

Farmland Conversion Study

For:

**Renfro Road and Santa Fe Way
Portion of the Northwest Quarter of Section 14
Township 29 South, Range 26 East, M. D. B. & M.
City of Bakersfield, County of Kern, State of California**

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Project No. 018-063.01

DECEMBER 2018

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1.0 Project Setting

1.1 Introduction

As the United States continues to urbanize, one of the many challenges facing Kern County is the need to preserve agricultural land and open space. Projects involving changes in land use sometimes convert agricultural lands to non-agricultural uses. Conserving productive agricultural lands requires a careful project-specific evaluation of the direct and indirect effects, as well as the cumulative effects, of agricultural land conversion. This study provides a checklist of items that should be considered by those analyzing the proposed project site. In order to analyze the proposed project’s potential impact to agricultural lands, this study utilized factors identified in the Metropolitan Bakersfield General Plan (MBGP) and the California Department of Conservation’s California Agricultural Land Evaluation and Site Assessment (LESA) Model (Appendix “G”).

1.2 Project Description

The proposed project site is located a half mile north of Hageman Road, west and adjacent to Santa Fe Way, north and adjacent to Renfro Road and a half mile south of Olive Drive; refer to Appendix “A”. The project site is located within the City of Bakersfield, County of Kern, and State of California. The project site is described as being in a portion of the Northwest ¼ of Section 14, Township 29 South, Range 26 East, Mount Diablo Base and Meridian; refer to Appendix “A”. This report has been prepared to accompany the proposed application as part of a General Plan Amendment and Zone Change. The area has been predominantly agricultural in nature throughout history, however the past 22 years there has seen migration of urban development flow westerly from the Metropolitan area of Bakersfield. This is primarily due to the fact development has grown in a consistent manner to the northwest and southwest areas of Bakersfield, as the extension of infrastructure has occurred to serve urban land uses; refer to Appendix “F”. The conversion of this farmland property will allow for the development of a future Light Industrial on approximately 8.53 acres.

The property is identified as a portion of Assessor’s Parcel Number 529-012-37, and contains approximately 8.53 net acres. The property is within the Metropolitan Bakersfield General Plan (MBGP) and is designated R-IA (Resource Intensive Agriculture – Minimum 20 Acre Parcel Size) and Zoned A (Agriculture Zone) in the City of Bakersfield. According to the United States Geological Survey (USGS), 7.5 Minute Series, “Rosedale” Topographic Quadrangle Map; refer to Appendix “B”. The subject site is generally flat, with a gradient to the northeast. The property is approximately 355 feet above mean sea level.

Properties surrounding the project site have the following land use and zoning designations as shown; refer to Table 1 below.

Table 1 - Land Use and Zoning – Adjacent Properties

	MBGP LAND USE	ZONE
North	R-IA / LMR	R-1 / R-2
East	LMR	R-2
South	LR/LI	R-1/M-I
West	LR/R-IA	R-1

R-IA - (Resource Intensive Agriculture)

LMR - (Low Medium Density Residential)

LR - (Low Density Residential)

LI - (Light Industrial)

R-2 – (Limited Multiple Family Dwelling Zone)

R-1 – (One Family Dwelling – 6,000 Sq. Ft. Minimum Lot Size)

M-1 – (Light Manufacturing Zone)

The following actions are being requested as part of this Project:

Zone Change: The project requests a zone change in the City of Bakersfield from A (Exclusive Agriculture) to M-1 (Medium Industrial)

General Plan Amendment: The project requests a General Plan Amendment to the MBGP from R-IA (Intensive Agriculture: Min. 20-acre Parcel Size) to LI (Light Industrial).

1.3 Purpose of Study

This Farmland Conversion Study addresses the conversion of approximately 8.53 acres of exclusive agricultural land within the City limits of Bakersfield. The subject property is located within Agricultural Preserve No. 9, and an Agricultural Preserve Exclusion will be required; refer to Appendix "C".

The Lead Agency (City of Bakersfield) typically bases a determination of agricultural resources significance on the thresholds established by the California Environmental Quality Act (CEQA) Guidelines. CEQA Appendix G provides an Environmental Checklist to address potential impacts. The lead agency may address questions from this checklist that are relevant to a project's environmental effects.

Would the Project:

- Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance, as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?
- Conflict with existing zoning for agricultural use or a Williamson Act Contract?
- Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use?

Agricultural Resources - In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Department of Conservation as an optional model to use in assessing impacts on agriculture and farmland.

2.0 Regulatory Setting

2.1 Federal

Farmland Protection Policy Act (7 U.S.C. Section 4201)

The purpose of the Farmland Protection Policy Act (FPPA) is to minimize the extent to which federal programs contribute to the unnecessary and irreversible conversion of farmland to nonagricultural uses. It additionally directs federal programs to be compatible with State and local policies for the protection of farmlands. Congress passed the Agriculture and Food Act of 1981 (Public Law 97-98) containing the FPPA—Subtitle I of Title XV, Section 1539-1549. The final rules and regulations were published in the Federal Register on June 17, 1994.

The FPPA is intended to minimize the impact federal programs have on the unnecessary and irreversible conversion of farmland to nonagricultural uses. It assures that, to the extent possible, federal programs are administered to be compatible with state, local units of government, and private programs and policies to protect farmland. Federal agencies are required to develop and review their policies and procedures to

implement the FPPA every two years. The FPPA does not authorize the Federal Government to regulate the use of private or nonfederal land or, in any way, affect the property rights of owners.

For the purpose of FPPA, farmland includes prime farmland, unique farmland, and land of statewide or local importance. Farmland subject to FPPA requirements does not have to be currently used for cropland. It can be forest land, pastureland, cropland, or other land, but not water or urban built-up land.

Projects are subject to FPPA requirements if they may irreversibly convert farmland (directly or indirectly) to nonagricultural use and are completed by a federal agency or with assistance from a federal agency (NRCS, 2008).

2.2 State

California Department of Conservation

The California Department of Conservation (DoC) applies the Natural Resources Conservation Service (NRCS) soil classifications to identify agricultural lands, and these agricultural designations are used in planning for the present and future of California's agricultural land resources. The DoC has a minimum mapping unit of 10 acres, with parcels that are smaller than 10 acres being absorbed into the surrounding classifications.

In Section 4.3 of this study, prime farmland is defined and discussed. Prime farmland, as defined by the United States Department of Agriculture (USDA), are soils that are best suited to producing food, seed, forage, fiber, and oilseed crops. In addition, prime farmland produces the highest yields with minimal units of energy and economic resources, and farming these soils results in the least damage to the environment.

Prime farmland soils commonly get an adequate and dependable supply of moisture from precipitation or irrigation. Temperature and growing season are favorable, and the level of acidity or alkalinity is acceptable. The soils have few rocks and are permeable to water and air, not excessively erodible or saturated with water for long periods and are not flooded during the growing season.

California Land Conservation Act (Williamson Act)

The California Land Conservation Act of 1965, also known as the Williamson Act, was established with the basic intent of encouraging the preservation of the state's agricultural lands in view of the increasing trends toward their "premature and unnecessary" urbanization. The Williamson Act enables local governments to enter into contracts with private landowners for the purpose of restricting specific parcels of land to agricultural or related open space use. In return, landowners receive property tax assessments, which are much lower than normal because they are based upon farming and open space uses as opposed to full market value. Local governments receive an annual subvention of forgone property tax revenues from the state via the Open Space Subvention Act of 1971.

The State Department of Conservation passed legislation in 1998 that would allow individual counties to establish an additional program for farmlands to enter into contract with the State to receive a similar benefit as the Williamson Act contract. The Farmland Security Zone is a 20-year self-renewing contract that allows property owners with qualifying parcels to receive an additional 35 percent in tax savings above that which is received under the Williamson Act land use contract.

The total acres of prime and nonprime farmland reported to the State Department of Conservation with the Kern County annual Subvention Report for 2017-2018 were 1,462,815.65 acres of prime and non-prime land under a California Land Conservation (Williamson Act) contract. Non-renewals initiated for the year totaled 41,802.43 acres of prime and non-prime property.

Farmland Security Zone Act

The Farmland Security Zone Act is similar to the Williamson Act and was passed by the California State Legislature in 1999 to ensure that long-term farmland preservation is part of public policy. Farmland

Security Zone Act contracts are sometimes referred to as “Super Williamson Act Contracts.” Under the provisions of this act, a landowner already under a Williamson Act contract can apply for Farmland Security Zone status by entering into a contract with the County. Farmland Security Zone classification automatically renews each year for an additional 20 years. In return for a further 35% reduction in the taxable value of land and growing improvements (in addition to Williamson Act tax benefits), the owner of the property promises not to develop the property into nonagricultural uses.

