

US-81 Realignment	
Was an INFRA application for this project submitted previously?	No
If yes, what was the name of the project in the previous application?	N/A
Previously Incurred Project Cost.....	\$22,267,000
Future Eligible Project Cost	\$254,980,000
Total Project Cost (This should be the sum of the previous two rows).....	\$277,247,000
INFRA Request.....	\$123,188,000
Total Federal Funding (including INFRA).....	\$174,184,000
Are matching funds restricted to a specific project component? If so, which one?	OTA \$ Yes US-81/I-44 Ramps
Is the project or a portion of the project currently located on National Highway Freight Network?	Pending
Is the project or a portion of the project located on the NHS?	Yes
<ul style="list-style-type: none"> Does the project add capacity to the Interstate system? 	No
<ul style="list-style-type: none"> Is the project in a national scenic area? 	No
Do the project components include a railway-highway grade crossing or grade separation project?	Yes
<ul style="list-style-type: none"> If so, please include the grade crossing ID 	595519H
Do the project components include an intermodal or freight rail project, or freight project within the boundaries of a public or private freight rail, water (including ports), or intermodal facility?....	No
If answered yes to either of the two component questions above, how much of requested INFRA funds will be spent on each of these project components?	N/A
State(s) in which project is located.....	Oklahoma
Small or large project.....	Large
Urbanized Area in which project is located, if applicable	N/A
Population of Urbanized Area	N/A
Is the project currently programmed in the:.....	
<ul style="list-style-type: none"> TIP 	N/A
<ul style="list-style-type: none"> STIP 	Yes
<ul style="list-style-type: none"> MPO Long Range Transportation Plan 	N/A
<ul style="list-style-type: none"> State Long Range Transportation Plan 	Consistent
<ul style="list-style-type: none"> State Freight Plan 	Yes
If selected, would you be interested in participating in a new environmental review and permitting approach?	No



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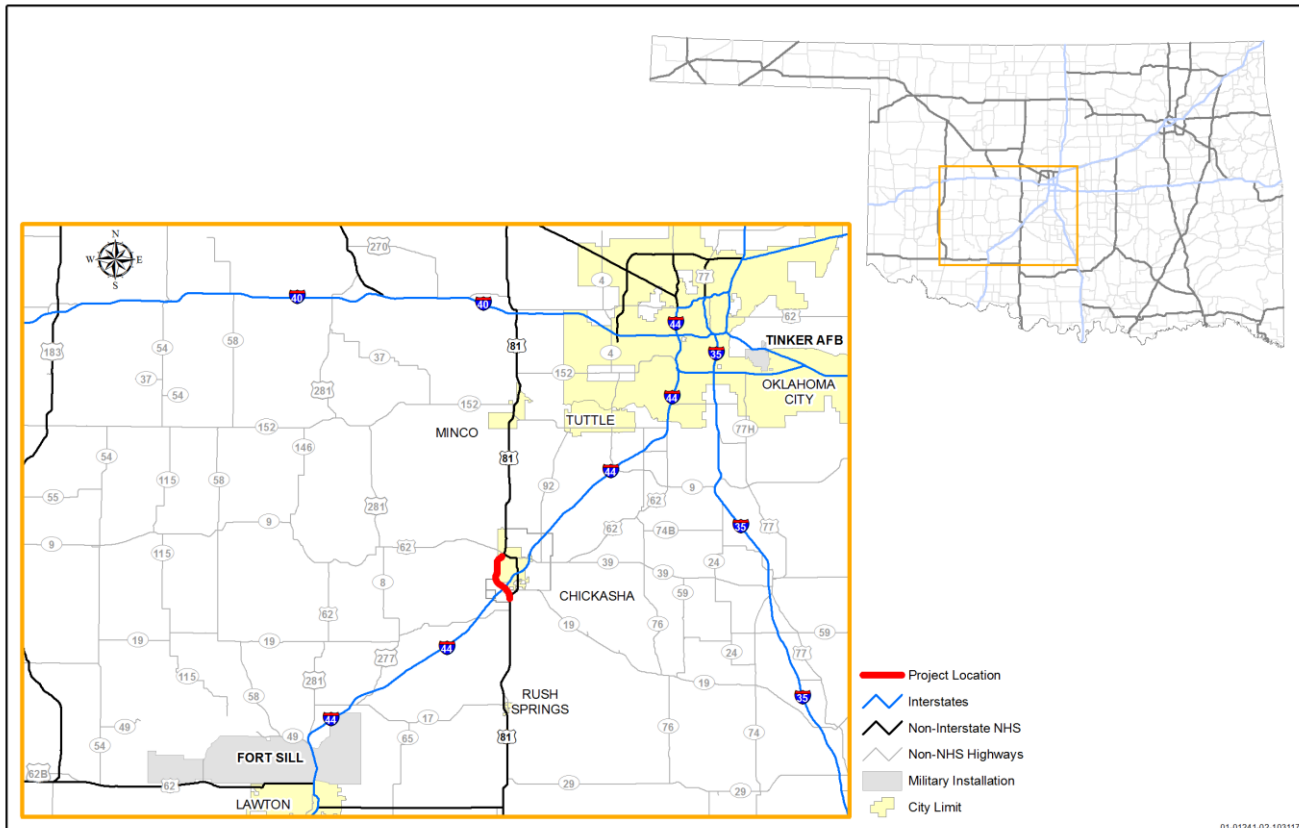
Note: Supplemental information for this grant application is provided on the ODOT US-81 INFRA Grant web site, [https://www.ok.gov/odot/Progress and Performance/Federal Grant Awards/INFRA Grants/Grady County US-81 Realignment.html](https://www.ok.gov/odot/Progress%20and%20Performance/Federal%20Grant%20Awards/INFRA%20Grants/Grady%20County%20US-81%20Realignment.html). References within this application document are hyperlinked directly to the website, clicking on the highlighted reference will take readers directly to the site.



Project Summary

Today US-81 is part of the National Highway System and serves as a multi-national freight corridor linking Oklahoma to Canada, Mexico, and domestic markets. Passing through Chickasha, Oklahoma, this project will be a controlled-access four-lane divided facility, beginning at the curve north of the US-81/SH-19 West junction and extending north 8.25 miles to the US-81/ US-62 intersection (see Exhibit 1). This is an essential corridor for the transportation of supplies, equipment, and products to support wind energy, oil and gas, and agricultural industries that sustain people and communities throughout the U.S. and around the world.

Exhibit 1: Project Overview Map



Project History:

The project segment of US-81 follows a portion of the old Chisholm Trail. As one of the nation’s early freight transportation corridors, the trail supported economic vitality of the Central Plains region by enabling ranchers and farmers to reach the railroad and ship their goods to destinations around the country.

This segment of US-81 passes through the Chickasha central business district (CBD), where less than ideal conditions slow traffic flow, especially freight related truck traffic. There are fourteen traffic signals in Chickasha and two 90-degree turns on this portion of the highway. Traffic studies show an increase in truck traffic, particularly oversize/overweight (OSOW) loads due to the energy industry (wind farms, gas and oil production) and agriculture production. Since the 1970s, the Oklahoma Department of Transportation (ODOT) has recognized the growing need to realign this segment of the corridor. A 2007 US-81 Corridor Study justified the need for a newly aligned route due to the difficulty in accommodating the increasing demand of trucks and other heavy vehicles. Based on data in the 2017 Access Justification Report (a copy can be found in the **Reports and**



Technical Information folder on the [ODOT US-81 INFRA Grant web site](#)), coupled with extensive public participation in the environmental assessment process, a new 8.25 mile alignment has been identified west of Chickasha.

Inadequate Existing US-81 Infrastructure: Truck volumes reach as high as 25% on some sections of this corridor. Average annual daily traffic (AADT) in the 2060 “no build” scenario estimates traffic volumes on the existing alignment through Chickasha will increase from 21,120 to 33,090 vehicles.¹ Copies of maps with current and future traffic volumes as well as “build” and “no-build” traffic data, can be found in the **Maps and Graphics** folder on the [ODOT US-81 INFRA Grant web site](#). The new alignment provides trucks and OSOW freight, along with through passenger traffic, a corridor that eliminates the 90 degree turns, improves mobility serving local businesses and downtown Chickasha, and eliminates an at-grade crossing at the Union Pacific rail line which regularly delays traffic.

US-81 - Energy and Agriculture: Oklahoma is the nation’s third largest wind energy producer and ranks fourth nationally in natural gas production and fifth in crude oil production.² This project segment of the corridor handles a significant volume of OSOW and super oversized freight movements supporting energy production occurring in the south central region of the state. New wind farms in Rush Springs, south of Chickasha and those near Minco and Tuttle north of the city, continue to move turbine blades, towers, and other large turbine components through the area. These super oversized loads cause significant delays as they navigate the route impacting both northbound and southbound traffic. Compounding the situation is the at-grade Union Pacific railroad crossing less than a half-mile north of the 90-degree intersection at US-81 and US-62. The second 90-degree intersection (at Choctaw Ave.) is in an urban setting where traffic signals, street lights, sidewalks, and utilities leave little room for OSOW vehicles to maneuver. These loads often bring traffic to a complete standstill in all directions as they move through the obstacles of this intersection.



