

# US-75 ACCESS MANAGEMENT PLAN



**MARCH 2014**

**PREPARED FOR: CITY OF INDEPENDENCE, KANSAS  
KANSAS DEPARTMENT OF TRANSPORTATION**

**KDOT # 75-63 KA-2857-01**



## **ACKNOWLEDGEMENTS**

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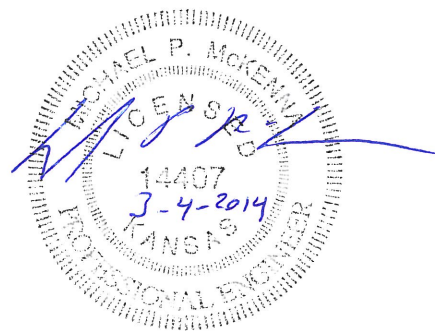
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# 1. PROJECT OVERVIEW

## 1.1 Introduction and Project Purpose

The US-75 Access Management Plan has been conducted by the Kansas Department of Transportation (KDOT) in cooperation with the City of Independence as part of the \$8 billion Transportation Works for Kansas (T-WORKS) program. Access management is the systematic control of the location, design, and operations of driveways, median openings, interchanges, and street connections to a roadway. Managing access is important because each access along a roadway introduces potential for conflict and friction within the traffic stream. Providing access to adjacent property is also important for many reasons – including economic activity and growth. Studies have shown managed corridors are more economically viable than unmanaged corridors.

Numerous studies have also shown corridors without good access management often have more crashes and lower travel speeds. The Federal Highway Administration (FHWA) has listed access management as one of the nine proven safety countermeasures credited with significantly reducing the national highway fatality rate between 2007 and 2010. Lastly, access management techniques help protect taxpayer investments in transportation by promoting safe, efficient traffic flow, thus reducing the need to rebuild infrastructure. Another way of thinking about it is access management attempts to balance property access with traffic safety and mobility

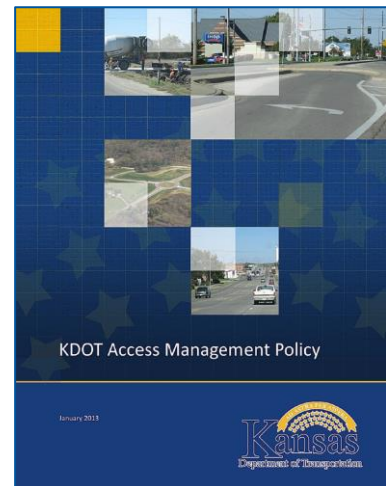
The US-75 corridor is a major thoroughfare and has significant development potential. A variety of transportation challenges may therefore come about, such as the need for additional access to the highway. The US-75 Access Management Plan identifies a coordinated strategy to provide access while promoting safe and efficient traffic flow.

The local KDOT area office and the City of Independence have been promoting access management along the US-75 corridor over the past few years by consolidating driveways when opportunities arose. Although they have been successful, a complete access management plan is needed to continue this process. The US-75 Access Management Plan provides a corridor specific guide to augment KDOT's Access Management Policy (AMP). KDOT and the City of Independence have committed to an ongoing collaborative implementation process in order to achieve this vision and accomplish this plan's stated goals.

The US-75 Access Management Plan will identify a corridor-based strategy to achieve the following goals:

1. Improve motorist safety within the study area.
2. Enhance and preserve efficient traffic flow along US-75 through Independence.
3. Enhance and preserve the economic development potential of Independence, as related to commercial development adjacent to US-75 and the subsequent need for reasonable highway access.
4. Promote continued intergovernmental coordination between KDOT and the City of Independence.

This planning process is focused on preserving the integrity of the existing US-75 alignment by promoting safe and efficient traffic flow. Because of this, the process considered but did not significantly evaluate an Independence bypass. A separate investigation would be necessary to evaluate a bypass.



## 1.2 Planning Area

The City of Independence, situated along US-75, is the county seat of Montgomery County. Located in southeastern Kansas, Independence is about 15 miles north of the Oklahoma state line. Nearby Kansas towns include Caney, Elk City, Cherryvale, and Coffeyville. US-75 approaches Independence from the southwest, approximately one mile west of the city limits, US-75 intersects US Highway 160. Sharing the roadway, both highways travel east into the heart of Independence where US-160 continues east, and US-75 turns and exits the city to the north. The limits of the project encompass the properties along US-75 within the city limits of Independence and the development area near Independence Municipal Airport, southwest of the city.



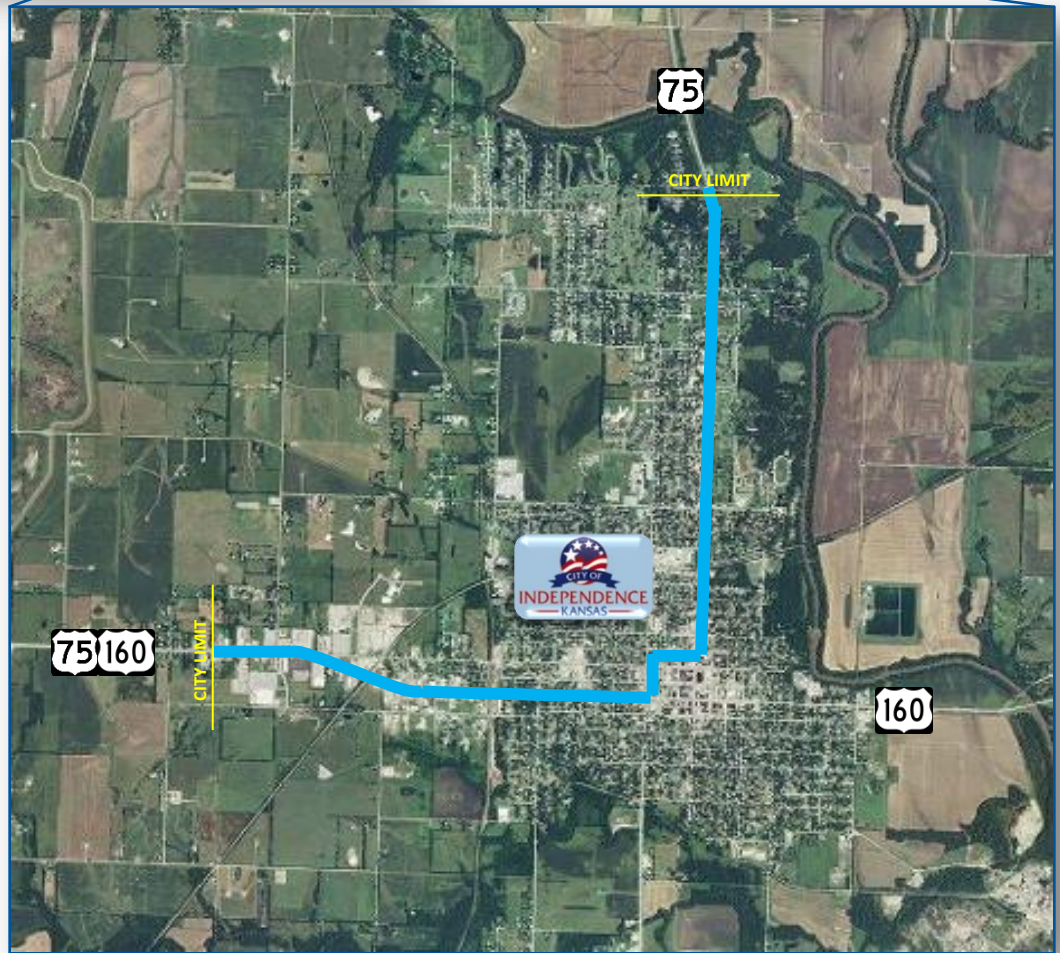
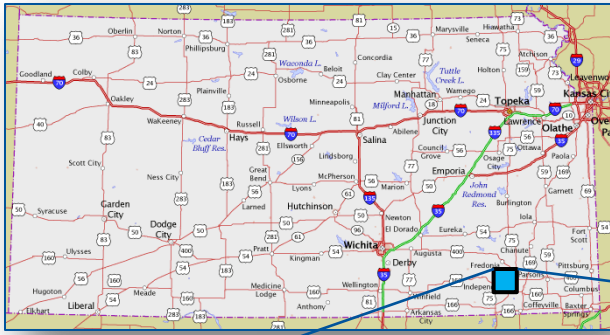


Figure 1: Project Limits Map

### 1.3 Priority Areas

The City of Independence has wanted to improve US-75 from 10th Street through 19th Street for some time due to deterioration from heavy traffic and numerous underground utility breaks. When Corridor Management funds became available, an Access Management Plan was needed to be able to apply these funds to this Main Street project. The T-WORKS project 75-63 KA-3300-01, consisting of rebuilding US-75 between 10th Street and 19th Street, is the first priority of the city and its citizens. Detailed discussion about this project is in Section 6.3.

When the concept of the Access Management Plan was being discussed with the City of Independence they began identifying additional priority areas along the US-75 corridor. Many of these locations were identified because of perceived and actual safety concerns:

- The intersection of US-75 and Chestnut Street. City staff has indicated this intersection poses several challenges to the traveling public.
- The intersection of US-75 and Pennsylvania Avenue.
- US-75 from the west city limits to the bridge spanning the Union Pacific railroad line near 21st Street. Future commercial and industrial development is anticipated along this stretch of the corridor. Laurel Street and Peter Pan Road will be the primary access points for development north of US-75 in this area.
- The offset intersections of Taylor Road and Morningside Drive with US-75.
- The high percentage of truck traffic using US-75 and the lack of an alternative truck route around the city. The trucks pose a safety concern sharing the road with passenger vehicles and they increase the rate of deterioration of the pavement along the route.

## 2. ACCESS MANAGEMENT OVERVIEW

### 2.1 Understanding Access Management

Access management, as defined by the Transportation Research Board (TRB), is “the systematic control of the location, spacing, design, and operations of driveways, median openings, interchanges, and street connections to a roadway.” This process involves managing the number of driveways, or access points, along a roadway in order to reduce the number of conflict points a driver may encounter. Conflict points are locations within the stream of traffic flow where vehicles stop, slow, merge, or cross paths. The greater the number of conflict points along the traffic stream, the greater the chance that two vehicles will collide. Access management attempts to reduce the number of conflict points in order improve traffic flow and safety. Methods used in reducing the number of conflict points are discussed in Section 2.3.

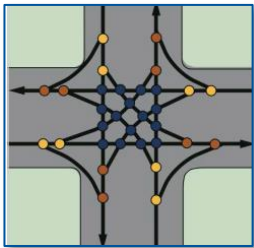
### 2.2 Roadway Functional Classification

A key concept of access management is the functional classification of roadways. Roadways are typically grouped according to the type of traffic service they are intended to provide. There are three categories (or classifications): arterial, collector, and local.

Arterial roadways provide the highest level of service at the greatest speed for the longest uninterrupted distance, with some degree of access control. Collector roadways provide a lower level of service than arterial roadways at a lower speed for shorter distances by collecting traffic from local roads and connecting them with arterials. Local roadways consist of all roads not defined as arterials or collectors; primarily provide access to land with little or no through traffic and low speeds.

US-75 is functionally classified as a principal arterial whose primary function is to move traffic through and within Independence. According to the Route Access Control Map from the KDOT Bureau of Transportation Planning, the highway is categorized as Partial Access Control 1. This classification allows for upgrading sections or the entire facility to full access control, if necessary. New access will be limited to public roads only. US-75 is also a major commercial/industrial corridor and adjacent properties need access. These two functions are not working well together creating congestion and safety issues.

### 2.3 Access Management Design Techniques

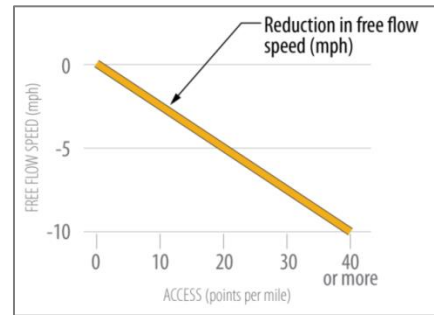


There are multiple methods utilized to improve safety and efficiency of a highway. The design techniques used in this study to analyze the existing corridor and make recommendations come from the KDOT AMP. The items listed below are procedures that could be used along the study corridor and can also be applied to other parts of Independence to achieve the same benefits. Each of the techniques listed below have a variety of benefits when utilized appropriately. Keep in mind this is not a complete list of all the possible techniques.



### Minimize Conflict Points

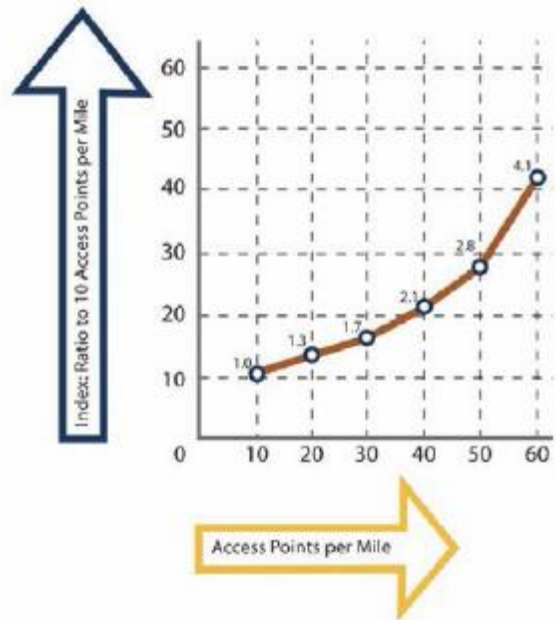
Conflict points are locations where vehicles may come into conflict with another vehicle. Reducing conflict points creates fewer opportunities for vehicles to need to slow down to turn, fewer vehicles cutting in front of others, and fewer distractions for drivers. Reducing the conflict points usually results in fewer crashes. Any reduction in conflict points also provides a more efficient corridor by minimizing changes of speed and improving the flow of traffic along the corridor and through intersections.



Each three-legged intersection or typical driveway creates nine conflict points; while each four-legged intersection creates 32 conflict points. Adding pedestrians and bicycles creates 48 more conflict points at each four-legged intersection. Right-in/right-out entrances are a tool that reduces conflict points while still providing access. These can easily be created with a median or a splitter island.

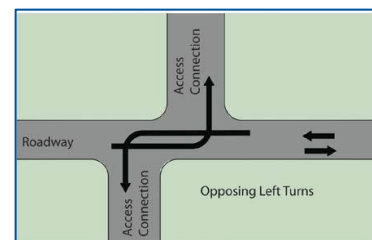
### Access Spacing

Limiting the number of driveways and increasing the spacing between driveways reduces conflict points and decreases the chances for a crash. The KDOT AMP has criteria for this spacing based on the class and speed limit of the highway. US-75 through Independence has speeds ranging from 20 mph to 50 mph and has a B Route classification (Table 1). According to Table C-1 in the KDOT AMP, access spacing for this classification ranges from 115 feet to 230 feet depending on the speed.



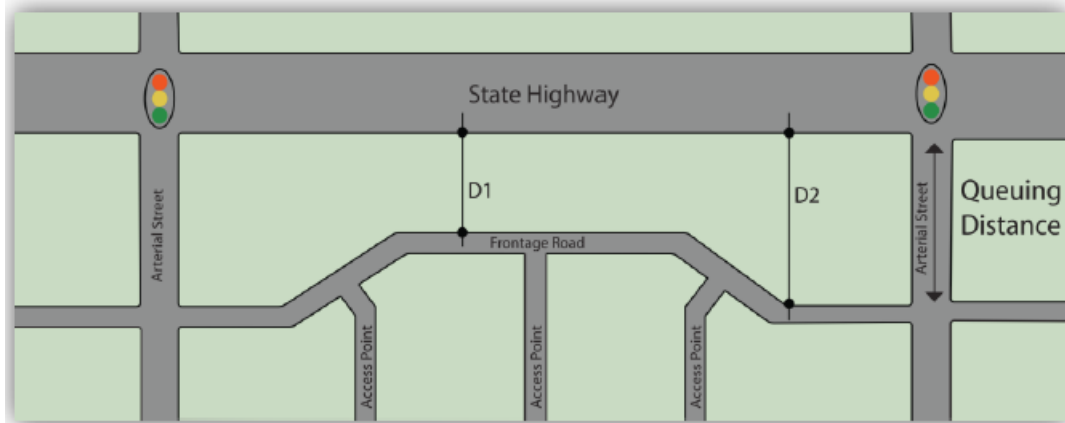
### Offset Lefts

Offset lefts is a condition where highway traffic turning left into a business from the center lane will conflict with the opposing movement if the driveways are not across from each other or in a positive offset direction. Realigning or reducing accesses can correct this issue.



### Frontage Roads

Access management and interconnectivity between properties is critical to maintaining a safe and efficient transportation system. Frontage roads are roadways parallel to an arterial that can be used to remove traffic and turning movements from the highway. A frontage road is normally located between the arterial and developed land. The disadvantage to a frontage road is the need to move the intersection of it and cross streets away from the arterial. This can possibly lead to inefficient use of space and higher costs. Another design is to use a reverse frontage road, one that runs behind developed land. Besides addressing the issues associated with a frontage road, a reverse frontage road also allows for development on two sides of the road, thus increasing opportunity for economic development at a lower cost.



Source: Modified version of figure in TRB Access Management Manual, 2003, p.194.

D1 = Minimum midblock separation  $\geq 25$  feet

D2 = Minimum separation at intersection  $\geq 300$  ft

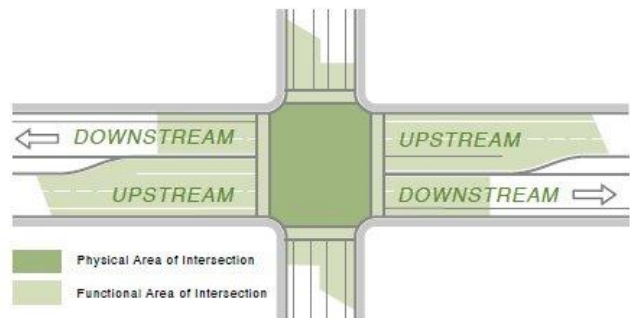
### Intersection Improvements



Separating turning movements at roadway intersections can reduce the likelihood of crashes and increase overall efficiency by moving slower turning vehicles out of the through lane. Adding these auxiliary lanes can potentially reduce rear-end collisions and maintains speeds through the intersection. Adding turning lanes where warranted helps more traffic traverse the intersection.

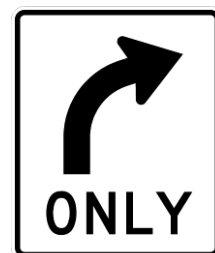
Updating signal timings to current volumes and improving driveway widths, radii, and slopes will help move traffic smoothly off, on, and along the highway. Signal timing describes the amount of green time a specific leg receives for each cycle. As traffic patterns change over time, signal timings should be adjusted. A well timed signal allows traffic to flow efficiently with minimal delay.

Moving driveways away from intersections also improves the efficiency of intersections. This area is called the functional area and includes the distance traveled while deciding if needing to stop, deceleration distance while stopping, and the length of the queue.



### Medians

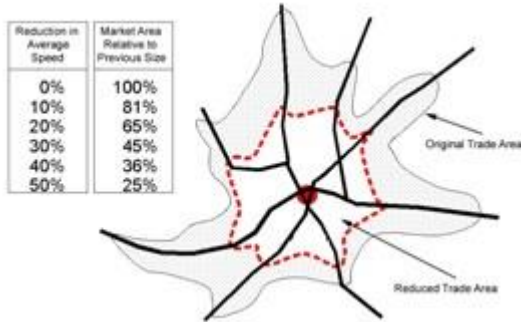
Another technique that has a proven track record of reducing crashes on an arterial is to construct medians. These raised (non-traversable) or grass areas installed in place of a two-way left-turn lane (TWLTL) limit left turn movements to specific locations of a roadway. Medians near intersections are particularly beneficial as accesses within the queue length significantly decrease the efficiency of an intersection.



## 2.4 Benefits of Access Management

Access Management is one of the FHWA’s nine proven safety countermeasures. KDOT has created the AMP to guide the execution of proper access management. This has the potential to benefit multiple different users in a transportation system.