Public Resources Code Section 21060.1

The Public Resources Code (PRC) Section 21060.1 defines agricultural land for the purposes of assessing environmental impacts using the Farmland Mapping and Monitoring Program (FMMP). The FMMP was established in 1982 to assess the location, quality, and quantity of agricultural lands and the conversion of these lands. The FMMP provides analysis of agricultural land use and land use changes throughout all of California.

California Agricultural Land Evaluation and Site Assessment Model

In Section 4.9 of this study, the LESA model is defined and discussed. The California Land Evaluation and Site Assessment (LESA) is a term used to define an approach for rating the relative quality of land resources based upon specific measurable features. The formulation of the California Agricultural LESA Model is the result of Senate Bill 850 (Chapter 812/1993), which charges the Resources Agency, in consultation with the Governor’s Office of Planning and Research, to develop an amendment to Appendix G of the California Environmental Quality Act (CEQA) Guidelines. Such an amendment is intended “to provide lead agencies with an optional methodology to ensure significant effects on the environment of agricultural land conversions are quantitatively and consistently considered in the environmental review process” (Public Resources Code Section 21095).

2.3 City of Bakersfield

Metropolitan Bakersfield General Plan (MBGP)

The City of Bakersfield, in collaboration with Kern County, prepared the MBGP. This document establishes policies to provide decision-makers with long-range guidance affecting the future character of the Bakersfield planning area. The MBGP also acts to clarify and articulate the relationship and intentions of local government to the rights and expectations of the general public, property owners and prospective investors. Through the Plan, the City and County can inform these groups of its goals, policies and development standards, thereby communicating what must be done to meet the objectives of the MBGP.

The MBGP provides for the continuation of historical growth patterns in the eastern Bakersfield region by allowing for the greatest growth potential in this area. The land use goals of the MBGP provide for the accommodation of:

- New development which captures the economic demands generated by the marketplace and establishes Bakersfield’s role as the capital of the southern San Joaquin Valley;
- New development which provides a full mix of uses to support its population;
- New development which channels land uses in a phased, orderly manner and is coordinated with the provision of infrastructure and public improvements;
- New development, which is compatible with and complements existing land uses.

The Elements within the MBGP that provide policies and implementation measures for the conservation and/or improvements on agricultural lands include the Land Use, Conservation, and Open Space Elements. Below is an outline of the applicable goals within these Elements:

- Allow for the continuance of agricultural uses in areas designated for future urban development;
- Provide for the planned management, conservation, and wise utilization of agricultural land in the planning area;
- Promote soil conservation and minimize development of prime agricultural land as defined by the following criteria:
 - Capability Class I and/or II irrigated soils;
 - 80-100 Storie Index rating;
 - vineyards and orchards;
 - gross crop return of \$200 or more per acre per year;
 - annual carrying capacity of one animal unit per acre per year;
- Establish urban development patterns and practices that promote soil conservation and that protect areas of agricultural production of food and fiber crops, and nursery products.

The Land Use Element of the MBGP outlines residential policies and implementation measures regulating how the land will be utilized. Additionally, according to the Farmland Conversion Report: 2002 to 2004, prepared by the staff of the Farmland Mapping and Monitoring Program in the Department of Conservation, Farmland of Local Importance is classified as:

“Farmland of Local Importance is land of importance to the local economy, as defined by each county's local advisory committee and adopted by its Board of Supervisors.

Farmland of Local Importance is either currently producing, or has the capability of production, but does not meet the criteria of Prime Farmland, Farmland of Statewide Importance, or Unique Farmland. Authority to adopt or to recommend changes to the category of Farmland of Local Importance rests with the Board of Supervisors in each county.”

The Kern County Board of Supervisors determined that there would be no Farmland of Local Importance in Kern County.

Williamson Act Standard Uniform Rules

Kern County has adopted a set of Agricultural Preserve Standard Uniform Rules that identify land uses that are considered compatible uses within agricultural preserves established under the Williamson Act. These rules are designed to restrict the uses of land enrolled in a Williamson Act contract to agriculture or other compatible uses. Agricultural uses include crop cultivation grazing operations, commercial wind farms, livestock breeding, dairies, and uses that are incidental to agricultural uses. Other compatible uses include the erection of gas, electric, communications, water, and other similar public utilities (Kern County Planning Department).

The most recent California Land Conservation (Williamson) Act Status Report, which is prepared by the Department of Conservation, provides a breakdown of contracted lands in Kern County receiving benefit of decreased property taxation for 2017-2018; refer to Table 2 below.

According to the Kern County GIS Mapping System, there is no record of the subject property being located within the Williamson Act contracted lands; refer to Appendix “C”. The subject property is also not undergoing non-renewal.

Table 2 – 2017-2018 California Land Conservation (Williamson Act)

California Land Conservation (Williamson Act) 2017-2018		
Williamson Act Contract	Prime	590,603 acres
	Non-Prime	872,255 acres
Land Conservation Act Nonrenewal (2011)	Prime	19,199 acres
	Non-Prime	33,603 acres
Farmland Security Zone Contract - Urban	Prime	145,906 acres
	Non-Prime	0 acres
Farmland Security Zone Contract – Non-Urban	Prime	1,455 acres
	Non-Prime	0 acres
Farmland Security Zone – Non-contracted*	Prime	13,775 acres
	Non-Prime	0 acres

* These lands have requested non-renewal of their contract and are in the process of “backing out” of the 20-year contract.

3.0 Environmental Setting

3.1 State of California Agricultural Production

According to the most recent 2016-2017 California Agriculture Statistics Review prepared by the California Department of Food & Agriculture (CDFA), California had 76,700 farms for the year 2016. This number represents a decrease of less than 1 percent compared to the year 2015.

Nearly 27 percent of California farms generated commodity sales over \$100,000, greater than the national average of 20 percent. The amount of land devoted to farming and ranching California decreased slightly to 25.4 million acres in 2016. The average farm size in California was 331 acres in 2016, up from the 2015 farm size, but still below the national average of 442 acres.

California now produces more than 400 commodities, and produced fifty-six (56) percent of United States grown fruits, nuts, and vegetables. Modern agricultural practices in the United States have greatly increased the productivity of an acre of land. Crops with record California production in 2016 were pistachios, pecans, mandarins, walnuts almonds, strawberries and raspberries. California accounted for all or nearly all of the national production of almonds, pistachios, walnuts, dates, figs, kiwifruit, olives, Clingstone peaches, dried plums, and raisins. California also accounts for a significant share of many other fruit crops. The state produced over 80 percent of the national production of apricots, avocados, dates, grapes, lemons, mandarins, nectarines, and grapes, lemons, mandarins, nectarines, and plums. California accounts for over 62 percent of the harvested fruit acreage in the country.

3.2 Kern County Agricultural Production

The valley region of Kern County is highly suitable for agricultural cultivation. A review of the California Department of Food and Agriculture Crop Reports indicates a history of high agricultural production for many crops over the years and continuing to the present. Factors that influence high agricultural activity

today are climate, availability of water, dependable market demand, good soils, and most importantly, proper management.

Agriculture in Kern County has been extensive since the introduction of livestock in the 1860’s. Livestock raising on large land grants and some production of grain under dry-farming methods were the primary agricultural pursuits until about 1880. Rapid agricultural development occurred after 1880 due to the development of irrigation, inexpensive land, favorable crop yields, the arrival of two railroads, the development of the petroleum industry, and access to markets.

The most recent 2016-2017 California Agriculture Statistics Review prepared by the California Department of Food & Agriculture (CDFA), ranked Kern County as number one in the State by gross value of Agricultural Production \$7,187,938,000 in 2016.

The most recent 2017 Agricultural Crop Report (September 18, 2018) prepared by the Kern County Agricultural Commissioner’s Office states that Kern County gross value saw a one percent (1%) from 2016 to \$7,254,168,000 and contains 884,371 acres of harvested land. Within that acreage; 86,830 acres were harvested for vegetable crops, 546,290 acres were harvested for fruit and nut crops, and 248,021 for field crops. The total harvested acreage decreased from the year 2016 to 2017 is approximately 0.01 percent. The 2016 top five commodities were grapes, almonds, citrus, dairy (milk), and pistachios.

