



AN ANALYSIS OF THE COSTS AND
DEVELOPMENT POSSIBILITIES OF GROWTH
TARGETED TO THE SOUTHWEST,
NORTHWEST AND NORTH OF AMES

Prepared by the Staff of the City of Ames and
Presented to the Ames City Council

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OBJECTIVE OF THE STUDY

In December 2006, the City Council received a report (Southwest/Northwest Growth Priority Analysis) that quantified the relative costs of annexing and extending city services to the Southwest and Northwest.* That study reflected the Land Use Policy Plan's priority of targeted growth in those directions.

The objective of this study is to provide the City Council with further information on the relative costs of annexing and extending city services to the North. This North study area is bounded on the west by US Highway 69, on the north by 190th Street, and on the west by George Washington Carver Avenue and Squaw Creek. It includes the land owned by Athen and Madson who indicated to the City Council in March of this year that they were interested in annexing. This study draws upon much of the data from the 2006 study but also includes an analysis of the costs and potential growth possibilities of annexing and developing to the North of Ames.

This study focuses on identifying residential growth possibilities and how annexation and development, targeted to certain geographic locations, can allow the City to reach the population goal identified in the Land Use Policy Plan. The study examines the geographic areas of the Southwest, Northwest and North growth areas to determine the net developable acres within each and within the identified subareas of each. The study then approximates the housing units that could be accommodated upon those acres and, using Census-determined persons per household, calculates the population that could be supported within each subarea.

The study also estimates the costs of annexation and providing the necessary infrastructure to serve those subareas. The dollar amounts are estimated both for the total costs of infrastructure and for the oversize only costs in order to give the City Council an indication of the scale of outlays if the City were to participate in a cost-sharing arrangement within any subarea. In addition, the study identifies the differentiated operating costs due to direction of growth.

This study offers necessary data that identify the benefits (determined to be the number of dwelling units and, hence, the ability to meet population targets) and the relative dollar costs of providing the infrastructure to serve the population within these growth areas and subareas.

* This study recreated the boundaries of the various study areas and subareas of the 2006 study. In most instances, the acreages of the 2006 study and this study are very similar. However, in instances where errors were made in the 2006 calculation of acreage, these 2008 figures reflect the corrections made. In most instances, the discrepancies are very minor and every attempt was made to ensure that this study is comparable to the 2006 study.



POPULATION TARGETS

The City of Ames has articulated clear population goals to be met within the time frame of the Land Use Policy Plan (LUPP). By 2020, the City's and the Planning Area's population would be within the range of 61,400 to 62,900. Further growth within the City and Planning Area by 2030 is projected to be 65,000 to 67,000. Projected population within the City of Ames proper in 2030 would be 60,000 to 62,000. To accommodate this goal, developable land must be identified in a timely manner so that the necessary processes of development—rezoning, platting, installation of utilities—may be accomplished to keep pace with the market demand for housing and to meet the interim population targets of the LUPP.

The Land Use Policy Plan identifies the current priority growth areas as the Southwest and the Northwest. Emphasis is placed on the Southwest with the Northwest being targeted as an alternate. Growth to the Northwest would be targeted only when the Southwest area nears buildout or if constraints limit development in the Southwest.

The City has heard anecdotally that it is difficult to keep a variety of buildable lots in inventory within the city. The City Council has asked that an analysis of a third area, the North, be done to provide baseline data on the costs of annexation and development of these three areas and the ability of these areas to provide developable land necessary to meet those population targets.

As an alternative to annexation, population growth can occur through development within the existing city limits. The 2006 study estimated that there are about 990 lots available in active subdivisions. Analysis for this study identified a further 300 acres of net developable land within the city. These 300 acres could, if developed at average city densities, result in 1,500 residential lots. The currently available platted lots and developable lands would yield a population increase of approximately 5,727, still falling short of LUPP targets. A caveat of this analysis is that these 300 acres cannot be guaranteed to be developed—in fact, should be heavily discounted. The City has no indication of the degree of interest of the owners in developing their lands. There may be other constraints such as fragmented ownership patterns, lack of access, or strong neighborhood opposition. For later analysis, this study will only refer to the approximately 990 lots currently platted but vacant.

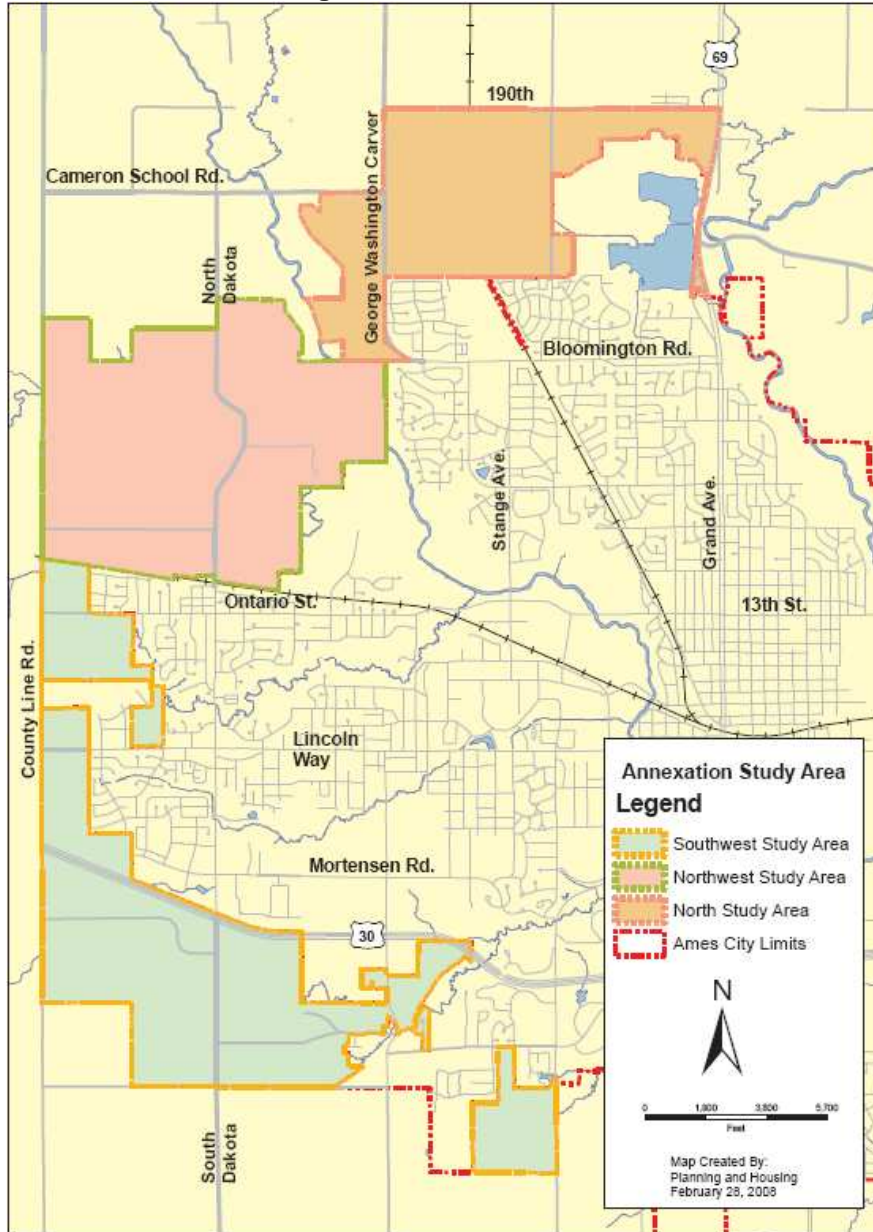
A second means to achieve population growth within the existing city limits could be to promote and encourage greater residential densities. Subdivisions with smaller lots, conversions of single family homes to multi-family structures, and encouragement of higher-density residential buildings are all means to increase densities. However, the LUPP has an objective of limited intensification with an emphasis on meeting growth targets through annexation and development of new areas.



GROWTH AREAS

The three study areas are identified as the Southwest growth area, the Northwest growth area and the North growth area. The boundaries of the first two areas are the same as in the 2006 study. The boundaries of the third area were delimited following direction from the City Council and internal discussion of staff. The boundaries of the three areas are shown in Figure 1.