Promoting safety and efficiency along a corridor creates a good transportation environment – which is good for business. Actual and perceived safety of a customer entering or exiting a business promotes return customers. Fewer entrances also increase pedestrian safety and activity along a corridor. Also, efficient roadways can decrease travel time for both customers and delivery vehicles. As travel time decreases along the corridor, the market area grows. Having an access management plan in place will encourage future development to be constructed with current criteria and promote safety and efficiency.



“One study in Texas indicated that corridors with access control improvements experienced an 18 percent increase in property values after construction.”

- Federal Highway Administration

There usually is not a specific timeline to implement access management techniques. Access management is generally integrated with roadway projects, property owner changes, redevelopment, or when safety concerns present themselves. Additionally, the specific type of improvements recommended in this plan may be different when it is time for the construction to be completed. Nearby factors, traffic volumes, land uses, and many other aspects may necessitate a different or better application.

## **3. PUBLIC OUTREACH STRATEGY**

### **3.1 Public Outreach Overview**

Public outreach is a process by which interested and affected individuals, the business community, special interest groups, and governmental entities are informed of a project and its goals, and have the opportunity to participate in the decision making process. Public outreach supports the exchange of ideas and information among interested individuals and groups, which is critical to resolving the challenges involved in any project. Outreach also creates and builds partnerships, involves the community, helps form mutual understanding, encourages trust, reduces conflict, and ultimately leads to a more complete and successful project.

### **3.2 Stakeholder Meetings**

Two stakeholder meetings were held October 9th, 2012 at the Independence Memorial Hall at 2:00 p.m. and 4:00 p.m. Stakeholders are individuals and groups who are affected by, or have an interest in, a particular project or action. A wide variety of stakeholders were involved in this project, including but not limited to:

- City of Independence government
- Montgomery County government
- Residents
- Businesses
- Business groups, e.g. chambers of commerce
- Property owners
- School districts
- Media contacts

The objective of these meetings were to provide stakeholders with the purpose and goals of the project and provide stakeholders an opportunity to participate in the decision making process. Creating and building relationships with stakeholders also helps to increase support for of the project. Community leader education and buy-in can go a long way towards building a positive attitude about the project among the greater community.

### **3.3 Public Open Houses**

Two public open houses were conducted to distribute and gather information from area citizens. The open house format is less formal than the stakeholder meetings and allows attendees to collaborate to formulate resolutions for problems. A summary of each open house is provided below.

#### **Public Open House #1 (October 29, 2012)**

The first public open house for US-75 was held from 4:00 p.m. to 7:00 p.m. on October 29, 2012 in the Independence Memorial Hall. KDOT, the City of Independence City Manager, and the consultant team discussed access management and the scope of the project with 20 residents. Five display boards and a rolled out aerial were used to assist in explanation. Images of the boards are located in the Appendix. The boards included a general definition of access management along with more detailed explanations of the safety, efficiency, and economic activity aspects. Another board explaining the intersection influence zone was also presented.

Common comments included confusion about what the project scope included, concerns about their driveways being closed, and a schedule of when work would occur. Sticky notes were used to write down specific residents' comments. The notes compiled were:

1. A center turn lane is needed west of the overpass.
2. Would like a median down Main Street that only allows left turns at every other street.
3. Has a drive through garage with access from both the alley and US-75 and would like to keep this. - 618 W. Main Street
4. Accesses garage from the front (highway) and leaves through the alley. If reversed, she would not be able to access the garage. – 610 W. Main Street
5. South 17th Street has a lot of trucks/traffic. Traffic goes to college and other homes.
6. The intersection of 10th Street and Chestnut Street needs better traffic control.
7. Home owners on the NW Corner of 10th Street and Laurel Street have two driveways near each other used as a shared driveway. They are concerned about access. Their existing garages are one foot from the alley so rear access would be tough.
8. At 10th Street and Laurel Street a lot of trucks go SB to WB on Laurel Street to the Hospital.
9. If trucks are a sign of a good economy – we should be fine!
10. Taylor Road to Rajah Road needs shoulders.

Each of the above notes is either from individual residents or from a married couple. Questionnaires were also available for the public to fill out and comment. Three questionnaires were filled out. Copies of the responses are included in the Appendix.

### **Public Open House #2 (June 3, 2013)**

The second public open house for US-75 was held from 5:00 p.m. to 6:30 p.m. on June 3, 2013 in the Independence Memorial Hall. KDOT, the City of Independence City Manager, and the consultant team discussed the project to the City of Independence Commissioners for 30 minutes prior to the open house. Throughout the open house, the commissioners were then able to talk to the public alongside the consultant team and KDOT. About 15 residents attended. The five boards from the first public open house were displayed as well as an updated rolled out aerial. The aerial showed how access management techniques would be used along the corridor.

Very few comments were heard during the open house. Most attendees just needed clarification on the scope and schedule of the work. The comments received were:

1. One couple who live at the northwest corner of Laurel Street and US-75 wanted to make sure their driveway was not being closed.
2. Owner of the truck wash at Cypress Street and US-75 needed to be able to move trucks in and out of his property easily. The aerial roll-outs showed a curb blocking one of his needed entrances.
3. A few individuals expressed concern that the drawings show curbs blocking access to the gas station at Spruce Street and US-75.

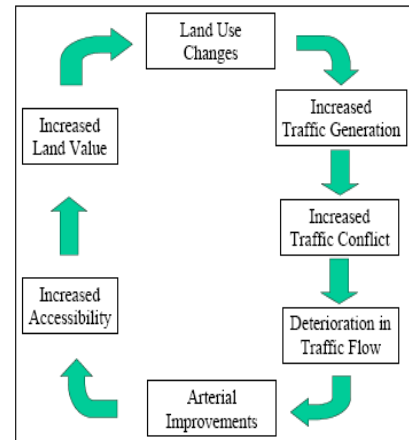
Questionnaires and comment forms were also available for the public to fill out at this open house. None have been returned to the project team.

## 4. LAND USE CHARACTERISTICS

### 4.1 Transportation/Land Use Relationship

Kansas arterials are vital links between communities and are essential to commerce, trade, and tourism. Within a community, transportation is closely linked to land use, which means localized activity in smaller towns depends on the highways for access to and from homes and businesses.

As land use changes along a corridor, the design and function of the roadway needs to change as well. Conversely, the design and function of roadways often direct the types of land uses that are appropriate in a given location. For example, a commercial development will want to be adjacent to a good arterial that has high traffic volume. Also, roads that are designed to go to and by commercial sites are often designed to provide good flow and access to the development. In fact, KDOT's Access Spacing Criteria consider land use and level of development among the factors in determining appropriate access spacing.



### 4.2 Existing Conditions

The City of Independence has a Comprehensive Plan that was completed February 1982 and adopted March 11, 1992. An amendment to the comprehensive plan was completed on April 6, 1995 that updated the General Development Plan Map. The most recent revision to the zoning plan for the City of Independence was in February 2012. These existing documents have been used to manage how new development occurs in the city, but reference documents detailing what type of access management and when to utilize the techniques pertaining to new development are lacking.

Existing land use conditions include industrial parks on the west end of town and near the airport. There is also a central business district, residential, and light commercial within the city limit. The central business district is located southeast of US-75 while the majority of the other commercial is located along the US-75 corridor.

A majority of homes that line US-75 are accessed directly from the highway. Most of these homes do have additional access from an alley at the rear of the property, but many have garages that face US-75 making it difficult to reverse access. Development west of the railroad bridge has been controlled in recent years, but many of the lots still have two or more entrances off of US-75.

#### *Independence Airport Industrial Park*

The Independence Airport Industrial Park is located southwest of the City of Independence and outside the city limits along US-75 adjacent to the Independence Municipal Airport. The City of Independence's master plan for this 353 acre industrial park shows access from existing locations on US-75. As the industrial park attains additional businesses, traffic impact studies should be completed to see if improvements to the existing highway access points are needed. New access locations on US-75 should be avoided to reduce conflict points and increase safety. Internal access management on the site should refer to the KDOT AMP for guidance.



## 5. TRANSPORTATION CHARACTERISTICS

### 5.1 Characteristics of the US-75 Corridor

To better manage and address the diversity of more than 10,000 miles of Kansas State Highways, KDOT has developed a Route Classification System based on daily traffic, route continuity, access to major cities, trip length, and route spacing. The system is divided into five classes: A through E. KDOT uses the Route Classification System to help make decisions regarding future roadway improvements, maintenance, and other items. KDOT also uses route classification to make decisions regarding access. KDOT’s route classifications are based on the roadway types, significance to the national and regional highway network, traffic volumes, and posted speed limits (Table 1). KDOT has designated US-75, which runs from the Canadian border south to Dallas, Texas, as a Class B route through Kansas since it is a major artery through the east half of the state.

Table 1: KDOT Route Classifications

CLASS	DEFINITION AND DESCRIPTION
<b>Class A</b>	The Interstate System, including the Kansas Turnpike—Class A routes are interstates. They are fully access-controlled routes that permit high-speed travel. They are important arteries with high truck volumes. Examples include I-70 and I-35. Statewide, Class A routes average 21,700 vehicles per day. They make up just 8 percent of the highway system but carry more than 40 percent of the daily travel.
<b>Class B</b>	Routes that serve as the most important statewide and interstate corridors for travel—Class B routes are non-Interstate routes with limited access, high-speed travel, long distance truck traffic, and statewide significance. The routes serve distinct trip movements since they are widely spaced throughout the State. On major sections of the routes, traffic volumes are relatively constant. A significant number of out-of-state vehicles use Class B routes, and trips on the routes are typically very long. Examples include US-50, US-36, and US-400. These routes average 5,100 vehicles per day.
<b>Class C</b>	Defined as arterials, routes that are closely integrated with Class A and B routes in service to all parts of the State—Major locations that are not on Class A or B routes are connected by a Class C route. Trip lengths are usually long. Class C routes are for regional travel and connect to higher-speed, limited-access roads. US-77 and K-10 are examples. The average number of vehicles per day on these routes is 3,800.
<b>Class D</b>	Routes that provide access to arterials and serve small urban areas not on a Class A, B, or C route—The routes are important for intercounty movement. Class D routes provide intercounty transport and connect to higher-speed roadways. They may have speed restrictions because of the number of local road intersections. Examples are US-50B (business route), K-16, and K-25. On average, these routes are traveled by 1,800 vehicles per day.
<b>Class E</b>	Primarily for local service only, routes typified by very short trips—Class E routes are frequently used on a daily basis, sometimes several times a day, to connect rural residents with other routes or to provide access to small towns in the area. Class E routes are for short trips. They typically connect small towns to nearby higher speed routes. They carry low traffic volumes and few trucks. K-76 and K-245 are examples. The average number of vehicles per day on these routes statewide is 800.

Source: KDOT Access Management Policy (2013)

Since there is no bypass route, or any other major roads through the City, the highway is also the main arterial in the city. Over years of development, numerous driveways and entrances have been connected directly to the highway without thought to access management. Through most of the city, from the north city limits to 19th Street, these accesses are mostly residential with a few commercial entrances mixed in. West of 19th Street, across the railroad bridge, commercial and industrial entrances create a majority of the access points.

The traffic along US-75 in the City of Independence can be grouped into two categories: through traffic using US-75 as a connector between communities and local traffic traveling to and from businesses and residences within the City of Independence.

### *Truck traffic*

Throughout discussions with the City of Independence and local KDOT officials it is clear that trucks driving through the neighborhoods on US-75 are a major concern. These trucks are about 8% of the traffic and as there is no truck bypass route, trucks take the same route through Independence as all other traffic. Although this planning process is focused on preserving the integrity of the existing US-75 alignment, the consultant team briefly reviewed a truck bypass route as this could be an efficient way to address trucks along US-75. The main obstacles to a bypass route would be the cost of the roadway construction and the cost to traverse the train tracks running through the City of Independence. The existing US-75 alignment has grade separated crossings the two times it intersects the railroad. With a brief look, the potential benefits created by a bypass route would not be worth the cost of a new grade separated railroad crossing. In the future, further investigation would be needed to see if a bypass route seems possible.



As a bypass route is not feasible, proper geometry is needed along US-75 to allow the truck traffic to travel through Independence safely. The existing US-75 alignment includes three 90 degree turns, and two of the turns, Main Street and North 10th Street; and North Pennsylvania Avenue and West Chestnut Street, have appropriate geometry that facilitate efficient truck movements. T-WORKS project 75-63 KA-3049-01 is scheduled to widen and improve the geometrics of the middle turn at North 10th Street and West Chestnut Street. The details of this project are in Section 6.4.

## 5.2 Existing and Projected Traffic Volumes

One of the key components of any traffic analysis is traffic volumes. Existing and proposed traffic volumes are used for signal warrants, auxiliary lanes, roadway sections, and road classification. Volumes along US-75 were provided by KDOT from a 2012 count (Figure 2).

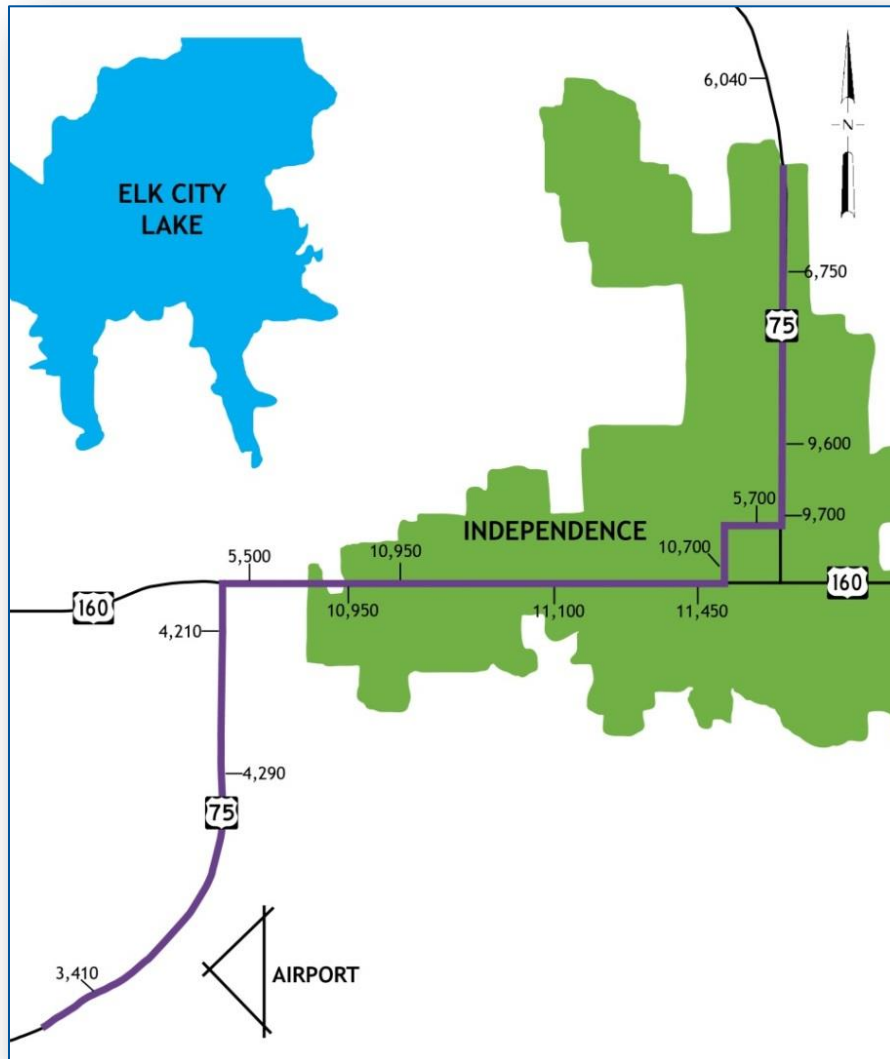


Figure 2: 2012 Average Daily Traffic Volumes.

In the future, KDOT planners have projected the traffic to grow at a rate of 1.5 percent to 2.0 percent per year. The road network has enough capacity to support this level of growth. Future 2032 volumes are shown in Figure 3.

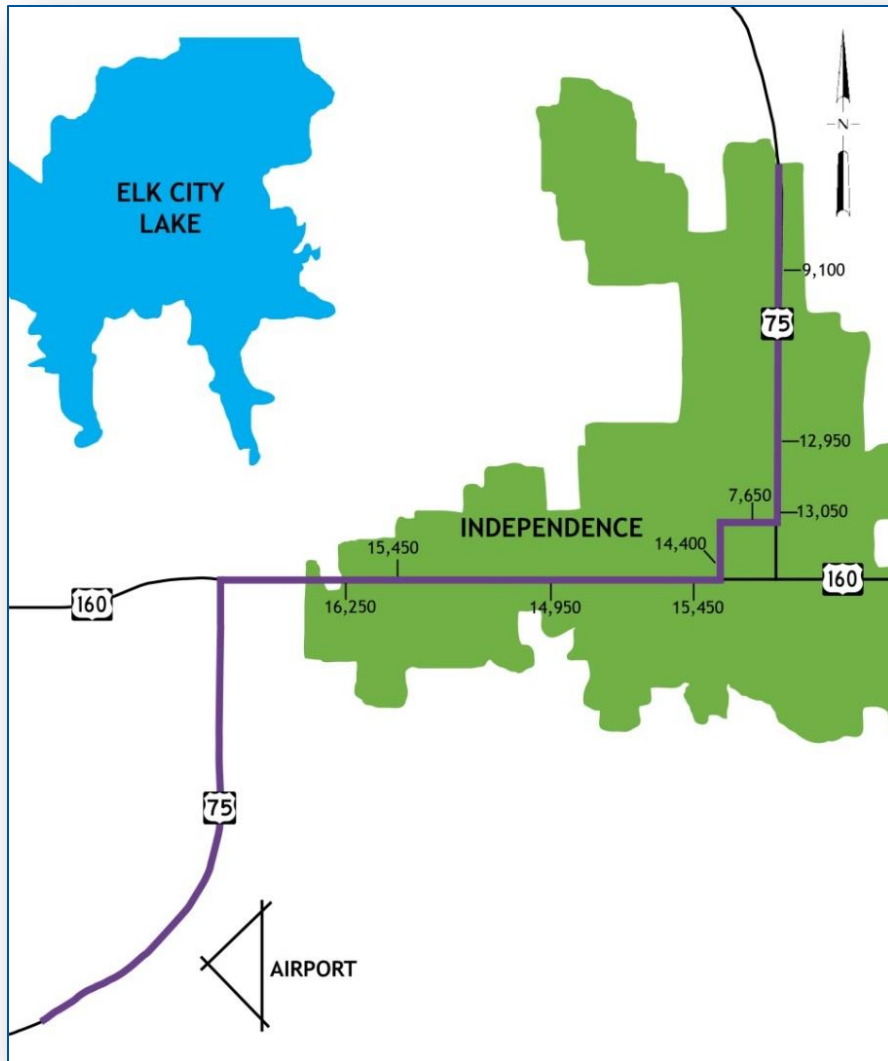


Figure 3: 2032 Average Daily Traffic Volumes.

### 5.3 Road Safety Audit

In July 2010, KDOT completed a Road Safety Audit (RSA) for Montgomery County. A detailed breakdown of US-75 through the City of Independence was included. This breakdown includes route characteristics, intersection characteristics, traffic signal details, speed data, turning movement data, and recommendations.

#### Crash History

The numerous driveways along with the large percentage of through truck traffic create a potential for crashes. Overall, US-75 does not have a high crash rate; however, safety is always a priority when looking at a corridor. According to the 2010 KDOT RSA, the highest crash rate, crashes per million vehicle miles traveled, along US-75 is in the section from the west city limit to Peter Pan Road, Table 2. Although the crash rate at Peter Pan is above average from 2006 to 2008, the most recent three years of crash data, 2010 to 2012, show a different scenario, Figure 4. The number of crashes at the Peter Pan Road intersection has dropped significantly to only three crashes within these three years. Further discussion is in Section 5.4.

Table 2: Crash rates from 2006-2008. From KDOT Road Safety Audit.