3.3 Agricultural Production - Subject Property

A review of historical aerial photographs show the project site has been used for agricultural production from at least 1994 to present. The project property is approximately 8.53 net acres. Aerial photography was used to determine whether agricultural production has occurred on the project site within the past. Refer to Appendix F (F-1 thru F-15 Aerial Photos).

Table 3 - Aerial Photographs/Agricultural Production

Year	Agricultural Production on Site	Description of Site
1937	None	Project site appears undeveloped. Land to the west, north, and east appear to be undeveloped. Land to the south appear to be under agricultural cultivation. <i>The year 1937 aerial photography was only reviewed and is not part of this report.</i>
1956	None	Project site appears undeveloped. Land to the west and northwest appear to be under agricultural cultivation. The land to the south, east and northeast appear to be undeveloped.
1994	Yes	Project site appears under agricultural production. Surrounding lands appear to be under agricultural production.
1998	Yes	Project site appears under agricultural production. Surrounding lands appear to be under agricultural production. Residential development can be seen within ½ mile to the south.
2000	Yes	Project site appears under agricultural production. Surrounding lands appear to be under agricultural production. Residential development is to the south and at the northeast corner of Hageman Road and Renfro Road. Residential development is to the southeast at Allen Road and Hageman Road.
2004	Yes	Project site continues to be under agricultural production. Land to the west, north, east and south appear to continue to be under cultivation. Residential development is the same as the previous aerial photograph.

2006	Yes	Project site appears unchanged since previous aerial photograph. Residential development continues to grow to the south and east. A new high school can be seen to the northeast.
2009	Yes	Project site appears unchanged since previous aerial photograph. Urban development continues to the south and east, with new development to the west, southwest, and northeast of subject site. Renfro Road has been constructed along the southerly border of the Project site and now intersects with Santa Fe Way.
2011	Yes	Project site appears unchanged since previous photograph. Urban development and encroachment continues with new development on all surrounding lands except northerly.
2012	Yes	Project site appears unchanged since previous photograph. Urban development and encroachment continues with new development on all surrounding lands except northerly.
2013	Yes	Project site appears unchanged since previous photograph. Urban development and encroachment continues with new development on all surrounding lands except northerly.
2014	Yes	Project site appears unchanged since previous photograph. Urban development and encroachment continues with new development on all surrounding lands except northerly.
2015	Yes	Project site appears unchanged since previous photograph. Urban development and encroachment continues with new development on all surrounding lands except northerly.
2016	Yes	Two industrial agriculture warehouses have been constructed on the Project site. Urban development and encroachment continues with new development on all surrounding lands except northerly.
2017	Yes	Project site appears unchanged since previous photograph. Urban development and encroachment continues with new development on all surrounding lands except northerly.
2018	Yes	Project site appears unchanged since previous photograph. Urban development and encroachment continues with new development on all surrounding lands except northerly.

The project property is approximately 8.53 net acres. Tasteful Selections was the tenant farmer in 2017 and R & M Jelmini Farms was the tenant farmer for the years 2013 to 2016. The property owner, Justin Batey, has provided the crop information for the last 5 years; refer to Table 4 below.

Table 4 - 2013–2017 Crops – Grown on Subject Property

2013-2017 Crops Grown on Subject Property		
Year	Commodity	Total Acres
2013	Cotton	8.0
2014	Alfalfa	8.0
2015	Alfalfa	8.0
2016	Wheat and Carrots	8.0
2017	Mini Potatoes	8.0

3.4 Pesticide Usage - Subject Property

Information pertaining to pesticide use within the subject property has been provided by the Kern County Geographic Information Mapping System and the Kern County Department of Agriculture records. According to the Agriculture Department, chemicals reported used and permitted on site from 2013 through 2017 are shown in Table 5 below. The property owner stated in the Farmland Conversion Questionnaire that no pesticides or farm equipment were stored on the site through 2017. Two buildings were constructed in 2018 to house farming equipment and supplies.

Table 5 - Pesticide Use (2013-2017)

Pesticide Use 2013 - 2017		
Year	Pesticide Name	Purpose/Use
2013	PROWL H2O NORTH	Herbicide
	MEPEX	Plant Growth Regulator
	PHT ENTRY	Pesticide
	PHT GUIDE-IT	Non-Ionic Surfactant/Adjuvant
	ASSAIL 70WP	Insecticide
	PHT BUGGER	Buffering Agent
	CARBINE 50WG	Insecticide
	AD WET 90 CA	Non-Ionic Surfactant/Spreader Activator/Defoaming Agent
	ET	Herbicide/Defoliant
	PARAZONE 30SL	Herbicide
	COREAGRI POLY-FOLIANT V	Defoliant
FINISH 6 PRO HARVEST	Defoliant/Regulator	

Pesticide Use 2013 - 2017		
Year	Pesticide Name	Purpose/Use
	GINSTAR EC	Defoliant
	PHT WATER-GUARD RT	Adjuvant/Surfactant
	AGRI-MEK SC	Miticide/Insecticide
	ROUNDUP POWERMAX	Herbicide
2014	PURSUIT (R)	Herbicide
	PROWL (R) H2O	Herbicide
	PH AD-WET 90 CA	Non-Ionic Surfactant/Spreader Activator/Defoaming Agent
	BAYTHROID XL	Insecticide
	DUPONT STEWARD EC	Insecticide
	AD WED 90 CA	Non-ionic Surfactant/Spreader Activator/Defoaming Agent
	PHT GUIDE-IT	Non-Ionic Surfactant/Adjuvant
	TELONE II	Fumigant/Nematicide
	LOROX DF	Herbicide
	EXIT	Insecticide
	CABRIO EG FUNGICIDE	Fungicide
	RIDOMIL GOLD SL	Fungicide
	RANMAN	Fungicide
	PRISTINE	Fungicide
	ADMIRE PRO SYSTEMIC PROTECTANT	Insecticide
	PROWL H2O	Herbicide
	LOROX DF	Herbicide
	YELLOW JACK FLOWABLE SULFUR	Insecticide
	DUAL MAGNAUM	Herbicide
	HERO EW	Insecticide
CHATEAU SW	Herbicide	
2015	BAYTHROID XL	Insecticide
	PHT AD-WET 90 CA	Non-Ionic Surfactant/Spreader Activator/Defoaming Agent
	ABBA ULTRA MITICIDE	Insecticide
	ROUNDUP POWERMAX	Herbicide
	COURIER 40SC INSECT GROWTH REGULATOR	Insecticide
	AD WET 90 CA	Non-Ionic Surfactant/Spreader Activator/Defoaming Agent
	DRIFTSTOP	Freezing Weather
	BELT SC	Insecticide
	CARBINE 50WG	Insecticide
	41-A	Insecticide
	MEPEX	Insecticide
	BELAY	Insecticide
	PHT ENTRY	Activator Adjuvant
	PHT GUIDE-IT	Non-Ionic Surfactant/Adjuvant
2016	Exit	Insecticide
	CLARITY (R) HERBICIDE	Herbicide

Pesticide Use 2013 - 2017		
Year	Pesticide Name	Purpose/Use
	PHT AD-WET 90 CA	Non-Ionic Surfactant/Spreader Activator/Defoaming Agent
	41-A	Insecticide
	SHARK EW	Herbicide
	LOROX DF	Herbicide
	INTENSITY	Herbicide
	PROWL (R) H2O	Herbicide
	EXIT ACTUVATIR ADHYV	Insecticide
	RIDOMIL GOLD SL	Fungicide
	BRAVO ULTREX	Fungicide
	YELLOW JACKET FLOWAB	Insecticide
	RANMAN	Fungicide
	CABRIO (R) EG	Fungicide
	PRISTINE (R)	Fungicide
	INTENSITY POST-EMERGENCE GRASS	Herbicide
	ULTRA FLOURISH	Fungicide
2017	ADMIRE PRO SYSTEMIC	Insecticide
	QUADRIS (CA, HI, & N)	Fungicide
	EPTAM 7E	herbicide

Source: Kern County Department of Agriculture

3.5 Agricultural Production - Adjacent Property

The crops grown on adjacent properties for the years 2012-2017, and the land uses for the adjacent property are presented in the Table 6 below; refer to Appendix “E”.

