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FACULTAD DE INGENIERÍA



**UNIVERSIDAD NACIONAL
DE JAÉN**

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ANÁLISIS VIAL EN LA INTERSECCIÓN DE LAS CALLES

IQUITOS Y EJÉRCITO EMPLEANDO EL SOFTWARE

SYNCHRO 10 EN LA CIUDAD DE JAÉN, 2025

**TESIS PARA OPTAR EL TÍTULO PROFESIONAL DE
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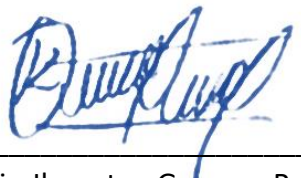
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ÍNDICE

| | |
|--|----|
| ÍNDICE..... | 2 |
| RESUMEN..... | 7 |
| ABSTRACT..... | 8 |
| I. INTRODUCCIÓN..... | 9 |
| 1.1. Planteamiento del problema..... | 9 |
| 1.2. Justificación..... | 10 |
| 1.3. Objetivos..... | 10 |
| 1.4. Antecedentes..... | 11 |
| II. MATERIALES Y MÉTODOS..... | 15 |
| 2.1. Población, muestra y muestreo..... | 15 |
| 2.2. Hipótesis..... | 15 |
| 2.3. Materiales y métodos..... | 15 |
| 2.4. Procedimiento de recolección de datos..... | 16 |
| III. RESULTADOS..... | 19 |
| 3.1. Condiciones geométricas de la intersección..... | 19 |
| 3.2. Demanda vehicular y peatonal..... | 24 |
| 3.3. Cálculo del nivel de servicio de la intersección..... | 30 |
| IV. DISCUSIÓN..... | 34 |
| V. CONCLUSIONES Y RECOMENDACIONES..... | 36 |
| 5.1. Conclusiones..... | 36 |
| 5.2. Recomendaciones..... | 37 |
| VI. REFERENCIAS BIBLIOGRÁFICAS..... | 38 |
| DEDICATORIA..... | 42 |
| AGRADECIMIENTO..... | 44 |
| ANEXOS..... | 46 |

ÍNDICE DE TABLAS

| | |
|--|----|
| Tabla 1. Condiciones geométricas de la intersección..... | 23 |
| Tabla 2. Total de vehículos por día | 24 |
| Tabla 3. Porcentaje de tipo de vehículos en hora punta | 26 |
| Tabla 4. Resumen de aforo peatonal por acceso | 29 |

ÍNDICE DE FIGURAS

| | |
|--|-----|
| Figura 1. Levantamiento topográfico en la intersección de las calles Iquitos y Ejército ... | 16 |
| Figura 2. Nivelación en la intersección de las calles Iquitos y Ejército | 16 |
| Figura 3. Medición del ancho de calzada en la intersección de las calles Iquitos y Ejército. | 17 |
| Figura 4. Conteo vehicular en la intersección de las calles Iquitos y Ejército | 17 |
| Figura 5. Conteo vehicular en la intersección de las calles Iquitos y Ejército | 18 |
| Figura 6. Giros y radios de giro..... | 20 |
| Figura 7. Anchos de carril | 21 |
| Figura 8. Anchos de carril | 22 |
| Figura 9. Volumen vehicular en intervalos de 15 minutos..... | 25 |
| Figura 10. <i>Porcentaje de vehículos en hora pico</i> | 27 |
| Figura 11. <i>Flujograma de tránsito vehicular por sentido en hora punta</i> | 28 |
| Figura 12. <i>Volumen peatonal</i> | 29 |
| Figura 13. <i>Representación gráfica de la intersección en el software Synchro 10.</i> | 30 |
| Figura 14. <i>Configuración de geometría de carril</i> | 31 |
| Figura 15. <i>Configuración de volumen</i> | 32 |
| Figura 16 . <i>Configuración de la intersección.</i> | 33 |
| Figura 17. Zonificación | 180 |
| Figura 18. Vista de la intersección en estudio..... | 182 |
| Figura 19. Vista de la intersección en estudio..... | 182 |
| Figura 20. Medición de vereda..... | 183 |
| Figura 21. Configuración de GPS diferencial | 183 |
| Figura 22. Levantamiento topográfico | 184 |
| Figura 23. Nivelación para el cálculo de la pendiente de las calles | 184 |
| Figura 24. Nivelación para el cálculo de la pendiente de las calles | 185 |
| Figura 25. Conteo vehicular en la intersección de las calles Iquitos y Ejército (Turno mañana) | 185 |
| Figura 26. Conteo vehicular en la intersección de las calles Iquitos y Ejército (Turno mañana) | 186 |
| Figura 27. Conteo vehicular en la intersección de las calles Iquitos y Ejército (Turno medio día)..... | 186 |

| | |
|---|-----|
| Figura 28. Conteo vehicular en la intersección de las calles Iquitos y Ejército (Turno medio día)..... | 187 |
| Figura 29. Conteo vehicular en la intersección de las calles Iquitos y Ejército (Turno tarde)..... | 187 |

ÍNDICE DE ANEXOS

| | |
|--|-----|
| Anexo 1. OPERACIONALIZACIÓN DE VARIABLES | 47 |
| Anexo 2. MATRIZ DE CONSISTENCIA | 49 |
| Anexo 3. DELIMITACIÓN DEL ÁREA DE ESTUDIO | 51 |
| Anexo 4. FORMATO DE AFORO VEHICULAR | 55 |
| Anexo 5. FORMATO DE AFORO PEATONAL | 57 |
| Anexo 6. RESULTADOS DEL CONTEO VEHICULAR EN LA INTERSECCIÓN DE LAS CALLES IQUITOS Y EJÉRCITO | 59 |
| Anexo 7. CONVERSION A VEHÍCULOS EQUIVALENTES EN EL DÍA DE MAYOR CONCENTRACIÓN DE TRÁFICO VEHICULAR. | 159 |
| Anexo 8. RESUMEN TOTAL DEL VOLUMEN DE VEHÍCULOS, TOMANDO EN CUENTA LAS HORAS CRÍTICAS Y EL CORRESPONDIENTE FACTOR DE HORA PICO | 167 |
| Anexo 9. FLUJOGRAMA DE HORA PICO (TURNO MAÑANA) | 169 |
| Anexo 10. FLUJOGRAMA DE HORA PICO (TURNO MEDIO DÍA) | 171 |
| Anexo 11. FLUJOGRAMA DE HORA PICO (TURNO TARDE) | 173 |
| Anexo 12. RESULTADOS DE AFORO PEATONAL | 175 |
| Anexo 13. ZONIFICACIÓN DE LA INTERSECCIÓN IQUITOS Y EJÉRCITO | 179 |
| Anexo 14. PANEL FOTOGRÁFICO DE CONTEO VEHICULAR | 181 |
| Anexo 15. PANEL FOTOGRÁFICO DEL CAMPO DE ESTUDIO | 181 |

RESUMEN

La presente investigación tuvo como objetivo analizar las condiciones de operación vial en la intersección de las calles Iquitos y Ejército, ubicada en la ciudad de Jaén, mediante la aplicación del software Synchro 10. El estudio se desarrolló bajo un enfoque cuantitativo y diseño no experimental, basado en la recolección de datos de campo y su posterior procesamiento digital. Los resultados mostraron que la vía cuenta con cuatro accesos de dos carriles cada uno, sin zonas de estacionamiento, y pendientes de hasta 6% en los accesos Este y Oeste. La demanda vehicular promedio diaria alcanzó los 13,441 vehículos, predominando las mototaxis (57.06%) y las motos lineales (31.10%), mientras que la mayor afluencia peatonal se presentó en el horario de mediodía. La simulación en Synchro 10 determinó una relación volumen/capacidad de 0.89, una demora promedio de 25.5 segundos por vehículo y un nivel de servicio D, lo que evidencia condiciones de operación deficientes y tendencia a la congestión. Se concluye que la intersección requiere mejoras de señalización y posible semaforización para optimizar su desempeño y seguridad. Finalmente, se recomienda realizar simulaciones futuras con alternativas de rediseño vial que permitan contribuir a una movilidad urbana más eficiente en la ciudad de Jaén.

Palabras clave: Análisis vial, nivel de servicio, Synchro 10, intersección.

ABSTRACT

This research aimed to analyze road operating conditions at the intersection of Iquitos and Ejército streets, located in the city of Jaén, using Synchro 10 software. The study employed a quantitative approach and a non-experimental design, based on field data collection and subsequent digital processing. The results showed that the road has four two-lane access points, no parking areas, and gradients of up to 6% on the east and west access points. The average daily traffic reached 13,441 vehicles, predominantly motorcycle taxis (57.06%) and motorcycles (31.10%), while the highest pedestrian traffic occurred around midday. The Synchro 10 simulation determined a volume-to-capacity ratio of 0.89, an average delay of 25.5 seconds per vehicle, and a Level of Service (LES) rating of D, indicating poor operating conditions and a tendency toward congestion. It is concluded that the intersection requires improved signage and possible traffic lights to optimize its performance and safety. Finally, it is recommended that future simulations be conducted with alternative road redesigns to contribute to more efficient urban mobility in the city of Jaén.

Keywords: Road analysis, level of service, Synchro 10, intersection.

I. INTRODUCCIÓN

1.1. Planteamiento del problema

A nivel internacional en los últimos años va aumentando el parque vehicular, la circulación en calles y carreteras se ha vuelto más compleja, lo que resalta la importancia de realizar un análisis de la capacidad vial y los niveles de servicio de los sistemas de transporte. (Cal et al., 2017). Es así que el crecimiento del parque automotriz en Quito ha ocasionado un problema de movilidad ya que se ha generado mayor congestión en las vías por el espacio que ocupan los vehículos afectando directamente los tiempos de viaje de los usuarios. (Ubillús, 2019, p.3). Por otro lado, en la ciudad de Loja, el parque automotor está experimentando un crecimiento acelerado, con tasa del 9%. Este aumento conlleva diversos problemas, entre los que se destacan el incremento en los tiempos de traslado, un mayor gasto de combustible y una notable contaminación ambiental debido a los gases emitidos por los vehículos, especialmente durante los días laborales. (Crónica, 2015, p.7).

A nivel Nacional, el crecimiento de la industria automotriz y la demanda del Parque Automotor en el Perú como vehículos ligeros y comerciales se viene incrementando de manera considerable entre un 10 – 15% en los últimos diez años, estudios realizados han llegado a demostrar que tiene cierta relación e influencia con el crecimiento económico del país, pero no obstante a la vez trae congestión vehicular en las ciudades, contaminación antropogénico del medio ambiente, accidentes viales y por ultimo caos y desorden. (Castañeda, 2019, p.9). Así mismo la congestión vehicular se evidencia de manera grave en la ciudad de Lima, pero también se está evidenciando en el interior del país como en Huaraz; este fenómeno tiene consecuencias significativas como la pérdida económica debido al tiempo desperdiciado en los embotellamientos y las interrupciones en las intersecciones de las carreteras. (Rondoño, 2018, p.4)

A nivel Regional, se evidencia que la ciudad de Cajamarca ha experimentado un crecimiento exponencial sin una planificación adecuada, se enfrenta a serios problemas de diseño vial. Un ejemplo de esto es el diseño inadecuado para las intersecciones, las cuales no están preparadas para el volumen actual de tráfico. (Araujo, 2020, p.2).

Actualmente, en la intersección entre las calles Iquitos y Ejército se evidencia un alto índice de transitabilidad. Esta intersección es no semaforizada, lo que conlleva a un caos tanto vehicular como peatonal. La mencionada problemática puede atribuirse principalmente

a la falta de planificación del tránsito en la ciudad de Jaén, lo que implica la ausencia de estudios de análisis vial en las intersecciones, esto a su vez dificulta la realización de un diseño adecuado para que pueda satisfacer la demanda vehicular.

Pregunta de investigación

¿Qué condiciones de operación presenta la intersección de las calles Iquitos y Ejército empleando el software Synchro 10 en la ciudad de Jaén, 2025?

1.2. Justificación

1.2.1. Justificación Social

La presente investigación desde el punto de vista social es necesaria porque representa un punto crítico dentro del sistema vial urbano, y la información técnica generada servirá para que las autoridades locales y los actores involucrados en la gestión del tránsito cuenten con una herramienta técnica que les permita comprender la situación vial actual en la intersección de las calles Iquitos y Ejército. Con ello, se pretende contribuir a la optimización del flujo vehicular, reducir los tiempos de espera y minimizar el riesgo de accidentes, beneficiando así a peatones, conductores y la comunidad en general.

1.2.2. Justificación Científica

La presente investigación se justifica científicamente porque en la ciudad de Jaén existen escasas investigaciones relacionadas al análisis vial, es por ello que esta investigación servirá para que las futuras investigaciones tengan nuevos antecedentes como base para futuras investigaciones y puedan utilizar esta metodología en casos similares, promoviendo una planificación más eficiente, segura y sostenible del transporte en entornos urbanos.

1.3. Objetivos

1.3.1. Objetivo general

Realizar el análisis vial en la intersección de las calles Iquitos y Ejército, empleando el software Synchro 10 en la ciudad de Jaén, 2025.

1.3.2. Objetivos específicos

- Determinar las condiciones geométricas de la intersección de las calles Iquitos y Ejército en la ciudad de Jaén.
- Calcular la demanda vehicular y peatonal en el área de estudio.

- Determinar el nivel de servicio de la intersección, mediante el modelado vial.

1.4. Antecedentes

1.4.1. Internacionales

Carrillo & Montoya (2022), en su investigación realizada en la ciudad de Villavicencio-Colombia planteó como objetivo determinar la capacidad vial y nivel de servicio de la intersección, glorieta barrio Porfia, para ello utilizó la metodología HCM. Como resultados obtuvo que la hora de máxima demanda comprende desde las 12:30-1:00 p.m. Además, el flujo vehicular en el acceso A es de 3902 veh., en el acceso C es de 2818 veh., y en el acceso E es de 2373 veh.; Por otro lado, el acceso A presenta un nivel de servicio F, el acceso C tiene nivel de servicio E y el acceso E tiene un nivel de servicio F. Concluye que la capacidad vehicular de los accesos A y E no satisfacen la capacidad del tráfico.

Ospina & Rubio (2021), en su trabajo de investigación realizado en Villavicencio - Colombia, planteó como objetivo analizar el tráfico de vehículos en la intersección mencionada, con el fin de encontrar alternativas que mejoren el flujo vehicular en esa área. La metodología empleada en este proyecto incluyó la recopilación de datos a través de conteos manuales de tráfico, y posteriormente se realizó una modelación utilizando el programa Vissim. Los resultados de dicho análisis revelaron que existen problemas que afectan la movilidad en la intersección en el periodo de tiempo de 17:45 a 18:45 con un total de 1034 vehículos. Concluye que la problemática se debe a la falta de señalización horizontal y vertical, y semáforos en mal estado.

Bajaña (2021), en su tesis planteó como objetivo formular la solución vial para mejorar la congestión vehicular, utilizando como metodología los aforos vehiculares y modelación en el software Synchro 8. Los resultados indican que en la avenidas de estudio se desplazan vehículos que oscilan a velocidades de 30 a 60 km/h; el carril de la Vía a las Mercedes sentido sur-norte proyecta con una demora mayor a 62 segundos, en comparación al carril de la Av. Juan Montalvo en el sentido este-oeste el cual presenta una demora que varía entre los 27 a 42 segundos; además la intersección estudiada presenta un nivel de servicio A. Concluye que la vía opera a un 53.9% de su capacidad en condiciones habituales y se reduce a un 48.5% por medio de semáforos.

Ogoño & Orozco (2020), en su investigación planteó como objetivo analizar el tránsito vehicular en las intersecciones del centro de Loja, para determinar el nivel de servicio. La metodología que utilizó fue la HCM. En los resultados obtenidos muestran que

el volumen máximo de tránsito es de 12:00-13:00 pm, la relación de volumen-capacidad es de 63.52%, además se determinó que el nivel de servicio de las intersecciones es de tipo “C” y “D”. Concluye que una de las soluciones para la ciudad de Loja es el sistema denominado “Hoy no circula”, este sistema de restricción permitiría disminuir el tiempo de traslado en 3 segundos.

1.4.2. Nacionales

Illapuma (2022), en su tesis desarrollada en el distrito de San Sebastián - Cusco, planteó como objetivo realizar un análisis del tránsito de vehículos en intersecciones sin semáforos en el área del distrito de San Sebastián. Utilizó la metodología HCM 2016. Los resultados evidencian que existe una carencia de señales de regulación o normativas acorde a intersecciones no semaforizadas, lo que provoca retrasos en horas punta, evidenciando que los niveles de servicio se encuentran en el rango de C a F (mayor que 50 s/veh); la prolongación avenida de la cultura presenta un IMDA de 2879 veh/día. Concluye que el flujo vehicular en las intersecciones no semaforizadas de la prolongación avenida de la cultura presenta resultados que evidencian el carente nivel de servicio existente en estas.

Mamani (2022), en su tesis desarrollada en Yura y Cerro Colorado, Arequipa, estableció como objetivo realizar el estudio y mejora de flujo vehicular en la vía actual con el fin de disminuir la saturación del tráfico en la carretera PE-34A ubicada en Yura y Cerro Colorado. Utilizando la metodología basada en aforos vehiculares, llegó a los resultados que la zona de mayor congestión fue identificada en la estación E-04 con un nivel de servicio F, la utilización de capacidad de la intersección es de 102.50 %, la relación de Volumen vehicular – Capacidad de la vía “V/C” es de 1.43; además se registraron demoras vehiculares de 116.6 seg/veh. Concluye que el análisis y optimización de los flujos vehiculares de la red vial actual ha permitido identificar y observar la problemática actual para la futura toma de decisiones.

Saavedra (2021), en su tesis desarrollada en la ciudad de Lima, planteó como objetivo realizar una restructuración de las intersecciones de la avenida Universitaria con las avenidas Venezuela, Argentina y Benavides desde la perspectiva multidisciplinaria de la administración de la movilidad. Para ello utilizó la metodología HCM. Los resultados evidencian que la hora de máxima demanda es de 8:00-9:00 am con una totalidad de 3904 vehículos combinados; además los niveles de servicio de las 3 intersecciones se traducen en niveles desfavorables (E y F). Concluye que las intersecciones estudiadas requieren una restructuración centrada en proporcionar mayores beneficios a los peatones y ciclistas.

Reynoso (2021), en su tesis desarrollada en la confluencia de la avenida Panamericana Norte y Canta Callao”, planteó como objetivo sugerir la implementación de un intercambio vial a desnivel evaluando el nivel de servicio, a través de un estudio de microsimulación. Para ello utilizó la metodología HCM. Los resultados evidencian que las demoras promedio del nodo de la intersección semaforizada es de 41.9seg; además la carretera Panamericana Norte tiene un nivel de servicio “C”, y el nodo en estudio presenta un nivel de servicio “D”. Concluye que el uso de un intercambio vial a desnivel en “T” permitirá que el nodo estudiado mejore notablemente hasta alcanzar un nivel de servicio “A”.

Zapana & Ojeda (2021), en su tesis desarrollada en la ciudad de Cusco, planteó como objetivo determinar la capacidad vial y nivel de servicio de las confluencias no semaforizadas de la prolongación av. Grau y av. Agustín Gamarra, para ello utilizó la metodología HCM y microsimulación con el software VISSIM. Los resultados evidencian que en la mayoría de intersecciones los niveles de servicio operan bajo condiciones de saturación (E) y (F), excepto en los nodos 2, 5 y 11 que tienen valores menores a (D); además los tiempos de demora varían entre 1.6 y 142.3 segundos. Concluye que los valores de V/C van de 1.09 a 1.24, esto significa que el volumen que transitan por estos cruces excede a la capacidad de la infraestructura vehicular.

1.4.3. Regionales y locales

Moron & Ramos (2023), en su trabajo de investigación propuso como objetivo llevar a cabo un análisis vial que permita mejorar el nivel de servicio en la intersección entre la calle Sacsayhuamán y la avenida Villanueva Pinillos, para ello utilizó la metodología HCM 2010. Los resultados obtenidos fueron que El día con el mayor flujo vehicular es el lunes, con un total de 5260 vehículos. La hora pico se presenta entre las 12:15 y las 13:15, momento en el cual se registran 1017 vehículos. Además, se observa que los mototaxis representan el 55.12% de los vehículos en circulación. Concluyó que el análisis vial realizado aplicando el software mejoró el nivel de servicio a “B”, reduciendo las demoras, maniobras de estacionamiento y disminuye la cantidad vehicular en la zona, emisiones contaminantes entre otros.

Díaz & Horna (2022), en su tesis desarrollada en la ciudad de Jaén – Cajamarca – 2022, planteó como objetivo analizar la circulación de vehículos y peatones en dicha intersección con la intención de proponer opciones de resolución utilizando el programa Vissim. Utilizó la metodología HCM 2010. Los resultados indican velocidades promedio

que tienen los vehículos en los accesos de la intersección es de 15 km/h; además el tiempo de viaje es de 61.35 segundos, y el flujo peatonal presenta un carácter desordenado, con una densidad de peatones que no supera los 0.077 peatones por m². Concluyó que la congestión vehicular en la intersección de la Calle Francisco Orellana cuadra N° 01 y Luna Pizarro N° 2 y 3, se debe a la geometría irregular, falta de señales horizontales y además que no cuentan con semáforos.

Velásquez (2021), en su tesis desarrollada en la ciudad de Cajamarca, estableció como objetivo Analizar el nivel de servicio y la capacidad de los vehículos en dos intersecciones que no cuentan con semáforos, para ello utilizó cámaras de videovigilancia y la metodología HCM 2010. Los resultados muestran que la demanda máxima horaria en la intersección 1 es de 749 veh. y de la intersección 2 es de 305 veh, por ello los volúmenes elevados de flujo vehicular generan altos índices de demoras que sobrepasan el límite recomendado (50 segundos), por lo que estas intersecciones no semaforizadas se clasifican con nivel de servicio "F". Concluyó que los factores que ocasionan el congestionamiento son el reducido ancho de carriles, estacionamientos vehiculares restringidos, ausencia de semáforos, etc.

Gamboa & Julcamoro (2021), en su trabajo de investigación propuso como objetivo analizar el nivel de servicio de las intersecciones semaforizadas en el Jr. Manuel Seoane, en la ciudad de Cajamarca, que presentan un elevado grado de congestión vehicular., para ello utilizó la metodología HCM 210. Los resultados indican que en la intersección del Jr. Manuel Seoane con Av. Hoyos Rubio el flujo de saturación es de 824 veh/h y la hora punta es de 16:00-17:00 pm; en cambio en la intersección de dicho Jr. con la prol. Revilla Pérez el flujo de saturación es de 731 veh/h y la hora punta es de 12.30-13:30 pm. Concluye que en las intersecciones existe congestionamiento vehicular.

Abanto (2020), en su tesis desarrollada planteó como objetivo determinar los tiempos óptimos de desplazamiento vehicular en la Plazuela Bolognesi - Cajamarca, teniendo en cuenta los flujos vehiculares, peatonales y la infraestructura vial. Utilizó la metodología HCM 2010 y los softwares de modelación VISSIM Y VILWALK. Los resultados indican demoras promedio de 110.92 segundos/vehículo y velocidades entre 3.05-5.03 km/h; Además, la velocidad promedio de los peatones fue de 2.02 km/h y el tiempo de viaje promedio fue de 179.96 s. Concluye que las 3 alternativas viables propuestas mejoran el funcionamiento de la rotonda Bolognesi, principalmente porque son seguras, económicas y funcionales.

II. MATERIALES Y MÉTODOS

2.1. Población, muestra y muestreo

2.1.1. Población

La población estuvo conformada por todas las intersecciones no semaforizadas en la ciudad de Jaén, estas intersecciones representan puntos críticos dentro del sistema vial urbano, donde la ausencia de semáforos puede generar problemas de tránsito.

2.1.2. Muestra

Para esta investigación, la muestra a analizar estuvo conformada por la intersección de las calles Iquitos y Ejército.

2.1.3. Muestreo

El muestreo que se aplicó para la presente investigación es no probabilístico, puesto que la selección de la intersección se realizó considerando su accesibilidad, disponibilidad de datos y la evidencia de un problema vial.

2.2. Hipótesis

El análisis vial en la intersección de las calles Iquitos y Ejército en la ciudad de Jaén presenta condiciones de operación deficientes, caracterizadas por un nivel de servicio C y tiempos de demora moderados.

2.3. Materiales y métodos

2.3.1. Materiales

Los materiales utilizados en el desarrollo de la presente investigación fueron: Wincha; nivel topográfico, GPS, estación total, hojas de registro de conteo vehicular, computadora con software Synchro 10.

2.3.2. Métodos

Deductivo: Este método se aplicó al analizar la congestión vehicular desde un enfoque general, revisando referencias bibliográficas como libros, trabajos de investigación, manuales (Manual HCM), para buscar soluciones aplicables a la intersección, contribuyendo así a la mejora del sistema vial de Jaén.

Inductivo: Este método fue aplicado luego de analizar las condiciones reales de la intersección estudiada, extrayendo conclusiones a partir de los datos obtenidos sobre su geometría, flujo vehicular y nivel de servicio.

2.4. Procedimiento de recolección de datos

Los procedimientos para la recolección de datos de esta investigación han sido organizados por etapas que se presenta luego de la descripción de cada una de las ellas con sus respectivas evidencias en las figuras correspondientes.

Etapa 1: Levantamiento topográfico

En esta primera etapa se tomaron las medidas del ancho de calzada, radios de giro, pendientes y demás características físicas de la intersección mediante el uso de GPS diferencial, wincha y nivel topográfico.

Figura 1.

Levantamiento topográfico en la intersección de las calles Iquitos y Ejército



Nota: En la figura 1, se muestra el proceso de configuración de un receptor GNSS geodésico, en la intersección de las calles Iquitos y Ejército.

Figura 2.

Nivelación en la intersección de las calles Iquitos y Ejército



Nota: En la figura 2, se muestra la toma de datos para el cálculo de las pendientes en la intersección de las calles Iquitos y Ejército.

Etapa 2: Registro de condiciones de señalización y circulación

Durante esta etapa se documentó el estado de señalización horizontal y vertical, así como el comportamiento de los conductores y peatones, lo que permitió identificar situaciones de conflicto, congestión e inseguridad.

Figura 3.

Medición del ancho de calzada en la intersección de las calles Iquitos y Ejército.



Nota: En la figura 3, se muestra el proceso de medición de la calzada en la intersección de las calles Iquitos y Ejército.

Etapa 3: Estimación del aforo vehicular y peatonal

En esta etapa se realizó el conteo vehicular durante dos semanas en horas punta de 6:00 am – 9.00 am, de 11.00 am – 2.00 pm y de 4.00 pm – 7.00 pm, registrando manualmente el número de vehículos que transitaban por cada acceso. La información fue registrada en planillas previamente elaboradas.

Figura 4.

Conteo vehicular en la intersección de las calles Iquitos y Ejército



Nota: En la figura 4, se muestra el conteo vehicular en la intersección de las calles Iquitos y Ejército en el turno medio día.

Figura 5.

Conteo vehicular en la intersección de las calles Iquitos y Ejército



Nota: En la figura 5, se muestra el conteo peatonal en la intersección de las calles Iquitos y Ejército en el turno de medio día.

III. RESULTADOS

3.1. Condiciones geométricas de la intersección

3.1.1. Seguridad vial

✓ **Visibilidad**

La intersección presenta cuatro accesos con dos carriles por aproximación y un ancho promedio de calzada de 7.00 m. Durante la inspección de campo se identificó que los accesos Este y Oeste presentan una pendiente longitudinal de 6%, lo cual reduce parcialmente la distancia de visibilidad de aproximación, especialmente para vehículos menores como mototaxis.

Asimismo, se observó que una de las esquinas no cuenta con ochavo, sumado a la actividad comercial en las esquinas, estacionamientos informales y presencia de peatones en calzada genera obstáculos visuales. La ausencia de líneas de pare demarcadas y señalización horizontal reduce la claridad de prioridad de paso, incrementando el riesgo de conflictos laterales.

✓ **Velocidad de operación**

Para el modelado en el software Synchro 10 se adoptó una velocidad de operación de 30 km/h, correspondiente a zona urbana comercial según el Reglamento Nacional de Tránsito. No obstante, durante algunas horas se evidenció que algunos vehículos superan dicha velocidad, lo que incrementa el riesgo de accidentes en la intersección.

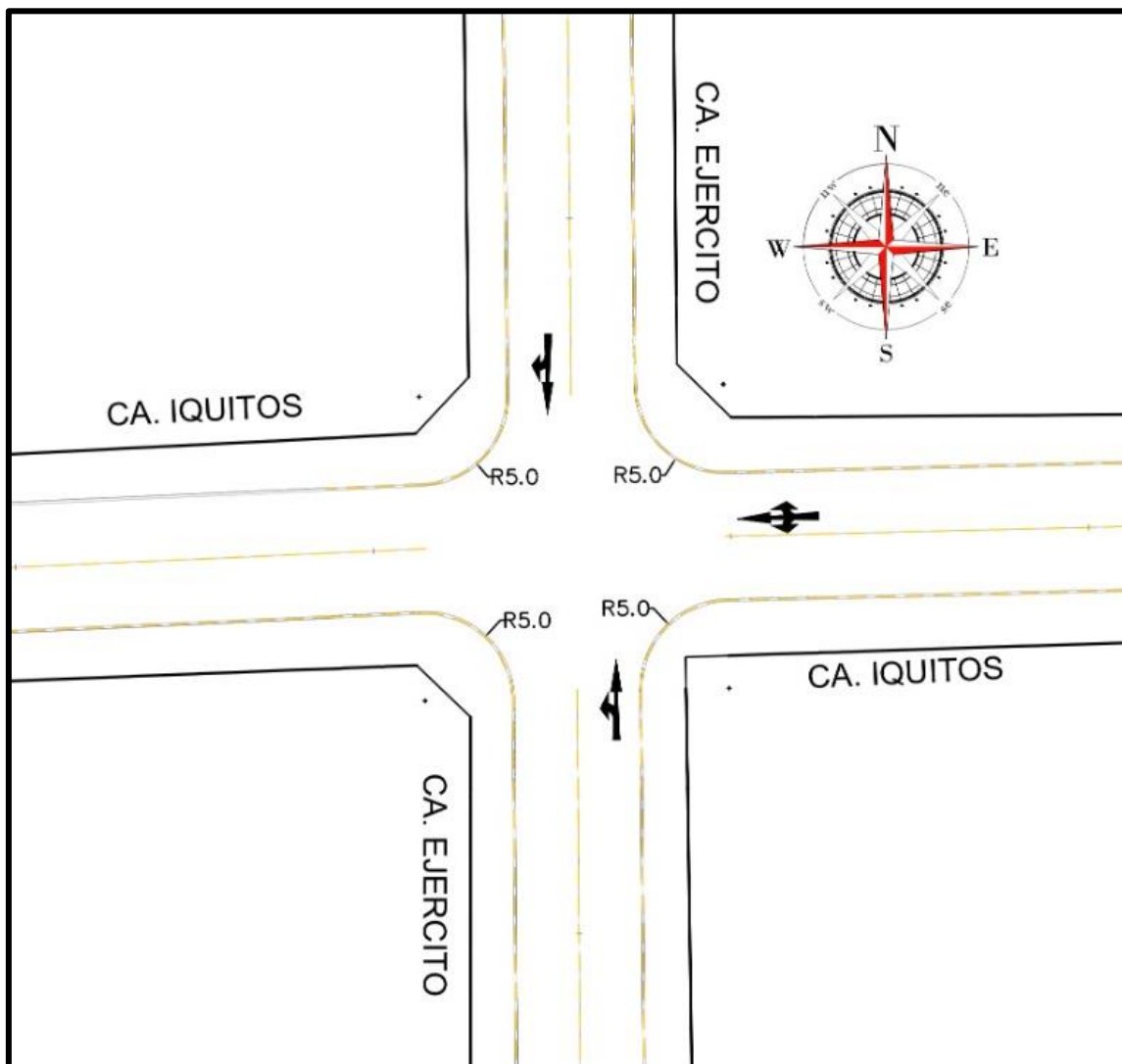
3.1.2. Maniobrabilidad

✓ **Radios de giro**

De acuerdo con el levantamiento geométrico realizado, los radios de giro en las cuatro esquinas de la intersección son de 5.00 m. Este valor resulta funcional para el tránsito predominante de vehículos livianos, como mototaxis y automóviles; sin embargo, se encuentra en el límite inferior para camionetas y camiones, las cuales deben reducir significativamente su velocidad o invadir parcialmente el carril contiguo durante la maniobra de giro.

