

Resers Fine Foods, Inc.
Proposed Warehouse & Distribution Center
545 SE Croco Road
Topeka, Kansas 66607
CFS Project No. 16-5226

Traffic Impact Analysis

October 31, 2016

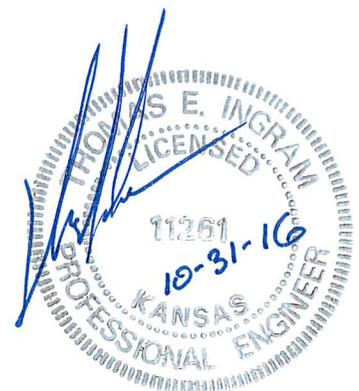
Prepared for:

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Topeka, Kansas 66607

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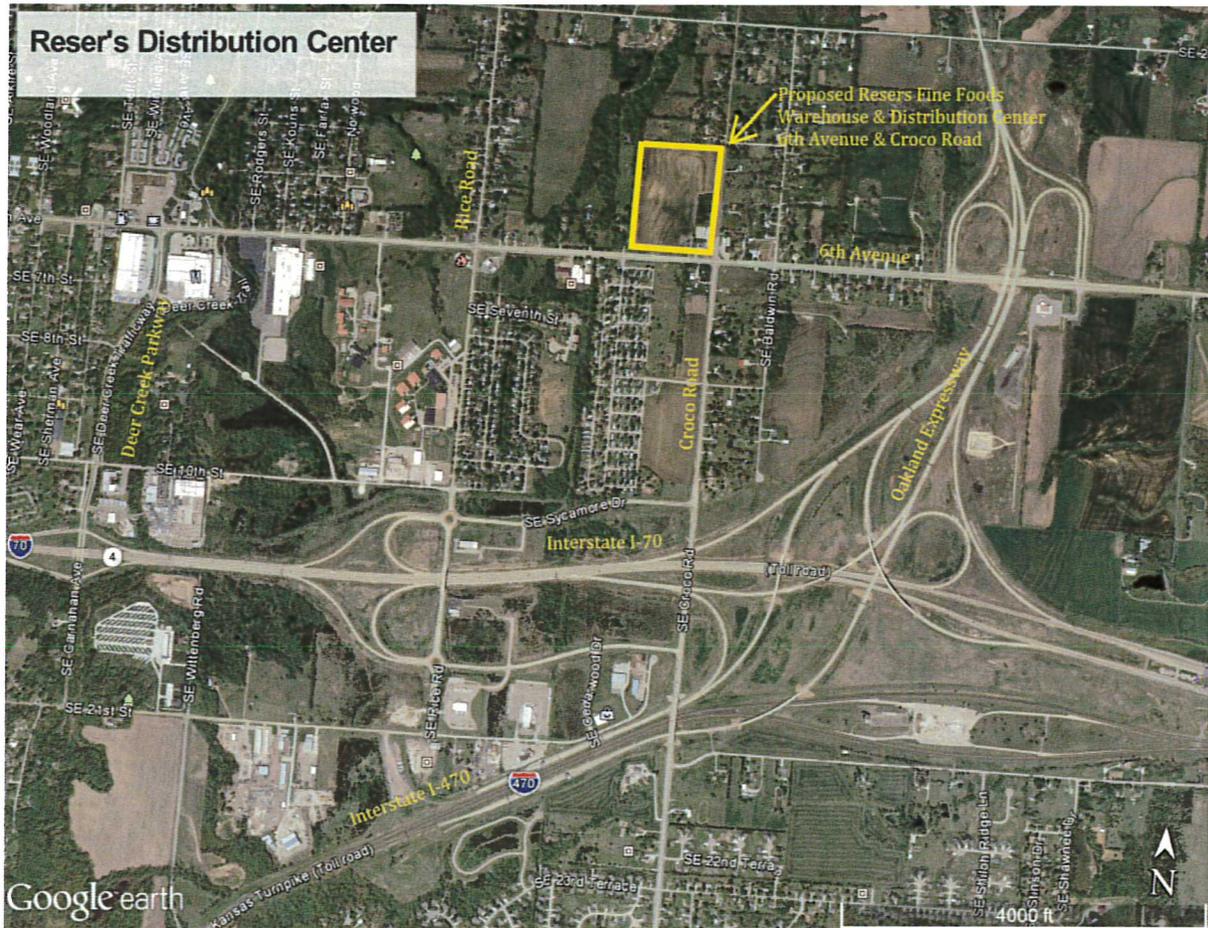


