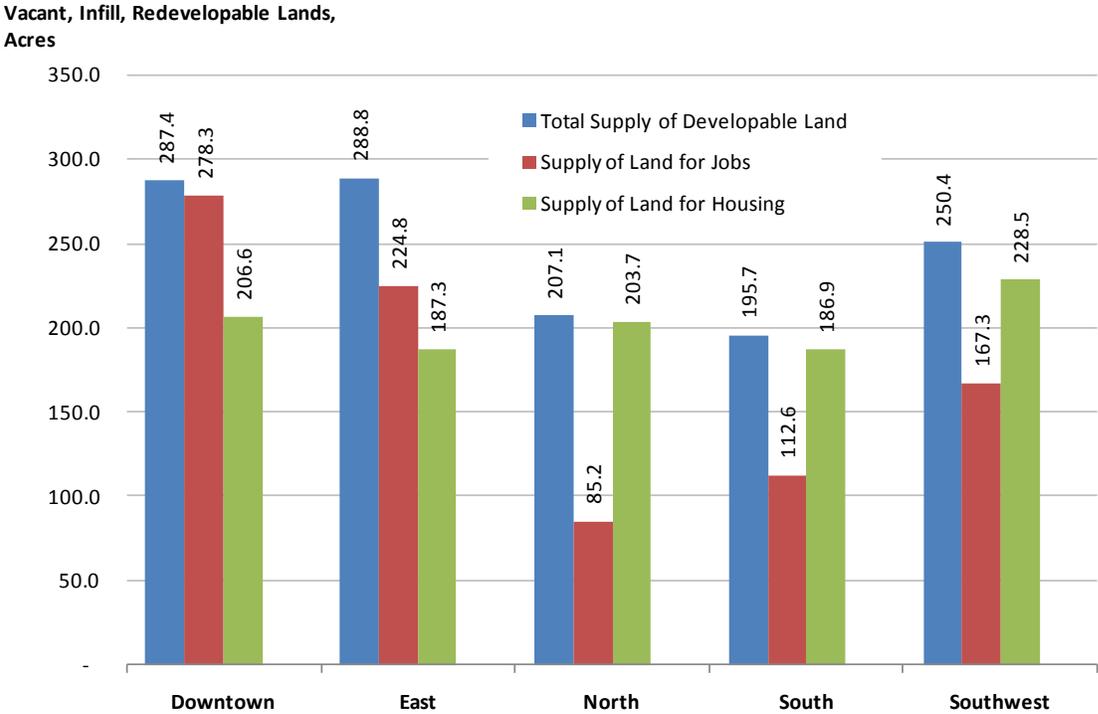
Map Date: June, 2010
 Source: City of Minneapolis (2010),
 Hennepin County (2010), ESRI (2010)

The City’s zoning allows for many areas where development can accommodate either jobs or housing, or a combination of jobs and housing in mixed use development. As a result, a comparison of the demand for land that stems from employment growth and housing growth requires distinguishing the supply of land that can accommodate either jobs or housing or both (**Exhibit 10**). The analysis comes from extensive parcel-level analysis and zoning codes.

Exhibits 11 and 12 present the developable land supply for housing and jobs by TAZ within each Planning Sector.

Exhibit 10

Developable Land Supply for Job and Housing by Planning Sector, 2010

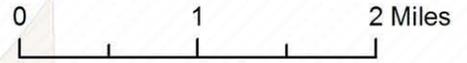


Source: Community Attributes, Minneapolis CPED, Minneapolis Assessor’s Office (2010).

Note: Based on allowed uses by zoning district on vacant, infill and redevelopable lands.

Exhibit 11 Developable Land for Jobs

Citywide

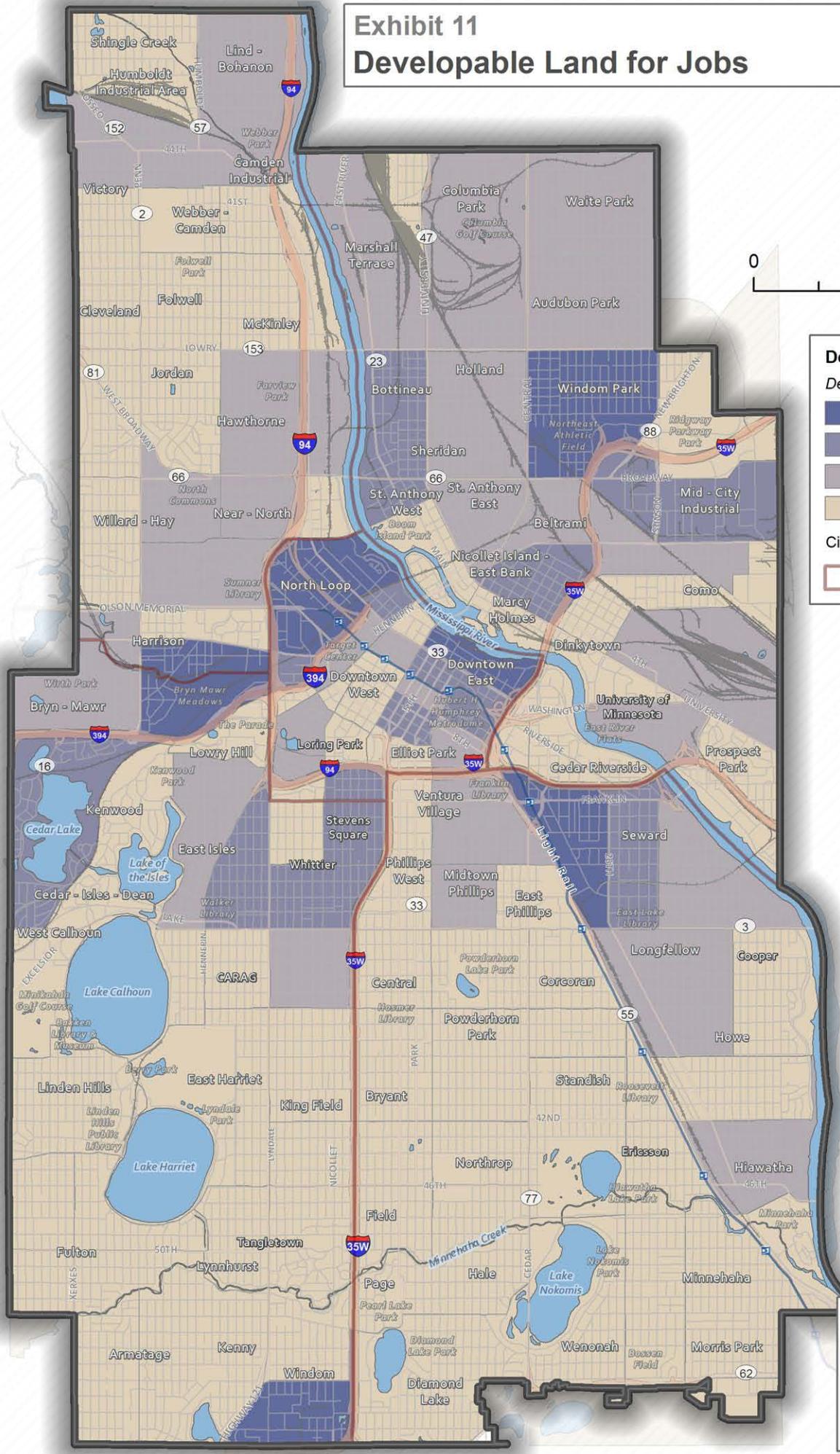


Developable Land For Jobs
Developable Acres by TAZ

- More than 20.0
- 12.6 - 20.0
- 5.0 - 12.5
- Less than 5.0

Citywide Land: 870 Acres

Planning Sector Boundaries

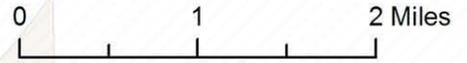


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Map Date: June, 2010
 Source: City of Minneapolis (2010),
 Hennepin County (2010), ESRI (2010)

Exhibit 12 Developable Land for Housing

Citywide

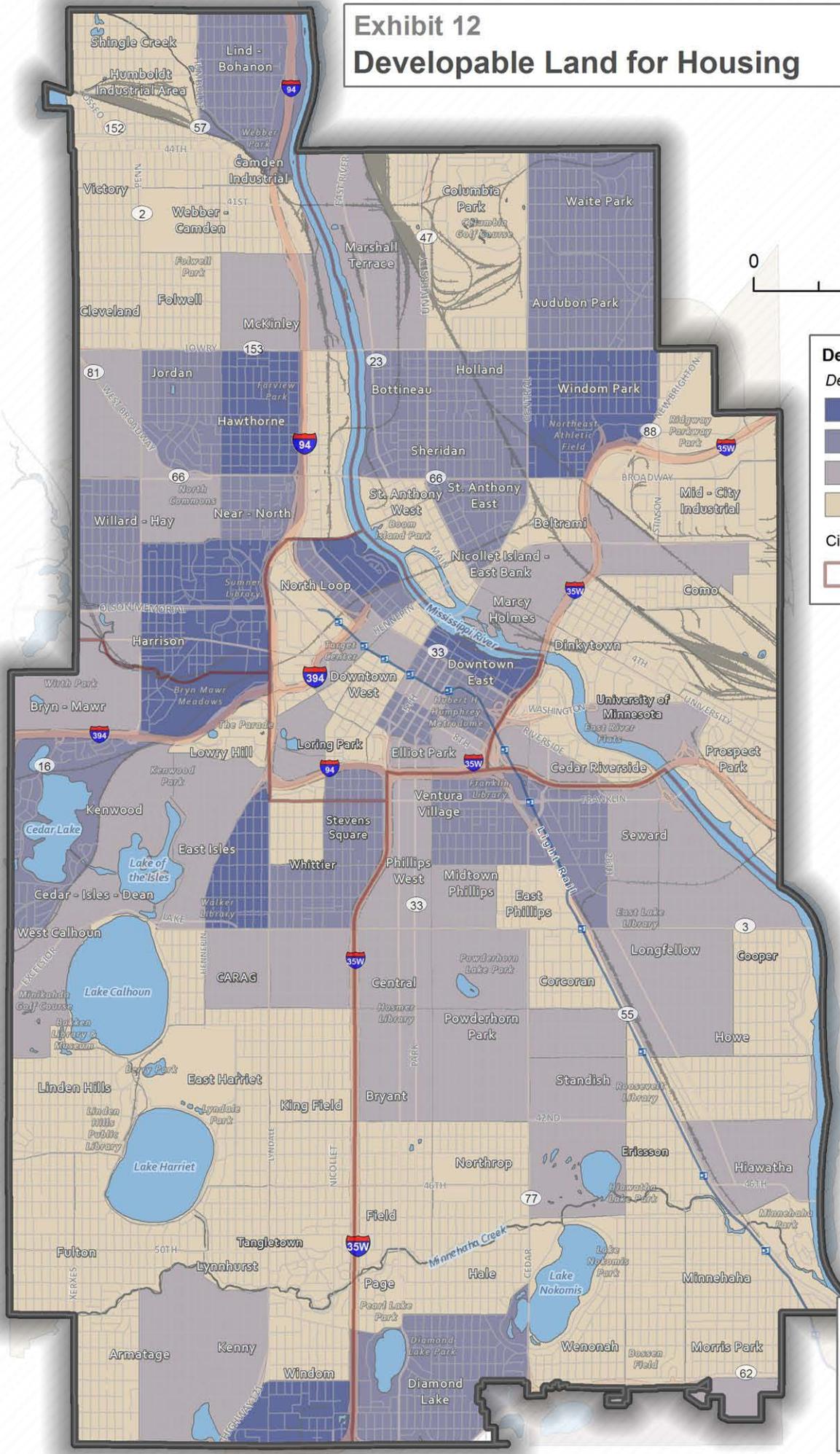


Developable Land For Housing
Developable Acres by TAZ

- More than 20.0
- 12.6 - 20.0
- 5.0 - 12.5
- Less than 5.0

Citywide Land: 1,010 Acres

Planning Sector Boundaries



Map Date: June, 2010
 Source: City of Minneapolis (2010),
 Hennepin County (2010), ESRI (2010)

3.2 Vacant Lands

General Definition

City of Minneapolis assessor's data identifies land parcels that have no improvements (value or building square footage) and are classified as "vacant". Shuttered and condemned structures are also included in the vacant lands inventory. See **Appendix C** for a detailed summary of vacant lands by planning sector, zoning district and lot size.

Exclusions for Vacant Lands

Some lands that show up as vacant in County assessor data require special understanding and are excluded from most planning considerations. Land uses excluded from analysis include:

- **Utility and transportation rights-of-ways**, merit special treatment and are excluded from development consideration. However, urban agriculture uses may have different criteria than many development applications that may affect their considerations for use.
- **Parks and open space**. All parcels classified as parks and open space in the City of Minneapolis Future Land Use Plan are removed from this analysis. This category also removes environmentally sensitive areas. Aerial imagery was used to remove some recreation and park facilities classified as vacant in assessor data.
- **Public and institutional uses**. All parcels classified as public and institutional land uses in the City of Minneapolis Future Land Use Plan are removed from analysis.

Special Considerations and Limitations

- **Surface Parking**. Owners of some parcels with no discernable improvements may not consider their land to be available for new uses. Surface parking lots often fit in this category. Minneapolis Assessors currently classify surface parking lots as vacant. Surface parking lots in downtown were identified using aerial imagery. Surface parking lots accounted for approximately 85% of Downtown vacant lands (a greater percentage is possible). Surface parking lots were not identified in any other area of the city.
- **Vacant parcels that are part of a larger property**. Individual parcels that are classified as vacant may be part of a larger property that is developed. Limitations in the availability of assessor data restrict identification of commonly owned properties comprise of multiple parcels. Therefore, a portion of a property that is comprised of multiple parcels may be considered vacant if there are no building improvements

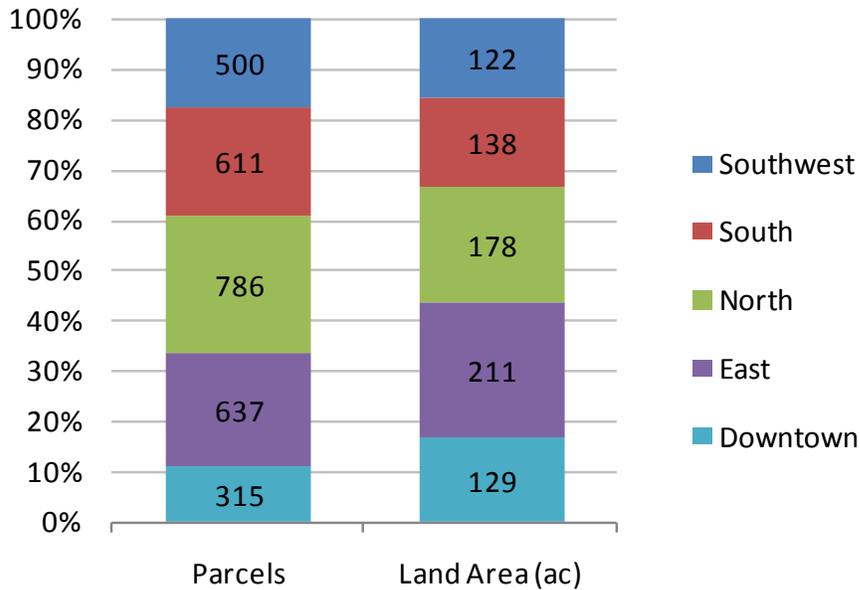
located on the individual parcel. Surface parking lots are the most common example of this limitation.