Figura 6.

Giros y radios de giro



Nota: En la figura 6, se muestra la configuración geométrica de la intersección, indicando los giros vehiculares y radios de giro existentes ($R = 5.00$ m).

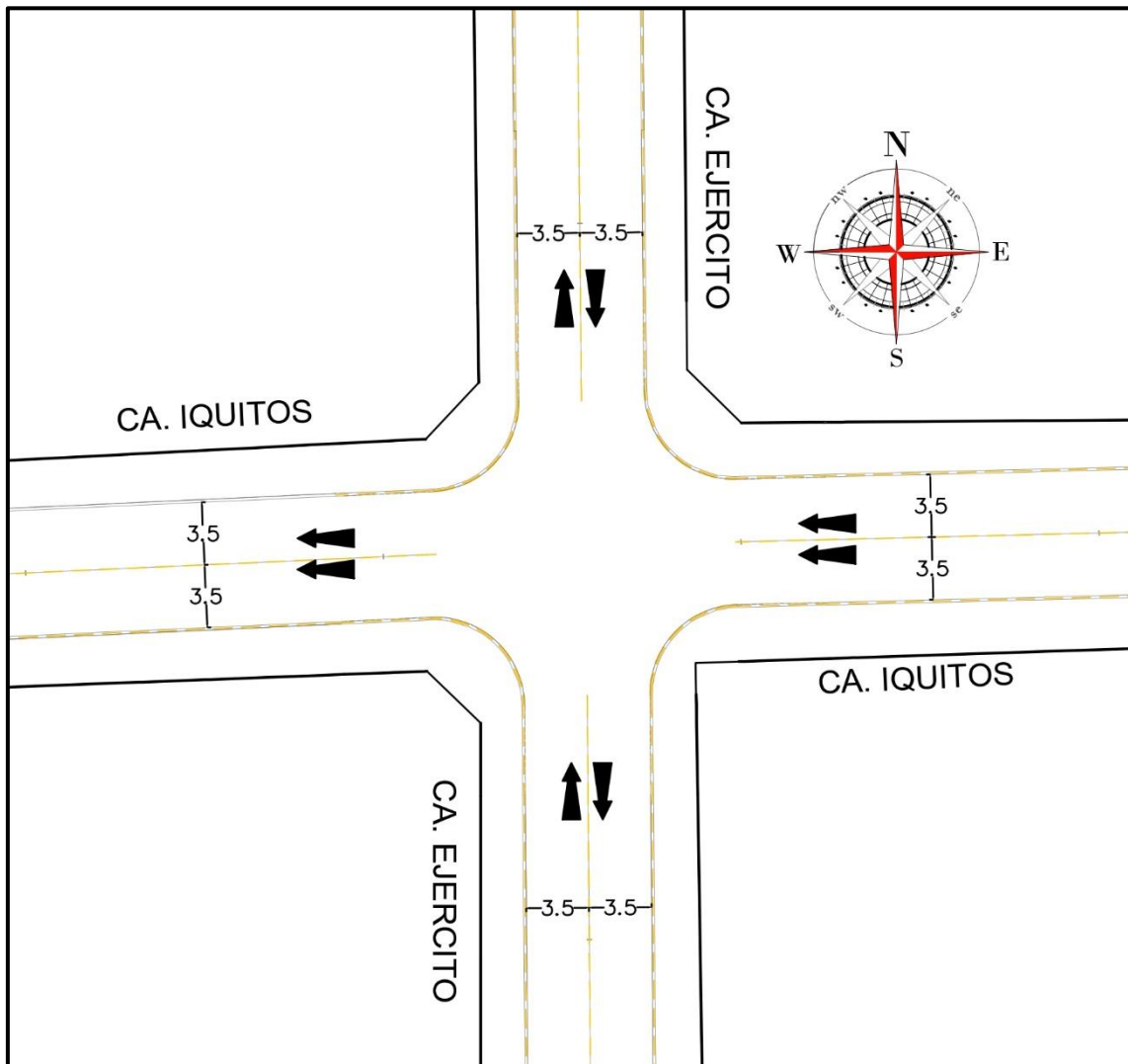
✓ Anchos de carril

El ancho promedio de calzada es de 7.00 m por acceso, lo que equivale a aproximadamente 3.50 m por carril. Este valor es adecuado para vías urbanas comerciales

No se identificaron zonas formales de estacionamiento; sin embargo, se observó estacionamiento informal a menos de 5 m de la esquina en determinados periodos, afectando la visibilidad lateral.

Figura 7.

Anchos de carril



Nota: En la figura 7, se muestra la configuración geométrica de la intersección, indicando los anchos de carril existentes ($L = 3.50$ m).

3.1.3. Accesibilidad peatonal

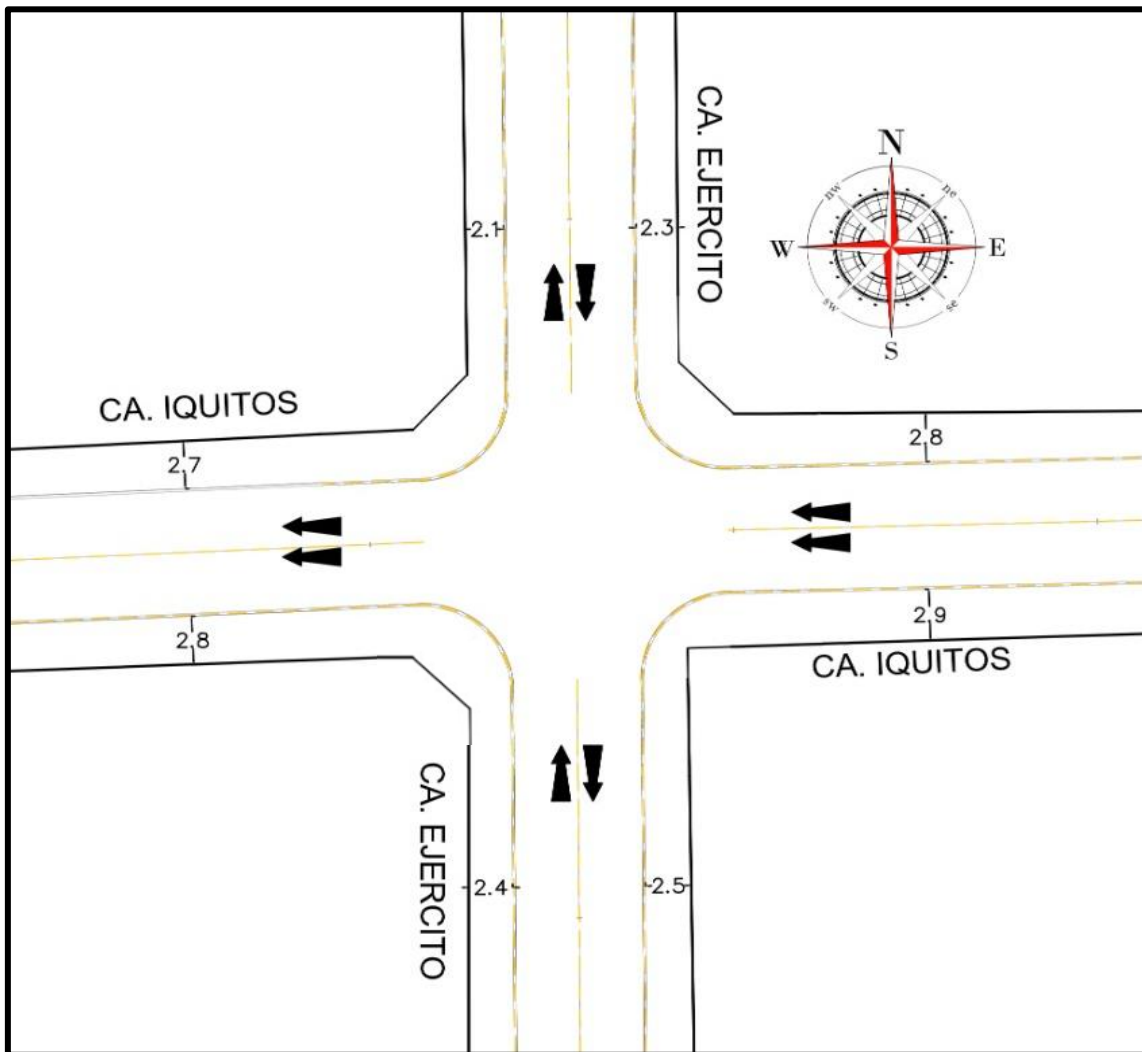
No existen cruces peatonales demarcados horizontalmente, lo que genera cruces informales en múltiples trayectorias. La ausencia de señalización de esquinas limita la seguridad peatonal, especialmente en periodos de mayor demanda.

Asimismo, de acuerdo con el Reglamento Nacional de Edificaciones (RNE), las veredas con pendientes de hasta 6% deben contar con descansos de 1.20 m de longitud como máximo cada 30 metros. En la situación actual evaluada, no se evidencia la presencia de

dichos descansos, lo que incumple la normativa vigente y afecta las condiciones de accesibilidad y seguridad para los peatones, particularmente para personas con movilidad reducida.

Figura 8.

Anchos de veredas



Nota: En la figura 8, se muestra la configuración geométrica de la intersección, indicando los anchos de veredas existentes.

3.1.4. Drenaje y pendientes

Los accesos Norte y Sur presentan pendiente longitudinal de 0.5%, mientras que los accesos Este y Oeste presentan pendiente de 6%. Esta diferencia favorece el escurrimiento superficial longitudinal.

3.1.5. Estacionamiento y retiro de esquina

✓ Estacionamiento

No se han delimitado formalmente espacios de estacionamiento; sin embargo, se observó estacionamiento informal en los tramos próximos a la intersección, lo cual no garantiza una adecuada visibilidad lateral para maniobras de cruce y giro.

✓ Retiro de esquina

Se evidenció que tres de las cuatro esquinas cuentan con un ochavo de 3.00 m por lado, mientras que una de ellas no presenta retiro, manteniendo alineación directa con la edificación colindante; esta condición reduce el campo visual en maniobras de giro y limita el espacio de espera peatonal.

3.1.6. Señalización y demarcación

Durante la inspección de campo se evidenció deficiencia en señalización horizontal y vertical. No se identificaron líneas de pare, ni demarcación de cruces peatonales.

A continuación, se presenta un resumen de los datos sobre las características geométricas obtenidas en el sitio.

Tabla 1.

Condiciones geométricas de la intersección

| DATOS COMPLEMENTARIOS DE LA GEOMETRIA | | | | | | |
|---------------------------------------|------------------------|---------------------------|----------------|---------------------|------------------|------------------------------------|
| ACCESO | Número de carriles (N) | Ancho promedio de calzada | Pendiente (S%) | Carriles exclusivos | Estacionamientos | Zonificación o tipo de área |
| Norte (N) | 2 | 7 | 0.5 | NO | NO | Comercio central de la ciudad (CC) |
| Sur (S) | 2 | 7 | 0.5 | NO | NO | |
| Este (E) | 2 | 7 | 6 | NO | NO | |
| Oeste (O) | 2 | 7 | 6 | NO | NO | |

Nota: En la tabla 1, se muestra la configuración geométrica de los accesos que conforman la intersección de las calles Iquitos y Ejército.

La clasificación de la zona o categoría del área, al igual que el esquema fotográfico que captura medidas de las condiciones geométricas en el terreno, se presenta en el Anexo 13.

3.2. Demanda vehicular y peatonal

3.2.1. Demanda Vehicular

Para realizar el aforo vehicular existen técnicas como el aforo manual que demanda una cantidad considerable de personal ubicados estratégicamente en varios puntos de la intersección que se estudia, y también está el aforo mecánico, donde se emplean equipos de video grabación que tienen una particular ventaja ya que permite obtener información detallada sobre clasificación vehicular, movimientos direccionales, obediencia a los dispositivos para el control del tránsito, entre otros. (Rondoño, 2018, p.51)

a) Volumen vehicular total por día

El conteo vehicular se desarrolló durante un periodo de dos semanas consecutivas, con el objetivo de identificar las variaciones en la demanda diaria. Tras el procesamiento y análisis de los datos obtenidos, se determinó que los días lunes, miércoles y viernes presentan una mayor afluencia vehicular en comparación con el resto de la semana.

Luego de completar los análisis en Excel para cada uno de los aforos diarios y en ambos sentidos, se concluyó que el viernes se registró el mayor número de vehículos. A continuación, en la Tabla N° 2, se presenta el total de vehículos por día.

Tabla 2.

Total de vehículos por día

| DIAS | SENTIDOS | | | | | | | TOTAL |
|-----------|----------|------|------|------|-----|-----|-----|--------------|
| | E-O | E-N | E-S | S-N | S-O | N-S | N-O | |
| Lunes | 5946 | 1850 | 1654 | 1406 | 836 | 873 | 766 | 13331 |
| Miércoles | 5522 | 1326 | 1332 | 1154 | 567 | 885 | 606 | 11386 |
| Viernes | 5982 | 1976 | 1684 | 1382 | 690 | 985 | 742 | 13441 |

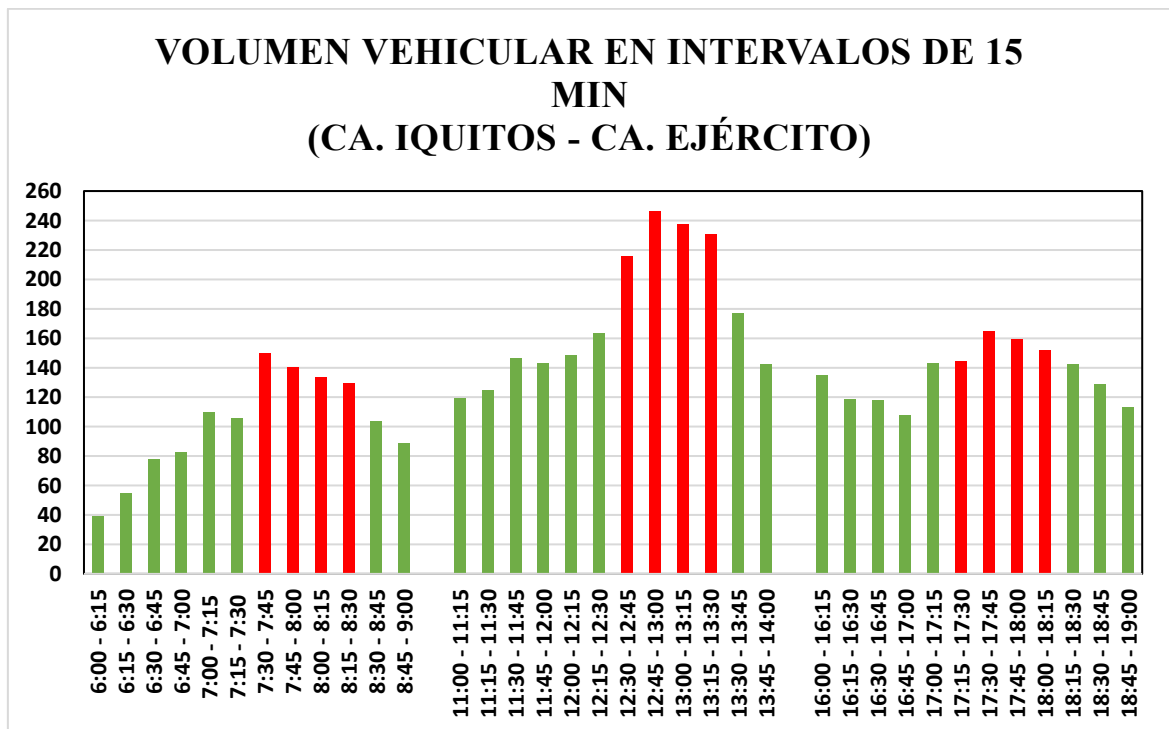
Nota: En la tabla 2, se muestra la cantidad total de vehículos que circulan en la intersección.

b) Determinación de la hora pico

Para identificar la hora de mayor afluencia, se elaboró una tabla estadística en forma de barras, que correlaciona el número de vehículos con intervalos de 15 minutos. Cabe señalar que las barras que presentan el mayor volumen vehicular están marcadas en rojo; por lo tanto, las horas pico que se han establecido son las siguientes: 7:30 – 8:30, 12:30 – 13:30, 17:15 – 18:15

Figura 9.

Volumen vehicular en intervalos de 15 minutos.



Nota: En la figura 9, las barras de color rojo representan el volumen máximo vehicular correspondiente a los turnos mañana, medio día y tarde.

c) Determinación del porcentaje de tipo de vehículos en hora punta

Luego de determinar la hora pico, se procedió a calcular el porcentaje de participación de cada tipo de vehículo respecto al volumen total registrado.

Tabla 3.*Porcentaje de tipo de vehículos en hora punta*

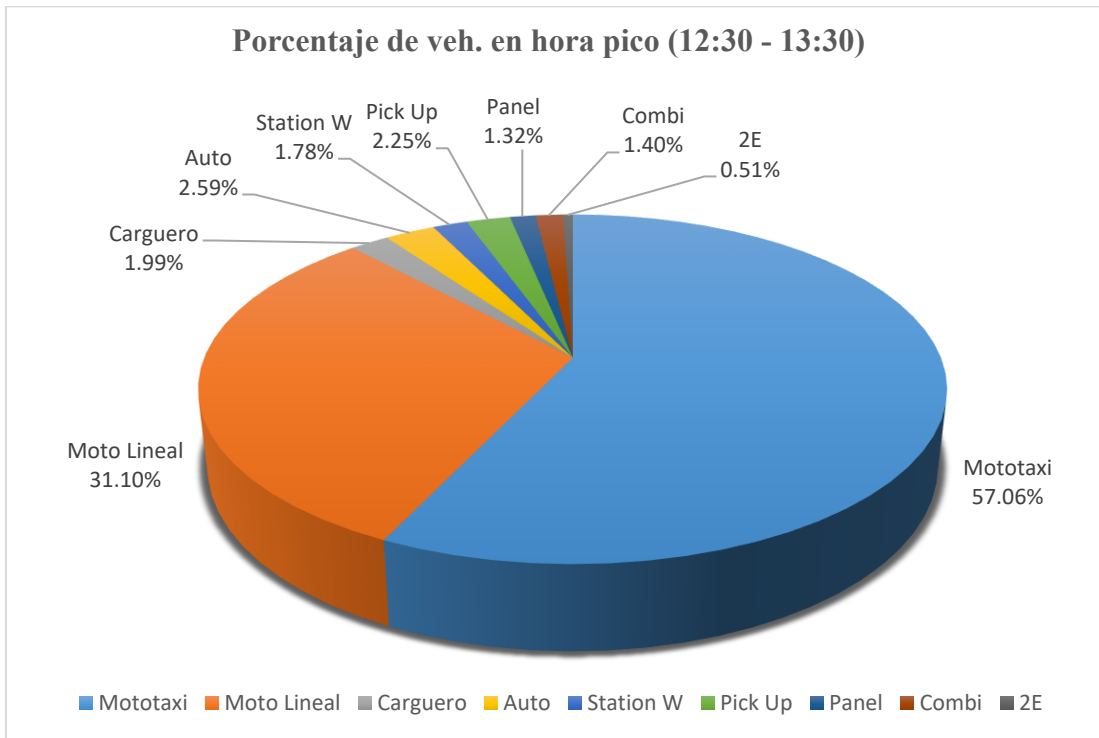
| PORCENTAJE DE TIPO DE VEHICULOS EN HORA PUNTA | | | | | | |
|---|-------------|--------|---------------|--------|---------------|--------|
| Tipo de Veh. | 7:30 - 8:30 | | 12:30 - 13:30 | | 17:15 - 18:15 | |
| | N° | % | N° | % | N° | % |
| | Veh | | Veh | | Veh | |
| Mototaxi | 898 | 61.30% | 1345 | 57.06% | 1047 | 58.72% |
| Moto Lineal | 432 | 29.49% | 733 | 31.10% | 615 | 34.49% |
| Carguero | 14 | 0.96% | 47 | 1.99% | 21 | 1.18% |
| Auto | 24 | 1.64% | 61 | 2.59% | 25 | 1.40% |
| Station W | 30 | 2.05% | 42 | 1.78% | 20 | 1.12% |
| Pick Up | 34 | 2.32% | 53 | 2.25% | 38 | 2.13% |
| Panel | 16 | 1.09% | 31 | 1.32% | 10 | 0.56% |
| Combi | 10 | 0.68% | 33 | 1.40% | 7 | 0.39% |
| 2E | 7 | 0.48% | 12 | 0.51% | 0 | 0.00% |
| 3E | 0 | 0.00% | 0 | 0.00% | 0 | 0.00% |
| 4E | 0 | 0.00% | 0 | 0.00% | 0 | 0.00% |
| Total | 1465 | 100% | 2357 | 100% | 1783 | 100% |

Nota: En la tabla 3, se presenta los porcentajes correspondientes al volumen vehicular durante las horas pico.

En los siguientes gráficos se muestra la distribución porcentual de los diferentes tipos de vehículos que transitan por la intersección durante las horas punta correspondiente a los turnos mañana, medio día y tarde respectivamente. Se observa que la mototaxi y moto lineal representan la mayor proporción del flujo vehicular.

Figura 10.

Porcentaje de vehículos en hora pico



Nota: En la figura 10, se muestra la distribución porcentual del tráfico según el tipo de vehículos, el tipo de vehículos que más circula son los mototaxis con 57.06% y el de menor incidencia son los camiones de 2 ejes con el 0.51%.

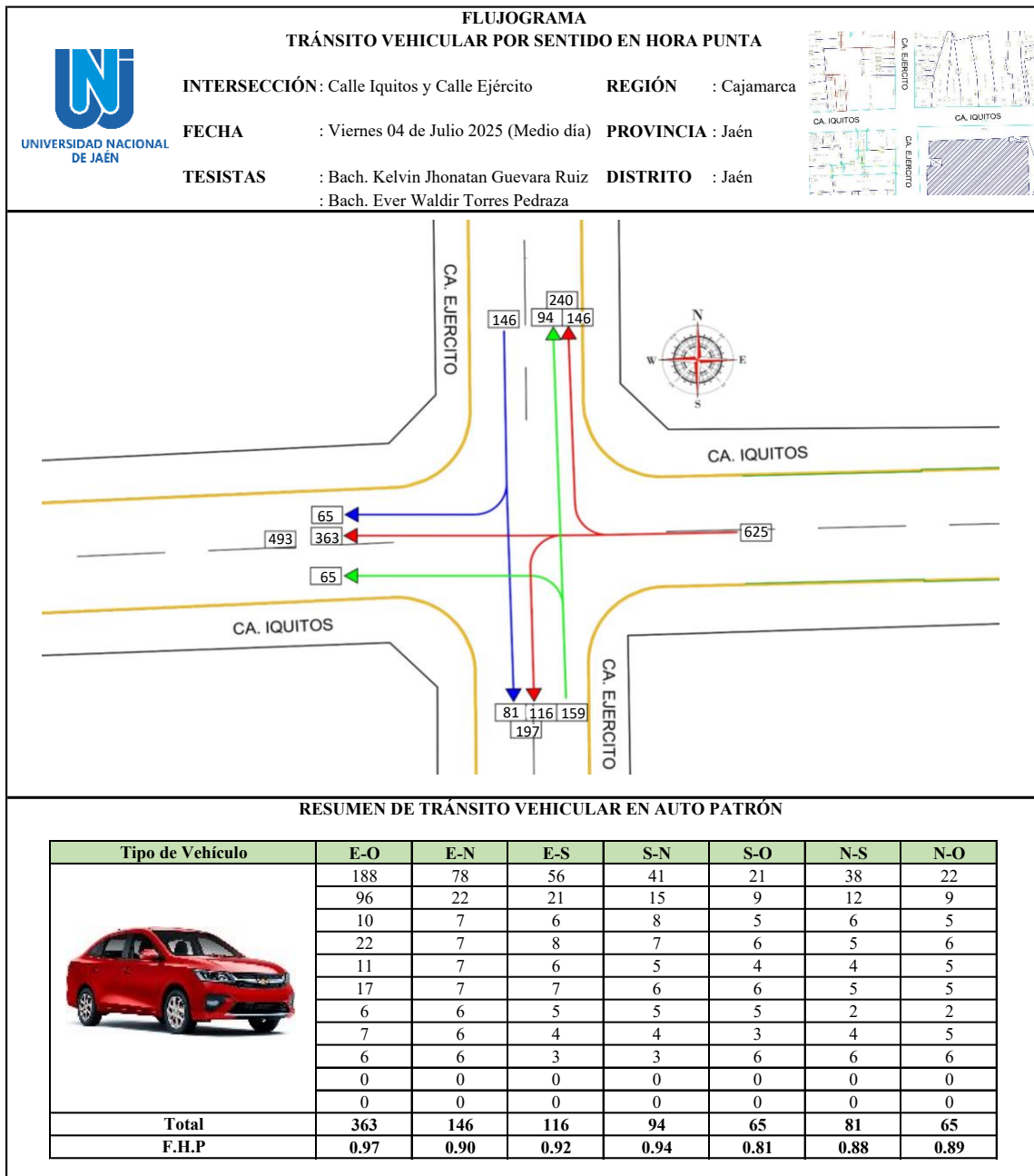
d) Flujograma de momento crítico

A continuación, la figura N° 11 presenta el flujograma correspondiente al periodo más crítico, utilizado para el modelado vial. Es importante destacar que en dicho flujograma se incluyen parámetros de gran relevancia, tales como:

- Volumen total por acceso expresado en autos patrón.
- Factores horarios de máxima demanda, también conocidos como factores de hora pico (FHP)

Figura 11.

Flujograma de tránsito vehicular por sentido en hora punta



Nota: En la figura 11, se muestra el flujograma correspondiente al medio día, en el cual se visualiza los giros y la cantidad de vehículos (auto patrón).

e) Tasa de flujo de saturación en condiciones ideales

De acuerdo con la metodología establecida por el HCM 2010, el flujo de saturación ideal es de 1900 veh/h; por ello, se adoptó este valor como referencia para los cálculos posteriores.

3.2.2. Demanda Peatonal

El conteo de peatones se llevó a cabo mediante un método manual, posicionándonos de forma estratégica en distintos lugares de la intersección para realizarlo de manera adecuada. Este conteo se efectuó los días: lunes 14, miércoles 16 y viernes 18 de julio del 2025, a lo largo de tres periodos cada día, desde las 07:00 hasta las 09:00, de 12:00 a 14:00 y de 17:00 a 19:00 horas. Se realizaron conteos cada 15 minutos durante los horarios establecidos.

Tabla 4.

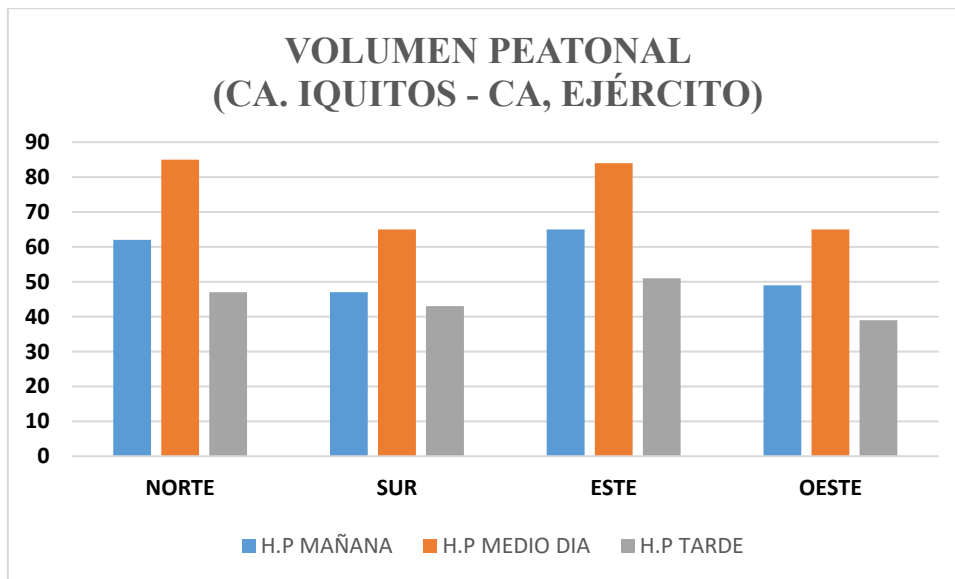
Resumen de aforo peatonal por acceso

| RESUMEN DE AFORO PEATONAL POR ACCESO | | | | | |
|--------------------------------------|-------------------------------------|-----------------------|----------------------------|------------------------|----|
| INTERSECCIÓN | | HORA PUNTA/PERIODO | | | |
| | | Mañana 7:30 - 8:30 | Medio día 12:30 - 13:30 | Tarde 17:15 - 18:15 | |
| Ca. Ejército | Total de peatones por hora / acceso | NORTE | 62 | 85 | 47 |
| | | SUR | 47 | 65 | 43 |
| Ca. Iquitos | Total de peatones por hora / acceso | ESTE | 65 | 84 | 51 |
| | | OESTE | 49 | 65 | 39 |

Nota: En la tabla 4, se detalla el aforo peatonal en horas punta de la intersección.