Figure 1—Growth Areas

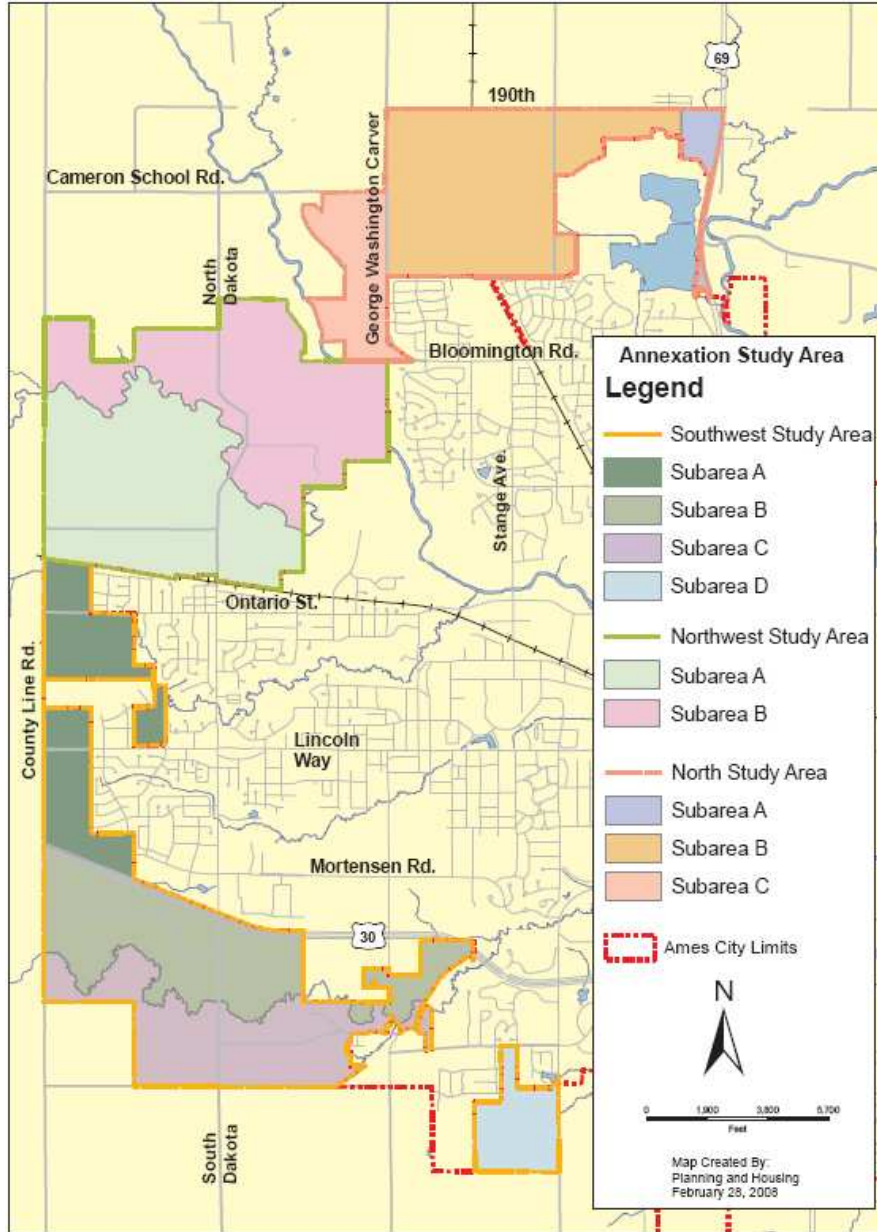


The 2006 study further broke down areas within the two study areas—the Northwest into two subareas and the Southwest into four subareas. These subareas were created to recognize the constraints—natural and man-made—that would allow the



subareas to be developed in phases. After examining the topography and infrastructure needs, the North study area was divided into three subareas. The subareas of the three growth areas are shown in Figure 2.

FIGURE 2—GROWTH AREAS AND SUBAREAS



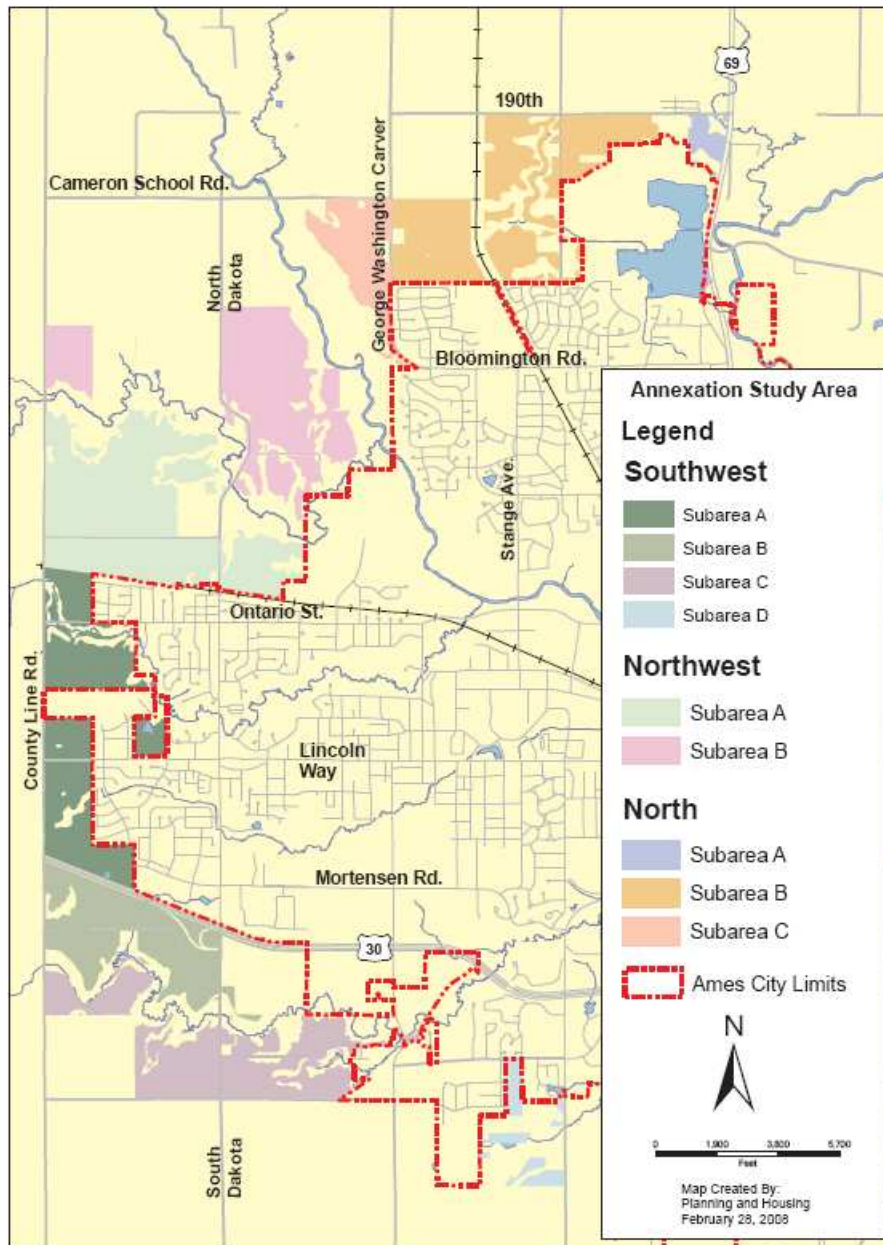
NET DEVELOPABLE ACRES AND POPULATION TARGETS

To allow for an accurate analysis of the population that could be supported within each growth area and subarea, it is necessary to determine the net developable areas within each subarea. To do this, the City's geographic information system (GIS) was used to calculate gross acres and to identify certain features that are



incompatible with further residential development and need to be removed from consideration. These lands netted out include the natural areas identified from the 1995 Norris study; flood plains as determined by the Federal Emergency Management Agency; lands sloping at greater than ten percent; lands used for existing rights-of-way; identified wetlands; and lands owned by Iowa State University or its affiliates. Once these areas were removed from consideration, a further twenty percent was removed from the remainder to accommodate the land needed during development for street rights-of-way, utility corridors, or other purposes. The result is the number of acres that could be developed solely for residential construction—the net developable acres. These acres are shown graphically in Figure 3.

FIGURE 3—NET DEVELOPABLE ACRES WITHIN SUBAREAS



The tables below show the net developable acres for each of the subareas. The tables identify the gross acres, the acres removed from consideration due to the various factors described above, and the net developable acres. Also calculated and shown is the percent of net developable acres to gross acres. This number is an indication of how “efficiently” the land can be developed, but may also give an indication of the amount of land that might be available for natural greenways, parks, trail systems, or recreational needs.

Table A, below, calculates the net developable acres for each subarea in the Southwest growth area. **It should be emphasized that these net developable acres exclude ISU-owned land.**

TABLE A—SOUTHWEST GROWTH AREA NET DEVELOPABLE ACRES

	AREA A	AREA B	AREA C	AREA D	TOTAL
GROSS ACRES	422.27	643.91	519.51	166.31	1,751.98
(HIGHLY NATURAL AREA)	10.04	60.00	74.42	20.83	165.29
(FLOOD PLAIN AREA)	21.34	77.31	37.63	10.77	147.05
(SLOPE ≥ 10%)	41.03	84.80	98.08	4.96	228.87
(EXISTING RIGHT OF WAY)	14.13	61.69	20.42	3.70	99.94
(WETLANDS)	3.76	0	0.51	0.16	4.43
(ISU/AFFILIATED LAND)	0	126.25	5.67	0	131.92
(DEVELOPED LAND)	0	71.41	11.73	99.7	182.84
(OTHER 20%)	68.58	56.20	68.40	10.62	203.80
NET DEVELOPABLE ACRES	274.30	224.78	273.62	42.48	815.18
PERCENT OF GROSS ACRES	65.0%	34.9%	52.7%	25.5%	46.5%

Table B, below, calculates the net developable acres for each subarea in the Northwest growth area. Again, these net developable acres exclude ISU-owned land.