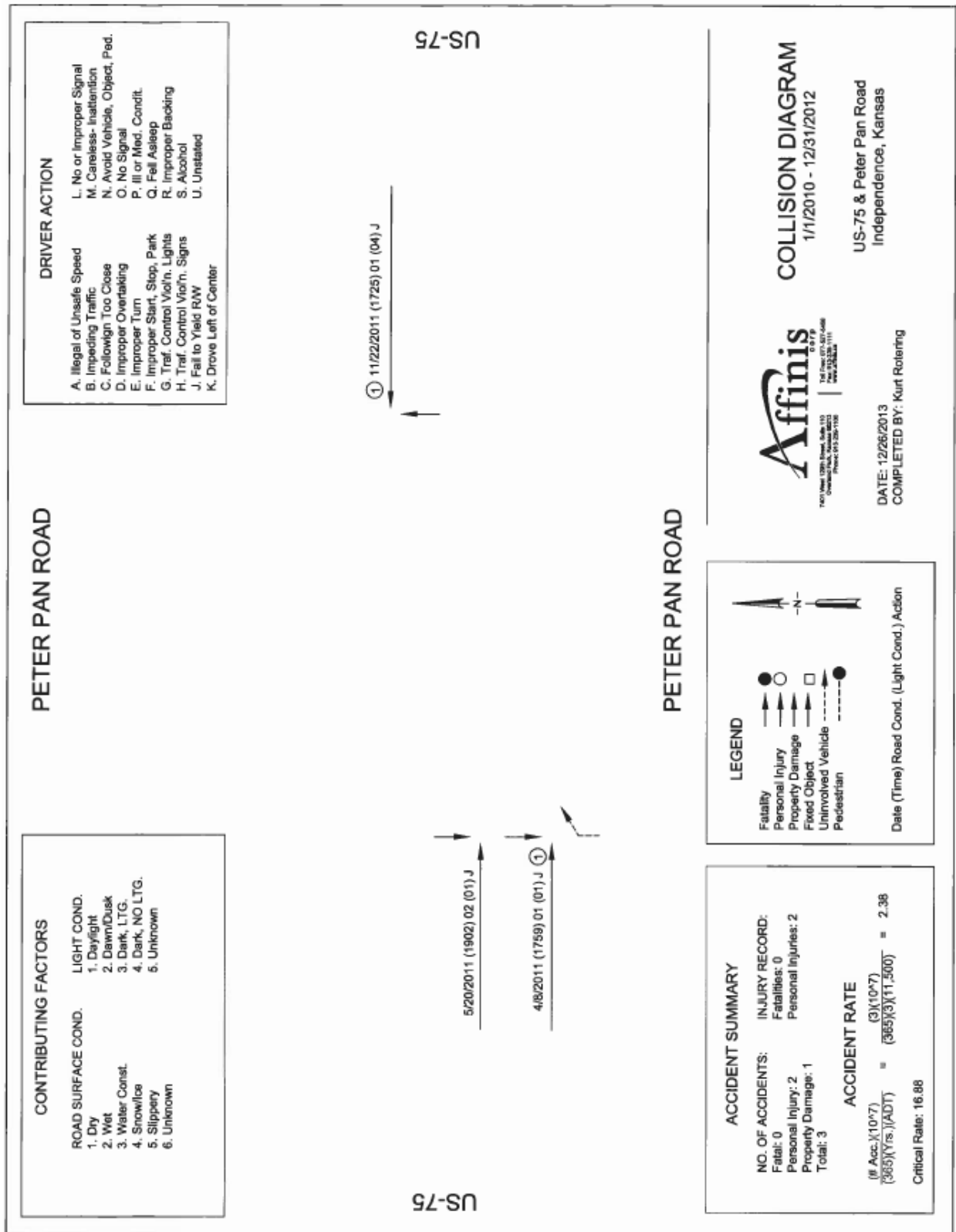
FROM	TO	LENGTH (MI)	SPEED (MPH)	LANES	EDGE OF TRAVEL	ADT	CRASHES (06-08)	CRASHES/MVM		NOTE
								Rate	Critical Rate	
WCL	Peter Pan	0.13	50.0	4	C&G	10700	26	17.07	9.50	1
Peter Pan	18th	1.206	40.0	4	C&G	9980	22	1.67	6.76	1
18th	11th	0.49	35.0	4	C&G	10970	27	4.59	7.43	
11th	Locust	0.607	20.0	4	C&G	10680	40	5.63	7.25	
Locust	Willow	0.846	35.0	4	C&G	10700	24	2.42	6.96	
Willow	Morningside Drive	0.79	40.0	4	C&G	8270	4	0.59	7.29	
Morningside Drive	200 ft N of Timberlane	0.26 1 LT	40.0	2	4'-6' turf	8270	2	0.85	8.65	
200 ft N of Timberlane	NCL	0.199	50.0	2	4'-6' turf	8270	4	2.22	9.15	

**Notes:**

1. Has center two way left turn lane.

Source: Montgomery County Road Safety Audit (2010)

Figure 4: US-75 and Peter Pan Road Collision Diagram (2010 to 2012).





## 5.4 Traffic Signals

There are currently seven traffic signals along the US-75 corridor through Independence. These traffic signals are summarized in the Road Safety Audit completed by KDOT. Table 3, from the RSA, describes each signal. Warrant analysis was completed during the RSA for the intersection of US-160 and US-75 and at 10th Street and US-75/Chestnut Street (Table 4). Both of these intersections warranted signals at the time of the audit.

Signalized intersection capacity analyses for was performed using Synchro, Version 8.0, based on the Highway Capacity Manual (HCM). For simplicity, the amount of delay is equated to a grade, or Level of Service (LOS), based on thresholds of driver acceptance. A letter grade between A and F is assigned, where LOS A represents the best operation. Table 3 represents the LOS associated with intersection control delay, in seconds per vehicle (sec/veh), for signalized intersections.

*Table 3: Intersection Level of Service Summary*

LEVEL OF SERVICE CRITERIA		
Level of Service (LOS)	STOP CONTROL	SIGNAL CONTROL
	Approach Delay sec/veh	Control Delay sec/veh
A	≤ 10	≤ 10
B	>10 and ≤ 15	>10 and ≤ 20
C	>15 and ≤ 25	>20 and ≤ 35
D	>25 and ≤ 35	>35 and ≤ 55
E	>35 and ≤ 50	>55 and ≤ 80
F	>50	>80

Table 4: Traffic Signal Analysis. From KDOT Road Safety Audit

INTERSECTION	SIGNAL TYPE	GEOMETRICS (E/W)	YELLOW TIME (E/W)	ALL RED TIME (E/W)	GEOMETRICS (N/S)	YELLOW TIME (N/S)	ALL RED TIME (N/S)	NOTE
Peter Pan	Actuated	1 LT 2 Thru	4.0	1.8	1 LT/Thru/RT	3.5	1.2	1,2,3
W Laurel	Actuated	1 LT 2 Thru 1 RT	4.5	2.0	1 Thru 1 RT [n] 1 Thru [s]	3.5	2.0	1
US-75 (10th St)/US-160 (Main St)	Actuated	1 LT 1 Thru [w] 1 LT 1 Thru [w] 1 RT [e]	4.0	1.5	1 LT 1 Thru	4.0	1.5	1 2
Myrtle St	Actuated	1 Thru, 1 RT	3.75	1.5	1 LT, 2 Thru	3.75	1.5	1,2
10th St/Laurel	Actuated	1 LT 1 Thru [w] 1 Thru 1 RT [e]	4.0	1.5	1 LT 1 Thru	4.0	1.5	1 2
Chestnut St/ Pennsylvania St	Actuated	1 LT 1 Thru [w] 1 LT 1 Thru 1 RT [e]	3.0 [w] 3.25 [e]	2.6	1 LT 1 Thru 1 LT 1 Thru 1 RT [n]	3.0 (3.25 SB left turn phase)	2.6	1 2 4
Oak St	Actuated	1 LT 1 Thru [w] 1 LT 1 Thru 1 RT [e]	4.0	2.0	2 Thru	2.0	5.0	1 2 5 6

**Notes:**

1. Mast arm.
2. Pedestrian signals with push buttons for all four legs.
3. Left Turn Yield on Green Ball (R10-12) signs for EB and WB. Protected/permitted left turn phasing for EB and WB.
4. Left Turn Yield on Green Ball (R10-12) signs for EB and SB. Protected/permitted left turn phasing for EB and SB.
5. East leg right turn lane is a free-flow right turn lane.
6. Signal Ahead (W3-3) signs present for NB and SB traffic.

The first traffic signal encountered by eastbound traffic entering Independence is Peter Pan Road and US-75. The most recent crash data shows no issues with this intersection or the signal. The left-turns for US-75 traffic at Peter Pan Road currently have protected/permitted phasing.

The second traffic signal on US-75 from the west is at Laurel Street. The south leg of this four-legged intersection is the entrance to the west annex of the Independence Community College. There are plans to further develop this and the adjacent property by adding out-lots which will add traffic to this leg. The left turn movements from US-75 are currently permitted only, but as volumes increase, protected phasing may be needed. A complete signal analysis with updated counts would need to be completed prior to changing the phasing.

The next three signals on US-75 are on North 10th Street at Main Street, Myrtle Street, and Laurel Street separated by 400 feet each. With three signals this close together, signal timing is critical for efficient movement of vehicles. Interconnecting these three signals would be helpful and should be reviewed in the future.

The Chestnut Street and Pennsylvania Avenue signal is the north entrance to downtown Independence and has permitted/protected left-turns for all four legs. Although the existing operation is working well, regularly updating the signal timing to current traffic volumes is recommended for all signals. The southbound to westbound right-turn is free-flowing with a receiving lane. Even though pedestrians cross this free-flow right-turn lane there have not been any known pedestrian/vehicle conflicts.

The last traffic signal in Independence for eastbound/northbound traffic on US-75 is at West Oak Street. This two phase signal with permitted left turns appears to operate sufficiently. This intersection has a slight skew; however, since it is signal controlled the minor skew of the roadways does not warrant realignment.

*Table 5: Traffic Signal Warrant Summary. From KDOT Road Safety Audit.*

LOCATION	DATE	Signal warrants met (yes/no) and hours met				
		1A	1B	1 Combined	2	3
Jct US-75 and US-160	6/24/2003	Yes 15 hours	Yes 10 hours	No, 14 hours (Condition A) and 7 hours (Condition B)	Yes 14 hours	Yes 10 hours
US-75/Chestnut and 10th St	6/23/2003	Yes 12 hours	No 3 hours	No, 9 hours (Condition A) and 0 hours (condition B)	Yes 9 hours	Yes 4 hours

*Source: Montgomery County Road Safety Audit (2010)*

## 6. RECOMMENDATIONS

### DESIGN RECOMMENDATIONS

#### 6.1 Plan Design Concept Recommendations

Design recommendations presented in this section should be considered for implementation by KDOT and the City of Independence when the opportunity arises. The improvements shown will improve the access management of the existing land uses, residences and businesses. Access management is necessary for safety and efficiency of the road network.

If an entire block is redeveloped, the access management should be reviewed and adjusted based on the policy recommendations below and KDOT's AMP. There is no timeline for these recommendations as they should be implemented when redevelopment or other projects occurs or if a safety issue is present.

#### 6.2 Access Management

The recommendations below address many of the concerns that brought this project to fruition. These recommendations should be followed as a general guideline wherever possible for new and existing locations:

- New and existing commercial access to US-75 should be limited to the side streets. If a driveway mid-block is necessary it should be as far from an existing intersection as possible. To accomplish this, existing drives should be consolidated where feasible.
- Along the entire corridors there are numerous residential driveways on US-75. As improvements occur along the corridor, these driveways need to be reviewed for opportunities to be closed. A majority of the properties have adjacent alleys which could provide the required access. Each residence will need to be reviewed on an individual basis due to unique garage locations and other physical restraints. Ideally there would be zero residential driveways on the highway.
- Alleys and frontage roads should be improved and created to encourage use by residents.
- As development occurs near the airport, access should be controlled using the KDOT AMP.
- Major intersections should be improved to accommodate truck movements and promote safe and efficient flow of traffic.

## 6.3 Geometric Recommendations

### *10th Street to 19th Street*

The improvement project that prompted this plan, T-WORKS project 75-63 KA-3300-01, consists of rebuilding US-75 between 10th Street and 19th Street. The reconstruction project was needed because this roadway section has been deteriorating due to time and numerous underground utility breaks and subsequent repairs. Additionally, in this location, US-75 runs through a high density of residential properties which have direct access to the highway and create numerous conflict points. KDOT has started consolidating and eliminating some of the existing driveways along Main Street/US-75. The following are eight driveways that could currently be closed without major construction:

- 1112 W. Main Street
- 1105 W. Main Street
- 1017 W. Main Street
- 1004 W. Main Street
- 615 W. Main Street
- 611 W. Main Street
- 101 N. 10th Street
- 100 N. 10th Street

These driveways were chosen based on available alternate access and if the driveway was currently used. Figure 3 shows the driveways that were recommended for closure as a part of the T-WORKS project 75-63 KA-3300-01.

In addition to the numerous conflict points created from the driveways, the city streets intersecting US-75 between 10th Street and 19th Street are spaced at about 360 feet. All of these opportunities for turning vehicles create the need for a left turn lane. The current roadway has an 11-foot center TWLTL and two 11-foot through lanes in each direction. KDOT guidelines were followed to evaluate if the current section is still appropriate.

KDOT's guidelines for having a TWLTL with a four-lane undivided highway are:

- 10,000 to 20,000 vehicles per day
- Posted speed limit of 45 mph or below
- One of the following two criteria is met:
  - 70 midblock turns per 1,000 feet during peak hours
  - Left-turn peak-hour volume 20 percent or more of total volume

This portion of US-75 currently has a 35 mph speed limit and 2009 KDOT traffic counts states that it has an average daily traffic (ADT) of 11,450. Since this section of the highway also produces a large number of left turns, the TWLTL is appropriate and should be expanded to the generally accepted guideline of 12-foot through lanes with a 14-foot TWLTL. The extra width for all lanes will help reduce the opportunity for rear-end and side-swipe crashes.

## *Access Management Exhibits*

The access management exhibits, Sheets 1 through 17 in Appendix A, depict recommended geometric improvements along the US-75 corridor within the city limits. The west city limit is about 0.20 miles east of Rosser Road/County Road 3375 and the north city limit is at Rajah Road/Glencliff Road. The exhibits show commercial driveway consolidations, US-75 expansions, and improvements to adjacent roadways and intersections. Below is a list of specific recommended improvements that are depicted on each exhibit:

### *Sheet 1:*

Two businesses each have three entrances off of US-75. Consolidating these entrances into one main entrance on each side of US-75 would eliminate four extra opportunities for conflicts along this section of highway. Additionally, placing the two consolidated entrances across from one another will eliminate the existing offset left situation.

### *Sheet 2:*

On Sheet 2 there are five opportunities to apply access management techniques. Starting at the west end of the sheet, on the south side of US-75, two small access points are consolidated into one established driveway. KDOT owns the next property east which currently has two entrances and is in the process of removing the east drive. A small frontage road from the tractor dealership and the Microtel Inn & Suites to the Wal-Mart access road is recommended and will consolidate the three accesses along this section into one. In order for this to be effective, the private Wal-Mart access road will need to be annexed by the city or city policy needs to be modified as currently every lot within the city limits must have access to a public road.

Along the north side of US-75, there are four properties shown connected by a frontage road with shared entrances. This frontage road allows traffic to travel between the businesses without using the highway thus removing conflicts and traffic from US-75. Additionally, the existing Orscheln Farm & Home has two entrances that will be consolidated into one. Locating this combined entrance between the current two existing entrances on US-75 would help prevent traffic from cutting across US-75 to the Wal-Mart access road. Lastly, the city has plans to improve the north leg of Peter Pan Road to match the existing urban three-lane section on the south leg. The southbound left turn lane will provide additional capacity and efficiency to the intersection.

### *Sheet 3:*

There are six opportunities to consolidate driveways on Sheet 3. Closing the center access and widening the west access are shown as ways to manage the access to the mall on the south side of US-75. The west access aligns with the access across the street. This mall is platted for some out buildings which will create an internal street system. Adding a frontage road in front of Sonic and the Lamplighter Inn will improve connectivity between these businesses and reduce conflicts. Aligning the consolidated driveways of the car dealership with the east end of the frontage road eliminates offset lefts.

### *Sheet 4:*

In addition to the car dealership's entrance consolidation mentioned on Sheet 3, there are six opportunities on Sheet 4 to consolidate entrances. Along the south side of US-75, the Toyota dealership and the adjacent property will share a driveway, consolidating the dealership's entrance near 27th Street. For the remaining businesses, moving their main entrances off of US-75 to the side streets and the alleyways will greatly improve the flow of traffic along this portion of the highway and provide safer access for patrons of the adjacent businesses.



*Sheet 5:*

West of 24th Street, there are two adjacent entrances to be consolidated into one that aligns with the alley across the highway. Additionally, the locations of the businesses on the north side of US-75 provide an opportunity to create a frontage road and consolidate five access points. The east entrance to the frontage road will be aligned with 23rd Street to create a four-legged intersection.

*Sheet 6:*

The land use on Sheet 6 is all residential with a majority of the houses having direct access to US-75. Where there are opportunities to create access from the alleyways, the driveways will be consolidated in the future. All alleys are shown to be improved on this sheet to encourage their use. Access to the highway from the frontage road on the south side of the bridge has been removed to eliminate a conflict area. Constructing an alley between 17th Street and 18th Street will provide alternative access to the residences in this area as well as create a route for frontage road traffic.

*Sheet 7:*

US-75 from 10th Street to 19th Street currently consists of five 11-foot lanes. These will be widened to the current guideline of 12-foot through lanes and a 14-foot TWLTL to improve safety. This current T-WORKS project is described in further detail earlier in this section. Alleyways through this residential area will be improved to promote using access in the rear of properties to remove these conflict points from the highway.

*Sheet 8:*

Sheet 8 depicts the transition from residential neighborhoods to the downtown business district. Moving Jiffy Mart's primary access to 12th Street would be beneficial but might cause some circulation problems. This access should be reviewed and further discussed with the property owner when the Main Street T-WORKS project is constructed. On the northwest corner of 10th Street and Main Street a driveway to the Jiffy Lube property is already blocked off by bollards constructed by the owner to prevent cut-through traffic from McDonalds. This entrance should be permanently removed. The main Jiffy Lube access will be relocated out of the 10th Street southbound right turn lane to the alley as drivers should be focused on intersection traffic as they enter its area of influence.

On the northeast corner of Main Street and 10th Street there is an opportunity to consolidate all of the driveways to the vacant convenience store to the eastern most driveway and the existing alleyway. To encourage the use of the alleyways on both sides of 10th Street, these entrances will be improved to the city typical. Access to the bank on the southeast corner of Myrtle Street and 10th Street will be limited to their current east entrance on Myrtle Street and the improved alley. Their existing accesses adjacent to the intersection are too close to the intersection's area of influence.

*Sheet 9:*

The current T-WORKS project 75-63 KA-3049-01 on US-75, detailed in Section 6.4, is shown. This project will widen the highway for two blocks and improve the geometrics at 10th Street and Chestnut Street. An additional opportunity for improvement includes moving the 90 degree parking for the complex on the northeast corner of 10th Street and Chestnut Street from US-75 to 10th Street. Vehicles pulling out of parking spots on to a highway create conflicts and unnecessary delay.

*Sheet 10:*

There are four opportunities to consolidate access, remove driveways that are near intersections, and move some access to side streets on Sheet 10. The driveways to AutoZone and the gas station on the east side of US-75 will be consolidated with one another easily due to grade differences. Alternatively the two AutoZone driveways could be consolidated and aligned with the bank driveway to eliminate offset lefts. From Locust Street north to Taylor Road there is an opportunity to consider converting this four-lane road section to a three lane section with a TWLTL and parking or bike lanes. Further discussion on this road diet is in Section 6.4.

*Sheet 11:*

The land use along US-75 on Sheet 11 is all residential with a majority of the houses having direct access to the highway. Where there are opportunities to create access from the alleyways, the driveways will be consolidated in the future. All alleys are shown to be improved on this sheet to encourage their use as a frontage road. The road diet detailed in Section 6.4 continues on this sheet.

*Sheet 12:*

There are five commercial properties that provide opportunities for defining and consolidating the entrances. Constructing curb and gutter to define entrances creates one location for vehicles to enter and exit the property which reduces the opportunity for conflicts and thus crashes. Improving the alleyway behind these businesses and promoting its use as a reverse frontage road will also create a safer corridor. The road diet suggestion for US-75 detailed in Section 6.4 also continues on this sheet.