Vacant Lands by Planning Sector

- Analysis identified nearly 780 acres and 2,850 parcels of vacant lands, citywide (**Exhibit 13**).
- Downtown Minneapolis has 130 acres of vacant land, 17% of citywide total. Surface parking lots (classified as vacant) account for 86% of Downtown vacant land area.
- East Minneapolis has approximately 210 acres of vacant lands, the most of any Planning Sector. Vacant lands in the East Planning Sector account for 27% of Citywide vacant lands.
- North Minneapolis has approximately 180 acres of vacant lands, accounting for 24% of Citywide vacant lands.
- Vacant lands in South and Southwest Planning Sectors range from 122 to 138 acres, or 16% to 18% of citywide totals.

Exhibit 13

Vacant Lands by Planning Sector



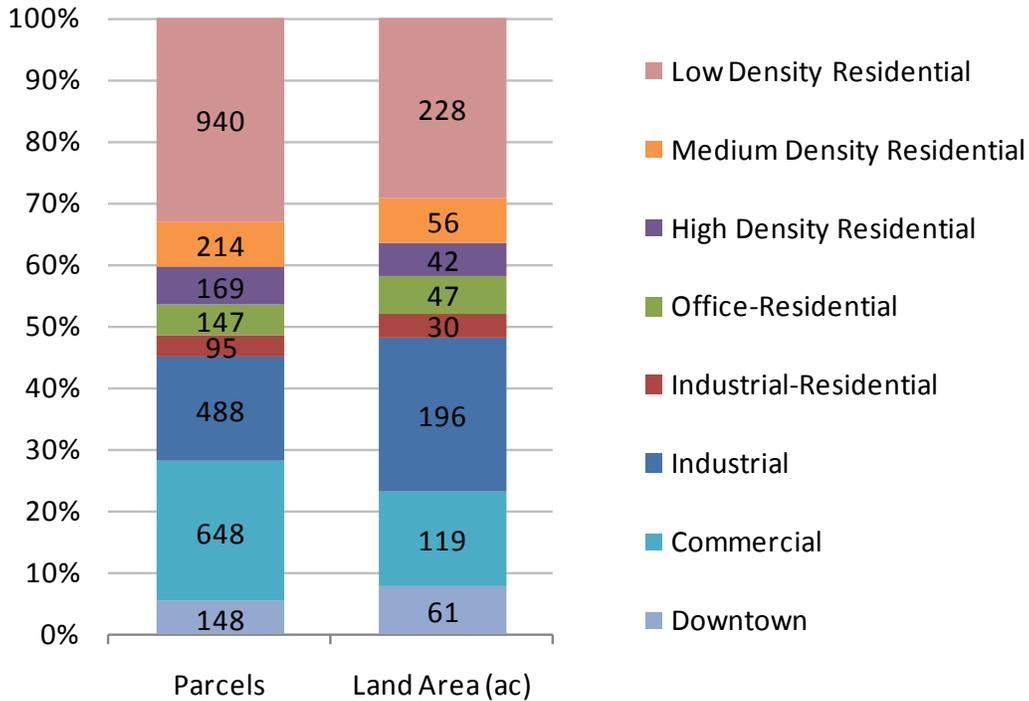
Source: Community Attributes, Minneapolis CPED, Minneapolis Assessor’s Office (2010).

Vacant Lands by General Zoning District

- Vacant lands are most prevalent in low density single family residential and industrial zoning districts (**Exhibit 14**).
- Vacant lands in low density residential and industrial zones totals over 420 acres, or 54% of citywide vacant lands.
- More than 650 parcels and 120 acres of vacant lands are in commercial zones, which account for 15% of citywide vacant land area.

Exhibit 14

Vacant Lands by Zoning District

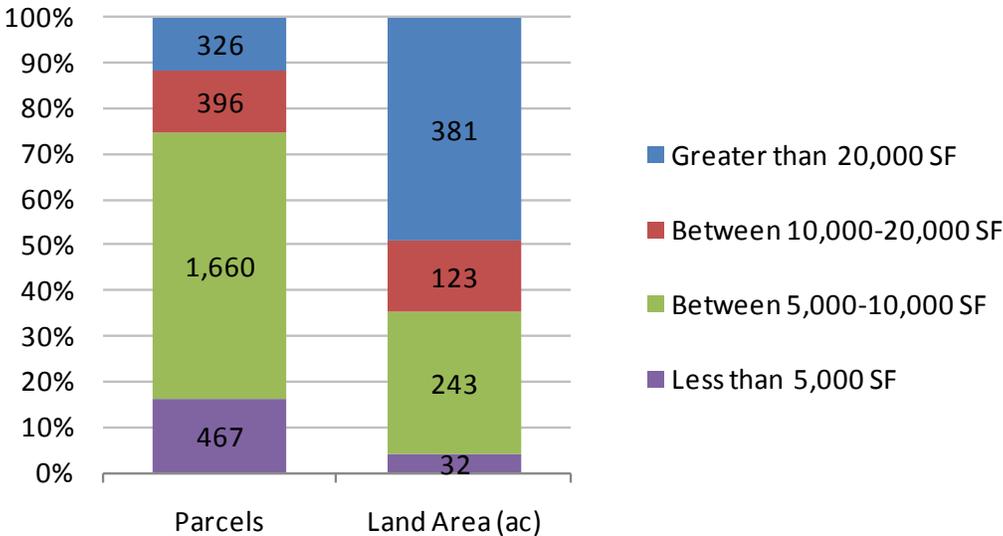


Source: Community Attributes, Minneapolis CPED, Minneapolis Assessor’s Office (2010).

Vacant Lands by Lot Size

- Small parcels under 5,000 SF represent 16% of all vacant lots but only 4% of total vacant land area (**Exhibit 15**). Smaller vacant parcels may be adjacent to other vacant parcels allowing for the assemblage of larger vacant parcels. All vacant parcels under 5,000 SF meet minimum lot size requirements established by zoning.
- Vacant lots between 5,000 and 20,000 SF represent over 70% of vacant lots and 47% of vacant land area.
- Vacant parcels greater than 20,000 SF (330 parcels total) represent nearly 50% of vacant land area in the city.

Exhibit 15
Vacant Lands by Lot Size



Source: Community Attributes, Minneapolis CPED, Minneapolis Assessor’s Office (2010).

3.3 Infill Lands

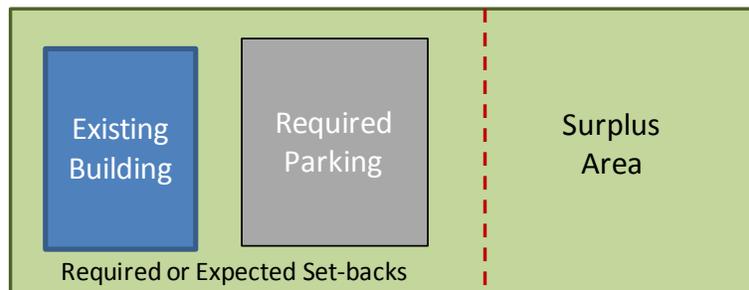
General Definition

Infill land consists of lots where surplus land exists beyond the area required to meet the needs of the current use of the property. Surplus land refers to land area within a parcel that exceeds the minimum amount of land required to accommodate the building that exists on the land today, including consideration of parking and building set-back requirements (**Exhibit 16**).

Zoning policies determine the maximum amount of building allowable on parcels of land. Conversely, these same policies describe the minimum amount of land required to accommodate a building of a given size, including considerations of how much of that land must be devoted to accommodating parking. This approach works well for commercial and multifamily residential zones, with the inputs varying by zone. See **Appendix C** for a detailed summary of infill lands by planning sector, zoning district and surplus lot area.

Exhibit 16

Illustration of Surplus Area Definition



Methods

Methods for identification of infill lands follows a four step process, as follows:

- (1) Current building SF / Floor-to-Area Ratio = Minimum land area required for building
- (2) Current building SF * Parking requirement = Land area required for parking
- (3) (Land area for Building + Parking) / Percentage impervious lot coverage = Land required for existing development.
- (4) Total land area – Land area required for existing development = Surplus land area.

Lots where the surplus area is large enough for new development (larger than the minimum lot area required under zoning) are likely candidates for urban infill.

Exclusions from Infill Lands Analysis

Land uses excluded from infill analysis include:

- **Lands previously classified as vacant.** Lands previously classified as vacant are not included for infill considerations.
- **Industrial Lands.** Parcels classified as industrial in the City of Minneapolis Future Land Use Plan are removed from analysis. Industrial uses are frequently built at significantly lower densities than prescribed by code and require surplus land area for business operations, logistics and storage.
- **Low and medium density residential development.** These land uses are excluded because significant gains in density are not likely through infill development.
- **Parks and open space.** All parcels classified as parks and open space in the City of Minneapolis Future Land Use Plan are removed from analysis. This category also removes environmentally sensitive areas.
- **Public and institutional uses.** All parcels classified as public and institutional land uses in the City of Minneapolis Future Land Use Plan are removed from analysis.
- **Surplus land area less than the minimum lot size required** by zoning and or where surplus land area is less than 25% of the lot size.

Special Considerations and Limitations.

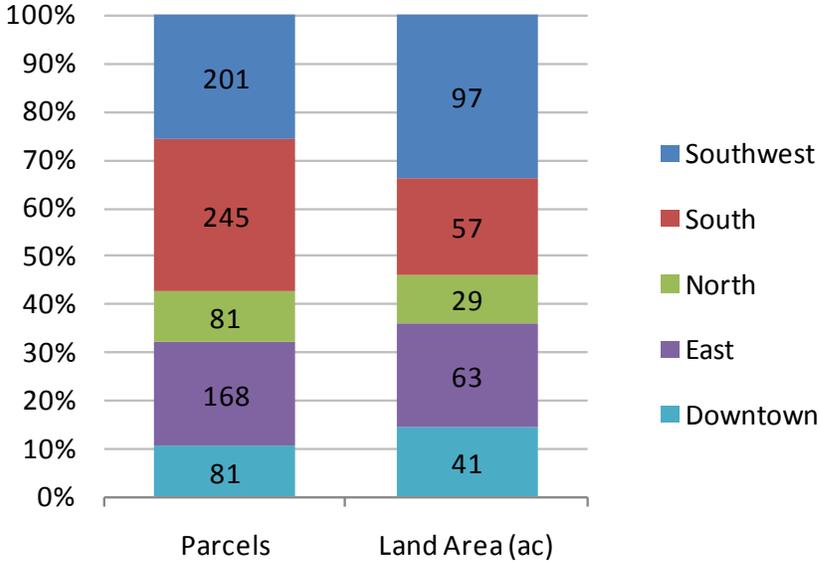
- **Common ownership of parcels considered a single property.** Infill criteria are applied to each parcel. As mentioned earlier, a property may be composed of one or more properties, therefore direct application of this method on a property (rather than parcel) basis.
- **Existing site layout can impede infill development.** The surplus land area may not be easily assembled or configured to allow for efficient or feasible infill. This limitation is addressed by requiring that the surplus land area be greater than 25% of the lot area and the minimum lot size required by zoning.

Infill Lands by Planning Sector

- Analysis identified nearly 780 partially-utilized parcels that could support infill development Citywide (**Exhibit 17**). Surplus lot area on infill lands totals nearly 290 acres citywide.
- Southwest Minneapolis has 97 acres of infill land area, the most of any Planning Sector. Southwest infill lands represents 34% of infill land Citywide.
- Downtown Minneapolis has 40 acres of infill land area, 14% of the Citywide total.
- East and South Minneapolis have approximately 60 acres of infill land respectively, accounting for a combined 40% of infill lands Citywide.

Exhibit 17

Infill Lands by Planning Sector

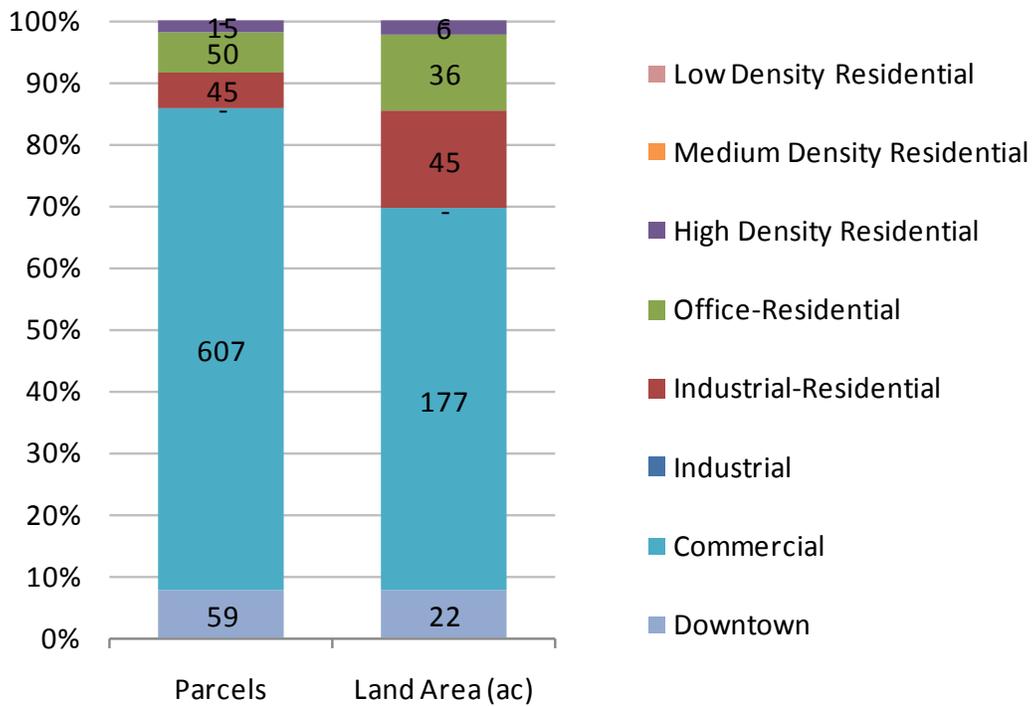


Source: Community Attributes, Minneapolis CPED, Minneapolis Assessor’s Office (2010).

Infill Lands by General Zoning District

- Partially-utilized lands are most prevalent in commercial zoning districts (industrial lands were excluded). Infill lands total nearly 180 acres in commercial zoning districts, accounting for 60% of Citywide infill lands (**Exhibit 18**).
- Several large commercial developments (such as regional and local shopping centers) are potential candidates for infill development due to large surface lots and amenities that make multifamily development attractive.
- There are 180 acres of infill lands on Office-Residential and Industrial Living Overlay Districts, accounting for nearly 30% of Citywide infill lands.

Exhibit 18
Infill Lands by Zoning District



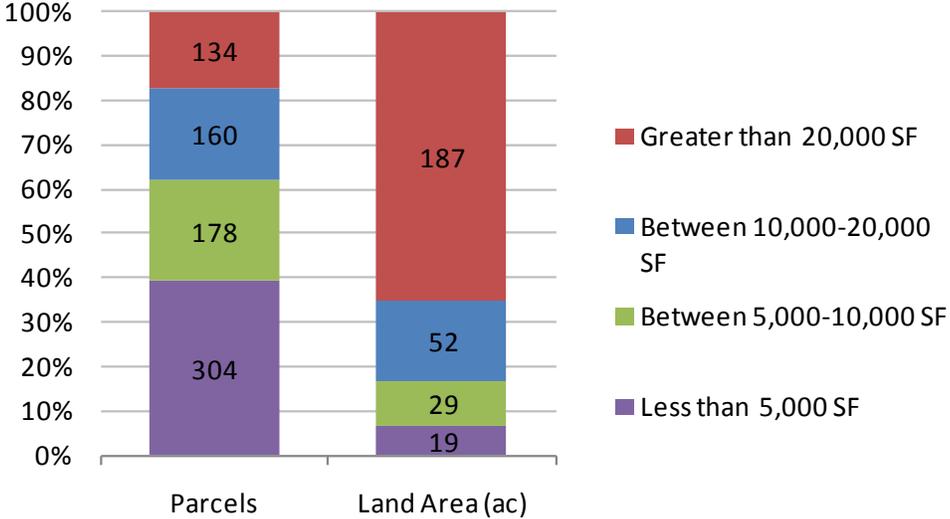
Source: Community Attributes, Minneapolis CPED, Minneapolis Assessor’s Office (2010).

