SECTION FOUR

Affected Environment

SECTION FOUR: AFFECTED ENVIRONMENT

4.1 Introduction

This section describes the social, economic and environmental settings within the proposed South Central Regional Airport service area, existing Oskaloosa Municipal Airport and the existing Pella Municipal Airport.

4.2 South Central Regional Airport Agency (Airport Sponsor)

The South Central Regional Airport Agency (SCRAA) was created by the City of Pella, Mahaska County, and the City of Oskaloosa. The 28E Agreement was filed with the Iowa Secretary of State on March 24, 2012. The FAA Office of Regional Council determined (February 24, 2012) that the South Central Regional Airport Agency had the legal authority to act as a "Sponsor". The South Central Regional Airport Agency will own, operate, and maintain the proposed airport (South Central Regional Airport).

4.3 Airport Role

The *2010 Iowa Aviation System Plan* recommended that consideration be given to the development of an "Enhanced Service Airport" to replace the existing Pella Municipal Airport and the Oskaloosa Municipal Airport. An "Enhanced Service Airport" is defined within the *2010 Iowa Aviation System Plan* as follows:

> *"These airports have runways 5,000 feet or greater in length with facilities and services that accommodate a full range of general aviation activity, including most business jets. These airports serve business aviation and are regional transportation centers and economic centers."*

The airport has been entered into the National Plan of Integrated Airport Systems (NPIAS). It is reasonable to conclude that FAA will classify the proposed airport as a "Regional" airport in the national system. A "Regional" airport, as defined by FAA, supports regional economies by connecting communities to regional and national markets. These airports have high levels of activity with some jets and multi-engine propeller aircraft. These airports average about 90 total based aircraft, including three (3) jets.

4.4 Past, Present, and Reasonably Foreseeable Actions

4.4.1 Past Actions

The City of Pella and City of Oskaloosa have undertaken efforts to develop a joint use facility dating back to 2001 (see *Red Rock Airport Master Plan Draft* – 2005). The proposed Red Rock Airport site extended over a Section 4(f) resource (Vander Wilt Historic District) and as such, efforts associated with the Red Rock site were discontinued. The City of Pella and the City of Oskaloosa, together with

Mahaska County, renewed their joint airport dialogue in 2011 that led to the creation of the South Central Regional Airport Agency in 2012.

4.4.2 Present Actions

The City of Pella and City of Oskaloosa continue to operate and maintain their respective airport facilities. While minimizing the present investment, some level of investment will need to be made in the existing facilities (i.e., pavement maintenance, airfield lighting, obstruction removal, and building maintenance).

At present, neither of the existing airport facilities can accommodate aeronautical demand (as discussed in Section 1.2 – Purpose and Need). There are no actions being proposed by either entity to expand their existing airside facilities.

4.4.3 Reasonably Foreseeable Actions

The South Central Regional Airport Agency proposes to implement the improvements as shown on the Airport Layout Plan for Site A over a 20 year time horizon.

The Iowa Department of Transportation is considering U.S. Highway 63 alternative alignments extending around the northwest quadrant of Oskaloosa. The Iowa DOT Project Management Team (PMT) proposes to construct an interchange at Iowa Highway 163. The proposed interchange is located approximately one (1) mile from the proposed Runway 32 threshold. The Iowa Department of Transportation considers the proposed highway transportation improvement and the proposed airport improvement projects as independent actions.

The City of Oskaloosa is the nearest urban area and is expected to extend its corporate boundary to accommodate development, if any, around the highway interchange. Municipal utilities and services would be extended commensurate with the need to accommodate growth within the community. The area immediately adjacent to the airport is expected to retain its rural character in the foreseeable future.

4.5 Pella Municipal Airport Environs

The Pella Municipal Airport is located in Marion County and within the City of Pella corporate boundary. The community has historically been a regional employment hub centered around Pella Corporation (window/door manufacture), Vermeer (agricultural equipment manufacturer), Central College, and several smaller service and manufacturing establishments.

The City has experienced a significant increase in population. While the recession had a negative impact on employment associated with the housing market, the recent commodity prices for corn and soybeans has had a positive impact on employment associated with the private sector. The diversified economic base of the community has

contributed to the historic and present community growth (see Section 4.9 - Socioeconomic Setting and Section 3.5 - Pella Municipal Airport Closure).

Closure of the Pella Municipal Airport will eliminate the airport environmental footprint that now extends over an urban area. The existing 109 acre site is constrained with displaced thresholds on each runway end so as to provide for the runway safety and object free area extending beyond the runway thresholds.

The airport site is currently served by City's water utility and could be serviced by a gravity sanitary sewer system. The site is accessible from Iowa Highway 163 and the City's arterial and collector street system. The city can reasonably provide municipal services (to include potable water) to the site.

Residential, recreational, and commercial/retail uses have developed adjacent to the airport. Residential and recreational uses are generally not compatible with airport operations.

The City has contemplated replacement of the existing airport over the past 10 years. The Comprehensive Plan and Future Land Use Plan envisions the airport site ultimately accommodating low to high density residential development (see Section 3.5).

The highest and best use of the airport site is for urban residential development. The proposed residential use is compatible with existing adjacent and future planned land uses (see Section 3.5).

The proposed action to close the Pella Municipal Airport will provide an opportunity for the City to:

- Provide for "in-fill" development
- Minimize conversion of farmland to urban uses as the city continues to grow
- Complement existing non-agricultural land and residential land uses within the airport environs
- Participate in a multi-jurisdictional effort to develop an airport that will accommodate aeronautical demand.
- Convert a constrained site that does not provide for current FAA airport design standards
- Reduce the burden of supporting a constrained facility where a significant investment is in rehabilitating the existing airfield pavement and electrical infrastructure
- Contribute to obtaining the delivery of aeronautical services
- Eliminate the airport environmental footprint

4.6 Oskaloosa Municipal Airport Environs

The Oskaloosa Municipal Airport is located in a loosely defined neighborhood between Oskaloosa, Sigourney, and Ottumwa that has a significant row crop agricultural influence due to the productive Mahaska-Taintor soils that are found in this region.

The area is primarily rural in nature with a mix of stable small to medium size family farms and expanding large multi-generational farm operators. High quality farm land is desired and tightly held with limited land available for sale.

The average weighted tillable Corn Suitability Rating (CSR) is approximately 88.7. There is approximately 521 tillable acres on the airport at present. The Taintor and Mahaska soil complex are some of the most productive soils in Iowa and are well suited for corn and soybean production. The Taintor silty clay loam (0 to 2 percent slope) is found extending over 71.7 percent of the 521 tillable acres with a CRS noting of 88. Mahaska silty clay loam (2 to 5 percent slope) covers 15.4 percent while the same soil with 0 to 2 percent slope extends over 6.9 percent of the tillable acres. The Mahaska silty clay loam has a CRS rating of 92 and 97 respectively. The entire site is well drained with the exception of approximately 6.8 acres or 1.3 percent of the tillable acreage.

The highest and best use is for agricultural row crop production. The conversion of the Oskaloosa Municipal Airport to an agricultural use will eliminate aeronautical activity from the area. The proposed action to close the airport will allow for maximum use of the site and soil resources for agricultural production. The proposed action will contribute to sustaining the rural, social, and economic setting of the areas (see Section 3.6).

The proposed closure is consistent with goals set forth in the 2004 Mahaska County Comprehensive Plan. The closure will sustain the rural agricultural character within the existing airport environs.

4.7 Physical Setting

4.7.1 Introduction

The two (2) alternative sites (Alternative One Site B and Alternative Two Site A) are located in Mahaska County and on the Southern Iowa Drift Plain. The two site locations are located on an upland divide that extends between the Des Moines River and South Skunk River watersheds. Iowa Highway 163 extending between the City of Oskaloosa and the City of Pella is located on an upland divide. The land surface is characterized by rolling hills or alluvial lowlands along the Des Moines and Skunk Rivers. The upland divide can be described as relatively leveled. While the topography varies across both sites, the high point on each site is approximately 850 feet above mean sea level.

4.7.2 Drainage Patterns

Alternative One is located within the Muchakinock Drainage Basin that extends out from the Des Moines River. The north half of Alternative Two is drained by an unnamed tributary extending out from the South Skunk River while drainage on the south half of the site is provided by an unnamed tributary extending out from the Des Moines River.

There are no FEMA (Federal Emergency Management Agency) designated 100 year flood plains on Alternative Two, while there are on Alternative One. Both site locations have pronounced drainage patterns, stream corridors, and potential wetland areas.

4.7.3 Soils

The Mahaska-Taintor association consists of soils on wide ridge tops or divides. The larger of these areas form the divide between the Skunk River and the Des Moines River. The Mahaska-Taintor soils are formed in loess under a cover of grasses and are poorly drained as are the Taintor soils. Drain tiles have generally been installed in areas under cultivation. The surface layer consists of black silty clay loam and a subsoil of mottled, gray silty clay.

There are minor soils found in the Mahaska-Taintor association. Sperry soils are found in slight depressions and are poorly drained. Givin soils are found on slightly convex, nearly level upland ridges and benches. Colo and Ely soils are found along drainage ways.

All of the soils in the Mahaska-Taintor association have high available water capacity and are well suited for agricultural row crops. These soils were formed when the predominant vegetation was prairie.

The Otley-Ladoga-Nina association is characterized by gently sloping to strongly sloping, moderately well drained soils that have a subsoil of silty clay loam. Otley soils are found on ridgetops and upper side slopes, and formed in loess under a cover of grasses. The Ladoga soils are found on ridges and at lower elevations having been formed under a cover of grasses and trees. Nina soils are generally found at the head of waterways and on side slopes.

The Otley-Ladoga-Nina association occupies about 31 percent of the county while the Mahaska-Taintor association covers about 16 percent of the county. Figure 4-1 depicts the two dominant soil associations found along the ridge line extending between Pella and Oskaloosa.

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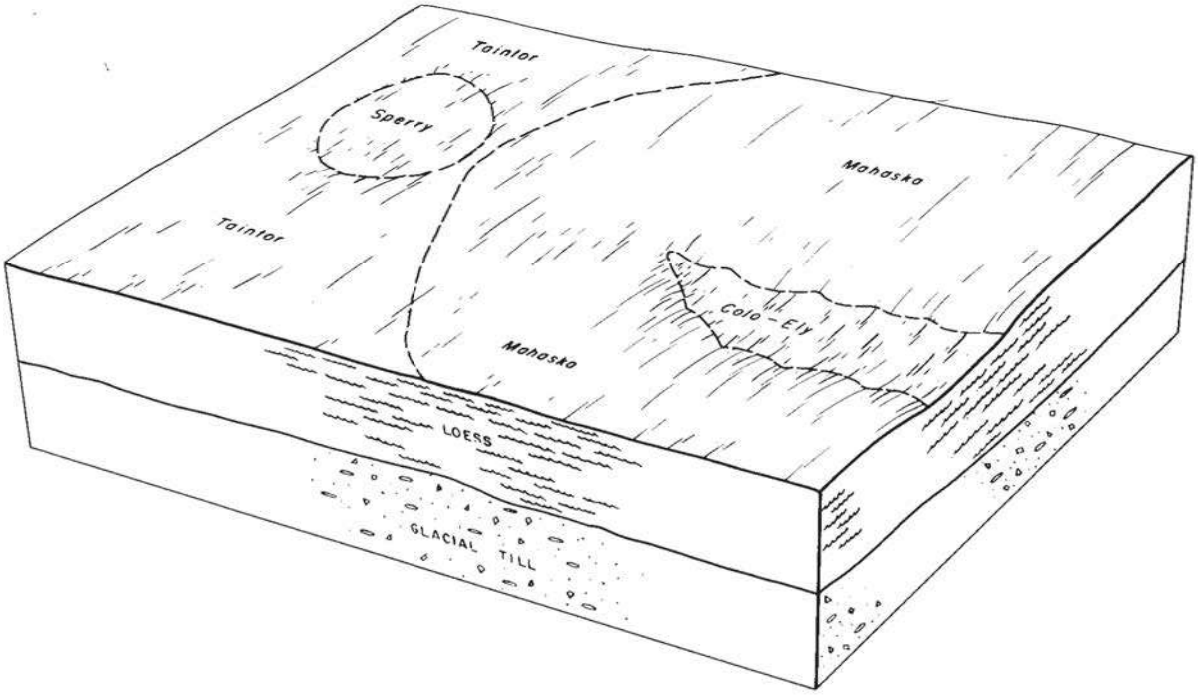
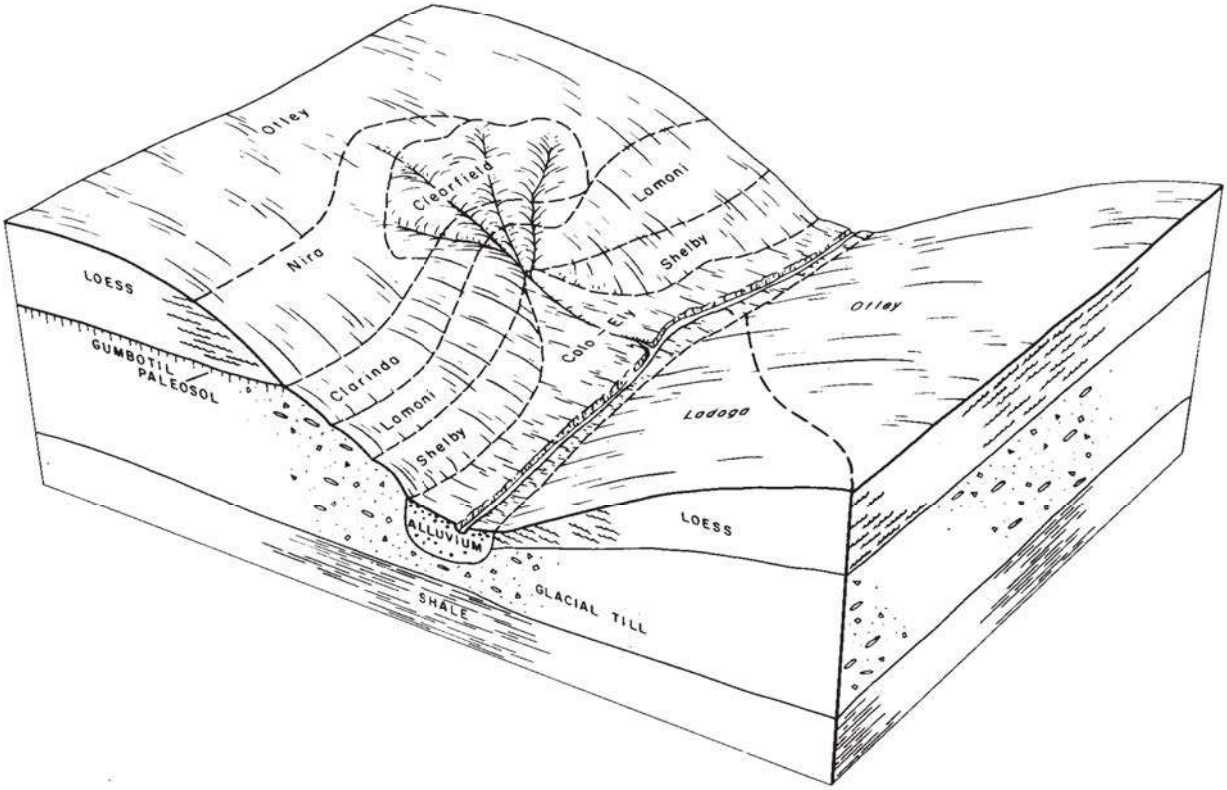
MAHASKA COUNTY, IOWA





DGR ENGINEERING	Snyder & Associates Engineers and Planners	JS Consulting LLC	SOUTH CENTRAL REGIONAL AIRPORT MAHASKA COUNTY, IOWA MAHASKA-TAINTOR SOIL ASSOCIATION OTLEY-LADOGA SOIL ASSOCIATION	FIGURE 4-1

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4.7.4 Climate

The climate within the Area of Potential Effect (APE) is sub humid with an average growing season of 165 days. The average annual rainfall is 32 inches with about two-thirds of the annual precipitation occurring from April to September. On average, there are 48 days with one (1) or more inches of snow. The average daily maximum temperature (87 degrees Fahrenheit) occurs in July. The average daily minimum (13 degrees Fahrenheit) occurs in January.

Table 4-1
Temperature/Precipitation Summary

Month	Average (°F) Daily Maximum	Average (°F) Daily Minimum	Average Monthly Precipitation (inches)
January	32	13	1.2
February	35	16	1.2
March	47	27	2.1
April	62	39	3.0
May	73	50	3.9
June	81	60	4.6
July	87	64	3.7
August	85	62	3.5
September	78	54	3.5
October	66	42	2.4
November	49	29	1.9
December	36	18	1.3

Source: USDA Soil Survey of Mahaska County February 1977

4.7.5 Natural Resources

There are significant coal deposits located in Mahaska County. Coal mining activities were concentrated in the southwest part of Mahaska County. There are no recorded above or underground coal mines within Alternative Sites One and Two. The natural resources currently extracted in commercial quantities within Mahaska County are limestone, sand, and gravel.

4.7.6 Woodlands

Woodlands are generally along river and stream corridors. There are no woodlands on Alternative One (Site B) with the exception of small groves planted around farmsteads. Woodlands are found along a stream corridor on Alternative Two (Site A).

4.8 Land Use – Unincorporated Mahaska County

Mahaska County adopted a Comprehensive Plan on December 20, 2004. The primary focus of the planning document was on the unincorporated Mahaska County. The 2004 Comprehensive Plan classified 91 percent of the land uses within the unincorporated area as agricultural. Of the 91 percent, five (5) percent was devoted to pasture, woodland, and other uses. The remaining 86 percent was classified as cropland. Of the nine (9) percent classified as non-agricultural, three (3) percent was devoted to residential, four (4) percent to roads, and the remaining two (2) percent was devoted to business/industrial uses.

While land use patterns have changed since 2004, the rural agricultural character of the area within unincorporated areas has not undergone significant changes. The Comprehensive Plan examined future land use needs and concluded with a "Summary of Findings".

- Prime agricultural land is a vital resource of Mahaska County and preservation of the prime agricultural land should be a priority. Potential conversion of such land should be given careful consideration, with thought as to soil types and optimal land use.
- Any development in unincorporated areas of Mahaska County should be carefully planned and measures should be taken to ensure that development does not adversely affect the rural environment of Mahaska County.
- To the greatest extent possible, future development should be located adjacent to paved roads in clusters near existing public services.
- Industrial development should be directed towards urban areas to see that adequate infrastructure is available to service the industry.
- Rural development should be primarily located in low quality agricultural land along major traffic routes and in unincorporated communities.
- Preservation of unique environmental resources such as wetlands and timbered areas is necessary if such land is to remain undeveloped.

Source: Mahaska County Comprehensive Plan September 2004; Page 47.

Mahaska County has not adopted a land use zoning ordinance. The 2004 Comprehensive Plan set forth land use goals, objectives, and policies which were intended to provide guidance to the county on the development and implementation of land use regulations. Goals set forth in the Comprehensive Plan establish a broad framework upon which general development objectives and policies were formulated (see Mahaska County Comprehensive Plan, December 20, 2004, Page 48).

