

# Eureka Valley — Highway K-18 Corridor Plan

*Update to the Manhattan Urban  
Area Comprehensive Plan*

A Joint Project of the City of Manhattan,  
Riley County, and the City of Ogden

April 2013



# Acknowledgements

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## ***Manhattan City Commission***

John Mata, Mayor  
Wynn Butler  
Richard B. Jankovich  
Karen McCulloh  
Usha Reddi  
Loren J. Pepperd (Mayor during project)  
James E. Sherow (Member during project)

## ***Board of Commissioners of Riley County***

David Lewis, Chairman  
Robert Boyd  
Ron Wells

## ***Ogden City Commission***

Robert (Bob) Pence, Mayor  
Ed Burch  
Brian Still  
Kenneth Carroll  
Ward Nations  
Paul Werle

## ***Corridor Plan Steering Committee***

Mona Bass, Ogden Planning Commission  
Richard Faulkner, Ogden Building Official  
Mike Goreham, Fort Riley Master Planner  
Dick Hayter, Airport Advisory Board  
Jon Howe, Property Owner  
Stacy Kohlmeier, Auth Florence  
Connie Miller, Property Owner, Township Board  
Tom Phillips, Manhattan Resident (Member during initial phase of project)  
Jerry Reynard, Manhattan Urban Area Planning Board  
Frederick W. Willich, Business Owner

### ***Manhattan Urban Area Planning Board***

Gary Stith, Chair

Linda Morse, Vice Chair

Phil Anderson

John Ball

Mike Kratochvil

Jerry Reynard

Mike Hill (Member during initial phase of project)

### ***Riley County Planning Board***

Laurence Clement Jr., Chair

Tom Taul, Vice Chair

Diane Hoobler

Julie Henton

John Wienck

### ***Ogden Planning Commission***

Darrell Wood, Chair

Mona Bass, Vice Chair

Flora Graham

Patricia Elliott

Michael Coulter

Sharon Rohlman

Chris Soder

### ***Project Staff***

Lance Evans, AICP, Senior Long Range Planner, Manhattan

Eric Cattell, AICP, Assistant Director for Planning, Manhattan

Monty Wedel, AICP, Planning & Development Director, Riley County

Kevin Credit, Long Range Planner, Manhattan

Bob Isaac, Planner, Riley County

Richard Faulkner, Zoning Administrator, Ogden

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# I. Introduction

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## *A. Plan Overview*

The Eureka Valley — Highway K-18 Corridor Plan addresses anticipated growth of the Eureka Valley resulting from the realignment of Highway K-18 and the expansion of the Manhattan Regional Airport and the surrounding communities. The Plan establishes a vision along with goals, objectives and action plans in eight key areas to promote the orderly growth and development of the Valley and the protection of community assets. The Eureka Valley - Highway K-18 Corridor Plan is a joint planning initiative of the City of Manhattan, Riley County and the City of Ogden. The Plan updates the Eureka Valley Special Planning Area of the 2003 Manhattan Urban Area Comprehensive Plan, and is intended to be used by property and business owners, developers, local government agencies, and decision makers, to help guide and inform their decisions during the planning, zoning and development process on a range of issues, including future land use, growth and annexation, future streets and access, provision of public facilities and services, and intergovernmental coordination.

## *B. Need for Eureka Valley — Highway K-18 Corridor Plan*

The Kansas Department of Transportation (KDOT) is undertaking a major realignment and reconfiguration of the Eureka Valley segment of K-18 into a four-lane expressway with grade-separated interchanges to improve the overall safety and capacity of the corridor, which is scheduled to be completed by 2014. The local segment of the K-18 Highway Corridor extends from I-70 northeast through Ogden and into Manhattan and serves as a major gateway to both communities. After crossing the Kansas River, the highway passes through Riley County, Ogden and Manhattan.

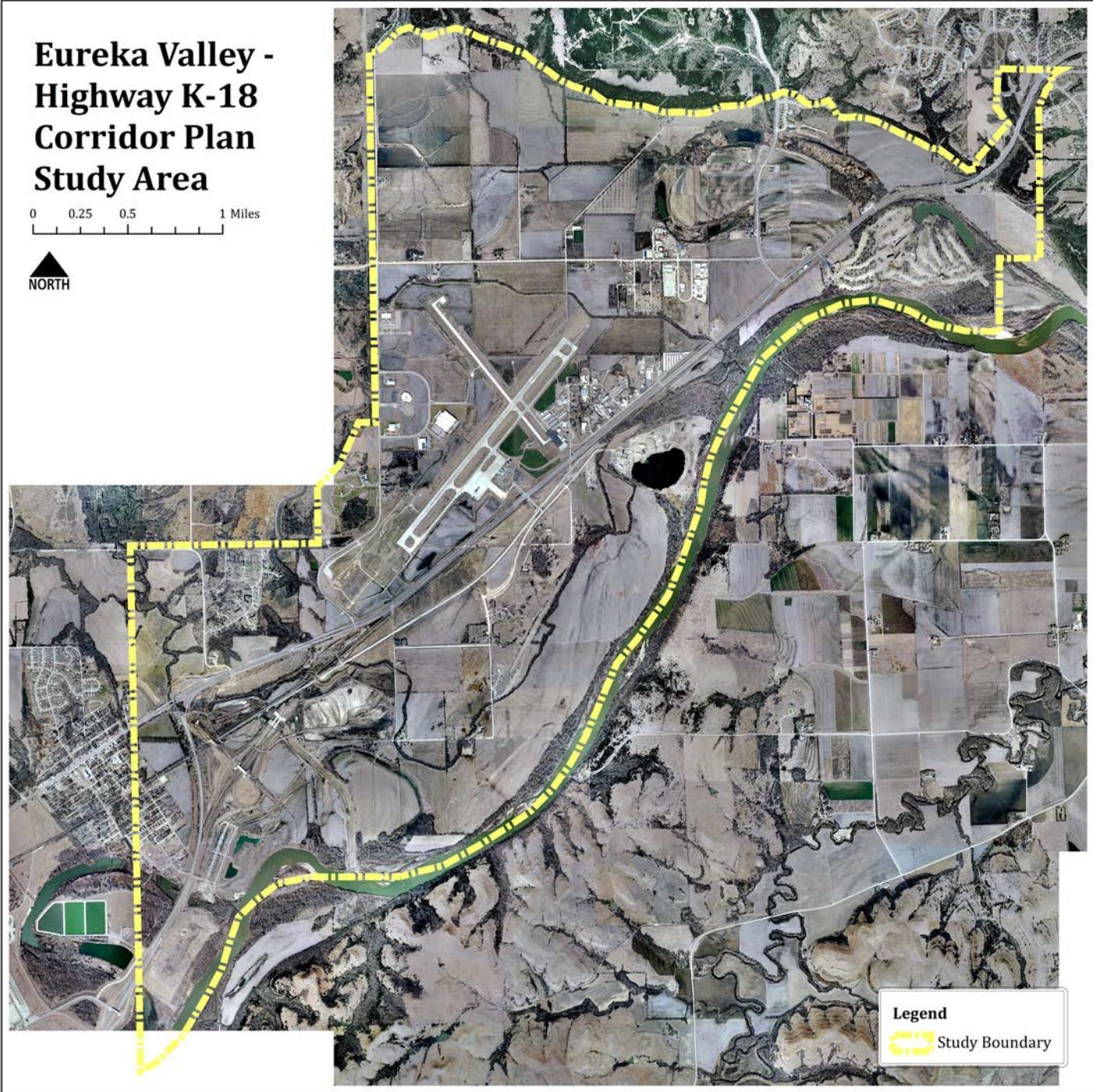
Major population and economic growth is anticipated in the Manhattan region as a result of increased numbers of civilians and enlisted personnel at Fort Riley, growth associated with construction and operation of the National Bio and Agro Defense Facility (NBAF) on the Kansas State University campus, and increased activity associated with the Manhattan Regional Airport, the second busiest airport in Kansas based on enplanements. KDOT has projected that the realignment of K-18 will have an estimated economic impact of \$121 million, based on projected savings from congestion relief, travel time savings, expanded economic opportunities and market access, and safety impacts.

Drainage improvements are another important component of the project which will help address ongoing flooding issues with area businesses. New interchanges will be located at Ogden, 56th Avenue (Manhattan Regional Airport), Scenic Drive, and Davis Drive/Miller Parkway. As a result of the realignment and conversion of the highway into a limited access expressway, the three local jurisdictions carried out a joint planning study to address the following issues:

- Analyze how changes to K-18 and access management may affect future growth and development patterns along the Corridor;
- Identify how municipal utility services will be provided within the Eureka Valley;
- Identify challenges and opportunities for economic development;
- Explore strategies for promoting consistency and cooperation towards a unified approach to development regulations, design guidelines, signage and corridor branding; and,
- Update land use and policy recommendations in the Manhattan Urban Area Comprehensive Plan and the Ogden Comprehensive Plan.

### ***C. Study Area Boundary***

The boundary for the Eureka Valley — Highway K-18 Corridor Plan encompasses the land directly adjacent to the K-18 Corridor and the surrounding areas generally comprising the Eureka Valley to ensure that the plan takes as comprehensive a view as possible regarding the Corridor’s local and regional context. The southern boundary of the study area follows the Kansas River from just downstream of the K-18 Bridge across the Kansas River near Ogden, to the eastern edge of Stagg Hill Golf Course. The boundary continues generally north to the Miller Parkway-Davis Drive interchange; then west and south along the Manhattan city limit line to K-18; then west along the base of the hills on the northern edge of the Eureka Valley to the boundary of Fort Riley; and then continues south to the Kansas River. The study area comprises approximately eleven (11) square miles adjoining the southwestern edge of Manhattan and includes the Manhattan Regional Airport, the Kansas Veteran’s Cemetery, Flint Hills Job Corps Center, commercial and industrial developments along K-18, Wildcat Creek Road, Scenic Drive and Eureka Drive, the eastern portion of the City of Ogden, and rural portions of the Eureka Valley.



Map 1. Study Area.

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## II. Plan Elements

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The Steering Committee, along with input from local property owners and citizens, developed a vision statement describing the future of the Eureka Valley that reinforces the Manhattan Urban Area Comprehensive Plan goals.

### *Vision Statement*

The Eureka Valley K-18 area will be an efficient, scenic and well designed transportation corridor that invites business and commercial development and provides employment opportunities while preserving the Flint Hills character of the region.

**Goals, Objectives, & Action Plans.** The Plan divides the vision statement into five major elements, each with goals, objectives and action plans that will guide growth and development in the area. Eight Goals were identified, which describe the over-arching desires of the community for the future of the Valley. Objectives identify specific areas on which to focus efforts in order to achieve the overall goals. The Action Plans describe specific steps for accomplishing the goals and objectives.

### *A. Future Land Use*

The Future Land Use Map identifies recommended land use designations throughout the Plan area and should be used together with the applicable goals, objectives, action plans and policies to provide guidance to property owners and decision makers regarding land use changes and growth and development in the Eureka Valley - Highway K-18 Corridor area. The Future Land Use Map designates twelve land use categories that are defined in Appendix D. In addition to the applicable goals, guiding principles and policies previously identified in Chapter 4 (Land Use and Growth Management) and Chapter 13 (Special Planning Areas) of the Manhattan Urban Area Comprehensive Plan, the following goals, objectives and action plans have been identified for the Eureka Valley — Highway K-18 Corridor Plan.

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### Land Use

***Goal 1: Establish land uses that leverage economic opportunities provided by the K-18 expressway, Airport and rail access in the Eureka Valley.***

**Objective A:** Promote land uses that are compatible with and do not encroach upon the Airport and Fort Riley.

**Objective B:** Prohibit noise sensitive land uses that could negatively impact the Airport and Fort Riley.

**Objective C:** Investigate opportunities and potential locations to take advantage of rail access and for a truck-rail transfer facility.

**Objective D:** Promote retail commercial and service nodes around K-18 interchanges, and light manufacturing and industrial services in other areas.

**Objective E:** Locate commercial uses within proximity of employment areas to provide services for employees.

**Objective F:** Identify appropriate locations and zoning designations for research-based commercial and industrial uses that have unique needs.

**Objective G:** Locate businesses incorporating heavier industrial activities and/or outdoor animal holding areas away from main roads on second-tier lots.

**Objective H:** Promote commercial uses that are scaled to serve the needs of local and regional commuters, recreational users, and employment areas within the Eureka Valley. While individual businesses may have a regional draw, promote commercial retail centers of a neighborhood or community scale.

**Objective I:** Promote development of land uses in the manufacturing, scientific-professional, specialized industrial service, and education and specialized training sectors that can take advantage of the unique opportunities offered by the presence of Fort Riley, Kansas State University and NBAF to attract new capital and job creation.

***Action Plan***

1. The local jurisdictions shall utilize the Future Land Use map designations in combination with the goals, objectives and action plans throughout the Eureka Valley — Highway K-18 Corridor Plan to guide growth, development, and zoning decisions within the plan area.

2. Investigate opportunities and potential locations to take advantage of rail access and for a truck-rail transfer facility.

3. Focus economic development efforts on the types of light industry, manufacturing, scientific-professional, specialized industrial services, and education and specialized training sectors (i.e. basic industries) that will attract new capital and job growth that does not already exist in the area and will more fully take advantage of Fort Riley, Kansas State University, the Manhattan Regional Airport and NBAF.

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## Regional Airport

*Goal 2: Protect the long term viability of the Manhattan Regional Airport as a transportation and economic asset to the area.*



**Figure 1.**  
Manhattan  
Regional Airport  
Terminal.

**Objective A:** Enhance the Airport's ability to serve the region through provision of services to the traveling public and military users as identified in the Terminal Area Plan.

**Objective B:** Promote land uses throughout the Eureka Valley that are compatible with the Airport Master Plan, and Airport Noise and Land Use Compatibility Study.

### **Action Plan**

1. Manhattan, Ogden and Riley County shall work towards cooperative implementation of the Airport Overlay District and the Joint Land Use Study (JLUS) to facilitate more effective protection of the Manhattan Regional Airport and Fort Riley from incompatible encroachment, including the use of tools such as noise disclosure and

noise attenuation construction techniques, while promoting compatible growth and economic development. The proposed future land uses, as shown on the Future Land Use Map, are general categories that - together with the written goals, objectives, action plans and policies - help guide decisions on future land use changes in the area.

### **Commercial**

Commercial Nodes located around each of the K-18 interchanges identify that these areas are generally appropriate and encouraged for either neighborhood scale, or community scale commercial uses, depending upon market conditions.

As noted in the Economic Analysis (Appendix A), the primary commercial focus is towards serving traffic along K-18, Airport traveler services and the needs of employers and employees in the Valley. The commercial nodes allow for expansion of current commercial activities as needed. However new commercial development should be limited in scope to providing essential services for the Eureka Valley, while truly regional scale



commercial developments should continue to be located within Manhattan's downtown central core area. In addition to the identified commercial nodes, other commercial areas are shown along portions of the K-18 Corridor and within Ogden. A neighborhood scale commercial area has also been designated just west of the Miller Parkway/Davis Drive interchange.

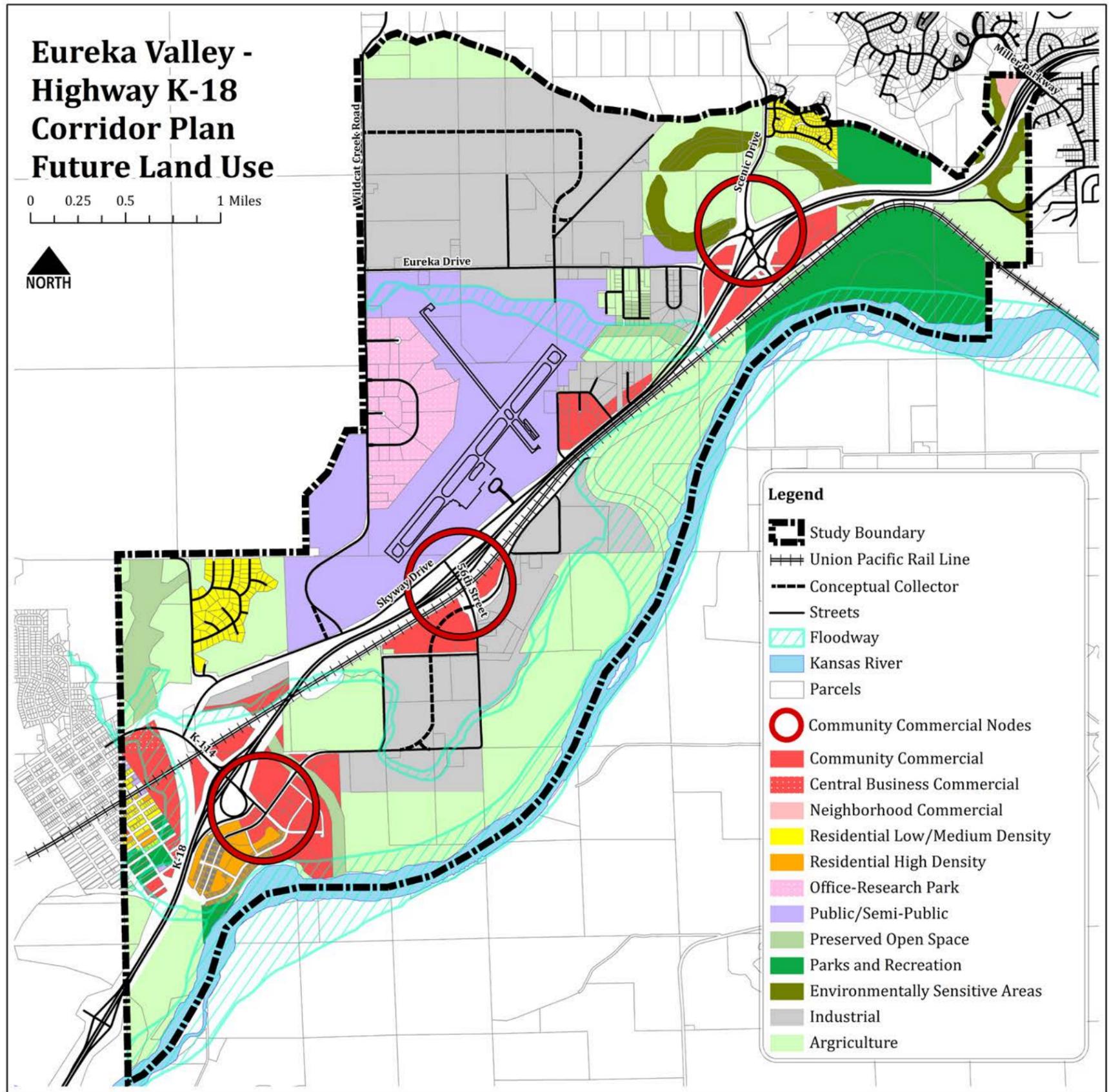
**Figure 2.** Example of desirable highway commercial development.

### **Airport**

The Manhattan Regional Airport comprises the largest public facility in the Eureka Valley and expanding regional air service is an important driving force in the development of the valley and the region. The Airport also has a significant economic impact on the region and the state of Kansas. For 2012, the Airport supported 489 jobs in Kansas that earned a total of \$13.4 million, and the Airport contributed \$46.3 million to the state's economy<sup>1</sup>. The Airport was the second busiest in Kansas with 67,000 total enplanements in 2012, and growth is expected to continue into the future.

The Airport Master Plan and Terminal Area Plan were developed in 2009 and 2011 respectively, to guide future capital improvements and expanded services for air travelers, based on existing and projected needs for commercial and general aviation, ground transportation and parking, as well as military deployments associated with Fort Riley. Planned future improvements include expansions of the airfield, commercial terminal and parking areas, relocation of the general aviation fixed base operation, and construction of additional hangers. The Airport Master Plan and Terminal Area Plan encourage commercial development as part of the long-term viability of the Airport and identify an on-site area for commercial opportunities, located generally southwest of the terminal near the 56th Avenue interchange.

<sup>1</sup>. *The Economic Impact of Manhattan Regional Airport*, October 2012, CDM Smith.



Map 2. Future Land Use.



This location conforms to the commercial node identified at the 56th Avenue interchange on the Future Land Use Map. Commercial activities could include car rental lots, convenience store, car wash, restaurants, hotel, and other retail conveniences.



**Figure 3.**  
Conceptual  
Rendering of NBAF  
facility.

### **Industrial**

The Future Land Use Map identifies expanded industrial locations throughout the Eureka Valley, particularly south of K-18, along Eureka Drive, and in areas north of Eureka Drive. These areas are intended to address the anticipated long term need for a broad range of industrial uses and sites, including: manufacturing and business parks, and light industry; industrial services that could be generated by the presence of Fort Riley; as well as research facilities and specialized service activities that could be generated by the proximity of Kansas State University and the future National Bio and Agro Defense Facility (NBAF). These areas will need to be served by municipal sewer and water services and collector street extensions as identified and described below

under the sections on Mobility and Connectivity, and Public Facilities and Services. Depending upon market conditions, some of the commercial areas identified around the commercial nodes may develop with lighter industrial activities and services, provided they follow recommended development design standards associated with higher visibility areas along the corridor.

While there may be some instances where heavier industrial processes may be utilized by a business, the primary focus of the Eureka Valley – Highway K-18 Corridor should be towards lighter industrial activities and services.

### **Limited Residential**

Expanded residential development is not recommended in the Eureka Valley beyond those areas identified on the Future Land Use Map, given the proximity of Fort Riley and the Manhattan Regional Airport and their associated noise exposure zones. The Airport and Fort have completed extensive noise analyses that recommend restrictions on noise sensitive land uses to prevent encroachment on either facility.

In response, a key objective of the Eureka Valley – Highway K-18 Corridor Plan is the desire to maintain Airport and Fort Riley functionality for years to come by discouraging new residential areas beyond those that are shown on the Eureka Valley Future Land Use Map and would encroach upon or adversely impact the long term operation and viability of the Airport and Fort Riley.

## ***B. Mobility & Connectivity***

The K-18 re-alignment improves the efficiency and safety of the Highway Corridor for commuter and regional traffic going to and from Fort Riley, the Manhattan Regional Airport and other destinations in the area. The new alignment combined with the interchanges creates a safer, more efficient corridor; however, they also limit the level of direct access to local businesses and private property for future development of the valley, necessitating the development of a secondary street network. In addition to the applicable goals, guiding principles and policies identified in Chapter 8 (Mobility and Transportation Options) and Chapter 6 (Public Facilities and Services) of the Manhattan Urban Area Comprehensive Plan, the following goals, objectives and action plan guide the development of new roads and promote improved connectivity to identified growth areas within the valley.

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### Street Connectivity

***Goal 3: Develop a roadway network to enhance connectivity, safety and access, utilizing the new K-18 alignment.***

**Objective A:** Create a collector street network to enhance access to existing and new development areas and promote economic development opportunities.

**Objective B:** Investigate designation of Highway K-18 as an I-70 business loop.

#### ***Action Plan***

1. Manhattan and Riley County shall coordinate efforts to develop preliminary alignment plans for the proposed collector streets.
2. As proposed developments are brought to the City and County for consideration, collector street rights-of-way shall be preserved through the subdivision process.



The new K-18 expressway increases access control for the highway, improving overall safety and functionality; however it limits direct access along K-18 to four interchanges: Ogden (K-114), 56th Avenue at the Manhattan Regional Airport, Scenic Drive, and Davis Drive/ Miller Parkway. The frontage road system along the north side of K-18 has been enhanced as part of the K-18 realignment project to improve access to existing and future commercial and industrial areas located between Scenic Drive and 56th Avenue. The Plan calls for the creation of two new collector roads that will increase access and local circulation to the areas north of Eureka Drive and south of K-18. The Future Street Map illustrates their approximate alignments.