Infill Lands by Lot Size

- The City has over 180 lots with over 20,000 SF of surplus land area available for infill development (**Exhibit 19**). These large lots account for 65% of Citywide infill land area.
- The City has 170 parcels with surplus land area between 5,000 and 20,000 SF total, totaling 81 acres land available for infill.
- Infill land area under 5,000 SF represents 40% of all infill lots but only 7% of total infill land area. All infill areas under 5,000 SF meet minimum lot size requirements established by zoning, however these parcels may have some development constraints.

Exhibit 19

Infill Lands by Surplus Land Area



Source: Community Attributes, Minneapolis CPED, Minneapolis Assessor’s Office (2010).

3.4 Redevelopable Lands

This section addresses the suitability of land for redevelopment, where developers would be expected to replace current structures with new structures, and most likely with new structures that accommodate more jobs or residents than the demolished structure.

Understanding the redevelopable potential of land ranks highly for understanding land capacity. The City will benefit from employing as accurate means as possible to understand and estimate redevelopment capacity when developing land use plans.

This analysis tests redevelopable lands methods in three subareas of the city:

- Downtown Planning Sector
- Uptown (ECCO, CARAG, East Isles, and Lowry Hill East Neighborhoods)
- “Dinkytown” Area (Marcy Holmes and Nicollet Island - East Bank Neighborhoods)

Land Value Potential Approach (LVP)

The approach taken in this analysis is referred to as the Land Value Potential, or LVP approach. The LVP approach uses a market-based methodology to identify redevelopable lands and development capacity. The LVP method defines market districts and then tests redevelopment feasibility of commercial and residential development for each parcel within the districts given current market conditions and zoning regulations.

Redevelopment feasibility is tested using residual land value analysis. This analysis finds the residual capital available to acquire land after accounting for anticipated developments costs, net operating incomes, and required return on investment. Mathematically, residual land values are calculated as follows:

- (1) Present value of net operating incomes (rental income per square feet) generated by new construction over time
- (2) Less: Development and demolition costs (excluding site acquisition)
- (3) Less: Desirable return (profit) on development
- (4) Equals: Resources (dollars) left to purchase site, or the residual land value

The calculation results in a theoretical willingness-to-pay for the opportunity to develop and operate a commercial or residential project at a site, given market conditions and profit requirements.

If the residual land value (4) is greater than or equal to the seller's anticipated asking price, then the parcel is considered feasible for redevelopment. For this analysis, the seller's asking price is assumed to be equivalent to total assessed value of the parcel, including land and improvement values. Parcels are considered likely to be redevelopable if the residual land value exceeds 120% of total assessed value. Parcels are considered for redevelopment potential if the residual land value is between 80% and 120% of total assessed value. Outcomes of redevelopable lands include both categories of redevelopment.

The "net buildable land" of redevelopable parcels is based on the percentage gain in building capacity. For example, if the LVP analysis found that a 40,000 SF building built to maximum density could replace a 10,000 SF building on a 10,000 acre lot, the net gain in buildable land would be 7,500 SF (20,000 SF net gain in building capacity / 30,000 SF max building capacity = 75% net gain in building capacity. 75% increase in building capacity * 10,000 SF lot = 7,500 net gain in buildable land).

Exclusions from Redevelopable Lands Analysis

Land uses excluded from redevelopable lands analysis include:

- **Low and medium zoned residential development.** These land uses are excluded because significant increases in net density are not likely through redevelopment.
- **Parcels with existing dense development.** Parcels where new development built to the maximum density is less than two times the density of the existing development is not considered for development. This eliminates replacement of an existing use with a more profitable use, if there is no significant increase in density. Additionally, a developer or property owner may consider refurbishment of the existing property to increase cash flow and value, rather than tearing down and replacing the structure, due to risk and capital requirements.
- **Parks and open space.** All parcels classified as parks and open space in the City of Minneapolis Future Land Use Plan are removed from analysis. This category also removes environmentally sensitive areas.
- **Public and institutional uses.** All parcels classified as public and institutional land uses in the City of Minneapolis Future Land Use Plan are removed from analysis.

Special Considerations and Limitations.

- **Sensitive inputs.** Market inputs such as capitalization rates (i.e. cap rates) vary among developers and investors based on the risk and return profile of any given project. Small changes in cap rates have a large impact on the net present value of new development. Rental rates are also sensitive inputs, and can vary considerably based on the quality and location of

development. These limitations are addressed by considering “ranges of redevelopability” that identify parcels that have potential to redevelop, as well as those that are likely or not likely to redevelop.

- **Parcel assemblage and other site constraints.** This analysis does not consider parcel assemblage and its impacts on redevelopment feasibility. The LVP method is applied to each parcel within the study areas chosen. A single parcel may be considered unlikely to redevelop but if it is surrounded by potentially redevelopable parcels, a developer may view the parcel as redevelopable. Larger sites can create economies of scale that may support feasible redevelopment.

Redevelopable Lands: Downtown Minneapolis

- Nearly 200 downtown parcels (totaling 154 acres) appear suitable for redevelopable based on current real estate market assumptions (**Exhibits 20 and 21**). Exhibit 21 below does not include redevelopment potential on vacant and infill lands.
- In total, redevelopment could result in a net increase of 117 acres of net buildable land area. Industrially zoned land as well as the industrial living overlay district, show the greatest potential for redevelopment and increases in density in Downtown.

Exhibit 20

Market Data and Assumptions for Downtown

Market Inputs	Commercial	Multifamily
Building Efficiency (% of GLA)	85%	80%
Building Rent (Gross \$/SF, MF is rent/mth)	\$ 32.00	\$ 2.15
Parking Rent	\$ -	\$ 0.50
Vacancy	15%	5%
Operating Expenses (% of Rent)	20%	25%
Cap Rate	7.000%	6.00%
Building Hard Construction Costs (\$/SF)	\$ 170	\$160
Surface Parking Cost	\$ 6	\$ 6
Below Parking Cost	\$ 70	\$ 70
Dem Cost (10% of Site Value)	10%	10%
Soft Cost (% of Const and Dem Cost)	25%	25%
Entrepreneurial Return (% of Total Cost)	10.000%	8.000%

Source: Community Attributes, GVA Marquette Advisors, CBRE, Minneapolis Trends, Rider Levett Bucknall (2010).

Exhibit 21

Downtown Redevelopable Lands

Sector	General Zoning	Parcels	Existing Conditions		Redevelopable Lands		
			Building SF (millions)	Land Area (ac)	New Building SF (millions)	Net Gain in Building SF (millions)	Net Gain in Buildable Land Area (ac)
Downtown							
	Downtown	39	0.95	15.6	3.49	2.54	11.2
	Commercial	17	0.39	7.4	1.28	0.89	5.1
	Industrial	54	1.89	73.5	8.64	6.76	57.4
	Industrial-Residential	12	1.37	33.5	5.52	4.15	25.2
	Office-Residential	39	0.76	15.4	3.20	2.44	11.7
	High Density Residential	36	0.23	8.6	0.97	0.74	6.5
Downtown Total		197	5.59	154.0	23.10	17.51	117

Source: Community Attributes, Minneapolis CPED, Minneapolis Assessor's Office (2010).

Redevelopable Lands: Uptown Area

This analysis examines redevelopment potential in the “Uptown area” including the ECCO, CARAG, East Isles, and Lowry Hill East Neighborhoods.

- 170 parcels (over 40 acres in total) appear suitable for re-developable based on current real estate market assumptions (**Exhibits 22 and 23**). Exhibit 23 below does not include redevelopment potential on vacant and infill lands.
- In total, redevelopment could result in an increase of 30 acres of net buildable land area. High-density residential land shows the greatest potential for redevelopment and increases in density.

Exhibit 22

Market Data and Assumptions for the Uptown Area

Market Inputs	Commercial	Multifamily
Building Efficiency (% of GLA)	85%	80%
Building Rent (\$/SF, MF is rent/mth)	\$ 28.00	\$ 1.85
Vacancy	10%	5%
Parking Rent	\$ -	\$ 0.25
Operating Expenses (% of Rent)	20%	25%
Cap Rate	7.000%	6.500%
Building Hard Construction Costs (\$/SF)	\$ 150	\$ 140
Surface Parking Cost	\$ 6	\$ 6
Below Parking Cost	\$ 70	\$ 70
Dem Cost (10% of Site Value)	10%	10%
Soft Cost (% of Const and Dem Cost)	25%	25%
Entrepreneurial Return (% of Total Cost)	8.500%	8.000%
Average Unit Size (SF)		850

Source: Community Attributes, GVA Marquette Advisors, CBRE, Minneapolis Trends, Rider Levett Bucknall (2010).

Exhibit 23

Uptown Area Redevelopable Lands

Sector	General Zoning	Parcels	Existing Conditions		Redevelopable Lands		
			Building SF (millions)	Land Area (ac)	New Building SF (millions)	Net Gain in Building SF (millions)	Net Gain in Buildable Land Area (ac)
Southwest							
	Commercial	9	0.12	4.8	0.85	0.73	4.1
	Industrial	5	0.11	5.2	0.61	0.50	4.2
	Industrial-Residential	-	0.00	-	0.00	0.00	-
	Office-Residential	2	0.01	0.4	0.03	0.03	-
	High Density Residential	154	1.08	30.7	3.84	2.77	22.2
Southwest Total		170	1.31	41.1	5.34	4.02	30

Source: Community Attributes, Minneapolis CPED, Minneapolis Assessor’s Office (2010).

Redevelopable Lands: Dinkytown Area

This analysis examines redevelopment potential in the “Dinkytown area” including the Marcy Holmes and Nicollet Island East Bank Neighborhoods.

- Five parcels in the Dinkytown area appear suitable for re-developable based on current real estate market assumptions (**Exhibits 24 and 25**). Exhibit 25 below does not include redevelopment potential on vacant and infill lands.
- In total, redevelopment could result in an increase of 15 acres of net buildable land area on industrial lands.

Exhibit 24

Market Data and Assumptions for the Dinkytown Area

Market Inputs	Commercial	Multifamily
Building Efficiency (% of GLA)	85%	80%
Building Rent (\$/SF, MF is rent/mth)	\$ 26.00	\$ 1.80
Vacancy	10%	4%
Parking Rent	\$ -	\$ 0.25
Operating Expenses (% of Rent)	20%	25%
Cap Rate	7.500%	6.500%
Building Hard Construction Costs (\$/SF)	\$ 150	\$ 135
Surface Parking Cost	\$ 6	\$ 6
Below Parking Cost	\$ 70	\$ 70
Dem Cost (10% of Site Value)	10%	10%
Soft Cost (% of Const and Dem Cost)	25%	25%
Entrepreneurial Return (% of Total Cost)	8.500%	8.000%
Average Unit Size (SF)		850

Source: Community Attributes, GVA Marquette Advisors, CBRE, Minneapolis Trends, Rider Levett Bucknall (2010).

Exhibit 25

Dinkytown Area Redevelopable Lands

Sector	General Zoning	Parcels	Existing Conditions		Redevelopable Lands		
			Building SF (millions)	Land Area (ac)	New Building SF (millions)	Net Gain in Building SF (millions)	Net Gain in Buildable Land Area (ac)
East							
	Commercial	-	-	-	-	-	-
	Industrial	5	0.36	18.2	2.14	1.78	15.1
	Industrial-Residential	-	-	-	-	-	-
	Office-Residential	-	-	-	-	-	-
	High Density Residential	-	-	-	-	-	-
East Total		5	0.36	18.2	2.14	1.78	15

Source: Community Attributes, Minneapolis CPED, Minneapolis Assessor’s Office (2010).

4.0 LAND DEMAND FORECASTS

4.1 Population and Housing Forecasts

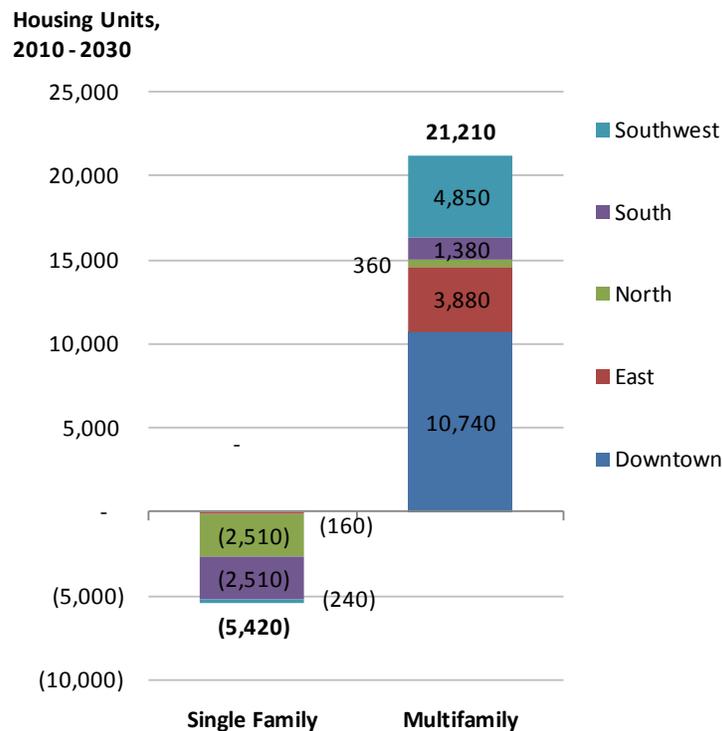
Population and household forecasts published in the City of Minneapolis Comprehensive Plan drive forecasts of residential land demand over the next 20 years (2010 to 2030). Population forecasts show Citywide growth through 2030, with continued increases in demand for multifamily housing (**Exhibit 26**).

Housing unit forecasts suggest continued concentration of multifamily housing units in Downtown Minneapolis, with strong demand for multifamily housing in both the Southwest and the East. The forecasts show continued decline in single-family housing in the South and North Planning Sectors. Each Planning Sector has growth forecasted to concentrate in its multifamily areas, as planned in the City's comprehensive plan and zoning policies (**Exhibit 27**).

See **Appendix B** for further explanation of household forecast methods and assumptions.

Exhibit 26

Housing Growth Forecasts, from 2010 to 2030



Source: Minneapolis CPED, Minneapolis Assessor, Metropolitan Council, Community Attributes (2010).

