

## CUP Narrative | Youthfront Camp West | Miami County, Kansas

**Name of Project:** Youthfront Camp CUP for Master Plan of Future Expansion

**Address(es):** 21667 Spoon Creek Road, Edgerton, KS 66021, Parcel 052100000004000  
21669 Spoon Creek Road, Edgerton, KS 66021, Parcel 052100000005000  
22129 Spoon Creek Road, Edgerton, KS 66021, Parcel 052100000006000

**Current Zoning:** AG (all properties)

**Owner:** Youthfront Inc, DBA Kansas City Youth for Christ, 501 (C)(3) non profit, 4600 Rainbow Blvd, Kansas City, KS 66103. Corporate address: 4715 Rainbow Blvd, Shawnee Mission, KS 66215. Contact: Topher Philgreen, Cell: 913-915-6677, [tphilgreen@youthfront.com](mailto:tphilgreen@youthfront.com)

**Plan Author/Engineer:** David Greusel, FAIA, Principal, Convergence Design LLC, 1600 Genessee, Suite 620, Kansas City, MO, 64102, Phone: 816.255.2123  
[david@convergencedesignllc.com](mailto:david@convergencedesignllc.com)

### Legal Descriptions:

**21667 Spoon Creek Road, Edgerton, KS 66021, Parcel 0452100000004000:** The South half of the Northwest Quarter (1/4) of the Northwest Quarter (1/4) of the Northwest Quarter (1/4) of Section Twenty-one (21), Township Fifteen (15), Range Twenty-Two (22), in Miami County, Kansas, according to the recorded plat thereof. Accepting: Beginning at the northwest corner of said SE1/2, NW1/4 of Section 21; thence westerly along the north line of said SE1/2, NW1/4 to a point, said point being 180 feet east of the northwest corner of said SE1/2, NW1/4; thence southerly parallel with the west line of said SE1/2, NW1/4 to a line described as beginning at the southwest corner of the NW1/4, SW1/4, NW1/4, SE1/4, NW1/4 of said Section 21 and extending in a southeasterly direction to the southeast corner of SW1/4, SE1/4, SE1/4, NW1/4 of said Section 21; thence in a southeasterly direction along said described line to the southeast corner of said SW1/4, SE1/4, SE1/4, NW1/4; thence easterly along the south line of said SE1/2, NW1/4 to the southeast corner thereof; thence northerly along the east line of said SE1/2, NW1/4 to the point of beginning, containing 28.22 acres, more or less. AND All of that part of the S1/2, NW1/4, NW1/4, the NE1/4, NE1/4, SW1/4, NW1/4, and the west 180 feet of the W1/2, NW1/4, SE1/4, NW1/4 of Section 21, Township 15 South, Range 22, East of the Sixth Principal Meridian, Miami County, Kansas, lying below elevation 926" (m.s.l.), containing 10.68 acres of land, more or less. Total remaining parcel containing 98 acres more or less.

**21669 Spoon Creek Road, Edgerton, KS 66021, Parcel 0452100000005000:** The South half of the Northwest Quarter (1/4) of the Northwest Quarter (1/4) of Section Twenty-one (21), Township Fifteen (15), Range Twenty-Two (22), Tract beginning 115' South and

## Youthfront Camp West

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25' East of the Northwest Corner (S1/2, NW 1/4), East 239', South 165', West 239', North 165' to Place of Beginning, in Miami County, Kansas, according to the recorded plat thereof. 1 acre more or less.

**22129 Spoon Creek Road, Edgerton, KS 66021**, Parcel 045210000006000: The North Half of the Southwest Quarter (N ½, SW 1/4) of Section Twenty-one (21), Township Fifteen (15), Range Twenty-Two (22), in Miami County, Kansas, according to the recorded plat thereof. N. 88.9 acres more or less.

#### **Historical Background:**

Youthfront (formerly Kansas City Youth For Christ) was started over 80 years ago in 1943 during the second world war. It started as a ministry to keep kids “off the streets” while their fathers fought in war and the mothers worked in factories. Since 1943 it has blossomed into one of the largest 501c3 non-profit youth ministry organizations in the country. Over its 80+ year history Youthfront has impacted hundreds of thousands of students and families. Today, over 12,000 students per year are impacted by its various programs.

From 1946 to 1969 KCYFC/Youthfront would load up busses to take kids to other states for a camp experience at places like Lake Afton in Wichita and John Brown University in Silom Spring Arkansas.

In 1969, Youthfront Camp West (then Circle-C Ranch) was built and opened for its first summer in 1970. This camp and the then 10 cabins, large main chapel, pool and giant dry-slide, were built long before any zoning laws were created in Miami County. When it comes to CUPs in Miami County, it has been said that Camp West is sitting on the oldest grandfathered site in the county.

Since 1970 Youthfront has added 6 more cabins, rebuilt them all, lost our main building to a fire one week before camp and rebuilt it, have added a stand-alone dining center, snack shop, activity center, chapel, ropes courses, water slide and other water features to make Youthfront Camp West (at 216<sup>th</sup> and Spoon Creek Road) one of the best camps in the entire Midwest. There is no other local camp experience that allows groups to come for the price like Youthfront Camp West in Miami County, Kansas.

Youthfront Camps serve primarily Miami County and Johnson County kids but draw from the entire region. In a recent demographic study, as of summer 2023, of the 3,281 students who attended 86% (2,809) are from Kansas and Missouri. Of the Kansas Students 91% (2,552) are from Johnson County and 3% (70) are from Miami County. The vast majority of the students that attend Youthfront camps are from Johnson and Miami County in Kansas.

As the city grows further and further south, it has become apparent that Youthfront needs to plan for future growth of our camps, camping operations, and other related ventures along

## Youthfront Camp West

### CUP Narrative

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Spoon Creek Road. The purpose of the CUP is to establish a long-range plan for Youthfront's growth into the future.

#### **A) General Description of Proposed Use:**

**Nature of Use:** Youthfront Camp West is used as a short term residential and day camp for youth and adults in the greater Kansas City Area.

**Description of Outdoor Uses:** Outdoor activities include swimming, field and court games (day and evening), hiking, prayer and meditation, and worship services.

**Hours of Operation:** During the summer and on weekends where the camp is in use, operations are 24 hours.

**Anticipated Vehicle Trips Per Day:** Current use is up to 250 trips per day on check-in and check-out days (generally one or two days per week), approximately 25 trips per day on other days. See Traffic Study on Expected use.

**Number of Employees and Public Associated with The Use:** Youthfront employs a lot of people in Miami County in full-time, part-time, full-time temporary and contract basis. We currently employ 6 on-site, year around permanent full-time staff. During most weekends and in the summer weeks we employ 60 part-time staff or full-time temporary. When expansion happens, this number will likely double. Although staff will greatly increase it doesn't change our traffic impact much because they live on site and arrive and depart before and after campers.

**Phasing Schedule for Construction:** No construction schedule exists at present. This CUP Application is for the potential addition of a second camp on recently-acquired property; however, the timing of construction of that second camp is undetermined. Once approval is granted, a capital fund-raising campaign and construction phasing will begin.

**Requested Time Limit for Permit:** 25 years.

#### **B) Utilities and Infrastructure:**

availability of all existing and proposed utilities to the property:

- Water: Johnson County Rural Water District 7. We have a domestic water with a ¾" tap that feeds a 2" line from 215<sup>th</sup> and Spoon Creek Road. Because of the Hillsdale watershed we have had to exist on Johnson County water supply since we started. We have storage tanks and pressurize our own water systems.
- Gas: No service (propane is delivered to site).
- Electricity: Evergy, single phase 480V service. Multiple metering existing.

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**Sewerage:** No service (treatment lagoons on site). Youthfront is a certified Small System Waste Water Manger. Our lagoons are inspected by KDHE. We foresee continuing this system of sewage management by adding a third stage lagoon to cover any expansion.

**Access to the Property:** Via Spoon Creek Road along west property line.

### **C) Impacts to Surrounding Properties:**

**Noise:** Camp activities are confined to the property and are normal for youth camping operations. The outdoor activity is listed above and would consist of kids laughing and having fun. Except for outdoor activities noted above, the rest of the programing primarily occur indoors. There are no large-scale outdoor concerts, festivals or events planned at this camp.

**Lighting:** Outdoor security lighting is provided at buildings and parking areas. Sports field lighting is in the center of the very large property and does not spill over to other properties.

**Traffic:** See included traffic study.

**Impact Mitigation:** The proposed second camp will be more internal to the site with large buffered vegetation zones to the east, south and west. Noise, lights, or any disturbance from outdoor activities should be less than from the existing camp.

In terms of lighting, the more central location of the proposed second camp will likewise minimize lighting impacts to surrounding properties because of its distance from property boundaries.

A new circulation plan will improve ingress and egress to the site by creating a new main entrance along Spoon Creek Road where the adjoining grade is less steep, providing better visibility for entering and exiting drivers as well as for through traffic on Spoon Creek Road. This new entrance will also aid in creating a single point of entry for security and screening purposes.

**D) Other:** *Any other information that will help give the Planning Commission an understanding of the proposal.*

This proposed CUP is in recognition of the expansion of Youthfront Camp West to include a recently acquired parcel of approximately 80 acres to the south of the existing camp, and the desire of Youthfront to have a planning mechanism in place should Youthfront wish to expand the current facility onto the recently acquired parcel.

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Youthfront recognizes that its presence in Miami County precedes the Zoning Regulations the County has adopted, and that Camp West is a permitted use under a Conditional Use Permit, which has not been sought or issued because the camp pre-existed the ordinance. Youthfront desires to bring its entire facility, including both current and new property, into compliance with Miami County's Zoning Regulations.

The proposed site plan envisions a second camp, similar in scope and scale to the existing Youthfront Camp West, located to the south of the current facilities on the newly acquired parcel. There is no timeline for construction of the second camp at the present time. The two camps would share an internal roadway system, an improved swimming facility, and an indoor gymnasium. The latter two facilities would be located in between the two camps.

This second camp will be approximately the same size as the current camp thereby doubling our census for campers and staff. Currently our max census is 256 campers in 16 cabins. We anticipate this doubling to 512 campers total with two circles of cabins that hold approximately 16 campers per cabin.

The second camp would have its own pond, which would be the primary storm water management structure for any impervious structures added to the site. All storm water runoff from both of these properties run directly into the Bull Creek valley and are immediately part of the Hillsdale Lake property and watershed.

A note about the staff housing parcels depicted on the south east side of the property: There are currently no new plans for this area other than possibly future staff housing. We sometimes need to accommodate a small family who live on site as staff. Small staff houses could be built in this area and still be a considerable distance from surrounding property lines. These depicted parcels would be owned by Youthfront and not considered a sub-division. Any future development of housing or other uses on the southern portion of the site would be subject to an amended CUP or zoning change if required.

The existing sewage treatment lagoons would be enlarged and/or improved to treat wastewater from any new facilities added under this CUP.

Youthfront is also requesting that the CUP allow for limited commercial use of its property north of the branch of Bull Creek on its property next to the Johnson County line. These uses may include a mini-rental storage facility and/or temporary RV campsites and related amenities. At this time, Youthfront is NOT requesting a CUP to explicitly allow these commercial facilities. But rather to consider in the future planning that Youthfront would like to redeem this brownfield area into a more commercial type operation under a different CUP to generate income for the organization. In association with this development, Youthfront would consent to right-of-way dedication along its entire north property line for the creation of a public roadway extending 215<sup>th</sup> Street to the east. Currently 215<sup>th</sup> Street terminates at Spoon

## **Youthfront Camp West**

### **CUP Narrative**

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Creek Road at the property's northwest corner. Both Miami and Johnson Counties could benefit from extending 215<sup>th</sup> Street to the east past Youthfront's property. This limited commercial use of part of the overall site would help to ensure the financial sustainability of YF Camp West in the future. It is understood that any commercial expansion north of Bull Creek would include interaction with Johnson County and possibly the City of Edgerton and would have to fit within existing codes. The depicted drawings of the mini-storage and RV park are for planning purposes area and not considered part of this CUP for camping operations.

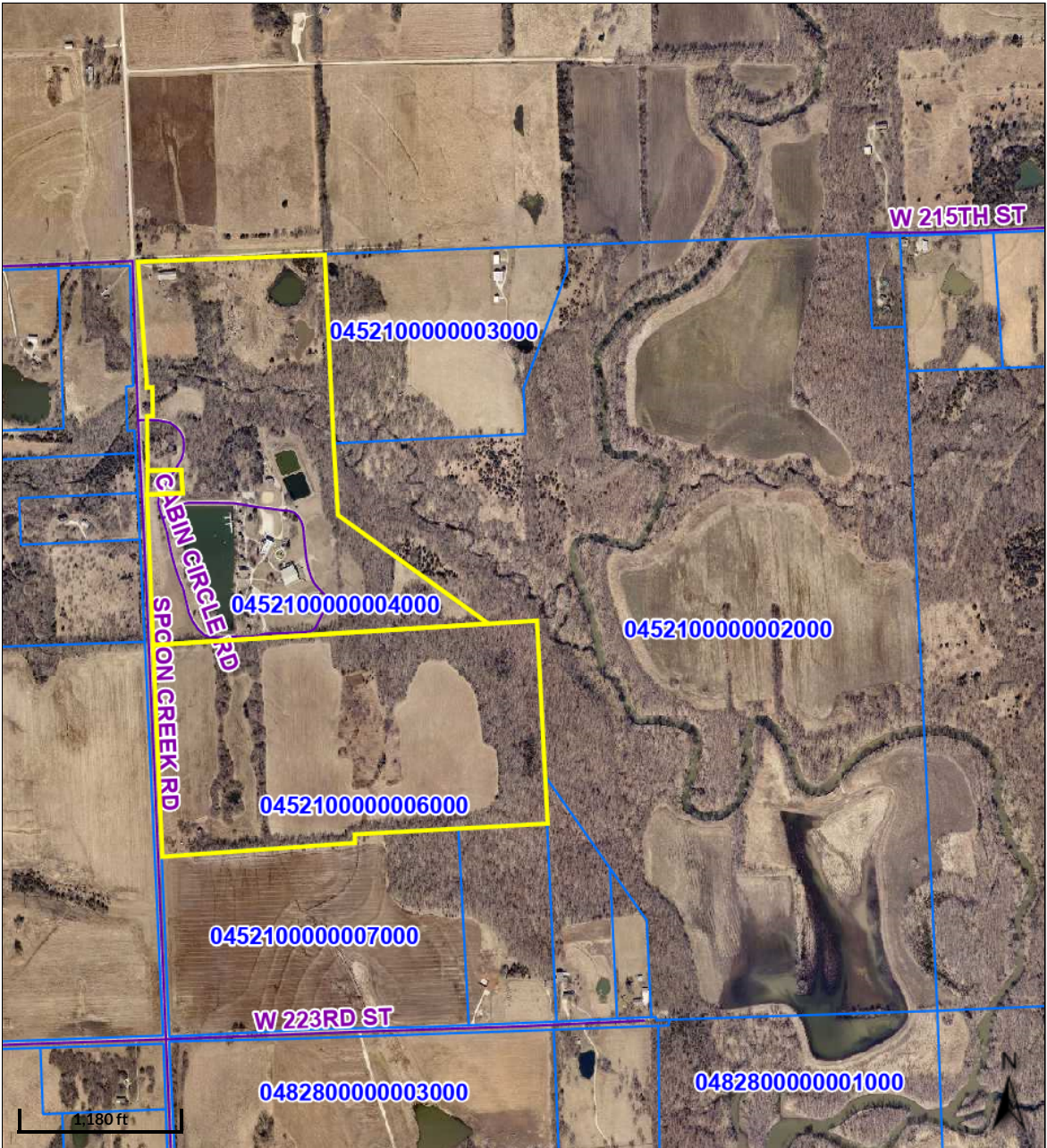
All future buildings and improvements would be subject to building permits, inspections and current codes in effect at the time of plan submission.

Note on Emergency Preparedness and Response: Youthfront, during its 60 years of camping experience has developed a very robust emergency management and crisis response system for all levels of emergencies including medical, fire, environmental, and even active shooter emergencies. Regularly, Youthfront interacts and interfaces with Sherriff, Police, EMS and Fire to review and practice our emergency response. Because Youthfront Camps are rural, automatic fire sprinkler systems are not feasible. Therefore, Youthfront has focused on fire mitigation using engineered and monitored fire notification systems that get people out of buildings safely and prioritize safe egress over preservation of property. In addition, Youthfront has and will install dry-hydrants in each lake to provide an unlimited water supply in the event of a large-scale fire-fighting procedure.

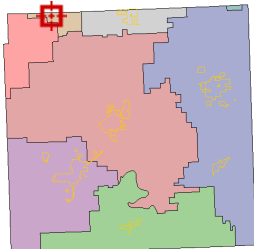
Final Thoughts: We believe there are thousands of people who live and work in Miami County and its cities because they were repeatedly brought into the county to visit one of Youthfront Camps. We have enjoyed a very long and positive working relationship with all levels of county and state government. We believe in our mission and would like to expand the impact on our world and especially on the youth of our world by improving our superior facilities in Miami County.

Thank you for your consideration.

Topher Philgreen  
Executive Vice President of Strategic Initiatives



Overview



Legend

- City Limits
- Centerlines
- Parcels
- Lakes

This property ownership map is for tax purposes only. It is not intended for conveyances, nor is it a legal survey.

Date created: 11/22/2024  
 Last Data Uploaded: 11/22/2024 12:18:29 PM

# PROJECT INFORMATION

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**Current Zoning:** All properties are currently zoned: AG

**Owner:** Youthfront Inc., DBA Kansas City Youth for Christ, 501 (C)(3) nonprofit, 4600 Rainbow Blvd, Kansas City, KS 66103.  
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**Contact:** Topher Philgreen  
 Cell phone: 913-915-6677,  
 Email: tphilgreen@youthfront.com

**Plan Author:** Convergence Design  
 Address: 1600 Genessee Suite 620, Kansas City, MO, 64102  
 Phone: 816.255.2123  
 Contact: David Greusel, Principal  
 Email: david@convergencedesignllc.com

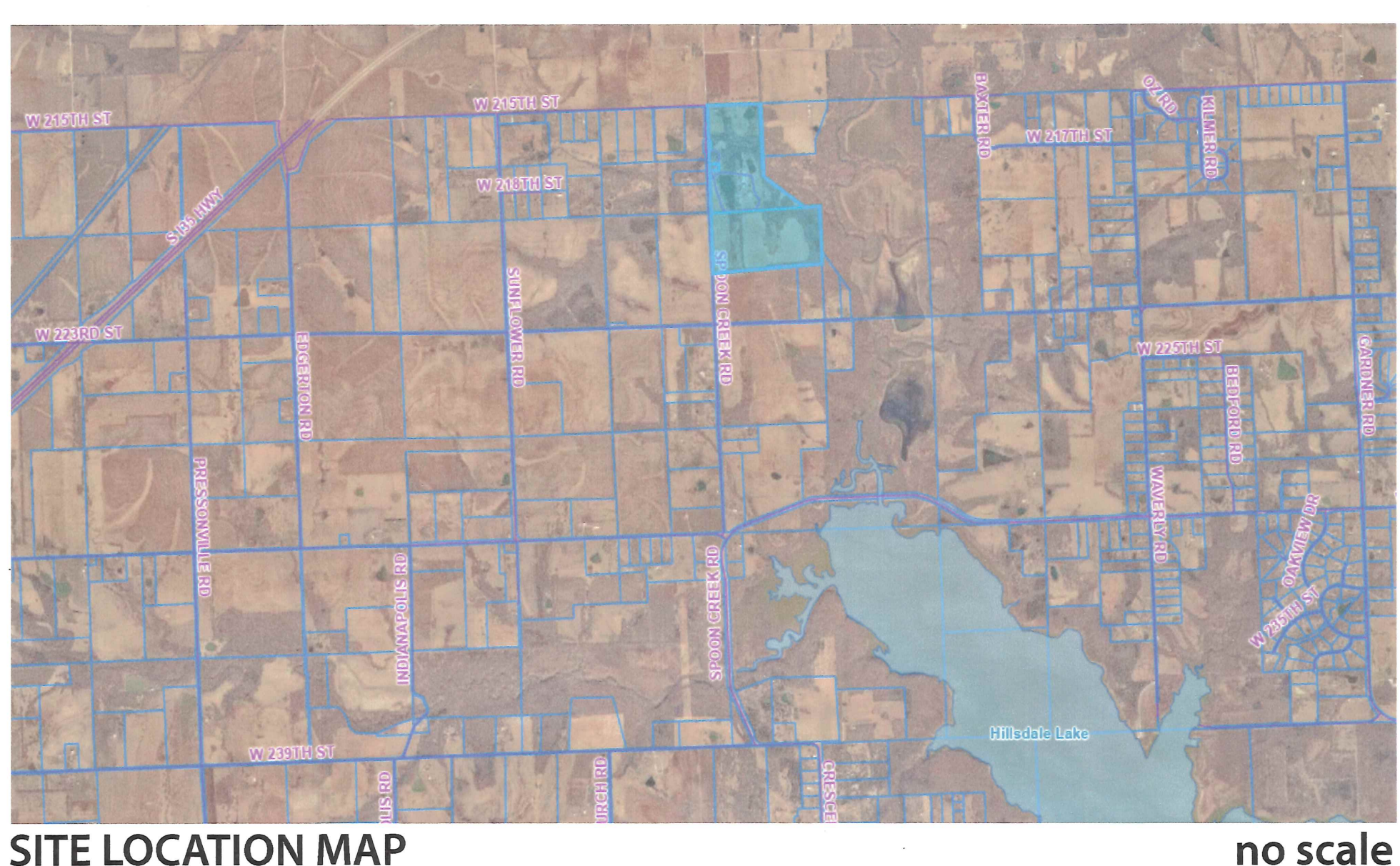
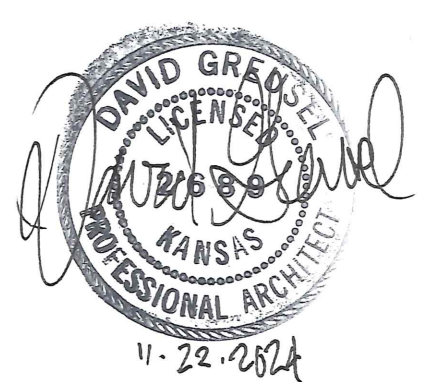
Parking Tabulation	
Existing Camp	105 FS
Future Camp	130 FS
Total Current & Proposed	235 FS
RV Park	51 sites
Storage Units	0 FS

**Legal Descriptions:**

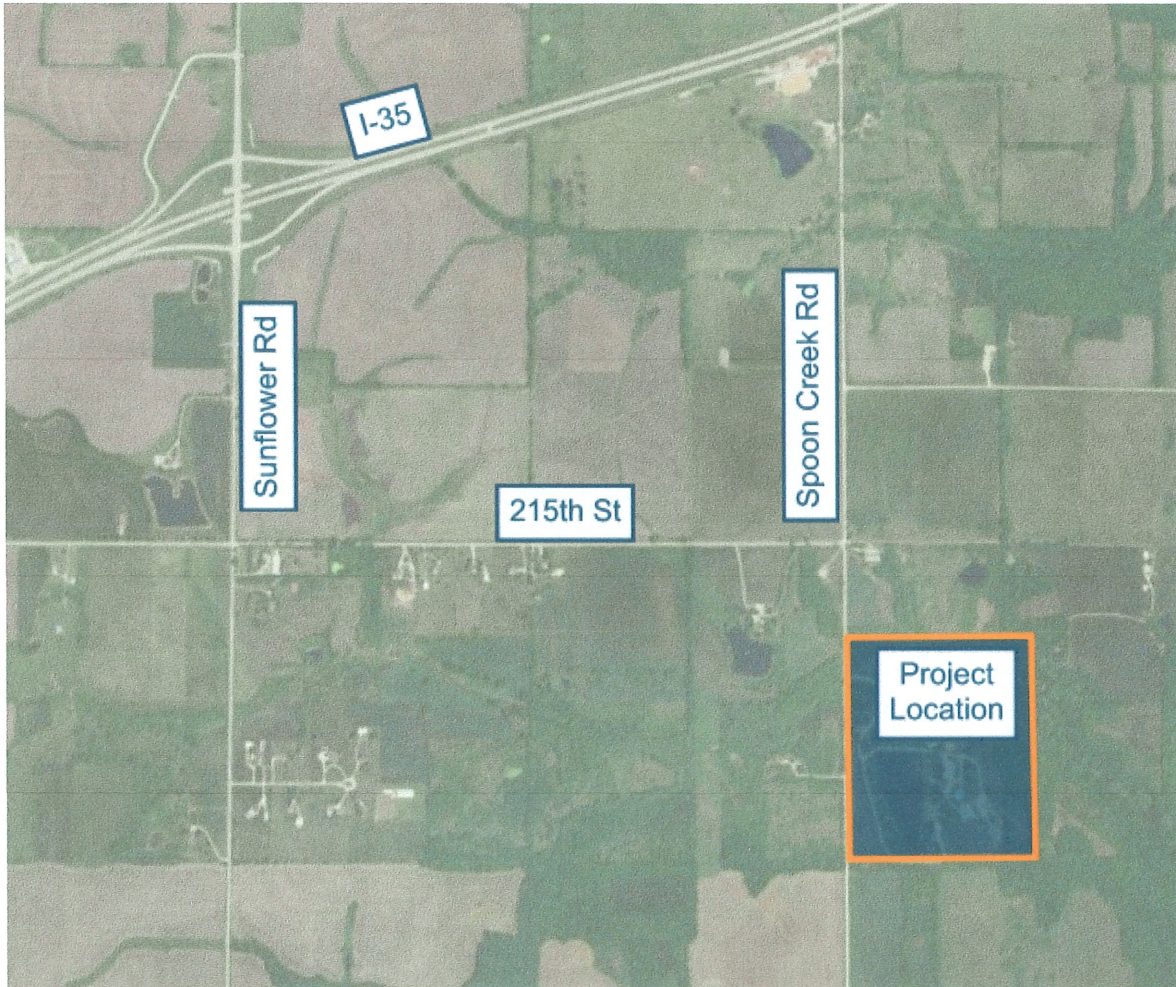
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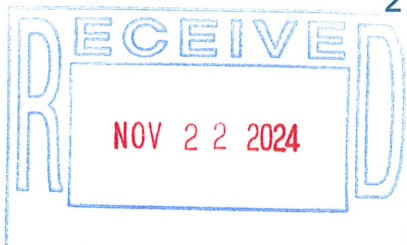
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# Youthfront Camp West Traffic Impact Study



21667 Spoon Creek Road  
Edgerton, KS





October 23, 2024

Topher Philgreen  
Youthfront  
Executive Vice President of Strategic Initiatives  
4600 Rainbow Blvd  
Kansas City, KS 66103

**RE: Traffic Study for Youthfront Camp West Master Plan  
21667 Spoon Creek Road, Edgerton, Kansas**

BHC has reviewed the traffic impact of the proposed 25-year Master Plan for Youthfront Camp West at 21667 Spoon Creek Road.

**EXISTING CONDITIONS**

Youthfront has eight decades of youth ministry history at this location. Virtually all campers and visitors commute to the site from the interchange of I-35 and Sunflower Road. From I-35, visitors travel a half mile south on Sunflower Road, a paved two-lane 45mph road. From Sunflower Road, they travel one mile east on 215<sup>th</sup> Street, a 22' wide gravel 35mph road. The intersection of Sunflower Road and 215<sup>th</sup> Street is two-way Stop sign controlled in the east-west directions. Vehicles then head south 1100' on Spoon Creek Road, a 22' wide gravel road to the Camp West entrance.

See Figure 1 for a location map of Youthfront Camp West.



