

**City of Dublin**

# **DEVELOPMENT CAPACITY**

Analysis of Development Capacity of the Planning Area

DRAFT FOR REVIEW

Prepared by



DRAFT DATE

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### Notes:

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The information contained in this document is intended for planning analysis purposes and the preparation of coordinated land use, transportation and fiscal analysis. The analysis of available land is intended to illustrate possible or theoretical areas for future development. It does not imply that development is proposed by the City of Dublin or any private agency in these areas, nor does it propose a specific development. Generally, it is a broad estimate of possible growth over the coming decades under certain circumstances. This analysis is intended to assist in planning efforts by showing potential differences between various land use scenarios which can then be applied and tested in a series of models to help the City determine which land use plan will result in a balanced and responsible growth pattern.

#### General Note on Rounding:

Microsoft Excel was used in the calculation of the numbers presented in this document. Results are presented in whole numbers or rounded to two decimal places where appropriate; however, the analysis itself uses figures carried to their ultimate decimal places. Therefore, the sums and products generated in the analysis may not equal the sum or product if the reader replicates the calculations with the factors shown in the report.

## Introduction

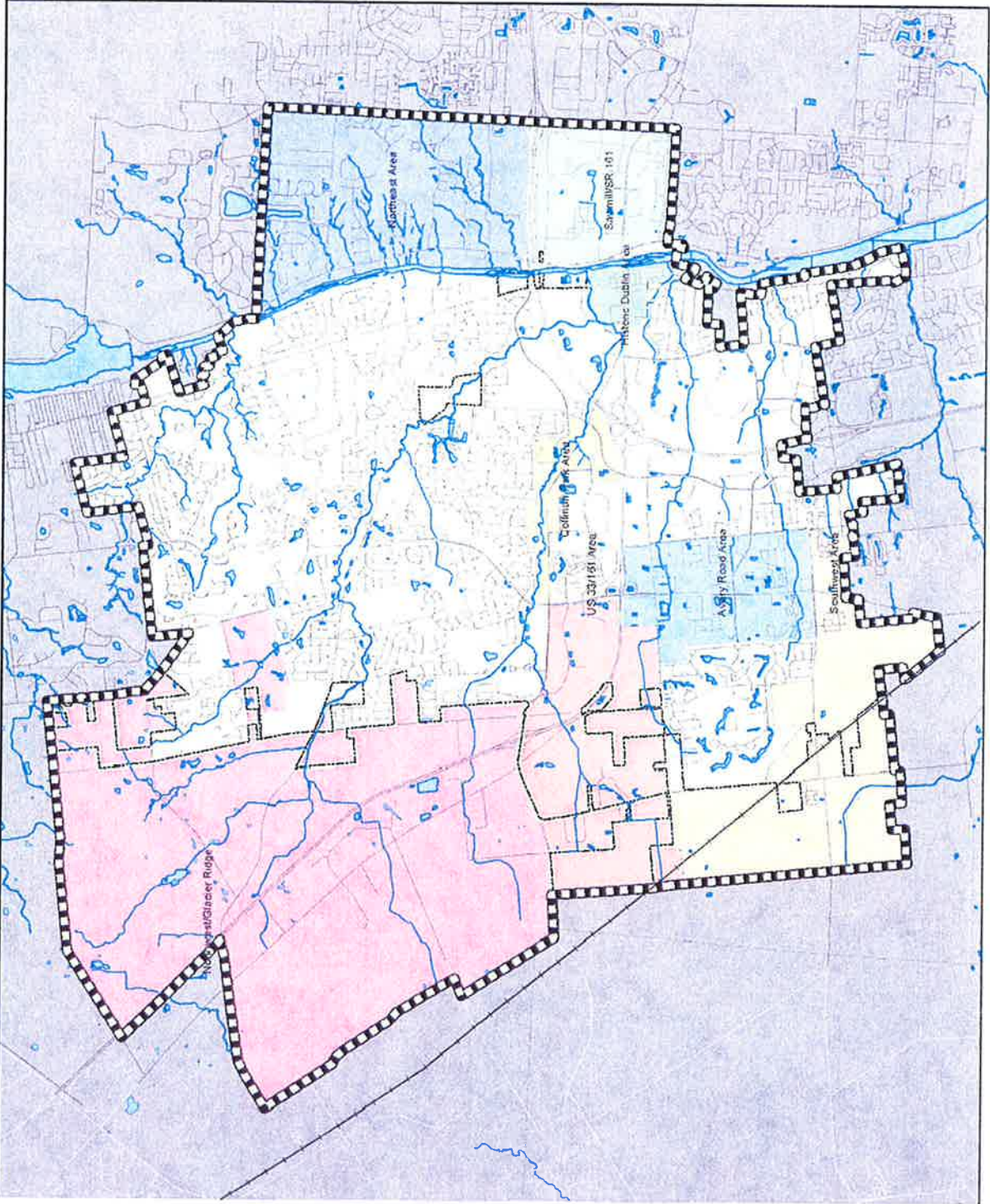
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The analysis outlined in this document was prepared by McBride Dale Clarion to illustrate possible scenarios for development in the City of Dublin and its surrounding planning area (see Map 1), based on a series of land use scenarios and the land that may be available for possible future development or redevelopment. The purpose of this exercise is to evaluate how current regulations, policies, and trends may accommodate growth/development over the planning period and offer comparison to alternative scenarios. This analysis examines the capacity of land in the City and surrounding planning area under a combination of the current zoning and the 1999 Future Land Use Plan, as well as potential alternatives for the update of the City's Land Use Plan. These alternatives were prepared by ACP Planning and Visioning and Dublin City Staff.

Once approved by the Planning Commission and City Council, the capacity results of these scenarios will be compared through analysis of a transportation model, and a fiscal model which will be completed by Burgess and Niple and TischlerBise respectively. Additional land use scenarios and modifications may be developed by the consultant and City staff to explore the potential options for development that may make future development in the City more sustainable.

To identify the future capacity of the City of Dublin for additional development or growth, it is first necessary to identify the areas for growth and the existing land use pattern. Early in the process to prepare for the plan, Dublin staff identified seven Target Planning Areas which are shown in Map 1. Generally the Target Areas identify land for redevelopment, or land which is not currently part of the City of Dublin but may be added in the future through annexation. This Capacity Analysis assesses the buildout capacity under the three scenarios for most of the land within these target areas. In addition, vacant or unbuilt parcels which are not covered by the updated land use scenarios were identified as potential areas for future development and population growth.

-  Planning Area
-  Dublin City Line
- Target Areas**
- NAME**
-  Avery Road Area
-  Coffman Park Area
-  Historic Dublin Area
-  Northeast Area
-  Northwest/Glacier Ridge
-  Sawmill/SR 161
-  Southwest Area
-  US 33/161 Area



# Map 1 Planning Area

This map is for planning purposes only. Mapping data was provided by the City of Dublin, and the surrounding Counties. Approved but unbuilt land, or redevelopment potential. Existing Land Use Inventory. Completed 2004. 2005. Printed by MDC. 1/11/05



**Table 2: Existing Development Inventory City of Dublin  
(estimated Jan 1, 2005)**

Population	35,578	Employment to Population ratio-2.086	
Employees	74,201		
<b>Development Type</b>	<b>Existing</b>	<b>2005 Residential Composition</b>	
Residential Units (Total)	13,935	All Units	100%
Single-Family Units	9,172	Single Family	65.8%
Attached Single Family Units	1,369	Attached SF	9.8%
Multi-Family Units	3,394	Multi-Family	24.4%
Non-Residential Building Acreage	1,778 acres		
Commercial/Retail Acreage	479* acres		
Office Acreage	1,040 acres		
Industrial/Flex Acreage	260 acres		

\*The memorandum prepared by Economic Research Associates dated December 22, 2005, reports that there is about 1.4 million square feet of commercial retail space in the City.

## Existing Land Use and Development

### Existing Land Use

The City of Dublin prepared an existing land use inventory at the end of 2004. The digitization and approval of the inventory was completed by April 2005. This inventory was used as the basis to identify potential development areas or PDAs. The existing land use for the planning area is illustrated on Map 2. Table 1 shows the inventory of existing land uses.