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Introduction and Summary

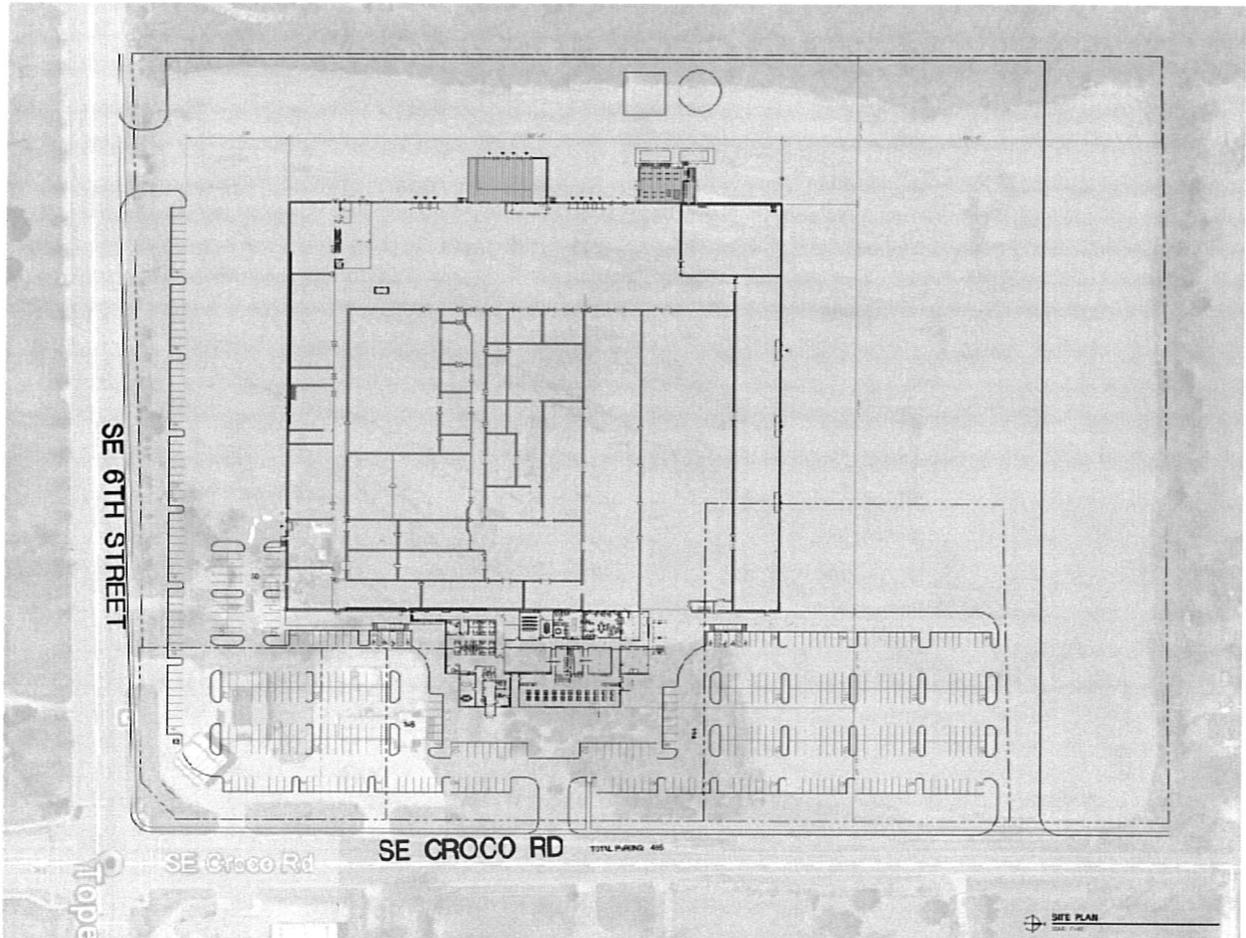
This Traffic Impact Analysis for the Resers Fine Foods, Inc., proposed warehouse and distribution center at 545 SE Croco Road has been prepared at the request of the CIDA Inc. Architects of Portland, Oregon, in accordance with the City of Topeka's requirements. The 25.7 acre site located on the northwest corner of 6th Avenue & Croco Road would include a multi-use 307,000 sqft building for warehousing (113,000 sqft), production & distribution (169,00 sqft) and regional administrative offices (25,000 sqft) for the company's Topeka operations. The facility would employ an anticipated total staff of 350 to 380 employees including drivers, warehouse workers and office administrative staff, which would operate during two regular full-time shifts (155-170 employees), and a smaller nighttime cleaning shift (40 employees). The first shift would run from 7:00am – 3:00pm, second shift from 3:00pm – 11:00pm, and nighttime shift from 11:00pm – 7:00am.