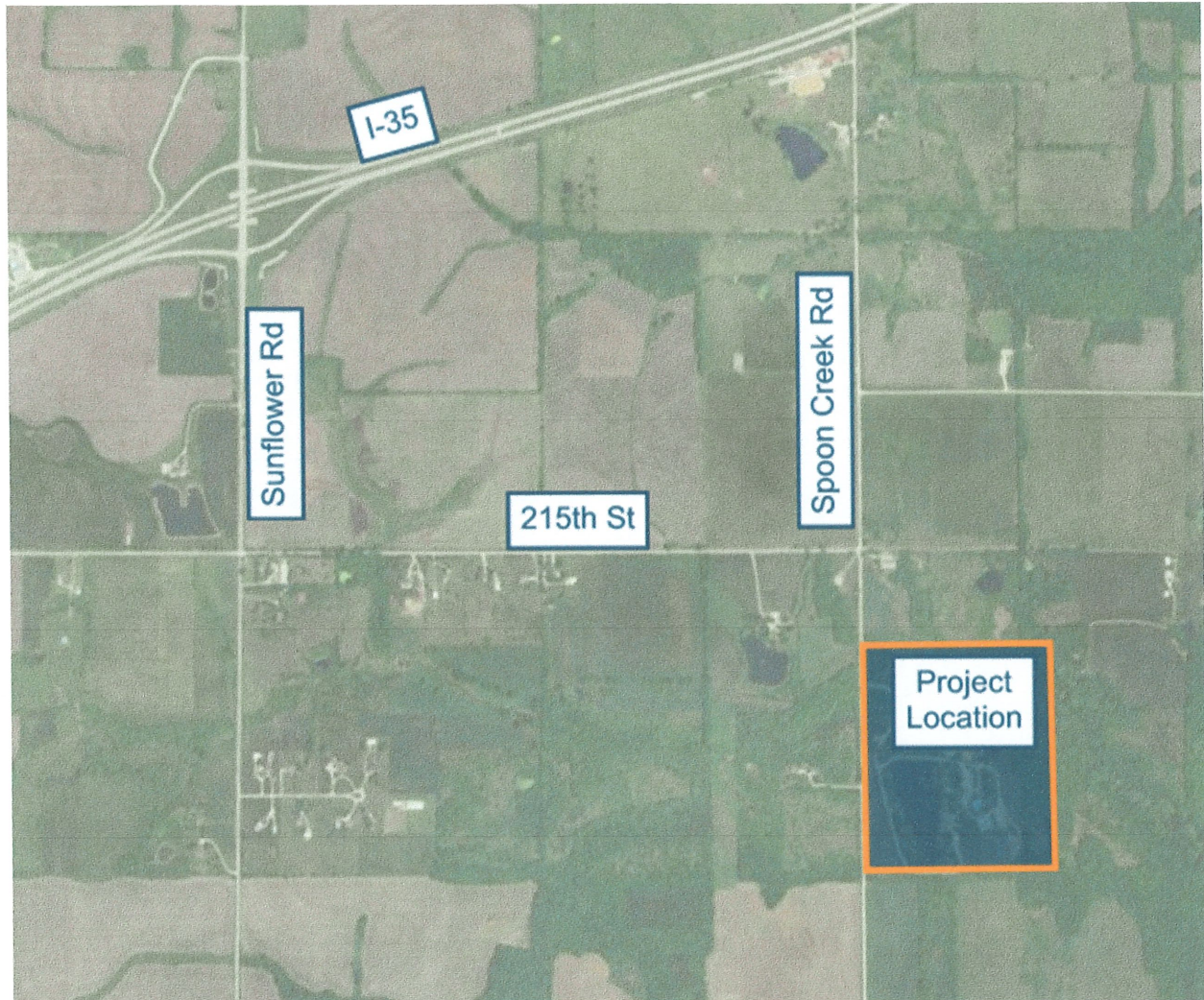
913.663.1900



ibhc.com



7101 College Blvd., Ste. 400



**Figure 1: Location Map**

Youthfront Camp West's summer camp operations run 11-weeks from early June to early August. At peak times, staff may consist of 24 teenagers and 30 summer staff. Staff typically arrive a day before the campers and leave several hours after camp ends. The camp has operated with 15 cabins since 1972, there are presently 16 cabins. Each cabin can hold 16 youth and 2 adults. The maximum number of campers is 256. The adults arrive the evening before and leave a few hours after camp dismisses.

Youthfront also runs smaller weekend camps, not during the summer sessions, from August 15<sup>th</sup> to Thanksgiving and from Valentines Day to May 1<sup>st</sup>. These camps average 100 campers. They typically arrive in groups (church vans or buses) arriving Friday evening and dismissing on Sunday mornings. These camps generate significantly less traffic than the summer sessions. This study will focus only on the impact of a fully operating summer camp.

**EXISTING CONDITIONS (CONTINUED)**

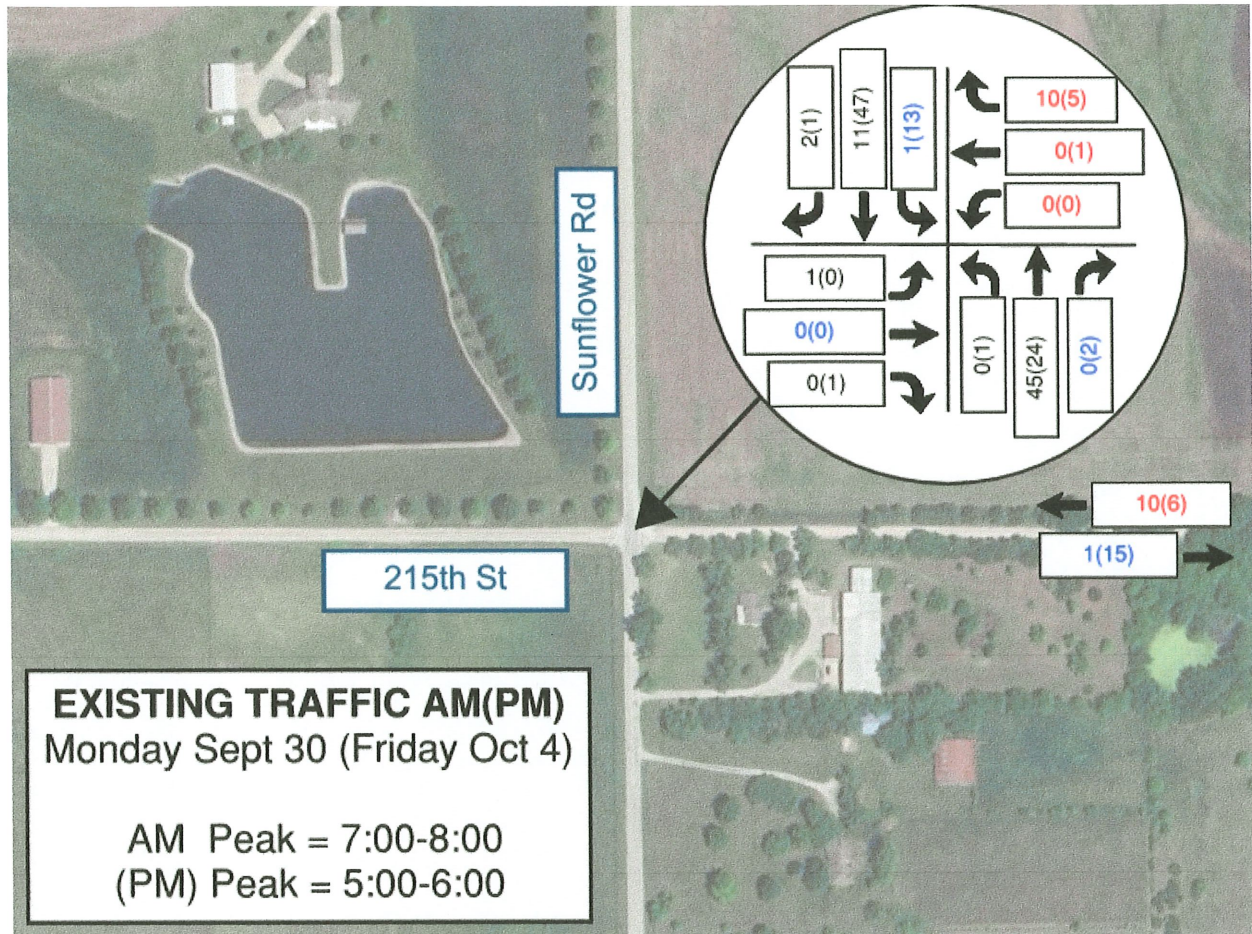
Table 1 provides the 11-week summer camp schedule for year 2025.

<b>Table 1: Youthfront Camp West 2025 Schedule</b>					
<b>Week</b>	<b>Days</b>	<b>Camp</b>	<b>Max # Campers</b>	<b>Arrival Hours</b>	<b>Dismissal Hours</b>
June 2	M-F	Middle/High School	256	M 7-9 AM	F 5-7 PM
June 9	M-F	Middle School	256	M 7-9 AM	F 5-7 PM
June 16	M-F	Middle School	256	M 7-9 AM	F 5-7 PM
June 23	M-W	Kids Camp	256	M 7-9 AM	W 5-7 PM
June 26	R-SAT	Kids Camp	256	R 7-9 AM	SAT 5-7 PM
June 30	M-R	Kids Camp	256	M 7-9 AM	R 5-7 PM
July 9	W-SAT	Kids Camp	256	W 7-9 AM	SAT 5-7 PM
July 14	M-F	Middle School	256	M 7-9 AM	F 5-7 PM
July 21	M-F	Middle School	256	M 7-9 AM	F 5-7 PM
July 28	M-F	Middle School	256	M 7-9 AM	F 5-7 PM
August 4	M-F	Middle/High School	256	M 7-9 AM	F 5-7 PM

The purpose of providing the summer camp schedule is to document the 22-days and time periods Youthfront generates the most traffic. Traffic generated by the camp is significantly less, or non-existent, for the majority of the calendar year.

**EXISTING TRAFFIC COUNTS**

Morning and evening peak hour traffic counts were taken at Sunflower Road and 215<sup>th</sup> Street on Monday, September 30<sup>th</sup> from 7:00-10:00 AM and Friday, October 4<sup>th</sup> from 5:00-7:00 PM. These days of the week and times were selected based on the days and times in Table 1. The results of the peak 60-minute periods on the AM and PM periods represent the existing peak hour periods and can be seen in Figure 2.



A daily 24-hour volume count was not conducted along 215<sup>th</sup> Street between Sunflower Road and Spoon Creek Road. Daily average traffic volumes can be extrapolated by a widely accepted standard that 10% of the daily traffic occurs in each of the AM and PM peak hours respectively. From Figure 2, we can determine there are 11 vehicles on 215<sup>th</sup> Street east of Sunflower in the AM period and 21 vehicles on 215<sup>th</sup> Street in the PM period. These 2-hours of traffic total 32 vehicles and should account for 20% of the daily traffic.

This results in an anticipated existing 24-hour count along 215<sup>th</sup> Street of 160 vehicles per day.

The Kansas Department of Transportation (KDOT) classifies roads carrying less than 400 vehicles per day as low-volume rural roads. Both 215<sup>th</sup> Street and the 1100' of Spoon Creek Road south of 215<sup>th</sup> Street certainly meet this classification for 343 of the 365 days of the year.

**EXISTING CAMP TRIP GENERATION**

The traffic counts were not taken during the summer camp period, and there is no Institute of Transportation Engineering (ITE) land use code for a Youth Summer Camp.

Based on information provided by Youthfront, it is assumed that 1.5 campers arrive per vehicle on average, resulting in 171 vehicles entering and exiting trips for a full camp of 256 youth. These values were entered in the existing summer camp trip generation in Table 2.

<b>Table 2: Existing Summer Camp Trip Generation</b>									
ITE Code	Land Use		Variable	Value	Avg. Rate	Trip Ends			
						Total	Enter	Exit	
<b>AM Peak Hour</b>									
N/A	Youth Camp	Summer	# of Campers	256	N/A	342	171	171	
						<b>Total AM Peak Hour Trips</b>	<b>342</b>	<b>171</b>	<b>171</b>
<b>PM Peak Hour</b>									
N/A	Youth Camp	Summer	# of Campers	256	N/A	342	171	171	
						<b>Total PM Peak Hour Trips</b>	<b>342</b>	<b>171</b>	<b>171</b>

Not all these trips will enter and exit within a peak 60-minute period. However, 215<sup>th</sup> Street and a segment of Spoon Creek Road experience these or similar volume increases over a 2-hour period, on 22-days of the year. This 342 per day increase in average daily traffic has been generally occurring 20-22 times per year for the past 50-years.

The entering and exiting volumes in Table 2 were added to the existing traffic volumes in Figure 2. The results can be seen in Figure 3.

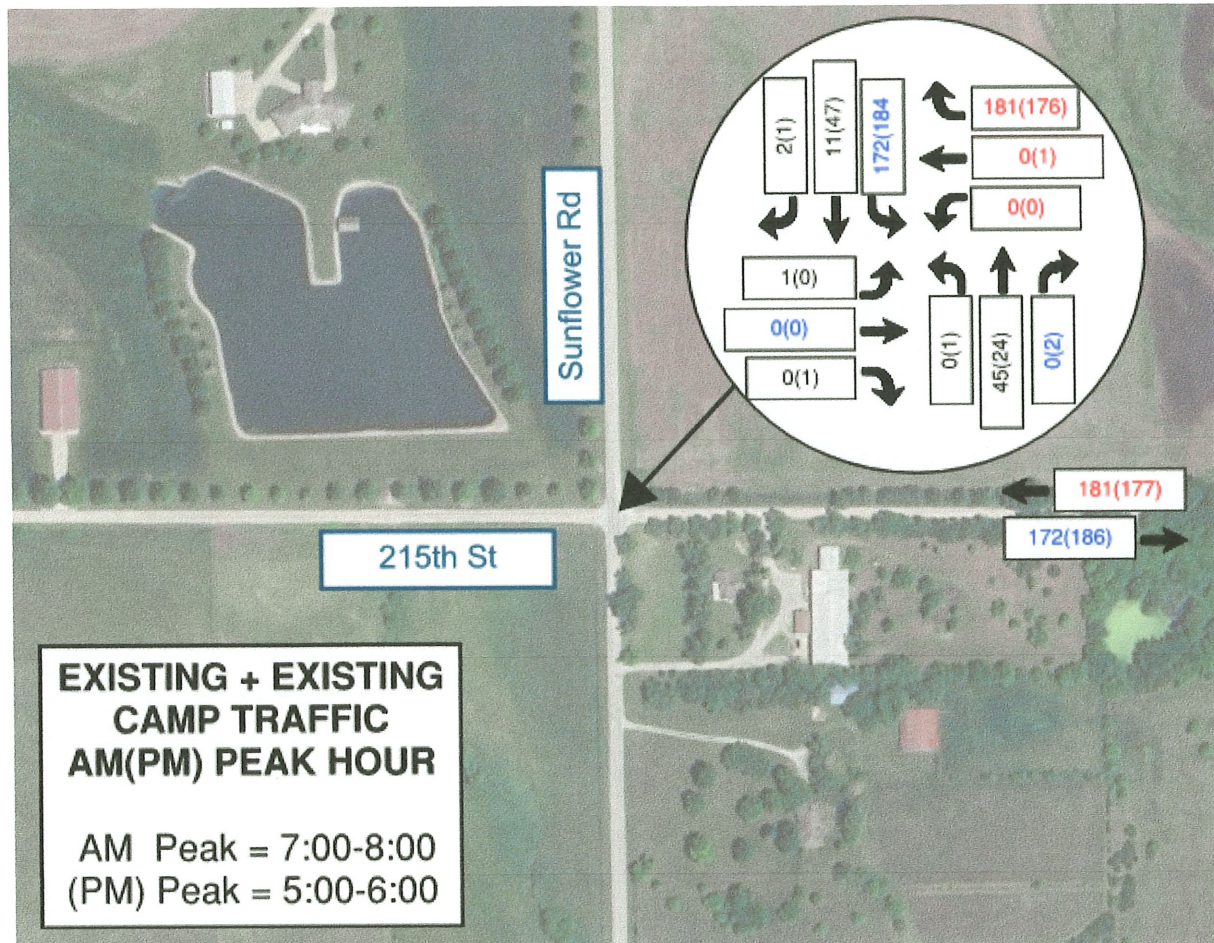


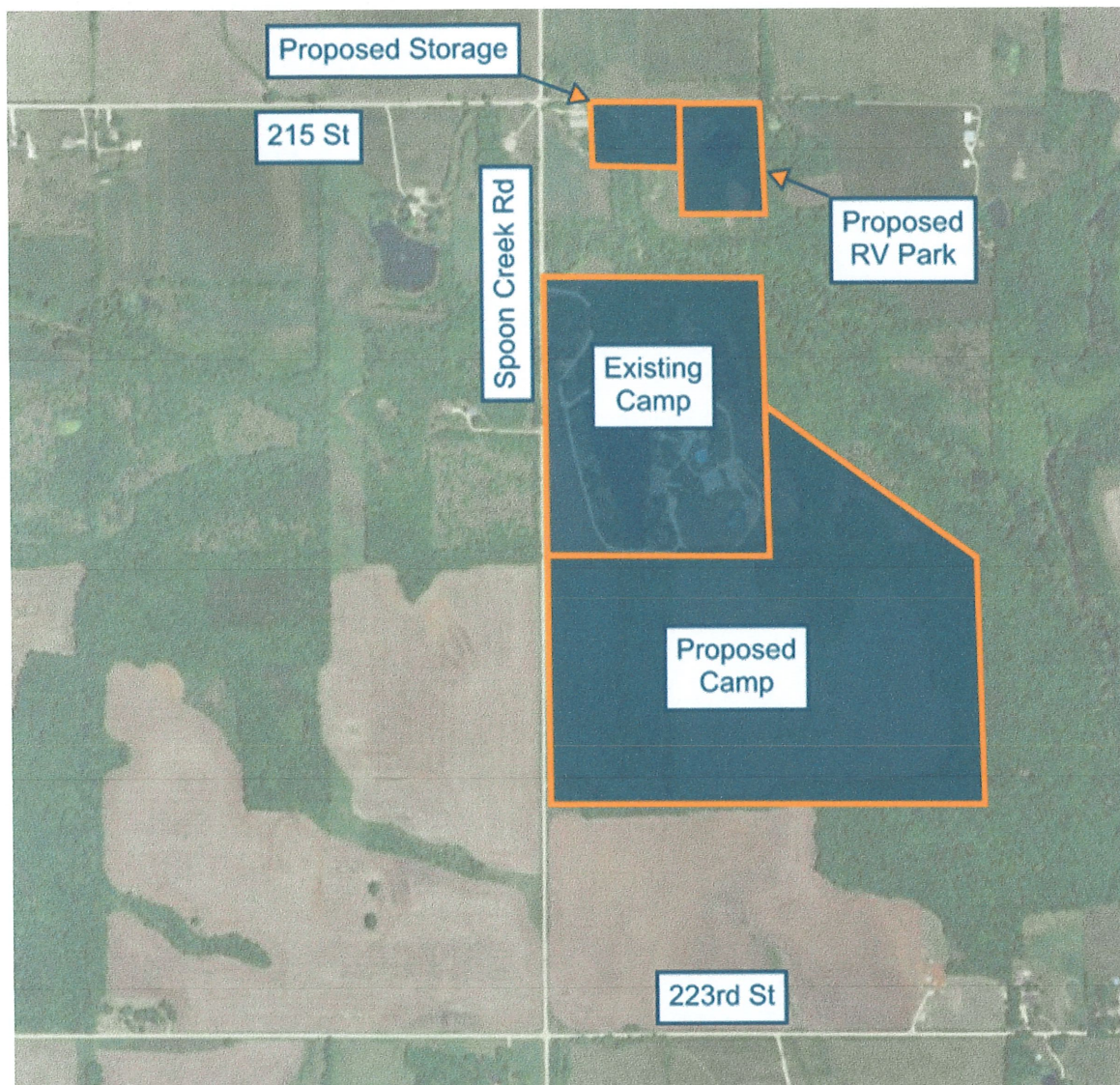
Figure 3 represents highly conservative peak hour volumes for the intersection of Sunflower Road and 215<sup>th</sup> Street. All 171 entering vehicles were added to the southbound left and all 171 exiting vehicles were added to the westbound right-turn.

The 171 vehicle trips generated by a full summer camp session result in a daily 24-hour increase in traffic of 342 vehicles per day.

This results in an anticipated existing 24-hour count along 215<sup>th</sup> Street of 502 vehicles per day, for the 22 days of the year summer camp generates traffic.

## PROPOSED CONDITIONS

The proposed Youthfront West Master Plan intends to double the number of cabins from 16 to 32, placing the new cabins in the area south of the existing campgrounds. The plan also intends to add 75 mini storage units and a RV park with 51 spaces to the north of the existing site. A layout of the proposed site can be seen in Figure 4.



**Figure 4: Proposed Master Plan for Youthfront Camp West**

## PROPOSED CAMP TRIP GENERATION

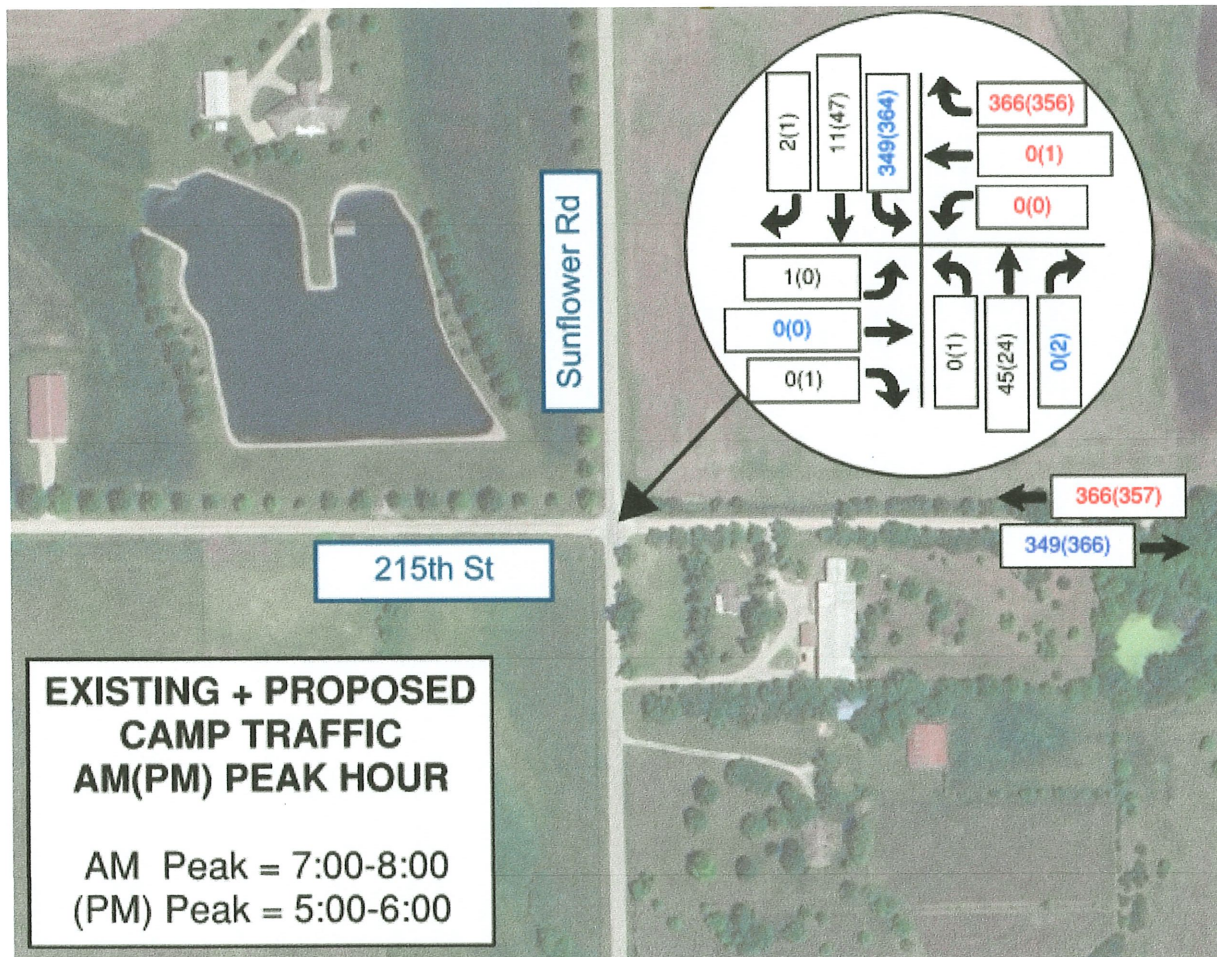
A trip generation analysis for the plan in Figure 4 was performed using the ITE TripGen web-based app. The 11<sup>th</sup> edition of the ITE Trip Generation Manual was used. ITE Land Use Codes (151 Mini-Warehouse) and (416 Campground/Recreational Vehicle Park) were selected as best fit land use codes for the proposed future site. The number of trips generated may be seen in Table 3 for the AM peak hour, PM peak hour, and weekday total.

<b>Table 3: Proposed Youthfront Master Plan Trip Generation</b>							
ITE Code	Land Use	Variable	Value	Avg. Rate	Trip Ends		
					Total	Enter	Exit
<b>AM Peak Hour</b>							
N/A	Youth Summer Camp	# of Campers	256	N/A	342	171	171
151	Mini-Warehouse	Per 100 Units	0.75	2.04	2	1	1
416	Recreation Vehicle Park	Campsites	51	0.25	13	5	8
<b>Total AM Peak Hour Trips</b>					<b>357</b>	<b>177</b>	<b>180</b>
<b>PM Peak Hour</b>							
N/A	Youth Summer Camp	# of Campers	256	N/A	342	171	171
151	Mini-Warehouse	Per 100 Units	0.75	2.07	2	1	1
416	Recreation Vehicle Park	Campsites	51	0.41	21	13	8
<b>Total PM Peak Hour Trips</b>					<b>365</b>	<b>185</b>	<b>180</b>
<b>Weekday</b>							
N/A	Youth Summer Camp	# of Campers	256	N/A	342	171	171
151	Mini-Warehouse	Per 100 Units	0.75	17.96	13	7	6
416	Recreation Vehicle Park	Campsites	51	N/A	34	18	16
<b>Total Weekday Trips</b>					<b>389</b>	<b>196</b>	<b>193</b>

The trip generation analysis conducted in Table 3 was applied to AM and PM peak hour trips in Figure 3 to create the proposed trip generation shown in Figure 5.

**EXISTING + PROPOSED CAMP TRAFFIC**

The existing traffic volumes in Figure 3 were added to the proposed trip generation volumes in Table 3 to determine the Existing + Proposed Camp volumes in Figure 5. The proposed trip generation volumes were added similarly to the existing camp traffic, with all entering trips added to the southbound left and all exiting trips added to the westbound right. Also, similar to the existing camp, this expected traffic will only occur 22 days per year. It should also be noted that these expected volumes will not occur suddenly, but will slowly be reached over the course of the 25-Year Master Plan’s completion. These volumes will be used in the intersection capacity analyses for Existing + Proposed Camp conditions.



**Figure 5: Existing + Proposed Camp Traffic**

The 389 weekday vehicle trips generated by the full development of the proposed Youthfront site results in a daily 24-hour increase in traffic of 389 vehicles per day.

This results in an anticipated existing 24-hour count along 215<sup>th</sup> Street of 891 vehicles per day. For the 22 days of the year that the summer camp generates the most traffic.

## INTERSECTION CAPACITY ANALYSES

Intersection capacity analyses were performed using the Highway Capacity Manual (HCM) Methodology provided in Synchro v11. The amount of delay is equated to a Level of Service (LOS) based on defined thresholds. A grade of A through F is assigned, with LOS A representing the best intersection operation. Table 4 shows the LOS associated with intersection approach delays, in seconds per vehicle (sec/veh), for signalized and unsignalized intersection cases.

Table 4 – Level of Service Criteria		
Level of Service (LOS)	Stop Control Approach Delay (sec/veh)	Signal Control Approach Delay (sec/veh)
A	≤ 10	≤ 10
B	> 10 and ≤ 15	> 10 and ≤ 20
C	> 15 and ≤ 25	> 20 and ≤ 35
D	> 25 and ≤ 35	> 35 and ≤ 55
E	> 35 and ≤ 50	> 55 and ≤ 80
F	> 50	> 80

Analyses were performed for the Existing, Existing + Existing Camp, and Existing + Proposed Camp peak hour volumes shown in Figures 2, 3, and 5, respectively. The results of these analyses may be viewed in Tables 5 & 6.

Table 5 – Intersection Capacity Analyses										
		Existing Conditions				Existing + Existing Camp Conditions				
		AM		PM		AM		PM		
Intersection		Avg. Delay (sec)	LOS	Avg. Delay (sec)	LOS	Avg. Delay (sec)	LOS	Avg. Delay (sec)	LOS	LOS
<b>215<sup>th</sup> St and Sunflower Rd</b>						<b>(Two-Way Stop)</b>				
	NB	0	A	0.3	A	0	A	0.3	A	A
	SB	0.5	A	1.6	A	7.1	A	6	A	A
	EB	9	A	8.5	A	15.8	C	8.5	A	A
	WB	8.6	A	8.7	A	9.4	A	9.3	A	A

Table 6 – Intersection Capacity Analyses					
		Existing + Proposed Camp Conditions			
		AM		PM	
Intersection		Avg. Delay (sec)	LOS	Avg. Delay (sec)	LOS
<b>215<sup>th</sup> St and Sunflower Rd</b>				<b>(Two-Way Stop)</b>	
	NB	0	A	0.3	A
	SB	7.8	A	7.1	A
	EB	39.3	E	8.5	A
	WB	10.8	B	10.5	B

For low volume side streets, LOS of E is acceptable. One vehicle per hour may wait 39 seconds for a break in traffic.