Table 1: Existing Land Use Inventory

Land Use Classification	Current City Existing Land Use		Total Planning Area	
	Acreage	Percent of Total	Acreage	Percent of Total
Agriculture	2,529	17%	6,591	31%
Light Industrial	260	2%	633	3%
Mixed Use	1	0%	1	0%
Office	1,040	7%	1,041	5%
Private Institution	165	1%	197	1%
Private Park	924	6%	1,095	5%
Public Institution	565	4%	577	3%
Public Park	1,446	10%	2,260	10%
Residential Multifamily 20-39	35	0%	35	0%
Residential Multifamily 3-19	112	1%	112	1%
Residential Multifamily 40	405	3%	424	2%
Residential Single Family	4,451	30%	5,378	25%
Residential Two Family	68	0%	68	0%
Residential Vacant	414	3%	416	2%
Retail	479	3%	480	2%
Roads and River*	1,977	13%	2,010	9%
Unclassified	65	0%	66	0%
Unknown	18	0%	147	1%
<b>Total</b>	<b>14,954</b>	<b>100%</b>	<b>21,532</b>	<b>100%</b>

\* estimated from GIS data.

### Existing Development Statistics

Table 2 below shows the estimated existing development inventory for the City of Dublin and the Planning Area based on the 2000 census and building records for the years 2000-2004. The employment figure is based on information reported for W-2's in 2004. The acreage currently dedicated to each land use is shown for the non-residential development. This information is provided as a point of comparison for the potential future population and employment.

## Capacity Calculations

### Overview

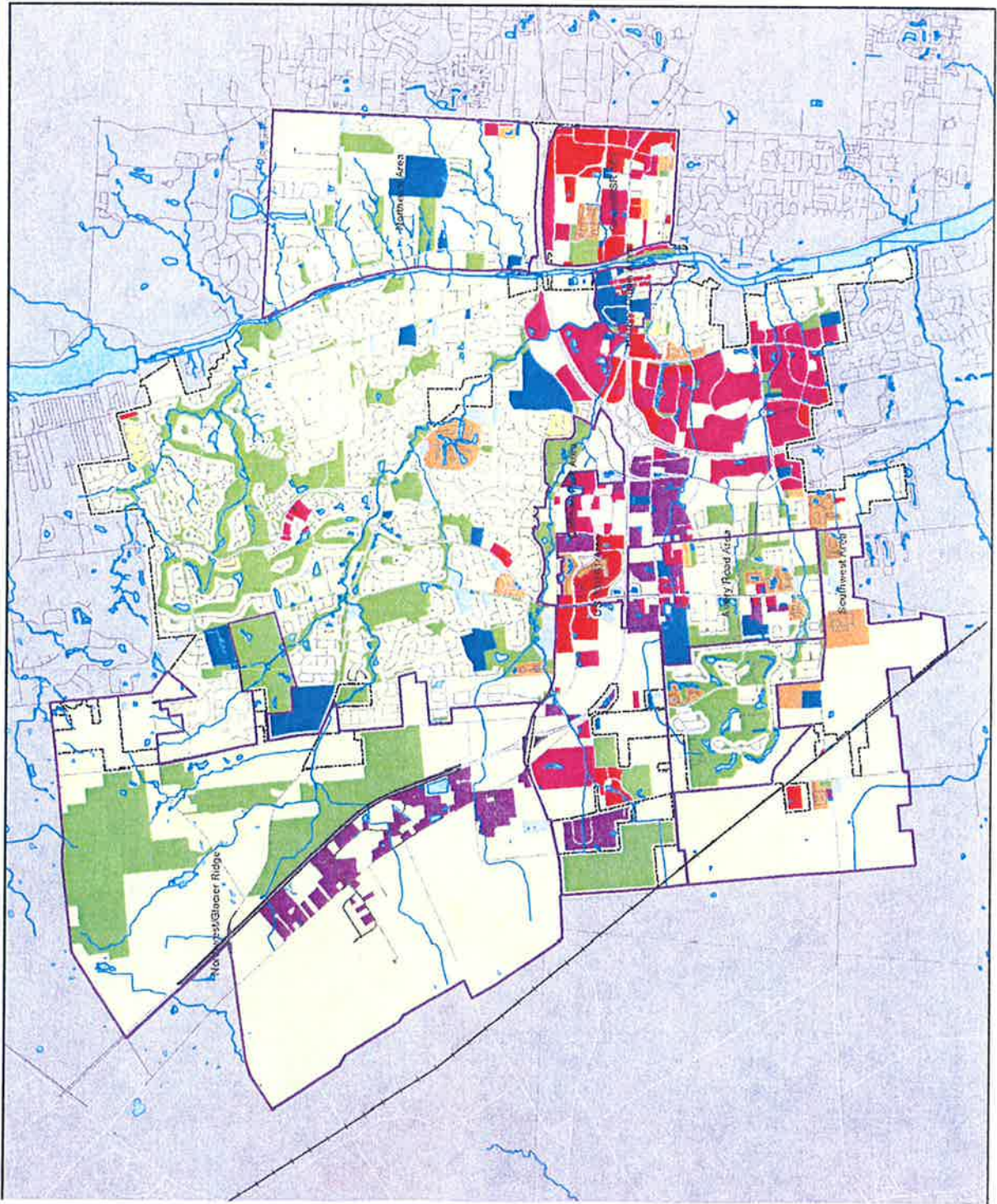
The following is an explanation of the calculation of the capacity for growth within the City of Dublin and the planning area for the update to the plan. Because this analysis is part of a process to update the City's Land Use Plan, not all of the potentially developable land will be changed from its current land use designations (as currently zoned or as designated in the City's 1999 Future Land Use Plan). In order to compare the three alternative scenarios on a somewhat consistent basis, developable land that is assumed to maintain a current land use designation is calculated with a constant capacity for new development. Most of the land that falls into this category is land that is currently subdivided or platted into individual residential lots but is not yet built, land that is in an approved Planned Unit Development, or land that is already zoned for a non-residential use.

### Platted but Unbuilt, and Currently Zoned Land (Infill Capacity)

MDC used the existing land use inventory of residential parcels over 5 acres, agricultural land, vacant land and areas identified for redevelopment to account for the potentially developable land. All of the potentially developable areas that were not covered by Scenario 2 or 3 as described later in this analysis were assumed to be regulated by the current zoning or 1999 Land Use Plan designations. These designations are based on the same assumptions as Scenario 1 and will use the same density assumptions for all land that is not already an individual residential lot or part of an approved Planned Unit Development. Map 3 shows the areas identified for potential future growth with their current zoning or planned densities. The capacity to hold future development for these areas will be assumed to remain constant in all three scenarios. Table 3 shows the capacity for new infill growth.

Table 3: Infill Capacity

Acres	High Capacity	Low Capacity	Approved PUDs (platted but unbuilt)	Total Infill (High)	Total Infill (Low)
	Infill (platted unbuilt and redevelopment)	Infill (platted unbuilt and redevelopment )			
	1,284	1,284	521	1,805	1,805
<b>Residential Units (Total)</b>	<b>1,396</b>	<b>1,171</b>	<b>1,980</b>	<b>3,376</b>	<b>3,150</b>
Single Family Units	1,331	1,122	941	2,272	2,063
Attached Single Family Units	-	-	154	154	154
Multi-Family Units	65	49	885	950	934
<b>Non-Residential Building Area (SF)</b>	<b>3,654,099</b>	<b>2,691,945</b>		<b>3,654,099</b>	<b>2,691,945</b>
Commercial/Retail Space (SF)	717,873	960,837	1,240,000	1,957,873	2,200,837
Office Space (SF)	968,812	1,360,778	24,700	993,512	1,385,478
Industrial /Flex (SF)	970,193	1,285,514	-	970,193	1,285,514
Civic Acres	-	-	-	-	-
Open Space/Parks Acres	-	-	-	-	-

