

Staff Report

Industrial Study

July 2002



Prepared by the
Department of Planning and Housing
City of Ames, Iowa

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I. Purpose for the Study

A. Chamber Request

On February 19, 2002 the Board of Directors of the Ames Economic Development Commission (AEDC) submitted a memorandum to City Council outlining their concerns about the availability of industrial land in the City of Ames. The letter addressed the following concerns:

- The Land Use Policy Plan indicates that the City of Ames will need 300 to 375 acres of industrial land to accommodate a projected manufacturing employment growth of 1,300 to 1,700 jobs between the years 1994 to 2030. Barilla America consumed 250 acres of planned industrial expansion area providing 150 additional jobs. More land should be planned to replace the large land resources consumed by Barilla America.
- The ISU Research Park cannot be used for general manufacturing purposes.
- Existing industrial sites are too small to accommodate large industrial growth.
- The Ball Corporation expansion has reduced the industrial land inventory by approximately 12 acres.
- There is an industrial expansion opportunity north of Barilla America.

The AEDC concluded the letter asking City Council to direct staff to “expeditiously study the industrial land needs for the community.”

B. City Council Direction

On February 22, 2002 City Council directed staff to complete a staff report outlining the vacant industrial land inventory and industrial land need until the year 2030 for the City of Ames.

C. The Study

In response to City Council’s direction, this report entails the complete inventory of the City’s existing planned and zoned industrial land resources, outlining the availability of vacant land area in each category. It includes trend data that provides up-to-date information on projected industrial land needs for the Ames community. In addition, this report outlines industrial expansion land use alternatives with relative infrastructure costs, existing land uses, potential land uses, and existing conditions identified.

II. Industrial Land Definition

The industrial land inventory of the City of Ames consists of planned land; land shown on the Land Use Policy Plan Map, and zoned land; land shown on the Zoning Map.

The Land Use Policy Plan establishes two industrial land use categories, General Industrial and Planned Industrial. In the Zoning Ordinance, the zoning classifications that permit industrial development include General Industrial (GI) and Planned Industrial (PI).

According to the Land Use Policy Plan, Planned Industrial uses involve a clustered/industrial park setting in order to achieve a greater integration of uses, access, and appearance. Planned Industrial uses are located near limited access thoroughfares near main entrances into the City of Ames, thus they are required to have higher development and design standards. Such design features include greater setbacks, the front of the building facing the major road network, landscape buffering, and storage of materials and parking areas in the rear of the building or site. General Industrial planned areas are much less restrictive than Planned Industrial areas and allow for a variety of industrial uses. (The Land Use Policy Plan designations of General Industrial and Planned Industrial extend beyond existing corporate boundaries. These designations may encompass areas zoned for non-industrial uses. See map titled “Industrial Planning Areas (LUPP).”)

The City’s zoning ordinance states that the PI zone designation requires a higher degree of development standards and limits industrial uses to mostly light industrial and research activities. Similarly, the GI zone designation is less restrictive than the PI zone designation and allows for a greater variety of manufacturing and industrial uses. The GI zone designation allows for uses ranging from manufacturing and processing to salvaging yards. (Planned Industrial and General Industrial zoning does not extend beyond existing corporate boundaries. See map titled “Industrial Zoned Areas.”)

III. Executive Summary

Given existing industrial trends, the City will need approximately 750-acres in total to accommodate industrial growth until the year 2030. Currently, the City of Ames maintains approximately 410-acres of vacant and developable land within its industrial inventory. Therefore, the City will need approximately 340 more acres to meet its 2030 need. (750 ac. need – 410 ac. available = 340 ac. needed). The following is a breakdown of industrial need by General Industrial and Planned Industrial categories:

- Over the past 30-years, the average acres absorption for General Industrial land uses is approximately 13-acres per year. This trend indicates that the City of Ames will need approximately 390-acres in its zoned and/or planned inventory to accommodate its general industrial growth rate (13 ac. X 30-years = 390 ac. of total need). Presently, the City has approximately 166-acres of developable land available for General Industrial expansion opportunities, or a 13-year supply. The City will have to plan for an additional 224-acres for General Industrial growth.
- The first Planned Industrial development occurred in 1988 in the ISU Research Park. Since 1988, the City of Ames has experienced a Planned Industrial growth rate of approximately 12-acres per year. The past trend suggests that 360-acres in total will be required in order to meet the City's Planned Industrial growth need until the year 2030 (12 ac. X 30-years = 360 ac. of total need). To date, there is approximately 244-acres of developable planned and zoned Planned Industrial land, or a 20-year supply. The City will have to plan for an additional 116-acres to accommodate the average future growth rate of Planned Industrial land uses.