## MAIN FINDINGS

This section provides a summary of the main findings of this study:

### Existing Conditions

- 215<sup>th</sup> Street on a non-summer camp day experiences an estimated 160 vehicles per day. This occurs around 343 days of the year.
- The existing overall intersection LOS for the peak hours at 215<sup>th</sup> Street and Sunflower Road is LOS A.

### Existing + Existing Camp Conditions

- 215<sup>th</sup> Street on a summer camp arrival/dismissal day experiences an estimated 502 vehicles per day. This increase occurs 22 days of the year
- The existing camp generates a conservative estimate of 171 trips entering and 171 trips exiting when camp arrives, and a few days later when camp dismisses.
- The existing overall intersection LOS for the peak hours under these conditions at 215<sup>th</sup> Street and Sunflower is LOS A except for the low volume eastbound approach, which operates at an overall LOS of C.

### Existing + Proposed Camp Conditions

- 215<sup>th</sup> Street on a summer camp arrival/dismissal day for the ultimate proposed condition will experience an estimated 891 vehicles per day. This increase only occurs 22 days of the year.
- The proposed camp with RV Park and Mini-storage intends to add 177 entering and 180 exiting trips in the AM peak hour and 185 entering and 180 exiting PM peak hour trips.
- The proposed overall intersection LOS for the peak hours under these conditions at 215<sup>th</sup> Street and Sunflower is LOS B or higher except for the eastbound approach, which operates at an overall LOS of E (caused by 1 single left-turn trip).
- The increase in traffic will occur over the course of the 25-year Master Plan's completion.

## CONCLUSION AND RECOMMENDATIONS

For the past 50 years, Youthfront's 11-week summer camp has significantly increased traffic along 215th Street and Spoon Creek Road, but only for 22 days each year.

Currently, the baseline 24-hour traffic volume on 215th Street is 160 vehicles per day. During the 22 peak days of summer camp, this volume increases to approximately 502 vehicles per day.

The proposed 25-Year Master Plan includes doubling the number of campers, adding 75 storage units, and 51 RV campsites. The 11-week summer camp schedule would remain unchanged, maintaining the same 22 peak traffic days. Once fully implemented, the Master Plan is expected to generate an additional 389 vehicles per day, increasing the 24-hour traffic volume on 215th Street to approximately 891 vehicles per day.

Several conservative assumptions were made for this study:

- It was assumed that 1.5 campers arrive per vehicle. If carpooling is higher, actual traffic on 215th Street would be lower.
- All traffic was assumed to use I-35 via Sunflower Road and 215th Street. A small percentage of traffic arrives from the south, which would further reduce traffic estimates on 215th Street.
- It was assumed that all arriving and departing vehicles would travel on 215th Street within a single 60-minute peak hour, although in reality, this process extends over two hours.

Analysis of the intersection of Sunflower Road and 215th Street, based on trip generation and peak hour assumptions, indicates acceptable Levels of Service. The intersection of 215th Street and Spoon Creek Road, a T-intersection, presents no capacity concerns.

No road improvements are required for this development. It is important to note that for 41 weeks of the year, 215th Street functions as a low-volume rural road.

Recognizing Youthfront's long-term plan to double the number of summer campers, it is recommended that Youthfront implement dust abatement measures, at their cost, along the gravel sections of 215th Street and Spoon Creek Road adjacent to residential homes facing the roadway. An annual dust treatment each June would be beneficial. Given that full expansion may take several years, this treatment should begin once 8 of the proposed 16 additional campsites are operational.

If there are any questions regarding this study, please contact me at your convenience at 816-898-0669 or [mark.sherfy@ibhc.com](mailto:mark.sherfy@ibhc.com).

Sincerely,   
Mark Sherfy, PE, PTOE  
Vice-President | Development Group Director  
BHC

# **APPENDICES**

## **APPENDIX A - TRAFFIC COUNTS**

- 215<sup>th</sup> Street and Sunflower Road

## **APPENDIX B – ITE TRIP GENERATION REPORTS**

## **APPENDIX C - CAPACITY AND QUEUING ANALYSES**

- 215<sup>th</sup> Street and Sunflower Road
  - AM Existing
  - PM Existing
  - AM Existing + Existing Camp
  - PM Existing + Existing Camp
  - AM Existing + Proposed Camp
  - PM Existing + Proposed Camp

# **APPENDIX A TRAFFIC COUNTS**

**TRAFFIC COUNTS  
215th Street and  
Sunflower Road**

215th Street & Sunflower Road - IMC

Mon Sep 30, 2024

Full Length (7 AM-10 AM)

All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)

All Movements

ID: 1229799, Location: 38.73847, -95.000858



Provided by: Gewalt Hamilton Associates Inc.  
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

Leg Direction	Sunflower Road Southbound					215th Street Westbound					Sunflower Road Northbound					215th Street Eastbound					Int
	R	T	L	U	App	R	T	L	U	App	R	T	L	U	App	R	T	L	U	App	
2024-09-30 7:00AM	0	6	0	0	6	2	0	0	0	2	0	12	0	0	12	0	0	0	0	0	20
7:15AM	0	0	1	0	1	1	0	0	0	1	0	14	0	0	14	0	0	0	0	0	16
7:30AM	2	4	0	0	6	4	0	0	0	4	0	6	0	0	6	0	0	0	0	0	16
7:45AM	0	1	0	0	1	3	0	0	0	3	0	13	0	0	13	0	0	1	0	1	18
Hourly Total	2	11	1	0	14	10	0	0	0	10	0	45	0	0	45	0	0	1	0	1	70
8:00AM	0	1	1	0	2	0	0	0	0	0	0	5	0	0	5	0	0	1	0	1	8
8:15AM	0	4	0	0	4	0	0	0	0	0	0	8	0	0	8	0	0	0	0	0	12
8:30AM	0	4	1	0	5	0	0	0	0	0	0	6	0	0	6	0	0	0	0	0	11
8:45AM	0	3	2	0	5	1	0	0	0	1	0	7	0	0	7	0	0	0	0	0	13
Hourly Total	0	12	4	0	16	1	0	0	0	1	0	26	0	0	26	0	0	1	0	1	44
9:00AM	0	5	1	0	6	1	0	0	0	1	0	4	0	0	4	0	0	0	0	0	11
9:15AM	0	4	9	0	13	0	0	0	0	0	0	7	0	0	7	0	0	0	0	0	20
9:30AM	0	5	1	0	6	0	0	0	0	0	0	5	0	0	5	0	0	0	0	0	11
9:45AM	0	5	0	0	5	0	0	0	0	0	0	4	0	0	4	0	0	1	0	1	10
Hourly Total	0	19	11	0	30	1	0	0	0	1	0	20	0	0	20	0	0	1	0	1	52
<b>Total</b>	<b>2</b>	<b>42</b>	<b>16</b>	<b>0</b>	<b>60</b>	<b>12</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>12</b>	<b>0</b>	<b>91</b>	<b>0</b>	<b>0</b>	<b>91</b>	<b>0</b>	<b>0</b>	<b>3</b>	<b>0</b>	<b>3</b>	<b>166</b>
<b>% Approach</b>	3.3%	70.0%	26.7%	0%	-	100%	0%	0%	0%	-	0%	100%	0%	0%	-	0%	0%	100%	0%	-	-
<b>% Total</b>	1.2%	25.3%	9.6%	0%	36.1%	7.2%	0%	0%	0%	7.2%	0%	54.8%	0%	0%	54.8%	0%	0%	1.8%	0%	1.8%	-
<b>Lights</b>	2	38	16	0	56	11	0	0	0	11	0	89	0	0	89	0	0	3	0	3	159
<b>% Lights</b>	100%	90.5%	100%	0%	93.3%	91.7%	0%	0%	0%	91.7%	0%	97.8%	0%	0%	97.8%	0%	0%	100%	0%	100%	95.8%
<b>Articulated Trucks</b>	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	2
<b>% Articulated Trucks</b>	0%	2.4%	0%	0%	1.7%	0%	0%	0%	0%	0%	0%	1.1%	0%	0%	1.1%	0%	0%	0%	0%	0%	1.2%
<b>Buses and Single-Unit Trucks</b>	0	3	0	0	3	1	0	0	0	1	0	1	0	0	1	0	0	0	0	0	5
<b>% Buses and Single-Unit Trucks</b>	0%	7.1%	0%	0%	5.0%	8.3%	0%	0%	0%	8.3%	0%	1.1%	0%	0%	1.1%	0%	0%	0%	0%	0%	3.0%

\*L: Left, R: Right, T: Thru, U: U-Turn

215th Street & Sunflower Road - IMC

Fri Oct 4, 2024

Full Length (5 PM-7 PM)

All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)

All Movements

ID: 1229800, Location: 38.73847, -95.000858



Provided by: Gewalt Hamilton Associates Inc.  
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

Leg Direction	Sunflower Road Southbound					215th Street Westbound					Sunflower Road Northbound					215th Street Eastbound					Int	
Time	R	T	L	U	App	R	T	L	U	App	R	T	L	U	App	R	T	L	U	App	Int	
2024-10-04 5:00PM	0	11	2	0	13	2	0	0	0	2	0	6	0	0	6	0	0	0	0	0	0	21
5:15PM	0	19	5	0	24	1	0	0	0	1	1	7	0	0	8	0	0	0	0	0	0	33
5:30PM	1	11	5	0	17	1	0	0	0	1	1	6	0	0	7	1	0	0	0	1	1	26
5:45PM	0	6	1	0	7	1	1	0	0	2	0	5	1	0	6	0	0	0	0	0	0	15
Hourly Total	1	47	13	0	61	5	1	0	0	6	2	24	1	0	27	1	0	0	0	1	1	95
6:00PM	0	9	2	0	11	0	0	0	0	0	0	7	0	0	7	0	0	0	0	0	0	18
6:15PM	0	4	8	0	12	5	0	0	0	5	0	6	0	0	6	0	0	0	0	0	0	23
6:30PM	1	8	12	0	21	0	0	0	0	0	0	7	0	0	7	0	0	0	0	0	0	28
6:45PM	0	9	5	0	14	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	16
Hourly Total	1	30	27	0	58	5	0	0	0	5	0	22	0	0	22	0	0	0	0	0	0	85
<b>Total</b>	2	77	40	0	119	10	1	0	0	11	2	46	1	0	49	1	0	0	0	1	1	180
<b>% Approach</b>	1.7%	64.7%	33.6%	0%	-	90.9%	9.1%	0%	0%	-	4.1%	93.9%	2.0%	0%	-	100%	0%	0%	0%	-	-	-
<b>% Total</b>	1.1%	42.8%	22.2%	0%	66.1%	5.6%	0.6%	0%	0%	6.1%	1.1%	25.6%	0.6%	0%	27.2%	0.6%	0%	0%	0%	0.6%	-	-
<b>Lights</b>	2	74	40	0	116	10	1	0	0	11	2	45	1	0	48	1	0	0	0	1	1	176
<b>% Lights</b>	100%	96.1%	100%	0%	97.5%	100%	100%	0%	0%	100%	100%	97.8%	100%	0%	98.0%	100%	0%	0%	0%	100%	97.8%	97.8%
<b>Articulated Trucks</b>	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
<b>% Articulated Trucks</b>	0%	1.3%	0%	0%	0.8%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0.6%
<b>Buses and Single-Unit Trucks</b>	0	2	0	0	2	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	3
<b>% Buses and Single-Unit Trucks</b>	0%	2.6%	0%	0%	1.7%	0%	0%	0%	0%	0%	0%	2.2%	0%	0%	2.0%	0%	0%	0%	0%	0%	0%	1.7%

\* L: Left, R: Right, T: Thru, U: U-Turn

215th Street & Sunflower Road - IMC

Mon Sep 30, 2024

AM Peak (7 AM - 8 AM) - Overall Peak Hour

All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)

All Movements

ID: 1229799, Location: 38.73847, -95.000858



Provided by: Gewalt Hamilton Associates Inc.  
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

Leg Direction	Sunflower Road Southbound					215th Street Westbound					Sunflower Road Northbound					215th Street Eastbound							
Time	R	T	L	U	App	R	T	L	U	App	R	T	L	U	App	R	T	L	U	App	Int		
2024-09-30 7:00AM	0	6	0	0	6	2	0	0	0	2	0	12	0	0	12	0	0	0	0	0	0	20	
7:15AM	0	0	1	0	1	1	0	0	0	1	0	14	0	0	14	0	0	0	0	0	0	16	
7:30AM	2	4	0	0	6	4	0	0	0	4	0	6	0	0	6	0	0	0	0	0	0	16	
7:45AM	0	1	0	0	1	3	0	0	0	3	0	13	0	0	13	0	0	1	0	1	1	18	
<b>Total</b>	2	11	1	0	14	10	0	0	0	10	0	45	0	0	45	0	0	1	0	1	1	70	
<b>% Approach</b>	14.3%	78.6%	7.1%	0%	-	100%	0%	0%	0%	-	0%	100%	0%	0%	-	0%	0%	100%	0%	-	-	-	
<b>% Total</b>	2.9%	15.7%	1.4%	0%	20.0%	14.3%	0%	0%	0%	14.3%	0%	64.3%	0%	0%	64.3%	0%	0%	1.4%	0%	1.4%	-	-	
<b>PHF</b>	0.250	0.458	0.250	-	0.583	0.625	-	-	-	0.625	-	0.804	-	-	0.804	-	-	0.250	-	0.250	0.875	0.875	
<b>Lights</b>	2	10	1	0	13	9	0	0	0	9	0	44	0	0	44	0	0	1	0	1	1	67	
<b>% Lights</b>	100%	90.9%	100%	0%	92.9%	90.0%	0%	0%	0%	90.0%	0%	97.8%	0%	0%	97.8%	0%	0%	100%	0%	100%	95.7%	95.7%	
<b>Articulated Trucks</b>	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	1	1
<b>% Articulated Trucks</b>	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	2.2%	0%	0%	2.2%	0%	0%	0%	0%	0%	0%	1.4%	1.4%
<b>Buses and Single-Unit Trucks</b>	0	1	0	0	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	2	2
<b>% Buses and Single-Unit Trucks</b>	0%	9.1%	0%	0%	7.1%	10.0%	0%	0%	0%	10.0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	2.9%	2.9%

\*L: Left, R: Right, T: Thru, U: U-Turn

215th Street & Sunflower Road - I/MC

Mon Sep 30, 2024

AM Peak (7 AM - 8 AM) - Overall Peak Hour

All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)

All Movements

ID: 1229799, Location: 38.73847, -95.000858



Provided by: Gewalt Hamilton Associates Inc.  
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

[N] Sunflower Road

Total: 70

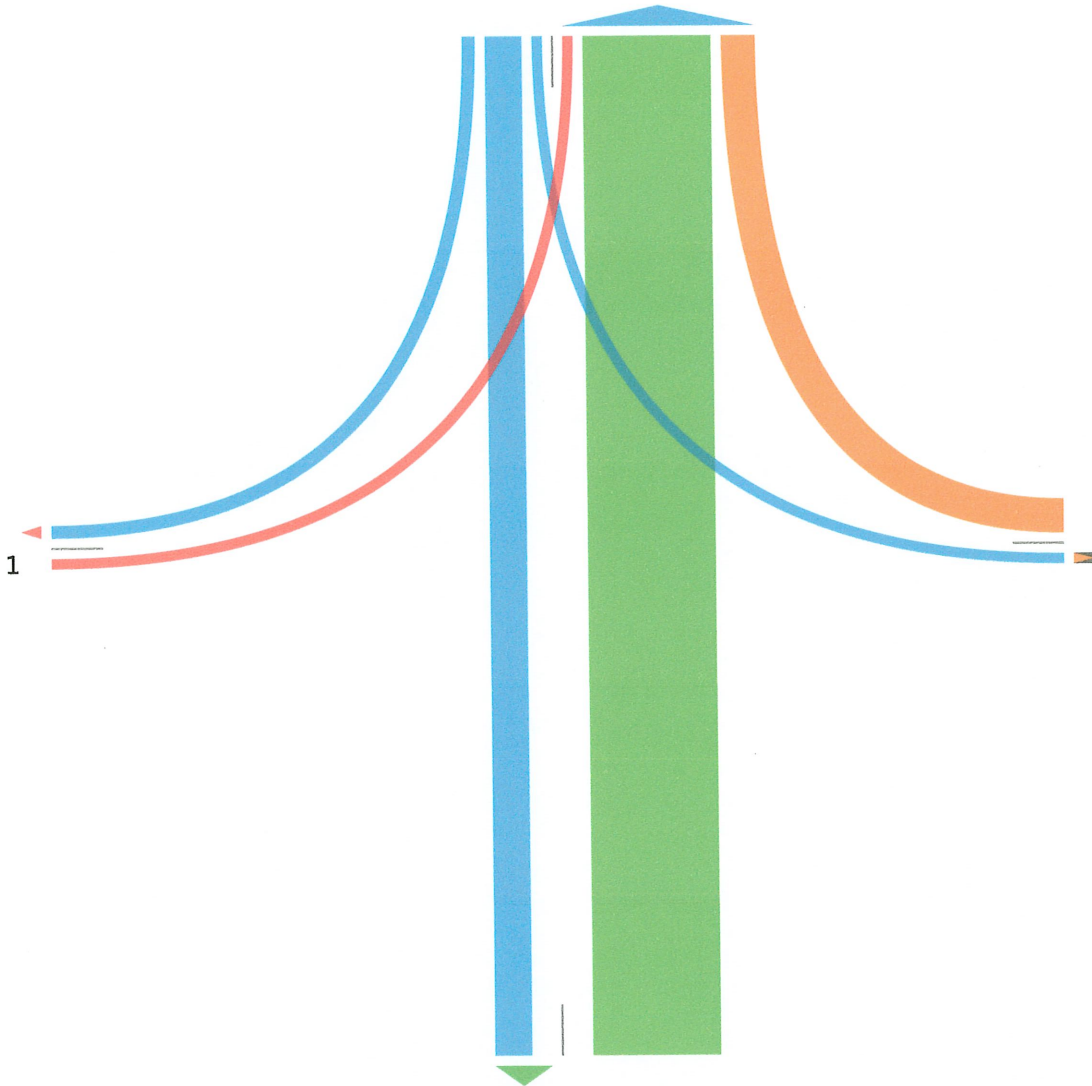
In: 14 Out: 56

2 11 1

[W] 215th Street

Total: 3

In: 1 Out: 2



10

Out: 1 In: 10

Total: 11

[E] 215th Street

Out: 11 In: 45

Total: 56

[S] Sunflower Road

45

215th Street & Sunflower Road - IMC

Fri Oct 4, 2024

PM Peak (5 PM - 6 PM) - Overall Peak Hour

All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)

All Movements

ID: 1229800, Location: 38.73847, -95.000858



Provided by: Gewalt Hamilton Associates Inc.  
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

Leg Direction	Sunflower Road Southbound					215th Street Westbound					Sunflower Road Northbound					215th Street Eastbound					
Time	R	T	L	U	App	R	T	L	U	App	R	T	L	U	App	R	T	L	U	App	Int
2024-10-04 5:00PM	0	11	2	0	13	2	0	0	0	2	0	6	0	0	6	0	0	0	0	0	21
5:15PM	0	19	5	0	24	1	0	0	0	1	1	7	0	0	8	0	0	0	0	0	33
5:30PM	1	11	5	0	17	1	0	0	0	1	1	6	0	0	7	1	0	0	0	1	26
5:45PM	0	6	1	0	7	1	1	0	0	2	0	5	1	0	6	0	0	0	0	0	15
<b>Total</b>	1	47	13	0	61	5	1	0	0	6	2	24	1	0	27	1	0	0	0	1	95
<b>% Approach</b>	1.6%	77.0%	21.3%	0%	-	83.3%	16.7%	0%	0%	-	7.4%	88.9%	3.7%	0%	-	100%	0%	0%	0%	-	-
<b>% Total</b>	1.1%	49.5%	13.7%	0%	64.2%	5.3%	1.1%	0%	0%	6.3%	2.1%	25.3%	1.1%	0%	28.4%	1.1%	0%	0%	0%	1.1%	-
<b>PHF</b>	0.250	0.618	0.650	-	0.635	0.625	0.250	-	-	0.750	0.500	0.857	0.250	-	0.844	0.250	-	-	-	0.250	0.720
<b>Lights</b>	1	45	13	0	59	5	1	0	0	6	2	24	1	0	27	1	0	0	0	1	93
<b>% Lights</b>	100%	95.7%	100%	0%	96.7%	100%	100%	0%	0%	100%	100%	100%	100%	0%	100%	100%	0%	0%	0%	100%	97.9%
<b>Articulated Trucks</b>	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
<b>% Articulated Trucks</b>	0%	2.1%	0%	0%	1.6%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	1.1%
<b>Buses and Single-Unit Trucks</b>	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
<b>% Buses and Single-Unit Trucks</b>	0%	2.1%	0%	0%	1.6%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	1.1%

\*L: Left, R: Right, T: Thru, U: U-Turn

215th Street & Sunflower Road - I/MC

Fri Oct 4, 2024

PM Peak (5 PM - 6 PM) - Overall Peak Hour

All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)

All Movements

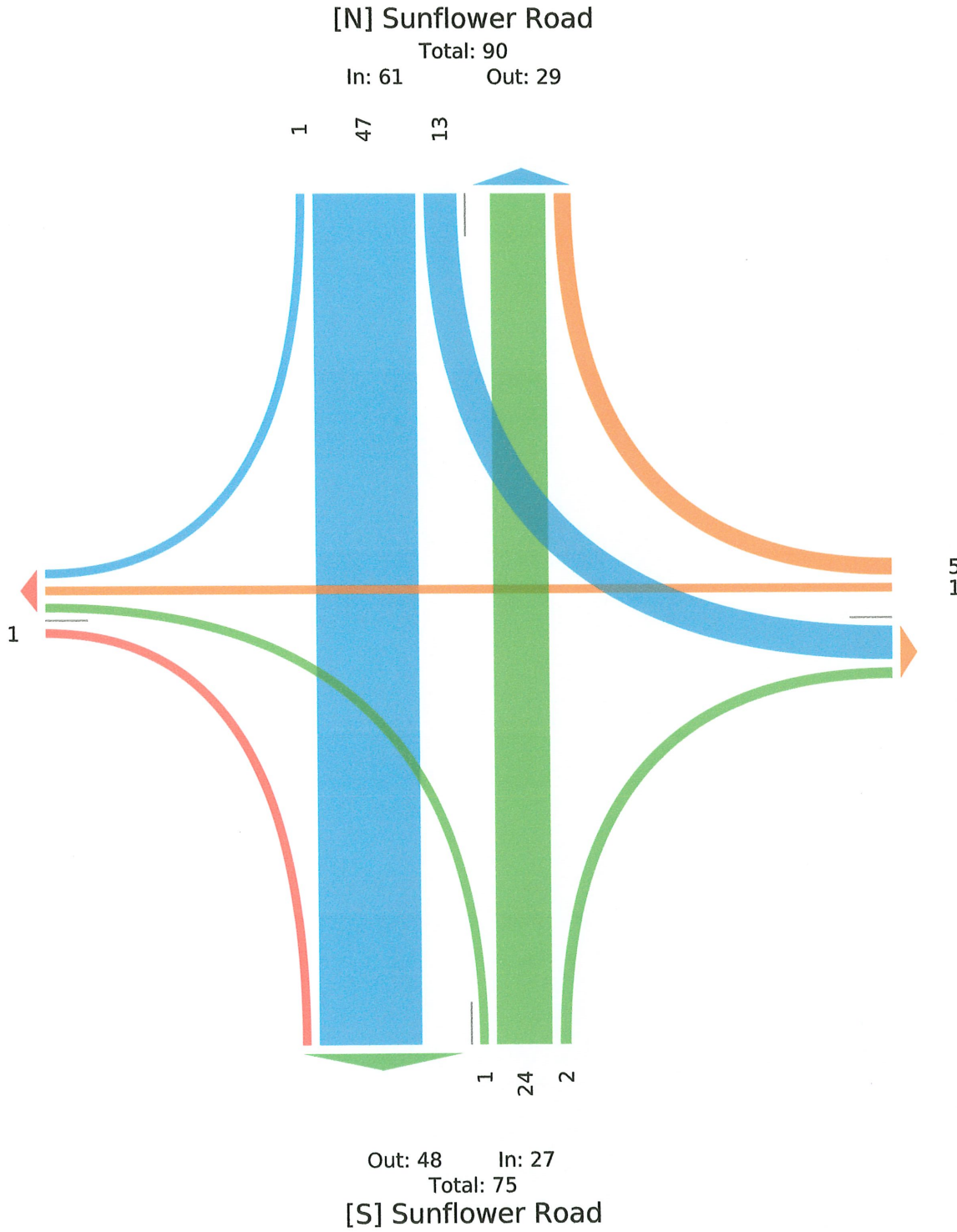
ID: 1229800, Location: 38.73847, -95.000858



Provided by: Gewalt Hamilton Associates Inc.  
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

[W] 215th Street

Total: 4  
In: 1 Out: 3



**APPENDIX B  
ITE TRIP GENERATION  
PLOTS**

# Mini-Warehouse (151)

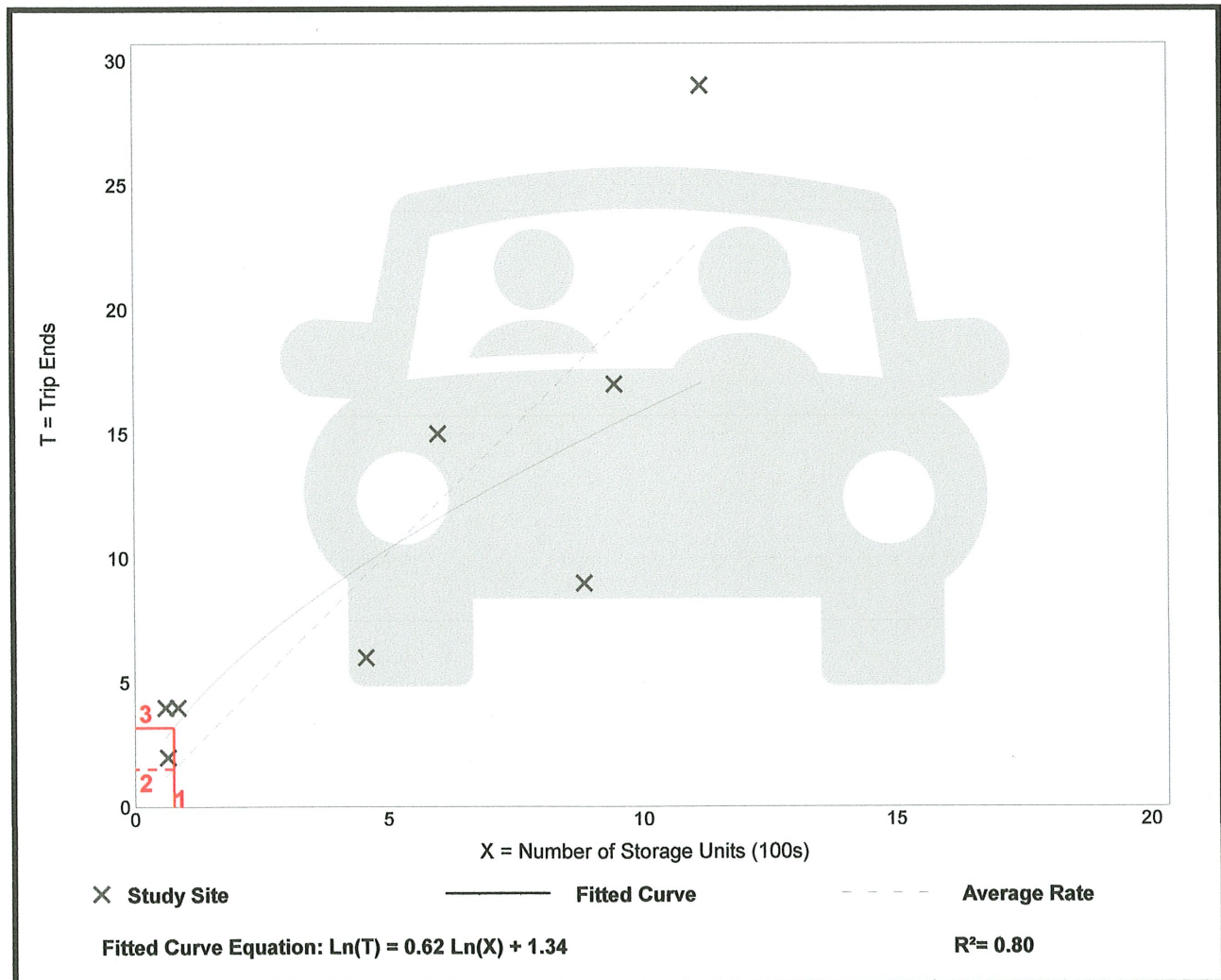
**Vehicle Trip Ends vs: Storage Units (100s)**  
**On a: Weekday,**  
**AM Peak Hour of Generator**