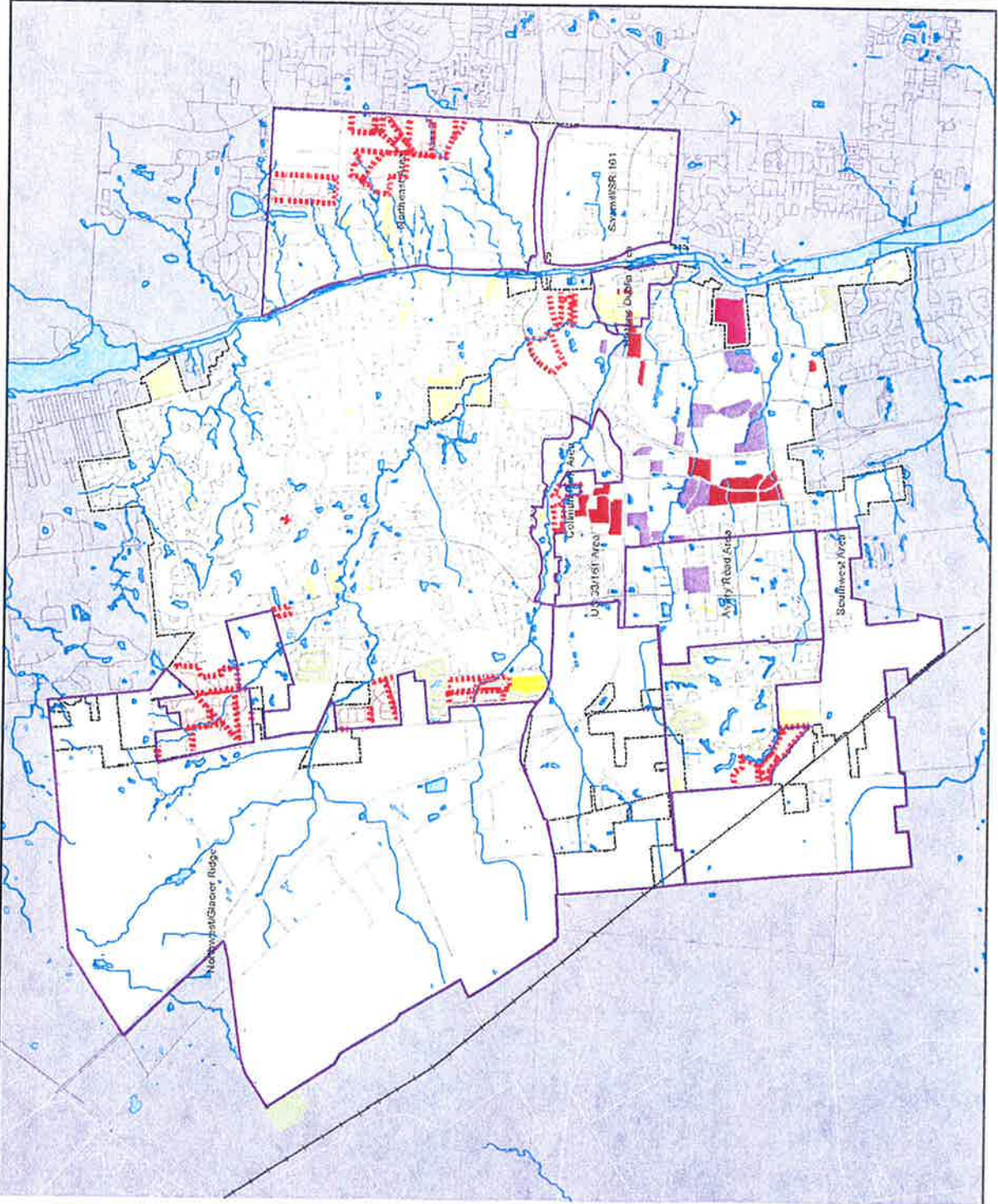


- Target Areas
- Area\_Plan\_Parcels
- Dublin Land Use
- Private Park
- Public Park
- Agriculture
- Private Institution
- Public Institution
- Residential Single Family
- Residential Two Family
- Residential Multifamily 3-19
- Residential Multifamily 20-39
- Residential Multifamily 40
- Residential Vacant
- Office
- Retail
- Mixed Use
- Light Industrial
- Heavy Industrial
- Unclassified
- Unknown

## Map 2 Existing Land Use

This map is for planning purposes only. Mapping data was provided by the City of Dublin and the surrounding Counties. Existing Land Use Inventory Completed 2004-2005. Printed by MDC - 1/11/08





- Target Areas
- Infill PDAs
- Approved Planned Unit Development
- Density Category**
- CIVIC/INSTITUTIONAL (NA)
- COMMERCIAL/RETAIL (6,500-8,700 SF/acre)
- INDUSTRIAL/FLEX (6,500-8,700 SF/acre)
- OFFICE/EMPLOYMENT (8,700-17,400 SF/ACRE)
- MIXED USE-EMPLOYMENT EMPHASIS
- PLANNED UNIT DEVELOPMENT (VARIES BY PLAN)
- RESIDENTIAL HIGH DENSITY (5+ Units/Acre)
- RESIDENTIAL MED-HIGH DENSITY (3-4 Units/Acre)
- RESIDENTIAL MED-LOW DENSITY (2-3 Units/Acre)
- RESIDENTIAL LOW DENSITY (1-2 Unit/Acre)
- RESIDENTIAL LOW DENSITY (1.5-1 Unit/Acre)
- PARK

## Map 3 Infill Capacity

This map is for planning purposes only. Mapping date was provided by the City of Dublin, and the surrounding Counties. Approved but unbuild or redevelopment potential. Existing Land Use Inventory. Completed 2004-2005. Printed by HDC, 1/11/05



### The Trend Scenario (Scenario 1)

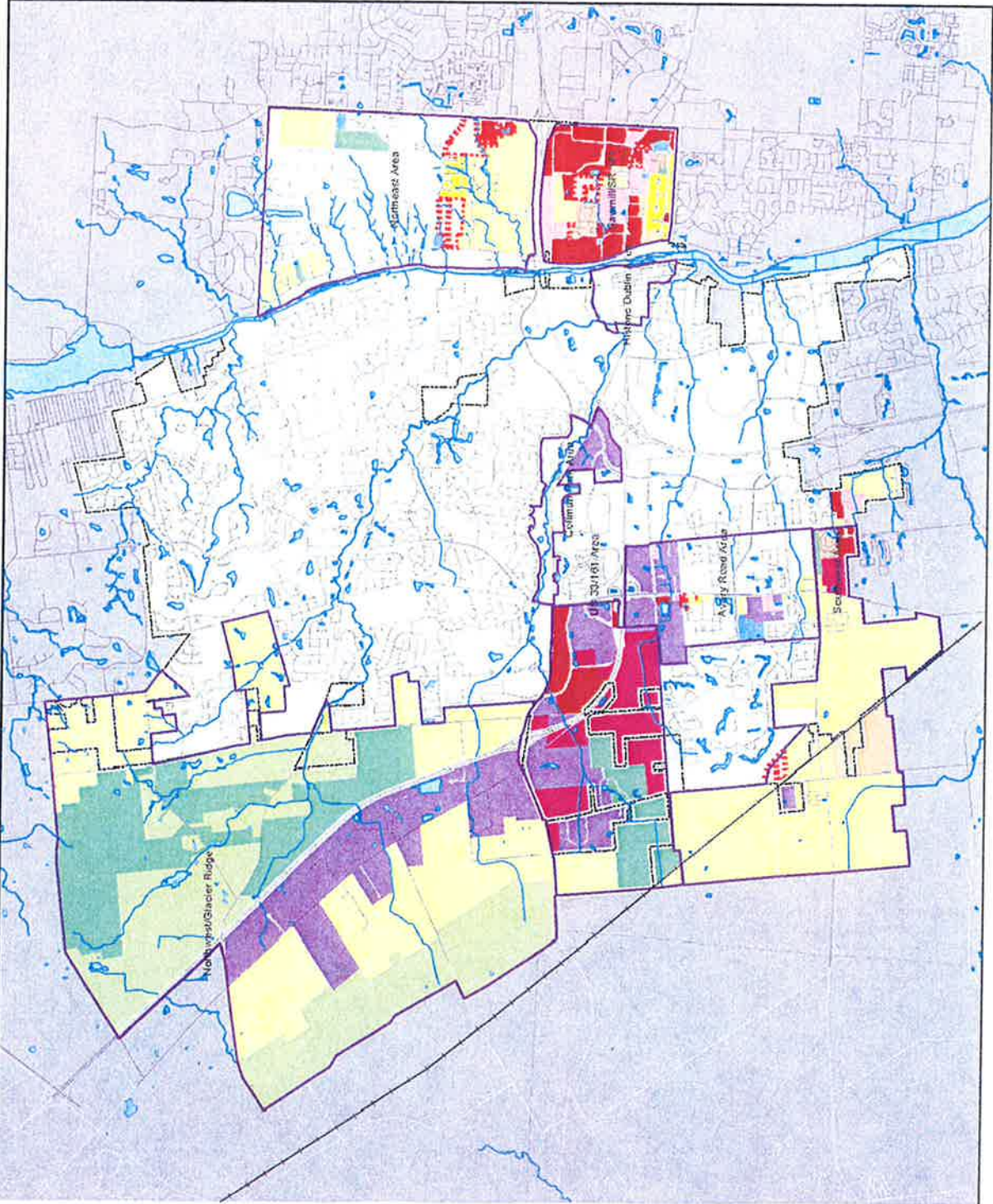
Within the planning area, three alternative scenarios were prepared for the majority of the land in the target areas. The first Scenario is the Trend Scenario. This Scenario assumes that the Current Land Use Plan density recommendations would be followed in the future and the land currently zoned for anything but agricultural uses. The current zoning and Current Land Use Plan categories were applied to the land that was also updated in Scenarios 2 and 3, and a calculation of the capacity for total buildout of the area under these recommendations was calculated. The trend density and composition assumptions are shown in the Attached Calculation Tables, Table A.