*Sheet 13:*

There are two main opportunities to consolidate driveways. The Pizza Hut and adjacent property will share a consolidated entrance to the highway. A second access consolidation opportunity exists between the Conoco gas station and the property to the north. Alleyway improvements continue on this sheet creating the reverse frontage road to remove movements from US-75. The road diet for US-75 detailed in Section 6.4 also continues on this sheet.

*Sheet 14:*

There are minimal opportunities to improve the access management on Sheet 14. There is no alley on this sheet that could be used for an alternate access so residences' and businesses' access must remain on US-75. New access points should not be allowed and any reconstruction or redevelopment should attempt to consolidate or move access points. The road diet for US-75, detailed in Section 6.4, ends on this sheet.

*Sheet 15:*

Taylor Road and Morningside Drive create two three-legged intersections on US-75 200 feet apart. This is not preferable but due to the existing properties adjacent to both streets realignment would be cost prohibitive. Further discussion on these intersections is in Section 6.4. The residential driveway located in the south radii of Morningside Drive should be moved to the side street to remove these conflicts from the highway.

*Sheet 16:*

Hoover Road and Timberlane Drive create another set of offset intersections. As these two intersections are only 80 feet apart the city should realign the streets to create a four legged intersection if the properties on the corners are ever redeveloped or available. See Sheet 17 for the improvements near Glencliff Road.

*Sheet 17:*

There are three opportunities to improve the access management on Sheet 17. There is an existing connecting road that creates a skewed intersection that should be removed to force all traffic to use the current four-legged intersection. On the east leg of the Glencliff Road and US-75 intersection geometric improvements should be made that separate the existing parking lot from the roadway and to lengthen the available queue length. Consolidating the entrances to this property would also improve this area by reducing the number of conflict points. Part of this opportunity is located outside the city limits so coordination with Montgomery County will be necessary.

Another opportunity to improve safety and efficiency on this sheet is to lower the profile of US-75 just south of Glencliff Road. From preliminary observations, the sight distance appears to be limited for vehicles looking south from the intersection of US-75, just south of Glencliff Road. Lowering the profile of this intersection may help further promote safety and efficiency on this sheet. This type of improvement would be most feasible when another construction project on US-75 is proposed due to relatively high construction costs and the potential inconvenience it would pose to the travelling public.

## **6.4 Additional Geometric Recommendations**

### ***10th Street and Chestnut Street***

The intersection of 10th Street and Chestnut Street is identified as one of the priority areas in Section 1.3 and has been labeled by the city and its residents as “the most dangerous intersection in the city.” According to information from the public meetings, many of the vehicles that drive this intersection are students traveling to and from the area schools. The nearby schools that use the 10th Street and Chestnut Street intersection are Independence High School, Independence Community College, and Independence Middle School which is one block north of the intersection.

The intersection of 10th Street and Chestnut Street is currently stop controlled on the west and east legs and US-75 traffic travels the intersection from northbound to eastbound and westbound to southbound. As mentioned in Section 5.1 there is a current T-WORKS project, 75-63 KA-3049-01. This project includes the following improvements:

- Widen and improve the geometrics of 10th Street and Chestnut Street to five lanes.
  - The existing section is the only piece of US-75 in Independence that has only one through lane in each direction.
  - The proposed five lanes will consist of 12-foot through lanes and a 14-foot TWLTL.
  - The additional lanes will remove the current lane drop situation at the connecting intersections and provide more capacity through the intersection.
- Increase the radii of the southeast corner of 10th Street and Chestnut Street.
  - This will allow trucks to navigate the northbound to eastbound movement without pulling into the middle of the intersection.
- Remove the existing stop signs and install a signal at the intersection if a signal is still warranted.
  - The Montgomery County RSA states this intersection was warranted for a signal in 2003.

All three of these improvements will increase the capacity, efficiency, and safety of this segment of US-75. Additional improvements that should be included with this project are:

- Moving the perpendicular parking on the northeast corner of 10th Street and Chestnut Street intersection to 10th Street north of Chestnut Street.
- Consolidate the driveway on the north side of Chestnut Street west of 9th Street. Access is provided from the existing alleyway.

### *Chestnut Street and Pennsylvania Avenue*

Three blocks east of the 10th Street and Chestnut Street intersection, US-75 changes directions back to a north and south route at Pennsylvania Avenue and Chestnut Street. This intersection is similar to 10th Street and Main Street. It is signal controlled and is the north entrance to the downtown business district. This intersection has a southbound to westbound channelized right turn lane with existing geometrics that allow for truck movements along US-75. Improvements that will increase efficiency and safety at this intersection are:

- Revisit the timing of the signal.
- Remove the driveway accesses from the intersection's area of influence.
- Remove parking from the intersection's area of influence.
- Create bulb-outs on the southwest and southeast corners to shorten the pedestrian crossing distance and act as a traffic calming device.

Additional signal description and recommendations are in Section 5.4.

### *US-75 from Locust Street to Taylor Street*

US-75 is currently a four-lane section from Locust Street to Taylor Street. This 1.6 mile section provides an opportunity to improve the flow and safety by applying a road diet and converting this segment to a three-lane section with a TWLTL. In situations where there are a high volume of left-turn movements, road diets can increase the efficiency of a corridor by moving the turning vehicles out of the through lanes. Unexpected stops and lane changes create opportunity for rear-end and sideswipe crashes. A road-diet could reduce these occurrences and therefore increase safety. Additionally, since the railroad bridge just south of Parkhurst Avenue has narrow footings, the current four-lane road section's eleven-foot lanes cannot be improved to the generally accepted guideline of 12 foot lanes. A three-lane section could be constructed with these 12-foot through lanes and 14-foot TWLTL.

From KDOT's AMP the criteria to **convert** a four-lane undivided highway to a two-lane highway with a TWLTL are:

- Average Daily Traffic: 5,000 to 12,000 vehicles per day
- Speed Limit: 45 miles per hour
- Left Turn Peak Hour Volume: 20% or more of the total volume
- Midblock Turns: 70 per 1,000 feet of roadway during peak hours

The most recent traffic count on this segment is 9,600 vehicles per day and the speed limit is currently 35 to 40 mph making it a possible candidate. Additional study is needed to determine if restriping this section of US-75 is appropriate as turning movement counts are not included in this report.

### *Taylor Road and Morningside Drive*

Offset intersections are undesirable in most situations. Taylor Road, a main east and west link across northern Independence, forms a T intersection with US-75 in-between the US-75 intersections of Morningside Place and Morningside Drive. These three intersections within 500 feet of each other create an undesirable situation. Intersections should be spaced to provide a reasonable amount of space for drivers to assess the situation, decide a course of action, and adjust a vehicle's path if necessary. Although it would be ideal to line up Taylor Road with Morningside Drive or Morningside Place, this would require major right-of-way acquisition and is impractical for the benefit it would create. Near-term improvements to this location would be:

- Remove the driveway connected to the Morningside Drive and Pennsylvania Avenue intersection
- Maintain clear line of site for all three intersections.
- Replace the dashed pavement marking line designating the southbound right turn lane onto Taylor Road with the correct solid white markings.

## **POLICY RECOMMENDATIONS**

### **6.5 Adjust Current City Policy to Promote Access Management**

Rather than determining criteria on a case by case basis as development is proposed, policies made in advance regarding development and its associated impacts offer a systematic approach which treats development in the city fairly and equitably. Appropriate policies can assist with achieving long-range goals and provide justification and guidance for access management decisions.

Current City of Independence policy states that all lots must have access to a public street. In order to promote and permit the use of out lots and private frontage or reverse frontage roads, this policy needs to be adjusted. One way to address this issue is to use travel easements on private roads. An example of this situation is located west of Peter Pan Road. Currently no lots can be created south of the farm implement dealer unless access is allowed on the Wal-Mart access road.

Additionally, the City of Independence should establish a classification hierarchy for their street system. Access management strategies are dependent on the designation of streets. A published hierarchy is needed to properly utilize this plan and KDOT's AMP. Adopting the proposed KDOT Functional Classification Map for Independence created in June 2013 (Appendix D) would fulfill this need. It classifies streets within the Urban Area Boundary (UAB) as either a major principal arterial, minor arterial, or collector. This illustrative map easily conveys this information and could be added to the City of Independence's current Comprehensive Plan.

### **6.6 Promote KDOT Access Spacing Criteria**

Access management in existing areas is difficult to accomplish without a change of land-use or new construction. As redevelopment occurs along the US-75 corridor, the recommendations presented in the report and KDOT's AMP shall guide access management decisions.

The proposed Airport Master Plan shall be developed in a way where access off of US-75 shall be limited to existing Section Line access. These arterials may need to be improved to handle the future traffic. Direct business access shall be from collector streets that weave through the development.

## 7. IMPLEMENTATION STRATEGIES

### 7.1 Intergovernmental Coordination

The City of Independence and KDOT should encourage continued coordination on access management issues in the future. The US-75 Access Management Plan is a good start to what should be a long-lasting effort. As both of these agencies move forward with plans, regulations, and projects, continued consultation would be helpful. This will help enable meeting plan goals and will minimize negative development impacts on access to US-75. Additionally, although Montgomery County was not involved with the development of this plan, coordination with the county would also be productive to create a quality corridor.

The City of Independence and developers need to submit plats, development proposals, and site plans that affect US-75 to KDOT for review early in the development process. Early reviews offer an opportunity for coordination before the development is approved at the local level and facilitate information sharing between agencies. These reviews will also promote the use of any new access management techniques.

The KDOT development review process is similar to the permitting process, whereby information is submitted to the local area office for initial review and then forwarded to KDOT's planning and engineering staff for further review. KDOT's Access Management Unit reviews the information for access-related issues and then if needed, forwards the proposal to other affected KDOT staff, such as the Traffic Engineering Section and Bureau of Road Design.

### 7.2 Interlocal Cooperation Agreement

KDOT's formal access planning instruments provide a cooperative intergovernmental process for transportation partners to achieve a unified transportation vision. Access management plans, area transportation plans, and corridor management plans lead stakeholders through a process of input, analysis, and consensus building. An interlocal cooperation agreement which is the culmination of that coordination and recognizes a commitment between the City of Independence and KDOT should be created to consider this plan when making decisions. Interlocal cooperation agreements provide the framework for decision-making in developing transportation priorities and determining how new development and its transportation demands will be accommodated. Kansas Statute 12-2901 below provides guidelines:

**Statute 12-2901: Purpose of act.** It is the purpose of this act to permit local governmental units to make the most efficient use of their powers by enabling them to cooperate with other localities, persons, associations and corporations on a basis of mutual advantage and thereby to provide services and facilities in a manner and pursuant to forms of governmental organization that will accord best with geographic, economic, population and other factors influencing the needs and development of local communities.

In addition to formal cooperation agreements, the City of Independence should strive to forge working relationships with KDOT. Through these relationships, open lines of communication provide another mechanism for cooperation and coordination. The KDOT District and Area offices will strive to maintain regular communication with the city to provide support and guidance on access related issues. The area offices, in particular, will provide opportunities for one-on-one interface with stakeholders regarding access issues.

### 7.3 Implementation

As opportunities for redevelopment, reconstruction, or safety concerns present a need, this plan, as well as the KDOT AMP, should be referenced and followed to create a better US-75 corridor. As funds are made available, the improvements shown in this plan should take priority to improve the existing access management.



## APPENDICES A - D

**APPENDIX A – FIRST OPEN HOUSE**

# Project Name: US-75 Access Management Plan

KDOT Project Number: KA-2857-01

TWORKS PROJECT WEBSITE: <http://tinyurl.com/US75AMP>



**Public Meeting Intent:** The intent of this meeting is to receive input from residents, business owners, and other interested parties by presenting them with information about the project, answering their questions, and listening to any solutions that they may provide.

**Project Description:** The City of Independence and the KDOT have teamed up to create an access management plan to address traffic and safety concerns along the US-75 Highway corridor within the city limits of Independence. The team partners are working with the project consultant, Affinis Corp, to complete the plan.



**Project Intent:** The plan will identify a long-term conceptual strategy to help preserve efficient traffic flow along US-75 while providing reasonable access to adjacent properties and businesses.

## CONTACT INFORMATION:

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Notes: \_\_\_\_\_  
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# Questionnaire

October 29, 2012

## Public Meeting for the US-75 Highway Access Management Plan

Please rate your experience at this Public Meeting:                      Excellent                      Good                      Fair                      Poor

What locations along US-75 in Independence would consider to be problem areas?

Were all of your questions, concerns, or recommendations expressed and addressed?                      Yes                      No

If not, please list the question, concern, and/or recommendation:

May we contact you to discuss this issue?                      Yes                      No

If yes, please provide your contact information below:

Name:

Address:

Phone Number:

Email:

Do you know of anyone who was unable to attend that may have a question, concern, and/or recommendation?

Name:

Address:

Phone Number:

Email:



# Attendance Sheet

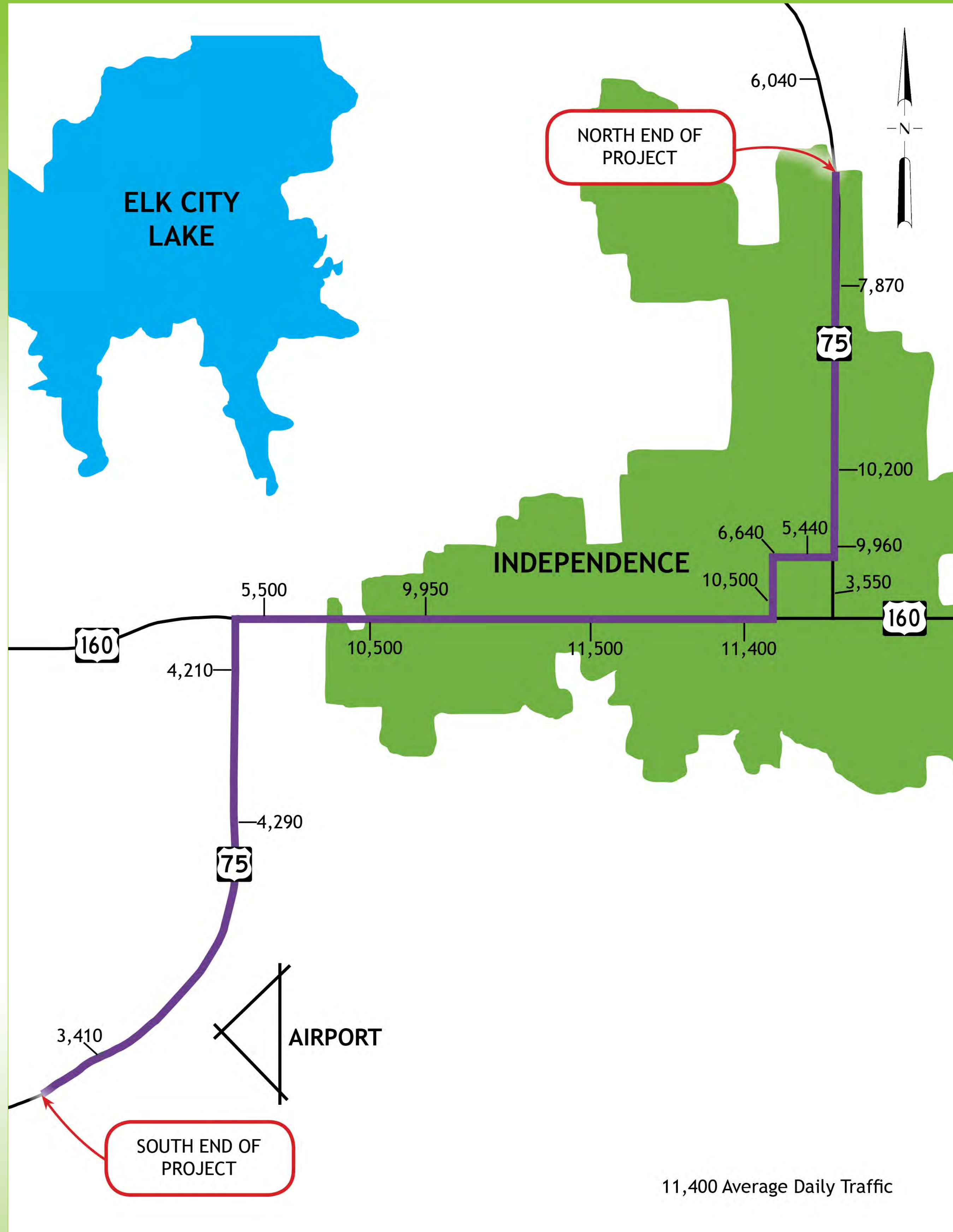
October 29, 2012

## Public Meeting for the US-75 Highway Access Management Plan

Print Name	Address	Phone #	Email Address
1 Peggy Andersen	P.O. Box 245	331-4707	
2 Derrill M. Unruh	218 Mulberry	331-7480	
3 Sallie Dewey	720 W. Main	331-0175	
4 Frank Stark	1017 W. Main	331-4602	
5 Rick Mott	1301 Birdie Dr		
6 Larry Annable	301 N 10th St	779-2487	
7 Sandy Annable	301 N 10th St	779-2487	
8 Duane Koszalka	309 N 10th	331-4360	
9 Judith Umlauf	618 W Main	205-8025	
10 Micky Webb	City	332-2506	
11 Kelly C Passauer	City	332-2506	
12 Mickey Helms	1220 W Main	313-0642	
13 Derrell Gentry	313 N. Penn	331-8903	
14 John Heckman	2620 N. Penn	331-0661	
15 Frank Crebase	417 W. Myrtle	330-6109	
16 Kathy Bennett	205 S. 11th	779-1328	
17 Marlene Cheever	610 W. Main	331-2286	
18 Jim D Bennett	610 W. Main	330-4448	
19 Allen Smith	506 S. 4th	330-3554	Independent Reporter
20 Charlotte Muse	428 Catalpa	331-6369	







## ACCESS MANAGEMENT PLAN FOR US-75 THROUGH INDEPENDENCE WILL:

- ✓ Promote Safety
- ✓ Promote Efficiency
- ✓ Promote Economic Activity

### ACCESS MANAGEMENT -

“The systematic control of the location, spacing, design, and operations of driveways, median openings, interchanges, and street connections to a roadway”

- Transportation Research Board (TRB) Access Management Manual

### ROAD FUNCTIONS

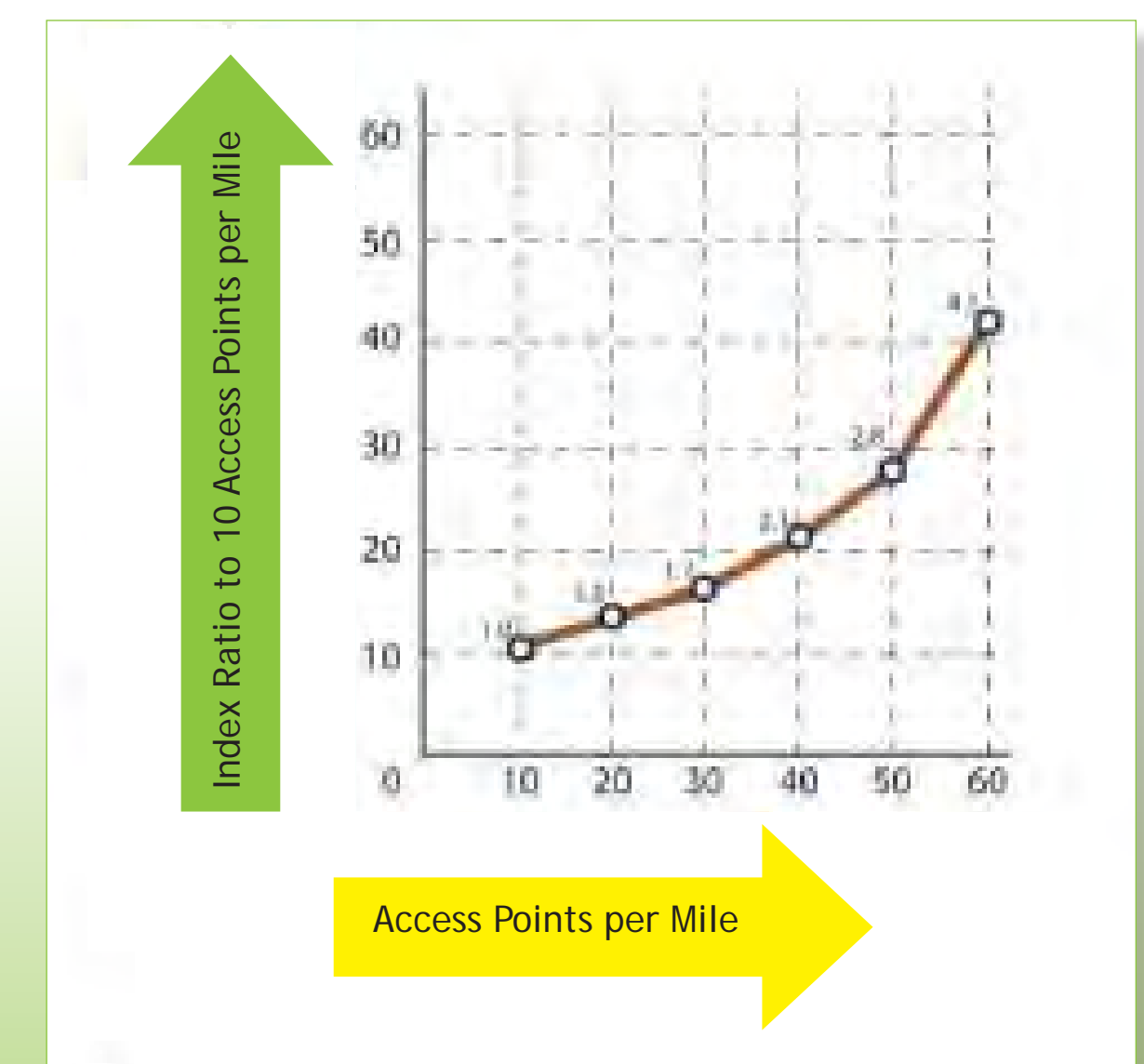
- ✓ Provide access: side roads, businesses, homes
- ✓ Move Traffic: move traffic through Independence

Access Management tries to balance mobility while providing access.