TABLE B—NORTHWEST GROWTH AREA NET DEVELOPABLE ACRES

	AREA A	AREA B	TOTAL
GROSS ACRES	847.10	824.22	1,671.32
(HIGHLY NATURAL AREA)	133.37	174.51	307.88
(FLOOD PLAIN AREA)	63.05	155.57	218.62
(SLOPE ≥ 10%)	110.15	97.74	207.89
(EXISTING RIGHT OF WAY)	16.55	15.08	31.63
(WETLANDS)	2.02	11.89	13.91
(ISU/AFFILIATED LAND)	24.77	153.94	178.71
(DEVELOPED LAND)	74.00	1.84	75.84
(OTHER 20%)	113.58	81.96	195.54
NET DEVELOPABLE ACRES	454.31	327.86	782.17
PERCENT OF GROSS ACRES	53.6%	39.8%	46.8%

Table C, below, calculates the net developable acres for each subarea in the North growth area. There are no ISU-owned lands in the North study area.



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GROWTH TARGETED TO THE SOUTHWEST, NORTHWEST AND NORTH OF AMES

TABLE C—NORTH GROWTH AREA NET DEVELOPABLE ACRES

	AREA A	AREA B	AREA C	TOTAL
GROSS ACRES	60.98	768.47	236.09	1065.54
(HIGHLY NATURAL AREA)	0.24	54.69	21.67	76.60
(FLOOD PLAIN AREA)	1.65	0.00	57.53	59.18
(SLOPE ≥ 10%)	14.96	107.14	17.91	140.01
(EXISTING RIGHT OF WAY)	7.62	18.70	5.14	31.46
(WETLANDS)	0.61	2.09	3.05	5.75
(ISU/AFFILIATED LAND)	0.00	0.00	0.00	0.00
(DEVELOPED LAND)	10.06	222.87	6.77	239.70
(OTHER 20%)	6.53	81.246	28.60	116.38
NET DEVELOPABLE ACRES	26.10	324.98	114.42	465.50
PERCENT OF GROSS ACRES	42.8%	42.3%	48.5%	43.7%

Table D, below, shows how those net developable acres can be expected to support a projected population. The net developable acres are multiplied by 5.00 housing units per acre to determine the number of dwellings that can be accommodated within each subarea. The 5.00 housing units per acre is an average of the net densities of city subdivisions in the recent past calculated for the 2002 Land Use Policy Plan Evaluation. (Of course, a village subdivision would have greater density while a more traditional suburban development would have less density.) Finally, the numbers in the column on the right are determined by taking the number of projected dwellings and multiplying by 2.30 persons per dwelling to arrive at the projected population accommodated within each subarea. The 2.30 persons per dwelling unit is the average household size as determined by the 2000 Census.

TABLE D—PROJECTED GROWTH IN EACH AREA

	NET DEVELOPABLE ACRES	PROJECTED DWELLINGS	PROJECTED POPULATION
SOUTHWEST GROWTH AREA			
AREA A	274.31	1,372	3,155
AREA B	224.78	1,124	2,584
AREA C	273.62	1,368	3,147
AREA D	42.48	212	489
TOTAL FOR GROWTH AREA	815.18	4,076	9,375
NORTHWEST GROWTH AREA			
AREA A	454.31	2,272	5,225
AREA B	327.86	1,639	3,770
TOTAL FOR GROWTH AREA	782.17	3,911	8,995
NORTH GROWTH AREA			
AREA A	26.10	131	300
AREA B	324.98	1,625	3,737
AREA C	114.42	572	1,316
TOTAL FOR GROWTH AREA	465.50	2,328	5,353



The projected dwellings and, hence, projected population, assumes that all the net developable acres will develop with residential uses. If, however, commercial or industrial uses develop within the growth areas, this will negatively affect the projected population.

As mentioned above, the City has limited capacity for growth within its existing boundaries. This minimal potential growth can be accommodated through the buildout of existing subdivisions, the development of vacant land, or the intensification of densities within existing built out areas. Estimates of the extent of that potential growth in currently platted lots within the city limits were given above. These estimates are included in Table E, below, along with the US Census Bureau estimate of the city's population in 2006. They are then added to the population accommodated within each subarea to see how the development of each subarea can meet the targeted population identified in the LUPP.

TABLE E—PROJECTED GROWTH TOWARD TARGET POPULATION

	2006 CITY POPULATION (EST)	IN-CITY PROJECTED POPULATION	SUBAREA PROJECTED POPULATION	FULL BUILDOUT PROJECTED POPULATION
	51,557	2,277		
SOUTHWEST GROWTH AREA				
AREA A			3,155	56,989
AREA B			2,584	56,418
AREA C			3,147	56,981
AREA D			489	54,323
TOTAL FOR GROWTH AREA			9,375	63,209
NORTHWEST GROWTH AREA				
AREA A			5,225	59,059
AREA B			3,770	57,604
TOTAL FOR GROWTH AREA			8,995	62,829
NORTH GROWTH AREA				
AREA A			300	54,134
AREA B			3,737	57,571
AREA C			1,316	55,150
TOTAL FOR GROWTH AREA			5,353	59,187

SCHOOL DISTRICT IMPACTS

An important aspect of land development within the city is the impact on school district enrollment figures. Recent residential growth to the north has sent the children of many Ames families to the Gilbert Community School District. Some of the growth to the southwest has occurred within the United Community School District. Community members and the City Council have gained a growing awareness of the impact of level or declining student enrollments on the Ames Community School District.

Figure 4, below, shows the net developable acres in each of the study areas as they lie within the school district boundaries. Using the same methodology as above, a



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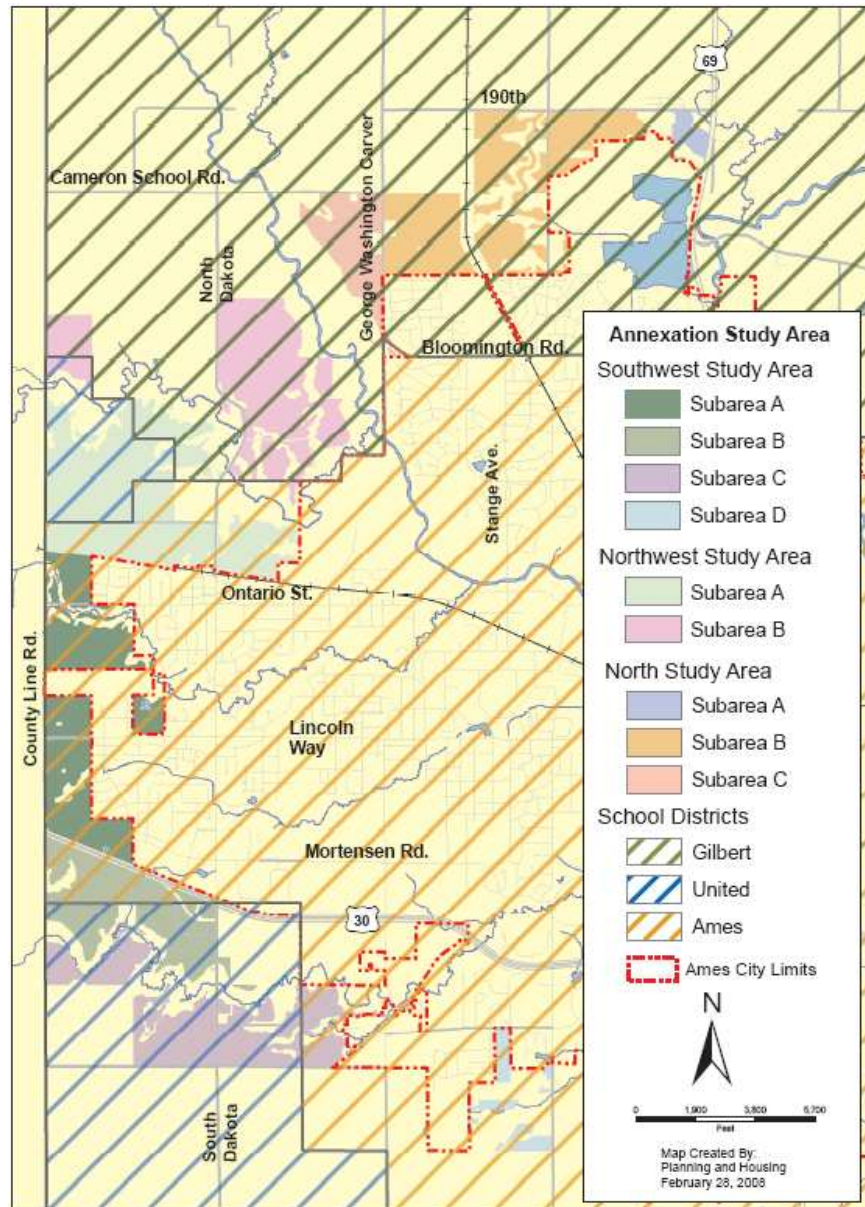
count of dwelling units that each school district would realize at full buildout is shown in Table F.