**Figure 4.** View of the recently-constructed Scenic Drive overpass.

The Manhattan Regional Airport plays an important role in the areas' economic development and the transportation and mobility needs of citizens, business and industry, Kansas State University and Fort Riley, at a regional, national and global level. As noted in the Land Use section, the Airport Master Plan and Terminal Area Plan will guide improvements on airport property to address improved services for air travelers. The Union Pacific Railroad parallels the south side of K-18 through the valley with approximately nine trains on a typical day. The rail line may present the opportunity for additional rail access to industries in the area and potential locations for a truck-rail transfer facility.

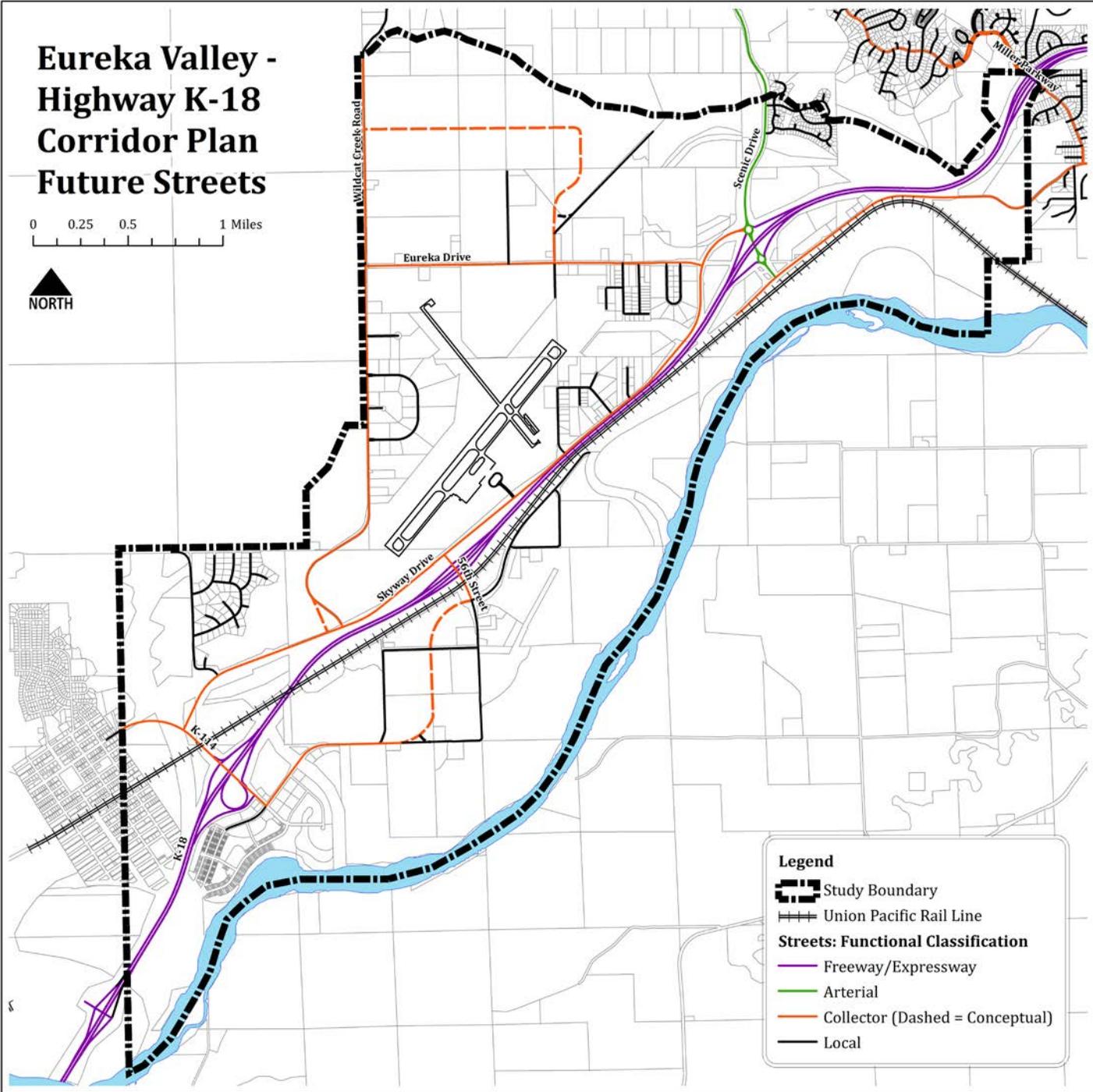
The Eureka Valley - Highway K-18 Corridor Plan also identifies a conceptual future trail network that would accommodate pedestrian and bicycle transportation throughout the valley. This system could potentially serve commuters to area businesses as well as recreational users. The Corporate Technology Park located along the west edge of the Airport includes platted trail easements around the perimeter and within the park, which are identified as part of the overall network in the valley. Pedestrian and bicycle connectivity, including their recreational aspects, are addressed more fully in the Parks, Recreation and Environmental Assets section.

## Functional Street Classifications

The four street classifications that comprise the hierarchical system are described as follows and are shown on the Future Street Map:

- *Freeway/Expressway* - Provides for relatively high speeds, accommodates large traffic volumes, and generally connects major activity areas, frequently on a regional scale. No direct property access is provided. Access to a freeway is provided at interchanges only, while an expressway may include both interchanges and at-grade intersections.
- *Arterial* - Provides a high degree of mobility with little or no property access. Connects freeways/expressways with collector streets and generally serves larger traffic generators. Typically provides mobility across the entire community.
- *Collector* - Provides for the movement of vehicles between arterial and local streets with some direct property access.
- *Local* - Provides for the distribution of traffic within activity areas and direct access to property. Vehicular speeds are de-emphasized.

Some communities assign a specific street configuration or width, e.g., two-lane, four-lane, etc, to each functional classification. However, the City of Manhattan does not follow that practice. Rather, functional classifications are assigned based on the actual, anticipated or desired function of the street and the number of lanes is determined based on the actual and projected travel demand. This is the preferred method of determining street infrastructure needs and allows for the application of design standards consistent with adjacent land uses. The goal of assigning functional classification is to establish a system of streets or roads that will allow the movement of goods and people safely and efficiently throughout a community. Therefore, assigning functional classifications in the City of Manhattan is based on a global perspective of the community.



Map 3. Future Streets.

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## ***C. Parks, Recreation, & Environmental Assets***

The Eureka Valley, surrounded by wooded ridgelines to the north and east and the Kansas River to the south, offers a number of recreational and environmental opportunities. While Chapter 5 (Natural Resources and Environment) of the Manhattan Urban Area Comprehensive Plan outlines a framework of broad, community-wide goals for protecting the environment and developing green infrastructure, the following goals, objectives and action plans relate specifically to the needs of the Eureka Valley - Highway K-18 Corridor area. The desire for additional parks, trails, and other recreational amenities was often cited by the Steering Committee and citizens attending open house meetings as a high priority for the Eureka Valley.

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### **Parks and Open Space**

***Goal 4: Establish an interconnected system of parks, trails and open space areas to create a framework of green infrastructure to provide opportunities for public recreation and enjoyment of the Eureka Valley.***

**Objective A:** Develop a river access in the vicinity of Stagg Hill Golf Course.

**Objective B:** Develop a regional park in the Eureka Valley.

**Objective C:** Develop a continuous trail system throughout the valley that connects Anneberg Park and the Miller Parkway Corridor with other park and open space areas in the Eureka Valley and with Manhattan's Linear Trail system.

**Objective D:** Develop a trail along the Kansas River that connects to the Ogden river access.

#### ***Action Plan***

- 1.** Meet with appropriate officials and representatives of Stagg Hill Golf Course to discuss opportunities, develop a preliminary plan and determine cost estimates for the creation of a new river access point, including grant funding opportunities.
- 2.** Negotiate the acquisition of land from KDOT north of K-18 for the development of a regional park.

3. Work with property owners to investigate and pursue opportunities for dedication of trail easements during the subdivision process and/or fee simple acquisition to develop a trail network in the valley.
4. Create a prioritized phased budget for acquisition and construction of trails in the Eureka Valley.

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## Environmental Assets

***Goal 5: Preserve environmentally sensitive features including floodways, wetlands, steep slopes and riparian areas.***

**Objective A:** Identify sensitive areas, establish appropriate policies and secure easements to protect sensitive areas from potential development.

**Objective B:** Manage and reduce flood risks within identified growth areas.

**Objective C:** Identify areas that could benefit from stormwater improvement projects.

**Objective D:** Re-map the Eureka Valley floodplain to incorporate changes resulting from KDOT and other projects.

### ***Action Plan***

1. Establish buffer requirements around environmentally sensitive areas to protect them from development.
2. Adopt Best Management Practices for post construction storm water mitigation.
3. Utilize tools such as conservation easements and voluntary open space dedications to preserve environmentally sensitive areas.
4. Work with property owners and developers during the subdivision process to establish easements and buffers.
5. Develop a prioritized/phased capital improvements program for storm water projects in the area.
6. The City and Riley County shall coordinate with federal and state agencies to remap the Eureka Valley floodplains based on Conditional Letters of Map Revision (CLOMR's) associated with K-18 channel improvements.



**Figure 5.** Environmentally-sensitive wetland area in the location of the Eureka Lake oxbow.

## **Environmental Assets & Green Infrastructure**

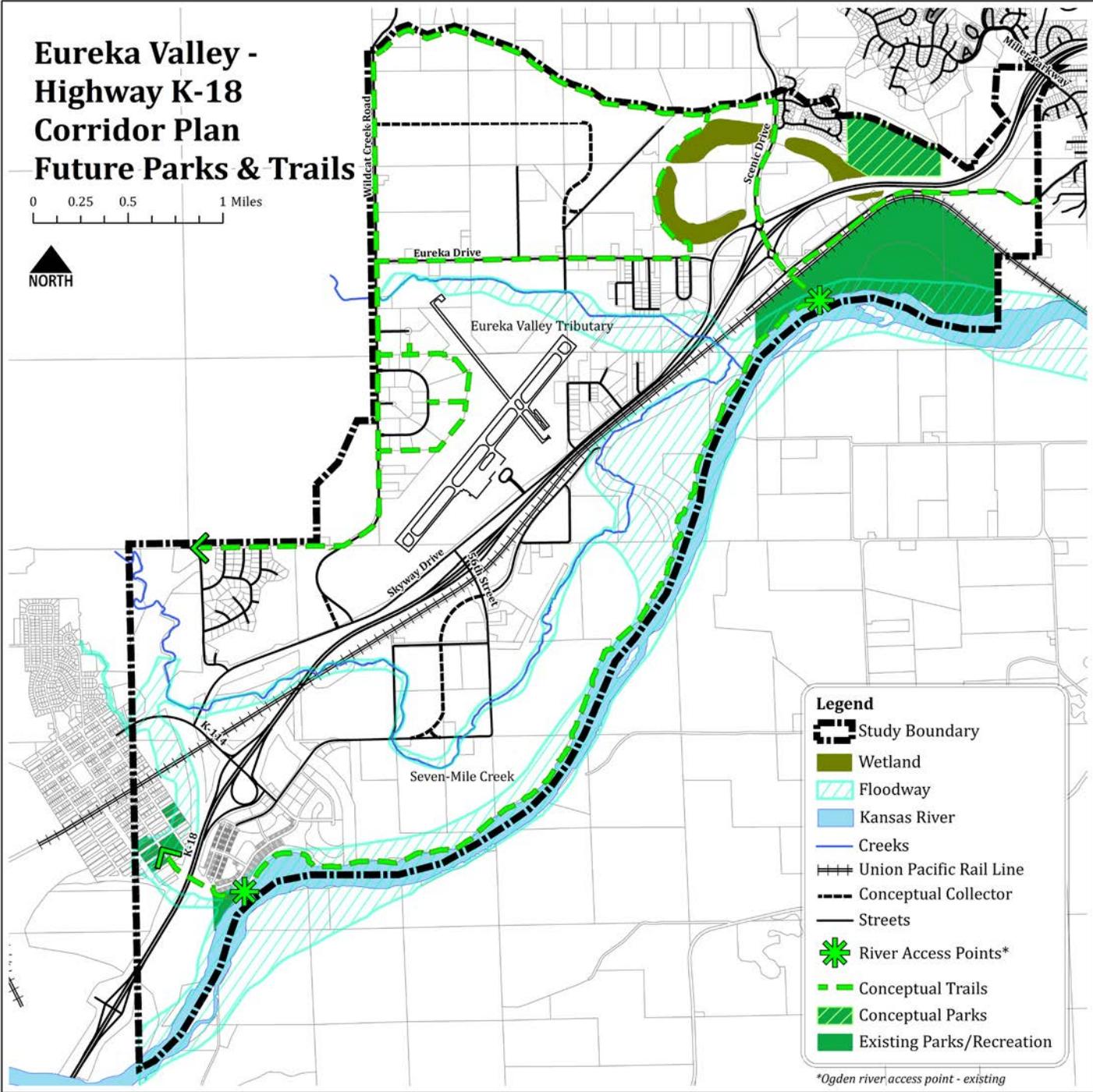
The Eureka Valley contains several important environmental features, including a wetland in the Eureka Lake oxbow area (see Parks and Trails Map), and three main waterways (the Kansas River, Eureka Valley Tributary and Seven-Mile Creek) and their associated floodplains and riparian areas. Additionally, the steep slopes (20% or greater) along the north side of the valley are identified in the Manhattan Urban Area Comprehensive Plan as a natural hazard that may contribute to soil erosion without proper controls. These natural features require sensitive development practices in order to preserve their functionality, as they are important components of a green infrastructure system that provides for natural storm water

management, filtration and erosion control. Such features also enhance the aesthetic value of the area and provide habitat for a range of animal species. In order to maintain biodiversity, natural hydrology and high water quality, the Plan calls for the protection of the area's floodways and wetlands, as well as buffering of riparian areas.

In fact, trail systems, parks and open space can often provide opportunities for natural buffers that also provide a recreational benefit and green infrastructure linkages without utilizing developable land. In addition to protecting the area's green infrastructure system, the Plan recommends enhancing the man-made storm water infrastructure system through identification of future storm water improvement projects and facilitating the remapping of the Eureka Valley floodplain to reflect the effects of channelization and new development in the area.

## **Parks & Open Space**

Currently, the Stagg Hill Golf course provides the largest expanse of open recreational space in the Eureka Valley. However, in order to provide additional opportunities for outdoor enthusiasts to fully take advantage of the valley's natural assets, a network of bicycle and pedestrian trails and other amenities are identified on the Parks and Trails Map. A new regional park site is planned north of the golf course on the north side of K-18.



Map 4. Future Parks & Trails.

The site was part of the right-of-way acquisition purchased by KDOT during the K-18 construction process, and is identified as an area that will remain generally undevelopable once construction of K-18 is completed. Due to environmental constraints caused by its location within wetlands, the 100-year floodplain and other challenges, the Manhattan Parks and Recreation Department has conceptually planned the park to consist largely of unprogrammed open space, with parking and nature trails in which to enjoy the natural beauty of the Eureka Valley.

### **Kansas River Access**

The existing river access point located east of Ogden currently enjoys usage by recreational canoeists and kayakers. Unfortunately, for local enthusiasts, the only other access point is located approximately 12 river miles downstream under the K-177 Bridge on the east edge of downtown Manhattan. The construction of a new river access between these existing ramps has the potential to increase tourism and general recreational opportunities by providing more options for river users closer to a larger segment of the regional population in Manhattan. Preliminary investigations, including potential site reconnaissance, were conducted by Manhattan and Riley County staff along the north river bank upstream from Stagg Hill Golf Course. This site offers the advantage of sharing an existing railroad crossing with the golf course (a considerable cost savings), as well as being located on an accessible and stable section of river bank. In addition, the Kansas River was designated in July 2012 as a National Water Trail by the U.S. Department of Interior. The designation seeks to increase opportunities for outdoor recreation along the river, encourage community stewardship, and promote tourism that fuels local economies, and could open up new funding opportunities for the development of river access and recreation facilities. Governor Brownback, in a press release<sup>2</sup>, said:

“The Kansas River is an important natural resource in our state and plays a significant role in the economies of numerous communities located along its river banks...This designation as a water trail will complement our ongoing efforts to develop and promote outdoor recreational opportunities in this great state of Kansas. Not only will we continue to encourage youth and adults to re-connect with nature through some of the best hunting and fishing in the nation, but we are now in a position to offer amazing hiking, biking, kayaking and horseback riding venues to compliment a variety of interests....sparking additional small business opportunities for entrepreneurs”.

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<sup>2</sup>. July 14, 2012 press release - U.S. Department of Interior.

## Trails

Conceptual plans are already in place to provide a pedestrian trail connection, generally following the old Military Trail route from the Miller Parkway Corridor area, to the Scenic Meadows Addition at the north edge of the Eureka Valley, with opportunities to connect to the future regional park site. The Eureka Valley - Highway K-18 Corridor Plan also calls for the extension of a trail network throughout the entire length of the valley. The planned network, shown on the Parks and Trails Map, is intended to connect



**Figure 6.**  
Anneberg Park  
pedestrian bridge.

Manhattan and Ogden, development along Eureka Drive, and both river access points via a continuous system of interconnected pedestrian/bicycle trails. The general concept is to create a trail system that can equally support two kinds of uses: the purely recreational/exercise-based trips that take advantage of scenic environments and are intended for users of all skill levels and abilities; and for commuting or shopping trips that utilize more direct routes to businesses and services.

Both kinds of trails have the ability to take advantage of otherwise undevelopable or sensitive areas, such as floodplains, riparian zones, or rocky terrain, and can provide ancillary benefits to the community by doubling as a green infrastructure network that buffers environmentally sensitive areas from development. In many locations the system would utilize sidewalks along roadways to complete the network. In addition to environmental benefits, the planned trail network would provide another transportation option by providing pedestrian and bicycle connections to various destinations.

The proposed trail system would connect to the proposed Manhattan trail network at Scenic Meadows Addition and follow Scenic Drive south over K-18, and potentially utilize the existing railroad crossing point at Stagg Hill Golf Course to connect to the proposed river access point on the north bank of the Kansas River. From there, the trail is proposed to extend southwest along the river, utilizing undevelopable land in the floodway and connecting to the existing river access point at Ogden. The trail could connect northwest into Ogden, perhaps employing the existing overpass at Walnut Street.

The northern leg of the proposed trail system would also begin at Scenic Meadows Addition, and extend westward along the base of the hills along the valley's northern edge. As the trail approaches the Eureka Lake wetland area, it is proposed to split, creating a northern loop for recreational users, while preserving a more direct connection to the businesses along Eureka Drive by skirting the western wetland boundary and continuing west along Eureka Drive, most likely in the form of a wide, multi-use sidewalk. The northern loop of the trail would continue to follow the base of the hills, turning south at Wildcat Creek Road and again manifesting itself as a wide sidewalk before reaching the Corporate Technology Park. Trail easements are platted within the Corporate Technology Park, which will facilitate interconnection of the entire technology park with the trail network. The trail would then continue south from the Technology Park along Wildcat Creek Road before turning west along Vinton School Road and eventually continuing southward into Ogden.

### ***D. Public Facilities & Services***

The provision of adequate public utilities and services is critical to promoting economic development within the Eureka Valley - Highway K-18 Corridor and to ensuring public safety and maintaining a high quality of life.

In addition to the applicable goals, guiding principles and policies identified in Chapter 4 (Land Use and Growth Management) and Chapter 6 (Public Facilities and Services) of the Manhattan Urban Area Comprehensive Plan, the following goal, objectives and action plan have been identified for the Eureka Valley — Highway K-18 Corridor Plan.

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## Public Facilities & Services

***Goal 6: Ensure that new growth areas are provided with municipal level facilities and services, including water and sewer infrastructure, and fire protection.***

**Objective A:** Coordinate the establishment of utility service areas to ensure adequate public services are provided.

**Objective B:** Extend municipal utilities south of K-18 to facilitate urban development.

**Objective C:** Ensure efficient and cost effective provision of public services through an orderly, contiguous growth pattern that discourages dispersed development.

**Objective D:** The County shall manage rural development located outside the Urban Service Areas of Manhattan and Ogden, so that it does not impede future urban growth in areas identified on the Future Land Use Map for urban development.

**Action Plan**

1. Manhattan, Ogden and Riley County shall coordinate identification and establishment of service areas.



2. Promote contiguous growth patterns through phased utility and road extensions and an appropriate annexation policy.

**Figure 7.** Airport fire station.

**Manhattan Urban Service Area**

The Urban Service Area, as shown on the Utilities Map, represents the area within which the City of Manhattan is able to efficiently and economically provide utility services and fire protection and is the logical area for future urban service based on drainage basins.

Manhattan currently provides water and wastewater services to annexed properties within the Eureka Valley on the north side of K-18 and has the capacity to extend services to identified growth areas throughout the valley. The city installed sleeves under K-18 in the vicinity of the Manhattan Regional Airport to facilitate extending sewer and water service to areas south of the highway.

The following Growth Management policy identified in Chapter 4 of the Manhattan Urban Area Comprehensive Plan is of particular importance for the Eureka Valley — Highway K-18 Corridor Plan:

GM 3: Future urban development shall be contained within the geographic limits of the Urban Service Area Boundary. All development within these areas shall be compatible with the future vision and principles of the Comprehensive Plan.

**Utility Services**

The Utilities Map identifies existing water and wastewater lines and force mains operated by Manhattan and Ogden within the study area, as well as the water mains of Riley County Rural Water District #1.

Manhattan entered into a service agreement with Riley County Rural Water District #1 in 2004 to provide water to that district, which serves a significant portion of Riley County extending approximately 19 miles north of the Eureka Valley to the City of Randolph. The connection between Manhattan's water system and Rural Water District # 1 is located near the intersection of Wildcat Creek Road and Sykes Boulevard. The Utility Services Map also depicts Manhattan's conceptual water and sewer extensions to serve future growth areas located north of Eureka Drive, south and west of the Manhattan Regional Airport, and south of K-18. Ogden's water and sewer systems are anticipated to be extended to serve future growth areas located within its current city limits.



**Figure 8.** New floodway improvements at Seven-Mile Creek near Ogden.

side of the Manhattan Regional Airport westward to Wildcat Creek Road. However, the Corps determined that the infrastructure constructed by KDOT resulted in an insufficient cost/benefit ratio for further federal participation in additional storm water improvements along the Eureka Valley Tributary. Therefore it is likely that any additional storm water infrastructure will need to be provided as part of the development process.