**Setting/Location: General Urban/Suburban**  
 Number of Studies: 8  
 Avg. Num. of Storage Units (100s): 5  
 Directional Distribution: 58% entering, 42% exiting

## Vehicle Trip Generation per Storage Unit (100s)

Average Rate	Range of Rates	Standard Deviation
2.04	1.02 - 6.67	1.00

## Data Plot and Equation



# Mini-Warehouse (151)

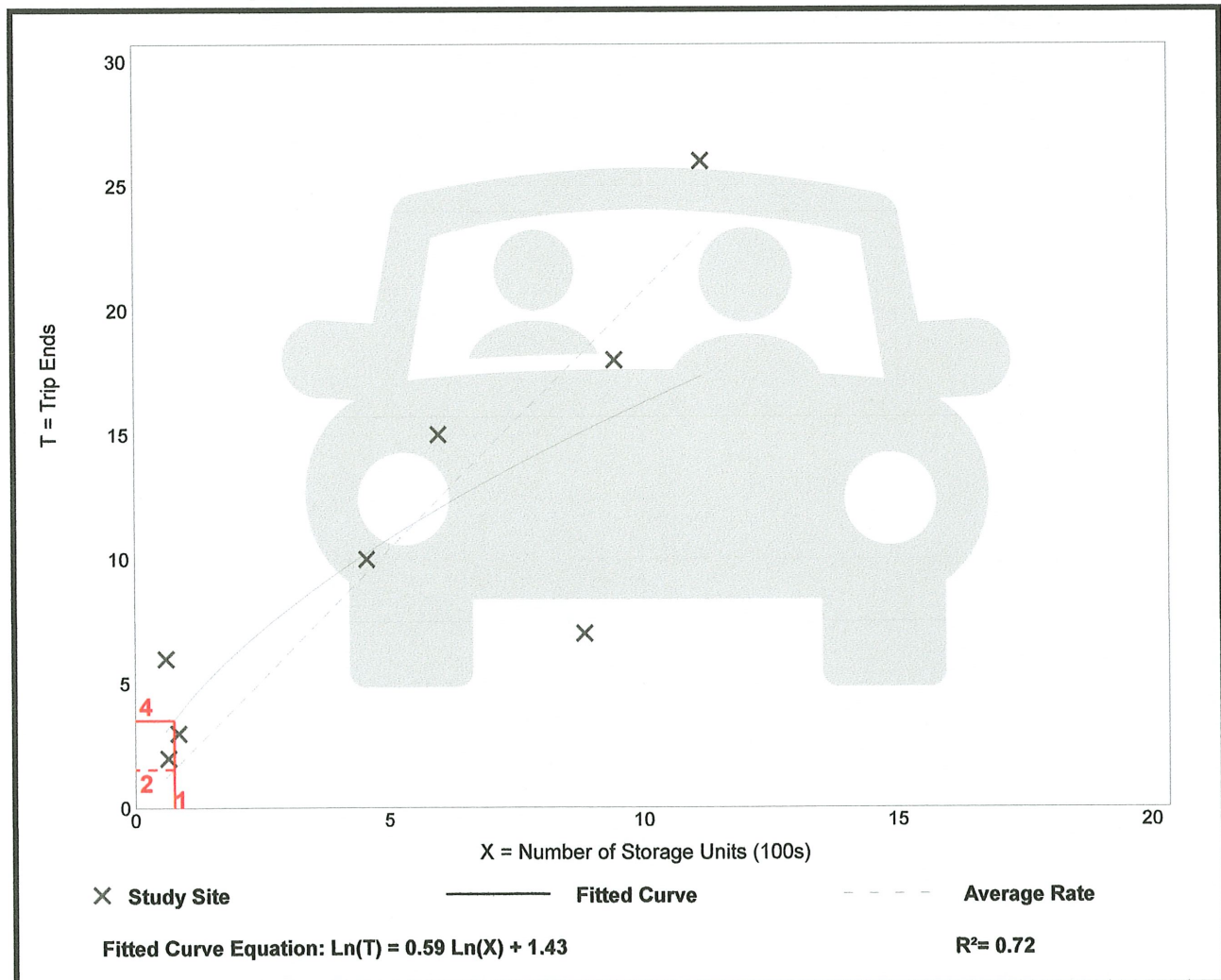
Vehicle Trip Ends vs: Storage Units (100s)  
On a: Weekday,  
PM Peak Hour of Generator

Setting/Location: General Urban/Suburban  
Number of Studies: 8  
Avg. Num. of Storage Units (100s): 5  
Directional Distribution: 48% entering, 52% exiting

## Vehicle Trip Generation per Storage Unit (100s)

Average Rate	Range of Rates	Standard Deviation
2.07	0.79 - 10.00	1.24

## Data Plot and Equation



# Mini-Warehouse (151)

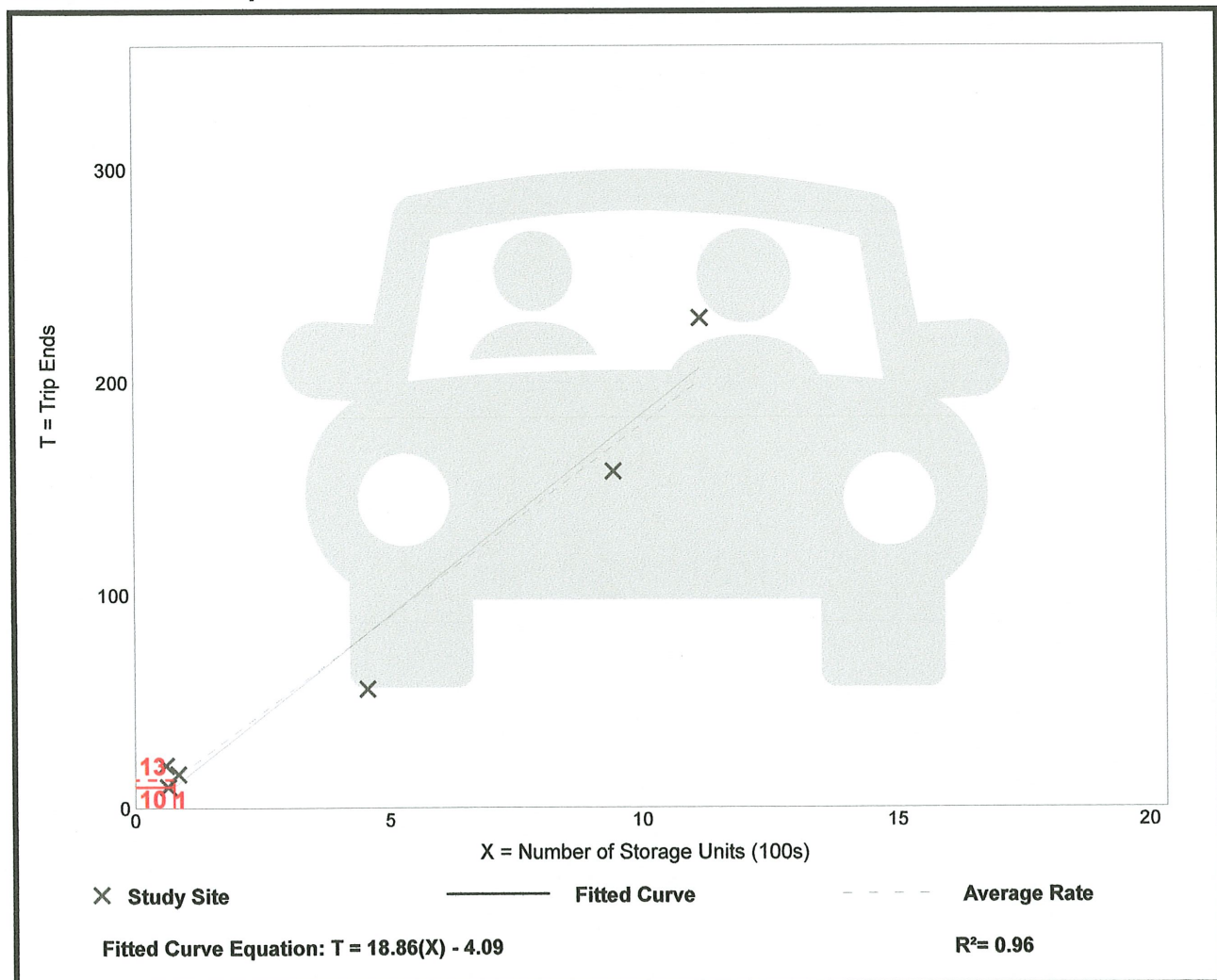
**Vehicle Trip Ends vs: Storage Units (100s)**  
On a: **Weekday**

**Setting/Location: General Urban/Suburban**  
Number of Studies: 6  
Avg. Num. of Storage Units (100s): 5  
Directional Distribution: 50% entering, 50% exiting

## Vehicle Trip Generation per Storage Unit (100s)

Average Rate	Range of Rates	Standard Deviation
17.96	12.25 - 33.33	4.13

## Data Plot and Equation



# Campground/Recreational Vehicle Park (416)

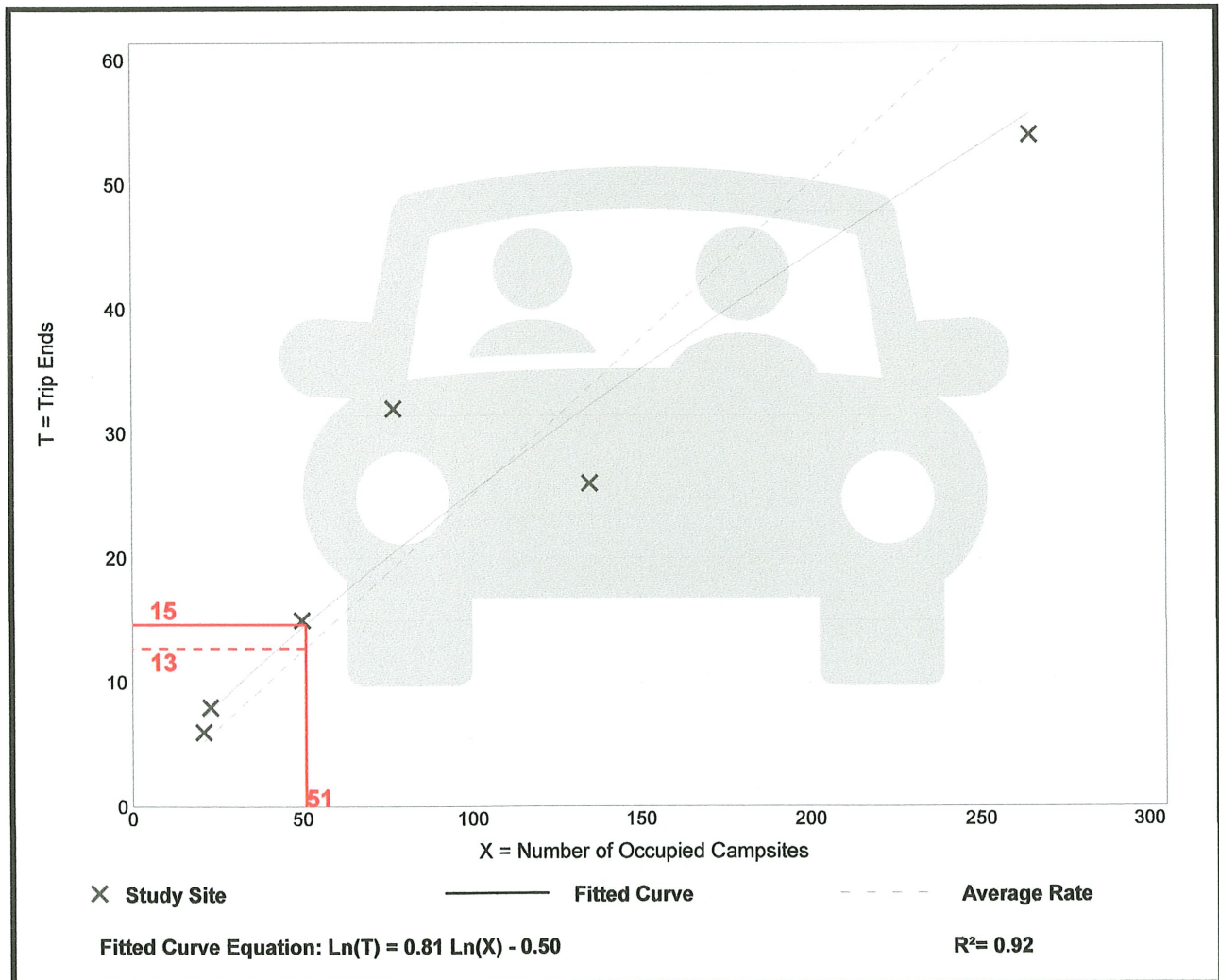
**Vehicle Trip Ends vs: Occupied Campsites**  
**On a: Weekday,**  
**AM Peak Hour of Generator**

**Setting/Location: General Urban/Suburban**  
 Number of Studies: 6  
 Avg. Num. of Occupied Campsites: 95  
 Directional Distribution: 36% entering, 64% exiting

## Vehicle Trip Generation per Occupied Campsite

Average Rate	Range of Rates	Standard Deviation
0.25	0.19 - 0.42	0.09

## Data Plot and Equation



# Campground/Recreational Vehicle Park (416)

**Vehicle Trip Ends vs: Occupied Campsites**  
**On a: Weekday,**  
**PM Peak Hour of Generator**

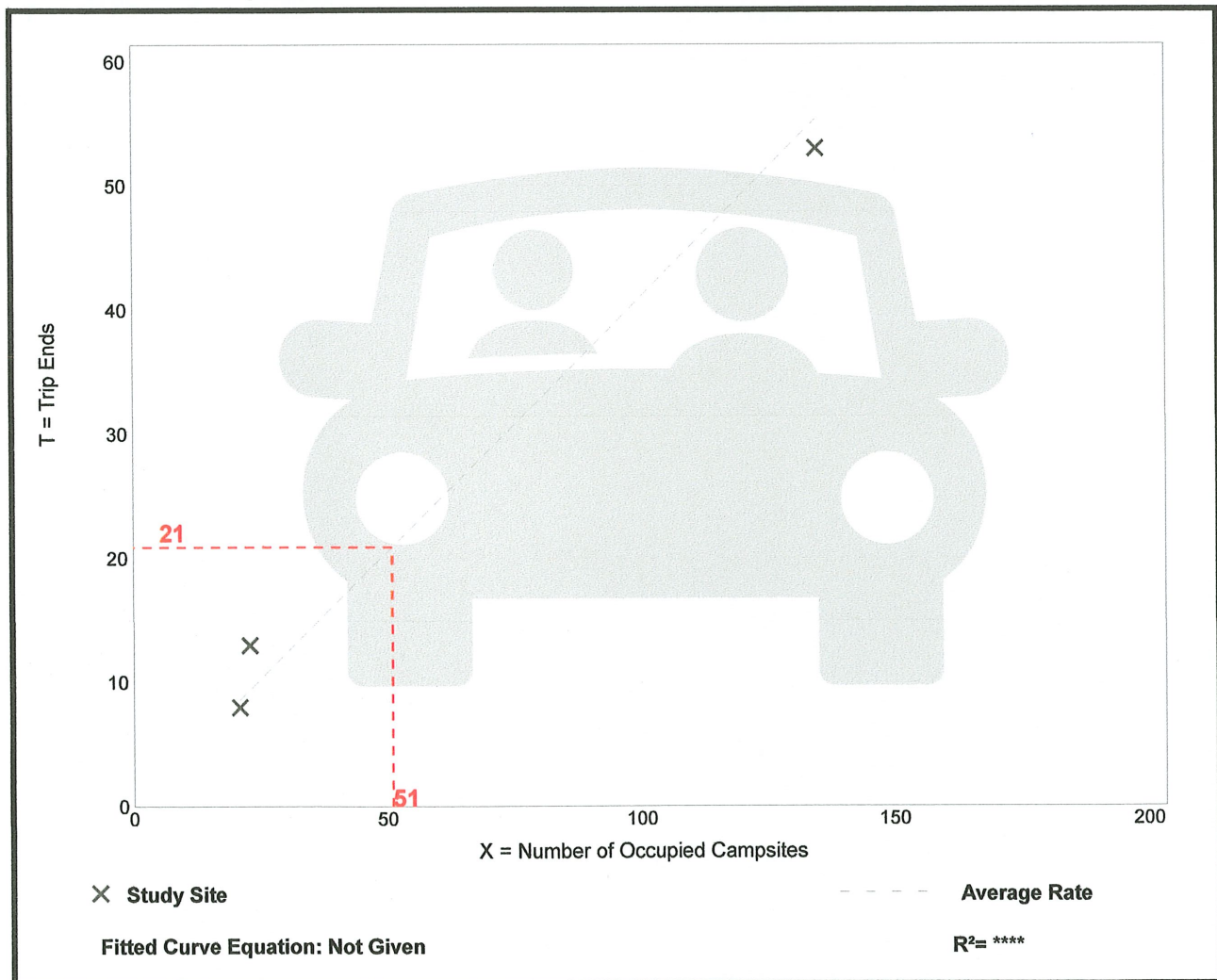
**Setting/Location: General Urban/Suburban**  
 Number of Studies: 3  
 Avg. Num. of Occupied Campsites: 60  
 Directional Distribution: 62% entering, 38% exiting

## Vehicle Trip Generation per Occupied Campsite

Average Rate	Range of Rates	Standard Deviation
0.41	0.38 - 0.57	0.07

## Data Plot and Equation

*Caution – Small Sample Size*



**APPENDIX C  
CAPACITY AND  
QUEUING ANALYSES**

# **215th Street and Sunflower Road**

Intersection												
Int Delay, s/veh	1.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	1	0	0	0	0	10	0	45	0	1	11	2
Future Vol, veh/h	1	0	0	0	0	10	0	45	0	1	11	2
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	0	0	0	0	11	0	49	0	1	12	2

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	70	64	13	64	65	49	14	0	0	49	0	0
Stage 1	15	15	-	49	49	-	-	-	-	-	-	-
Stage 2	55	49	-	15	16	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	922	827	1067	930	826	1020	1604	-	-	1558	-	-
Stage 1	1005	883	-	964	854	-	-	-	-	-	-	-
Stage 2	957	854	-	1005	882	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	912	826	1067	929	825	1020	1604	-	-	1558	-	-
Mov Cap-2 Maneuver	912	826	-	929	825	-	-	-	-	-	-	-
Stage 1	1005	882	-	964	854	-	-	-	-	-	-	-
Stage 2	947	854	-	1004	881	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	9	8.6	0	0.5
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1604	-	-	912	1020	1558	-	-
HCM Lane V/C Ratio	-	-	-	0.001	0.011	0.001	-	-
HCM Control Delay (s)	0	-	-	9	8.6	7.3	0	-
HCM Lane LOS	A	-	-	A	A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0	0	0	-	-

Intersection												
Int Delay, s/veh	1.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	0	1	0	1	5	1	24	2	13	47	1
Future Vol, veh/h	0	0	1	0	1	5	1	24	2	13	47	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	1	0	1	5	1	26	2	14	51	1

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	112	110	52	109	109	27	52	0	0	28	0	0
Stage 1	80	80	-	29	29	-	-	-	-	-	-	-
Stage 2	32	30	-	80	80	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	866	780	1016	870	781	1048	1554	-	-	1585	-	-
Stage 1	929	828	-	988	871	-	-	-	-	-	-	-
Stage 2	984	870	-	929	828	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	854	772	1016	862	773	1048	1554	-	-	1585	-	-
Mov Cap-2 Maneuver	854	772	-	862	773	-	-	-	-	-	-	-
Stage 1	928	821	-	987	870	-	-	-	-	-	-	-
Stage 2	977	869	-	920	821	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	8.5		8.7		0.3		1.6	
HCM LOS	A		A					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1554	-	-	1016	989	1585	-	-
HCM Lane V/C Ratio	0.001	-	-	0.001	0.007	0.009	-	-
HCM Control Delay (s)	7.3	0	-	8.5	8.7	7.3	0	-
HCM Lane LOS	A	A	-	A	A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0	0	0	-	-

Intersection												
Int Delay, s/veh	7.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	1	0	0	0	0	181	0	45	0	172	11	2
Future Vol, veh/h	1	0	0	0	0	181	0	45	0	172	11	2
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	0	0	0	0	197	0	49	0	187	12	2

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	535	436	13	436	437	49	14	0	0	49	0	0
Stage 1	387	387	-	49	49	-	-	-	-	-	-	-
Stage 2	148	49	-	387	388	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	456	514	1067	531	513	1020	1604	-	-	1558	-	-
Stage 1	637	610	-	964	854	-	-	-	-	-	-	-
Stage 2	855	854	-	637	609	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	334	452	1067	482	451	1020	1604	-	-	1558	-	-
Mov Cap-2 Maneuver	334	452	-	482	451	-	-	-	-	-	-	-
Stage 1	637	536	-	964	854	-	-	-	-	-	-	-
Stage 2	690	854	-	560	535	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	15.8		9.4		0		7.1	
HCM LOS	C		A					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1604	-	-	334	1020	1558	-	-
HCM Lane V/C Ratio	-	-	-	0.003	0.193	0.12	-	-
HCM Control Delay (s)	0	-	-	15.8	9.4	7.6	0	-
HCM Lane LOS	A	-	-	C	A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0	0.7	0.4	-	-

Intersection												
Int Delay, s/veh	7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↕			↕			↕			↕		
Traffic Vol, veh/h	0	0	1	0	1	176	1	24	2	184	47	1
Future Vol, veh/h	0	0	1	0	1	176	1	24	2	184	47	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	1	0	1	191	1	26	2	200	51	1

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	577	482	52	481	481	27	52	0	0	28	0	0
Stage 1	452	452	-	29	29	-	-	-	-	-	-	-
Stage 2	125	30	-	452	452	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	428	484	1016	495	485	1048	1554	-	-	1585	-	-
Stage 1	587	570	-	988	871	-	-	-	-	-	-	-
Stage 2	879	870	-	587	570	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	314	421	1016	445	421	1048	1554	-	-	1585	-	-
Mov Cap-2 Maneuver	314	421	-	445	421	-	-	-	-	-	-	-
Stage 1	586	496	-	987	870	-	-	-	-	-	-	-
Stage 2	717	869	-	510	496	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	8.5		9.3		0.3		6	
HCM LOS	A		A					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1554	-	-	1016	1039	1585	-	-
HCM Lane V/C Ratio	0.001	-	-	0.001	0.185	0.126	-	-
HCM Control Delay (s)	7.3	0	-	8.5	9.3	7.6	0	-
HCM Lane LOS	A	A	-	A	A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0	0.7	0.4	-	-

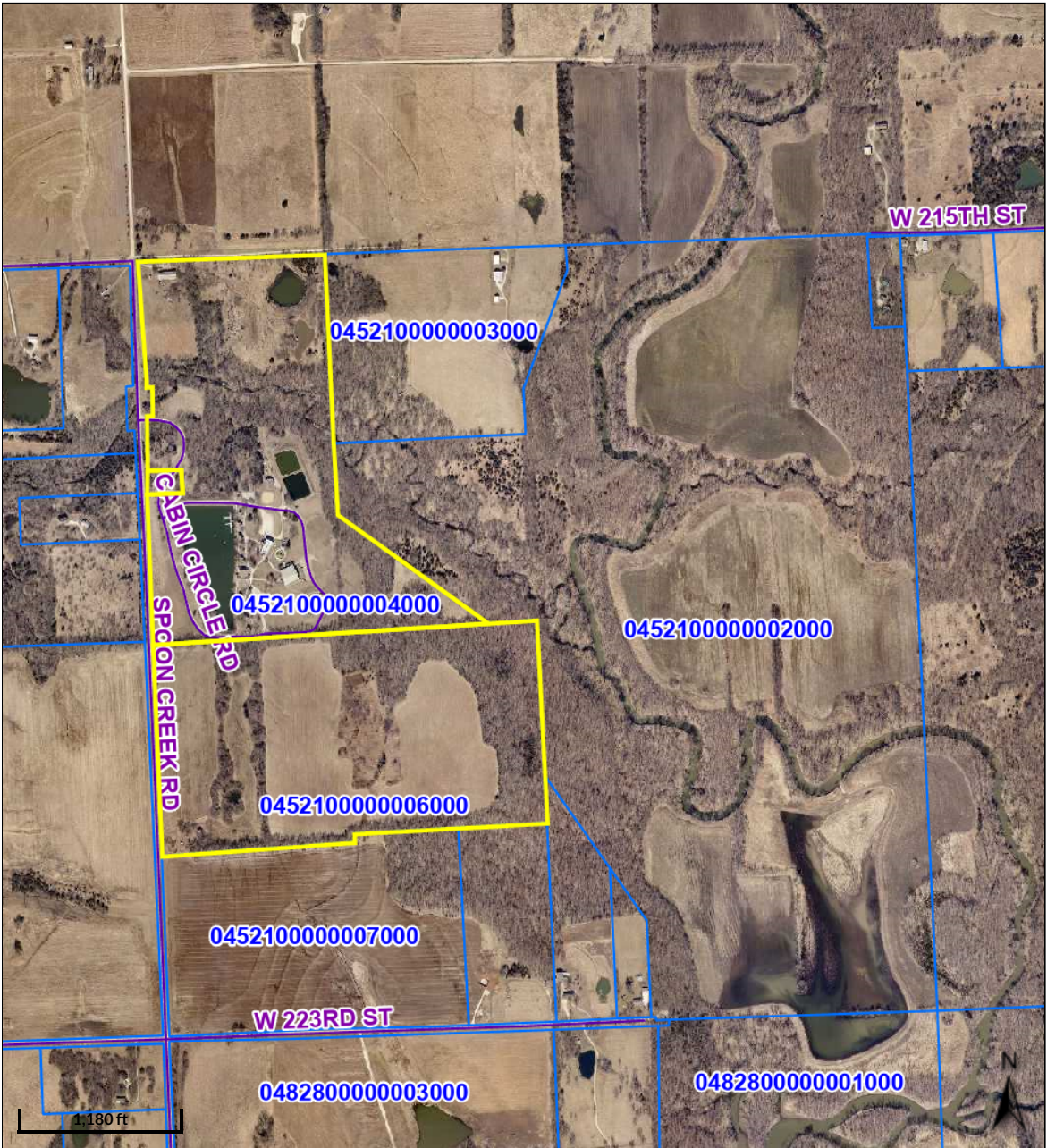
Intersection												
Int Delay, s/veh	8.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	1	0	0	0	0	366	0	45	0	349	11	2
Future Vol, veh/h	1	0	0	0	0	366	0	45	0	349	11	2
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	0	0	0	0	398	0	49	0	379	12	2
Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1019	820	13	820	821	49	14	0	0	49	0	0
Stage 1	771	771	-	49	49	-	-	-	-	-	-	-
Stage 2	248	49	-	771	772	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	215	310	1067	294	309	1020	1604	-	-	1558	-	-
Stage 1	393	410	-	964	854	-	-	-	-	-	-	-
Stage 2	756	854	-	393	409	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	106	234	1067	238	233	1020	1604	-	-	1558	-	-
Mov Cap-2 Maneuver	106	234	-	238	233	-	-	-	-	-	-	-
Stage 1	393	310	-	964	854	-	-	-	-	-	-	-
Stage 2	461	854	-	297	309	-	-	-	-	-	-	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	39.3			10.8			0			7.8		
HCM LOS	E			B								
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR				
Capacity (veh/h)	1604	-	-	106	1020	1558	-	-				
HCM Lane V/C Ratio	-	-	-	0.01	0.39	0.243	-	-				
HCM Control Delay (s)	0	-	-	39.3	10.8	8.1	0	-				
HCM Lane LOS	A	-	-	E	B	A	A	-				
HCM 95th %tile Q(veh)	0	-	-	0	1.9	1	-	-				

Intersection												
Int Delay, s/veh	8.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	0	1	0	1	356	1	24	2	364	47	1
Future Vol, veh/h	0	0	1	0	1	356	1	24	2	364	47	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	1	0	1	387	1	26	2	396	51	1

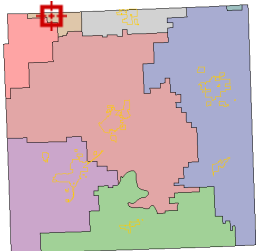
Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	1067	874	52	873	873	27	52	0	0	28	0	0
Stage 1	844	844	-	29	29	-	-	-	-	-	-	-
Stage 2	223	30	-	844	844	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	200	288	1016	271	289	1048	1554	-	-	1585	-	-
Stage 1	358	379	-	988	871	-	-	-	-	-	-	-
Stage 2	780	870	-	358	379	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	101	214	1016	217	214	1048	1554	-	-	1585	-	-
Mov Cap-2 Maneuver	101	214	-	217	214	-	-	-	-	-	-	-
Stage 1	358	282	-	987	870	-	-	-	-	-	-	-
Stage 2	491	869	-	266	282	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	8.5		10.5		0.3		7.1	
HCM LOS	A		B					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1554	-	-	1016	1037	1585	-	-
HCM Lane V/C Ratio	0.001	-	-	0.001	0.374	0.25	-	-
HCM Control Delay (s)	7.3	0	-	8.5	10.5	8	0	-
HCM Lane LOS	A	A	-	A	B	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0	1.8	1	-	-



Overview



Legend

- City Limits
- Centerlines
- Parcels
- Lakes

This property ownership map is for tax purposes only. It is not intended for conveyances, nor is it a legal survey.