Mahaska County has not adopted land use zoning regulations. Iowa Code - Chapter 414, Municipal Planning and Zoning, Section 414.23 - Extending Beyond City Limits allows a city to extend its zoning jurisdiction two (2) miles beyond its corporate boundary if the county has not adopted a zoning ordinance. Whenever a county in which the power is being exercised by a municipality adopts a county zoning ordinance, the power exercised

by the municipality must be terminated within three (3) months or as mutually agreed upon by the municipality and county.

Alternative One (Site B) is located within two (2) miles of the City of Leighton. Alternative Two (Site A) is located more than two (2) miles beyond the corporate boundary of an incorporated city.

4.9 Socioeconomic Setting – Combined Oskaloosa and Pella Airport Service Area

4.9.1 Airport Service Area

The South Central Regional Airport service area includes nearly all of the geographic area that comprised the airport service area previously associated with the Oskaloosa Municipal Airport and the Pella Municipal Airports. The proposed airport site is located adjacent to Iowa Highway 163 and within two (2) miles of the proposed U.S. Highway 63/Iowa Highway 163 interchange. The proposed U.S. Highway 63 bypass around the west side of Oskaloosa will provide improved regional surface access.

The airport service area is shown in Figure 4-2. The primary airport service area includes all of Mahaska County and an area within Marion County that is defined by the Des Moines River and Iowa Highway 44. The primary service area includes the following incorporated cities:

- Barnes City
- Keomah Village
- Oskaloosa
- Beacon
- Leighton
- Pella
- Fremont
- New Sharon
- Rose Hill
- University Park

A secondary service area extends into Keokuk County. Aircraft owners from this secondary area that currently base airplanes at the Oskaloosa Municipal Airport may choose to use the proposed South Central Regional Airport, the Washington Municipal Airport, or the Ottumwa Regional Airport.

Given the proposed airport location, aircraft owners within the primary airport service area would most likely base their aircraft at the proposed airport.

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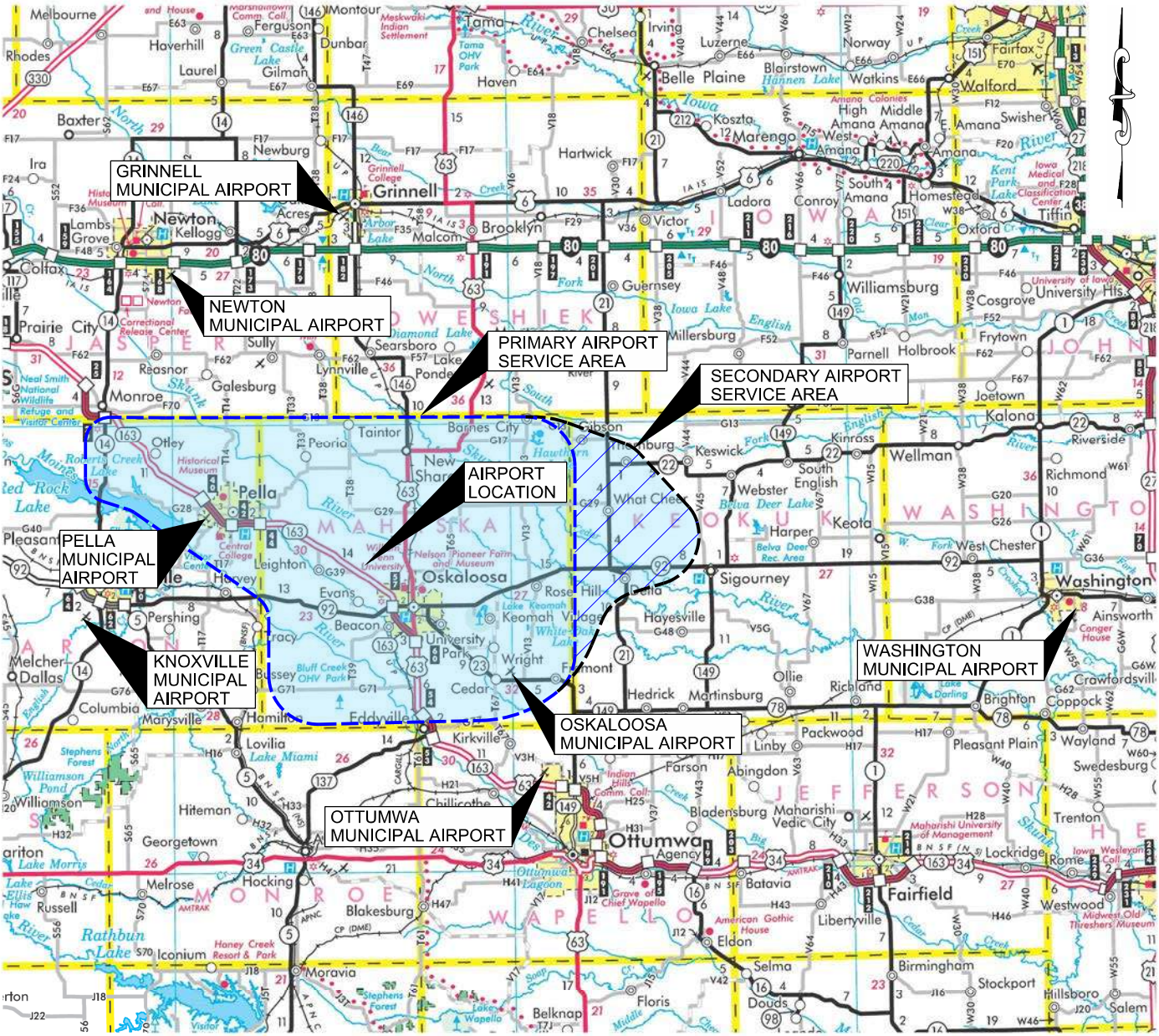

LEGEND

PRIMARY SERVICE AREA

SECONDARY SERVICE AREA

DGR ENGINEERING

SNYDER & ASSOCIATES
Engineers and Planners

JS Consulting LLC

SOUTH CENTRAL REGIONAL AIRPORT
MAHASKA COUNTY, IOWA

AIRPORT SERVICE AREA

FIGURE
4-2

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4.9.2 Population

There were 36,623 persons residing within the South Central Regional Airport Service Area in 2010. Of those, 69.4% resided within the eight (8) incorporated cities located in the airport service area. The City of Pella and City of Oskaloosa combined account for 59.6% of the 2010 airport service area population. Table 4-2 shows, by township, the resident population for the census years 1990, 2000, and 2010.

Table 4-2
Total Population in SCRA Service Area Townships: 1990-2010

Geographic Area Township	Population			Change	
	1990	2000	2010	No.	%
Adams township, Mahaska County	312	288	242	-70	-22.00%
Black Oak township, Mahaska County	594	637	753	159	26.80%
Cedar township, Mahaska County	1,075	1,111	1,108	33	3.10%
East Des Moines township, Mahaska County	268	281	273	5	1.90%
Garfield township, Mahaska County	1,237	1,287	1,232	-5	-0.40%
Harrison township, Mahaska County	570	622	608	38	6.70%
Jefferson township, Mahaska County	369	351	324	-45	-12.20%
Lake Prairie township, Marion County - Pella	10,771	11,763	12,498	1,727	16.00%
Lincoln township, Mahaska County	410	448	402	-8	-2.00%
Madison township, Mahaska County	434	404	361	-73	-16.80%
Monroe township, Mahaska County	290	259	232	-58	-20.00%
Oskaloosa City township, Mahaska County	10,632	10,938	11,463	831	7.80%
Pleasant Grove township, Mahaska County	355	352	297	-58	-16.30%
Prairie township, Mahaska County	1,534	1,735	1,671	137	8.90%
Richland township, Mahaska County	522	459	472	-50	-9.60%
Scott township, Mahaska County	482	425	712	230	47.70%
Spring Creek township, Mahaska County	1,443	1,647	1,583	140	9.70%
Summit township, Marion County	676	1,141	1,444	768	113.60%
Union township, Mahaska County	370	312	331	-39	-10.50%
West Des Moines township, Mahaska County	120	164	170	50	41.70%
White Oak township, Mahaska County	505	525	447	-58	-11.50%
Total	**32,969**	**35,149**	**36,623**	**3,654**	**11.10%**

Source: U.S. Bureau of the Census 1990-2010

Approximately 38% of the service area population resides in Marion County (Lake Prairie Township and Summit Township). The balance of the population resides in Mahaska County. It should be noted that there are two (2) public airports in Marion County (Pella and Knoxville). The balance of the Marion County population (62%) is served by the Knoxville Municipal Airport. As noted in Table 4-2, Lake Prairie Township (Pella City) accounts for 52.7% of the South Central Regional Airport Service Area population increase within the period of 1990-2010. The population within Pella increased from 9,270 persons in 1990 to 10,352 in 2010, or by 11.6%. Within the same period the population of Oskaloosa increased by 863 persons, or by 8.14%.

While the discussion on the previous page focused on population change within the past 20 years, Table 4-3 summarizes the population change for incorporated cities over a 40 year period. The City of Pella experienced significant growth from 1970 to 2010 (55.2%) with the most significant increase occurring between 1970 and 1990. The City of Oskaloosa, within the same period, experienced a modest population growth.

Table 4-3
Population Incorporated Cities: 1970-2010

City	Population					Change	
	1970	1980	1990	2000	2010	No.	%
Barnes City	238	266	221	201	176	-62	-26.10%
Beacon	338	530	509	518	494	156	46.20%
Fremont	480	730	701	704	743	263	54.80%
Keomah Village	N/A	99	99	97	84	-	-
Leighton	140	137	142	153	162	22	15.70%
New Sharon	944	1,225	1,136	1,301	1,293	349	37.00%
Oskaloosa	11,224	10,989	10,632	10,938	11,463	239	2.10%
Pella	6,668	8,349	9,270	9,832	10,352	3,684	55.20%
Rose Hill	192	214	171	205	168	-24	-12.50%
University Park	534	645	598	536	487	-47	-8.80%
Total	**20,758**	**23,184**	**23,479**	**24,485**	**25,422**	**4,664**	**22.47%**

Source: U.S. Bureau of the Census 1990-2010

Given the concentration of population and employment opportunities within a 14-mile corridor, extending between Pella and Oskaloosa, there is merit to the development of a new airport along the Iowa Highway 163 corridor that can serve both population and employment nodes.

Population growth in the South Central Regional Airport Service Area is expected to continue through 2025. Table 4-4 summarizes forecast population change in the Marion and Mahaska Counties as well as five (5) adjacent counties.

Table 4-4
Seven County Population Projection: 2015-2025

County	Population				Change	
	2010	2015	2020	2025	No.	%
Jasper	36,636	36,817	37,067	37,351	715	2.00%
Keokuk	10,608	10,402	10,215	10,037	-571	-5.40%
Mahaska	22,326	22,367	22,451	22,555	229	1.00%
Marion	32,909	33,793	34,737	35,714	2,805	8.50%
Monroe	7,532	7,430	7,342	7,262	-270	-3.60%
Poweshiek	18,658	18,853	19,083	19,331	673	3.60%
Wapello	35,328	34,913	34,566	34,251	-1,077	-3.00%

Source: Woods & Poole Economics Inc. 2010 State Profile: Iowa

4.9.3 Commuting Patterns

Worker commuting patterns are an indicator of regional economic relationships. People are often employed outside of the city or county within which they reside. The willingness to travel has an impact on a number of economic indicators. People will purchase goods and services in a location where they work.

The development of a new airport, located between Pella and Oskaloosa, represents a component of the transportation infrastructure that will contribute to the development of a regional population and employment center. Seventy (70) percent of employed Pella residents work in Marion County, while only 46% of employed Oskaloosa residents work in Mahaska County. More specifically, 51% of employed Pella residents work in Pella compared to 37% of employed Oskaloosa residents that work in Oskaloosa. Five (5) percent of employed Oskaloosa residents commute to Pella, while three (3) percent of employed Pella residents commute to Oskaloosa.

Table 4-5
Worker Inflows-Outflows: Pella & Oskaloosa 2011

City	Employed In - Living Elsewhere	Employed & Living In	Living in - Employed Elsewhere
Pella	4,268	2,183	2,129
Oskaloosa	3,947	1,903	3,260

Source: Iowa State University Department of Economics
FY 2013 Retail Trade Analysis: Pella, Oskaloosa

Given the good correlation between population and employment with aeronautical activity, it is reasonable to consider the laborshed studies for Pella and Oskaloosa (Mahaska County). The laborshed studies were published by the Iowa Workforce Development – Labor Market and Workforce Information Division. The *Pella Laborshed Analysis* was released in February 2013. The *Mahaska Community Analysis* was also released in February 2013. While each of the above referenced studies followed the same methodology, it is not reasonable to simply combine the two (2) data sets. A request was made to the Iowa Workforce Development to prepare an analysis for a combined laborshed to more accurately represent the South Central Regional Airport Service Area.

Figure 4-3 shows the two major employment nodes within the combined Pella and Oskaloosa labor shed. The study (*South Central Regional Airport Service Area Laborshed Analysis* report) concluded that persons accepting employment within the Pella and Oskaloosa employment nodes area will commute an average of 28 miles one way.

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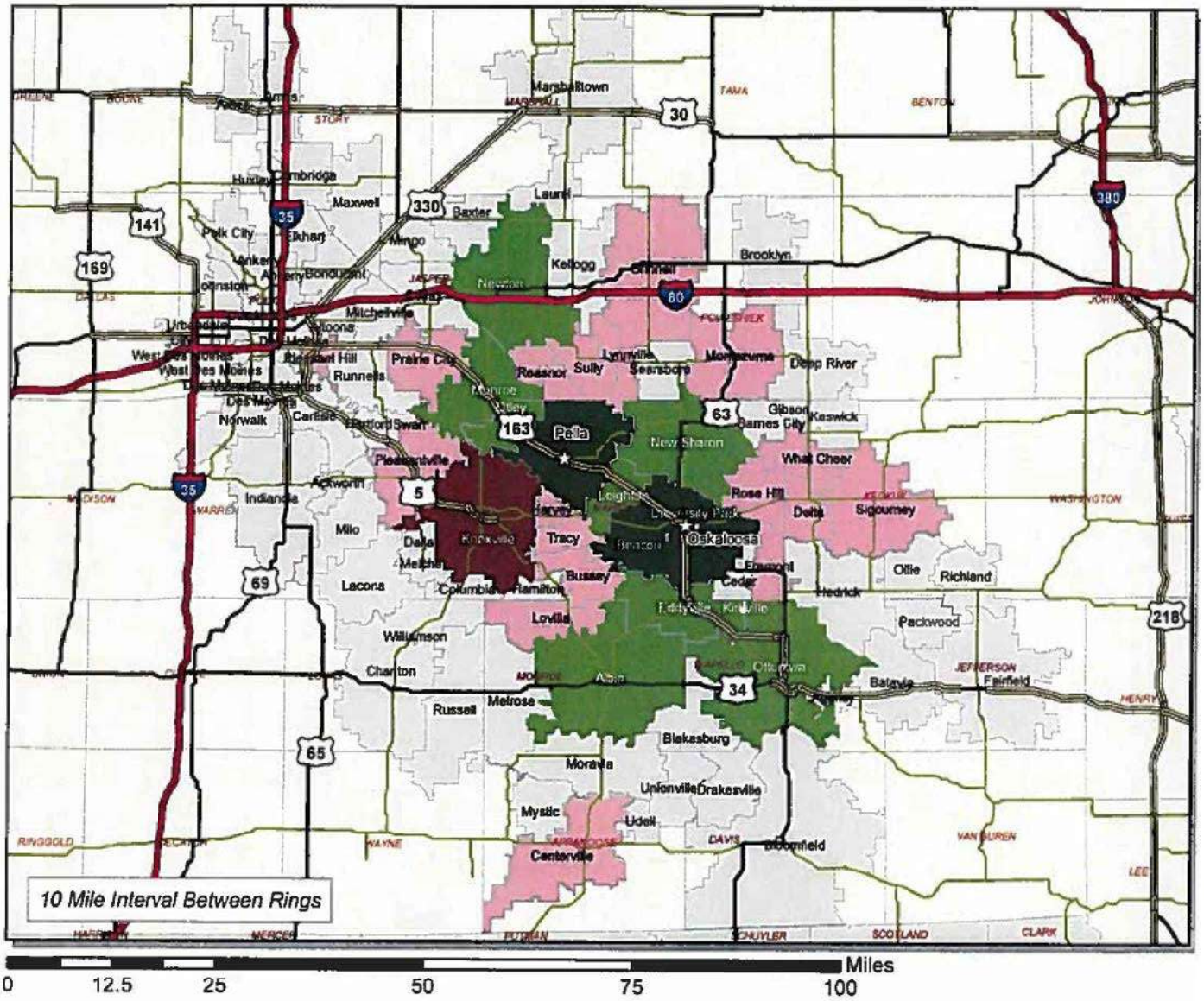

DGR ENGINEERING	SNYDER & ASSOCIATES Engineers and Planners	JS Consulting LLC	SOUTH CENTRAL REGIONAL AIRPORT MAHASKA COUNTY, IOWA COMMUTER CONCENTRATION BY PLACE OF RESIDENCE INTO OSKALOOSA AND PELLA	FIGURE 4-3

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4.9.4 Retail Sales

Retail sales are an indicator of a community's economic well-being. The City of Pella and the City of Oskaloosa each show a trade surplus. Given the proximity to the Des Moines Metropolitan Area, a surplus indicates that persons travel to each community to purchase goods and services.

Table 4-6
Retail Trade Surplus: Pella & Oskaloosa FY 2006-2013

Fiscal Year[1]	Pella		Oskaloosa	
	Surplus ($1,000)	% of Actual Sales	Surplus ($1,000)	% of Actual Sales
2006	19,110	13.50%	48,818	27.90%
2007	20,449	14.40%	50,945	29.20%
2008	26,853	18.00%	48,564	28.00%
2009	24,188	16.50%	42,225	25.40%
2010	32,681	22.70%	46,388	28.60%
2011	34,400	23.10%	49,173	29.50%
2012	36,564	23.80%	44,580	27.20%
2013	45,572	28.30%	42,712	26.60%

Source: Iowa State University Department of Economics
Retail Trade Analysis report: Pella, Oskaloosa – March 2014
[1]State Fiscal Year Ending June 30

As evident in Table 4-6, Oskaloosa has historically been a strong retail center. Of significance is the increase in surplus retail sales in Pella. Actual sales in Oskaloosa decreased by 7.9%, while actual retail sales in Pella increased by 13.9% from FY 2006 to FY 2013. The increase in actual sales is related, in part, to the increase in population. The surplus sales are a more salient indicator of the geographic extent of the retail trade service area. In some communities, the retail trade service area mirrors the airport service area.

4.9.5 Employment

According to the *South Central Regional Airport Service Area Laborshed Analysis* report, manufacturing employment accounted for 24.8% of the total employment (see Table 4-7). Those employed in education accounted for 16.8%. There are two 4-year institutions of higher learning located within the airport service area. Central College is located in Pella and has an enrollment of 1,500 students. William Penn University is located in Oskaloosa and has an on campus enrollment of 900 students.

Persons employed within the healthcare and social service occupations accounted for 12.6% of the employment followed in turn by persons employed in wholesale and retail trade.