### **Storm Drainage**

Storm water infrastructure in the valley ranges from rural roadside ditches along county and township roads, to urban level curbs, gutters and inlets with underground storm sewers in portions of areas annexed by Manhattan and Ogden. As part of the K-18 realignment project, the Kansas Department of Transportation constructed major channelization improvements along Seven Mile Creek and the Eureka Valley Tributary to improve storm water management and reduce impacts of flooding on properties in those areas. The Army Corps of Engineers conducted an extensive study of the Eureka Valley Tributary and developed preliminary conceptual alternatives for channelization and widening improvements along the Eureka Valley Tributary, extending from the east

## **Public Safety, Emergency Services, & Fire Protection**

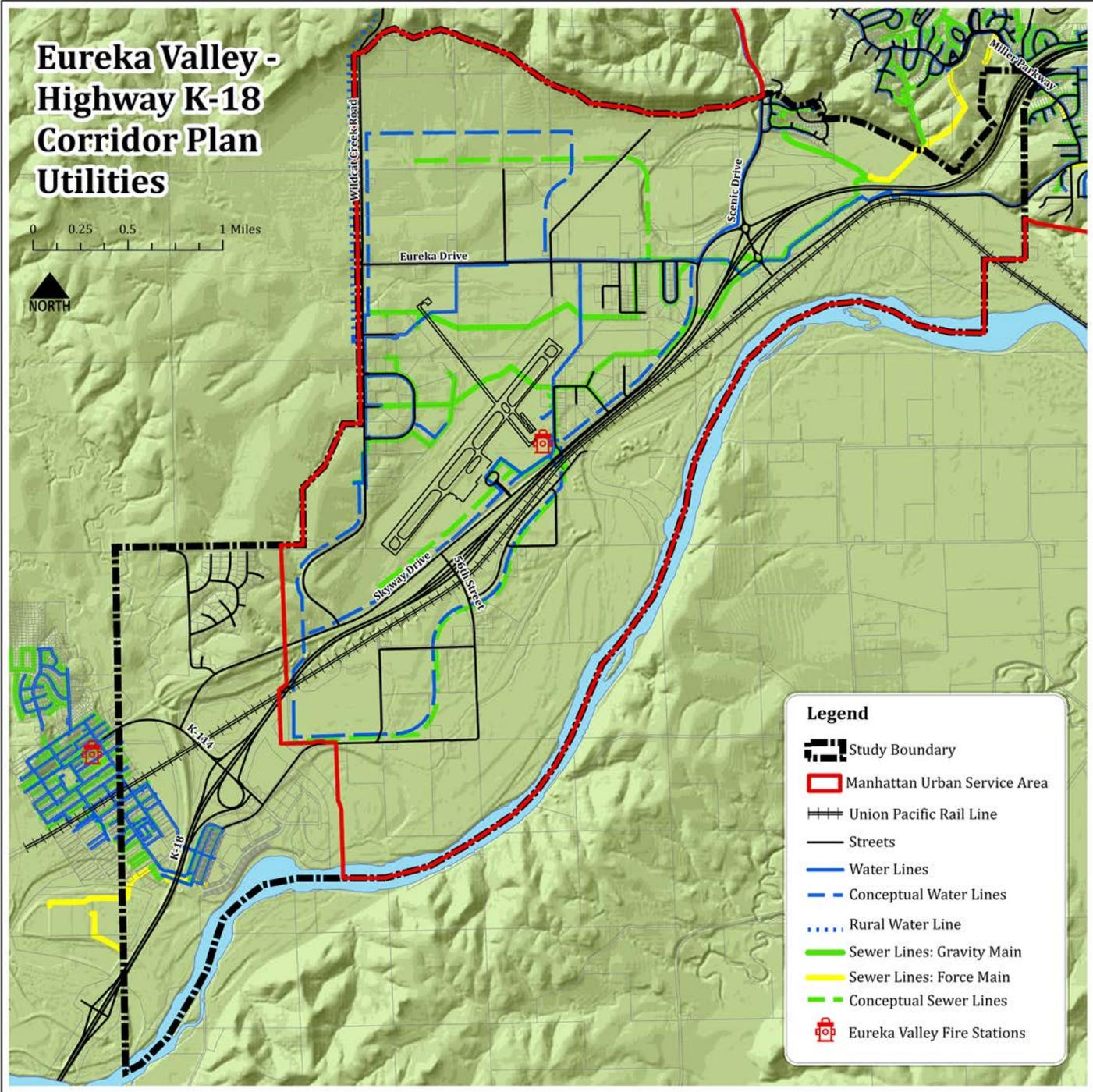
The Eureka Valley - Highway K-18 Corridor is entirely within the consolidated Riley County Police Department's jurisdiction which provides service to Manhattan and Ogden as well as the unincorporated areas of the county. Emergency Medical Services are provided by Riley County EMS/Ambulance, which is operated by Mercy Regional Health Center. Riley County provides all fire and emergency services within Ogden. The Ogden Fire Station is leased to Riley County Fire District # 1, which provides fire protection within Ogden and the unincorporated areas. Manhattan Fire Station 4, located on the east edge of the Manhattan Regional Airport, provides specialized aircraft and airport fire suppression and rescue services, in addition to fire protection for all other properties annexed into Manhattan within the Eureka Valley.

The Manhattan Fire Department has an automatic aid agreement with the Riley County Fire Department to provide fire response services to the K-18 Corridor, Eureka Drive and Wildcat Creek Road. With this agreement Manhattan Fire Department crews are automatically dispatched to emergency incidents along the K-18 Highway Corridor from Seven Mile Creek to the western city limits of Manhattan, along Eureka Drive, and along Wildcat Creek Road from K-18 to Eureka Drive. The Department also responds with automatic aid for reported structure fires within the city limits of Ogden.

The Manhattan Fire Department has a written mutual aid agreement with the Department of the Army/Ft. Riley whereas, upon request by either agency, equipment and/or personnel will be dispatched when available to any point within the fire-fighting jurisdiction of the requesting agency. It will be important to extend municipal water service and improved access to growth areas as development occurs in the valley, to ensure that adequate fire protection can be provided by Manhattan as development is annexed.

## **Annexation**

As new development and redevelopment occurs within the Eureka Valley and along the K-18 Corridor, it is anticipated that most development will desire connection to municipal utility services. The resulting pattern of properties receiving municipal service in some cases may be noncontiguous to other served parcels. Therefore, it will be necessary for the Cities to determine when it will be cost effective and most beneficial for the provision of contiguous fire and other services, to annex particular portions of the Eureka Valley to avoid a patchwork pattern of noncontiguous parcels. It is more likely that commercial and industrial properties along K-18, Eureka Drive, Scenic Drive, Wildcat Creek Road and the future collector streets would be annexed, while existing residential properties are less likely to be annexed.



Map 5. Utilities.

## ***E. Intergovernmental Coordination, Development Standards, & Implementation***

The Eureka Valley — Highway K-18 Corridor serves as a major employment and transportation center for the region and provides an important gateway to Manhattan, Ogden and Riley County. The area’s significant potential for economic development and growth, combined with its high visibility along K-18, necessitates a coordinated approach towards corridor design, development standards and implementation, to promote an attractive gateway for the region.

This sentiment is expressed in the Vision Statement for the Eureka Valley — Highway K-18 Corridor Plan. The Manhattan Urban Area Comprehensive Plan previously identified a number of applicable goals, guiding principles and policies in Chapter 7 (Regional Coordination), Chapter 11 (Community Design) and Chapter 13 (Special Planning Areas). In addition, the following goals, objectives and action plan are identified as part of the Eureka Valley - Highway K-18 Corridor Plan.

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### Intergovernmental Coordination

***Goal 7: Coordinate local government efforts to identify and address growth and development issues in the Eureka Valley.***

**Objective A:** Explore opportunities and strategies for promoting cooperation toward economic development and job creation.

**Objective B:** Foster a unified approach toward development guidelines to promote a consistent look along the corridor.

#### ***Action Plan***

**1.** Manhattan, Riley County and Ogden shall continue to work together, along with the Manhattan Area Chamber of Commerce and other stakeholders, to coordinate efforts to develop strategies to promote a unified approach towards growth and economic development in the Eureka Valley — Highway K-18 Corridor area.

**2.** Manhattan, Riley County and Ogden shall work with the Manhattan Area Chamber of Commerce and other stakeholders to explore opportunities for coordinated corridor branding.

3. Manhattan, Riley County and Ogden shall coordinate efforts to adopt and implement the Eureka Valley - Highway K-18 Corridor Plan.

4. Riley County and Manhattan shall work towards expansion of the Manhattan Urban Area Planning Board’s jurisdiction to include the remaining portion of the Eureka Valley that falls within the Manhattan Urban Area Comprehensive Plan boundary, to improve the efficiency of the development review and approval process.

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## Aesthetics

***Goal 8: Enhance the appearance of the Eureka Valley and K-18 Corridor through development standards that balance the Flint Hills character with promoting employment opportunities and commercial and industrial growth.***



**Objective A:** Establish development design standards that address building materials, landscape treatments, signage, lighting, and screening of outdoor storage, to facilitate coordination and consistency between local jurisdictions in the Eureka Valley.

**Objective B:** Establish outdoor advertising standards that address size, spacing, setbacks, stacking, lighting and digital billboards to facilitate coordination and consistency between the local jurisdictions in the Eureka Valley.

### ***Action Plan***

1. Manhattan, Riley County and Ogden shall jointly create development standards and guidelines addressing specific site and

**Figure 9.** Example of desirable industrial/office development.

aesthetic issues to promote an appropriate level of consistency along the K-18 Corridor. Issues that should be considered include: setbacks, structure heights, building materials, landscape treatments, signage, lighting, and screening of outdoor storage.

2. The three jurisdictions shall work together to create and adopt appropriate coordinated planning and zoning tools, such as an overlay district, to implement the development standards.

Chapter 14 (Action Plan) of the Manhattan Urban Area Comprehensive Plan also includes several broad action items listed in Table 10 that apply to implementation of many of the goals and objectives developed as a part of the Eureka Valley - Highway K-18 Corridor Plan.

## ***F. Economic Opportunities***

In order to understand the potential future market demand for commercial and industrial activity and job creation in the Eureka Valley, a general economic analysis was conducted for the region, as well as research regarding the Valley's potential to accommodate specific future land uses, such as bioscience research facilities. The focus of the analysis, (See Appendix A), was to analyze regional economic trends to discern how Manhattan, Riley County and Ogden can best position the Eureka Valley to take advantage of the region's unique economic strengths, including the presence of Fort Riley, Kansas State University, and the future construction of NBAF, and to identify what types of land uses make the most sense to be located in the area by: a) identifying corridor users; and b) conducting quantitative and qualitative analyses. The following are some of the primary findings of the economic analysis:

- Potential users/consumers of the valley's goods and services can be generally classified into four types: Eureka Valley employers & employees, local through-commuters, regional through-commuters (including air travelers), and recreational enthusiasts. Understanding and providing for the demands of these consumers will be a top priority for businesses in the area.
- Employment, population, and income for the Manhattan Metropolitan Statistical Area, consisting of Riley, Geary and Pottawatomie Counties, are all projected to increase at steady rates into the future.
- Automotive-supporting land uses, such as convenience stores, gasoline stations, repair shops, and car washes, are appropriate in the Eureka Valley – Highway K-18 Corridor given its high traffic volumes, community-wide projected demand for these businesses, and the type of users (many commuters and travelers).
- Restaurants and other food-related businesses, including convenience stores, also make sense for the Valley, given the high demand for such services, particularly by employees in the Valley, the current lack of supply, and the nature of the area's users.

- Based on measured traffic volumes, interchanges along K-18 have very high visibility for motorists and therefore provide good opportunities for commercial businesses.
- Industrial, warehousing, and manufacturing uses do not currently play a commanding role in the region's economy; however, the Eureka Valley remains a prime location for these types of businesses due to its good access to the expressway and I-70, and relatively flat buildable land.
- While the number of bioscience and research related uses is expected to grow based on expanding research activities at Kansas State University and anticipated activity associated with NBAF, it is difficult to project without a prior history of expansion. However, the Eureka Valley provides a good location to accommodate demand for these types of businesses.
- The manufacturing, scientific-professional, specialized industrial service, and education and specialized training sectors (i.e. basic industries), are more likely to create true economic growth by bringing in new jobs and capital with their associated magnifier effects, rather than recirculating existing capital by competing with existing business, as could happen with the construction of a new regional retail center in the Eureka Valley.

In summary, while it is recognized that provision of various commercial and retail services will be important to the daily needs of commuters, travelers, employers and employees in the Eureka Valley – Highway K-18 Corridor, the primary emphasis of a coordinated long term economic development effort should be focused on the types of light manufacturing, research, industrial service, and training activities that will attract new capital and job growth that does not already exist in the area and will more fully take advantage of the presence of Fort Riley, Kansas State University, the Manhattan Regional Airport and NBAF.



# III. Background

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## *A. Planning Process & Public Involvement*

Planning staff from Manhattan and Riley County worked with a ten person Steering Committee which included property and business owners in the Eureka Valley, representatives from the Manhattan Urban Area Planning Board, the Ogden Planning Commission, the Manhattan Airport Advisory Board, Fort Riley's Master Planner, and the Ogden building official. The Steering Committee assisted with identifying stakeholders, identifying and discussing issues, participated in the SWOT analysis (strengths, weaknesses, opportunities and threats) and public open houses, visioning, developing goals and objectives, and reviewing draft policies and drafts of the Corridor Plan. Stakeholder interviews were conducted with various citizens, property and business owners, and local organizations, including the KSU Foundation, Manhattan Area Chamber of Commerce and Flint Hills Regional Council, city and county public works, utility and park staff, as well as utility companies serving the region. Public open houses were held in Ogden and Manhattan following completion of the SWOT analysis and the initial identification of issues, to facilitate community input and further refinement of issues, concerns and opportunities, and to begin identifying future land use alternatives for the Eureka Valley. The draft Corridor Plan was presented to the Manhattan Urban Area Planning Board for comment, to the public in a second round of open houses, as well as at a joint meeting of the governing bodies of the cities and county, prior to the public hearing and adoption process.

## *B. Local & Regional Context*

### **History**

The Eureka Valley was originally home to the Kansa Indians and was a part of the Kansa Indian Reservation until the Indian Lands of the Kansas Territory were opened to immigration in 1854. Fort Riley had been established a year earlier in order to protect the settlers moving into the area. Manhattan was incorporated in 1857, although Ogden initially grew more quickly, becoming a second-class city in 1870 (Riley County Historical Society).

In the fall of 1852, Major R. H. Chilton with his Troop B, First Dragoons escorted Major E. A. Ogden on an expedition to locate a new military post in the vicinity of the forks of the Kansas River at the confluence of the Smoky Hill and Republican Rivers. The site was named Fort Riley. In 1855 Congress made an appropriation for establishing a cavalry post at Fort Riley and Major Ogden was put in charge of the work.

Finished materials for the post, such as woodwork, windows and doors were made in Cincinnati, Ohio and came by boat to Fort Leavenworth and thence by wagon over the Military Trail to Fort Riley. (Volume 7, "Kansas Historical Collections," in an article written by Percival G. Lowe) This route which became the Military Trail, a wagon trail connecting Fort Leavenworth to Fort Riley, entered the Eureka Valley from the north rim of the valley in the vicinity of the present day Lee Mill Heights Addition, continued down a ravine to the present day Scenic Meadows Addition, then along the base of the north edge of the valley, skirting the Eureka Lake oxbow and continued westward through the valley, entering the present day eastern boundary of Fort Riley, just north of the intersection of Eureka Drive and Wildcat Creek Road. The Military Trail was used extensively from 1857 until 1866, when extension of the Kansas Pacific Railroad to Junction City rendered the Trail obsolete.

As Riley County continued to grow, new transportation options and recreational opportunities began to shape the Eureka Valley. The Kansas Pacific Railroad was constructed through Ogden and Manhattan in 1866, roughly following the current path that K-18 takes through the Valley. In 1899, prominent resident C.P. Dewey created the Manhattan Beach resort on Eureka Lake, an oxbow lake created by the 1844 flood of the Kansas River. While the lake itself has largely disappeared, its marshy remnants are still evident to the north of the Flint Hills Job Corps Center (South Scenic Drive now intersects its former C shape). The resort featured amusements such as a wooden castle, hiking, horseback riding, boating, swimming, and an "electric park" that allowed guests to enjoy cool summer nights outdoors. While a flood in 1903 ruined the Manhattan Beach resort, an Interurban railroad line was built to connect Eureka Lake to Manhattan in 1909 and the line was lengthened to Junction City in 1913. However, the Interurban line was discontinued in the 1920's (Slagg, Riley County Kansas, 1968).

The Manhattan Regional Airport, which comprises the largest facility in the Eureka Valley, began operation in 1938 as a grass landing strip with stone hangars. The main runway was first paved in 1950 and expanded in 1953. The first terminal was constructed in 1958, and the first airport master plan was completed in 1976 (Manhattan Regional Airport Master Plan Update, 2008, p. 6). Since then, the Eureka Valley become home to the Manhattan Corporate Technology Park, the Stagg Hill Golf Course, Kansas Veterans Cemetery and various other commercial, industrial, agricultural, and residential uses. The realignment of K-18, Fort Riley's expansion, and the planned growth of the Manhattan Regional Airport will all present significant influence on the future of the Eureka Valley.

## ***C. Existing Physical & Environmental Conditions***

Much of the land in the Eureka Valley study area is impacted by existing environmental and noise-related conditions, the effects of which must be taken into account when considering the intended future pattern of growth in the area. In addition to analyzing the area's existing physical and hydrological characteristics, it is important to look at existing patterns of land use development and demographics. The purpose of this section is to provide background information on the relevant environmental and physical conditions that can be applied to the process of developing appropriate goals for the future growth of the Valley.

### **Topography**

In terms of environmental context, the study area can be roughly characterized as a relatively flat basin. The Valley is located between two prominent topographic features: the rim of the Eureka Valley to the north and the Kansas River to the south. In between these features the terrain is relatively homogenous, with pockets of variation in topography; the elevation generally increases in the northeast corner of the study area at the intersection of K-18 and Miller Parkway/Davis Drive. In terms of development context, the soils, natural vegetation, and topography of the Valley are not overtly significant or unique and are not expected to play a definitive role in constraining future development in the area. However, due to the Valley's proximity to the Kansas River and position in the drainage basin, portions of the area are impacted by periodic flooding. These floodplain considerations form the bulk of the environmental context of the area as it relates to development.

### **Floodplain & Wetlands**

For the purposes of this plan, the hydrological characteristics of the Eureka Valley can be broadly broken down into four categories: the floodway, the 1% annual chance floodplain (100-year floodplain), the 0.2% annual chance floodplain (500-year floodplain), and the land outside of the 500-year floodplain<sup>1</sup>. The floodway is defined for regulatory purposes as the river or stream channel and adjacent land areas that are necessary for the ordinary conveyance and discharge of the base flood as part of a river's natural functioning. The floodway should generally never be obstructed or constrained by development. The 1% annual chance floodplain is the area that would be covered by floodwaters in the event of a storm with a 1% probability of occurring in any given year. Likewise, the 0.2% annual chance floodplain is that area that would be covered by a storm that has a 0.2% probability of occurring in any given year. Land outside of the floodplain, while still able to be inundated in any given year, is generally high enough in elevation and far enough away from large watercourses that it is expected to flood only in extreme cases.

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1. The definitions of these terms are based on the Federal Emergency Management Agency's (FEMA) requirements for purchasing flood insurance; different areas are classified based on their annual percentage risk of being flooded.

In general, the impacts from flooding in the Eureka Valley (shown on Map 6 - Floodplain Effective in 2005) are focused primarily in four areas: to the south of K-18 along the north bank of the Kansas River, through much of Ogden along Seven-Mile Creek, north of K-18 near the Scenic Drive interchange along the original path of the Kansas River (i.e. the Eureka Lake oxbow), and along the Eureka Valley Tributary north of the airport. Preliminary Floodplain Map 7 shows the floodplain based on the latest topographic information; however this map has not been formally adopted. In addition, due to the construction of major drainage improvements at Seven-Mile Creek and the Eureka Valley Tributary by KDOT as a part of the K-18 realignment, the floodplain in the Eureka Valley will likely change. It is anticipated that once all the K-18 improvements are completed, the floodplain map will be amended to reflect final resulting conditions. In addition, the K-18 improvements also addressed surface flooding issues in the area that had been caused by undersized drainage structures under the highway and poorly maintained ditches and culverts. (Note: Maps 6 and 7 in this document are for general reference purposes only and should not be used for determining the extent of the floodplain on a specific parcel or for permitting purposes.)

In terms of land area, Table 1 shows that 53.8% (over 3,800 acres) of the study area is within the 100 year floodplain (FEMA's Special Flood Hazard Area designated by flood zones A and AE), with some 1,186 acres situated directly in the floodway (roughly 16.6% of the study area). Effective floodplain management will be an important factor for future development in the Eureka Valley. In addition to the floodplain and various watercourses, the Eureka Valley is home to a significant wetland in the Eureka Lake oxbow area, also shown on the Floodplain Map. The Eureka Lake was created after the flood of 1844, when the Kansas River changed course, leaving an oxbow. Over time the Lake has transitioned into a wetland, providing important wildlife habitat, water quality enhancement, and flood control. While the 1% annual chance floodplain covers large pockets of developable land in the Valley, especially north of K-18 near the airport and Scenic Drive interchange, and south of K-18 near Ogden, avoiding development in the floodway and Eureka Lake wetlands will be the most critical factor in preserving the natural environmental functions of these areas – namely, discharging and absorbing water effectively and safely, and providing a habitat for a range of animal and plant species.

### **Manhattan Regional Airport Airspace and Noise Exposure Restrictions**

The Manhattan Regional Airport includes airspace and noise exposure components that need to be considered when planning for various types of future land uses in and around the Eureka Valley. The Part 77 Airspace is a three dimensional airspace established through Federal Aviation Administration (FAA) regulations and standards that define a range of volumes and surfaces associated with the specific layout and classification of the runways and the approach and departure patterns of aircraft using the facility.

Protection of the airspace from man-made obstructions and encroachments is critical to the continued long term operation and utility of the airport as a regional transportation facility. The airspace places certain restrictions on the height of structures depending upon their proximity to the airport and the ground elevation of the structure in question. Therefore certain types of construction in the Eureka Valley must undergo FAA review to ensure that they will not create conflicts with the established airspace.