In 1997, Barilla America consumed approximately 140-acres of the City's Planned Industrial resources. (Barilla America is a unique development in Ames and is not included in the average acres absorption rates included in this report.) If the City of Ames plans to permit other types of large land consuming industrial land uses like Barilla America, then additional strategic land use planning and policies are necessary to set aside appropriate land resources to meet the land consumptive need of large industrial growth.

Staff has completed a detailed land use and cost analysis of extending infrastructure across Interstate 35 to meet the average industrial growth trend and provide suitable land area for large land consuming industrial land uses. An area of approximately 3,000-acres was analyzed for its potential to meet a variety of industrial growth opportunities. Interstate 35 to the west, ½ mile south of Highway 30 to the South, ¼ mile east of 580th Avenue to the east, and approximately 1-1/2 miles north of 220th or 13th Street to the north generally bound the subject area studied. Within the subject area, three phases were identified. Phase 1, 820-acres, encompasses a land area located approximately north of the Union Pacific Railroad. Phase 2, 794-acres, is the land area south of the Union Pacific Railroad, north of Highway 30, and approximately ½ mile east of 580th Avenue. Phase 3, 1,232-acres, is the remaining portion of the subject area. It is located south of the railroad

tracks, ¼ mile east of 580th Avenue, and ½ mile south of Highway 30. (See map “Proposed Industrial Expansion Area.)

Phase 1 would meet the City’s average industrial growth needs until the year 2030, providing approximately 820 gross acres for industrial expansion opportunities. Phase 2 and 3 would provide additional industrial expansion areas when or if large land consuming industrial land uses plan to develop in the City of Ames.

The total estimated infrastructure cost (water, sanitary sewer, street improvements) for industrial expansion into Phase 1 is approximately 6.3 million dollars, or about \$8,000 per acre. **It is recommended that this cost would be the full responsibility of future industrial developers in this area.**

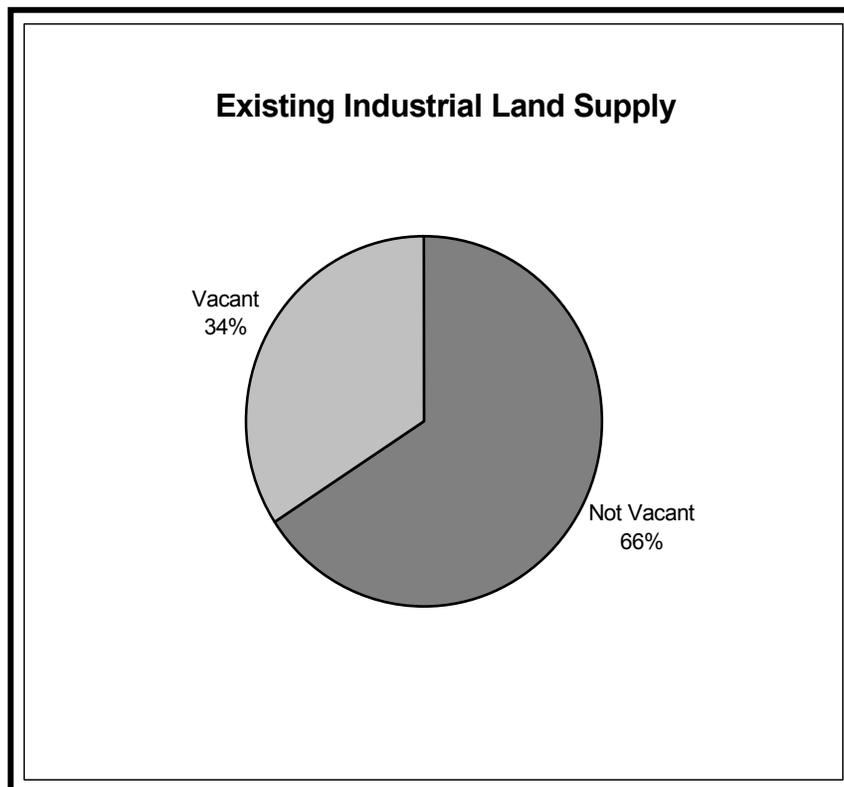
The City of Ames has vacant industrial land resources (both planned and zoned) to meet the average industrial demand for Planned Industrial and General Industrial land for roughly 15 years. **Average industrial growth, which includes the development of 5-10 acre lots for General Industrial and 10-15 acre lots for Planned Industrial, should be directed to occur on existing land resources before land expansion opportunities are extended across Interstate 35.** The City of Ames has invested vast amounts of resources in the developable industrial land within corporate limits. Most of the infrastructure is in place or adjacent to the developable land resources. Opening new industrial land resources before these vacant areas are developed would endorse the inefficient use of municipal capital resources. The normal patterns of industrial development that has occurred within the City of Ames over the past 30-years should be encouraged to develop where public investment has already been made. **Expansion across Interstate 35 should be done with much scrutiny of the proposed industrial land use, and should be reserved to large land consumptive industrial developments.**

