

Green Valley Area

Transportation and Thoroughfare Plan



**Bartlett
& West**



POTTAWATOMIE COUNTY
TRANSPORTATION AND THOROUGHFARE PLAN
GREEN VALLEY

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Transportation Planning Best Practices

Growing residential areas, newly developed commercial or industrial centers and construction of isolated traffic generators can all have a profound impact on the roadway network serving these developments. Municipalities should establish, with local planning partners, a collaborative process of monitoring development and roadway usage patterns to ensure that the functional classification system is kept current.

A primary objective of the functional classification system is to connect traffic generators (population centers, schools, shopping areas, etc.) with a roadway network that channelizes trips logically and efficiently.

These procedures do not eliminate judgment from the classification process, but when used as a guide, they help to apply judgment in a sound and orderly fashion.

1. Identify traffic generators. In rural areas, traffic generators may be population centers (cities and towns); recreational areas such as lakes, national and State parks; military facilities; and consolidated schools. In urban areas, traffic generators may be business districts, regional shopping centers, colleges and universities, hospital complexes, military bases, industrial and commercial centers, fairgrounds, and parks. Regional traffic generators adjacent, but outside of the area of interest, that can reasonably affect traffic patterns should also be identified.
2. Rank traffic generators. Traffic generators should be categorized based on their relative ability to generate trip. Traffic generators with similar significance should be placed in the same group. These groups will be used to identify the functional classification of connecting roadways. Population, sales tax receipts, retail trade, visitation and employment are some examples of factors to consider when ranking traffic generations according to their significance.
3. Map traffic generators. Traffic generators should be mapped using graduated symbols of varying sizes and/or colors according to the group to which the generator belongs. This will produce a visual representation of the ranking. For example, the group of generators ranked highest should all be symbolized with the largest symbol.
4. Determine the appropriate functional classification to connect traffic generators

Some considerations and rules of thumb for designating roads as Arterials include:

Preserve the continuity of arterial routes. Continuity of arterial routes traveling from rural areas, then into and through urban areas, should be preserved.

Arterials should avoid neighborhoods. They often serve as buffers between incompatible land uses and should avoid penetration of residential neighborhoods.

Most high-volume roadways in urban areas function as arterials. Notable exceptions to this rule in intensely developed areas exist in cases where high volume roadways function as collectors that serve traffic movements between locals and arterials or provide a high degree of direct access service to

abutting land uses. For example, roadways that border on high-activity, low-land area generators may carry proportionally high volumes of traffic while functioning as collectors.

The network of minor arterial roadways will usually intersect roadways in all other classifications.

In urban areas, guidance for distinguishing between principal and minor arterials includes:

Principal arterials provide more mobility. Minor arterials provide more access. The land access function of principal arterials is a lower priority when compared to their primary function of providing mobility for traffic not destined to land adjacent to the roadway. Minor arterials, on the other hand, have a slightly more important land access function. Providing land access is a higher priority and consideration for minor arterials compared to principal arterials.

In general, the spacing between principal arterials should be greater than the spacing between minor arterials. In most cases, minor arterials will be located between principal arterials.

Avoid, if possible, assigning the same functional classification to parallel routes. In the event that parallel routes are determined to provide identical functions, a determination should be made as to which of the routes is more important, likely indicated by traffic volumes. The other parallel route(s) will be assigned the next lower functional classification.

In general, the more intense the development, the closer the spacing of roadways within the same functional classification category. In less dense suburban locations within an urban area, neighborhoods tend to be larger than in the denser central parts of cities. These less dense areas generally do not require the same close spacing of facilities to serve traffic as the areas closer to the central business district.

For the most part, a single connection between two generators is all that is required. However, in some instances, an additional alternative route might be included where two apparently alternative routes are separated by geographic barriers and each is needed for connection to another intermediate generator or another intersecting route within the same classification category, one roadway excludes commercial vehicles, or total traffic volume is not adequately handled by one of the roadways.

Ensure that each route terminates at a route of the same or higher functional classification. As each subsequent category in the roadway classification is identified and added to the system, the continuity of the system must be maintained.