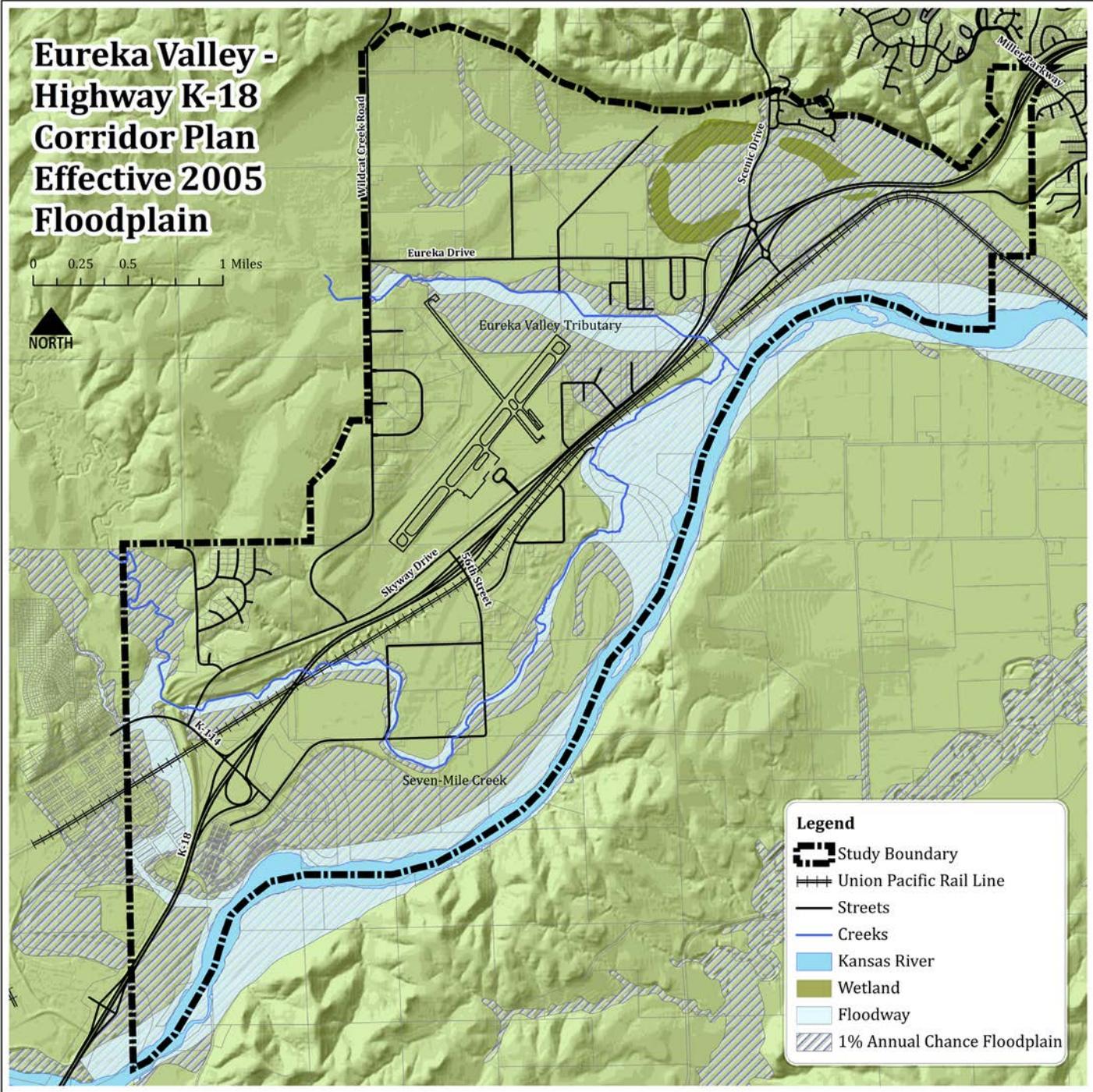
The Airport also includes the Part 150 Noise Contours that were established through a detailed study of existing and projected noise exposure levels resulting from operation of aircraft utilizing the facility. These exposures were projected to the year 2027, utilizing an “A-weighted” scale for day-night noise levels (ADNL) which measure noise produced by aircraft engines. Noise sensitive land uses, such as residential are generally considered to be incompatible within the 65 decibel contour, due to greater levels of annoyance and complaints generated by this level of noise (See Noise Exposure Map).

As a result, the Manhattan Zoning Regulations prohibit the construction of residential uses and mobile homes within the 65 decibel contour. In addition other types of noise sensitive uses including hospitals, churches, auditoriums/concert halls and schools require a conditional use permit if located within the 65 decibel contour.

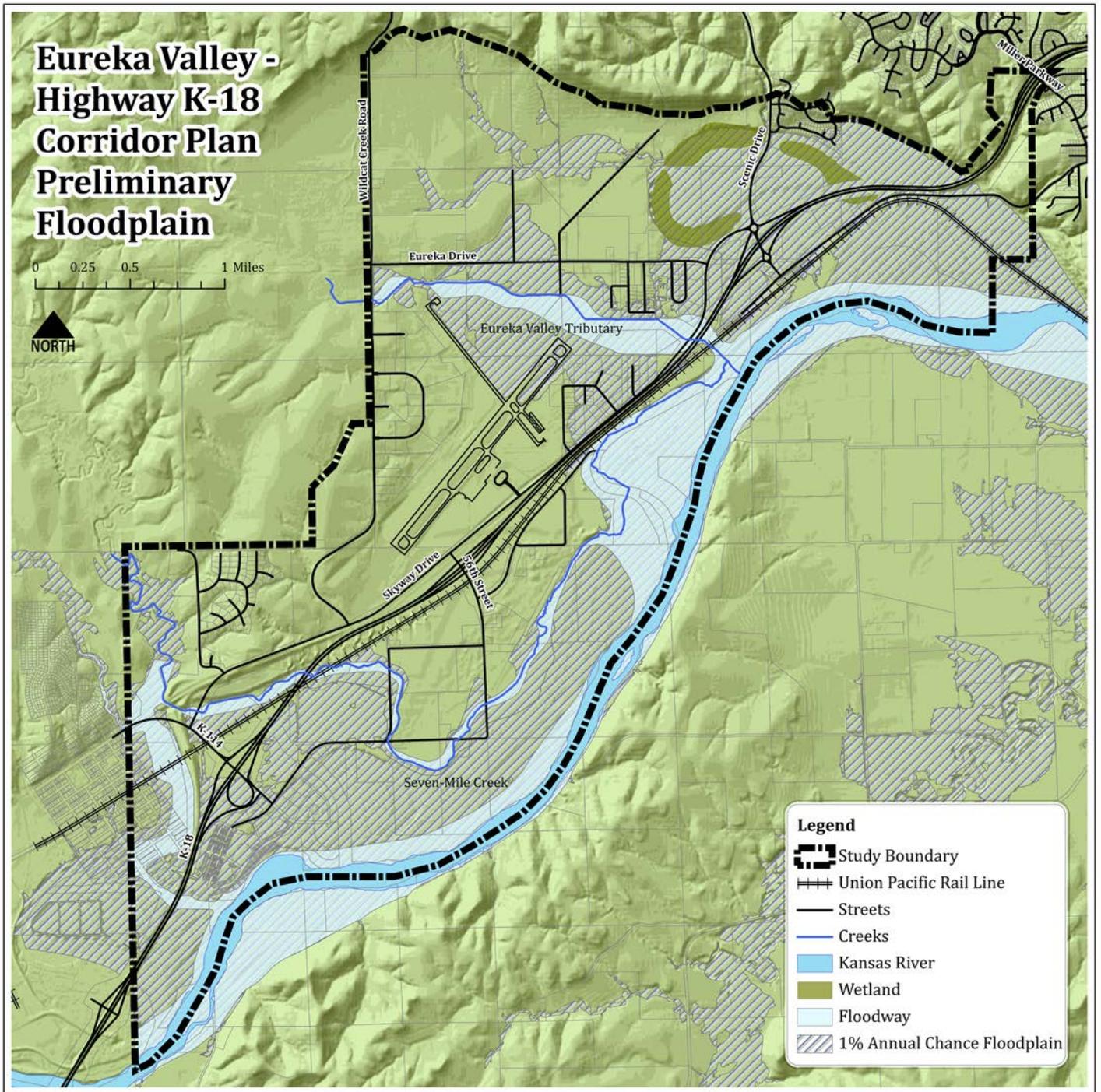
### **Fort Riley Noise Impact Area - LUPZ**

In addition to the noise restrictions imposed by the Airport, most of the Eureka Valley is impacted by noise related to Fort Riley’s training exercises. In 2005 the Flint Hills Joint Land Use Study (JLUS) was completed; in that study, a Land Use Planning Zone (LUPZ) was identified, based on the level of noise acceptable for noise-sensitive land uses, including residences, schools, and hospitals.

In order to map the boundary of acceptable noise levels, the military uses a weighted day-night level (DNL) measurement, which is a computation of the sound level produced by a military base averaged over 250 days, with a 10 decibel penalty added for nighttime noise. As opposed to the “A-weighted” DNL scale used for aviation noise, the military uses a “C-weighted” scale (CDNL), which measures the impact of the type of impulsive noise events generated by weapons fire rather than the kind of drone produced by aircraft engines. The noise exposure boundary for the LUPZ is 57 CDNL, within which noise-sensitive land uses are not recommended to locate. This is due to a concern for quality of life factors, as well as to minimize development encroachment and complaints from surrounding communities regarding what are basically core operational tasks (e.g. training military personnel).



Map 6. Floodplain Effective in 2005.



Map 7. Preliminary Floodplain.

As shown in the Noise Exposure Map, the 57 CDNL contour covers much of the Eureka Valley study area, with 4,821 acres - 67.7% - of the area falling within the LUPZ (see Table 1). This includes most of the area north of K-18 and about half of the land south of K-18, including almost all of Ogden.

Due to the extensive impact of noise-related conditions on the Valley, both from Fort Riley and the Airport, restricting the construction of additional noise-sensitive land uses – especially residential development – in the Valley will be important for maintaining a high quality of life for residents of Manhattan, Ogden, and Riley County, while minimizing encroachment on the activities of Fort Riley and the Airport, which are critical public facilities to the long term growth and sustainability of the regional economy.

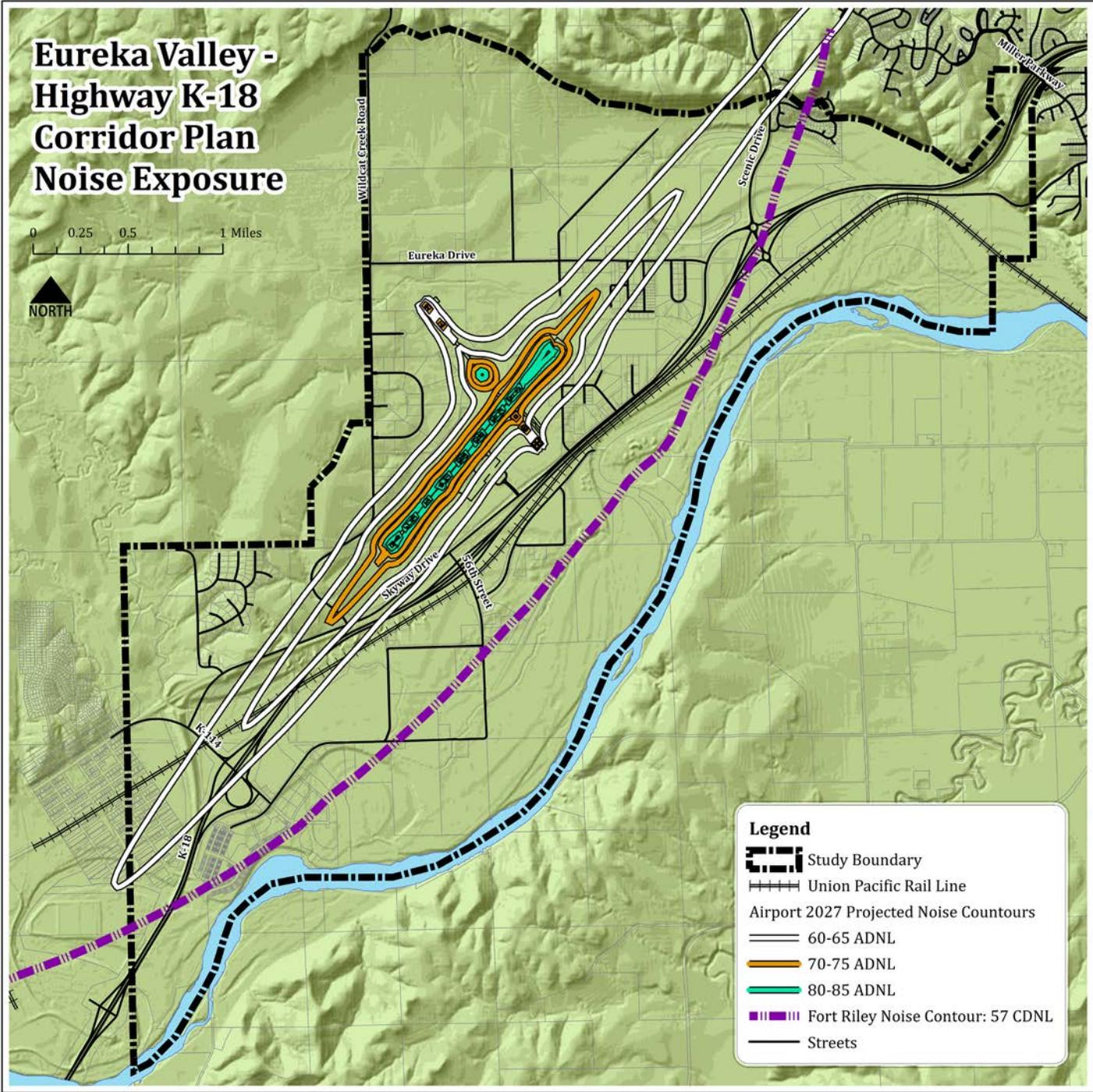
### **Jurisdictional Area, Demographics, & Population Density**

A basic analysis of the population density and demographic makeup of the three jurisdictions (Manhattan, Riley County, and Ogden), in the Eureka Valley provides insight into the physical context of the area. Riley County controls the majority of the land in the area, as shown in Table 5, with 77% (5,484 acres) currently unincorporated; however, according to the 2010 Census, the Riley County portion of the study area is home to only 428 people, yielding a very low density of .08 persons per acre. The City of Manhattan annexations, while not primarily residential, contain 350 residents on 1,131 acres (almost 16% of the Valley), for a minimally-higher density of .31 persons/acre. The City of Ogden houses the highest number of residents on the smallest portion of the study area – 564 people on 512 acres (7.2% of the area) for a population density of 1.1 persons per acre. While residential densities are likely to remain very low or drop due to the various environmental constraints present in the area, this analysis supports the understanding of this area currently as largely rural, agricultural, and employment/airport-based. The total 2010 population within the study area was 1342.

### **Current Zoning**

As zoning is the primary implementation tool of physical planning policies, understanding the existing zoning context of the area is an important prerequisite to developing future planning goals. The Current Zoning Map shows the distribution of general zoning classifications in the Eureka Valley study area. In order to compare zoning types across the three jurisdictions, districts were grouped together into general categories<sup>2</sup>. The largest zoning category present in the Valley, as shown in Table 3, is agriculture, which accounts for 4,259 acres - 62.2% of the total zoned area in the Valley. Most of the land zoned for agricultural use is found on the edges of the study area – generally north of the airport, east of the planned Scenic Drive interchange, and south of K-18.

2. Data collected from the official zoning maps of the City of Ogden, Riley County, and the City of Manhattan.



Map 8. Noise Exposure.

Airport base zoning districts – from both the County and City – together make up 14.5% of the zoned land in the area, or almost 1,000 acres, while the City’s airport overlay district (which is used in conjunction with another base zoning district) covers another 1,009 acres of land in the Valley.

Airport zones immediately adjacent to the Airport boundary extend along a northeast-southwest axis due to the placement of the runways and noise/airspace considerations. Commercial zones found mostly along K-18 and east of Ogden, as well as in the vicinity of the Kansas Veteran’s Cemetery and south of K-18 along West 56th Avenue, account for 10.7% of zoned land in the area (some 733 acres). Altogether, agriculture, airport (i.e. Manhattan Regional Airport property), and commercial districts make up 87.5% of the zoned land in the study area, with single-family residential (295 acres), industrial (285 acres), parks/public (151 acres), multi-family residential (66 acres), university (43 acres), and PUD (17 acres) district all combined for just 12.5% of zoned land in the corridor. This data shows that the area is currently lightly developed and mostly agricultural, with airport and automobile oriented commercial intermixed.

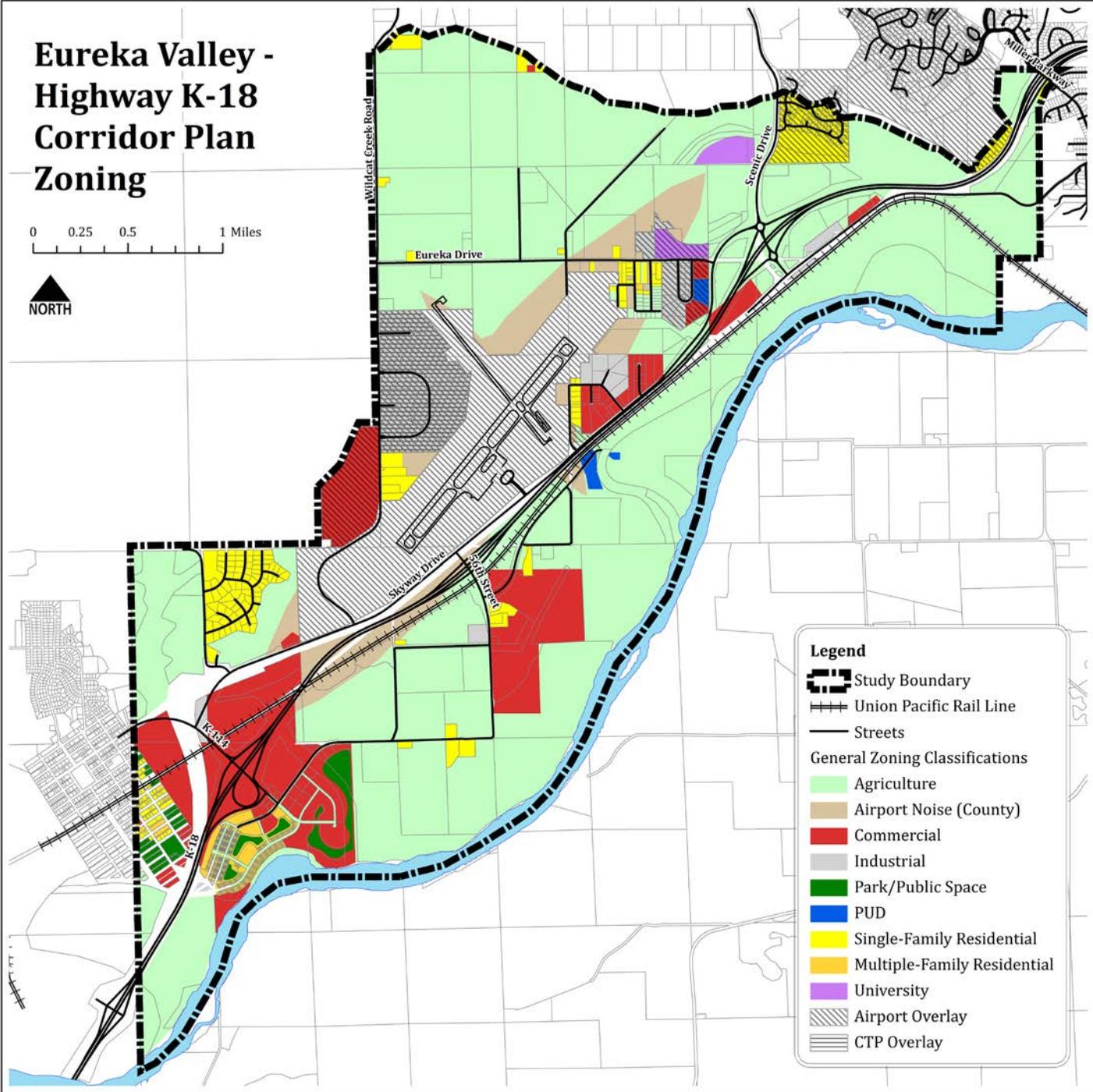
### **Current Land Use**

Patterns of existing land use, shown on the Current Land Use Map, generally follow that of the current zoning. Using a more-detailed description of land uses based on categories developed for the 2003 Comprehensive Plan, the analysis of existing land use patterns<sup>3</sup> (in Table 6) shows that agriculture (3,739 acres), parks and recreation (306 acres), vacant (238 acres), and extractive (2.1%) uses account for 78.2% of the developable land in the study area. That means that relatively non-urban land uses – including Stagg Hill Golf Course and the Midwest Concrete Materials batch plant/quarry – currently make up the vast majority of the Valley. These land uses are presently concentrated on the edges of the study area (similarly to the corresponding zoning districts) - generally north of the airport, east of the future Scenic Drive interchange, and south of K-18.

When public land uses (including the Airport and Kansas Veteran’s Cemetery in the center of the study area) and existing rights-of-way<sup>4</sup> are added in, a total of 6,665 acres of the study area are currently non-urban in use. Of the urbanized land, 168 acres are used for community commercial functions (mostly automobile-related or semi-industrial), 47 acres for industrial uses, 22 acres for office-research parks, 2 acres for utilities, and 222 acres for residential (including high, low, and rural density). Again, these findings indicate that this corridor is currently focused primarily on agricultural uses and the Airport, with some service commercial and existing residential functions also present, as well as the river, wetlands, and other environmentally-sensitive areas.

3. Data collected from Riley County Assessor’s Office, and verified by field surveys in August 2011. Detailed explanations of the land use categories used here can be found in the Manhattan Urban Area Comprehensive Plan.

4. As shown in Figure x, right-of-way has been calculated to make up some 1,603 acres or of the study area.



Map 9. Current Zoning.

## Parcel Size & Ownership Patterns

In order to understand the type of future development and redevelopment that might be expected in an area, an important factor to consider is the existing fabric of parcels and owners – oftentimes development is slowed or stalled by the inability to assemble the number of small lots necessary to construct and fund a cohesive development. In the Eureka Valley, as shown in Table 2, the majority of lots are smaller than 1 acre; such parcels account for 71.6% of all lots. However, over 20% of the parcels in the area are between 1 and 10 acres in size, and there are some 92 parcels larger than 10 acres, which might be considered as those sites most ripe for new development.

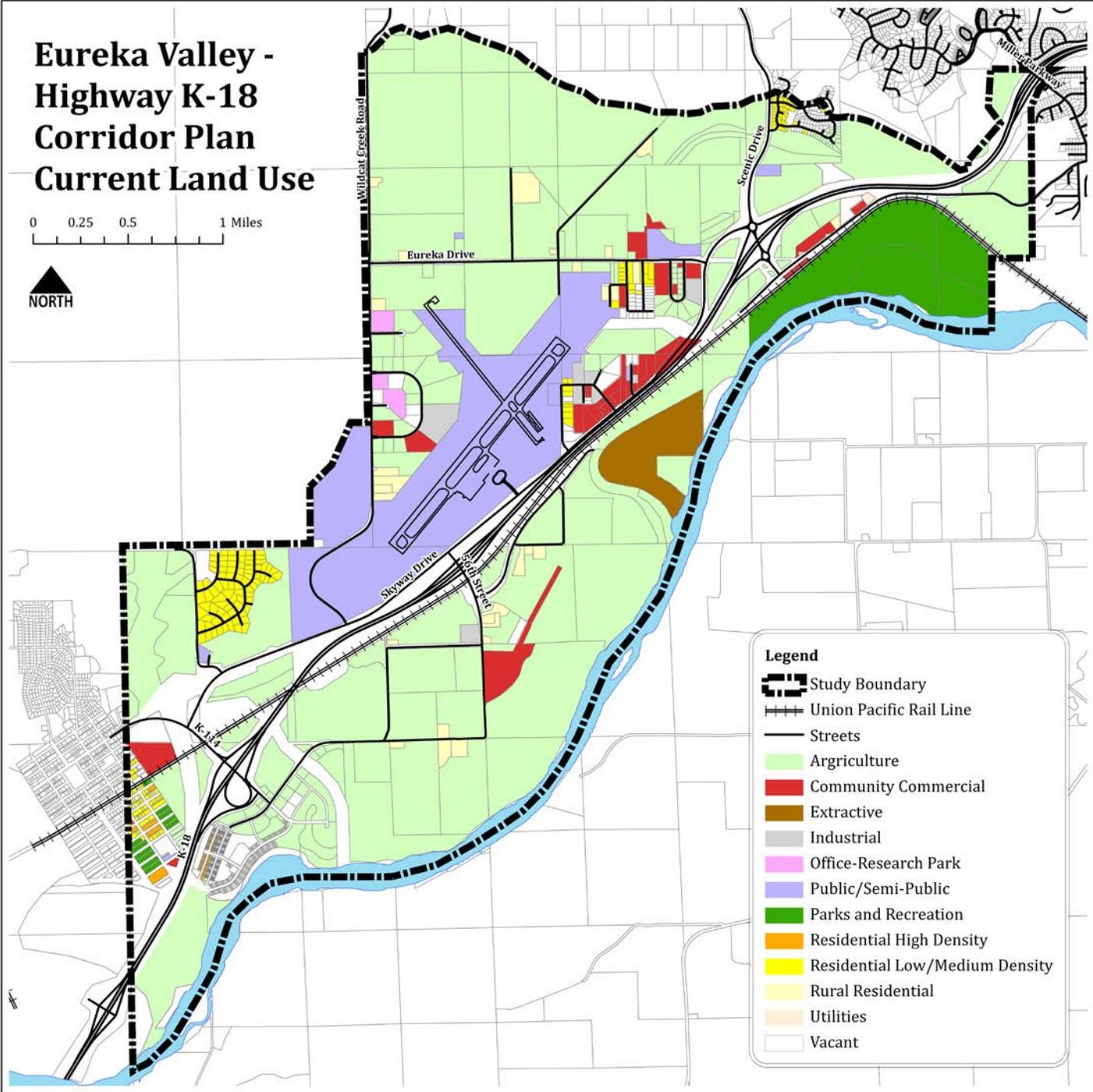
Many of the large lots are part of the Airport property. In fact, as shown in Table 2, the City of Manhattan is the Valley’s largest land-owner by far<sup>5</sup>, accounting for 12.5% of the study area, which includes the Airport, Corporate Technology Park, and other smaller parcels. Stagg Hill Golf Course is the second-largest property owner, with 326 acres. All in all, the ten largest land-holders in the Valley account for over 40% of the land, demonstrating a fairly considerable concentration of property ownership (and potentially development capability).