IV. Industrial Land Inventory Analysis

A. Total Industrial Land

The City's industrial land inventory consists of planned (areas designated on the Land Use Policy Plan Map) and zoned land. In total, the inventory of vacant and non-vacant industrial land is approximately 1,600-acres. The following table is a very general breakdown of the City's planned and zoned industrial inventory:

| Total Industrial Land Inventory (Planned and Zoned) | |
|---|-------------|
| | Grand Total |
| Not Vacant | 1053.14 |
| Vacant | 546.81 |
| Grand Total | 1599.94 |



B. Developable Industrial Land Analysis

Although approximately 547-acres of industrial planned (LUPP) and zoned land is vacant, a number of conditions exist that do not permit the full development of these acres. 547-vacant acres are a gross estimate. The actual number of vacant and developable industrial acres is approximately 410-acres, broken down by 166-acres in the General Industrial inventory and 244-acres in the Planned Industrial inventory. The following tables are a summary analysis of developable and vacant industrial acres:

| Calculation of Developable Industrial Land Resources | |
|--|---------|
| Total Industrial Land Inventory (Includes PI and GI zoned land, and PI and GI designated areas on the LUPP map.) | 1599.94 |
| (-) Minus Developed (Land parcels that are developed.) | 1053.14 |
| Developable Acres Sub Total | 546.81 |
| Minus Restrictive Conditions (Acres that maintain development restrictive attributes. These attributes include: cemetery, chemical pollution, airport clear zone, odd lot configuration, floodway, government land, landfill, poor or no access, railroad restrictions, and water storage/conveyance. <i>See index for explanation.</i>) | 65.43 |
| Developable Acres Sub Total | 481.38 |
| (-) Minus Planned PI, but zoned HOC (Areas identified on the Land Use Policy Plan Map as Planned Industrial, but have been rezoned to Highway-Oriented Commercial on May 1, 2000.) | 35.34 |
| Developable Acres Sub Total | 446.04 |
| (-) Minus Planned GI, but zoned RLP (Areas identified on the Land Use Policy Plan Map as General Industrial, but have been rezoned to Residential Low Density Park Zone (Mobile Home Parks) on May 1, 2000.) | 35.44 |
| Total Developable Acres | 410.60 |

| Breakdown of Vacant and Developable Acres | |
|--|--------|
| Zoned and Planned GI (Vacant Developable Acres that are zoned General Industrial and/or shown on the Land Use Policy Plan Map as General Industrial.) | 166.38 |
| Zoned and Planned PI (Vacant Developable Acres that are zoned Planned Industrial and/or shown on the Land Use Policy Plan Map as Planned Industrial.) | 244.22 |
| Total Developable Acres | 410.60 |

C. Vacant General Industrial Land Characteristics

Approximately 80% of vacant and developable General Industrial land is outside of the floodplain as shown in the table below:

| General Industrial – Developable (Vacant) Industrial Land in the Floodplain | |
|--|--------|
| Acres Inside 100-year Floodplain | 32.80 |
| Acres Outside of Floodplain | 133.57 |
| Percentage Inside | 20% |
| Percentage Outside | 80% |

Past General Industrial development primarily occurred on parcels of 5-acres or less in size.

| Developed (Not Vacant) General Industrial Parcel Sizes | | |
|---|--------------------------|----------------------------|
| Acres/Size of Parcel | Number of Parcels | Percentage of Total |
| 0.25 or less | 6 | 3.26% |
| Between 0.25 and 0.50 | 24 | 13.04% |
| Between 0.50 and 1 | 36 | 19.57% |
| Between 1 and 5 | 94 | 51.09% |
| Between 5 and 10 | 11 | 5.98% |
| Between 10 and 15 | 7 | 3.80% |
| Between 15 and 20 | 2 | 1.09% |
| Between 20 and 30 | 2 | 1.09% |
| Between 50 and 60 | 1 | 0.54% |
| Between 60 and 70 | 1 | 0.54% |
| Grand Total Parcels | 184 | 100.00% |