Date created: 11/22/2024  
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 GEOSPATIAL

## CUP Narrative | Youthfront Camp West | Miami County, Kansas

**Name of Project:** Youthfront Camp CUP for Master Plan of Future Expansion

**Address(es):** 21667 Spoon Creek Road, Edgerton, KS 66021, Parcel 052100000004000  
21669 Spoon Creek Road, Edgerton, KS 66021, Parcel 052100000005000  
22129 Spoon Creek Road, Edgerton, KS 66021, Parcel 052100000006000

**Current Zoning:** AG (all properties)

**Owner:** Youthfront Inc, DBA Kansas City Youth for Christ, 501 (C)(3) non profit, 4600 Rainbow Blvd, Kansas City, KS 66103. Corporate address: 4715 Rainbow Blvd, Shawnee Mission, KS 66215. Contact: Topher Philgreen, Cell: 913-915-6677, [tphilgreen@youthfront.com](mailto:tphilgreen@youthfront.com)

**Plan Author/Engineer:** David Greusel, FAIA, Principal, Convergence Design LLC, 1600 Genessee, Suite 620, Kansas City, MO, 64102, Phone: 816.255.2123  
[david@convergencedesignllc.com](mailto:david@convergencedesignllc.com)

### Legal Descriptions:

**21667 Spoon Creek Road, Edgerton, KS 66021, Parcel 0452100000004000:** The South half of the Northwest Quarter (1/4) of the Northwest Quarter (1/4) of the Northwest Quarter (1/4) of Section Twenty-one (21), Township Fifteen (15), Range Twenty-Two (22), in Miami County, Kansas, according to the recorded plat thereof. Accepting: Beginning at the northwest corner of said SE1/2, NW1/4 of Section 21; thence westerly along the north line of said SE1/2, NW1/4 to a point, said point being 180 feet east of the northwest corner of said SE1/2, NW1/4; thence southerly parallel with the west line of said SE1/2, NW1/4 to a line described as beginning at the southwest corner of the NW1/4, SW1/4, NW1/4, SE1/4, NW1/4 of said Section 21 and extending in a southeasterly direction to the southeast corner of SW1/4, SE1/4, SE1/4, NW1/4 of said Section 21; thence in a southeasterly direction along said described line to the southeast corner of said SW1/4, SE1/4, SE1/4, NW1/4; thence easterly along the south line of said SE1/2, NW1/4 to the southeast corner thereof; thence northerly along the east line of said SE1/2, NW1/4 to the point of beginning, containing 28.22 acres, more or less. AND All of that part of the S1/2, NW1/4, NW1/4, the NE1/4, NE1/4, SW1/4, NW1/4, and the west 180 feet of the W1/2, NW1/4, SE1/4, NW1/4 of Section 21, Township 15 South, Range 22, East of the Sixth Principal Meridian, Miami County, Kansas, lying below elevation 926" (m.s.l.), containing 10.68 acres of land, more or less. Total remaining parcel containing 98 acres more or less.

**21669 Spoon Creek Road, Edgerton, KS 66021, Parcel 0452100000005000:** The South half of the Northwest Quarter (1/4) of the Northwest Quarter (1/4) of Section Twenty-one (21), Township Fifteen (15), Range Twenty-Two (22), Tract beginning 115' South and

## Youthfront Camp West

### CUP Narrative

Page 2 of 6

25' East of the Northwest Corner (S1/2, NW 1/4), East 239', South 165', West 239', North 165' to Place of Beginning, in Miami County, Kansas, according to the recorded plat thereof. 1 acre more or less.

**22129 Spoon Creek Road, Edgerton, KS 66021**, Parcel 045210000006000: The North Half of the Southwest Quarter (N ½, SW 1/4) of Section Twenty-one (21), Township Fifteen (15), Range Twenty-Two (22), in Miami County, Kansas, according to the recorded plat thereof. N. 88.9 acres more or less.

#### **Historical Background:**

Youthfront (formerly Kansas City Youth For Christ) was started over 80 years ago in 1943 during the second world war. It started as a ministry to keep kids “off the streets” while their fathers fought in war and the mothers worked in factories. Since 1943 it has blossomed into one of the largest 501c3 non-profit youth ministry organizations in the country. Over its 80+ year history Youthfront has impacted hundreds of thousands of students and families. Today, over 12,000 students per year are impacted by its various programs.

From 1946 to 1969 KCYFC/Youthfront would load up busses to take kids to other states for a camp experience at places like Lake Afton in Wichita and John Brown University in Silom Spring Arkansas.

In 1969, Youthfront Camp West (then Circle-C Ranch) was built and opened for its first summer in 1970. This camp and the then 10 cabins, large main chapel, pool and giant dry-slide, were built long before any zoning laws were created in Miami County. When it comes to CUPs in Miami County, it has been said that Camp West is sitting on the oldest grandfathered site in the county.

Since 1970 Youthfront has added 6 more cabins, rebuilt them all, lost our main building to a fire one week before camp and rebuilt it, have added a stand-alone dining center, snack shop, activity center, chapel, ropes courses, water slide and other water features to make Youthfront Camp West (at 216<sup>th</sup> and Spoon Creek Road) one of the best camps in the entire Midwest. There is no other local camp experience that allows groups to come for the price like Youthfront Camp West in Miami County, Kansas.

Youthfront Camps serve primarily Miami County and Johnson County kids but draw from the entire region. In a recent demographic study, as of summer 2023, of the 3,281 students who attended 86% (2,809) are from Kansas and Missouri. Of the Kansas Students 91% (2,552) are from Johnson County and 3% (70) are from Miami County. The vast majority of the students that attend Youthfront camps are from Johnson and Miami County in Kansas.

As the city grows further and further south, it has become apparent that Youthfront needs to plan for future growth of our camps, camping operations, and other related ventures along

## Youthfront Camp West

### CUP Narrative

Page 3 of 6

Spoon Creek Road. The purpose of the CUP is to establish a long-range plan for Youthfront's growth into the future.

#### **A) General Description of Proposed Use:**

**Nature of Use:** Youthfront Camp West is used as a short term residential and day camp for youth and adults in the greater Kansas City Area.

**Description of Outdoor Uses:** Outdoor activities include swimming, field and court games (day and evening), hiking, prayer and meditation, and worship services.

**Hours of Operation:** During the summer and on weekends where the camp is in use, operations are 24 hours.

**Anticipated Vehicle Trips Per Day:** Current use is up to 250 trips per day on check-in and check-out days (generally one or two days per week), approximately 25 trips per day on other days. See Traffic Study on Expected use.

**Number of Employees and Public Associated with The Use:** Youthfront employs a lot of people in Miami County in full-time, part-time, full-time temporary and contract basis. We currently employ 6 on-site, year around permanent full-time staff. During most weekends and in the summer weeks we employ 60 part-time staff or full-time temporary. When expansion happens, this number will likely double. Although staff will greatly increase it doesn't change our traffic impact much because they live on site and arrive and depart before and after campers.

**Phasing Schedule for Construction:** No construction schedule exists at present. This CUP Application is for the potential addition of a second camp on recently-acquired property; however, the timing of construction of that second camp is undetermined. Once approval is granted, a capital fund-raising campaign and construction phasing will begin.

**Requested Time Limit for Permit:** 25 years.

#### **B) Utilities and Infrastructure:**

availability of all existing and proposed utilities to the property:

- Water: Johnson County Rural Water District 7. We have a domestic water with a ¾" tap that feeds a 2" line from 215<sup>th</sup> and Spoon Creek Road. Because of the Hillsdale watershed we have had to exist on Johnson County water supply since we started. We have storage tanks and pressurize our own water systems.
- Gas: No service (propane is delivered to site).
- Electricity: Evergy, single phase 480V service. Multiple metering existing.

## Youthfront Camp West

### CUP Narrative

Page 4 of 6

**Sewerage:** No service (treatment lagoons on site). Youthfront is a certified Small System Waste Water Manger. Our lagoons are inspected by KDHE. We foresee continuing this system of sewage management by adding a third stage lagoon to cover any expansion.

**Access to the Property:** Via Spoon Creek Road along west property line.

### **C) Impacts to Surrounding Properties:**

**Noise:** Camp activities are confined to the property and are normal for youth camping operations. The outdoor activity is listed above and would consist of kids laughing and having fun. Except for outdoor activities noted above, the rest of the programing primarily occur indoors. There are no large-scale outdoor concerts, festivals or events planned at this camp.

**Lighting:** Outdoor security lighting is provided at buildings and parking areas. Sports field lighting is in the center of the very large property and does not spill over to other properties.

**Traffic:** See included traffic study.

**Impact Mitigation:** The proposed second camp will be more internal to the site with large buffered vegetation zones to the east, south and west. Noise, lights, or any disturbance from outdoor activities should be less than from the existing camp.

In terms of lighting, the more central location of the proposed second camp will likewise minimize lighting impacts to surrounding properties because of its distance from property boundaries.

A new circulation plan will improve ingress and egress to the site by creating a new main entrance along Spoon Creek Road where the adjoining grade is less steep, providing better visibility for entering and exiting drivers as well as for through traffic on Spoon Creek Road. This new entrance will also aid in creating a single point of entry for security and screening purposes.

**D) Other:** *Any other information that will help give the Planning Commission an understanding of the proposal.*

This proposed CUP is in recognition of the expansion of Youthfront Camp West to include a recently acquired parcel of approximately 80 acres to the south of the existing camp, and the desire of Youthfront to have a planning mechanism in place should Youthfront wish to expand the current facility onto the recently acquired parcel.

## **Youthfront Camp West**

### **CUP Narrative**

Page 5 of 6

Youthfront recognizes that its presence in Miami County precedes the Zoning Regulations the County has adopted, and that Camp West is a permitted use under a Conditional Use Permit, which has not been sought or issued because the camp pre-existed the ordinance. Youthfront desires to bring its entire facility, including both current and new property, into compliance with Miami County's Zoning Regulations.

The proposed site plan envisions a second camp, similar in scope and scale to the existing Youthfront Camp West, located to the south of the current facilities on the newly acquired parcel. There is no timeline for construction of the second camp at the present time. The two camps would share an internal roadway system, an improved swimming facility, and an indoor gymnasium. The latter two facilities would be located in between the two camps.

This second camp will be approximately the same size as the current camp thereby doubling our census for campers and staff. Currently our max census is 256 campers in 16 cabins. We anticipate this doubling to 512 campers total with two circles of cabins that hold approximately 16 campers per cabin.

The second camp would have its own pond, which would be the primary storm water management structure for any impervious structures added to the site. All storm water runoff from both of these properties run directly into the Bull Creek valley and are immediately part of the Hillsdale Lake property and watershed.

A note about the staff housing parcels depicted on the south east side of the property: There are currently no new plans for this area other than possibly future staff housing. We sometimes need to accommodate a small family who live on site as staff. Small staff houses could be built in this area and still be a considerable distance from surrounding property lines. These depicted parcels would be owned by Youthfront and not considered a sub-division. Any future development of housing or other uses on the southern portion of the site would be subject to an amended CUP or zoning change if required.

The existing sewage treatment lagoons would be enlarged and/or improved to treat wastewater from any new facilities added under this CUP.

Youthfront is also requesting that the CUP allow for limited commercial use of its property north of the branch of Bull Creek on its property next to the Johnson County line. These uses may include a mini-rental storage facility and/or temporary RV campsites and related amenities. At this time, Youthfront is NOT requesting a CUP to explicitly allow these commercial facilities. But rather to consider in the future planning that Youthfront would like to redeem this brownfield area into a more commercial type operation under a different CUP to generate income for the organization. In association with this development, Youthfront would consent to right-of-way dedication along its entire north property line for the creation of a public roadway extending 215<sup>th</sup> Street to the east. Currently 215<sup>th</sup> Street terminates at Spoon

## **Youthfront Camp West**

### **CUP Narrative**

Page 6 of 6

Creek Road at the property's northwest corner. Both Miami and Johnson Counties could benefit from extending 215<sup>th</sup> Street to the east past Youthfront's property. This limited commercial use of part of the overall site would help to ensure the financial sustainability of YF Camp West in the future. It is understood that any commercial expansion north of Bull Creek would include interaction with Johnson County and possibly the City of Edgerton and would have to fit within existing codes. The depicted drawings of the mini-storage and RV park are for planning purposes area and not considered part of this CUP for camping operations.

All future buildings and improvements would be subject to building permits, inspections and current codes in effect at the time of plan submission.

Note on Emergency Preparedness and Response: Youthfront, during its 60 years of camping experience has developed a very robust emergency management and crisis response system for all levels of emergencies including medical, fire, environmental, and even active shooter emergencies. Regularly, Youthfront interacts and interfaces with Sherriff, Police, EMS and Fire to review and practice our emergency response. Because Youthfront Camps are rural, automatic fire sprinkler systems are not feasible. Therefore, Youthfront has focused on fire mitigation using engineered and monitored fire notification systems that get people out of buildings safely and prioritize safe egress over preservation of property. In addition, Youthfront has and will install dry-hydrants in each lake to provide an unlimited water supply in the event of a large-scale fire-fighting procedure.

Final Thoughts: We believe there are thousands of people who live and work in Miami County and its cities because they were repeatedly brought into the county to visit one of Youthfront Camps. We have enjoyed a very long and positive working relationship with all levels of county and state government. We believe in our mission and would like to expand the impact on our world and especially on the youth of our world by improving our superior facilities in Miami County.

Thank you for your consideration.

Topher Philgreen  
Executive Vice President of Strategic Initiatives

# PROJECT INFORMATION

**Project Name:** Youthfront Camp CUP for Master Plan of Future Expansion

**Address(es):**  
 21667 Spoon Creek Road, Edgerton, KS 66021, Parcel No. 045210000004000  
 21669 Spoon Creek Road, Edgerton, KS 66021, Parcel No. 045210000005000  
 22129 Spoon Creek Road, Edgerton, KS 66021, Parcel No. 045210000006000

**Current Zoning:** All properties are currently zoned: AG

**Owner:** Youthfront Inc., DBA Kansas City Youth for Christ, 501 (C)(3) nonprofit, 4600 Rainbow Blvd, Kansas City, KS 66103.  
 Corporate address: 4715 Rainbow Blvd, Shawnee Mission, KS 66215.  
**Contact:** Topher Philgreen  
 Cell phone: 913-915-6677,  
 Email: tphilgreen@youthfront.com

**Plan Author:** Convergence Design  
 Address: 1600 Genessee Suite 620, Kansas City, MO, 64102  
 Phone: 816.255.2123  
 Contact: David Greusel, Principal  
 Email: david@convergencedesignllc.com

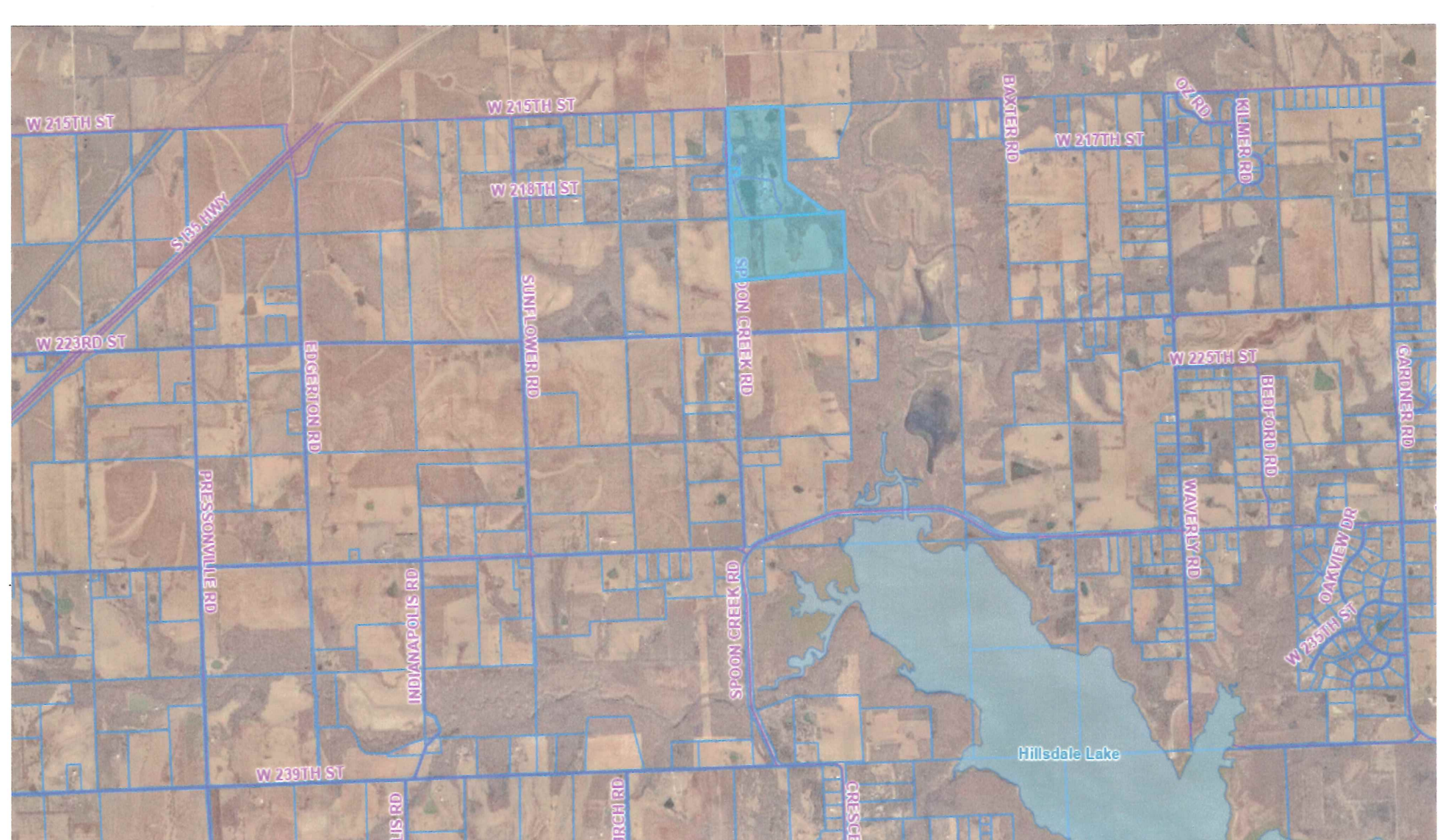
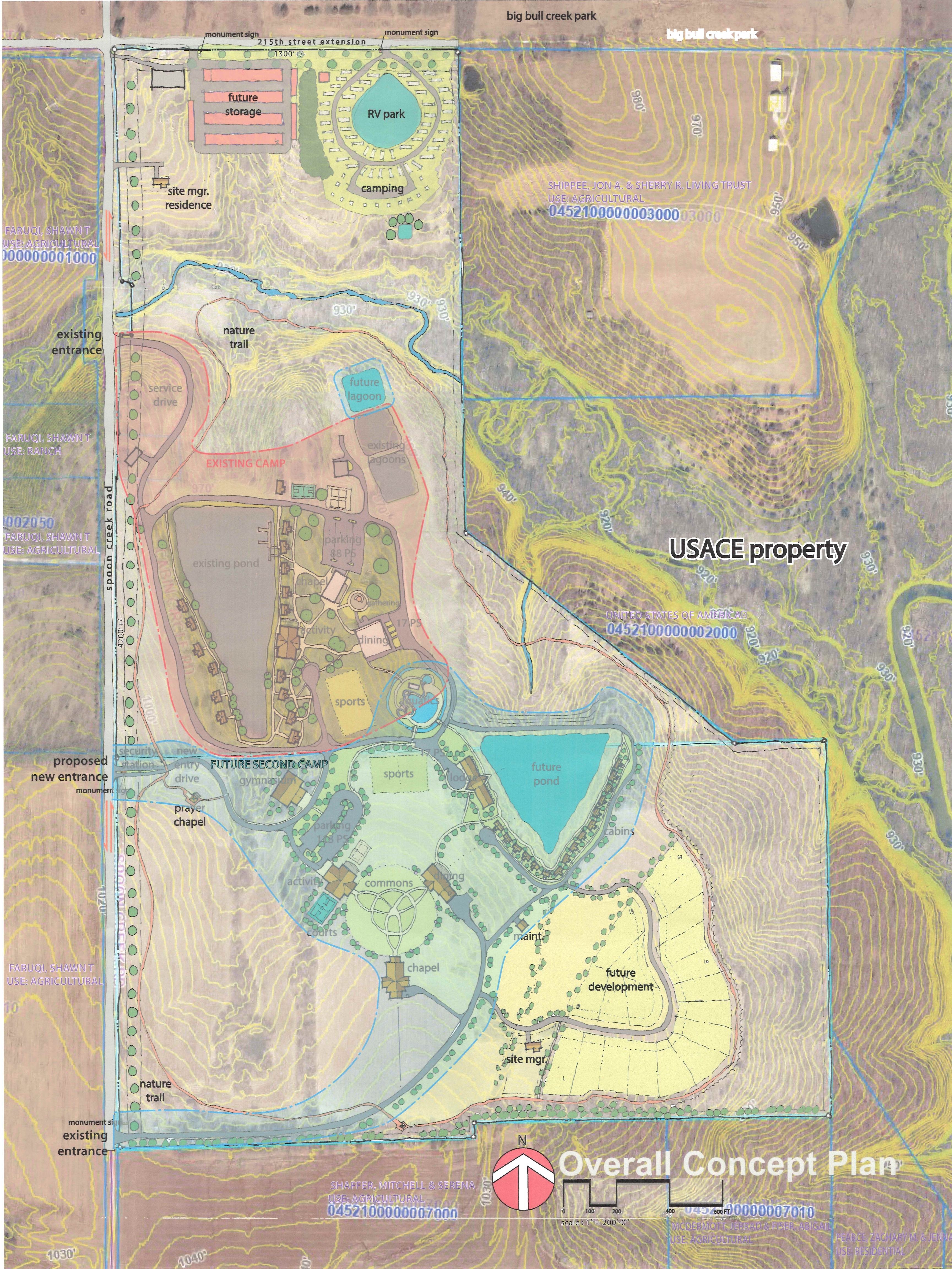
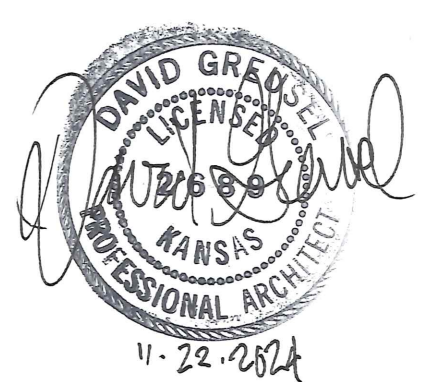
Parking Tabulation	
Existing Camp	105 FS
Future Camp	130 FS
Total Current & Proposed	235 FS
RV Park	51 sites
Storage Units	0 FS

**Legal Descriptions:**

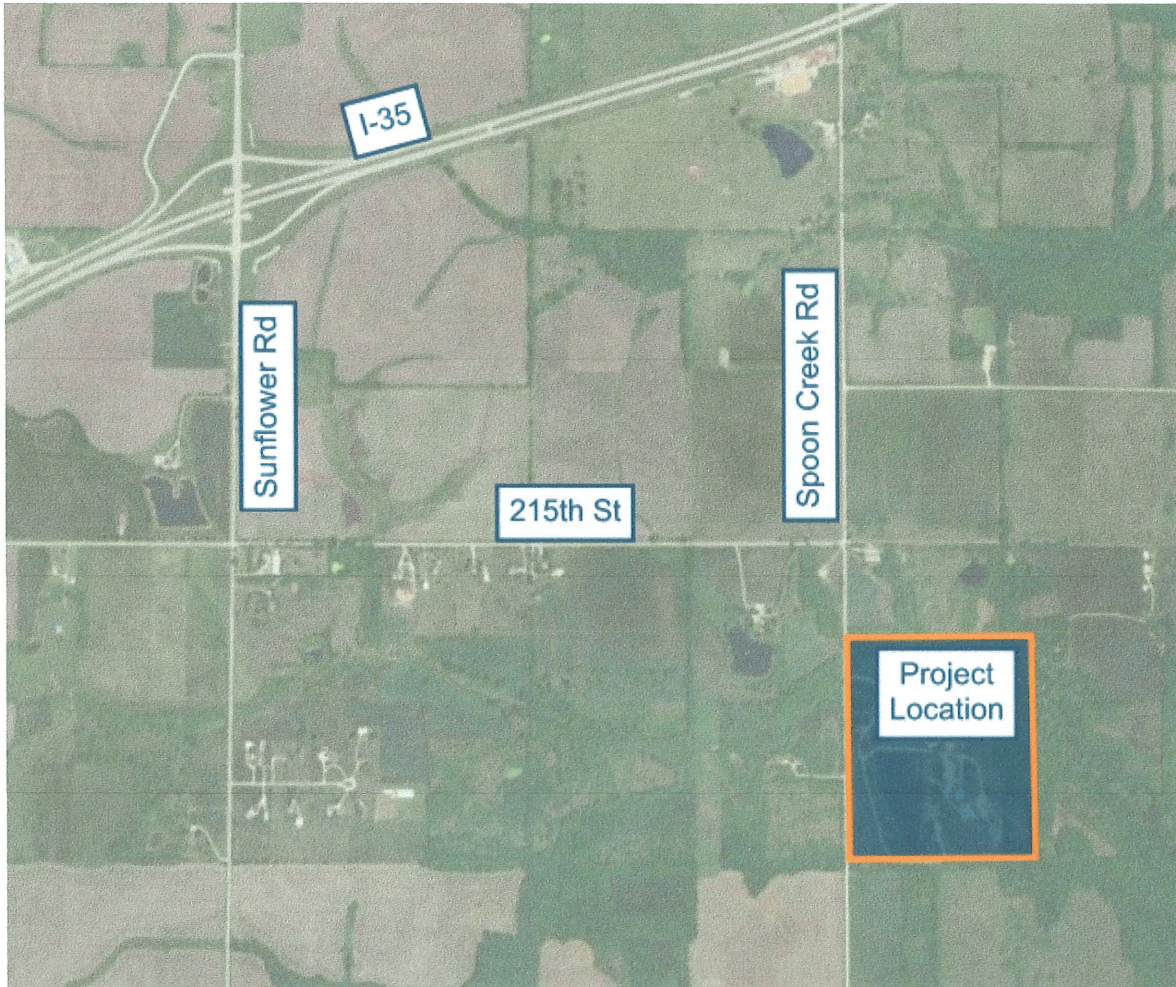
21667 Spoon Creek Road, Edgerton, KS 66021, Parcel 045210000004000: The South half of the Northwest Quarter (1/4) of the Northwest Quarter (1/4) of Section Twenty-one (21), Township Fifteen (15), Range Twenty-Two (22), in Miami County, Kansas, according to the recorded plat thereof. Accepting: Beginning at the northwest corner of said SE1/2, NW1/4 of Section 21; thence westerly along the north line of said SE1/2, NW1/4 to a point, said point being 180 feet east of the northwest corner of said SE1/2, NW1/4; thence southerly parallel with the west line of said SE1/2, NW1/4 to a line described as beginning at the southwest corner of the NW1/4, SW1/4, NW1/4, SE1/4, NW1/4 of said Section 21 and extending in a southeasterly direction to the southeast corner of SW1/4, SE1/4, SE1/4, NW1/4 of said Section 21; thence in a southeasterly direction along said described line to the southeast corner of said SW1/4, SE1/4, SE1/4, NW1/4; thence easterly along the south line of said SE1/2, NW1/4 to the southeast corner thereof; thence northerly along the east line of said SE1/2, NW1/4 to the point of beginning, containing 28.22 acres, more or less. AND All of that part of the S1/2, NW1/4, NW1/4, the NE1/4, NE1/4, SW1/4, NW1/4, and the west 180 feet of the W1/2, NW1/4, SE1/4, NW1/4 of Section 21, Township 15 South, Range 22, East of the Sixth Principal Meridian, Miami County, Kansas, lying below elevation 926" (m.s.l.), containing 10.68 acres of land, more or less. Total remaining parcel containing 98 acres more or less.