While studying parcel size and ownership will not strictly determine the pattern of new development, proximity to necessary services and in-demand locations also play an important role, it does offer insight into the realistic potential for some types of development.

Overall, the existing environmental and physical conditions of the Valley can be summarized in the following way: the floodplain, Airport, and Fort Riley exert considerable influence over the land use characteristics of the study area. Currently, much of the land is zoned and used for agriculture or other low-intensity land uses and the area exhibits an extremely low population density, all of which supports an understanding of this corridor as rural, environmentally-sensitive, and focused around the core needs of the few employment-based uses (including the Airport) in the area. Very little of the Valley currently functions at an urban or even suburban level of intensity. However, this relatively undeveloped character can serve as a potential opportunity for focused, non-noise sensitive development that can capitalize on the area’s proximity to transportation networks, high visibility, environmental assets, and existing employment centers.

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5. Data collected from Riley County Assessor’s Office.



Map 10. Current Land Use.

## D. Inventory Data Tables

**Table 1. Flood & Noise Restrictions.**

Special Flood Hazard Areas	Square Miles	Acres	Square Feet	% Study Area
0.2% Annual Chance (500-Year Floodplain)	0.853	546	23,772,782	7.7%
0.1% Chance (100-Year Floodplain) Zones A + AE	5.989	3,833	166,951,942	53.8%
<b>Total Floodplain</b>	<b>6.841</b>	<b>4,378</b>	<b>190,724,724</b>	<b>61.4%</b>
Floodway	1.853	1,186	51,661,798	16.6%
Noise Restrictions	Square Miles	Acres	Square Feet	% Study Area
Fort Riley Noise: 57 CDNL	7.533	4,821	210,006,175	67.7%
Airport Noise: 65 ADNL	0.750	480	20,899,795	6.7%

**Table 2. Lot Size Analysis.**

	Square Miles	Acres	Square Feet
Mean Lot Size	0.0077	4.93	214,808
Median Lot Size	0.0004	0.23	10,175

	# Lots	% Lots
0-1 acres	802	71.6%
1-5 acres	176	15.7%
5-10 acres	50	4.5%
10-20 acres	28	2.5%
20-50 acres	32	2.9%
50-100 acres	22	2.0%
100+ acres	10	0.9%
<b>Total</b>	<b>1,120</b>	<b>100.0%</b>

**Table 3. Aggregate Zoning Categories.**

	Square Miles	Acres	Square Feet	%
Agriculture	6.654	4,259	185,505,126	62.2%
Airport (City Base Zoning)	1.042	667	29,049,488	9.7%
Airport Noise (County)	0.516	330	14,395,233	4.8%
Commercial	1.145	733	31,917,790	10.7%
Industrial	0.446	285	12,431,674	4.2%
Parks/Public	0.236	151	6,579,542	2.2%
PUD	0.026	17	734,901	0.2%
Single-Family Residential	0.462	295	12,866,167	4.3%
Multi-Family Residential	0.103	66	2,877,643	1.0%
University	0.067	43	1,873,999	0.6%
<b>Total Zoned</b>	<b>10.698</b>	<b>6,846</b>	<b>298,231,563</b>	<b>100.0%</b>
Corporate Technology Park Overlay	0.290	186	8,097,978	
Airport Overlay (Total)	2.618	1,675	72,980,605	

**Table 4. Large Land-Holders.**

Party Name	Square Miles	Acres	Square Feet	% Study Area
CITY OF MANHATTAN	1.394	892	38,874,317	12.5%
STAGG HILL GOLF CLUB	0.514	329	14,339,279	4.6%
WOOD & WOOD FARMS INC	0.511	327	14,233,528	4.6%
RIM DEVELOPMENT LLC	0.469	300	13,062,630	4.2%
BRITT, R E JR & ANGELA G	0.372	238	10,362,898	3.3%
FEATHER FIELD FARMS LLC	0.261	167	7,285,500	2.3%
FOWLES, WALLACE; TRUST	0.248	158	6,900,697	2.2%
FOWLES, WALLACE; TRUSTEE				
WOOD, LAURA MAE; TRUST	0.245	157	6,824,153	2.2%
WOOD, ALBERT D; TRUST				
STADEL, DELBERT; TRUST	0.232	149	6,471,465	2.1%
STADEL, JEANNE E; TRUST				
WOOD, RANDY E & LARRY D	0.218	140	6,086,260	2.0%
TAYLOR, JEANETTE S				
<b>Total Holdings of Top 10 Land-Holders</b>	<b>4.464</b>	<b>2,857</b>	<b>124,440,726</b>	<b>40.1%</b>

**Table 5. Jurisdictional Size & Population Density.**

	Square Miles	Acres	Square Feet	% Study Area	Pop.	% Total	Pop. Density (persons/acre)
City of Manhattan	1.767	1,131	49,247,417	15.9%	350	26.1%	0.31
City of Ogden	0.799	512	22,285,854	7.2%	564	42.0%	1.10
Unincorporated Riley County	8.568	5,484	238,871,638	77.0%	428	31.9%	0.08
<b>Study Area Boundary</b>	<b>11.134</b>	<b>7,126</b>	<b>310,404,908</b>	<b>100.0%</b>	<b>1,342</b>	<b>100.0%</b>	<b>0.19</b>
<b>Fort Riley (Total)</b>	<b>158.304</b>	<b>101,314</b>	<b>4,413,253,870</b>		<b>14,279</b>		<b>0.14</b>

**Table 6. Land Use Categories \***

Land Use Categories	Current Land Use				Future Land Use				Change	
	Square Miles	Acres	Square Feet	%	Square Miles	Acres	Square Feet	%	Absolute (Acres)	% Change
Agriculture	5.920	3,789	165,049,049	66.5%	2.611	1,671	72,794,585	29.5%	(2,118)	-55.9%
Community Commercial	0.262	168	7,308,573	2.9%	0.608	389	16,961,658	6.9%	222	132.1%
Central Business Commercial	-	-	-	0.0%	0.025	16	708,195	0.3%	16	-
Neighborhood Commercial	-	-	-	0.0%	0.014	9	376,609	0.2%	9	-
Extractive	0.185	118	5,145,684	2.1%	-	-	-	0.0%	(118)	-100.0%
Industrial	0.073	47	2,036,266	0.8%	2.395	1,533	66,776,011	27.0%	1,486	3179.3%
Office-Research Park	0.035	22	970,363	0.4%	0.327	209	9,124,600	3.7%	187	840.3%
Public/Semi-Public	1.225	784	34,150,789	13.8%	1.465	937	40,835,839	16.5%	153	19.6%
Parks and Recreation	0.478	306	13,328,468	5.4%	0.620	397	17,294,995	7.0%	91	29.8%
Residential High Density	0.019	12	537,858	0.2%	0.109	70	3,036,217	1.2%	57	464.5%
Residential Low/Medium Density	0.191	122	5,310,975	2.1%	0.202	129	5,617,939	2.3%	7	5.8%
Rural Residential	0.137	88	3,824,972	1.5%	-	-	-	0.0%	(88)	-100.0%
Utilities	0.003	2	96,850	0.0%	-	-	-	0.0%	(2)	-100.0%
Preserved Open Space	-	-	-	0.0%	0.247	158	6,877,422	2.8%	158	-
Environmentally Sensitive Areas	-	-	-	0.0%	0.234	150	6,530,440	2.6%	150	-
Vacant	0.372	238	10,373,079	4.2%	-	-	-	0.0%	(238)	-100.0%
<b>Total</b>	<b>8.901</b>	<b>5,696</b>	<b>248,132,926</b>	<b>100.0%</b>	<b>8.858</b>	<b>5,669</b>	<b>246,934,511</b>	<b>100.0%</b>		
<b>Right-of-Way</b>	<b>2.234</b>	<b>1,430</b>	<b>62,271,982</b>		<b>2.277</b>	<b>1,457</b>	<b>63,470,397</b>		<b>28</b>	<b>1.9%</b>

\* Percentages shown in this table reflect the size/category of current land use as measured in 2011 (shown in Map 9 of this document) compared to the planned size/category of future land uses laid out in Map 2 of this document. Some abnormally large values (such as in the industrial and office-research park categories) are due to relatively small current proportion of certain land use types, as well as differences in classification and actual planned changes in land use.

## ***E. Governance: Jurisdictions & Regulatory Controls***

The Eureka Valley - Highway K-18 Corridor Plan study area lies within the jurisdictions of Manhattan, Ogden and Riley County (see the Jurisdictions map). Each of these local government agencies is responsible for planning, zoning, subdivision and building permit activities within their respective areas, generally utilizing their own staff, planning boards and governing bodies.

### **Planning Boards**

The Manhattan Urban Area Planning Board (MUAPB) is responsible for planning and development review and approval within the Manhattan city limits as well as the Urban Area around the city, as identified in the inter-local agreement between Manhattan and Riley County, which originally established this joint Board in March 1976. This agreement was amended in 1979 to expand the jurisdictional boundary of the MUAPB; in 1981 to adjust how members are appointed; and again in 2001, to expand the MUAPB jurisdiction and to cooperate in the creation and adoption of a single Comprehensive Plan for the City and surrounding Urban Area that is consistent with the City's growth policies and plans.

The MUAPB's jurisdiction covers most of the Eureka Valley - Highway K-18 Corridor Plan area, with three exceptions: a portion of the northwestern corner of the Valley and the southwestern portion of the plan area which are under the Riley County Planning Board's control, and the incorporated area within Ogden which is under the jurisdiction of the Ogden Planning Commission.

### **Manhattan**

The City of Manhattan has annexed 1,131 acres along K-18 and within the Eureka Valley, starting in 1991 with the annexation of the Flint Hills Job Corps Center at the request of the United States Department of Labor, which desired municipal sewer and water service to the site. As per the annexation agreement, the Department of Labor contributed \$150,000 to extend city water service into the Eureka Valley. The Corporate Technology Park was annexed in 1999 and the Manhattan Regional Airport in 2000, followed by the Kansas Veterans Cemetery and the Eureka Addition industrial park in 2006.

The Scenic Meadows residential area, located on the east side of Scenic Drive and north of the Eureka Lake oxbow, was annexed, zoned and platted in 2006 in order to obtain municipal utilities and was a controversial development because it extended urban residential uses into the Eureka Valley in the vicinity of the Manhattan Regional Airport.

These have all been island annexations requiring approval from both the Riley County Commission and the Manhattan City Commission and comprise approximately 15.9 percent of the study area. The 2010 Census reports that there were 350 people living in the Manhattan City limits within the Eureka Valley/K-18 study boundary.

### **Riley County**

Approximately seventy seven percent (77%) of the land in the study area is unincorporated and governed by Riley County; much of this area is rural or agricultural in character and use. However, as previously noted, much of this unincorporated area is actually under the jurisdiction of the Manhattan Urban Area Planning Board, rather than the Riley County Planning Board. According to the 2010 Census, the approximate population of this unincorporated area was 428, primarily located in the Random Woods Addition west of the Manhattan Regional Airport and the Ady Addition south of the Job Corps Center.

### **Ogden**

The southern interchange for the K-18 expansion is located within the boundaries of the City of Ogden, a town of 2,087 that is known locally as the “Gateway to Fort Riley.” Ogden comprises approximately 7.2% of the study area and the 2010 Census indicated there were approximately 564 people within the study area. In 2010, Ogden completed an update of its comprehensive plan, Ogden 2020, which includes portions of the Eureka Valley study area, creating some jurisdictional overlap between Ogden’s Plan and the Manhattan Urban Area Comprehensive Plan.

### **Fort Riley**

Fort Riley adjoins the western edge of the study area and has an important effect on the current conditions of the Valley. The Fort is home to the 1st Infantry Division, covers over 100,000 acres of land area (including large portions of both Geary and Riley counties), and permanently houses 14,279 people, according to the 2010 Census. Both the noise impact created by regular military training exercises and the everyday goods and services needed by civilian employees and enlisted personnel generate significant impacts on the Eureka Valley - Highway K-18 Corridor Plan , and will be an important factor in the demand for future services and development in the area.

### **Previous Cooperative Planning Efforts**

In addition to the inter-local agreement between Manhattan and Riley County establishing the MUAPB in 1976, there have been several other collaborative initiatives to address various planning and zoning issues in the area.

Most notably when a shopping mall was proposed in 1981 to be located east of the Manhattan Municipal Airport near the intersection of Scenic Drive and K-18, threatening the viability of downtown redevelopment efforts, the Board of Riley County Commissioners, upon recommendation from the MUAPB and the City of Manhattan, denied the request.

In 1982 the City and County Planning staffs began a cooperative effort to develop joint Subdivision Regulations that would apply to the City and the surrounding Urban Area. These regulations were adopted by the MUAPB, Manhattan and Riley County in 1984 and subsequently amended in 1987 and 2003.

The Urban Area Plan developed in 1987 is an example of a joint planning effort between the City, Riley County, Pottawatomie County and Ogden, which looked at the highway corridors leading into Manhattan, including the K-18 Corridor. The Plan was adopted by both the Manhattan Urban Area Planning Board and the Riley County Planning Board.

In 1999, Manhattan and Riley County developed the Report On Coordinating City/County Planning In The Urban Fringe, which addressed jurisdictional boundaries and service areas; Zoning, Subdivision and Storm-water Regulations; and outlined procedures for cooperation in development reviews in the urban fringe around the city.

Additional joint planning initiatives include the Flint Hills Joint Land Use Study (JLUS) and the Flint Hills Regional Growth Plan as described below.

## Plans & Regulations

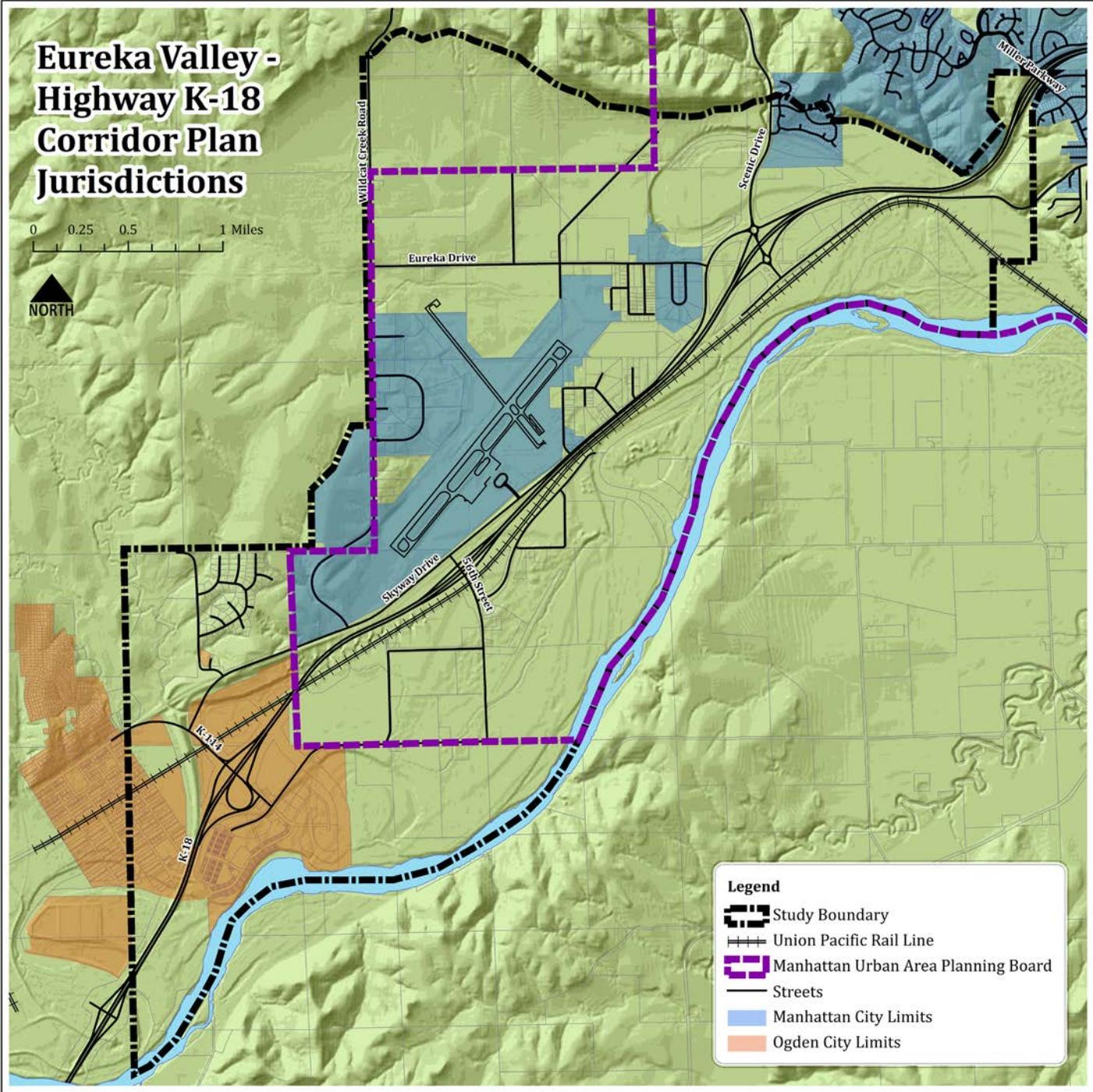
### **Corporate Technology Park Master Plan**

The Corporate Technology Park Master Plan was completed in 1998 in order to “prepare a physical development and market positioning strategy” for the Manhattan Corporate Technology Park located west of the Manhattan Regional Airport. The study included a Site Inventory and Analysis, a Market Analysis, and a look at Land Use and Development Controls, as well as other considerations.

The document is primarily concerned with how to best meet the Technology Park’s goals of accommodating industrial growth, ensuring the project’s marketability, providing adequate infrastructure and promoting high-quality design.

### **Manhattan Urban Area Comprehensive Plan (2003)**

The latest update of the Manhattan Urban Area Comprehensive Plan was developed in a joint planning initiative by the City of Manhattan and Riley County involving an extensive and highly collaborative public process.



Map 11. Jurisdictional Boundaries.

The Plan was unanimously adopted by the Manhattan Urban Area Planning Board and the Riley County Planning Board in April 2003, following a joint public hearing, and by the Riley County Commission and Manhattan City Commission in June 2003.

The Eureka Valley is identified as one of the “special planning areas” in the document, which includes several specific policies, including: promotion of land uses that are compatible with the Manhattan Regional Airport; right-of-way protection and access control along K-18; expanded industrial and commercial development; wetland protection; enhancement of the corridor through landscape treatments, coordinated signage and lighting; and development of design guidelines to create an attractive gateway. The section describing the background and intent of the Eureka Valley Special Planning Area on page 13 6 of the Comprehensive Plan states that, “The Eureka Valley will continue to grow in its role as a multi-purpose employment center for the Manhattan Urban Area. Service industrial, office and research park, and limited heavy industrial uses will be encouraged to locate in targeted areas of the Valley. Commercial uses will be encouraged to locate within employment areas on a limited basis to provide basic services for employees and minimize the need for cross-town trips throughout the day”. The Future Land Use map from the 2003 Plan identifies expanded areas for industrial development along both sides of Eureka Drive, east of the airport and south of K-18, in addition to the Corporate Technology Park west of the airport. Limited commercial development is shown along the north side of K-18 east of the airport and a potential community commercial center is located near the K-18/ Scenic Drive intersection, provided sufficient market demand can support such a site. No future residential development is identified within the Eureka Valley study area, due to the primary focus on land uses that are compatible with the Airport and Fort Riley.

### **Flint Hills Joint Land Use Study**

The Flint Hills Joint Land Use Study (JLUS) was completed in 2005 in order to address the challenging interdependence between military installations and the surrounding communities, where increased growth and encroachment can “place pressure on installations to modify their operations.” The plan was the outcome of a cooperative process involving the military, local surrounding communities and counties, the public, as well as other stakeholders.

The report cited Manhattan’s continuing growth along the West Anderson corridor towards Fort Riley as a land use condition that may raise issues in the future, and identified several recommendations for continued compatibility:

- Encourage compatible new growth.

- Encourage real estate noise disclosure in previously identified growth areas located in the Land Use Planning Zone (LUPZ).
- Encourage new residential development not exceeding one dwelling unit per ten acres in non growth areas of the LUPZ along with noise disclosure.
- Voluntary purchase of development rights for land conservation round Fort Riley.
- Enhanced communication and coordination between regional jurisdictions, including the creation of a JLUS Coordinating Committee.

The study also conducted a land use compatibility analysis and identified several land use categories and related regulatory tools that might be used to direct growth away from noise-sensitive areas, including Growth Opportunity Areas, Limited Growth Areas, Primary Protection Areas, the Land Use Planning Zone, and Conservation Opportunity Areas, among others. A detailed discussion of the identified compatibility tools and land use classifications (including a map) can be found in Section 5 of the Executive Summary document, on pages 63-85.

### **Flint Hills Regional Growth Plan**

The Flint Hills Regional Growth Plan, completed in 2008, was prepared in order to better prepare for and manage the growth anticipated to occur at Fort Riley due to the 2005 Base Realignment and Closure (BRAC) process, as well as other federal military indicatives. The plan states that “as a result of these activities, Fort Riley will gain approximately 9,700 active military personnel and nearly 2,000 new civilian employees by 2012.” The Flint Hills Regional Growth Plan provides a very detailed look at Land Use, Housing, Utilities and Infrastructure, Transportation and Transit, and additional considerations for each of the region’s communities.

The Executive Summary outlines some general recommendations that are relevant to the future planning and development of the Eureka Valley. The report calls for additional planning efforts in the K-18 Corridor, and also identifies several “significant risks to effective planning and the efficient use of land in the region,” which include “corridors vulnerable to strip development,” a “need for form based and district planning,” and the “erosion of rural character and the agricultural base,” all of which might be pertinent to the future of the Eureka Valley. In terms of specific recommendations for land use planning in the K-18 Corridor area, the plan offers the following directions (pages LUEx-4-6):

- Update the Zoning and Subdivision Regulations in both Manhattan and Riley County.

- Establish a Military Overlay District for the Land Use Planning Zone as identified in the 2005 JLUS study.
- Create Inter-local service agreements between Manhattan and Riley County to require that all new development within the Urban Planning Area “conform to established city standards for water and wastewater service.”
- Protect corridors by partnering with KDOT to “conduct land use planning and design studies” for K-18.
- “Aggressively pursue policies to protect active agriculture and reduce the conflicts associated with residential uses in proximity to farmlands” in Riley County.