Reser's Warehouse & Distribution Center, Vicinity Map

Proposed Development Plan

The 27.5 acre facility would serve as Reser's main warehousing and distribution center in northeast Topeka. The 307,000 sqft building would have an estimated 465 total parking spaces including 8 accessible spaces, along with parking for semi-truck trailers along the northwest corner of the site.



Reser's Proposed Warehouse & Distribution Center, Site Layout Plan

The site would have three points of vehicular access with two expanded truck entrances off of 6th Avenue and off of Croco, and a regular passenger vehicle entrance off of Croco Road. The expanded truck entrance off of 6th Avenue would be 70 ft wide to accommodate semi-truck traffic and would be spaced with approximately 760 ft of separation distance to the west edge of Croco Road. The main passenger vehicle entrance off of Croco Road would be 36 ft wide to provide three lanes of access (one incoming lane and two outgoing lanes) and would be spaced with approximately 480 ft of separation distance to the north edge of 6th Avenue. The expanded

truck entrance off of Croco Road would be 50 ft wide to accommodate semi-truck traffic and would have approximately 500 ft of separation distance to the north edge of the main passenger vehicle entrance drive further to the south on Croco Road.

Construction of the project would require the demolition of the existing convenience store, car wash and single-family house presently on the site. The project would be constructed in two phases, with all of the construction work confined within the site. Grades across the site are fairly mild, so major hauling on or off of excavation material is not envisioned to burden the adjacent roadway system during the initial construction operations. Provisions for erosion control and keeping the streets clean and free from sediment would be required by the contractor with regular monitoring by a professional construction inspector.

Street System

Resers proposed site at the northwest corner of 6th & Croco would have excellent access for trucks and passenger vehicles from the surrounding City street grid and from Interstate I-70 and the Oakland Expressway. The characteristics of the key streets in the vicinity were summarized as follows:

6th Avenue (US-40 Highway): 5-lane minor arterial along the south side of the Reser's site. Curb & gutter street section with enclosed storm sewers west of Croco, transitioning to widened shoulder section to the east where residential driveways connect directly onto 6th Avenue. Posted speed limit of 45 mph. Signalized interchange with the Oakland Expressway one mile to the east of the site with large-radius corners for accommodating semi-truck traffic. KDOT's 2014 Traffic Count Map indicated an average annual daily traffic volume of 5665 vpd west of nearby Rice Road. Sidewalks on both north and south sides west of Deer Creek Parkway, extending east past Rice Road, then no sidewalks on either side to the interchange with the Oakland Expressway to the east. The major cross-street intersections at Rice, Croco and the Oakland Expressway are signalized.

Croco Road: 2-lane minor arterial to the north and 3-lane minor arterial to the south of 6th Avenue. Roadway extends through single-family residential areas to the north and south with posted speed limits of 40 mph. Croco has been widened to 5-lanes on the north side of 6th Avenue where the street has two northbound thru lanes and designated southbound left, thru and right lanes. Croco has been widened to 4-lanes on the south side of 6th Avenue where the street has a single southbound thru lane and designated northbound left, thru and right lanes. All four corners of the 6th & Croco intersection have back of curb radius of approximately 40 ft to

accommodate truck turning movements. KDOT's 2014 Traffic Count Map indicated an average annual daily traffic volume of 4510 vpd south of 6th Avenue. There are sidewalks on both sides of Croco south of 6th Avenue, but no sidewalks on the north leg. Croco Road extends over both Interstate I-70 and I-470 to the south, providing access to the residential subdivisions around Lake Shawnee.

Deer Creek Parkway: 4-lane divided major collector extending through a warehouse/industrial area with heavy truck access. Interchanges directly with Interstate I-70 to the south and ends with a T-intersection at 6th Avenue. KDOT's 2014 Traffic Count Map indicated an average annual daily traffic volume of 3955 vpd south of 6th Avenue. There are sidewalks along the west side of the road south of 6th Avenue, and a portion of the Deer Creek Walking Train runs along the eastern side of the road north of 10th Street.