Table 4-7
Industrial Classification of the Employed
Oskaloosa/Pella Labor shed Survey: 2013

Industry	% of Laborshed
Manufacturing	24.80%
Education	16.80%
Healthcare/Social Services	12.60%
Wholesale & Retail Trade	10.70%
Finance, Insurance, Real Estate	6.10%
Transportation, Communication Utilities	5.10%
Personal Services	4.90%
Professional Services	4.70%
Construction	3.80%
Agriculture, Forestry	3.30%
Entertainment	0.90%
Active Military	0.20%

Source: Iowa Workforce Development

The Pella Chamber of Commerce posted the following on their website (www.pella.org):

> *"Pella Boasts 6,500 plus manufacturing and industrial jobs and ranks ninth in the state in the capacity. This abundance of jobs attracts commuters from communities within a 50-mile radius. Major employers within each of the two (2) South Central Regional Airport Service area employment nodes are summarized below:*
>
> | *Oskaloosa* | *Pella* |
> |---|---|
> | *Clow Value Company-350* | *Pella Corporation-2,224 (Pella Location)* |
> | *Cargill, Inc.-600* | *Vermeer Corporation-2,364 (Pella Location)* |
> | *Cunningham Inc.-90* | *Pella Regional Health Center-819* |
> | *Musco-450* | *Central College-469* |
> | *Interpower Corp-81* | *Precision Inc.-193* |
> | *Mahaska Bottling-97* | *Van Gorp Corp-60* |
> | *William Penn-225* | *Heritage Lace-45* |
> | *Midland Metals-62* | *Pella Products-39* |
> | *Mahaska Health Partnership-489* | *Christian Opportunity Center-122* |
>
> *A number of the companies located within the airport service area use aviation on a regular basis. The Pella Corporation and MUSCO own and operate airplanes that are identified in FAA AC 150/5325-4B Table 3-2, Remaining 25 Percent of Airplanes that Make Up 100 Percent of Fleet."*

SECTION FIVE

Environmental Consequences

SECTION FIVE: ENVIRONMENTAL CONSEQUENCES AND MITIGATION

5.1 Introduction

Section Five examines the probable beneficial and adverse social, economical and environmental impacts anticipated from implementation of the proposed project actions. The following subsections address each of the specific impact categories referenced in the Federal Aviation Administration (FAA) Order 5050.4B, *NEPA Implementing Instructions for Airport Actions* and FAA Order 1050.1F, *Environmental Impacts: Policies and Procedures.* Order 5050.4B supplements Order 1050.1F by providing NEPA instructions, especially for proposed federal actions to support airport development projects. FAA Order 5050.4B follows the Council on Environmental Quality's (CEQ's) NEPA implementing regulations that include CFR 1500-1508.

5.2 Resources Not Affected

The following resource(s) are either not present or would not be affected by the proposed airport improvements or airport closures. These resources were evaluated but not discussed in the document since the proposed improvements would not impact them.

- Coastal Resources

5.3 Resources Affected

The No Action, Reasonable Alternative One - Site B, Reasonable Alternative Two - Site A Build Alternative 3 (Proposed Action), Pella Municipal Airport closure and Oskaloosa Municipal Airport closure would likely affect the following resource(s):

- Air Quality (5.4)
- Biotic Resources (5.5)
- Climate (5.6)
- Department of Transportation Act Section 4(f) (5.7)
- Farmlands (5.8)
- Hazardous Materials, Solid Waste and Pollution Prevention (5.9)
- Historic Architectural, Archaeological, and Cultural Resources (5.10)
- Land Use (5.11)
- Natural Resources and Energy Supply (5.12)
- Noise and Noise Compatible Land Use (5.13)
- Socioeconomics, Environmental Justice, and Children's Environmental Health and Safety Risks (5.14)
- Visual Effects (5.15)
- Water Resources (5.16)
- Cumulative Impacts Summary (5.17)

5.4 Air Quality

5.4.1 Introduction

Under the Clean Air Act (CAA), the U.S. Environmental Protection Agency (EPA) developed the Nation Ambient Air Quality Standards (NAAQS) for six (6) common air pollutants, namely:

- Carbon monoxide (CO)
- Nitrogen dioxide (NO_2)
- Ozone (O_3)
- Particulate Matter (PM)
- Sulfur dioxide (SO_3)
- Lead (Pb)

The EPA determined that these criterial air pollutants may harm human health and the environment, and cause property damage.

The Iowa Department of Natural Resources (Iowa DNR) Air Quality Bureau is responsible for keeping Iowa's air in attainment (within the limits of) of the National Ambient Air Quality Standards (NAAQS). The Code of Iowa Chapters 455A and 455B gives authority to regulate air quality to the Iowa DNR. Iowa's statewide ambient air quality standards are the same as the National Ambient Air Quality Standards (see Iowa Administrative Code – IAC Chapter 28 – Ambient Air Quality Standards).

The National Ambient Air Quality Standards are set forth in Table 5-1.

Table 5-1
National Ambient Air Quality Standards (NAAQS)

Pollutants	Primary Standards Value	Primary Standards Averaging Period	Secondary Standards
CO	9 ppm (10 mg/m^3)	8 hours	None
CO	35 ppm (40 mg/m^3)	1 hour	None
NO_2	53 ppb	Annual (Arithmetic average)	Same as Primary
NO_2	100 ppb	1 hour	None
O_3	0.075 ppm	8 hours	Same as Primary
PM_{10}	150 µg/m^3	24 hours	Same as Primary
$PM_{2.5}$	15.0 µg/m^3	Annual (Arithmetic average)	Same as Primary
$PM_{2.5}$	35 µg/m^3	24 hours	Same as Primary
SO_2	75 ppb	1 hour	None
SO_2	None	None	500 ppb average period of 3 hours
Pb	0.15 µg/m^3	Rolling 3-month average	Same as Primary

Source: EPA's NAAQS website at: http://www.epa.gov/air/criteria.html. The information in the table is current as of September 2012. The Standards are codified at 40 Code of Federal Regulations (CFR) part 50.

Note: CO = carbon monoxide; Pb = lead; NO_2 = nitrogen dioxide; PM_{10} and $PM_{2.5}$ = particulate matter with an aerodynamic diameter equal to or less than 10 microns and 2.5 microns, respectively; O_3 = ozone; SO_2 = sulfur dioxide; mg/m^3 = milligram per cubic meter; ppb = part per billion; ppm = part per million; µg/m^3 = microgram per cubic meter

There are two designated non-attainment areas in Iowa.

- Pottawattamie County – Lead
- Muscatine County – Sulfur dioxide

The Iowa Department of Transportation created the Iowa Clean Air Attainment Program to help finance transportation projects and programs that result in attaining or maintaining the National Ambient Air Quality Standards within Iowa.

5.4.2 Analysis

The alternatives as discussed in Section Three are located within an area that does not exceed the National Ambient Air Quality Standards. The State Hygienic Laboratory at the University of Iowa maintains a network of sites located throughout the state to monitor the following pollutants:

- Carbon monoxide (CO)
- Nitrogen dioxide (NO_2)
- Ozone (O_3)
- Reactive Nitrogen
- Speciation
- Air Toxics
- Meteorological Conditions
- Particulate Matter (PM)
- Sulfur dioxide (SO_3)
- Lead (Pb)

Historical air quality data and meteorological conditions are also maintained by the State of Iowa Hygienic Laboratory.

Regional meteorological conditions are conducive to pollution dispersion. Topographic conditions within the area will have minimal influence on air flow and/or air temperature. There are no land uses or large emission sources within the study area.

No single universal criterion exists for deciding whether an ambient pollutant concentration analysis (NAAQS Analysis) is necessary. Since the alternatives being discussed are not located in a non-attainment area and the south central Iowa region including Mahaska County has not had a history of NAAQS pollutant exceedances, a NAAQS Analysis was not conducted.

5.4.3 Potential Impacts

5.4.3.1 No Action Alternative

The “No Action Alternative” assumes that there will be no airport related expansion at the two (2) existing public owned airports nor will the replacement airport be constructed.

5.4.3.2 Pella Municipal Airport: Release and Closure

Closure of the Pella Municipal Airport will eliminate aircraft emissions as well as airport generated vehicle emissions from the airport vicinity.

Residential development to accommodate a projected increase in population will occur even if the airport is not closed. Therefore, closure of the existing

airport will not contribute to an increase in pollutants as a result of a potential increase in population as the City anticipates a population increase even if the airport is not closed.

5.4.3.3 Oskaloosa Municipal Airport: Release and Closure

Closure of the Oskaloosa Municipal Airport will eliminate aircraft emissions as well as airport generated vehicle emissions from the airport vicinity.

The conversion of the existing airport to row crops will result in a net decrease in emissions as an opportunity to utilize more efficient farming practices will be introduced.

5.4.3.4 Reasonable Alternative One – Site B

An increase in emission (aircraft, vehicles) will be introduced into the area. There are no anticipated impacts to air quality that would exceed the National Ambient Air Quality Standards (NAAQS) as a result of construction or after the airport becomes operational. During construction, reasonable precautions to prevent fugitive dust will be utaken in accordance with Iowa Administrative Code Chapter 23.

The combined aeronautical activity will result in a net decrease in emissions within the airport service area since one airport will be maintained (snow removal, grass mowing) rather than two airport facilities.

5.4.3.5 Reasonable Alternative Two – Site A Build Alternative 3 (Proposed Action)

An increase in emissions will occur from construction related activities. During construction, reasonable measures will be taken to mitigate fugitive dust.

The combined aeronautical activity will result in a net decrease in emissions within the airport service area since one airport will be maintained rather than two airport facilities. Emissions from ground maintenance vehicles and vehicular traffic will be less than if two airports were maintained.

5.4.4 Mitigation

Other than mitigating for fugitive dust during construction, there are no mitigation requirements proposed. Fugitive dust resulting from construction activities are anticipated from movement of heavy construction equipment and exposure and disturbance to surface soils. These impacts are expected to be both temporary and localized. Mitigation measures (see Section 5.17 – Table 5-6) will be established to reduce fugitive dust and potential nuisance impacts. During construction dry periods, these measures could include:

- Cover all materials being transferred by truck.
- Use dust suppressant on unpaved travel paths.
- Minimize unnecessary vehicular and machinery activities.

- Minimize soil track-out by washing or cleaning trucks before leaving the construction site

5.5 Biotic Resources

5.5.1 Introduction

For purposes of this document, the term "biotic resources" means various types of flora (plants) and fauna (fish, birds, reptiles, etc.) in a particular area. The term also refers to habitat that supports flora and fauna such as rivers, wetlands, forests and other types of habitat. Impacts to biotic resources are determined based on whether a proposal would cause a minor permanent alteration of existing habitat or whether it would involve the removal of a sizeable amount of habitat which supports a rare species, or a small, sensitive tract.

5.5.2 Analysis

The "No Action Alternative" will have a less than significant impact on biotic resources. Reasonable Alternatives One and Two will require the conversion of farmland to airport use. Activities associated with the construction of a new airport facility may potentially impact the natural habitat.

The natural habitat has been significantly altered due to historic and current agricultural practices. The primary agricultural activity is related to corn and soybean production. Some natural habitat exists along drainage ways, streams, and within wooded corridors.

The Iowa Department of Natural Resources (Iowa DNR) website was used to identify potential state listed threatened and endangered flora and fauna species within Mahaska County. The U.S. Fish and Wildlife Service (USFWS) website was used to identify federally listed endangered and threatened species. Potential habitat of the listed species was investigated during the onsite review.

Section 7 of the Endangered Species Act of 1973, as amended, requires "all Federal Agencies shall, in consultation with and with the assistance of the Secretary, ensure that any action authorized, funded, or carried out by such agency ("agency action") is not likely to jeopardize the continued existence of an endangered or threatened species, or result in destruction or adverse modification of a critical habitat of a species." Furthermore, Section 7a(4) requires that "all Federal Agencies must confer with the Secretary on any agency action likely to jeopardize the continued existence of any species proposed to be listed, or result in destruction or adverse modification of proposed critical habitat."

The term "endangered species" relates to any species which is in danger of extinction throughout all or a significant portion of its range. Endangered species do not include species of the Class Insecta determined by the Secretary of the Interior that constitute a pest and would present an overwhelming and overriding risk to people.

The term "threatened species" relates to any species in decline which is likely to become an endangered species within the foreseeable future throughout all or a significant part of its range.

Table 5-2
Federally Listed Threatened and Endangered Species

	Common Name	Scientific Name	Classification
Mammals	Indiana Bat	Myotis Sodalis	Endangered
	Northern Long-eared Bat	Myotis Septentrionalis	Threatened
Plants	Prairie Bush Clover	Lespedeza Leptostachya	Threatened
	Western Prairie Fringed Orchid	Plantanthera Praeclara	Threatened

Source: U.S. Fish and Wildlife Service: http://www.fws.gov/midwest/endangered/lists/iowa_cty.html

In addition to the federally listed species, the Iowa DNR has identified those species of state concern (Threatened, Endangered, and Special Concern). The Iowa DNR defines those species listed as "Special Concern" as any species about which problems of status or distribution are suspected, but not documented.

- 571 Iowa Administrative Code (IAC) Chapter 77

Table 5-3
State Listed Threatened, Endangered, and Special Concern Species

	Common Name	Scientific Name	Classification
Birds	Bald Eagle	Haliaeetus leucocephalus	Special Concern
	Barn Owl	Tyto alba	Endangered
	Henslow's Sparrow	Ammodramus henslowii	Threatened
Insects	Regal Fritillary	Speyeria idalia	Special Concern
Mammals	Indiana Bat	Myotis sodalis	Endangered
	Southern Bog Lemming	Synaptomys cooperi	Threatened
Plants (Dicots)	Creeping Bush-clover	Lespedeza repens	Special Concern
	Curved-pod Corydalis	Corydalis curvisiliqua ssp grandibracteata	Endangered
	Downy Woodmint	Blephilia ciliata	Threatened
	Earleaf Foxglove	Tomanthera auriculata	Special Concern
	Frost Grape	Vitis vulpina	Special Concern
	Hill's Thistle	Cirsium hillii	Special Concern
	Larkspur	Delphinium carolinianum	Special Concern
	Paw Paw	Asimina triloba	Special Concern
	Rough Bedstraw	Galium asprellum	Special Concern
	Rough Buttonweed	Diodia teres	Special Concern
	Roundstem Foxglove	Agalinis gattingeri	Threatened
	Spring Avens	Geum vernum	Special Concern
	Winged Monkey Flower	Mimulus alatus	Threatened
Plants (Monocots)	Glomerate Sedge	Carex aggregata	Special Concern
	Meadow Bluegrass	Poa wolfii	Special Concern
	Oval Ladies'-tresses	Spiranthes ovalis	Threatened
	Pale Green Orchid	Platanthera flava	Endangered
	Slender Ladies'-tresses	Spiranthes lacera	Threatened
	Soft Rush	Juncus effusus	Special Concern
	Virginia Spiderwort	Tradescantia virginiana	Special Concern
Plants Pteriodophytes	Crowfoot Clubmoss	Lycopodium digitatum	Special Concern
	Northern Adder's-tongue	Ophioglossum pusillum	Special Concern
Reptiles	Smooth Green Snake	Liochlorophis vernalis	Special Concern

Source: Iowa Department of Natural Resources https://programs.iowadnr.gov/naturalareasinventory

5.5.3 Potential Impact

5.5.3.1 No Action Alternative

The "No Action Alternative" will have no impact on biotic resources as airport expansion or related projects would not occur.

5.5.3.2 Pella Municipal Airport: Release and Closure

Closure of the Pella Municipal Airport will not have an adverse effect on biological resources as there is no critically designated habitat on the existing airport site.

5.5.3.3 Oskaloosa Municipal Airport: Release and Closure

Closure of the Oskaloosa Municipal Airport will not have an adverse effect on biological resources as there is no critically designated habitat on the existing airport site.

5.5.3.4 Reasonable Alternative One – Site B

With the exception of a farmstead, county roads (220th Street, Elba Avenue) and grass waterways, the balance of the site is under cultivation. The location of any habitat associated with threatened, endangered, and special concern species on the site is minimal. There are no woodland or trees located on the site. Therefore, Reasonable Alternative One – Site B will have no adverse effect on critical habitats associated with threatened, endangered, and special concern species.

5.5.3.5 Reasonable Alternative Two – Site A Build Alternative 3 (Proposed Action)

Nearly all of Site A is under cultivation with the exception of a pond, two intermittent streams, wooded areas around the intermittent streams, one ephemeral drainage way and road right of way (220th Street).

Snyder & Associates Inc. assessed the project area for the presence of the Indiana Bat and Northern Long-Eared Bat habitat. Pedestrian surveys were conducted on May 6, 2015 and May 18, 2015 (see Technical Memorandum: *Indiana Bat and Northern Long-Eared Bat Habitat Assessment* – Snyder & Associates, Inc. – June 19, 2015) (Appendix I).

The proposed project will cause minor permanent alterations of the existing woodland habitat. The impact is considered minor because the proposed project would remove woodland habitat that supports a minimal number of biotic resources in the effected area. A bat habitat survey was completed during the spring of 2015. This project will not have a permanent impact on threatened, endangered, or special concern species. The identified roost trees will be removed during the hibernation season from October 1 through March 31.

There are no local, state or federally designated forest, grasslands, or wildlife refuges on or adjacent to Site A.

5.5.4 Mitigation

Throughout the accessible project area, 89 potential roost tree locations met the habitat requirements listed in the Iowa DNR and USFWS guidance.

Based on the result of the Indiana Bat and Northern Long-Eared Bat Habitat survey, the proposed actions may affect, but not likely adversely affect the Indiana Bat and Northern Long-Eared bat. The recommendation is that removal of any potential roost trees identified during the habitat study or during the project construction should be removed from October 1 to March 31 (see USFWS letter dated 2-10-16 - Appendix B).

To protect migratory birds, construction activities will not occur where active nests are present until the birds have fledged and left the nest. If evidence of migratory

bird nesting is discovered after the beginning of construction, or if migratory bird nests become established, constructions should immediately stop within the vicinity of the nest. All non-active, existing migratory bird nests should be removed and properly disposed and monitored weekly to prevent the establishment of active nests.

5.5 Climate

5.6.1 Introduction

Of growing concern is the potential impact of proposed projects on climate change. Greenhouse gases (GHG's) are those gases that trap heat in the earth's atmosphere and include carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), ozone (O_3), and water vapor (H_2O). FAA Order 1050.1F, *Environmental Impacts: Policies and Procedures* (July 2015), requires that FAA give considerations to the effects of climate change and greenhouse gas emissions. The FAA guidance provides that potential climate impacts be documented in a separate section of the NEPA document, distinct from air quality (Section 5.4).

5.6.2 Analysis

The Proposed Action, when combined with the closure of the existing Pella and Oskaloosa Municipal Airports, will result in a reduction of greenhouse gases. The reduction will be provided by reducing the fuel burned to maintain (snow removal, mowing) the facility. Further reduction will be provided by reduced surface travel distances to an alternative airport location

5.6.3 Potential Impacts

5.6.3.1 No Action Alternative

The "No Action Alternative" will result in no changes to GHG emissions at the Pella and Oskaloosa Municipal Airports as there will be no changes to existing facilities or traffic patterns.

5.6.3.2 Pella Municipal Airport: Release and Closure

Closure of the Pella Municipal Airport will eliminate GHG's within the airport environs as there would be no CO_2 emissions from aircraft operations and grounds maintenance.