In rural, sparsely developed areas, the spacing of various functional classification categories is often not a helpful criterion in determining functional classification. In most cases, the most direct, most improved and most heavily traveled route should be chosen for connecting medium and small size traffic generators.

CROSS SECTIONS

Applying the guidelines from the *AASHTO Geometric Design of Low-Volume Roads* to the Green Valley area provides the following recommended roadway cross sections in Green Valley.

Rural (<400 veh/day)

Asphalt or Gravel – Two (2) 10' driving lanes. Gravel shoulder recommended but not required.

Urban (<400 veh/day)

Concrete or Asphalt – Two (2) 10' driving lanes with concrete curb & gutter.

Commercial/Industrial (<400 veh/day)

Concrete – Two (2) 13' driving lanes with concrete curb & gutter.

*Rural (400-2,000 veh/day)

Asphalt or Gravel – Two (2) 12' driving lanes. Gravel shoulder recommended but not required.

*Urban (400-2,000 veh/day)

Concrete or Asphalt – Two (2) 12' driving lanes with concrete curb & gutter.

*Commercial/Industrial (400-2,000 veh/day)

Concrete – Two (2) 13' driving lanes with concrete curb & gutter.

*Depending on the density of intersections and/or accesses off a particular roadway, a 12' turn lane may be required to ensure proper traffic flow.

Unpaved roadways have shown to have higher crash rates when compared to paved roadways. Unless an existing roadway has shown a concerning crash pattern in a particular segment, it is not recommended to widen the roadway. Crash rates for unpaved roadways have been found to be lower for narrower roadway widths. (Zegeer, 1994).

FINANCING

There are a number of reasonable options available for funding various transportation and infrastructure projects.

KDOT Transportation Alternatives (TA) Program

<https://www.ksdot.org/bureaus/burtransplan/TransAlt.asp#:~:text=The%20TA%20Program%2C%20as%20administered,scenic%20or%20environmental%2C%20or%20archaeological>

The TA Program provides funding for a variety of alternative transportation projects including, but not limited to, the following:

- Pedestrian and bicycle facilities
- Infrastructure for non-driver access to public transportation
- Projects that enhance safety and mobility
- Improve the scenic, environmental, or archaeological assets in our state
- Safe Routes to School projects

All selected projects are required to meet a minimum 20% local cash match.

KDOT Cost Share Program

<https://www.ksdot.org/CostShare/CostShareProgram.asp>

The KDOT Cost Share Program provides financial assistance to local entities for transportation projects that improve safety, support job retention and growth, improve access or mobility, relieve congestion and/or help areas across the state to improve the transportation system.

The Cost Share program is one of KDOT's most flexible funding opportunities for communities, allowing communities to apply for assistance with a wide range of highway, local road, bridge, rail, airport, bicycle, pedestrian and public transit projects. Participants are required to match at least 15 percent of the total construction cost of the project. KDOT funds are used exclusively to match construction costs for these projects. KDOT opens the Cost Share program for applications twice a year, generally in the Fall and in the Spring.

Community Development Block Grant (CDBG) Program

https://www.hud.gov/program_offices/comm_planning/cdbg

Provides annual grants with the intention of developing viable urban communities by providing housing, suitable living environments, and by expanding economic opportunities for low- and moderate-income persons.

Federal Transit Administration (FTA) Funding

<https://www.transit.dot.gov/funding/grants/grant-programs>

Numerous federal funding grants are availability for a wide variety of transportation-related projects.

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Identification of Cost-Effective Routes

It can be challenging to accurately project where roadways need to be constructed or upgraded in a timely manner before development occurs adjacent to the roadway. The goal is to provide reasonable roadway access to residents, businesses, and other commercial entities before the growth arrives in order to minimize the amount of disruption to daily access. However, it is equally important to not spend valuable dollars and resources on growing your roadway network that outpaces the growth in your municipality.

ELK CREEK ROAD

GREEN VALLEY ROAD TO TIMBER CREEK PARKWAY

The realignment and improvements along Elk Creek Rd. from Green Valley Rd. to Timber Creek Pkwy. will help improve drivers' safety and traffic flow by moving the Elk Creek Rd. access point further south along Green Valley Rd. This will provide more distance from the roadway bridge to the north. Currently the roadway bridge only has room for two driving lanes which does not allow room for a left turning lane on to Elk Creek Rd. for southbound traffic. Potentially the existing bridge will be widened or replaced in the future.

