Village of Rantoul Transportation Plan Existing Conditions Report Draft November 25, 2019



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3.1. VILLAGE OF RANTOUL'S TRANSPORTATION HISTORY

The Village of Rantoul has a rich history rooted in military and transportation. Originating in 1854, Rantoul was planned for the location of the Illinois Central Railroad Station and consisted of the Rantoul Station, a small town, and a post office.¹ The Village was officially named Rantoul in 1862, and went on to become the home of Chanute Field during the beginning of World War I because of its proximity to the Illinois Central Railroad.¹ Due to the pressing need for Air Force pilots early during the war, the air field was built rather rapidly and guickly brought in military personnel, construction workers, visitors and their families to the area. In turn, the sudden influx of people contributed significantly to Rantoul's economic and population growth, which was key to Rantoul's early success. The air field was later renamed Chanute Air Force Base in 1948, where hundreds of soldiers were trained at the base during the mid-20th century. Among them were the first squadrons of all-African American pilots, later known as the Tuskegee Airmen, which marked an important milestone in Chanute Air Force Base's 75-year legacy.²

2 Quealy, Brendan, "Rantoul: 20 years after closing of Chanute Air Force Base", The News Gazette, August 10th, 2013, http://www. news-gazette.com/news/local/2013-10-06/rantoul-20-years-afterclosing-chanute-air-force-base.html

FIGURE 3.A AMTRAK STATION AT THE VILLAGE OF RANTOUL By Daniel Schwen - Own work, CC BY-SA 4.0, https://commons. wikimedia.org/w/index.php?curid=7518023



In the Village of Rantoul, transportation has come a long way since Robert Rantoul Jr. and the Illinois Central Railroad. Dating back to the 1970's, the Village had been pushing for better transportation. The population and wealth of the Village of Rantoul remained at a healthy level until the Air Force Base's decommission in 1993. Rantoul has lost a significant amount of businesses, population and employment opportunities since then, specifically in the transportation and warehousing industries.

In 1995, a Rural Transportation Steering Committee was established.³ Soon after the Committee's establishment, it was determined that a significant improvement in public transportation was needed, with ideas being discussed accordingly. By 2004, a comprehensive assessment on transportation that supported the Committee was completed, concluding that there was a current need for rural public transportation that will likely grow as the overall population ages. A year later, the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU) authorized funding to the states for the purpose of supporting public transportation in rural areas with populations of less than 50,000. The Illinois Department of Transportation – Division of Public and Intermodal Transportation (IDOT-DPIT) notified the Champaign County Board of available funding for rural public transportation in 2007. At that time, the Champaign County Regional Planning Commission (CCRPC) started the Transportation Coordination Primer Process for rural Champaign County. The process involved local stakeholders to select a rural public transportation operator, which was crucial to the rural transportation system's success.

In 2011, CRIS Rural Mass Transit District (CRIS-RMTD) was identified as the most suited operator for Champaign County. CRIS operated public transportation services in rural Champaign County, including the Village of Rantoul until 2014.

In 2014, the Champaign-Urbana Mass Transit District (CU-MTD), under a contract with Champaign County, started providing public transportation services in Champaign County and Champaign County Area Rural Transit System (C-CARTS) was formed.⁴ By 2016, the Village of Rantoul signed an agreement with CU-MTD and Champaign County to provide fixed route transportation services, five days a week between

3 "Champaign-County Area Rural Transit System", Champaign-County Area Rural Transit System, http://c-carts.com/fixed-route/
 4 "Champaign-County Area Rural Transit System", Champaign-

^{1 &}quot;Rantoul, Illinois", Wikipedia, May 6th, 2018, https://en.wikipedia. org/wiki/Rantoul,_Illinois

County Area Rural Transit System, http://c-carts.com/fixed-route/

the hours of 5:00 am and 8:00 am and 3:00 pm and 6:00 pm. The Eagle Express operates within the Village of Rantoul to connect residents and visitors to employment, public services, and recreational destinations. At the same time that the Eagle Express started operating in Rantoul, a fixed route called the Rantoul Connector was initiated which links the Village of Rantoul and the cities of Champaign and Urbana. The Rantoul Connector service operates approximately every 60 minutes between the hours of 5:00 am and 8:00 am and again between 3:00 pm and 6:00 pm, Monday through Friday. It is a fixed stop, express service that stops at Fountain Valley and Walmart in Rantoul, as well as Country Fair, Illinois Terminal, Carle Hospital, and Lincoln Square in Champaign-Urbana. From these destinations, passengers can connect with the Eagle Express in Rantoul, or Champaign-Urbana Mass Transit District services in Champaign-Urbana using a free transfer obtained from the C-CARTS Operator⁴.

In September 2018, it was decided to change the Eagle Express' existing route to three routes compared to the original one, with the one route being a mainline connector that spans from Rantoul Plaza on the east to the industrial park on the west. The other two routes cover the north and south sides of the Village and are called "Eagle Express North" and "Eagle Express South", respectively. The intention is that the new routes will allow riders to reach their destination more efficiently. These changes were made based on ridership trends, public input and consultation with the village. The Eagle Express makes stops at Industrial Park Employers, Walmart, Downtown Rantoul, Village Municipal Building, J.W. Eater Junior High School, Multicultural Center and the Youth Center.⁵

Although the Village of Rantoul is well located along I-57, it does not offer the same level of regional highway access or proximity to jobs as Champaign-Urbana, classifying the Village as a secondary location for industries.⁶ Rantoul is also in possession of a decent business park with capabilities to expand. As for Chanute Air Force Base, parts of the base are currently being used for community purposes under Economic Development and Public Benefit Conveyances, but the properties are not very accessible nor expected to capture much of the region's share market⁶. FIGURE 3.B AERIAL VIEW OF CHANUTE FIELD IN 1939



3.2. REVIEW OF PAST STUDIES

3.2.1 Rantoul Initiative Report (2011)

In 2011, the same year CRIS-RMTD was chosen to operate C-CARTS, the Rantoul Initiative progress report came out and mentioned several times the need of improved transportation overall in the Village. Better transit within the Village of Rantoul, public transit to and from the Champaign-Urbana area, a high-speed rail system feasibility study and how to use I-57 to Rantoul's advantage were popular topics.⁷ It was also mentioned that some of Rantoul's best amenities, such as the aquatic center, library, skate park and fitness facility, are located on the former Air Force Base property far from major residential areas.

The implementation of a multimodal transportation system that includes pedestrians, cyclists, and public transit was noted to potentially increase the use and access of those areas, as well as promote a better quality of life for people. Additionally, a multimodal transportation system would reduce urban sprawl that would ultimately strain infrastructure resources and potentially encourage major employers to locate in Rantoul.

Public transit from the Urbana-Champaign area and back was also heavily emphasized, with the idea being that increased ridership between the two areas would provide economic opportunities to Rantoul neighborhoods along the route and low-cost housing for Urbana-Champaign labor and industry workers.⁷ The idea, however, was not very popular because of the likely high cost and low ridership due to the lack of a major employer or University of Illinois facility. Economic development explorations in the past explained the need for transit in Rantoul, but overall the demand was not enough.

⁵ Meadows, Jim, "New Bus Service Launches in Rantoul", Illinois Public Media News, November 7th, 2016, https://will.illinois.edu/ news/story/new-bus-service-launches-in-rantoul

^{6 &}quot;Analysis of the Impacts of Acquiring the Remaining Land at Chanute Air Force Base", RKG Associates Inc. Economic, Planning and Real Estate, July 2010

^{7 &}quot;Rantoul Tomorrow Initiative", Village of Rantoul

3.2.2 Community Experience Plan, Village of Rantoul (2014)

The Village of Rantoul had planned in 2014 to include a transportation hub in downtown Rantoul. The hub would be located just south of the old police station headquarters, with the hope that the transportation station would bring community members and visitors by bus and rail to downtown Rantoul. The station would also attract business people to the proposed business park and serve as a part of the proposed walking tour of Rantoul as outlined in the Community Experience Plan. The plan was projected to cost \$24,000,000.

3.2.3 Rantoul Tomorrow Initiative (2017)

The Rantoul Tomorrow Initiative was also put in place in 2017, and covered the different needs of the Rantoul community when it came to economic development, housing and transportation. During the public input process of this initiative, public transportation to the Champaign-Urbana area and better transport within Rantoul was voted on heavily by community members. These issues scored highly on the community members' priorities, right below improved mental health services.⁸ This initiative's goals are to develop a reliable public transport system, address opportunities to expand job recruitment and provide reliable public transport to workers, as well reinvest in the Rantoul Airport, advocate for high-speed rail, reinvest in roads and promote walkable and bike-able communities.⁹ Long term, the initiative hopes to provide safe, affordable and convenient transport alternatives to assure mobility and access for those who have no choice and a viable option for those who do. To do so, the initiative assessed transportation strengths, weaknesses, opportunities and threats pertaining to the Village. It was found that some major strengths included access to major highways, rail, bus and air transport, hub logistics and industrial development. Weaknesses include aging transport infrastructure, lack of access to affordable transport, and lack of affordability to private transport.¹⁰

10 "Village of Rantoul Comprehensive Plan", Champaign County Regional Planning Commission, February 14th, 2006, https://www.village.rantoul.il.us/DocumentCenter/ View/102/022206CompPlanText?bidl

FIGURE 3.C COVER OF THE COMMUNITY EXPERIENCE PLAN



FIGURE 3.D COVER OF THE RANTOUL TOMORROW INITIATIVE



Unfortunately, some threats include federal and state funding, employers not being able to fill positions and leaving Rantoul, and community members not taking the issue seriously. In 2014, the Village of Rantoul received a D+ in transportation and has then worked with different agencies to fix some issues.¹¹

As a result of the Rantoul Tomorrow Initiative, the Village of Rantoul partnered with the Champaign County Regional Planning Commission and CU-MTD to implement fixed bus routes within the Village of Rantoul, with the Eagle Express as the transit service. Rantoul had also started investing local Motor Fuel Tax (MFT) dollars in major street resurfacing programs, using 2015-2016 to expand the Rantoul bike path, and creating a rideshare program to assist lower income residents.¹²

^{8 &}quot;Rantoul Community Service Priorities", Village of Rantoul, December 11th, 2017

^{9 &}quot;Rantoul Initiative", Center for Community Adaption, April 2011

^{11 &}quot;Rantoul Tomorrow, Where We Are & Where We're Going", Village of Rantoul, 2017

^{12 &}quot;Village of Rantoul Transportation Plan", Champaign County Regional Planning Commission

As of 2018, part of the former Chanute Air Force Base was adopted by the University of Illinois as the Advanced Transportation Research and Engineering Laboratory (ATREL). Researchers from the University of Illinois, other nationwide universities, and the Illinois Department of Transportation will study transportation-related issues on the 47-acre site. Some of its features include a signalized intersection, a roundabout, underpass, bridges, railroad crossing, bus lanes/stops and a bike/ pedestrian safety site, with a 1.9-mile track where vehicles can reach up to 65 miles per hour. The center of the site is to be prototyped to be a smart city with different opportunities to test different types of transportation.¹³ While the lab is impressive and innovative, Rantoul is projected to get significantly busier in terms of population, transport, and infrastructure demands.

3.3. EXISTING PLANS AND POLICIES

3.3.1 The Village of Rantoul Comprehensive Plan, 2006

According to the Village of Rantoul Comprehensive Plan (2006), Rantoul has several key themes in place when it comes to improving development, including developing a mix of land uses, strengthening the economy and improving accessibility to area markets for commercial enterprises within the Village.¹⁴ The Goals and Policies Section of the comprehensive plan states the Village of Rantoul's key goals by the year 2020, specifically in the Residential, Business and Commercial, Industrial, Recreational and Open Space, Circulation, Traffic and Transportation, and Services, Facilities and System sectors. Overall, one of the Village's main goals is to plan for multimodal transportation within walkable neighborhoods, specifically by providing a worker/shopper bus transit system, bikeways and a Village wide installation of pedestrian sidewalks. Some particular policies are highlighted below.¹⁵

A. Business and Commercial Policies

Improvement on accessibility, convenience and safety of retail activity in shopping areas was strongly encouraged in the comprehensive plan, with goals to implement a bus transit network that would connect residential, retail, recreational, and industrial areas. Parking requirements would also be reduced in areas served by the transit system, while pedestrian access and street lighting would be enhanced in retail areas. Additionally, it was stated that an I-57 interchange to connect traffic to Chandler Road should be accompanied by strict land use control, in order to prevent unneeded strip commercial development or development that will require Village investment in additional infrastructure.