¹ ODOT Division of Traffic

² U.S. Energy Information Administration, February 2017 Petroleum Report for Oklahoma



In the past nine months the Oklahoma Department of Public Safety recorded 15,149 permitted OSOW/super oversized loads moving through Chickasha. The local police department is frequently called to manage traffic for these super oversized loads which include oil drilling rigs, large agricultural machinery, and wind turbines. When it is necessary for traffic to be stopped in both directions, it takes 45 – 50 minutes for traffic to normalize.³ Although OSOW loads travel this corridor on a daily basis and



Super oversized load on US-81 at Choctaw Ave.

are restricted to daylight hours, the volume is significant and dramatically affects freight flows and business operations in Chickasha and Grady County. To provide context for the challenges these OSOW and super oversized loads create, a Google KMZ map and a video clip of super oversized traffic at this intersection can be found in the **Maps and Graphics** folder on the [ODOT US-81 INFRA Grant web site](#).

Proposed Improvements to US-81: This INFRA Grant application requests funding for realigning the section of US-81 that currently bisects Chickasha. The new corridor will have design speeds of 70 mph and provide full access control, with grade separated interchanges and as well as rail crossings for Union Pacific and Stillwater Central (which interchanges with BNSF) railroads. New interchanges will be constructed as shown on Exhibit 2. Once the new alignment is completed, the existing corridor through Chickasha will become part of the local road network with the maintenance and operation being transferred to Chickasha and Grady County. The preliminary engineering for this new alignment and interchanges has been completed and can be found in the **Reports and Technical Information** folder on the [ODOT US-81 INFRA Grant web site](#).

³ Information provided by ODOT Division 7 Construction Engineer based on discussions with City of Chickasha Officials and PD



Exhibit 2: Project Location Map



Benefits to the Highway: The full project **Benefit Cost Analysis** narrative and spreadsheet model can be found in the **Reports and Technical Information** folder on the [ODOT US-81 INFRA Grant web site](#). Based on the project Benefit Cost Analysis, the US-81 realignment project will result in substantial safety and travel improvements. The most significant enhancements include:

New Alignment Benefits

- \$189,362,000 in benefits when discounted, and
- Generates a benefit cost ratio of **1.07**.

Reductions in Vehicle Crashes

- Reduced loss of life, injuries, and damages
- BCA estimates of avoided crashes totalling \$401 million in collision savings benefits (\$81.8 million when discounted) during 2016 to 2060 period.

Faster Travel

- Significant volume of truck through traffic removed from downtown streets

Reduced Vehicle Operating Costs

- More efficient travel, leading to \$47.9 million (\$9.6 million when discounted) in savings for drivers during the 2016 to 2060 period.

Better Response Times for Emergency Vehicles

- Less congestion along the corridor would result in better access for emergency vehicles

Reduced Noise

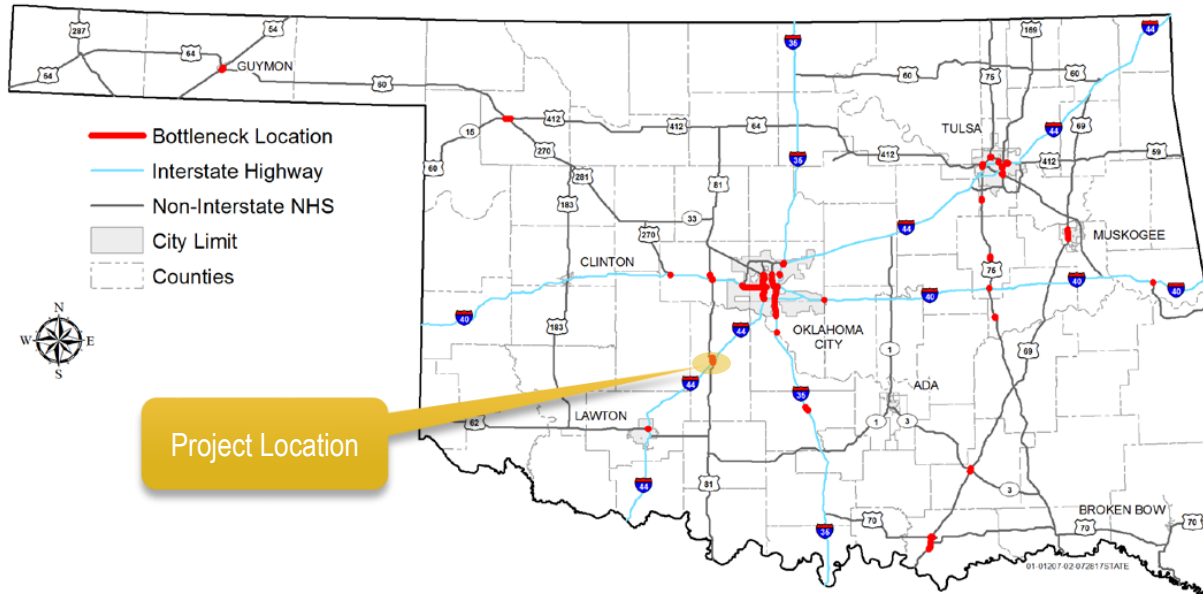
- Noise due to truck traffic will be reduced considerably with 2/3 of truck traffic diverted to new US-81 realignment

Economic Development Opportunities

- Improved access to businesses within Chickasha
- Economic development potential along former US-81 within Chickasha as well as along new realignment

National and Regional Freight Assets: Chickasha, the county seat of Grady County, is located 35 minutes from Oklahoma City and Fort Sill Army Base. The segment of US-81 included in this project is recommended as a Critical Rural Freight Corridor in the Oklahoma Freight Transportation Plan: 2018-2022 (OFTP). The OFTP also lists this highway in the top 5% of bottleneck locations in the state, as a Rural High Percentage Truck Route, and as a High Truck Volume Route. (see Exhibit 3) Copies of the bottleneck and truck volume maps can be found on pages 47, 76, and 77 in the OFTP and a copy is located in the **Reports and Technical Information** folder on the [ODOT US-81 INFRA Grant web site](#). The transportation network serving Chickasha and Grady County includes: US-81, I-44, US-62 and Union Pacific and the Stillwater Central Railroad. The realignment would improve the efficient movement of freight rail, trucks, and passenger vehicles. State and national transportation resiliency would be enhanced by providing an improved highway route, in combination with I-40 to/from Oklahoma City, in the event that I-44 becomes impassable during a natural or man-made disaster.

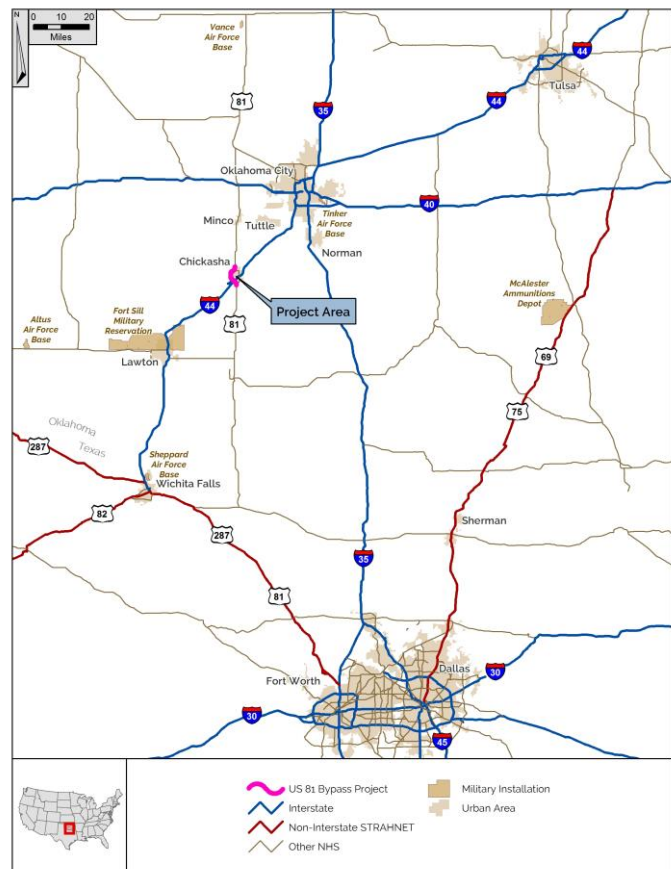
Exhibit 3: Oklahoma's Top 5% Bottleneck Locations



Source: ODOT. Draft Oklahoma Freight Transportation Plan, October 2017

Critical Oklahoma Economic, Freight, and Military Link: As the state's economy continues to diversify and grow, businesses place increasing demands on the multimodal transportation network as more freight and people move in and through this region. (see Exhibit 4) US-81 serves as a freight route to five major military facilities: Fort Sill Army Base, Altus Air Force Base, Vance Air Force Base, Sheppard Air Force Base and Tinker Air Force Base. The Fort Sill Fires Center of Excellence, located 50 miles southwest of Chickasha in Lawton, incorporates the Air Defense Artillery School and the Field Artillery School where thousands of military students train annually. In 2015 over 102,585 military members, their families, and civilian employees were stationed at this base for training, deployment, and other military duties. As a critical artillery training center, this facility frequently receives munitions shipments. Although specific routing and freight volume information is not available for security reasons, freight to this facility could be routed from Dallas and Houston and east and west from I-40 to US-81 to the base. Improvements from this project would increase the reliability of the transportation network serving Fort Sill and the Air Force Bases in the region.