The ultimate development of the existing airport to accommodate projected population increase will contribute to a potential reduction of greenhouse gases (GHG's) within the community, since the site represents an opportunity to minimize urban sprawl and the conversion of undeveloped land to urban residential uses.

5.6.3.3 Oskaloosa Municipal Airport: Release and Closure

Closure of the Oskaloosa Municipal Airport will eliminate GHG's within the airport environs as there would be no CO_2 emissions from aircraft operations and grounds maintenance.

The opportunity to introduce efficient farming practices will result in a net reduction of greenhouse gases.

5.6.3.4 Reasonable Alternative One – Site B

There will be an increase in CO_2 emission equal to the emissions by aircraft that will be relocated from the Pella, Oskaloosa, and Ottumwa Municipal Airports.

Within the combined airport service area, there will be a net reduction of greenhouse gases since there will be one airport to maintain and operate rather than two airport facilities.

5.6.3.5 Reasonable Alternative Two – Site A Build Alternative 3 (Proposed Action)

There will be an increase in CO_2 emission equal to the emissions by aircraft that will be relocated from the Pella, Oskaloosa, and Ottumwa Municipal Airports.

The increase in greenhouse gases will be offset by removal of aircraft generated greenhouse gases at the Pella Municipal Airport and Oskaloosa Municipal Airport.

5.6 Department of Transportation Act – Section 4(f) and Related Lands

5.7.1 Introduction

Section 4(f) of the Department of Transportation Act of 1966 [49 USC Section 303(c)] is intended to preserve public-owned parks and recreation lands, wildlife and waterfowl refuges of national, state or local significance or any historic site of natural, state or local significance.

5.7.2 Analysis

Section 4(f)/303(c) of the Department of Transportation Act of 1966 provided that the Secretary of Transportation shall not approve any program or project which requires the use of any land from a public park, recreation area, wildlife and waterfowl refuge, or historical site listed or eligible for listing, unless there are no feasible and prudent alternatives to the use of such land and such a program includes all possible planning to minimize harm to such areas.

When proposed improvements affect lands purchased or developed using Land and Water Conservations Funds [LAWCON Section 6(f)], changes in use to other than

public recreation cannot be made without prior approval of the Secretary of the Interior.

Section 4(f) resource determinations are made by FAA.

5.7.3 Potential Impacts

5.7.3.1 No Action Alternative

The "No Action Alternative" would have no adverse effect on public-owned parks and recreation areas, wildlife or waterfowl refuges or historic sites as no changes to aircraft traffic patterns or construction would be undertaken.

5.7.3.2 Pella Municipal Airport: Release and Closure

There are no Section 4(f) resources on the Pella Municipal Airport; therefore, the release and closure will have no adverse effect.

5.7.3.3 Oskaloosa Municipal Airport: Release and Closure

There are no known Section 4(f) resources on the Oskaloosa Municipal Airport; therefore, the release and closure will have no adverse effect.

5.7.3.4 Reasonable Alternative One – Site B

There are no Section 4(f) resources on or adjacent to the site; therefore, there are no adverse effects anticipated.

There are no Section 6(f) funded parks or recreation facilities located on or adjacent to the site.

5.7.3.5 Reasonable Alternative Two – Site A Build Alternative 3 (Proposed Action)

If the proposed action results in the physical use or constructive use of a resource listed or eligible for listing on the National Register of Historic Places, the potential impact must be evaluated.

Wapsi Valley Archaeology conducted a reconnaissance level historic architectural survey to identify properties within the area of potential effect that may be eligible for listing. Of the 13 properties, only one (1) property, at 1795 220th Street, may retain sufficient integrity to meet criteria for listing on the National Register. In addition to the residential structure, an associated earth cellar may be individually significant and eligible for listing.

Wapsi Valley Archaeology conducted an intensive level survey and evaluation of the Prine Cemetery. The evaluation concluded that the Prine Cemetery is eligible for listing because it retains a high level of integrity (see Section 5.10 Historic, Architectural, Archaeological, and Cultural Resources).

There is a previously recorded prehistoric lithic artifact site (13MK341) located on land proposed for acquisition.

The residence and earth cellar, located at 1795 220th Street, as well as the Prine Cemetery are located outside the area proposed for acquisition. Based on proposed mitigation measures, the proposed action will not result in the constructive use of the cultural resources eligible or potentially eligible for listing.

Constructive use occurs when the impacts of a project on a Section 4(f) resource are as severe that the activities, features, or attributes that qualify the property for protection under Section 4(f) are substantially impaired (See Section 5.10 Historical, Architectural, Archaeological, and Cultural Resoures/ 5.10.3.5 – Reasonable Alternative Two – Site A Build Alternative 3).

Section 5.10 discusses measures to protect the Prine Cemetery and artifacts associated with site 13MK341 and the residential structure/earth cellar located at 1795 220th Street.

5.7.4 Mitigation

See Section 5.10 Historic, Architectural, Archaeological and Cultural Resources and Section 5.15 Visual Effects.

Recommendations from the Cultural Resources Studies and consultation with the Iowa State Historical Preservation Office (SHPO) conclude that the potential constructive use of these sites can be reduced below a substantial impairment by inclusion of mitigation measures.

5.8 Farmlands

5.8.1 Introduction

The Farmland Protection Policy Act (FPPA) (Public Law 97-98, Subtitle 1 of Title XV, Section 1539-1549) authorizes the U.S. Department of Agriculture (USDA) to develop criteria for identifying the effects of federal programs on the direct or indirect conversion of farmland to non-agricultural uses. Federal agencies are directed to: (1) use the criteria established; (2) identify the quantity of farmland actually converted by the federal programs; (3) identify and take into account the adverse effects of federal programs on the preservation of farmland; (4) consider alternative actions, as appropriate, that could lessen such adverse effects; and (5) assure that such federal programs, to the extent practicable, are compatible with state and local units of government, as well as private programs and policies in order to protect farmland.

The project actions will involve acquisition of farmland that will be converted to non-agricultural uses. Therefore, it must be determined whether any of the

converted farmland is protected by the FPPA. Farmland protected by the FPPA is either (1) prime farmland, which is land that possesses the best combination of physical and chemical characteristics for producing food, feed, fiber, forage, oilseed, and other agricultural crops with minimal use of fuel, fertilizer, pesticides or products, but is being used currently to produce livestock and timber; (2) unique farmland, which is land other than prime farmland that is used for production of specific high-value food and fiber crops; or (3) other farmland, other than prime or unique farmland, that is of statewide or local importance for the production of food, feed, fiber ,etc., as determined by the appropriate state or unit of local government agency or agencies, and that the Secretary of Agriculture determines should be considered as farmland for this purpose.

Prime farmland subject to FPPA requirements does not include land already in or committed to urban development or water storage.

5.8.2 Analysis

As part of the early coordination process, the Soil Conservation Division of the Iowa Department of Agriculture was contacted. The Natural Resource Conservation (NRCS) Office completed the Farmland Conversion Impact Rating worksheet (Form AD-1006). Reference may be made to Appendix B for early coordination and Form AD-1006. The Iowa Department of Agriculture and Land Stewardship were contacted during the early coordination phase.

5.8.3 Potential Impacts

5.8.3.1 No Action Alternative

The "No Action Alternative" would have no impact on prime or unique farmland as there would be no construction occurring and no farmland acquisition required.

5.8.3.2 Pella Municipal Airport: Release and Closure

Closure of the Pella Municipal Airport will have no adverse impact on farmland as the land will ultimately be converted from a federally obligated airport to urban uses. Initially, the 109 acre airport site will be converted to an agricultural use. The agricultural use will be maintained until it is converted to land uses consistent with the City's Future Land Use Plan.

5.8.3.3 Oskaloosa Municipal Airport: Release and Closure

Federally obligated land (620 acres) that now compromises the Oskaloosa Municipal Airport will be converted to an agricultural use.

5.8.3.4 Reasonable Alternative One – Site B

Development of Site B will require the acquisition of approximately 524 acres. The land acquired will be federally obligated.

The total points (164 from Part V and Part VI does not exceed the maximum point threshold of 260 (see Appendix B – Form AD-1006).

A score below 160 does not require further analysis. Where the total points equal or exceed 160, alternative actions, where appropriate, should be considered.

5.8.3.5 Reasonable Alternative Two – Site A Build Alternative 3 (Proposed Action)

The Proposed Action will require the acquisition of 582 acres of land in fee with approximately 303 acres being directly converted to airside and landside facilities and approximately 279 acres being indirectly converted from agricultural use without restrictions to agricultural uses with restrictions (as may be set forth in FAA grant assurances).

The combined Part VI score (see Appendix B Form AD-1006) for the proposed Build Alternative was 95. Total combined scores on Form AD-1006 below 160 do not require further analysis. The total point score from Part V (Relative value of farmland) and Part VI (Site Assessment Points) was 175. The total points (175) from Part V and Part VI does not exceed the maximum point threshold of 260.

Where the total points equal or exceed 160, alternative actions, where appropriate, should be considered. Alternative actions may include an alternative site, modification to the airport geometry or other mitigation (See Section 5.8.4).

Except for areas required for an aeronautical purpose (i.e. runway, taxiway, airport hangars and facilities, and associated object free areas), the remaining 279 acres could remain under agricultural production. This area may be leased back and would generally include the land within the Runway Protection Zone (RPZ) and the area extending out from the Runway and Taxiway Object Free Areas (ROFA/TOFA) to the proposed airport property line. Areas of agricultural production including land within the Runway Protection Zones (RPZ) and the areas extending beyond the Runway and Taxiway Object Free Areas (ROFA/TOFA) to the proposed airport property line require crop restrictions, as shown on the Airport Layout Plan (ALP) – Land Use Plan Sheet (see Appendix E).

The acquisition of agricultural property for the project action will be carried out in accordance with the *Federal Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970* (URA), as amended, 49 CFR Part 24.

5.8.4 Mitigation

The release and disposal of the Pella Municipal Airport and Oskaloosa Municipal Airport will mitigate, in part, the impact associated with the conversion of land from an agricultural use to a non-agricultural use.

The 620 acre Oskaloosa Municipal Airport site is federally obligated. Closure will result in the removal of land use restrictions associated with airport facilities and operations. The 620 acres will be converted to agricultural uses without restrictions associated with airport operations.

The National Resource Conservation Service (NRCS) Web Soil Survey (WSS) was used to identify prime farmland and prime farmland if drained on the Oskaloosa Municipal Airport. The report showed that 469.7 acres were classified as Taintor silty clay loam (prime farmland if drained) and 128.9 acres classified as Mahaska silty clay loam (prime farmland).

Of the 582 acres acquired for the Replacement Airport, 279 acres will be available for farming. The 279 acres represent non-safety critical areas of the proposed airport and would be available for certain types of crops.

5.9 Hazardous Materials, Solid Wastes and Pollution Prevention

5.9.1 Introduction

A hazardous material is any substance or material that has been determined to be capable of posing an unreasonable risk to health, safety, and property. The term hazardous materials include hazardous wastes and substances as well as petroleum and natural gas substances and materials.

To identify these materials and protect the environment from harmful interaction of potential hazardous wastes, several federal laws and regulations have been enacted including: The Nation Priorities List (Superfund Sites), the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) and the Resource Conservation Recover Act (RCRA).

In addition to federal regulations, the State of Iowa – Iowa Department of Natural Resources (Iowa DNR) has developed regulations and guidance related to abandoned water wells, leaking underground storage tanks (LUST) and fuel storage facilities.

5.9.2 Analysis

The Iowa Department of Natural Resources was contacted regarding the potential location of hazardous wastes or hazardous substances on the existing Pella Municipal Airport, Oskaloosa Municipal Airport and Reasonable Alternative One – Site B and Reasonable Alternative Two – Site A (Proposed action). The U.S. Environmental Protection Agency (EPA) listing (CERCLA) of potential suspected and known hazardous waste and substance sites was reviewed.

Compliance with local, state and federal regulations that relate to disposal of construction debris must be adhered to. The Solid Waste Disposal Act notes that the term “solid waste” includes garbage, refuse, or sludge from a waste treatment

plant, water supply treatment plant or an air pollution control facility. Solid waste also includes solid, liquid, semi-solid or contained gaseous materials.

5.9.3 Potential Impacts

5.9.3.1 No Action Alternative

The "No Action Alternative" assumes that there will be no new construction or expansion of the existing airport facilities. The No Action Alternative would not generate construction debris or solid, semi-solid, or gaseous material and substances beyond what would be generated from maintaining the existing two (2) airports

5.9.3.2 Pella Municipal Airport: Release and Closure

Closure of the Pella Municipal Airport will have no adverse impacts. Existing pavement will be left in place. The existing buildings will be converted to other uses when, and if, disposed of by the City of Pella. Closure of the airport will remove, from the site, potential sources of pollution that may result from fuel spills.

There are two (2) 10,000 gallon underground fuel storage tanks located on the airport. One (1) tank is used to store Jet A fuel and the other for 100LL fuel. There is a monitoring system in place.

The conversion to residential uses will result in an increase in stormwater runoff and potentially hazardous wastes. The City has, in place, a site plan checklist (see Municipal Code Chapter 165: Zoning Code) and subdivision regulations (see Municipal Code Chapter 170: Subdivision Regulations) to address stormwater. The City of Pella contracts with Midwest Sanitation for the collection of solid waste, recycling, and yard waste (see Municipal Code: Chapter 105: Solid Waste Control, Chapter 106: Solid Waste Collection, and Chapter 28: Hazardous Waste Spills).

5.9.3.3 Oskaloosa Municipal Airport: Release and Closure

Closure of the Oskaloosa Municipal Airport will have no adverse impacts. Existing pavement will be left in place. The existing building structure will be converted to other uses. If building demolition would occur the asbestos (if any) will be removed and materials having no salvage value transported to the Mahaska County Landfill.

The Oskaloosa Airport will be converted to agricultural uses. Should an animal confinement and feeding operation be considered, the proponent must adhere to guidelines set forth by the Iowa Department of Natural Resources. The Air Quality Bureau conducts field studies near animal feeding operations to evaluate air quality. The Iowa DNR Field Services and Compliance Bureau reviews manure management and nutrient management plans. The Iowa DNR also issues NPDES and stormwater permits applicable

to feeding and confinement operations (see Iowa Code Chapter 65: Animal Feeding and Confinement Operations).

There is one (1) 12,000 gallon underground fuel storage tank divided into three (3) compartments of which one (1) compartment is used to store 100 LL and the remaining two (2) for Jet A. A monitoring system is in place to detect leaks. Tanks are subject to requirements set forth in the Iowa Administrative Code (IAC) – Chapter 134 *Underground Licensing and Certification Program.*

5.9.3.4 Reasonable Alternative One – Site B

There are no known hazardous materials or substances within the area proposed for acquisitions or on property adjacent to the proposed site.

Fuel (Jet A, 100LL) will be stored in double wall above ground storage tanks. The above ground storage tanks will not exceed 12,000 gallons each.

5.9.3.5 Reasonable Alternative Two – Site A Build Alternative 3 (Proposed Action)

There are no known hazardous materials on Alternative Two – Site A. The volume of solid waste generated will not be disproportionally greater than the volume generated by the two (2) existing airports. The Mahaska County Landfill is located 11 miles from the proposed site. Therefore, the Mahaska County Landfill is not considered a potential wildlife attractant.

Fuel (Jet A, 100LL) will be stored in double wall above ground storage tanks. The storage tanks and fuel dispensing units will be subject to regulations set forth by the Office of the Iowa State Fire Marshall and Iowa Department of Natural Resources.

5.10 Historical, Architectural, Archaeological, and Cultural Resources

5.10.1 Introduction

There are two (2) basic federal laws in this category that apply to the proposed project:

- National Historic Preservation Act of 1966
- Archaeological and Historical Preservation Act of 1974

Section 106 of the National Historic Preservation Act of 1966 (NHPA), as amended, requires federal agencies to take into account the effects of their undertakings on historic properties and determine if any properties are in, or eligible for inclusion into, the National Register of Historic Places. In addition, it affords the Advisory Council on Historic Preservation a reasonable opportunity to comment. The historical preservation review process mandated in Section 106 is outlined in regulations issued by the Council. The current regulations, Protection of Historic

Properties (36 CFR Part 800), were amended on August 5, 2004, and incorporates the statutory changes mandated by the 2001 amendments to the NHPA.

The Archaeological and Historic Preservation Act of 1974 (AHPA) describes the process that occurs when consultation with resource agencies indicates that there may be impact on significant scientific, prehistoric, historic, archaeological, or paleontological data when such data may be destroyed or lost as a result of the implementation of proposed project action. The process provides for the preparation of a professional resource survey of a proposed project area. Should the survey identify significant resources, the National Register process described above is then followed. Should the survey be inconclusive, a determination is made on whether or not it is appropriate to halt construction (if resources are uncovered) in order for a qualified professional to evaluate their importance and provide for data recovery if needed.

5.10.2 Analysis

The purpose of a Phase I Cultural Resources Investigation is to locate, identify and evaluate all archaeological resources within the Area of Potential Effect (APE) in order to provide federal and state reviewing agencies with documentation of a project's potential impact on historical properties. Cultural resources include archaeological, architectural, and historic resources. Historic properties are those resources that have been determined to have some potential eligibility for inclusion in the National Register of Historic Places (NRHP).

Mr. Jon Sellars, Principal Investigator with Consulting Archaeological Services (CAS), completed a Phase I Cultural Resources Investigation on 319 acres of the 582 acres proposed for acquisition.

The abstract of the Phase I Cultural Resource Investigation, performed by Consulting Archaeological Services, for the proposed project can be found in Appendix H.

5.10.3 Potential Impacts

5.10.3.1 No Action Alternative

The "No Action Alternative" will have no adverse effects on historical, architectural, archaeological, and cultural resources as no airport related expansion project would occur.

5.10.3.2 Pella Municipal Airport: Release and Closure

The Phase IA Archaeological Assessment prepared by Wapsi Valley Archaeological Inc. (April 2016) recommended a Phase I intensive archaeological survey for two (2) areas on the airport (see Appendix H). The Phase I intensive archaeological survey will be undertaken prior to the disposal of airport property.

A reconnaissance level architectural survey of the Pella Municipal Airport concluded that none of the buildings were individually eligible and the airport as a whole was not eligible for listing on the National Register of Historic Places (see Appendix H).

5.10.3.3 Oskaloosa Municipal Airport: Release and Closure

A Phase I intensive archeological survey was recommended by Wapsi Valley for three (3) farmsteads that were illustrated on the 1904 plat map and visible on late 1930's aerial photography. In addition, the southwestern portion of the existing airport site should be investigated for prehistoric archaeological sites as well as material traces from the period (1942-1947). The airport site was operated as a "Naval Outlying Landing Field" associated with the Ottumwa Naval Air Station. The Oskaloosa Municipal Airport may be eligible for the National Register of Historic Places. A Phase I intensive level historic architectural evaluation and documentation is to be completed to determine eligibility for the National Register.

The Phase I intensive archeological survey and architectural survey will be undertaken prior to disposal of all of part of the Oskaloosa Municipal Airport (See Appendix H).

The existing site will be converted to agricultural uses.