Rice Road: 2-lane major collector extending through residential areas on both the north and south sides of 6th Avenue. The northern leg is a standard 24 ft width 2-lane street and the southern leg is a wide 36 ft 2-lane street. Posted speed limit is 30 mph. The Topeka Correctional Facility, Central Unit is located on the western side of the road, south of 6th Avenue. Rice Road interchanges with Interstate I-70 with a roundabout at Sycamore Drive on the north for the westbound I-70 ramp terminals, and another roundabout on the south for the eastbound I-70 ramp terminals, before extending further south to SW 21st Street. KDOT's 2007 Traffic Count Map indicated an average annual daily traffic volume of 2145 vpd south of 6th Avenue. There is sidewalk along only the eastern side of Rice Road south of 6th Avenue, but no sidewalk on either side north of 6th.

Oakland Expressway (Kansas Route 4): 4-lane divided expressway which extends and interchanges with Interstate I-70 to the south. The intersection of 6th Avenue & Oakland Expressway is a partial cloverleaf with signalized T-intersections at both of the north and southbound ramp mergers. The intersection corners have edge of pavement radius of approximately 40 ft to accommodate truck turning movements. There are three northbound lanes and two southbound lanes of traffic posted at 65 mph. KDOT's 2014 Traffic Count Map indicated an average annual daily traffic volume of 8880 vpd south of 6th Avenue. There are no sidewalks along 6th Avenue in the vicinity of the Oakland Expressway interchange.

Existing Traffic Conditions

Photographs of the existing street conditions were clipped from Google-Earth's Street-Cam to show the number of lanes, sidewalks, signals and medians that exist along 6th Avenue and at the

major intersections between Deer Creek Parkway and the interchange with the Oakland Expressway. All of the existing major intersections on 6th Avenue including Rice Road, Croco Road and the Oakland Expressway interchange are signalized. The intersection of 6th Avenue & Deer Creek Parkway is stop-controlled for the minor leg only on Deer Creek. The pictures and captions have been included below:



6th & Deer Creek Parkway: 6th Avenue Looking West at Deer Creek Parkway

Stop-control on Deer Creek with free-movement on 6th Avenue. Both streets have 5-lanes. Flat terrain with sight distance over 1000 ft at all approaches to intersection. Large-radius corners. Continuous N-S sidewalks along east side of Deer Creek and along both sides of 6th Avenue.



6th & Deer Creek Parkway: Deer Creek Parkway Looking North at 6th Avenue

Painted channelized island markings and raised center median. Private shopping center to north.



6th & Deer Creek Parkway: Deer Creek Parkway Looking South at 6th Avenue

View of trucking depot center at southwest corner. Deer Creek Parkway connects to interchange with I-70 three-quarters of a mile to the south.



6th & Rice Road: Rice Road Looking North at 6th Avenue

Signalized intersection. 6th Avenue has 5-lanes and Rice has 2-lanes transitioning to 3-lanes at the intersection. Flat terrain with sight distance over 1000 ft at all approaches to intersection. Large-radius corners. Continuous N-S sidewalks along east side of south leg of Rice Road and along both sides of 6th Avenue.



6th & Rice Road: Rice Road Looking South at 6th Avenue

Fire Station at southwest corner with Topeka Correctional Facility further to south. Sidewalks along east side of Rice Road.



6th & Croco Road: 6th Avenue Looking West at Croco Road

Signalized intersection. 6th Avenue has 5-lanes. Proposed Resers Warehouse & Distribution Center on northwest corner (presently occupied by convenience store with gasoline pumps). Flat terrain with sight distance over 1000 ft at all approaches to intersection. Large-radius corners. Continuous N-S sidewalks along both sides of south leg of Croco Road. No sidewalks along either side of 6th Avenue.