Exhibit 4: Regional Map



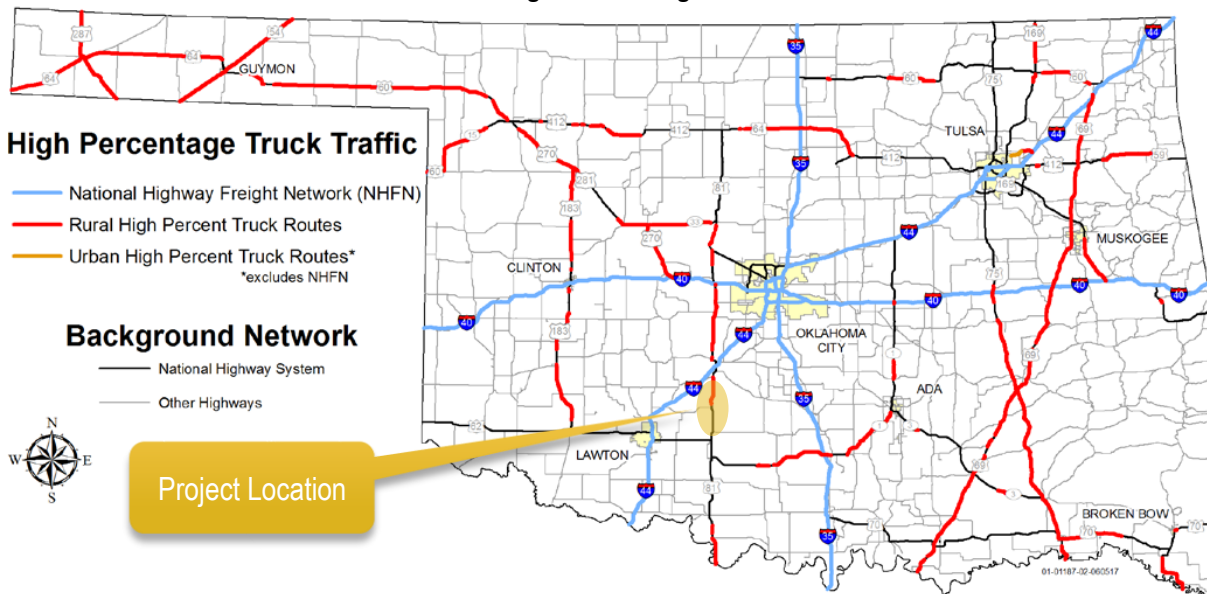


Funding Needs: The State of Oklahoma, through ODOT, is requesting \$123,188,000 in INFRA Grant funds; **48% of the total project cost.** This total does not include \$22,267,000 in previously incurred costs for preliminary project engineering, environmental studies, and relocation of the Oklahoma Turnpike Authority (OTA) toll booth at I-44, required to facilitate construction of this project. ODOT will contribute \$80,796,000 which includes a \$29,800,000 contribution from the OTA, a valued partner. The OTA commitment will be used for the construction of the access ramps at the new US-81 and I-44 turnpike interchange. Other funding sources and uses for this project are shown on the **Grant Funds, Sources and Uses of all Project Funding** table on page 15. ODOT will fund the long-term maintenance of the new alignment (estimated at \$36.9 million during the 2021-2060 period) and the City of Chickasha and Grady County will maintain the existing segment of US-81 when it becomes part of the city and county road network.

Without INFRA Grant funds, construction on this project cannot begin before 2024 and ODOT estimates constructing the new alignment will take 13 years to complete, given the transportation funding available. During this intervening period, conditions on this corridor will continue to deteriorate, impeding the movement of freight, and negatively affecting the region and the metropolitan area economy. INFRA funds are essential to this project and the continuing economic vitality of this region, the military, and this key energy and agriculture production corridor.

Expected Users: At the regional and local levels, many businesses and freight-dependent industries use US-81 daily to transport supplies, raw materials and move finished goods. (see Exhibit 5) Over 70.8% of the residents in Grady County travel outside the county for work⁴ and many depend on this corridor every day to get to their jobs. The corridor also provides residents of this rural area access to education and training services, specialized health care, cultural events, food, and recreational opportunities to enhance their lives and improve their health and well-being.

Exhibit 5: Oklahoma’s High Percentage Truck Traffic Locations



Source: ODOT Draft Oklahoma Freight Transportation Plan, October 2017

⁴ US Census Bureau Longitudinal Employment – Household Dynamics 2016 for Grady County

Based on the benefit cost analysis, annual hours of travel time for passenger vehicles are forecasted to increase from 1.2 million hours to 2.1 million hours from 2016 to 2060. Annual hours of travel time for trucks are projected to increase from 247,100 million hours to 432,400 million hours during the same period. Freight, businesses, residents, and visitors that depend on the project corridor face significant impacts from increased travel time, increased accidents and safety challenges, declining quality of life, and loss of economic vitality until this new alignment is completed.

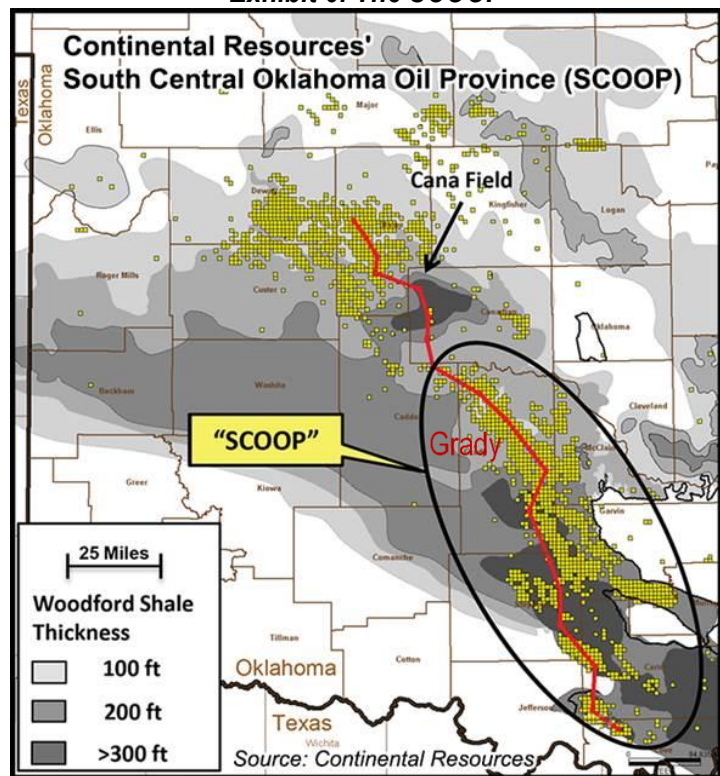
Wind Energy Production: Northwest of Chickasha the largest wind energy project in the U.S. is currently under construction. The \$4.5 billion 800-turbine Wind Catcher Wind Farm will provide clean energy to 1.1 million utility customers. As the cost of wind energy production has decreased, additional clean wind energy production projects are in the pipeline competing with fossil fuel driven power generation. Drift Sand and Rush Springs Wind Energy Center, as well as additional wind farms near Tuttle and Minco, north of Chickasha, will result in more super oversized loads moving through the city.

A small 50 – 80 turbine wind farm will generate 400 – 640 super oversized loads. The Wind Catcher project with 800 turbines will generate 6,400 oversized loads, some utilizing the existing corridor through Chickasha. The Oklahoma Turnpike Authority does not allow oversized loads on I-44, therefore these loads utilize US-81 and other similar highways.⁵

Oil and Gas Sector: The traffic conditions on US-81 in Chickasha are further challenged by the increase in oil and gas activity in the region. This region is within the Anadarko Basin geological region; and, since 2012, has experienced a significant increase in activity due to the discovery of oil and gas fields in the South Central Oklahoma Oil Province (SCOOP) and the Sooner Trends Anadarko Basin Canadian and Kingfisher Counties (STACK). See Exhibit 6. The increase in oil and gas activity and the heavy truck traffic that supports the exploration, production and transportation has significantly increased along this corridor. An example of this is trips generated by oil field service company trucks traveling from their equipment yards to the well sites using US-81.