The development capacity includes residential/dwelling units broken down by single-family, attached single family, and multi-family units, and non-residential floor area broken down by commercial/retail, office, and industrial flex. The acreage in the scenario dedicated to civic uses, and open space is also calculated. The City's current land use plan offers a range of densities for each category, so for the capacity analysis a high and a low capacity were calculated. Staff indicated that development proposals tend to be on the high side of these recommendations rather than the low, but both are shown here for comparison. Map 4 shows the land use and density categories for the Trend Scenario.

The analysis of Scenario 1 yields capacity for between 4,696-9,270 single family units, 289-575 attached single family units, and 645-1,290 multi-family units, for a total of 5,629-11,133 residential units. Non-residential capacity in Scenario 1 includes between 2.12-2.75 million square feet of commercial/retail building area, 4.37-6.64 million square feet of office building area, and 7.45-9.97 million square feet of industrial or flex building area. This scenario would add 1,413 acres of open space and 18 acres of civic land. The capacity is shown in Table 4.

Table 4: Scenario 1 Capacity

	Scenario 1a (Low)	Scenario 1b (High)
Total Acres Calculated	9,421	9,421
Residential Acres	5,738	5,738
Residential Units (Total)	5,629	11,133
Single Family Units	4,696	9,270
Single Family Attached Units	289	575
Multi-Family Units	645	1,290
Non-Residential Acres	2,102	2,102
Non-Residential Building Area (SF)	13,953,735	19,458,817
Commercial/Retail(SF)	2,127,545	2,847,598
Office	4,375,073	6,638,006
Industrial/Flex	7,451,348	9,973,248
Civic Land Acres	18	18
Open Space/Parks	1,413	1,413



- Target Areas
- Scenario 1
- Approved Planned Unit Development
- Density Category
- CIVIC/INSTITUTIONAL (NA)
- COMMERCIAL/RETAIL (6 500-8 700 SF/Acre)
- INDUSTRIAL/FLEX (6 500-8 700 SF/Acre)
- OFFICE/EMPLOYMENT (8 700-17 400 SF/Acre)
- MIXED USE EMPLOYMENT EMPHASIS
- PLANNED UNIT DEVELOPMENT (VARIES BY PLAN)
- RESIDENTIAL HIGH DENSITY (5+ Units/Acre)
- RESIDENTIAL MED-HIGH DENSITY (3-4 Units/Acre)
- RESIDENTIAL MED-LOW DENSITY (2-3 Units/Acre)
- RESIDENTIAL LOW DENSITY (1-2 Unit/Acre)
- RESIDENTIAL LOW DENSITY (5-1 Unit/Acre)
- PARK

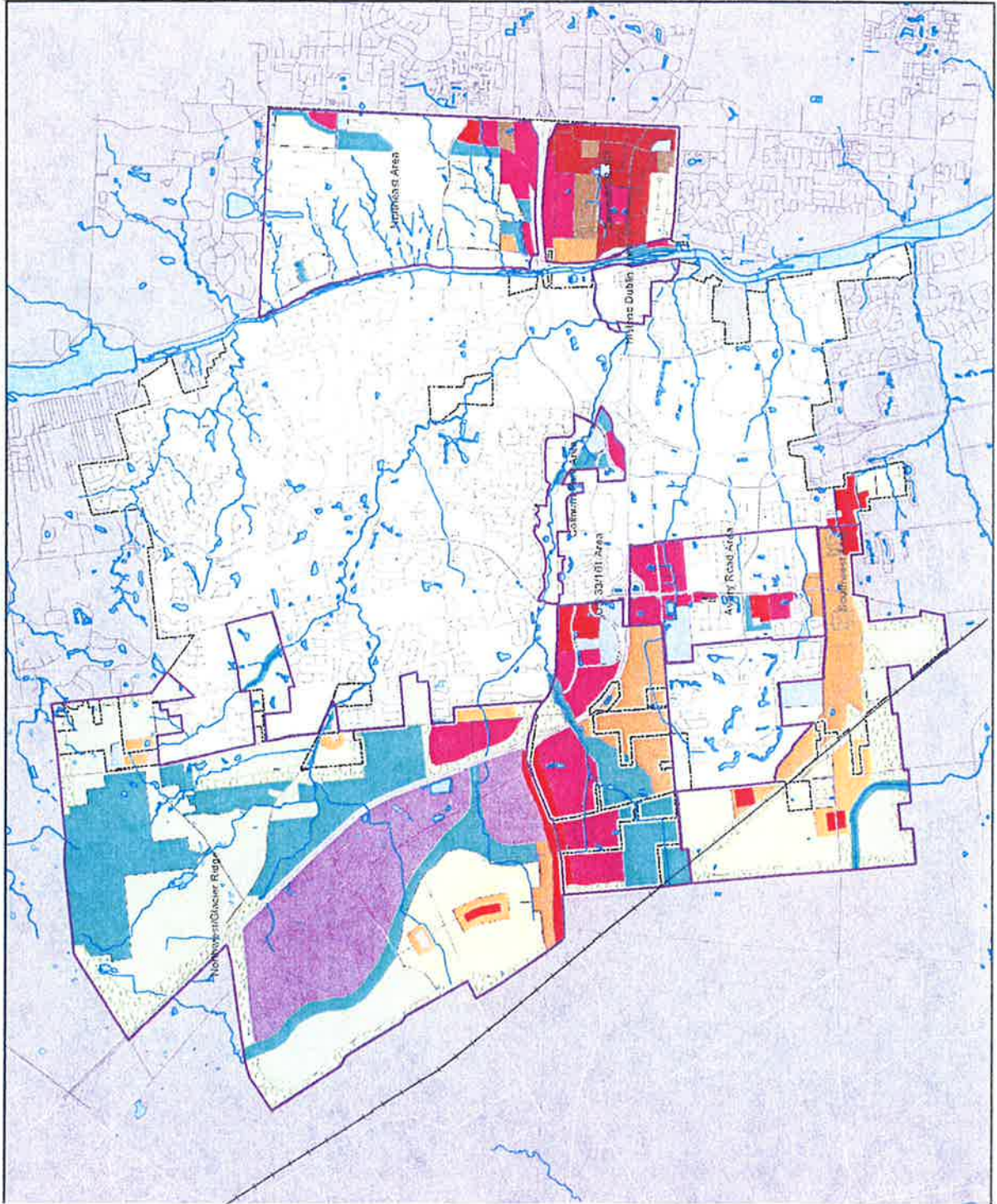
# PRELIMINARY FOR CAPACITY ANALYSIS

## Map 4 Trend Scenario 1

This map is for planning purposes only. Mapping data was provided by the City of Dublin, and the Surrounding Counties. Trend Scenario developed by MDC from existing zoning and the 1999 Land Use Plan.