### **Vision 2025: A Comprehensive Plan for Riley County (2009)**

Vision 2025 is a definitive guide for the orderly growth and development of Riley County and replaced the outdated 1987 Comprehensive Plan. The plan was completed and adopted following a lengthy steering committee and public participation process. Vision 2025 addresses a number of important land use issues facing Riley County and establishes a framework to guide decisions about where development should occur. Riley County is poised for growth as the City of Manhattan has become a metropolitan area. While most of the expected population growth through the year 2025 is anticipated to locate within the Manhattan urban area and within the smaller cities in Riley County, there is also expected to be a continued desire by property owners to build homes in the unincorporated areas. How county officials accommodate the demand for rural, non-farm housing, while also protecting environmental resources and agricultural production, is a key concern of the plan. The plan includes a development guidance system with a Land Evaluation – Site Assessment (LESA) component to help inform decisions in concert with the goals and objectives of the plan. A major focus of the plan is to support and preserve opportunities for a sustainable agricultural economy while ensuring opportunities for industrial, commercial and residential components of municipal economies to grow and expand.

### **Ogden Comprehensive Plan**

Ogden 2020, an update to the City of Ogden’s Comprehensive Plan, was completed in 2010 after a series of public participation outreach sessions, and meetings with City staff and the Comprehensive Plan Advisory Committee. As stated in the introduction to the plan, its purpose is to outline “goals, objectives, and strategies” that “meet the needs of all those served by the City” and accomplish the community’s vision statement, which stresses the maintenance of a “small-town atmosphere,” family-friendliness, and a unique character.

While the plan does not specifically address the development of the Eureka Valley or K-18 Corridor in any one section, pages 23-33 generally lay out the existing and future land use designations for the entire City, about a third of which is contained within the Eureka Valley study area. Ogden's Comprehensive Plan was adopted prior to KDOT finalizing the realignment route for K-18.

### **Manhattan Regional Airport Master Plan; Terminal Area Plan**

The 2008 update to the Manhattan Regional Airport Master Plan includes a detailed discussion of the future demand for air travel in the region, potential expansion possibilities for the airport, financial issues, and land use planning in the surrounding areas. The Plan identifies continued urban expansion in the Eureka Valley as a concern, especially as the airport attempts to "ensure the continued flexibility" to expand the scope of its operations. Specifically related to planning and development concerns, Section 2.15 discusses the Airport Overlay Zoning District, which was created to "protect MHK by restricting the use of land on, or adjacent to, the airport."

Section 2.17 enumerates the surrounding land use and property conditions, and explains that "although several residential areas exist around MHK, the Manhattan Urban Area Comprehensive Plan adopted by the City and County in 2003 advocates a policy of no further residential development in Eureka Valley. In addition, the Joint Land Use Plan (JLUS), which is centered around Fort Riley, addresses incompatible land uses by recommending that there generally be no urban-density residential development west of Scenic Drive." Section 2.19 discusses the environmental impacts of the airport – the City completed an Environmental Assessment (EA) report that determined that the proposed airport expansion "would not significantly affect the quality of the human environment." However, storm water drainage has been identified as a continuing concern for the airport, and the plan states that "individual airfield improvement projects should move to better the drainage situation," and that a detention basin on Fort Riley property would work to "mitigate the flooding of airport property during large storm events."

The Manhattan Regional Airport Terminal Area Master Plan was completed in September 2011, and focuses more narrowly on the future needs of the airport terminal itself, including the planned phasing of the parking lot. In addition, the plan identifies a section of land west of the terminal along K-18 as available for future commercial development.

## **Manhattan Regional Airport Part 150 Airport Noise and Land Use Compatibility Planning Study**

In 2010, the airport completed a noise exposure study which modeled the noise contours generated by the airport in 2009, with projections for 2014 and 2027. The study found that there were no incompatible land uses within the 2009 65 DNL noise contour.

However, the projected 2027 60 DNL noise contour does extend up to some of the residential development along the western end of the Miller Parkway Corridor, just north of the Eureka Valley - Highway K-18 Corridor study area. Detailed explanations of the land use analysis and noise exposure projections are found in Chapters 4 and 5 of the document.

### **Zoning, Subdivision, & Floodplain Regulations**

The Manhattan Zoning Regulations and the Ogden Zoning Regulations apply to their respective city limits. The Riley County Zoning Regulations apply to the balance of the study area in the unincorporated areas. The Manhattan Urban Area Subdivision Regulations apply to the City of Manhattan and surrounding Urban Area matching the Manhattan Urban Area Planning Board's jurisdiction, while the Riley County Subdivision Regulations apply in the balance of the unincorporated area. Ogden's Subdivision Regulations apply to its jurisdiction. Applicable Floodplain regulations are incorporated into the Zoning Regulations of the respective jurisdictions.

# Appendix A. Economic Analysis

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In order to understand the potential future market demand for commercial and industrial activity and job creation in the Eureka Valley, a general economic analysis was conducted for the region, as well as research regarding the Valley's potential to accommodate specific future land uses, such as bioscience research facilities. The focus of the study, which can be found in full in Appendix A, was to analyze regional economic trends in order to discern how Manhattan, Riley County and Ogden can best position the Eureka Valley to take advantage of the region's unique economic strengths, including the presence of Fort Riley, Kansas State University, and the future construction of NBAF, and to identify what types of land uses make the most sense to be located in the area.

In general, the process used to complete the study was as follows:

1. Identify corridor users (i.e. the “consumers” of the plan and the services in the area).
2. Conduct a quantitative analysis, using empirical data such as historical and projected population and employment rates, consisting of four sections.
  - a. Regional economic trends: population, employment, and income growth projections.
  - b. Consumer demand: use the projections above to derive future demand for consumer products (and therefore future land uses) in the region.
  - c. Non-consumer demand: breakdown of regional employment by industry and comparison to state and national economic structure.
  - d. Traffic analysis: determine areas with highest traffic volumes, i.e., areas in which businesses are most likely to locate.
3. Conduct a qualitative analysis with data obtained through interviews and discussion with stakeholders and the Steering Committee.
4. Synthesize results: use this information to help inform what land uses should be located in the Valley and at what locations that make sense to help meet regional demand.

## *A. Corridor Users*

Overall, it is important to consider the primary potential types of land uses – and thus markets – that the Eureka Valley/K-18 corridor might support or cater to in the future.

**1. Eureka Valley employers and employees:** The area currently serves as an important employment center, with the Flint Hills Job Corps, Manhattan Corporate Technology Park, Manhattan Regional Airport, and other industrial and commercial businesses located in the corridor. The daily needs of businesses and their employees, such as basic industrial service vendors, restaurants and retail services, will be an important economic driver in the Eureka Valley.

**2. Local through-commuters:** Those commuting to-and-from Fort Riley use the K-18 corridor on a daily basis and constitute a large portion of the highway's daily traffic. While these users do not have the same needs as those employed in the corridor, automobile-oriented services, including convenience stores, gas stations, and perhaps even supermarkets, are land uses expected to be in high demand by this group.

**3. Regional through-commuters:** these types of commuters fall generally into three categories: 1) those using the K-18 corridor to connect to-and-from I-70 on longer regional auto trips, 2) those utilizing the airport as a regional point of departure and arrival, and 3) those commuting to and from other regional communities. Some of the market needs of this group include automobile-oriented commercial, gas stations, restaurants, convenience food, rental car services, and potentially lodging.

**4. Recreational enthusiasts:** while still a burgeoning group in the Eureka Valley, the potential for the K-18 corridor to become a focal point for recreational activity, with its proximity to the Kansas River and existing natural features, is undoubtedly high. Bicyclists, kayakers, runners, and other recreational enthusiasts have specific needs, including access to recreational amenities such as trails, shelters, public restrooms, and boat launches. Additional demand from this group could include recreational supply, repair, and outfitting, as well as a shared general demand for convenience services.

Thus, while specific demand for new types of land uses in the Eureka Valley may be difficult to accurately project into the future, due to the lack of precedent, a close analysis of the potential types of users of the corridor and their constituent needs helps to provide a more complete picture of the nature of economic demand that can be expected in the corridor in the future.

## ***B. Quantitative Analysis***

Some of the basic quantitative findings from Manhattan MSA statistics are:

- Regional employment, population, and income are all projected to increase at steady rates into the future.
- The biggest per-capita consumer expenditures in the Manhattan Metropolitan Statistical Area (MSA) are for: food (at home and away), vehicle purchases (new and used), gasoline and motor oil, and education.
- The primary “basic” industries in the Manhattan MSA are: construction; retail; education/health care/social services; arts/entertainment/recreation/accommodation/food service; public administration; and armed forces.
- Traffic volumes along K-18, measured in 2010, were some of the highest in the entire City, with an average of 22,300 vehicles passing the Airport daily.

### **Regional Economic Trends**

The Manhattan, KS, Metropolitan Statistical Area (MSA) is made up of Riley, Geary, and Pottawatomie counties, and provides a suitable scope for projecting large-scale economic trends that may impact market conditions in and around the Eureka Valley. Table 1 shows mid-range projections of population, employment, and total personal income for the three-county region through 2030. This data, which extrapolates past trends, projects the following outcomes by 2030:

- The population of the MSA will grow by 17,688, or nearly 14%.
- The number of workers in the region will grow by 11,469, or about 13%.
- Total personal income (without adjusting for inflation) will increase by almost 86%, nearly doubling.
- Per-capita income (without adjusting for inflation) will grow by about 63%.

**Table 1. Overall Projections for Manhattan, KS MSA, 2010-2030.**

	Population <sup>1</sup>	Employment <sup>2</sup>	Total Personal Income <sup>3</sup>	Per-Capita Income
2010	126,494	88,974	\$ 5,387,699,000	\$ 42,593
2015	131,360	86,064	\$ 5,839,406,763	\$ 44,453
2020	135,864	90,612	\$ 7,093,620,063	\$ 52,211
2025	139,516	95,401	\$ 8,481,042,343	\$ 60,789
2030	144,182	100,443	\$ 10,001,673,604	\$ 69,368

1. Population Projection: Cohort-component projection from Center for Economic Development & Business Research, Wichita State University, 2012.  
 2. Employment Projection: Historical data taken from Bureau of Economic Analysis Personal Income and Employment Summary, 1969-2010.  
 3. Personal Income Projection: Historical data taken from Bureau of Economic Analysis Personal Income and Employment Summary, 1969-2010.

## Consumer Demand

The demand for additional goods and services, and the income to purchase these goods and services, is projected to increase dramatically over the course of the next 15-20 years. In order to better understand the direct impact of these increases on the regional economy in terms of direct retail expenditures, and the potential demand for business activity in the Eureka Valley, 2010 Consumer Expenditure

Survey data from the Bureau of Labor Statistics for the Midwest Census Region was applied to the total projected personal income for the region, and then those values were divided by the projected population in order to obtain per-capita expenditures in various retail categories.

The percentage of total household expenditure by consumer product type and projected per-capita expenditure values are shown in Table 2 and aggregate regional projected expenditures by product type are shown in Table 3. In each table, those products comprising the top six average expenditures are marked in bold. In general, food at home, food away from home, new and used vehicles, gasoline, and education receive the highest amount of per-capita and aggregate expenditures. This data shows that businesses of these types may be interested in locating in the Eureka Valley. A more detailed description of the top five expenditure categories follows:

*Food at home* “refers to the total expenditures for food at grocery stores (or other food stores)” and constitutes the largest percentage of commercial spending in the region. While opportunities may exist in the Eureka Valley for constructing additional grocery stores to serve the existing residents, as well as existing and future employees, it does not seem as likely to occur as some of the other business types. This is due to the fact that a) the amount of residential land use in the area is not planned to increase, and b) there are a large number of established grocery stores in Manhattan and Junction City. However, Ogden has identified the need for a new grocery store to serve its needs.

*Food away from home* “includes all meals (breakfast and brunch, lunch, dinner and snacks and nonalcoholic beverages) including tips at fast food, take-out, delivery, concession stands, buffet and cafeteria, at full-service restaurants, and at vending machines and mobile vendors.” The demand for restaurants in the Valley, which could serve commuters, airport travelers, employees, and residents, has been well-established. Discussions with the Manhattan Area Chamber of Commerce have also revealed that businesses interested in relocating to the Eureka Valley have, in the past, declined to do so based on the limited current supply of eating establishments in the area.

*Cars and trucks, new & used* “includes the net outlay (purchase price minus trade-in value) on new and used domestic and imported cars and trucks and other vehicles, including motorcycles and private planes,” and makes up large percentage of regional and per-capita expenditures primarily due to the relatively high cost of vehicles compared to other consumer products. However, vehicle dealerships could be important land uses in the Eureka Valley due to the K-18 corridor’s automobile concentration, the availability of land, high daily traffic volumes, and the high sales tax potential of such uses.

*Education* “includes tuition; fees; and textbooks, supplies, and equipment for public and private nursery schools, elementary and high schools, colleges and universities, and other schools.” Clearly, KSU represents a large focus of commercial expenditure in the Manhattan MSA, and support-type businesses such as textbook and research supply vendors may have a market in the Eureka Valley.

*Gasoline and motor oil* “includes gasoline, diesel fuel, and motor oil.” Due to the overall prevalence of driving in American society, and the high (and increasing) cost of fuel, it is not surprising that gasoline expenditures make up a large proportion of individuals’ budgets. In specific terms, the current lack of gas stations along the K-18 Corridor seems to suggest an opportunity for such businesses to locate at the newly-planned interchanges. With high traffic volumes along K-18, it seems likely that additional gas stations/convenience stores in the Valley would be able to serve commuters, employees, airport rental car customers, as well as regional travelers.

In addition to the business types listed above, several other economic needs and/or concerns have been identified through the stakeholder interview process:

- Demand for service commercial uses, such as child care for workers and residents of the Eureka Valley, has been strongly expressed.
- Any new community-scale retail centers located in the Eureka Valley should be small enough in scale so as to serve the existing and future commuters, residents, travelers, and employees of the Eureka Valley without negatively impacting established retail vitality downtown.

**Table 2. Projected Per-Capita Consumer Expenditure\* by Product Type: Manhattan, KS MSA.**

Consumer Product	2010	2015	2020	2025	2030
<b>Food at home</b>	<b>\$2,608</b>	<b>\$2,722</b>	<b>\$3,197</b>	<b>\$3,722</b>	<b>\$4,248</b>
<b>Food away from home</b>	<b>\$1,576</b>	<b>\$1,644</b>	<b>\$1,931</b>	<b>\$2,249</b>	<b>\$2,566</b>
Other lodging	\$484	\$505	\$593	\$691	\$788
Alcoholic beverages	\$277	\$289	\$340	\$395	\$451
Housekeeping supplies	\$462	\$482	\$567	\$660	\$753
Household textiles	\$69	\$72	\$84	\$98	\$112
Furniture	\$243	\$253	\$298	\$347	\$395
Floor coverings	\$20	\$21	\$24	\$28	\$32
Major appliances	\$136	\$142	\$167	\$195	\$222
Small appliances, miscellaneous housewares	\$69	\$72	\$85	\$99	\$113
Miscellaneous household equipment	\$440	\$460	\$540	\$629	\$717
Men and boys apparel	\$240	\$250	\$294	\$342	\$391
Women and girls apparel	\$440	\$460	\$540	\$629	\$717
Apparel for children under 2	\$61	\$63	\$74	\$86	\$99
Other apparel products and services	\$145	\$151	\$178	\$207	\$236
Footwear	\$189	\$197	\$231	\$270	\$308
<b>Cars and trucks, new</b>	<b>\$710</b>	<b>\$741</b>	<b>\$871</b>	<b>\$1,014</b>	<b>\$1,157</b>
<b>Cars and trucks, used</b>	<b>\$1,005</b>	<b>\$1,049</b>	<b>\$1,233</b>	<b>\$1,435</b>	<b>\$1,638</b>
Other vehicles	\$36	\$38	\$45	\$52	\$59
<b>Gasoline and motor oil</b>	<b>\$1,537</b>	<b>\$1,604</b>	<b>\$1,884</b>	<b>\$2,194</b>	<b>\$2,503</b>
Vehicle maintenance and repairs	\$570	\$595	\$699	\$814	\$929
Vehicle rentals, leases, licenses, and other charges	\$295	\$308	\$362	\$421	\$481
Medical services	\$529	\$552	\$649	\$755	\$862
Drugs	\$373	\$390	\$458	\$533	\$608
Medical supplies	\$101	\$105	\$123	\$144	\$164
Entertainment fees and admissions	\$419	\$437	\$513	\$597	\$682
Audio and visual equipment and services	\$664	\$693	\$814	\$948	\$1,082
Pets, toys, hobbies, and playground equipment	\$427	\$446	\$524	\$610	\$696
Other entertainment supplies, equipment, and services	\$349	\$364	\$427	\$497	\$568
Reading	\$74	\$77	\$90	\$105	\$120
<b>Education</b>	<b>\$841</b>	<b>\$877</b>	<b>\$1,031</b>	<b>\$1,200</b>	<b>\$1,369</b>
Personal care products and services	\$378	\$394	\$463	\$539	\$615
<b>Total Consumer Per-Capita Expenditures</b>	<b>\$15,767</b>	<b>\$16,456</b>	<b>\$19,328</b>	<b>\$22,503</b>	<b>\$25,679</b>

\*Source: 2010 Consumer Expenditure Survey for Midwest Census Region, U.S. Bureau of Labor Statistics, September, 2011. Population Projections with Migration: Center for Economic Development and Business Research, Wichita State University, 2012.

**Table 3. Projected Aggregate Consumer Expenditure\* by Product Type: Manhattan, KS MSA (in millions of dollars).**

Consumer Product	2010 %	2010	2015	2020	2025	2030
<b>Food at home</b>	<b>6.12%</b>	<b>\$329.9</b>	<b>\$357.6</b>	<b>\$434.4</b>	<b>\$519.3</b>	<b>\$612.4</b>
<b>Food away from home</b>	<b>3.70%</b>	<b>\$199.3</b>	<b>\$216.0</b>	<b>\$262.4</b>	<b>\$313.7</b>	<b>\$370.0</b>
Other lodging	1.14%	\$61.2	\$66.4	\$80.6	\$96.4	\$113.7
Alcoholic beverages	0.65%	\$35.0	\$38.0	\$46.1	\$55.2	\$65.1
Housekeeping supplies	1.09%	\$58.5	\$63.4	\$77.0	\$92.0	\$108.5
Household textiles	0.16%	\$8.7	\$9.4	\$11.4	\$13.6	\$16.1
Furniture	0.57%	\$30.7	\$33.3	\$40.4	\$48.3	\$57.0
Floor coverings	0.05%	\$2.5	\$2.7	\$3.3	\$3.9	\$4.6
Major appliances	0.32%	\$17.2	\$18.7	\$22.7	\$27.1	\$32.0
Small appliances, miscellaneous housewares	0.16%	\$8.8	\$9.5	\$11.5	\$13.8	\$16.3
Miscellaneous household equipment	1.03%	\$55.7	\$60.4	\$73.3	\$87.7	\$103.4
Men and boys apparel	0.56%	\$30.3	\$32.9	\$40.0	\$47.8	\$56.3
Women and girls apparel	1.03%	\$55.7	\$60.4	\$73.3	\$87.7	\$103.4
Apparel for children under 2	0.14%	\$7.7	\$8.3	\$10.1	\$12.1	\$14.2
Other apparel products and services	0.34%	\$18.4	\$19.9	\$24.2	\$28.9	\$34.1
Footwear	0.44%	\$23.9	\$25.9	\$31.5	\$37.6	\$44.3
<b>Cars and trucks, new</b>	<b>1.67%</b>	<b>\$89.8</b>	<b>\$97.4</b>	<b>\$118.3</b>	<b>\$141.4</b>	<b>\$166.8</b>
<b>Cars and trucks, used</b>	<b>2.36%</b>	<b>\$127.2</b>	<b>\$137.8</b>	<b>\$167.5</b>	<b>\$200.2</b>	<b>\$236.1</b>
Other vehicles	0.09%	\$4.6	\$5.0	\$6.1	\$7.3	\$8.6
<b>Gasoline and motor oil</b>	<b>3.61%</b>	<b>\$194.4</b>	<b>\$210.7</b>	<b>\$256.0</b>	<b>\$306.0</b>	<b>\$360.9</b>
Maintenance and repairs	1.34%	\$72.1	\$78.2	\$95.0	\$113.5	\$133.9
Vehicle rentals, leases, licenses, and other charges	0.69%	\$37.4	\$40.5	\$49.2	\$58.8	\$69.3
Medical services	1.24%	\$67.0	\$72.6	\$88.2	\$105.4	\$124.3
Drugs	0.88%	\$47.2	\$51.2	\$62.2	\$74.3	\$87.7
Medical supplies	0.24%	\$12.7	\$13.8	\$16.8	\$20.0	\$23.6
Entertainment fees and admissions	0.98%	\$52.9	\$57.4	\$69.7	\$83.3	\$98.3
Audio and visual equipment and services	1.56%	\$84.0	\$91.1	\$110.6	\$132.3	\$156.0
Pets, toys, hobbies, and playground equipment	1.00%	\$54.0	\$58.6	\$71.2	\$85.1	\$100.3
Other entertainment supplies, equipment, and services	0.82%	\$44.1	\$47.8	\$58.0	\$69.4	\$81.8
Reading	0.17%	\$9.3	\$10.1	\$12.3	\$14.7	\$17.3
<b>Education</b>	<b>1.97%</b>	<b>\$106.3</b>	<b>\$115.3</b>	<b>\$140.0</b>	<b>\$167.4</b>	<b>\$197.4</b>
Personal care products and services	0.89%	\$47.8	\$51.8	\$62.9	\$75.2	\$88.7

\*Source: 2010 Consumer Expenditure Survey for Midwest Census Region, U.S. Bureau of Labor Statistics, September, 2011.

## Non-Consumer Demand

Demand for consumer goods and services highlights only one aspect of the potential market demand for future land uses in the Eureka Valley. Another important aspect of the K-18 Corridor is its ability to meet potential future demand for light industrial, scientific research, bioscience, office, warehousing, and other types of industrial service activities. In order to investigate the non-consumer aspects of the region's economy, a Location Quotient analysis was employed.

Location Quotient (LQ) is a measure by which a regional economy's concentrations in specific industries can be measured in order to determine the "basic" (primary/exporting) and "non-basic" (supplemental/importing) sectors of the economy.

This is done by dividing the share of regional employment by sector by the share of state or national employment in the same sector: LQ values greater than 1 are thus determined to be areas of economic concentration in the region. The percentage of employment by industry for the US, Kansas, and the Manhattan MSA is shown in Table 4, with state and national comparative LQ values displayed in Table 5, with the "basic" industries identified in bold<sup>5</sup>. Figure 1 also displays this data graphically.

In general, as shown in Figure 1, the Manhattan MSA regional economy is specialized in six core sectors: construction; retail trade; education, health care, and social services; arts, entertainment, recreation, accommodation, and food service; public administration; and armed forces. Certainly much of this concentration is likely to be due to the influence of Fort Riley and KSU on the region's economy, as well as the status of Manhattan as a regional outlet for retail goods and personal services. Fully 48% of the regional economy is devoted to educational/health care, public administration, or armed forces activities, with almost half of the armed forces employment in the state of Kansas located in the Manhattan MSA.