TABLE F—IMPACTS OF PROJECTED GROWTH ON SCHOOL DISTRICTS

	AMES COMMUNITY SCHOOL DISTRICT		GILBERT COMMUNITY SCHOOL DISTRICT		UNITED COMMUNITY SCHOOL DISTRICT	
	Acres	Dwelling Units	Acres	Dwelling Units	Acres	Dwelling Units
SOUTHWEST GROWTH AREA						
AREA A	274.30	1372	0.00	0	0.00	0
AREA B	94.06	470	0.00	0	130.73	654
AREA C	50.74	254	0.00	0	222.88	1114
AREA D	42.48	212	0.00	0	0.00	0
TOTAL FOR GROWTH AREA	461.58	2308	0.00	0	353.61	1768
NORTHWEST GROWTH AREA						
AREA A	216.27	1081	54.34	272	183.70	919
AREA B	3.30	17	308.14	1541	16.42	82
TOTAL FOR GROWTH AREA	219.57	1098	362.48	1812	200.12	1001
NORTH GROWTH AREA						
AREA A	0.00	0	26.10	131	0.00	0
AREA B	0.00	0	324.98	1625	0.00	0
AREA C	1.92	10	112.49	562	0.00	0
TOTAL FOR GROWTH AREA	1.92	10	463.58	2318	0.00	0



FIGURE 4—NET DEVELOPABLE ACRES WITHIN SCHOOL DISTRICTS

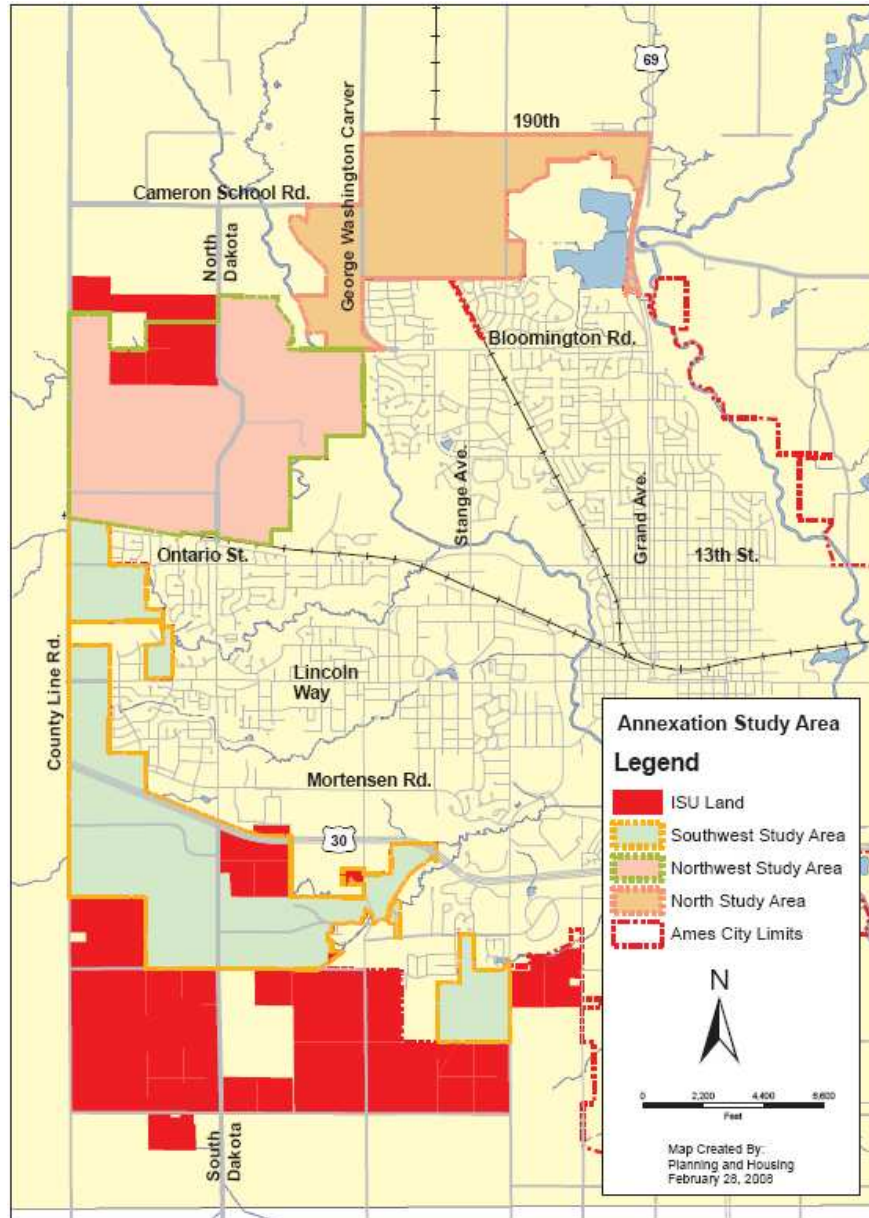


ISU IMPACTS

Staff met with ISU representatives several times during the course of the 2006 study. These representatives stated that the University has no intention of making any of their lands within the growth areas or beyond available for private development. Rather, the University's long-range plan places a high premium on holding onto these lands for future teaching and research uses in locations convenient to the main campus. This is particularly true for University land within or adjacent to the Southwest growth area. Furthermore, University affiliates are continuing their efforts to acquire additional agricultural lands immediately south of the City for these same

long-term purposes. Staff was assured then and for this study, however, that the University has no intention of acquiring any unincorporated lands that lay within the City's Southwest Growth Area. Figure 5 identifies the ISU-owned lands within and adjacent to the growth study areas.

FIGURE 5—ISU-OWNED LANDS



CAPITAL COSTS

In order to reach the population goals of the Land Use Policy Plan, development in the growth areas will need full city services, including sanitary sewer, public water, paved streets, police and fire protection, and transit service. Costs have been calculated to provide these services to each of the identified subareas in the Southwest, Northwest, and North. Costs were calculated on the full value of the infrastructure (Tables G, H, I) and, also, on the oversize* only costs of the infrastructure (Tables J, K, L). These two sets of numbers allow the City Council to consider funding scenarios in which the City may choose to participate in all, a portion, or none of the infrastructure costs. For example, the City’s Capital Investment Strategy describes policies whereby the City will pay a percentage of all major infrastructure (sewer trunk lines, water mains, arterial streets) serving a Village Residential development within the Southwest priority growth area, oversizing costs only of a Suburban Residential development within the Northwest priority growth area, or none of the costs outside of either of the priority growth areas.

STREETS, SEWERS, WATER

Tables G, H, and I show total costs for infrastructure improvements—Tables J, K, L are the oversize only costs. The street improvements include specific projects within or near the study areas needed to accommodate traffic flow due to growth in the study area. These project costs are generally borne by the developer, but the City may choose to participate in the oversize costs (in accordance with the Capital Investment Strategy). A brief description of these street improvements is given in each section. The costs of the sanitary sewer and water mains are for main trunk lines only. For sanitary sewer mains, service was planned without the need for lift stations. For water mains, the lines were looped to provide better service. Again, the tables show total costs for these utilities and for the oversize only costs.

Southwest Total Costs

Table G, below, calculates the total costs of infrastructure improvements in the Southwest growth area and each of its subareas. Full infrastructure development costs are estimated at \$18,954,495.

TABLE G—SOUTHWEST GROWTH AREA INFRASTRUCTURE TOTAL COSTS

	AREA A	AREA B	AREA C	AREA D	TOTAL
STREET IMPROVEMENTS	\$3,857,508	\$3,789,190	\$2,080,607	\$1,135,608	
SANITARY SEWER	-	\$1,660,050	\$1,640,724	\$458,238	
WATER MAIN	\$1,038,048	\$1,107,370	\$1,861,222	\$325,930	
TOTAL	\$4,895,556	\$6,556,610	\$5,582,553	\$1,919,776	\$18,954,495
TOTAL INFRASTRUCTURE COST PER DEVELOPABLE ACRE	\$17,847	\$29,169	\$20,403	\$45,192	\$23,252

* Oversize costs include the incremental cost of the increased size of the infrastructure as well as system improvements that may be needed but not considered specific to a particular development.