B. Circulation, Traffic and Transportation Policies

This section aims to implement policies that plan for a coordinated multi-modal transportation system which accommodates the travel needs of the community, a reduced need of driving automobiles within the Village, improved adequacy and safety of transportation, minimized conflict between vehicular modes and pedestrian traffic, and two additional I-57 interchanges to reduce semi truck traffic through Rantoul. More specifically, the way the Village proposed to implement these changes was through policies that coordinated the railway, street and highway system with the regional and state transportation planning efforts. The feasibility of an intra-Village bus transit system would also be explored, as well as cooperation with the school districts for non-school hour "ride to work" service for resident employees. Pedestrian walkways would be given priority, especially in all new development areas and necessary widening and maintenance of streets would also be subject to a Plan of Capital Improvements. The hope was to address transportation issues and encourage commercial development and housing for current employees who commute to the Village in the process. Two new interchanges are proposed on I-57, to the north and south of the existing interchange. A southern interchange is proposed to connect traffic to Chandler Road. A railroad spur to the Aviation Center is also proposed to reduce traffic on the south side of Rantoul. A northern interchange would move the congestion of vehicle traffic to existing state and local roadways.

¹³ Hinton, Dave, "Ul's transportation lab in Rantoul could soon get test track, 'smart city', The News Gazette, August 7th, 2018, http:// www.news-gazette.com/news/local/2018-07-18/uis-transportationlab-rantoul-could-soon-get-test-track-smart-city.html

^{14 &}quot;Land Resource Management Plan", Champaign County Regional Planning Commission, DATW, https://ccrpc.org/wp-content/ uploads/2010/04/4_v1_Chapter2.pdf

^{15 &}quot;Village of Rantoul Comprehensive Plan", Village of Rantoul, February 14th, 2006, https://www.village.rantoul.il.us/ DocumentCenter/View/102/022206CompPlanText?bidl

3.3.2 Village of Rantoul Code of Ordinances

The following information relates to the transportation system in the Village Rantoul Code of Ordinances.¹⁶

A. CHAPTER 32, ARTICLE IV, SUBDIVISION DESIGN STANDARDS

Design of Streets, Section 32-41

"The classification and location of all streets shall conform to the comprehensive plan, these regulations and the Manual of Practice. (b) Each buildable lot within a new subdivision shall be adjacent to a public street. Private streets may be permitted only in a planned unit development or a mobile home park and are to be maintained by the subdivider or other declarant entity. (c) All streets shall be properly integrated with the existing and proposed system of streets and thoroughfares as established in the comprehensive plan.

B. CHAPTER 38, TRAFFIC AND VEHICLES

ARTICLE V, TRAFFIC REGULATIONS

Authority to designate crosswalks and establish safety zones, Section 38-106

"(a) The village traffic engineer is hereby authorized to designate and maintain, by official traffic-control devices upon the surface of the roadway, crosswalks at intersections where in his opinion there is particular danger to pedestrians crossing the roadway and at such other places as he may deem necessary. (b) The village traffic engineer is hereby authorized to establish safety zones of such kind and character and at such places as he may deem necessary for the protection of pedestrians."

Authority to mark traffic lanes, Section 38-107

"The village traffic engineer is hereby authorized to mark traffic lanes upon the roadway of any street or highway where a regular alignment of traffic is necessary or appropriate."

Authority to regulate speed by traffic signals, Section 38-108

"The village traffic engineer is authorized to regulate the timing of traffic signals so as to permit the movement of traffic in an orderly and safe manner at speeds slightly at variance from the speeds otherwise applicable within the district or at intersections and shall erect appropriate signs giving notice thereof."

• ARTICLE XII, BICYCLES, SKATEBOARDS AND SKATES

Low-speed bicycles, Section 38-296

"It shall be unlawful and a violation of this section for any person to operate a low-speed electric bicycle or low-speed gas bicycle on any public sidewalk, bicycle path, multi-purpose path or trail within the village, except when any such bicycle is being propelled exclusively by human power".

C. VILLAGE OF RANTOUL ZONING ORDINANCE, 2017

• ARTICLE 5: CENTRAL BUSINESS DISTRICT, ARTICLE 6: INSTITUTIONAL DISTRICT

Section 46-65, 46-74,

Entrance design and siting

"It is required that a pedestrian link be provided to connect to existing public right-of-way sidewalks and any adjacent development to ensure safe pedestrian access between the development and adjacent uses outside the development."

ARTICLE 7: INDUSTRIAL DISTRICT

Section 46-84

Entrance design and siting

"It is strongly encouraged that a pedestrian link be provided between existing public right-of-way sidewalks and any adjacent commercial development to ensure safe pedestrian access between the development and adjacent commercial uses outside the development."

• ARTICLE 12: OFF-STREET PARKING AND OFF-STREET LOADING

Sec. 46-169. – Bicycle parking requirements.

"All developments involving the construction of a new parking lot shall provide at least one bicycle parking space. For parking lots exceeding 50 automobile spaces, one bicycle parking space must be provided for every 50 automobile parking spaces, with a maximum of 20 bicycle parking spaces required."

¹⁶ Rantoul, Illinois, Municicode Library, https://library.municode. com/il/rantoul/codes/code_of_ordinances?nodeld=COOR_ CH38TRVE_ARTVTRRE_S38-106AUDECRESSAZO

4. Existing Conditions

The following section examines the village population's demographic, economic, housing, and transportation characteristics.

4.1. DEMOGRAPHICS

The Village of Rantoul has an estimated population of 13,190 people in 4,962 households, according to the 2013-2017 American Community Survey 5-Year Estimates.¹

4.1.1 Population Trends

The Village of Rantoul reached a peak population of 25,562 residents in the 1970 Census; the population has been smaller at each successive decennial census. The decline seems to be slowing: after decreases of thousands of people between 1970 and 1980, 1980 and 1990, and 1990 and 2000, the population only fell by 580 between 2000 and 2010 (see **FIGURE 4-1**).

4.1.2 Age and Sex

The Village of Rantoul has a relatively young population: over a third of the village population (33.9 percent) is younger than 20 years, and nearly half (46.7 percent) is younger than 30 years. Older adults, aged 65 older, make up only 12.8 percent of the village population (see **FIGURE 4-2**).



FIGURE 4-1 TOTAL POPULATION (1950-2010)³



FIGURE 4-2 POPULATION BY AGE AND SEX⁴

4.1.3 Race and Ethnicity

Slightly more than two-thirds (69.7 percent) of the population of the Village of Rantoul is white alone; 20.5 percent of the population is black or African American alone. Just under five percent (4.6 percent) of the population identifies as two or more races, and 11.5 percent of the population is of Hispanic or Latino origin.

FIGURE 4-3 RACIAL COMPOSITION (2013-2017)⁵



FIGURE 4-4 ETHNIC COMPOSITION (2013-2017)⁴



4.1.4 Population with a Disability

Among the Village of Rantoul population, 13.4 percent of residents have one or more disabilities. This is pertinent to this plan because transportation services and networks must meet the needs of all residents regardless of ability.

FIGURE 4-5 POPULATION WITH A DISABILITY (2013-2017)6



4.1.5 Educational Attainment

Among the Village of Rantoul population aged 25 years and over, over a third (36.6 percent) have a high school diploma or equivalency as their highest level of educational attainment. Over a quarter (26.8 percent) have some college experience, but do not have a degree. 26 percent of the population has an associate's, bachelor's, or graduate or professional degree.



FIGURE 4-6 EDUCATIONAL ATTAINMENT (2013-2017)7

4.2. ECONOMICS

4.2.1 Household Income

The median household income among Village of Rantoul households is an estimated \$43,605. Median household income is calculated based on all households in the village (see **TABLE 4-2**).

The greatest percentage of households in a single income bracket is 13.2 percent, making between \$75,000 and \$99,999 per year. Almost as many households, 13.1 percent, make less than \$10,000 per year, and another 10.1 percent have an annual income between \$50,000 and \$59,999.

MAP 4-1 shows the median household income distribution by Census block groups in the Village of Rantoul.

4.2.2 Family Income

Median family income in the Village of Rantoul was an estimated \$52,440. Median family income is calculated based on the incomes of all family households, or all households of two or more individuals who are related by birth, marriage, or adoption.

Similar to among all households, the greatest percentage of families in a single income bracket make between \$75,000 and \$99,999, at 15.1 percent. The income brackets \$50,000 to \$59,999 and \$60,000 to \$74,999 each account for approximately 12 percent of village families. The lowest income bracket, an annual income of less than \$10,000, accounts for 8.8 percent of families.

FIGURE 4-7 DOWNTOWN RANTOUL



TABLE 4-2 HOUSEHOLD INCOME (2013-2017)9

Household Income	Households	MOE*	Percent
Less than \$10,000	650	192	13.1%
\$10,000 to \$19,999	486	85	4.0%
\$20,000 to \$29,999	593	125	6.2%
\$30,000 to \$39,999	586	116	5.9%
\$40,000 to \$49,999	481	92	5.0%
\$50,000 to \$59,999	501	143	10.1%
\$60,000 to \$74,999	492	141	9.9%
\$75,000 to \$99,999	657	168	13.2%
\$100,000 to \$124,999	274	114	5.5%
\$125,000 to \$149,999	71	46	1.4%
\$150,000 to \$199,999	127	61	2.6%
\$200,000 or more	44	33	0.9%
Total households	4,962	283	100.0%
Median household income	\$43,605	\$3,868	-

*MOE or Margin of Error is a measure of the possible variation of the estimate around the population value.

TABLE 4-1 FAMILY INCOME (2013-2017)8

Family Income	Families	MOE	Percent
Less than \$10,000	287	126	8.8%
\$10,000 to \$19,999	238	147	7.3%
\$20,000 to \$29,999	380	192	11.6%
\$30,000 to \$39,999	402	200	12.3%
\$40,000 to \$49,999	267	162	8.2%
\$50,000 to \$59,999	392	122	12.0%
\$60,000 to \$74,999	383	140	11.7%
\$75,000 to \$99,999	495	169	15.1%
\$100,000 to \$124,999	210	87	6.4%
\$125,000 to \$149,999	71	46	2.2%
\$150,000 to \$199,999	109	59	3.3%
\$200,000 or more	37	31	1.1%
Total families	3,271	222	100.0%
Median family income	\$52,440	\$6,470	-

MAP 4-1 MEDIAN HOUSEHOLD INCOME, VILLAGE OF RANTOUL (2013-2017)



4.2.3 Poverty

The Village of Rantoul has a relatively high poverty rate; almost one-fifth of village residents for whom poverty status is determined are below poverty (**TABLE 4-3**).² The western block groups adjacent to I-57 have the lowest percentage of population below poverty level.

TABLE 4-3 POVERTY RATE (2013-2017)10

Poverty	Population	MOE	Percent
Total population for whom poverty status is determined	12,693	343	-
Population below poverty	2,517	484	19.8%

MAP 4-2 POVERTY RATE, VILLAGE OF RANTOUL (2013-2017)



4.2.4 Labor Force Status

Over half of the population aged 16 years and over in the Village of Rantoul is employed (59.1 percent), while four percent are unemployed. No percentage of the population is in the Armed Forces. Over a third of the population (36.9 percent) are not in the labor force, meaning that they do not have a job and that they are not looking for a job.