Exhibit 27 Population Change 2010 - 2030

Citywide

N



Population Change 2010 - 2030

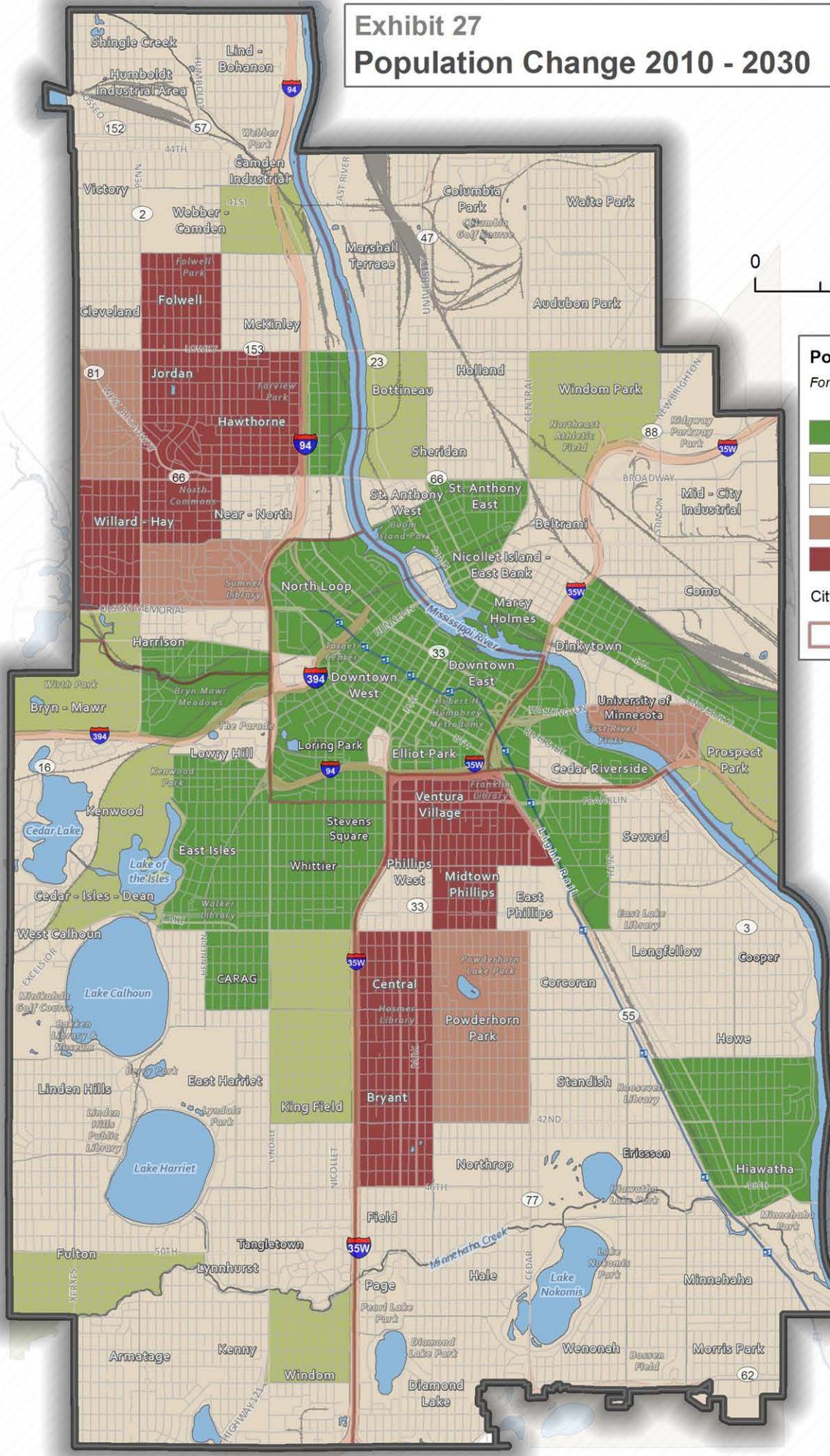
Forecasted Change in Population Per Acre

By TAZ

- More than +3
- +1 to +3
- 1 to +1
- 1 to -3
- Less than -3

Citywide Change: +0.9 People Per Acre

Planning Sector Boundaries



Map Date: June, 2010
 Source: City of Minneapolis (2010),
 Hennepin County (2010), ESRI (2010)

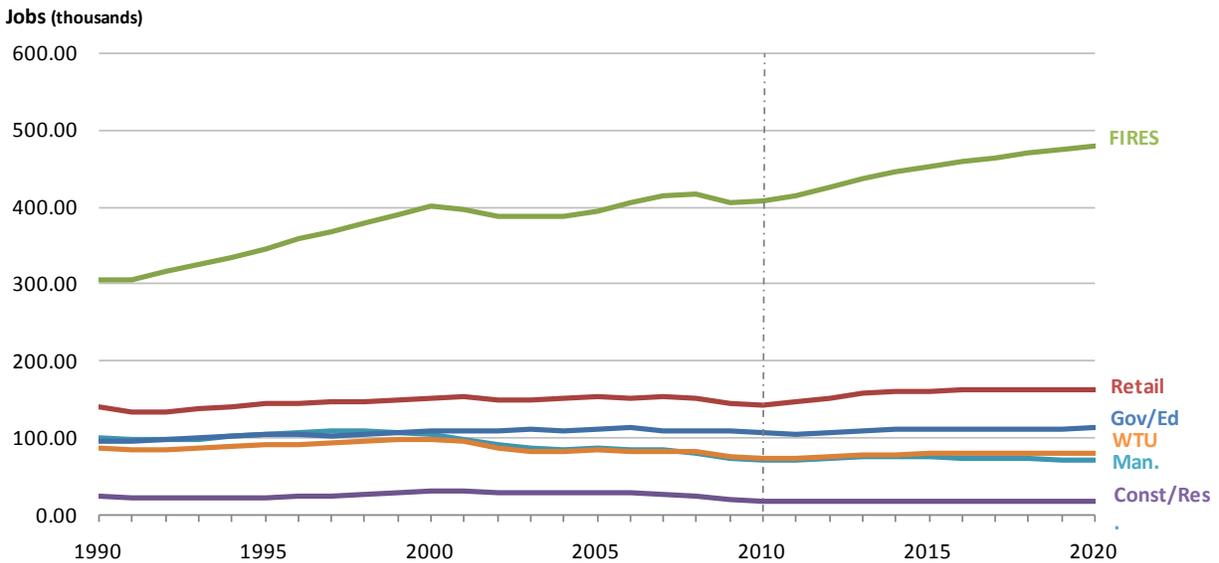
4.2 Employment Forecasts

Employment growth drives forecasts of employment-based land demand over the next 20 years. Countywide forecasts by economic sector add additional context to forecasts of total employment published by the City of Minneapolis and Metropolitan Council. Employment-based land demand varies considerably based on the types of jobs and land use requirements for different economic industries. See **Appendix B** for further explanation of employment forecast methods and assumptions.

Employment forecasts for Hennepin County show job growth in 2011 and continuing annually through 2020, with the strongest growth in the service-based industries (finance, insurance, real estate and services (FIRES) and retail) (**Exhibits 28 and 29**). The job growth follows three years of job declines, from 2007 through 2010, consistent with the U.S. recession during this period.

Exhibit 28

Hennepin County Employment Trends and Forecasts by Economic Sector, 1990 through 2020

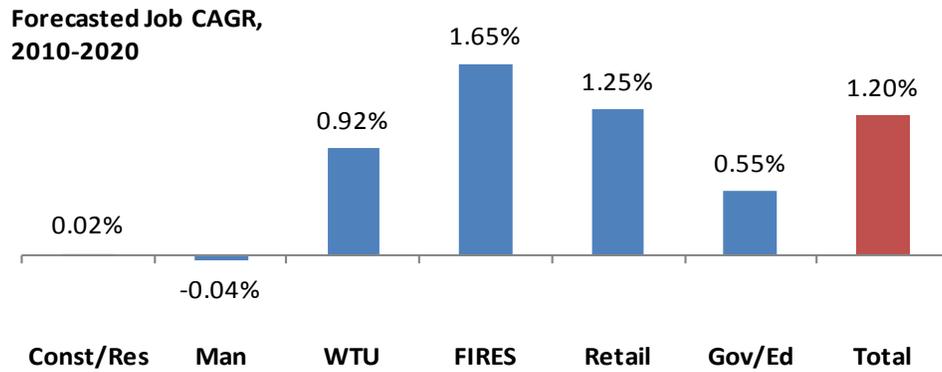


Source: Moody's Economy.com (May, 2010), Community Attributes.

Note: FIRES includes finance, insurance, real estate and services. Retail includes leisure and hospitality. Gov/Ed is government and education. WTU includes wholesale trade, transportation and utilities, Man is manufacturing, Const/Res is construction and resources.

Exhibit 29

Forecast Annual Growth Rates by Economic Sector, Hennepin County, 2010 to 2020



Source: Moody's Economy.com (May, 2010), Community Attributes.

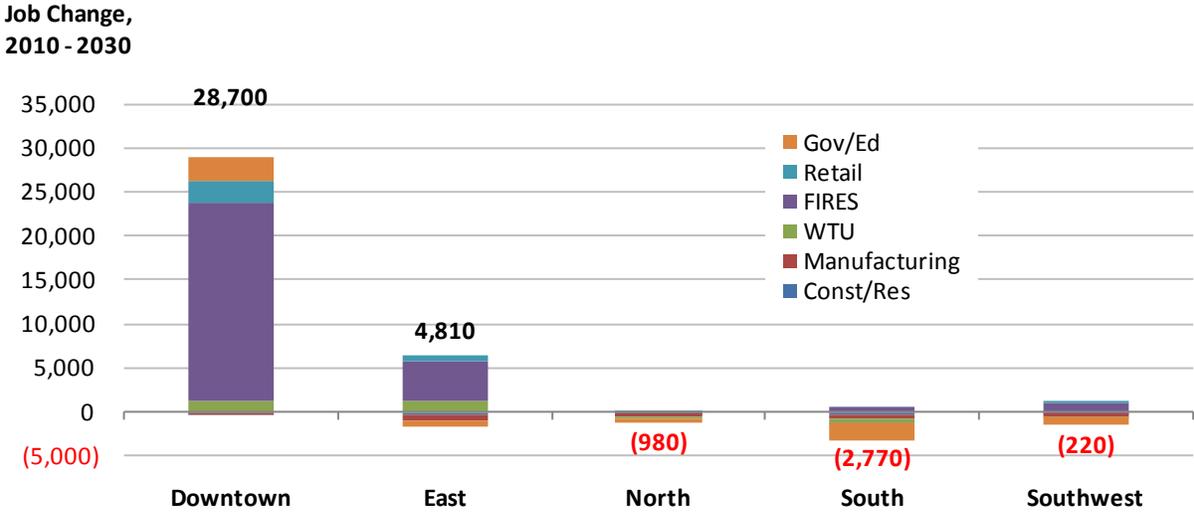
Within the City, jobs are forecast to grow in some places and decline in other places. Forecasts by TAZ from Metropolitan Council and the City show job growth concentrated in Downtown Minneapolis and some job growth in the East Planning Sector. The job growth by TAZ adds up to net loss in the North, South and Southwest Planning Sectors.

If job growth throughout the City follows the economic sector forecasts for the County (per the Moody’s forecasts), then Services jobs (FIRES) would continue to drive growth in Downtown and the East, with additional growth in Retail, Government and Education and jobs in Wholesale, Trade and Utilities (**Exhibit 30**).

Within each Planning Sector, some areas are forecasted to add jobs and in some areas jobs are forecasted to decline (**Exhibit 31**).

Exhibit 30

**Employment Forecasts by Planning Sector and Economic Sector,
2010 to 2030**



Source: Minneapolis CPED, Minneapolis Assessor, Moody's Economy.com, Community Attributes (2010).
 Note: Net job change shown in bold labels for each Planning Sector. Rounding results in slightly different estimates than shown in Exhibit 13.

Exhibit 31 Employment Change 2010 - 2030

Citywide

N



0 1 2 Miles

Employment Change 2010 - 2030

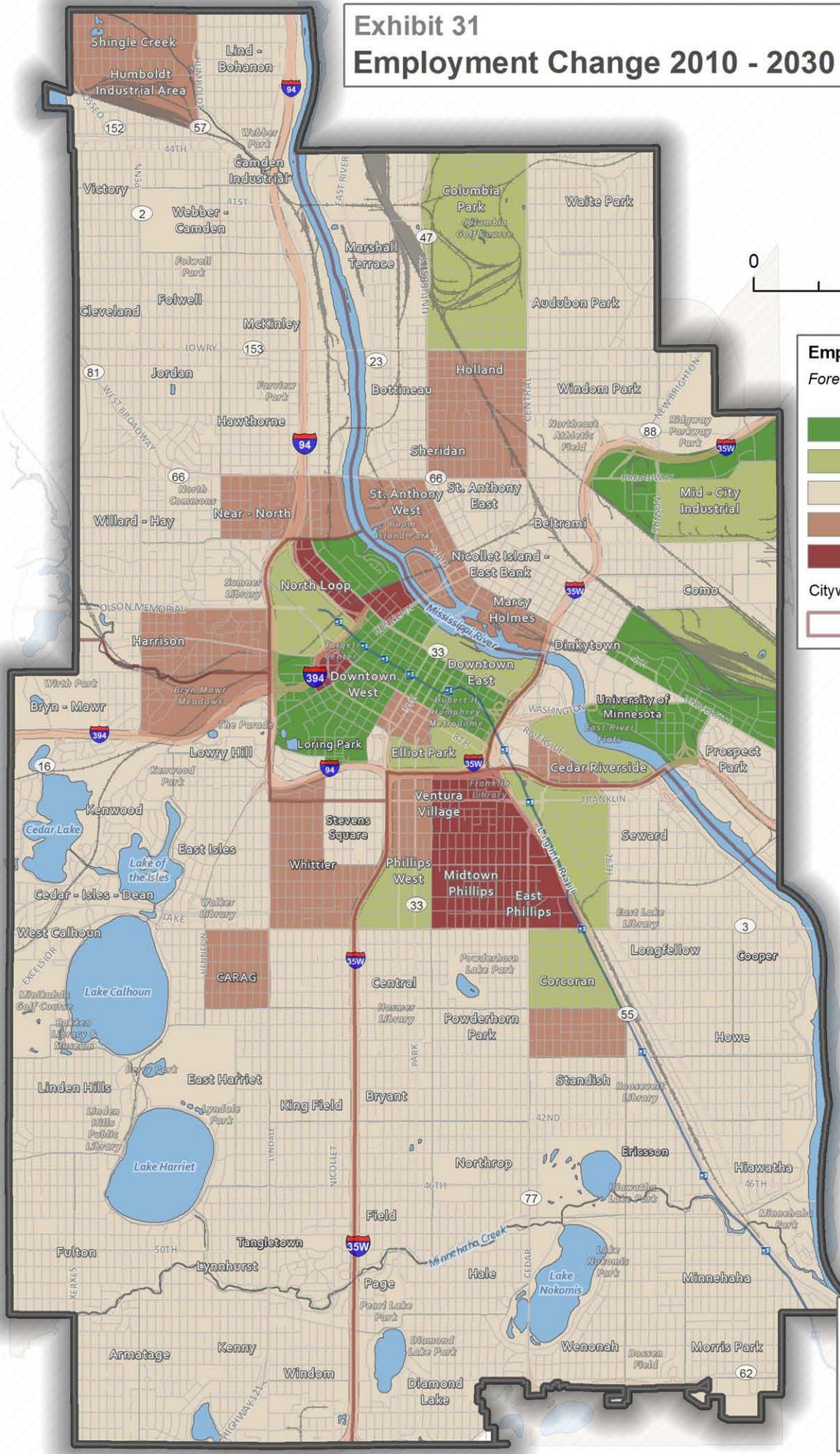
Forecasted Change in Jobs per Acre

By TAZ

- More than +2
- +0.5 to +2
- 0.5 to +0.5
- 0.5 to -2
- Less than -2

Citywide Change: +0.8 Jobs Per Acre

Planning Sector Boundaries



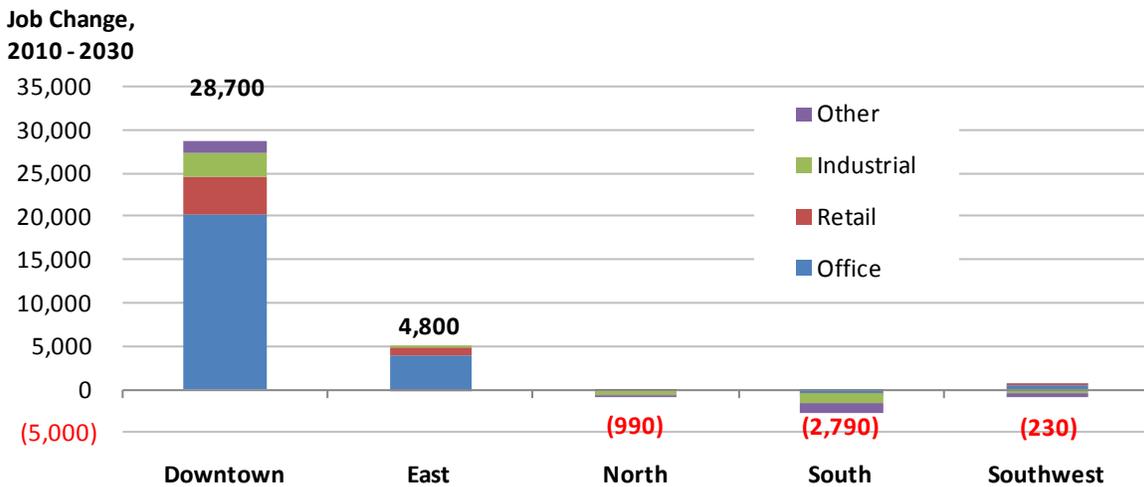
Map Date: June, 2010
 Source: City of Minneapolis (2010),
 Hennepin County (2010), ESRI (2010)

Employment by Land Use Forecasts

The employment forecasts by economic sector translate into employment forecasts by land use as shown in **Exhibit 32**. On net, jobs result in an increased demand for land in Downtown and the East. Job declines in the North, South and Southwest, would be expected to result in a net decline in land demand for employment uses. Within some areas of each Planning Sector, employment changes may result in demand for new development and new land consumption despite a net decline in employment-based land demand.