5.10.3.4 Reasonable Alternative One – Site B

There are no known historical, architectural, archaeological and cultural resources on Site B. A Phase I Cultural Resource survey will be done prior to the acquisition of the land and/or construction.

5.10.3.5 Reasonable Alternative Two – Site A Build Alternative 3 (Proposed Action)

Surface analysis and the implementation of the subsurface testing led to the identification of four (4) archaeological sites within the proposed project area. One (1) previously recorded site, 13MK341, was also investigated as part of the Phase I survey. The two (2) archaeological sites (13MK610 and 12MK611) identified within the project boundaries, do not appear to meet minimum requirements for nomination to the National Register of Historical Places. No further testing was recommended by Consulting Archaeological Services. Consulting Archaeological Services concluded that a previously recorded prehistoric lithic artifact site (13MK341) does not meet minimum requirements for inclusion on the National Register of Historic Places (NRHP). Section 4(f) protects only historic or archaeological properties on or eligible for inclusion on the National Registry of Historic Places (see Section 5.7).

Prine Cemetery

Wapsi Valley Archaeology Inc., conducted an intensive level survey and evaluation of the Prine Cemetery. The 104 acre site is located adjacent to property to be acquired for the proposed airport.

Wapsi Valley Archaeology Inc. concluded that the Prine Cemetery is eligible for listing on the National Register of Historic places on a local level under criterion A and D. Criterion A is defined as those properties associated with events that have made a significant contribution to the broad patterns of our history. Criterion D are properties that have yielded or may be likely to yield information important in prehistory or history. The period of significance for the cemetery is 1845 through 1920.

The Prine Cemetery is eligible under Criterion A for its role in the early settlement and history of the surrounding area. It is also eligible under Criterion D for its potential to contribute information that would shed light on the initial settlement of Mahaska County, Iowa.

Development of Alternative Two- Site A will not result in the direct use nor temporary (use) occupancy during construction of the proposed airport.

A constructive use occurs when the proximity impacts of a proposed project adjacent to, or nearly by, a section 4(f) property results in substantial impairment to the property's activities, features, or attributes that qualify the project for protection under Section 4(f) (see Section 5.7 – Department of Transportation Act – Section 4(f) and Related Lands).

Potential airport related noise impacts were evaluated. The evaluation revealed that the aircraft noise would not have an adverse effect (see Appendix K – Noise).

Wapsi Valley Archaeology Inc. conducted a view shed impact study and concluded that the proposed action would have no adverse visual impact to the Prine Cemetery (see Section 5.15 – Visual Effects and Appendix H).

1795 220th Street

Wapsi Valley Archaeology Inc. recommended that a Phase I intensive level historic architectural evaluation of the house and earth cellar be undertaken to determine National Register eligibility. The property at 1795 220th Street may retain sufficient integrity to meet criteria for listing under Criterion C.

Criterion C is defined as properties that embody the distinctive characteristics of a type, period, or method of construction that possess high artistic value, or that represents a significant and distinguishable entity whose components may lack individual distinction.

Wapsi Valley Archaeology Inc. concluded that the residence and earth cellar will be adversely impacted by the proposed airport development.

To mitigate the adverse effects should the property be found to be eligible, Wapsi Valley Archeology suggested that a National Register Multiple Property Documentation Form be prepared for earth contact cellars in Iowa.

The Section 106 process has been completed for 16 of the 28 parcels proposed for acquisition.

5.10.4 Mitigation

In order to ensure that there are no adverse impacts to known and/or undocumented burials, the Prine Cemetery boundary will be clearly defined and an airport boundary fence or temporary construction fence maintained where the airport property line and cemetery property line coincide. The intent of the Runway Protection Zone (RPZ) is to protect persons on the ground and prohibit land uses that provide the concentration of people. Therefore, the RPZ serves as a "buffer" zone extending out from the east edge of the Prine Cemetery.

Improvements involving excavation could uncover archaeological, cultural or human skeletal remains. It is recommended that any set of contract documents and specifications include a provision for the contractor to stop work and to contact the State Historical Preservation Office in the event of an archaeological, cultural or skeletal discovery.

To mitigate the visual impact to the property at 1795 220th Street, a visual screen (trees, shrubs) will be planted where the proposed property line coincides (see Section 5.15 – Visual Effects and Section 5.17 – Table 5-6).

5.11 Land Use

5.11.1 Introduction

The Federal Aviation Administration and the Iowa Department of Transportation – Office of Aviation has established guidance as well as regulation requirements to encourage compatible land uses around and within the airport environs. The intent of these guidelines and regulations is to protect the public and airport user's health, safety, and welfare while maintaining the operational capabilities of the airports aviation operations.

5.11.2 Analysis

Land use conflicts are a common problem surrounding many airports in Iowa. The most common compatibility risks are land uses that place people on the ground and in the air in harm's way. Residential subdivisions, schools, hospitals, recreational facilities, commercial retail, and office buildings within the approach surface and in close proximity of the runway end are generally not considered compatible land

uses. These land uses provide for a concentration of persons on the ground and should be prohibited.

Airport obstructions (trees, towers, electrical transmission lines, wind turbines, and elevated water storage facilities) that would interfere with aircraft flight or distract pilots should be discouraged. It is important that compatible land use polices are put in place to protect and secure runway approaches and departure areas in order to maintain obstruction-free airspace. Agriculture is the primary land use within the immediate vicinity of Oskaloosa Municipal Airport (see Section 3.6).

As an Airport Sponsor, the South Central Regional Airport Agency, City of Pella and the City of Oskaloosa have at various times accepted federal assistance to carry out airport studies and improvements. Upon accepting the federal assistance, the airport sponsor is obligated to comply with specific grant assurances (Grant Assurances, Airport and Airway Improvement Act of 1982 United States Code (USC) Title 49, subtitle VII as amended). Specifically, Grant Assurance 21 requires all airport sponsors to take appropriate actions to promote compatible land uses within the immediate vicinity of the airport.

The City of Oskaloosa and the City of Pella have adopted an airport tall structures zoning ordinance to protect the airport facilities. The tall structures zoning ordinance, based in Federal Aviation Regulation (FAR) Part 77, provides airport airspace thresholds that are used to determine if a specific object is an obstruction and potential hazard to aircraft. While the tall structures zoning ordinance regulates the height of structures extending into airports airspace, it does not regulate land uses.

The Pella Municipal Airport is located within the City's corporate boundary. The City of Pella has adopted a Comprehensive Land Use Plan and Land Use Zoning Ordinance. The future land use plan shows the existing airport site being ultimately developed for residential uses (see Section 3.5).

The Oskaloosa Municipal Airport is located in unincorporated Mahaska County. Mahaska County has adopted a comprehensive plan. The county has not adopted land use zoning regulations. The airport is located more than two (2) miles beyond the City's corporate boundary and as such cannot use its extraterritorial powers as provided under Iowa Code, Chapter 414 *Municipal Planning and Zoning*.

5.11.3 Potential Impacts

5.11.3.1 No Action Alternative

The "No Action Alternative" would result in no changes to existing land use and agricultural practices as no airport related construction would occur.

5.11.3.2 Pella Municipal Airport: Release and Closure

The proposed closure of the Pella Municipal Airport and conversion of the existing airport to non-airport land uses is consistent with local planning

initiatives that have been carried out by the City of Pella. Elimination of the airport's environmental footprint is consistent with objectives set forth in the City's Comprehensive Plan. The conversion of the existing 109 acre airport site to a residential use will not have an adverse impact on adjacent land uses, municipal infrastructure and services, the local road network, or natural resources. The conversion to urban land use will provide "in-fill" development opportunities and minimize the conversions of agricultural land on the fringe areas of the community that might otherwise be converted to urban uses needed to accommodate the projected increase in population (see Section 3.5). The "Release and Closure" of the Pella Municipal Airport will have no adverse effects on existing and planned future land uses.

5.11.3.3 Oskaloosa Municipal Airport: Release and Closure

The proposed closure of the Oskaloosa Municipal Airport and conversion of 620 acres of airport obligated land to non-airport uses is consistent with existing rural agricultural environs within which the Oskaloosa Municipal Airport is located. The release and disposal of airport obligated land will not have an adverse impact on the economic or social fabric within the airport's environs. It will place additional land on the county's tax roll and eliminate the airport's environmental footprint. Closure of the airport will contribute to maintaining the rural agricultural character of the area. The "Release and Closure" of the Oskaloosa Municipal Airport will have no adverse effects on existing agricultural land uses.

5.11.3.4 Reasonable Alternative One – Site B

The development of Site B will require the acquisition of approximately 524 acres of land in unincorporated Mahaska County. The proposed site with the exception of drainage and grass waterways, country road, and a farmstead is under cultivation with corn and soybeans being the dominant agricultural crop.

The City of Leighton is located within 3,000 feet of the proposed crosswind runway and within 4,000 feet of the nearest point on the primary runway. The approach surfaces associated with the primary and crosswind runways do not extend over the city with agricultural uses primarily found under the runway approach surfaces. The City of Leighton is the largest concentration of people (Population 162 based on 2010 U.S. Census).

The concept plan (see Figure 3-1) may ultimately require the disconnection and/or the relocation of 220th Street. The county road (220th Street) is a paved all weather road providing access from the east to the City of Leighton. It, along with Eaton Avenue, are the primary roads providing access to the City from Iowa Highway 163.

Conversion of Site B will require the relocation of one (1) farmstead and building demolition. The farmstead is located west of the primary runway.

Access to the farmstead (from 205th Street and Iowa Highway 163) is provided by Elba Avenue. To develop the conceptual airport, Elba Avenue will need to be abandoned south of 205th Street and the farmstead.

The optimum location for a terminal area is between the intersecting runways. The location would require a new public roadway be constructed from Iowa Highway 163. Other than provide access to the proposed terminal and abutting agricultural land uses, the access road will not provide an impetus for non-agricultural development.

While agricultural land uses are generally compatible with airport operations, the South Central Regional Airport Agency, City of Leighton and Mahaska County need to adopt an airport height restriction ordinance (based on FAR Part 77) and develop land use guidelines to ensure the agricultural character of the adjacent land uses are sustainable.

5.11.3.5 Reasonable Alternative Two – Site A Build Alternative 3 (Proposed Action)

The development of Site A Build Alternative 3 (Proposed Action) will require the acquisition of 582 acres of land. The site, with the exception of road right-of-way (220th Street) and an unnamed drainageway located north of the crosswind (Runway10/28) and primary runway (Runway 14/32) intersections, is under cultivation. The other exception is a grass waterway located beyond the south end of the proposed primary runway.

Unlike Site B, there are no farmsteads proposed for relocation. There are no proposed residential or farmstead relocations or demolition of building structures.

The Proposed Action will require the disconnection of 220th Street. The optimum location for the terminal area is south of the crosswind runway and west of the primary runway. Access from Iowa Highway 163 will be provided by 220th Street. At present, 220th Street is a gravel surfaced roadway that will ultimately be paved.

The Mahaska Rural Water Association maintains an elevated water storage facility adjacent to the proposed terminal area. The proposed airport development will have no adverse effect on the water storage facility, nor will the structure have an adverse impact on airport operations.

There is a vineyard located approximately one (1) mile southwest of the proposed crosswind runway (Runway 10). The proposed airport will have no adverse effect on the vineyard. Rainbow Seed Company, located south of the site, will have no adverse impact of airport operations. The seed company maintained a turf runway (Pierson Field – IA 32) adjacent to the seed processing facility. The airfield is no longer in use.

The proposed airport will have an impact on current farming practices. Of the 582 acres of land that will be federally obligated, 279 acres of the converted land will be available for agricultural use.

Agricultural land uses are generally compatible with airport operations. Row crop production of corn and soybeans is the primary economic activity that exists on and around the proposed airport site. It is anticipated that the surrounding land, not directly converted to aviation operations, will retain the capacity to continue current economic activities. Generally, land uses such as row crop production, grain and pasture ground are compatible with airport operations.

Existing land uses in the vicinity of the proposed airport will have no adverse effect on airport operations. The South Central Regional Airport will work with Mahaska County and the City of Oskaloosa to ensure the rural agricultural character of the area within unincorporated Mahaska County and adjacent to the proposed airport site is sustained.

To ensure land use compatibility, the South Central Reginal Airport Agency in cooperation with the City of Oskaloosa and Mahaska County is working to address future land uses and develop an airport height restriction ordinance to protect the airport airspace.

5.11.4 Mitigation

There are several sources of information available for the planning and implementation of land use controls for airport projects. They include:

- FAA Advisory Circular 150/5050-6, Airport Land Use Compatibility Planning
- FAA Advisory Circular 150/5020-1, Noise Control and Compatibility Planning for Airports
- FAA Advisory Circular 150/5190-4A, A Model Zoning Ordinance to Limit Height of Objects Around Airports
- Iowa DOT Office of Aviation – Land Use Guidebook

Agricultural land uses, as previously stated, are generally compatible with airport operations. Reference to the Iowa Department of Transportation – Office of Aviation publication titled *Iowa Airport Land Use Guidebook* (January 2008) provides guidance of regarding agricultural land use compatibility (see Table 5-4).

Table 5-4
Airport Zone Chart for Agricultural Activities

Iowa Airport Zone Chart					
C *= Compatible*	***AR*** *= Additional Review Required*			***NC*** *= Not Compatible*	
Land Uses	Zone A	Zone B	Zone C	Zone D	Zone E
Infrastructure Activities					
Agricultural Uses (i.e. commercial cultivation of plants, livestock production)					
Plant-related (i.e. crop farming, vegetable, fruit, and tree, wholesale plant nurseries)	AR	AR	AR	C	C
Animal-related (i.e. livestock operations, dairy farms, horse farms)	AR	AR	AR	C	C
Resident-related (i.e. single-family home, mobile home if converted to real property and taxed)	NC	AR	NC	AR	C
Facility-related (i.e. fuel bulk storage/pumping facility, grain elevator, livestock/seed/grain sales)	NC	NC	NC	AR	AR

Source: Iowa DOT – Office of Aviation: *Iowa Airport Land Use Guidebook* (January 2008)

The South Central Regional Airport Agency will request the City of Oskaloosa (Site A, if implemented) and/or the City of Leighton (Site B, if implemented) and Mahaska County to adopt an Airport Height Restriction Ordinance in accordance with Iowa Code 329. The height restriction ordinance is based on the airport imaginary surfaces as defined in Federal Aviation Regulation (FAR) Part 77.

At a minimum, airport related land use ordinances that should be considered in order to protect airport operations and the safety of the public are:

- Height Hazard Ordinances
- Land Use Ordinances

5.12 Natural Resources and Energy Supply

5.12.1 Introduction

Energy requirements associated with the daily operation or related expansion of an airport generally fall into two (2) categories: those which relate to changed demands for stationary facilities (i.e. airfield lighting and terminal building heating), and those which involve the movement of air and ground vehicles (i.e. fuel consumption). Project development includes the use of natural resources such as fuel, construction materials, water and labor.

According to FAA Order 5050.4B, *National Environmental Policy Act (NEPA) Implementing Instructions for Airport Projects*, an impact arises when a project will have a measurable effect on local energy supplies or would require the use of an unusual material, or one in short supply. Increased consumption of fuel by aircraft is examined where ground movement or run-up times are increased substantially without offsetting efficiencies in operating procedures or if the action includes a change in flight patterns. Fuel consumption by ground vehicles is examined only if the action would add appreciably to access time, or there would be a substantial change in movement patterns for on-airport services or other vehicles.

5.12.2 Analysis

The consumption of energy by the proposed stationary facilities (buildings, airfield lighting systems, parking lot, apron, rotating beacon) will be less given the proposed closure of the existing public owned airports.

The consumption of aircraft fuel will be comparable to fuel presently consumed by aircraft to be relocated from the Pella, Oskaloosa and Ottumwa Airports. Given the proposed facilities, aircraft fuel consumption is expected to increase commensurate with an increase in based aircraft. Fuel is procured through the private sector and will not have an adverse impact on energy supplies.

The Proposed Action (if implemented) will more effectively serve existing and forecasted aeronautical demand by reducing vehicle travel distance. The consumption of fuel needed for grounds maintenance (i.e. snow removal, mowing, etc.) for two (2) airports will be reduced to one (1) airport.

Natural resources used to construct a new airport will be offset by the use of natural resources to maintain the two (2) existing airports. Based on the life-cycle of the existing facilities, a commitment of natural resources to rehabilitate or replace existing pavement, building structures, and airfield electrical systems at the two (2) airports will not be required.

Design of the new facilities will incorporate energy saving components.

The Proposed Action does not require the use of unusual materials or materials in short supply. When compared to the "No Action Alternative", the use of natural resources and energy over a 20-year time horizon will be less.

5.12.3 Potential Impacts

5.12.3.1 No Action Alternative

The "No Action Alternative" would have no impacts on the commitment of fuel, energy, construction materials or natural resources beyond current demands as no construction activities would take place.

Under the "No Action Alternative", vehicle fuel consumption by airport users may increase due to increased travel distance to the nearest system

airport that can accommodate aeronautical demand not serviced by the two (2) existing airports.

5.12.3.2 Pella Municipal Airport: Release and Closure

Closure of the Pella Municipal Airport will reduce the consumption of energy and use of natural resources.

Development of the 109 acre site over several years will be in response to the demand for residential housing within the City of Pella. The existing airport site offers an opportunity to accommodate future residential demand at a location that can be served by the municipal infrastructure as opposed to other locations that may not be as conveniently and efficiently served. In-fill development should result in the most efficient uses of natural and energy resources.

5.12.3.3 Oskaloosa Municipal Airport: Release and Closure

Closure of the Oskaloosa Municipal Airport will reduce the consumption of energy and use of natural resources by eliminating restrictions to agriculture associated with airport and aircraft operations.

5.12.3.4 Reasonable Alternative One – Site B

Natural resources used in construction are available within the region and are not in short supply. Energy consumed in the construction is not expected to be significantly greater than the energy used to maintain and rehabilitate the pavement infrastructure at the two existing airports. Energy used to construct aircraft storage facilities will not be disproportionately greater given the need to construct additional storage at Pella and to replace structures no longer adequate to accommodate the forecast aircraft mix.

5.12.3.5 Reasonable Alternative Two – Site A Build Alternative 3 (Proposed Action)

Alternative Two – Site A will consume less energy to construct than would Alternative One as there is less grading. When compared to Alternative One, the consumption of natural resources is comparable.

The Proposed Action (if implemented) will reduce the consumption of energy used to maintain and operate the airport. New building construction may be more energy efficient than existing structures located at the two existing airports.

5.12.4 Mitigation

The proposed actions are not anticipated to have an adverse impact on the consumption of energy and use of natural resources.

5.13 Noise and Noise Compatible Land Use

5.13.1 Introduction

Noise is considered unwanted sound that can disturb routine activities. Aviation noise results from the operation of aircraft (fixed wing, rotary wing) on approach, departure, taxiing, and engine run-ups. Concerns regarding aircraft noise may arise where an airport is undergoing an expansion that would provide for a different aircraft operation mix or change in traffic patterns. The development of the proposed airport would introduce noise into a rural agricultural area.

5.13.2 Analysis

A noise analysis is required for a new airport location where forecast operations exceed the following thresholds.