### KDOT AND THE CITY'S CONCERNS FOR US-75

- ✓ Significant development potential which creates the need for future access
- ✓ The need to promote safe and efficient traffic flow along US-75

Managing access is important because each access along a roadway, whether a driveway or an intersection, introduces potential for conflict and friction within the traffic stream. Access management techniques also help protect public investments in transportation by preserving safety and efficiency of traffic flow, thus reducing the need for costly and potentially invasive improvements.





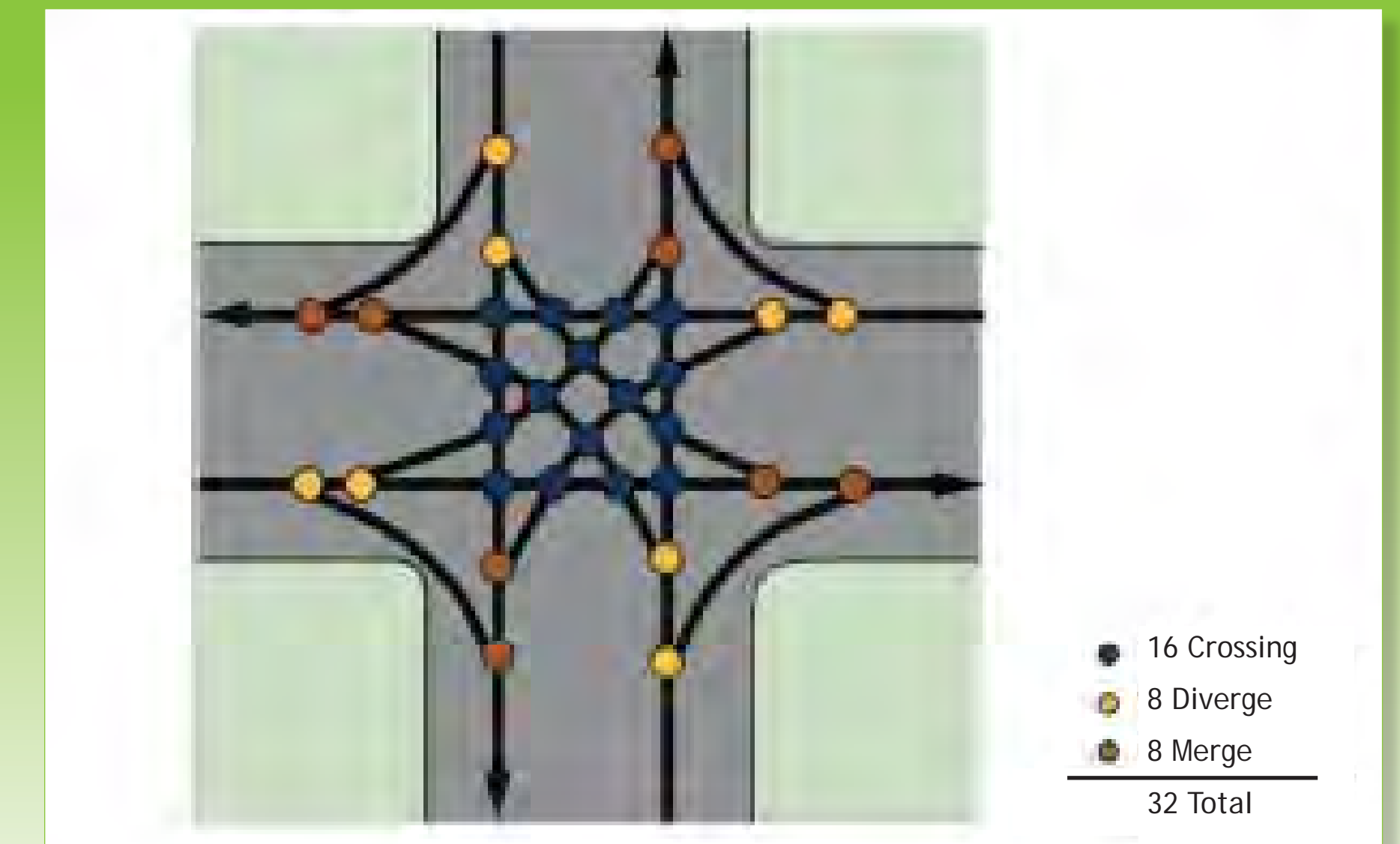
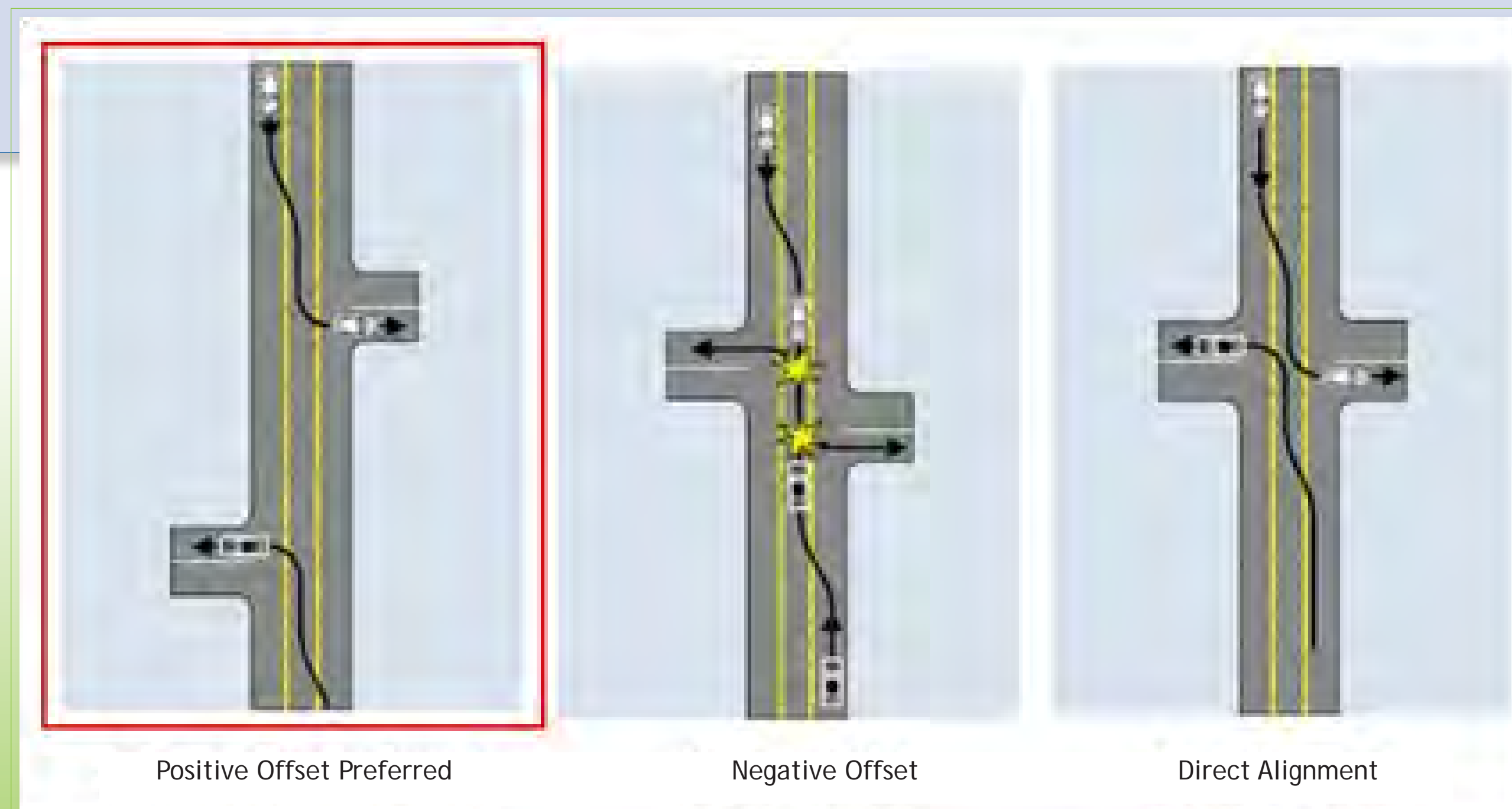
Access Management is the systematic control of the location, design and operations of driveways, median openings, interchanges, and street connections to a roadway.

### CONFLICT POINTS

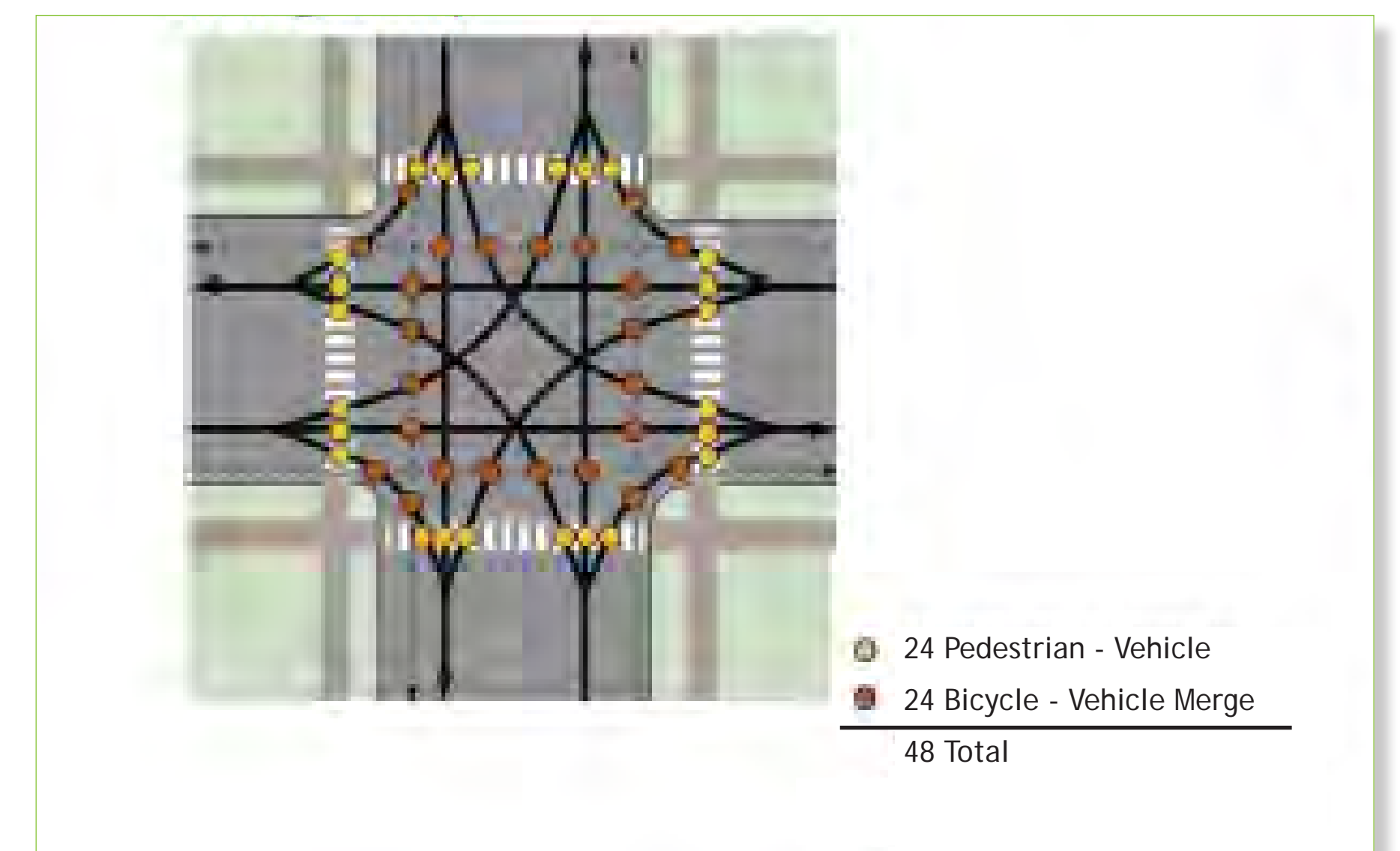
- ✓ Locations where vehicles may come into conflict with another vehicle
- ✓ 3-legged intersection = 9 conflict points
- ✓ 4-legged intersection = 32 conflict points
- ✓ Reducing the total number of intersections and driveways along US-75 reduces conflict points
- ✓ Pedestrians and bicycles create 48 more conflict points at each 4-legged intersection
- ✓ Right-in/right-out entrances
  - reduce conflict points
  - still providing access
  - created with a median or splitter island

### NEGATIVE OFFSET LEFTS

- ✓ Highway traffic turning left into a business from the center lane will conflict with the opposing movement if the driveways aren't across from each other
- ✓ How do we fix this?
  - realigning or reducing accesses



Vehicle conflicts at 4-legged intersection



Pedestrian and bicycle conflicts at 4-legged intersection

**“Corridor Access Management is one of nine proven safety countermeasures.”**

- Federal Highway Administration



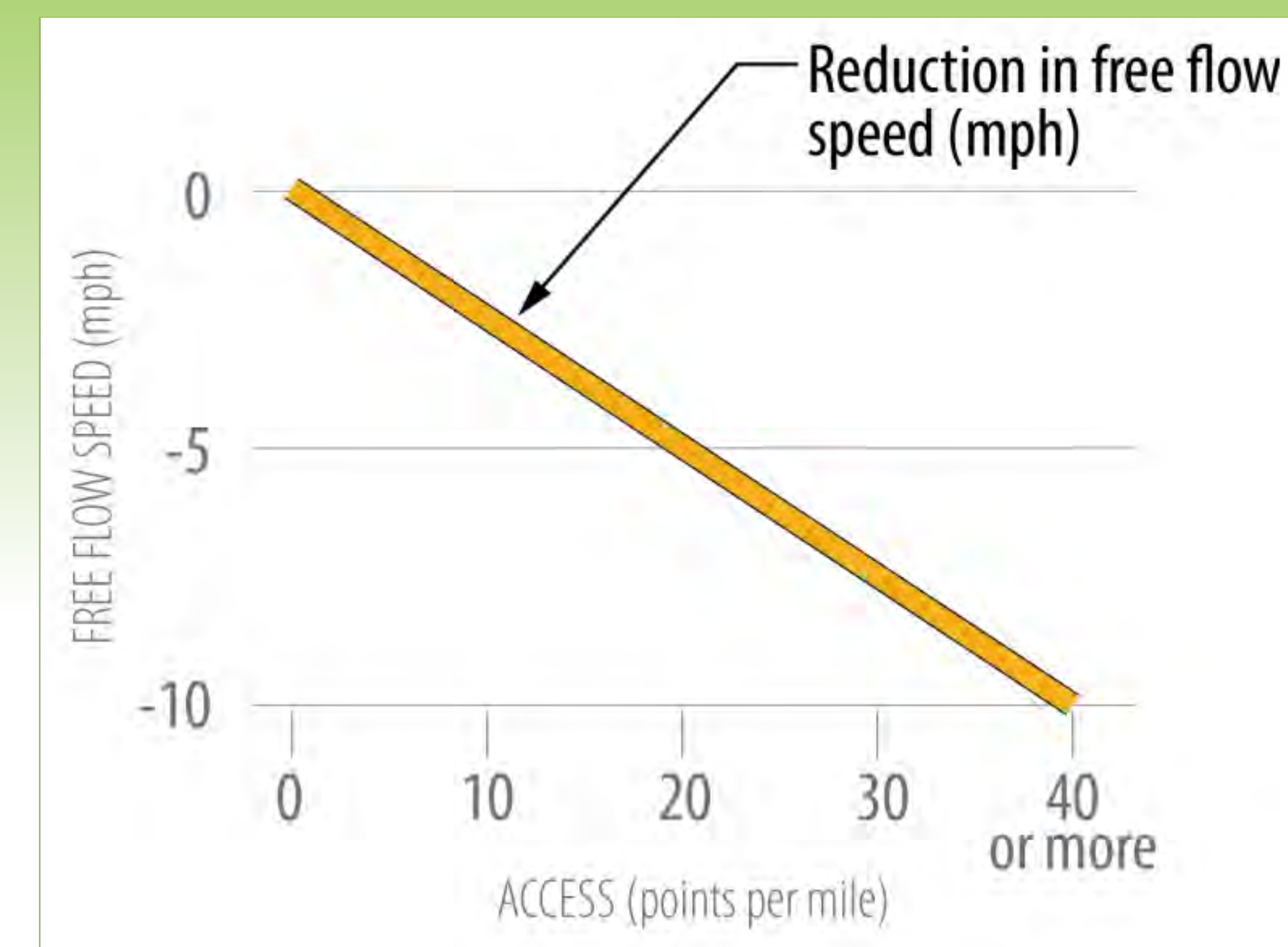
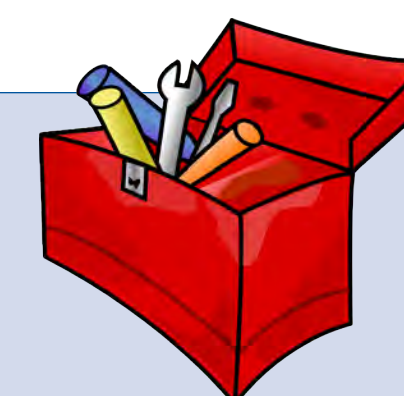
Access Management provides a more efficient corridor by minimizing and regulating changes in speed of traffic along the corridor while improving the flow through intersections.