Southwest Growth Area street improvements include, for Area A, County Line Road improvements and the extension of Mortensen Road. For Area B, improvements to County Line Road and 240th Street. For Area C, improvements to Dartmoor Road and County Line Road. And for Area D, improvements to University Boulevard.

Northwest Total Costs

Table H, below, calculates the total costs of infrastructure improvements in the Northwest growth area and each of its subareas. Full infrastructure development costs are estimated at \$9,470,692.

TABLE H—NORTHWEST GROWTH AREA INFRASTRUCTURE TOTAL COSTS

	AREA A	AREA B	TOTAL
STREET IMPROVEMENTS	\$2,486,302	-	
SANITARY SEWER	\$2,365,641	\$976,894	
WATER MAIN	\$1,702,635	\$1,939,520	
TOTAL	\$6,554,278	\$2,916,414	\$9,470,692
TOTAL INFRASTRUCTURE COST PER DEVELOPABLE ACRE	\$14,427	\$8,895	\$12,108

Northwest Growth Area street improvements for Area A include the paving of 215th Street, improvements to the N. Dakota Ave./Ontario St. intersection, and revising the traffic flow of Ontario Street to 3 lanes of traffic by removing the north-side on-street parking. No further street improvements are necessary for Area B.

North Total Costs

Table I, below, calculates the total costs of infrastructure improvements in the North growth area. Full infrastructure development costs are estimated at \$7,098,912.

TABLE I—NORTH GROWTH AREA INFRASTRUCTURE TOTAL COSTS

	AREA A	AREA B	AREA C	TOTAL
STREET IMPROVEMENTS	-	\$3,595,320	-	
SANITARY SEWER	\$843,510	\$1,354,104	\$1,227,792	
WATER MAIN	\$958,529	\$2,149,488	\$223,850	
TOTAL	\$1,802,039	\$7,098,912	\$1,451,642	\$10,352,593
TOTAL INFRASTRUCTURE COST PER DEVELOPABLE ACRE	\$69,043	\$21,844	\$12,687	\$22,240

North Growth Area street improvements include paving Hyde (Grant) Avenue, the extension of Stange Road, installation of turn lanes, and Bloomington Road/Hyde Avenue intersection improvements.



Southwest Oversize Only Costs

Table J, below, calculates only the oversize costs of infrastructure improvements in the Southwest growth area. Oversize only infrastructure costs are estimated at \$3,973,492.

TABLE J—SOUTHWEST GROWTH AREA INFRASTRUCTURE OVERSIZE COSTS

	AREA A	AREA B	AREA C	AREA D	TOTAL
STREET IMPROVEMENTS	\$780,861	\$721,418	\$411,388	\$215,929	
SANITARY SEWER	-	\$459,870	\$333,504	\$73,898	
WATER MAIN	\$285,186	\$238,040	\$377,938	\$75,460	
TOTAL	\$1,066,047	\$1,419,328	\$1,122,830	\$365,287	\$3,973,492
TOTAL OVERSIZE COST PER DEVELOPABLE ACRE	\$3,886	\$6,314	\$4,104	\$8,599	\$4,874

Northwest Oversize Only Costs

Table K, below, calculates only the oversize costs of infrastructure improvements in the Northwest growth area. Oversize only infrastructure costs are estimated at \$2,347,116.

TABLE K—NORTHWEST GROWTH AREA INFRASTRUCTURE OVERSIZE COSTS

	AREA A	AREA B	TOTAL
STREET IMPROVEMENTS	\$392,779	-	
SANITARY SEWER	\$705,056	\$411,219	
WATER MAIN	\$411,262	\$426,800	
TOTAL	\$1,509,097	\$838,019	\$2,347,116
TOTAL OVERSIZE COST PER DEVELOPABLE ACRE	\$3,322	\$2,556	\$3,001

North Oversize Only Costs

Table L, below, calculates only the oversize costs of infrastructure improvements in the North growth area. Oversize only infrastructure costs are estimated at \$1,502,445.

TABLE L—NORTH GROWTH AREA INFRASTRUCTURE OVERSIZE COSTS

	AREA A	AREA B	AREA C	TOTAL
STREET IMPROVEMENTS	-	\$657,553	-	
SANITARY SEWER	\$431,610	\$285,168	\$475,272	
WATER MAIN	\$249,403	\$560,824	\$57,420	
TOTAL	\$680,013	\$1,503,545	\$532,692	\$2,716,250
TOTAL OVERSIZE COST PER DEVELOPABLE ACRE	\$26,054	\$4,627	\$4,656	\$6,237



Figures 6, 7, and 8 show the general location of the proposed infrastructure for each of the growth areas. This map is intended to identify general—not specific—locations. A closer approximation of the location of infrastructure could be found only after a more exhaustive engineering analysis.