Aerospace and Aviation: There are over 236 aerospace businesses in this region employing 36,600 people and generating \$2.7 billion in income annually.⁶ Indirect employment from the aerospace industry supports an additional 31,000 metro area jobs. There are six aerospace companies located in Grady County. While supplies and materials to support this industry sector move by air, rail, and truck, the oversized component parts travel exclusively by truck and utilize US-81 through Chickasha.

Exhibit 6: The SCOOP



⁵ General Electric Renewable Energy website. <https://www.GErenewableenergy.com/wind-energy/turbines>

⁶ "Greater Oklahoma City Region Aerospace Industry Survey and Economic Impact Assessment, June 2016"

Agriculture: Agriculture is a primary industry in Grady County. Livestock trailers, oversized machinery, and large tankers frequently travel along US-81 through Chickasha.⁷ Seasonal movements of oversize farm equipment associated with the annual grain harvest utilize this corridor as well. Farmers and ranchers grow and raise commodities including rye, winter wheat, cattle and hogs, soybeans, milk, and other products. International exports of agriculture products from Oklahoma exceeded \$1.9 billion in 2013. Many agricultural producers in the area are dependent upon this corridor to move their product to market.

Transportation Challenges Addressed: This segment of US-81 is characterized by varying speeds, a range of development densities, and various median types. The urbanized section through Chickasha serves as a primary arterial providing access to local businesses and commercial areas with posted speeds as low as 25 mph. Outside the urbanized area is primarily a four-lane divided highway with posted speeds from 45 mph. According to past studies and field conditions, one of the primary challenges with the existing route through Chickasha is the number of trucks and OSOW vehicles traveling through downtown. These trucks and OSOW loads travel at low speeds due to the inadequate intersection geometry, which leads to high congestion and a crash rate 3.5 times that of similar facilities in the state. ODOT estimates there are 625 super oversized loads traveling this section of US-81 annually, resulting in 59.9 minutes of delay per weekday. The impacts of this delay are discussed in detail in the benefit cost analysis.

US-81 currently carries 11,000 to 17,500 vehicles per day through Chickasha. By 2060, traffic projections reach 21,000 to 33,000 daily vehicles.⁸ ODOT estimates that one-third of passenger traffic and approximately two-thirds of truck traffic on the existing route will divert to the realigned corridor once opened. This will provide time saving benefits for both diverting traffic and traffic that continues to use US-81 through Chickasha.



Flagger Truck stops approach to intersection at US-81/62.



Truck driver directs traffic to provide room to turn.

Although US-81 is a four-lane highway, oversize loads essentially reduce capacity to a single lane, resulting in lengthy queues behind these trucks. These loads also have a longer acceleration time to reach the posted speed limit causing trailing traffic to be slowed as well. The northbound approach at the intersection of US-62 and Choctaw Ave. has a dedicated left turn lane and a shared left/through/right lane. Oversize truck loads frequently use both lanes to make a left turn.

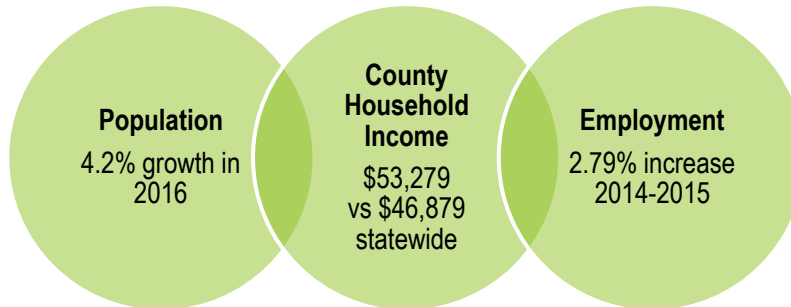
⁷ Oklahoma Department of Agriculture, Food, & Forestry, 2015 Ag Stats

⁸ ODOT. Draft Access Justification Report, August 2017.



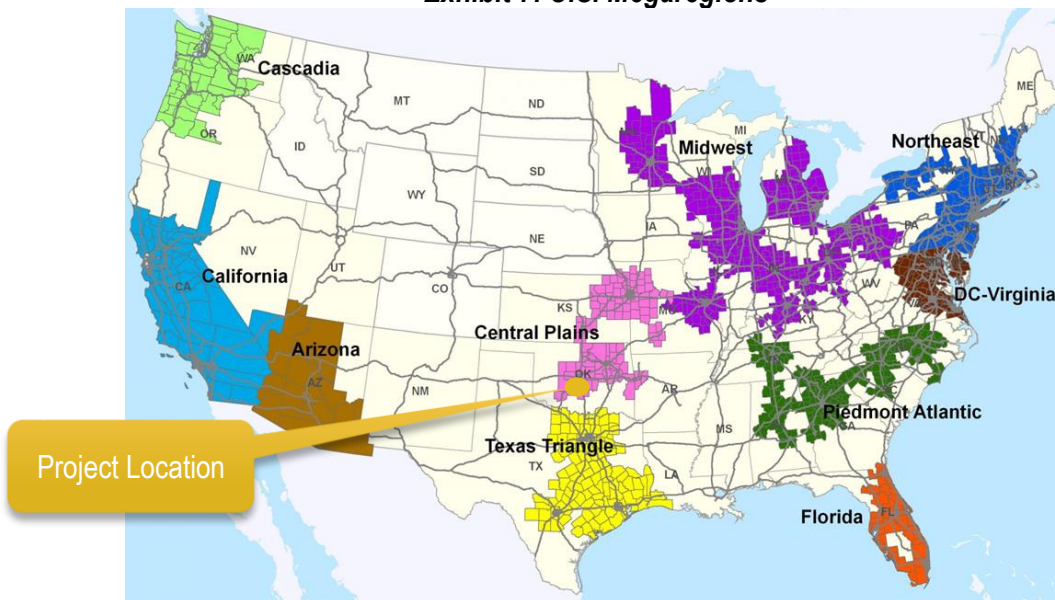
Economic Outcomes

In 2016, Grady County’s population increased from 52,430 to 54,655, a 4.2% growth rate.⁹ The county’s median household income is \$52,279, compared to \$46,879 statewide. Currently there are 24,086 people employed in the county, an increase of 2.79% from 2014 to 2015.



Primary employment sectors include healthcare and social services, retail trade, manufacturing, and education. The county is home to the University of Science and Arts of Oklahoma, located in Chickasha and named the highest-ranked public college in Oklahoma for the sixth straight year by U.S. News and World Report. The Center for Quality Growth and Regional Development at the Georgia Institute of Technology includes Grady County in the future Central Plains megaregion, shown on Exhibit 7 and contained in the **Map & Graphics** folder on the [ODOT US-81 INFRA Grant web site](#).

Exhibit 7: U.S. Megaregions



Source: Center for Quality Growth and Regional Development (CQGRD), Georgia Institute of Technology, 2009

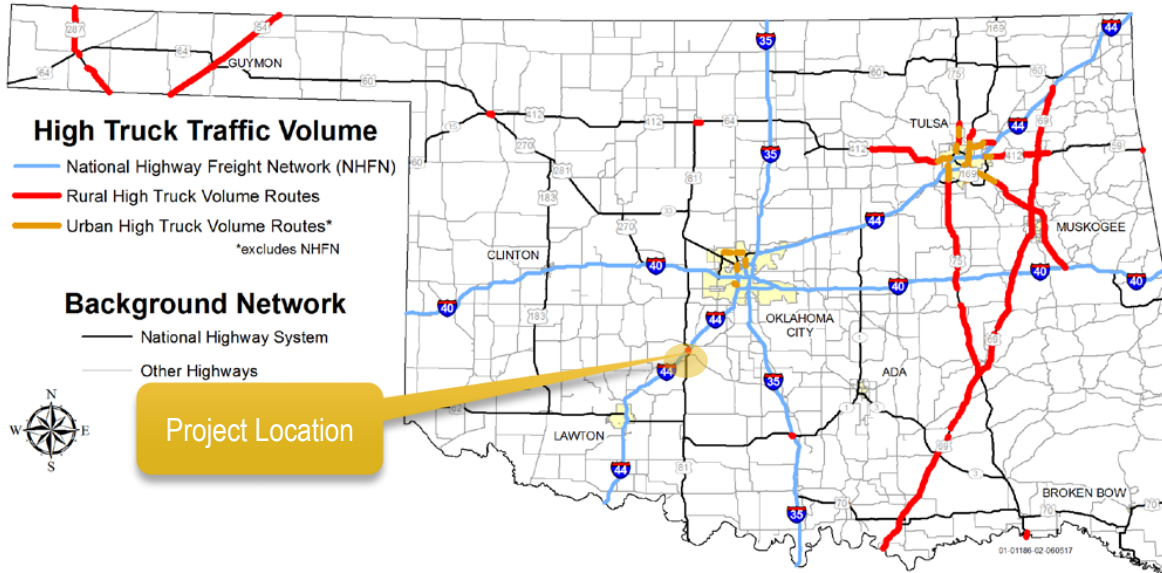
Truck and rail freight movements to, from, and through this region will increase as population, business growth, freight flows, and demand for consumer goods continue to increase. Travel times for passenger vehicles and trucks are projected to increase by 57% over the next 40 years.¹⁰ Improvements resulting from this project will help address growth impacts in Chickasha, Grady County and the Oklahoma City metro area. As documented in