4.2.5 Unemployment Rate

The Village of Rantoul has an unemployment of 6.4 percent. The unemployment rate differs from the percentage shown as unemployed in the previous section. This is because the unemployment rate is calculated based on the population that is in the labor force (i.e., individuals who either have a job or are searching for a job), not on the total population aged 16 and over. It does not include individuals who do not have a job and are not looking for one; this population often includes individuals who are full-time students or caregivers.

4.2.6 Employment by Industry

Two industries account for nearly half of the employed civilian population aged 16 and over in Rantoul. The educational services and health care and social assistance sector accounts for 23.7 percent of workers, and manufacturing accounts for another 21.3 percent. Nearly 15 percent of workers are employed in the retail trade sector.

FIGURE 4-9 EMPLOYMENT BY INDUSTRY (2013-2017)¹¹



FIGURE 4-10 EMPLOYMENT BY OCCUPATION (2013-2017)¹²



TABLE 4-4 LABOR FORCE STATUS (2013-2017)¹³

Labor Force Status	Population	MOE	Percent
In labor force	6,218	377	63.1%
Civilian labor force	6,218	377	63.1%
Employed	5,823	366	59.1%
Unemployed	395	145	4.0%
Armed Forces	0	17	0.0%
Not in labor force	3,638	395	36.9%
Total population aged 16 and over	9,856	447	100.0%

TABLE 4-5 UNEMPLOYMENT RATE (2013-2017)¹⁴

Labor Force Status	Rate	MOE
Population aged 16 years and over	9,856	447
Labor Force Participation Rate	63.1%	3.3
Unemployment Rate	6.4%	2.3

- Educational services, and health care and social Finance and insurance, and real estate and assistance
- Manufacturing

Retail trade

- Arts, entertainment, and recreation, and
- accommodation and food services Professional, scientific, and management, and
- administrative and waste management services
- Transportation and warehousing, and utilities
- Wholesale trade

- rental and leasing
- Public administration
- Construction
- Other services, except public administration
- Information
- Agriculture, forestry, fishing and hunting, and mining
- Production, transportation, and material moving occupations
- Management, business, science, and arts occupations
- Sales and office occupations
- Service occupations
- Natural resources, construction, and maintenance occupations

4.3. HOUSING

4.3.1 Housing Tenure

Housing tenure in the Village of Rantoul is split, almost evenly. Households own 51.7% of the occupied units in the village, and rent the remaining 48.3% units. Block groups making up the south and central residential areas of the village have higher rates of occupancy by renter households.

FIGURE 4-11 HOUSING TENURE (2013-2017)¹⁵



MAP 4-3 PERCENTAGE OF RENTER OCCUPIED HOUSING UNITS, VILLAGE OF RANTOUL (2013-2017)



4.3.2 Occupancy Status

The housing unit vacancy rate in the Village of Rantoul is 16.5 percent. Block groups in the northeast and south-central areas of the village have higher vacancy rates than the remainder of the village.

FIGURE 4-12 HOUSING OCCUPANCY STATUS (2013-2017)¹⁶



MAP 4-4 PERCENTAGE OF VACANT HOUSING UNITS, VILLAGE OF RANTOUL (2013-2017)



4.3.3 Housing Units in Structure

Over half of all housing units in the Village of Rantoul (55.3 percent) are single-unit detached homes, and another 10 percent are single-unit attached homes. Common structure types are multifamily buildings with 3 to 4 and 5 to 9 units in each building; each of these structure types accounts for approximately eight percent of housing units. Seven percent of housing units in the village are mobile homes.

FIGURE 4-13 HOUSING UNITS IN STRUCTURE (2013- 2017)¹⁷



4.3.4 Year Built

The Village of Rantoul has a relatively old housing stock. No housing units were built since 2014, and only 3.2 percent of units were built since 2000. Almost a quarter (24 percent) of units were built between 1950 and 1959, and 12.7 percent were built before 1939.



Percentage of Housing Units

FIGURE 4-15 RESIDENTIAL STREET IN RANTOUL



4.3.5 Housing Unit Value

Owner-occupied housing units in the Village of Rantoul tend to be moderate in value: 80.4 percent of units (an aggregate 64.4 percent) are valued between \$40,000 and \$174,999. No units are valued above \$500,000, while 11.9 percent are valued at \$39,999 or below and 7.7 percent are valued between \$175,000 and \$499,999.

TABLE 4-6 HOUSING UNIT VALUE (2013-2017)19

Housing Unit Value	No. of Units	MOE	Percent
Less than \$10,000	122	69	4.75%
\$10,000 to \$19,999	77	61	3.00%
\$20,000 to \$29,999	27	60	1.05%
\$30,000 to \$39,999	79	67	3.08%
\$40,000 to \$49,999	117	64	4.56%
\$50,000 to \$59,999	163	84	6.35%
\$60,000 to \$69,999	186	75	7.25%
\$70,000 to \$79,999	240	81	9.35%
\$80,000 to \$89,999	316	109	12.31%
\$90,000 to \$99,999	148	78	5.77%
\$100,000 to \$124,999	482	153	18.78%
\$125,000 to \$149,999	208	90	8.11%
\$150,000 to \$174,999	204	86	7.95%
\$175,000 to \$199,999	113	62	4.40%
\$200,000 to \$249,999	33	33	1.29%
\$250,000 to \$299,999	13	22	0.51%
\$300,000 to \$399,999	11	18	0.43%
\$400,000 to \$499,999	27	33	1.05%
\$500,000 or more	0	85	0.00%

4.3.6 Gross Rent

Similarly, rents in the Village of Rantoul also trend toward the middle of the range. Nearly 60 percent of units rent for between \$350 and \$799 per month, while a combined nearly 40 percent of units rent for between \$800 and \$1,249. Only 2.8 percent rent for over \$1,250, and only 0.3 percent rent for less than \$299. An estimated 36 renter-occupied units in the village have no cash rent.

TABLE 4-7 GROSS RENT (2013-2017)20

Gross Rent	No. of Units	MOE	Percent
Less than \$100	0	17	0.0%
\$100 to \$149	0	17	0.0%
\$150 to \$199	0	17	0.0%
\$200 to \$249	0	17	0.0%
\$250 to \$299	8	12	0.3%
\$300 to \$349	0	17	0.0%
\$350 to \$399	55	72	2.3%
\$400 to \$449	107	85	4.5%
\$450 to \$499	123	106	5.2%
\$500 to \$549	175	104	7.4%
\$550 to \$599	129	91	5.5%
\$600 to \$649	189	79	8.0%
\$650 to \$699	281	120	11.9%
\$700 to \$749	131	68	5.6%
\$750 to \$799	170	76	7.2%
\$800 to \$899	376	154	15.9%
\$900 to \$999	214	90	9.1%
\$1,000 to \$1,249	336	114	14.2%
\$1,250 to \$1,499	52	40	2.2%
\$1,500 to \$1,999	7	13	0.3%
\$2,000 to \$2,499	7	11	0.3%
\$2,500 to \$2,999	0	17	0.0%
\$3,000 to \$3,499	0	17	0.0%
\$3,500 or more	0	17	0.0%
No cash rent	36	33	1.5%
Total renter occupied units	2,360	255	100.0%

4.4. COMMUTING BEHAVIOR

4.4.1 Commuter Mode Share

90.3 percent of workers aged 16 years and over commuted by car, truck, or van; 77.5 percent drove alone, while 12.9 percent commuted in a carpool in the Village of Rantoul. Walking and bicycling accounted for 3.1 percent and 0.6 percent of workers, respectively, while another 2.1 percent used a taxi, motorcycle, or other means of transportation to get to work. Three percent of workers worked at home. Only 0.8 percent of workers commuted by public transportation.

TABLE 4-8 COMMUTER MODE SHARE (2013- 2017)²¹

Transportation Mode	Population	MOE
Car, truck, or van	90.3%	3.8
Drove alone	77.5%	5.2
Carpooled	12.9%	3.8
In 2-person carpool	9.7%	3.2
In 3-person carpool	1.2%	1.0
In 4-or-more person carpool	1.9%	1.5
Public transportation (excluding taxi)	0.8%	0.8
Walked	3.1%	2.3
Bicycle	0.6%	0.7
Taxicab, motorcycle, or other means	2.1%	1.8
Worked at home	3.0%	2.0
Total	100.0%	-

Chapter Endnotes

1 U.S. Census Bureau; American Community Survey, 2013-2017 American Community Survey 5-Year Estimates, Table B19101, S1903; generated by CCRPC staff; using American FactFinder; <http://factfinder2.census.gov>; (14 May 2019).U.S. Census Bureau; American Community Survey, 2013-2017 American Community Survey 5-Year Estimates, Table S0101; generated by CCRPC staff; using American FactFinder; <http://factfinder2.census.gov>; (14 May 2019). U.S. Census Bureau; American Community Survey 5-Year Estimates, Table S0101; generated by CCRPC staff; using American FactFinder; <http://factfinder2.census.gov>; (14 May 2019). U.S. Census Bureau; American Community Survey, 2013-2017 American Community Survey 5-Year Estimates, Table S1101; generated by CCRPC staff; using American FactFinder; <http://factfinder2.census.gov>; (14 May 2019). U.S. Census Bureau; American FactFinder; <http://factfinder2.census.gov>; (14 May 2019). U.S. Census Bureau; American FactFinder; <http://factfinder2.census.gov>; (14 May 2019). U.S. Census Bureau; American FactFinder; <http://factfinder2.census.gov>; (14 May 2019). U.S. Census Bureau; American FactFinder; <http://factfinder2.census.gov>; (14 May 2019). U.S. Census Bureau; American FactFinder; <http://factfinder2.census.gov>; (14 May 2019).

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5. Transportation System

5.1 TRANSPORTATION NETWORK

5.1.1 Roadway Functional Classification TABLE 5.A FUNCTIONAL CLASSIFICATION SYSTEM

The Federal Highway Administration (FHWA) categorizes roadways by the function they perform with regards to providing access and mobility. Following the FHWA functional classification system, there are three highway functional classifications: arterial, collector, and local roads. There are seven roadway functional classification categories: interstates, other freeways and expressways, other principal arterials, minor arterials, major and minor collectors, and local roads (TABLE 5.A).

· Principal arterials provide mobility over long distances with minimal access to adjacent properties.

Classification	Classification Categories			
		Interstates		
Artoriale	Principal Arterials	Freeways/Expressways		
Arteriais		Other Principal Arterials		
	Minor Arterials			
Callestera	Major Collectors			
Collectors	Minor Collectors			
Local Roads				



MAP 5.A ROADWAY FUNCTIONAL CLASSIFICATION

- Minor arterials facilitate trips of moderate lengths, serve geographic areas that are smaller than their higher arterial counterparts, and offer connectivity to the higher arterial system.
- Major and minor collectors provide access to adjacent properties rather than serving long distances.
- Local streets are lower-volume roadways that provide direct land access but are not designed to serve through-traffic.

MAP 5.A shows principal arterials, minor arterials, and major collectors serving the Village of Rantoul. US 45 is classified as other principal arterial connecting the center of the village to I-57 and Champaign-Urbana. Among the minor arterials is US 136 (Champaign Avenue) which connects the industrial area on the

west side of the Village to I-57 and the center of the Village to the towns east of Rantoul. The other minor arterials are US 136 (East Grove Avenue), East Veterans Parkway and parts of Century Boulevard (US 45), South Maplewood Drive, and Borman Drive. Parts of East Wabash Avenue, South Lincoln Street, North Fredrick Street, North Sheldon Street and North Maplewood Drive which are near the schools serve as major collectors.

5.1.2 Roadway Jurisdiction

The high volume roadways like I-57, US 136 and US 45 are maintained by the Illinois Department of Transportation (IDOT). However, most of the roadways in the Village of Rantoul are under the jurisdiction of the village. **MAP 5.B** shows the jurisdiction of roadways in Rantoul.



MAP 5.B ROADWAYS MAINTAINED BY JURISDICTION

5.1.3 Speed Limit

MAP 5.C presents the speed limit on various roadways. The speed limit in the residential areas in the north half of the Village of Rantoul is 25 mph or below, while in the south, just west of the Rantoul Aviation Center is around 30-35 mph. The speed limit along US 136 is 40 mph on the west side of Rantoul and 35 mph on the east side of Rantoul, with the exception of 20 mph school speed zones near Broadmeadow Elementary and Rantoul Township High School.