- 90,000 annual operations by piston powered aircraft in Approach Category A through D.
- 700 annual jet aircraft operations

The Cessna Citation 500 and other jet aircraft producing noise levels less than or equal to the Beech Baron 58P may be counted as propeller aircraft. The FAA has established a standard process to evaluate aircraft noise. The Integrated Noise Model (INM), the accepted model at the time the site selection and Airport Layout Plan was initiated, has been replaced by a new system that combines INM and EDMS (Emissions and Dispersion Modeling System) into a single model (AEDT2b) (see Appendix K).

A noise analysis would typically not be prepared for the No Action Alternative, the Pella Municipal Airport and the Oskaloosa Municipal Airport, since aviation activity would not exceed the aircraft operation thresholds noted above.

Agricultural land uses are generally compatible with airport operations.

Land uses within the airport surroundings associated with Reasonable Alternative One and Reasonable Alternative Two – Site A Build Alternative 3 (Proposed Action) are compatible.

> *"Individual, isolated, residential structures may be considered compatible within the DNL 65 dB noise contour where the primary use of land is agriculture and adequate noise attenuation is provided."*
> Source: FAA *Order 1050.1F, Paragraph 11-5.b(8)*

5.13.3 Potential Impacts

5.13.3.1 No Action Alternative

The "No Action Alternative" will not result in a significant increase in aircraft generated noise associated with the Oskaloosa Municipal Airport or

Pella Municipal Airport. Given this alternative, aircraft noise would not be introduced into the surroundings associated with Reasonable Alternative One and Two.

5.13.3.2 Pella Municipal Airport: Release and Closure

Closure of the Pella Municipal Airport will eliminate the aircraft noise footprint within the airport environs.

5.13.3.3 Oskaloosa Municipal Airport: Release and Closure

Closure of the Oskaloosa Municipal Airport will eliminate the aircraft noise footprint within the airport environs.

5.13.3.4 Reasonable Alternative One – Site B

The approach and departure surfaces associated with the primary runway (see Figure 3-1) extends over land devoted to agricultural uses. Given the proposed runway length and wind coverage, nearly all jet operations and operations by large airplanes would be completed using the primary runway (Runway 16/34).

The nearest concentrated non-agricultural land use consists of the City of Leighton with a population of 162 based on 2010 U.S. Census data. The City of Leighton is located within 4,000 feet of the nearest point on the primary runway and 3,000 feet of the nearest point on the crosswind runway.

5.13.3.5 Reasonable Alternative Two – Site A Build Alternative 3 (Proposed Action)

Construction related noise would exist as the airport is developed. Daytime construction during the period April to November is typical of the time frame when grading, drainage and paving activities would occur. These activities would generally extend over a three (3) to four (4) year period when Runway 14/32, Taxiway A and the terminal area are being constructed. A second concentrated construction period would occur when the crosswind runway (Runway 10/28) is constructed. Construction related noise is considered less than significant given the existing agricultural land uses adjacent to the project site.

Increased vehicle traffic from Iowa Highway 163 via 220th Street to the terminal area will be less than significant, meaning traffic delays or congestion would not be anticipated. The existing rock surfaced 220th Street will be hard surfaced thereby reducing dust and noise both for existing users of the facility as well as airport related users.

Given the rural agricultural character within the proposed airport surroundings, potential aviation noise is considered less than significant.

Based on the noise impact criteria stated in FAA Order 1050.1F, the proposed project would not result in significant noise impacts. There are no noise sensitive land uses within the limits of DNL 65 dB noise contour (see Appendix K).

5.13.4 Mitigation

The South Central Regional Airport Agency (SCRAA) will work with Mahaska County to develop compatible land use guidelines and ordinances to restrict non-compatible land uses (see Appendix F).

5.14 Socioeconomic, Environmental Justice and Children's Environmental Health and Safety Risks

5.14.1 Introduction

The existing Pella and Oskaloosa Municipal Airport service areas will be served by a single public owned airport. The Council on Environmental Quality (CEQ) Regulations require an analysis of social and economic effects that may result from the closure of the two existing public owned airports and development of the replacement airport.

5.14.2 Analysis

Section Four, Affected Environment, provides an overview of the physical and socioeconomic characteristics within the airport service area including the following topics:

4.5 Pella Municipal Airport Environs
4.6 Oskaloosa Municipal Airport Environs
4.7 Physical setting – Alternative One and Two
4.8 Land Use – Alternatives One and Two
4.9 Socioeconomic: Population and Employment

When compared to the "No Action Alternative", the Reasonable Alternative One and Two will result in a change in land use patterns. The consolidation of the two public owned airports will result in one location from which aeronautical services will be provided. Consolidating airport operations into one location will provide a critical mass that will enhance the delivery and contribute to the sustainability associated with the delivery of aeronautical services.

The two reasonable alternatives provide a site located between the two major population and employment centers that is served by a regional four-lane divided highway. The airport role, as defined by the Iowa Department of Transportation, will contribute to the improvement and sustainability of air service within the region. It will indirectly sustain current levels of employment and contribute to population growth with the incorporated cities located in the airport service area.

The airport environmental footprint associated with Pella Municipal Airport and Oskaloosa Municipal Airport will be eliminated. Conversion of the airports to non-

airport uses as discussed in Section 5.11 is consistent with local land use objectives and plans.

Alternative One – Site A and Alternative Two – Site B are located in Mahaska County. Selected population and housing data (2014) from the U.S. Census Bureau are summarized as follows:

Total County Population:	22,370	(2014 Estimate)
Person Under 5 years:	1,365	(6%)
White:	21,453	(95.5%)
Black, African American:	291	(1.3%)
American Indian:	89	(0.4%)
Asian:	268	(1.2%)
Hispanic or Latino:	269	(1.2%)
Housing Units:	9,726	(Persons per Household: 2.40)
Home Ownership:	6,857	(70.5%) (2009-2013)
Person below poverty level:	3,556	(15.9%) (2009-2013)

5.14.3 Potential Impacts

5.14.3.1 No Action Alternative

The "No Action Alternative" would not safely and efficiently accommodate aeronautical activity and indirectly impact the ability to sustain employment levels within the airport service areas.

5.14.3.2 Pella Municipal Airport: Release and Closure

Closure of the Pella Municipal Airport will not have a disproportionate impact on low and moderate income persons or households. It will remove potential environmental and safety risks form the existing airport environs. The fixed-based operator (FBO) may relocate to the proposed replacement airport.

5.14.3.3 Oskaloosa Municipal Airport: Release and Closure

Closure of the Oskaloosa Municipal Airport will remove aeronautical activity from the existing airport environs. Closure of the airport will not have a disproportionate impact on low and moderate income persons or households that derive their livelihood from the airport.

The closure will remove restrictions to agricultural operations and practices and compensate, in part, for land acquired to accommodate the proposed replacement airport. The existing fixed-base operator (FBO) may relocate to the proposed replacement airport facility.

Closure of the Oskaloosa Municipal Airport will have no adverse impact on persons and/or households within the airport environs.

5.14.3.4 Reasonable Alternative One – Site B

The development of Site B will alter the rural character in the area and require the relocation and demolition of one (1) farmstead. There are no other relocations or displacement of persons. The proposed development will cause the disconnection or relocation of 220th Street. The average 2014 annually daily traffic (AADT) on 220th between Iowa Highway 163 and the City of Leighton was 420 vehicles per day.

The development of Site B will not have a disproportionate impact on minority population within the area of potential effect (see U.S. Census of Population).

The development of Site B will not have an adverse impact of the safety, health and welfare of children. The proposed development will induce an increase in population within unincorporated Black Oak Township and place a burden on the public infrastructure.

The development of Site B will not contribute significantly to new aviation/employment opportunities. Aviation related jobs will likely be filled by the persons currently working at the two existing public owned airports.

5.14.3.5 Reasonable Alternative Two – Site A Build Alternative 3 (Proposed Action)

The "Build Alternative" will require the acquisition of 582 acres of land. Of the 582 acres, approximately 302 acres will be directly converted from agricultural use to land that is used to accommodate proposed airside and landside facilities. 279 acres will be managed as "on-airport" agricultural land.

Neither the closure of the existing public owned airports nor the development of the replacement airport cause a shift in population or a decrease in employment opportunity. The proposed actions may potentially sustain and expand employment opportunities within the combined airport service area.

Potential effects, as a resulting from the introduction of aircraft noise, will have a less than significant impact on land uses adjacent to the proposed site.

During the site selection phase of the project planning process, Mahaska County was consulted regarding the disconnection of 220th Street. The County Engineer, in a letter dated July 1, 2013, indicated that action to disconnect would be undertaken if acceptable mitigation actions are identified (see Appendix G). The proposed disconnect would occur at the

proposed airport property line (see Appendix E, Airport Layout Plan, and Figure 5-1).

220th Street, located west of the disconnect point, will continue to provide access to Iowa Highway 163 for three (3) residential units and out buildings. 220th Street will also provide access to the elevated water storage tower owned and operated by the Mahaska Rural Water Systems, Inc. (see Figure 5-1).

The South Central Regional Airport Agency proposes using 220th Street, west of the disconnect point, to provide access to the terminal area. The roadway extending between Iowa Highway 163 and the terminal access point will ultimately be upgraded and hard surfaced. The proposed roadway improvements are included as a proposed capital project within the Airport Master Plan.

There are no residential acreages or farmsteads located on 220th Street east of the proposed disconnect point to Independence Avenue. 220th Street, east of the disconnect point, would be maintained to provide access to abutting agricultural land.

Independence Avenue provides access to Iowa Highway 163. The distance from the intersection of 220th Street/Independence Avenue to Iowa Highway 163 is approximately 5,520 feet. The distance from the same point along existing 220th Street to Iowa Highway 163 is approximately 7,900 feet (see Figure 5-1).

The Proposed Action may result in increased vehicle travel on Independence Avenue. The potential increase in traffic on Independence Avenue is expected to be less than significant. 210th Street and Highland Avenue are gravel surfaced county roads and may experience a less than significant increase in traffic.

The Iowa Department of Transportation is proposing the relocation of U.S. Highway 63 from a point south of the Oskaloosa Water Treatment Plant to a point of intersection with Iowa Highway 163.

Two alternative alignments (Alternative 1A and 4) were carried forward (See Appendix G, Iowa DOT Northwest Bypass, NEPA/Section 404 Concurrence Point Meeting 3). Alternative 1A is shown on Figure 5-2. Alternative 4 is shown on Figure 5-3. Neither of the two alternatives would have an adverse effect on planned approaches to the proposed airport.

The Iowa DOT Project Management Team (PMT) met on June 2, 2016. Of the two alternatives being considered, the PMT selected Alternative 1A as the preferred alternative.

The proposed U.S. 63 alignment will enhance regional accessibility to the proposed airport. Semi-trailer trucks are used to haul grain to Eddyville as well as livestock to packing plants. The proposed highway will reduce traffic congestion within the City of Oskaloosa.

The county road system is important in that it provides access to abutting properties and is used to move agricultural products. While trucks may be used, the county road network accommodates large and slow moving equipment. The disconnection of 220th Street may potentially impact the ability to move farm equipment over a low volume roadway. Concerns have been expressed with having to use a high traffic volume roadway such as Iowa Highway 163 to move farm equipment. As shown in Figure 5-1, the 220th Street/Iowa Highway 163 intersections are offset causing vehicles entering Iowa Highway 163 to travel a short distance and change travel lanes. A portion of Iowa Highway 163 would need to be used even if it were not disconnected.

The Proposed Action will disrupt current agricultural practices and potentially affect future farm generated income. The potential effect will be potentially reduced given the closure of two (2) existing airports. Land now within the crop restriction lines and consequentially not devoted to agriculture may be used for row crops and grain in the future.

The proposed site and airport development will have no adverse effects on facilities such as schools, hospitals, recreational lands, and designated 4(f) resources. Closure of two (2) existing airports will reduce the environmental footprint associated with the Pella Municipal Airport and the Oskaloosa Municipal Airport.

The proposed actions will have no disproportionate effect on the environmental health and safety of children.

All land proposed for acquisition will be acquired in accordance with the Federal Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended 49 CFR Part 24.

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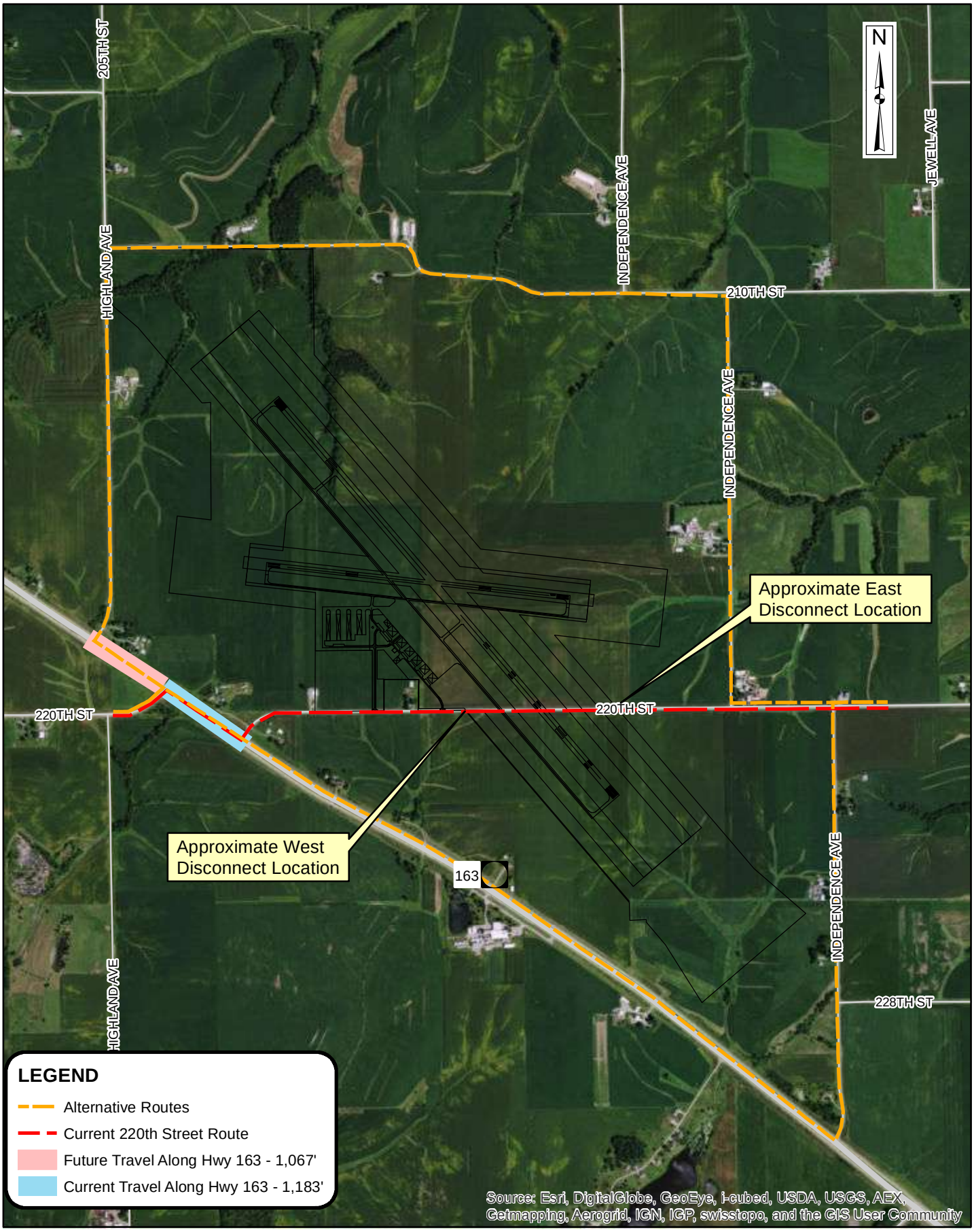
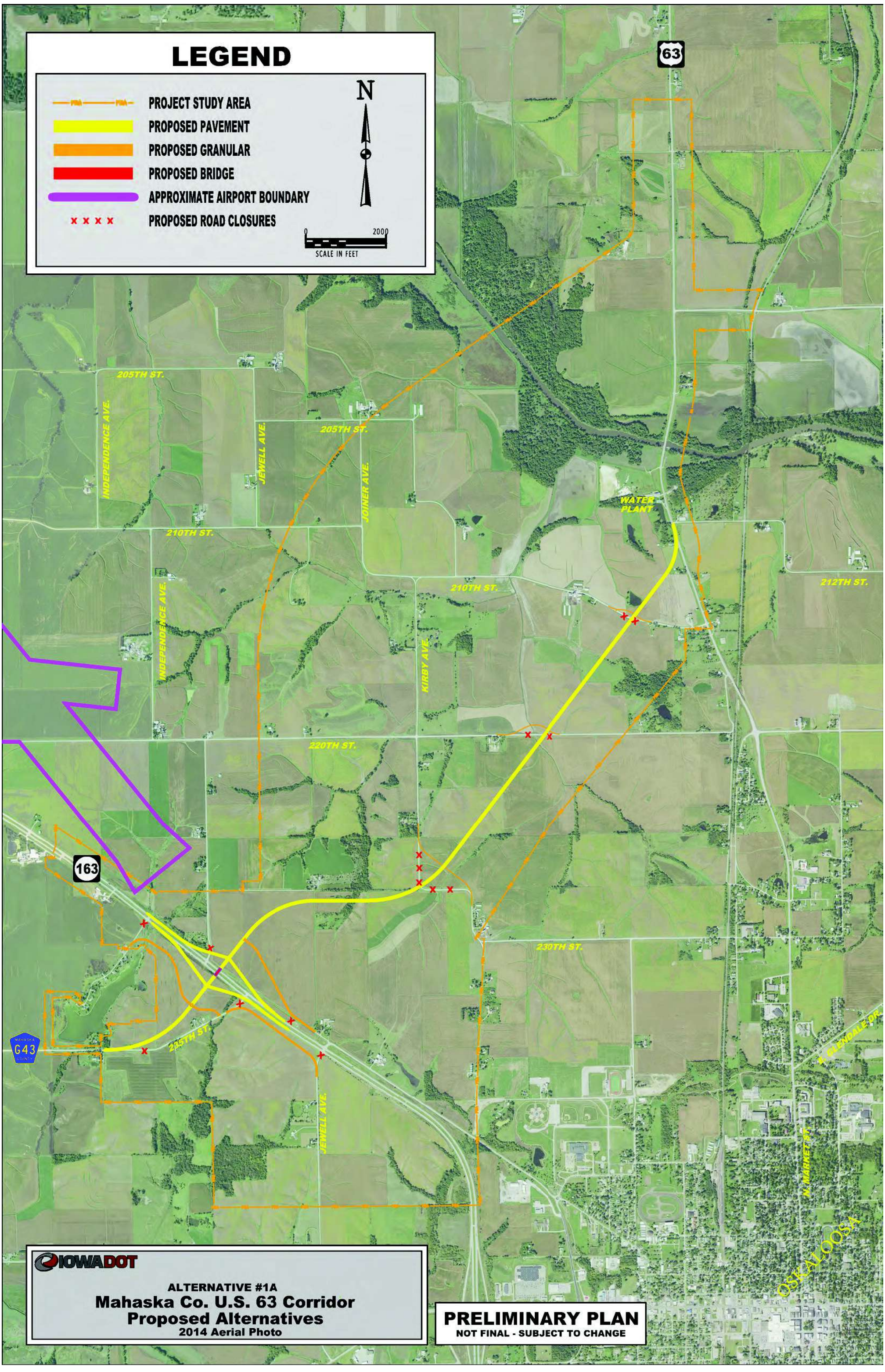