The existing inventory of vacant and developable industrial land consists primarily of parcels of 5-acres or less.

| Developable (Vacant) General Industrial Parcels | | | | |
|--|--------------------------|---------------------------------|--------------------|-------------------------------|
| Category | Count of Category | Percent of Total Parcels | Total Acres | Percent of Total Acres |
| 0.25 or Less | 1 | 2.44% | 0.23 | 0.14% |
| Between 0.25 and 0.50 | 3 | 7.32% | 0.94 | 0.56% |
| Between 0.50 and 1 | 6 | 14.63% | 4.32 | 2.59% |
| Between 1 and 5 | 26 | 63.41% | 51.13 | 30.73% |
| Between 10 and 15 | 1 | 2.44% | 14.01 | 8.42% |
| Between 15 and 20 | 1 | 2.44% | 15.29 | 9.19% |
| Between 20 and 30 | 3 | 7.32% | 80.46 | 48.36% |
| Grand Total | 41 | 100% | 166.38 | 100% |

Note: Parcels may be further subdivided or combined.

D. Vacant Planned Industrial Land Characteristics

Approximately 96% of vacant and developable Planned Industrial land is outside of the floodplain as shown in the table below:

| Planned Industrial – Developable (Vacant) Industrial Land in the Floodplain | |
|---|--------|
| Acres Inside 100-year Floodplain | 9.16 |
| Acres Outside of Floodplain | 235.06 |
| Percentage Inside | 4% |
| Percentage Outside | 96% |

Past development trends indicate that the majority of developed Planned Industrial parcels are between 5 and 15-acres in size. Planned Industrial lot sizes are generally larger than General Industrial lot sizes.

| Developed (Not Vacant) Planned Industrial Parcel Sizes | | |
|--|-------------------|---------------------|
| Acres/Size of Parcel | Number of Parcels | Percentage of Total |
| 5 or Less | 1 | 11.11% |
| Between 5 and 10 | 3 | 33.33% |
| Between 10 and 15 | 4 | 44.44% |
| Between 130 and 140 | 1 | 11.11% |
| Grand Total Parcels | 9 | 100.00% |

The existing inventory of vacant and developable Planned Industrial land consists primarily of parcels of 10-acres or less.

| Developable (Vacant) Planned Industrial Parcels | | | | |
|---|-------------------|--------------------------|---------------|------------------------|
| Category | Count of Category | Percent of Total Parcels | Total Acres | Percent of Total Acres |
| Between 1 and 5 | 11 | 50.00% | 30.14 | 12.34% |
| Between 5 and 10 | 7 | 31.82% | 46.23 | 18.93% |
| Between 10 and 15 | 1 | 4.55% | 10.52 | 4.31% |
| Between 20 and 30 | 1 | 4.55% | 20.69 | 8.47% |
| Between 30 and 40 | 1 | 4.55% | 39.96 | 16.36% |
| Between 90 and 100* | 1 | 4.55% | 96.68 | 39.58% |
| Grand Total | 22 | 100.00% | 244.22 | 100.00% |

Note: Parcels may be further subdivided or combined.

**Barilla America's vacant/undeveloped parcel north of the Union Pacific Railroad right-of-way*

V. Absorption/Industrial Need Analysis

A. Methodology

In past analysis of land absorption trends for residential and commercial land uses, staff was able use many different kinds of statistical methods to explain future need. For example, the Land Use Policy Plan and Annexation Study used census data such as household size and unit types, in combination with acre absorption data and City and County Assessor data to understand development trends. Within the Commercial Land Needs Assessment Study, there was a strong correlation between retail sales trends and acres absorption; staff was able to predict future land need by another method beyond average acre absorption rates alone.

Within this Industrial study, the information used to explain industrial need was derived from City and County Assessor information from various Geographic Information System databases. This study is different from the Annexation Study and the Commercial Land Needs Assessment in that no correlations to other variables were used to understand future need. **Only real acres absorption rates were used to explain future need.**

Industrial uses are much more varied and more complex to predict than local retail uses and housing. Economists utilize a multiplicity of complex economic indicators to understand industrial markets and future trends. The stability and growth of a city's industrial base is not heavily weighted on local or sub-regional variables alone. Global, national, state, and regional forces together affect the pattern of industrial activity. Industrial uses range from local to global in scale. For instance, Barilla America not only serves Iowa, but the rest of the nation as well. Ag Leader distributes its product worldwide. The desire of an industrial use to develop within a community depends on many factors. For example, Barilla America chose the City of Ames because of its well-educated employment base, access to major transportation networks, quality of schools, and availability of infrastructure (water, sewer, street, etc.).