FIGURE 5.B CHAMPAIGN AVE. & CENTURY BLVD. INTERSECTION





MAP 5.C SPEED LIMIT ALONG ROADWAYS

5.1.4 Pavement Condition

Pavement surface conditions greatly affect traveler safety and traffic flow. **MAP 5.D** presents roadway pavement condition. This data was not available for all roadway types. Based on the data available, high volume roadways like I-57 south of US 136, US 136 on the east and west sides of Rantoul, and part of US 45 (Century Boulevard) have "Fair" pavement condition. A considerable proportion of roadways were found to be in Excellent and Good condition.

FIGURE 5.C PAVEMENT CONDITION OF US 45





MAP 5.D PAVEMENT CONDITION OF ROADWAYS

5.1.5 Intersection Control Type

The Village of Rantoul has a mix of intersection controls that vary from one-way stop control to fully signalized intersections. Most of the intersections along the major corridors in the Village of Rantoul are signalized intersections as can be seen in **MAP 5.E**. Those corridors include Liberty Avenue (US 45), Century Boulevard (US 45), Champaign Avenue (US 136), Grove Avenue (US 136), and Maplewood Drive.

5.1.6 12-Hour Intersection Traffic Volumes

The 12-hour volume of the top five busiest intersections among the 12 intersections counted are presented in **FIGURE 5.D**. As can be seen in **FIGURE 5.D**, the intersections of Champaign Avenue (US 136)

& Century Boulevard (US 45), and Grove Avenue (US 136) & Maplewood Drive are the busiest intersections in the Village. Based on the turning movement counts (TMC) collected, it was determined that at these intersections, the morning peak hour is from 7:00 a.m. to 8:00 a.m. and evening peak hour is from 4:00 p.m. to 5:00 p.m.

The other four intersections with high traffic volumes are located near schools. These intersectivtreet, Grove Avenue and Marshall Street, Wabash Avenue and Marshall Street and Bel Aire Drive and Maplewood Drive. **FIGURE 5.E** shows the 12-hour traffic volumes at these intersections. From the TMC data collected, it was determined that the morning peak hour is from 7:00 a.m. to 8:00 a.m. and the evening peak hour coincides with the end of the typical school day from 3:00 p.m. to 4:00 p.m.



MAP 5.E INTERSECTION CONTROL TYPE

FIGURE 5.D 12-HOUR TRAFFIC VOLUME AT INTERSECTIONS





FIGURE 5.E 12-HOUR TRAFFIC VOLUME AT INTERSECTIONS NEAR SCHOOLS IN THE VILLAGE OF RANTOUL

L2:00 P.M 1:00 PM 2:00 PM 3:00 PM

12:00 PM

1:00 PM 2:00 PM 3:00 PM 4:00 PM 5:00 PM

N 5:00 PM

6:00 PM

1:00 2:00



5.1.7 Intersection Turning Movement Volumes (Peak AM and PM)

TABLE 5.B shows traffic counts of vehicles, pedestrians, buses, and bicyclists by approach at morning and afternoon peak hours at five intersections: Wabash Avenue and Marshall Street, Grove Avenue (US 136) and Marshall Street, Maplewood Drive and Bel Aire Drive, Champaign Avenue and Century Boulevard, and Champaign Avenue and Lon Drive.

The morning peak period is 7:45-8:45 a.m., and the afternoon peak period is 2:45-3:45 p.m. The intersection of Champaign Avenue and Century Boulevard, during the afternoon peak period, had the greatest traffic volume, at 1,758 vehicles. The intersection of Wabash Avenue and Marshall Street, during the morning peak period, had the smallest traffic volume, with 243 roadway users.

Of the intersections with data disaggregated by roadway user type, the intersection of Maplewood Drive and Bel Aire Drive in the afternoon peak period had the most pedestrians and the most buses, while the intersection of Wabash Avenue and Marshall Street in the morning peak period had the most bicyclists. These locations are near Eastlawn Elementary and J. W. Eater Junior High School, respectively. FIGURE 5.F SIGNALIZED INTERSECTION OF CENTURY BLVD. & VETERANS PKWY.



FIGURE 5.G CHAMPAIGN AVE. & CENTURY BLVD. INTERSECTION



Intersection	Time	User Type	North Leg	East Leg	South Leg	West Leg	All Approaches
		Car	19	91	1	87	198
	Morning Pook	Bus	-	2	-	4	6
Wabash Ave. and Marshall St		Bike	5	2	-	-	7
	(/:45-8:45 a.m)	Pedestrian	3	6	5	18	32
		All	27	101	6	109	243
		Car	-	203	13	99	315
	Morning Peak (7:45-8:45 a.m)	Bus	-	1	-	4	5
Grove Ave. and Marshall		Bike	-	-	-	-	-
Jl.		Pedestrian	4	2	1	3	10
		All	4	206	14	106	330
	Afternoon Doold	Car	204	36	233	23	496
		Bus	5	5	9	1	20
Maplewood Dr. and Bel	Alternoon reak	Bike	3	-	3	-	6
Alle DI.	(2:45-3:45 p.m.)	Pedestrian	27	-	3	4	34
		All	239	41	248	28	556
Champaign Ave. and Century Blvd.	Afternoon Peak (2:45-3:45 p.m.)	All Vehicles	242	373	514	629	1,758
Champaign Ave. and Lon Dr.	Afternoon Peak (2:45-3:45 p.m.)	All Vehicles	8	163	35	309	515

TABLE 5.B TRAVEL VOLUMES (2019)



MAP 5.F EXISTING CONDITION TURNING MOVEMENT COUNTS FOR MORNING AND EVENING PEAK HOURS

5.1.8 Intersections Traffic Operations (Delays and Level of Service)

Existing operational conditions during the AM, Noon, and PM peak hours on typical weekdays were evaluated at selected intersections. Level of Service (LOS), approach delay, and intersection delay were analyzed to determine existing operational conditions at the signalized intersections.

LOS is a qualitative measure describing operational conditions, from "A" (best) to "F" (worst), within a traffic stream or at an intersection. LOS is quantified for signalized and unsignalized intersections using vehicle control delay. Control delay is the component of delay that results from the type of traffic control at the intersection. It is measured by comparing the controlled condition against the uncontrolled condition. The difference between the travel time that would have occurred in the intersection control's absence and the travel time that results from the entrol delay. Average control delay per vehicle is estimated for each lane group and aggregated for each approach and for the intersection as a whole.

TABLE 5.C describes the LOS criteria for signalized intersections. LOS A represents free flow along the intersection with minimal delay, LOS B represents stable flow with slight delays, LOS C indicates stable flow with acceptable delays, LOS D represents an approaching unstable flow with tolerable delay (e.g. occasionally wait through more than one signal cycle before proceeding), LOS E indicates unstable flow with an approaching intolerable delay, and LOS F represents forced or jammed flow.

Existing traffic operating conditions for intersections in the Village of Rantoul were evaluated for existing conditions. 12-hour turning movement counts (TMC) were collected from 7:00 a.m. to 7:00 p.m. on a typical weekday at 11 intersections in the Village of Rantoul. In addition, the most recent 2016 data for the intersection of Champaign Avenue (US-136) at Lon Drive was obtained from IDOT. Among these intersections, six were signalized while the others were stop-controlled at minor approaches.

The intersection performance level for morning and evening peak hours were analyzed using Synchro® 10 software. For the purpose of simulation, the morning and evening peak hours are considered to be from 7:00 a.m. to 8:00 a.m. and from 4:00 p.m. to 5:00 p.m., respectively.

FIGURE 5.H SANGAMON AVE. & GARRARD ST. INTERSECTION

TABLE 5.C LOS CRITERIA FOR SIGNALIZED INTERSECTIONS

Control Delay per Vehicle	LOS for Volume to Capacity Ratio ≤1
≤10	А
>10 and ≤20	В
>20 and ≤35	С
>35 and ≤55	D
>55 and ≤80	E
>80	F

Source: HCM 2010

The morning and evening peak hours turning movement counts from **MAP 5.F** were used to estimate performance measures like delay (seconds/vehicle) and level of service (LOS) for existing conditions using the Synchro® software. Synchro® estimates performance level using Highway Capacity Manual (HCM) 2010.

The signalized intersection performance level seems to be within an acceptable range of delay and LOS for existing conditions with LOS being "B" or "C".

TABLE 5.D and **TABLE 5.E** present delay and LOS by intersection approaches. For unsignalized intersections, HCM 2010 provides information on delay and LOS for only minor approaches.