Exhibit 32

Job Growth Forecasts by Planning Sector and by Land Use, 2010 to 2030



Source: CPED, Minneapolis Assessor, Moody's Economy.com, CAI (2010)

Note: Net job change shown in bold labels for each Planning Sector.

Assumptions of the percentage of jobs in each economic sector that result in demand for each type of land use are shown in **Exhibit 33**. This analysis groups employment-based land demand into four general categories: Office, Retail, Industrial and Other. The definitions of (and data codes for) economic sectors are not land use codes. The population and housing forecasts neatly align into land use codes, but the economic forecasts do not.

Exhibit 33

Assumptions of Land Use by Type among Economic Sectors

Land Use	Economic Sector					
	Const/Res	Manufacturing	WTU	FIRES	Retail	Gov/Ed
Office	30%	10%	42%	82%	22%	30%
Commercial	10%	12%	7%	11%	72%	0%
Industrial	60%	78%	51%	7%	6%	20%
Other	0%	0%	0%	0%	0%	50%
Total	100%	100%	100%	100%	100%	100%

Source: CAI, DEED, Minneapolis CPED, Minneapolis Assessor's Office (2010).

4.3 Development Demand for Land

Translating the growth forecasts into demand for land requires some assumptions or predictions of the density at which new buildings will be developed. This study produced two scenarios for development densities.

The first scenario, entitled the Policy-Based Scenario, assumes development would occur at full build-out of the development allowed by zoning. This scenario applies development densities prescribed by the City’s comprehensive plan and zoning code. Floor-to-area ratios (FARs) in the City’s zoning code provide the measures to describe development density. The other scenario, called the Trends-Based Scenario, assumes the densities achieved by development from 2000 to 2010 within each area of the City.

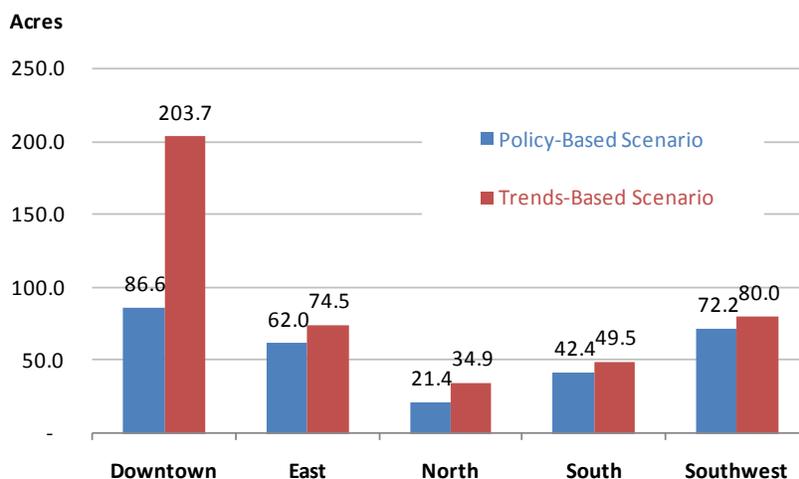
The two scenarios produce significantly different findings about the amount of land required to accommodate employment and housing growth forecasts.

Exhibits 34 through 36 demonstrate the land demand for residential and employment-related uses for the two scenarios.

The exhibits show development at densities that have occurred since 2000 result in substantially more land demand compared to the land required at allowed densities, in particular for residential uses Downtown and employment-related uses in Downtown and East Planning Sectors. The Policy-Based Scenario, where development is built up to the maximum allowed densities translates into demand for less land, because developers build more space per acre of land to accommodate more housing and jobs on each parcel of land.

Exhibit 34

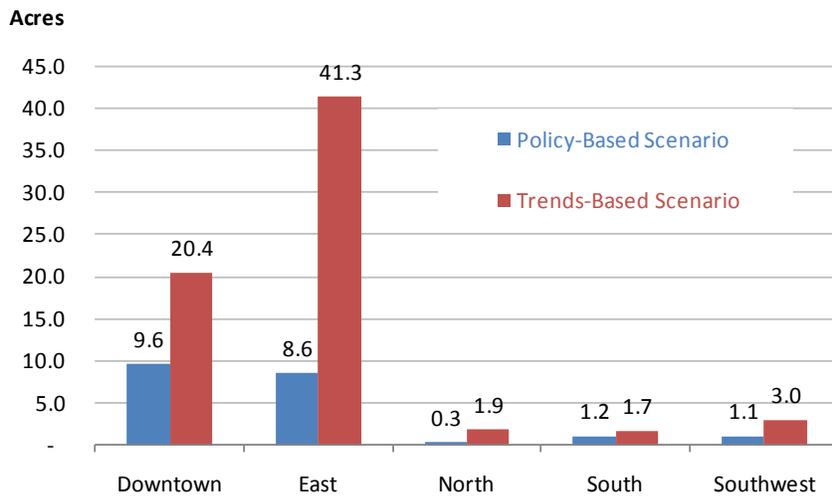
Land Demand for Residential Uses, 2010 - 2030



Source: Community Attributes, Minneapolis CPED, Minneapolis Assessor’s Office (2010).

Exhibit 35

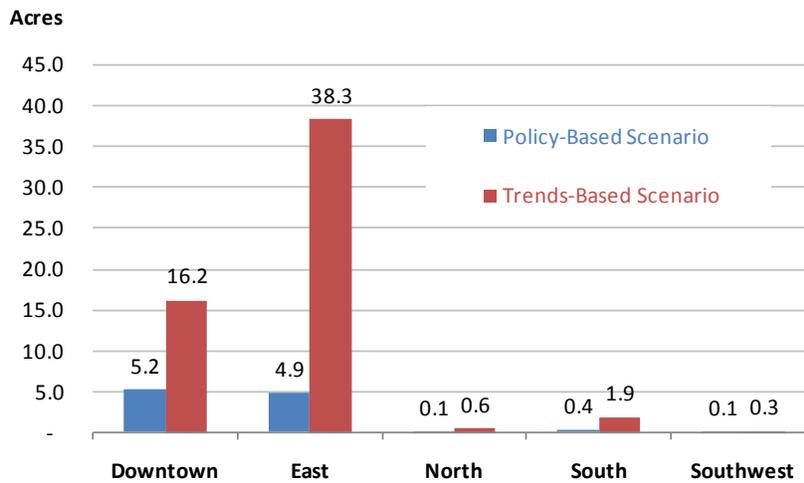
Land Demand for Commercial-Related Uses, 2010 - 2030



Source: Community Attributes, Minneapolis CPED, Minneapolis Assessor’s Office (2010) Note: Includes estimates for office and retail using employment only.

Exhibit 36

Land Demand for Industrial-Related Uses, 2010 - 2030



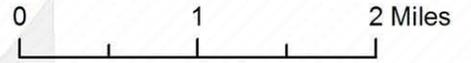
Source: Community Attributes, Minneapolis CPED, Minneapolis Assessor’s Office (2010).

Exhibits 37 and 38 provide maps by TAZ showing the locations of demand for land under the policy-based and trend-based scenarios. See **Appendix B** for further explanation of density methods and assumptions used in the Policy-Based and Trends-Based Scenario.

Exhibit 37 Land Demand (Policy-Based Scenario)

Citywide

N



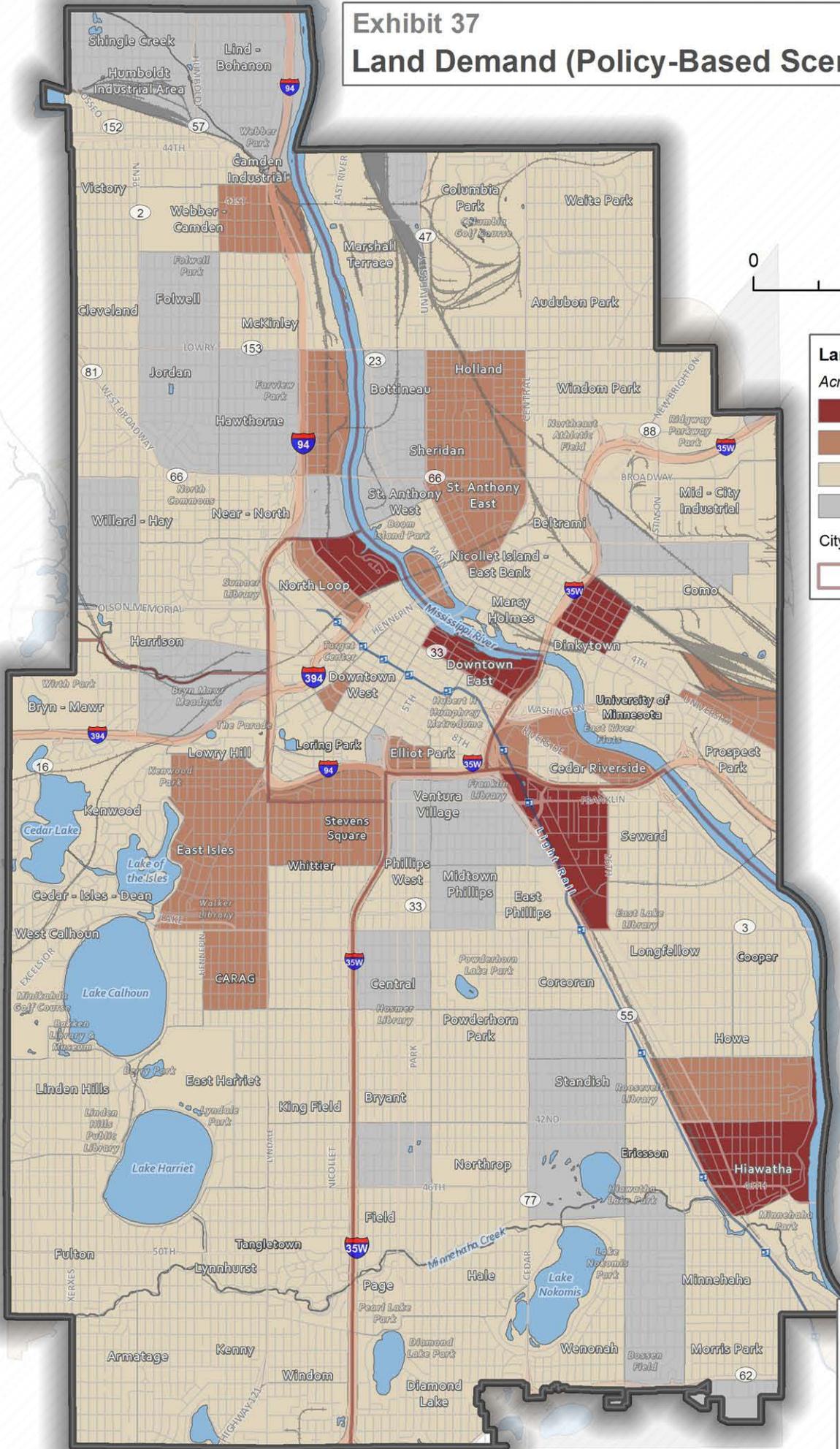
Land Demand (Policy-Based)

Acres by TAZ

- More than 10 Acres
- 5.01 to 10 Acres
- 0.01 to 5 Acres
- No Growth Expected

Citywide Land: 315 Acres

Planning Sector Boundaries



Map Date: June, 2010
 Source: City of Minneapolis (2010),
 Hennepin County (2010), ESRI (2010)

Exhibit 38 Land Demand (Trend-Based Scenario)

Citywide

N



0 1 2 Miles

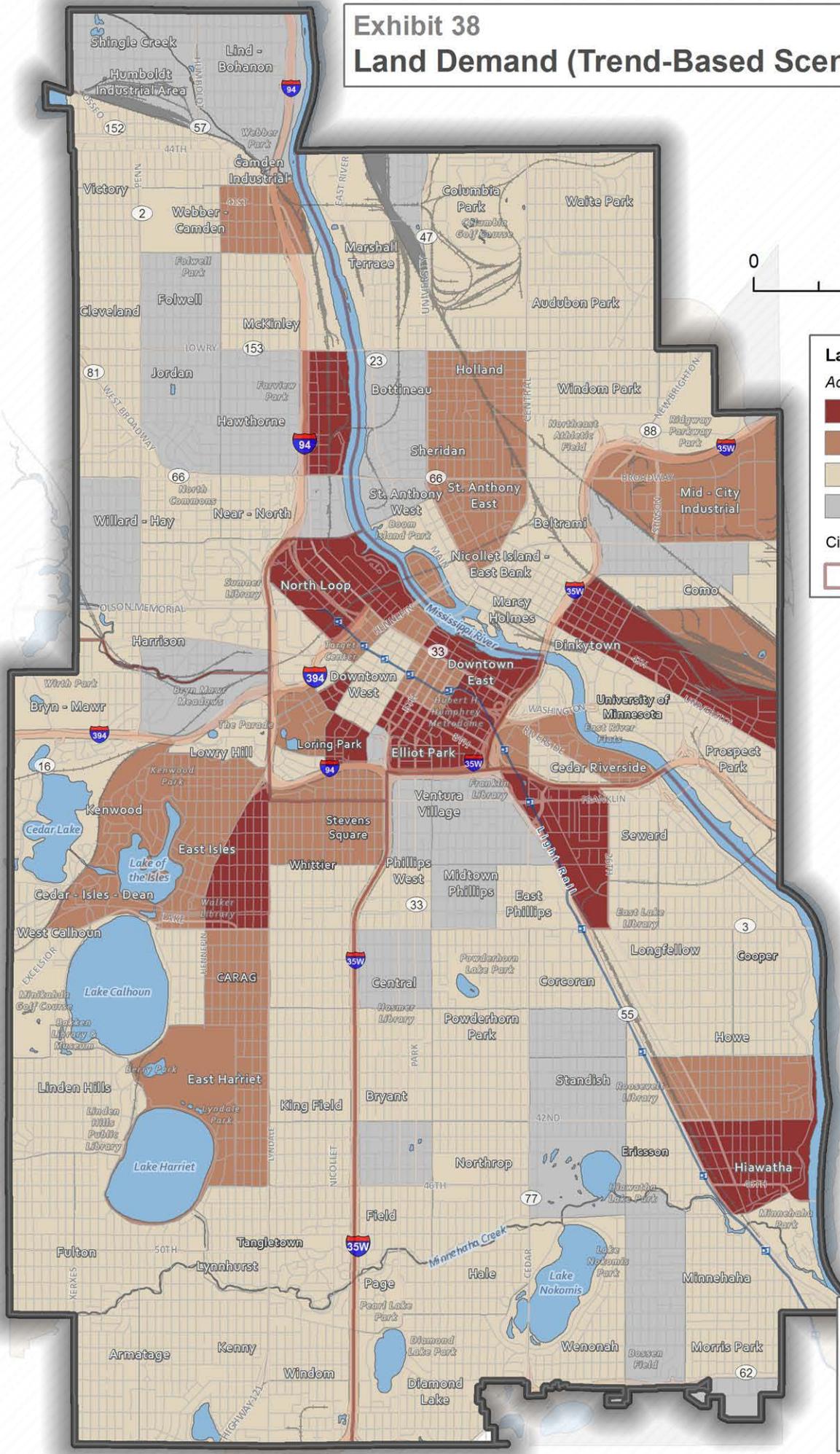
Land Demand (Trend-Based)