DGR ENGINEERING	SNYDER & ASSOCIATES Engineers and Planners	JS Consulting LLC	SOUTH CENTRAL REGIONAL AIRPORT MAHASKA COUNTY, IOWA 220TH STREET DISCONNECT	FIGURE 5-1


LEGEND
PROJECT STUDY AREA
PROPOSED PAVEMENT
PROPOSED GRANULAR
PROPOSED BRIDGE
APPROXIMATE AIRPORT BOUNDARY
PROPOSED ROAD CLOSURES
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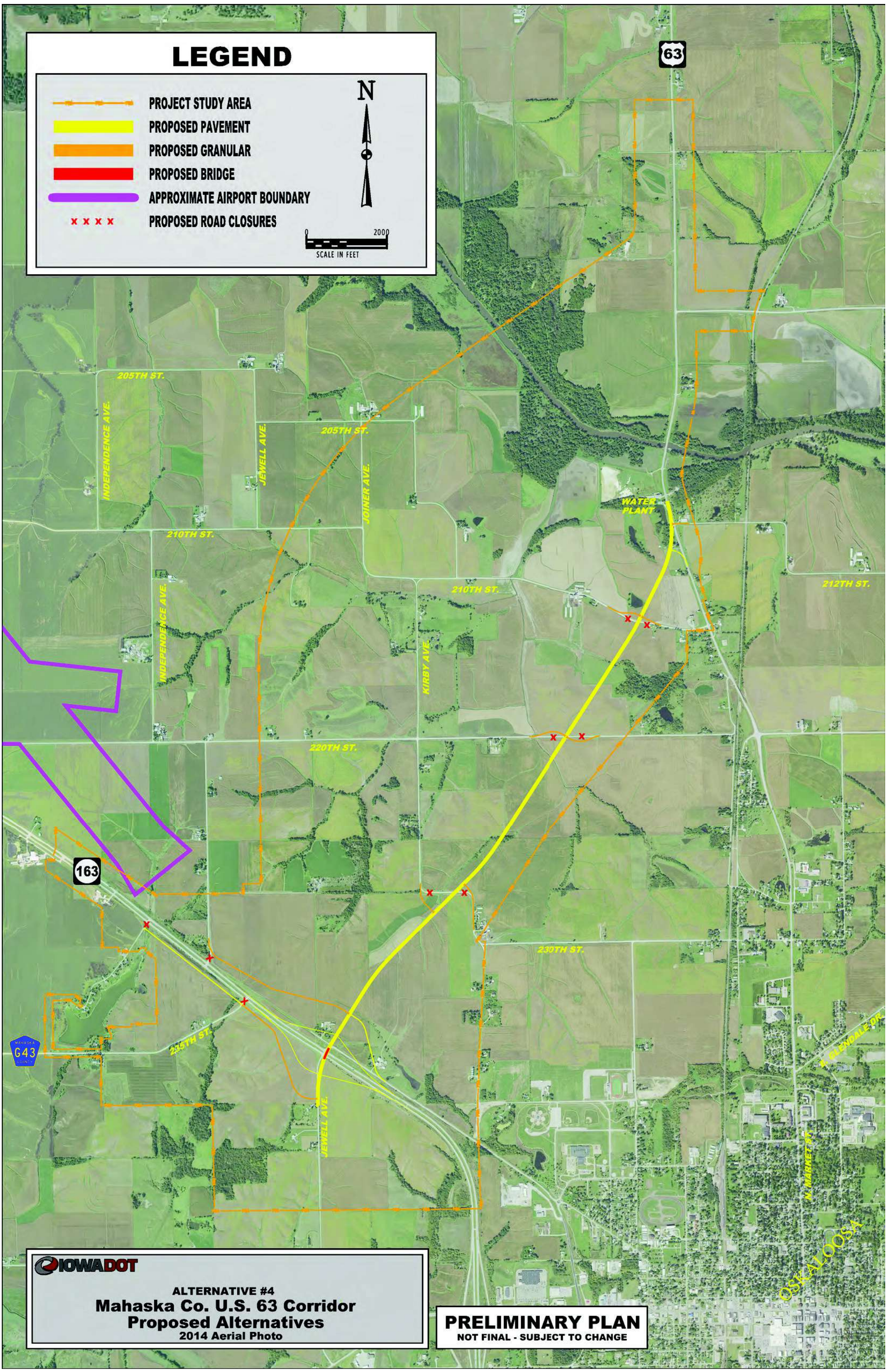
2000
SCALE IN FEET
63
205TH ST.
INDEPENDENCE AVE.
JEWELL AVE.
JOINER AVE.
WATER PLANT
210TH ST.
212TH ST.
KIRBY AVE.
220TH ST.
163
230TH ST.
235TH ST.
G43
GLENDALE DR.
N. MARKET ST.
OSKALOOSA
IOWADOT
ALTERNATIVE #1A
Mahaska Co. U.S. 63 Corridor
Proposed Alternatives
2014 Aerial Photo
PRELIMINARY PLAN
NOT FINAL - SUBJECT TO CHANGE


LEGEND
PROJECT STUDY AREA
PROPOSED PAVEMENT
PROPOSED GRANULAR
PROPOSED BRIDGE
APPROXIMATE AIRPORT BOUNDARY
PROPOSED ROAD CLOSURES
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JOINER AVE.
WATER PLANT
210TH ST.
212TH ST.
KIRBY AVE.
220TH ST.
163
230TH ST.
235TH ST.
G43
GLENDALE DR.
N. MARKET ST.
OSKALOOSA
IOWADOT
ALTERNATIVE #4
Mahaska Co. U.S. 63 Corridor
Proposed Alternatives
2014 Aerial Photo
PRELIMINARY PLAN
NOT FINAL - SUBJECT TO CHANGE

The improvement of 220th Street from Iowa Highway 163 to the disconnect point will provide an all weather hard surface roadway to the three (3) residential dwellings having driveway access located on 220th Street. The 220th Street improvement will also provide an all weather surface to the Mahaska Rural Water System 500,000 gallon elevated water storage facility.

The "Alternative Two – Site A Build Alternative" (Proposed Action) will require the acquisition of 582 acres of agricultural land. While there are no farmsteads, residential structures, or commercial businesses proposed for acquisition, the Proposed Action will disrupt current farming practices.

5.14.4 Mitigation

Land will be acquired in accordance with requirements set forth in the Federal Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended.

The "Request for Release" from federal assurances associated with the Oskaloosa Municipal Airport site will allow the entire 620 acre site to be converted to agricultural activities without airport related restrictions.

5.15 Visual Effects

5.15.1 Introduction

Visual effects concern the extent for which the proposed action would:

- Produce light emissions that create annoyance or interfere with activities
- Detract from the visual resources and/or character of the existing environment.

There are no federal special purpose laws or requirements for visual effects; however, there are requirements associated with resources on or potentially eligible for the National Register of Historic Places.

5.15.2 Analysis

Aviation lighting required for the purpose of security, obstruction marking, rotating beacon, and landing aids are the primary contributors to light emissions radiating from airports. Airport lights have a potentially greater impact if the terrain surrounding the airport is at a higher elevation.

Closure of the two existing airports will eliminate airport related lighting within the airport environs. Reasonable Alternatives One and Two will result in light emissions associated with the rotating airport beacon light, runway threshold and edge lighting, taxiway edge lights, guidance signage, visual guidance slope indicator lights, runway end identifier lights, and approach lighting system. Overhead airfield and security lighting, within the terminal build area, will also be introduced. New structures (i.e. hangar, terminal building) will be visible from

adjacent properties and more specifically related to properties on or eligible for the National Register of Historic Places.

5.15.3 Potential Impacts

5.15.3.1 No Action Alternative

The "No Action Alternative" assumes that no expansion to the existing Pella Municipal and Oskaloosa Municipal Airports would occur. Therefore, there would be no increase in light emissions nor new structures introduced into the airport environs.

5.15.3.2 Pella Municipal Airport: Release and Closure

Closure of the Pella Municipal Airport will eliminate airport light emissions within the existing airport environs.

5.15.3.3 Oskaloosa Municipal Airport: Release and Closure

Closure of the Oskaloosa Municipal Airport will eliminate airport light emission within the existing airport environs.

5.15.3.4 Reasonable Alternative One – Site B

New light emissions will be introduced into an area that is absent of light emissions from urban, residential, commercial, institutional, or industrial land uses. The City of Leighton is located within 3,000 feet of the crosswind runway. Runway lighting associated with the crosswind runway will have a less than significant impact on the community. Approaches to the primary runway do not extend over the City. Airfield lighting associated with the primary runway will have no adverse impact on the City of Leighton.

5.15.3.5 Reasonable Alternative Two – Site A Build Alternative 3 (Proposed Action)

The Airport Layout Plan shows the orientation of the two (2) runways and terminal areas proposed for construction. The runway and taxiway lighting will have no adverse effect on adjacent agricultural land uses. There are no residential structures or farmsteads located under approach surfaces (FAR Part 77) and within close proximity of the runway ends.

The proposed approach light system will be installed over terrain with a downward slope and will have no adverse effect on vehicle movements on Iowa Highway 163 (see Airport Layout Plan).

The terrain beyond the proposed site is relatively level with elevations generally decreasing away from the site. Therefore, the light beam from the rotating beacon light will have no adverse effect on adjacent land uses. Airfield lighting will be operational during periods of low visibility or darkness and will be activated by the aircraft pilot.

The introduction of proposed building structures (pre-engineered hangars) have architectural elements similar to modern farm buildings. The building elevations would not typically exceed forty (40) feet in height. The terminal building will not exceed two (2) stories.

The rural agricultural character of the area has been altered by improvements to Iowa Highway 163. An elevated water storage facility is located adjacent to the proposed terminal area. The views to the east, west, and south of the Prine Cemetery will retain their agricultural character. Several non-farm structures exist within the immediate view from Prine Cemetery. These elements include an elevated water storage facility – Mahaska Rural Water Systems and the Pierson Seed Producers Facility. The terminal building as proposed will be located approximately one half mile northwest. The structure (if located on the building restriction line) will not exceed a height of 35 feet. Wapsi Valley Archaeological Inc. concluded that the proposed undertaking will have no adverse visual impact to the Prine Cemetery.

The house and earth cellar, located at 1795 220th Street, may be eligible for the National Register of Historic Places. Terminal area development will be located immediately north of the house and earth cellar. The proposed aircraft storage hangars and terminal building will be visible. As previously noted, the structures (pre-engineered) will resemble modern farm buildings.

A view shed impact study was completed by Wapsi Valley Archaeology Inc. for the property located at 1795 220th Street. Wapsi Valley Archaeology Inc. concluded that the house and associated earth cellar are within the view shed of the proposed airport and would be adversely affected should the property be determined eligible for listing on the National Register of Historic Places (see Appendix H).

5.15.4 Mitigation

The South Central Regional Airport Agency will plant trees and shrubs along the airport property line in common with the property at 1795 220th Street and the Prine Cemetery. The trees and shrubs will provide a visual screen that will minimize adverse visual effects from development within the terminal area (see Section 5.17 and Table 5-6).

5.16 Water Quality

5.16.1 Introduction

Water resources include rivers, lakes, ponds and other surface water bodies as well as groundwater. Surface water, groundwater, floodplains and wetlands represent a single functional integrated natural system.

Floodplains perform many important functions that include nutrient retention and removal, erosion control and flood desynchronization. Regulatory floodplains are those with a designated 100-year floodplain that are mapped on National Flood Insurance Rate Maps by the Federal Emergency Management Agency (FEMA).

Executive Order 11988, *Floodplain Management* directs Federal agencies to "take actions to reduce the risk of flood loss, minimize the impact of floods on human safety, health and welfare and restore and preserve the natural and beneficial value served by floodplains." The U.S. Department of Transportation Order 5650.2 *Floodplain Management and Protection* establishes a policy of avoiding the 100-year floodplain if a practical and reasonable alternative exists.

Wetlands are defined in the U.S. Army Corps of Engineers (USACE) regulation 33 CFR 328.3(b) as those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support and that under normal circumstance, do support a prevalence of vegetation, typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs and similar areas, such as sloughs, prairie potholes, wet meadows, river overflows, mudflats and natural ponds. Wetlands also include estuarine areas, tidal overflows and shallow lakes and ponds with emergent vegetation. Furthermore, a wetland ecosystem includes those areas which affect or are affected by the wetland itself (e.g. adjacent uplands or upstream and downstream regions).

The USACE issues permits under Section 404 of the Clean Water Act (CWA) for the discharge of dredged or fill materials into jurisdictional "waters of the United States". Activities that require a Section 404 permit include placing stream bank protection, temporary or permanent stockpiling of excavated material, grading that involves the filling of low areas or leveling of land, construction weirs or diversion tanks, constructing approach fills, and discharging dredged or fill material as part of any other activity.

Waters of the United States are considered jurisdictional under the Clean Water Act (CWA) unless a determination is made by the USACE that the water body is non-jurisdictional. The limits of jurisdiction are also discussed in 33 CFR 328.4.

Section 401 of the CWA requires a Water Quality Certificate from the Iowa Department of Natural Resources (Iowa DNR) to ensure that proposed construction activities do not violate State of Iowa water quality standards.

A Federal National Pollutant Discharge Elimination System Permit (NPDES) authorizing point source discharges into navigable waters of the United States is required under Section 402 of the Clean Water Act.

There are two basic types of NPDES permits: individual and general permits. An individual permit is a permit specifically tailored to an individual facility, and would typically be required for point source discharges. Once a facility submits the

appropriate application(s), the permitting authority develops a permit for that particular facility based on the information contained in the permit application (e.g. type of activity, nature of discharge, receiving water quality, etc.). The permit authority issues the permit to the facility for a specific time period (not to exceed five years) with a requirement that facility reapply prior to the expiration date.

The NPDES Construction General Permit is a type of general permit that is required if construction activities would disturb 1 acre or more of land. Under this permit, construction refers to any action that result in disturbance of the land, including clearing, grading, and other similar activities. It also includes construction-related activities, which occur in areas that support the construction project such as stockpiles, borrow areas, concrete truck washouts, fueling areas, material storage areas, and equipment storage areas.

A requirement of NPDES permits, for both operations and construction activities, is development of a Storm Water Pollution Prevention Plan (SWPPP). A SWPPP outlines how stormwater run-off, erosion, and sediment will be controlled in order to minimize polluted stormwater run-off into nearby waters.

5.16.2 Analysis

Construction of airport facilities can temporarily or permanently affect the quality of surface water, groundwater, wetlands and floodplains. Pollution affecting water quality has either a point or non-point source of origin. Point source pollution includes discrete conveyances, such as stormwater runoff or other types of discharges from a specific source, such as a wastewater treatment plant, sanitary sewer system, collection basin, or other waste collection device that flows through a pipe and discharges into a waterway. In addition, consideration must be given to the storage and dispensing of aviation related fuel, petroleum products and solvents. Non-point source pollution includes indiscrete stormwater runoff from a diffuse source, such as an airport runway, taxiway, apron, vehicle parking lot, construction area, or from agricultural lands.

Surface water locations were preliminarily determined from a review of aerial photography, topographic maps, National Wetland Inventory (NWI) maps and soils reports. Further onsite review was completed during the wetland delineation. Where property access was granted, the project team completed wetland delineation of drainageways and wetlands located within the Proposed Action Alternative airport property boundary.

5.16.3 Potential Impacts

5.16.3.1 No Action Alternative

The “No Action Alternative” will have no adverse effect on water quality as no airport related expansion projects at the two (2) existing airport or the replacement airport facility will be constructed.

5.16.3.2 Pella Municipal Airport: Release and Closure

Closure of the Pella Municipal Airport will have no adverse effect on water resources. The existing site will be converted to urban land uses consistent with the City of Pella's Future Land Use Plan. The City of Pella has adopted a site plan ordinance and subdivision regulations. The City has review and approval authority over proposed development. The City can provide public utilities and has a stormwater management ordinance in place.

5.16.3.3 Oskaloosa Municipal Airport: Release and Closure

Closure of the Oskaloosa Municipal Airport will have no adverse effect on water resources. The site will be converted to an agricultural use. Mahaska County has adopted the following ordinances that may be applicable to future agriculture related activities at the site:

- Chapter 30 Groundwater Protection and Solid Waste Disposal
- Chapter 31 On Site Wastewater Treatment and Disposal
- Chapter 34 Hazardous Substances

5.16.3.4 Reasonable Alternative One – Site B

Site B is located within the lower Des Moines River watershed. Muchakinock Creek Tributary 11 extends through Site B. The proposed primary runway (Runway 16/34) would extend through the 100-year floodplain associated with the tributary (see Figure 3-3). Mahaska County, in cooperation with the Iowa DNR and USACE, is responsible for permitting any construction activities in floodplains. Mahaska County adopted a floodplain ordinance in 2011 (see Mahaska County Code of 2014 – Chapter 33 – Floodplain Management Ordinance).

Provided there is no reasonable alternative to impacting the floodplain, the South Central Regional Airport Agency (SCRAA) will be required to submit a "Joint Application" to the USACE and Iowa DNR to obtain the required regulatory permits to construct in the floodplain associated with Muchakinock Creek Tributary 11. A significant encroachment on the floodplain may potentially have an adverse impact on the floodplain's natural and beneficial values as well as its value to agriculture.

Provided there is no reasonable alternative to avoiding the designated floodplain on Site B, then the following mitigation action may be considered:

- Minimizing fill placed in the floodplain while adhering to FAA design standards as set forth in FAA *AC 150/5300-13A: Airport Design.*
- Adherence to Best Management Practices (BMPs) to minimize erosion and sedimentation.
- Controlling runoff while ensuring the runoff control measures do not become a wildlife attractant.

- Controlling waste and soils disposal to prevent contaminating ground and surface water.

Development of the proposed terminal area and the crosswind runway (Runway 3/21) will have no adverse effect on the floodplain provided erosion and sediment control measures are put in place.

The National Wetland Inventory (NWI) did not identify wetland areas on Site B. From a review of aerial photographs and soil maps, four (4) potential wetland areas located within drainage swales were identified.

Construction related activities would occur on land for which land had been acquired. It is anticipated that no off-site borrow would be needed. Materials not available on-site would be transported to the site via Iowa Highway 163 and Elba Avenue.

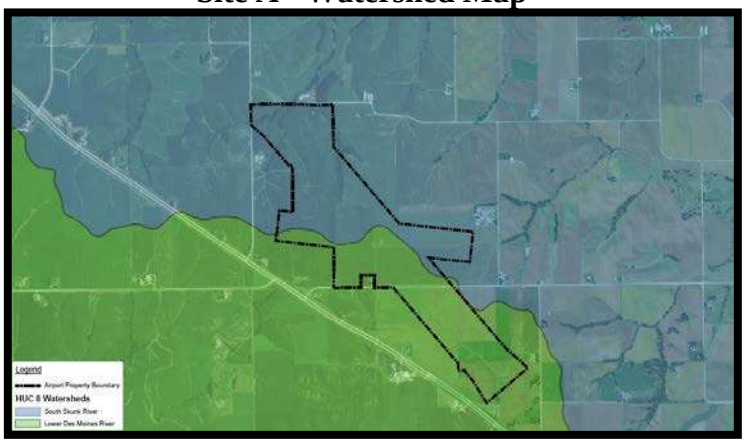
Construction activity would likely extend over a three to five year period.