FIGURE 5.I CHAMPAIGN AVE. & MURRAY RD. INTERSECTION



Intersection Delays (sec/veh) by Approaches in the Morning Peak Hour												
	Internetion Trees	EB	WB	NB	SB	Delay						
Intersection Name	Intersection type	2019	2019	2019	2019	2019						
Champaign Ave & Evans Rd	Signalized	19.4	19.1	24.1	23.6	19.7						
Champaign Ave & Century Blvd	Signalized	28	27.9	28.6	32.4	29.4						
#Champaign Ave/Klein Ave & Chanute St	TWSC	N/A	N/A	11.4	11.9							
Grove Ave & Maplewood Dr	Signalized	23.4	24.6	35.5	47.2	32.5						
*Grove Ave & Lon Dr	Signalized					N/A						
Veterans Pkwy & Century Blvd	Signalized	28.4	42	36.3	13	23.9						
Chandler Rd & Liberty Ave	Signalized	27.9	22.5	20.7	26	24.3						
#Campbell Ave & Century Blvd	TWSC	11.6	13.3									
#Campbell Ave & Sheldon St	TWSC	18.5	0									
#Wabash Ave & Marshall St	1-way Stop				9.8							
#Grove Ave & Marshall St	TWSC			10.3	0							
#Bel Aire Dr & Maplewood Dr	TWSC	10.3	15.2									
Intersection Delays (sec/veh)	by Approaches in the	Evening	Peak Ho	bur								
Intersection Name	Intersection Type	EB	WB	NB	SB	Delay						
Intersection Name	Intersection Type	EB 2019	WB 2019	NB 2019	SB 2019	Delay 2019						
Intersection Name Champaign Ave & Evans Rd	Intersection Type Signalized	EB 2019 20.4	WB 2019 9.6	NB 2019 23.3	SB 2019 34	Delay 2019 23.2						
Intersection Name Champaign Ave & Evans Rd Champaign Ave & Century Blvd	Intersection Type Signalized Signalized	EB 2019 20.4 35.3	WB 2019 9.6 31	NB 2019 23.3 33.5	SB 2019 34 29.4	Delay 2019 23.2 32.9						
Intersection Name Champaign Ave & Evans Rd Champaign Ave & Century Blvd #Champaign Ave/Klein Ave & Chanute St	Intersection Type Signalized Signalized TWSC	EB 2019 20.4 35.3	WB 2019 9.6 31	NB 2019 23.3 33.5 22.7	SB 2019 34 29.4 15	Delay 2019 23.2 32.9						
Intersection Name Champaign Ave & Evans Rd Champaign Ave & Century Blvd #Champaign Ave/Klein Ave & Chanute St Grove Ave & Maplewood Dr	Intersection Type Signalized Signalized TWSC Signalized	EB 2019 20.4 35.3 25	WB 2019 9.6 31 23.8	NB 2019 23.3 33.5 22.7 32.6	SB 2019 34 29.4 15 36.5	Delay 2019 23.2 32.9 28.7						
Intersection Name Champaign Ave & Evans Rd Champaign Ave & Century Blvd #Champaign Ave/Klein Ave & Chanute St Grove Ave & Maplewood Dr *Grove Ave & Lon Dr	Intersection Type Signalized Signalized TWSC Signalized Signalized	EB 2019 20.4 35.3 25	WB 2019 9.6 31 23.8	NB 2019 23.3 33.5 22.7 32.6	SB 2019 34 29.4 15 36.5	Delay 2019 23.2 32.9 28.7 N/A						
Intersection Name Champaign Ave & Evans Rd Champaign Ave & Century Blvd #Champaign Ave/Klein Ave & Chanute St Grove Ave & Maplewood Dr *Grove Ave & Lon Dr Veterans Pkwy & Century Blvd	Intersection Type Signalized Signalized TWSC Signalized Signalized Signalized	EB 2019 20.4 35.3 25 25 30.2	WB 2019 9.6 31 23.8 40.9	NB 2019 23.3 33.5 22.7 32.6 37.2	SB 2019 34 29.4 15 36.5 24.5	Delay 2019 23.2 32.9 28.7 N/A 30.7						
Intersection Name Champaign Ave & Evans Rd Champaign Ave & Century Blvd #Champaign Ave/Klein Ave & Chanute St Grove Ave & Maplewood Dr *Grove Ave & Lon Dr Veterans Pkwy & Century Blvd Chandler Rd & Liberty Ave	Intersection Type Signalized Signalized TWSC Signalized Signalized Signalized Signalized	EB 2019 20.4 35.3 25 25 30.2 28.1	WB 2019 9.6 31 23.8 40.9 20.5	NB 2019 23.3 33.5 22.7 32.6 37.2 23.1	SB 2019 34 29.4 15 36.5 24.5 22.7	Delay 2019 23.2 32.9 28.7 N/A 30.7 23.5						
Intersection Name Champaign Ave & Evans Rd Champaign Ave & Century Blvd #Champaign Ave/Klein Ave & Chanute St Grove Ave & Maplewood Dr *Grove Ave & Lon Dr Veterans Pkwy & Century Blvd Chandler Rd & Liberty Ave #Campbell Ave & Century Blvd	Intersection Type Signalized Signalized TWSC Signalized Signalized Signalized Signalized TWSC	EB 2019 20.4 35.3 25 30.2 28.1 13.4	WB 2019 9.6 31 23.8 40.9 20.5 16.6	NB 2019 23.3 33.5 22.7 32.6 37.2 23.1	SB 2019 34 29.4 15 36.5 24.5 22.7	Delay 2019 23.2 32.9 28.7 N/A 30.7 23.5						
Intersection Name Champaign Ave & Evans Rd Champaign Ave & Century Blvd #Champaign Ave/Klein Ave & Chanute St Grove Ave & Maplewood Dr *Grove Ave & Lon Dr Veterans Pkwy & Century Blvd Chandler Rd & Liberty Ave #Campbell Ave & Century Blvd #Campbell Ave & Sheldon St	Intersection Type Signalized Signalized TWSC Signalized Signalized Signalized TWSC TWSC	EB 2019 20.4 35.3 25 25 30.2 28.1 13.4 11.9	WB 2019 9.6 31 23.8 23.8 40.9 20.5 16.6 0	NB 2019 23.3 33.5 22.7 32.6 37.2 23.1	SB 2019 34 29.4 15 36.5 24.5 22.7	Delay 2019 23.2 32.9 28.7 N/A 30.7 23.5						
Intersection Name Champaign Ave & Evans Rd Champaign Ave & Century Blvd #Champaign Ave/Klein Ave & Chanute St Grove Ave & Maplewood Dr *Grove Ave & Lon Dr Veterans Pkwy & Century Blvd Chandler Rd & Liberty Ave #Campbell Ave & Century Blvd #Campbell Ave & Sheldon St #Wabash Ave & Marshall St	Intersection Type Signalized Signalized TWSC Signalized Signalized Signalized Signalized TWSC TWSC 1-way Stop	EB 2019 20.4 35.3 25 30.2 28.1 13.4 11.9	WB 2019 9.6 31 23.8 40.9 20.5 16.6 0	NB 2019 23.3 33.5 22.7 32.6 37.2 23.1	SB 2019 34 29.4 15 36.5 24.5 22.7 22.7 9.5	Delay 2019 23.2 32.9 28.7 N/A 30.7 23.5						
Intersection Name Champaign Ave & Evans Rd Champaign Ave & Century Blvd #Champaign Ave/Klein Ave & Chanute St Grove Ave & Maplewood Dr *Grove Ave & Lon Dr Veterans Pkwy & Century Blvd Chandler Rd & Liberty Ave #Campbell Ave & Century Blvd #Campbell Ave & Sheldon St #Wabash Ave & Marshall St #Grove Ave & Marshall St	Intersection Type Signalized Signalized TWSC Signalized Signalized Signalized TWSC TWSC 1-way Stop TWSC	EB 2019 20.4 35.3 25 30.2 28.1 13.4 11.9	WB 2019 9.6 31 23.8 40.9 20.5 16.6 0	NB 2019 23.3 33.5 22.7 32.6 37.2 23.1 9.5	SB 2019 34 29.4 15 36.5 24.5 22.7 22.7 9.5 0	Delay 2019 23.2 32.9 28.7 N/A 30.7 23.5						

TABLE 5.D MORNING AND EVENING PEAK HOUR DELAYS AT INTERSECTIONS FOR EXISTING CONDITIONS

*The signal timings are Non-NEMA phasing, not supported by HCM 2010. #The delay is calculated only for the minor approaches.



MAP 5.G LEVEL OF SERVICE FOR MORNING PEAK HOURS AT INTERSECTIONS FOR EXISTING CONDITIONS

Intersection LOS by Approaches in the Morning Peak Hour												
latence stice Norse	latence attain Times	EB	WB	NB	SB	LOS						
Intersection Name	Intersection Type	2019	2019	2019	2019	2019						
Champaign Ave & Evans Rd	Signalized	В	В	С	С	В						
Champaign Ave & Century Blvd	Signalized	С	С	С	С	С						
#Champaign Ave/Klein Ave & Chanute St	TWSC			В	В							
Grove Ave & Maplewood Dr	Signalized	С	С	D	D	С						
*Grove Ave & Lon Dr	Signalized					N/A						
Veterans Pkwy & Century Blvd	Signalized	С	D	D	В	С						
Chandler Rd & Liberty Ave	Signalized	С	С	С	С	С						
#Campbell Ave & Century Blvd	TWSC	В	В									
#Campbell Ave & Sheldon St	TWSC	С	Α									
#Wabash Ave & Marshall St	1-way Stop				A							
#Grove Ave & Marshall St	TWSC			В	A							
#Bel Aire Dr & Maplewood Dr	TWSC	В	С									
Intersection Delays (sec/veh)	by Approaches in the	Evening	Peak Ho	our								
Intersection Delays (sec/veh)	by Approaches in the	Evening EB	Peak Ho WB	our NB	SB	LOS						
Intersection Delays (sec/veh)	by Approaches in the Intersection Type	Evening EB 2019	Peak Ho WB 2019	NB 2019	SB 2019	LOS 2019						
Intersection Delays (sec/veh) Intersection Name Champaign Ave & Evans Rd	by Approaches in the Intersection Type Signalized	Evening EB 2019 C	Peak Ho WB 2019 A	our NB 2019 C	SB 2019 C	LOS 2019 C						
Intersection Delays (sec/veh) Intersection Name Champaign Ave & Evans Rd Champaign Ave & Century Blvd	by Approaches in the Intersection Type Signalized Signalized	Evening EB 2019 C D	Peak Ho WB 2019 A C	NB 2019 C C	SB 2019 C C	LOS 2019 C C						
Intersection Delays (sec/veh) Intersection Name Champaign Ave & Evans Rd Champaign Ave & Century Blvd #Champaign Ave/Klein Ave & Chanute St	by Approaches in the Intersection Type Signalized Signalized TWSC	Evening EB 2019 C D	Peak Ho WB 2019 A C	NB 2019 C C C	SB 2019 C C C C	LOS 2019 C C						
Intersection Delays (sec/veh) Intersection Name Champaign Ave & Evans Rd Champaign Ave & Century Blvd #Champaign Ave/Klein Ave & Chanute St Grove Ave & Maplewood Dr	by Approaches in the Intersection Type Signalized Signalized TWSC Signalized	Evening EB 2019 C D C	Peak Ho WB 2019 A C C	NB 2019 C C C C C	SB 2019 C C C D	LOS 2019 C C C						
Intersection Delays (sec/veh) Intersection Name Champaign Ave & Evans Rd Champaign Ave & Century Blvd #Champaign Ave/Klein Ave & Chanute St Grove Ave & Maplewood Dr *Grove Ave & Lon Dr	by Approaches in the Intersection Type Signalized Signalized TWSC Signalized Signalized	Evening EB 2019 C D C C	Peak Ho WB 2019 A C C	NB 2019 C C C C C	SB 2019 C C D	LOS 2019 C C C C N/A						
Intersection Delays (sec/veh) Intersection Name Champaign Ave & Evans Rd Champaign Ave & Century Blvd #Champaign Ave/Klein Ave & Chanute St Grove Ave & Maplewood Dr *Grove Ave & Lon Dr Veterans Pkwy & Century Blvd	by Approaches in the Intersection Type Signalized Signalized TWSC Signalized Signalized Signalized	Evening EB 2019 C D C C C	Peak Ho WB 2019 A C C C D	NB 2019 C C C C D	SB 2019 C C D C C	LOS 2019 C C C N/A C						
Intersection Delays (sec/veh) Intersection Name Champaign Ave & Evans Rd Champaign Ave & Century Blvd #Champaign Ave/Klein Ave & Chanute St Grove Ave & Maplewood Dr *Grove Ave & Lon Dr Veterans Pkwy & Century Blvd Chandler Rd & Liberty Ave	by Approaches in the Intersection Type Signalized Signalized TWSC Signalized Signalized Signalized Signalized	Evening EB 2019 C D C C C C C	Peak Ho WB 2019 A C C D C	NB 2019 C C C D C	SB 2019 C C D C C C C C C C C C	LOS 2019 C C C N/A C C C						
Intersection Delays (sec/veh) Intersection Name Champaign Ave & Evans Rd Champaign Ave & Century Blvd #Champaign Ave/Klein Ave & Chanute St Grove Ave & Maplewood Dr *Grove Ave & Lon Dr Veterans Pkwy & Century Blvd Chandler Rd & Liberty Ave #Campbell Ave & Century Blvd	by Approaches in the Intersection Type Signalized Signalized TWSC Signalized Signalized Signalized Signalized TWSC	Evening EB 2019 C D C C C C B	Peak Ho WB 2019 A C C C D C C	NB 2019 C C C C C D C C	SB 2019 C C C D C C C	LOS 2019 C C C N/A C C						
Intersection Delays (sec/veh) Intersection Name Champaign Ave & Evans Rd Champaign Ave & Century Blvd #Champaign Ave/Klein Ave & Chanute St Grove Ave & Maplewood Dr *Grove Ave & Lon Dr Veterans Pkwy & Century Blvd Chandler Rd & Liberty Ave #Campbell Ave & Century Blvd #Campbell Ave & Sheldon St	by Approaches in the Intersection Type Signalized Signalized TWSC Signalized Signalized Signalized Signalized TWSC TWSC	Evening EB 2019 C D C C C C B B B	Peak Ho WB 2019 A C C C D C C C A	NB 2019 C C C C C D C C	SB 2019 C C C D C C C	LOS 2019 C C C N/A C C C						
Intersection Delays (sec/veh) Intersection Name Champaign Ave & Evans Rd Champaign Ave & Century Blvd #Champaign Ave/Klein Ave & Chanute St Grove Ave & Maplewood Dr *Grove Ave & Lon Dr Veterans Pkwy & Century Blvd Chandler Rd & Liberty Ave #Campbell Ave & Century Blvd #Campbell Ave & Sheldon St #Wabash Ave & Marshall St	by Approaches in the Intersection Type Signalized Signalized TWSC Signalized Signalized Signalized Signalized TWSC TWSC 1-way Stop	Evening EB 2019 C D C C C C B B B	Peak Ho WB 2019 A C C D C C C A	NB 2019 C C C D C	SB 2019 C C D D C C C C	LOS 2019 C C C N/A C C C						
Intersection Delays (sec/veh) Intersection Name Champaign Ave & Evans Rd Champaign Ave & Century Blvd #Champaign Ave/Klein Ave & Chanute St Grove Ave & Maplewood Dr *Grove Ave & Lon Dr Veterans Pkwy & Century Blvd Chandler Rd & Liberty Ave #Campbell Ave & Century Blvd #Campbell Ave & Sheldon St #Wabash Ave & Marshall St #Grove Ave & Marshall St	by Approaches in the Intersection Type Signalized Signalized TWSC Signalized Signalized Signalized Signalized TWSC TWSC 1-way Stop TWSC	Evening EB 2019 C D C C C B B B	Peak Ho WB 2019 A C C D C C A	NB 2019 C C C D C D C A	SB 2019 C D C C C C A	LOS 2019 C C C N/A C C						

TABLE 5.E LEVEL OF SERVICE (LOS) FOR MORNING AND EVENING PEAK HOURS AT INTERSECTIONS FOR EXISTING CONDITIONS

*The signal timings are Non-NEMA phasing, not supported by HCM 2010. #The delay is calculated only for the minor approaches.