Acres by TAZ

- More than 10 Acres
- 5.01 - 10 Acres
- 0.01 - 5 Acres
- No Growth Expected

Citywide Total: 570 Acres

Planning Sector Boundaries



Map Date: June, 2010
 Source: City of Minneapolis (2010),
 Hennepin County (2010), ESRI (2010)

4.0 CONCLUSIONS AND AREAS FOR FURTHER ANALYSIS

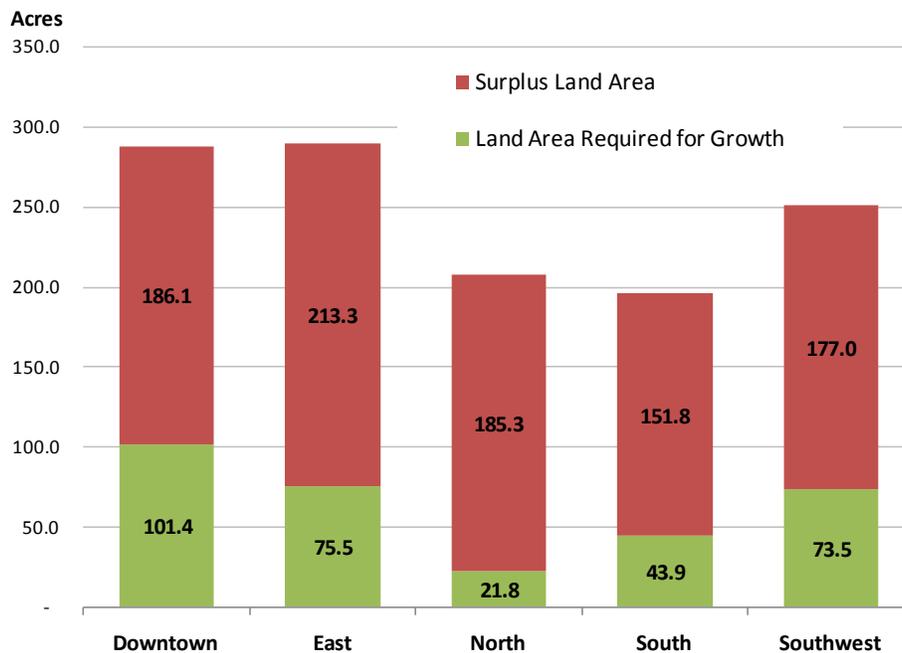
Supply and Demand Comparison

During the next 20 years, forecasts for the City and current land supply data suggest that city will have more than enough developable land to accommodate growth (Exhibits 39 and 40).

Demand for new space is expected to require between 316 and 568 acres of land, depending on how densely developers build. The total supply of vacant, infill and redevelopable lands totals 1,229 acres, resulting in surplus land through 2030 of 661 to 914 acres Citywide. The Trends-Based Scenario shows noticeably more consumption of land, particularly in Downtown and in the East Planning Sectors.

Exhibit 39

Land Demand Required and Surplus by Planning Sector through 2030, Policy-Based Scenario



Source: Community Attributes, Minneapolis CPED, Minneapolis Assessor's Office (2010).

Exhibit 40

Land Demand Required and Surplus by Planning Sector through 2030, Trends-Based Scenario



Source: Community Attributes, Minneapolis CPED, Minneapolis Assessor's Office (2010).

Exhibit 41 Surplus Land (Policy-Based Scenario)

Citywide

N



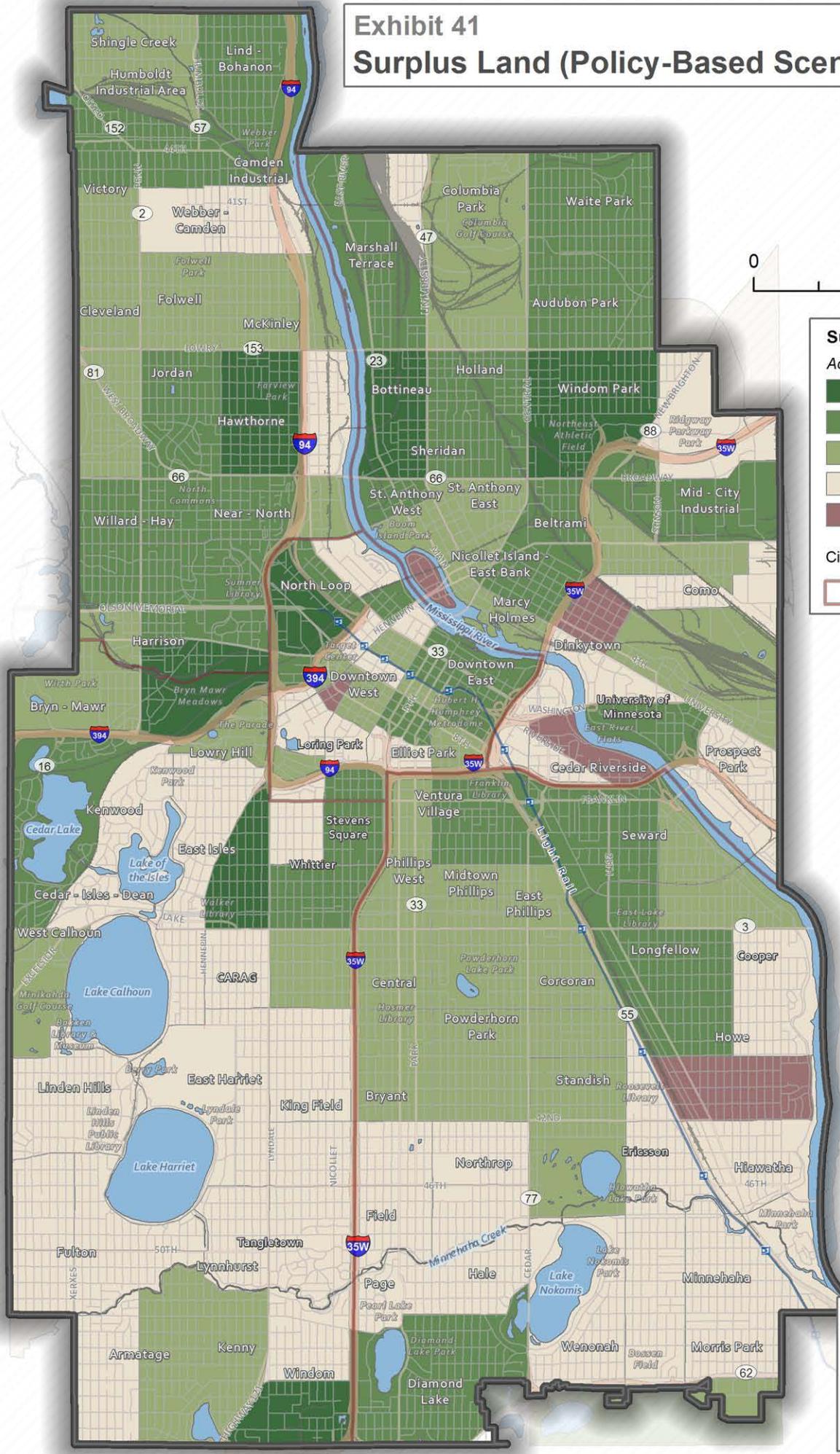
0 1 2 Miles

Surplus Land
Acres by TAZ

- More than 20.0
- 10.01 to 20.0
- 3.01 to 10.0
- 3.0 to 3.0
- Land Demand Exceeds Capacity

Citywide Land: 915 Acres

Planning Sector Boundaries



cai community attributes INTERNATIONAL

Map Date: June, 2010
Source: City of Minneapolis (2010), Hennepin County (2010), ESRI (2010)

Exhibit 42 Surplus Land (Trend-Based Scenario)

Citywide

N

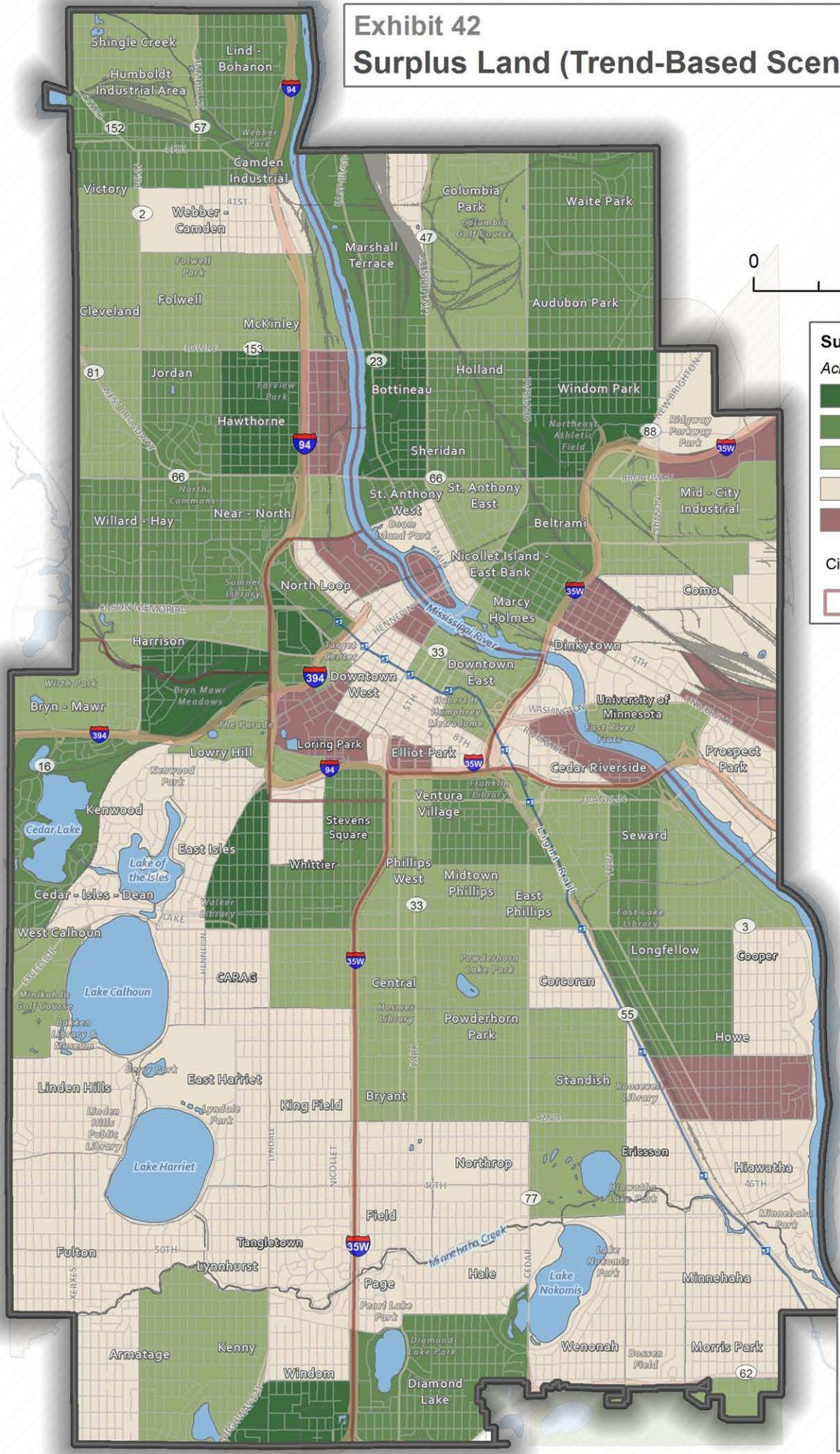


Surplus Land
Acres by TAZ

- More than 20.0
- 10.01 to 20.0
- 3.01 to 10.0
- 3.0 to 3.0
- Land Demand Exceeds Capacity

Citywide Land: 660 Acres

Planning Sector Boundaries



Map Date: June, 2010
Source: City of Minneapolis (2010), Hennepin County (2010), ESRI (2010)

Areas for Further Analysis

Outcomes presented in this report create a baseline for future efforts to improve growth forecasts and estimates of land capacity. Areas for further analysis include:

- **Employment forecasts.** Detailed forecasts by economic sector will improve precision in estimates of office, retail and industrial land demand in the City. At the time of this study detailed forecasts by economic sector were not available at the City or TAZ geography. Point level QCEW data available through the Metropolitan Council could be used to support employment forecasts and density assumptions.
- **Citywide TAZ forecasts.** Land capacity estimates support evaluation of TAZ growth forecasts. TAZ's where land demand exceeds supply, could serve as a starting point for evaluation of growth forecasts allocation. For example, a portion of growth in TAZ's where land demand exceeds supply could be directed to neighboring TAZ's with surplus land capacity.
- **Regional forecasting applications.** Land capacity estimates provide a foundation for regional growth policy discussions and forecasts. Forecasts produced by the Metropolitan Council consider, "developable land, share of developable land for residential and nonresidential uses, the mix and densities of single-family and multifamily land uses."¹ These land capacity estimates provide a basis for evaluating forecasts and discussing the role of Minneapolis in accommodating future growth.
- **Urban Agriculture.** The detailed parcel inventory, and land capacity estimates produced for this study provides a planning and site evaluation tool for urban agriculture. For example, in areas where land demand exceeds supply, other uses would likely compete for developable land, therefore constraining urban agriculture. In these areas, parcels with development constraints, such as right of ways, could be considered for urban agriculture. Alternatively, areas with surplus land capacity would be well positioned to support future urban agriculture facilities.

¹ Source: Metropolitan Council, *Forecast Methodology*

APPENDIX A: DATA SOURCES

This Analysis collected and applied the following data maintained and used City and County departments. Four types of data are applied in this analysis.