## REDUCING CONFLICT POINTS

- ✓ Less opportunity for vehicles to need to slow down to turn
- ✓ Consolidating driveways provides motorists more room to make decisions, increasing efficiency
- ✓ Fewer vehicles cutting in front of others
- ✓ Less distractions for drivers

## INTERSECTION IMPROVEMENT TOOLBOX

- ✓ Adding turning lanes where warranted helps more traffic traverse the intersection
- ✓ Updating signal timings to current volumes
- ✓ Improving driveway widths, radii, and slopes better facilitates traffic off of the highway
- ✓ Moving driveways away from intersections improves the efficiency of intersections. *See next board*

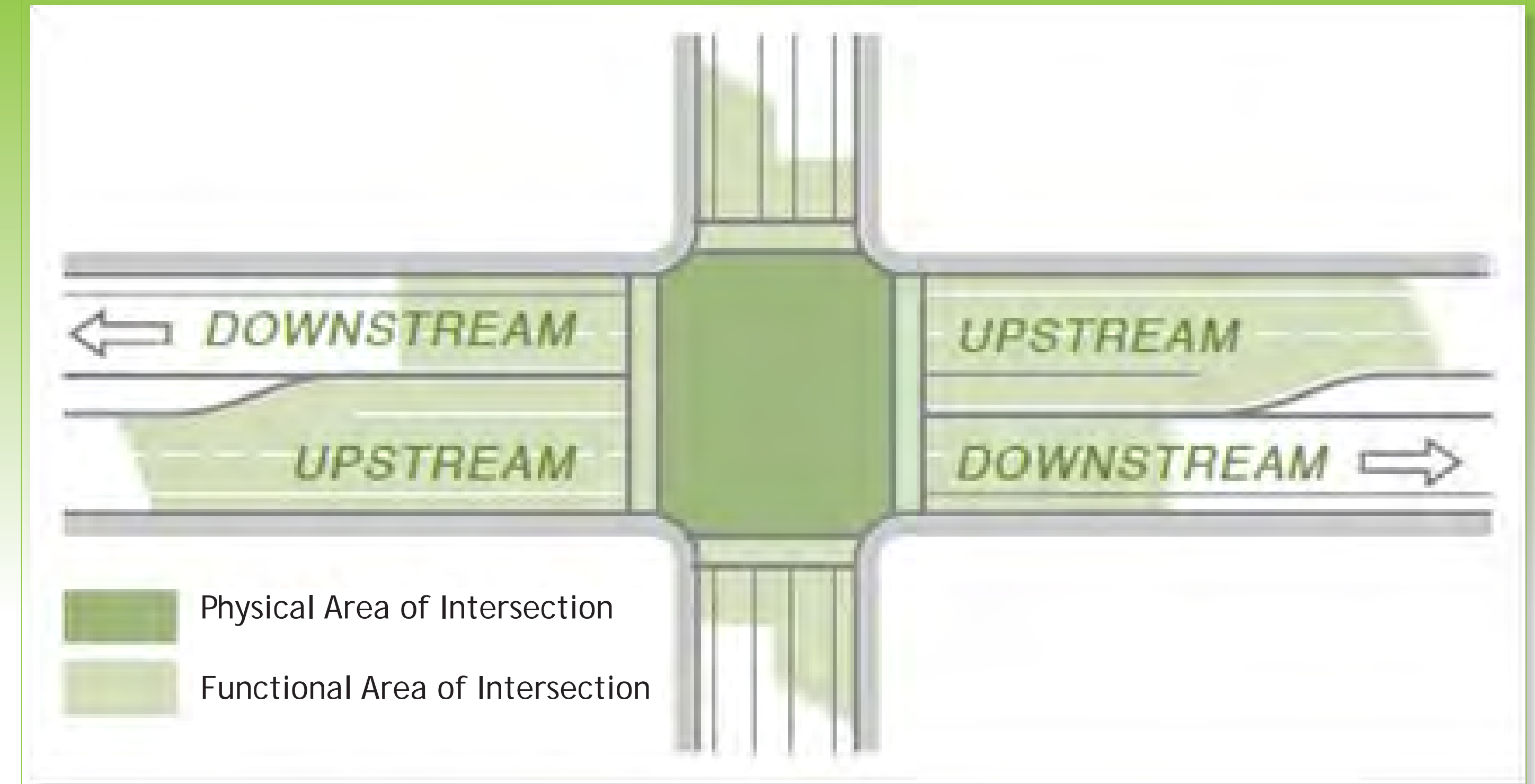


Moving driveways away from intersections improves the efficiency of intersections.

## FUNCTIONAL AND PHYSICAL AREA OF AN INTERSECTION

Functional Area is where a driver needs to be concentrating on the intersection.

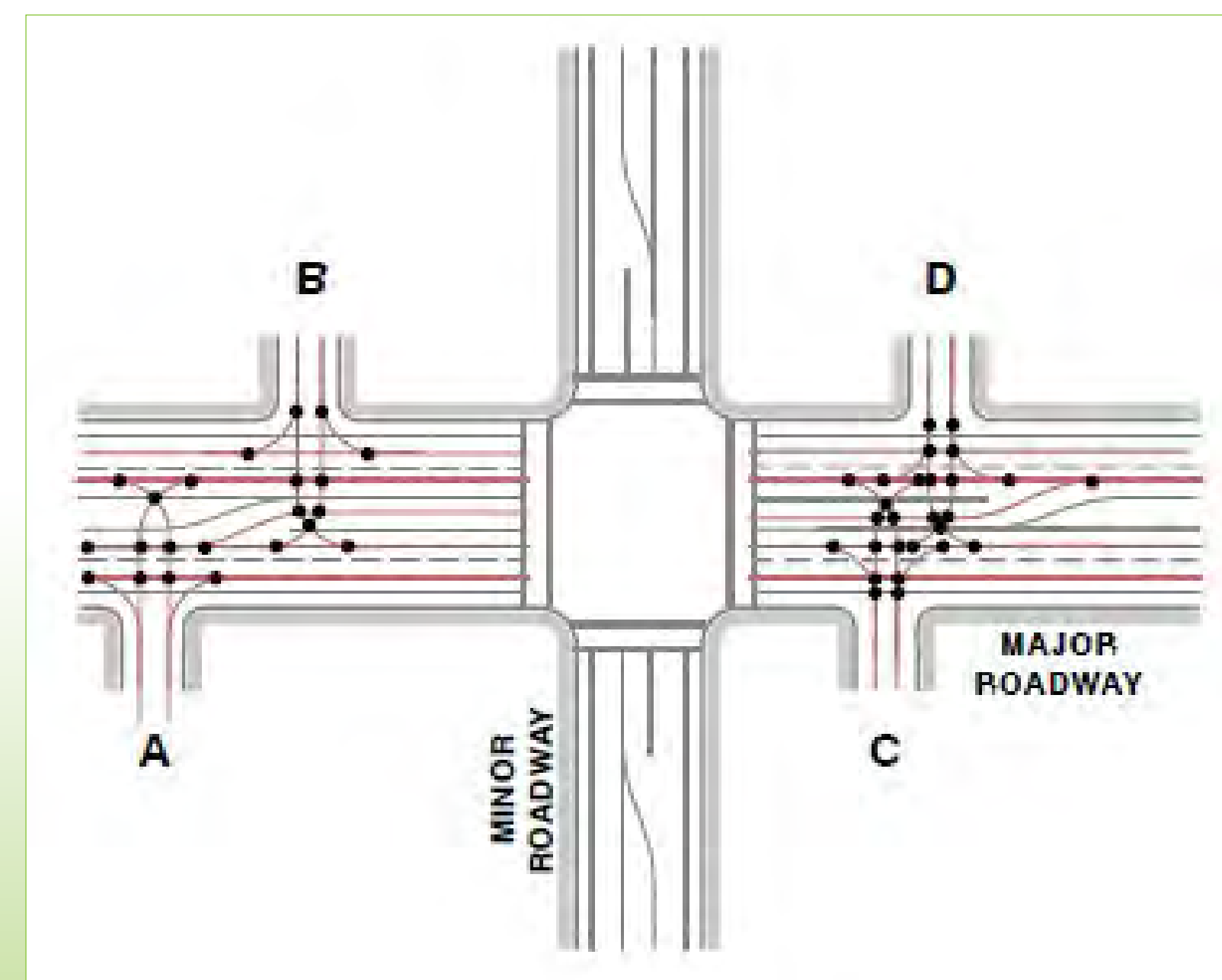
- The Functional Area for each intersection includes:
- Distance traveled while deciding if stopping is needed
  - +
  - Deceleration distance while stopping
  - +
  - The length of stopped vehicles at a signal or stop sign



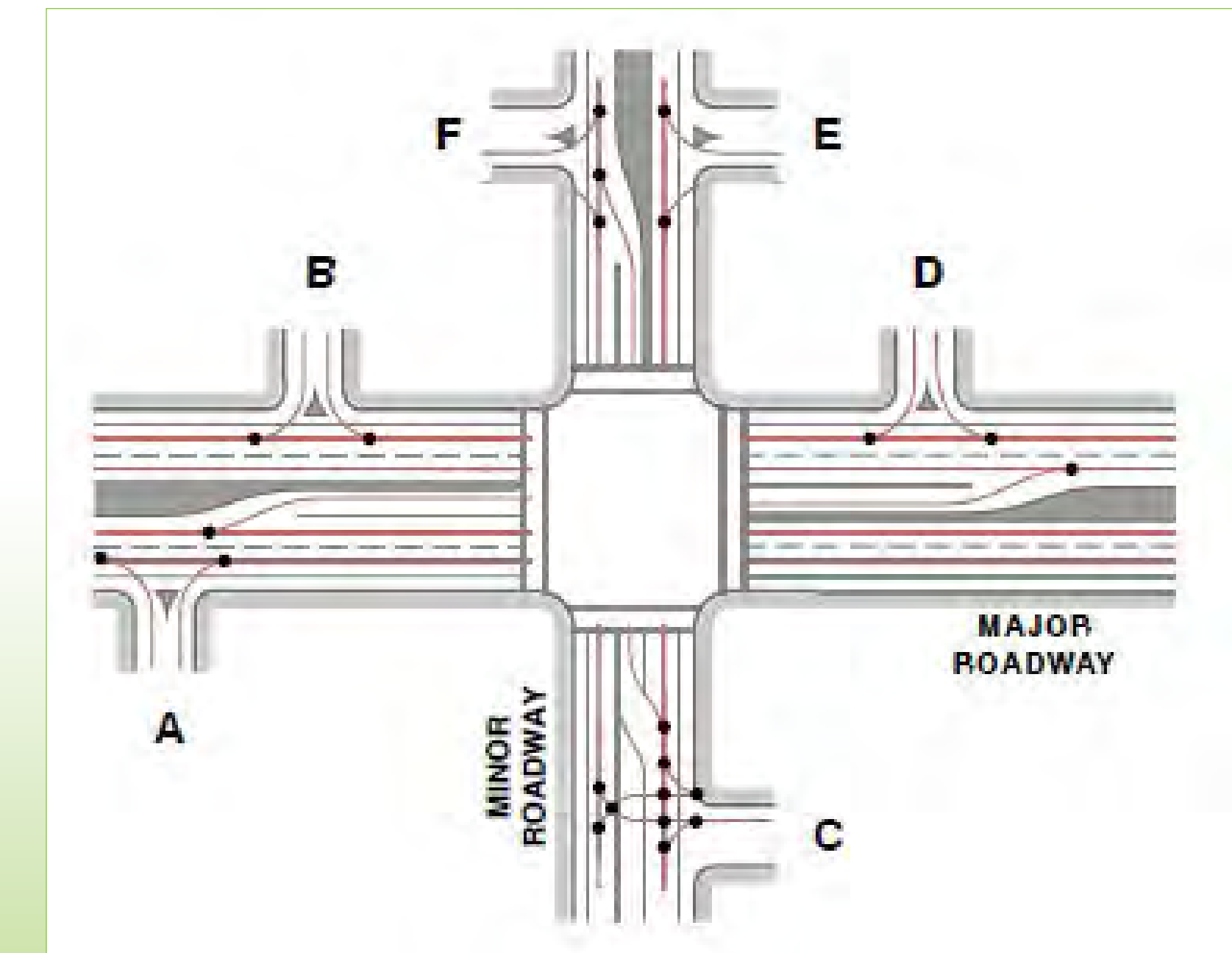
Conflict points should be kept to a minimum within the functional area of an intersection.

## HOW DO WE ACCOMPLISH THIS?

- ✓ Add medians to prevent left turns crossing lanes
- ✓ Move driveways further from intersections
- ✓ Move driveways to minor roadways



Typical Access Scenario at Intersection



Desirable Access Scenario at Intersection



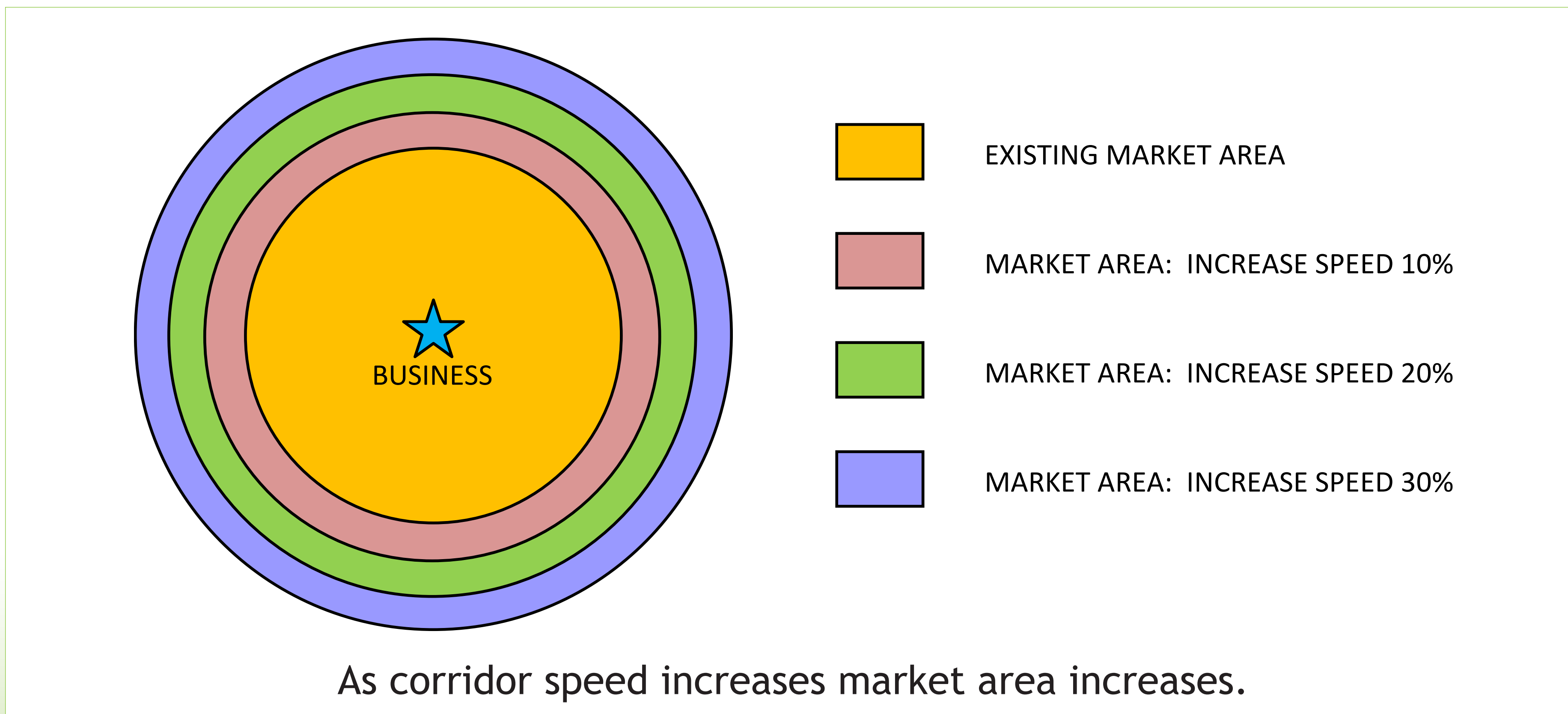
## Promoting safety and efficiency along a corridor creates a good transportation environment - which is good for business.

### SAFETY

- ✓ Fewer entrances increase pedestrian safety and promote more activity along a corridor
- ✓ Actual and perceived safety of a customer entering or exiting a business promotes return customers

### EFFICIENCY

- ✓ Efficient roadways can decrease travel time for both customers and delivery vehicles
- ✓ As travel time decreases along the corridor, the market area grows



“One study in Texas indicated that corridors with access control improvements experienced an 18 percent increase in property values after construction.”  
- Federal Highway Administration

Having an Access Management Plan in place will assure that future development will be constructed to current criteria and promote safety and efficiency.

**APPENDIX B – SECOND OPEN HOUSE**



# Questionnaire

June 3, 2013

## Public Meeting for the US-75 Highway Access Management Plan

Please rate your experience at this Public Meeting:                      Excellent                      Good                      Fair                      Poor

What locations along US-75 in Independence would consider to be problem areas?

Were all of your questions, concerns, or recommendations expressed and addressed?                      Yes                      No

If not, please list the question, concern, and/or recommendation:

May we contact you to discuss this issue?                      Yes                      No

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Name:

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Do you know of anyone who was unable to attend that may have a question, concern, and/or recommendation?

Name:

Address:

Phone Number:

Email:



# Attendance Sheet

June 3, 2013

## Public Meeting for the US-75 Highway Access Management Plan

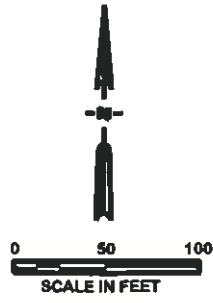
Print Name	Address	Phone #	Email Address
1 Robert Bever	PO Box 663	330-3240	rbevermgcountyks.org
2 Signham Cupusat	PO Box 494	332-3033	archcoll@terraworld.net
3 Lar McManus	2503 Quail Run	330-1487	
4 Allen Smith	Indep. Daily Reporter	331-3550	
5 Charlotte Caflischl	600 S. 5th St	331-8118	
6 Fred Meier	2712 Links Ln	332-4906	fdmeier@gmail.com
7 Linda Wilson	PO Box 128	330-6725	lwilson@indkschamber.org
8 Me	Not Important		
9 Randy Kelley	Indy	331-1774	kellyenterprises@hotmail.com
10 Norman Chambers	Indy	331-1379	
11 Hoite Caston	301 S. 4th	331-4001	
12 Steve Ross	968 E College	205-7358	
13 Dave Ralkes	401 W main	330-3032	
14 Shawn Turner	115 S 6th	331-9621	sdtturner@transystems.com
15 Rob Rumfelt	1000 N 18th Pl	331-5977	
16 Reeta Rumfelt	1001 N 18th Pl	331-5978	
17 Duane Koszauka	309 N 10th	331-4360	koszauka@terraworld.net
18 Amy Koszauka	310 N 10th	331-4361	koszauka@terraworld.net
19 Kathleen Worthington	701 N Penn	926-0012	kskathy@gmail.com
20 Bill Jumy	919 Beech	331-1202	
21 Jim Kelly	309 S 5th	332-3108	jim.kelly@house.ks.gov
22 Wayne R Gudmonson	411 N 14th St, Chanute	431-1000	wayne@ksdot.org
23 Luke Middleton	3027 W Main	320-331-3760	luke@ksdot.org
24 John Eaton	2710 N 8th St	577-2286	jae121560@yahoo.com
25 Ned Stichman	725 Washington	331-4578	ned@hit.net
25 Chris Romine	115 Timberlande	331-9186	rominepat@sbcglobal.net
26 Pat Romine	116 Timberlande	331-9187	rominepat@sbcglobal.net





**APPENDIX C – SHEET 1 THRU SHEET 17**

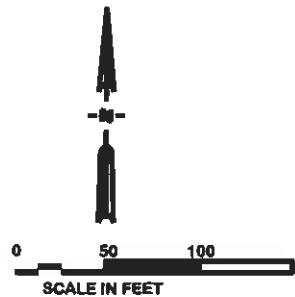




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  - Proposed Street Closure
  - Edge of Proposed Roadway/Driveway