MAP 5.H LEVEL OF SERVICE FOR EVENING PEAK HOURS AT INTERSECTIONS FOR EXISTING CONDITIONS

5.2 AUTOMOBILES

5.2.1 Annual Average Daily Traffic

The annual average daily traffic (AADT) are the traffic volume counts collected in a year divided by 365 days. The Illinois Department of Transportation (IDOT) periodically collects 24-hour traffic volume data on many roadways around the State.

MAP 5.I shows the available annual average daily traffic (AADT) of major roadways in the Village of Rantoul. I-57 has the highest AADT (15,000 to 25,000) followed by the US 136/Champaign Avenue corridor (5,000 to 20,000). Liberty Avenue/Century Boulevard and Maplewood Drive have AADT ranging from 5,000 to 10,000.

TABLE 5.F COMMUTER MODE SHARE (2013-2017)*

Number of Vehicles	Percent	MOE
No vehicle available	4.8%	3.1
1 vehicle available	27.8%	5.5
2 vehicles available	41.7%	7.3
3 or more vehicles available	25.7%	5.0
Workers aged 16 and over	100.0%	-

*U.S. Census Bureau; American Community Survey, 2013-2017 American Community Survey 5-Year Estimates, Table S0801; generated by CCRPC staff; using American FactFinder; http://factfinder2.census.gov; (14 May 2019).

MAP 5.I ANNUAL AVERAGE DAILY TRAFFIC (AADT)



5.2.2 Vehicles Available per Household

Among workers aged 16 and over in the Village of Rantoul, 4.8 percent had no vehicles available for their use. The greatest percentage of workers had two vehicles available, at 41.7 percent. Over a quarter of workers had one vehicle available (27.8 percent), and approximately another quarter (25.7 percent) had three or more vehicles available.

5.2.3 Automobile Crashes

The crash data for the Village of Rantoul was obtained from Illinois Department of Transportation (IDOT). The crashes are classified in KABCO scale based on the type of the most severe injury of a person in that crash.

"K" represents a fatal crash if any injury results in a fatality within 30 days of a crash occurrence. "A" stands for an incapacitating injury, also referred to as a serious injury that is any injury other than a fatal injury and prevents the person from continuing his or her normal activities, which the person was otherwise capable of performing before the injury occurred. "B" refers to a non-incapacitating injury, as shown by any evident injuries on the person due to a crash. "C" represents a reported crash with no evident injuries. Lastly, "O" stands for no indication of injury and only property damage of a monetary value greater than \$1,500.

The most recent crash data available is from 2012 to 2016. **TABLE 5.G** presents the summary of crashes. The maximum number of crashes was 136 in 2016, and the average number of crashes per year was 117. There was one fatal crash in 2014, three percent of the crashes were of A-injury type, 15 percent were of B-injury type and eight percent were of C-injury type.

FIGURE 5.J presents the fatal and A-injury crashes by year. The average number of A-injury crashes per year is four. A steep reduction in A-injury crashes is observed in 2013 which remained constant in 2014, but then the number increased from one to three in 2015 and then to seven in 2016.

FIGURE 5.K presents the percentage of crashes occurring at intersections, road segments (between intersections) and Interstate 57. 68% of the crashes occurred at intersections, more than the percentages occurring on segments (23.8%) and on the Interstate (8.2%). Among the fatal and injury crashes, 79% of them occurred at intersections.

TABLE 5.G SUMMARY OF CRASHES IN VILLAGE OF RANTOUL BYSEVERITY TYPE (2012–2016)

Crash Severity	2012	2013	2014	2015	2016	Total	%
Fatal	0	0	1	0	0	1	0%
A Injury	6	1	1	3	7	18	3%
B Injury	20	14	22	8	23	87	15%
C Injury	6	5	10	12	12	45	8%
No Injuries	85	86	98	69	94	432	74%
Total	117	106	132	92	136	583	100%

FIGURE 5.J TOTAL NUMBER OF FATAL AND A-INJURY TYPE CRASHES BY YEAR



FIGURE 5.K PERCENTAGE OF CRASHES BY TYPE OF LOCATION



MAP 5.J DISTRIBUTION OF CRASHES BY SEVERITY TYPE (2012-2016)



FIGURE 5.L US 136 & US 45 INTERSECTION



A. Crash Factors

A.1. Time of Day, Week and Month

FIGURE 5.N, FIGURE 5.O and FIGURE 5.P present the distribution of crashes (2012–2016) by hour of the day, month and day of the week respectively. The maximum number of crashes in an hour occurred at 3:00 p.m. with 55 crashes. In FIGURE 5.N, the number of crashes increased in the morning at 7 a.m., continued to increase in the afternoon with a sudden peak at 3:00 p.m. and then gradually decreased in the evening. The month with the most crashes was April with 67, and the day of the week with the most crashes are higher at 3 p.m. on weekdays which may be due to increase in after school or post-workday traffic.





FIGURE 5.0 NUMBER OF CRASHES (2012-2016) BY MONTH AND HOUR OF THE DAY

Month								Nur	nbe	r of	Cras	shes	by	Hou	r of	the	Day								Tota
WOITT	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	TULA
Jan	0	0	0	1	1	1	7	5	4	1	2	2	2	6	2	9	6	3	2	1	4	4	1	1	65
Feb	1	1	0	0	0	1	3	2	4	1	3	1	2	2	0	6	2	2	2	1	1	5	1	2	43
Mar	1	0	3	0	2	1	1	5	2	0	2	0	2	2	4	2	3	4	0	1	1	0	2	0	38
Apr	3	3	0	1	2	1	5	6	3	1	2	3	6	3	2	10	1	3	3	1	1	1	4	2	67
May	0	1	0	1	1	3	2	2	0	1	2	5	2	5	3	3	5	4	4	0	1	4	2	2	53
Jun	3	0	1	1	0	1	0	1	2	3	1	3	0	1	5	4	6	3	3	2	3	2	3	4	52
Jul	3	2	0	0	1	1	1	2	3	1	2	3	0	3	5	5	2	3	3	3	3	3	0	1	50
Aug	2	1	0	0	0	1	1	0	2	2	3	3	4	2	0	2	5	2	1	2	0	3	0	0	36
Sept	0	2	0	2	0	3	0	3	2	3	6	0	3	3	2	5	3	4	4	3	4	4	2	3	61
Oct	0	1	0	1	0	0	1	2	1	0	0	2	2	0	3	4	1	5	2	1	1	2	0	0	29
Nov	4	0	1	0	0	0	1	2	0	0	3	3	2	4	0	4	2	1	5	2	2	2	2	2	42
Dec	1	2	1	0	0	1	0	2	4	2	0	3	3	3	5	1	0	3	5	6	1	1	1	2	47
Total	18	13	6	7	7	14	22	32	27	15	26	28	28	34	31	55	36	37	34	23	22	31	18	19	583

FIGURE 5.P NUMBER OF CRASHES (2012-2016) BY DAY OF THE WEEK AND HOUR OF THE DAY



A.2. Collision Type

TABLE 5.H presents the number of crashes from 2012–2016 by collision type. Twenty two percent of the crashes were of fixed object collision type, the most among all crash types. Nineteen percent were crashes involving a parked motor vehicle, and 17 percent were turning collisions. Two percent of crashes involved a bicyclist, and two percent of crashes involved a pedestrian.

FIGURE 5.0 presents the quantity of the three most frequest crash types (fixed object, parked motor vehicle, and turning) between 2012–2016 by time of the day. A high number of fixed object crashes occurred at night between 9 p.m. and 12 a.m. Meanwhile, turning and parking motor vehicle crashes are higher in the afternoon.

MAP 5.K presents the spatial distribution of fixed object, parked motor vehicle and turning collision types. There are more parked motor vehicle crashes in residential areas like Falcon Drive to the northeast, St. Andrews Circle near Willow Pond Golf Course, and the streets of South Pointe Commons to the southwest. Fixed object crashes are more common along the interstate and ramps. Turning crashes are more frequent at the intersections along US 136 (Champaign Avenue/Klein Avenue/Grove Avenue) corridor.

TABLE 5.H NUMBER OF CRASHES BY COLLISION TYPE (2012-2016)

Collision Type	No. of Crashes	Percent
Fixed Object	129	22%
Parked Motor Vehicle	112	19%
Turning	101	17%
Rear End	76	13%
Angle	68	12%
Sideswipe Same Direction	35	6%
Animal	12	2%
Pedestrian	10	2%
Bicyclist (pedal cyclist)	9	2%
Other Object	8	1%
Overturned	7	1%
Sideswipe Opposite Direction	7	1%
Other Non-Collision	5	1%
Head On	3	1%
Train	1	0%
Total	583	100%

FIGURE 5.Q NUMBER OF CRASHES BY COLLISION TYPE AND TIME OF THE DAY (2012-2016)







A.3. Road Surface, Lighting Condition and Weather Condition

Thirteen percent of the crashes from 2012-2016 in the Village of Rantoul occurred on wet roads, and seven percent took place on icy roads. Nineteen percent of the crashes from 2012–2016 in Rantoul occurred in darkness on a lighted road, and ten percent took place in the dark. Eight percent of the crashes from 2012–2016 in Rantoul occurred when it was raining, and seven percent happened when it was snowing.

FIGURE 5.R PERCENTAGE OF CRASHES BY ROAD SURFACE CONDITIONS



FIGURE 5.S PERCENTAGE OF CRASHES BY LIGHTING CONDITIONS

	10.1%	19.7%				62.3%				8.4%
0.0%	10.0	% 20.	0% 30	.0% 40.	0% 50.0)% 60.0%	70.0%	6 80.0%	90.0%	100.0%
				Percentage o	of Crashes du	e to Lighting C	Conditions			
			Dark	mess 🗖 Dai	rkness / Liaht	ed Road 🛛 🔳 🛙)avliaht 🗖	Other		

FIGURE 5.T PERCENTAGE OF CRASHES BY WEATHER CONDITIONS

				79.1%				5.5%	8.4%	7.0%
.0%	10.0%	20.0%	30.0%	40.0%	50.0%	60.0%	70.0%	80.0%	90.0%	100.0%
			Percen	ntage of Cras	shes due to	Weather Cor	ditions			
				Clear	Other 🔳 R	ain 🗧 Snow				

A.4. Driver Characteristics

Driver Age and Sex

There were 887 drivers involved in crashes from 2012–2016 in the Village of Rantoul. Forty-seven percent were male drivers, 44 percent were female drivers, and the gender of the remaining 9 percent is unknown. Thirteen percent of the drivers involved in crashes were between 20 and 24 years old, more than any other age group. Twelve percent of the drivers were between ages 15–19 and another 12 percent were between ages 25–29.

MAP 5.L presents the drivers involved in crashes by the three age cohorts mentioned earlier. The crashes involving young drivers within the age cohort of 15–19 years were concentrated in the village's central area.