- **Parcel Data** includes existing and future land uses datasets and assessors attribute tables. Parcel data is the foundation of the analysis. These datasets were joined to define development conditions and characteristics for each parcel in the City, such as lot area and building size. Data was supplied by Minneapolis CPED and Assessor's Office.
- **Development and Real Estate Data** included historical building activity in the City from 2000 to the present, including new construction, demolitions, and vacant or condemned structures. Permit data was provided by Minneapolis Regulatory Services. Market data from GVA Marquette Advisors and CB Richard Ellis were used to identify current vacancy rates and rents to support analysis of redevelopment potential and growth capacity in existing buildings.
- **Zoning and Planning Data** includes zoning districts and regulations, subarea planning boundaries, Planning Sectors and emphasis areas were used to integrate planning policy into the analysis. Zoning data is used to determine current and future land capacity, development densities and parcels with infill potential. Planning geographies are used to summarize land capacity outcomes. Data was provided by Minneapolis CPED.
- **Population and Employment Data.** Information on existing conditions from Census, Metropolitan Council estimates of population from 2000 - 2008, QCEW data from DEED from 2000 – 2009. Growth forecasts of population, households and jobs by TAZ as well as employment densities were provided by CPED.

APPENDIX B: METHODS AND ASSUMPTIONS

Housing Demand Methods and Assumptions

Projections of residential land demand depend on the housing type and density. CPED forecasts include total households by TAZ. This analysis translates total household forecasts to single and multifamily household forecasts. This analysis also estimates forecasted multifamily households by density (medium, high, and very high densities).

First, household growth within each TAZ is assigned to single family or multifamily housing types. The total development capacity of developable lands (expressed in terms of the number of dwelling units allowed on developable lands include vacant, infill and redevelopable lands based on zoning) is used to allocate households by type and density.

Single family units are assigned to low density residential districts (R1 and R2), multifamily units are assigned to other zoning districts that support residential development. Allocations of household types are based on the percentage of total dwelling units on developable lands in low density single family zones and multifamily zones. Multifamily zones account for the majority of dwelling unit capacity in TAZs where growth is expected, therefore the majority of household growth is anticipated to be multifamily.

Allocations of multifamily units by density is determined for each TAZ based on the development capacity in medium, high and very high density zoning districts (See **Exhibit B-4**). An average lot size per dwelling unit in each zoning district (medium, high, and very high) is multiplied by the number of multifamily units forecasted to determine multifamily land demand in each TAZ.

Employment Demand Methods and Assumptions

Commercial and industrial land demand are driven by changes within different economic sectors, as well as the building types required to accommodate different types of jobs. Metropolitan Council provides forecasts of total jobs by TAZ.

This analysis first breaks out total job forecasts by major NAICS sector. NAICS sectors include:

- Construction and Resources (Cons/Res)
- Manufacturing (Man)
- Wholesale, Transportation and Utilities (WTU)
- Finance, Insurance, Real Estate and Services (FIRES)
- Retail
- Government and Education (Gov/Ed)

Estimates of 2010 jobs by sector within each TAZ are informed by the current building codes, as well as building and land area records from the Minneapolis Assessor. Future job change by economic sector is driven by Hennepin County employment forecasts purchased from Moody's Economy.com from 2010 to 2020. Total job change remains consistent with City of Minneapolis forecasts.

Sector-based job forecasts are used to define employment forecasts by land use type, which includes:

- Office Employment
- Retail Employment
- Industrial Employment
- Other Employment (Mostly government and educational jobs that do not determine market demand for buildings)

Exhibit B-1 shows the assumptions used to translate economic sector forecasts into land use sector forecasts. For example, these assumptions state that for all manufacturing jobs, 10% of manufacturing jobs will require office space (or land zoned for office), 12% will require retail space, and 78% will required industrial building space (or industrially-zoned land).

Exhibit B-1

Economic Sector-Land Use Sector Crosswalk Table

Land Use	Economic Sector					
	Const/Res	Manufacturing	WTU	FIRES	Retail	Gov/Ed
Office	30%	10%	42%	82%	22%	30%
Commercial	10%	12%	7%	11%	72%	0%
Industrial	60%	78%	51%	7%	6%	20%
Other	0%	0%	0%	0%	0%	50%
Total	100%	100%	100%	100%	100%	100%

Source: Community Attributes, Minneapolis Assessor, Moody's Economy.com

Detailed forecasts of jobs by land use type are used to estimate demand for building square footage for office, retail and industrial uses. **Exhibit B-2** presents density assumptions used in this analysis. Employment density assumptions were provided by CPED as part of the "Developable Land Decision Framework Methodology."

Exhibit B-2

Employment Density Assumptions

Employment Density Assumptions	Jobs per 1,000 SF	SF per Job
Office Using Employment	4.39	228
Commercial Using Employment	3.33	300
Industrial Using Employment	2.31	433
Approx. Wtd Avg:		300

Source: Minneapolis CPED, Community Attributes (2010)

Density assumptions are multiplied by job forecast to estimate building square footage. A building efficiency factor of 85% is also applied. For example, 100 office jobs requiring 230 square feet per employee would require 23,000 square feet of net leasable office space, or 27,000 square feet of total building space (assuming 85% efficiency, 75% efficiency applied in Downtown office buildings).

Building square footage is divided by FAR to determine total land consumed by new development. FAR for each TAZ is determined using the development capacity of developable land zoned for specific uses.

Application of Real Estate Market Data

Vacant space in existing buildings influences the demand for new construction and land development. This analysis assumes that some new jobs and households will absorb existing vacant space in existing buildings. When existing vacant space is absorbed to the natural vacancy rate the remaining growth will drive the demand for new construction.

The following vacancy rates shown in **Exhibit B-3** are applied to the existing building stock in each Planning Sector to determine the net vacant building space. Future growth is assumed to absorb existing vacant space until “target vacancies” are achieved.

For example, Downtown office buildings are currently 19.1% vacant. New growth is expected to absorb 9.1% of existing office space (19.1% vacancy – 10% target vacancy = 9.1% vacancy available for absorption). The total vacant space available for absorption is determined using queries of assessor data by building type and application of vacancy rates. Vacant building space for absorption is divided by square foot per job metrics (see **Exhibit B-2**) to determine the job capacity of existing vacant building space.

Exhibit B-3

City of Minneapolis Market Vacancies, 2009 Quarter 4

Sector	Office	Commercial	Industrial	Multifamily
Downtown	19.10%	11.70%	4.90%	9.8%
East	13.00%	6.30%	7.20%	3.6%
North	13.60%	23.70%	4.90%	5.6%
South	13.60%	12.70%	4.90%	11.6%
Southwest	13.60%	12.70%	4.90%	6.0%
Natural Vacancies	10.00%	7.50%	10.00%	7.5%

Source: CB Richard Ellis, GVA Marquette Advisors, Community Attributes

Note - The analysis does not assume increases in land capacity in areas where employment or households are forecasted to decline, resulting in future increases in vacant space in existing buildings.

Development Density Methods and Assumptions

This study produced two scenarios for development densities. Development densities are used to translate estimates of building square footage demand to estimates of land demand.

Policy-Based Scenario Methods and Assumptions

The “Policy-Based Scenario” looks at applies densities established by the City’s comprehensive plan, future land use plan and zoning ordinance. This scenario, entitled the Policy-Based Scenario, assumes development would occur at full build-out of the development allowed by FAR. **Exhibit B-4** presents zoning inputs used in the policy-based scenario. These zoning inputs serve multiple functions in the land capacity analysis, including estimates of infill lands and surplus area, and development densities for redevelopable lands

Exhibit B-4

Policy-Based Scenario Density Inputs

Zone	General Description	Base FAR	Max FAR	Min. Lot Area	Lot Area per DU	Minimum Parking	Residential Density
OR1	Office-Residential	1.50	1.80	4,000	1,500	500	Medium
OR2	Office-Residential	2.50	3.50	4,000	700	500	High
OR3	Office-Residential	3.50	4.90	4,000	300	500	Very High
C1	Commercial	1.70	2.72	-	700	500	High
C2	Commercial	1.70	2.72	-	700	500	High
C3A	Commercial	2.70	4.32	-	400	500	Very High
C3S	Commercial	2.70	4.32	-	400	500	Very High
C4	Commercial	1.70	2.72	-	900	500	Medium
B4-1	Downtown	8.00	8.00	-	-	-	Very High
B4-2	Downtown	16.00	16.00	-	-	-	Very High
B4S-1	Downtown	4.00	4.00	-	-	-	Very High
B4S-2	Downtown	8.00	8.00	-	-	-	Very High
B4C-1	Downtown	4.00	4.00	-	-	-	Very High
B4C-2	Downtown	8.00	8.00	-	-	-	Very High
I1	Industrial	2.70	2.70	-	-	1,000	NA
I2	Industrial	2.70	2.70	-	-	1,000	NA
I3	Industrial	2.70	2.70	-	-	1,000	NA
ILOD	Industrial-Residential	2.70	3.78	-	900	1,000	Medium
R1	Low Density Residential	0.50	0.50	6,000	-	-	Low
R1A	Low Density Residential	0.50	0.50	5,000	-	-	Low
R2	Low Density Residential	0.50	0.50	6,000	-	-	Low
R2B	Low Density Residential	0.50	0.50	5,000	-	-	Low
R3	Medium Density Residential	1.00	1.00	5,000	1,500	850	Medium
R4	Medium Density Residential	1.50	1.50	5,000	1,250	850	Medium
R5	High Density Residential	2.00	2.00	5,000	700	850	High
R6	High Density Residential	3.00	3.00	5,000	400	850	Very High

Source: City of Minneapolis CPED, Community Attributes (2010)

Zoning inputs are used to calculate the maximum development capacity for each developable parcel under the policy-based scenario. Detailed calculations are then aggregated to determine average or weighted densities which are applied for TAZ density calculations.

Trends-Based Scenario Methods and Assumptions

The “Trends-Based Scenario” assumes that future development within each area of the City will be consistent with the densities developed since 2000. The trend-based scenario applies the average densities achieved in Planning Sector zoning districts from 2000 to 2010 to determine the potential development required by new growth.

Application of density trends begins with the selection of parcels with new construction. Assessor records were screened for all parcels with development completed after 2000. Readily accessible permit data, including building SF, uses, and date of completion was not available for this project, therefore assessor records were used. Lot size, building square footage, number of units or buildings, and zoning district were obtained for each parcel. Data was thoroughly reviewed and improved to capture the most accurate conditions possible.

Next, the maximum density for each parcel (i.e. maximum allowable building square footage) was calculated by multiplying lot size by the maximum allowable FAR for the zoning district. Data was then aggregated by general zoning district. “Average” actual densities achieved (FAR) in each Planning Sector zoning district were determined by dividing aggregate building square footage by aggregate lot size. Actual densities were then compared to maximum densities to determine the delta between FAR achieved and FAR under zoning. The “percentage of Development Capacity” shown in the last column in **Exhibit B-5 and B-6**, are used to adjust the policy-based scenario densities to the trend-based scenario densities.

Implication of Density Assumptions.

Analysis of density trends reveals that recent development was built at a lower density than prescribed by code. Development economics play an important role when determining the density of development. Building height significantly influences construction costs. For example, a four story apartment building may allow for a wood frame, while a five story building may require a concrete frame, significantly increasing costs. Additionally, implementation of underground or structured parking to maximize densities may not be economically feasible (i.e. revenues generated by parking, either through parking revenue or building rents, may not outweigh construction costs). Other potential reasons for lower density development include higher capital requirements, expertise, market demand, among others.

Exhibit B-5
Trend-Based Scenario Density Calculations and Inputs
for Non-Residential Development

Sector	General Zoning	Actual Building SF	Maximum Building SF Possible	Land Area	FAR Actual	FAR Code	% of Development Capacity
Downtown							
	Downtown	3,994,070	8,203,436	869,974	4.59	9.4	48.7%
	Commercial	2,994,997	6,718,962	1,595,146	1.88	4.2	44.6%
	Office-Residential	696,042	1,452,343	345,539	2.01	4.2	47.9%
	High Density Residential	83,322	138,814	69,407	1.20	2.0	60.0%
	Industrial-Residential	547,434	1,407,914	372,464	1.47	3.8	38.9%
Downtown Total		8,315,865	17,921,469	3,252,530	2.56	5.5	46.4%
East							
	Commercial	790,674	1,296,369	410,125	1.93	3.2	61.0%
	Industrial	291,454	2,312,153	856,353	0.34	2.7	12.6%
	Office-Residential	710,644	2,710,375	649,747	1.09	4.2	26.2%
	High Density Residential	729,332	785,064	322,991	2.26	2.4	92.9%
	Medium Density Residential	284,917	480,480	413,435	0.69	1.2	59.3%
	Industrial-Residential	685,443	1,976,146	522,790	1.31	3.8	34.7%
East Total		3,492,464	9,560,587	3,175,441	1.10	3.0	36.5%
North							
	Commercial	121,869	454,134	166,961	0.73	2.7	26.8%
	Industrial	308,367	2,390,348	885,314	0.35	2.7	12.9%
	Office-Residential	11,919	52,549	21,933	0.54	2.4	22.7%
	High Density Residential	201,074	512,380	256,190	0.78	2.0	39.2%
	Medium Density Residential	579,069	1,599,972	1,066,648	0.54	1.5	36.2%
	Industrial-Residential	63,723	321,323	85,006	0.75	3.8	19.8%
North Total		1,286,021	5,330,705	2,482,052	0.52	2.1	24.1%
South							
	Commercial	681,153	1,173,714	390,736	1.74	3.0	58.0%
	Industrial	315,928	2,366,150	876,352	0.36	2.7	13.4%
	Office-Residential	1,274,412	1,751,790	452,644	2.82	3.9	72.7%
	High Density Residential	98,160	181,785	76,716	1.28	2.4	54.0%
	Medium Density Residential	102,914	210,761	140,507	0.73	1.5	48.8%
	Industrial-Residential	14,519	38,375	10,152	1.43	3.8	37.8%
South Total		2,487,086	5,722,574	1,947,107	1.28	2.9	43.5%
Southwest							
	Commercial	868,492	1,717,107	522,758	1.66	3.3	50.6%
	Office-Residential	260,000	855,750	244,500	1.06	3.5	30.4%
	High Density Residential	339,378	404,555	141,385	2.40	2.9	83.9%
	Medium Density Residential	14,940	37,450	28,418	0.53	1.3	39.9%
Southwest Total		1,482,810	3,014,862	937,061	1.58	3.2	49.2%
Citywide Total		17,064,246	41,550,198	11,794,191	1.45	3.5	41.1%

Source: Community Attributes, City of Minneapolis CPED, City of Minneapolis Assessor (2010)

Exhibit B-6
Trend-Based Scenario Density Calculations and Inputs
for Residential Development

Residential Density	Actual Units	Maximum Units Possible	Land Area (Acres)	Achieved Units Per Acre	Policy-based Units per Acre	% of Development Capacity
Downtown						
Very High	2,106	7,037	34.2	61.5	206	30%
High	198	257	4.1	48.0	62.2	77%
Medium	209	168	4.1	50.7	40.7	100%
Downtown Total	2,513	7,462	42.5	59.1	175.6	34%
East						
Very High	473	618	5.2	90.2	117.9	77%
High	363	473	7.6	47.7	62.2	77%
Medium	677	773	19.4	34.9	39.8	88%
East Total	1,513	1,864	32.2	46.9	57.8	81%
North						
High	227	415	6.7	34.0	62.2	55%
Medium	468	918	25.6	18.2	35.8	51%
North Total	695	1,333	32.3	21.5	41.3	52%
South						
Very High	97	157	1.4	67.3	108.9	62%
High	538	589	9.5	56.8	62.2	91%
Medium	111	124	3.5	32.1	35.8	90%
South Total	746	870	14.4	51.9	60.5	86%
Southwest						
Very High	345	412	3.8	91.2	108.9	84%
High	125	147	2.4	53.0	62.2	85%
Medium	9	21	0.7	13.8	32.7	42%
Southwest Total	479	580	6.8	70.5	85.4	83%
Citywide Total	5,946	12,110	128.2	46.4	94.4	49%

Source: Community Attributes, City of Minneapolis CPED, City of Minneapolis Assessor (2010)

APPENDIX C: DEVELOPABLE LANDS SUMMARY TABLES

The following Exhibits present detailed outcomes of the land supply analysis. The following tables are presented:

- **Exhibit C-1. Total Developable Lands by Category.** This Exhibit summarizes Vacant, Infill and Redevelopable Lands by Planning Sector and General Zoning District.
- **Exhibit C-2. Total Developable Lands by Lot Size.** This Exhibit summarizes Developable Lands by Lot Size ranges for Planning Sectors and General Zoning Districts.
- **Exhibit C-3. Vacant Lands by Lot Size.** This Exhibit summarizes Vacant Lands by Lot Size ranges for Planning Sectors and General Zoning Districts.
- **Exhibit C-4. Infill Lands by Lot Size.** This Exhibit summarizes Infill Lands by Lot Size ranges for Planning Sectors and General Zoning Districts.