⁹ U.S. Census Bureau, Data Quick Facts

¹⁰ Access Justification Report for US-81 Realignment, August 2017

the benefit-cost analysis, travel time for international highway and rail freight movements (Canada to Mexico) within this corridor will improve significantly once this project is complete. Realignment will also benefit freight moving to the Fort Sill Army Base, southwest of Chickasha. The proposed US-81 improvements will provide regional and national economic benefits supporting the goals of the NSFHP program and the INFRA Grant program.

Exhibit 8: Oklahoma's High Truck Traffic Volume Locations



Source: ODOT. Draft Oklahoma Freight Transportation Plan, October 2017

On average, 17% of the vehicles traveling this route are trucks¹¹ transporting products manufactured by local and regional businesses including:

- automotive parts,
- cooling town components,
- oil and gas industry equipment,
- wind turbines,
- agricultural machinery and agricultural products, and
- military equipment

Freight transportation is critical to the transportation dependent industry sectors that dominate employment in Grady County.¹² These businesses compete, in part, on their ability to deliver goods and materials on time and at a cost-effective price. Current conditions on this segment of US-81 adversely impact local and regional companies, as well as those businesses throughout the nation that use this highway in their business operations and freight movement.

Transportation Dependent Industry Sectors in Grady County

- 12.6% – retail trade;
- 12.6% – health care and social services;
- 5.6% – accommodation and food services;
- 9.5% – manufacturing;
- 8.0% – construction; and
- 6.9% – oil and gas extraction

¹¹ ODOT Division of Traffic and Oklahoma Freight Transportation Plan 2018-2022

¹² American Community Survey, 2016 Employment by Industry, Grady County, Oklahoma

Safety Outcomes

Congestion and delay are not the only problems affecting this highway. Safety is paramount for ODOT and USDOT. Collision statistics for the most recent five-year period available (2011–2016) form the basis for the safety analysis in the benefit cost analysis of this realignment project. During this period there were a **total of 1,473 crashes** on US-81 in Chickasha, **8 fatalities and 432 injuries**.¹³ An analysis of this crash data by ODOT found that this segment exhibited a crash rate that was **3.5 times higher** than the average statewide rate for similar highways.¹⁴ Nearly three-quarters of these crashes occurred at intersections. Of the eight fatalities, five occurred at intersections. This project will construct grade separated interchanges, as well as grade separated rail crossings, significantly improving the safety on this corridor.

To determine the reduction in crashes resulting from the project, the benefit cost analysis estimated year 2040 collisions within the “no-build” and “build” conditions. (see Exhibit 9) The estimated number and severity of collisions was developed for the three most severe collision types. Collision growth rates were 61% for “no-build” conditions and 38% for “build” conditions. Monetized benefits from the reduction in collisions are included in the benefit cost analysis narrative. Based on the results of the analysis, the total collision savings during the period 2025 – 2060 is \$401.0 million (non-discounted value), reflecting 1,160 crashes and 36 fatalities avoided.

Exhibit 9: Crash Reductions for “Build” Conditions versus “No-Build” Conditions

Crash Category	YEAR			
	2025	2030	2040	2060
NO-BUILD				
Property Damage Only	112	123	145	189
Possible Injury	43	47	55	71
Incapacitating Injury	6	8	10	15
Fatality	1	1	2	2
Total of All Crashes	163	179	212	277
BUILD				
Property Damage Only	104	111	125	158
Possible Injury	40	43	48	60
Incapacitating Injury	6	6	8	12
Fatality	1	1	1	2
Total of All Crashes	151	161	182	231
DIFFERENCE				
Property Damage Only	8	12	20	31
Possible Injury	3	4	7	11
Incapacitating Injury	1	1	2	3
Fatality	1	1	1	1
Total of All Crashes	13	18	30	46
Value of Avoided Crashes (\$)	\$10,172,000	\$10,458,000	\$11,030,000	\$11,830,800

Notes: Use of decimal values in the crash figures may affect arithmetic calculations. Fatalities were rounded up for values less than 1 in the analysis.
Source: CDM Smith

¹³ ODOT Data, CDM Benefit Cost Analysis

¹⁴ US-81 Realignment, Chickasha, Grady County, Federal Aid Project no. J2-4428(004), Environmental Assessment, US Department of Transportation Federal Highway Administration and Oklahoma Department of Transportation, Approved February 2017

Mobility Outcomes: Currently, impediments to mobility on US-81 are significant at signalized and non-signalized intersections. The mobility of freight and passenger vehicles traveling through Chickasha will improve substantially as a result of this INFRA project. In addition, local traffic will flow more efficiently without the impedance of trucks, oversized and super oversized loads, and fewer accidents. The total travel time ranges throughout the day from nearly 12 minutes southbound in the morning to 13 minutes and 20 seconds northbound at midday. The summary results are shown in Exhibit 10.

Exhibit 10: US-81 Travel Time from US-62 to SH-19

Time	Direction	Average Speed (MPH)	Average Travel Time (sec)	Average Running Time (sec)	Average Stop Delay Time (sec)
6:30 AM–	NB to SB	40	733.14	629.29	103.86
9:30 AM	SB to NB	40	714.00	635.29	78.71
11:00 AM –	NB to SB	45	800.40	635.40	165.00
1:00 PM	SB to NB	45	724.00	616.00	108.00
3:30 PM –	NB to SB	45	724.43	599.71	124.71
6:30 PM	SB to NB	45	732.29	597.86	134.43

Source: ODOT

Travel time reliability is a critically important factor for freight and logistics firms and drivers. Most businesses utilize just-in-time inventory management systems with precise delivery schedules and penalties for failing to meet schedules. Travel time reliability is also important for the truck drivers, who must adhere to strict hours of service requirements. The improvements proposed in this INFRA project will enable traffic to flow freely at 70 mph on an access-controlled highway, resulting in significant travel time savings and reduced accidents. For the existing “no-build” condition, total annual travel time in 2016 was more than 1.1 million hours. By 2060, total annual travel time increases to 1.9 million hours. Once the new alignment is completed in 2025, results for traffic traveling on existing US-81 plus the realignment for “build” conditions for both routes is 1.0 million hours; and by 2060, that total annual travel time only increases to 1.5 million hours, a savings of well over 400,000 hours.

Community and Environmental Outcomes: The community and environmental effects of the US-81 realignment project will influence a diverse region. Chickasha has a population of 16,423.¹⁵ More than 17.2% of Chickasha’s population lives below the poverty level compared to a state average of 16.7%, and a national average of 15.5%. A number of initiatives are underway with the Chickasha Chamber of Commerce, the Chickasha Economic Development Council, and the Oklahoma Department of Commerce to improve access to jobs, increase household incomes, and improve workforce training.



University of Science and Arts of Oklahoma

The realignment around Chickasha will enhance opportunities for economic development. Less traffic congestion will make local businesses in the central business district more accessible. Fewer trucks will make the area more walkable and safe, thereby enhancing business ventures and tourism. Economic activity in Chickasha is not restricted only to the central business district area. Industries and professional services throughout the city experience significant negative impacts from increased truck traffic, congestion, and delays that impact their employees, profitability, and customers.

¹⁵ U.S. Census, American Fact Finder. 2015 5-year average. Tables B19301 and B19013



Secondary benefits of the realignment project include: new development around the new interchanges, economic development opportunities for businesses that need access to the improved highway network, improved pedestrian access in the Chickasha Central Business District, and redevelopment of vacant or under-utilized parcels on the existing US-81 corridor.