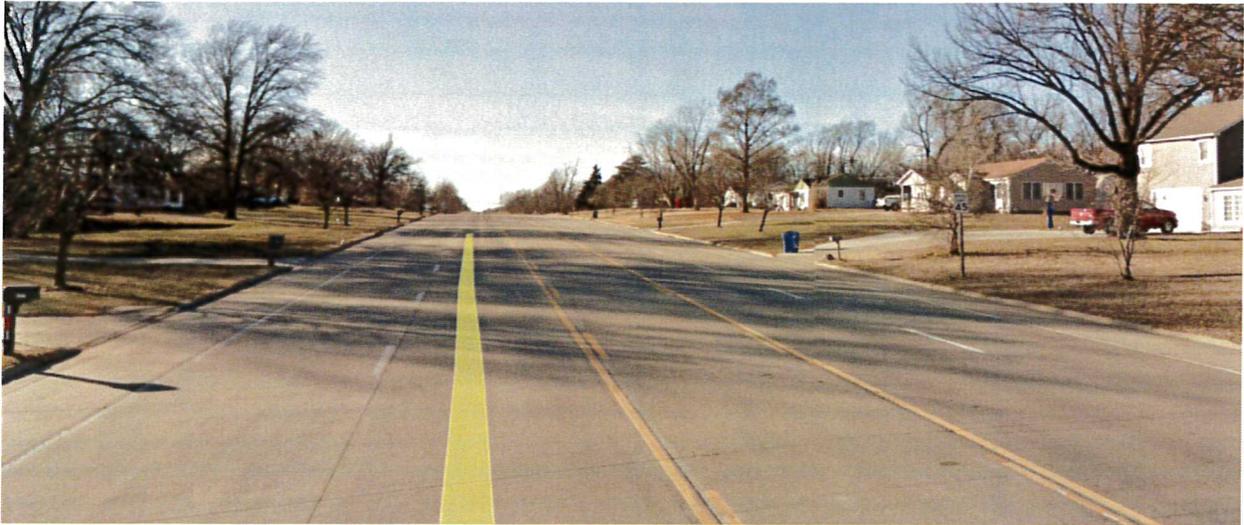
6th & Croco Road: Croco Looking North at 6th Avenue

Croco has 2-lanes to north and 3-legs to south, with intersection transitioning to 5-lanes. Croco Road extends north through residential area to Billards Municipal Airport. No sidewalks along either side of north leg of Croco.



6th & Croco Road: Croco Looking South at 6th Avenue

Croco extends south to bridge over both Interstate I-70 and I-470 and on to Lake Shawnee residential area. Continuous sidewalks along both sides of south leg of Croco.



6th Avenue East of Croco Road:

6th Avenue is a 5-lane section extending through a residential area between Croco and the Oakland Expressway, and has 6 ft shoulder lanes for additional maneuvering clearance to residential driveways and for mailboxes.



6th Avenue & Oakland Expressway Southbound Ramp Terminals Interchange:

Intersection of 6th & Oakland Expressway Southbound Entrance/Exit Ramp Terminals. Signalized intersection with flat terrain and sight distance over 1000 ft at all approaches. Large radius corners to accommodate large trucks. Open shoulders with roadside drainage ditches.



6th Avenue & Oakland Expressway Northbound Ramp Terminals Interchange:

Intersection of 6th & Oakland Expressway Northbound Entrance/Exit Ramp Terminals.

KDOT's 2014 Traffic Count Map for the City of Topeka showed the 24-hour average annual daily traffic volumes for the streets in the vicinity of the Reser's site. Below is an enlarged clip of the region:



KDOT 2014 Traffic Count Map for the City of Topeka (enlarged excerpt)

A summary of the AADT's on the surrounding streets by the proposed Resers site at 6th & Croco Road was as follows:

6th Avenue: 5665 VPD, Minor Arterial w/ 5-lanes
Deer Ck Pkwy: 3955 VPD, Major Collector w/ divided 4-lanes
Rice Road: 1275 VPD-North / 3040 VPD-South, Major Collector w/ 2-lanes
Croco Road: 1790 VPD-North / 4510 VPD-South, Major Collector w/ 2-lanes
Oakland Expy: 9210 VPD, Freeway w/ divided 4-lanes

Trip Generation & Site Traffic Projections

The management at Resers provided the following data about the facility size, projected employment staffing, estimates on the volume of heavy delivery trucks, work shifts and hours of operations:

Proposed Facility:

Building Size: 169,000 sqft Production
113,000 sqft Storage / Warehouse
25,000 sqft Office & Employee Services
307,000 sqft Total
Employees: 350 – 380 Total Employees Including Regular Staff and Drivers
Hours of Operation: 2 Full Daytime Shifts (155 – 170 per Regular Shift)
Nighttime Cleaning Crew (40)
Operating Days: September to April, Regular Monday thru Friday Operation
May to August, Full 7-Days per Week Operation

Truck Deliveries:

Design Vehicle: Typical WB-62 Semi Truck
Deliveries: 25 – 50 per day
Delivery Times: Staggered throughout the Day to Avoid Peak Hour Traffic
Loading Times: 1 to 2 hours per truck
Trailers Stored On Lot: 30 – 40

Shipping Products / Hazardous Materials:

Typical Cargo: Food Products, Packaging Materials (Plastic Containers, Cardboard)
Hazardous Material: Ammonia for Refrigeration Systems
Fuel: No Fuel Stored on Site