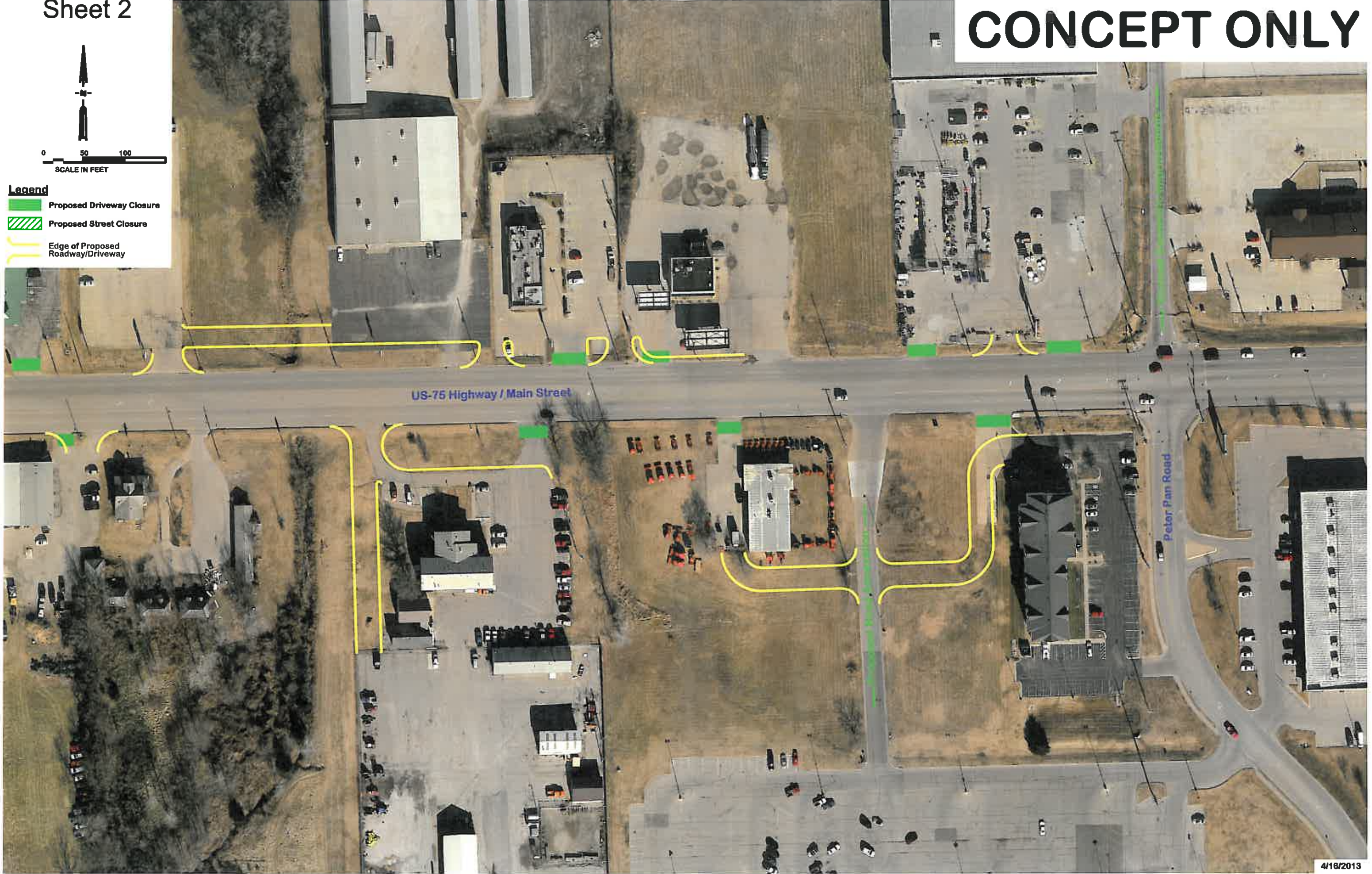




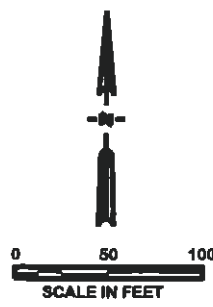


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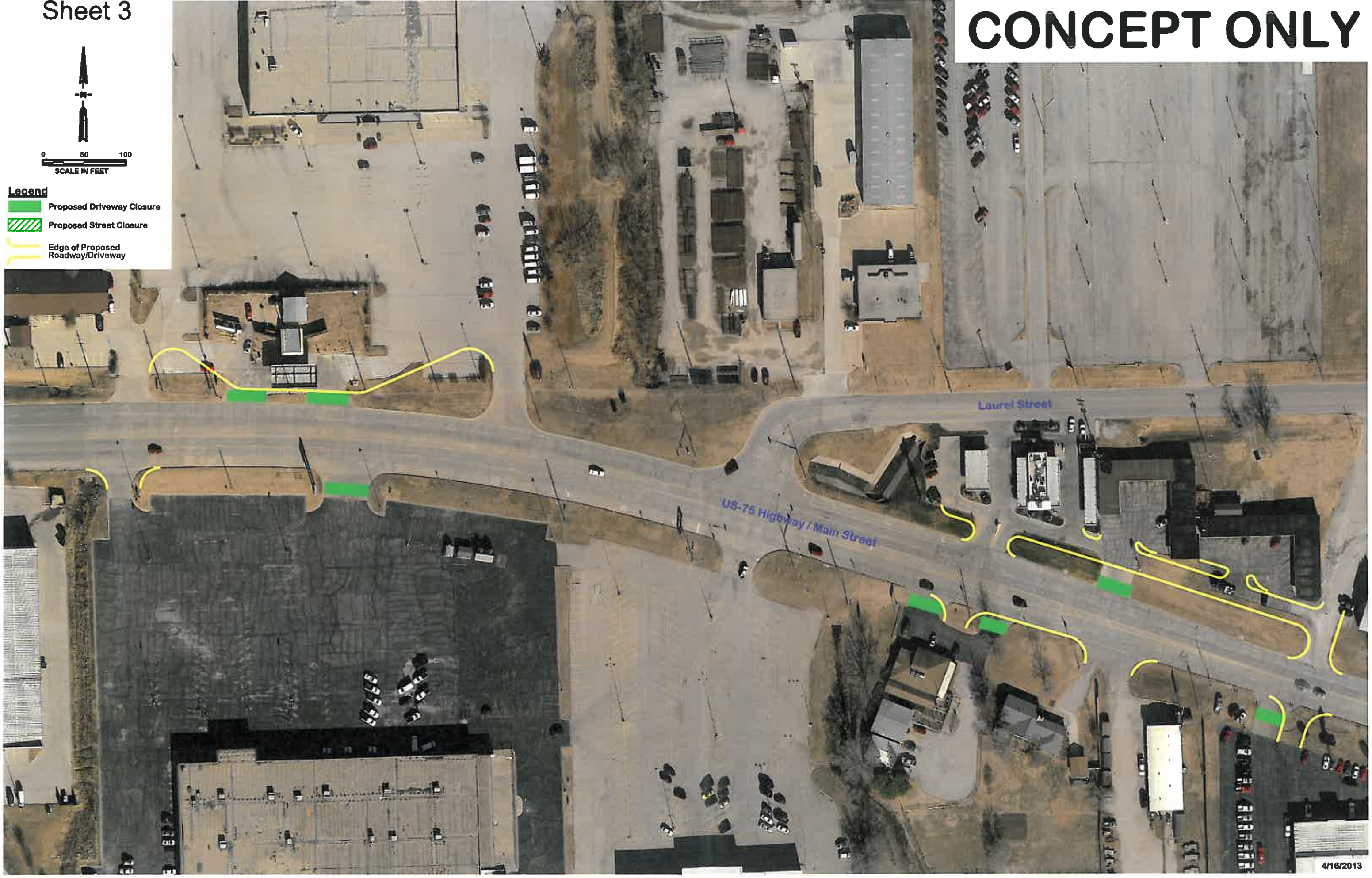
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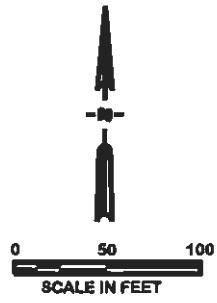




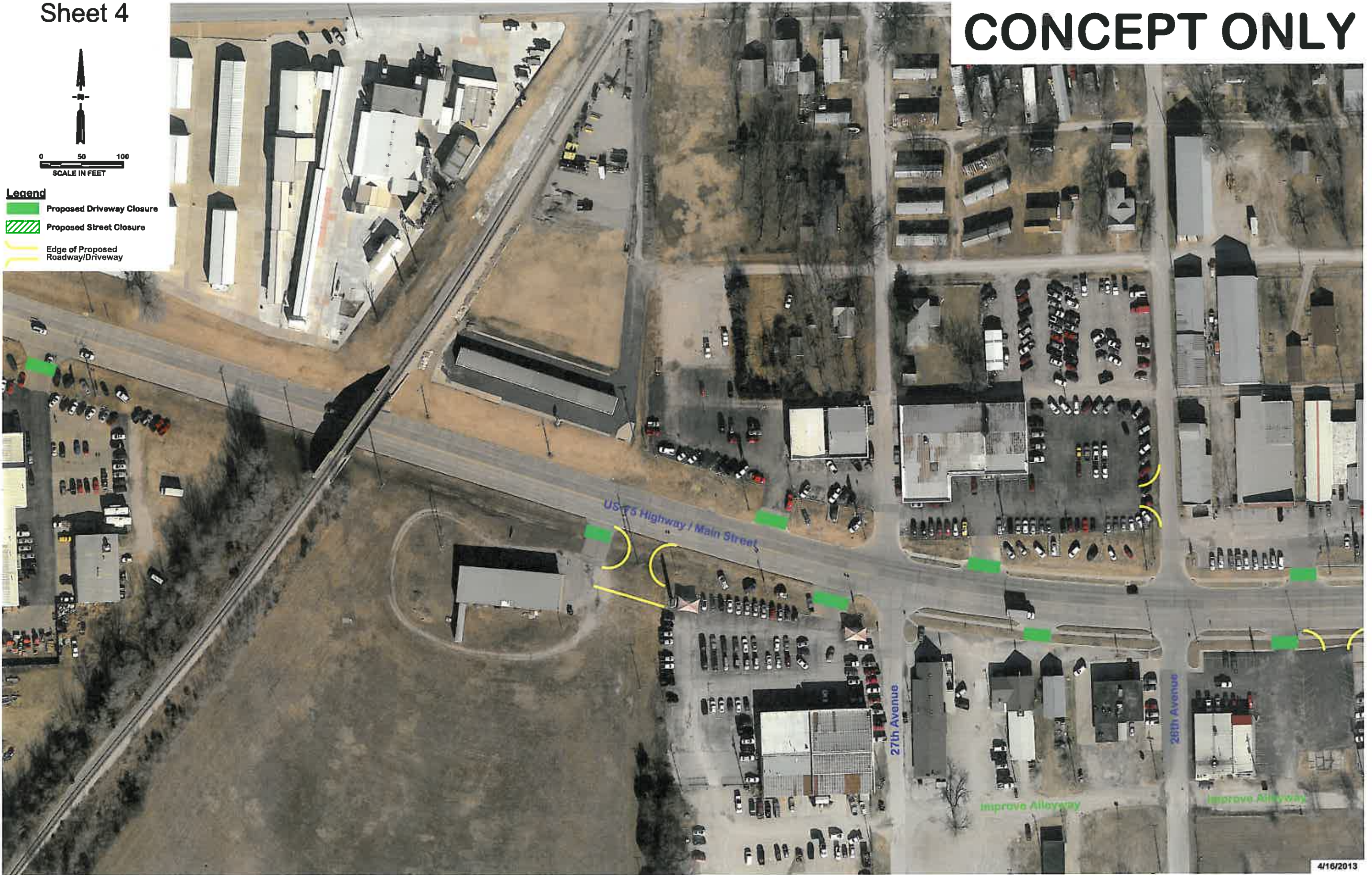
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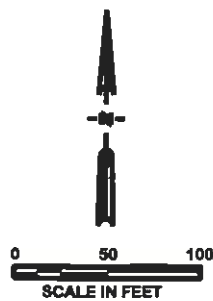




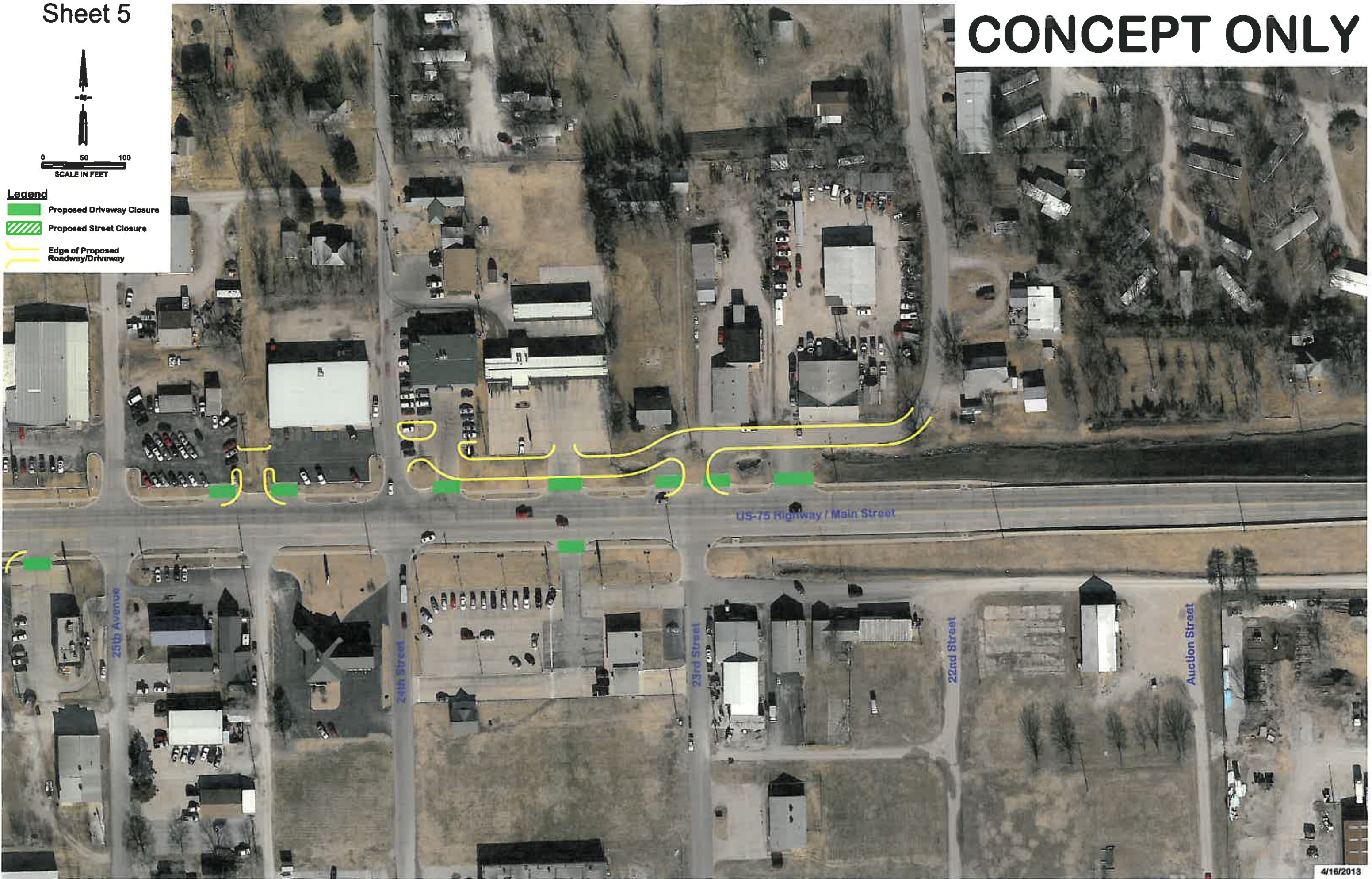
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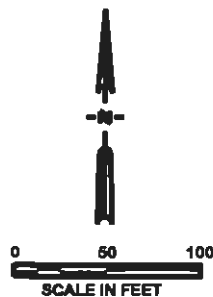




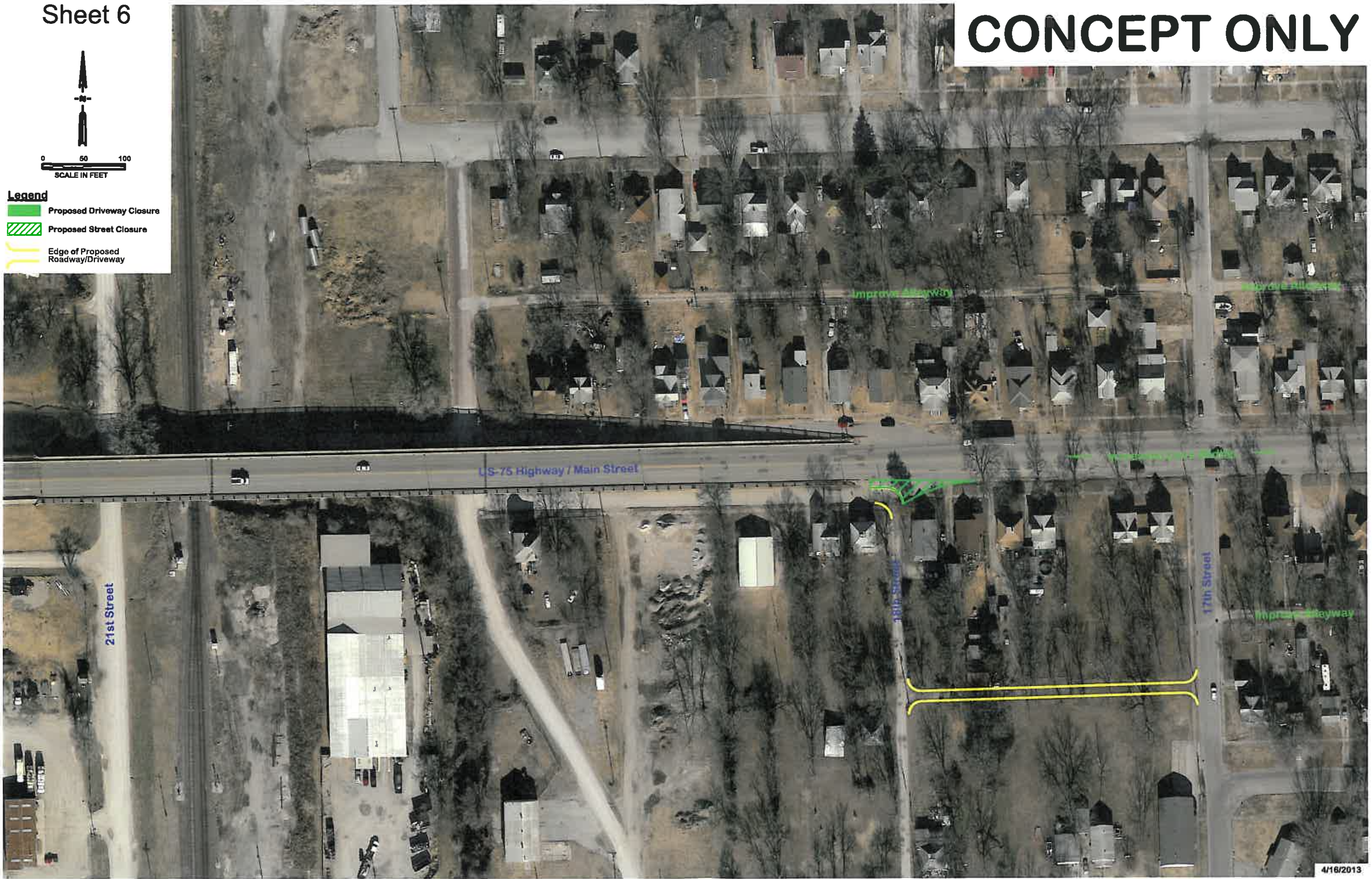
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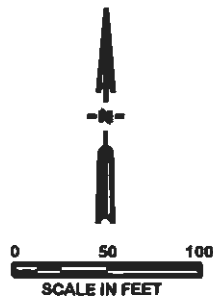