FIGURE 5.U NUMBER OF DRIVERS INVOLVED IN CRASHES BY AGE GROUP (2012- 2016)



MAP 5.L DRIVERS INVOLVED IN CRASHES BY AGE COHORT (2012-2016)



Impaired Driving

There were 32 impaired drivers involved in crashes from 2012–2016 in Rantoul. **MAP 5.M** presents the distribution of impaired driver crashes. Twenty-seven alcohol impaired driver crashes and 5 drug-impaired driver crashes occurred from 2012 to 2016.

In **MAP 5.M**, approximately seven impaired driver crashes were along the Grove Avenue segment that crosses the railroad track. **FIGURE 5.V** presents the number of impaired drivers involved in crashes by age groups. There were seven impaired drivers between ages 20–24 and nine impaired drivers between ages 25–29.

There was one fatal crash, four A-injuries, six B-injuries, and two C-injuries due to impaired drivers. The one fatal crash in Rantoul between 2012 and 2016 was due to an impaired driver.

MAP 5.M IMPAIRED DRIVERS INVOLVED IN CRASHES (2012-2016)

FIGURE 5.V IMPAIRED DRIVERS INVOLVED IN CRASHES BY AGE (2012- 2016)





B. High Crash Intersections

High-priority intersections were identified based on equivalent crashes and crash frequency. Equivalent crashes were calculated based on crash severity: more severe crashes (e.g., fatal crashes) were weighted more heavily than less severe crashes (e.g., C-injury crashes). Crash frequency is the average number of crashes over the five year study period. These measures were combined to produce a Priority Index, which is used to identify high-priority intersections in the Village of Rantoul.

```
Equivalent Crashes = <u>(25 X Fatal Crashes + 10 X A Injury Crashes + B Injury Crashes + C Injury Crashes)</u>
5
Crash Frequency = <u>Total No. of Crashes</u>
5
```

B.1. Methodology to Identify High Priority Intersections:

High-priority intersections were identified based on two factors: Equivalent Crashes and Crash Frequency.

- Equivalent Crashes and Crash Frequency were calculated for each intersection based on the equations presented.
- · Considering all the intersections, a mean and standard deviation for the two factors were calculated.
- For each intersection, based on the equivalent crashes and crash frequency values from its mean, an index was assigned.
- The two index values were combined to give a priority index value.
- The higher the priority index value, the higher the priority given to the segment.
- · A list of high-priority intersections were identified.

MAP 5.N presents the high priority intersections identified using this methodology.

C. High Crash Segments

High-priority segments were identified based on equivalent crashes, crash frequency, and crash frequency per mile. Equivalent crashes were calculated based on crash severity: more severe crashes (e.g., fatal crashes) were weighted more heavily than less severe crashes (e.g., C-injury crashes). Crash frequency is the average number of crashes over the five-year study period, and crash frequency per mile is the average crashes per mile of the segment. These measures were combined to produce a Priority Index, which is used to identify high-priority road segments in the Village of Rantoul.

Equivalent Crashes = (<u>25*Fatal Crashes + 10*A-Injury Crashes + B-Injury Crashes + C-Injury Crashes)</u> 5
Crash Frequency = <u>Total Number of Crashes</u> 5
Crash Frequency Per Mile = <u>Total Number of Crashes</u> (5*Length of Segment)

C.1. Methodology to Identify High-Priority Segments:

High-priority segments are based on three factors: Equivalent Crashes, Crash Frequency, and Crash Frequency per Mile.

- Equivalent Crashes, Crash Frequency, and Crash Frequency per Mile were calculated for each segment based on the equations presented.
- · Considering all the segments, a mean and standard deviation for the three factors were calculated.

FIGURE 5.Y METHODOLOGY TO IDENTIFY HIGH PRIORITY

- For each segment, based on the equivalent crashes, crash frequency and crash frequency per length values from its mean, an index was assigned.
- The three index values were combined to give a priority index value.
- The higher the priority index value, the higher the priority given to the segment was.
- · A list of high-priority segments was identified.

MAP 5.N presents the high priority segments identified using this methodology.



MAP 5.N HIGH PRIORITY INTERSECTIONS & SEGMENTS



TABLE 5.I SUMMARY OF HIGH PRIORITY INTERSECTIONS

North-South Roadway	East-West Roadway	No of Legs	Control Type	No of Crash	A Injury Crash	B Injury Crash	C Injury Crash	Fatal Crash	PDO Crash	Average Crash	Average EPDO	Crash Index	EPDO Index	Priority Index
Liberty Dr	Chandler Rd	4	Signal	10	1	2	2	0	5	2	2.8	4	4	8
Century Blvd	Champaign Ave	4	Signal	20	2	3	2	0	13	4	5	4	4	8
Century Blvd	Campbell Ave	4	2WSC (E-W)	7	1	3	0	0	3	1.4	2.6	3	4	7
Chanute St	Champaign Ave / Klein Ave / US 136	4	2WSC (N-S)	7	1	0	2	0	4	1.4	2.4	3	4	7
Murray Rd	Champaign Ave	4	Signal	15	0	4	1	0	10	3	1	4	2	6
Maplewood Dr	Grove Ave	4	Signal	21	0	4	3	0	14	4.2	1.4	4	2	6

TABLE 5.J SUMMARY OF HIGH PRIORITY SEGMENTS

Road Name	From-To	No of Crashes	A Injury Crashes	B Injury Crashes	C Injury Crashes	PDO Crash	Length (Mile)	Average Crash	Average EPDO	Average Crash Per Mile	Crash Index	EPDO Index	Crash per Mile Index	Priority Index
Champaign Ave	Murray Rd– Malsbury Dr	6	0	0	1	5	0.13	1.2	0.2	8.9	4	1	4	9
Champaign Ave	Jay Dr–Murray Rd	3	1	0	0	2	0.15	0.6	2	4.1	2	4	2	8
Falcon Dr	Juniper Dr– Maplewood Dr	8	0	1	0	7	0.25	1.6	0.2	6.4	4	1	3	8
Maplewood Dr	Clark St– Grove Ave	6	0	0	0	6	0.20	1.2	0	6.0	4	0	3	7

D. High Priority Location Analysis

The crash data from 2012–2016 was considered for the analysis of the following high priority locations.

D.1. Champaign Avenue segments and intersection of Champaign Avenue and Murray Road

The intersection of Champaign Avenue and Murray Road is approximately 700 feet east of I-57. At 700 feet west of the intersection, there were three crashes with two of them due to exceeding the speed limit. At 700 feet east of the intersection, there were six crashes with two of them as turning, one as angle, one as fixed object and one as rear end collision types of crashes. There are approximately 10 driveways to the east of this intersection. At the intersection, there were 15 crashes, 10 out of which were related to turning collision type. Most of the crashes were due to failing to yield or exceeding the speed limit. **FIGURE 5.2** presents the study location.

FIGURE 5.Z LOCATION OF CRASHES ALONG CHAMPAIGN AVE. SEGMENT AND INTERSECTION OF CHAMPAIGN AVE. & MURRAY RD.



D.2. Falcon Drive segment

The Falcon Drive segment is 0.25 miles along which there were eight segment related crashes and seven intersection related crashes, a total of 15 crashes (**FIGURE 5.AB**). Eleven out of fifteen were of parked motor vehicle related crashes. Along Falcon Drive, which is a two-way street and approximately 36 feet, cars are parked on both sides of the road. A higher number of parked cars reduces the space for drivers to pass each other, and also increases the possibility of pedestrians being hit by moving vehicles who are crossing between parked cars.

D.3. Intersection of Champaign Avenue and Century Boulevard

There were 20 crashes at the intersection of Champaign Avenue (US 136) and Century Boulevard (US 45). Eleven crashes were of turning collision type only. Ten crashes were due to failing to yield the right-of-way. **FIGURE 5.AC** presents the location of crashes at this intersection.

FIGURE 5.AA CROSS SECTIONAL VIEW OF FALCON DR. SEGMENT



FIGURE 5.AB LOCATION OF CRASHES ALONG HIGH PRIORITY FALCON DR. SEGMENT



FIGURE 5.AC INTERSECTION OF CHAMPAIGN AVE. & CENTURY BLVD.







5.3 PUBLIC TRANSPORTATION

5.3.1 Routes and Schedule

The Village of Rantoul has an agreement with the Champaign County Area Rural Transit System (C-CARTS) to provide public transportation services to village residents. **MAP 5.0** shows bus routes and stops in the Village of Rantoul.

The Eagle Express bus service has three fixed routes within the village and operates on weekdays between 5 a.m. and 8 a.m. and between 3 p.m. and 6 p.m. A single fare is two dollars. The Rantoul Connector is an inter-city public transportation service connecting Rantoul to Champaign and Urbana. The bus operates hourly on weekdays between 5 a.m. and 8 a.m. and between 3 p.m. and 6 p.m.

5.3.2 Ridership History

TABLE 5.K shows monthly C-CARTS ridership data between July 2017 and September 2018, including number of trips, daily average number of trips, reason for trip, number of trips using the lift, number of trips provided to individuals aged 60 and over, and number of trips denied.

July 2017 had the fewest trips of any month in the study period, with 940 total trips and an average of 47 trips per day; March 2018 had the most trips, with 1,349 total trips and an average of 64 trips per day. Riders aged 60 and above took over 400 trips per month, and never used the lift fewer than 78 times in a single month. The two most common trip reasons during the study period were consistently medical and employment, showing that the C-CARTS service meets key transportation needs for its riders.



MAP 5.0 BUS ROUTES

Year	Month	Medical	Personal	Shopping	Social	Employment	Education	Misc.	Total Trips	Days	Daily Avg.	Lift	60+	Denials
2018	Jan	435	194	91	37	405	14	0	1,176	21	56	127	458	36
	Feb	425	265	93	34	368	24	0	1,209	21	58	118	514	20
	Mar	442	315	109	50	399	34	0	1,349	21	64	135	608	31
	April	410	284	93	45	401	45	0	1,278	21	61	110	553	52
	May	387	248	103	62	400	28	0	1,228	23	53	95	578	36
	June	323	260	97	52	396	2	0	1,130	20	57	93	527	102
	July	341	274	129	53	302	2	0	1,101	21	52	78	558	109
	Aug	396	296	129	104	396	21	0	1,321	23	57	119	648	92
	Sep	283	153	99	139	352	14	0	1,040	19	55	128	522	98
	Oct	355	129	143	250	480	32	0	1,389	23	60	99	558	108
	Nov	285	88	90	205	462	21	0	1,151	21	55	194	648	72
	Dec	277	75	100	174	394	8	0	1,028	20	51	157	522	75
2019	Jan	291	78	86	176	479	0	0	1,110	21	53	158	525	112
	Feb	271	78	112	227	443	8	0	1,139	19	60	202	574	137
	Mar	261	84	102	232	463	6	0	1,148	21	55	218	574	118
	April	272	80	174	291	461	8	0	1,286	21	61	220	702	42
	May	284	94	152	292	423	4	0	1,249	21	59	217	693	57
	June	283	73	148	262	355	0	0	1,121	20	56	167	614	93
	July	266	82	128	295	370	0	0	1,141	22	61	218	633	116
	Aug	259	65	130	329	354	4	0	1,141	22	59	229	622	229
	Sep	218	59	118	298	316	2	0	1,011	20	56	216	554	256

TABLE 5.K C-CARTS RIDERSHIP (JANUARY 2018-SEPTEMBER 2019)

5.4 DESTINATIONS

5.4.1 Area Destinations

Willingness to walk or bike is directly related to where people live, work, go to school, shop, spend their free time, access transit, and proximity to other resources. Demand for pedestrian and bicycle infrastructure is directly connected to the locations of destinations in a community, and the creation of a well-connected pedestrian and bicycle network must take the location of these destinations into consideration.

Map 5.P displays various destinations throughout Rantoul. This includes Downtown Rantoul, schools, recreational centers, employment centers, and medical facilities. Additionally, institutional destinations such as local government facilities, state government facilities, the Rantoul Public Library, post offices, and non-profit facilities are included.