Table 6 - Crops Grown on Adjacent Properties (2012-2017)

Crops Grown on Adjacent Properties Years 2012-2017		
Years	Location	Crops
2012	North	Alfalfa
	South	Carrots, Wheat
	East	Alfalfa, Carrots, Wheat
	West	Wheat, Corn, Wheat, Alfalfa
2013	North	Alfalfa
	South	Cotton
	East	Alfalfa, Cotton
	West	Wheat, Corn, Wheat
2014	North	Alfalfa
	South	Potato
	East	Alfalfa, Potato
	West	Wheat
2015	North	Carrot, Tomato, Potato, Bean
	South	Carrot, cotton

Crops Grown on Adjacent Properties Years 2012-2017		
Years	Location	Crops
	East	Carrot
	West	Wheat, Corn,
2016	North	Carrot, Tomato, Barley
	South	Carrot, Wheat
	East	Carrot, Barley
	West	Corn, Wheat
2017	North	None
	South	Potato
	East	Potato
	West	Wheat

Source: Kern County Geographic Information Systems

3.6 Agricultural Crops and Yields for the Years 2013-2017

The project site consists of 8.53 net acres of land. All of the project land is zoned agriculture, with approximately 8 acres currently under production. The 2018 growing year was incomplete during the preparation of this document.

The Crop yields for 2013 through 2017 are listed in the Table 7 below.

Table 7 - Agricultural Crops and Yields for the Years 2013-2017

Agricultural Crops and Yields for the Years 2013-2017							
Year	Crop	Acres	Tons Per Acre	Cost to Produce ^b	Unit Value Per Ton	Net Crop Value	Net Acreage Value
2013	Cotton	8.0	2.80	\$1,325	\$545.00	\$71.78 ^a	\$1,608
2014	Alfalfa	8.0	3.41	\$1,346.00 ^c	\$247.00	\$5,532.8 ^{0d}	(\$5,235)
2015	Alfalfa	8.0	3.49	\$1,346.00 ^c	\$208.00	\$4,659.20 ^d	(\$6,108)
2016	Wheat	8.0	2.70	\$903.00 ^c	\$175.00	\$3,780 ^d	(\$3,444)
2017	Potatoes	8.0	15	\$3,500.00	\$300.00	\$36,000	\$4,000

- a) Bale
- b) Per acre
- c) No Cost to Produce provided by farmer, costs from UC Davis Agricultural cost & Return Studies
- d) Gross Crop Value

2013 Crop Information

Cotton was grown on the 22.29-acre parcel in 2013. The typical yield of the cotton was 2.80 bales per acre, and the cost to produce is estimated at \$1,325.00 per acre based on information provided by the grower. The cotton crop value is estimated at \$0.94 per pound (Kern County 2013 Crop Report). Net crop value was \$1,608.00

2014 Crop Information

Alfalfa was grown on the 8-acre site in 2014. The typical yield of the alfalfa was 3.41 tons per acre, and the cost to produce is estimated at \$1,346.00 per acre based on information in the UC Davis Cooperative Extension, "Costs and Returns to Produce Crops". The net crop value of the alfalfa was \$247.00 per ton based on information from the Department of Agriculture and Measurement Standards' 2014 Agricultural Crop Report.

2015 Crop Information

Alfalfa was grown on the 8-acre site in 2015. The typical yield of the alfalfa was 3.49 tons per acre, and the cost to produce is estimated at \$1,346.00 per acre based on information in the UC Davis Cooperative Extension, "Costs and Returns to Produce Crops". The net crop value of the alfalfa was \$208.00 per ton based on information from the Department of Agriculture and Measurement Standards' 2015 Agricultural Crop Report.

2016 Crop Information

Wheat and Carrots were grown on the 8-acre site in 2016. Carrots were grown in the fall and wheat was grown in the winter according to information provided by the grower. The typical yield of wheat is 2.70 tons per acre and the cost to produce is estimated at \$903.00 per acre based on information in the UC Davis Cooperative Extension, "Costs and Returns to Produce Crops". The net crop value of the wheat was \$175.00 per ton.

2017 Crop Information

Potatoes were grown on the 8-acre site in 2017 based on information provided by the grower. The typical yield of the potatoes was 15.0 tons per acre, and the cost to produce is estimated at \$3,500.00 per acre. The net crop value of the potatoes was \$300.00 per ton.

3.7 Historical and Current Aerial Photographs

Historical and current aerial photographs were reviewed to help establish the history of the subject property. Photograph from 1937 shows undeveloped land on the entire site. From 1937 to approximately 1964 the project site was undeveloped, when agricultural production began; (refer to Appendix "F"), which has continued to the present with the addition of two warehouse buildings.

3.8 Soils

California Land Conservation Act

As defined by the California Land Conservation Act (G.C. § 51201), prime agricultural soils include:

(c) "Prime agricultural land" means any of the following:

- (1) All land that qualifies for rating as class I or class II in the Natural Resource Conservation Service land use capability classifications.
- (2) Land which qualifies for rating 80 through 100 in the Storie Index Rating.
- (3) Land which supports livestock used for the production of food and fiber and which has an annual carrying capacity equivalent to at least one animal unit per acre as defined by the United States Department of Agriculture.
- (4) Land planted with fruit- or nut-bearing trees, vines, bushes, or crops which have a nonbearing period of less than five years and which will normally return during the commercial bearing period on an annual basis from the production of unprocessed agricultural plant production not less than two hundred dollars (\$200) per acre.
- (5) Land which has returned from the production of unprocessed agricultural plant products with an annual gross value of not less than two hundred dollars (\$200) per acre for three of the previous five years.

According to the California Land Conservation Act definition, all of the project property contains prime agricultural soils.

United States Department of Agricultural (USDA)

The United States Department of Agricultural Soil Survey of Kern County, California, and Northwestern Part was utilized to determine the soil units occurring within the proposed site. There are two different soil types in the soil survey area that are within the project area; see Table 8 below). A detail description follows in Section 3.8.1 Soil Units Description.

As defined by the United States Department of Agriculture (USDA), prime farmland is land that has the best combination of physical and chemical characteristics for producing food, feed, forage, fiber, and oilseed crops and that is available for these uses. It has the combination of soil properties, growing season, and moisture supply needed to produce sustained high yields of crops in an economic manner if it is treated and managed according to acceptable farming methods. Prime farmland soils produce the highest yields with minimal units of energy and economic resources, and farming in these soils result in the least damage to the environment.

The USDA Soil Survey Kern County, Northwestern Part states which soil units meet the requirements for prime farmland if water for irrigation is available. According to the Soil Survey, neither soil unit found on the subject property is considered prime farmland if water for irrigation is available.

Table 8 - USDA Soil Survey of Kern County, CA, Northwestern Part

USDA Soil Survey of Kern County, Northwestern Part				
Map Unit	Map Unit Name	Capability Classification		Acres in Site
		Irrigated	Non-irrigated	
196	Milham sandy loam	I	Vlls	8.53

3.8.1 Soil Unit Descriptions

Map Unit: 196 – Milham sandy loam

This deep, well-drained soil is on alluvial fans, plains, and low terraces. It formed in alluvium derived dominantly from granitic and sedimentary rock. The vegetation in areas not cultivated is mainly annual grasses and forbs with scattered shrubs. Typically, the surface layer is light brownish gray sandy loam about 4 inches thick. The upper 6 inches of the subsoil is pale brown sandy loam, and the lower 39 inches is yellowish brown loam and clay loam. The substratum to a depth of 60 inches or more is pale olive sandy loam. In some areas, the surface layer is loam for this type of soil. Permeability of this Milham soil is moderately slow, available water capacity is high, runoff is very slow, and the hazard of water erosion is slight. Effective rooting depth is 60 inches or more. This unit is suited to irrigated crops. This unit is also suited to hay and pasture. The entire project site is this map unit. This map unit is capability class I (17) irrigated, and capability subclass VIIc non-irrigated. The Storie Index rating is 81.

(Refer to Tables 8 and 9). It is considered prime farmland where water for irrigation is available.

Land Capability Classifications

As defined by the United States Department of Agriculture (USDA), the land capability classification shows the suitability of soils for most kinds of field crops. The soils are grouped according to their limitations for field crops, the risk of damage if they are used for crops, and the way they respond to management.

In the Capability system, soils are generally grouped at three levels: capability class, capability subclass, and capability unit. Capability subclasses are soil groups within a class. They are designated by adding a, e,w,s, or c to the class number, for example IIe. The letter e shows the main limitation as erosion unless close-growing plant cover is maintained; w shows that water in or on the soil interferes with plant growth or cultivation; s shows that the soil is limited mainly because it is shallow, droughty, or stony; and c, used in only some parts of the United States, shows that the chief limitation is climate that is very cold or very dry.