Figura 12.

Volumen peatonal



Nota: En la figura 12, se evidencia que en la hora punta del medio día existe mayor demanda peatonal.

3.3. Cálculo del nivel de servicio de la intersección

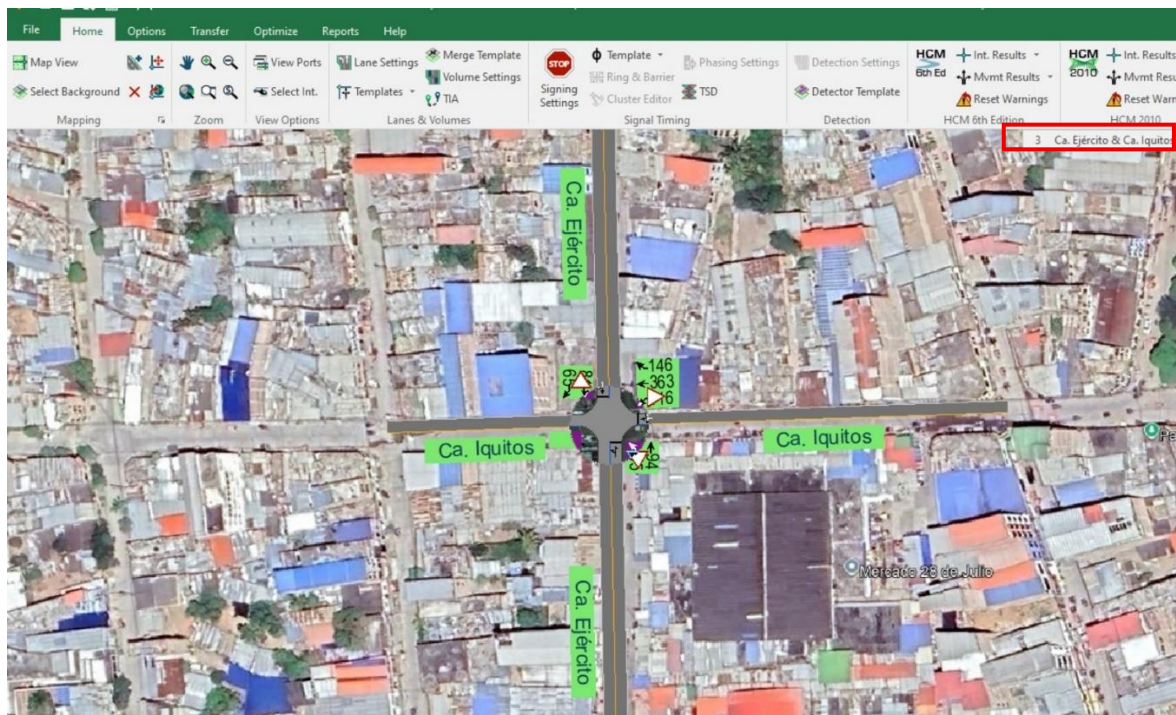
3.3.1. Diagnóstico de la situación actual mediante la aplicación del software Synchro 10

En esta sección se describe el proceso a seguir, incluyendo la introducción de datos, ajuste de la demanda de vehículos, cálculo de la capacidad y acciones de eficiencia tales como los tiempos de espera y la calidad del servicio; con el propósito de analizar la situación actual del área en estudio.

En la figura 13 se evidencia la zona correspondiente al área de estudio, donde resalta la intersección objeto de análisis, considerando las características geométricas (cantidad de carriles, ancho medio de los carriles, inclinación, y maniobras permitidas) observadas en el terreno.

Figura 13.

Representación gráfica de la intersección en el software Synchro 10.



Nota: En la figura 13, se muestra la intersección en estudio, a la cual se le asignó su respectivo nombre

Se debe considerar que la velocidad de operación adoptada es de 30 km/h, conforme a lo establecido en el Reglamento Nacional de Tránsito.

En la Figura N.º 14 se presenta la configuración de carril (*Lane Settings*), la cual permite definir las condiciones geométricas del área en estudio, tales como: el sentido de circulación (unidireccional o bidireccional), el número de carriles, el volumen de tránsito, la longitud de cada tramo vial, la velocidad de operación, el flujo de saturación ideal, el ancho de carril, la pendiente y el tipo de zona.

Los valores mostrados en color azul en dicha figura corresponden a los resultados obtenidos, que incluyen el factor de utilización de carril, los factores de giro a la derecha e izquierda, los factores de giro asociados al volumen de peatones y ciclistas, así como el flujo de saturación ajustado.

Figura 14.

Configuración de geometría de carril

| LANE SETTINGS | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|-----------------------------|-------------------------------------|------|------|-------------------------------------|------|------|-------------------------------------|------|------|-------------------------------------|------|------|
| Lanes and Sharing (NRL) | [Icons] | | | | | | | | | | | |
| Traffic Volume (vph) | 0 | 0 | 0 | 116 | 363 | 146 | 65 | 94 | 0 | 0 | 81 | 65 |
| Future Volume (vph) | 0 | 0 | 0 | 116 | 363 | 146 | 65 | 94 | 0 | 0 | 81 | 65 |
| Street Name | Ca. Iquitos | | | Ca. Iquitos | | | Ca. Ejército | | | Ca. Ejército | | |
| Link Distance (m) | 66.6 | | | 119.8 | | | 118.7 | | | 107.4 | | |
| Links Speed (km/h) | 50 | | | 50 | | | 50 | | | 50 | | |
| Set Arterial Name and Speed | EB | | | WB | | | NB | | | SB | | |
| Travel Time (s) | 4.8 | | | 8.6 | | | 8.5 | | | 7.7 | | |
| Ideal Satd. Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width (m) | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 |
| Grade (%) | 6 | | | 6 | | | 0 | | | 0 | | |
| Area Type CBD | <input type="checkbox"/> | | | <input type="checkbox"/> | | | <input type="checkbox"/> | | | <input type="checkbox"/> | | |
| Storage Length (m) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Storage Lanes (R) | None | | | | | | | | | | | |
| Right Turn Channelized | None | | | | | | | | | | | |
| Curb Radius (m) | None | | | | | | | | | | | |
| Add Lanes (R) | None | | | | | | | | | | | |
| Lane Utilization Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Right Turn Factor | -- | | | 0.967 | | | 1.000 | | | 0.940 | | |
| Left Turn Factor (prot) | -- | | | 0.991 | | | 0.978 | | | 1.000 | | |
| Saturated Flow Rate (prot) | -- | | | 1747 | | | 1838 | | | 1766 | | |
| Left Turn Factor (perm) | -- | | | 0.991 | | | 0.818 | | | 1.000 | | |
| Right Ped Factor | -- | | | 1.000 | | | 1.000 | | | 1.000 | | |
| Left Ped Factor | -- | | | 1.000 | | | 1.000 | | | 1.000 | | |
| Saturated Flow Rate (perm) | -- | | | 1747 | | | 1537 | | | 1766 | | |
| Right Turn on Red? | <input checked="" type="checkbox"/> | | | <input checked="" type="checkbox"/> | | | <input checked="" type="checkbox"/> | | | <input checked="" type="checkbox"/> | | |
| Saturated Flow Rate (RTOR) | -- | | | 43 | | | 0 | | | 73 | | |
| Link Is Hidden | <input type="checkbox"/> | | | | | | | | | | | |
| Hide Name in Node Title | <input type="checkbox"/> | | | | | | | | | | | |

Nota: En la figura 14, se muestra los valores que corresponden a los resultados obtenidos mostrados en color azul.

En la figura 15, en cuanto a los volúmenes de tránsito, el software permite ingresar flujos vehiculares mixtos; no obstante, se optó por homologar las diferentes tipologías vehiculares mediante la Unidad de Coche Particular (UCP), equivalente a un automóvil. Además, se consideraron los volúmenes de peatones y ciclistas que interfieren con los giros, el factor de hora punta, el porcentaje de vehículos pesados (nulo por el uso de UCP), la

existencia de estacionamientos y las maniobras de parqueo. En la siguiente figura se muestra la configuración de volúmenes (Volume Settings) con todos estos parámetros.

Figura 15.

Configuración de volumen

| | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|-----------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| Lanes and Sharing (HRL) | | | | | | | | | | | | |
| Traffic Volume (vph) | 0 | 0 | 0 | 116 | 363 | 146 | 65 | 94 | 0 | 0 | 81 | 65 |
| Development Volume (vph) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Combined Volume (vph) | 0 | 0 | 0 | 116 | 363 | 146 | 65 | 94 | 0 | 0 | 81 | 65 |
| Future Volume (vph) | 0 | 0 | 0 | 116 | 363 | 146 | 65 | 94 | 0 | 0 | 81 | 65 |
| Conflicting Peds. (#/hr) | 86 | — | 65 | 65 | — | 86 | 88 | — | 61 | 61 | — | 88 |
| Conflicting Bicycles (#/hr) | — | — | 0 | — | — | 0 | — | — | 0 | — | — | 0 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.97 | 0.90 | 0.81 | 0.94 | 0.92 | 0.92 | 0.88 | 0.89 |
| Growth Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adjusted Flow (vph) | 0 | 0 | 0 | 126 | 374 | 162 | 80 | 100 | 0 | 0 | 92 | 73 |
| Heavy Vehicles (%) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Bus Blockages (#/hr) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Adj. Parking Lane? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Parking Maneuvers (#/hr) | — | — | — | — | — | — | — | — | — | — | — | — |
| Traffic from mid-block (%) | — | 0 | — | — | 0 | — | — | 0 | — | — | 0 | — |
| Link OD Volumes | — | — | — | — | — | — | — | — | — | — | — | — |
| Traffic in shared lane (%) | — | — | — | — | — | — | — | — | — | — | — | — |
| Lane Group Flow (vph) | 0 | 0 | 0 | 0 | 662 | 0 | 0 | 180 | 0 | 0 | 165 | 0 |

Nota: En la figura 15, se muestra la asignación del volumen vehicular y peatonal, además el factor hora pico (FHP).

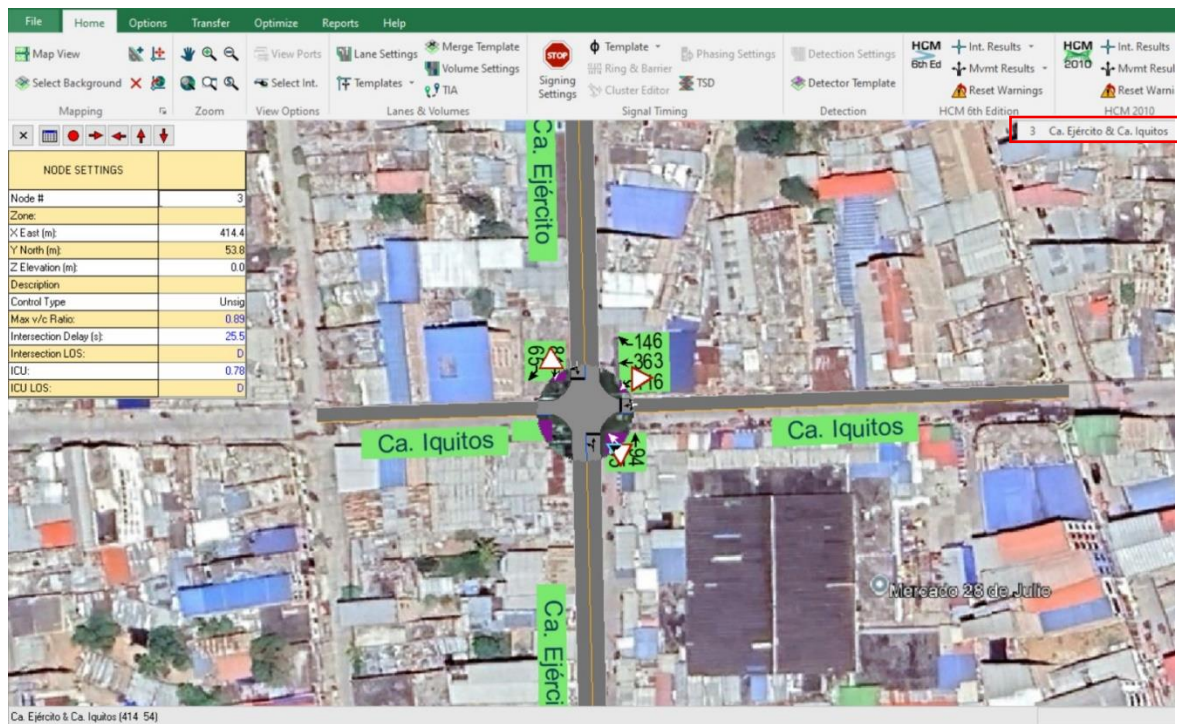
En la figura 16 se presenta la configuración del nodo o intersección (Node Settings), donde se define el tipo de control correspondiente. En los valores resaltados en color azul se muestran la relación volumen-capacidad, la demora, el nivel de servicio (LOS) y la capacidad de utilización de la intersección (ICU).

Los valores obtenidos son los siguientes:

- ✓ Relación Volumen - Capacidad máxima es de 0.89.
- ✓ La demora promedio de la intersección es de 25.5 segundos.
- ✓ El nivel de servicio (LOS) es “D”.
- ✓ La capacidad de la intersección (ICU) es de 0.78.
- ✓ El nivel de servicio correspondiente a la capacidad de utilización (ICU LOS) es “D”

Figura 16 .

Configuración de la intersección.



Nota: En la figura 16, se muestra los principales indicadores de desempeño de la intersección.

IV. DISCUSIÓN

Tras haber ejecutado las actividades requeridas para cumplir con el primer objetivo específico, el cual consistió en determinar las condiciones geométricas de la intersección de las calles Iquitos y Ejército en la ciudad de Jaén; se ha evidenciado que la intersección está conformada por cuatro accesos de dos carriles y un ancho promedio de calzada de 7 metros, sin presencia de carriles exclusivos para giros ni zonas de estacionamiento. Asimismo, los accesos Este y Oeste presentan pendientes de 6%, lo que influye negativamente en la maniobrabilidad y la visibilidad de los conductores. Estos resultados reflejan una configuración vial básica y limitada, propia de intersecciones no semaforizadas con alto flujo vehicular. Coincide con lo descrito por Velásquez (2021), quien determinó que en Cajamarca la ausencia de carriles de giro y señalización adecuada genera demoras elevadas (50 segundos) y nivel de servicio “F”. En la misma línea, Araujo (2020) resalta que la falta de planificación geométrica incrementa los conflictos entre usuarios y reduce la seguridad vial. La semejanza radica en que, al igual que en los estudios citados, la intersección analizada presenta deficiencias geométricas que afectan la fluidez y seguridad del tránsito.

Una vez realizadas las actividades necesarias para el cumplimiento del segundo objetivo específico, el cual consistió en calcular la demanda vehicular y peatonal en el área de estudio se determinó que el aforo vehicular con mayor demanda es el día viernes, con un total de 13,441 vehículos, mientras que las horas pico corresponden a los intervalos 7:30 – 8:30 a.m., 12:30 – 1:30 p.m. y 5:15 – 6:15 p.m. Asimismo, se identificó que las mototaxis representan el 57.06% del flujo total, seguidas de las motos lineales (31.10%), lo que evidencia un predominio de vehículos menores en la composición del tránsito. Estos resultados se relacionan con lo descrito por Morón & Ramos (2023), quienes en Jaén observaron que los mototaxis superaban el 55% del total del flujo vehicular. El alto porcentaje de este tipo de vehículos genera un flujo discontinuo y mayor interferencia en los giros, lo que afecta la fluidez general. Respecto a la demanda peatonal, se registró un mayor flujo durante el medio día, alcanzando 85 peatones/hora en el acceso Este. Esto confirma que la intersección posee una intensa interacción vehicular-peatonal, sin que existan medidas adecuadas de control o pasos seguros. Este comportamiento concuerda con lo descrito por Díaz & Horna (2022), quienes señalaron que el tránsito peatonal en Jaén es desordenado con una densidad menor igual a 0.108 peatones por m², lo que agrava la congestión y eleva el riesgo de accidentes. La semejanza radica en que la composición vehicular mantiene el

mismo patrón estructural observado en estudios previos realizados en la ciudad de Jaén, donde predominan los vehículos menores, especialmente mototaxis. Esta similitud se explica por el modelo de movilidad urbana característico de la ciudad, basado en transporte liviano y de bajo costo.

Tras la ejecución de las actividades planteadas para el cumplimiento del tercer objetivo específico, el cual consistió en determinar el nivel de servicio de la intersección mediante el modelado vial, la simulación realizada con el software Synchro 10 permitió obtener los principales indicadores de desempeño: la relación Volumen/Capacidad (v/c) en de 0.89, la demora promedio es de 25.5 s/vehículo, el nivel de servicio (LOS) es “D” y el índice de capacidad de utilización (ICU) es de 0.78, con nivel de servicio también “D”. Estos resultados confirman que la intersección presenta condiciones de operación deficientes, con demoras moderadas y una capacidad cercana a su límite máximo, lo que genera congestión en horas pico. El nivel de servicio “D” indica que el flujo vehicular es inestable y que los usuarios experimentan incomodidad en la circulación. Comparando con estudios similares, Illapuma (2022) reportó niveles de servicio entre “C” y “F” en intersecciones no semaforizadas del Cusco, mientras que Zapana & Ojeda (2021) obtuvieron relaciones v/c superiores a 1.0, reflejando saturación total. En el presente caso, aunque la relación v/c es menor que 1, el valor de 0.89 muestra una situación crítica que podría evolucionar hacia la saturación si el flujo vehicular continúa incrementándose. La semejanza radica en que, al igual que en los estudios mencionados, la intersección analizada presenta un desempeño operacional deficiente propio de intersecciones no semaforizadas con alta demanda.

V. CONCLUSIONES Y RECOMENDACIONES

5.1. Conclusiones

La intersección presenta una configuración geométrica deficiente, con dos carriles y un ancho promedio de calzada de 7 metros, sin carriles exclusivos de giro ni zonas de estacionamiento. Los accesos Este y Oeste (Calle Iquitos) poseen una pendiente del 6%, lo que afecta la visibilidad y la seguridad vial. Esta condición limita la capacidad de la intersección para atender la demanda vehicular actual, generando congestión y conflictos de circulación.

El aforo vehicular permitió determinar que el viernes es el día de mayor tránsito, con un total de 13,441 vehículos, y que las horas de máxima demanda ocurren entre 7:30 – 8:30 a.m., 12:30 – 1:30 p.m. y 5:15 – 6:15 p.m. Se evidenció el predominio de mototaxis (57.06%) y motos lineales (31.10%), lo que caracteriza un flujo altamente fragmentado e irregular. En cuanto al flujo peatonal, se registró mayor presencia durante el mediodía (12:30 – 1:30 pm), con hasta 85 peatones/hora, reflejando una intensa interacción vehículo-peatón sin medidas de control adecuadas.

El modelado efectuado en el software Synchro 10 determinó que la intersección opera con una relación Volumen/Capacidad (v/c) de 0.89, una demora promedio de 25.5 s/vehículo y un nivel de servicio (LOS) “D”, lo que indica condiciones de operación deficientes. El índice de capacidad de utilización (ICU) es de 0.78, con nivel de servicio también “D”. La intersección trabaja cerca de su capacidad máxima, con flujos vehiculares inestables y congestión en horas punta.

De acuerdo con los resultados obtenidos en el análisis mediante el software Synchro 10, se rechaza parcialmente la hipótesis planteada, la cual establecía que la intersección de las calles Iquitos y Ejército presentaba condiciones de operación deficientes con un nivel de servicio C y tiempos de demora moderados. Los valores obtenidos evidencian un nivel de servicio D y una demora promedio de 25.5 segundos por vehículo, lo que demuestra que la intersección opera bajo condiciones más críticas de las previstas inicialmente.

5.2. Recomendaciones

Se sugiere que el diseño geométrico de las intersecciones, así como la señalización vertical y horizontal, se desarrollen de acuerdo con las disposiciones establecidas en el Reglamento Nacional de Tránsito, con el fin de optimizar la eficiencia del tránsito vehicular y garantizar la seguridad de los peatones.

Se recomienda que la Municipalidad Provincial de Jaén implemente estrategias de gestión del tránsito que permitan ordenar los flujos y reducir la congestión en horas pico. Además, es necesario promover campañas de educación y seguridad vial dirigidas tanto a conductores como a peatones, con el propósito de fomentar el respeto a las normas de tránsito y mejorar la convivencia entre los diferentes modos de transporte en la intersección.

Considerando que la intersección presenta un nivel de servicio D, se sugiere evaluar la instalación de un sistema semafórico con control por fases y la restricción de giros conflictivos en horas punta.

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DEDICATORIA

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Este logro no es solo mío, es también de ustedes. Con todo mi corazón, gracias.

Ever Waldir Torres Pedraza

A Dios, por ser la guía constante en mi vida y permitirme llegar hasta este logro académico que marca un paso importante en mi formación profesional.

A mis padres, Teodoro Guevara y Ana María Ruiz, por su amor incondicional, sacrificio y esfuerzo permanente. Por enseñarme con su ejemplo el valor del trabajo, la responsabilidad y la perseverancia. Todo lo que soy y lo que logro se lo debo a ustedes.

A mis hermanos Ytala, Marcio y Mónica, por su apoyo, cariño y por acompañarme en este camino

con palabras de aliento y motivación constante. Su presencia ha sido fundamental para seguir avanzando con firmeza.

Kelvin Jhonatan Guevara Ruiz

AGRADECIMIENTO

A la Universidad Nacional de Jaén, por brindarme el espacio, las oportunidades y las herramientas que hicieron posible el desarrollo de esta investigación. Mi reconocimiento también a los docentes de la escuela profesional, quienes con su dedicación, exigencia y compromiso académico han dejado una huella importante en mi formación. De manera especial, quiero expresar mi gratitud a mi asesor, Dr. Ing. José Luis Piedra Tineo, cuya guía constante, paciencia y valiosos aportes fueron claves para dar forma y culminar esta investigación. A todos ustedes, gracias por acompañarme en este camino y por contribuir de manera tan significativa a este logro.

Ever Waldir Torres Pedraza

Al Dr. Ing. José Luis Piedra Tineo, asesor de esta tesis, por su dedicación, orientación y paciencia. Su experiencia y compromiso han sido esenciales para el desarrollo de este trabajo de investigación, aportando conocimientos y criterios que enriquecieron significativamente los resultados obtenidos.

A nuestra alma máter, la Universidad Nacional de Jaén, por brindarnos la formación profesional necesaria, así como los recursos y espacios que hicieron posible nuestra preparación académica.

A todos los docentes de la Facultad de Ingeniería Civil, quienes con esfuerzo, vocación y exigencia contribuyeron a nuestra formación integral,

transmitiendo conocimientos y valores que hoy nos permiten desempeñarnos con responsabilidad y profesionalismo.

Kelvin Jhonatan Guevara Ruiz

ANEXOS

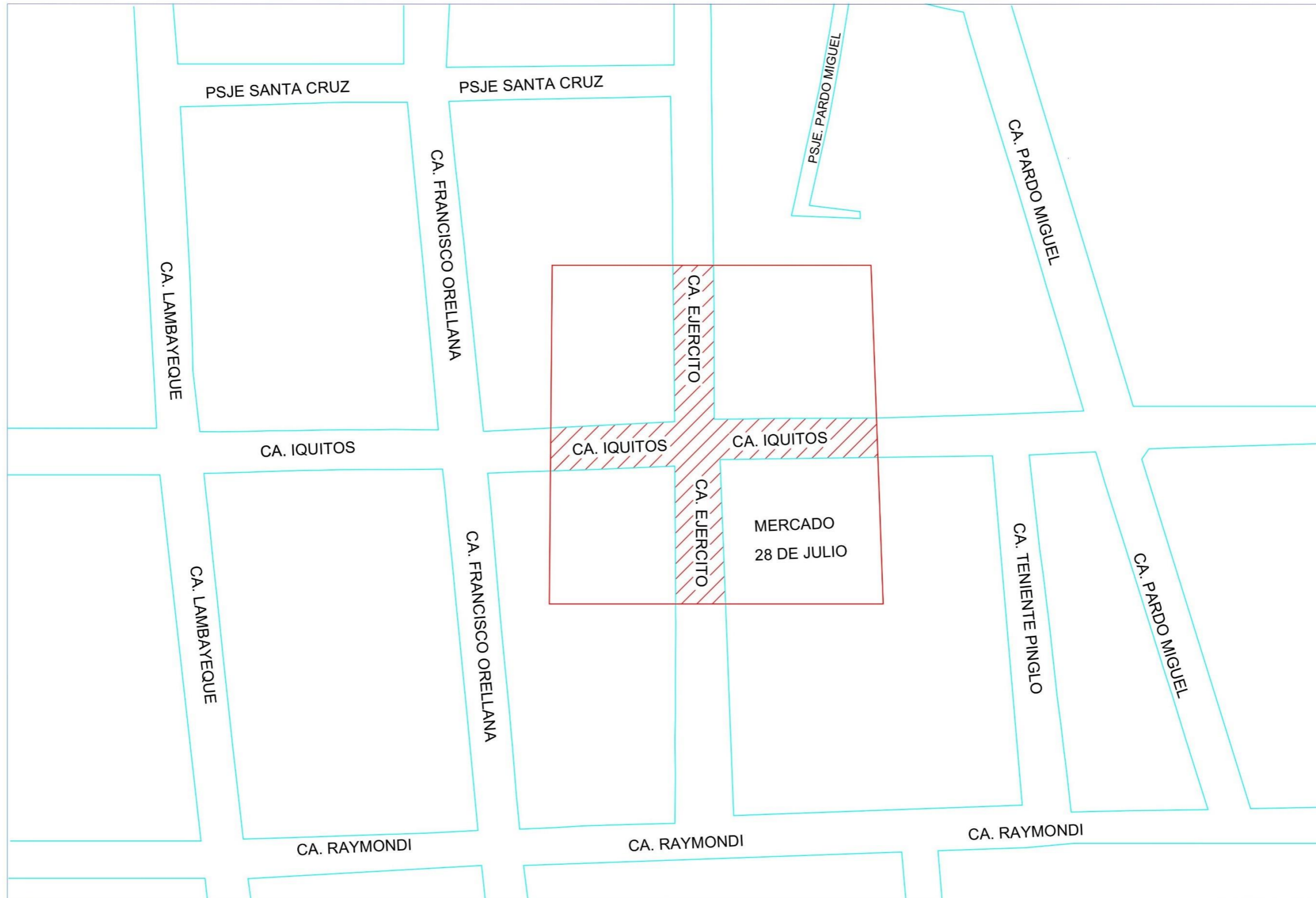
Anexo 1. OPERACIONALIZACIÓN DE VARIABLES

| Variable | Dimensiones | Indicadores | Técnicas | Instrumentos |
|---------------|-----------------------|---|--|------------------------------|
| Análisis Vial | Condición geométrica | Ancho de carril, pendiente. | Análisis de información: Se analizará la información respecto a las condiciones que muestra la intersección. | - Nivel - GPS diferencial |
| | Condición de tránsito | Flujo vehicular, peatonal, nivel de servicio. | | - Software Synchro 10. |

Anexo 2. MATRIZ DE CONSISTENCIA

| TÍTULO | PROBLEMA | HIPÓTESIS | OBJETIVO GENERAL | MUESTREO | TÉCNICAS DE RECOLECCIÓN DE DATOS |
|---|--|--|--|----------------------------|---|
| Análisis vial en la intersección de las calles Iquitos y Ejército empleando el software Synchro 10 en la ciudad de Jaén, 2025 | Congestión vehicular en la intersección de las calles Iquitos y Ejército | La intersección de las calles Iquitos y Ejército en la ciudad de Jaén, en el año 2025, presenta condiciones de operación deficientes, caracterizadas por un nivel de servicio c y tiempos de demora moderados, según el análisis realizado con el software Synchro 10. | Realizar el análisis vial en la intersección de las calles Iquitos y Ejército, empleando el software Synchro 8.0 en la ciudad de Jaén, 2025. | Muestreo no probabilístico | Las técnicas a utilizar en la presente investigación son: Observación, procesamiento de datos, y análisis de resultados. |
| | PREGUNTA DE INVESTIGACIÓN | JUSTIFICACIÓN | OBJETIVOS ESPECÍFICOS | VARIABLES | POBLACIÓN Y MUESTRA |
| | ¿Qué condiciones de operación presenta la intersección de las calles Iquitos y Ejército empleando el software Synchro 10 en la ciudad de Jaén, 2025? | La presente investigación se pretende contribuir en la intersección en la optimización del flujo vehicular, reducir los tiempos de espera y minimizar el riesgo de accidentes, beneficiando así a peatones, conductores y la comunidad en general. | <ul style="list-style-type: none"> -Determinar las condiciones geométricas de la intersección. - Calcular la demanda vehicular y peatonal en el área de estudio. - Determinar el nivel de servicio de la intersección, mediante el modelado vial. | Análisis Vial. | Población: Intersecciones no semaforizadas en la ciudad de Jaén. Muestra: Intersección de las calles Iquitos y Ejército |

Anexo 3. DELIMITACIÓN DEL ÁREA DE ESTUDIO




**UNIVERSIDAD NACIONAL
DE JAÉN**

TESIS: ANÁLISIS VIAL EN LA INTERSECCIÓN DE LAS CALLES IQUITOS Y EJÉRCITO EMPLEANDO EL SOFTWARE SYCHRO 10 EN LA CIUDAD DE JAÉN, 2025