The complexity and varied methods used by economists to predict industrial expansion is too obscure to use within this study. Moreover, given the multitude of indicators and complexity of industrial use combinations and the relatively small industrial base of the City of Ames (compared to the rest of the nation), it would require too much time and resources to derive the statistical correlations necessary to help predict or better understand future land needs.

Although staff's method provides only one methodology to understand industrial land need, it is not different from the method used by many different communities across the United States. Staff found that cities in the Midwest such as Des Moines, Cedar Rapids, Iowa City, and various suburbs within the Chicago land area use this same approach. Staff believes the methods used in this report provide good information on the existing patterns of industrial development. These patterns provide a good understanding of the future of industrial growth within the community.

B. General Industrial Land Need

The following table represents average General Industrial acres absorption in various time periods.

| General Industrial Zoned Growth Only | |
|--------------------------------------|------------------------|
| | Average acres per year |
| Period | Acres |
| 1929-2002 | 11.29 |
| 1970-2002 | 13.03 |
| 1980-2002 | 10.86 |
| 1990-2002 | 15.57 |
| | |
| 1970-1980 | 17.36 |
| 1980-1990 | 4.44 |
| 1990-2002 | 15.57 |

Statistical methods indicate that the 32-year period from 1970 through 2002 best represents the future growth trend for General Industrial land uses. When the past 32-years (1970-2002) is used to explain the future General Industrial land absorption rate, the City of Ames will absorb General Industrial land resources at approximately 13-acres per year. Using this average absorption rate, the future 30-year General Industrial land inventory requirement is approximately 390-acres. Presently, the City of Ames has approximately 166-acres of vacant and developable General Industrial acres within its industrial land inventory. Therefore, the City of Ames will need an additional 224-acres to accommodate average General Industrial growth (390 ac. – 166 ac. = 224 ac.). The City of Ames has approximately 13-years of General Industrial growth opportunity within its industrial inventory, assuming average land absorption rates continue.

C. Planned Industrial Land Need

The following table represents average General Industrial acres absorption in various time periods.

| Planned Industrial Growth Only | | |
|--------------------------------|------------------------|-------------------|
| | Average acres per year | |
| Period | Including Barilla | Excluding Barilla |
| 1988-2002 | 40.07 | 12.07 |

Planned Industrial land uses began in 1988. Since 1988, the city averaged approximately 12-acres per year in Planned Industrial land absorption. (This average is calculated by removing Barilla America from the average calculation. The one-time 142-acre land absorption number of Barilla America skews Planned Industrial absorption calculations upward.) If the past 14-years of Planned Industrial absorption explains the next 30-years of Planned Industrial land needs, then the City of Ames will need approximately 360-acres of Planned Industrial land resources to accommodate growth within the next 30-years. Presently, the City of Ames has approximately 244-acres of vacant and developable Planned Industrial acres within its industrial land inventory. Therefore, the City of Ames will need an additional 116-acres to accommodate average Planned Industrial growth (360 ac. – 244 ac. = 116 ac.). The City of Ames has approximately 20-years of average Planned Industrial growth opportunity within its industrial inventory.

D. Total Industrial Need

In total, the City of Ames will need approximately 750-acres (390 ac. General Industrial + 360 ac. Planned Industrial = 750 ac. Industrial) of industrial supply to meet its average industrial growth rate until the year 2030. Presently, the City of Ames has 410-acres of vacant and developable industrial land within its land supply, thus leaving a 340-acre deficit. The City of Ames needs to allocate an additional 340-acres on its Land Use Policy Plan map to meet its average industrial absorption rate until the year 2030.

| Calculation of Needed Acres | |
|---|--------------|
| | Acres |
| General Industrial Needed (13 ac. per year for 30-years absorption rate) | (390) |
| (+) Planned Industrial Needed (12 ac. per year for 30-years absorption rate) | (360) |
| Total Industrial Acres Needed | (750) |
| Developable and Vacant General Industrial Land | 166 |
| (+) Developable and Vacant Planned Industrial Land | 244 |
| Total Developable Acres Needed | 410 |
| (=) Total Industrial Acres Needed | (340) |

Barilla America was unique in the fact that it consumed approximately 140-acres for one industrial land use at a single point in time. This land consumptive pattern is not represented elsewhere in the City of Ames. If large land consuming industrial development occurs in the future, more land will be needed to accommodate the average acre absorption projections represented in this report. Staff recommends that if large industrial or large land consuming industrial activities is anticipated for the future, City Council should designate appropriate industrial expansion areas on the City land use policy map.