It is important to note that while professional, scientific, and management fields, as well as manufacturing, are currently considered a "non-basic" industry in the region, the regional concentration in scientific industries is expected to grow rapidly as KSU continues to expand its research activities and NBAF construction begins. In order to meet this expected demand, locations for bioscience research facilities (e.g. wet labs and other research space) and accompanying offices and research supply vendors will need to be identified in advance.

Also, businesses in the scientific and/or manufacturing sectors will be more likely to act as true "basic" industries if they are attracted to the region, creating new wealth in the community rather than re-appropriating existing wealth, which retail and service sector businesses are more apt to do.

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<sup>4</sup>Note: the discrepancy between total employment calculated in Tables 4 and 5 and the figure given in Table 1 are due to differences in data collection methods between the American Community Survey and the Bureau of Economic Analysis. Roughly, the BEA counts the number of jobs in an area, while the ACS counts the number of workers.

Overall, the LQ analysis demonstrates that the education, health care, public administration, and military sectors form the foundation of the region's economy. Consumer goods and services such as retail trade and food service are also very important components of the market. In terms of the Eureka Valley specifically, the following assumptions can be made:

- Consumer retail uses (such as those described above) and food service are the most likely to be occur in the area.
- The majority of research and/or industrial activities expanding into the area will most likely be closely related to either KSU or Fort Riley.
- Currently, the regional economic concentration in the Manhattan MSA is not high in industrial-type land uses (such as those related to manufacturing, wholesale trade, and transportation and warehousing) and office-demanding land uses (associated with the finance, insurance, real estate, information, and professional sectors).
- However, growth in these industries is expected to increase as Manhattan's economy expands and diversifies, and the unique assets found in the Eureka Valley could provide a logical area in which to locate many of these land uses.
- These types of businesses are also more likely than others, such as retail - despite the fact that LQ analysis shows that retail is an exporting industry in the region - to generate new economic growth by attracting outside jobs/wages rather than re-circulating money already in the economy by competing with existing businesses in other areas of the region.
- According to stakeholder discussions, the importance of rail access to businesses looking to locate in the Eureka Valley is not particularly high.

**Table 4. 2010 Employment by Industry\* : US, Kansas, & Manhattan, KS MSA.**

INDUSTRY	UNITED STATES		KANSAS		MANHATTAN, KS MSA	
	Employment	%	Employment	%	Employment	%
Civilian employed population 16 years and over + Armed Forces employed	143,044,493	100%	1,395,122	100%	64,640	100%
Agriculture, forestry, fishing and hunting, and mining	2,637,118	1.84%	48,538	3.44%	1,045	1.62%
Construction	9,606,000	6.72%	91,032	6.45%	4,401	6.81%
Manufacturing	15,179,968	10.61%	182,241	12.92%	3,649	5.65%
Wholesale trade	4,131,546	2.89%	40,003	2.84%	965	1.49%
Retail trade	16,417,085	11.48%	155,501	11.02%	7,248	11.21%
Transportation and warehousing, and utilities	7,143,071	4.99%	65,482	4.64%	1,400	2.17%
Information	3,237,186	2.26%	33,648	2.38%	1,003	1.55%
Finance and insurance, and real estate and rental and leasing	9,680,270	6.77%	86,315	6.12%	2,783	4.31%
Professional, scientific, and management, and administrative and waste management services	14,959,353	10.46%	116,662	8.27%	4,272	6.61%
Educational services, and health care and social assistance	32,051,925	22.41%	337,873	23.95%	18,875	29.20%
Arts, entertainment, and recreation, and accommodation and food services	12,865,366	8.99%	109,627	7.77%	5,558	8.60%
Other services, except public administration	6,992,502	4.89%	62,869	4.46%	1,685	2.61%
Public administration	6,946,707	4.86%	65,331	4.63%	4,227	6.54%
Armed Forces	1,196,396	0.84%	15,783	1.12%	7,529	11.65%

\*Source: American Community Survey, 3-Year Estimates, 2008-2010.

**Table 5. 2010 Location Quotient by Industry\* : Manhattan, KS MSA.**

INDUSTRY	MANHATTAN, KS MSA			
	Employment	Percentage	State LQ	National LQ
Civilian employed population 16 years and over+ Armed Forces employed	64,640	100%	1.00	1.00
Agriculture, forestry, fishing and hunting, and mining	1,045	2%	0.47	0.88
<b>Construction</b>	<b>4,401</b>	<b>7%</b>	<b>1.06</b>	<b>1.01</b>
Manufacturing	3,649	6%	0.44	0.53
Wholesale trade	965	1%	0.53	0.52
<b>Retail trade</b>	<b>7,248</b>	<b>11%</b>	<b>1.02</b>	0.98
Transportation and warehousing, and utilities	1,400	2%	0.47	0.43
Information	1,003	2%	0.65	0.69
Finance and insurance, and real estate and rental and leasing	2,783	4%	0.70	0.64
Professional, scientific, and management, and administrative and waste management services	4,272	7%	0.80	0.63
<b>Educational services, and health care and social assistance</b>	<b>18,875</b>	<b>29%</b>	<b>1.22</b>	<b>1.30</b>
<b>Arts, entertainment, and recreation, and accommodation and food services</b>	<b>5,558</b>	<b>9%</b>	<b>1.11</b>	0.96
Other services, except public administration	1,685	3%	0.59	0.53
<b>Public administration</b>	<b>4,227</b>	<b>7%</b>	<b>1.41</b>	<b>1.35</b>
<b>Armed Forces</b>	<b>7,529</b>	<b>12%</b>	<b>10.41</b>	<b>13.93</b>

\*Source: American Community Survey, 3-Year Estimates, 2008-2010.

Figure 1A. Comparative Regional Employment Concentration: United States. Exporting industries (LQ > 1) for the Manhattan MSA are outlined in black.

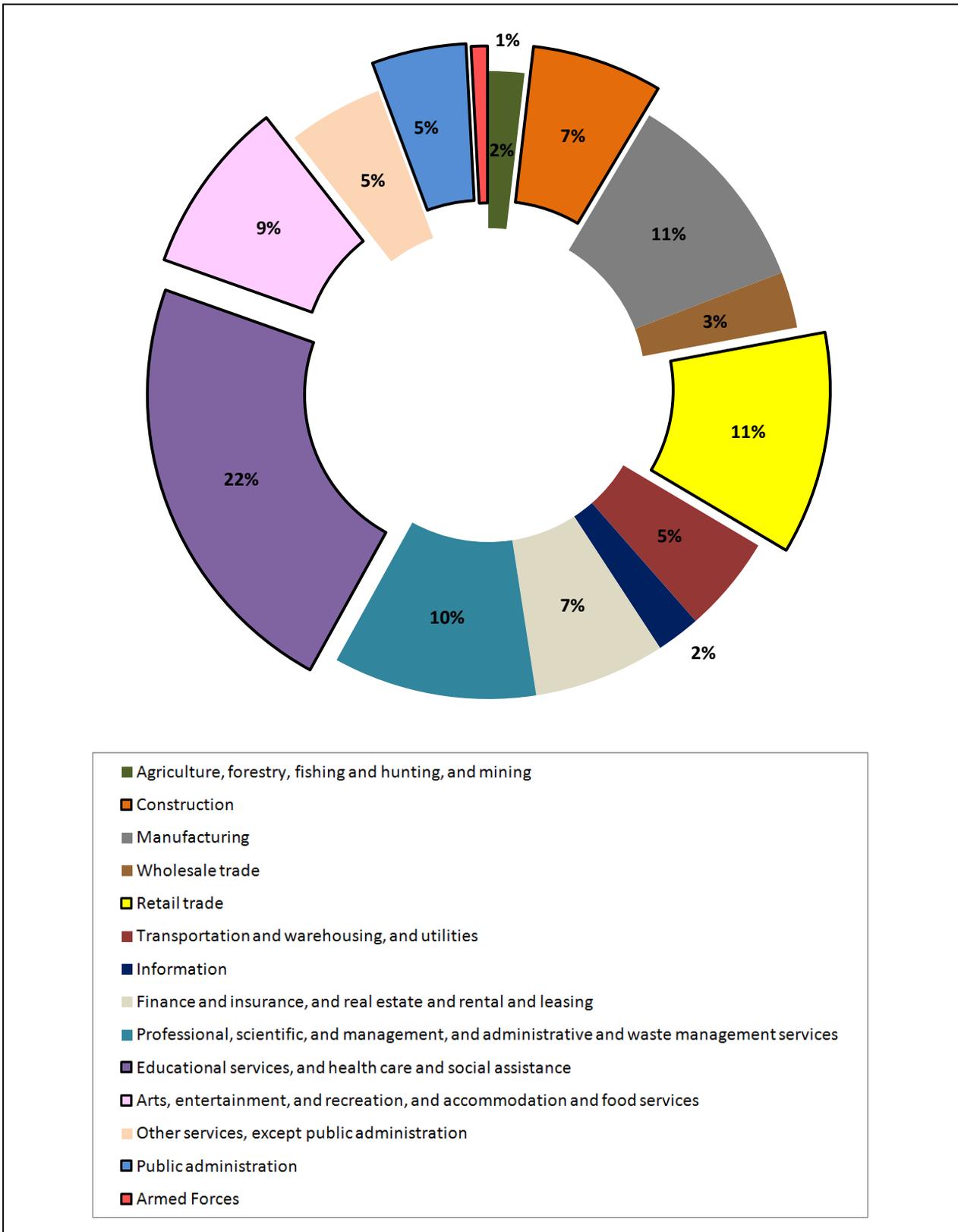


Figure 1B. Comparative Regional Employment Concentration: State of Kansas. Exporting industries (LQ > 1) for the Manhattan MSA are outlined in black.

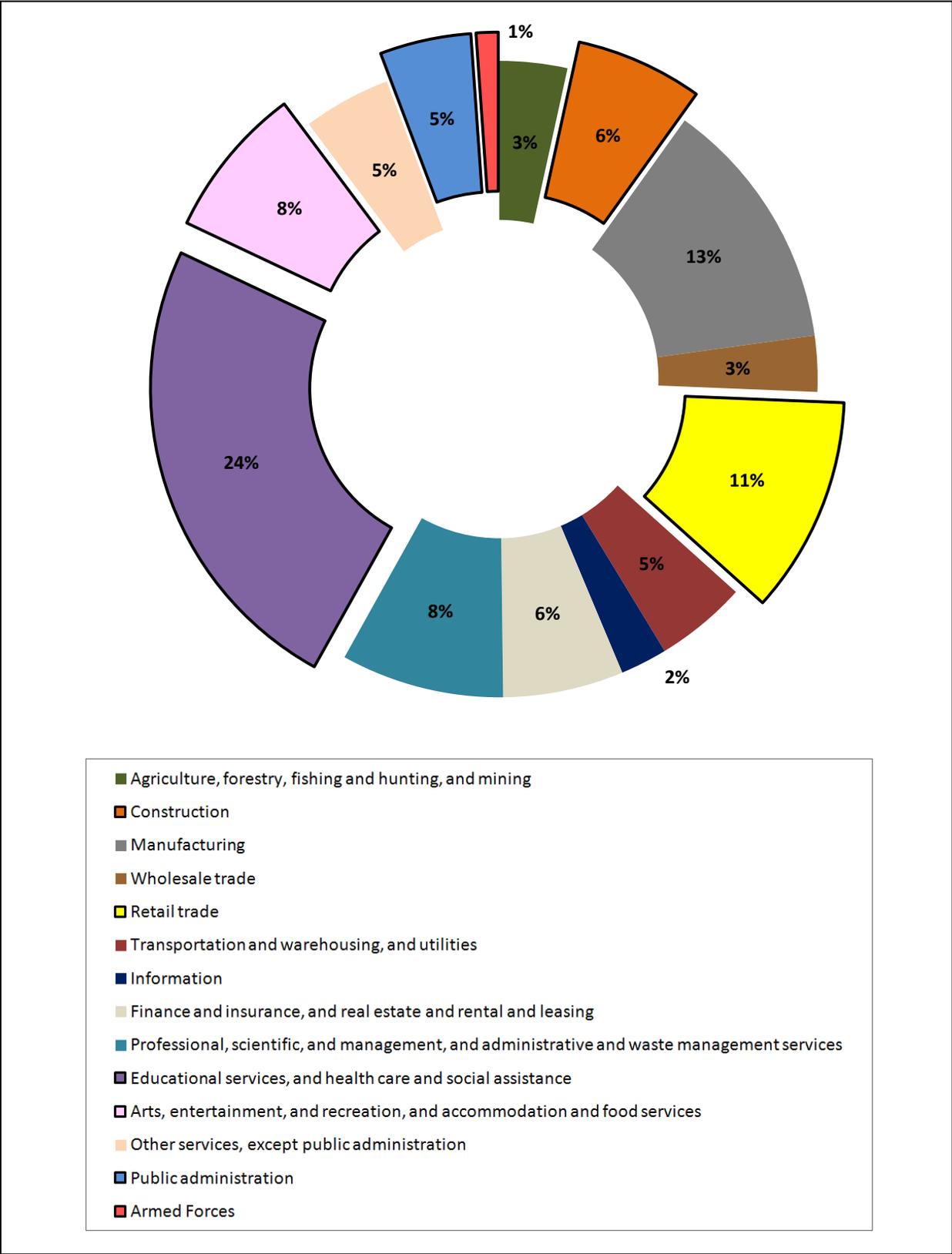
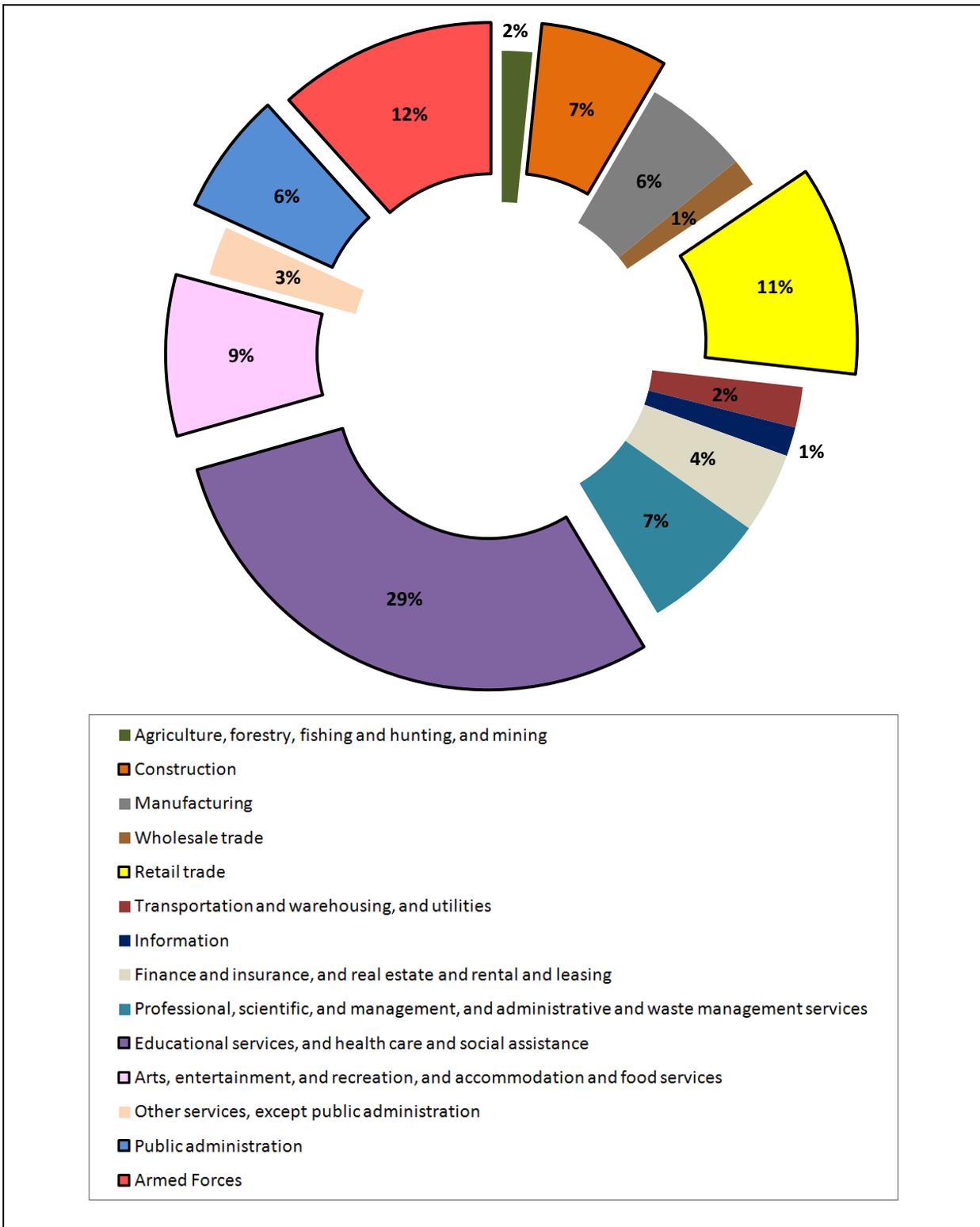


Figure 1C. Comparative Regional Employment Concentration: Manhattan, KS MSA. Exporting industries (LQ > 1) for the Manhattan MSA are outlined in black.



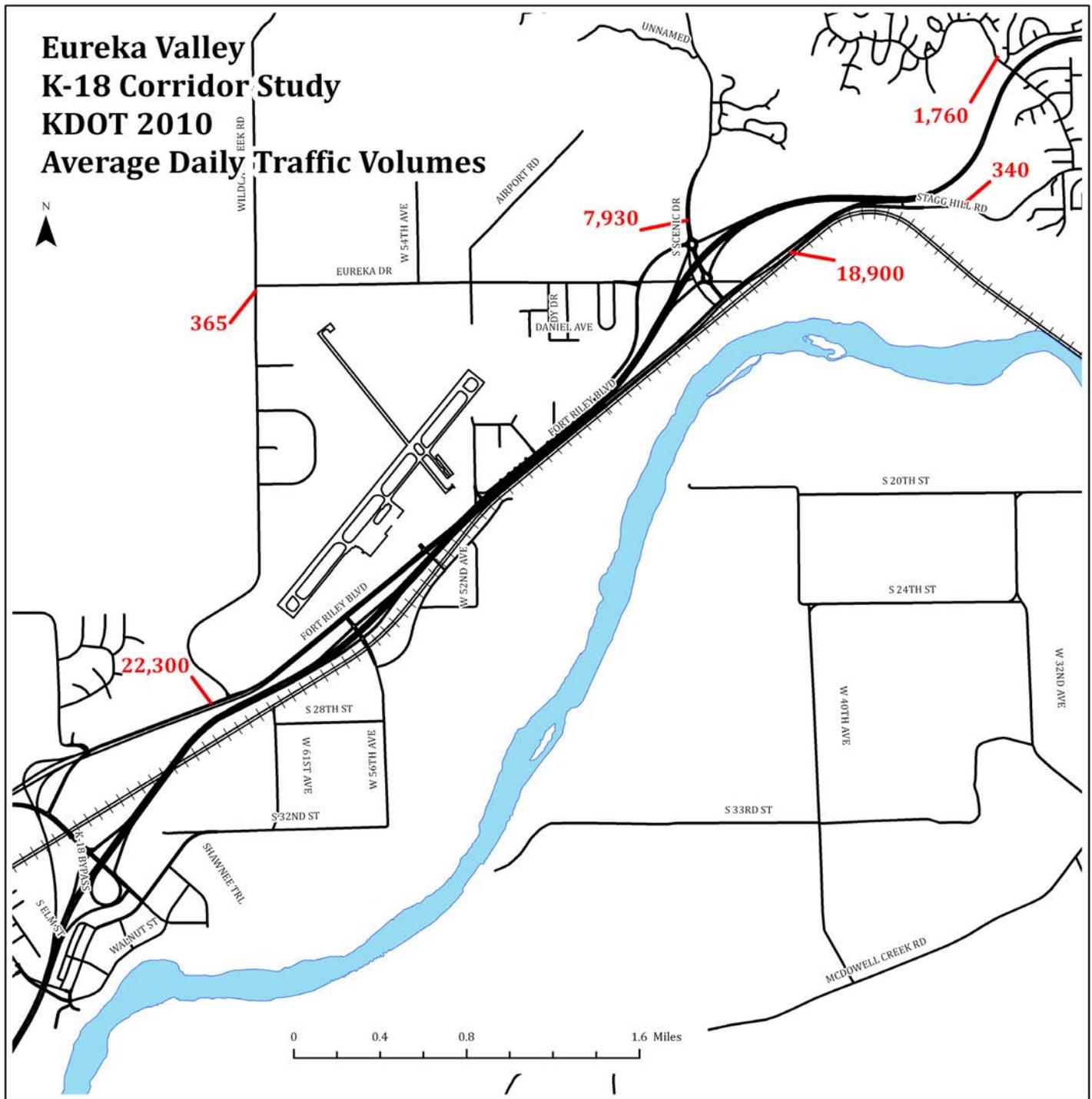
### **Traffic Analysis**

Another important factor in assessing the economic potential of the Eureka Valley, especially in terms of supporting auto-oriented businesses, is the high level of daily vehicular trips that occur on K-18 and the surrounding roadways. The Kansas Department of Transportation (KDOT) most recently measured the average annual 24-hour traffic in the Eureka Valley in 2010. The traffic volumes that KDOT measured for four key points in the area, shown in Map 1, are as follows:

- **On K-18, just west of Wildcat Creek Road: 22,300**
- **On Scenic Drive, just north of K-18: 7,930**
- **On K-18, just west of the Scenic Drive exit: 18,900**
- **On Miller Parkway, just north of K-18: 1,760**

Traffic volumes can be expected to increase on K-18 due to population growth trends, as well as a result of the increased travel capacity provided by the expansion of K-18 into a limited-access expressway. However, before construction on K-18 began in 2010, the value of 22,300 average daily vehicles measured west of Wildcat Creek Road constituted the second-largest traffic volume in the City of Manhattan, second only to a section of Anderson Avenue between 17th Street and Denison Avenue, in front of the KSU campus, which recorded 26,050 vehicles. In addition, the average daily volume of 22,300 on K-18 is higher than cross-state traffic on I-70, with a 2011 daily traffic volume measured by KDOT on I-70 at the K-177 interchange of 12,600 average daily trips, and 13,100 average daily trips on I-70 east of the K-18 intersection.

K-18 has been and will continue to be one of the highest-volume roadways in the Manhattan MSA. These high traffic volumes provide strong visibility, and thus marketability, to consumer businesses located along K-18, especially if they are auto-oriented in nature. High traffic volumes in the corridor indicate strong potential demand for goods and services, and point toward an increased likelihood that businesses of these types will locate near interchanges along the highway.



Map 1. Traffic Count Map of Manhattan, Kansas. Data prepared by the Kansas Department of Transportation Bureau of Transportation Planning, March, 2007.

## ***C. Qualitative Analysis***

In addition to the data collected above, stakeholder interviews have identified further information about the market conditions in the Valley, including the following:

- Strong desire has been expressed for additional restaurants and service commercial uses to address the needs of commuters, air travelers and employees in the Eureka Valley area.
- New retail centers located in the Eureka Valley should be focused on a community-scale to serve existing and future commuters, residents, travelers, and employees of the Eureka Valley and are not intended to replace existing regional retail centers in Manhattan and Junction City.
- Demand for land suitable for bioscience research facilities is expected to grow as KSU continues to expand its research activities following K-State 2025 Plan and NBAF begins construction.
- Rail access has not been identified as a primary concern for existing businesses in the Eureka Valley.