Exhibit C-1

Total Developable Lands by Category

Sector	General Zoning	Vacant		Infill		Redevelopable		Total Developable Lands	
		Parcels	Land Area (ac)	Parcels	Surplus Land Area (ac)	Parcels	Net Buildable Land Area (ac)	Parcels	Land Area (ac)
Downtown									
	Downtown	148	61	59	22	39	11	246	94.4
	Commercial	45	18	7	3	17	5	69	26.0
	Industrial	50	23	-	-	54	57	104	80.9
	Industrial-Residential	16	9	8	13	12	25	36	47.4
	Office-Residential	43	15	7	3	39	12	89	29.7
	High Density Residential	13	3	-	-	36	7	49	9.1
	Medium Density Residential	-	-	-	-	-	-	0	-
	Downtown Total	315	129	81	41	197	117	593	287.4
East									
	Commercial	179	34	135	45	-	-	314	79.1
	Industrial	170	94	-	-	5	15	175	108.9
	Industrial-Residential	57	14	22	13	-	-	79	27.1
	Office-Residential	19	7	3	2	-	-	22	9.7
	High Density Residential	49	15	8	3	-	-	57	17.4
	Medium Density Residential	33	7	-	-	-	-	33	7.4
	Low Density Residential	130	39	-	-	-	-	130	39.2
	East Total	637	211	168	63	5	15	810	288.8
North									
	Commercial	93	15	74	24	-	-	167	38.2
	Industrial	98	36	-	-	-	-	98	36.1
	Industrial-Residential	4	3	2	2	-	-	6	5.1
	Office-Residential	15	4	4	2	-	-	19	5.9
	High Density Residential	26	5	1	0	-	-	27	5.8
	Medium Density Residential	112	33	-	-	-	-	112	32.6
	Low Density Residential	438	84	-	-	-	-	438	83.5
	North Total	786	178	81	29	0	-	867	207.1
South									
	Commercial	168	27	215	48	-	-	383	75.4
	Industrial	85	20	-	-	-	-	85	19.8
	Industrial-Residential	18	3	12	2	-	-	30	5.6
	Office-Residential	23	5	15	6	-	-	38	11.8
	High Density Residential	36	8	3	0	-	-	39	8.6
	Medium Density Residential	45	11	-	-	-	-	45	11.0
	Low Density Residential	236	64	-	-	-	-	236	63.6
	South Total	611	138	245	57	0	-	856	195.7
Southwest									
	Commercial	163	25	176	58	9	4	348	86.9
	Industrial	85	23	-	-	5	4	90	27.4
	Industrial-Residential	-	-	1	15	-	-	1	14.7
	Office-Residential	47	16	21	22	2	-	70	38.1
	High Density Residential	45	11	3	3	154	22	202	35.9
	Medium Density Residential	24	5	-	-	-	-	24	5.4
	Low Density Residential	136	42	-	-	-	-	136	41.8
	Southwest Total	500	122	201	97	170	30	871	250.1
CITYWIDE TOTAL		2,849	779	776	287	372	163	3,997	1,229

Source: Community Attributes, City of Minneapolis CPED, City of Minneapolis Assessor (2010)

Exhibit C-2

Total Developable Lands by Lot Size

Sector	General Zoning	Less than 5,000 SF		Between 5,000-10,000 SF		Between 10,000-20,000 SF		Greater than 20,000 SF		Total Developable		
		Parcels	Acres	Parcels	Acres	Parcels	Acres	Parcels	Acres	Parcels	Acres	% of Total
Downtown												
	Downtown	53	4	62	10	67	22	64	59	246	94	33%
	Commercial	22	1	15	2	15	4	17	18	69	26	9%
	Industrial	15	1	24	4	22	8	43	69	104	81	28%
	Industrial-Residential	3	0	3	1	7	2	23	44	36	47	16%
	Office-Residential	8	1	38	6	28	8	15	15	89	30	10%
	High Density Residential	15	1	24	4	8	2	2	2	49	9	3%
	Medium Density Residential	-	-	-	-	-	-	-	-	-	-	0%
Downtown Total		116	8	166	28	147	47	164	205	593	287.4	100%
East												
	Commercial	130	9	95	15	50	16	39	40	314	79	27%
	Industrial	45	3	42	7	33	10	55	89	175	109	38%
	Industrial-Residential	23	1	21	3	19	6	16	17	79	27	9%
	Office-Residential	-	-	11	2	4	1	7	7	22	10	3%
	High Density Residential	-	-	33	6	15	5	9	7	57	17	6%
	Medium Density Residential	-	-	23	4	7	2	3	2	33	7	3%
	Low Density Residential	-	-	94	14	24	8	12	17	130	39	14%
East Total		198	12	319	50	152	48	141	178	810	288.8	100%
North												
	Commercial	79	5	46	7	23	7	19	19	167	38	18%
	Industrial	32	2	20	3	24	8	22	23	98	36	17%
	Industrial-Residential	-	-	2	0	1	0	3	4	6	5	2%
	Office-Residential	-	-	8	1	9	3	2	2	19	6	3%
	High Density Residential	-	-	21	3	3	1	3	2	27	6	3%
	Medium Density Residential	-	-	94	14	7	2	11	17	112	33	16%
	Low Density Residential	-	-	402	56	18	5	18	23	438	84	40%
North Total		111	7	593	84	85	26	78	89	867	207.1	100%
South												
	Commercial	180	12	130	20	50	15	23	28	383	75	39%
	Industrial	29	2	35	5	13	4	8	8	85	20	10%
	Industrial-Residential	8	1	16	3	5	2	1	1	30	6	3%
	Office-Residential	4	0	23	3	5	2	6	7	38	12	6%
	High Density Residential	-	0	34	5	1	0	4	3	39	9	4%
	Medium Density Residential	-	0	35	5	7	2	3	3	45	11	6%
	Low Density Residential	-	0	206	27	17	6	13	31	236	64	32%
South Total		221	14	479	69	98	32	58	81	856	195.7	100%
Southwest												
	Commercial	132	10	121	18	65	20	30	38	348	87	35%
	Industrial	25	2	36	5	12	4	17	17	90	27	11%
	Industrial-Residential	-	0	-	0	-	0	1	15	1	15	6%
	Office-Residential	8	1	38	6	10	3	14	28	70	38	15%
	High Density Residential	79	8	91	14	22	6	10	8	202	36	14%
	Medium Density Residential	-	0	18	3	3	1	3	2	24	5	2%
	Low Density Residential	-	0	105	15	17	5	14	22	136	42	17%
Southwest Total		244	20	409	61	129	40	89	129	871	250.4	100%
CITYWIDE TOTAL		890	62	1,966	292	611	192	530	682	3,997	1,229	

Source: Community Attributes, City of Minneapolis CPED, City of Minneapolis Assessor (2010)

Exhibit C-3

Vacant Lands by Lot Size

Sector	General Zoning	Less than 5,000 SF		Between 5,000-10,000 SF		Between 10,000-20,000 SF		Greater than 20,000 SF		Total Vacant		% of Total
		Parcels	Acres	Parcels	Acres	Parcels	Acres	Parcels	Acres	Parcels	Acres	
Downtown												
	Downtown	27	2	33	6	43	14	45	40	148	61	47%
	Commercial	17	1	7	1	9	3	12	13	45	18	14%
	Industrial	13	1	14	2	13	4	10	16	50	23	18%
	Industrial-Residential	2	0	2	0	5	2	7	7	16	9	
	Office-Residential	2	0	18	3	16	5	7	8	43	15	12%
	High Density Residential	-	-	9	1	4	1	-	-	13	3	2%
	Medium Density Residential	-	-	-	-	-	-	-	-	-	-	0%
Downtown Total		61	3	83	14	90	28	81	84	315	129.4	100%
East												
	Commercial	75	5	64	10	26	8	14	11	179	34	16%
	Industrial	45	3	42	7	32	10	51	74	170	94	44%
	Industrial-Residential	19	1	19	3	13	4	6	7	57	14	
	Office-Residential	-	-	11	2	3	1	5	5	19	7	3%
	High Density Residential	-	-	30	5	11	3	8	6	49	15	7%
	Medium Density Residential	-	-	23	4	7	2	3	2	33	7	4%
	Low Density Residential	-	-	94	14	24	8	12	17	130	39	19%
East Total		139	9	283	44	116	36	99	122	637	210.8	100%
North												
	Commercial	43	3	37	6	10	3	3	3	93	15	8%
	Industrial	32	2	20	3	24	8	22	23	98	36	20%
	Industrial-Residential	-	-	2	0	-	-	2	3	4	3	
	Office-Residential	-	-	8	1	7	2	-	-	15	4	2%
	High Density Residential	-	-	21	3	3	1	2	1	26	5	3%
	Medium Density Residential	-	-	94	14	7	2	11	17	112	33	18%
	Low Density Residential	-	-	402	56	18	5	18	23	438	84	47%
North Total		75	5	584	83	69	21	58	69	786	178.5	100%
South												
	Commercial	69	5	78	12	16	5	5	5	168	27	20%
	Industrial	29	2	35	5	13	4	8	8	85	20	14%
	Industrial-Residential	3	0	13	2	1	0	1	1	18	3	
	Office-Residential	3	0	14	2	3	1	3	2	23	5	4%
	High Density Residential	-	0	31	5	1	0	4	3	36	8	6%
	Medium Density Residential	-	0	35	5	7	2	3	3	45	11	8%
	Low Density Residential	-	0	206	27	17	6	13	31	236	64	46%
South Total		104	7	412	58	58	19	37	54	611	138.3	100%
Southwest												
	Commercial	58	5	80	12	20	6	5	3	163	25	21%
	Industrial	25	2	36	5	10	3	14	13	85	23	19%
	Industrial-Residential	-	0	-	0	-	0	-	0	0	0	0%
	Office-Residential	5	1	27	4	6	2	9	9	47	16	13%
	High Density Residential	-	0	32	5	7	2	6	4	45	11	9%
	Medium Density Residential	-	0	18	3	3	1	3	2	24	5	4%
	Low Density Residential	-	0	105	15	17	5	14	22	136	42	34%
Southwest Total		88	7	298	44	63	19	51	53	500	122.5	100%
CITYWIDE TOTAL		467	32	1,660	243	396	123	326	381	2,849	779	

Source: Community Attributes, City of Minneapolis CPED, City of Minneapolis Assessor (2010)

Exhibit C-4

Infill Lands by Lot Size

Sector	General Zoning	Less than 5,000 SF		Between 5,000-10,000 SF		Between 10,000-20,000 SF		Greater than 20,000 SF		Total Infill		% of Total
		Parcels	Acres	Parcels	Acres	Parcels	Acres	Parcels	Acres	Parcels	Acres	
Downtown												
	Downtown	18	1.2	13	2.1	15	4.8	13	14.1	59	22	54%
	Commercial	-	-	1	0.2	4	1.2	2	1.4	7	3	7%
	Industrial	-	-	-	-	-	-	-	-	-	-	0%
	Industrial-Residential	1	0.1	-	-	-	-	7	13.1	8	13	
	Office-Residential	1	0.1	3	0.5	1	0.3	2	1.7	7	3	6%
	High Density Residential	-	-	-	-	-	-	-	-	-	-	0%
	Medium Density Residential	-	-	-	-	-	-	-	-	-	-	0%
Downtown Total		20	1.4	17	2.7	20	6.3	24	30.3	81	40.7	100%
East												
	Commercial	55	3.5	31	5.5	24	7.5	25	28.7	135	45	72%
	Industrial	-	-	-	-	-	-	-	-	0	0	0%
	Industrial-Residential	4	0.2	2	0.3	6	2.1	10	10.0	22	13	
	Office-Residential	-	-	-	-	1	0.5	2	2.0	3	2	4%
	High Density Residential	-	-	3	0.4	4	1.4	1	0.8	8	3	4%
	Medium Density Residential	-	-	-	-	-	-	-	-	0	0	0%
	Low Density Residential	-	-	-	-	-	-	-	-	0	0	0%
East Total		59	3.7	36	6.3	35	11.4	38	41.5	168	62.9	100%
North												
	Commercial	36	2.0	9	1.3	13	4.1	16	16.2	74	24	83%
	Industrial	-	-	-	-	-	-	-	-	0	0	0%
	Industrial-Residential	-	-	-	-	1	0.4	1	1.7	2	2	
	Office-Residential	-	-	-	-	2	0.7	2	1.6	4	2	8%
	High Density Residential	-	-	-	-	-	-	1	0.5	1	0	2%
	Medium Density Residential	-	-	-	-	-	-	-	-	0	0	0%
	Low Density Residential	-	-	-	-	-	-	-	-	0	0	0%
North Total		36	2.0	9	1.3	16	5.3	20	20.0	81	28.6	100%
South												
	Commercial	111	6.8	52	8.5	34	10.4	18	22.6	215	48	84%
	Industrial	-	-	-	-	-	-	-	-	0	0	0%
	Industrial-Residential	5	0.3	3	0.4	4	1.6	-	-	12	2	
	Office-Residential	1	0.1	9	1.3	2	0.6	3	4.4	15	6	11%
	High Density Residential	-	-	3	0.5	-	-	-	-	3	0	1%
	Medium Density Residential	-	-	-	-	-	-	-	-	0	0	0%
	Low Density Residential	-	-	-	-	-	-	-	-	0	0	0%
South Total		117	7.1	67	10.7	40	12.6	21	27.0	245	57.4	100%
Southwest												
	Commercial	70	4.4	38	6.4	45	14.7	23	32.1	176	58	59%
	Industrial	-	-	-	-	-	-	-	-	0	0	0%
	Industrial-Residential	-	-	-	-	-	-	1	14.7	1	15	15%
	Office-Residential	2	0.2	10	1.7	4	1.4	5	19.0	21	22	23%
	High Density Residential	-	-	1	0.1	-	-	2	2.5	3	3	3%
	Medium Density Residential	-	-	-	-	-	-	-	-	0	0	0%
	Low Density Residential	-	-	-	-	-	-	-	-	0	0	0%
Southwest Total		72	4.6	49	8.2	49	16.0	31	68.3	201	97.1	100%
CITYWIDE TOTAL		304	19	178	29	160	52	134	187	776	287	

Source: Community Attributes, City of Minneapolis CPED, City of Minneapolis Assessor (2010)