Community benefits from this project include:

Safety Benefits

- Increased safety for both vehicles and non-motorized users
- Reduction in number of accidents and related injuries
- Less congestion and delay
- Grade separation at rail crossings

Mobility and Accessibility Benefits

- Separation of local and through traffic
- Reduced travel time in the project area
- Improved travel reliability
- Elimination of rail delays and barriers when a train is passing

Economic Development Potential

- Improved access to local Chickasha businesses
- Redevelopment of vacant or under-utilized parcels on existing US-81 corridor

By diverting traffic from the downtown area to an access controlled section, fewer trucks will be idling which will decrease vehicle emissions as well as acceleration and deceleration noise.¹⁶ This corridor also supports the wind power industry, a clean renewable energy source resulting in indirect air quality and environmental benefits. The proposed project will also reduce long-term maintenance costs on the existing US-81 corridor.

Project Location

The proposed realignment project begins at the curve north of the US-81/SH-19 West junction and extends north approximately 8.25 miles to the US-81/ US-62 intersection.¹⁷ See project location maps and regional map in the **Maps and Graphics** folder on the [ODOT US-81 INFRA Grant web site](#).

- Southern limit:
 - -97°57'09.0567" W
 - 34°58'44.5278" N
- Northern limit:
 - -97°57'53.4256" W
 - 35°03'36.7944" N

This is a rural application and no urbanized area boundaries are applicable.

¹⁶ EPA, Emission Facts, Average Annual Emissions and Fuel Consumption for Gasoline-Fueled Passenger Cars and Light Trucks, October 2008. <https://www3.epa.gov/otaq/consumer/420f08024.pdf>

¹⁷ See US-81 Project Location map in the Maps and Graphics folder on the (insert website link here)

Project Parties

ODOT is the project sponsor. OTA is providing \$29.8 million in financial support for the project. Other entities in the region have provided letters of support. The OTA financial commitment and regional letters of support can be found in the **Letters of Support** folder on the [ODOT US-81 INFRA Grant web site](#). These partners include:

- OTA
- City of Chickasha
- Grady County
- Chickasha Economic Development Council
- University of Science and Arts
- Standley Systems
- Southwest Oklahoma Impact Coalition
- Chickasha First National Bank
- Southwest Oklahoma Regional Transportation Planning Organization

Grant Funds, Sources and Uses of all Project Funding

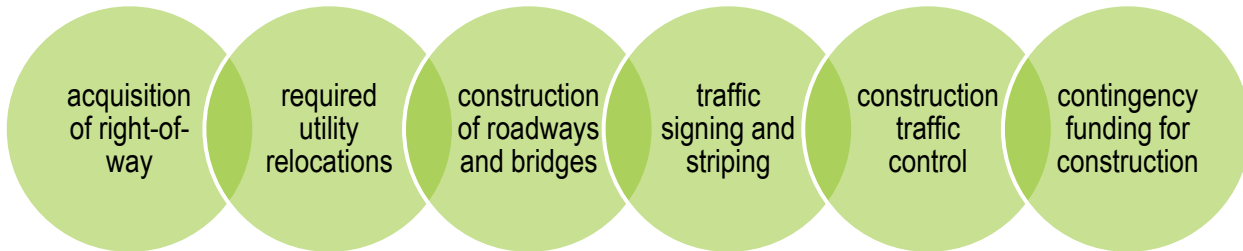
Sources of Funds							
All funds shown in thousands of 2017 \$	Non-Federal funds Previously Incurred	Federal Funds Previously Incurred	Non-Federal Funds Future Eligible Costs	Federal Funds Future Eligible Costs	Federal INFRA Funds	Future Eligible Costs	Total Project Costs
<i>Uses of Funds (thousands)</i>							
Preliminary Engineering & Environmental Studies	\$561.0	\$4,706.0					\$5,267.0
Relocation of Toll Structure at US-81/I-44	\$17,000.0						\$17,000.0
ROW & Utilities			\$3,530.0	\$14,250.0 <i>(Freight Formula Funds \$7,120.0; Federal \$7,130.0)</i>		\$17,780.0	\$17,780.0
Construction			\$70,235.0 <i>(ODOT & OTA Funds)</i>	\$33,403.0 <i>(ODOT Federal Formula Funds)</i>	\$111,978.0	\$215,616.0	\$215,616.0
Contingency & Other			\$7,031.0 <i>(ODOT & OTA Funds)</i>	\$3,343.0 <i>(ODOT Federal Formula Funds)</i>	\$11,210.0	\$21,584.0	\$21,584.0
TOTAL	\$17,561.0	\$4,706.0	\$80,796.0 (32%)	\$50,996.0 (20%)	\$123,188.0 (48%)	\$254,980.0 <i>Fed 20%, Non-Fed 32%, Infra Funds 48%</i>	\$277,247.0

See **Certification Statement** in the **Certifications and Assurances** folder on the [ODOT US-81 INFRA Grant web site](#), regarding availability and commitment of funds.



The OTA commitment of \$29.8 million is included in the Non-Federal Future Eligible Costs for this project. A letter documenting this funding commitment can be found in the **Letters of Support** folder on the [ODOT US-81 INFRA Grant web site](#). These funds are to be used for the construction of the ramps for the new interchange on the realignment at I-44. ODOT will ensure any necessary documentation required by OTA regarding the construction, inspection, and completion of the ramps is provided to OTA. ODOT works closely with OTA and coordination will continue on this project.

Project funds will be used for:



Merit Criteria

Criterion #1: Support for National or Regional Economic Vitality

US-81 is an important multi-national corridor linking the Texas Triangle, Central Plains, and Midwest mega-regions to Canada and Mexico border crossings. The corridor interchanges with I-44 and I-40 giving shippers international north-south and coast-to-coast east-west access to reach seaport facilities, domestic markets, and customers around the world. These connections are crucial to national and regional economic vitality. This project will improve travel time and reliability for regional and national businesses by improving speed-to-market, reducing costs, and providing a safer corridor for all users.

The corridor is invaluable to major energy producers in the region that contribute heavily to the annually estimated 625 super oversized loads often restricted from interstate highways.¹⁸ The concentration of wind energy, oil and gas producers, and large-scale agricultural production in this region of the state provides significant contributions to the economic vitality of the region and the entire state. Almost 20% of the state’s workforce is employed in the oil and gas sector.¹⁹

Benefit Cost Analysis

The benefit-cost ratio produced from the analysis of this project is 1.07. This ratio, a high benefit-cost ratio (BCR) for a realignment project, demonstrates that the generated monetized benefits exceed the project cost.

The benefit-cost analysis (BCA) developed for this INFRA Grant application was evaluated in terms of the following characteristics:

- **Economic competitiveness** – time savings and vehicle operating cost savings
- **Safety** – avoided crashes, injuries, property damage, and fatalities
- **Quality of life improvements**
- **Costs** – pre-construction, construction, and annual maintenance costs

¹⁸ Based on analysis from ODOT Division 7, City of Chickasha, and Chickasha Police Department

¹⁹ Steven C. Agee Economic Research and Policy Institute, Oklahoma City University



The table and information below present the results of the BCA, expressed in terms of net present value (NPV) and benefit-cost ratio (BCR), using a discount rate of 7%. An **Executive Summary Table** of the BCA, the full BCA narrative and spreadsheet model, and the **BCA Executive Summary** can be found in the **Reports and Technical Information** folder on the [ODOT US-81 INFRA Grant web site](#).

Benefit Cost Analysis Results	
Benefits with 7% Discount Rate	\$189,362,000
Costs with 7% Discount Rate	\$176,353,000
Net Present Value	\$13,009,000
Benefit Cost Ratio	1.07

Benefit Cost Analysis Summary of Results

- **Total Project Benefits:**
 - \$955.4 million (\$189.4 million using 7% discount rate)
- **Economic Competitiveness Benefits:**
 - Time saving \$542.9 million total benefit;
 - Vehicle operating cost savings - \$47.9 million;
 - Total economic competitiveness benefits - \$590.8 million (\$115.2 million using 7% discount rate)
- **Safety Benefits:**
 - Cost of crashes, fatalities, and injuries avoided through new alignment around Chickasha - \$401.0 million total benefits (\$81.8 million using 7% discount rate)
- **Quality of Life Improvements:**
 - Better emergency vehicle response times,
 - Reduced noise impacts due to reduced traffic volumes,
 - Economic development opportunities at interchanges on new alignment, and
 - Elimination of oversized vehicle re-routing requests allowing local police department to focus on other duties.
 - Qualitative benefits, no monetized value.
- **Total Project Cost:**
 - Previously incurred costs and construction costs - \$256.5 million (\$176.4 million using 7% discount rate).²⁰

²⁰ Per U.S. DOT guidance, \$36.4 million in annual operating and maintenance have been calculated as a disbenefit in this analysis.