AUTORES: Bach. Ever Waldir Torres Pedraza
Bach. Kelvin Jhonatan Guevara Ruiz

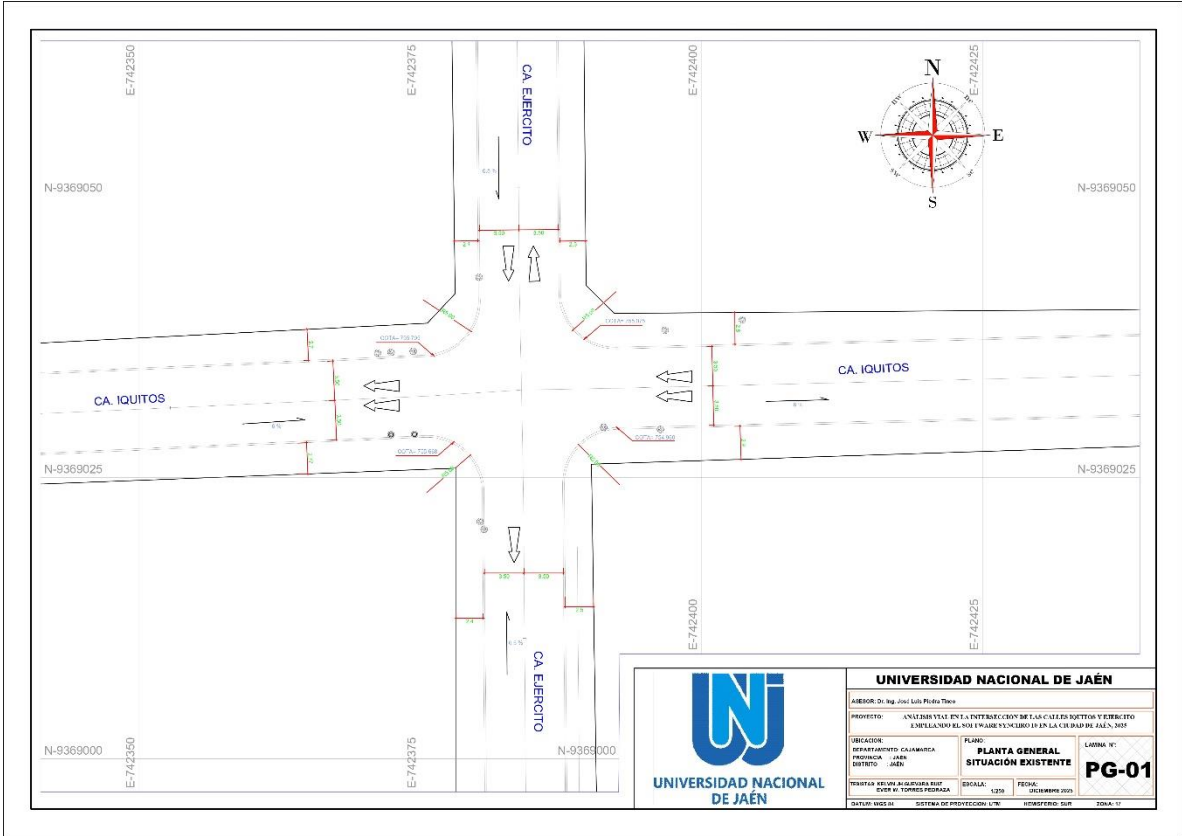
ASESOR: Dr. José Luis Piedra Tineo

PLANO: DELIMITACIÓN DE ZONA DE ESTUDIO

| | | | |
|------------|-----------|---------|----------------|
| REGION : | Cajamarca | ESCALA: | 1/1000 |
| PROVINCIA: | Jaén | FECHA: | NOVIEMBRE-2025 |
| DISTRITO : | Jaén | | |

LAMINA:
D-01

Anexo 4. PLANO DE SITUACIÓN EXISTENTE



Anexo 5. FORMATO DE AFORO VEHICULAR



UNIVERSIDAD NACIONAL DE JAÉN



Técnica de recolección de datos: Observación directa

| | | | | | | | | | | | | | |
|-----------------------|---|---------------|-----------------|-------------|----------------------|-------------------|--------------|--------------|-----------------|-----------|-----------|-----------------------|------------------------------|
| Tesis | ANÁLISIS VIAL EN LA INTERSECCIÓN DE LAS CALLES IQUITOS Y EJÉRCITO EMPLEANDO EL SOFTWARE SYNCHRO 10 EN LA CIUDAD DE JAÉN, 2025 | | | | | | | | | | | | |
| Tesistas | Bach. Kelvin Jhonatan Guevara Ruiz Bach. Ever Waldir Torres Pedraza | | | | | | | | | | | | |
| Asesor | Doc. José Luis Piedra Tineo | | | | | | | | | | | | |
| Fecha: | Punto de conteo: Intersección de las calles Iquitos y Ejército | | | | | | | | | | | | |
| HORA | MOTOS | | | | | CAMIONETAS | | | CAMIONES | | | Total por hora | Total por horas punta |
| | TAXI | LINEAL | CARGUERO | AUTO | STATION WAGON | PICK UP | PANEL | COMBI | 2E | 3E | 4E | | |
| | | | | | | | | | | | | | |
| 6:00 a.m - 6:15 a.m | | | | | | | | | | | | | |
| 6:15 a.m - 6:30 a.m | | | | | | | | | | | | | |
| 6:30 a.m - 6:45 a.m | | | | | | | | | | | | | |
| 6:45 a.m - 7:00 a.m | | | | | | | | | | | | | |
| 7:00 a.m - 7:15 a.m | | | | | | | | | | | | | |
| 7:15 a.m - 7:30 a.m | | | | | | | | | | | | | |
| 7:30 a.m - 7:45 a.m | | | | | | | | | | | | | |
| 7:45 a.m - 8:00 a.m | | | | | | | | | | | | | |
| 8:00 a.m - 8:15 a.m | | | | | | | | | | | | | |
| 8:15 a.m - 8:30 a.m | | | | | | | | | | | | | |
| 8:30 a.m - 8:45 a.m | | | | | | | | | | | | | |
| 8:45 a.m - 9:00 a.m | | | | | | | | | | | | | |
| 11:00 a.m - 11:15 a.m | | | | | | | | | | | | | |
| 11:15 a.m - 11:30 a.m | | | | | | | | | | | | | |
| 11:30 a.m - 11:45 a.m | | | | | | | | | | | | | |
| 11:45 a.m - 12:00 a.m | | | | | | | | | | | | | |
| 12:00 a.m - 12:15 p.m | | | | | | | | | | | | | |
| 12:15 p.m - 12:30 p.m | | | | | | | | | | | | | |
| 12:30 p.m - 12:45 p.m | | | | | | | | | | | | | |
| 12:45 p.m - 13:00 p.m | | | | | | | | | | | | | |
| 13:00 p.m - 13:15 p.m | | | | | | | | | | | | | |
| 13:15 p.m - 13:30 p.m | | | | | | | | | | | | | |
| 13:30 p.m - 13:45 p.m | | | | | | | | | | | | | |
| 13:45 p.m - 14:00 p.m | | | | | | | | | | | | | |
| 16:00 p.m - 16:15 p.m | | | | | | | | | | | | | |
| 16:15 p.m - 16:30 p.m | | | | | | | | | | | | | |
| 16:30 p.m - 16:45 p.m | | | | | | | | | | | | | |
| 16:45 p.m - 17:00 p.m | | | | | | | | | | | | | |
| 17:00 p.m - 17:15 p.m | | | | | | | | | | | | | |
| 17:15 p.m - 17:30 p.m | | | | | | | | | | | | | |
| 17:30 p.m - 17:45 p.m | | | | | | | | | | | | | |
| 17:45 p.m - 18:00 p.m | | | | | | | | | | | | | |
| 18:00 p.m - 18:15 p.m | | | | | | | | | | | | | |
| 18:15 p.m - 18:30 p.m | | | | | | | | | | | | | |
| 18:30 p.m - 18:45 p.m | | | | | | | | | | | | | |
| 18:45 p.m - 19:00 p.m | | | | | | | | | | | | | |
| Total por tipo | | | | | | | | | | | | | |

Anexo 6. FORMATO DE AFORO PEATONAL

AFORO PEATONAL



INTERSECCIÓN : Calle Iquitos y Calle Ejercito

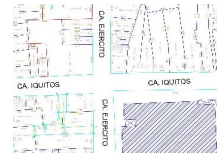
REGIÓN : Cajamarca

FECHA :

PROVINCIA : Jaén

TESISTAS : Bach. Kelvin Jhonatan Guevara Ruiz
: Bach. Ever Waldir Torres Pedraza

DISTRITO : Jaén



| HORA | ACCESO PEATONAL | | | | | | | |
|---------------|-----------------|---------------|-----|---------------|------|---------------|-------|---------------|
| | NORTE | TOTAL HORARIO | SUR | TOTAL HORARIO | ESTE | TOTAL HORARIO | OESTE | TOTAL HORARIO |
| 06:00 - 06:15 | | | | | | | | |
| 06:15 - 06:30 | | | | | | | | |
| 06:30 - 06:45 | | | | | | | | |
| 06:45 - 07:00 | | | | | | | | |
| 07:00 - 07:15 | | | | | | | | |
| 07:15 - 07:30 | | | | | | | | |
| 07:30 - 07:45 | | | | | | | | |
| 07:45 - 08:00 | | | | | | | | |
| 08:00 - 08:15 | | | | | | | | |
| 08:15 - 08:30 | | | | | | | | |
| 08:30 - 08:45 | | | | | | | | |
| 08:45 - 09:00 | | | | | | | | |
| | | | | | | | | |
| 11:00 - 11:15 | | | | | | | | |
| 11:15 - 11:30 | | | | | | | | |
| 11:30 - 11:45 | | | | | | | | |
| 11:45 - 12:00 | | | | | | | | |
| 12:00 - 12:15 | | | | | | | | |
| 12:15 - 12:30 | | | | | | | | |
| 12:30 - 12:45 | | | | | | | | |
| 12:45 - 13:00 | | | | | | | | |
| 13:00 - 13:15 | | | | | | | | |
| 13:15 - 13:30 | | | | | | | | |
| 13:30 - 13:45 | | | | | | | | |
| 13:45 - 14:00 | | | | | | | | |
| | | | | | | | | |
| 16:00 - 16:15 | | | | | | | | |
| 16:15 - 16:30 | | | | | | | | |
| 16:30 - 16:45 | | | | | | | | |
| 16:45 - 17:00 | | | | | | | | |
| 17:00 - 17:15 | | | | | | | | |
| 17:15 - 17:30 | | | | | | | | |
| 17:30 - 17:45 | | | | | | | | |
| 17:45 - 18:00 | | | | | | | | |
| 18:00 - 18:15 | | | | | | | | |
| 18:15 - 18:30 | | | | | | | | |
| 18:30 - 18:45 | | | | | | | | |
| 18:45 - 19:00 | | | | | | | | |












**Anexo 7. RESULTADOS DEL CONTEO VEHICULAR EN LA INTERSECCIÓN
DE LAS CALLES IQUITOS Y EJÉRCITO**



UNIVERSIDAD NACIONAL DE JAÉN



Técnica de recolección de datos: Observación directa












| Tesis | | ANÁLISIS VIAL EN LA INTERSECCIÓN DE LAS CALLES IQUITOS Y EJÉRCITO EMPLEANDO EL SOFTWARE SYNCHRO 10 EN LA CIUDAD DE JAÉN, 2025 | | | | | | | | | | | | |
|--------------------------------|---|---|---|--|---|---|---|---|---|---|---|-----------------------|------------------------------|------|
| Tesistas | | Bach. Kelvin Jhonatan Guevara Ruiz Bach. Ever Waldir Torres Pedraza | | | | | | | | | | | | |
| Asesor | | Doc. José Luis Piedra Tineo | | | | | | | | | | | | |
| Fecha: Lunes 30/06/2025 | | Punto de conteo: Intersección de las calles Iquitos y Ejército | | | | | Entrada: Calle Iquitos (Este) | | | Salida: Calle Iquitos (Oeste) | | | | |
| HORA | MOTOS | | CARGUERO | AUTO | STATION WAGON | CAMIONETAS | | | CAMIONES | | | Total por hora | Total por horas punta | |
| | TAXI | LINEAL | | | | PICK UP | PANEL | COMBI | 2E | 3E | 4E | | | |
| |  |  |  |  |  |  |  |  |  |  |  | | | |
| 6:00 a.m - 6:15 a.m | 16 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 21 | 1431 | |
| 6:15 a.m - 6:30 a.m | 26 | 10 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 37 | | |
| 6:30 a.m - 6:45 a.m | 36 | 13 | 1 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 52 | | |
| 6:45 a.m - 7:00 a.m | 51 | 21 | 2 | 0 | 2 | 1 | 2 | 1 | 1 | 0 | 0 | 81 | | |
| 7:00 a.m - 7:15 a.m | 87 | 35 | 2 | 1 | 3 | 2 | 2 | 2 | 2 | 0 | 0 | 136 | | |
| 7:15 a.m - 7:30 a.m | 100 | 34 | 1 | 2 | 2 | 3 | 0 | 0 | 1 | 0 | 0 | 143 | | |
| 7:30 a.m - 7:45 a.m | 114 | 60 | 2 | 3 | 3 | 3 | 2 | 0 | 1 | 0 | 0 | 188 | | |
| 7:45 a.m - 8:00 a.m | 122 | 65 | 0 | 3 | 4 | 4 | 1 | 0 | 0 | 0 | 0 | 199 | | |
| 8:00 a.m - 8:15 a.m | 105 | 60 | 0 | 2 | 4 | 3 | 2 | 1 | 0 | 0 | 0 | 177 | | |
| 8:15 a.m - 8:30 a.m | 100 | 55 | 0 | 2 | 3 | 3 | 0 | 2 | 0 | 0 | 0 | 165 | | |
| 8:30 a.m - 8:45 a.m | 85 | 35 | 2 | 1 | 2 | 2 | 0 | 1 | 0 | 0 | 0 | 128 | | |
| 8:45 a.m - 9:00 a.m | 74 | 30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 104 | | |
| 11:00 a.m - 11:15 a.m | 92 | 41 | 1 | 1 | 1 | 0 | 2 | 0 | 0 | 0 | 0 | 138 | | 2267 |
| 11:15 a.m - 11:30 a.m | 105 | 48 | 1 | 2 | 0 | 1 | 1 | 0 | 1 | 0 | 0 | 159 | | |
| 11:30 a.m - 11:45 a.m | 115 | 52 | 2 | 2 | 0 | 3 | 2 | 1 | 2 | 0 | 0 | 179 | | |
| 11:45 a.m - 12:00 p.m | 110 | 64 | 1 | 2 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 179 | | |
| 12:00 p.m - 12:15 p.m | 125 | 70 | 0 | 2 | 1 | 1 | 1 | 2 | 1 | 0 | 0 | 203 | | |
| 12:15 p.m - 12:30 p.m | 119 | 76 | 0 | 2 | 0 | 1 | 1 | 0 | | 0 | 0 | 199 | | |
| 12:30 p.m - 12:45 p.m | 143 | 95 | 0 | 7 | 2 | 2 | 2 | 1 | 0 | 0 | 0 | 252 | | |
| 12:45 p.m - 13:00 p.m | 145 | 102 | 0 | 6 | 1 | 5 | 0 | 0 | 0 | 0 | 0 | 259 | | |
| 13:00 p.m - 13:15 p.m | 150 | 105 | 2 | 4 | 1 | 3 | 0 | 1 | 0 | 0 | 0 | 266 | | |
| 13:15 p.m - 13:30 p.m | 125 | 91 | 1 | 3 | 2 | 4 | 0 | 2 | 0 | 0 | 0 | 228 | | |
| 13:30 p.m - 13:45 p.m | 105 | 89 | 0 | 1 | 3 | 4 | 0 | 3 | 0 | 0 | 0 | 205 | | |
| 13:45 p.m - 14:00 p.m | 100 | 81 | 0 | 2 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 185 | | |
| 16:00 p.m - 16:15 p.m | 60 | 47 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 108 | 1903 | |
| 16:15 p.m - 16:30 p.m | 64 | 50 | 0 | 0 | 2 | 2 | 2 | 1 | 1 | 0 | 0 | 122 | | |
| 16:30 p.m - 16:45 p.m | 77 | 57 | 1 | 1 | 1 | 1 | 2 | 0 | 2 | 0 | 0 | 142 | | |
| 16:45 p.m - 17:00 p.m | 83 | 63 | 0 | 1 | 0 | 1 | 1 | 2 | 1 | 0 | 0 | 152 | | |
| 17:00 p.m - 17:15 p.m | 89 | 65 | 2 | 3 | 2 | 3 | 1 | 1 | 0 | 0 | 0 | 166 | | |
| 17:15 p.m - 17:30 p.m | 94 | 75 | 1 | 0 | 0 | 4 | 1 | 1 | 0 | 0 | 0 | 176 | | |
| 17:30 p.m - 17:45 p.m | 105 | 90 | 2 | 4 | 3 | 4 | 0 | 1 | 0 | 0 | 0 | 209 | | |
| 17:45 p.m - 18:00 p.m | 121 | 95 | 1 | 3 | 2 | 7 | 0 | 2 | 0 | 0 | 0 | 231 | | |
| 18:00 p.m - 18:15 p.m | 127 | 87 | 2 | 4 | 2 | 4 | 0 | 2 | 0 | 0 | 0 | 228 | | |
| 18:15 p.m - 18:30 p.m | 117 | 73 | 2 | 3 | 3 | 3 | 0 | 2 | 0 | 0 | 0 | 203 | | |
| 18:30 p.m - 18:45 p.m | 96 | 65 | 0 | 2 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 166 | | |
| 18:45 p.m - 19:00 p.m | 90 | 67 | 0 | 1 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 160 | | |
| Total por tipo | 3473 | 2171 | 29 | 70 | 50 | 80 | 27 | 31 | 15 | 0 | 0 | 5946 | | |



UNIVERSIDAD NACIONAL DE JAÉN



Técnica de recolección de datos: Observación directa

| Tesis | | ANÁLISIS VIAL EN LA INTERSECCIÓN DE LAS CALLES IQUITOS Y EJÉRCITO EMPLEANDO EL SOFTWARE SYNCHRO 10 EN LA CIUDAD DE JAÉN, 2025 | | | | | | | | | | | |
|-------------------------|---|---|---|--|---|---|---|---|---|---|---|----------------|-----------------------|
| Tesisistas | | Bach. Kelvin Jhonatan Guevara Ruiz Bach. Ever Waldir Torres Pedraza | | | | | | | | | | | |
| Asesor | | Doc. José Luis Piedra Tinoco | | | | | | | | | | | |
| Fecha: Lunes 30/06/2025 | | Punto de conteo: Intersección de las calles Iquitos y Ejército | | | | | Entrada: Calle Iquitos (Este) | | | Salida: Calle Ejército (Norte) | | | |
| HORA | MOTOS | | | | | CAMIONETAS | | | CAMIONES | | | Total por hora | Total por horas punta |
| | TAXI | LINEAL | CARGUERO | AUTO | STATION WAGON | PICK UP | PANEL | COMBI | 2E | 3E | 4E | | |
| |  |  |  |  |  |  |  |  |  |  |  | | |
| 6:00 a.m - 6:15 a.m | 6 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 10 | |
| 6:15 a.m - 6:30 a.m | 9 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 15 | |
| 6:30 a.m - 6:45 a.m | 8 | 7 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 18 | |
| 6:45 a.m - 7:00 a.m | 13 | 10 | 0 | 0 | 0 | 0 | 2 | 1 | 2 | 0 | 0 | 28 | |
| 7:00 a.m - 7:15 a.m | 18 | 20 | 2 | 1 | 2 | 1 | 1 | 1 | 1 | 0 | 0 | 47 | |
| 7:15 a.m - 7:30 a.m | 21 | 18 | 1 | 2 | 2 | 1 | 1 | 0 | 0 | 0 | 0 | 46 | |
| 7:30 a.m - 7:45 a.m | 27 | 20 | 1 | 2 | 3 | 0 | 0 | 2 | 0 | 0 | 0 | 55 | |
| 7:45 a.m - 8:00 a.m | 36 | 22 | 0 | 1 | 1 | 2 | 1 | 1 | 0 | 0 | 0 | 64 | |
| 8:00 a.m - 8:15 a.m | 30 | 21 | 0 | 2 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 55 | |
| 8:15 a.m - 8:30 a.m | 28 | 20 | 1 | 2 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 54 | |
| 8:30 a.m - 8:45 a.m | 22 | 15 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 38 | |
| 8:45 a.m - 9:00 a.m | 17 | 7 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 25 | |
| 11:00 a.m - 11:15 a.m | 19 | 9 | 1 | 0 | 0 | 1 | 1 | 1 | 1 | 0 | 0 | 33 | |
| 11:15 a.m - 11:30 a.m | 22 | 12 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 35 | |
| 11:30 a.m - 11:45 a.m | 24 | 14 | 2 | 1 | 0 | 0 | 1 | 1 | 2 | 0 | 0 | 45 | |
| 11:45 a.m - 12:00 p.m | 32 | 12 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 45 | |
| 12:00 p.m - 12:15 p.m | 39 | 24 | 1 | 2 | 1 | 2 | 2 | 1 | 0 | 0 | 0 | 72 | |
| 12:15 p.m - 12:30 p.m | 44 | 26 | 2 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 76 | |
| 12:30 p.m - 12:45 p.m | 36 | 25 | 1 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 65 | |
| 12:45 p.m - 13:00 p.m | 51 | 26 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 79 | |
| 13:00 p.m - 13:15 p.m | 50 | 29 | 1 | 2 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 85 | |
| 13:15 p.m - 13:30 p.m | 43 | 23 | 0 | 3 | 2 | 1 | 0 | 2 | 0 | 0 | 0 | 74 | |
| 13:30 p.m - 13:45 p.m | 39 | 25 | 0 | 2 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 68 | |
| 13:45 p.m - 14:00 p.m | 35 | 17 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 53 | |
| 16:00 p.m - 16:15 p.m | 17 | 12 | 0 | 0 | 0 | 0 | 2 | 0 | 1 | 0 | 0 | 32 | |
| 16:15 p.m - 16:30 p.m | 23 | 14 | 0 | 0 | 0 | 1 | 1 | 0 | 1 | 0 | 0 | 40 | |
| 16:30 p.m - 16:45 p.m | 22 | 12 | 1 | 1 | 1 | 0 | 2 | 2 | 2 | 0 | 0 | 43 | |
| 16:45 p.m - 17:00 p.m | 31 | 15 | 0 | 0 | 1 | 0 | 1 | 1 | 1 | 0 | 0 | 50 | |
| 17:00 p.m - 17:15 p.m | 39 | 27 | 1 | 0 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 71 | |
| 17:15 p.m - 17:30 p.m | 38 | 25 | 1 | 3 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 69 | |
| 17:30 p.m - 17:45 p.m | 39 | 25 | 2 | 2 | 2 | 3 | 0 | 0 | 0 | 0 | 0 | 73 | |
| 17:45 p.m - 18:00 p.m | 41 | 20 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 64 | |
| 18:00 p.m - 18:15 p.m | 37 | 26 | 0 | 3 | 3 | 2 | 0 | 2 | 0 | 0 | 0 | 73 | |
| 18:15 p.m - 18:30 p.m | 34 | 21 | 0 | 2 | 2 | 0 | 0 | 1 | 0 | 0 | 0 | 60 | |
| 18:30 p.m - 18:45 p.m | 31 | 15 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 47 | |
| 18:45 p.m - 19:00 p.m | 25 | 18 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 43 | |
| Total por tipo | 1046 | 642 | 19 | 36 | 28 | 27 | 20 | 19 | 13 | 0 | 0 | 1850 | |



























UNIVERSIDAD NACIONAL DE JAÉN



Técnica de recolección de datos: Observación directa

| Tesis | ANÁLISIS VIAL EN LA INTERSECCIÓN DE LAS CALLES IQUITOS Y EJÉRCITO EMPLEANDO EL SOFTWARE SYNCHRO 10 EN LA CIUDAD DE JAÉN, 2025 | | | | | | | | | | | | |
|-------------------------|---|--------|----------|------|---------------|-------------------------------|-------|-------|------------------------------|----|----|----------------|-----------------------|
| Tesis | Bach. Kelvin Jhonatan Guevara Ruiz Bach. Ever Waldir Torres Pedraza | | | | | | | | | | | | |
| Asesor | Doc. José Luis Piedra Tinto | | | | | | | | | | | | |
| Fecha: Lunes 30/06/2025 | Punto de conteo: Intersección de las calles Iquitos y Ejército | | | | | Entrada: Calle Iquitos (Este) | | | Salida: Calle Ejército (Sur) | | | | |
| HORA | MOTOS | | CARGUERO | AUTO | STATION WAGON | CAMIONETAS | | | CAMIONES | | | Total por hora | Total por horas punta |
| | TAXI | LINEAL | | | | PICK UP | PANEL | COMBI | 2E | 3E | 4E | | |
| | | | | | | | | | | | | | |
| 6:00 a.m - 6:15 a.m | 4 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | |
| 6:15 a.m - 6:30 a.m | 9 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 15 | |
| 6:30 a.m - 6:45 a.m | 7 | 7 | 2 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 18 | |
| 6:45 a.m - 7:00 a.m | 10 | 10 | 1 | 0 | 0 | 0 | 2 | 0 | 2 | 0 | 0 | 25 | |
| 7:00 a.m - 7:15 a.m | 22 | 11 | 2 | 1 | 2 | 1 | 0 | 0 | 1 | 0 | 0 | 40 | |
| 7:15 a.m - 7:30 a.m | 30 | 14 | 0 | 2 | 2 | 0 | 2 | 0 | 1 | 0 | 0 | 51 | |
| 7:30 a.m - 7:45 a.m | 25 | 10 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 42 | |
| 7:45 a.m - 8:00 a.m | 32 | 20 | 1 | 2 | 1 | 2 | 1 | 0 | 0 | 0 | 0 | 59 | |
| 8:00 a.m - 8:15 a.m | 26 | 18 | 0 | 1 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 47 | |
| 8:15 a.m - 8:30 a.m | 23 | 17 | 0 | 1 | 0 | 3 | 0 | 1 | 0 | 0 | 0 | 45 | |
| 8:30 a.m - 8:45 a.m | 17 | 12 | 0 | 0 | 2 | 1 | 0 | 1 | 0 | 0 | 0 | 33 | |
| 8:45 a.m - 9:00 a.m | 19 | 8 | 0 | 2 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 32 | |
| 11:00 a.m - 11:15 a.m | 15 | 8 | 1 | 1 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 27 | |
| 11:15 a.m - 11:30 a.m | 17 | 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 27 | |
| 11:30 a.m - 11:45 a.m | 16 | 15 | 1 | 0 | 0 | 2 | 1 | 1 | 0 | 0 | 0 | 36 | |
| 11:45 a.m - 12:00 p.m | 21 | 18 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 39 | |
| 12:00 p.m - 12:15 p.m | 22 | 15 | 1 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 40 | |
| 12:15 p.m - 12:30 p.m | 27 | 19 | 2 | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 52 | |
| 12:30 p.m - 12:45 p.m | 29 | 15 | 2 | 1 | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 51 | |
| 12:45 p.m - 13:00 p.m | 33 | 19 | 2 | 3 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 58 | |
| 13:00 p.m - 13:15 p.m | 37 | 20 | 0 | 1 | 1 | 3 | 0 | 0 | 0 | 0 | 0 | 62 | |
| 13:15 p.m - 13:30 p.m | 30 | 13 | 0 | 2 | 2 | 2 | 2 | 2 | 0 | 0 | 0 | 53 | |
| 13:30 p.m - 13:45 p.m | 29 | 14 | 0 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 48 | |
| 13:45 p.m - 14:00 p.m | 15 | 8 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 25 | |
| 16:00 p.m - 16:15 p.m | 15 | 13 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 31 | |
| 16:15 p.m - 16:30 p.m | 21 | 15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 36 | |
| 16:30 p.m - 16:45 p.m | 20 | 12 | 0 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 0 | 35 | |
| 16:45 p.m - 17:00 p.m | 27 | 19 | 0 | 0 | 2 | 1 | 1 | 0 | 0 | 0 | 0 | 50 | |
| 17:00 p.m - 17:15 p.m | 37 | 25 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 65 | |
| 17:15 p.m - 17:30 p.m | 35 | 29 | 0 | 2 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 69 | |
| 17:30 p.m - 17:45 p.m | 54 | 22 | 2 | 1 | 1 | 2 | 2 | 1 | 1 | 0 | 0 | 86 | |
| 17:45 p.m - 18:00 p.m | 46 | 25 | 3 | 2 | 1 | 3 | 1 | 0 | 0 | 0 | 0 | 81 | |
| 18:00 p.m - 18:15 p.m | 47 | 27 | 1 | 1 | 2 | 2 | 0 | 1 | 0 | 0 | 0 | 81 | |
| 18:15 p.m - 18:30 p.m | 45 | 24 | 1 | 2 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 74 | |
| 18:30 p.m - 18:45 p.m | 36 | 28 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 65 | |
| 18:45 p.m - 19:00 p.m | 26 | 22 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 49 | |
| Total por tipo | 924 | 570 | 24 | 31 | 30 | 35 | 18 | 11 | 11 | 0 | 0 | 1654 | |