FIGURE 6—SOUTHWEST PROPOSED INFRASTRUCTURE IMPROVEMENTS

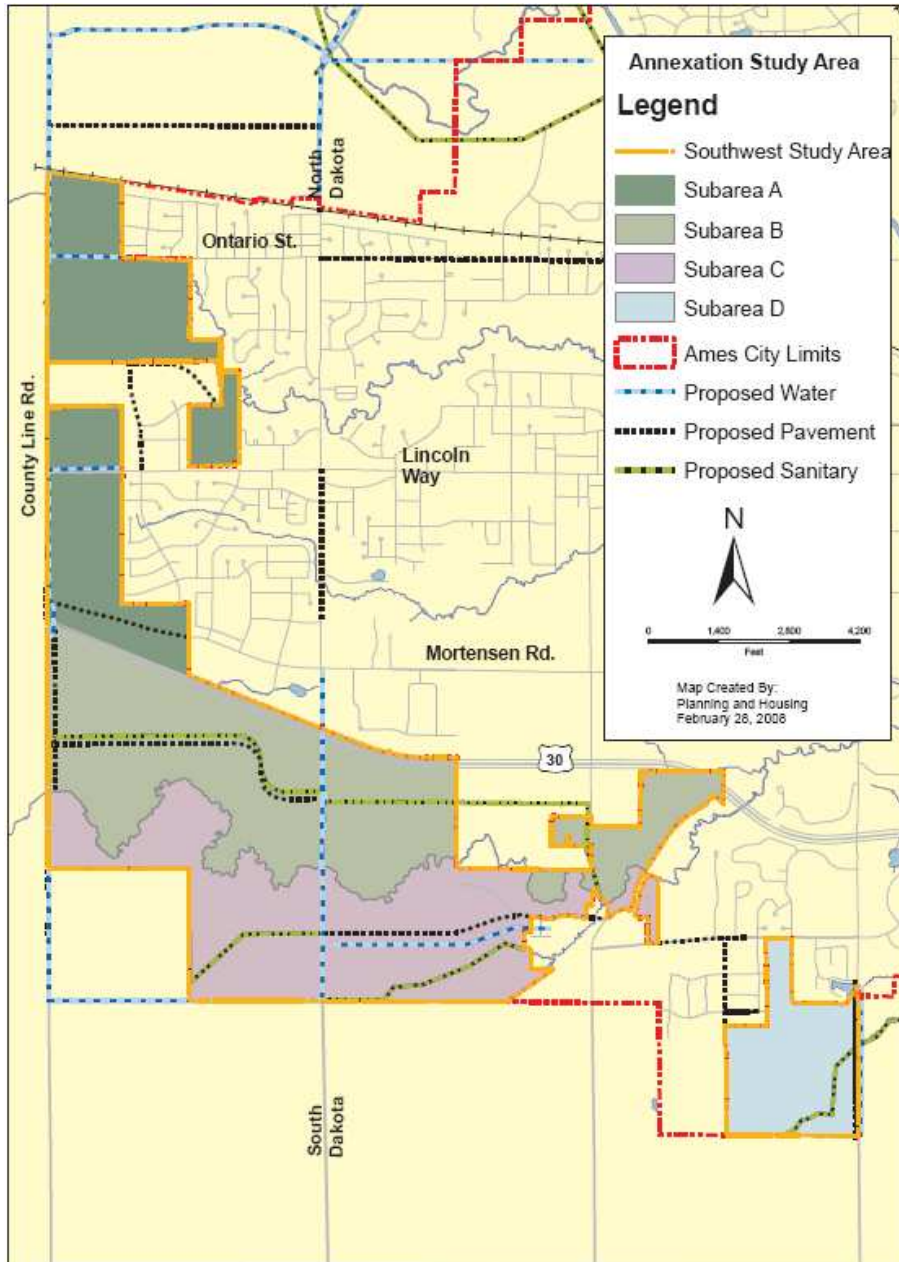


FIGURE 7—NORTHWEST PROPOSED INFRASTRUCTURE IMPROVEMENTS

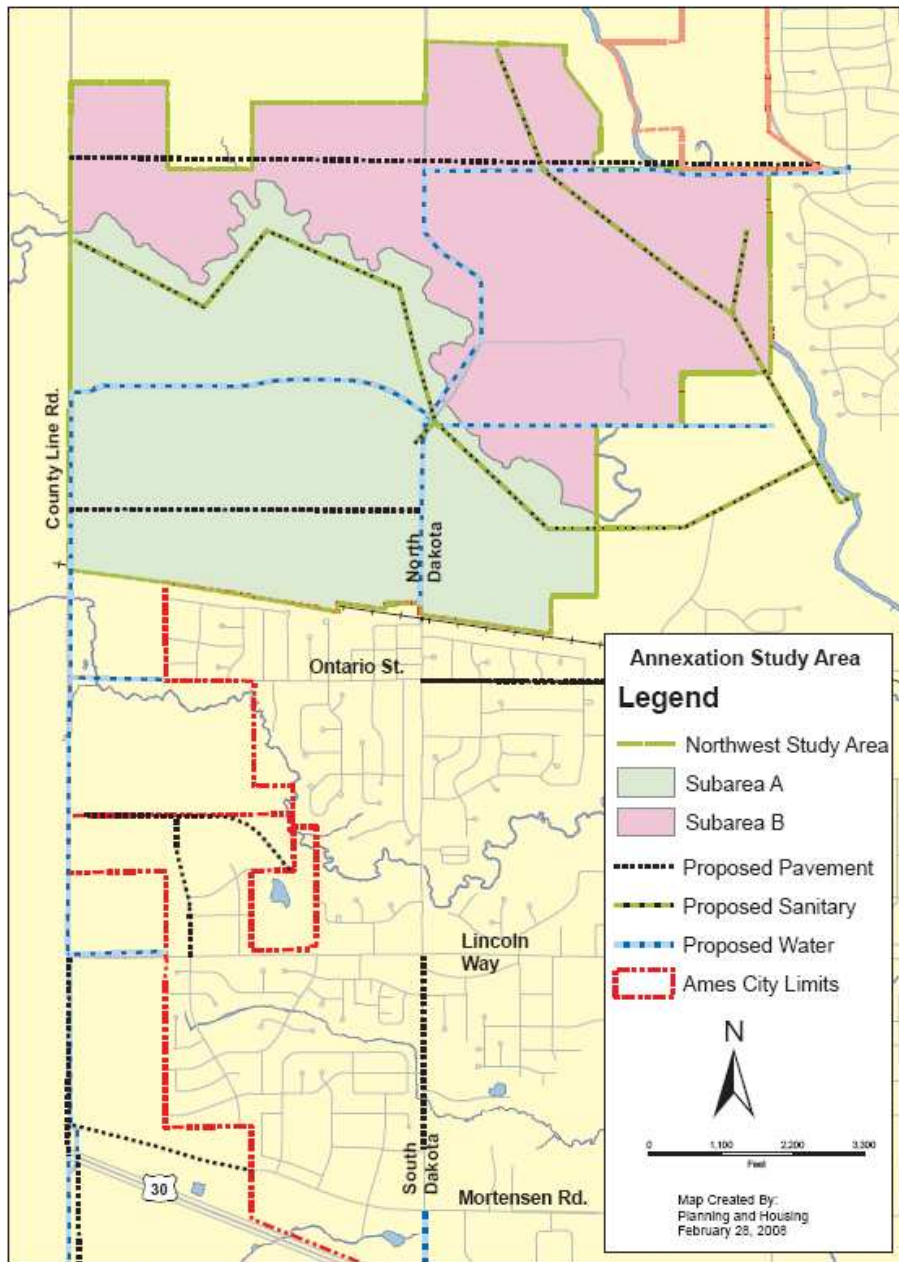
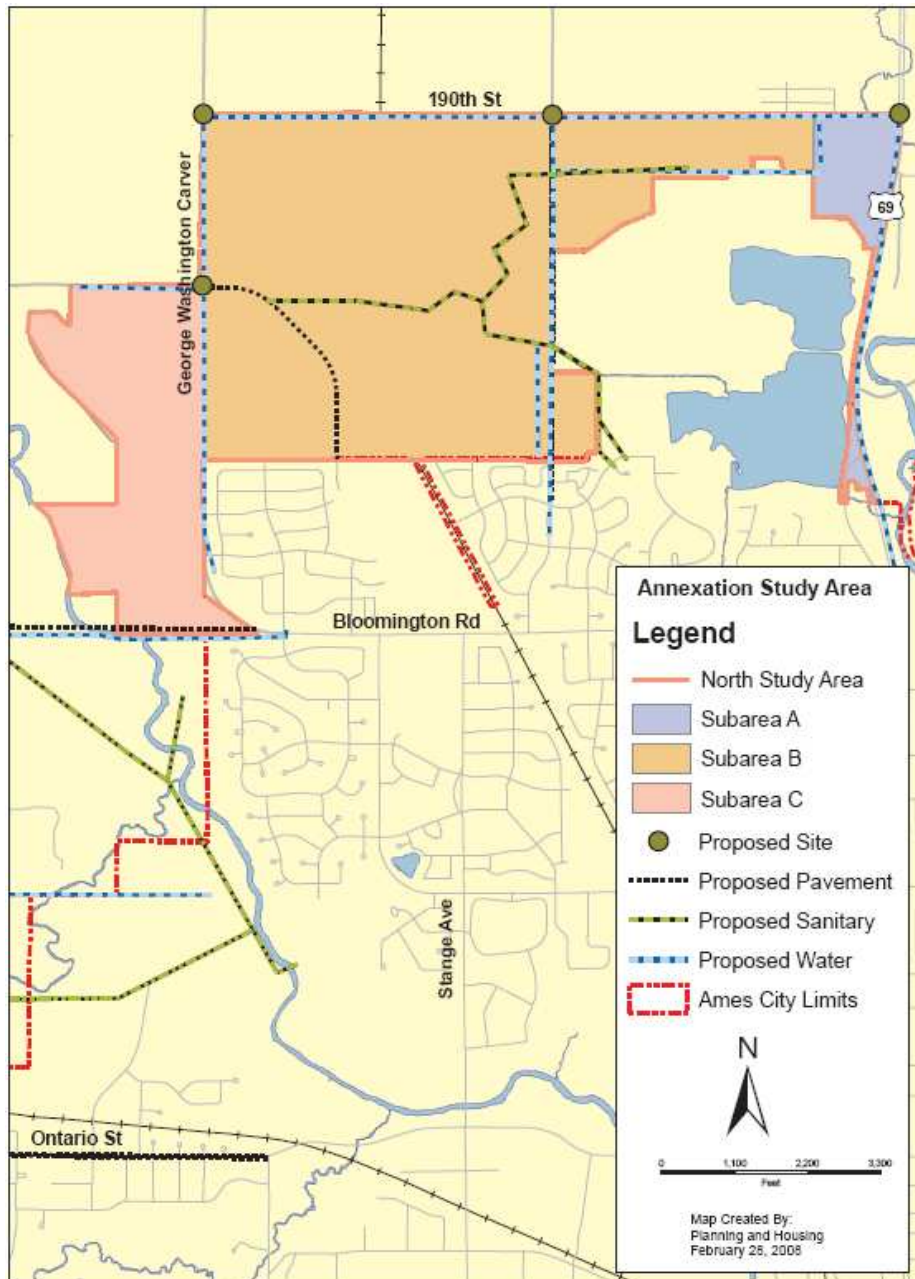


FIGURE 8—NORTH PROPOSED INFRASTRUCTURE IMPROVEMENTS



NETWORK TRAFFIC IMPROVEMENTS

Growth anywhere in the community adds to the traffic load borne by our street system. Beyond the immediate street improvements identified above, these system needs would not be a prerequisite for development to occur. However, using the growth priorities (to the Southwest and Northwest), the population projections, and the land use designations of the Land Use Policy Plan, a number of projects were identified by the Ames Area Metropolitan Planning Organization's Long Range

Transportation Plan that would be needed in order to maintain the desired level of service and to avoid congestion delays. These improvements include a widening of South Dakota Avenue from Lincoln Way to Mortensen Road; an extension of Bloomington Road westerly to County Line Road; a North Dakota Avenue overpass over the Union Pacific railroad tracks; an extension of Bloomington Road easterly from Grand Avenue to 570th Avenue; and a widening of US 69 from 190th Street to the existing four-lane section north of Bloomington Road. These projects were identified in response to the needs identified based on priority growth to the Southwest and Northwest. Growth to the North (or to the North and any other combination) would require an update to the Long-Range Transportation Plan (and the computer modeling) to identify network improvements based on those changed priorities.

The costs of these improvements are shown in Table M. These costs, however, do not include the costs of the local improvements within each growth area identified earlier. They are not necessarily identified with growth in any particular direction. In fact, they were based on growth priorities that did not include development in the North. A clearer indication of proposed traffic network improvements can be had only after updating the Long-Range Transportation Plan to reflect new assumptions on growth directions.