It is likely that right-of-way will need to be purchased for the improvements along this route.

Preliminary plans are included as a part of this report.

With school buses utilizing the route on a daily basis during the school year, it is recommended that the roadway utilize an urban concrete typical section. An asphalt typical section could potentially experience significant rutting from the school buses turning on and off of Elk Creek Rd.

Due to the existing development and future land use along the south side of Elk Creek Rd., it is not recommended to install a sidewalk. However, it is recommended to install a shared-use path along the north side of Elk Creek Rd., tying into the new shared-use path along Green Valley Rd. and extending to Excel Rd. These efforts could be combined with the improvements along Excel Rd. from Cara's Way to Harvest Rd., however, it is recommended that the entire route be planned and submitted to KDOT for consideration for TA (Transportation Alternatives) funding. From KDOT's website, the next round of projects for consideration will likely be accepted in early Spring of 2024. If Elk Creek Rd. is to be improved before TA funding can be secured, the alignment for the shared-use path can be identified and graded for paving with this project.

EXCEL ROAD

CARA'S WAY TO HARVEST ROAD

Excel Rd. has been constructed as an urban typical section up to Cara's Way from the south but is a rural gravel section north of the intersection. With an existing residential development access point to the north near Harvest Rd., future access points planned along Excel Rd. and Harvest Rd., and the planned extension of Excel Rd. from Harvest Rd. to Junietta Rd., it is imperative to upgrade this route from rural to urban as soon as possible.

It is likely that right-of-way will need to be purchased for the improvements along this route.

With the likelihood of construction equipment utilizing the roadway in the near future, it is recommended that the roadway utilize a concrete typical section. Consideration should also be given to utilizing a thicker concrete section than is typically utilized for an urban roadway section.

Currently there is a sidewalk along the east side of Excel Rd. from the south. It is recommended that the walk continue to be extending north along this section of Excel Rd.

It is also recommended to install a shared-use path along the west side of Excel Rd., extend the shared-use path west along the north side of Elk Creek Rd., and tie into the new shared-use path along Green Valley Rd. These efforts could be combined with the improvements along Elk Creek Rd. from Green Valley Rd. to Timbercreek Pkwy, however, it is recommended that the entire route be planned and submitted to KDOT for consideration for TA (Transportation Alternatives) funding. From KDOT's website, the next round of projects for consideration will likely be accepted in early Spring of 2024. If Excel Rd. is to be improved before TA funding can be secured, the alignment for the shared-use path can be identified and graded for paving with this project.

EXCEL ROAD

HARVEST ROAD TO JUNIETTA ROAD

With a substantial amount of residential development along the west side of Excel Rd., future development planned along the east side of Excel Rd., and the construction of Oliver Brown Elementary at the southwest corner of Excel Rd. and Junietta Rd., the construction of Excel Rd. from Harvest Rd. to Junietta Rd. is a vital route to be added to the Green Valley roadway network. The extension of Junietta Rd. from Excel/Moody Rd. to Lake Elbo Rd. would provide similar access to the new elementary school and future development in the area, however, that route has no right-of-way acquired, is twice as long, and would need to cross Elbo Creek two to three times necessitating in the construction of a number of costly bridge or substantial drainage structures.

Right-of-way for the construction of the roadway has already been acquired by the County.

Preliminary plans are included as a part of this report.

It is recommended that an urban asphalt typical section be utilized for the roadway.

It is recommended that either a sidewalk or shared-use path be constructed along the west side of Excel Rd. This would further extend the shared-use path that begins at the intersection of Green Valley Rd. & US-24 with the goal of eventually extending north to Lake Elbo and/or the Pottawatomie County State Lake.

LIMERICK LANE

EXCEL ROAD TO LAKE ELBO ROAD

The construction of Limerick Lane from Excel Rd. to Lake Elbo Rd. would be providing roadway access for future commercial and industrial development as well as for existing entities that currently have their access points along US-24. While these access points may be attractive to the current commercial entities, drivers' safety is a concern due to high speeds and as traffic volumes continue to increase in the

areas. It would be significantly safer for all access points through this area to be limited to the newly constructed Limerick Lane.