Additional industrial land resources need to be assigned to the City's Land Use Policy Plan Map to accommodate the City's 30-year average industrial absorption rate (340-acres total) and provide opportunities for future industrial growth. The Land Use Policy Plan should be amended to outline strategies and policies that minimize the City's responsibility associated with improvement costs for industrial expansion areas. The following is a land use planning analysis and strategic phasing plan for industrial growth opportunities east of Interstate 35.

VI. Recommendation/Strategy

A. Study Area: Proposed Industrial Expansion Area

City staff has conducted a land use study to determine the potential for future industrial development for an area east of I-35. The boundaries of the area (study area) examined by staff are generally described as follows:

- West Boundary: Interstate 35;
- North Boundary: $\frac{3}{4}$ mile north of E. 13th Street;
- East Boundary: $\frac{1}{4}$ mile east of 580th Avenue; and the
- South Boundary: $\frac{1}{2}$ mile south of U.S. Highway 30.

See map titled “Proposed Industrial Expansion Area.”

The study area includes approximately 3,062 gross acres (including railroad and street right-of-way). Much of this land is currently located outside the Ames corporate limits in Story County. The study area is further divided into three phase areas. The phase areas are described as follows (Phase area calculations exclude railroad and Highway 30 right-of-way):

- **Phase 1:** 826-acres gross
 - West boundary: Interstate 35;
 - North Boundary: 1 mile north of Union Pacific Railroad;
 - East Boundary: $\frac{1}{4}$ mile east of 580th Avenue; and the
 - South Boundary: Union Pacific Railroad

- **Phase 2:** 794-acres gross
 - West boundary: Interstate 35;
 - North Boundary: Union Pacific Railroad;
 - East Boundary: $\frac{1}{2}$ mile west of 580th Avenue; and the
 - South Boundary: U.S. Highway 30

- **Phase 3:** 1,232-acres gross
 - West boundary: Interstate 35, $\frac{1}{2}$ mile west of 580th Avenue;
 - North Boundary: Union Pacific Railroad;
 - East Boundary: $\frac{1}{4}$ mile east of 580th Avenue; and the
 - South Boundary: $\frac{1}{2}$ mile south of U.S. Highway 30

This industrial expansion study has been conducted in response to the future need for industrial expansion, and as a strategic planning approach to understand and accommodate industrial demand for large parcels of land. The City of Ames has also been approached by several industrial site locators for land east of Interstate 35 (I-35) in the vicinity of East 13th Street, East Lincoln Way, and U.S. 30, and for land adjacent to the Union Pacific Railroad right-of-way.

The policy followed by the City for the past several years, as stated in the 1988 Land Use Policy Plan (LUPP), has been one of designating the area east of I-35 as an “industrial reserve” area that will not be the primary area for industrial development, but will serve as an expansion area once the designated industrial areas west of I-35 is fully developed. It is understood that the area east of I-35 may be developed prior to complete build out on the west side, if the proposed development involved a creation of a significant number of jobs and a satisfactory cost/benefit ratio could be identified.

The Future Land Use Map in the Land Use Policy Plan designates the land east of I-35 between E. 13th Street and E. Lincoln Way for “Planned Industrial” development. Land from Lincoln Way extending to one-quarter mile south of U.S. 30 is designated as “Regional Commercial”.

The adopted policy for development of this area is stated in the LUPP as follows:

“In approving development of the proposed regional commercial and planned industrial areas, there should be sufficient committed development to pay/repay the full costs associated with extending public infrastructure for the areas. The area is not part of the Capital Investment Strategy; therefore, extending public infrastructure should not conflict with the provision of infrastructure in the southwest growth priority area.”

B. Infrastructure Phasing Strategy

Anticipated development in the industrial expansion study area will require upgrading of existing infrastructure and extension of new infrastructure. The City of Ames would provide potable water, sanitary sewer, and wastewater treatment for the area. Alliant Utilities would alone provide natural gas and, along with Consumers Energy, provide electric service. All of the land area being studied east of Interstate 35 is not within the Ames municipal electric service franchise area. The existing street network serving the area would be upgraded by paving County roads that are currently surfaced with gravel or sealcoat. The ultimate street network would consist of these upgraded County roads, new streets constructed in phases to form a system of arterial streets, and other streets (both collector and local) constructed by developers as the individual development take place. All infrastructure improvements would be constructed in phases. Within these phases, infrastructure improvements could be made in even smaller sub-phases as needed for specific developments. Phased construction would allow flexibility for development and allow phasing of capital expenditures. (See the following enclosed maps: Proposed Sanitary Sewer Improvements, Proposed Water Improvements, and Proposed Street Network Improvements.) The following page is a breakdown of infrastructure improvement costs for the subject area.