| UNIVERSIDAD NACIONAL DE JAÉN | | | | | | | | | | | | | |
|--|---|---|---|--|---|---|---|---|---|---|---|----------------|-----------------------|
| Técnica de recolección de datos: Observación directa | | | | | | | | | | | | | |
| Tesis | ANÁLISIS VIAL EN LA INTERSECCIÓN DE LAS CALLES IQUITOS Y EJÉRCITO EMPLEANDO EL SOFTWARE SYNCHRO 10 EN LA CIUDAD DE JAÉN, 2025 | | | | | | | | | | | | |
| Tesistas | Bach. Kelvin Jhonatan Guevara Ruiz Bach. Ever Waldir Torres Pedraza | | | | | | | | | | | | |
| Asesor | Doc. José Luis Piedra Tineo | | | | | | | | | | | | |
| Fecha: Lunes 30/06/2025 | Punto de conteo: Intersección de las calles Iquitos y Ejército | | | | | Entrada: Calle Ejército (Sur) | | | Salida: Calle Ejército (Norte) | | | | |
| HORA | MOTOS | | CARGUERO | AUTO | STATION WAGON | CAMIONETAS | | | CAMIONES | | | Total por hora | Total por horas punta |
| | TAXI | LINEAL | | | | PICK UP | PANEL | COMBI | 2E | 3E | 4E | | |
| |  |  |  |  |  |  |  |  |  |  |  | | |
| 6:00 a.m - 6:15 a.m | 3 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | |
| 6:15 a.m - 6:30 a.m | 7 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 12 | |
| 6:30 a.m - 6:45 a.m | 6 | 4 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 12 | |
| 6:45 a.m - 7:00 a.m | 9 | 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 17 | |
| 7:00 a.m - 7:15 a.m | 15 | 19 | 2 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 39 | |
| 7:15 a.m - 7:30 a.m | 23 | 21 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 46 | |
| 7:30 a.m - 7:45 a.m | 25 | 20 | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 48 | |
| 7:45 a.m - 8:00 a.m | 25 | 23 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 51 | |
| 8:00 a.m - 8:15 a.m | 28 | 20 | 0 | 2 | 0 | 2 | 0 | 1 | 0 | 0 | 0 | 53 | |
| 8:15 a.m - 8:30 a.m | 23 | 18 | 0 | 1 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 45 | |
| 8:30 a.m - 8:45 a.m | 17 | 12 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 31 | |
| 8:45 a.m - 9:00 a.m | 19 | 12 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 33 | |
| 11:00 a.m - 11:15 a.m | 12 | 7 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 20 | |
| 11:15 a.m - 11:30 a.m | 14 | 9 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 25 | |
| 11:30 a.m - 11:45 a.m | 20 | 7 | 1 | 0 | 0 | 3 | 0 | 0 | 1 | 0 | 0 | 32 | |
| 11:45 a.m - 12:00 p.m | 17 | 12 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 30 | |
| 12:00 p.m - 12:15 p.m | 22 | 15 | 0 | 0 | 0 | 2 | 1 | 0 | 0 | 0 | 0 | 40 | |
| 12:15 p.m - 12:30 p.m | 25 | 16 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 42 | |
| 12:30 p.m - 12:45 p.m | 30 | 13 | 2 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 48 | |
| 12:45 p.m - 13:00 p.m | 35 | 17 | 0 | 1 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 55 | |
| 13:00 p.m - 13:15 p.m | 34 | 20 | 0 | 0 | 1 | 2 | 0 | 1 | 0 | 0 | 0 | 58 | |
| 13:15 p.m - 13:30 p.m | 29 | 15 | 0 | 2 | 2 | 0 | 0 | 1 | 0 | 0 | 0 | 49 | |
| 13:30 p.m - 13:45 p.m | 25 | 10 | 0 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 38 | |
| 13:45 p.m - 14:00 p.m | 20 | 7 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 28 | |
| 16:00 p.m - 16:15 p.m | 15 | 10 | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 28 | |
| 16:15 p.m - 16:30 p.m | 17 | 14 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 31 | |
| 16:30 p.m - 16:45 p.m | 15 | 16 | 0 | 0 | 1 | 2 | 0 | 1 | 0 | 0 | 0 | 35 | |
| 16:45 p.m - 17:00 p.m | 19 | 15 | 0 | 0 | 2 | 3 | 0 | 0 | 0 | 0 | 0 | 39 | |
| 17:00 p.m - 17:15 p.m | 27 | 26 | 1 | 1 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 58 | |
| 17:15 p.m - 17:30 p.m | 24 | 26 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 51 | |
| 17:30 p.m - 17:45 p.m | 29 | 23 | 2 | 2 | 0 | 0 | 2 | 2 | 0 | 0 | 0 | 60 | |
| 17:45 p.m - 18:00 p.m | 28 | 22 | 0 | 3 | 0 | 2 | 1 | 0 | 0 | 0 | 0 | 56 | |
| 18:00 p.m - 18:15 p.m | 19 | 24 | 2 | 1 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 49 | |
| 18:15 p.m - 18:30 p.m | 26 | 27 | 1 | 1 | 0 | 3 | 0 | 1 | 0 | 0 | 0 | 59 | |
| 18:30 p.m - 18:45 p.m | 23 | 17 | 0 | 2 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 44 | |
| 18:45 p.m - 19:00 p.m | 20 | 19 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 39 | |
| Total por tipo | 745 | 550 | 17 | 23 | 13 | 37 | 8 | 8 | 5 | 0 | 0 | 1406 | |

|  UNIVERSIDAD NACIONAL DE JAÉN  | | | | | | | | | | | | | |
|---|---|---|---|--|---|---|---|---|---|---|---|-----------------------|-----|
| Técnica de recolección de datos: Observación directa | | | | | | | | | | | | | |
| Tesis | ANÁLISIS VIAL EN LA INTERSECCIÓN DE LAS CALLES IQUITOS Y EJÉRCITO EMPLEANDO EL SOFTWARE SYNCHRO 10 EN LA CIUDAD DE JAÉN, 2025 | | | | | | | | | | | | |
| Tesistas | Bach. Kelvin Jhonatan Guevara Ruiz Bach. Ever Waldir Torres Pedraza | | | | | | | | | | | | |
| Asesor | Doc. José Luis Piedra Tineo | | | | | | | | | | | | |
| Fecha: Lunes 30/06/2025 | Punto de conteo: Intersección de las calles Iquitos y Ejército | | | | | | | | | | | | |
| HORA | Entrada: Calle Ejército (Sur) | | | | | Salida: Calle Iquitos (Oeste) | | | | | Total por hora | Total por horas punta | |
| | MOTOS | | CARGUERO | AUTO | STATION WAGON | CAMIONETAS | | | CAMIONES | | | | |
| | TAXI | LINEAL |  |  |  | PICK UP | PANEL | COMBI | 2E | 3E | | | 4E |
|  | |  | | | |  |  |  |  |  |  | | |
| 6:00 a.m - 6:15 a.m | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 223 |
| 6:15 a.m - 6:30 a.m | 3 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | |
| 6:30 a.m - 6:45 a.m | 3 | 2 | 2 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 9 | |
| 6:45 a.m - 7:00 a.m | 7 | 7 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 16 | |
| 7:00 a.m - 7:15 a.m | 10 | 10 | 1 | 0 | 0 | 1 | 2 | 0 | 0 | 0 | 0 | 24 | |
| 7:15 a.m - 7:30 a.m | 13 | 11 | 1 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 27 | |
| 7:30 a.m - 7:45 a.m | 14 | 11 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 26 | |
| 7:45 a.m - 8:00 a.m | 17 | 14 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 32 | |
| 8:00 a.m - 8:15 a.m | 13 | 12 | 0 | 2 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 29 | |
| 8:15 a.m - 8:30 a.m | 12 | 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 20 | |
| 8:30 a.m - 8:45 a.m | 11 | 5 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 17 | |
| 8:45 a.m - 9:00 a.m | 8 | 3 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 13 | |
| 11:00 a.m - 11:15 a.m | 5 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | 8 | |
| 11:15 a.m - 11:30 a.m | 6 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 10 | |
| 11:30 a.m - 11:45 a.m | 10 | 7 | 1 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 20 | |
| 11:45 a.m - 12:00 p.m | 13 | 9 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 22 | |
| 12:00 p.m - 12:15 p.m | 12 | 9 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 22 | |
| 12:15 p.m - 12:30 p.m | 15 | 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 25 | |
| 12:30 p.m - 12:45 p.m | 14 | 9 | 0 | 2 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 26 | |
| 12:45 p.m - 13:00 p.m | 15 | 11 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 27 | |
| 13:00 p.m - 13:15 p.m | 20 | 10 | 0 | 2 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 34 | |
| 13:15 p.m - 13:30 p.m | 17 | 10 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 29 | |
| 13:30 p.m - 13:45 p.m | 12 | 6 | 0 | 0 | 2 | 1 | 1 | 0 | 0 | 0 | 0 | 22 | |
| 13:45 p.m - 14:00 p.m | 5 | 2 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 9 | |
| 16:00 p.m - 16:15 p.m | 7 | 3 | 0 | 0 | 0 | 0 | 2 | 0 | 1 | 0 | 0 | 13 | |
| 16:15 p.m - 16:30 p.m | 10 | 5 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 16 | |
| 16:30 p.m - 16:45 p.m | 10 | 9 | 0 | 1 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 22 | |
| 16:45 p.m - 17:00 p.m | 15 | 13 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 28 | |
| 17:00 p.m - 17:15 p.m | 21 | 14 | 2 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 38 | |
| 17:15 p.m - 17:30 p.m | 18 | 11 | 0 | 2 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 33 | |
| 17:30 p.m - 17:45 p.m | 23 | 14 | 0 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 41 | |
| 17:45 p.m - 18:00 p.m | 15 | 11 | 1 | 1 | 1 | 0 | 2 | 0 | 0 | 0 | 0 | 31 | |
| 18:00 p.m - 18:15 p.m | 20 | 15 | 1 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 39 | |
| 18:15 p.m - 18:30 p.m | 20 | 12 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 32 | |
| 18:30 p.m - 18:45 p.m | 22 | 11 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 35 | |
| 18:45 p.m - 19:00 p.m | 20 | 10 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 31 | |
| Total por tipo | 458 | 304 | 11 | 18 | 7 | 20 | 9 | 3 | 6 | 0 | 0 | 836 | 359 |



UNIVERSIDAD NACIONAL DE JAÉN



Técnica de recolección de datos: Observación directa

| ANÁLISIS VIAL EN LA INTERSECCIÓN DE LAS CALLES IQUITOS Y EJÉRCITO EMPLEANDO EL SOFTWARE SYNCHRO 10 EN LA CIUDAD DE JAÉN, 2025 | | | | | | | | | | | | | |
|---|---|--------|----------|------|---------------|---------------------------------|-------|-------|------------------------------|----|----|----------------|-----------------------|
| Tesis | ANÁLISIS VIAL EN LA INTERSECCIÓN DE LAS CALLES IQUITOS Y EJÉRCITO EMPLEANDO EL SOFTWARE SYNCHRO 10 EN LA CIUDAD DE JAÉN, 2025 | | | | | | | | | | | | |
| Testistas | Bach. Kelvin Jhonatan Guevara Ruiz Bach. Ever Waldir Torres Pedraza | | | | | | | | | | | | |
| Asesor | Doc. José Luis Piedra Tineo | | | | | | | | | | | | |
| Fecha: Lunes 30/06/2025 | Punto de conteo: Intersección de las calles Iquitos y Ejército | | | | | Entrada: Calle Ejército (Norte) | | | Salida: Calle Ejército (Sur) | | | | |
| HORA | MOTOS | | CARGUERO | AUTO | STATION WAGON | CAMIONETAS | | | CAMIONES | | | Total por hora | Total por horas punta |
| | TAXI | LINEAL | | | | PICK UP | PANEL | COMBI | 2E | 3E | 4E | | |
| | | | | | | | | | | | | | |
| 6:00 a.m - 6:15 a.m | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 290 |
| 6:15 a.m - 6:30 a.m | 4 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | |
| 6:30 a.m - 6:45 a.m | 5 | 3 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 10 | |
| 6:45 a.m - 7:00 a.m | 9 | 6 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 16 | |
| 7:00 a.m - 7:15 a.m | 11 | 10 | 2 | 0 | 0 | 1 | 1 | 2 | 1 | 0 | 0 | 28 | |
| 7:15 a.m - 7:30 a.m | 15 | 14 | 0 | 0 | 0 | 1 | 1 | 4 | 0 | 0 | 0 | 31 | |
| 7:30 a.m - 7:45 a.m | 17 | 15 | 1 | 2 | 1 | 2 | 0 | 1 | 0 | 0 | 0 | 39 | |
| 7:45 a.m - 8:00 a.m | 25 | 15 | 1 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 44 | |
| 8:00 a.m - 8:15 a.m | 20 | 13 | 0 | 3 | 2 | 3 | 0 | 0 | 0 | 0 | 0 | 41 | |
| 8:15 a.m - 8:30 a.m | 15 | 12 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 30 | |
| 8:30 a.m - 8:45 a.m | 12 | 12 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 24 | |
| 8:45 a.m - 9:00 a.m | 8 | 8 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 17 | |
| 11:00 a.m - 11:15 a.m | 6 | 3 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 11 | 257 |
| 11:15 a.m - 11:30 a.m | 8 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 12 | |
| 11:30 a.m - 11:45 a.m | 8 | 4 | 2 | 0 | 1 | 0 | 1 | 1 | 1 | 0 | 0 | 18 | |
| 11:45 a.m - 12:00 p.m | 15 | 3 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 20 | |
| 12:00 p.m - 12:15 p.m | 16 | 5 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 23 | |
| 12:15 p.m - 12:30 p.m | 18 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 25 | |
| 12:30 p.m - 12:45 p.m | 15 | 8 | 2 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 27 | |
| 12:45 p.m - 13:00 p.m | 19 | 7 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 28 | |
| 13:00 p.m - 13:15 p.m | 20 | 8 | 0 | 0 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 31 | |
| 13:15 p.m - 13:30 p.m | 19 | 6 | 0 | 0 | 0 | 2 | 0 | 2 | 0 | 0 | 0 | 29 | |
| 13:30 p.m - 13:45 p.m | 15 | 5 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 22 | |
| 13:45 p.m - 14:00 p.m | 7 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 11 | |
| 16:00 p.m - 16:15 p.m | 7 | 6 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 15 | 326 |
| 16:15 p.m - 16:30 p.m | 11 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 19 | |
| 16:30 p.m - 16:45 p.m | 8 | 10 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 20 | |
| 16:45 p.m - 17:00 p.m | 15 | 14 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 30 | |
| 17:00 p.m - 17:15 p.m | 22 | 15 | 1 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 40 | |
| 17:15 p.m - 17:30 p.m | 15 | 12 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 27 | |
| 17:30 p.m - 17:45 p.m | 13 | 11 | 1 | 2 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 30 | |
| 17:45 p.m - 18:00 p.m | 17 | 13 | 1 | 2 | 2 | 1 | 1 | 0 | 0 | 0 | 0 | 37 | |
| 18:00 p.m - 18:15 p.m | 16 | 13 | 2 | 3 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 36 | |
| 18:15 p.m - 18:30 p.m | 13 | 12 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 27 | |
| 18:30 p.m - 18:45 p.m | 13 | 9 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 22 | |
| 18:45 p.m - 19:00 p.m | 12 | 11 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 23 | |
| Total por tipo | 471 | 309 | 16 | 20 | 16 | 20 | 7 | 8 | 6 | 0 | 0 | 873 | |


















UNIVERSIDAD NACIONAL DE JAÉN















Técnica de recolección de datos: Observación directa


| ANÁLISIS VIAL EN LA INTERSECCIÓN DE LAS CALLES IQUITOS Y EJÉRCITO EMPLEANDO EL SOFTWARE SYNCHRO 10 EN LA CIUDAD DE JAÉN, 2025 | | | | | | | | | | | | | |
|---|-------|--------|----------|------|---------------|------------|-------|-------|----------|----|----|----------------|-----------------------|
| Tesis | | | | | | | | | | | | | |
| Bach. Kelvin Jhonatan Guevara Ruiz | | | | | | | | | | | | | |
| Tesistas | | | | | | | | | | | | | |
| Bach. Ever Waldir Torres Pedraza | | | | | | | | | | | | | |
| Asesor | | | | | | | | | | | | | |
| Doc. José Luis Piedra Tineo | | | | | | | | | | | | | |
| Fecha: Lunes 30/06/2025 | | | | | | | | | | | | | |
| Punto de conteo: Intersección de las calles Iquitos y Ejército | | | | | | | | | | | | | |
| Entrada: Calle Ejército (Norte) | | | | | | | | | | | | | |
| Salida: Calle Iquitos (Oeste) | | | | | | | | | | | | | |
| HORA | MOTOS | | CARGUERO | AUTO | STATION WAGON | CAMIONETAS | | | CAMIONES | | | Total por hora | Total por horas punta |
| | TAXI | LINEAL | | | | PICK UP | PANEL | COMBI | 2E | 3E | 4E | | |
| | | | | | | | | | | | | | |
| 6:00 a.m - 6:15 a.m | 3 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 214 |
| 6:15 a.m - 6:30 a.m | 4 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | |
| 6:30 a.m - 6:45 a.m | 4 | 3 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 8 | |
| 6:45 a.m - 7:00 a.m | 6 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 10 | |
| 7:00 a.m - 7:15 a.m | 10 | 10 | 1 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 23 | |
| 7:15 a.m - 7:30 a.m | 12 | 9 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 24 | |
| 7:30 a.m - 7:45 a.m | 13 | 12 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 27 | |
| 7:45 a.m - 8:00 a.m | 16 | 14 | 0 | 3 | 0 | 3 | 1 | 0 | 1 | 0 | 0 | 38 | |
| 8:00 a.m - 8:15 a.m | 14 | 13 | 0 | 2 | 1 | 1 | 2 | 0 | 0 | 0 | 0 | 33 | |
| 8:15 a.m - 8:30 a.m | 10 | 8 | 0 | 1 | 2 | 0 | 0 | 1 | 0 | 0 | 0 | 22 | |
| 8:30 a.m - 8:45 a.m | 11 | 6 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 18 | |
| 8:45 a.m - 9:00 a.m | 5 | 5 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 11 | |
| 11:00 a.m - 11:15 a.m | 4 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 10 | |
| 11:15 a.m - 11:30 a.m | 7 | 6 | 2 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 16 | |
| 11:30 a.m - 11:45 a.m | 8 | 4 | 1 | 0 | 1 | 1 | 2 | 0 | 1 | 0 | 0 | 18 | |
| 11:45 a.m - 12:00 p.m | 10 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 17 | |
| 12:00 p.m - 12:15 p.m | 8 | 9 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 18 | |
| 12:15 p.m - 12:30 p.m | 13 | 10 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 24 | |
| 12:30 p.m - 12:45 p.m | 12 | 11 | 0 | 0 | 0 | 1 | 1 | 2 | 0 | 0 | 0 | 27 | |
| 12:45 p.m - 13:00 p.m | 16 | 9 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 26 | |
| 13:00 p.m - 13:15 p.m | 17 | 12 | 0 | 1 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 33 | |
| 13:15 p.m - 13:30 p.m | 14 | 11 | 0 | 2 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 29 | |
| 13:30 p.m - 13:45 p.m | 10 | 6 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 17 | |
| 13:45 p.m - 14:00 p.m | 7 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 11 | |
| 16:00 p.m - 16:15 p.m | 8 | 4 | 1 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 15 | |
| 16:15 p.m - 16:30 p.m | 8 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 12 | |
| 16:30 p.m - 16:45 p.m | 10 | 6 | 0 | 1 | 2 | 1 | 1 | 0 | 0 | 0 | 0 | 21 | |
| 16:45 p.m - 17:00 p.m | 14 | 9 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 25 | |
| 17:00 p.m - 17:15 p.m | 17 | 12 | 0 | 1 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 33 | |
| 17:15 p.m - 17:30 p.m | 15 | 11 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 28 | |
| 17:30 p.m - 17:45 p.m | 14 | 12 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 29 | |
| 17:45 p.m - 18:00 p.m | 18 | 10 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 31 | |
| 18:00 p.m - 18:15 p.m | 17 | 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 27 | |
| 18:15 p.m - 18:30 p.m | 15 | 12 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 28 | |
| 18:30 p.m - 18:45 p.m | 14 | 11 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 26 | |
| 18:45 p.m - 19:00 p.m | 11 | 9 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 20 | |
| Total por tipo | 395 | 291 | 11 | 18 | 15 | 14 | 11 | 5 | 6 | 0 | 0 | 766 | |












|  UNIVERSIDAD NACIONAL DE JAÉN  | | | | | | | | | | | | | |
|---|---|---|----------|------|---------------|---|---|--|---|---|---|----------------|-----------------------|
| Técnica de recolección de datos: Observación directa | | | | | | | | | | | | | |
| Tesis | ANÁLISIS VIAL EN LA INTERSECCIÓN DE LAS CALLES IQUITOS Y EJÉRCITO EMPLEANDO EL SOFTWARE SYNCHRO 10 EN LA CIUDAD DE JAÉN, 2025 | | | | | | | | | | | | |
| Testistas | Bach. Kelvin Jhonatan Guevara Ruiz Bach. Ever Waldir Torres Pedraza | | | | | | | | | | | | |
| Asesor | Doc. José Luis Piedra Tineo | | | | | | | | | | | | |
| Fecha: Martes 01/07/2025 | Punto de conteo: Intersección de las calles Iquitos y Ejército | | | | | | | | | | | | |
| | Entrada: Calle Iquitos (Este) Salida: Calle Iquitos (Oeste) | | | | | | | | | | | | |
| HORA | MOTOS | | CARGUERO | AUTO | STATION WAGON | CAMIONETAS | | | CAMIONES | | | Total por hora | Total por horas punta |
| | TAXI | LINEAL | | | | PICK UP | PANEL | COMBI | 2E | 3E | 4E | | |
| |  |  | | | |  |  |  |  |  |  | | |
| 6:00 a.m - 6:15 a.m | 11 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 14 | 1147 |
| 6:15 a.m - 6:30 a.m | 21 | 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 29 | |
| 6:30 a.m - 6:45 a.m | 26 | 16 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 45 | |
| 6:45 a.m - 7:00 a.m | 45 | 21 | 0 | 1 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 69 | |
| 7:00 a.m - 7:15 a.m | 77 | 31 | 2 | 0 | 1 | 1 | 2 | 2 | 1 | 0 | 0 | 117 | |
| 7:15 a.m - 7:30 a.m | 93 | 28 | 1 | 2 | 2 | 2 | 0 | 0 | 1 | 0 | 0 | 129 | |
| 7:30 a.m - 7:45 a.m | 102 | 39 | 1 | 3 | 2 | 2 | 1 | 2 | 1 | 0 | 0 | 153 | |
| 7:45 a.m - 8:00 a.m | 96 | 39 | 0 | 1 | 1 | 2 | 0 | 1 | 0 | 0 | 0 | 140 | |
| 8:00 a.m - 8:15 a.m | 85 | 34 | 0 | 1 | 2 | 3 | 0 | 1 | 0 | 0 | 0 | 126 | |
| 8:15 a.m - 8:30 a.m | 80 | 33 | 0 | 0 | 2 | 0 | 1 | 0 | 0 | 0 | 0 | 116 | |
| 8:30 a.m - 8:45 a.m | 75 | 30 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 107 | |
| 8:45 a.m - 9:00 a.m | 75 | 26 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 102 | |
| 11:00 a.m - 11:15 a.m | 96 | 43 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 141 | |
| 11:15 a.m - 11:30 a.m | 97 | 45 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 144 | |
| 11:30 a.m - 11:45 a.m | 102 | 51 | 1 | 2 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 159 | |
| 11:45 a.m - 12:00 p.m | 103 | 53 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 158 | |
| 12:00 p.m - 12:15 p.m | 108 | 61 | 0 | 2 | 0 | 2 | 0 | 1 | 0 | 0 | 0 | 174 | |
| 12:15 p.m - 12:30 p.m | 109 | 67 | 0 | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 179 | |
| 12:30 p.m - 12:45 p.m | 130 | 95 | 1 | 4 | 2 | 2 | 1 | 2 | 0 | 0 | 0 | 237 | |
| 12:45 p.m - 13:00 p.m | 129 | 100 | 1 | 6 | 2 | 4 | 0 | 0 | 0 | 0 | 0 | 242 | |
| 13:00 p.m - 13:15 p.m | 88 | 90 | 0 | 4 | 1 | 3 | 0 | 0 | 0 | 0 | 0 | 186 | |
| 13:15 p.m - 13:30 p.m | 80 | 85 | 0 | 3 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 171 | |
| 13:30 p.m - 13:45 p.m | 97 | 79 | 0 | 2 | 0 | 2 | 0 | 1 | 0 | 0 | 0 | 181 | |
| 13:45 p.m - 14:00 p.m | 94 | 75 | 0 | 2 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 173 | |
| 16:00 p.m - 16:15 p.m | 60 | 49 | 1 | 0 | 0 | 1 | 0 | 2 | 0 | 0 | 0 | 113 | |
| 16:15 p.m - 16:30 p.m | 65 | 54 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 121 | |
| 16:30 p.m - 16:45 p.m | 72 | 65 | 0 | 1 | 1 | 2 | 0 | 0 | 1 | 0 | 0 | 142 | |
| 16:45 p.m - 17:00 p.m | 78 | 74 | 1 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 155 | |
| 17:00 p.m - 17:15 p.m | 75 | 75 | 1 | 2 | 2 | 3 | 0 | 1 | 1 | 0 | 0 | 160 | |
| 17:15 p.m - 17:30 p.m | 82 | 78 | 1 | 0 | 1 | 0 | 0 | 2 | 0 | 0 | 0 | 164 | |
| 17:30 p.m - 17:45 p.m | 105 | 104 | 1 | 2 | 2 | 2 | 0 | 1 | 0 | 0 | 0 | 217 | |
| 17:45 p.m - 18:00 p.m | 100 | 101 | 0 | 2 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 206 | |
| 18:00 p.m - 18:15 p.m | 98 | 95 | 0 | 3 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 199 | |
| 18:15 p.m - 18:30 p.m | 97 | 86 | 0 | 2 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 188 | |
| 18:30 p.m - 18:45 p.m | 87 | 82 | 0 | 0 | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 173 | |
| 18:45 p.m - 19:00 p.m | 82 | 80 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 163 | |
| Total por tipo | 3020 | 2095 | 14 | 49 | 30 | 52 | 7 | 17 | 9 | 0 | 0 | 5293 | |




|  UNIVERSIDAD NACIONAL DE JAÉN  | | | | | | | | | | | | | | |
|---|---|---|---|---|--|---|---|---|---|---|---|---|-----------------------|-----|
| Técnica de recolección de datos: Observación directa | | | | | | | | | | | | | | |
| Tesis | ANÁLISIS VIAL EN LA INTERSECCIÓN DE LAS CALLES IQUITOS Y EJÉRCITO EMPLEANDO EL SOFTWARE SYNCHRO 10 EN LA CIUDAD DE JAÉN, 2025 | | | | | | | | | | | | | |
| Tesistas | Bach. Kelvin Jhonatan Guevara Ruiz Bach. Ever Waldir Torres Pedraza | | | | | | | | | | | | | |
| Asesor | Doc. José Luis Piedra Tineo | | | | | | | | | | | | | |
| Fecha: Martes 01/07/2025 | Punto de conteo: Intersección de las calles Iquitos y Ejército | | | | | | | | | | | | | |
| HORA | Entrada: Calle Iquitos (Este) | | | | | Salida: Calle Ejército (Norte) | | | | | | Total por hora | Total por horas punta | |
| | MOTOS | | CARGUERO | AUTO | STATION WAGON | CAMIONETAS | | | CAMIONES | | | | | |
| | TAXI | LINEAL | | | | PICK UP | PANEL | COMBI | 2E | 3E | 4E | | | |
| | |  |  |  |  |  |  |  |  |  |  |  | | |
| 6:00 a.m - 6:15 a.m | 4 | 3 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 8 | 396 |
| 6:15 a.m - 6:30 a.m | 5 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9 | |
| 6:30 a.m - 6:45 a.m | 9 | 4 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 16 | |
| 6:45 a.m - 7:00 a.m | 10 | 10 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 21 | |
| 7:00 a.m - 7:15 a.m | 17 | 15 | 2 | 1 | 1 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 39 | |
| 7:15 a.m - 7:30 a.m | 30 | 17 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 49 | |
| 7:30 a.m - 7:45 a.m | 26 | 20 | 0 | 2 | 1 | 1 | 2 | 1 | 1 | 0 | 0 | 0 | 54 | |
| 7:45 a.m - 8:00 a.m | 28 | 22 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 53 | |
| 8:00 a.m - 8:15 a.m | 25 | 18 | 0 | 0 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 46 | |
| 8:15 a.m - 8:30 a.m | 19 | 19 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 38 | |
| 8:30 a.m - 8:45 a.m | 16 | 16 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 33 | |
| 8:45 a.m - 9:00 a.m | 15 | 15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 30 | |
| 11:00 a.m - 11:15 a.m | 14 | 10 | 1 | 1 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 28 | |
| 11:15 a.m - 11:30 a.m | 15 | 11 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 28 | |
| 11:30 a.m - 11:45 a.m | 18 | 14 | 0 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 37 | |
| 11:45 a.m - 12:00 p.m | 18 | 15 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 34 | |
| 12:00 p.m - 12:15 p.m | 20 | 18 | 2 | 2 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 45 | |
| 12:15 p.m - 12:30 p.m | 24 | 20 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 48 | |
| 12:30 p.m - 12:45 p.m | 26 | 24 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 52 | |
| 12:45 p.m - 13:00 p.m | 32 | 21 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 55 | |
| 13:00 p.m - 13:15 p.m | 35 | 25 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 61 | |
| 13:15 p.m - 13:30 p.m | 34 | 23 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 57 | |
| 13:30 p.m - 13:45 p.m | 27 | 20 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 47 | |
| 13:45 p.m - 14:00 p.m | 24 | 16 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 40 | |
| 16:00 p.m - 16:15 p.m | 16 | 10 | 0 | 1 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 29 | |
| 16:15 p.m - 16:30 p.m | 17 | 16 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 34 | |
| 16:30 p.m - 16:45 p.m | 21 | 17 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 41 | |
| 16:45 p.m - 17:00 p.m | 22 | 18 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 41 | |
| 17:00 p.m - 17:15 p.m | 26 | 21 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 50 | |
| 17:15 p.m - 17:30 p.m | 30 | 27 | 2 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 62 | |
| 17:30 p.m - 17:45 p.m | 32 | 27 | 0 | 0 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 63 | |
| 17:45 p.m - 18:00 p.m | 28 | 25 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 55 | |
| 18:00 p.m - 18:15 p.m | 27 | 23 | 0 | 1 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 53 | |
| 18:15 p.m - 18:30 p.m | 25 | 20 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 45 | |
| 18:30 p.m - 18:45 p.m | 25 | 21 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 46 | |
| 18:45 p.m - 19:00 p.m | 26 | 18 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 45 | |
| Total por tipo | 786 | 623 | 13 | 16 | 15 | 19 | 8 | 7 | 5 | 0 | 0 | 0 | 1492 | |