TABLE M—NETWORK TRAFFIC IMPROVEMENTS

PROJECT	COST
SOUTH DAKOTA AVE. WIDENING (LINCOLN WAY TO MORTENSEN RD.)	\$2,000,000
BLOOMINGTON ROAD WEST EXTENSION (G.W. CARVER AVE. TO COUNTY LINE ROAD)	\$18,700,000
DAKOTA AVENUE OVERPASS OVER UP TRACKS	\$5,000,000
BLOOMINGTON ROAD EAST EXTENSION (GRAND AVE. TO 570 TH AVE.)	\$25,000,000
US 69 WIDENING (190 TH ST. TO EXISTING FOUR-LANE)	\$3,200,000

OTHER CAPITAL COSTS (FIRE DEPARTMENT AND CYRIDE)

Most capital costs for the City are non-directional, that is, they tend to rise based on the growth of the city population regardless of direction. However, two departments in particular have identified capital costs reflecting growth in a directional pattern. These capital costs reflect the needs of the Fire Department and of CyRide. Growth to the Southwest study area or the Northwest study area will require the relocation of Fire Station #2 at a cost of \$2,340,000. A new Fire Station #4 would be needed for growth to the North study area. The capital costs of a new fire station, including new apparatus, are \$3,340,000.

Further growth to the Southwest study area will require three new buses while growth in the Northwest and North study areas will require the purchase of one bus each to provide service.



AN ANALYSIS OF THE COSTS AND DEVELOPMENT POSSIBILITIES OF
GROWTH TARGETED TO THE SOUTHWEST, NORTHWEST AND NORTH OF AMES

TABLE N—DIRECTIONAL GROWTH IMPACTS ON FIRE DEPARTMENT

	SOUTHWEST	NORTHWEST	NORTH
LAND ACQUISITION	-	-	\$200,000
NEW FIRE STATION	\$2,200,000	\$2,200,000	\$2,200,000
FURNISHINGS & FIXTURES	\$140,000	\$140,000	\$140,000
APPARATUS & EQUIPMENT	-	-	\$800,000
TOTAL	\$2,340,000	\$2,340,000	\$3,340,000

TABLE O—DIRECTIONAL GROWTH IMPACTS ON CYRIDE

	SOUTHWEST	NORTHWEST	NORTH
40-FOOT HEAVY DUTY BUSES AT \$335,000 EACH	\$1,005,000	\$335,000	\$335,000



ANNUAL OPERATING COSTS (FIRE DEPARTMENT AND CYRIDE)

Much of the annual operating costs to the City of an expanding population are non-directional—that is, they will occur in an amount that is not dependent on the direction of that growth. Those costs are not shown in this report. However, some costs can be ascribed to directional growth. The data below show the differentiated annual operating costs associated with targeted growth to the Southwest, Northwest, and North.

TABLE P—IMPACTS ON OPERATING COSTS DUE TO DIRECTIONAL GROWTH

	SOUTHWEST	NORTHWEST	NORTH
FIRE DEPARTMENT	-	-	\$868,000
CYRIDE	\$263,699	\$97,131	\$109,544
TOTAL	\$263,699	\$97,131	\$977,544



SUMMARY OF COSTS

The tables below summarize the capital costs of annexing and developing the three study areas and the net developable acres gained. These tables calculate the cost per developable acre as well as the cost per capita of the necessary improvements within each growth area.

The layout of Tables Q, R, and S summarize the gross and net developable acres and the population that those acres would support. The tables also summarize the total infrastructure costs, the oversize only costs, and the fire station and CyRide costs. The tables then lay out the calculated cost per developable acre and the cost per capita (for both the total costs and the oversize only costs and including the fire station and CyRide costs). The tables also show the calculated cost per developable acre and per capita for the increase in operating expenses for each growth area. And finally, the net developable acres and potential dwelling units within the Ames Community School District are shown.

TABLE Q—SOUTHWEST SUMMARY*

	AREA A	AREA B	AREA C	AREA D	TOTAL
GROSS ACRES	422.27	643.91	519.51	166.31	1,751.98
NET DEVELOPABLE ACRES	274.30	224.78	273.61	42.48	815.18
PROJECTED POPULATION	3,155	2,584	3,147	489	9,375
TOTAL INFRASTRUCTURE COSTS					
TOTAL INFRASTRUCTURE COSTS	\$4,895,556	\$6,556,610	\$5,582,553	\$1,919,776	\$18,954,495
TOTAL OVERSIZE COSTS					
TOTAL OVERSIZE COSTS	\$1,066,047	\$1,419,328	\$1,122,830	\$365,287	\$3,973,492
FIRE STATION RELOCATION					\$2,340,000
CYRIDE CAPITAL COSTS					\$1,005,000
TOTAL INFRASTRUCTURE COST PER DEVELOPABLE ACRE					
TOTAL INFRASTRUCTURE COST PER DEVELOPABLE ACRE	\$17,847	\$29,169	\$20,403	\$45,192	\$27,355
TOTAL OVERSIZE COST PER DEVELOPABLE ACRE					
TOTAL OVERSIZE COST PER DEVELOPABLE ACRE	\$3,886	\$6,314	\$4,104	\$8,599	\$8,978
TOTAL INFRASTRUCTURE COST PER CAPITA					
TOTAL INFRASTRUCTURE COST PER CAPITA	\$1,552	\$2,537	\$1,774	\$3,926	\$2,379
TOTAL OVERSIZE COST PER CAPITA					
TOTAL OVERSIZE COST PER CAPITA	\$338	\$549	\$357	\$747	\$781
FIRE STATION OPERATING COSTS					
FIRE STATION OPERATING COSTS					-
CYRIDE OPERATING COSTS					
CYRIDE OPERATING COSTS					\$263,699
TOTAL ANNUAL OPERATING COSTS					
TOTAL ANNUAL OPERATING COSTS					\$263,699
TOTAL ANNUAL OPERATING COST PER DEVELOPABLE ACRE					
TOTAL ANNUAL OPERATING COST PER DEVELOPABLE ACRE					323
TOTAL ANNUAL OPERATING COST PER CAPITA					
TOTAL ANNUAL OPERATING COST PER CAPITA					28
NET DEVELOPABLE ACRES IN AMES COMMUNITY SCHOOL DISTRICT					
NET DEVELOPABLE ACRES IN AMES COMMUNITY SCHOOL DISTRICT	274.30	94.06	50.74	42.48	461.58
DWELLING UNITS IN AMES COMMUNITY SCHOOL DISTRICT					
DWELLING UNITS IN AMES COMMUNITY SCHOOL DISTRICT	1372	470	254	212	2308

* In calculating the “Cost per Developable Acre” and “Cost per Capita,” only the “Total” column includes the Fire Station and CyRide capital costs. The “Area” columns do not.



AN ANALYSIS OF THE COSTS AND DEVELOPMENT POSSIBILITIES OF
GROWTH TARGETED TO THE SOUTHWEST, NORTHWEST AND NORTH OF AMES

TABLE R—NORTHWEST SUMMARY*

	AREA A	AREA B	TOTAL
GROSS ACRES	847.10	824.22	1,671.32
NET DEVELOPABLE ACRES	454.31	327.80	782.17
PROJECTED POPULATION	5,225	3,770	8,995
TOTAL INFRASTRUCTURE COSTS			
	\$6,554,278	\$2,916,414	\$9,470,692
TOTAL OVERSIZE COSTS			
	\$1,509,097	\$838,019	\$2,347,116
FIRE STATION RELOCATION			\$2,340,000
CYRIDE CAPITAL COSTS			\$335,000
TOTAL INFRASTRUCTURE COST PER DEVELOPABLE ACRE			
	\$14,427	\$8,895	\$15,528
TOTAL OVERSIZE COST PER DEVELOPABLE ACRE			
	\$3,322	\$2,556	\$6,421
TOTAL INFRASTRUCTURE COST PER CAPITA			
	\$1,254	\$774	\$1,350
TOTAL OVERSIZE COST PER CAPITA			
	\$289	\$222	\$558
FIRE STATION OPERATING COSTS			
			-
CYRIDE OPERATING COSTS			
			\$97,131
TOTAL ANNUAL OPERATING COSTS			
			\$97,131
TOTAL ANNUAL OPERATING COST PER DEVELOPABLE ACRE			
			\$124
TOTAL ANNUAL OPERATING COST PER CAPITA			
			\$11
NET DEVELOPABLE ACRES IN AMES COMMUNITY SCHOOL DISTRICT			
	216.57	3.30	219.57
DWELLING UNITS IN AMES COMMUNITY SCHOOL DISTRICT			
	1083	17	1100

* In calculating the “Cost per Developable Acre” and “Cost per Capita,” only the “Total” column includes the Fire Station and CyRide capital costs. The “Area” columns do not.