A portion of right-of-way exists for the roadway off Excel Rd. The rest of the right-of-way will have to either be purchased by the County or donated by the landowners.

Preliminary plans are included as a part of this report.

It is recommended that a concrete commercial/industrial typical section be utilized for this roadway.

It is not recommended that a shared-use path or sidewalk be constructed along this route.

HARVEST ROAD

EXCEL ROAD TO LAKE ELBO ROAD

Harvest Rd. is an existing rural gravel roadway that currently has a significant amount of residential development at the west and east ends with more residential development planned in the near future. In order to limit the disruption to local residents and provide access to allow for future growth, it is important to improve this roadway section as soon as is reasonable.

It is likely that right-of-way will need to be purchased and/or acquired for the improvements along Harvest Rd.

Preliminary plans are included as a part of this report.

It is recommended that an urban asphalt typical section be utilized for the roadway.

It is recommended that a sidewalk or shared-use path be constructed along the north side of Harvest Rd. as a part of the project. This would further extend the shared-use path that begins at the intersection of Green Valley Rd. & US-24 with the goal of eventually extending north to Lake Elbo and/or the Pottawatomie County State Lake.

EXCEL LANE

EXCEL ROAD TO LAKE ELBO ROAD

Excel Lane currently exists as the east entrance into the Green Valley Business Park. Extending Excel Lane further east from Excel Rd. to Lake Elbo Rd. would help to encourage future commercial and industrial growth in the Green Valley region without needing to add more access points off of US-24. The extension of Excel Lane to Lake Elbo Rd. would include an expensive bridge structure that would need to be constructed along the east side of Lake Elbo Rd.

Right-of-way will have to be either purchased by the County or donated by the landowners.

Preliminary plans are included as a part of this report.

It is recommended that a concrete commercial/industrial typical section be utilized for this roadway.

It is not recommended that a shared-use path or sidewalk be constructed along this route.

GREEN VALLEY ROAD

JUNIETTA ROAD TO MOUNT ZION ROAD

Green Valley Rd. is an existing rural gravel roadway that currently has some existing and planned residential development at the northeast corner of Green Valley Rd. & Junietta Rd. It is likely that residential growth will continue to find its way north along Excel/Moody Rd. and it is recommended to improve this roadway section to provide access for future growth. If it is determined that the Green Valley Rd. improvements for this route are not feasible at this time, it is recommended to at least improve the roadway 600-700' north to Nature Ave.

It is likely that right-of-way will need to be purchased and/or acquired for the improvements along Green Valley Rd.

Preliminary plans are included as a part of this report.

It is recommended that an urban asphalt typical section be utilized for the roadway.

It is recommended that a sidewalk be constructed along the east side of Green Valley Rd. as a part of the project. Consideration should be given to grading for a future sidewalk along the west side of Green Valley Rd.

MOUNT ZION ROAD

MOODY ROAD TO LAKE ELBO ROAD

Mount Zion Rd. is an existing rural gravel roadway that currently has a very little existing or planned residential development. It is likely that residential growth will continue to find its way north along Excel/Moody Rd. and it is recommended to improve this roadway section to provide access for future growth. The USD 383 school district owns land along Mt. Zion Rd. just west of Moody Rd. Though the pandemic has curbed enrollment growth for the school district in recent year, overcrowding was a recent concern for the school district. Constructing the roadway improvements along Mount Zion Rd. from Moody Rd. to Lake Elbo Rd. would prepare the County for the construction of a new middle school should overcrowding become a pressing concern in the near future.

It is likely that right-of-way will need to be purchased and/or acquired for the improvements along Moody Rd.

Preliminary plans are included as a part of this report.

It is recommended that an urban asphalt typical section be utilized for the roadway.

It is recommended that a shared-use path be constructed along the south side of Mount Zion Rd. as a part of the project. This would further extend the shared-use path that begins at the intersection of Green Valley Rd. & US-24 with the goal of eventually extending north to Lake Elbo and/or the Pottawatomie County State Lake.



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