| UNIVERSIDAD NACIONAL DE JAÉN | | | | | | | | | | | | | |
|--|---|---|---|--|---|---|---|---|---|---|---|----------------|-----------------------|
| Técnica de recolección de datos: Observación directa | | | | | | | | | | | | | |
| Tesis | ANÁLISIS VIAL EN LA INTERSECCIÓN DE LAS CALLES IQUITOS Y EJÉRCITO EMPLEANDO EL SOFTWARE SYNCHRO 10 EN LA CIUDAD DE JAÉN, 2025 | | | | | | | | | | | | |
| Tesistas | Bach. Kelvin Jhonatan Guevara Ruiz Bach. Ever Waldir Torres Pedraza | | | | | | | | | | | | |
| Asesor | Doc. José Luis Piedra Tineo | | | | | | | | | | | | |
| Fecha: Martes 01/07/2025 | Punto de conteo: Intersección de las calles Iquitos y Ejército | | | | | Entrada: Calle Iquitos (Este) | | | Salida: Calle Ejército (Sur) | | | | |
| HORA | MOTOS | | CARGUERO | AUTO | STATION WAGON | CAMIONETAS | | | CAMIONES | | | Total por hora | Total por horas punta |
| | TAXI | LINEAL | | | | PICK UP | PANEL | COMBI | 2E | 3E | 4E | | |
| |  |  |  |  |  |  |  |  |  |  |  | | |
| 6:00 a.m - 6:15 a.m | 3 | 2 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 7 | |
| 6:15 a.m - 6:30 a.m | 5 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 10 | |
| 6:30 a.m - 6:45 a.m | 6 | 5 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 13 | |
| 6:45 a.m - 7:00 a.m | 12 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 18 | |
| 7:00 a.m - 7:15 a.m | 28 | 9 | 1 | 0 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 42 | |
| 7:15 a.m - 7:30 a.m | 23 | 10 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 36 | |
| 7:30 a.m - 7:45 a.m | 31 | 12 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 47 | |
| 7:45 a.m - 8:00 a.m | 29 | 16 | 0 | 2 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 50 | |
| 8:00 a.m - 8:15 a.m | 26 | 12 | 0 | 1 | 1 | 2 | 1 | 1 | 0 | 0 | 0 | 44 | |
| 8:15 a.m - 8:30 a.m | 24 | 11 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 36 | |
| 8:30 a.m - 8:45 a.m | 16 | 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 24 | |
| 8:45 a.m - 9:00 a.m | 15 | 7 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 23 | |
| 11:00 a.m - 11:15 a.m | 14 | 6 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 22 | |
| 11:15 a.m - 11:30 a.m | 16 | 7 | 0 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 26 | |
| 11:30 a.m - 11:45 a.m | 19 | 8 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 29 | |
| 11:45 a.m - 12:00 p.m | 18 | 9 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 28 | |
| 12:00 p.m - 12:15 p.m | 21 | 10 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 32 | |
| 12:15 p.m - 12:30 p.m | 22 | 10 | 2 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 36 | |
| 12:30 p.m - 12:45 p.m | 25 | 11 | 0 | 1 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 40 | |
| 12:45 p.m - 13:00 p.m | 28 | 12 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 41 | |
| 13:00 p.m - 13:15 p.m | 23 | 14 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 38 | |
| 13:15 p.m - 13:30 p.m | 20 | 12 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 33 | |
| 13:30 p.m - 13:45 p.m | 18 | 9 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 29 | |
| 13:45 p.m - 14:00 p.m | 15 | 7 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 23 | |
| 16:00 p.m - 16:15 p.m | 17 | 12 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 31 | |
| 16:15 p.m - 16:30 p.m | 20 | 14 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 36 | |
| 16:30 p.m - 16:45 p.m | 22 | 15 | 2 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 42 | |
| 16:45 p.m - 17:00 p.m | 23 | 17 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 41 | |
| 17:00 p.m - 17:15 p.m | 27 | 21 | 1 | 2 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 53 | |
| 17:15 p.m - 17:30 p.m | 33 | 28 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 62 | |
| 17:30 p.m - 17:45 p.m | 37 | 31 | 1 | 1 | 0 | 2 | 0 | 1 | 0 | 0 | 0 | 73 | |
| 17:45 p.m - 18:00 p.m | 34 | 27 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 62 | |
| 18:00 p.m - 18:15 p.m | 28 | 30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 58 | |
| 18:15 p.m - 18:30 p.m | 31 | 34 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 65 | |
| 18:30 p.m - 18:45 p.m | 22 | 18 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 40 | |
| 18:45 p.m - 19:00 p.m | 19 | 17 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 37 | |
| Total por tipo | 770 | 482 | 13 | 17 | 14 | 18 | 3 | 5 | 5 | 0 | 0 | 1327 | |

| UNIVERSIDAD NACIONAL DE JAÉN | | | | | | | | | | | | | |
|--|---|---|---|--|---|---|---|---|---|---|---|----------------|-----------------------|
| Técnica de recolección de datos: Observación directa | | | | | | | | | | | | | |
| Tesis | ANÁLISIS VIAL EN LA INTERSECCIÓN DE LAS CALLES IQUITOS Y EJÉRCITO EMPLEANDO EL SOFTWARE SYNCHRO 10 EN LA CIUDAD DE JAÉN, 2025 | | | | | | | | | | | | |
| Tesistas | Bach. Kelvin Jhonatan Guevara Ruiz Bach. Ever Waldir Torres Pedraza | | | | | | | | | | | | |
| Asesor | Doc. José Luis Piedra Tineo | | | | | | | | | | | | |
| Fecha: Martes 01/07/2025 | Punto de conteo: Intersección de las calles Iquitos y Ejército | | | | | Entrada: Calle Ejército (Sur) | | | Salida: Calle Ejército (Norte) | | | | |
| HORA | MOTOS | | CARGUERO | AUTO | STATION WAGON | CAMIONETAS | | | CAMIONES | | | Total por hora | Total por horas punta |
| | TAXI | LINEAL | | | | PICK UP | PANEL | COMBI | 2E | 3E | 4E | | |
| |  |  |  |  |  |  |  |  |  |  |  | | |
| 6:00 a.m - 6:15 a.m | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | |
| 6:15 a.m - 6:30 a.m | 4 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | |
| 6:30 a.m - 6:45 a.m | 6 | 6 | 0 | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 15 | |
| 6:45 a.m - 7:00 a.m | 11 | 10 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 22 | |
| 7:00 a.m - 7:15 a.m | 15 | 14 | 2 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 34 | |
| 7:15 a.m - 7:30 a.m | 17 | 18 | 1 | 0 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 39 | |
| 7:30 a.m - 7:45 a.m | 20 | 20 | 0 | 1 | 1 | 3 | 0 | 0 | 0 | 0 | 0 | 45 | 350 |
| 7:45 a.m - 8:00 a.m | 22 | 20 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 45 | |
| 8:00 a.m - 8:15 a.m | 25 | 17 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 44 | |
| 8:15 a.m - 8:30 a.m | 20 | 16 | 0 | 1 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 39 | |
| 8:30 a.m - 8:45 a.m | 19 | 13 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 32 | |
| 8:45 a.m - 9:00 a.m | 16 | 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 26 | |
| 11:00 a.m - 11:15 a.m | 12 | 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 20 | |
| 11:15 a.m - 11:30 a.m | 14 | 12 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 26 | |
| 11:30 a.m - 11:45 a.m | 15 | 9 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 26 | |
| 11:45 a.m - 12:00 p.m | 16 | 10 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 29 | |
| 12:00 p.m - 12:15 p.m | 19 | 12 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 32 | |
| 12:15 p.m - 12:30 p.m | 20 | 15 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 36 | |
| 12:30 p.m - 12:45 p.m | 23 | 11 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 36 | 386 |
| 12:45 p.m - 13:00 p.m | 25 | 13 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 40 | |
| 13:00 p.m - 13:15 p.m | 29 | 17 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 48 | |
| 13:15 p.m - 13:30 p.m | 25 | 15 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 41 | |
| 13:30 p.m - 13:45 p.m | 19 | 9 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 28 | |
| 13:45 p.m - 14:00 p.m | 17 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 24 | |
| 16:00 p.m - 16:15 p.m | 15 | 12 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 28 | |
| 16:15 p.m - 16:30 p.m | 14 | 15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 29 | |
| 16:30 p.m - 16:45 p.m | 16 | 12 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 28 | |
| 16:45 p.m - 17:00 p.m | 18 | 13 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 31 | |
| 17:00 p.m - 17:15 p.m | 27 | 22 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 50 | |
| 17:15 p.m - 17:30 p.m | 22 | 22 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 45 | |
| 17:30 p.m - 17:45 p.m | 27 | 20 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 49 | 471 |
| 17:45 p.m - 18:00 p.m | 24 | 20 | 1 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 47 | |
| 18:00 p.m - 18:15 p.m | 21 | 20 | 1 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 44 | |
| 18:15 p.m - 18:30 p.m | 22 | 20 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 42 | |
| 18:30 p.m - 18:45 p.m | 19 | 18 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 38 | |
| 18:45 p.m - 19:00 p.m | 23 | 17 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 40 | |
| Total por tipo | 659 | 496 | 7 | 8 | 2 | 27 | 4 | 2 | 2 | 0 | 0 | 1207 | |

| UNIVERSIDAD NACIONAL DE JAÉN | | | | | | | | | | | | | |
|--|---|---|---|---|--|---|---|---|---|---|---|----------------|-----------------------|
| Técnica de recolección de datos: Observación directa | | | | | | | | | | | | | |
| Tesis | ANÁLISIS VIAL EN LA INTERSECCIÓN DE LAS CALLES IQUITOS Y EJÉRCITO EMPLEANDO EL SOFTWARE SYNCHRO 10 EN LA CIUDAD DE JAÉN, 2025 | | | | | | | | | | | | |
| Tesistas | Bach. Kelvin Jhonatan Guevara Ruiz Bach. Ever Waldir Torres Pedraza | | | | | | | | | | | | |
| Asesor | Doc. José Luis Piedra Tineo | | | | | | | | | | | | |
| Fecha: Martes 01/07/2025 | Punto de conteo: Intersección de las calles Iquitos y Ejército | | | | | Entrada: Calle Ejército (Sur) | | | Salida: Calle Iquitos (Oeste) | | | | |
| HORA | MOTOS | | CARGUERO | AUTO | STATION WAGON | CAMIONETAS | | | CAMIONES | | | Total por hora | Total por horas punta |
| | TAXI | LINEAL | | | | PICK UP | PANEL | COMBI | 2E | 3E | 4E | | |
| |  |  |  |  |  |  |  |  |  |  |  | | |
| 6:00 a.m - 6:15 a.m | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 176 |
| 6:15 a.m - 6:30 a.m | 4 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | |
| 6:30 a.m - 6:45 a.m | 4 | 3 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 9 | |
| 6:45 a.m - 7:00 a.m | 7 | 5 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 13 | |
| 7:00 a.m - 7:15 a.m | 8 | 7 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 17 | |
| 7:15 a.m - 7:30 a.m | 10 | 9 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 20 | |
| 7:30 a.m - 7:45 a.m | 10 | 7 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 19 | |
| 7:45 a.m - 8:00 a.m | 13 | 11 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 24 | |
| 8:00 a.m - 8:15 a.m | 11 | 8 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 20 | |
| 8:15 a.m - 8:30 a.m | 9 | 6 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 16 | |
| 8:30 a.m - 8:45 a.m | 8 | 7 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 18 | |
| 8:45 a.m - 9:00 a.m | 5 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 11 | |
| 11:00 a.m - 11:15 a.m | 5 | 3 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 10 | |
| 11:15 a.m - 11:30 a.m | 7 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 12 | |
| 11:30 a.m - 11:45 a.m | 6 | 4 | 1 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 13 | |
| 11:45 a.m - 12:00 p.m | 8 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 14 | |
| 12:00 p.m - 12:15 p.m | 8 | 5 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 15 | |
| 12:15 p.m - 12:30 p.m | 10 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 14 | |
| 12:30 p.m - 12:45 p.m | 8 | 6 | 0 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 17 | |
| 12:45 p.m - 13:00 p.m | 11 | 8 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 20 | |
| 13:00 p.m - 13:15 p.m | 12 | 6 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 20 | |
| 13:15 p.m - 13:30 p.m | 6 | 4 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 12 | |
| 13:30 p.m - 13:45 p.m | 7 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 12 | |
| 13:45 p.m - 14:00 p.m | 6 | 3 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 10 | |
| 16:00 p.m - 16:15 p.m | 9 | 5 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 15 | |
| 16:15 p.m - 16:30 p.m | 9 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 15 | |
| 16:30 p.m - 16:45 p.m | 8 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 13 | |
| 16:45 p.m - 17:00 p.m | 11 | 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 19 | |
| 17:00 p.m - 17:15 p.m | 16 | 10 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 28 | |
| 17:15 p.m - 17:30 p.m | 12 | 8 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 21 | |
| 17:30 p.m - 17:45 p.m | 17 | 9 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 28 | |
| 17:45 p.m - 18:00 p.m | 16 | 7 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 24 | |
| 18:00 p.m - 18:15 p.m | 18 | 11 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 32 | |
| 18:15 p.m - 18:30 p.m | 15 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 22 | |
| 18:30 p.m - 18:45 p.m | 13 | 8 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 22 | |
| 18:45 p.m - 19:00 p.m | 9 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 15 | |
| Total por tipo | 338 | 221 | 8 | 10 | 4 | 11 | 2 | 3 | 2 | 0 | 0 | 599 | |

|  | | UNIVERSIDAD NACIONAL DE JAÉN | | | | | | | | | |  | |
|---|---|---|---|---|--|---|---|---|---|---|---|---|-----------------------|
| Técnica de recolección de datos: Observación directa | | | | | | | | | | | | | |
| Tesis | ANÁLISIS VIAL EN LA INTERSECCIÓN DE LAS CALLES IQUITOS Y EJÉRCITO EMPLEANDO EL SOFTWARE SYNCHRO 10 EN LA CIUDAD DE JAÉN, 2025 | | | | | | | | | | | | |
| Testistas | Bach. Kelvin Jhonatan Guevara Ruiz Bach. Ever Waldir Torres Pedraza | | | | | | | | | | | | |
| Asesor | Doc. José Luis Piedra Tineo | | | | | | | | | | | | |
| Fecha: Martes 01/07/2025 | Punto de conteo: Intersección de las calles Iquitos y Ejército | | | | | Entrada: Calle Ejército (Norte) | | | Salida: Calle Ejército (Sur) | | | | |
| HORA | MOTOS | | CARGUERO | AUTO | STATION WAGON | CAMIONETAS | | | CAMIONES | | | Total por hora | Total por horas punta |
| | TAXI | LINEAL | | | | PICK UP | PANEL | COMBI | 2E | 3E | 4E | | |
| |  |  |  |  |  |  |  |  |  |  |  | | |
| 6:00 a.m - 6:15 a.m | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 4 | 300 |
| 6:15 a.m - 6:30 a.m | 4 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | |
| 6:30 a.m - 6:45 a.m | 6 | 6 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 15 | |
| 6:45 a.m - 7:00 a.m | 9 | 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 17 | |
| 7:00 a.m - 7:15 a.m | 12 | 10 | 0 | 0 | 1 | 0 | 2 | 2 | 0 | 0 | 0 | 27 | |
| 7:15 a.m - 7:30 a.m | 16 | 14 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 32 | |
| 7:30 a.m - 7:45 a.m | 18 | 12 | 1 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 34 | |
| 7:45 a.m - 8:00 a.m | 24 | 21 | 0 | 2 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 50 | |
| 8:00 a.m - 8:15 a.m | 21 | 15 | 0 | 2 | 2 | 2 | 0 | 1 | 0 | 0 | 0 | 43 | |
| 8:15 a.m - 8:30 a.m | 13 | 12 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 26 | |
| 8:30 a.m - 8:45 a.m | 12 | 13 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 26 | |
| 8:45 a.m - 9:00 a.m | 10 | 9 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 19 | |
| 11:00 a.m - 11:15 a.m | 7 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 11 | |
| 11:15 a.m - 11:30 a.m | 10 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 17 | |
| 11:30 a.m - 11:45 a.m | 7 | 5 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 14 | |
| 11:45 a.m - 12:00 p.m | 9 | 5 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 15 | |
| 12:00 p.m - 12:15 p.m | 10 | 8 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 20 | |
| 12:15 p.m - 12:30 p.m | 12 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 19 | |
| 12:30 p.m - 12:45 p.m | 12 | 8 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 24 | |
| 12:45 p.m - 13:00 p.m | 16 | 9 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 26 | |
| 13:00 p.m - 13:15 p.m | 15 | 10 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 27 | |
| 13:15 p.m - 13:30 p.m | 13 | 7 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 21 | |
| 13:30 p.m - 13:45 p.m | 9 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 15 | |
| 13:45 p.m - 14:00 p.m | 11 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 17 | |
| 16:00 p.m - 16:15 p.m | 7 | 6 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 15 | |
| 16:15 p.m - 16:30 p.m | 10 | 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 18 | |
| 16:30 p.m - 16:45 p.m | 7 | 7 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 15 | |
| 16:45 p.m - 17:00 p.m | 9 | 10 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 20 | |
| 17:00 p.m - 17:15 p.m | 12 | 9 | 1 | 1 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 25 | |
| 17:15 p.m - 17:30 p.m | 9 | 9 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 20 | |
| 17:30 p.m - 17:45 p.m | 11 | 8 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 21 | |
| 17:45 p.m - 18:00 p.m | 10 | 7 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 18 | |
| 18:00 p.m - 18:15 p.m | 11 | 9 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 22 | |
| 18:15 p.m - 18:30 p.m | 9 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 16 | |
| 18:30 p.m - 18:45 p.m | 7 | 6 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 14 | |
| 18:45 p.m - 19:00 p.m | 8 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 13 | |
| Total por tipo | 389 | 296 | 7 | 12 | 9 | 16 | 4 | 5 | 5 | 0 | 0 | 743 | |

| UNIVERSIDAD NACIONAL DE JAÉN | | | | | | | | | | | | | |
|--|---|---|---|--|---|---|---|---|---|---|---|----------------|-----------------------|
| Técnica de recolección de datos: Observación directa | | | | | | | | | | | | | |
| Tesis | ANÁLISIS VIAL EN LA INTERSECCIÓN DE LAS CALLES IQUITOS Y EJÉRCITO EMPLEANDO EL SOFTWARE SYNCHRO 10 EN LA CIUDAD DE JAÉN, 2025 | | | | | | | | | | | | |
| Tesistas | Bach. Kelvin Jhonatan Guevara Ruiz Bach. Ever Waldir Torres Pedraza | | | | | | | | | | | | |
| Asesor | Doc. José Luis Piedra Tineo | | | | | | | | | | | | |
| Fecha: Martes 01/07/2025 | Punto de conteo: Intersección de las calles Iquitos y Ejército | | | | | Entrada: Calle Ejército (Norte) | | | Salida: Calle Iquitos (Oeste) | | | | |
| HORA | MOTOS | | CARGUERO | AUTO | STATION WAGON | CAMIONETAS | | | CAMIONES | | | Total por hora | Total por horas punta |
| | TAXI | LINEAL | | | | PICK UP | PANEL | COMBI | 2E | 3E | 4E | | |
| |  |  |  |  |  |  |  |  |  |  |  | | |
| 6:00 a.m - 6:15 a.m | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 168 |
| 6:15 a.m - 6:30 a.m | 4 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | |
| 6:30 a.m - 6:45 a.m | 5 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9 | |
| 6:45 a.m - 7:00 a.m | 7 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 12 | |
| 7:00 a.m - 7:15 a.m | 6 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 12 | |
| 7:15 a.m - 7:30 a.m | 10 | 6 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 18 | |
| 7:30 a.m - 7:45 a.m | 9 | 7 | 1 | 2 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 20 | |
| 7:45 a.m - 8:00 a.m | 12 | 10 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 24 | |
| 8:00 a.m - 8:15 a.m | 9 | 9 | 0 | 2 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 22 | |
| 8:15 a.m - 8:30 a.m | 8 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 15 | |
| 8:30 a.m - 8:45 a.m | 7 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 14 | |
| 8:45 a.m - 9:00 a.m | 6 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 11 | |
| 11:00 a.m - 11:15 a.m | 6 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 12 | |
| 11:15 a.m - 11:30 a.m | 8 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 15 | |
| 11:30 a.m - 11:45 a.m | 8 | 6 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 16 | |
| 11:45 a.m - 12:00 p.m | 9 | 5 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 15 | |
| 12:00 p.m - 12:15 p.m | 10 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 16 | |
| 12:15 p.m - 12:30 p.m | 12 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 19 | |
| 12:30 p.m - 12:45 p.m | 14 | 9 | 1 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 26 | |
| 12:45 p.m - 13:00 p.m | 9 | 9 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 19 | |
| 13:00 p.m - 13:15 p.m | 14 | 8 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 24 | |
| 13:15 p.m - 13:30 p.m | 8 | 7 | 0 | 0 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 18 | |
| 13:30 p.m - 13:45 p.m | 10 | 5 | 0 | 0 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 18 | |
| 13:45 p.m - 14:00 p.m | 8 | 6 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 16 | |
| 16:00 p.m - 16:15 p.m | 7 | 5 | 2 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 15 | |
| 16:15 p.m - 16:30 p.m | 8 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 15 | |
| 16:30 p.m - 16:45 p.m | 7 | 7 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 15 | |
| 16:45 p.m - 17:00 p.m | 10 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 17 | |
| 17:00 p.m - 17:15 p.m | 18 | 6 | 0 | 1 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 27 | |
| 17:15 p.m - 17:30 p.m | 12 | 9 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 22 | |
| 17:30 p.m - 17:45 p.m | 13 | 6 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 21 | |
| 17:45 p.m - 18:00 p.m | 16 | 8 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 25 | |
| 18:00 p.m - 18:15 p.m | 12 | 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 20 | |
| 18:15 p.m - 18:30 p.m | 10 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 15 | |
| 18:30 p.m - 18:45 p.m | 7 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 13 | |
| 18:45 p.m - 19:00 p.m | 9 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 16 | |
| Total por tipo | 330 | 232 | 7 | 8 | 3 | 16 | 0 | 4 | 3 | 0 | 0 | 603 | |











UNIVERSIDAD NACIONAL DE JAÉN



Técnica de recolección de datos: Observación directa

| Tesis | | ANÁLISIS VIAL EN LA INTERSECCIÓN DE LAS CALLES IQUITOS Y EJÉRCITO EMPLEANDO EL SOFTWARE SYNCHRO 10 EN LA CIUDAD DE JAÉN, 2025 | | | | | | | | | | | |
|-----------------------------|-------|---|----------|------|---------------|-------------------------------|-------|-------|-------------------------------|----|----|----------------|-----------------------|
| Tesisistas | | Bach. Kelvin Jhonatan Guevara Ruiz Bach. Ever Waldir Torres Pedraza | | | | | | | | | | | |
| Asesor | | Doc. José Luis Piedra Tineo | | | | | | | | | | | |
| Fecha: Miércoles 02/07/2025 | | Punto de conteo: Intersección de las calles Iquitos y Ejército | | | | Entrada: Calle Iquitos (Este) | | | Salida: Calle Iquitos (Oeste) | | | | |
| HORA | MOTOS | | CARGUERO | AUTO | STATION WAGON | CAMIONETAS | | | CAMIONES | | | Total por hora | Total por horas punta |
| | TAXI | LINEAL | | | | PICK UP | PANEL | COMBI | 2E | 3E | 4E | | |
| | | | | | | | | | | | | | |
| 6:00 a.m - 6:15 a.m | 10 | 6 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 17 | 1160 |
| 6:15 a.m - 6:30 a.m | 23 | 11 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 34 | |
| 6:30 a.m - 6:45 a.m | 30 | 11 | 1 | 0 | 0 | 2 | 1 | 0 | 0 | 0 | 0 | 45 | |
| 6:45 a.m - 7:00 a.m | 40 | 15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 55 | |
| 7:00 a.m - 7:15 a.m | 80 | 27 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 0 | 0 | 121 | |
| 7:15 a.m - 7:30 a.m | 85 | 23 | 1 | 2 | 2 | 3 | 0 | 1 | 1 | 0 | 0 | 118 | |
| 7:30 a.m - 7:45 a.m | 85 | 38 | 1 | 2 | 3 | 2 | 2 | 1 | 1 | 0 | 0 | 135 | |
| 7:45 a.m - 8:00 a.m | 105 | 47 | 1 | 2 | 4 | 1 | 0 | 2 | 0 | 0 | 0 | 162 | |
| 8:00 a.m - 8:15 a.m | 97 | 44 | 1 | 1 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 146 | |
| 8:15 a.m - 8:30 a.m | 91 | 30 | 0 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 124 | |
| 8:30 a.m - 8:45 a.m | 80 | 26 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 108 | |
| 8:45 a.m - 9:00 a.m | 75 | 20 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 95 | |
| 11:00 a.m - 11:15 a.m | 90 | 39 | 0 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 132 | 2269 |
| 11:15 a.m - 11:30 a.m | 100 | 40 | 0 | 0 | 0 | 1 | 0 | 0 | 2 | 0 | 0 | 143 | |
| 11:30 a.m - 11:45 a.m | 99 | 56 | 2 | 1 | 1 | 2 | 2 | 1 | 2 | 0 | 0 | 166 | |
| 11:45 a.m - 12:00 p.m | 108 | 50 | 1 | 2 | 0 | 2 | 0 | 0 | 1 | 0 | 0 | 164 | |
| 12:00 p.m - 12:15 p.m | 110 | 70 | 2 | 2 | 2 | 1 | 1 | 0 | 2 | 0 | 0 | 190 | |
| 12:15 p.m - 12:30 p.m | 100 | 71 | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 174 | |
| 12:30 p.m - 12:45 p.m | 120 | 93 | 1 | 2 | 1 | 2 | 1 | 1 | 0 | 0 | 0 | 221 | |
| 12:45 p.m - 13:00 p.m | 160 | 100 | 0 | 5 | 1 | 3 | 0 | 0 | 0 | 0 | 0 | 269 | |
| 13:00 p.m - 13:15 p.m | 167 | 107 | 0 | 6 | 2 | 4 | 0 | 1 | 0 | 0 | 0 | 287 | |
| 13:15 p.m - 13:30 p.m | 113 | 61 | 0 | 4 | 1 | 4 | 0 | 1 | 0 | 0 | 0 | 184 | |
| 13:30 p.m - 13:45 p.m | 101 | 80 | 0 | 3 | 0 | 3 | 0 | 2 | 0 | 0 | 0 | 189 | |
| 13:45 p.m - 14:00 p.m | 79 | 70 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 150 | |
| 16:00 p.m - 16:15 p.m | 66 | 46 | 0 | 1 | 0 | 2 | 0 | 0 | 2 | 0 | 0 | 117 | 2093 |
| 16:15 p.m - 16:30 p.m | 74 | 54 | 0 | 0 | 1 | 0 | 0 | 1 | 3 | 0 | 0 | 133 | |
| 16:30 p.m - 16:45 p.m | 67 | 55 | 1 | 2 | 2 | 0 | 0 | 2 | 1 | 0 | 0 | 130 | |
| 16:45 p.m - 17:00 p.m | 78 | 80 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 160 | |
| 17:00 p.m - 17:15 p.m | 95 | 89 | 2 | 1 | 3 | 2 | 1 | 0 | 2 | 0 | 0 | 195 | |
| 17:15 p.m - 17:30 p.m | 100 | 61 | 0 | 0 | 3 | 3 | 2 | 0 | 0 | 0 | 0 | 169 | |
| 17:30 p.m - 17:45 p.m | 111 | 100 | 2 | 4 | 2 | 4 | 2 | 1 | 0 | 0 | 0 | 226 | |
| 17:45 p.m - 18:00 p.m | 99 | 99 | 1 | 2 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 203 | |
| 18:00 p.m - 18:15 p.m | 98 | 72 | 1 | 2 | 2 | 3 | 0 | 2 | 0 | 0 | 0 | 180 | |
| 18:15 p.m - 18:30 p.m | 117 | 98 | 0 | 0 | 2 | 4 | 0 | 2 | 0 | 0 | 0 | 223 | |
| 18:30 p.m - 18:45 p.m | 93 | 71 | 0 | 1 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 168 | |
| 18:45 p.m - 19:00 p.m | 109 | 80 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 189 | |
| Total por tipo | 3255 | 2040 | 20 | 52 | 40 | 58 | 16 | 21 | 20 | 0 | 0 | 5522 | |

| UNIVERSIDAD NACIONAL DE JAÉN | | Técnica de recolección de datos: Observación directa | | | | | | | | | | | |
|------------------------------------|---|--|----------|------|---------------|---|--|---|---|---|---|----------------|-----------------------|
| Tesis | | ANÁLISIS VIAL EN LA INTERSECCIÓN DE LAS CALLES IQUITOS Y EJÉRCITO EMPLEANDO EL SOFTWARE SYNCHIRO 10 EN LA CIUDAD DE JAÉN, 2025 | | | | | | | | | | | |
| Tesistas | | Bach. Kelvin Jhonatan Guevara Ruiz Bach. Ever Waldir Torres Pedraza | | | | | | | | | | | |
| Asesor | | Doc. José Luis Piedra Tineo | | | | | | | | | | | |
| Fecha: Miércoles 02/07/2025 | | Punto de conteo: Intersección de las calles Iquitos y Ejército | | | | Entrada: Calle Iquitos (Este) | | | Salida: Calle Ejército (Norte) | | | | |
| HORA | MOTOS | | CARGUERO | AUTO | STATION WAGON | CAMIONETAS | | | CAMIONES | | | Total por hora | Total por horas punta |
| | TAXI | LINEAL | | | | PICK UP | PANEL | COMBI | 2E | 3E | 4E | | |
| |  |  | | | |  |  |  |  |  |  | | |
| 6:00 a.m - 6:15 a.m | 4 | 4 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 9 | 322 |
| 6:15 a.m - 6:30 a.m | 9 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 16 | |
| 6:30 a.m - 6:45 a.m | 9 | 4 | 1 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 17 | |
| 6:45 a.m - 7:00 a.m | 11 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 17 | |
| 7:00 a.m - 7:15 a.m | 10 | 9 | 0 | 1 | 1 | 1 | 1 | 1 | 2 | 0 | 0 | 26 | |
| 7:15 a.m - 7:30 a.m | 23 | 11 | 1 | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 38 | |
| 7:30 a.m - 7:45 a.m | 19 | 9 | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 34 | |
| 7:45 a.m - 8:00 a.m | 30 | 10 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 42 | |
| 8:00 a.m - 8:15 a.m | 24 | 12 | 2 | 2 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 43 | |
| 8:15 a.m - 8:30 a.m | 18 | 9 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 29 | |
| 8:30 a.m - 8:45 a.m | 17 | 11 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 29 | |
| 8:45 a.m - 9:00 a.m | 13 | 7 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 22 | |
| 11:00 a.m - 11:15 a.m | 12 | 9 | 1 | 0 | 1 | 0 | 1 | 1 | 1 | 0 | 0 | 26 | |
| 11:15 a.m - 11:30 a.m | 15 | 13 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 29 | |
| 11:30 a.m - 11:45 a.m | 17 | 12 | 0 | 1 | 1 | 2 | 1 | 1 | 0 | 0 | 0 | 35 | |
| 11:45 a.m - 12:00 p.m | 19 | 14 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 35 | |
| 12:00 p.m - 12:15 p.m | 23 | 13 | 1 | 1 | 1 | 1 | 0 | 1 | 1 | 0 | 0 | 42 | |
| 12:15 p.m - 12:30 p.m | 22 | 15 | 0 | 2 | 1 | 1 | 2 | 1 | 0 | 0 | 0 | 44 | |
| 12:30 p.m - 12:45 p.m | 19 | 14 | 2 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 39 | |
| 12:45 p.m - 13:00 p.m | 26 | 17 | 0 | 2 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 47 | |
| 13:00 p.m - 13:15 p.m | 27 | 18 | 0 | 1 | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 50 | |
| 13:15 p.m - 13:30 p.m | 16 | 15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 31 | |
| 13:30 p.m - 13:45 p.m | 18 | 15 | 0 | 0 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 36 | |
| 13:45 p.m - 14:00 p.m | 18 | 12 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 31 | |
| 16:00 p.m - 16:15 p.m | 18 | 11 | 2 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 33 | |
| 16:15 p.m - 16:30 p.m | 22 | 14 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 38 | |
| 16:30 p.m - 16:45 p.m | 20 | 12 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 35 | |
| 16:45 p.m - 17:00 p.m | 24 | 17 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 43 | |
| 17:00 p.m - 17:15 p.m | 25 | 31 | 1 | 2 | 1 | 2 | 1 | 1 | 1 | 0 | 0 | 65 | |
| 17:15 p.m - 17:30 p.m | 30 | 19 | 1 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 53 | |
| 17:30 p.m - 17:45 p.m | 31 | 18 | 1 | 2 | 1 | 2 | 0 | 1 | 2 | 0 | 0 | 58 | |
| 17:45 p.m - 18:00 p.m | 26 | 32 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 59 | |
| 18:00 p.m - 18:15 p.m | 27 | 26 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 56 | |
| 18:15 p.m - 18:30 p.m | 21 | 19 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 42 | |
| 18:30 p.m - 18:45 p.m | 23 | 14 | 0 | 0 | 2 | 1 | 0 | 1 | 0 | 0 | 0 | 41 | |
| 18:45 p.m - 19:00 p.m | 19 | 16 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 36 | |
| Total por tipo | 705 | 495 | 16 | 20 | 24 | 28 | 11 | 15 | 12 | 0 | 0 | 1326 | |