| Infrastructure Phasing Strategy | | | | |
|---|-----------------------------------|---------------------------------|---|---|
| | Scenario A Normal Water Use | Scenario B High Water Use | Cost Scenario A per Gross Acre | Cost Scenario B per Gross Acre |
| Phase 1 (826-acres) | | | | |
| Sanitary Sewer | | | | |
| Treatment Plant Expansion | \$0 | \$9,900,000 | \$0 | \$11,985 |
| Phase 1a | | | | |
| 5900 feet of 18 inch pipe (\$108 per foot) | \$637,200 | \$637,200 | \$771 | \$771 |
| Phase 1b | | | | |
| 2700 feet of 15 inch pipe (\$96 per foot) | \$259,200 | \$259,200 | \$314 | \$314 |
| 6600 feet of 12 inch pipe (\$84 per foot) | \$554,400 | \$554,400 | \$671 | \$671 |
| Water | | | | |
| 15900 feet of 12 inch pipe (\$60 per foot) | \$795,000 | \$795,000 | \$962 | \$962 |
| Street Improvements | | | | |
| Grading (2.6 miles at \$60,000 per mile) | \$156,000 | \$156,000 | \$189 | \$189 |
| Paving (53200 square yards at \$72 per square yard) | \$3,830,400 | \$3,830,400 | \$4,637 | \$4,637 |
| Phase 1 Subtotal | \$6,232,200 | \$16,132,200 | \$7,545 | \$19,531 |
| Phase 2 (794-acres) | | | | |
| Sanitary Sewer | | | | |
| Treatment Plant Expansion | \$90,000 | \$12,900,000 | \$113 | \$16,247 |
| 6700 feet of 18 inch pipe (\$108 per foot) | \$723,600 | \$723,600 | \$911 | \$911 |
| 21200 feet of 48 inch pipe (\$180 per foot) | \$3,816,000 | \$3,816,000 | \$4,806 | \$4,806 |
| 5000 feet of 15 inch pipe (\$96 per foot) | \$480,000 | \$480,000 | \$605 | \$605 |
| Water | | | | |
| 12000 feet of 12 inch pipe (\$60 per foot) | \$600,000 | \$600,000 | \$756 | \$756 |
| Street Improvements | | | | |
| Grading (1.7 miles at \$60,000 per mile) | \$102,000 | \$102,000 | \$128 | \$128 |
| Paving (31400 square yards at \$72 per square yard) | \$2,260,800 | \$2,260,800 | \$2,847 | \$2,847 |
| Separated Railroad Crossing | \$6,000,000 | \$6,000,000 | \$7,557 | \$7,557 |
| Phase 2 Subtotal | \$14,072,400 | \$26,882,400 | \$17,723 | \$33,857 |
| Phase 3 (1,232-acres) | | | | |
| Sanitary Sewer | | | | |
| Treatment Plant Expansion | \$8,100,000 | \$32,400,000 | \$6,575 | \$26,299 |
| 6700 feet of 24 inch pipe (\$144 per foot) | \$964,800 | \$964,800 | \$783 | \$783 |
| 5300 feet of 18 inch pipe (\$108 per foot) | \$572,400 | \$572,400 | \$465 | \$465 |
| Water | | | | |
| 27100 feet of 12 inch pipe (\$60 per foot) | \$1,355,000 | \$1,355,000 | \$1,100 | \$1,100 |
| Street Improvements | | | | |
| Grading (2 miles at \$60,000 per mile) | \$120,000 | \$120,000 | \$97 | \$97 |
| Paving (36200 square yards at \$72 per square yard) | \$2,606,400 | \$2,606,400 | \$2,116 | \$2,116 |
| Separated Railroad Crossing | \$6,000,000 | \$6,000,000 | \$4,870 | \$4,870 |
| Phase 3 Subtotal | \$19,718,600 | \$44,018,600 | \$16,005 | \$35,729 |
| TOTAL PROJECT COST | \$40,023,200 | \$87,033,200 | | |

See explanation of columns "Scenario A Normal Water Use" and "Scenario B High Water Use" on the next page.