5.4.2 Downtown Area Destinations

Map 5Q shows the destinations in the central part of Rantoul, including Downtown Rantoul and around Wabash Park.

MAP 5.P AREA DESTINATIONS







5.5 BICYCLISTS

5.5.1 Existing Bicycle Facilities

The Village of Rantoul has six paved, off-street bike paths within its corporate limits: the Ryan Park Path, the Maplewood Path, the Maplewood Pond Path, the Wabash Park Path, the Chanute Air Force Base Path, and the Rudzinski Pond Path. These six paths have a combined length of 8.85 miles, and provide connectivity between destinations including but not limited to parks, schools, recreation facilities, and downtown Rantoul. IDOT also installed bike lanes on Century Boulevard (US 45) from the Ryan Park Path to Congress Avenue.

Plans to expand the Rantoul bike network include perimeter paths around the former Chanute Air Force Base, access along Champaign Ave. to employment centers west of I-57, and additional connectivity in the residential neighborhoods in north-central Rantoul.

MAP 5.R EXISTING BIKEWAYS



5.5.2 Bicycle Crashes

There were nine bicyclist involved in crashes from 2012–2016 in the Village of Rantoul. There were three female and six male bicyclists involved in crashes. All of these bicyclists were between ages 5–30, as shown in **TABLE 5.L. MAP 5.S** shows the location of bicycle crashes in the Village of Rantoul.

FIGURE 5.AF NUMBER OF BICYCLISTS INVOLVED IN CRASHES BY HOUR OF THE DAY



MAP 5.S BICYCLIST CRASHES BY INJURY TYPE

TABLE 5.L NUMBER OF BICYCLISTS INVOLVED IN CRASH BY AGE

Age	Female	Male	Total
5-9	3	0	3
10-14	0	2	2
15-19	0	1	1
20-24	0	1	1
25-29	0	2	2
Total	3	6	9



5.5.3 Bicycle Level of Traffic Stress (BLTS)

Level of Traffic Stress (LTS) is a rating given to a route segment or crossing indicating the traffic stress it imposes on bicyclists.¹ Levels of traffic stress range from 1 to 4 as follows:

- 1. LTS 1: Strong separation from all except low speed, low volume traffic. Simple crossings. Suitable for children.
- 2. LTS 2: Except in low speed / low volume traffic situations, cyclists have their own place to ride that keeps them from having to interact with traffic except at formal crossings. Physical separation from higher speed and multi-lane traffic. Crossings that are easy for an adult to

1 Furth, Peter, Northeastern University; Level of Traffic Stress Criteria, accessed 21 November 2019; http://www.northeastern.edu/ peter.furth/research/level-of-traffic-stress/. negotiate. A level of traffic stress that most adults can tolerate, particularly those sometimes classified as "interested but concerned."

- 3. LTS 3: Involves interaction with moderate speed or multilane traffic, or close to proximity to higher speed traffic. A level of traffic stress acceptable to those classified as "enthused and confident."
- 4. LTS 4: Involves interaction with higher speed traffic or close proximity to high speed traffic. A level of stress acceptable only to those classified as "strong and fearless."

There are criteria for determining LTS for route segments, intersection approaches, and crossings. LTS scores for a route combine over segments using weakest link logic. That means that if most of the links on a route have LTS 1 or 2, but one or a few links on a route have LTS 3, the route as a whole has LTS 3.

A. BLTS Analysis

MAP 5.T shows BLTS scores for the study area. The majority of Rantoul streets score as BLTS 1 (low stress), and there are no streets in the study area that score as BLTS 4 (high stress).

BLTS 2 (medium stress) locations include North Maplewood Drive near Maplewood Sports Complex, East Veterans Parkway, South Century Boulevard, and South Murray Road. Additional BLTS 2 locations are Sheldon Street, Oakcrest Drive, Campbell Avenue, and Clark Street near Northview School; Grove Avenue, Tanner Street, Eater Drive near Pleasant Acres School, and Cheryl Drive. Street segments that cross the higher stress roads of US 136, US 45, and Maplewood Drive in the central and east parts of Rantoul are also BLTS 2, higher than their surrounding BLTS 1 street segments.

BLTS 3 (medium-high stress) locations include all of US 136; parts of US 45 (Century Boulevard, Liberty Drive), Veterans Parkway, Willow Pond Road, Broadmeadow Road near Walmart, and other roads on the perimeter of the study area. Some streets that cross these roads are also BLTS 3.





5.6 PEDESTRIANS

5.6.1 Existing Pedestrian Facilities

Data about the physical condition of pedestrian facilities in the study area were collected as part of the CUUATS Sidewalk Network Inventory and Assessment. This report gathered and analyzed information about the the compliance with the Americans with Disabilities Act (ADA) of sidewalks, curb ramps, crosswalks, and pedestrian signals. Compliance scores are based on an index created to convert measurements taken in the inventory to scores that correspond with the Public Rights-of-Way Accessibility Guidelines (PROWAG), the standard adopted by ADA. Lower scores indicate measurements outside of the compliance range.

5.6.2 Sidewalks

The ADA compliance score for sidewalks considers its cross slope, vertical faults, obstructions, and width. Map 5.U shows the sidewalk compliance scores for the study area. Many existing sidewalks in the study area have low compliance scores, which can cause issues for people with disabilities.

MAP 5.U ADA COMPLIANCE FOR SIDEWALKS



5.6.3 Crosswalks

Crosswalks are needed to provide a safe pedestrian crossing at street intersections and midblock crossing locations. Crosswalk compliance was assessed based on crosswalk width and cross slope. Cross slope is the slope of the crosswalk perpendicular to the direction of travel. Map 5.V shows crosswalk compliance scores, which are generally high with the study area, with only a few crosswalks scoring below 90.

MAP 5.V ADA COMPLIANCE FOR CROSSWALKS



5.6.4 Curb Ramps

Curb ramps are the transition between sidewalks and the street. Having curb ramps that are compliant with ADA requirements at all corners of an intersection is necessary for creating an accessible pedestrian network for people with disabilities. The Sidewalk Network Inventory and Assessment assessed compliance for curb ramps in the study area, as shown in Map 5.W. Compliance scores for the curb ramps considered ramp geometry, detectable warning surface, gutter presence, landings, approaches and flares, and the presence of hazards. Many curb ramps received low compliance scores, meaning that many are currently having a negative impact on accessibility, especially for people with disabilities.



MAP 5.W ADA COMPLIANCE FOR CURB RAMPS

5.6.5 Pedestrian Signals

Pedestrian signals provide visual and/or audible cues for pedestrian crossing phases, increasing pedestrian safety. Like crosswalks, condition was not formally collected by the sidewalk inventory. However, compliance was assessed based on both ADA and Manual on Uniform Traffic Control Devices (MUTCD) standards. The criteria considered include button size, button height, button position and appearance, and tactile features, including a tactile arrow indicating the direction of crossing and vibrotactile walk indicator. Based on this criteria, the compliance of pedestrian signals in the study area is low, with many receiving a score of 60 or less. This is shown in Map 5.X.

MAP 5.X ADA COMPLIANCE FOR PEDESTRIAN SIGNALS



5.6.6 Pedestrian Crashes

There were 11 pedestrians involved in crashes from 2012–2016 in the Village of Rantoul. There were six female and five male pedestrians involved in crashes.

FIGURE 5.AG NUMBER OF PEDESTRIANS INVOLVED IN CRASHES BY HOUR OF THE DAY

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TABLE 5.M NUMBER OF PEDESTRIANS INVOLVED IN CRASHES BY AGE

Age	Female	Male	Total
0-4	1	1	2
5-9	2	0	2
10-14	1	0	1
20-24	0	1	1
25-29	1	1	2
30-34	1	1	2
45-49	0	1	1
Total	6	5	11

MAP 5.Y PEDESTRIANS CRASHES BY INJURY TYPE



5.6.7 Pedestrian Level of Traffic Stress (PLTS)

Level of Traffic Stress (LTS) is a rating given to a route segment or crossing indicating the traffic stress it imposes on pedestrians.² Levels of traffic stress range from 1 to 4 as follows:

- 1. LTS 1: Represents little to no traffic stress and requires little attention to the traffic situation. This is suitable for all users including children 10 years or younger, groups of people, and people using a wheeled mobility device. The facility is a sidewalk or shared-use path with a buffer between the pedestrian and motor vehicle facility. Pedestrians feel safe and comfortable on the pedestrian facility. Motor vehicles are either far from the pedestrian facility and/or traveling at a low speed and volume. All users are willing to use this facility.
- 2. LTS 2: Represents little traffic stress but requires more attention to the traffic situation than of which, beyond what younger children may be capable. This would be suitable for children over 10, teens, and adults. All users should be able to use the facility, but some factors may limit people using wheeled mobility devices. Sidewalk condition should be good with limited areas of fair condition. Roadways may have higher speeds and/ or higher volumes. Most users are willing to use this facility.
- 3. LTS 3: Represents moderate stress and is suitable for adults. An able-bodied adult would feel uncomfortable but safe using this facility. This includes higher speed roadways with smaller buffers. Small areas in the facility may be impassable for a person using a wheeled mobility device and/or requires the user to travel on the shoulder/ bike lane/street. Some users are willing to use this facility.
- 4. LTS 4: Represents high traffic stress. Only ablebodied adults with limited route choices would use this facility. Traffic speeds are moderate to high with narrow or no pedestrian facilities provided. Typical locations include high speed, multi-lane roadways with narrow sidewalks and buffers. This also includes facilities with no sidewalk. Only the most confident or trip-purpose driven users will use this facility.

There are criteria for determining LTS for route segments, intersection approaches, and crossings. LTS for a route combine over segments using weakest link logic. That means that if most of the links on a route have LTS 1 or 2, but one or a few links on a route have LTS 3, the route as a whole has LTS 3.

² Oregon Department of Transportation; Level of Traffic Stress Criteria, accessed 21 November 2019; http://www.northeastern.edu/ peter.furth/research/level-of-traffic-stress/.

A. PLTS Analysis

Figure 5.Z shows PLTS scores for the study area. No streets in the study area score as PLTS 1 (low stress). PLTS is not scored for the shared-use path when it does not parallel a street.

Some street segments in Rantoul scored as PLTS 2 (medium stress). The following segments near schools are PLTS 2: Sunview Road near Broadmeadow School; Urbana Avenue near Wabash Park and J.W. Eater Junior High School; Sheldon Street, Congress Avenue, and Chanute Street near Rantoul Township High School; and Maplewood Drive near Eastlawn School. Near Downtown Rantoul, PLTS 2 streets include Sangamon Avenue, Garrard Street, Letchworth Avenue near the shared-use path, and Penfield Street. The shared-use path along Lon Drive is also PLTS 2.

All other streets in Rantoul are PLTS 3 (mediumhigh stress) or PLTS 4 (high stress), representing the majority of Rantoul. Although the weakest link logic is applied, segments without sidewalks should be considered for sidewalk construction, and improvements should be considered where sidewalks cross major roads.

MAP 5.Z PEDESTRIAN LEVEL OF TRAFFIC STRESS (PLTS)



5.7 SIDEWALK GAPS

As part of the CUUATS Sidewalk Network Inventory and Assessment, a sidewalk gap analysis was performed that identified missing sidewalk segments in currently developed areas. The missing sidewalk locations, both those that belong to the Village of Rantoul and those that do not, can be seen in Map 5.AA. These missing sidewalks represent barriers to mobility, especially for people with disabilities, and are potential locations for new sidewalk construction.

Sidewalks are missing on many streets in the north and east parts of Rantoul. In west Rantoul, sidewalks are missing near Broadmeadow School, Mary Alice Park, and along Champaign Avenue (US 136) across Interstate 57 to the employment centers in far west Rantoul. In south Rantoul, sidewalks are missing in Golfview Village and other parts of the former Chanute Air Force Base. Major roads with missing sidewalks include Champaign Avenue (US 136), Liberty Avenue (US 45), Veterans Parkway, Perimeter Road, and Chandler Road.

MAP 5.AA SIDEWALK GAPS