Future Land Use 2 and 3 developed by ACP and City of Dublin. Digitized and Printed by MDC. 1/11/06





- Target Areas**
- Scenario 2**
- Category**
- Buffer
  - Civic
  - Conservation Subdivision
  - Single-Family
  - Office
  - Light Industrial
  - Open Space/Park
  - Mixed Use N
  - Mixed Use V
  - Mixed Use T
  - Multi-Type A
  - Multi-Type B
  - Multi-Type D

**Annotation Key**

- N-Neighborhood Mixed-Use
- V-Village Mixed-Use
- T-Town Mixed-Use
- A- Multi-Type (4.5 Units/Ac)
- B-Multi-Type (6 Units/Ac)
- D-Multi-Type (10 Units/Ac)

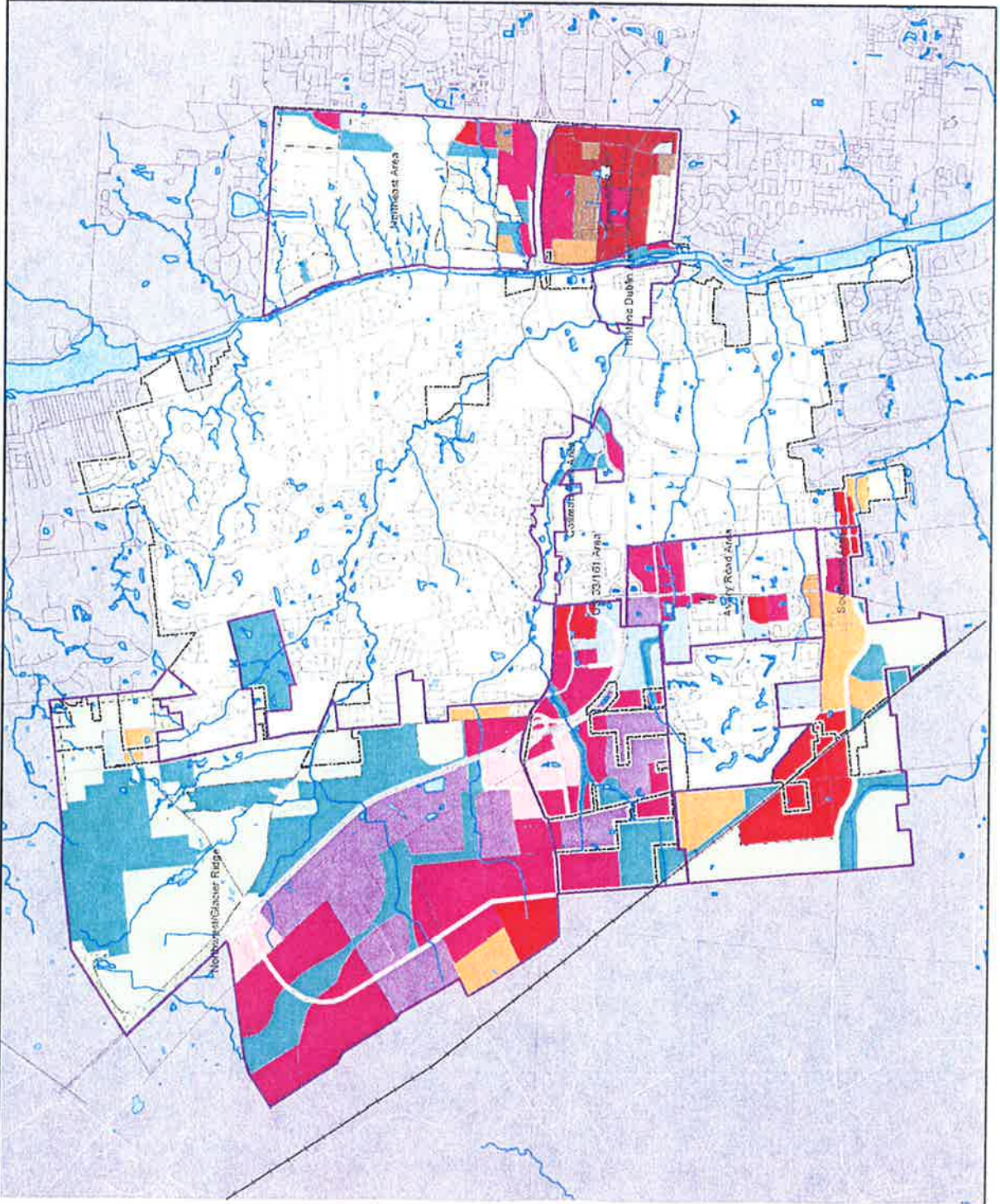
**PRELIMINARY FOR  
CAPACITY ANALYSIS**

**Map 5  
Alternative Scenario 2**

This map is for planning purposes only. Mapping data was provided by the City of Dublin, and the surrounding Counties. Trend Scenario developed by MDC from existing zoning and the 1999 Land Use Plan.

Future Land Use 2 and 3 developed by ACP and City of Dublin. Digitized and Printed by MDC. 1/11/06





- Target Areas**
- Scenario 3**
- Category**
- Ballier
  - Civic
  - Conservation Subdivision
  - Single-Family
  - Office
  - Light Industrial
  - Open Space/Park
  - Mixed Use N
  - Mixed Use V
  - Mixed Use T
  - Multi-Type A
  - Multi-Type B
  - Multi-Type D
- proposed roads

- Annotation Key**
- N-Neighborhood Mixed-Use
  - V-Village Mixed-Use
  - T-Town Mixed-Use
  - A- Multi-Type (4.5 Units/Ac)
  - B-Multi-Type (6 Units/Ac)
  - D-Multi-Type (10 Units/Ac)

**PRELIMINARY FOR  
CAPACITY ANALYSIS**

**Map 6  
Alternative Scenario 3**

This map is for planning purposes only. Mapping data was provided by the City of Dublin, and the surrounding Counties. Trend Scenario developed by MDC from existing zoning and the 1990 Land Use Plan.

Future Land Use 2 and 3 developed by ACP and City of Dublin. Digitized and Printed by MDC, 1/1/06



### Scenarios 2 & 3

ACP prepared a land use plan alternative after conducting a series of land use work sessions with the public for each of the Target Areas. The result of this exercise was the development of the first of two alternative scenarios prepared at this time (Scenario 2). Dublin planning staff created an alternative that varied from Scenario 2 and included a different potential street network, and more office designated land (Scenario 3). Scenarios 2 and 3 share the same land use categories, density assumptions, and compositions. These assumptions are shown in Table B of the attachment. These alternatives are described more fully in the memo prepared by ACP. Scenarios 2 and 3 are illustrated in Maps 5 and 6.

Scenario 2 produces capacity for 3,313 single-family units, 3,287 attached single family units, 4,347 multi-family units, for a total of 10,948 residential units. The non-residential capacity yielded by Scenario 2, includes 5.99 million square feet of commercial/retail building space, 17.21 million square feet of office building area, and 8.44 million square feet of industrial/flex building space. This scenario also yields 158 acres of civic land and 4,434 acres of open space/park land.

Scenario 3 produces capacity for 1,841 single-family units, 1,732 attached single family units, 3,005 multi-family units, for a total of 6,579 residential units. The non-residential capacity yielded by Scenario 3, includes 10.47 million square feet of commercial/retail building space, 29.87 million square feet of office building area, and 8.38 million square feet of industrial/flex building space. This scenario also yields 239 acres of civic land, and 4,135 acres of open space/park land. The capacity yields for Scenarios 2 and 3 are shown in Table 5.

Table 5: Scenarios 2 & 3 Capacity

	Scenario 2	Scenario 3
Total Acres Calculated	9,843	9,642
Residential Acres	3,012	1,847
Residential Units (Total)	10,948	6,579
Single Family Units	3,313	1,841
Single Family Attached Units	3,287	1,732
Multi-Family Units	4,347	3,005
Non-Residential Acres	2,239	3,421
Non-Residential Building Area (SF)	31,648,087	48,730,611
Commercial/Retail(SF)	5,991,399	10,474,076
Office	17,212,070	29,874,560
Industrial/Flex	8,444,624	8,381,979
Civic Land Acres	158	239
Open Space/Parks	4,434	4,135

## Scenario Comparisons and Population and Employment Yields

The potential capacity which is generated by the three scenarios can be combined with the existing development in the City to create potential future buildout population and employment yield. The following Tables show the addition of future development to the existing development and calculate the future population and employment for each of the scenarios. A preliminary assessment of the findings of these comparisons is presented.