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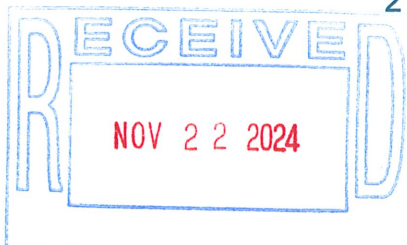
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# Youthfront Camp West Traffic Impact Study



21667 Spoon Creek Road  
Edgerton, KS





October 23, 2024

Topher Philgreen  
Youthfront  
Executive Vice President of Strategic Initiatives  
4600 Rainbow Blvd  
Kansas City, KS 66103

**RE: Traffic Study for Youthfront Camp West Master Plan  
21667 Spoon Creek Road, Edgerton, Kansas**

BHC has reviewed the traffic impact of the proposed 25-year Master Plan for Youthfront Camp West at 21667 Spoon Creek Road.

**EXISTING CONDITIONS**

Youthfront has eight decades of youth ministry history at this location. Virtually all campers and visitors commute to the site from the interchange of I-35 and Sunflower Road. From I-35, visitors travel a half mile south on Sunflower Road, a paved two-lane 45mph road. From Sunflower Road, they travel one mile east on 215<sup>th</sup> Street, a 22' wide gravel 35mph road. The intersection of Sunflower Road and 215<sup>th</sup> Street is two-way Stop sign controlled in the east-west directions. Vehicles then head south 1100' on Spoon Creek Road, a 22' wide gravel road to the Camp West entrance.

See Figure 1 for a location map of Youthfront Camp West.



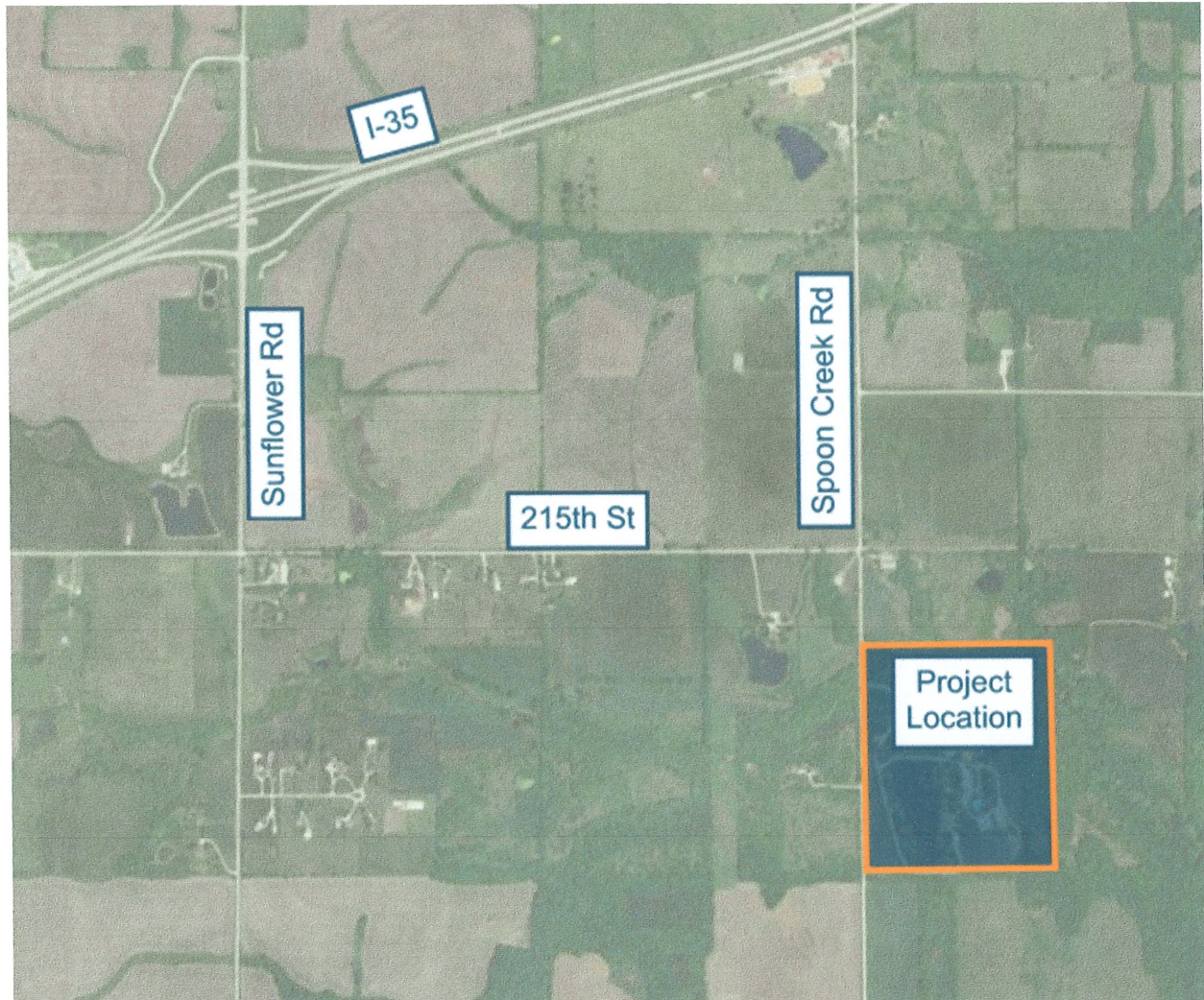
913.663.1900



ibhc.com



7101 College Blvd., Ste. 400



**Figure 1: Location Map**

Youthfront Camp West's summer camp operations run 11-weeks from early June to early August. At peak times, staff may consist of 24 teenagers and 30 summer staff. Staff typically arrive a day before the campers and leave several hours after camp ends. The camp has operated with 15 cabins since 1972, there are presently 16 cabins. Each cabin can hold 16 youth and 2 adults. The maximum number of campers is 256. The adults arrive the evening before and leave a few hours after camp dismisses.

Youthfront also runs smaller weekend camps, not during the summer sessions, from August 15<sup>th</sup> to Thanksgiving and from Valentines Day to May 1<sup>st</sup>. These camps average 100 campers. They typically arrive in groups (church vans or buses) arriving Friday evening and dismissing on Sunday mornings. These camps generate significantly less traffic than the summer sessions. This study will focus only on the impact of a fully operating summer camp.

**EXISTING CONDITIONS (CONTINUED)**

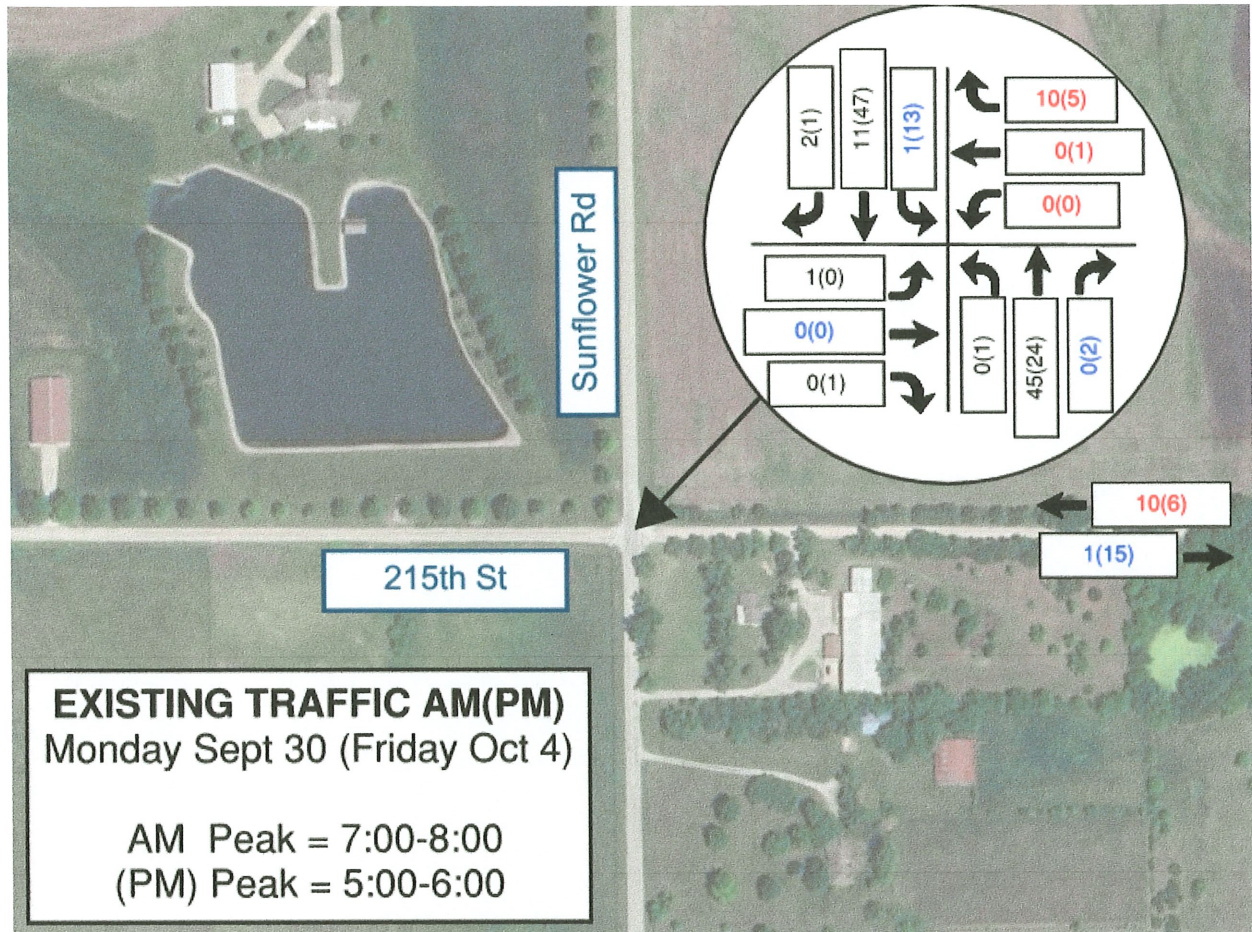
Table 1 provides the 11-week summer camp schedule for year 2025.

<b>Table 1: Youthfront Camp West 2025 Schedule</b>					
<b>Week</b>	<b>Days</b>	<b>Camp</b>	<b>Max # Campers</b>	<b>Arrival Hours</b>	<b>Dismissal Hours</b>
June 2	M-F	Middle/High School	256	M 7-9 AM	F 5-7 PM
June 9	M-F	Middle School	256	M 7-9 AM	F 5-7 PM
June 16	M-F	Middle School	256	M 7-9 AM	F 5-7 PM
June 23	M-W	Kids Camp	256	M 7-9 AM	W 5-7 PM
June 26	R-SAT	Kids Camp	256	R 7-9 AM	SAT 5-7 PM
June 30	M-R	Kids Camp	256	M 7-9 AM	R 5-7 PM
July 9	W-SAT	Kids Camp	256	W 7-9 AM	SAT 5-7 PM
July 14	M-F	Middle School	256	M 7-9 AM	F 5-7 PM
July 21	M-F	Middle School	256	M 7-9 AM	F 5-7 PM
July 28	M-F	Middle School	256	M 7-9 AM	F 5-7 PM
August 4	M-F	Middle/High School	256	M 7-9 AM	F 5-7 PM

The purpose of providing the summer camp schedule is to document the 22-days and time periods Youthfront generates the most traffic. Traffic generated by the camp is significantly less, or non-existent, for the majority of the calendar year.

**EXISTING TRAFFIC COUNTS**

Morning and evening peak hour traffic counts were taken at Sunflower Road and 215<sup>th</sup> Street on Monday, September 30<sup>th</sup> from 7:00-10:00 AM and Friday, October 4<sup>th</sup> from 5:00-7:00 PM. These days of the week and times were selected based on the days and times in Table 1. The results of the peak 60-minute periods on the AM and PM periods represent the existing peak hour periods and can be seen in Figure 2.



**Figure 2: Existing Traffic**

A daily 24-hour volume count was not conducted along 215<sup>th</sup> Street between Sunflower Road and Spoon Creek Road. Daily average traffic volumes can be extrapolated by a widely accepted standard that 10% of the daily traffic occurs in each of the AM and PM peak hours respectively. From Figure 2, we can determine there are 11 vehicles on 215<sup>th</sup> Street east of Sunflower in the AM period and 21 vehicles on 215<sup>th</sup> Street in the PM period. These 2-hours of traffic total 32 vehicles and should account for 20% of the daily traffic.

This results in an anticipated existing 24-hour count along 215<sup>th</sup> Street of 160 vehicles per day.

The Kansas Department of Transportation (KDOT) classifies roads carrying less than 400 vehicles per day as low-volume rural roads. Both 215<sup>th</sup> Street and the 1100' of Spoon Creek Road south of 215<sup>th</sup> Street certainly meet this classification for 343 of the 365 days of the year.

**EXISTING CAMP TRIP GENERATION**

The traffic counts were not taken during the summer camp period, and there is no Institute of Transportation Engineering (ITE) land use code for a Youth Summer Camp.

Based on information provided by Youthfront, it is assumed that 1.5 campers arrive per vehicle on average, resulting in 171 vehicles entering and exiting trips for a full camp of 256 youth. These values were entered in the existing summer camp trip generation in Table 2.

<b>Table 2: Existing Summer Camp Trip Generation</b>									
ITE Code	Land Use		Variable	Value	Avg. Rate	Trip Ends			
						Total	Enter	Exit	
<b>AM Peak Hour</b>									
N/A	Youth Camp	Summer	# of Campers	256	N/A	342	171	171	
						<b>Total AM Peak Hour Trips</b>	<b>342</b>	<b>171</b>	<b>171</b>
<b>PM Peak Hour</b>									
N/A	Youth Camp	Summer	# of Campers	256	N/A	342	171	171	
						<b>Total PM Peak Hour Trips</b>	<b>342</b>	<b>171</b>	<b>171</b>

Not all these trips will enter and exit within a peak 60-minute period. However, 215<sup>th</sup> Street and a segment of Spoon Creek Road experience these or similar volume increases over a 2-hour period, on 22-days of the year. This 342 per day increase in average daily traffic has been generally occurring 20-22 times per year for the past 50-years.

The entering and exiting volumes in Table 2 were added to the existing traffic volumes in Figure 2. The results can be seen in Figure 3.

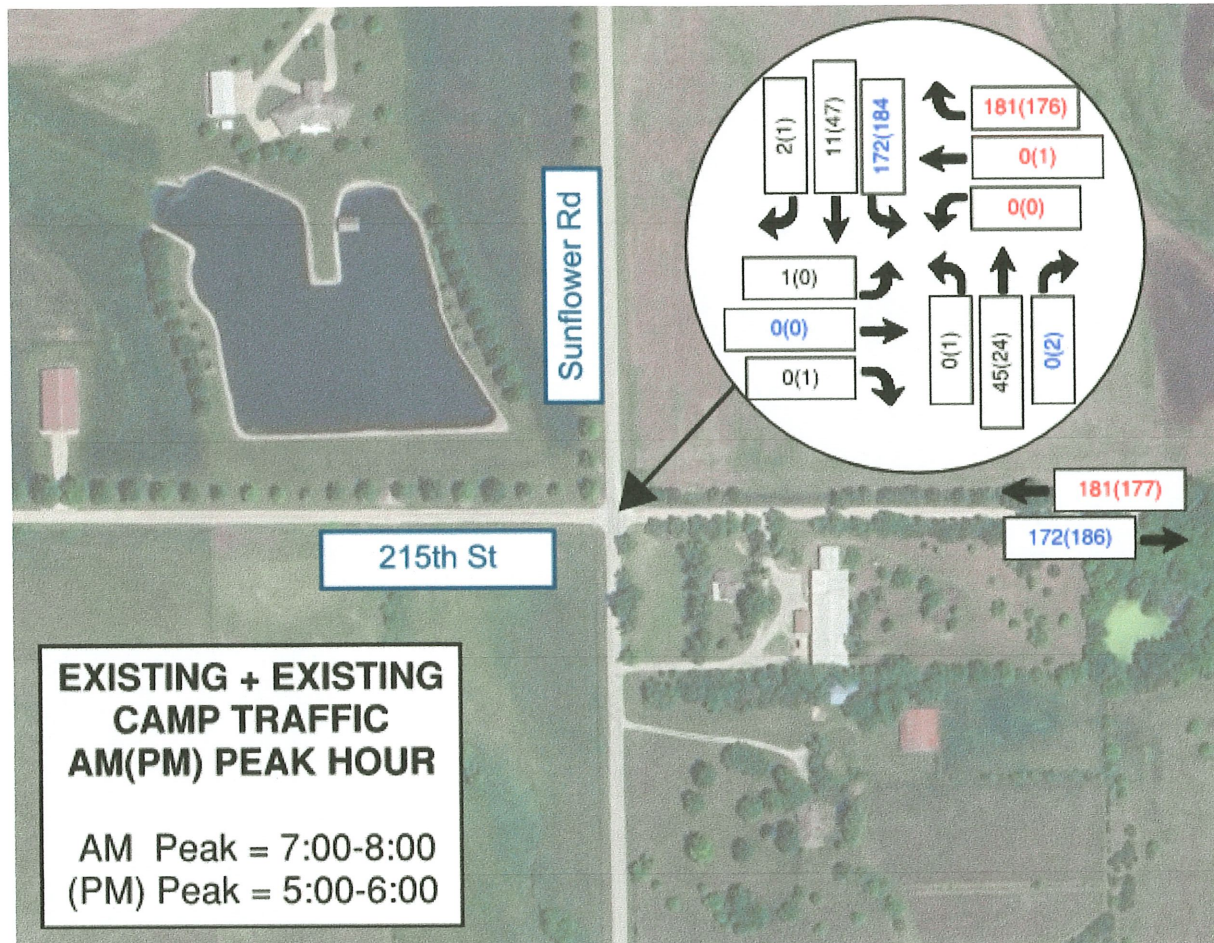


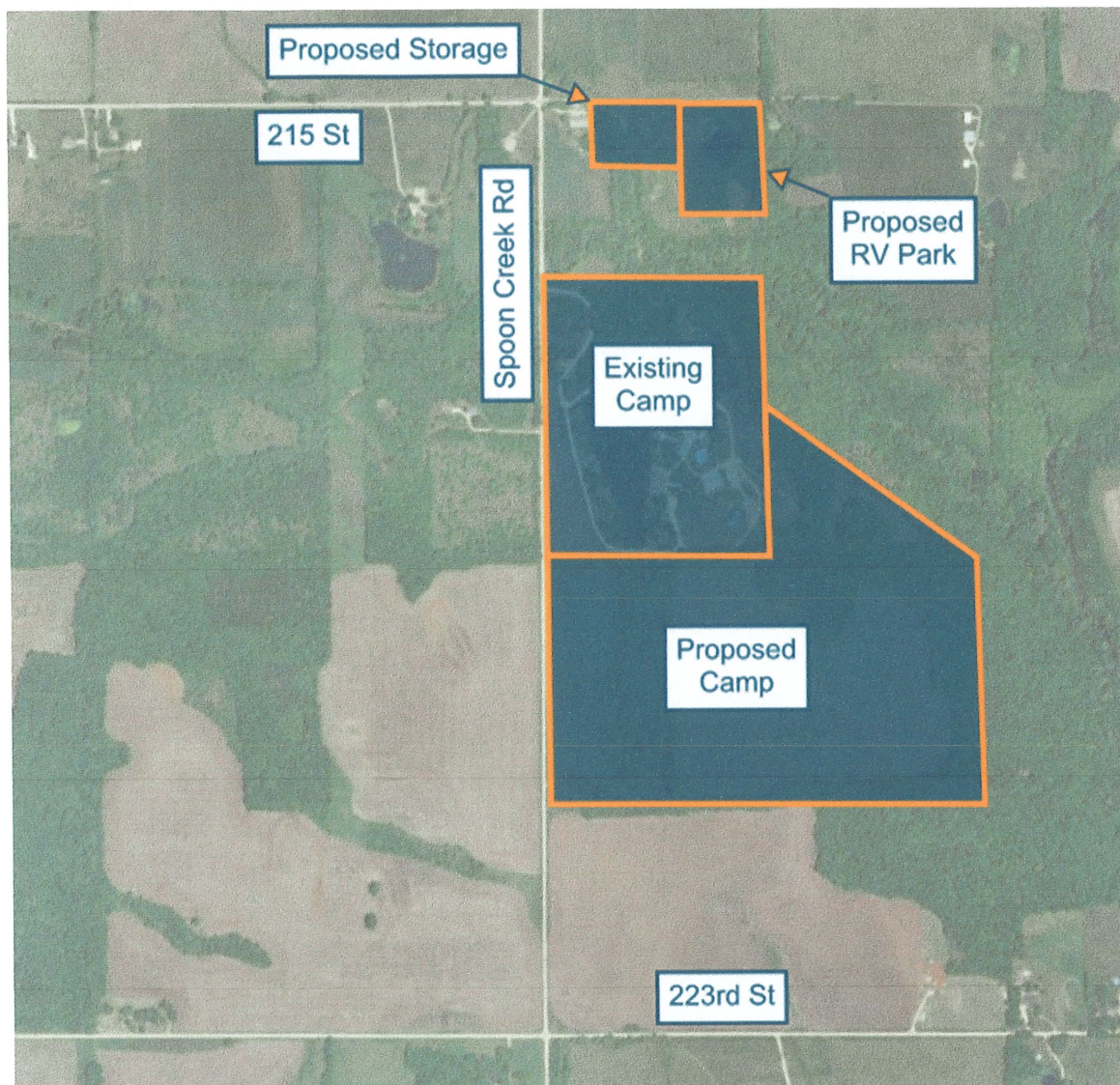
Figure 3 represents highly conservative peak hour volumes for the intersection of Sunflower Road and 215<sup>th</sup> Street. All 171 entering vehicles were added to the southbound left and all 171 exiting vehicles were added to the westbound right-turn.

The 171 vehicle trips generated by a full summer camp session result in a daily 24-hour increase in traffic of 342 vehicles per day.

This results in an anticipated existing 24-hour count along 215<sup>th</sup> Street of 502 vehicles per day, for the 22 days of the year summer camp generates traffic.

## PROPOSED CONDITIONS

The proposed Youthfront West Master Plan intends to double the number of cabins from 16 to 32, placing the new cabins in the area south of the existing campgrounds. The plan also intends to add 75 mini storage units and a RV park with 51 spaces to the north of the existing site. A layout of the proposed site can be seen in Figure 4.



**Figure 4: Proposed Master Plan for Youthfront Camp West**

## PROPOSED CAMP TRIP GENERATION

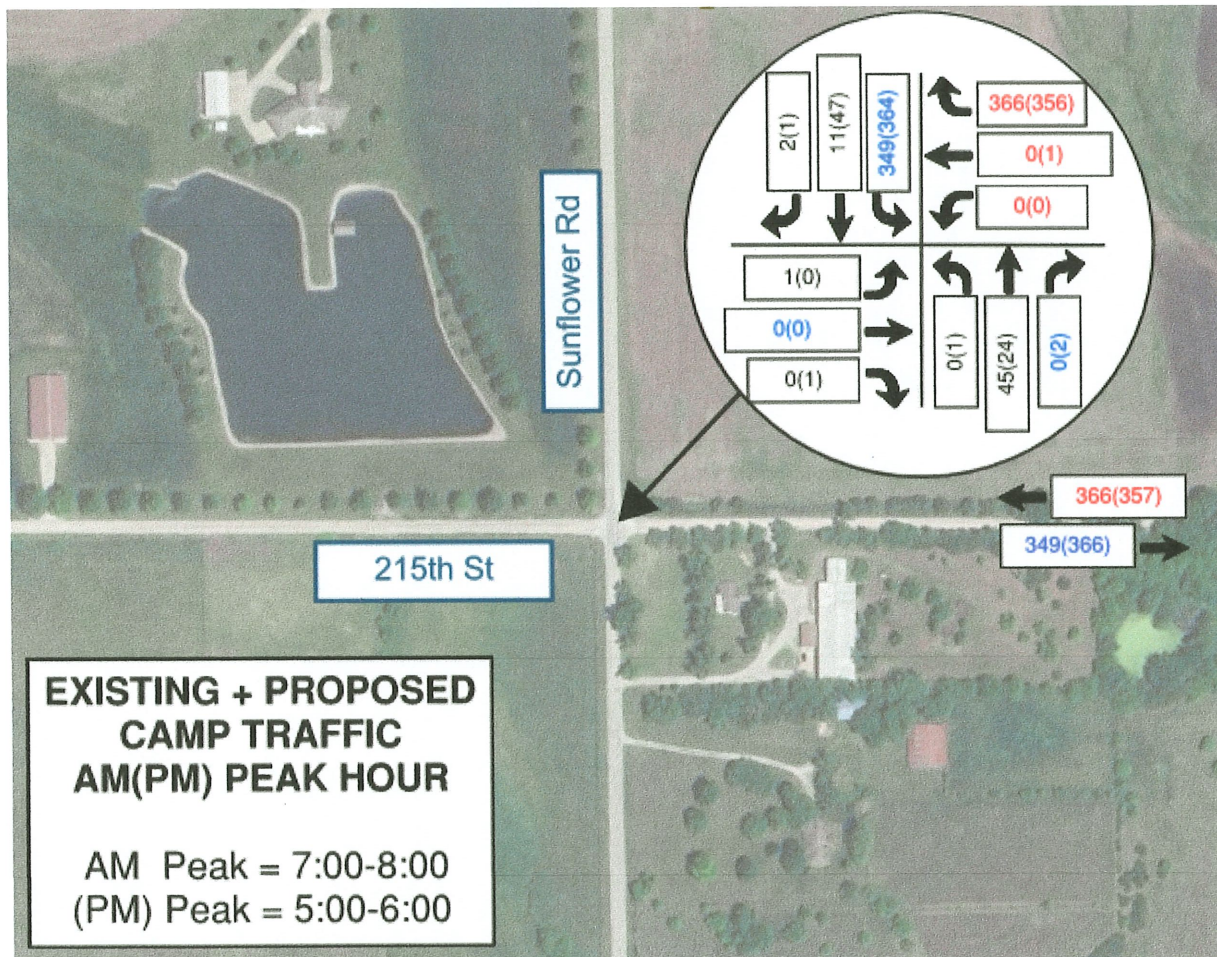
A trip generation analysis for the plan in Figure 4 was performed using the ITE TripGen web-based app. The 11<sup>th</sup> edition of the ITE Trip Generation Manual was used. ITE Land Use Codes (151 Mini-Warehouse) and (416 Campground/Recreational Vehicle Park) were selected as best fit land use codes for the proposed future site. The number of trips generated may be seen in Table 3 for the AM peak hour, PM peak hour, and weekday total.

Table 3: Proposed Youthfront Master Plan Trip Generation							
ITE Code	Land Use	Variable	Value	Avg. Rate	Trip Ends		
					Total	Enter	Exit
<b>AM Peak Hour</b>							
N/A	Youth Summer Camp	# of Campers	256	N/A	342	171	171
151	Mini-Warehouse	Per 100 Units	0.75	2.04	2	1	1
416	Recreation Vehicle Park	Campsites	51	0.25	13	5	8
<b>Total AM Peak Hour Trips</b>					<b>357</b>	<b>177</b>	<b>180</b>
<b>PM Peak Hour</b>							
N/A	Youth Summer Camp	# of Campers	256	N/A	342	171	171
151	Mini-Warehouse	Per 100 Units	0.75	2.07	2	1	1
416	Recreation Vehicle Park	Campsites	51	0.41	21	13	8
<b>Total PM Peak Hour Trips</b>					<b>365</b>	<b>185</b>	<b>180</b>
<b>Weekday</b>							
N/A	Youth Summer Camp	# of Campers	256	N/A	342	171	171
151	Mini-Warehouse	Per 100 Units	0.75	17.96	13	7	6
416	Recreation Vehicle Park	Campsites	51	N/A	34	18	16
<b>Total Weekday Trips</b>					<b>389</b>	<b>196</b>	<b>193</b>

The trip generation analysis conducted in Table 3 was applied to AM and PM peak hour trips in Figure 3 to create the proposed trip generation shown in Figure 5.