UNIVERSIDAD NACIONAL DE JAÉN



Técnica de recolección de datos: Observación directa

| Tesis | | ANÁLISIS VIAL EN LA INTERSECCIÓN DE LAS CALLES IQUITOS Y EJÉRCITO EMPLEANDO EL SOFTWARE SYNCHRO 10 EN LA CIUDAD DE JAÉN, 2025 | | | | | | | | | | | | | | | | | | | | | |
|-----------------------------|-------|---|----------|------|---------------|------------|-------------------------------|-------|----------|------------------------------|----|----------------|-----------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Tesisistas | | Bach. Kelvin Jhonatan Guevara Ruiz Bach. Ever Waldir Torres Pedraza | | | | | | | | | | | | | | | | | | | | | |
| Asesor | | Doc. José Luis Piedra Tineo | | | | | | | | | | | | | | | | | | | | | |
| Fecha: Miércoles 02/07/2025 | | Punto de conteo: Intersección de las calles Iquitos y Ejército | | | | | Entrada: Calle Iquitos (Este) | | | Salida: Calle Ejército (Sur) | | | | | | | | | | | | | |
| HORA | MOTOS | | CARGUERO | AUTO | STATION WAGON | CAMIONETAS | | | CAMIONES | | | Total por hora | Total por horas punta | | | | | | | | | | |
| | TAXI | LINEAL | | | | PICK UP | PANEL | COMBI | 2E | 3E | 4E | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | |
| 6:00 a.m - 6:15 a.m | 5 | 2 | 1 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 10 | 387 | | | | | | | | | | |
| 6:15 a.m - 6:30 a.m | 8 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 12 | | 387 | | | | | | | | | |
| 6:30 a.m - 6:45 a.m | 8 | 5 | 0 | 0 | 1 | 1 | 0 | 0 | 2 | 0 | 0 | 17 | | | 387 | | | | | | | | |
| 6:45 a.m - 7:00 a.m | 10 | 9 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 20 | | | | 387 | | | | | | | |
| 7:00 a.m - 7:15 a.m | 22 | 11 | 1 | 2 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 38 | | | | | 387 | | | | | | |
| 7:15 a.m - 7:30 a.m | 27 | 12 | 2 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 43 | | | | | | 387 | | | | | |
| 7:30 a.m - 7:45 a.m | 27 | 14 | 0 | 1 | 1 | 2 | 1 | 0 | 0 | 0 | 0 | 46 | | | | | | | 387 | | | | |
| 7:45 a.m - 8:00 a.m | 32 | 20 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 53 | | | | | | | | 387 | | | |
| 8:00 a.m - 8:15 a.m | 26 | 19 | 0 | 1 | 2 | 1 | 1 | 1 | 1 | 0 | 0 | 52 | | | | | | | | | 387 | | |
| 8:15 a.m - 8:30 a.m | 24 | 13 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 40 | | | | | | | | | | 387 | |
| 8:30 a.m - 8:45 a.m | 18 | 12 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 31 | | | | | | | | | | | 387 |
| 8:45 a.m - 9:00 a.m | 14 | 9 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 25 | | | | | | | | | | | |
| 11:00 a.m - 11:15 a.m | 15 | 7 | 1 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 25 | 396 | | | | | | | | | | |
| 11:15 a.m - 11:30 a.m | 15 | 11 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 26 | | 396 | | | | | | | | | |
| 11:30 a.m - 11:45 a.m | 17 | 11 | 0 | 1 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 31 | | | 396 | | | | | | | | |
| 11:45 a.m - 12:00 p.m | 20 | 9 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 30 | | | | 396 | | | | | | | |
| 12:00 p.m - 12:15 p.m | 19 | 11 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 34 | | | | | 396 | | | | | | |
| 12:15 p.m - 12:30 p.m | 26 | 13 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 41 | | | | | | 396 | | | | | |
| 12:30 p.m - 12:45 p.m | 20 | 15 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 38 | | | | | | | 396 | | | | |
| 12:45 p.m - 13:00 p.m | 29 | 10 | 0 | 1 | 0 | 2 | 1 | 0 | 0 | 0 | 0 | 43 | | | | | | | | 396 | | | |
| 13:00 p.m - 13:15 p.m | 24 | 13 | 0 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 41 | | | | | | | | | 396 | | |
| 13:15 p.m - 13:30 p.m | 17 | 14 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 32 | | | | | | | | | | 396 | |
| 13:30 p.m - 13:45 p.m | 18 | 11 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 31 | | | | | | | | | | | 396 |
| 13:45 p.m - 14:00 p.m | 15 | 7 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 24 | | | | | | | | | | | |
| 16:00 p.m - 16:15 p.m | 13 | 11 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 25 | 549 | | | | | | | | | | |
| 16:15 p.m - 16:30 p.m | 17 | 15 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 34 | | 549 | | | | | | | | | |
| 16:30 p.m - 16:45 p.m | 19 | 14 | 1 | 1 | 1 | 1 | 0 | 0 | 2 | 0 | 0 | 39 | | | 549 | | | | | | | | |
| 16:45 p.m - 17:00 p.m | 25 | 14 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 41 | | | | 549 | | | | | | | |
| 17:00 p.m - 17:15 p.m | 28 | 26 | 1 | 2 | 1 | 2 | 1 | 0 | 0 | 0 | 0 | 61 | | | | | 549 | | | | | | |
| 17:15 p.m - 17:30 p.m | 24 | 21 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 46 | | | | | | 549 | | | | | |
| 17:30 p.m - 17:45 p.m | 29 | 25 | 0 | 2 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 59 | | | | | | | 549 | | | | |
| 17:45 p.m - 18:00 p.m | 36 | 30 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 69 | | | | | | | | 549 | | | |
| 18:00 p.m - 18:15 p.m | 26 | 20 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 50 | | | | | | | | | 549 | | |
| 18:15 p.m - 18:30 p.m | 19 | 21 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 40 | | | | | | | | | | 549 | |
| 18:30 p.m - 18:45 p.m | 18 | 23 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 42 | | | | | | | | | | | 549 |
| 18:45 p.m - 19:00 p.m | 28 | 15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 43 | | | | | | | | | | | |
| Total por tipo | 738 | 497 | 12 | 22 | 20 | 21 | 5 | 7 | 10 | 0 | 0 | 1332 | | | | | | | | | | | |






















UNIVERSIDAD NACIONAL DE JAÉN













Técnica de recolección de datos: Observación directa

| ANÁLISIS VIAL EN LA INTERSECCIÓN DE LAS CALLES IQUITOS Y EJÉRCITO EMPLEANDO EL SOFTWARE SYNCHIRO 10 EN LA CIUDAD DE JAÉN, 2025 | | | | | | | | | | | | | |
|--|-------|--------|----------|------|---------------|------------|-------|-------|----------|----|----|----------------|-----------------------|
| Tesis | | | | | | | | | | | | | |
| Bach. Kelvin Jhonatan Guevara Ruiz | | | | | | | | | | | | | |
| Bach. Ever Waldir Torres Pedraza | | | | | | | | | | | | | |
| Asesor | | | | | | | | | | | | | |
| Doc. José Luis Piedra Tineo | | | | | | | | | | | | | |
| Fecha: Miércoles 02/07/2025 | | | | | | | | | | | | | |
| Punto de conteo: Intersección de las calles Iquitos y Ejército | | | | | | | | | | | | | |
| Entrada: Calle Ejército (Sur) | | | | | | | | | | | | | |
| Salida: Calle Ejército (Norte) | | | | | | | | | | | | | |
| HORA | MOTOS | | CARGUERO | AUTO | STATION WAGON | CAMIONETAS | | | CAMIONES | | | Total por hora | Total por horas punta |
| | TAXI | LINEAL | | | | PICK UP | PANEL | COMBI | 2E | 3E | 4E | | |
| | | | | | | | | | | | | | |
| 6:00 a.m - 6:15 a.m | 5 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 332 |
| 6:15 a.m - 6:30 a.m | 7 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 11 | |
| 6:30 a.m - 6:45 a.m | 6 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 12 | |
| 6:45 a.m - 7:00 a.m | 8 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 14 | |
| 7:00 a.m - 7:15 a.m | 19 | 16 | 2 | 0 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 40 | |
| 7:15 a.m - 7:30 a.m | 16 | 12 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 30 | |
| 7:30 a.m - 7:45 a.m | 18 | 17 | 0 | 2 | 1 | 3 | 0 | 0 | 0 | 0 | 0 | 41 | |
| 7:45 a.m - 8:00 a.m | 25 | 14 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 40 | |
| 8:00 a.m - 8:15 a.m | 23 | 17 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 41 | |
| 8:15 a.m - 8:30 a.m | 22 | 13 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 35 | |
| 8:30 a.m - 8:45 a.m | 24 | 12 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 36 | |
| 8:45 a.m - 9:00 a.m | 17 | 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 25 | |
| 11:00 a.m - 11:15 a.m | 9 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 17 | |
| 11:15 a.m - 11:30 a.m | 16 | 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 26 | |
| 11:30 a.m - 11:45 a.m | 12 | 11 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 24 | |
| 11:45 a.m - 12:00 p.m | 12 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 19 | |
| 12:00 p.m - 12:15 p.m | 15 | 8 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 25 | |
| 12:15 p.m - 12:30 p.m | 21 | 14 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 37 | |
| 12:30 p.m - 12:45 p.m | 23 | 9 | 0 | 0 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 35 | |
| 12:45 p.m - 13:00 p.m | 25 | 10 | 0 | 1 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 38 | |
| 13:00 p.m - 13:15 p.m | 29 | 17 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 47 | |
| 13:15 p.m - 13:30 p.m | 22 | 10 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 33 | |
| 13:30 p.m - 13:45 p.m | 19 | 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 27 | |
| 13:45 p.m - 14:00 p.m | 17 | 9 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 26 | |
| 16:00 p.m - 16:15 p.m | 16 | 11 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 27 | |
| 16:15 p.m - 16:30 p.m | 18 | 14 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 32 | |
| 16:30 p.m - 16:45 p.m | 15 | 11 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 28 | |
| 16:45 p.m - 17:00 p.m | 21 | 12 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 34 | |
| 17:00 p.m - 17:15 p.m | 30 | 24 | 1 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 57 | |
| 17:15 p.m - 17:30 p.m | 20 | 17 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 39 | |
| 17:30 p.m - 17:45 p.m | 30 | 18 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 50 | |
| 17:45 p.m - 18:00 p.m | 21 | 19 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 40 | |
| 18:00 p.m - 18:15 p.m | 25 | 22 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 48 | |
| 18:15 p.m - 18:30 p.m | 20 | 15 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 36 | |
| 18:30 p.m - 18:45 p.m | 19 | 14 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 33 | |
| 18:45 p.m - 19:00 p.m | 26 | 18 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 44 | |
| Total por tipo | 671 | 441 | 5 | 5 | 5 | 21 | 0 | 0 | 6 | 0 | 0 | 1154 | |



| UNIVERSIDAD NACIONAL DE JAÉN | | | | | | | | | | | | | |
|--|---|---|----------|-----------|-------------------------------|---|---|---|---|---|---|----------------|-----------------------|
| Técnica de recolección de datos: Observación directa | | | | | | | | | | | | | |
| Tesis | ANÁLISIS VIAL EN LA INTERSECCIÓN DE LAS CALLES IQUITOS Y EJÉRCITO EMPLEANDO EL SOFTWARE SYNCHRO 10 EN LA CIUDAD DE JAÉN, 2025 | | | | | | | | | | | | |
| Tesistas | Bach. Kelvin Jhonatan Guevara Ruiz Bach. Ever Waldir Torres Pedraza | | | | | | | | | | | | |
| Asesor | Doc. José Luis Piedra Tineo | | | | | | | | | | | | |
| Fecha: Miércoles 02/07/2025 | Punto de conteo: Intersección de las calles Iquitos y Ejército | | | | Entrada: Calle Ejército (Sur) | | | | Salida: Calle Iquitos (Oeste) | | | | |
| HORA | MOTOS | | CARGUERO | AUTO | STATION WAGON | CAMIONETAS | | | CAMIONES | | | Total por hora | Total por horas punta |
| | TAXI | LINEAL | | | | PICK UP | PANEL | COMBI | 2E | 3E | 4E | | |
| |  |  | | | |  |  |  |  |  |  | | |
| 6:00 a.m - 6:15 a.m | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 148 |
| 6:15 a.m - 6:30 a.m | 4 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | |
| 6:30 a.m - 6:45 a.m | 3 | 3 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 8 | |
| 6:45 a.m - 7:00 a.m | 4 | 3 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 8 | |
| 7:00 a.m - 7:15 a.m | 7 | 7 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 17 | |
| 7:15 a.m - 7:30 a.m | 6 | 5 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 12 | |
| 7:30 a.m - 7:45 a.m | 10 | 5 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 17 | |
| 7:45 a.m - 8:00 a.m | 12 | 8 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 21 | |
| 8:00 a.m - 8:15 a.m | 11 | 6 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 19 | |
| 8:15 a.m - 8:30 a.m | 9 | 5 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 15 | |
| 8:30 a.m - 8:45 a.m | 5 | 4 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 11 | |
| 8:45 a.m - 9:00 a.m | 6 | 4 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 12 | |
| 11:00 a.m - 11:15 a.m | 7 | 1 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 10 | |
| 11:15 a.m - 11:30 a.m | 9 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 13 | |
| 11:30 a.m - 11:45 a.m | 7 | 2 | 1 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 12 | |
| 11:45 a.m - 12:00 p.m | 9 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 13 | |
| 12:00 p.m - 12:15 p.m | 11 | 3 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 17 | |
| 12:15 p.m - 12:30 p.m | 9 | 3 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 13 | |
| 12:30 p.m - 12:45 p.m | 10 | 3 | 0 | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 17 | |
| 12:45 p.m - 13:00 p.m | 13 | 5 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 19 | |
| 13:00 p.m - 13:15 p.m | 15 | 4 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 20 | |
| 13:15 p.m - 13:30 p.m | 12 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 14 | |
| 13:30 p.m - 13:45 p.m | 9 | 2 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 12 | |
| 13:45 p.m - 14:00 p.m | 7 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9 | |
| 16:00 p.m - 16:15 p.m | 4 | 2 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 8 | |
| 16:15 p.m - 16:30 p.m | 9 | 5 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 15 | |
| 16:30 p.m - 16:45 p.m | 6 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 13 | |
| 16:45 p.m - 17:00 p.m | 10 | 6 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 18 | |
| 17:00 p.m - 17:15 p.m | 19 | 10 | 2 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 32 | |
| 17:15 p.m - 17:30 p.m | 11 | 7 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 19 | |
| 17:30 p.m - 17:45 p.m | 13 | 10 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 25 | |
| 17:45 p.m - 18:00 p.m | 19 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 25 | |
| 18:00 p.m - 18:15 p.m | 17 | 11 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 29 | |
| 18:15 p.m - 18:30 p.m | 16 | 8 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 25 | |
| 18:30 p.m - 18:45 p.m | 12 | 6 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 19 | |
| 18:45 p.m - 19:00 p.m | 17 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 22 | |
| Total por tipo | 348 | 170 | 8 | 10 | 7 | 13 | 4 | 3 | 4 | 0 | 0 | 567 | |














| UNIVERSIDAD NACIONAL DE JAÉN | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|----------|------|---------------|---|--|---|---|---|---|----------------|-----------------------|---|---|---|-----|-----|-----|-----|-----|-----|-----|
| Técnica de recolección de datos: Observación directa | | | | | | | | | | | | | | | | | | | | | | | |
| ANÁLISIS VIAL EN LA INTERSECCIÓN DE LAS CALLES IQUITOS Y EJÉRCITO EMPLEANDO EL SOFTWARE SYNCHRO 10 EN LA CIUDAD DE JAÉN, 2025 | | | | | | | | | | | | | | | | | | | | | | | |
| Bach. Kelvin Jhonatan Guevara Ruiz | | | | | | | | | | | | | | | | | | | | | | | |
| Bach. Ever Waldir Torres Pedraza | | | | | | | | | | | | | | | | | | | | | | | |
| Doc. José Luis Piedra Tineo | | | | | | | | | | | | | | | | | | | | | | | |
| Punto de conteo: Intersección de las calles Iquitos y Ejército | | | | | | | | | | | | | | | | | | | | | | | |
| Entrada: Calle Ejército (Norte) | | | | | | | | | | | | | | | | | | | | | | | |
| Salida: Calle Ejército (Sur) | | | | | | | | | | | | | | | | | | | | | | | |
| HORA | MOTOS | | CARGUERO | AUTO | STATION WAGON | CAMIONETAS | | | CAMIONES | | | Total por hora | Total por horas punta | | | | | | | | | | |
| | TAXI | LINEAL | | | | PICK UP | PANEL | COMBI | 2E | 3E | 4E | | | | | | | | | | | | |
| |  |  | | | |  |  |  |  |  |  | | |  |  |  | | | | | | | |
| 6:00 a.m - 6:15 a.m | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 3 | 298 | | | | | | | | | | |
| 6:15 a.m - 6:30 a.m | 5 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 8 | | 298 | | | | | | | | | |
| 6:30 a.m - 6:45 a.m | 4 | 4 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 10 | | | 298 | | | | | | | | |
| 6:45 a.m - 7:00 a.m | 10 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 17 | | | | 298 | | | | | | | |
| 7:00 a.m - 7:15 a.m | 9 | 10 | 1 | 1 | 0 | 2 | 1 | 0 | 0 | 0 | 0 | 24 | | | | | 298 | | | | | | |
| 7:15 a.m - 7:30 a.m | 16 | 13 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 30 | | | | | | 298 | | | | | |
| 7:30 a.m - 7:45 a.m | 19 | 18 | 0 | 2 | 2 | 1 | 0 | 1 | 0 | 0 | 0 | 43 | | | | | | | 298 | | | | |
| 7:45 a.m - 8:00 a.m | 22 | 15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 37 | | | | | | | | 298 | | | |
| 8:00 a.m - 8:15 a.m | 22 | 14 | 0 | 2 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 41 | | | | | | | | | 298 | | |
| 8:15 a.m - 8:30 a.m | 16 | 11 | 0 | 1 | 2 | 1 | 0 | 1 | 0 | 0 | 0 | 32 | | | | | | | | | | 298 | |
| 8:30 a.m - 8:45 a.m | 14 | 13 | 0 | 1 | 1 | 3 | 0 | 1 | 0 | 0 | 0 | 33 | | | | | | | | | | | 298 |
| 8:45 a.m - 9:00 a.m | 11 | 8 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 20 | | | | | | | | | | | |
| 11:00 a.m - 11:15 a.m | 7 | 3 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 12 | 264 | | | | | | | | | | |
| 11:15 a.m - 11:30 a.m | 8 | 5 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 14 | | 264 | | | | | | | | | |
| 11:30 a.m - 11:45 a.m | 10 | 5 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 18 | | | 264 | | | | | | | | |
| 11:45 a.m - 12:00 p.m | 7 | 4 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 12 | | | | 264 | | | | | | | |
| 12:00 p.m - 12:15 p.m | 15 | 6 | 1 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 24 | | | | | 264 | | | | | | |
| 12:15 p.m - 12:30 p.m | 13 | 9 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 22 | | | | | | 264 | | | | | |
| 12:30 p.m - 12:45 p.m | 13 | 9 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 25 | | | | | | | 264 | | | | |
| 12:45 p.m - 13:00 p.m | 17 | 13 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 30 | | | | | | | | 264 | | | |
| 13:00 p.m - 13:15 p.m | 21 | 16 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 39 | | | | | | | | | 264 | | |
| 13:15 p.m - 13:30 p.m | 16 | 14 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 30 | | | | | | | | | | 264 | |
| 13:30 p.m - 13:45 p.m | 13 | 9 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 23 | | | | | | | | | | | 264 |
| 13:45 p.m - 14:00 p.m | 7 | 6 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 15 | | | | | | | | | | | |
| 16:00 p.m - 16:15 p.m | 4 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 12 | 323 | | | | | | | | | | |
| 16:15 p.m - 16:30 p.m | 6 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 12 | | 323 | | | | | | | | | |
| 16:30 p.m - 16:45 p.m | 7 | 4 | 1 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 14 | | | 323 | | | | | | | | |
| 16:45 p.m - 17:00 p.m | 8 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 15 | | | | 323 | | | | | | | |
| 17:00 p.m - 17:15 p.m | 22 | 18 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 43 | | | | | 323 | | | | | | |
| 17:15 p.m - 17:30 p.m | 20 | 16 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 38 | | | | | | 323 | | | | | |
| 17:30 p.m - 17:45 p.m | 18 | 17 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 38 | | | | | | | 323 | | | | |
| 17:45 p.m - 18:00 p.m | 17 | 16 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 34 | | | | | | | | 323 | | | |
| 18:00 p.m - 18:15 p.m | 15 | 17 | 0 | 1 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 35 | | | | | | | | | 323 | | |
| 18:15 p.m - 18:30 p.m | 17 | 15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 32 | | | | | | | | | | 323 | |
| 18:30 p.m - 18:45 p.m | 16 | 8 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 26 | | | | | | | | | | | 323 |
| 18:45 p.m - 19:00 p.m | 14 | 9 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 24 | | | | | | | | | | | |
| Total por tipo | 460 | 355 | 7 | 16 | 11 | 22 | 3 | 5 | 6 | 0 | 0 | 885 | | | | | | | | | | | |



| UNIVERSIDAD NACIONAL DE JAÉN | | | | | | | | | | | | | |
|--|---|---|----------|-----------|---------------------------------|---|--|---|---|---|---|----------------|-----------------------|
| Técnica de recolección de datos: Observación directa | | | | | | | | | | | | | |
| Tesis | ANÁLISIS VIAL EN LA INTERSECCIÓN DE LAS CALLES IQUITOS Y EJÉRCITO EMPLEANDO EL SOFTWARE SYNCHRO 10 EN LA CIUDAD DE JAÉN, 2025 | | | | | | | | | | | | |
| Tesistas | Bach. Kelvin Jhonatan Guevara Ruiz Bach. Ever Waldir Torres Pedraza | | | | | | | | | | | | |
| Asesor | Doc. José Luis Piedra Tineo | | | | | | | | | | | | |
| Fecha: Miércoles 02/07/2025 | Punto de conteo: Intersección de las calles Iquitos y Ejército | | | | Entrada: Calle Ejército (Norte) | | | | Salida: Calle Iquitos (Oeste) | | | | |
| HORA | MOTOS | | CARGUERO | AUTO | STATION WAGON | CAMIONETAS | | | CAMIONES | | | Total por hora | Total por horas punta |
| | TAXI | LINEAL | | | | PICK UP | PANEL | COMBI | 2E | 3E | 4E | | |
| |  |  | | | |  |  |  |  |  |  | | |
| 6:00 a.m - 6:15 a.m | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 151 |
| 6:15 a.m - 6:30 a.m | 4 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9 | |
| 6:30 a.m - 6:45 a.m | 4 | 2 | 0 | 0 | 0 | 0 | 1 | 0 | 2 | 0 | 0 | 9 | |
| 6:45 a.m - 7:00 a.m | 3 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | |
| 7:00 a.m - 7:15 a.m | 7 | 4 | 1 | 1 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 15 | |
| 7:15 a.m - 7:30 a.m | 9 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 16 | |
| 7:30 a.m - 7:45 a.m | 10 | 6 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 17 | |
| 7:45 a.m - 8:00 a.m | 10 | 8 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 19 | |
| 8:00 a.m - 8:15 a.m | 9 | 8 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 19 | |
| 8:15 a.m - 8:30 a.m | 7 | 6 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 14 | |
| 8:30 a.m - 8:45 a.m | 6 | 5 | 0 | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 15 | |
| 8:45 a.m - 9:00 a.m | 4 | 5 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 10 | |
| 11:00 a.m - 11:15 a.m | 4 | 3 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 8 | |
| 11:15 a.m - 11:30 a.m | 6 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 11 | |
| 11:30 a.m - 11:45 a.m | 8 | 3 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 13 | |
| 11:45 a.m - 12:00 p.m | 9 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 15 | |
| 12:00 p.m - 12:15 p.m | 10 | 8 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 20 | |
| 12:15 p.m - 12:30 p.m | 13 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 19 | |
| 12:30 p.m - 12:45 p.m | 17 | 5 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 24 | |
| 12:45 p.m - 13:00 p.m | 15 | 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 25 | |
| 13:00 p.m - 13:15 p.m | 15 | 10 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 28 | |
| 13:15 p.m - 13:30 p.m | 13 | 6 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 20 | |
| 13:30 p.m - 13:45 p.m | 10 | 5 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 17 | |
| 13:45 p.m - 14:00 p.m | 5 | 5 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 12 | |
| 16:00 p.m - 16:15 p.m | 6 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 10 | |
| 16:15 p.m - 16:30 p.m | 9 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 14 | |
| 16:30 p.m - 16:45 p.m | 6 | 5 | 1 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 14 | |
| 16:45 p.m - 17:00 p.m | 10 | 7 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 19 | |
| 17:00 p.m - 17:15 p.m | 15 | 9 | 0 | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 28 | |
| 17:15 p.m - 17:30 p.m | 10 | 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 18 | |
| 17:30 p.m - 17:45 p.m | 12 | 10 | 0 | 0 | 0 | 2 | 0 | 1 | 0 | 0 | 0 | 25 | |
| 17:45 p.m - 18:00 p.m | 14 | 7 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 22 | |
| 18:00 p.m - 18:15 p.m | 14 | 9 | 0 | 1 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 26 | |
| 18:15 p.m - 18:30 p.m | 10 | 11 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 22 | |
| 18:30 p.m - 18:45 p.m | 13 | 12 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 27 | |
| 18:45 p.m - 19:00 p.m | 9 | 8 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 18 | |
| Total por tipo | 328 | 223 | 5 | 10 | 5 | 20 | 3 | 6 | 6 | 0 | 0 | 606 | |