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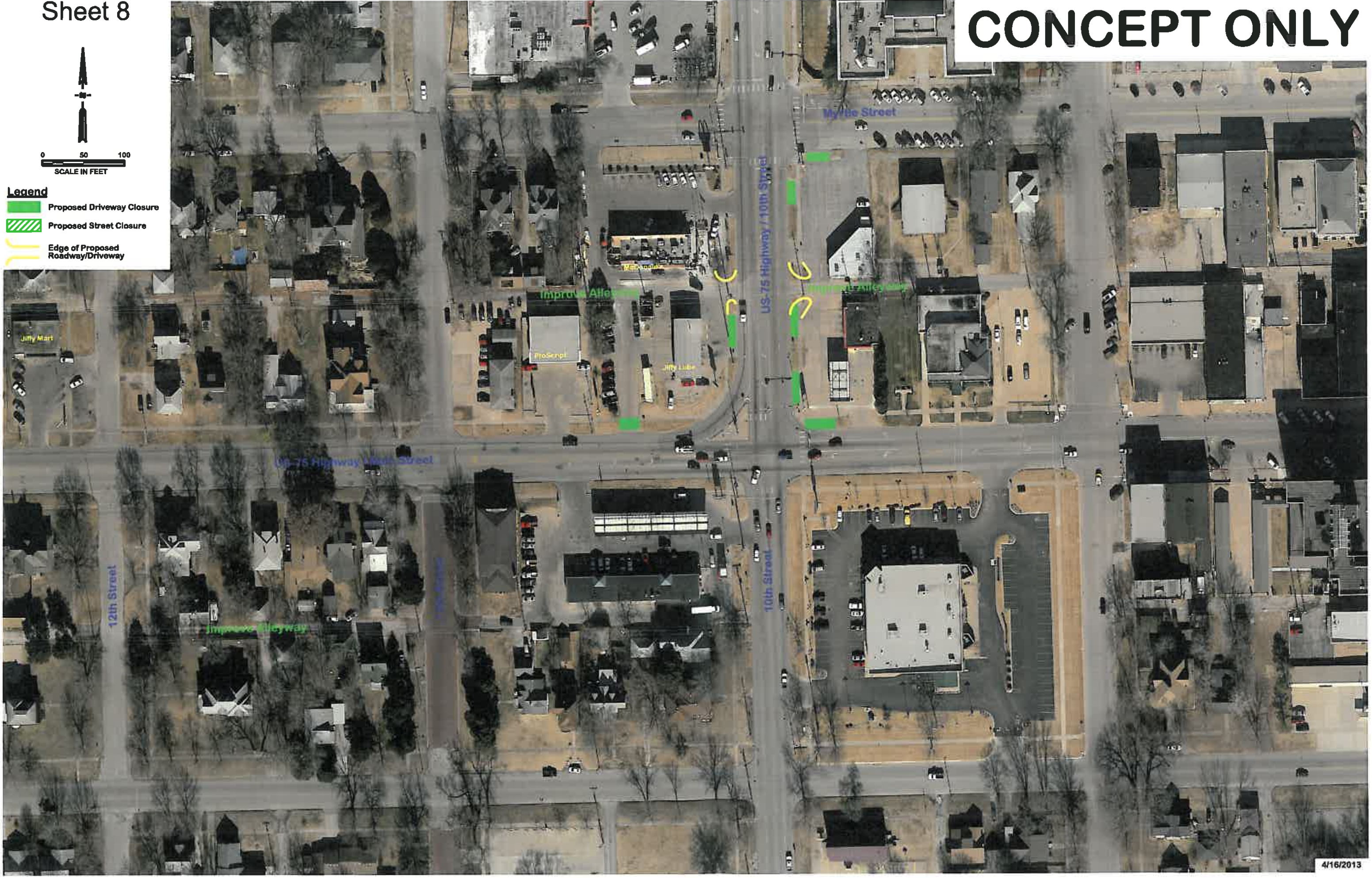




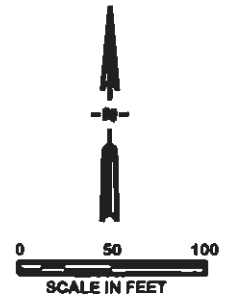
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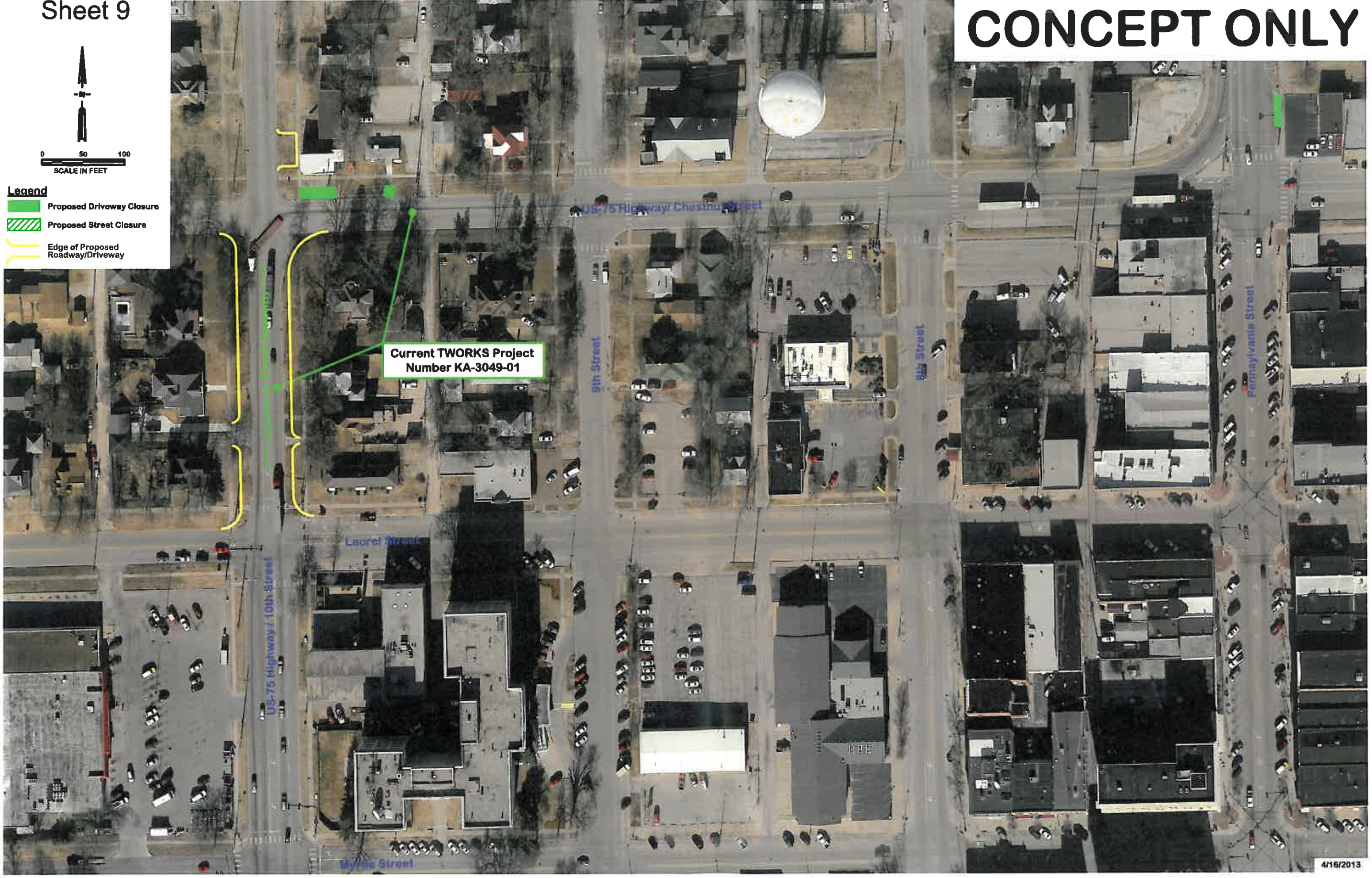
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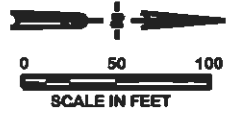




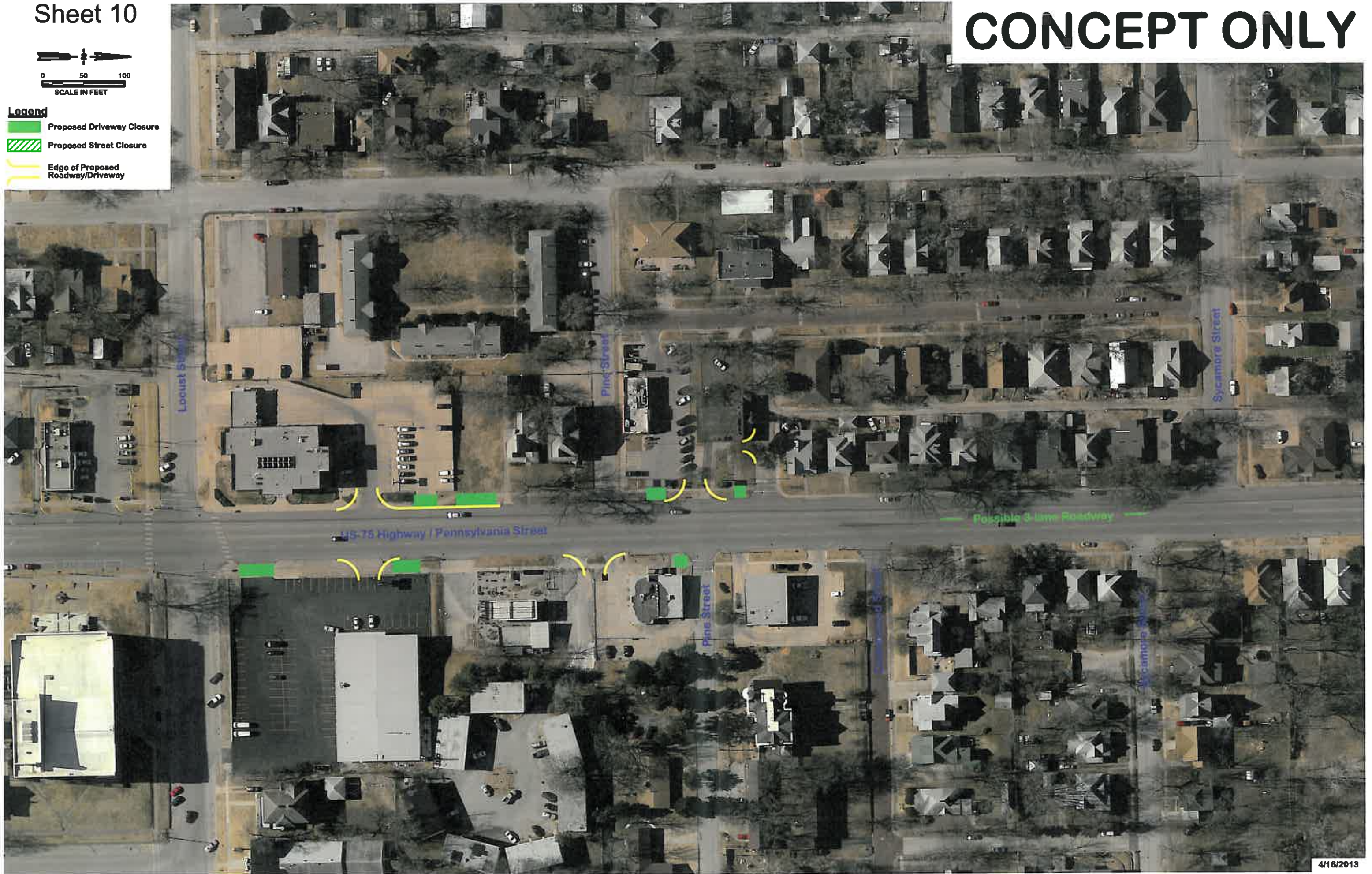
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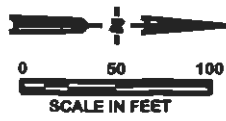




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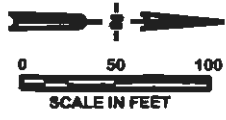


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# CONCEPT ONLY



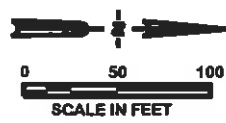




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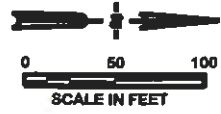




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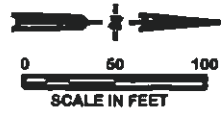


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CONCEPT ONLY

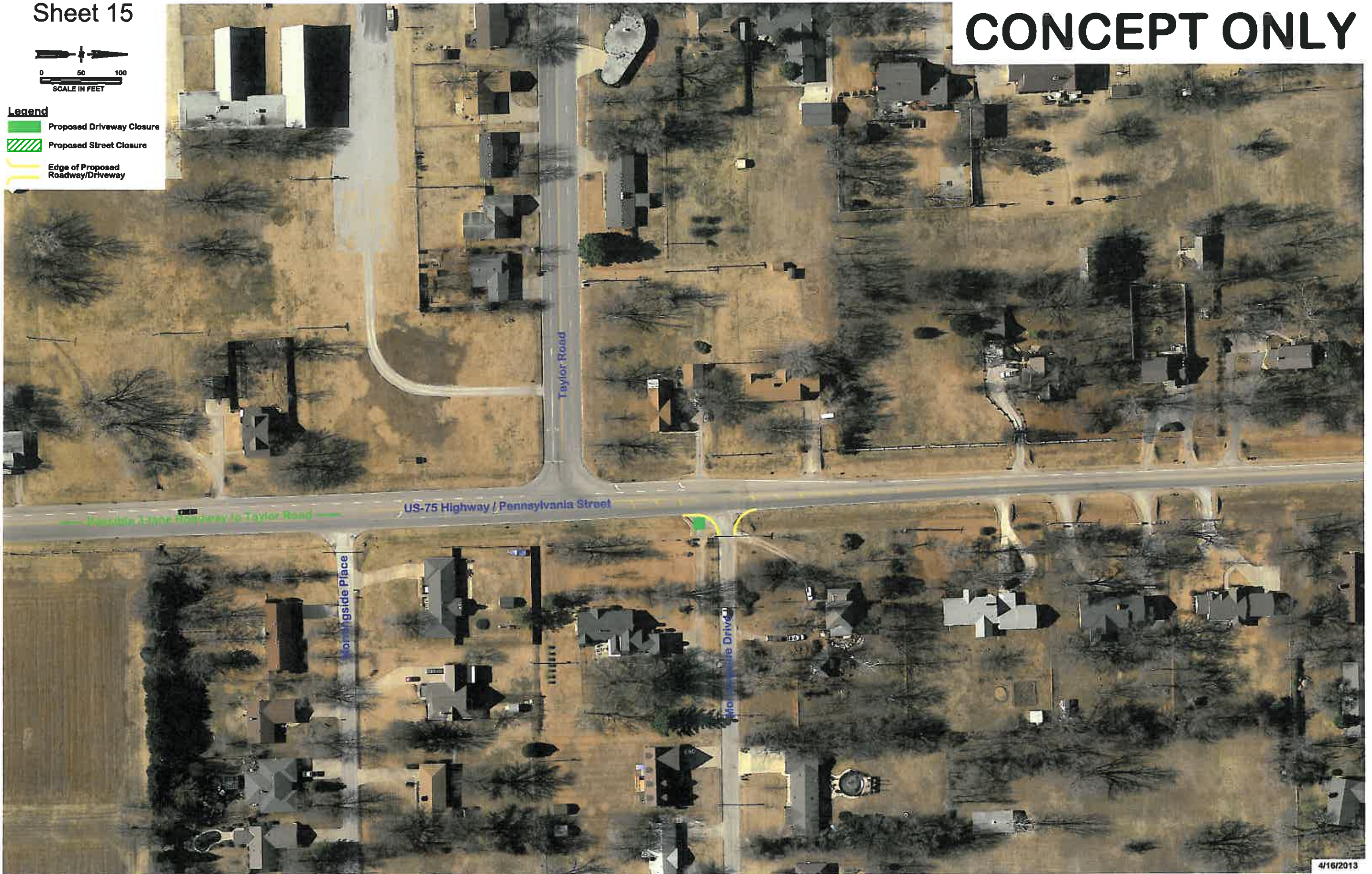




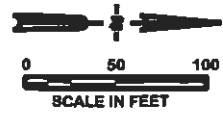


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CONCEPT ONLY







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**CONCEPT ONLY**







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CONCEPT ONLY





**APPENDIX D – FUNCTIONAL CLASSIFICATION MAP OF INDEPENDENCE**

**PROPOSED**  
FUNCTIONAL CLASSIFICATION  
MAP OF  
**INDEPENDENCE**  
URBAN AREA BOUNDARY (UAB)

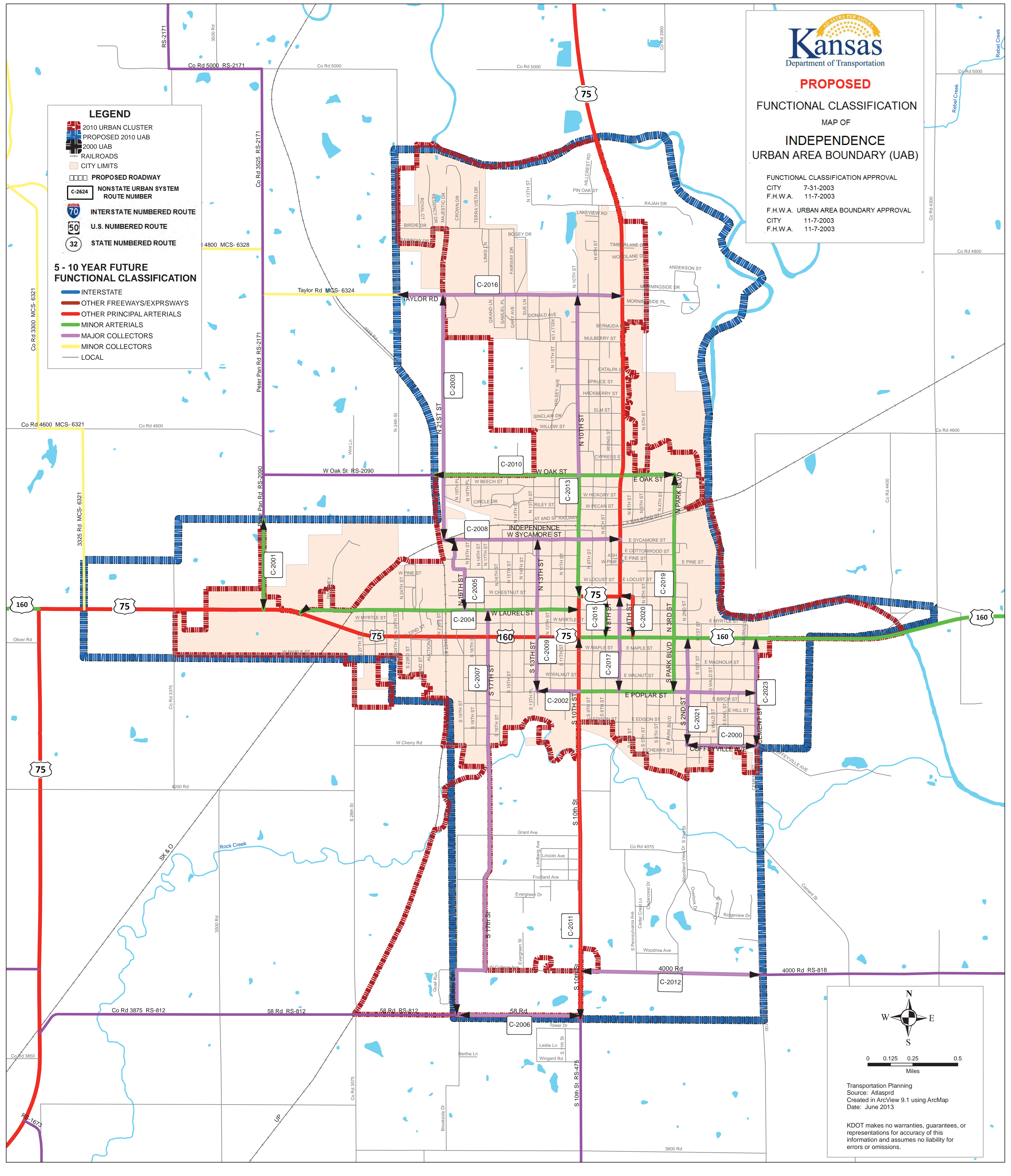
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F.H.W.A. URBAN AREA BOUNDARY APPROVAL  
CITY 11-7-2003  
F.H.W.A. 11-7-2003

**LEGEND**

- 2010 URBAN CLUSTER
- PROPOSED 2010 UAB
- 2000 UAB
- RAILROADS
- CITY LIMITS
- PROPOSED ROADWAY
- C-2624 NONSTATE URBAN SYSTEM ROUTE NUMBER
- INTERSTATE NUMBERED ROUTE
- U.S. NUMBERED ROUTE
- STATE NUMBERED ROUTE

**5 - 10 YEAR FUTURE FUNCTIONAL CLASSIFICATION**

- INTERSTATE
- OTHER FREEWAYS/EXPRSWAYS
- OTHER PRINCIPAL ARTERIALS
- MINOR ARTERIALS
- MAJOR COLLECTORS
- MINOR COLLECTORS
- LOCAL



0 0.125 0.25 0.5  
Miles

Transportation Planning  
Source: Atlasprd  
Created in ArcView 9.1 using ArcMap  
Date: June 2013

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