**EXISTING + PROPOSED CAMP TRAFFIC**

The existing traffic volumes in Figure 3 were added to the proposed trip generation volumes in Table 3 to determine the Existing + Proposed Camp volumes in Figure 5. The proposed trip generation volumes were added similarly to the existing camp traffic, with all entering trips added to the southbound left and all exiting trips added to the westbound right. Also, similar to the existing camp, this expected traffic will only occur 22 days per year. It should also be noted that these expected volumes will not occur suddenly, but will slowly be reached over the course of the 25-Year Master Plan’s completion. These volumes will be used in the intersection capacity analyses for Existing + Proposed Camp conditions.



**Figure 5: Existing + Proposed Camp Traffic**

The 389 weekday vehicle trips generated by the full development of the proposed Youthfront site results in a daily 24-hour increase in traffic of 389 vehicles per day.

This results in an anticipated existing 24-hour count along 215<sup>th</sup> Street of 891 vehicles per day. For the 22 days of the year that the summer camp generates the most traffic.

## INTERSECTION CAPACITY ANALYSES

Intersection capacity analyses were performed using the Highway Capacity Manual (HCM) Methodology provided in Synchro v11. The amount of delay is equated to a Level of Service (LOS) based on defined thresholds. A grade of A through F is assigned, with LOS A representing the best intersection operation. Table 4 shows the LOS associated with intersection approach delays, in seconds per vehicle (sec/veh), for signalized and unsignalized intersection cases.

Table 4 – Level of Service Criteria		
Level of Service (LOS)	Stop Control Approach Delay (sec/veh)	Signal Control Approach Delay (sec/veh)
A	≤ 10	≤ 10
B	> 10 and ≤ 15	> 10 and ≤ 20
C	> 15 and ≤ 25	> 20 and ≤ 35
D	> 25 and ≤ 35	> 35 and ≤ 55
E	> 35 and ≤ 50	> 55 and ≤ 80
F	> 50	> 80

Analyses were performed for the Existing, Existing + Existing Camp, and Existing + Proposed Camp peak hour volumes shown in Figures 2, 3, and 5, respectively. The results of these analyses may be viewed in Tables 5 & 6.

Table 5 – Intersection Capacity Analyses										
		Existing Conditions				Existing + Existing Camp Conditions				
		AM		PM		AM		PM		
Intersection		Avg. Delay (sec)	LOS	Avg. Delay (sec)	LOS	Avg. Delay (sec)	LOS	Avg. Delay (sec)	LOS	LOS
<b>215<sup>th</sup> St and Sunflower Rd</b>						<b>(Two-Way Stop)</b>				
	NB	0	A	0.3	A	0	A	0.3	A	A
	SB	0.5	A	1.6	A	7.1	A	6	A	A
	EB	9	A	8.5	A	15.8	C	8.5	A	A
	WB	8.6	A	8.7	A	9.4	A	9.3	A	A

Table 6 – Intersection Capacity Analyses					
		Existing + Proposed Camp Conditions			
		AM		PM	
Intersection		Avg. Delay (sec)	LOS	Avg. Delay (sec)	LOS
<b>215<sup>th</sup> St and Sunflower Rd</b>			<b>(Two-Way Stop)</b>		
	NB	0	A	0.3	A
	SB	7.8	A	7.1	A
	EB	39.3	E	8.5	A
	WB	10.8	B	10.5	B

For low volume side streets, LOS of E is acceptable. One vehicle per hour may wait 39 seconds for a break in traffic.

## MAIN FINDINGS

This section provides a summary of the main findings of this study:

### Existing Conditions

- 215<sup>th</sup> Street on a non-summer camp day experiences an estimated 160 vehicles per day. This occurs around 343 days of the year.
- The existing overall intersection LOS for the peak hours at 215<sup>th</sup> Street and Sunflower Road is LOS A.

### Existing + Existing Camp Conditions

- 215<sup>th</sup> Street on a summer camp arrival/dismissal day experiences an estimated 502 vehicles per day. This increase occurs 22 days of the year
- The existing camp generates a conservative estimate of 171 trips entering and 171 trips exiting when camp arrives, and a few days later when camp dismisses.
- The existing overall intersection LOS for the peak hours under these conditions at 215<sup>th</sup> Street and Sunflower is LOS A except for the low volume eastbound approach, which operates at an overall LOS of C.

### Existing + Proposed Camp Conditions

- 215<sup>th</sup> Street on a summer camp arrival/dismissal day for the ultimate proposed condition will experience an estimated 891 vehicles per day. This increase only occurs 22 days of the year.
- The proposed camp with RV Park and Mini-storage intends to add 177 entering and 180 exiting trips in the AM peak hour and 185 entering and 180 exiting PM peak hour trips.
- The proposed overall intersection LOS for the peak hours under these conditions at 215<sup>th</sup> Street and Sunflower is LOS B or higher except for the eastbound approach, which operates at an overall LOS of E (caused by 1 single left-turn trip).
- The increase in traffic will occur over the course of the 25-year Master Plan's completion.

## CONCLUSION AND RECOMMENDATIONS

For the past 50 years, Youthfront's 11-week summer camp has significantly increased traffic along 215th Street and Spoon Creek Road, but only for 22 days each year.

Currently, the baseline 24-hour traffic volume on 215th Street is 160 vehicles per day. During the 22 peak days of summer camp, this volume increases to approximately 502 vehicles per day.

The proposed 25-Year Master Plan includes doubling the number of campers, adding 75 storage units, and 51 RV campsites. The 11-week summer camp schedule would remain unchanged, maintaining the same 22 peak traffic days. Once fully implemented, the Master Plan is expected to generate an additional 389 vehicles per day, increasing the 24-hour traffic volume on 215th Street to approximately 891 vehicles per day.

Several conservative assumptions were made for this study:

- It was assumed that 1.5 campers arrive per vehicle. If carpooling is higher, actual traffic on 215th Street would be lower.
- All traffic was assumed to use I-35 via Sunflower Road and 215th Street. A small percentage of traffic arrives from the south, which would further reduce traffic estimates on 215th Street.
- It was assumed that all arriving and departing vehicles would travel on 215th Street within a single 60-minute peak hour, although in reality, this process extends over two hours.

Analysis of the intersection of Sunflower Road and 215th Street, based on trip generation and peak hour assumptions, indicates acceptable Levels of Service. The intersection of 215th Street and Spoon Creek Road, a T-intersection, presents no capacity concerns.

No road improvements are required for this development. It is important to note that for 41 weeks of the year, 215th Street functions as a low-volume rural road.

Recognizing Youthfront's long-term plan to double the number of summer campers, it is recommended that Youthfront implement dust abatement measures, at their cost, along the gravel sections of 215th Street and Spoon Creek Road adjacent to residential homes facing the roadway. An annual dust treatment each June would be beneficial. Given that full expansion may take several years, this treatment should begin once 8 of the proposed 16 additional campsites are operational.

If there are any questions regarding this study, please contact me at your convenience at 816-898-0669 or [mark.sherfy@ibhc.com](mailto:mark.sherfy@ibhc.com).

Sincerely,   
Mark Sherfy, PE, PTOE  
Vice-President | Development Group Director  
BHC

# APPENDICES

## APPENDIX A - TRAFFIC COUNTS

- 215<sup>th</sup> Street and Sunflower Road

## APPENDIX B – ITE TRIP GENERATION REPORTS

## APPENDIX C - CAPACITY AND QUEUING ANALYSES

- 215<sup>th</sup> Street and Sunflower Road
  - AM Existing
  - PM Existing
  - AM Existing + Existing Camp
  - PM Existing + Existing Camp
  - AM Existing + Proposed Camp
  - PM Existing + Proposed Camp

# **APPENDIX A TRAFFIC COUNTS**

**TRAFFIC COUNTS  
215th Street and  
Sunflower Road**

215th Street & Sunflower Road - IMC

Mon Sep 30, 2024

Full Length (7 AM-10 AM)

All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)

All Movements

ID: 1229799, Location: 38.73847, -95.000858



Provided by: Gewalt Hamilton Associates Inc.  
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

Leg Direction	Sunflower Road Southbound					215th Street Westbound					Sunflower Road Northbound					215th Street Eastbound					Int
	R	T	L	U	App	R	T	L	U	App	R	T	L	U	App	R	T	L	U	App	
2024-09-30 7:00AM	0	6	0	0	6	2	0	0	0	2	0	12	0	0	12	0	0	0	0	0	20
7:15AM	0	0	1	0	1	1	0	0	0	1	0	14	0	0	14	0	0	0	0	0	16
7:30AM	2	4	0	0	6	4	0	0	0	4	0	6	0	0	6	0	0	0	0	0	16
7:45AM	0	1	0	0	1	3	0	0	0	3	0	13	0	0	13	0	0	1	0	1	18
Hourly Total	2	11	1	0	14	10	0	0	0	10	0	45	0	0	45	0	0	1	0	1	70
8:00AM	0	1	1	0	2	0	0	0	0	0	0	5	0	0	5	0	0	1	0	1	8
8:15AM	0	4	0	0	4	0	0	0	0	0	0	8	0	0	8	0	0	0	0	0	12
8:30AM	0	4	1	0	5	0	0	0	0	0	0	6	0	0	6	0	0	0	0	0	11
8:45AM	0	3	2	0	5	1	0	0	0	1	0	7	0	0	7	0	0	0	0	0	13
Hourly Total	0	12	4	0	16	1	0	0	0	1	0	26	0	0	26	0	0	1	0	1	44
9:00AM	0	5	1	0	6	1	0	0	0	1	0	4	0	0	4	0	0	0	0	0	11
9:15AM	0	4	9	0	13	0	0	0	0	0	0	7	0	0	7	0	0	0	0	0	20
9:30AM	0	5	1	0	6	0	0	0	0	0	0	5	0	0	5	0	0	0	0	0	11
9:45AM	0	5	0	0	5	0	0	0	0	0	0	4	0	0	4	0	0	1	0	1	10
Hourly Total	0	19	11	0	30	1	0	0	0	1	0	20	0	0	20	0	0	1	0	1	52
<b>Total</b>	2	42	16	0	60	12	0	0	0	12	0	91	0	0	91	0	0	3	0	3	166
<b>% Approach</b>	3.3%	70.0%	26.7%	0%	-	100%	0%	0%	0%	-	0%	100%	0%	0%	-	0%	0%	100%	0%	-	-
<b>% Total</b>	1.2%	25.3%	9.6%	0%	36.1%	7.2%	0%	0%	0%	7.2%	0%	54.8%	0%	0%	54.8%	0%	0%	1.8%	0%	1.8%	-
<b>Lights</b>	2	38	16	0	56	11	0	0	0	11	0	89	0	0	89	0	0	3	0	3	159
<b>% Lights</b>	100%	90.5%	100%	0%	93.3%	91.7%	0%	0%	0%	91.7%	0%	97.8%	0%	0%	97.8%	0%	0%	100%	0%	100%	95.8%
<b>Articulated Trucks</b>	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	2
<b>% Articulated Trucks</b>	0%	2.4%	0%	0%	1.7%	0%	0%	0%	0%	0%	0%	1.1%	0%	0%	1.1%	0%	0%	0%	0%	0%	1.2%
<b>Buses and Single-Unit Trucks</b>	0	3	0	0	3	1	0	0	0	1	0	1	0	0	1	0	0	0	0	0	5
<b>% Buses and Single-Unit Trucks</b>	0%	7.1%	0%	0%	5.0%	8.3%	0%	0%	0%	8.3%	0%	1.1%	0%	0%	1.1%	0%	0%	0%	0%	0%	3.0%

\*L: Left, R: Right, T: Thru, U: U-Turn

215th Street & Sunflower Road - IMC

Fri Oct 4, 2024

Full Length (5 PM-7 PM)

All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)

All Movements

ID: 1229800, Location: 38.73847, -95.000858



Provided by: Gewalt Hamilton Associates Inc.  
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

Leg Direction	Sunflower Road Southbound					215th Street Westbound					Sunflower Road Northbound					215th Street Eastbound						
Time	R	T	L	U	App	R	T	L	U	App	R	T	L	U	App	R	T	L	U	App	Int	
2024-10-04 5:00PM	0	11	2	0	13	2	0	0	0	2	0	6	0	0	6	0	0	0	0	0	0	21
5:15PM	0	19	5	0	24	1	0	0	0	1	1	7	0	0	8	0	0	0	0	0	0	33
5:30PM	1	11	5	0	17	1	0	0	0	1	1	6	0	0	7	1	0	0	0	1	1	26
5:45PM	0	6	1	0	7	1	1	0	0	2	0	5	1	0	6	0	0	0	0	0	0	15
Hourly Total	1	47	13	0	61	5	1	0	0	6	2	24	1	0	27	1	0	0	0	1	1	95
6:00PM	0	9	2	0	11	0	0	0	0	0	0	7	0	0	7	0	0	0	0	0	0	18
6:15PM	0	4	8	0	12	5	0	0	0	5	0	6	0	0	6	0	0	0	0	0	0	23
6:30PM	1	8	12	0	21	0	0	0	0	0	0	7	0	0	7	0	0	0	0	0	0	28
6:45PM	0	9	5	0	14	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	16
Hourly Total	1	30	27	0	58	5	0	0	0	5	0	22	0	0	22	0	0	0	0	0	0	85
<b>Total</b>	2	77	40	0	119	10	1	0	0	11	2	46	1	0	49	1	0	0	0	1	1	180
<b>% Approach</b>	1.7%	64.7%	33.6%	0%	-	90.9%	9.1%	0%	0%	-	4.1%	93.9%	2.0%	0%	-	100%	0%	0%	0%	-	-	-
<b>% Total</b>	1.1%	42.8%	22.2%	0%	66.1%	5.6%	0.6%	0%	0%	6.1%	1.1%	25.6%	0.6%	0%	27.2%	0.6%	0%	0%	0%	0.6%	-	-
<b>Lights</b>	2	74	40	0	116	10	1	0	0	11	2	45	1	0	48	1	0	0	0	1	1	176
<b>% Lights</b>	100%	96.1%	100%	0%	97.5%	100%	100%	0%	0%	100%	100%	97.8%	100%	0%	98.0%	100%	0%	0%	0%	100%	97.8%	97.8%
<b>Articulated Trucks</b>	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
<b>% Articulated Trucks</b>	0%	1.3%	0%	0%	0.8%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0.6%
<b>Buses and Single-Unit Trucks</b>	0	2	0	0	2	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	3
<b>% Buses and Single-Unit Trucks</b>	0%	2.6%	0%	0%	1.7%	0%	0%	0%	0%	0%	0%	2.2%	0%	0%	2.0%	0%	0%	0%	0%	0%	0%	1.7%

\* L: Left, R: Right, T: Thru, U: U-Turn

215th Street & Sunflower Road - IMC

Mon Sep 30, 2024

AM Peak (7 AM - 8 AM) - Overall Peak Hour

All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)

All Movements

ID: 1229799, Location: 38.73847, -95.000858



Provided by: Gewalt Hamilton Associates Inc.  
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

Leg Direction	Sunflower Road Southbound					215th Street Westbound					Sunflower Road Northbound					215th Street Eastbound						
Time	R	T	L	U	App	R	T	L	U	App	R	T	L	U	App	R	T	L	U	App	Int	
2024-09-30 7:00AM	0	6	0	0	6	2	0	0	0	2	0	12	0	0	12	0	0	0	0	0	0	20
7:15AM	0	0	1	0	1	1	0	0	0	1	0	14	0	0	14	0	0	0	0	0	0	16
7:30AM	2	4	0	0	6	4	0	0	0	4	0	6	0	0	6	0	0	0	0	0	0	16
7:45AM	0	1	0	0	1	3	0	0	0	3	0	13	0	0	13	0	0	1	0	1	1	18
<b>Total</b>	2	11	1	0	14	10	0	0	0	10	0	45	0	0	45	0	0	1	0	1	1	70
<b>% Approach</b>	14.3%	78.6%	7.1%	0%	-	100%	0%	0%	0%	-	0%	100%	0%	0%	-	0%	0%	100%	0%	-	-	-
<b>% Total</b>	2.9%	15.7%	1.4%	0%	20.0%	14.3%	0%	0%	0%	14.3%	0%	64.3%	0%	0%	64.3%	0%	0%	1.4%	0%	1.4%	-	-
<b>PHF</b>	0.250	0.458	0.250	-	0.583	0.625	-	-	-	0.625	-	0.804	-	-	0.804	-	-	0.250	-	0.250	0.875	0.875
<b>Lights</b>	2	10	1	0	13	9	0	0	0	9	0	44	0	0	44	0	0	1	0	1	1	67
<b>% Lights</b>	100%	90.9%	100%	0%	92.9%	90.0%	0%	0%	0%	90.0%	0%	97.8%	0%	0%	97.8%	0%	0%	100%	0%	100%	95.7%	95.7%
<b>Articulated Trucks</b>	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	1
<b>% Articulated Trucks</b>	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	2.2%	0%	0%	2.2%	0%	0%	0%	0%	0%	0%	1.4%
<b>Buses and Single-Unit Trucks</b>	0	1	0	0	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	2
<b>% Buses and Single-Unit Trucks</b>	0%	9.1%	0%	0%	7.1%	10.0%	0%	0%	0%	10.0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	2.9%

\*L: Left, R: Right, T: Thru, U: U-Turn

215th Street & Sunflower Road - I/MC

Mon Sep 30, 2024

AM Peak (7 AM - 8 AM) - Overall Peak Hour

All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)

All Movements

ID: 1229799, Location: 38.73847, -95.000858



Provided by: Gewalt Hamilton Associates Inc.  
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

[N] Sunflower Road

Total: 70

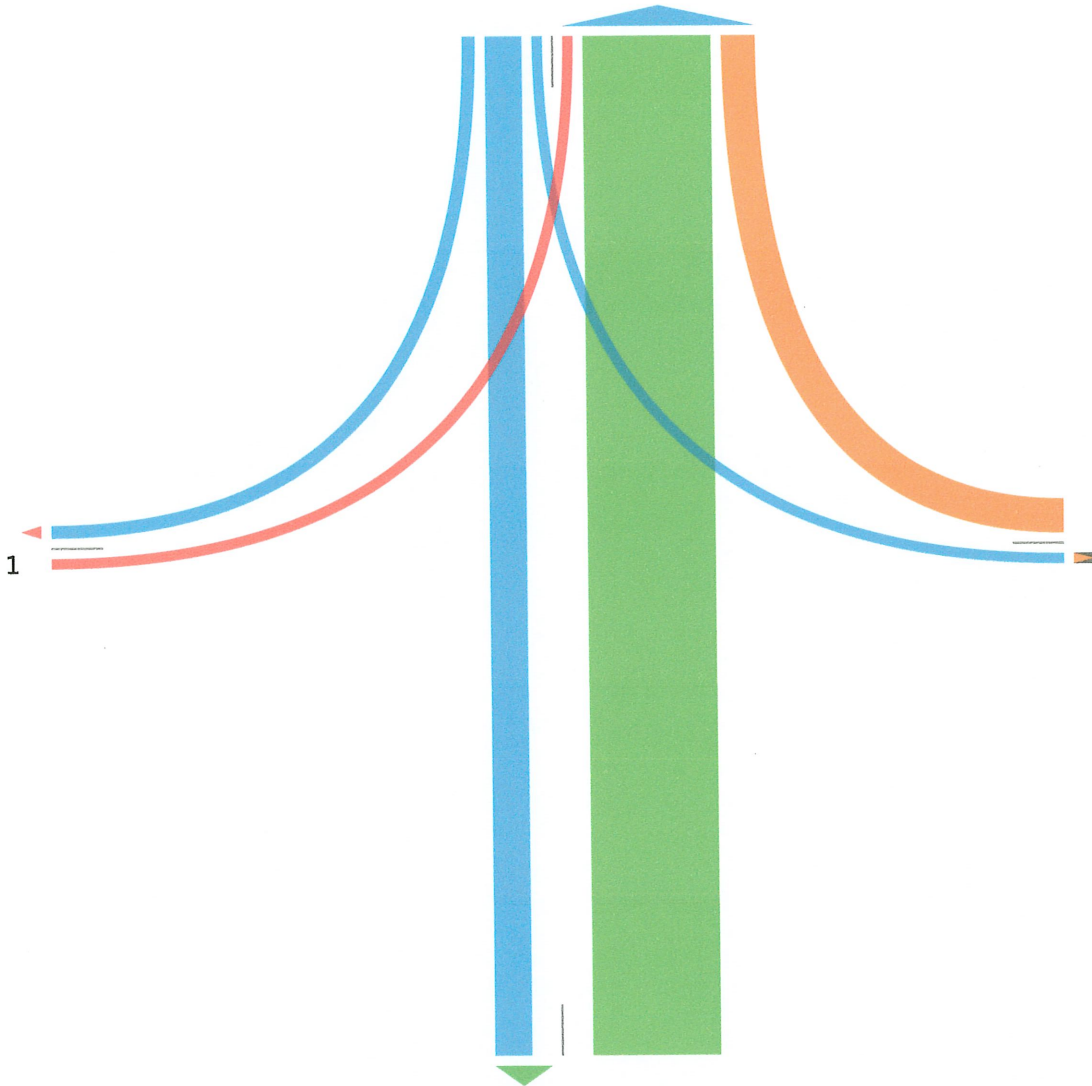
In: 14 Out: 56

2 11 1

[W] 215th Street

Total: 3

In: 1 Out: 2



10

Out: 1 In: 10

Total: 11

[E] 215th Street

45

Out: 11 In: 45

Total: 56

[S] Sunflower Road

215th Street & Sunflower Road - IMC

Fri Oct 4, 2024

PM Peak (5 PM - 6 PM) - Overall Peak Hour

All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)

All Movements

ID: 1229800, Location: 38.73847, -95.000858



Provided by: Gewalt Hamilton Associates Inc.  
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

Leg Direction	Sunflower Road Southbound					215th Street Westbound					Sunflower Road Northbound					215th Street Eastbound					
Time	R	T	L	U	App	R	T	L	U	App	R	T	L	U	App	R	T	L	U	App	Int
2024-10-04 5:00PM	0	11	2	0	13	2	0	0	0	2	0	6	0	0	6	0	0	0	0	0	21
5:15PM	0	19	5	0	24	1	0	0	0	1	1	7	0	0	8	0	0	0	0	0	33
5:30PM	1	11	5	0	17	1	0	0	0	1	1	6	0	0	7	1	0	0	0	1	26
5:45PM	0	6	1	0	7	1	1	0	0	2	0	5	1	0	6	0	0	0	0	0	15
<b>Total</b>	1	47	13	0	61	5	1	0	0	6	2	24	1	0	27	1	0	0	0	1	95
<b>% Approach</b>	1.6%	77.0%	21.3%	0%	-	83.3%	16.7%	0%	0%	-	7.4%	88.9%	3.7%	0%	-	100%	0%	0%	0%	-	-
<b>% Total</b>	1.1%	49.5%	13.7%	0%	64.2%	5.3%	1.1%	0%	0%	6.3%	2.1%	25.3%	1.1%	0%	28.4%	1.1%	0%	0%	0%	1.1%	-
<b>PHF</b>	0.250	0.618	0.650	-	0.635	0.625	0.250	-	-	0.750	0.500	0.857	0.250	-	0.844	0.250	-	-	-	0.250	0.720
<b>Lights</b>	1	45	13	0	59	5	1	0	0	6	2	24	1	0	27	1	0	0	0	1	93
<b>% Lights</b>	100%	95.7%	100%	0%	96.7%	100%	100%	0%	0%	100%	100%	100%	100%	0%	100%	100%	0%	0%	0%	100%	97.9%
<b>Articulated Trucks</b>	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
<b>% Articulated Trucks</b>	0%	2.1%	0%	0%	1.6%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	1.1%
<b>Buses and Single-Unit Trucks</b>	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
<b>% Buses and Single-Unit Trucks</b>	0%	2.1%	0%	0%	1.6%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	1.1%

\*L: Left, R: Right, T: Thru, U: U-Turn

215th Street & Sunflower Road - I/MC

Fri Oct 4, 2024

PM Peak (5 PM - 6 PM) - Overall Peak Hour

All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)

All Movements

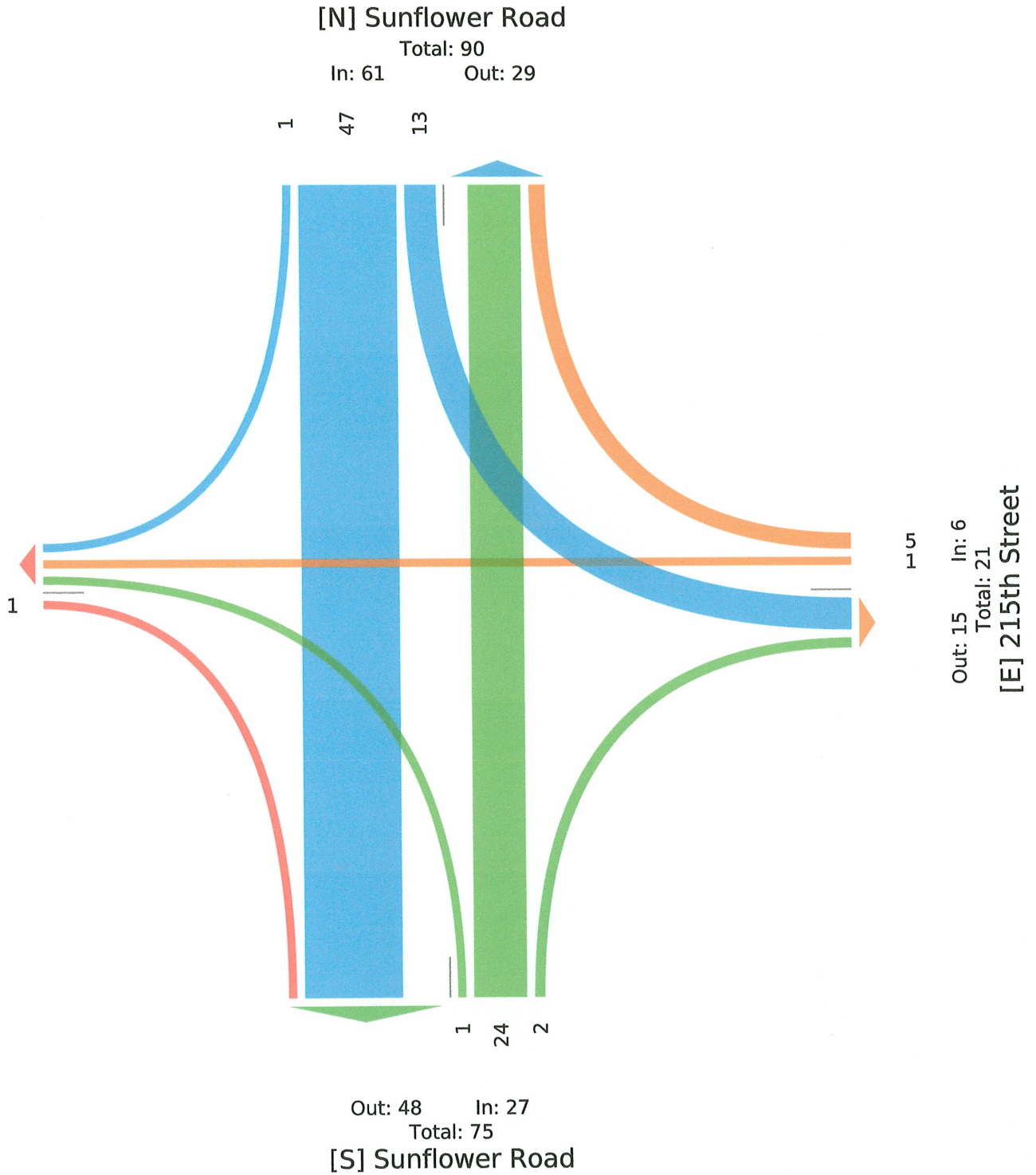
ID: 1229800, Location: 38.73847, -95.000858



Provided by: Gewalt Hamilton Associates Inc.  
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