### Residential Buildout Potential and Population Yields

The Tables showing the complete calculations for the buildout and conversion of the residential units to population are included in the attachment. Table 7 shows a summary of the estimated residential capacity at buildout and the estimated households and population derived from the capacity.

Table 7: Residential Comparison At Buildout

	Scenario 1a (Low)	Scenario 1b (High)	Scenario 2	Scenario 3
<b>Total Units at Build Out<sup>1</sup></b>				
All Types	22,714	28,444	28,259	23,890
Single Family	15,931	20,714	14,757	13,285
Attached Single Family	1,812	2,098	4,810	3,255
Multi-Family	4,973	5,634	8,691	7,349
<b>Housing Type Percentage of Total Housing Stock</b>				
All Types	100%	100%	100%	100%
Single Family	70%	73%	52%	56%
Attached Single Family	8%	7%	17%	14%
Multi-Family	22%	20%	31%	31%
<b>Estimated Households<sup>2</sup></b>				
All Types	21,196	26,661	25,734	21,814
Single Family	15,581	20,258	14,432	12,993
Attached Single Family	1,642	1,901	4,358	2,949
Multi-Family	3,973	4,502	6,944	5,872
<b>Estimated Population Yields<sup>3</sup></b>				
All Types	58,733	74,780	65,537	56,430
Single Family	48,767	63,408	45,173	40,667
Attached Single Family	3,251	3,764	8,629	5,839
Multi-Family	6,715	7,608	11,736	9,923

Notes for Table 7.

1. Units at buildout are equal to the existing units plus the infill capacity plus the capacity for the identified scenario.
2. Estimated households are calculated by applying vacancy rates from 2000 census by housing type to the housing units total.
3. Estimated population yields are derived from the households by multiplying each household type by an average persons per household. Single Family is 3.13 persons per household, Attached Single Family is 1.98, and Multi-Family is 1.69.

Scenario 1 produces a future housing composition that is 70-percent single family which is most similar to the estimated 2005 composition which is 65.8% single family. The other scenarios offer additional variety of housing types and provide increased housing opportunities, while not as dramatically increasing the total population as Scenario 1b does. Because single family houses in Dublin typically display a higher occupancy rate and larger average persons per households than other types of housing, single family units generate the greatest population increase per unit.

Of the four scenarios reviewed, Scenario 1b generates the highest buildout population at 74,480 total people. This figure represents a 110% increase in population from the estimated 2005 population of 35,578. Scenario 2 offers the second highest capacity for population at 65,537, an 84.2% increase. Scenario 1a generates a buildout population of 58,733 a 65.08% increase. Finally at the bottom of the spectrum, Scenario 3 generates the lowest buildout population of 56,430 people which is an increase of 58.6%.

### Residential Demand vs. Capacity

MDC prepared preliminary projections for population growth and housing demand in the City to the year 2030. These projections were based on historic trends and other projections from regional and national sources. The projections were based on an assumption that Dublin could acquire additional land to accommodate any one who “wanted to live in the City”, meaning that the demand reflected a theoretical projection of growth trends, and did not reflect the actual physical capacity of the land in the City. The recommended projection reached 66,121 people by 2030 at an average annual growth rate of 2.51%.

If the City did continue to grow at this rate in the future, the City could anticipate reaching residential buildout under three of the four scenarios in the next twenty years. Scenario 1b with the higher number of single-family units would have additional capacity to support growth beyond 2030.

The forecasted demand for housing units included approximately 37,970 residential units with 25,864 single family units, 3,685 attached single family units, and 8,421 units, which reflected the current 2005 composition of housing types. Table 8 shows the projected demand for residential units and the difference of each Scenario to that Demand. Scenario figures represent the deficit in the scenario compared to the demand. Figures in parentheses are an excess above the demand.

Table 8: Residential Demand vs. Capacity.

	Demand	Scenario 1a (Low)	Scenario 1b (High)	Scenario 2	Scenario 3
All Types	37,970	15,256	9,526	9,711	14,080
Single Family	25,864	9,933	5,150	11,107	12,579
Attached Single Family	3,685	1,873	1,587	(1,125)	430
Multi-Family	8,421	3,448	2,787	(270)	1,072

Because the demand forecasts assumed a much higher percentage of Single-Family units would be demanded than the other types of housing, while Scenario 1b could accommodate the forecasted population, the housing types would be different. If the demand were to come to fruition this would mean that the City and Planning area could reach buildout before 2030. There is neither a right nor wrong way to assess this; it is simply a point of comparison of the capacity of land planned for residential development to a theoretical demand for the same. The land use development policies the City adopts through the planning update and in the future are what will ultimately determine the housing mix in the City as it grows.

**Civic Land Use and Open Space/Park Land**

While Scenarios 2 and 3 do display a housing type composition which varies from the current conditions, a significant benefit to both of these scenarios is a dramatic increase in the capacity for civic uses and open space and parks. By using land more efficiently in the distribution of population and housing Scenario 2 and 3 identify over 4,000 acres of land for open space and 158 and 239 acres respectively for civic uses. In comparison Scenario 1 only generates capacity for 1,413 acres of open space or parks. Scenarios 2 and 3 provide more than three times the open space or parks as Scenario 1 while increasing capacity for other non-residential uses and still providing considerable residential growth.

**Non-Residential Capacity**

The City has a current inventory of 1,040 acres of office, 479 acres of retail land, and 260 acres of light industrial. This land area is supporting 74,201 employees. Because of the process used in the capacity analysis to calculate employment from the non-residential land area, there is an estimated capacity for building area in the Scenarios. As a point of comparison to the existing conditions Table 8 shows the potential buildout for non-residential uses employees generated and provides a total acreage dedicated to these non-residential uses. Calculation of these numbers is shown in Attachment Table H.

Table 8: Non-residential Acreage and Employment Yields

	Existing	Infill	Scenario 1a	Total at Buildout	% Change
Total Acreage	1,778	407	2,102	4,287	141%
Total Employment Yield	74,201	7,603	29,064	110,868	49%
	Existing	Infill	Scenario 1b	Total at Buildout	% Change
Total Acreage	1,778	407	2,102	4,287	141%
Total Employment Yield	74,201	7,603	34,413	116,217	57%
	Existing	Infill	Scenario 2	Total at Buildout	% Change
Total Acreage	1,778	407	2,239	4,424	149%
Total Employment Yield	74,201	7,603	79,493	161,297	117%
	Existing	Infill	Scenario 3	Total at Buildout	% Change
Total Acreage	1,778	407	3,421	5,606	215%
Total Employment Yield	74,201	7,603	129,574	211,378	185%

The non-residential and employment yields of Scenarios 2 and 3 are higher than those of the Trend Scenario. The alternative scenarios offer a variety of mixed-use type designations that integrate office, commercial and residential, as well as designating significant amounts of land for office uses. Based on the estimated 3,304 acres identified as the preliminary demand for non-residential acreage in the City in 2030 any one of the presented scenarios would meet this need with excess capacity.

## Conclusion

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In Conclusion, all of the scenarios presented have their positive and negative attributes. The trend scenario reflects the City's current and past policies carried into the future and generates the capacity for the highest population growth and the lowest employment growth. Scenarios 2 and 3 look at the City in a different manner and prepare for a change in demand for housing types as the population ages. These alternative scenarios encourage mixed use, mixed type developments and promote variety in the City that can contribute to future growth. These alternate scenarios provide large amounts of open space and identify adequate land to promote healthy economic development.

The next steps in this process once these figures have been reviewed and approved will be to apply this information into the transportation and fiscal models to test the implications of these land use scenarios on the other systems within the City.