Executive Summary Table

Current Status/Baseline & Problem to be Addressed	Change to Baseline/Alternatives	Type of Impacts	Economic Benefits	BCA Summary of Results
<p>US-81 is part of the National Highway System and serves as an integral regional route for both intrastate and interstate commerce. The highway runs north-south, from Texas to the Canadian border and passes through the Chickasha, Oklahoma central business district, where less than ideal conditions slow traffic flow, especially freight related truck traffic that has been increasing over the last several years. Fourteen signalized intersections, in the downtown area, and two 90-degree turns, result in the slowing of vehicles along this route, especially when super oversize vehicles hauling wind turbines, heavy equipment, and other large loads travel through the corridor.</p> <p>Congestion and delay are not the only problems affecting the corridor. The safety of drivers and passengers traveling on the roadway is also a significant concern. From January 1, 2006 to April 21, 2016, a total of 1,473 crashes occurred on US-81 in Chickasha. This resulted in 8 fatalities and 432 injuries. An analysis of crash data by ODOT found that this segment of US-81 exhibited a collision rate that was approximately 3.5 times higher than the statewide rate for similar roadways. Nearly three-quarters of these crashes occurred at intersections. Of the eight fatalities, five occurred at intersections.</p>	<p>Construction of an 8.25-mile realignment around Chickasha for US-81. This bypass would be a controlled-access, four-lane highway located west of Chickasha. It would begin at the curve north of the US-81/SH-19 West junction and extend north eight miles to the US-81/US 62 intersection. The realignment would incorporate six interchanges located at US-81, I-44, Country Club Road, Grand Avenue, Iowa Avenue, and US 62. Two aspects of the project that would improve traffic flow in Chickasha are as follows:</p> <ul style="list-style-type: none"> • Establish a posted speed limit of 70 miles per hour on the realigned route to encourage the diversion of through traffic not destined for Chickasha away from the central business district; and • Construction of a highway and railroad grade separation between Reding Road and the US-81/62 intersection west of downtown Chickasha. 	<ul style="list-style-type: none"> • Reduction in travel time and delay for through traffic due to the construction of the realigned route that would have a posted speed limit of 70 miles per hour compared to posted speed limits of 45 miles per hour down to 25 miles per hour along the existing US-81 corridor; the elimination of the at-grade US-81 and Union Pacific railroad crossing conflict northwest of downtown; and elimination of significant delays caused by super oversize vehicles traversing the corridor; • Reduced travel time and delay for local traffic traveling on the existing US-81 corridor due to the diversion of through traffic to the realigned route; • Reduction in vehicle operating costs for traffic using the realigned route due to its shorter distance relative to the existing US-81 corridor; • Safety benefits resulting from the removal of through traffic from the existing US-81 corridor; and • Improved emergency response times, reduced noise impacts in downtown Chickasha, and economic development opportunities at the interchanges along the realigned route. 	<ul style="list-style-type: none"> • Travel time and vehicle operating cost savings for through traffic diverting to the realigned route. • Travel time savings for local traffic traveling on the existing US-81 corridor once the realigned route opens. • Reduced motor vehicle accidents. 	<ul style="list-style-type: none"> • Total Project Benefit: \$955.4 million (\$189.4 million using 7% discount rate) • Economic Competitiveness: Time savings = \$542.9 million; vehicle operating cost savings = \$47.9 million; total benefit = \$590.8 million (\$115.2 million using 7% discount rate) • Safety: Cost of fatalities, injuries, and other incidents avoided by routing through traffic on the realigned US-81 corridor around Chickasha instead of through the downtown area = \$401.0 million total benefit (\$81.8 million using 7% discount rate). • Quality of Life Improvements: Better response times for emergency vehicles, reduced noise impacts on the existing US-81 corridor due to reduced traffic volumes, economic development opportunities at the interchanges along the realigned route, and elimination of super oversize vehicle rerouting requests, which would allow the Chickasha Police Department to focus on other duties. Qualitative benefits, therefore no monetized value. • Total Project Cost = \$256.5 million total costs (\$176.4 million using 7% discount rate)*

* Per U.S. DOT guidance, \$36.4 million in annual operating and maintenance have been calculated as a disbenefit in this analysis.



Criterion #2: Leveraging of Federal Funding

Maximizing non-Federal Funds

Chickasha and Grady County are small rural communities with limited financial resources; and while the existing US-81 corridor through Chickasha continues to have a significant negative impact on the city, these local governments do not have the funds necessary to contribute to the project. The State of Oklahoma is primarily a rural state with many financial demands, particularly acute after the recent downturn in the oil and gas industry. However, because of the importance of this project to the regional and state economy, freight movements, and the safety of those driving this highway, ODOT, in conjunction with OTA, is committing \$80,796,000 in Non-Federal funding to this project as well as \$50,996,000 in ODOT federal formula funds. ODOT is requesting \$123,188,000 from INFRA Grant funds, which is 48% of the total project cost. This shows the importance of this project both regionally and to the state by the significant leverage contribution from the State of Oklahoma.

Efforts to Secure Private Funding: ODOT has evaluated options for raising private funds for some portion of this project and plans to continue to identify and pursue potential options. Due to the rural nature of this area, value capture strategies that might generate funds in more urban environments are not an option.

Fiscal Constraints affecting use of non-Federal funds: There are no constraints affecting the use of the non-Federal funds.

Addressing Life Cycle Costs: ODOT maintains a detailed Asset Preservation Plan for existing transportation infrastructure and future transportation improvements for each county in the state. These plans begin with ODOT's field engineer building on a condition assessment of the highway network based upon their knowledge of the transportation needs and priorities in each division. ODOT's pavement maintenance schedule includes pavement preservation projects every seven years and rehabilitation/reconstruction project once between 2017 and 2060 on the existing US-81 corridor. The estimated maintenance costs on this corridor, including annual general maintenance, would be \$53 million through 2060. ODOT will maintain the existing corridor through Chickasha until the realignment project is completed. At that time, the existing segment of the corridor will be decommissioned and transferred to Chickasha and Grady County.

The new corridor alignment will be maintained in accordance with ODOT's maintenance schedule outlined previously. ODOT estimated maintenance and operating costs for the realigned corridor using recent maintenance and operating cost analysis of other similar new corridors. Based on ODOT's regular pavement maintenance, rehabilitation/reconstruction projects, and annual general maintenance the estimated maintenance cost for the new alignment will be \$37 million through 2060.

Criterion #3: Potential for Innovation

Environmental Review and Permitting: The US-81 Realignment project Environmental Assessment has been completed and the Finding of No Significant Impact (FONSI) has been issued.

Experimental Project Delivery: The project's most significant delivery issue is the availability of funding to construct the new alignment segment. ODOT currently has the realignment scheduled in two phases beginning in 2024. Phase 1 is expected to be completed by 2030 with a two-lane highway on four-lane right-of-way. Adding the final two lanes in Phase 2 is anticipated to be constructed from 2031 to 2036. **Should ODOT receive the requested INFRA award, the construction schedule will be advanced to begin construction in 2020 and complete construction in 2024.** This would advance the realization of the full project benefits by 12 years and reduce the risk of construction material cost escalation.

Safety and Technology: The grade separation of the proposed realignment and the Union Pacific Railroad eliminates future risks associated with at-grade highway/rail crossings. On the technology side, OTA has interoperation agreements with neighboring Kansas and Texas allowing each state's toll tags to be used in each of the three states.

Criterion #4: Performance and Accountability

ODOT is committed to public transparency and quality performance in all projects and operations. The agency prepares detailed strategies for maintaining their highways and bridges in the Eight Year Construction Plan (available for public review on their website). These strategies include schedules, key project components, and budgets that the department closely monitors.

If ODOT is awarded an INFRA Grant, to ensure the project achieves the optimal public benefits and meets or exceeds the project schedule performance milestones for obligation of funds and project completion, ODOT will structure the project contract to include the following:

- Encourage the use of Accelerated Bridge Construction (ABC) techniques, especially at the US-81 South and North interchanges and at rail crossings.
- ODOT will structure the contract to offer incentives for early completion of each major milestone and disincentives for delay.
- The use of innovating material QC/QA testing techniques such as use of concrete maturity meters and soil settlement plates to help expedite the construction process will be encouraged by ODOT.

Further, ODOT will organize a US-81 Project Performance Team comprised of the persons from the design firm, the field division, and local city/county officials who will attend project status meetings and be able to provide the construction team with accelerated answers to the contractor's requests for information. Prior to award of the construction contract, ODOT will organize a dispute resolution team which will provide accelerated resolution to disputes based on a project specific dispute resolution matrix.

Project Readiness

ODOT and their partners have already made significant investments to position the project to proceed as quickly as possible once funding is available. The project **Environmental Assessment** has been prepared and submitted; and the Finding of **No Significant Impact** has been issued. ODOT has completed preliminary engineering plans and OTA relocated a toll booth structure on I-44 to expedite the project once funding is in place.