## ***D. Synthesis: Overall Conclusions***

Given the economic characteristics of the region conveyed above, the purpose of this analysis is to better explain the role that the Eureka Valley could play in maximizing the region's economic potential. Understanding the general characteristics of the region's economy and the nature of the K-18 Corridor also informs the planning process by providing insight into the market factors that are likely to influence development in the area, as well as offering conclusions on ways in which the plan might best capitalize on these market factors. The six salient conclusions resulting from the study are:

- Automotive-supporting land uses, such as convenience stores, gasoline stations, repair shops, and car washes, are appropriate in the Eureka Valley – Highway K-18 Corridor given its high traffic volumes, community-wide projected demand for these businesses, and the type of users (many commuters and travelers).

- Restaurants and other food-related businesses, including convenience stores, also make sense for the Valley, given the high demand for such services, particularly by employees in the Valley, the current lack of supply, and the nature of the area's users.
- Based on measured traffic volumes, interchanges along K-18 have very high visibility for motorists and therefore provide good opportunities for commercial businesses.
- Industrial, warehousing, and manufacturing uses do not currently play a commanding role in the region's economy; however, the Eureka Valley remains a prime location for these types of businesses due to its good access to the expressway and I-70, and relatively flat buildable land.
- While the number of bioscience and research related uses is expected to grow based on expanding research activities at Kansas State University and anticipated activity associated with NBAF, it is difficult to project without a prior history of expansion. However, the Eureka Valley provides a good location to accommodate demand for these types of businesses.
- The manufacturing, scientific-professional, specialized industrial service, and education and specialized training sectors (i.e. basic industries), are more likely to create true economic growth by bringing in new jobs and capital with their associated magnifier effects, rather than re circulating existing capital by competing with existing business, as could happen with the construction of a new regional retail center in the Eureka Valley.

In summary, while it is recognized that provision of various commercial and retail services will be important to the daily needs of commuters, travelers, employers and employees in the Eureka Valley — Highway K-18 Corridor, the primary emphasis of a coordinated long term economic development effort should be focused on the types of basic industrial, specialized service, and training activities that will attract new capital and job growth that does not already exist in the area and will more fully take advantage of the presence of Fort Riley, Kansas State University, the Manhattan Regional Airport and NBAF.

# Appendix B. Public Participation

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## *A. Ogden Open House*

At the Ogden Community Center on April 11th, 2012, City and County Staff conducted an Open House for the Eureka Valley K-18 Corridor Plan from 4:00 – 7:00 PM. Staff members displayed a range of maps showing the existing conditions of the Eureka Valley, as well as boards with the Steering Committee’s Vision Statement and a list of the primary issues identified through the stakeholder interview process around the perimeter of the room. This “open house” format allowed members of the public to move through the room at their own pace, talking to Staff members about particular issues, and placing colored dots next to issue statements that were particularly important to them (each person was allotted a maximum of four such voting dots).

Staff provided comment sheets for residents to express their specific concerns or interests. At 5:30, a short presentation was given that provided an overview of the main issues and conditions present in the plan area, as well as a synopsis of the planning process and the next steps in the process. A short question-and-answer period followed the presentation.

Forty (40) members of the community attended the Open House in Ogden, leaving two comment forms. In general, the comments expressed concern over access to Ogden due to the new K-18 realignment, and a desire to create a “welcoming entrance into Ogden and Manhattan.”

## *B. Manhattan Open House*

City and County Staff conducted an additional open house for the Eureka Valley K-18 Corridor Plan in Manhattan from 4:00 – 7:00 PM on April 19th, 2012, in the City Commission Room of City Hall. The format of the room, presentation, and opportunities for comment were very similar to the Ogden Open House. Seventeen (17) members of the community attended, leaving four comment sheets. The following concerns were raised through written comments:

- The potential for further development in the flood plain to cause negative impacts on existing businesses.
- Maintaining existing agricultural land, especially where that land is in the flood plain.

- The future impacts to residential properties south of the Corporate Technology Park on Wildcat Creek Road, including apprehension that the City may eventually “force out” residential development in that area.
- The potential negative aesthetic impacts of new development in the Eureka Valley, including “fast food restaurants, department stores or car dealerships.”
- The scenic quality of the rural landscape in the Eureka Valley area, and its potential to be one of the City’s main “selling points” in the future - “appreciation for the preservation of this unique and beautiful landscape.”

### **Issue Identification/Prioritization**

The results of the unstructured voting-dot exercise, in which attendees were given four colored dots and instructed to place them next to written statements of the issues in the plan area that were of the greatest importance to them, are shown below in Table 1. In general, the purpose of this activity was to gather information on the topics of greatest public concern, and to ascertain the relative importance of issues that may have been previously unknown to the Steering Committee and/or Staff. The results of the issue identification/prioritization voting show that, at a very coarse scale, no one particular set of issues presents itself as overwhelmingly important to the public at this stage in the process.

**Table 1. Results of Voting Dot Exercise.**

ISSUE	Votes	
	OGD.	MAN.
<b>Transportation</b>		
1. Develop a north/south road west of Scenic Drive to connect K-18 to Anderson Avenue.		1
2. Extend Scenic Drive south to I-70 through Ashland Bottoms (in 20-30 years).		
3. Plan for all forms of transportation (cars, bus, bike, walking) and mass transit in the Eureka Valley.	1	1
4. The K-18 Corridor needs to provide convenient and safe access to employment centers, for businesses, and for delivery trucks.		1
5. Seek an opportunity for developing a truck/rail transfer point in the corridor south of K-18.		
<b>Airport</b>		
1. Manhattan Regional Airport is important to business in the region and needs to be protected from incompatible land uses and encroachment that would limit its ability to grow and serve existing and future needs.	2	1
<b>Land Use</b>		
1. Bioscience research activities should be located along Eureka Drive and/or south of K-18. Activities that incorporate outdoor animal holding pens should be located on second tier lots out of view from Eureka Drive and K-	1 no vote	
2. Prohibited Uses - Certain uses should not be allowed in the area (i.e. adult entertainment establishments)	4	1
<b>Industrial</b>		
1. Provide areas for light industrial and light manufacturing uses.		1
2. Discourage heavy industrial uses along the K-18 Corridor.		
<b>Commercial/Retail</b>		
1. Provide a range of retail activities (hotels, restaurants, gas and other) to serve employment centers throughout the valley as well as travelers.	5	2
2. Retail uses should be developed south of K-18 by Ogden.	3	1
3. New retail commercial services should be located at the K-18 interchanges.	3	1
<b>Fort Riley</b>	OGD.	MAN.
1. Protect Fort Riley from incompatible uses and encroachment that could limit the Fort's operations and viability to the region.	1	1
<b>Economic Development</b>		
1. The Eureka Valley should focus its growth as a vibrant employment center for the region.		
2. Promote an I-70 business loop through Ogden and Manhattan for increased regional economic opportunities.	3	1
<b>Aesthetic Quality/ Design Standards</b>		
1. The Flint Hills and Kansas River provide a scenic backdrop to the area. Development along the Valley rims would have a negative impact on the entire valley.	1	
2. The K-18 Corridor should promote an attractive entrance into Manhattan with some level of aesthetic controls and property maintenance, to provide a positive impression of the area.		1
<b>Billboards</b>		
1. Billboards can be informative and provide good information and should be constructed without excessive regulations or design guidelines.		1
2. Billboards are less important in the digital business environment and do not create a positive image of the area.	3	1
<b>Parks</b>		
1. Parks should go in the floodplain areas.		5
2. Plan for bike/pedestrian trails along the river, preserve adequate access points and provide connections to other park and recreation facilities in the area.	1	5
<b>Agriculture</b>		
1. Good agricultural land between the foothills and the airport should be preserved.	4	
2. Do not create a "green" zone that preserves agricultural land and does not allow for development.		1
<b>Floodplain</b>		
1. Allow some development in the floodplain following current guidelines.	1	2
2. Do not allow development in the Floodplain.		3

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# Appendix C. SWOT Analysis

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The following Vision Statement, Value Statements and SWOT analysis were developed in a series of meetings by the Steering Committee.

## *Vision Statement*

The Eureka Valley K-18 area will be an efficient, scenic and well designed transportation corridor that invites business and commercial development and provides employment opportunities while preserving the Flint Hills character of the region.

## **Value Statements**

1. Safe and efficient transportation corridor.
2. Regional Airport hub.
3. Economically, socially and environmentally sustainable.
4. Vibrant employment center for the region.
5. Convenient and safe access to employment centers.
6. Provide services for employment centers and travelers.
7. Promote an I-70 business loop through Ogden and Manhattan for increased regional connectivity.
8. The Scenic Flint Hills and Kansas River provide a backdrop for the area.
9. Regional gateway to Ogden, Manhattan and Riley County.

## *Existing Strengths*

### **Reduced Floodplain**

- The new K-18 drainage system is anticipated to improve the flood plain.

### **Property Access**

- K-18 can be used to access I-70 from Ogden, Riley County and Manhattan.
- Great access to I-70 – could become designated as a “business loop.”

- Gateway from west to Ogden and Manhattan.
- Easy access to the airport.
- Proximity to Fort Riley, Ogden and Manhattan with easier, faster, safer, access to Junction City.
- Potential rail access for properties located on the south side of existing tracks.
- K-18 Expansion opens up land for growth, traffic flow and possibly an interstate loop to Manhattan and K-177.
- Opportunities for new business and business expansion. Recreational facilities (Anneberg park style).

### **Workforce Access**

- Good access to labor pools for businesses in Manhattan, Junction City, and smaller towns east, west and south.
- Workforce accessibility easier for employees (as soon as K-18 work is done) since outside all cities – JC, Wamego, Manhattan, Clay Center, Abilene, Ogden, Riley, Leonardville, etc.

### **Development & Infrastructure**

- Manhattan Regional Airport.
- North of K-18 –large tracts of land with infrastructure in place for future business development.
- Land largely above the 100 year floodplain.
- Relatively low cost for development (level ground and not in rock).
- Existing infrastructure, gas, fiber optics, fire service, water and sewer service.
- Limited residential development/zoning reduces encroachment on airport and Fort Riley.

### **Environmental Assets**

- Potential areas for parks and recreational areas.
- Potential regional park site at the east end of Eureka Valley and north of K-18.
- Scenic rural landscape surroundings.
- Environmentally diverse area, waterways, plant-life, hillsides, currently “preserved.”
- Views.

### **Jurisdictional Assets**

- Multiple jurisdictional cooperation between Fort Riley, Riley County, Ogden and Manhattan will contribute to the overall corridor plan.

## ***Existing Weaknesses***

### **Property Access**

- Residential access to the City of Ogden is no longer as direct as before the K-18 realignment.
- Access from areas to the north of the valley is limited.
- Two-lane Scenic Drive, Wildcat Creek Road and other local roads might not be designed to handle increased traffic loads.
- Access to undeveloped property south of K-18 is not good; however K-18 improvements should address the major problems.
- Access to commercial areas and airport is not good ; however K-18 improvements should address the major problems.

### **Infrastructure & Environmental Limitations**

- Lack of infrastructure south of K-18.
- Floodplain and other low areas subject to flooding.
- Noise from the airport and from Fort Riley.
- Airport approach zones associated with Manhattan Regional Airport and Marshall Army Airfield.
- Encroachment on Fort Riley and Airport.

### **Jurisdictional Challenges**

- Multiple jurisdictions involved in decision-making can slow process down, create conflicts.

### **Planning Challenges**

- Existing commercial areas built prior to adopted plan.
- Commercial uses not necessarily planned well with nearby rural/agricultural uses.
- Need for rezoning of some properties.
- Need planning studies to develop roads north and south of K-18.
- Lack of a current detailed plan, mixed uses, incompatible land uses, signage controls.

## ***Future Opportunities***

### **Planning**

- Ability to develop master plan at a time when major roads are being rebuilt in area.
- Footprint of major thoroughfares unlikely to change for next 20+ years.
- Plan for growth in the area.

## **Development**

- The K-18 improvement provides an opportunity to increase commercial and residential development in Ogden.
- Industrial, retail and commercial development opportunities.
  - o Commercial service facilities: restaurants, fast food, convenience store with gas.
- Defense-related business opportunities.

## **Environment**

- Develop a welcoming, attractive entrance to Manhattan.
- Create a commercial corridor that preserves the beauty of the surrounding hillsides.
- Opportunities for parks and recreation facilities.

## **Airport-Related**

- Regional Airport use is growing and bringing more travel focus to area.
- Increased use of the Corporate Technology Park for airport related uses/businesses.
- Airfreight businesses.
- General aviation.
- Airport growth and expansion.

## **Regional Access & Services**

- Coordinate utility services between cities and with Fort Riley – (Fort Riley wants to receive services not sell services).
- Explore regional public transportation system.

## ***Future Threats***

### **Access**

- Since direct access to Ogden has been removed there is a concern on how this will affect access for emergency vehicles.

### **Incompatible Uses/Encroachment**

- Unplanned development that is incompatible with an adopted Land Use Plan.
- Increasing noise contours from airports and Fort Riley.
- Incompatible land uses and encroachment could result in a reduction or curtailment of Fort Riley's ability to train and fulfill mission.
- Land-locking/encroachment around the Manhattan Regional Airport in a manner that would preclude expansion.

### **Parochialism**

- If jurisdictional entities in the Eureka Valley (City's, County, Townships) do not cooperate to plan for mutually beneficial growth.

### **Unplanned Development**

- Development could move faster than the planning process and create development in areas that are not desirable or in incompatible land uses.

### **Infrastructure**

- Uncoordinated and/or duplicated rural and urban infrastructure.
- Development that is not required to participate in future benefit districts for infrastructure improvements.
- Flooding.
- Competing urban service providers (Ogden, Manhattan).
- Development that occurs faster than the ability of local governments to provide services and infrastructure .
- Local government funding shortfalls.

## **Environment**

- Loss of agricultural land in Eureka Valley (Riley County's 2025 Plan identifies specific areas for agricultural preservation and recognizes the Manhattan Urban Area Comprehensive Plan's development recommendations in the Eureka Valley).
- Billboards along roadways.
- Preserve environmental quality of the Kansas River.

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# Appendix D. Land Use Categories

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The following land use categories provide a general description of the uses identified on the Future Land Use Map. Applicable zoning districts that could be utilized to implement each category are also identified. However, determination of the most appropriate zoning implementation tool in each specific case should be based upon a complete analysis of the site and the applicable goals, objectives and policies provided in the Eureka Valley Highway K-18 Corridor Plan and other applicable planning and implementation documents. In addition, it is anticipated that the three local jurisdictions may develop additional zoning tools to facilitate implementation of the Eureka Valley Highway K-18 Corridor Plan.

## **Neighborhood Commercial**

Neighborhood Commercial Centers are intended to provide a range of services, including supermarkets, restaurants, movie rentals, drycleaners, drugstores, filling stations, smaller specialty shops, retail and health services, and business and professional offices for residential areas. Neighborhood centers vary in scale and character. Smaller, limited use centers may be fully integrated into the surrounding neighborhood and be accessed primarily by pedestrians and bicycles; while larger centers will function more independently, providing ample parking and numerous stores. Mixed-Use Neighborhood Centers that also incorporate residential uses are appropriate in a master planned setting. Neighborhood Centers often serve more than one nearby neighborhood in order to maintain sufficient economy of scale. Neighborhood centers should generally be located at the intersection of arterial and collector streets and be designed to be compatible with and sensitive to surrounding residences.

This category is shown on the Future Land Use Map adjacent to the City of Manhattan. Applicable zoning districts for this land use category may include:

- **City of Manhattan:** C-2 Neighborhood Shopping District; or Planned Unit Development (PUD).

## **Community Commercial**

Community Commercial Centers provide a mix of retail and commercial services in a concentrated and unified setting that serves the local community and may also provide a limited draw for the surrounding region. These centers may provide sales of a variety of general merchandise, grocery, apparel, appliances, hardware, lumber, and other household goods. Centers may be anchored by uses, such as a grocery store, and may include a variety of smaller, complementary uses, such as restaurants, specialty stores (such as books, furniture, computers, audio, office supplies, or clothing stores), professional offices and health services.

Although some single use highway-oriented commercial activities will continue to occur in some areas, this pattern of development is generally not encouraged. Commercial uses should be clustered at the identified commercial nodes, which result in more viable areas, rather than being scattered or developed in linear, “strip” configurations along major street corridors.

Applicable zoning districts for this land use category may include:

- **City of Manhattan:** C-2 Neighborhood Shopping District; C-5 Highway Service Commercial District; or PUD;
- **City of Ogden:** C-2 General Commercial; or MU Mixed Use District;
- **Riley County:** C-1 Neighborhood Business District; C-2 Shopping Center District; C-3 General Business District; or PUD.

### **Central Business Commercial**

Central Business Commercial is a special purpose designation for the downtown core and consists of a variety of civic, cultural, retail, commercial, business and professional offices and financial institutions, as well as residential uses in a compact, vibrant setting enhanced by a large inventory of older, and in some cases historic, structures and a pedestrian-friendly scale.

The Central Business Commercial category is only shown on the Future Land Use Map within Ogden. Applicable zoning districts for this land use category may include:

- **City of Ogden:** C-1 Central Business District.

### **Residential Low/Medium Density**

The Residential Low/Medium Density designation incorporates a range of single-family, single-family attached, duplex, and town homes, and in appropriate cases includes complementary neighborhood-scale supporting land uses, such as retail, service commercial, and office uses in a planned neighborhood setting, provided they conform with the policies on Neighborhood Commercial Centers. Small-scale multiple-family buildings and condominiums may be permissible as part of a planned unit development, or special mixed-use district, provided open space requirements are adequate to stay within desired densities. Densities in the Residential Low/Medium designation range between less than one dwelling unit/acre up to 11 dwelling units per net acre.

Applicable zoning districts for this land use category may include:

- **City of Manhattan:** R-S, R, R-1 (Single-Family Residential Districts); R-2 Two-Family Residential; or PUD;
- **City of Ogden:** RS, R-1 (Single Family Residential Districts); or R-2 (Two-Family Residential);
- **Riley County:** B-1 Two-Family Residential; B-2 Multi-Family Residential; B-3 Detached Multi-Family Residential; SF-1 through SF-5 (Single-Family Residential); or PUD.

### **Residential High Density**

The Residential High Density designation is designed to create opportunities for higher density neighborhoods and consists of a building or portion thereof designed for occupancy of two or more families living independently. Individual dwelling units may be detached buildings used as dwelling units located on a lot that is in single ownership having yards, courts, or facilities in common.

The only high density residential area shown on the Future Land Use Map is within the City of Ogden. Applicable zoning districts for this land use category may include:

- **City of Ogden:** R-3 General Residential.

### **Office-Research Park**

The Office/Research Park land use designation is intended to provide concentrated areas of high quality employment facilities, such as corporate office headquarters, research and development, and educational facilities in a planned, “campus-like” setting. Office/Research Park developments may be incorporated into a master planned neighborhood, or located in close proximity to residential areas. Activities within an employment area typically take place indoors, and outdoor storage or other more industrial types of uses are typically not permitted. Some specialized research parks may include limited prototype production. This category may also include smaller office complexes consisting of a single building or several buildings that are not located within a typical office park setting.

Applicable zoning districts for this land use category may include:

- **City of Manhattan:** Primarily the I-1 Research Park District; I-5 Business Park District; or a PUD.

In cases where restrictive covenants and/or overlay districts such as the Corporate Technology Park Overlay District are involved, the I-2 Industrial Park District and the I-3, Light Industrial District might be appropriate. The C-1, Restricted Business District might be applicable in cases of limited or smaller sites.

- **City of Ogden:** I-1 Light Industrial;
- **Riley County:** D-4 Business Park District; or PUD.

### **Industrial**

The Industrial designation is intended to provide locations for manufacturing and business parks, light industry, limited heavy manufacturing, warehousing and distribution, research testing and prototype production, specialized training, indoor or screened outdoor storage, and a wide range of other industrial services and operations. Design controls within an Industrial area are not as extensive as in the Office-Research Park category and a broader range of uses is permitted.

Applicable zoning districts for this land use category may include:

- **City of Manhattan:** I-1 Research Park; I-2 Industrial Park; I-3 Light Industrial; I-5 Business Park; or PUD;
- **City of Ogden:** I-1 Light Industrial;
- **Riley County:** D-1 Industrial Park District; D-2 Light Industrial; D-3 Heavy Industrial; D-4 Business Park District; or PUD.

### **Public/Semi-Public**

Schools, government offices, community centers, fire stations, airport, libraries, hospitals, cemeteries, churches, and other places of worship. Also includes facilities needed for essential public services such as electrical substations, water and wastewater facilities, and other similar uses and accessory commercial services related to the Airport. Churches are also an acceptable use in residential and some commercial areas.

These types of uses are generally incorporated, on an as needed basis, within broader development areas or neighborhoods and are not specifically zoned for the single use in question. As such these uses would most likely be zoned as part of a larger area utilizing the applicable zoning district for that area, as per the Future Land Use Map.

Within the City of Manhattan, many publicly owned and operated facilities would utilize the Municipal Facility process to authorize the use and determine the site layout and any applicable limitations, regardless of the zoning designation in the area. The Manhattan Regional Airport, with its associated fire station, and the Flint Hills Job Corps Center are major public uses that are already zoned appropriately.

### **Preserved Open Space**

Publicly or privately owned open space to protect sensitive natural areas and/or drainage improvements. Neighborhood or scenic parks, trails, and other recreational facilities that may be preserved with or without public access to protect sensitive natural areas. Includes privately owned open space with or without public access.

Preserved open space areas are typically part of a larger area that is zoned for the adjoining land uses, as per the Future Land Use Map, with the preserved open space area being protected through some type of easement and/or deed restriction, and not through a specific zoning district. Easements may be purchased and/or established through the platting process.

### **Parks & Recreation**

Parks and Recreation consists of neighborhood, scenic, and community parks, trails, and recreational facilities and is intended to provide for the active and passive recreational needs of the community. These areas are generally provided by public agencies (city, county, state or federal), although recreational facilities, such as privately operated golf courses, are also included.

Park and recreation uses are typically associated with, and zoned as part of surrounding residential neighborhoods, or might be a private commercial activity, such as a golf course. Within the City of Manhattan, many publicly owned and operated facilities would utilize the Municipal Facility process to authorize the use and determine the site layout and any applicable limitations, regardless of the zoning designation in the area.

The implementation zones for this land use category may include:

- **City of Manhattan:** Residential districts;
- **City of Ogden:** Any districts appropriate for the surrounding land use;
- **Riley County:** AG Agricultural District, all residential and commercial zones, or PUD.

### **Environmentally-Sensitive Areas**

This category is intended for the protection of key wildlife habitat, wetlands, floodways, tall grass prairie, riparian areas, and native woodlands and also includes areas of excessively steep slope. These areas may or may not have public access, depending on environmental sensitivity of the area. They might include passive recreational uses with minimal infrastructure requirements, such as trails, open space areas, natural habitat and riparian areas. Development within these areas will not be permitted. A higher level of scrutiny will be placed upon development proposals adjacent to these areas to minimize impacts upon them. Areas may or may not be publicly owned.

Environmentally sensitive areas are typically part of a larger area that is zoned for the adjoining land uses, as per the Future Land Use Map, with the environmentally sensitive area being protected through some type of easement and/or deed restriction, and not through a specific zoning district. Easements may be purchased and/or established through the platting process.

### **Agriculture**

The management of land for the production of food, fiber and economic benefit, with economic benefit limited to uses that maintain the productive capacity of the land.

The agricultural category is shown on the Future Land Use map in those areas that are not anticipated to develop with urban scale land uses or may have limited development potential due to floodplains or other constraints. It is anticipated that these areas will remain within Riley County's AG Agricultural District.