[W] 215th Street

Total: 4  
In: 1 Out: 3



**APPENDIX B  
ITE TRIP GENERATION  
PLOTS**

# Mini-Warehouse (151)

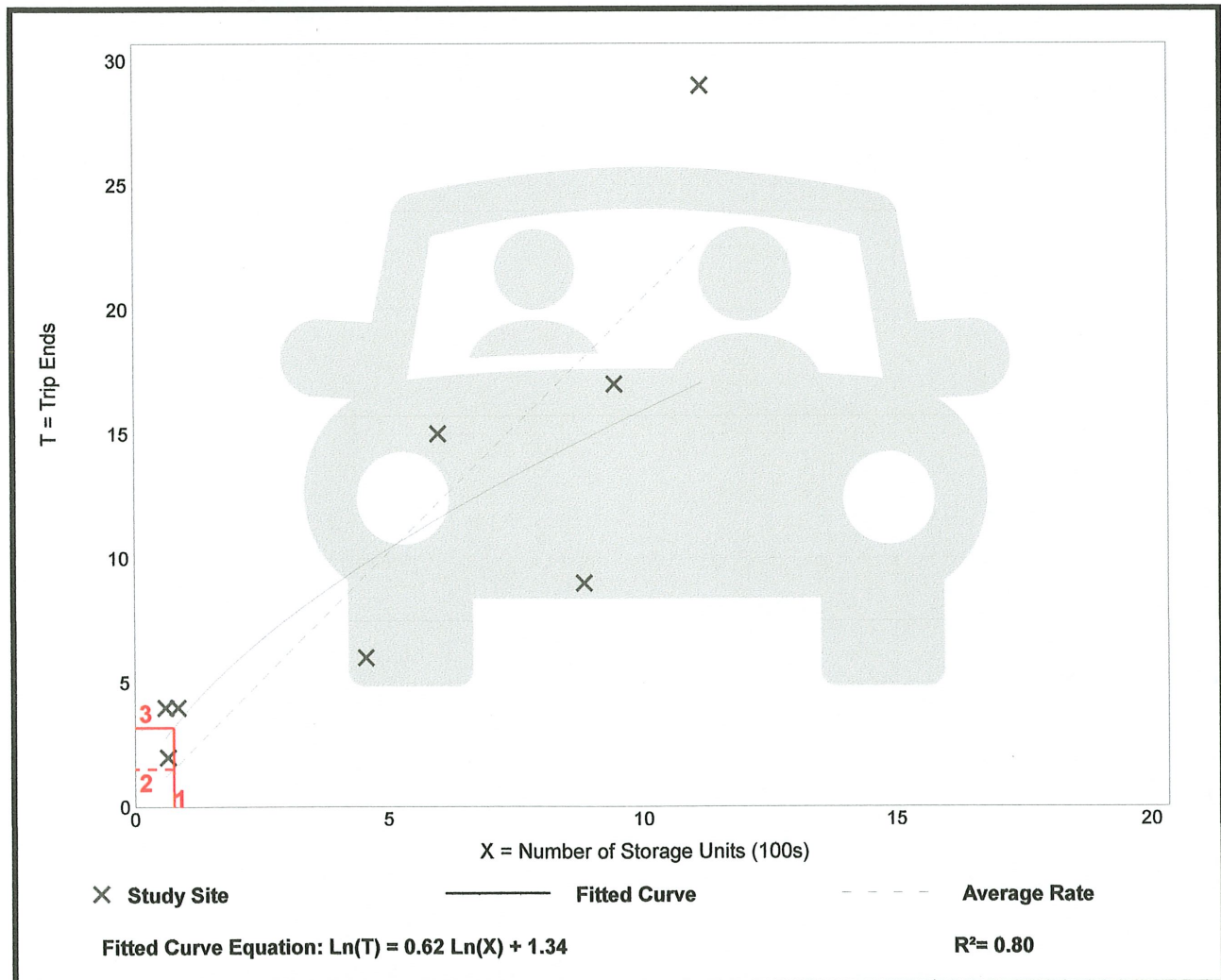
**Vehicle Trip Ends vs: Storage Units (100s)**  
**On a: Weekday,**  
**AM Peak Hour of Generator**

**Setting/Location: General Urban/Suburban**  
 Number of Studies: 8  
 Avg. Num. of Storage Units (100s): 5  
 Directional Distribution: 58% entering, 42% exiting

## Vehicle Trip Generation per Storage Unit (100s)

Average Rate	Range of Rates	Standard Deviation
2.04	1.02 - 6.67	1.00

## Data Plot and Equation



# Mini-Warehouse (151)

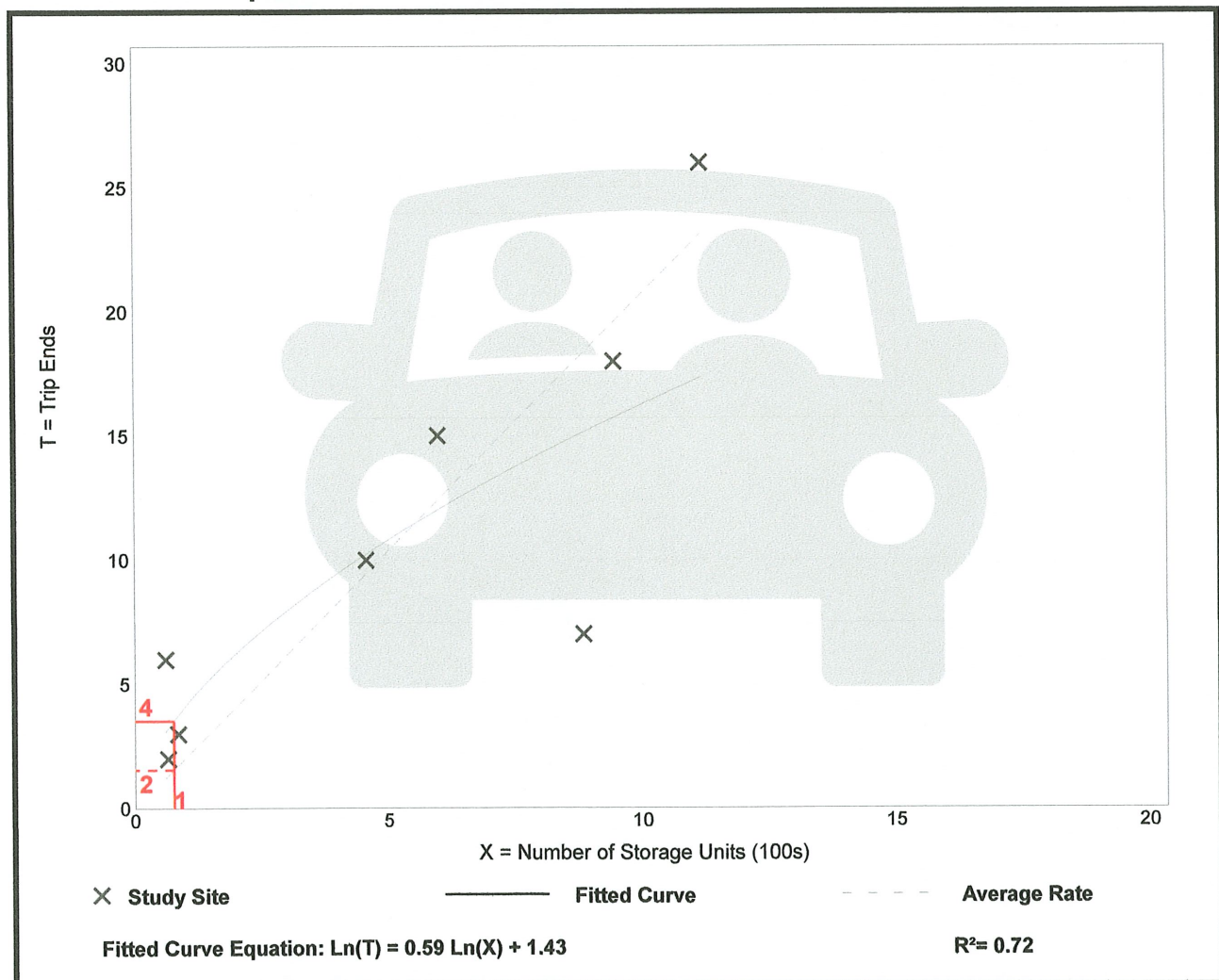
**Vehicle Trip Ends vs: Storage Units (100s)**  
**On a: Weekday,**  
**PM Peak Hour of Generator**

**Setting/Location: General Urban/Suburban**  
 Number of Studies: 8  
 Avg. Num. of Storage Units (100s): 5  
 Directional Distribution: 48% entering, 52% exiting

## Vehicle Trip Generation per Storage Unit (100s)

Average Rate	Range of Rates	Standard Deviation
2.07	0.79 - 10.00	1.24

## Data Plot and Equation



# Mini-Warehouse (151)

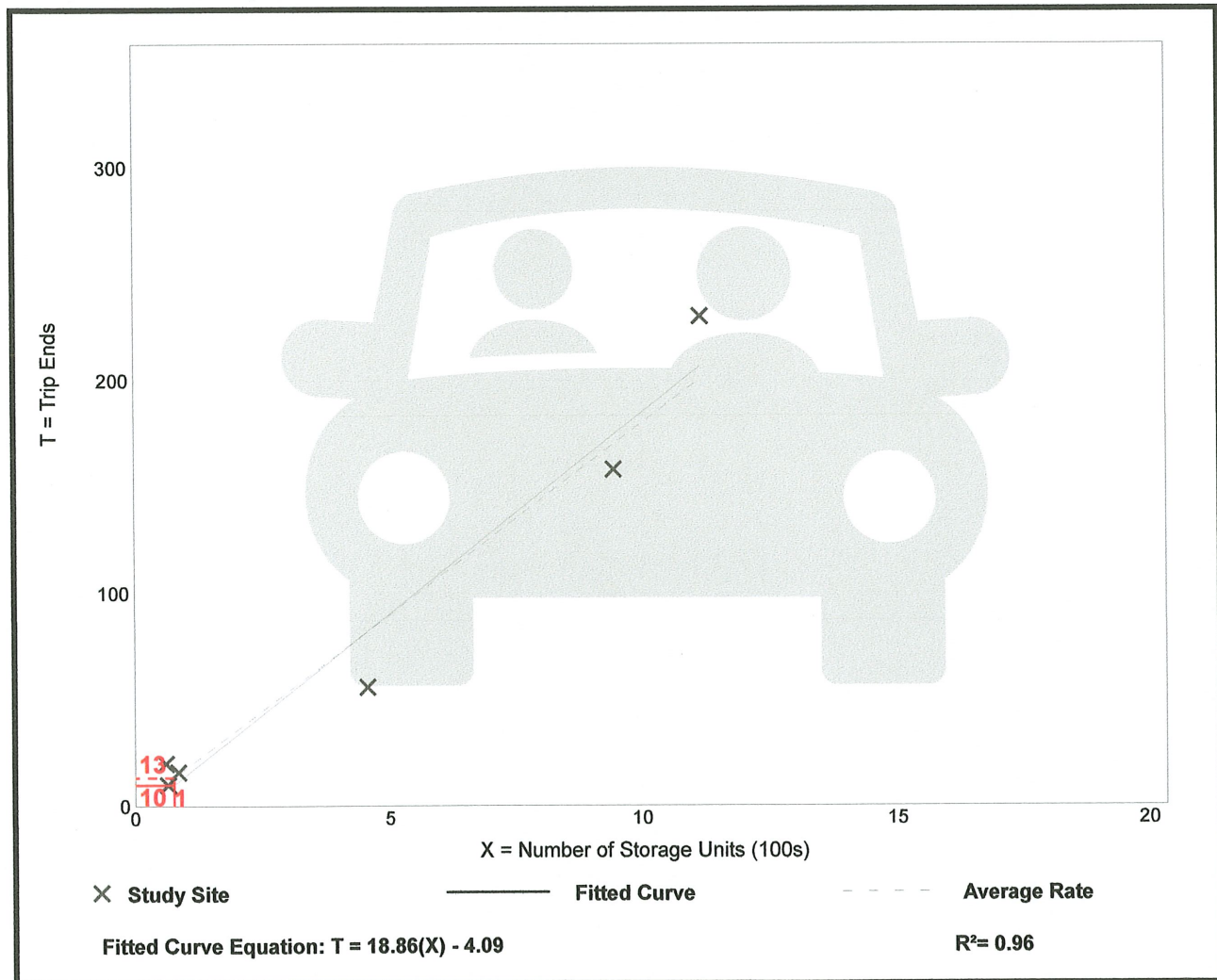
**Vehicle Trip Ends vs: Storage Units (100s)**  
On a: **Weekday**

**Setting/Location: General Urban/Suburban**  
Number of Studies: 6  
Avg. Num. of Storage Units (100s): 5  
Directional Distribution: 50% entering, 50% exiting

## Vehicle Trip Generation per Storage Unit (100s)

Average Rate	Range of Rates	Standard Deviation
17.96	12.25 - 33.33	4.13

## Data Plot and Equation



# Campground/Recreational Vehicle Park (416)

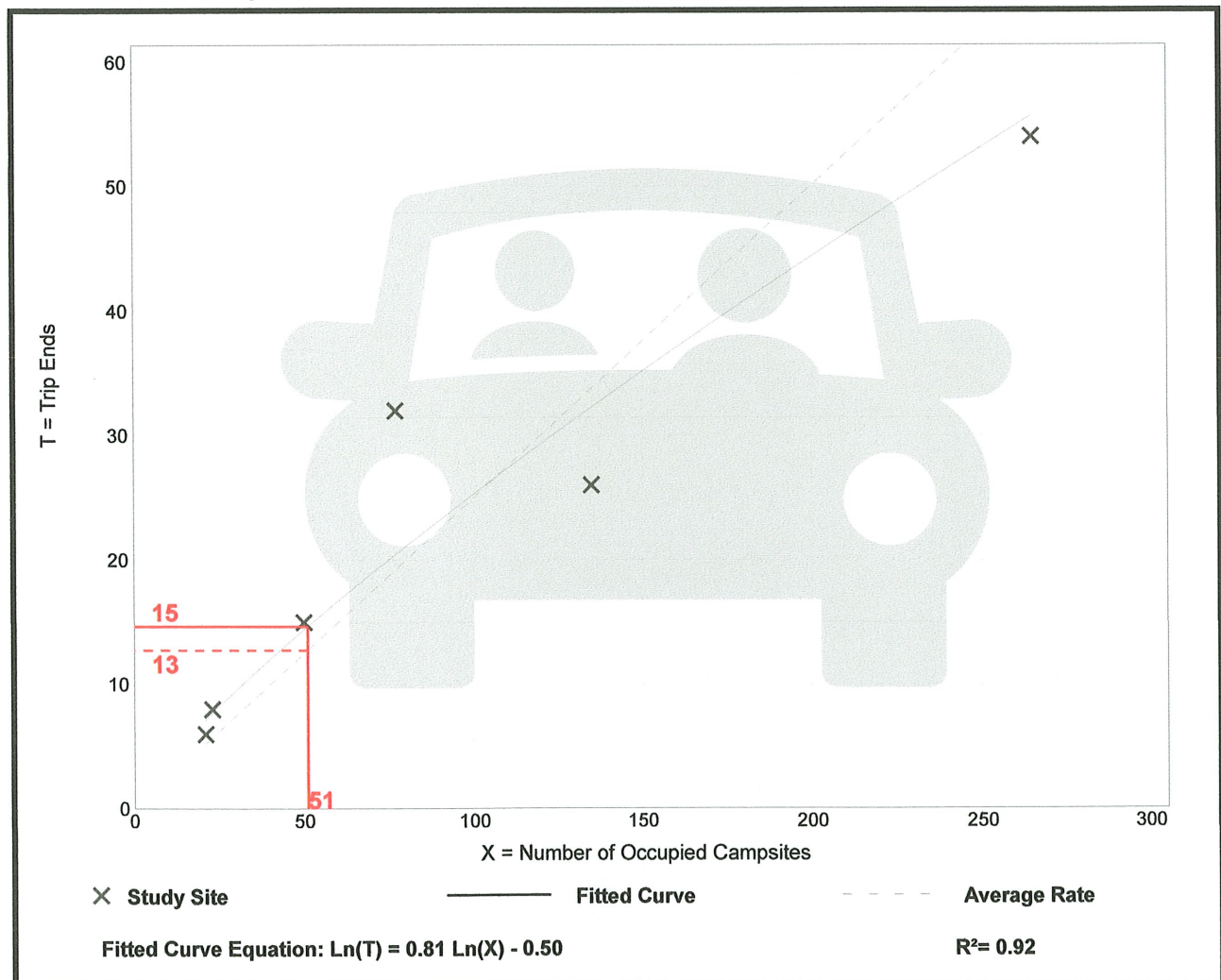
**Vehicle Trip Ends vs: Occupied Campsites**  
**On a: Weekday,**  
**AM Peak Hour of Generator**

**Setting/Location: General Urban/Suburban**  
 Number of Studies: 6  
 Avg. Num. of Occupied Campsites: 95  
 Directional Distribution: 36% entering, 64% exiting

## Vehicle Trip Generation per Occupied Campsite

Average Rate	Range of Rates	Standard Deviation
0.25	0.19 - 0.42	0.09

## Data Plot and Equation



# Campground/Recreational Vehicle Park (416)

**Vehicle Trip Ends vs: Occupied Campsites**  
**On a: Weekday,**  
**PM Peak Hour of Generator**

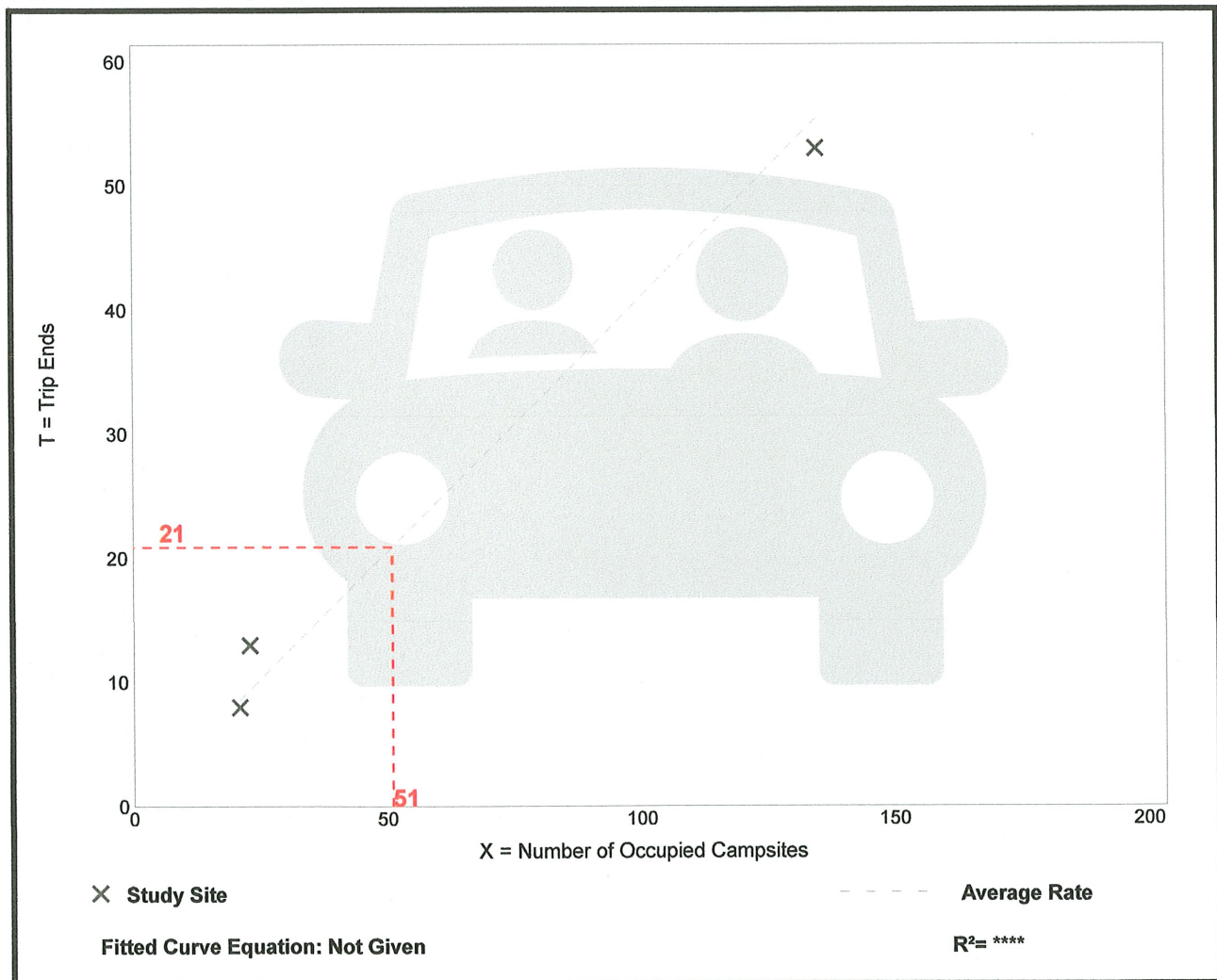
**Setting/Location: General Urban/Suburban**  
 Number of Studies: 3  
 Avg. Num. of Occupied Campsites: 60  
 Directional Distribution: 62% entering, 38% exiting

## Vehicle Trip Generation per Occupied Campsite

Average Rate	Range of Rates	Standard Deviation
0.41	0.38 - 0.57	0.07

## Data Plot and Equation

*Caution – Small Sample Size*



**APPENDIX C  
CAPACITY AND  
QUEUING ANALYSES**

# **215th Street and Sunflower Road**

Intersection												
Int Delay, s/veh	1.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	1	0	0	0	0	10	0	45	0	1	11	2
Future Vol, veh/h	1	0	0	0	0	10	0	45	0	1	11	2
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	0	0	0	0	11	0	49	0	1	12	2

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	70	64	13	64	65	49	14	0	0	49	0	0
Stage 1	15	15	-	49	49	-	-	-	-	-	-	-
Stage 2	55	49	-	15	16	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	922	827	1067	930	826	1020	1604	-	-	1558	-	-
Stage 1	1005	883	-	964	854	-	-	-	-	-	-	-
Stage 2	957	854	-	1005	882	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	912	826	1067	929	825	1020	1604	-	-	1558	-	-
Mov Cap-2 Maneuver	912	826	-	929	825	-	-	-	-	-	-	-
Stage 1	1005	882	-	964	854	-	-	-	-	-	-	-
Stage 2	947	854	-	1004	881	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	9	8.6	0	0.5
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1604	-	-	912	1020	1558	-	-
HCM Lane V/C Ratio	-	-	-	0.001	0.011	0.001	-	-
HCM Control Delay (s)	0	-	-	9	8.6	7.3	0	-
HCM Lane LOS	A	-	-	A	A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0	0	0	-	-

Intersection												
Int Delay, s/veh	1.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	0	1	0	1	5	1	24	2	13	47	1
Future Vol, veh/h	0	0	1	0	1	5	1	24	2	13	47	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	1	0	1	5	1	26	2	14	51	1

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	112	110	52	109	109	27	52	0	0	28	0	0
Stage 1	80	80	-	29	29	-	-	-	-	-	-	-
Stage 2	32	30	-	80	80	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	866	780	1016	870	781	1048	1554	-	-	1585	-	-
Stage 1	929	828	-	988	871	-	-	-	-	-	-	-
Stage 2	984	870	-	929	828	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	854	772	1016	862	773	1048	1554	-	-	1585	-	-
Mov Cap-2 Maneuver	854	772	-	862	773	-	-	-	-	-	-	-
Stage 1	928	821	-	987	870	-	-	-	-	-	-	-
Stage 2	977	869	-	920	821	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	8.5		8.7		0.3		1.6	
HCM LOS	A		A					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1554	-	-	1016	989	1585	-	-
HCM Lane V/C Ratio	0.001	-	-	0.001	0.007	0.009	-	-
HCM Control Delay (s)	7.3	0	-	8.5	8.7	7.3	0	-
HCM Lane LOS	A	A	-	A	A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0	0	0	-	-

**Intersection**

Int Delay, s/veh 7.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	1	0	0	0	0	181	0	45	0	172	11	2
Future Vol, veh/h	1	0	0	0	0	181	0	45	0	172	11	2
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	0	0	0	0	197	0	49	0	187	12	2

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	535	436	13	436	437	49	14	0	0	49	0	0
Stage 1	387	387	-	49	49	-	-	-	-	-	-	-
Stage 2	148	49	-	387	388	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	456	514	1067	531	513	1020	1604	-	-	1558	-	-
Stage 1	637	610	-	964	854	-	-	-	-	-	-	-
Stage 2	855	854	-	637	609	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	334	452	1067	482	451	1020	1604	-	-	1558	-	-
Mov Cap-2 Maneuver	334	452	-	482	451	-	-	-	-	-	-	-
Stage 1	637	536	-	964	854	-	-	-	-	-	-	-
Stage 2	690	854	-	560	535	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	15.8	9.4	0	7.1
HCM LOS	C	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1604	-	-	334	1020	1558	-	-
HCM Lane V/C Ratio	-	-	-	0.003	0.193	0.12	-	-
HCM Control Delay (s)	0	-	-	15.8	9.4	7.6	0	-
HCM Lane LOS	A	-	-	C	A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0	0.7	0.4	-	-

Intersection												
Int Delay, s/veh	7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↕			↕			↕			↕		
Traffic Vol, veh/h	0	0	1	0	1	176	1	24	2	184	47	1
Future Vol, veh/h	0	0	1	0	1	176	1	24	2	184	47	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	1	0	1	191	1	26	2	200	51	1

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	577	482	52	481	481	27	52	0	0	28	0	0
Stage 1	452	452	-	29	29	-	-	-	-	-	-	-
Stage 2	125	30	-	452	452	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	428	484	1016	495	485	1048	1554	-	-	1585	-	-
Stage 1	587	570	-	988	871	-	-	-	-	-	-	-
Stage 2	879	870	-	587	570	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	314	421	1016	445	421	1048	1554	-	-	1585	-	-
Mov Cap-2 Maneuver	314	421	-	445	421	-	-	-	-	-	-	-
Stage 1	586	496	-	987	870	-	-	-	-	-	-	-
Stage 2	717	869	-	510	496	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	8.5		9.3		0.3		6	
HCM LOS	A		A					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1554	-	-	1016	1039	1585	-	-
HCM Lane V/C Ratio	0.001	-	-	0.001	0.185	0.126	-	-
HCM Control Delay (s)	7.3	0	-	8.5	9.3	7.6	0	-
HCM Lane LOS	A	A	-	A	A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0	0.7	0.4	-	-

Intersection												
Int Delay, s/veh	8.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	1	0	0	0	0	366	0	45	0	349	11	2
Future Vol, veh/h	1	0	0	0	0	366	0	45	0	349	11	2
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	0	0	0	0	398	0	49	0	379	12	2
Major/Minor	Minor2		Minor1			Major1			Major2			
Conflicting Flow All	1019	820	13	820	821	49	14	0	0	49	0	0
Stage 1	771	771	-	49	49	-	-	-	-	-	-	-
Stage 2	248	49	-	771	772	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	215	310	1067	294	309	1020	1604	-	-	1558	-	-
Stage 1	393	410	-	964	854	-	-	-	-	-	-	-
Stage 2	756	854	-	393	409	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	106	234	1067	238	233	1020	1604	-	-	1558	-	-
Mov Cap-2 Maneuver	106	234	-	238	233	-	-	-	-	-	-	-
Stage 1	393	310	-	964	854	-	-	-	-	-	-	-
Stage 2	461	854	-	297	309	-	-	-	-	-	-	-
Approach	EB		WB			NB			SB			
HCM Control Delay, s	39.3		10.8			0			7.8			
HCM LOS	E		B									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR				
Capacity (veh/h)	1604	-	-	106	1020	1558	-	-				
HCM Lane V/C Ratio	-	-	-	0.01	0.39	0.243	-	-				
HCM Control Delay (s)	0	-	-	39.3	10.8	8.1	0	-				
HCM Lane LOS	A	-	-	E	B	A	A	-				
HCM 95th %tile Q(veh)	0	-	-	0	1.9	1	-	-				

Intersection												
Int Delay, s/veh	8.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	0	1	0	1	356	1	24	2	364	47	1
Future Vol, veh/h	0	0	1	0	1	356	1	24	2	364	47	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	1	0	1	387	1	26	2	396	51	1

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	1067	874	52	873	873	27	52	0	0	28	0	0
Stage 1	844	844	-	29	29	-	-	-	-	-	-	-
Stage 2	223	30	-	844	844	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	200	288	1016	271	289	1048	1554	-	-	1585	-	-
Stage 1	358	379	-	988	871	-	-	-	-	-	-	-
Stage 2	780	870	-	358	379	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	101	214	1016	217	214	1048	1554	-	-	1585	-	-
Mov Cap-2 Maneuver	101	214	-	217	214	-	-	-	-	-	-	-
Stage 1	358	282	-	987	870	-	-	-	-	-	-	-
Stage 2	491	869	-	266	282	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	8.5		10.5		0.3		7.1	
HCM LOS	A		B					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1554	-	-	1016	1037	1585	-	-
HCM Lane V/C Ratio	0.001	-	-	0.001	0.374	0.25	-	-
HCM Control Delay (s)	7.3	0	-	8.5	10.5	8	0	-
HCM Lane LOS	A	A	-	A	B	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0	1.8	1	-	-