Trip Generation: Trip generation calculations utilized the land use types categorized by the Institute of Transportation Engineer's Trip Generation Guidelines, 9th Edition. The different types of building uses given by Resers for their proposed facility included General Light Industrial (ITE Land Use Code 110), Warehousing (ITE Land Use Code 150), and Single-Tenant

Office Building (ITE Land Use Code 715). Given the working/industrial nature of the site, there would be no pass-by traffic. The estimated trips generated were calculated based on the estimated number of employees that Reser's management anticipated to fully staff the new facility, for each of the designated ITE building uses. The following table shows the parameters for measurement units, total trip generation rates for Weekday, AM and PM Peak Hour Traffic Volumes, corresponding percentage divisions for traffic entering and exiting the site:

Land Use	ITE Code	Units	Weekday Rate	AM-Peak Hour Rate	Enter %	Exit %	PM-Peak Hour Rate	Enter %	Exit %
General Light Industrial (Emp)	110	94 Emp	284 VPD	41 vph	83%	17%	39 vph	21%	79%
Warehousing (Emp)	150	76 Emp	296 VPD	39 vph	72%	28%	45 vph	35%	65%
Single-Tenant Office Bldg (Emp)	715	12 Emp	44 VPD	6 vph	89%	11%	6 vph	15%	85%
Total Site		182 Emp	624 VPD	86 vph			90 vph		

Crash histories of the intersections surrounding the site were not reviewed as part of this analysis.

Left-Turn Lane Improvements: Since 6th Avenue and the section of Croco Road fronting the site already have dual-direction center left-turn lanes, there was no need to check for a warrant based on Topeka's Left-turn Deceleration Lane requirements from Section 1.2.5.2.8 of the Street Design Criteria.

Right-Turn Improvements: A check for a warrant for a westbound right-turn at the main truck access drive on 6th Avenue was done based on the City's Section 1.2 Street Design Criteria, Section 1.2.5.2.8 – Speed Change Lanes. According to the City's design criteria, a right-turn deceleration lane shall be required if:

1. The street's ADT exceeds 10,000 vehicles per day
2. The street's operating speeds equal, or exceed, 35 miles per hour
3. The driveway's volume equals, or exceeds, 1,000 vehicles per day, and
4. The driveway's right-turn ingress movements equal, or exceed, 40 vehicles per hour during any peak period.

The 2014 KDOT traffic count map showed 6th Avenue's AADT at 5665 vpd. Posted speed limit of 45 mph. The estimated peak hour eastbound right-turning traffic was 43 vph during the AM peak hour, exceeding the 40 vph right-turn threshold volume, which would warrant a right-turn deceleration lane.

Findings & Recommendations

The proposed Resers Warehouse & Distribution Center at 545 SE Croco Road should not cause any hindrances or undue delays to the local traffic in the vicinity of the site. The site's location at the northwest corner of 6th Avenue and Croco Road has excellent access for truck traffic to the Oakland Expressway via 6th Avenue, and to Deer Creek Parkway via 6th Avenue to the west. Regular passenger car traffic has direct access to 6th Avenue to travel westwards back to the heart of the Topeka metropolitan area or ready access back to Interstates I-70 and I-470 for utilizing the loop highways circling the Topeka area. 6th Avenue has been widened to a 5-lane roadway section and the major half-mile intersections are signalized for safe and improved traffic movement.

Recommendations: The following recommendations are made for the construction of the proposed Reser site improvements:

1. A 205 ft westbound right-turn deceleration lane with a 120 ft transition taper needs to be added onto 6th Avenue at the proposed truck access entrance to the site located approximately 760 ft west of Croco Road.
2. SE Croco Road should be widened to a consistent 5-lane section along the entire frontage of the Resers site, from intersection with 6th Avenue to the northern truck access entrance. The street should be transitioned from 5-lanes to 2-lanes from the northern truck access entrance to the north to match into the residential neighborhood to the north.
3. Sidewalks should be extended along the entire frontage of the property along 6th Avenue and along Croco Road. Gaps in the sidewalk west of the site along the northern side of 6th Avenue should be filled-in to meet the existing limits of sidewalk 160 ft east of Rice Road.
4. Provisions for a bus stop on 6th Avenue to the west of Croco Road should be made to replace the existing bus stop located by the existing convenience store. Consideration should be made for a turn-out type bus stop with a widened lane to allow the bus to pull off of the main traffic on 6th Avenue.