Technical Feasibility: ODOT has extensive experience designing and constructing projects similar in complexity and scale to the one proposed in this application. The technical feasibility of this project is evidenced by the conceptual preliminary design plans that were 65% complete as of October 10, 2017. The preliminary plans are being designed in accordance with FHWA and AASHTO standards. The cost estimates for this project were developed based on estimated quantities and similar projects constructed in the State of Oklahoma. The construction schedule (CPM) and preliminary project plans can be found in the **Reports and Technical Information** folder on the [ODOT US-81 INFRA Grant web site](#).





Project Schedule: A detailed project schedule that includes all major project milestones has been prepared anticipating INFRA Grant funding. The project schedule is shown on the following page and can be found in the **Application** folder on the [ODOT US-81 INFRA Grant web site](#). A summary of the schedule includes:

- State and local planning approvals:
 - The project is consistent with the 2015-2040 Oklahoma Long Range Transportation Plan (LRTP);
 - The State Transportation Improvement Program is a financially constrained document and will be amended as the project progresses.
 - With an accepted INFRA award, ODOT will expedite the project as funding is made available.
- The project is included in the Oklahoma Freight Transportation Plan: 2018 – 2022 which has been submitted for FHWA review, and is expected to be finalized by the end of 2017.
- Environmental studies and NEPA documentation and other environmental reviews and approvals are complete with an Environmental Assessment signed on February 3, 2017. ODOT continues to coordinate with Federal Aviation Administration and the U.S. Army Corps of Engineers on permitting issues and anticipates that all environmental clearances to be completed by December 2017.
- Project design is 65% complete as of October 10, 2017, with final design to be completed by November 2019.
- Right-of-way acquisition will commence by the end 2017 and last approximately 18 months.
- Utility relocation will begin in 2018 and will be completed by the end of September 2019.
- Procurement and obligations of INFRA funds will be completed by September 30, 2020.
- Construction begins in 2020 with project completion by the end on 2024.
- Without INFRA Grant award, construction will begin by FFY 2024 and Phase 1 will be completed in FFY 2030. Phase 2 will start in FFY 2031 and will be completed by FFY 2036.

The project schedule that follows will obligate INFRA Grant funds by December 2019 in advance of the statutory deadline. Construction on the project will begin by January 2020 and will be completed by August 2024 in advance of INFRA requirements. All right-of-way acquisition will be completed in accordance with 49 CFR part 24 and other applicable federal regulations and will be concluded by August 2019.



Project Schedule and Milestones

ACTIVITY	2016	2017	2018	2019	2020	2021	2022	2023	2024
Survey	█								
Preliminary Engineering	█	█							
Environmental Clearance	█	█							
Right-of-Way Acquisition			█	█					
Utility Relocation			█	█					
Final Design			█	█					
INFRA Funding Obligation Deadline					★				
Construct Grading & Drainage on U.S. 81 from north of Quail Road to Rock Hollow Creek					█				
Construct bridges from I-44 through Rock Hollow Creek						█	█		
Construct interchanges at Quail Road and U.S. 62 (Turnkey)							█	█	
Construct all remaining surfacing (including U.S. 81 mainline and interchanges)								█	█
Project Completion									★

Required Approvals

The Environmental Assessment, early coordination with other state and local plans, and commitments to amend the necessary planning documents to advance the realignment project if INFRA funds are awarded, puts this project ahead of schedule to meet the INFRA Grant award obligation dates.

Environmental Permits and Reviews: ODOT reasonably expects all environmental approvals and permits necessary for the project to proceed on the timeline specified in the project schedule. The schedule will meet the statutory obligation deadline, including satisfaction of all Federal, state and local requirements.

NEPA Status: The project’s Environmental Assessment (EA) was signed February 3, 2017. The Finding of No Significant Impact is scheduled to be completed by the end of 2017.

Reviews, Approvals and Permits by Other Agencies: The Environmental Assessment identifies coordination with Federal Aviation Administration (FAA) that may be required via FAA Form 7460-1 prior to construction. The Chickasha Municipal Airport is roughly two miles north of the planned realignment. The proposed construction activities will be evaluated regarding the linear extent and volume of potential disturbance to any jurisdictional waters and wetlands to ensure that the appropriate Clean Water Act Section 404 permit application is made when design plans are finalized.

USDOT Modal Administration Discussions: FHWA was involved with the development of the US-81 Realignment Environmental Assessment and the document was approved by FHWA signature on February 3, 2017.

Public Engagement: During the development of the Environmental Assessment, ODOT and their team held three separate public meetings to obtain input and feedback regarding the realignment. Each public participation event was well publicized and included a meeting with stakeholders representing local residents, businesses, and public organizations, followed by a meeting with the general public. Chapter 5 of the **Environmental Assessment** describes the details of the public engagement process and comments can be found in the **Reports and Technical Information** folder on the [ODOT US-81 INFRA Grant web site](#). ODOT will continue to meet with regional partners and stakeholders throughout the design and construction process for this project. In addition, ODOT will establish a project advisory committee and coordinate with emergency services, public works staff, and area businesses and Chambers of Commerce to ensure businesses and residents stay informed about project progress.

State and Local Approvals: The 2015 – 2040 Oklahoma Long Range Transportation Plan, adopted in August 2015 is a policy document. The project to construct the US-81 realignment to a full access controlled facility addresses two policies in the LRTP:

- Highway Bridge Policy #3 – Reduce fatalities and serious injuries on Oklahoma highways through appropriate engineering solutions, and
- Highway Bridge Policy #5 – Provide for a safe, efficient and effective National Highway System to improve commercial motor vehicle mobility and connectivity.

ODOT has met with the City of Chickasha and Grady County and the project is supported by these entities and consistent with local plans and economic development efforts. Based on National Performance Management Research Data Set (NPMRDS), the Oklahoma Freight Transportation Plan: 2018 - 2022 identified US-81 through Chickasha as a top 5% freight bottleneck in Oklahoma.

Operational analysis of the proposed realignment shows collisions can be reduced and safety increased through implementation of this project. The project will allow for improved through freight and passenger vehicle traffic, and at the same time enhance the community environment and provide safe and reliable travel options for local residents and businesses.

Federal Transportation Requirements: Currently the right-of-way acquisition and utility projects are in the Statewide Transportation Improvement Program (STIP) FFY 2015-2018. Based on the existing construction schedule, both projects are scheduled for FY 2018. ODOT commits to amend the STIP and any other applicable local planning documents in the event the US-81 Realignment project is awarded INFRA funding. If given INFRA Grant awarded funding, construction is anticipated to be completed by 2024.

Assessment of Project Risks: ODOT staff has discussed the project concept with the Oklahoma Division of FHWA and project communication and coordination will continue. To date, no risks have been identified by FHWA staff. ODOT staff have carefully assessed the potential project risks and mitigation strategies. Risks considered are as follows:

- **Inability to secure ROW section(s).** This might include residential relocation or commercial impacts, etc. However, given the location of the necessary ROW acquisition, ODOT does not anticipate such conflicts. All right-of-way will be acquired in accordance with 49 CFR part 24, 23 CFR part 710 and other applicable legal requirements. To mitigate this, ODOT will begin communication with property owners early in the process. Also, ODOT will provide opportunities to meet and discuss concerns and questions with affected property owners and officials familiar with the local area and the project.

- **Inability to obtain permitting approval.** This project requires FAA approval and USACE permitting to begin construction. ODOT does not anticipate either of these approvals will have issues or delays. Mitigation would include early and clear communications with FAA and USACE.
- **Weather related construction delays are possible and difficult to mitigate.** Mitigation would include detailed project scheduling and clear communications and documentation regarding rain days, careful management of project schedule, and early and frequent communication with project contractor before schedule becomes an issue.

Large Project Requirements

Based on the future eligible project costs of \$254,980,000, the US-81 Realignment project exceeds the minimum total project cost categories for FY 2017 for the State of Oklahoma and therefore meets the large project size requirement.

REQUIREMENT	REFERENCE
Does the project generate national or regional economic, mobility, safety benefits?	Yes see Pages 1, 7, 9, 10, 12, 16
Is the project cost effective?	Yes see Pages 11 and 17
Does the project contribute to one or more of the Goals listed under 23 USC 150? <i>(safety infrastructure condition, congestion reduction, system reliability, freight movement and economic vitality, environmental sustainability, reduced project delivery delays)</i>	Yes see Pages 3, 8, 12, 13
Is the project based on the results of preliminary engineering?	Yes PE is 65% complete <i>(plans are on website)</i>
With respect to non-federal financial commitments, does the project have one or more stable and dependable funding or financing sources to construct, maintain, and operate the project?	Yes see Page 15
Are contingency amounts available to cover unanticipated cost increases?	Yes see Page 15
Is it possible that project cannot be easily and efficiently completed without other federal funding or financial assistance available to the project?	Yes See Page 22
Is the project reasonably expected to begin construction not later than 18 months after the date of the obligation of funds for the project?	Yes see Page 21