5.16.3.5 Reasonable Alternative Two – Site A: Build Alternative 3 (Proposed Action)

The project study area is located within the South Skunk River and Lower Des Moines River Watersheds (see map below). The South Skunk River has a drainage area of approximately 1,844 square miles and covers parts of 13 counties in Iowa. The watershed begins in northern Hamilton County and ends in Keokuk County. The banks of the South Skunk River include a mix of woodland and agricultural land. The South Skunk River flows through the City of Ames and eventually empties into the Skunk River.

The Lower Des Moines River has a drainage area of approximately 2,142 square miles and covers parts of 10 counties in Iowa as well as Hancock County, Illinois and Clark County, Missouri. The watershed begins in southeastern Marion County, Iowa located downstream of Red Rock Lake and ends at the border of Lee County, Iowa and Clark County, Missouri. The Lower Des Moines River flows through the City of Ottumwa and empties into the Mississippi River.

Site A - Watershed Map



Source: Iowa DNR NRGIS Library

There are no FEMA designated 100-year floodplains on Site A.

The *1987 Corps of Engineers Wetland Delineation Manual* and *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Midwest Region (Version 2.0) (2010 Midwest Supplement)* procedures were followed in identifying streams and delineating wetlands. Wetlands were identified through an analysis of vegetation, soils pits and hydrologic indicators. Wetland boundaries were then determined by analyzing groundcover for a shift from wetland to upland habitat.

Delineated Wetlands include:

Emergent Wetland	0.05 Acres (Field Verified)
Pond	0.20 Acres (Field Verified)

Potential Wetlands include:

Potential Emergent Wetland	Approximately 3.11 Acres (Secondary Sources)

Snyder & Associates, Inc. did not have permission from landowners to field verify the potential wetland (approximately 3.11 acres). The approximate acreage was determined from review of the potential wetland from an adjacent roadway, aerial photographs, and soils information. The potential wetland includes an emergent wetland adjacent to an ephemeral drainageway (identified as Stream C in the wetland delineation report) located within the Runway Protection Zone (RPZ) extending beyond Runway 32. The ephemeral drainageway is located beyond the anticipated Runway Safety Area (RSA) grading limit associated with Runway 14/32 (see Appendix J, Figures 5-1, 5-4). The installation of an approach light system would impact less than 0.10 acres of the potential wetland. The emergent wetland (0.05 acres) is located east of Runway 14 and outside the

anticipated grading limits associated with Runway 14/32 (see Appendix J, Figures 4-1, 5-2). The 0.20 acre pond is located beyond the anticipated grading limits associated with Runway 14/32 (see Appendix J Figures, 4-1, 5-2).

The U.S. Army Corps of Engineers provided a preliminary jurisdictional determination on December 21, 2015 and indicated that the pond and associated wetland are not jurisdictional and therefore mitigation would not be required.

Snyder & Associates, Inc. identified two (2) intermittent streams and one (1) ephemeral drainageway within the project area (see Appendix J). Potential Stream Impacts include:

Stream Identifier	Type	Length	Potential Impact
A	Intermittent Stream	3,470 feet	Zero (0)
B	Intermittent Stream	2,679 feet	Approx. 598 feet
C	Ephemeral Drainageway	672 feet	Zero (0)

Stream A is located within the Runway Protection Zone (RPZ) and beyond the anticipated grading limit associated with the Runway Safety Area (RSA) extending beyond Runway 14. Therefore, Stream A would not be impacted.

The upper reaches of Stream B would be impacted. Approximately 598 linear feet of Stream B, located within the anticipated grading limits associated with Runway 14/32, would be impacted (see Appendix J). The upper reaches of Stream B could not be confirmed during the wetland delineation due to restricted access to the property. A portion of the length of Stream B was estimated through LIDAR contours and aerial imagery. Impacts to Stream B will require U.S. Army Corps of Engineers preconstruction notification and permitting.

Stream C is located beyond Runway 32 and outside the Runway Safety Area (RSA) extending beyond Runway 32. Stream C would not be impacted by the proposed action. The potential wetland may have impacts less than one-tenth acre. Preconstruction notification will occur with the U.S. Army Corps of Engineers prior to impacting this area. The project design team will complete the wetland delineation upon obtaining access permission from the land owner. Should an approach lighting system be installed on Runway 32, the light units will be spaced by 200 feet on center. Permanent impacts to the potential wetland would be under one-tenth acre, but may need a 404 permit.

Construction activities associated with Site A – Build Alternative 3 may result in noise, air and water quality impacts. The potential impacts would be confined to the project site provided Best Management Practices (BMP's) were adhered to.

Construction related activities would occur on land for which a property interest in fee title or easement had been acquired. The design phase will consider the potential impact associated with significant storm events to ensure adequate silt basins and erosion control measures are incorporated into the project.

Construction materials not available on site will be transported via Iowa Highway 163 (4-lane divided) and 220th Street. Potential traffic impacts are considered less than significant. 220th Street extending from Iowa Highway 163 to the proposed terminal area will be hard surfaced.

Construction activities, as with Alternative One – Site B, will extend over a three (3) to five (5) year period. It is anticipated that all grading and drainage improvements associated with the primary runway, parallel taxiway and terminal area be completed as one project. Given this scenario, grading and drainage improvements can be constructed in a manner that will enhance erosion control efforts and provide appropriate stormwater detention facilities early on.

Areas on land acquired and beyond construction limits may be farmed while construction is taking place. The use of cover crops and current farming practices will minimize potential erosion.

5.16.4 Mitigation

Preconstruction notification will be provided to the Corps of Engineers to determine the appropriate level of permitting and mitigation, if necessary, for impacts to wetlands and stream areas. The proposed improvement may impact approximately 598 linear feet of Stream B. Mitigation for potential stream impacts would include compensatory mitigation onsite and offsite by constructing new stream lengths or stream enhancements within the proposed airport site boundary. A mitigation plan may be required. The USACE issued a "Preliminary Jurisdictional Determination" on information provided. A Final Jurisdiction Determination cannot be made until access to those parcels, where access was restricted, is obtained.

Potential impacts to the emergent wetland, pond, and potential wetland would be less than 0.10 acres. The ephemeral drainageway length would not be impacted. Therefore, mitigation would not be required.

The preferred alternative provides the least amount of resource impacts out of all of the alternatives. Impacts to wetland and streams have been minimized to the extent possible within the project limits of the preferred alternative.

The pond and vegetation may be managed to mitigate the 0.20 acre pond and adjacent 0.05 acre wetland from being a potential wildlife attractant.

The Iowa DNR has developed guidance that minimizes stormwater runoff impacts within Iowa watersheds. Within the design and construction phases, references will be made to the *Iowa Stormwater Management Manual* and the *Iowa Construction Site Erosion Control Manual*. Reference will also be made to the *Iowa Statewide Urban Design and Specifications (SUDAS) Manual: Erosion and Sediment Control*.

Part of the National Pollution Discharge Elimination System (NPDES) process is the completion of a pollution prevention plan that outlines construction measures minimizing soil erosion and pollutant movement to areas receiving waters from the construction site.

- NPDES Permitting:
  - General Permit Number 1 is required as a result of the proposed fueling activities.
  - General Permit Number 2 to include stormwater pollution prevention plan (SWPPP) will be required.

Temporary and permanent erosion control measures, as part of Best Management Practices (BMP's), will include silt fencing, temporary mulching and seeding, sediment traps at intakes, sediment basins, stream flow velocity controls, the use of temporary dikes, basins and ditches. After construction is complete, slopes and denuded areas will be re-seeded to aid in the vegetation process further reducing soil erosion impacts. Permanent erosion control measures include periodic site reviews for eroded areas and an identified maintenance program.

Erosion, sedimentation, siltation and air pollution emission (primarily dust) associated with construction will be minimized by the use of procedures set forth in the FAA Advisory Circular 150/5370-10C, *Standards for Specifying Construction of Airports*. Water quality will be maintained throughout construction with implementation of site-specific BMP's. Precautions will also be taken to minimize pollution concerns, such as the accidental spilling of fuels, lubricants, bitumen, raw sewage, or wash water from concrete mixing operations.

BMPs are structural or non-structural practices, or a combination of practices designed to act as an effective practicable means of minimizing the impacts resulting from implementation of a proposed improvement. BMP's may include careful application of site design principles, construction techniques to prevent erosion or siltation, source controls to keep pollutants out of stormwater flows, or treatment facilities to reduce pollutants. BMP's are required to minimize environmental impacts for meeting requirements of the National Environmental Policy Act (NEPA). BMP's referenced in FAA AC 150/5370-10C, [*Standards for Specifying Construction of Airports*], will be adhered to.

5.17 Summary of Environmental Consequences and Mitigation

Tables 5-5 and 5-6 summarize the environmental consequences and conceptual mitigation, if any, for each of the impact categories associated with the five (5) alternatives.

- No Action Alternative
- Pella Municipal Airport: Release and Closure
- Oskaloosa Municipal Airport: Release and Closure
- Reasonable Alternative One - Site B
- Reasonable Alternative Two - Site A Build Alternative 3 (Proposed Action)

The impact may result in a positive benefit or have negative consequences. Less than significant means some impact will occur but does not exceed thresholds considered unacceptable provided an effort is made to minimize harm, avoid and/or provide mitigation. Where the environmental footprint associated with the existing airports is removed, the less than significant impact extends a benefit by allowing the existing airport sites to be converted to non-airport uses commensurate with land uses surrounding the existing site. The cumulative impact of the proposed "Build Alternative 3" (Proposed Action), when combined with the release and closure of the two existing public owned airports, is discussed in Section 6.

Since preliminary design has not been done, the project design team will work with the Corps of Engineers in advance of construction to determine permitting and mitigation requirements.

Table 5-5
Potential Impact Summary

	No Action - Alternative		Pella Municipal Airport		Oskaloosa Municipal Airport	
RESOURCE CATEGORY	**Impact**	**Mitigation**	**Impact**	**Mitigation**	**Impact**	**Mitigation**
Air Quality	None	None	None	None	None	None
Biotic Resources	None	None	None	None	None	None
Climate	None	None	None	None	None	None
DOT Section 4(f)	None	None	None	None	None	None
Farmland	None	None	None	None	Remove Environmental Footprint	None
Hazardous Materials, Solid Waste & Pollution Prevention	None	None	Remove Environmental Footprint	None	Remove Environmental Footprint	None
Historic, Architectural & Cultural Resources	None	None	[1]	[1]	[1]	[1]
Land Use	None	None	Remove Environmental Footprint	None	None	None
Natural Resources & Energy Supply	None	None	None	None	None	None
Noise & Noise Compatible Land Use	None	None	Remove Environmental Footprint	None	None	None
Socioeconomic, Environmental Justice & Children	None	None	Remove Environmental Footprint	None	Remove Environmental Footprint	None
Visual Effects	None	None	None	None	None	None
Water Resources	None	None	None	None	None	None
			Release and closure of Airport. Remove Environmental Footprint from Airport Environs.		Release and closure of Airport. Remove Environmental Footprint from Airport Environs.	

[1] Prior to the release and sale of the existing Pella and Oskaloosa Municipal Airports, a Phase 1 Intensive Archaeological survey of selected areas of the airports will be completed as recommended by the Phase IA Archaeological Assessment of the Pella and Oskaloosa Airports (April 2016) and the report submitted to SHPO (see Appendix H).

Table 5-6 Potential Impact Summary

	Reasonable Alternative One - Site B		Reasonable Alternative Two - Site A - Build Alt 3 (Proposed Action)	
RESOURCE CATEGORY	**Impact**	**Mitigation**	**Impact**	**Mitigation**
Air Quality	None	None	None	Obtain construction and/or operating permits for portable equipment and processing plants Follow state requirments on open burning fugitive dust and opacity
Biotic Resources	Less than Significant	-Best Management Practices FAA AC 150/5370-10 Standards for Specifying Construction of Airport -Joint Application - USACE/IDNR (404 Permit, 401 Permit, 402 NPDES Permit (No. 1, No. 2)) -U.S. Fish & Wildlife Service Concurrence	None	-Best Management Practices FAA AC 150/5370-10 Standards for Specifying Construction of Airport -Joint Application - USACE/IDNR (404 Permit, 401 Permit, 402 NPDES Permit (No. 1, No. 2)) -U.S. Fish & Wildlife Service Concurrence
Climate	None	None	None	None
DOT Section 4(f)	None	None	Since the proposed action will not constitute a use or constructive use of the cultural resource eligible or potentially eligible, Section 4(f) resources will not be affected	None
Farmland	Less than Significant	None (Reference form AD 1006)	Less than Significant	None (Reference form AD 1006)
Hazardous Materials, Solid Waste & Pollution Prevention	Less than Significant	None	Less than Significant	None
Historic, Architectural & Cultural Resources	Less than Significant	None	Less than Significant	-State Historic Preservation Office Concurrence '-Complete Phase I Cultural Resources Investigation on 263 acres after obtaining access to property House and Cellar 1795 - 220th Street a. The undertaking will not acquire the house and cellar. b. The undertaking will plant a row of trees to visually screen the airport terminal area from the house and cellar along the airport's Southern and Western boundary Prine Cemetery a. The undertaking will not acquire the cemetery. b. The undertaking will avoid the cemetery. c. The undertaking will plant a secondary row of trees to further visually screen the airport from the cemetery along the airport's common property line. The trees will be maintained in perpetuity by the South Central Regional Airport Agency
Land Use	Less than Significant	The South Central Regional Airport Agency will work with Mahaska County to develop compatible land use guidelines and ordinances to restrict non-compatible land uses.	Less than Significant	The South Central Regional Airport Agency will work with Mahaska County to develop compatible land use guidelines and ordinances to restrict non-compatible land uses.
Natural Resources & Energy Supply	None	None	None	None
Noise & Noise Compatible Land Use	Less than Significant	None	Less than Significant	None
Socioeconomic, Environmental Justice & Children	Less than Significant	None	Less than Significant	None
Visual Effects	Less than Significant	None	Less than Significant	Plant trees and shrubs where the proposed airport and house / earth cellar property line coincide
Water Resources	Less than Significant	-Submit Joint Application - USACE/IDNR (404 Permit, 401 Permit, 402 NPDES Permit (No. 1, No. 2)) -Where property access was restricted, complete field survey for potential wetlands and streams -Submit report to the USACE for a final jurisdictional determination -During construction, adhere to Best Management Practices (BMP's) during construction	Less than Significant	-Submit Joint Application - USACE/IDNR (404 Permit, 401 Permit, 402 NPDES Permit (No. 1, No. 2)) -Where property access was restricted, complete field survey for potential wetlands and streams -Submit report to the USACE for a final jurisdictional determination -During construction, adhere to Best Management Practices (BMP's) during construction

SECTION SIX

Cumulative Impact

SECTION SIX: CUMULATIVE IMPACT ANALYSIS

6.1 Introduction

Cumulative impacts are "the incremental impact of an action when added to other past, present, and reasonably foreseeable future actions, regardless of what agency (federal or non-federal) or person undertakes such other actions" (40 CFR 1508.7). Cumulative impacts may result from individually minor but collectively significant actions taking place over a period of time. For further discussion, see Executive Order 1050.1E, 405f(1)(c), as well as Council of Environmental Quality (CEQ), *Considering Cumulative Effects Under the National Environmental Policy Act* (January 1997).

6.2 Analysis

The proposed actions will result in the closure of the Oskaloosa Municipal Airport and the Pella Municipal Airport.

The closure of the two (2) existing airports will reduce the environmental footprint from two (2) to one (1). Development of the proposed replacement airport will introduce an airport associated environmental footprint into an area where none previously existed.

At present, there are 729 acres of land defined by FAA as airport owned land that is federally obligated.

- Pella Municipal Airport 109 Acres (Obligated)
- Oskaloosa Municipal Airport 620 Acres (Obligated)

The Federal obligations that the City of Oskaloosa and the City of Pella assumed are mandated by the federal statue and incorporated into grant agreements and property conveyance instruments that are entered into by the airport sponsor (City of Pella, City of Oskaloosa) and the United States Government (see FAA Order 5090.4B *FAA Airport Compliance Manual*, Pages 1-5 through 1-7). The cities of Pella and Oskaloosa will request a release from current federal obligations associated with their respective airports.

- Oskaloosa Municipal Airport:
  - Surplus Property (see FAA Order 5190.6B, Paragraph 22.17)
- Pella Municipal Airport:
  - Replacement Airports (see FAA Order 5190.6B, Paragraph 22.20)

The existing airport assets will be disposed of or transferred to the proposed replacement airport. Reinvestment of the total net proceeds is required if the sponsor will own a public airport to include a replacement public airport (South Central Regional Airport). The existing airports will be converted to land uses compatible with adjacent land uses.

- Oskaloosa Municipal Airport:
  - 620 acres of federally obligated land will return to the private sector and will be used for agriculture (see Section 3.6).

- Pella Municipal Airport:
  - 109 acres of federally obligated land will be converted to land uses consistent with the *City of Pella Future Land Use Plan (*see *Pella Comprehensive Plan Update* – August, 2014). The Future Land Use Plan shows the airport being ultimately developed and converted by the private sector to the following land use:
    - Residential: Low to High Density (see Section 3.5).

While the proposed action is generally compatible with agricultural activities, it will disrupt current farming practices by removing 582 acres from private sector ownership. The 582 acres, when acquired, will be federally obligated and subject to conditions set forth in various FAA Orders and Advisory Circulars regarding future use.

The proposed Airport Land Use Plan (see Appendix E, Airport Layout Plan, Sheet 12) shows areas that may be used for row crops, grain, and/or hay. When ultimately developed, approximately 279 acres of crop will remain.

The first priorities will be to acquire 582 acres of land in fee title upon which to construct Runway 14/36, a parallel taxiway and terminal area to include aircraft parking, maintenance and storage facilities, a terminal building, and a fuel facility. Vehicle access and parking facilities will also be constructed within the initial development phase. Instrument approach procedures will be developed to each runway. Other improvements include weather, approach, and landing aids. The third phase of development contemplated is the construction of a crosswind runway (Runway 10/28). Within the 20-year time horizon, additional aircraft parking and storage facilities will be constructed commensurate with aeronautical demand. The cumulative development actions are shown on the Airport Layout Plan.

The proposed actions are not expected to induce non-agricultural related development adjacent to the proposed airport site. The proposed actions will indirectly help sustain current levels of employment within the airport service area.

The proposed actions complement the existing and planned transportation infrastructure improvements in South Central Iowa. The proposed actions will accommodate current and forecast aviation demand.

The proposed U.S. Highway 63 bypass around Oskaloosa to include the proposed U.S. Highway 63/Iowa Highway 163 interchange and proposed airport improvements are

considered independent actions. Non-agricultural development may occur near the proposed highway interchange provided municipal utility services are provided by the City of Oskaloosa. The proposed actions will not displace persons or existing businesses, nor cause a dramatic shift or increase in population. It will, however, indirectly contribute to sustaining existing business.

6.3 Summary

The cumulative effects on resources when combined with other past, present, and reasonably foreseeable actions will not have a significant impact on the resources discussed in Section Five.

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