If water intensive industrial land uses occur within the subject area, there would be a need to add capacity to the wastewater treatment facility located south of Ames. The column marked “Scenario A Normal Water Use” represents plant expansion cost based on historical peak flow information from comparable waste generators in the City of Ames (2,500 gpd/acre-industrial, 1,250 gpd/acre-commercial). The column marked “Scenario B High Water Use” represents plant expansion costs based on peak flows as prescribed by the Iowa Department of Natural Resources for maximum design conditions (10,000 gpd/acre-industrial, 5,000 gpd/acre-commercial). Waste treatment impact fees should be assigned to industrial uses that emit large quantities of wastewater to the City’s wastewater treatment facility. Uses that require low levels of water should be encouraged to develop within the subject area.

C. Land Use Policy Recommendations

Phase 1 would meet the City’s average industrial growth needs until the year 2030, providing approximately 820 gross acres for industrial expansion opportunities. Phase 2 and 3 would provide additional industrial expansion areas when or if large land consuming industrial land uses plan to develop in the City of Ames and exhaust existing and Phase 1 resources. The land east of Interstate 35 could provide industrial growth opportunities well beyond the time frame of the existing Land Use Policy Plan.

The City of Ames has invested vast amounts of resources in the developable industrial land within corporate limits. Most of the infrastructure is in place or adjacent to the developable land resources. Opening new industrial land resources before these vacant areas are developed would endorse the inefficient use of municipal capital resources. The normal pattern or type of industrial development that has occurred within the City of Ames over the past 30-years should be encouraged to develop where public investment has already been made.

When most or all of the existing industrial vacant land resources west of Interstate 35 are fully or nearly all developed in the future, City Council should then consider planning portions of the proposed “Industrial Expansion Area” to accommodate further industrial growth. When existing resources are exhausted, a sub analysis of each phase and corresponding strategic land use plan should be implemented to assure maximum compatibility of industrial uses within the proposed expansion area. Until then, the “Industrial Expansion Area” should be reserved for large lot developments.

In order to implement this recommendation, City Council may have to make changes to the adopted Land Use Policy Plan and Zoning Ordinance.

VIII. Sensitivity Analysis

The City's need for industrial land is approximately 340 additional acres to meet average industrial growth trends until the year 2030. Phase 1 will provide approximately 826 gross acres of industrial expansion, or 486-acres beyond the projected need.

If the development trend changes to more land consumptive patterns, the combination of Phases 1, 2, and 3 will provide an additional 2,552 gross acres (300-acres reserved for Regional Commercial development: 2,852 ac. - 300.ac = 2,552 ac.) of industrial expansion, or 2,212-acres beyond the average 30-year projection.

Hypothetically, if the City were to experience a land consumptive trend above the current average rate, say 50-acres per year on top of the existing trend, the phase areas combined would provide the necessary land resources. If this hypothetical pattern occurred in the future, the City would need approximately 1,840-acres to meet its industrial land needs (50 X 30 = 1,500 acres; plus 340 additional acres needed to meet the existing trend; equals 1,840-acres). The industrial expansion area would provide 712-acres more than what would be needed to support this highly unlikely and land consumptive pattern.

The industrial expansion subject area and existing developable land resources provide adequate land resources for the City of Ames to meet its industrial land needs until the year 2030.

VII. Index

A. Restrictive Conditions

| Restrictions | Definition |
|---------------|--|
| Cemetery | A cemetery is located on the parcel |
| Chemical | Chemical waste mitigation prohibits development |
| Clear Zone | A special airport easement that prohibits development |
| Configuration | The land parcel is an odd configuration that prohibits development |
| Floodway | A flood easement where development is prohibited |
| Government | Land owned by the government and not for private use |
| Landfill | Landfill site that prohibits the development of structures |
| No Access | Land that does not have suitable access to a road |
| Rail | Land used for railroad purposes |
| Water | Land used to store or convey water |
| None | No restrictions apply |

B. Enclosed Maps

Industrial Planning Areas (LUPP)

This map shows the existing Land Use Policy Plan designated for industrial land uses.

Industrial Zoned Areas

This maps shows the existing zoned industrial land.

Planned Developable Areas

This map shows areas of the LUPP that can be developed industrially

Planned Developable Areas in the Floodplain

This map represents areas within the floodplain that can be filled and improved.

Proposed Industrial Expansion Area

This map outlines the subject area that makes up the industrial expansion area.

Proposed Sanitary Sewer Improvements

This map represents the proposed sanitary sewer network and phasing scheme.

Proposed Street Network Improvements

This map represents the proposed street improvement network and phasing scheme.

Proposed Water Improvements

This map represents the proposed water network and phasing scheme.

Zoned Developable Areas

This map represents existing areas that are zoned industrial and developable.

Zoned Developable Areas in the Floodplain

This map represents existing areas that are zoned industrial and developable, but located in the 100-year floodplain.