## Attachments: Calculation and Summary Tables

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Table A: Land Use Classifications, Density and Breakdown Assumptions (Trend)

Table B: Land Use Classifications, Density and Breakdown Assumptions (Scenarios 2 and 3)

Table C: Scenario 1a (Trend Low Capacity) Capacity by Target Area

Table D: Scenario 1b (Trend High Capacity) Capacity by Target Area

Table E: Scenario 2 Capacity by Target Area

Table F: Scenario 3 Capacity by Target Area

Table G: Summary Comparison of Scenarios

Table H: Estimated Population and Job Yields

**Table A: Land Use Classifications, Density and Breakdown Assumptions (Trend Scenario)**

LAND USE	% To Residential	% To Non-Residential	% To Open Space/Recreation and Other	Residential Density (Units/Acre)	Residential Density (Units/Acre) (High)	Non-Residential Density (Floor Area Ratio) (Low)	Non-Residential Density (Floor Area Ratio) (High)	Residential Break Down (% of Residential Capacity)			Non-Residential Break Down (% of Non-Residential Capacity)			
								Single-Family %	Multi-Family %	Office %	Commercial %	Industrial %	Office %	Industrial %
<b>Non-Residential</b>														
C Commercial/Office	15%	100%	0%	10	10	2.0	2.0	15%	15%	0%	0%	0%	0%	0%
D Industrial	15%	100%	0%	10	10	2.0	2.0	15%	15%	0%	0%	0%	0%	0%
<b>Mixed Use</b>														
MULE Mixed Use Employment	15%	100%	0%	10	10	2.0	2.0	15%	15%	0%	0%	0%	0%	0%
<b>Residential</b>														
R1 Non-attached Density	15%	0%	100%	10	10	1.0	1.0	100%	0%	0%	0%	0%	0%	0%
R2 Non-attached Density 2	15%	0%	100%	10	10	1.0	1.0	100%	0%	0%	0%	0%	0%	0%
R3 Medium Density Attached	15%	0%	100%	10	10	1.0	1.0	100%	0%	0%	0%	0%	0%	0%
R4 Medium Density Attached	15%	0%	100%	10	10	1.0	1.0	100%	0%	0%	0%	0%	0%	0%
R5 Single-Family Attached	15%	0%	100%	10	10	1.0	1.0	100%	0%	0%	0%	0%	0%	0%
<b>Public</b>														
P1 Parks and Recreation	15%	0%	100%	10	10	1.0	1.0	0%	0%	0%	0%	0%	0%	0%
P2 Parks and Recreation Open Space	15%	0%	100%	10	10	1.0	1.0	0%	0%	0%	0%	0%	0%	0%

**Table B: Land Use Classifications, Density and Breakdown Assumptions (Scenarios 2 and 3)**

LAND USE	% To Residential	% To Non-Residential	% To Open Space/Recreation and Other	Residential Density (Units/Acre)	Residential Density (Units/Acre) (High)	Non-Residential Density (Floor Area Ratio) (Low)	Non-Residential Density (Floor Area Ratio) (High)	Residential Break Down (% of Residential Capacity)			Non-Residential Break Down (% of Non-Residential Capacity)			
								Single-Family %	Multi-Family %	Office %	Commercial %	Industrial %	Office %	Industrial %
<b>Environmental Categories</b>														
E1 Green Space/Recreation	15%	0%	100%	10	10	1.0	1.0	0%	0%	0%	0%	0%	0%	0%
E2 Green Space/Recreation Area	15%	0%	100%	10	10	1.0	1.0	0%	0%	0%	0%	0%	0%	0%
<b>Residential Categories</b>														
R1 Non-attached Density	15%	0%	100%	10	10	1.0	1.0	100%	0%	0%	0%	0%	0%	0%
R2 Non-attached Density 2	15%	0%	100%	10	10	1.0	1.0	100%	0%	0%	0%	0%	0%	0%
R3 Medium Density Attached	15%	0%	100%	10	10	1.0	1.0	100%	0%	0%	0%	0%	0%	0%
R4 Medium Density Attached	15%	0%	100%	10	10	1.0	1.0	100%	0%	0%	0%	0%	0%	0%
R5 Single-Family Attached	15%	0%	100%	10	10	1.0	1.0	100%	0%	0%	0%	0%	0%	0%
<b>Mixed-Use Categories</b>														
MULE Mixed Use Employment	15%	100%	0%	10	10	2.0	2.0	15%	15%	0%	0%	0%	0%	0%
<b>Commercial/Office Categories</b>														
C Commercial/Office	15%	100%	0%	10	10	2.0	2.0	15%	15%	0%	0%	0%	0%	0%
<b>Public Categories</b>														
P1 Parks and Recreation	15%	0%	100%	10	10	1.0	1.0	0%	0%	0%	0%	0%	0%	0%
P2 Parks and Recreation Open Space	15%	0%	100%	10	10	1.0	1.0	0%	0%	0%	0%	0%	0%	0%

Table C: Scenario 1a (Trend Low Capacity)

TARGET AREA	Gross Acreage Calculated	Non-Residential Acres	Non-Residential SF	Commercial/Ret all SF	Office SF	Industrial SF	Residential Acres	Residential Units	Singlo family Units	Singlo Family Attached Units	Multi-Family Units	Open Spaco/ Park Acres	Civic Acres
Avery Road Area	271	213	1,414,530	30,122	251,862	1,132,572	35	42	42	-	-	5	15
Collman Park Area	62	58	378,105	-	37,813	340,297	-	-	-	-	-	4	-
Northcoast Area	594	11	75,327	38,358	56,972	-	427	444	444	-	-	49	9
Northwest/Glacier Ridge Area	5,371	800	5,200,585	-	520,118	4,680,586	3,533	2,643	2,643	-	-	1,038	-
Sawmill/SR 161	297	188	1,434,125	408,594	1,025,541	-	94	312	98	64	151	5	8
Sawmill/SR 161 Area	269	186	1,237,275	786,842	440,166	10,296	49	78	65	13	-	-	-
Southwest Area	1,615	98	681,926	162,328	382,763	136,845	1,486	2,044	1,338	212	494	15	2
US 33/161 Area	1,213	761	4,946,392	731,423	1,931,700	2,283,324	149	108	108	-	-	303	-
Total in Planning Target Areas	9,421	2,102	13,953,735	2,127,545	4,375,073	7,451,348	5,738	5,629	4,696	289	645	1,413	18

Table D: Scenario 1b (Trend High Capacity)

TARGET AREA	Gross Acreage Calculated	Non-Residential Acres	Non-Residential SF	Commercial/Ret all SF	Office SF	Industrial SF	Residential Acres	Residential Units	Singlo family Units	Singlo Family Attached Units	Multi-Family Units	Open Spaco/ Park Acres	Civic Acres
Avery Road Area	271	213	1,969,414	40,315	413,214	1,515,889	35	66	66	-	-	5	15
Collman Park Area	62	58	506,079	-	50,609	455,471	-	-	-	-	-	4	-
Northcoast Area	594	11	114,641	51,339	63,302	-	427	850	850	-	-	49	9
Northwest/Glacier Ridge Area	5,371	800	6,960,783	-	696,092	6,264,713	3,533	5,266	5,266	-	-	1,038	-
Sawmill/SR 161	297	188	2,491,885	546,880	1,945,005	-	94	583	153	130	301	5	8
Sawmill/SR 161 Area	269	186	1,724,553	1,053,143	657,634	13,781	49	124	104	21	-	-	-
Southwest Area	1,615	98	1,040,262	217,266	639,837	183,161	1,486	4,094	2,681	424	989	15	2
US 33/161 Area	1,213	761	6,620,614	978,970	2,585,527	3,056,122	149	216	216	-	-	303	-
Total in Planning Target Areas	9,421	2,102	19,458,817	2,847,598	6,638,006	9,973,248	5,738	11,133	9,270	575	1,290	1,413	18

Table E: Scenario 2

TARGET AREA	Gross Acreage Calculated	Non-Residential Acres	Non-Residential SF	Commercial/Ret all SF	Office SF	Industrial SF	Residential Acres	Residential Units	Singlo family Units	Singlo Family Attached Units	Multi-Family Units	Open Spaco/ Park Acres	Civic Acres
Avery Road Area	267	142	2,039,784	189,702	1,850,080	-	25	153	3	66	83	61	39
Collman Park Area	65	13	189,460	9,473	179,987	-	-	-	-	-	-	42	10
Northcoast Area	629	120	1,718,503	177,326	1,541,181	-	296	791	517	70	205	202	11
Northwest/Glacier Ridge	5,427	1,197	13,605,034	1,262,930	3,897,486	8,444,624	1,273	2,864	1,839	615	410	2,947	10
Sawmill/SR 161	634	324	7,728,559	3,192,446	4,536,115	-	229	1,883	119	290	1,474	67	13
Southwest Area	1,565	40	578,011	289,006	289,006	-	871	3,304	834	1,327	1,143	622	32
US 33/161 Area	1,257	403	5,788,732	870,516	4,918,215	-	318	1,954	0	920	1,033	493	43
Total in Planning Target Areas	9,843	2,239	31,648,087	5,991,399	17,212,070	8,444,624	3,012	10,948	3,313	3,287	4,347	4,434	158