Capability units are soil groups within a subclass. The soils in a capability unit are enough alike to be suited to the same crops and pasture plants, to require similar management, and to have similar productivity. Capability units are designated by adding an Arabic numeral to the subclass symbol, for example, IIe-1 or IIIe-8. The numbers used to designate units within the subclass are as indicated in Table 9 below:

Table 9 - USDA Land Capability Classifications

United States Department of Agriculture (USDA) Land Capability Classifications	
Class	Definition
I	Soil has few limitations that restrict their use
II	Soil has moderate limitations that reduce the choice of plants or that require moderate conservation practices
III	Soil has severe limitations that reduce the choice of plants or require special conservation practices, or both
IV	Soil has severe limitations that reduce the choice of plants or that require very careful management, or both.
V	Soils are not likely to erode but have other limitations, impractical to remove, that limit their use.

United States Department of Agriculture (USDA) Land Capability Classifications	
VI	Soil has severe limitations that make them generally unsuitable for cultivation
VII	Soil has severe limitations that make them unsuitable for cultivation

Table 10 - Land Capability Units

United States Department of Agriculture (USDA) Land Capability Units	
Number	Definition
0	Indicates limitations caused by stony, cobbly, or gravelly material in the substratum.
1	Indicates limitations caused by slope or by an actual or potential erosion hazard.
2	Indicates a limitation of wetness caused by poor drainage or flooding.
3	Indicates a limitation of slow or very slow permeability of the subsoil or substratum is caused by a clayey subsoil or by a substratum that is semi-consolidated.
4	Indicates a low available water capacity in sandy or gravelly soils.
5	Indicates limitations caused by a fine textured or very fine textured surface layer.
6	Indicates limitations caused by salts or alkali.
7	Indicates limitations caused by rocks, stones, or cobblestones.
8	Indicates that the soil has a very low or low available water capacity because the root zone generally is less than 40 inches deep over massive bedrock.
9	Indicates limitations caused by low or very low fertility, acidity, or toxicity that cannot be corrected by adding normal amounts of fertilizer, lime, or other amendments.
10	Indicates a high organic matter content, peats, and mucks.

No unit designations are shown for class I soils because the soil characteristics are similar for all soils in the class. Unit designations are not given for soils in classes V through VIII because these soils normally are not intensively managed as cropland.

3.9 Water

Water servicing the existing agricultural development is provided by an off-site agricultural well with a 150 (hp) horse power electric motor. The well is used solely for agricultural purposes and is located south on the east side of the abutting property along Santa Fe Way. The Project site is also located within the Rosedale Ranch Improvement District of the North Kern Water Storage District. The Project would be provided domestic water through Vaughn Water Company. A “Conditional Will Serve” letter, dated January 11, 2018, was received from Vaughn Water Company indicating they are currently capable of supplying water to the site. The conditions include a Water Service Agreement and a licensed civil engineer to prepare the water plans and specifications.

3.10 Climate

Bakersfield’s temperatures are mild and pleasant throughout the year. Summers are dry and warm and winters are cool. Bakersfield’s temperature exceeds 100 degrees for an average of 38 days a year and drops

below freezing approximately 12 days annually. The precipitation averages 36 days a year. Bakersfield has an average of 223 sunny days per year and 86 cloudy days per year. The average rainfall (30-year period) is 6.49 inches per year.

4.0 Project Impacts

4.1 Methodology

This study utilizes a combination of the analysis of factors provided in the MBGP and the California Agricultural Land Evaluation and Site Assessment Model (LESA, California Department of Conservation – Office of Land Conservation, 1997) to identify the proposed project’s potential impact to agricultural lands.

4.2 Metropolitan Bakersfield General Plan - Factors

The MBGP recommends that certain factors be evaluated when determining the appropriateness of proposed agricultural conversions. These factors include:

- a) Soil Quality
- b) Availability of irrigation water
- c) Proximity to intensive parcelization
- d) Effect on properties subject to Williamson Act land use contracts
- e) Ability to provide urban services (sewer, water, roads, etc.)
- f) Ability to effect application of agricultural chemicals on nearby agricultural properties
- g) Ability to create precedent setting situation that leads to the premature conversion of prime agricultural lands
- h) Demonstrated project need that the project outweighs the need to retain the land for long-term agricultural use
- i) Necessity of buffers such as lower densities, setbacks, etc.

Section 4.0 includes a general discussion of the above-mentioned factors. This study’s findings regarding these factors are included in Section 6.0 Conclusions.

4.3 California Department of Conservation - Factors

In this section, prime farmland is defined and discussed. As defined by the USDA, prime farmland soils are soils that are best suited to producing food, seed, forage, fiber, and oilseed crops. In addition, prime farmland produces the highest yields with minimal units of energy and economic resources, and farming these soils results in the least damage to the environment.

Prime farmland soils commonly get an adequate and dependable supply of moisture from precipitation or irrigation. Temperature and growing season are favorable, and the level of acidity or alkalinity is acceptable. The soils have few rocks and are permeable to water and air, not excessively erodible or saturated with water for long periods and are not flooded during the growing season.

4.3.1 Seven Categories of Important Farmland

The California Department of Conservation has determined seven categories of Important Farmland:

Prime Farmland - This has the best combination of physical and chemical characteristics for crop production. It has the soil quality, growing seasons and moisture supply needed to produce sustained high yield crops when treated and managed, including water management, according to current farming methods.

According to the California Land Conservation Act definition of prime farmland, the subject property contains prime agricultural soils. Additional information from the United States Department of Agriculture, Soil Survey for Kern County Northwestern Part also indicates all soils found on the subject property would be considered prime farmland.

Farmland of Statewide Importance - This is land other than prime farmland that has a good combination of physical and chemical characteristics for the production of crops, and has been used for the production of irrigated crops within the last three years.

According to the California Department of Conservation Farmland Mapping and Monitoring Program, Soil Survey of Kern County, Northwestern Part (September 1988), none of the project site falls under this category, since all soils are classified as prime.

Unique Farmland – This is land that does not meet the criteria for Prime Farmland or Farmland of Statewide Importance, and land that is currently used for the production of specific high economic value crops. It has the special combination of soil quality, location, growing season and moisture supply needed to produce sustained high quality or high yields of specific crops (i.e. oranges, olives, avocados, cut flowers) when treated and managed according to current farming methods. This category excludes abandoned orchards or vineyards. None of the project site is in this category.

Farmland of Local Importance – This land produces crops or has the capability of production, or is used for the production of confined livestock. It is other than Prime, Statewide Importance or Unique Farmland. It may be important to the local economy due to its productivity. The Kern County Board of Supervisors has determined that there will be no Farmland of Local Importance in Kern County. None of the project site is in this category.

Grazing Land – This is land on which the existing vegetation, whether grown naturally or through management, is suitable for grazing or browsing of livestock. It is identified in minimum mapping units of 40 acres and does not include land previously identified above. None of the project site is in this category.

Urban and Built-up Land – This land is used for residential, industrial, commercial, construction, institutional, public administrative purposes, etc. None of the project site is in this category.

Other Land – This is land not included in any of the other mapping categories and generally includes rural development with a density of less than one structure per 1.5 acres, marginal agricultural lands, brush, timber, roads and other rural land uses. None of the subject property is within this category.

4.4 Buffer Zones

Buffer zones are well-defined strips of land located between farmland and urban development used to minimize possible conflicts between these uses. Buffers essentially create a separation between agricultural and urban uses, which minimize negative impacts on both sides of an edge boundary, especially the effects of chemical drift from farming activity. Agricultural buffers come in different forms—natural barriers created by landscape features such as waterways, roads, landscaping, walls, residential setbacks, open

space greenbelts, and combinations of various types. Key issues in their design and creation are their permanence, maintenance, and which of the landowners—developer/homeowner or farmer will provide the land or barrier.

If developments adjacent to agricultural fields do not include buffer zones in their design, the burden falls upon the grower to provide a buffer between these uses. This often means the grower must allocate a portion of their land to the creation of a buffer zone. As an example, growers might be required to refrain from spraying or harvesting the outside rows of their crops. In those cases, buffer zones represent a loss to the farmer of both crop production and income.

The proposed project is to be built on agricultural land and will be surrounded by agricultural land to the north, east, and a portion of the west. The project will require a General Plan Amendment and Zone Change (as discussed in Section 1.2). The applicant has indicated the site will be fenced with a block wall which acts to serve as a buffer to adjacent properties. The subject property relies on its base zone designation to determine whether buffer zones will be required or not. Setbacks in the form of roadways, landscaping, walls, etc. will be determined based on the project's development plan.