AN ANALYSIS OF THE COSTS AND DEVELOPMENT POSSIBILITIES OF
GROWTH TARGETED TO THE SOUTHWEST, NORTHWEST AND NORTH OF AMES

TABLE S—NORTH SUMMARY*

	AREA A	AREA B	AREA C	TOTAL
GROSS ACRES	60.98	768.47	236.09	1,065.54
NET DEVELOPABLE ACRES	26.10	324.95	114.42	465.50
PROJECTED POPULATION	300	3,737	1,316	5,353
TOTAL INFRASTRUCTURE COSTS				
TOTAL INFRASTRUCTURE COSTS	\$1,802,039	\$7,098,912	\$1,451,642	\$10,352,593
TOTAL OVERSIZE COSTS				
TOTAL OVERSIZE COSTS	\$680,013	\$1,503,545	\$532,692	\$2,716,250
NEW FIRE STATION				\$3,340,000
CYRIDE CAPITAL COSTS				\$335,000
TOTAL INFRASTRUCTURE COST PER DEVELOPABLE ACRE				
TOTAL INFRASTRUCTURE COST PER DEVELOPABLE ACRE	\$69,043	\$21,846	\$12,687	\$30,134
TOTAL OVERSIZE COST PER DEVELOPABLE ACRE				
TOTAL OVERSIZE COST PER DEVELOPABLE ACRE	\$2,654	\$4,627	\$4,656	\$13,730
TOTAL INFRASTRUCTURE COST PER CAPITA				
TOTAL INFRASTRUCTURE COST PER CAPITA	\$6,007	\$1,900	\$1,103	\$2,620
TOTAL OVERSIZE COST PER CAPITA				
TOTAL OVERSIZE COST PER CAPITA	\$2,267	\$402	\$405	\$2,744
FIRE STATION OPERATING COSTS				
FIRE STATION OPERATING COSTS				\$868,000
CYRIDE OPERATING COSTS				
CYRIDE OPERATING COSTS				\$109,544
TOTAL ANNUAL OPERATING COSTS				
TOTAL ANNUAL OPERATING COSTS				\$977,544
TOTAL ANNUAL OPERATING COST PER DEVELOPABLE ACRE				
TOTAL ANNUAL OPERATING COST PER DEVELOPABLE ACRE				\$2,100
TOTAL ANNUAL OPERATING COST PER CAPITA				
TOTAL ANNUAL OPERATING COST PER CAPITA				\$183
NET DEVELOPABLE ACRES IN AMES COMMUNITY SCHOOL DISTRICT				
NET DEVELOPABLE ACRES IN AMES COMMUNITY SCHOOL DISTRICT	0	0	1.92	1.92
DWELLING UNITS IN AMES COMMUNITY SCHOOL DISTRICT				
DWELLING UNITS IN AMES COMMUNITY SCHOOL DISTRICT	0	0	10	10

* In calculating the “Cost per Developable Acre” and “Cost per Capita,” only the “Total” column includes the Fire Station and CyRide capital costs. The “Area” columns do not.



CURRENT POLICIES AND PROCESS TO CHANGE

LAND USE POLICY PLAN

The Land Use Policy Plan (LUPP) clearly articulates priority growth areas. These are the Southwest and, as an alternative, the Northwest. The first paragraph of Chapter Six: Implementation of the LUPP states:

Priority Areas for Growth. There is a need to identify new areas for growth and to establish priorities for their availability and development. The City has expanded eastward to the constraints formed by Interstate 35 and the Skunk River's floodplain; northward to the constraints formed by topographic change and accompanying environmental impact; westward to the constraints formed by the political boundary of Boone County and by large ISU holdings; and, southward, to the constraints formed by Highway 30, large ISU holdings and the airport protection zone. Because of these development constraints and the resulting landlocked pattern for the City, Ames must seek a more targeted growth pattern. [p. 107]

The LUPP then went on to prescribe the target growth areas—the priority growth area of the Southwest and the alternative growth area of the Northwest.

Southwest Growth Priority Area. Portions of the City and Planning Area near the western limit of Highway 30 are recommended for designation as a priority area for growth. The southwest area is recommended as the first priority area for new growth. To the extent that major landholders can make sites available, new development should be concentrated in that area. [p. 107]

And

Northwest Growth Priority Area. In addition to the initial southwest growth priority area, an alternative northwest growth priority is recommended. The northwest growth priority area would be initiated in the event that one or both of the following conditions occur:

- The southwest growth priority area is substantially completed and additional residential expansion area is needed; and
- Unforeseen constraints significantly limit the capacity for development of the southwest area. [p. 108]

The LUPP also articulated a Capital Investment Strategy, creating policies on whether and to what degree the City would participate in the capital costs of developing infrastructure within or outside the priority growth areas. In summary, the City's Capital Investment Strategy describes policies whereby the City will pay some percentage of all major infrastructure serving a Village Residential development within the Southwest priority growth area, oversizing costs only of a Suburban Residential development within either priority growth area, and none of the costs outside of a priority growth area. [p. 110-111]

The City has also adopted the Urban Fringe Plan as an amendment to the LUPP. This amendment brings to the table the jurisdictions of Story County and the City of Gilbert when implementing changes to the Land Use Policy Plan Map outside the



City limits. The exact mechanism for this multilateral review has not been applied yet, but must be considered if changes are to occur to the Urban Fringe Area Plan.

REPRIORITIZATION AND THE LUPP

If the City Council wishes to redirect its prioritized growth options or its capital investment strategy, the Council should first direct that changes in the Land Use Policy Plan be prepared and processed. It is this plan that staff and the City Council have used to ensure orderly, efficient growth. The process to amend the plan would involve accepting public input, doing further research, and preparing the necessary text and map amendments to the LUPP. Staff would also analyze the impacts to the Urban Fringe Area Plan and the process we have started with Story County, Boone County, and Gilbert. The process would include a public hearing of the Planning and Zoning Commission and action by the City Council.

FINDINGS

Below are the findings that staff identified based on the data of this report. While these findings may argue both ways for designating each of the study areas as a priority growth area, their intent is to spark discussion among the City Council and the community as to what issues are important in deciding the direction of growth for the city to meet its population targets.

- Growth to the Southwest provides the greatest Net Developable Acres (815.18 acres), followed by growth to the Northwest (782.17 acres), then to the North (465.50 acres).
- Growth to the Southwest provides the greatest population increase (9,375), followed by growth to the Northwest (8,995), then to the North (5,353).
- The Land Use Policy Plan's 2030 population targets could be met by the Southwest growth area alone (63,209); by the Northwest growth area alone (62,829); or by the North growth area (59,187) in combination with some portion of the Southwest or Northwest.
- Development of the Southwest growth area provides the greatest growth for the Ames Community School District (2,308 dwelling units), followed by the Northwest (1,098 dwelling units), and the North (10 dwelling units).
- Further growth beyond the Southwest and Northwest growth areas is constrained by ISU-owned land.
- Growth to the Southwest has the greatest capital and infrastructure total cost (22,299,495).
- Growth to the Northwest has the least capital and infrastructure total cost (\$12,145,692).
- Growth to the Southwest has the greatest capital and infrastructure oversize cost (\$7,318,492).
- Growth to the Northwest has the least capital and infrastructure oversize cost (\$5,022,116).
- Growth to the North has the greatest capital and infrastructure total cost per net developable acre (\$30,134).



- Growth to the Northwest has the least capital and infrastructure total cost per net developable acre (\$15,528).
- Growth to the North has the greatest capital and infrastructure oversize cost per net developable acre (\$13,730).
- Growth to the Northwest has the least capital and infrastructure oversize cost per net developable acre (\$6,421).
- Growth to the North requires an additional fire station to construct and equip (\$3,340,000).
- Growth to the Northwest and/or the Southwest requires the relocation of Fire Station #2 (\$2,340,000)
- Growth to the Southwest requires two additional CyRide buses (\$670,000) more than growth to the Northwest or North.
- Growth to the North requires annual operational costs of a new fire station (\$868,000).
- Growth to the Southwest requires annual operational costs of CyRide (about \$160,000) more than growth to the Northwest or North.

OTHER ISSUES

In addition to the cost-benefit analysis shown in the preceding sections of this report, there are also several other issues that should be considered. These issues may be important to the City Council in determining the wisest direction for future growth. These issues include the following:

- In addition to considering the cost-benefit analysis above in order to select a preferred growth direction, the City Council could also take into consideration directional growth that allows the City to best protect valued environmental resources such as Ada Hayden Heritage Park.
- While the Council may desire to choose the most cost-effective direction for growth, it should be emphasized that unless the property owners are willing to make their land available for development, the City will not be able to reach its growth needs in that given direction.
- In addition to the cost-benefit analysis, the City Council might also want to consider the potential for expansion beyond the 2030 time frame of the LUPP for each of the growth areas.
- In terms of long-range transportation planning, the Council should also consider how changes in the priority growth areas impact the Long-Range Transportation Plan and the proposed network traffic improvements. However, answers to these questions will not be available until the new Plan is completed (by October 2010).
- Although the current Land Use Policy Plan draws a growth boundary at the Boone County line, the Council could consider moving across this roadway. This would involve an analysis of the infrastructure requirements to serve an expanded area directly to the west of the current planning area.