Table F: Scenario 3

TARGET AREA	Gross Acreage Calculated	Non-Residential Acres	Non-residential SF	Commercial/Rat all	Office SF	Industrial SF	Residential Acres	Residential Units	Single Family Units	Single-Family Attached Units	Multi-Family Units	Open Space/Park Acres	Civic Acres
Avery Road Area	272	144	1,973,359	192,462	1,555,473	225,423	25	152	3	66	84	49	54
Collin Park Area	65	13	189,460	9,473	179,987	-	-	-	-	-	-	42	10
Northwest Area	629	120	1,718,507	177,326	1,541,181	-	296	791	517	31	244	202	11
Northwest/Glacier Ridge	5,389	1,819	23,460,567	3,359,781	13,802,338	6,298,449	741	1,682	872	525	285	2,806	24
Sawmill/SR 161	634	328	7,853,141	3,254,737	4,598,406	-	230	1,896	119	115	1,662	66	9
Southwest Area	1,441	302	4,346,652	1,997,703	2,348,951	-	546	1,997	325	996	676	560	32
US 33/161 Area	1,213	694	9,185,925	1,482,594	5,848,224	1,858,106	9	61	5	-	55	111	99
<b>Total in Planning Target Areas</b>	<b>9,642</b>	<b>3,421</b>	<b>48,730,611</b>	<b>10,474,076</b>	<b>29,874,560</b>	<b>8,381,979</b>	<b>1,847</b>	<b>6,579</b>	<b>1,841</b>	<b>1,732</b>	<b>3,005</b>	<b>4,135</b>	<b>239</b>

This analysis includes an approximation of the land area within the target areas. Accurate varies between scenarios due to digitization of the 3 scenarios where some excluded existing public right of way or where Scenario 2 and 3 include land outside of the designated boundaries of the target areas. Further refinements can be made. Capacity represents the total capacity for the land represented and does not account for existing development. Additional capacity for growth is identified in areas of the city not in a Target Area. Most of this land is either platted and unbuilt or under construction and primarily includes residential lots. Additional analysis will be necessary for application in the models.

Table G: SUMMARY COMPARISON OF SCENARIOS

Scenario	Gross Acreage Calculated	Non-Residential Acres	Non-residential SF	Commercial/Rat all	Office SF	Industrial SF	Scenario 1a		Scenario 1b		Scenario 2		Scenario 3	
							Residential Acres	Residential Units	Residential Acres	Residential Units	Residential Acres	Residential Units	Residential Acres	Residential Units
Scenario 1a (Trend Low)	9,421	2,102	13,953,735	2,127,545	4,375,073	7,451,348	5,738	5,629	5,738	5,629	5,738	5,629	5,738	5,629
Scenario 1b (Trend High)	9,421	2,102	19,458,817	2,847,598	6,638,006	9,973,248	5,738	11,133	5,738	11,133	5,738	11,133	5,738	11,133
Scenario 2	9,843	2,239	31,648,087	5,991,399	17,212,070	8,444,624	3,012	10,948	3,012	10,948	3,012	10,948	3,012	10,948
Scenario 3	9,642	3,421	48,730,611	10,474,076	29,874,560	8,381,979	1,847	6,579	1,847	6,579	1,841	1,732	3,005	4,135

Table H: Estimated Population and Job Yields

Generation Rate	Scenario 1a				Scenario 1b				Scenario 2				Scenario 3			
	Single Family	Two Family	Multi-Family	Total	Single Family	Two Family	Multi-Family	Total	Single Family	Two Family	Multi-Family	Total	Single Family	Two Family	Multi-Family	Total
3.13 persons/ah	14,698	29,015	10,369	57,64	29,015	10,369	5,764	44,148	29,015	10,369	5,764	44,148	29,015	10,369	5,764	44,148
1.98 persons/ah	572	1,139	6,509	8,220	1,139	6,509	3,430	11,178	1,139	6,509	3,430	11,178	1,139	6,509	3,430	11,178
1.68 persons/ah	1,090	2,180	7,347	10,617	2,180	7,347	5,079	14,606	2,180	7,347	5,079	14,606	2,180	7,347	5,079	14,606
<b>Total</b>	<b>16,361</b>	<b>32,334</b>	<b>24,225</b>	<b>72,920</b>	<b>32,334</b>	<b>24,225</b>	<b>14,272</b>	<b>70,831</b>	<b>32,334</b>	<b>24,225</b>	<b>14,272</b>	<b>70,831</b>	<b>32,334</b>	<b>24,225</b>	<b>14,272</b>	<b>70,831</b>

Generation Rate	Scenario 1a				Scenario 1b				Scenario 2				Scenario 3			
	Commercial/Retail	Office	Industrial/Flex	Total	Commercial/Retail	Office	Industrial/Flex	Total	Commercial/Retail	Office	Industrial/Flex	Total	Commercial/Retail	Office	Industrial/Flex	Total
380 sf/employee (estimated)	5,599	7,193.68	15,766.84	28,559.52	7,193.68	15,766.84	27,563.36	32,653.88	7,193.68	15,766.84	27,563.36	32,653.88	7,193.68	15,766.84	27,563.36	32,653.88
330 sf/employee (estimated)	13,257.80	52,157.79	90,528.97	155,944.56	13,257.80	52,157.79	90,528.97	155,944.56	13,257.80	52,157.79	90,528.97	155,944.56	13,257.80	52,157.79	90,528.97	155,944.56
730 sf/employee (estimated)	10,207.33	13,661.98	11,482.16	35,351.47	10,207.33	13,661.98	11,482.16	35,351.47	10,207.33	13,661.98	11,482.16	35,351.47	10,207.33	13,661.98	11,482.16	35,351.47
<b>Total</b>	<b>29,064</b>	<b>34,413</b>	<b>79,493</b>	<b>142,970</b>	<b>29,064</b>	<b>34,413</b>	<b>129,574</b>	<b>142,970</b>	<b>29,064</b>	<b>34,413</b>	<b>129,574</b>	<b>142,970</b>	<b>29,064</b>	<b>34,413</b>	<b>129,574</b>	<b>142,970</b>

The population and jobs represent the total number supported at buildout of the scenario. This does not take into account existing jobs or population within the target areas.

Table H: Population Yield from Residential Units

	Existing	Infill	Scenario	Total	% Of inventory at build out	Vacancy Rate	Households	Persons Per Household	Population
<b>Scenario 1 (Low)</b>									
Total	13,935	3,150	5,629	22,714	100%		21,196		58,733
SF	9,172	2,069	4,696	15,931	70%	2%	15,581	3.13	48,767
TF	1,369	154	289	1,812	8%	9%	1,642	1.98	3,251
MF	3,394	934	645	4,973	22%	20%	3,973	1.69	6,715
<b>Scenario 1 (High)</b>									
Total	13,935	3,376	11,133	28,444	100%		26,661		74,780
SF	9,172	2,272	9,270	20,714	73%	2%	20,258	3.13	63,408
TF	1,369	154	575	2,098	7%	9%	1,901	1.98	3,764
MF	3,394	950	1,290	5,634	20%	20%	4,502	1.69	7,608
<b>Scenario 2</b>									
Total	13,935	3,376	10,948	28,259	100%		25,734		65,537
SF	9,172	2,272	3,313	14,757	52%	2%	14,432	3.13	45,173
TF	1,369	154	3,287	4,810	17%	9%	4,358	1.98	8,629
MF	3,394	950	4,347	8,691	31%	20%	6,944	1.69	11,736
<b>Scenario 3</b>									
Total	13,935	3,376	6,579	23,890	100%		21,814		56,430
SF	9,172	2,272	1,841	13,285	56%	2%	12,993	3.13	40,667
TF	1,369	154	1,732	3,255	14%	9%	2,949	1.98	5,839
MF	3,394	950	3,005	7,349	31%	20%	5,872	1.69	9,923