4.5 Water Quality

The amount and type of water contamination generated in urban areas differ from those generated in farmlands. Urbanization usually results in increased surface water concentrations of fecal coliforms, oil, grease, and heavy metals. Most farmers systematically apply a variety of pesticides and fertilizers to their crops. Some of these chemicals reach the soil and eventually leach into the groundwater. Soil and groundwater contamination also occur where chemicals are mixed or stored, where wells are constructed or abandoned, and through rainwater infiltration. Agricultural application of pesticides accounts for approximately 92 percent of all pesticide use in California (including chlorine). The pesticides and chemicals for use on this site are mixed and stored at an off-site location, therefore minimizing the potential for contamination from these pesticide chemicals.

4.6 Water Supply

Water is an important input in crop production. It has been the most important factor responsible for yield increases in the past 20 years. Some water districts have limits on the amount of water they can deliver to agricultural crops. Water demands change somewhat when croplands are converted to urban uses. Net irrigation requirements give the average amount of water required by specific crops at given locations in addition to the amount of water normally received in the form of precipitation. In addition, the State of California passed a three-bill package that would allow the state to oversee groundwater from the water table. As deliveries from surface sources have evaporated during a severe drought, farmers have turned to water from wells. Up to 65 percent of California's water supply flows from underground, according to a California Water Foundation report, up an estimated 40 percent.

Vaughn Water Company will be the domestic water purveyor for the project. There are existing 14-inch PVC water lines located along the south boundary of the parcel and along a portion of the east boundary on Santa Fe Way.

Urban water consumption depends on the land use established. Some industrial users, such as food processors, require very large volumes of water. Commercial uses require less water than industrial uses, but more water than residential uses. The industrial sector as a whole, however, requires less water than residential and commercial uses; refer to Table 11 below.

Table 11 - California Urban Water Use

California Urban Water Use in 2000		
Water Use by Sector	Acre Feet/Year	Percent
Residential Indoor	2,300,000	33.05
Residential Outdoor	983,000 to 1,900,000 (b)	14.12 to 27.3 (b)
Commercial/Institutional	1,850,000	26.58
Industrial	665,000	9.55
Unaccounted-for- Water	695,000	9.99
Total	6,960,000 (+/- 10%)	100 (+/- 10%)

Source: Pacific Institute for Studies in Development, Environment, and Security

(b) This is a range of estimated outdoor residential water use.

4.7 Competition for Water

California has historically had a relatively abundant supply of water, but the state’s Mediterranean climate and varied geography results in an uneven spatial and temporal distribution of water supply. The Sierra Nevada Mountain range, which lines the eastern edge of the State, captures and stores precipitation that occurs in the winter so it can be used for summer irrigation in the Central Valley. Average annual statewide precipitation is about 23 inches, corresponding to a volume of 200 million acre-feet. About 65 percent of this precipitation is consumed through evaporation and transpiration by trees, plants, and other vegetation. The remaining 35 percent comprises the state’s average annual runoff of about 71 million acre-feet.

The Department of Water Resources (DWR) projects a decline in California’s irrigated acreage by 2020, due in part to urbanization of agricultural lands and the continuing drought in the San Joaquin Valley. Potential changes in water use, resulting from land use conversion, are of concern by local agencies responsible for land use planning or for providing water supplies.

Changes in water usage depend on the types of crops grown, and the density and type of urban development in an area. In the case of single-family dwellings, applied water use varies with housing density. A recent DWR study showed that applied water use of single-family dwellings and agricultural crops were similar at low housing densities (four or five units per acre). However, higher density single-family dwellings (six units or more per acre) that have become common in today’s new home construction market tended to have greater applied water requirements than some crops.

Increased urban growth in the 1980’s resulted in an increase in the demand for water and an increase in groundwater use. Long-term groundwater withdrawals have caused some land subsidence.

Agricultural Sector

Agricultural water suppliers in the immediate vicinity of the project site include the Rosedale Ranch Improvement District of the North Kern Water Storage District.

As agricultural conversion replaces agricultural water users with urban water usage, the average fixed costs of maintaining and operating agricultural water delivery systems increase. Agricultural water consumption could eventually decrease below the minimum threshold necessary to operate delivery systems economically.

Changes in water usage depend on the types of crops grown and type of development in an area. The DWR urban water usage (urban water use includes residential, commercial, and industrial purposes) is equivalent to about 3.2 acre feet/year. The typical agricultural applied water use for alfalfa is 4.5 acre feet/year.

Future domestic water usage, which will need to be supplied by Vaughn Water Company, depends on the function and intensity of activities within the project site. Proposed zoning and land use designation, Table 12 shows average daily water consumption and corresponding acre feet per year for selected crops and urban uses.

Table 12 - Water Requirements – Urban and Agricultural

Water Requirements Urban and Agricultural	
Type of Use	Applied Water Use (af/acre)
Urban	3.2
Agricultural	3.35
Examples of Crop Irrigation Requirements	
Barley	1.3
Grapes	2.9
Cotton	3.2
Deciduous orchard	3.5
Pasture (improved)	4.5
Alfalfa	4.7

Source: Water Data Report

4.8 Effects on Other Agricultural Properties or Operations

Other changes in the existing environment could affect adjacent agricultural land by limiting the agricultural feasibility of the land. The following types of effects from agricultural conversion could generally reduce agricultural feasibility:

Conversion of farmland may affect nearby farmers by placing restrictions and limitations on pesticides, fungicides, and herbicides used on the crops. Restrictions could also be placed on noise, burning, and dust.

Vehicle emissions from adjacent transportation routes and increased roadway construction can impact the health and survival of crops on adjacent land.

Because of urban uses, adjacent farmers' share of the water supply could decline as competition for water increases. Agricultural water consumption could eventually decrease below the minimum threshold necessary to operate delivery systems economically. However, since the subject property is non-irrigated and would require domestic water to service industrial uses, there is no impact on the competition for agricultural water usage.

Increased traffic congestion reduces the efficiency and increases the hazards of moving crops and farm machinery along rural roads. Road congestion also increases the amount of time required to transport crops, which in turn increases shipping costs and the risk of spoilage.

Croplands and nearby agricultural lands that support farming are important sources of food, water, and cover for some native plants and animals. These resources are largely eliminated when farmlands are converted to urban use.

With respect to cumulative growth-inducing impacts, the conversion of this property from agricultural to industrial uses is not considered significant, since the site is the direct path of development and is surrounded on three sides by urban development and future approved Tentative Tract Maps.

4.9 California Agricultural Land Evaluation and Site Assessment Model – LESA

A LESA Model is created by defining and measuring two separate set of factors. The first set, Land Evaluation (LE), includes two different factors (Land Capability Classification Rating and Storie Index Rating) that are intended to measure the inherent, soil-based qualities of land as they relate to agricultural suitability.

The second set, Site Assessment (SA), includes factors that are intended to measure social, economic, and geographic attributes that also contribute to the overall value of agricultural land. This second set includes four different factors to provide measures of a given project's size, water resource availability, surrounding agricultural lands, and surrounding protected resource lands.

For a given project, each of these six factors is separately rated in a 100-point scale. The factors are then weighted relative to one another and combined, resulting in a single numeric score for a given project, with a maximum attainable score of 100 points. This final project score which becomes the basis for making a determination of a project's potential impact level of significance, based upon a range of established scoring thresholds.

4.9.1 Land Evaluation Factors

The California Agricultural LESA Model includes two LE factors that are separately rated:

Land Capability Classification Rating (LCC). The LCC indicates the suitability of soils for most kinds of crops. Groupings are made according to the limitations of the soils when used to grow crops and the risk of damage to soils when used in agriculture. Soils are rated from Class I to Class VIII, with soils having the fewest limitations receiving the highest rating (Class I). Specific Subclasses are also utilized to further characterize soils; refer to Appendix "G" (G-2 LESA – Land Evaluation-Site Assessment - Table 1A and Table 2).

Storie Index Rating. The Storie Index provides a numeric rating (based upon a scale of 100) of the relative degree of suitability or value of a given soil for intensive agriculture. The rating is based upon soil characteristics only. Four factors that represent the inherent characteristics and qualities of the soil are considered in the Storie Index rating. The factors are: profile characteristics, texture of the surface layer, slope, and other factors such as drainage or salinity; refer to Appendix "G" (G-2 LESA – Land Evaluation-Site Assessment - Table 1A). In some situations, only the USDA's LCC information may be available. In those cases, the Storie Index ratings can be calculated from information contained in soil surveys by qualified soil scientists. If, however, limitation of time and/or resources restrict the derivation of the Storie Index rating for a given project, it may be possible to adapt the LE by relying solely upon the LCC rating.

4.9.2 Site Assessment Factors

The four SA factors that are separately rated and included in the California Agricultural LESA Model are:

Project Size Rating. The Project Size rating is based upon identifying acreage figures for three separate grouping of soil classes within the project site, and then determining with grouping generates the highest Project Size score. The Project Size Rating relies upon acreage figures that were tabulated under the Land Capability Classification Rating (refer to Appendix “G” (G-2 LESA – Land Evaluation-Site Assessment - Table 1B and Table 3).

Water Resources Availability Rating. The Water Resources Availability rating is based upon identifying the various water sources that may supply a given property, and then determining whether different restrictions in supply are likely to take place in years that are characterized as being periods of drought and non-drought (refer to Appendix “G” (G-2 LESA – Land Evaluation-Site Assessment - Table 4 and Table 5).

Surrounding Agricultural Land Rating. Determination of the Surrounding Agricultural Land rating is based upon identification of a project’s Zone of Influence (ZOI), which is defined as that land near a given project, both directly adjoining and within a defined distance away, that is likely to influence, and be influenced, by the agricultural land use of the subject project site. The Surrounding Agricultural Land rating is designed to provide a measurement of the level of agricultural land use for lands in close proximity to a given project. The California Agricultural LESA Model rates the potential significance of the conversion of an agricultural parcel that has a large proportion of surrounding land in agricultural production more highly than one that has relatively small percentage of surrounding land in agricultural production. The definition of the ZOI that accounts for surrounding lands up to a minimum of one quarter mile from the project boundary is the result of several iterations during model development for assessing an area that will generally be a representative sample of surrounding land use (refer to Appendix “G” (G-2 LESA – Land Evaluation-Site Assessment - Table 6).

Surrounding Protected Resource Land Rating.

The Surrounding Protected Resource Land rating is essentially an extension of the Surrounding Agricultural Land rating, and it is scored in a similar manner (refer to Appendix “G” (G-2 LESA – Land Evaluation-Site Assessment - Table 7). Protected resource lands are those lands with long-term use restrictions that are compatible with or supportive of agricultural uses of land. Included among them are the following:

- Williamson Act contracted lands
- Publicly owned lands maintained as a park, forest, or watershed resources
- Lands with agricultural, wildlife habitat, open space, or other natural resource easements that restrict the conversion of such land to urban and industrial uses.

4.9.3 Final LESA Scoring

A single LESA score is generated for a given project after all the individual LE and SA factors have been scored and weighted. The California Agricultural LESA Model is weighted so that 50 percent of the total LESA score of a given project is derived from the LE factors and 50 percent from the SA factors. Individual factor weights are listed in Table 12, with the sum of the factor weights required to equal 100 percent. For the subject property, the final LESA score is determined to be 64 points; refer to Table 14.

Table 13 - Land Evaluation and Site Assessment Factors

Land Evaluation and Site Assessment Factors	
Land Evaluation Factors	
Land Capability Classification (LCC)	25%
Storie Index Rating	25%
Land Evaluation Subtotal	50%
Site Assessment Factors	
Project Size Rating	15%
Water Resource Availability Rating	15%
Surrounding Agricultural Lands Rating	15%
Surrounding Protected Resource Lands Rating	5%
Site Assessment Subtotal	50%
TOTAL LESA FACTOR WEIGHTING	100%

For the subject property, the final LESA score was determined to be as follows in Table 14 below:

Table 14 - Land Evaluation and Site Assessment Final Score

Land Evaluation and Site Assessment			
Factor Name	Factor Rating (0-100 Points)	Factor Weighting (Total=1.0)	Weighted Factor Rating
Land Evaluation			
Land Capability Classification	100	.25	25
Storie Index Rating	0	.25	0
	Total LE		25
Site Assessment			
Project Size	9	0.15	1
Water Resource Availability	45	0.15	7
Surrounding Agricultural Lands	9	0.15	1
Protected Resource Lands	0	0.05	0
	Total SA		9
	Total LESA Score		34

Note: Total LE and SA scores have been rounded; refer to Appendix "G".

4.9.4 Threshold of Significance

The California Agricultural LESA Model is designed to make determinations of the potential significance of a project’s conversion of agricultural lands during the Initial Study phase of the CEQA process. Scoring thresholds are based upon both the total LESA score and the component LE and SA separate sub-scores. In this manner the scoring thresholds are dependent upon the attainment of a minimum score for the LE and

SA sub-scores so that a single threshold is not the result of heavily skewed sub-scores (i.e., a site with a very high LE score but a very low SA score, or vice-versa). The California Agricultural LESA Model scoring thresholds are as follows:

Table 15 - LESA Model Scoring Thresholds

LESA Model Scoring Thresholds	
Total LESA Score	Scoring Decision
0 to 39 points	Not considered significant
40 to 59 points	Considered significant only if LE and SA sub-scores are each greater than or equal to 20 points
60 to 79 points	Considered significant unless either LE or SA sub-score is less than 20 points
80 to 100 points	Considered Significant

According to the California Agricultural LESA Model Threshold of Significance, the total score of 34 points for the subject property is not considered significant.

An explanation of the project size factor included in the LESA Instruction Manual discusses the shortfalls of the LESA model in its inability to specifically consider the issue of economic viability. The variables of economic viability include factors such as the financial management and farming skills of the operator, as well as the debt load and interest rates being paid by an individual operator.

Due to the above-mentioned factors, and the LESA model point score, the threshold of significance for the conversion of farmland into industrial uses is determined to be insignificant.

5.0 Conclusions

It is assumed that further development of the MBGP area will occur, and likely on “prime” agricultural soils that exist in the area. The MBGP concludes that removal of prime agricultural lands from production will result in a reduction of the regional agricultural economy and is considered a significant adverse impact. This study has found that the soils for this project site are considered “prime” and will have no impacts when converted to urban uses. No mitigation for this project is proposed.

Implementation of the proposed project will result in the conversion of approximately 8.53 acres of farmland to industrial uses. The project acreage includes approximately 8.53 acres of soil capability of Class I.

While conflicts between the residential and farming uses may exist, diminishing the edge relationships and exposures between the two, as well as adopting policies to mitigate their mutual impacts can minimize them. State and Federal Law restricts pesticide use in certain areas, and “right to farm” ordinances alone would not diminish the impact of the restrictions on pesticide use on farming operations.

According to the California Agricultural LESA Model Threshold of Significance, the total score of 34 points for the subject property is considered insignificant. An explanation of the project size factor included in the LESA Instruction Manual discusses the shortfalls of the LESA model in its inability to specifically consider the issue of economic viability. The variables of economic viability include factors such as the financial management and farming skills of the operator, as well as the debt load and interest rates being paid by an individual operator.

Detailed findings according to the MBGP factors are presented below.

Soil Quality

Finding: The proposed 8.53-acre project site is comprised of soil type: 196 Milham sandy loam, as classified by the Department of Agriculture Soil Conservation Service, and are IIs and I soils. The MBGP states: Areas designated for agricultural use, which include Class I and II and other enhanced agricultural soils with surface delivery water systems, should be protected from incompatible residential, commercial, and industrial subdivision and development activities. The subject property contains prime agricultural soils, therefore is considered significant. A statement of overriding consideration was adopted by the City when the General Plan was certified.

Availability of Irrigation Water

Finding: The property has one off-site water well located on the east side of the abutting property to the south, which has provided sufficient agricultural water needs.

Water demands change somewhat when croplands are converted to urban uses. Urban water consumption is higher in most industrial uses, however commercial and residential consume less water. Water agencies can charge a residential development more money for less water consumption.

Irrigation in a drought year with potential periods of power outages and the announcements of reduced water supply can severely reduce vegetable yields. Farmers have seen increases in water supply costs for their crops which are attributed to the higher costs on energy (electrical and diesel) to run the pump.

As part of the proposed project, upon approval of the project by the City of Bakersfield, the developer may enter into a Development Agreement with the City of Bakersfield to address various aspects of planning and development, including water facility development. Impacts are less than significant.

Proximity to Non-Agricultural Uses and Intensive Parcelization

Finding: The encroachment of urban uses on existing agricultural areas can result in negative interactions between farmers and urban neighbors. Farming operations can affect urban neighbors by creating inconveniences or discomforts such as equipment noise, odors from manure and other chemicals, and dust or smoke. Urban uses can create adverse impacts to farmers such as the introduction of pests, disease and weeds, increased complaints about noise, dust, smoke, odors, and spray drift from pesticide and fertilizer use, restrictions to the application of pesticides and chemicals, increased flooding and siltation, and increased traffic, vandalism, and trespassing.

The subject property is adjacent to intensive parcelization on three sides, and is already impacted by urbanization. The realignment of Renfro Road, severed the continuity of the former 127-acre agricultural parcel and created a 110-foot buffer between the subject property and the remaining agricultural property. Impacts are less than significant.

Effects on properties subject to Williamson Act Land Use Contracts

Finding: The total acres of prime and nonprime farmland reported to the State Department of Conservation with the Kern County annual Subvention Report for 2017-2018 were 1,462,815.00 acres of prime and non-prime land under a California Land Conservation (Williamson Act) contract. Of that total, 40.68 acres were enrolled in Farmland Security Zone (FSZ) contracts. Non-renewals initiated for the year totaled 52,802 acres of prime and non-prime property. The subject property is not under a land use contract and the nearest contracted land is approximately 3.5 miles distant. However, the subject property is located within Agricultural Preserve No. 9 and a Petition for Exclusion from the Agricultural Preserve is necessary. Existing urbanized and planned land uses surrounding the proposed project area demonstrate that the project is along the logical path of urban development. Impacts are less than significant.

Ability to be Provided with Urban Services

Finding: The proposed project is adjacent to existing residential and industrial development within the City limits and County of Kern. Domestic water will be provided by Vaughn Water Company. The project site is within the North of the River Sanitation District and will be provided sewer service. The proposed development is required to pay its proportional share of the local costs of infrastructure and other public facilities. Impacts are less than significant.

Ability to Affect the Application of Agricultural Chemicals on Nearby Agricultural Properties

Finding: The project site will be adjacent to agricultural uses along its west boundaries. The proposed project would be separated from adjacent properties by a block wall, which would contribute to minimize land use conflicts. Impacts are less than significant.

Ability to Create a Precedent-Setting Situation that Leads to the Premature Conversion of Prime Agricultural Lands

Finding: The project is surrounded by urban development and numerous approved Tentative Tract Maps and is in the logical path of development. Impacts are less than significant.

Demonstrated Project Need

Finding: The MBGP states that the Bakersfield Planning Department projects the population of the plan area to be 520,500 in the Year 2020. Population growth will result in the need for approximately 37,000 housing units (MBGP – Land Use Element, Page II-5). The proposed project intends to create an industrial parcel for agricultural warehousing for the rapidly growing Bakersfield community in a manner consistent with the goals and policies of the MBGP. The proposed project will also ensure that the area develops in a comprehensive and coordinated fashion with adequate consideration of traffic and circulation, public safety, site and resource management and project financing.

It is assumed that future development in the MBGP Planning Area would continue to include “prime” agricultural soils that exist on the Valley floor. This loss has not limited itself to the City of Bakersfield and Kern County but has become an issue of statewide concern. The MBGP concludes that conversion of prime agricultural lands to urban uses will result in a reduction of the regional agricultural economy and is considered to be a significant adverse impact. A statement of overriding considerations for this impact was adopted when the MBGP was certified. However, with implementation of mitigation measures found in Section 4.1-15 Impacts and Mitigation Measures of the Metropolitan Bakersfield General Plan Update EIR, the impact resulting from the conversion of farmland to non-agricultural uses is considered insignificant.

In addition, substantial existing and planned urban development on properties adjacent to and near the proposed project site indicates that this site is on the logical path of development. The Metropolitan Bakersfield General Plan encourages the orderly outward expansion of new urban development that maintains continuity of existing development and allows incremental expansion of infrastructure and public services. The proposal complies with the General Plan’s criteria.

The MBGP encourages the orderly outward expansion of new urban development that maintains continuity of existing development and allows incremental expansion of infrastructure and public services. The proposal complies with the MBGP’s criteria. Impacts are less than significant.

Necessity of Buffers Such as Lower Densities, Setbacks, etc.

Finding: If development adjacent to agricultural fields do not include buffer zones in their design, the burden falls upon the grower to provide a buffer between these uses. This often means the grower must allocate a portion

of their land to the creation of a buffer zone. As an example, growers might be required to refrain from spraying or harvesting the outside rows of their crops. In those cases, buffer zones represent a loss to the farmer of both crop production and income. However, with the project site being surrounded by urban and industrial development, a buffer zone may include a parking lot or landscape area or the roadway. Farmers can utilize their entire site for crop production if the adjacent development is commercial or industrial in nature, as these types of uses are not considered to be sensitive receptors. Impacts are less than significant.

6.0 Resources

Air Quality Resources Board - (Air Quality San Joaquin Valley -2004) <https://www.arb.ca.gov>

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California Department of Conservation-Farmland Mapping and Monitoring Program, Soil Candidate Listing for Prime Farmland and Farmland of Statewide Importance, Kern County – Reviewed January 2018

California Department of Conservation- Kern County Important Farmland Data Map, 2016. Available online at <ftp://ftp.consrv.ca.gov/pub/dlrp/FMMP/2016/> accessed January 2018

California Department of Conservation – Office of Land Conservation - (California Agricultural Land Evaluation and Site Assessment Model – Instruction Manual – 1997)

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California Department of Food and Agriculture (CDFA) - California Agricultural Statistics Review 2016-2017

California Department of Water Resources; Groundwater Information Center Map Interface; Available Online at <http://gis.water.ca.gov/app/groundwater/>

California Farm Bureau Federation (Central Valley Land Use Report) Available at <http://www.cfbf.com/storage/app/media/documents/Issues/CentralValleyLandUseReport.pdf>

City of Bakersfield, County of Kern, State of California (Metropolitan Bakersfield General Plan Map – Date: 11/21/2018)

City of Bakersfield, County of Kern, State of California (Metropolitan Bakersfield General Circulation Element Map – Date: 11/2018)

City of Bakersfield, California (Existing Sewer Lines)

City of Bakersfield, California (Tentative Tract Maps)

City of Bakersfield, California (Zoning Map 101-14 – Date: 03/03-2017)

City of Bakersfield, California (General Plan Amendment/Zone Change Exhibit Map – Date: 11/19/2018)

County of Kern, California (Assessors Map No. 529-01)

County of Kern, California (Case Map 101 East)

County of Kern, California (Survey – Field Map #71_06044)

County of Kern, California – Department of Agriculture and Measurement Standards – (Reported Crops 2009, 2010, 2011, 2012, 2013, 2014, 2015, & 2016), Available online at <http://www.kernag.com/caap/crop-reports/crop-reports.asp>

Federal Emergency Management Agency – (Flood Insurance Rate Map Community Panel 06029C1800E – Reviewed: January 2017)

Google Earth Pro – Aerial Photographs Dated: May 1994, May 2000, June 2004, August 2006, June 2009, October 2010, April 2011, August 2012, August 2013, April 2014, March 2015, October 2016 & September 2017

Google Maps – (Bakersfield, California - Date: January 2017)

Justin Batey, Manager – (Crops Information for 2017)

Justin Batey, Manager – (Farmland Conversion Study Questionnaire – Dated: January 12, 2017)

Kern County Planning and Community Development Services Department-Guidelines for Agricultural Soils/Farmland Conversion Studies

Kern County Department of Agriculture and Measurement Standards (Pesticide Use Report Data – 2013, 2014, 2015, 2016 & 2017)

Kern County Department of Agricultural Crop Reports – (Summary, Top Twenty Crops, Field Crops, and Vegetable Crops - 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016 & 2017)

Kern County Engineering and Survey Services - Aerial Photograph Dated: September 1937 & July 1956

McIntosh & Associates Engineering, Inc. – Aerial Photography Dated: April 1998

Natural Resources Conservation Service, United States Department of Agriculture. Web Soil Survey – Reviewed: January 2017

Pacific Institute for Studies in Development, Environment, and Security: Waste Not, Want Not The Potential for Urban Water Conservation in California – November 2003. Available online at <http://www.pacinst.org/issues/water-food-and-agriculture>, accessed January 2018

State of California - California Environmental Quality Act, Sacramento - January 2017

State of California - California Health and Safety Code § 11501 thru 11503; California Health and Safety Code § 26569.24 thru 26569.28; A.B. 645, Ch. 1135: Organic Food Act - February 21, 1991

United States Geological Survey - Topographic Quadrangle Map Rosedale, CA 1954

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Water Data Report – May 2007, Office of Scientific and Technical Information Available online at <v/bridge/servlets/purl/926300-bU6nMG/926300.pdf>, accessed October 2014