|  UNIVERSIDAD NACIONAL DE JAÉN  | | | | | | | | | | | | | |
|---|---|---|----------|------|---------------|---|--|---|---|---|---|----------------|-----------------------|
| Técnica de recolección de datos: Observación directa | | | | | | | | | | | | | |
| Tesis | ANÁLISIS VIAL EN LA INTERSECCIÓN DE LAS CALLES IQUITOS Y EJÉRCITO EMPLEANDO EL SOFTWARE SYNCHRO 10 EN LA CIUDAD DE JAÉN, 2025 | | | | | | | | | | | | |
| Testistas | Bach. Kelvin Jhonatan Guevara Ruiz Bach. Ever Waldir Torres Pedraza | | | | | | | | | | | | |
| Asesor | Doc. José Luis Piedra Tineo | | | | | | | | | | | | |
| Fecha: Jueves 03/07/2025 | Punto de conteo: Intersección de las calles Iquitos y Ejército | | | | | | | | | | | | |
| | Entrada: Calle Iquitos (Este) Salida: Calle Iquitos (Oeste) | | | | | | | | | | | | |
| HORA | MOTOS | | CARGUERO | AUTO | STATION WAGON | CAMIONETAS | | | CAMIONES | | | Total por hora | Total por horas punta |
| | TAXI | LINEAL | | | | PICK UP | PANEL | COMBI | 2E | 3E | 4E | | |
| |  |  | | | |  |  |  |  |  |  | | |
| 6:00 a.m - 6:15 a.m | 10 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 12 | 1106 |
| 6:15 a.m - 6:30 a.m | 21 | 6 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 28 | |
| 6:30 a.m - 6:45 a.m | 26 | 10 | 1 | 1 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 41 | |
| 6:45 a.m - 7:00 a.m | 43 | 17 | 0 | 1 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 63 | |
| 7:00 a.m - 7:15 a.m | 67 | 32 | 0 | 1 | 2 | 2 | 0 | 2 | 1 | 0 | 0 | 107 | |
| 7:15 a.m - 7:30 a.m | 94 | 38 | 2 | 2 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 138 | |
| 7:30 a.m - 7:45 a.m | 103 | 41 | 1 | 3 | 2 | 3 | 0 | 1 | 0 | 0 | 0 | 154 | |
| 7:45 a.m - 8:00 a.m | 73 | 45 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 120 | |
| 8:00 a.m - 8:15 a.m | 88 | 40 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 130 | |
| 8:15 a.m - 8:30 a.m | 78 | 37 | 0 | 0 | 2 | 0 | 0 | 1 | 0 | 0 | 0 | 118 | |
| 8:30 a.m - 8:45 a.m | 74 | 32 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 108 | |
| 8:45 a.m - 9:00 a.m | 62 | 24 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 87 | |
| 11:00 a.m - 11:15 a.m | 88 | 37 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 126 | |
| 11:15 a.m - 11:30 a.m | 93 | 43 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 137 | |
| 11:30 a.m - 11:45 a.m | 96 | 42 | 1 | 0 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 144 | |
| 11:45 a.m - 12:00 p.m | 100 | 54 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 156 | |
| 12:00 p.m - 12:15 p.m | 109 | 59 | 0 | 3 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 173 | |
| 12:15 p.m - 12:30 p.m | 98 | 51 | 0 | 0 | 2 | 1 | 1 | 0 | 0 | 0 | 0 | 153 | |
| 12:30 p.m - 12:45 p.m | 103 | 73 | 0 | 3 | 1 | 3 | 2 | 0 | 1 | 0 | 0 | 186 | |
| 12:45 p.m - 13:00 p.m | 133 | 89 | 0 | 3 | 1 | 4 | 0 | 0 | 0 | 0 | 0 | 230 | |
| 13:00 p.m - 13:15 p.m | 144 | 104 | 0 | 5 | 2 | 3 | 0 | 0 | 0 | 0 | 0 | 258 | |
| 13:15 p.m - 13:30 p.m | 104 | 85 | 0 | 3 | 1 | 4 | 0 | 0 | 0 | 0 | 0 | 197 | |
| 13:30 p.m - 13:45 p.m | 89 | 78 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 168 | |
| 13:45 p.m - 14:00 p.m | 78 | 72 | 0 | 0 | 0 | 1 | 0 | 2 | 0 | 0 | 0 | 153 | |
| 16:00 p.m - 16:15 p.m | 58 | 38 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 98 | |
| 16:15 p.m - 16:30 p.m | 63 | 49 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 112 | |
| 16:30 p.m - 16:45 p.m | 80 | 65 | 1 | 1 | 2 | 0 | 0 | 2 | 0 | 0 | 0 | 151 | |
| 16:45 p.m - 17:00 p.m | 68 | 81 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 151 | |
| 17:00 p.m - 17:15 p.m | 108 | 74 | 2 | 3 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 190 | |
| 17:15 p.m - 17:30 p.m | 90 | 70 | 0 | 2 | 0 | 2 | 0 | 1 | 1 | 0 | 0 | 166 | |
| 17:30 p.m - 17:45 p.m | 93 | 93 | 0 | 4 | 1 | 4 | 0 | 1 | 0 | 0 | 0 | 196 | |
| 17:45 p.m - 18:00 p.m | 103 | 93 | 0 | 1 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 199 | |
| 18:00 p.m - 18:15 p.m | 103 | 102 | 0 | 2 | 1 | 3 | 0 | 0 | 0 | 0 | 0 | 211 | |
| 18:15 p.m - 18:30 p.m | 95 | 95 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 192 | |
| 18:30 p.m - 18:45 p.m | 89 | 82 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 174 | |
| 18:45 p.m - 19:00 p.m | 83 | 87 | 0 | 0 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 173 | |
| Total por tipo | 3007 | 2040 | 9 | 42 | 28 | 50 | 4 | 14 | 6 | 0 | 0 | 5200 | |


|  UNIVERSIDAD NACIONAL DE JAÉN  | | | | | | | | | | | | | |
|---|---|---|----------|-----------|---------------|---|---|--|---|---|---|----------------|-----------------------|
| Técnica de recolección de datos: Observación directa | | | | | | | | | | | | | |
| Tesis | ANÁLISIS VIAL EN LA INTERSECCIÓN DE LAS CALLES IQUITOS Y EJÉRCITO EMPLEANDO EL SOFTWARE SYNCHRO 10 EN LA CIUDAD DE JAÉN, 2025 | | | | | | | | | | | | |
| Tesistas | Bach. Kelvin Jhonatan Guevara Ruiz Bach. Ever Waldir Torres Pedraza | | | | | | | | | | | | |
| Asesor | Doc. José Luis Piedra Tineo | | | | | | | | | | | | |
| Fecha: Jueves 03/07/2025 | Punto de conteo: Intersección de las calles Iquitos y Ejército | | | | | | | | | | | | |
| | Entrada: Calle Iquitos (Este) Salida: Calle Ejército (Norte) | | | | | | | | | | | | |
| HORA | MOTOS | | CARGUERO | AUTO | STATION WAGON | CAMIONETAS | | | CAMIONES | | | Total por hora | Total por horas punta |
| | TAXI | LINEAL | | | | PICK UP | PANEL | COMBI | 2E | 3E | 4E | | |
| |  |  | | | |  |  |  |  |  |  | | |
| 6:00 a.m - 6:15 a.m | 3 | 2 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 331 |
| 6:15 a.m - 6:30 a.m | 5 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9 | |
| 6:30 a.m - 6:45 a.m | 11 | 5 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 19 | |
| 6:45 a.m - 7:00 a.m | 11 | 9 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 22 | |
| 7:00 a.m - 7:15 a.m | 17 | 11 | 1 | 2 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 36 | |
| 7:15 a.m - 7:30 a.m | 18 | 15 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 35 | |
| 7:30 a.m - 7:45 a.m | 20 | 12 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 35 | |
| 7:45 a.m - 8:00 a.m | 23 | 16 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 40 | |
| 8:00 a.m - 8:15 a.m | 24 | 14 | 0 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 41 | |
| 8:15 a.m - 8:30 a.m | 21 | 13 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 34 | |
| 8:30 a.m - 8:45 a.m | 18 | 11 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 29 | |
| 8:45 a.m - 9:00 a.m | 15 | 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 25 | |
| 11:00 a.m - 11:15 a.m | 10 | 9 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 19 | |
| 11:15 a.m - 11:30 a.m | 10 | 11 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 21 | |
| 11:30 a.m - 11:45 a.m | 18 | 13 | 1 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 35 | |
| 11:45 a.m - 12:00 p.m | 18 | 16 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 36 | |
| 12:00 p.m - 12:15 p.m | 20 | 17 | 1 | 1 | 2 | 1 | 1 | 1 | 0 | 0 | 0 | 44 | |
| 12:15 p.m - 12:30 p.m | 20 | 14 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 35 | |
| 12:30 p.m - 12:45 p.m | 23 | 17 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 42 | |
| 12:45 p.m - 13:00 p.m | 23 | 20 | 0 | 1 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 47 | |
| 13:00 p.m - 13:15 p.m | 25 | 18 | 0 | 1 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 47 | |
| 13:15 p.m - 13:30 p.m | 22 | 16 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 38 | |
| 13:30 p.m - 13:45 p.m | 20 | 15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 35 | |
| 13:45 p.m - 14:00 p.m | 19 | 11 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 31 | |
| 16:00 p.m - 16:15 p.m | 15 | 9 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 26 | |
| 16:15 p.m - 16:30 p.m | 18 | 12 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 33 | |
| 16:30 p.m - 16:45 p.m | 19 | 11 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 0 | 0 | 34 | |
| 16:45 p.m - 17:00 p.m | 21 | 16 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 37 | |
| 17:00 p.m - 17:15 p.m | 29 | 21 | 1 | 1 | 2 | 2 | 1 | 0 | 0 | 0 | 0 | 57 | |
| 17:15 p.m - 17:30 p.m | 26 | 18 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 47 | |
| 17:30 p.m - 17:45 p.m | 29 | 26 | 1 | 1 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 60 | |
| 17:45 p.m - 18:00 p.m | 27 | 23 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 52 | |
| 18:00 p.m - 18:15 p.m | 24 | 25 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 50 | |
| 18:15 p.m - 18:30 p.m | 21 | 22 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 43 | |
| 18:30 p.m - 18:45 p.m | 22 | 19 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 42 | |
| 18:45 p.m - 19:00 p.m | 19 | 16 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 37 | |
| Total por tipo | 684 | 517 | 7 | 16 | 16 | 19 | 8 | 6 | 6 | 0 | 0 | 1279 | |











|  | | UNIVERSIDAD NACIONAL DE JAÉN | | | | | | | | | |  | |
|---|---|---|---|---|--|---|---|---|---|---|---|---|-----------------------|
| Técnica de recolección de datos: Observación directa | | | | | | | | | | | | | |
| Tesis | ANÁLISIS VIAL EN LA INTERSECCIÓN DE LAS CALLES IQUITOS Y EJÉRCITO EMPLEANDO EL SOFTWARE SYNCHRO 10 EN LA CIUDAD DE JAÉN, 2025 | | | | | | | | | | | | |
| Tesis | Bach. Kelvin Jhonatan Guevara Ruiz | | | | | | | | | | | | |
| Asesor | Doc. José Luis Piedra Tineo | | | | | | | | | | | | |
| Fecha: Jueves 03/07/2025 | Punto de conteo: Intersección de las calles Iquitos y Ejército | | | | Entrada: Calle Iquitos (Este) | | | | Salida: Calle Ejército (Sur) | | | | |
| HORA | MOTOS | | CARGUERO | AUTO | STATION WAGON | CAMIONETAS | | | CAMIONES | | | Total por hora | Total por horas punta |
| | TAXI | LINEAL | | | | PICK UP | PANEL | COMBI | 2E | 3E | 4E | | |
| |  |  |  |  |  |  |  |  |  |  |  | | |
| 6:00 a.m - 6:15 a.m | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 369 |
| 6:15 a.m - 6:30 a.m | 4 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | |
| 6:30 a.m - 6:45 a.m | 7 | 5 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 14 | |
| 6:45 a.m - 7:00 a.m | 11 | 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 19 | |
| 7:00 a.m - 7:15 a.m | 24 | 10 | 1 | 1 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 39 | |
| 7:15 a.m - 7:30 a.m | 30 | 12 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 42 | |
| 7:30 a.m - 7:45 a.m | 27 | 17 | 0 | 2 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 48 | |
| 7:45 a.m - 8:00 a.m | 31 | 20 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 53 | |
| 8:00 a.m - 8:15 a.m | 26 | 14 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 42 | |
| 8:15 a.m - 8:30 a.m | 23 | 17 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 41 | |
| 8:30 a.m - 8:45 a.m | 20 | 11 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 31 | |
| 8:45 a.m - 9:00 a.m | 17 | 10 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 29 | |
| 11:00 a.m - 11:15 a.m | 14 | 10 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 26 | |
| 11:15 a.m - 11:30 a.m | 17 | 11 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 30 | |
| 11:30 a.m - 11:45 a.m | 15 | 9 | 1 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 27 | |
| 11:45 a.m - 12:00 p.m | 20 | 12 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 32 | |
| 12:00 p.m - 12:15 p.m | 22 | 9 | 1 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 35 | |
| 12:15 p.m - 12:30 p.m | 22 | 12 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 34 | |
| 12:30 p.m - 12:45 p.m | 21 | 12 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 34 | |
| 12:45 p.m - 13:00 p.m | 27 | 16 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 44 | |
| 13:00 p.m - 13:15 p.m | 25 | 12 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 39 | |
| 13:15 p.m - 13:30 p.m | 19 | 11 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 32 | |
| 13:30 p.m - 13:45 p.m | 15 | 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 25 | |
| 13:45 p.m - 14:00 p.m | 14 | 8 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 23 | |
| 16:00 p.m - 16:15 p.m | 12 | 8 | 1 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 23 | |
| 16:15 p.m - 16:30 p.m | 17 | 11 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 29 | |
| 16:30 p.m - 16:45 p.m | 22 | 12 | 1 | 0 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 38 | |
| 16:45 p.m - 17:00 p.m | 25 | 12 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 37 | |
| 17:00 p.m - 17:15 p.m | 29 | 25 | 0 | 2 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 58 | |
| 17:15 p.m - 17:30 p.m | 23 | 23 | 0 | 2 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 50 | |
| 17:30 p.m - 17:45 p.m | 33 | 26 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 62 | |
| 17:45 p.m - 18:00 p.m | 32 | 24 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 56 | |
| 18:00 p.m - 18:15 p.m | 28 | 21 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 51 | |
| 18:15 p.m - 18:30 p.m | 25 | 20 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 45 | |
| 18:30 p.m - 18:45 p.m | 22 | 18 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 41 | |
| 18:45 p.m - 19:00 p.m | 20 | 15 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 36 | |
| Total por tipo | 741 | 476 | 7 | 15 | 11 | 15 | 3 | 5 | 3 | 0 | 0 | 1276 | |














|  | | UNIVERSIDAD NACIONAL DE JAÉN | | | | | | | | | |  | |
|---|---|---|---|--|---|---|---|---|---|---|---|---|-----------------------|
| Técnica de recolección de datos: Observación directa | | | | | | | | | | | | | |
| Tesis | ANÁLISIS VIAL EN LA INTERSECCIÓN DE LAS CALLES IQUITOS Y EJÉRCITO EMPLEANDO EL SOFTWARE SYNCHRO 10 EN LA CIUDAD DE JAÉN, 2025 | | | | | | | | | | | | |
| Tesistas | Bach. Kelvin Jhonatan Guevara Ruiz Bach. Ever Waldir Torres Pedraza | | | | | | | | | | | | |
| Asesor | Doc. José Luis Piedra Tineo | | | | | | | | | | | | |
| Fecha: Jueves 03/07/2025 | Punto de conteo: Intersección de las calles Iquitos y Ejército | | | | | Entrada: Calle Ejército (Sur) | | | Salida: Calle Ejército (Norte) | | | | |
| HORA | MOTOS | | CARGUERO | AUTO | STATION WAGON | CAMIONETAS | | | CAMIONES | | | Total por hora | Total por horas punta |
| | TAXI | LINEAL | | | | PICK UP | PANEL | COMBI | 2E | 3E | 4E | | |
| |  |  |  |  |  |  |  |  |  |  |  | | |
| 6:00 a.m - 6:15 a.m | 3 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 6 | |
| 6:15 a.m - 6:30 a.m | 4 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 8 | |
| 6:30 a.m - 6:45 a.m | 5 | 5 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 11 | |
| 6:45 a.m - 7:00 a.m | 11 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 18 | |
| 7:00 a.m - 7:15 a.m | 15 | 14 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 30 | |
| 7:15 a.m - 7:30 a.m | 17 | 17 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 34 | |
| 7:30 a.m - 7:45 a.m | 20 | 19 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 41 | |
| 7:45 a.m - 8:00 a.m | 22 | 21 | 0 | 1 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 46 | |
| 8:00 a.m - 8:15 a.m | 23 | 18 | 0 | 2 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 45 | |
| 8:15 a.m - 8:30 a.m | 22 | 16 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 39 | |
| 8:30 a.m - 8:45 a.m | 19 | 15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 34 | |
| 8:45 a.m - 9:00 a.m | 16 | 12 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 28 | |
| 11:00 a.m - 11:15 a.m | 8 | 7 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 16 | |
| 11:15 a.m - 11:30 a.m | 13 | 9 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 22 | |
| 11:30 a.m - 11:45 a.m | 12 | 10 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 24 | |
| 11:45 a.m - 12:00 p.m | 15 | 10 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 26 | |
| 12:00 p.m - 12:15 p.m | 19 | 14 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 35 | |
| 12:15 p.m - 12:30 p.m | 19 | 12 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 31 | |
| 12:30 p.m - 12:45 p.m | 23 | 11 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 36 | |
| 12:45 p.m - 13:00 p.m | 26 | 13 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 40 | |
| 13:00 p.m - 13:15 p.m | 28 | 17 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 46 | |
| 13:15 p.m - 13:30 p.m | 25 | 13 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 39 | |
| 13:30 p.m - 13:45 p.m | 18 | 11 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 29 | |
| 13:45 p.m - 14:00 p.m | 15 | 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 25 | |
| 16:00 p.m - 16:15 p.m | 15 | 11 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 27 | |
| 16:15 p.m - 16:30 p.m | 17 | 13 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 31 | |
| 16:30 p.m - 16:45 p.m | 20 | 14 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 35 | |
| 16:45 p.m - 17:00 p.m | 21 | 17 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 39 | |
| 17:00 p.m - 17:15 p.m | 26 | 19 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 47 | |
| 17:15 p.m - 17:30 p.m | 23 | 23 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 48 | |
| 17:30 p.m - 17:45 p.m | 24 | 21 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 46 | |
| 17:45 p.m - 18:00 p.m | 20 | 20 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 41 | |
| 18:00 p.m - 18:15 p.m | 21 | 18 | 1 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 42 | |
| 18:15 p.m - 18:30 p.m | 18 | 21 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 39 | |
| 18:30 p.m - 18:45 p.m | 20 | 16 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 36 | |
| 18:45 p.m - 19:00 p.m | 22 | 14 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 36 | |
| Total por tipo | 645 | 494 | 5 | 5 | 3 | 19 | 2 | 0 | 3 | 0 | 0 | 1176 | |

| UNIVERSIDAD NACIONAL DE JAÉN | | | | | | | | | | | | | |
|--|---|---|---|---|--|---|---|---|---|---|---|----------------|-----------------------|
| Técnica de recolección de datos: Observación directa | | | | | | | | | | | | | |
| Tesis | ANÁLISIS VIAL EN LA INTERSECCIÓN DE LAS CALLES IQUITOS Y EJÉRCITO EMPLEANDO EL SOFTWARE SYNCHRO 10 EN LA CIUDAD DE JAÉN, 2025 | | | | | | | | | | | | |
| Tesistas | Bach. Kelvin Jhonatan Guevara Ruiz Bach. Ever Waldir Torres Pedraza | | | | | | | | | | | | |
| Asesor | Doc. José Luis Piedra Tineo | | | | | | | | | | | | |
| Fecha: Jueves 03/07/2025 | Punto de conteo: Intersección de las calles Iquitos y Ejército | | | | | Entrada: Calle Ejército (Sur) | | | Salida: Calle Iquitos (Oeste) | | | | |
| HORA | MOTOS | | CARGUERO | AUTO | STATION WAGON | CAMIONETAS | | | CAMIONES | | | Total por hora | Total por horas punta |
| | TAXI | LINEAL | | | | PICK UP | PANEL | COMBI | 2E | 3E | 4E | | |
| |  |  |  |  |  |  |  |  |  |  |  | | |
| 6:00 a.m - 6:15 a.m | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | |
| 6:15 a.m - 6:30 a.m | 3 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | |
| 6:30 a.m - 6:45 a.m | 3 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 7 | |
| 6:45 a.m - 7:00 a.m | 8 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 11 | |
| 7:00 a.m - 7:15 a.m | 10 | 6 | 1 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 19 | |
| 7:15 a.m - 7:30 a.m | 9 | 9 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 18 | |
| 7:30 a.m - 7:45 a.m | 11 | 6 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 18 | |
| 7:45 a.m - 8:00 a.m | 15 | 7 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 24 | |
| 8:00 a.m - 8:15 a.m | 11 | 8 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 21 | |
| 8:15 a.m - 8:30 a.m | 7 | 6 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 15 | |
| 8:30 a.m - 8:45 a.m | 8 | 7 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 16 | |
| 8:45 a.m - 9:00 a.m | 5 | 4 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 10 | |
| 11:00 a.m - 11:15 a.m | 5 | 3 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 10 | |
| 11:15 a.m - 11:30 a.m | 7 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 11 | |
| 11:30 a.m - 11:45 a.m | 6 | 6 | 0 | 0 | 1 | 0 | 2 | 0 | 1 | 0 | 0 | 16 | |
| 11:45 a.m - 12:00 p.m | 8 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 13 | |
| 12:00 p.m - 12:15 p.m | 9 | 5 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 15 | |
| 12:15 p.m - 12:30 p.m | 11 | 6 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 18 | |
| 12:30 p.m - 12:45 p.m | 9 | 5 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 15 | |
| 12:45 p.m - 13:00 p.m | 13 | 7 | 0 | 1 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 23 | |
| 13:00 p.m - 13:15 p.m | 10 | 6 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 18 | |
| 13:15 p.m - 13:30 p.m | 12 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 17 | |
| 13:30 p.m - 13:45 p.m | 8 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 14 | |
| 13:45 p.m - 14:00 p.m | 6 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9 | |
| 16:00 p.m - 16:15 p.m | 9 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 15 | |
| 16:15 p.m - 16:30 p.m | 9 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 15 | |
| 16:30 p.m - 16:45 p.m | 11 | 7 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 20 | |
| 16:45 p.m - 17:00 p.m | 14 | 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 22 | |
| 17:00 p.m - 17:15 p.m | 18 | 9 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 29 | |
| 17:15 p.m - 17:30 p.m | 15 | 7 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 23 | |
| 17:30 p.m - 17:45 p.m | 12 | 10 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 24 | |
| 17:45 p.m - 18:00 p.m | 16 | 8 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 25 | |
| 18:00 p.m - 18:15 p.m | 17 | 11 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 29 | |
| 18:15 p.m - 18:30 p.m | 14 | 9 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 23 | |
| 18:30 p.m - 18:45 p.m | 11 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 18 | |
| 18:45 p.m - 19:00 p.m | 14 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 21 | |
| Total por tipo | 355 | 215 | 2 | 10 | 3 | 15 | 2 | 2 | 5 | 0 | 0 | 609 | |












|  UNIVERSIDAD NACIONAL DE JAÉN  | | | | | | | | | | | | | |
|---|---|---|----------|-----------|---------------|---|--|---|---|---|---|----------------|-----------------------|
| Técnica de recolección de datos: Observación directa | | | | | | | | | | | | | |
| Tesis | ANÁLISIS VIAL EN LA INTERSECCIÓN DE LAS CALLES IQUITOS Y EJÉRCITO EMPLEANDO EL SOFTWARE SYNCHRO 10 EN LA CIUDAD DE JAÉN, 2025 | | | | | | | | | | | | |
| Testistas | Bach. Kelvin Jhonatan Guevara Ruiz Bach. Ever Waldir Torres Pedraza | | | | | | | | | | | | |
| Asesor | Doc. José Luis Piedra Tineo | | | | | | | | | | | | |
| Fecha: Jueves 03/07/2025 | Punto de conteo: Intersección de las calles Iquitos y Ejército | | | | | | | | | | | | |
| | Entrada: Calle Ejército (Norte) Salida: Calle Ejército (Sur) | | | | | | | | | | | | |
| HORA | MOTOS | | CARGUERO | AUTO | STATION WAGON | CAMIONETAS | | | CAMIONES | | | Total por hora | Total por horas punta |
| | TAXI | LINEAL | | | | PICK UP | PANEL | COMBI | 2E | 3E | 4E | | |
| |  |  | | | |  |  |  |  |  |  | | |
| 6:00 a.m - 6:15 a.m | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 298 |
| 6:15 a.m - 6:30 a.m | 2 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | |
| 6:30 a.m - 6:45 a.m | 5 | 7 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 14 | |
| 6:45 a.m - 7:00 a.m | 9 | 6 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 16 | |
| 7:00 a.m - 7:15 a.m | 13 | 13 | 1 | 0 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 30 | |
| 7:15 a.m - 7:30 a.m | 18 | 15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 33 | |
| 7:30 a.m - 7:45 a.m | 21 | 13 | 0 | 1 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 38 | |
| 7:45 a.m - 8:00 a.m | 24 | 19 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 45 | |
| 8:00 a.m - 8:15 a.m | 18 | 15 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 36 | |
| 8:15 a.m - 8:30 a.m | 15 | 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 25 | |
| 8:30 a.m - 8:45 a.m | 14 | 11 | 0 | 1 | 0 | 2 | 0 | 1 | 0 | 0 | 0 | 29 | |
| 8:45 a.m - 9:00 a.m | 10 | 13 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 24 | |
| 11:00 a.m - 11:15 a.m | 8 | 4 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 13 | |
| 11:15 a.m - 11:30 a.m | 10 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 15 | |
| 11:30 a.m - 11:45 a.m | 9 | 6 | 2 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 19 | |
| 11:45 a.m - 12:00 p.m | 11 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 16 | |
| 12:00 p.m - 12:15 p.m | 15 | 9 | 1 | 1 | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 30 | |
| 12:15 p.m - 12:30 p.m | 14 | 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 22 | |
| 12:30 p.m - 12:45 p.m | 12 | 10 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 24 | |
| 12:45 p.m - 13:00 p.m | 19 | 11 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 31 | |
| 13:00 p.m - 13:15 p.m | 17 | 17 | 0 | 1 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 37 | |
| 13:15 p.m - 13:30 p.m | 13 | 11 | 0 | 2 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 27 | |
| 13:30 p.m - 13:45 p.m | 11 | 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 19 | |
| 13:45 p.m - 14:00 p.m | 8 | 6 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 15 | |
| 16:00 p.m - 16:15 p.m | 6 | 6 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 13 | |
| 16:15 p.m - 16:30 p.m | 8 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 15 | |
| 16:30 p.m - 16:45 p.m | 7 | 6 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 15 | |
| 16:45 p.m - 17:00 p.m | 11 | 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 21 | |
| 17:00 p.m - 17:15 p.m | 15 | 10 | 2 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 30 | |
| 17:15 p.m - 17:30 p.m | 12 | 7 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 20 | |
| 17:30 p.m - 17:45 p.m | 9 | 9 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 20 | |
| 17:45 p.m - 18:00 p.m | 13 | 9 | 0 | 2 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 25 | |
| 18:00 p.m - 18:15 p.m | 11 | 6 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 18 | |
| 18:15 p.m - 18:30 p.m | 13 | 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 21 | |
| 18:30 p.m - 18:45 p.m | 10 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 15 | |
| 18:45 p.m - 19:00 p.m | 8 | 7 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 16 | |
| Total por tipo | 421 | 316 | 7 | 12 | 11 | 20 | 2 | 3 | 3 | 0 | 0 | 795 | |











| UNIVERSIDAD NACIONAL DE JAÉN | | | | | | | | | | | | | |
|--|---|---|---|--|---|---|---|---|---|---|---|----------------|-----------------------|
| Técnica de recolección de datos: Observación directa | | | | | | | | | | | | | |
| Tesis | ANÁLISIS VIAL EN LA INTERSECCIÓN DE LAS CALLES IQUITOS Y EJÉRCITO EMPLEANDO EL SOFTWARE SYNCHRO 10 EN LA CIUDAD DE JAÉN, 2025 | | | | | | | | | | | | |
| Tesistas | Bach. Kelvin Jhonatan Guevara Ruiz Bach. Ever Waldir Torres Pedraza | | | | | | | | | | | | |
| Asesor | Doc. José Luis Piedra Tineo | | | | | | | | | | | | |
| Fecha: Jueves 03/07/2025 | Punto de conteo: Intersección de las calles Iquitos y Ejército | | | | | Entrada: Calle Ejército (Norte) | | | Salida: Calle Iquitos (Oeste) | | | | |
| HORA | MOTOS | | CARGUERO | AUTO | STATION WAGON | CAMIONETAS | | | CAMIONES | | | Total por hora | Total por horas punta |
| | TAXI | LINEAL | | | | PICK UP | PANEL | COMBI | 2E | 3E | 4E | | |
| |  |  |  |  |  |  |  |  |  |  |  | | |
| 6:00 a.m - 6:15 a.m | 2 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | |
| 6:15 a.m - 6:30 a.m | 4 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | |
| 6:30 a.m - 6:45 a.m | 6 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 11 | |
| 6:45 a.m - 7:00 a.m | 7 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 13 | |
| 7:00 a.m - 7:15 a.m | 7 | 5 | 1 | 1 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 16 | |
| 7:15 a.m - 7:30 a.m | 13 | 8 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 23 | |
| 7:30 a.m - 7:45 a.m | 15 | 12 | 1 | 3 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 33 | |
| 7:45 a.m - 8:00 a.m | 17 | 11 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 29 | |
| 8:00 a.m - 8:15 a.m | 10 | 10 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 21 | |
| 8:15 a.m - 8:30 a.m | 9 | 9 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 19 | |
| 8:30 a.m - 8:45 a.m | 7 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 13 | |
| 8:45 a.m - 9:00 a.m | 8 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 13 | |
| 11:00 a.m - 11:15 a.m | 6 | 4 | 1 | 0 | 1 | 0 | 1 | 1 | 1 | 0 | 0 | 15 | |
| 11:15 a.m - 11:30 a.m | 8 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 14 | |
| 11:30 a.m - 11:45 a.m | 7 | 5 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 13 | |
| 11:45 a.m - 12:00 p.m | 9 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 16 | |
| 12:00 p.m - 12:15 p.m | 8 | 5 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 14 | |
| 12:15 p.m - 12:30 p.m | 11 | 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 19 | |
| 12:30 p.m - 12:45 p.m | 14 | 12 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 26 | |
| 12:45 p.m - 13:00 p.m | 10 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 17 | |
| 13:00 p.m - 13:15 p.m | 17 | 8 | 0 | 1 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 28 | |
| 13:15 p.m - 13:30 p.m | 15 | 9 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 25 | |
| 13:30 p.m - 13:45 p.m | 10 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 17 | |
| 13:45 p.m - 14:00 p.m | 8 | 5 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 14 | |
| 16:00 p.m - 16:15 p.m | 7 | 5 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 13 | |
| 16:15 p.m - 16:30 p.m | 8 | 8 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 17 | |
| 16:30 p.m - 16:45 p.m | 9 | 7 | 1 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 20 | |
| 16:45 p.m - 17:00 p.m | 11 | 8 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 20 | |
| 17:00 p.m - 17:15 p.m | 16 | 9 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 28 | |
| 17:15 p.m - 17:30 p.m | 19 | 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 27 | |
| 17:30 p.m - 17:45 p.m | 16 | 6 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 24 | |
| 17:45 p.m - 18:00 p.m | 15 | 9 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 25 | |
| 18:00 p.m - 18:15 p.m | 13 | 7 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 21 | |
| 18:15 p.m - 18:30 p.m | 11 | 8 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 20 | |
| 18:30 p.m - 18:45 p.m | 9 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 14 | |
| 18:45 p.m - 19:00 p.m | 7 | 7 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 15 | |
| Total por tipo | 369 | 252 | 6 | 11 | 4 | 14 | 2 | 3 | 4 | 0 | 0 | 665 | |









|  | | UNIVERSIDAD NACIONAL DE JAÉN | | | | | | | | | |  | | | | | | | | | | | |
|---|--|---|----------|------|-------------------------------|---|---|---|---|---|---|---|-----------------------|------|------|------|------|------|------|------|------|------|------|
| Técnica de recolección de datos: Observación directa | | | | | | | | | | | | | | | | | | | | | | | |
| Tesis | ANÁLISIS VIAL EN LA INTERSECCIÓN DE LAS CALLES IQUITOS Y EJÉRCITO EMPLEANDO EL SOFTWARE SYNCHIRO 10 EN LA CIUDAD DE JAÉN, 2025 | | | | | | | | | | | | | | | | | | | | | | |
| Tesisistas | Bach. Kelvin Jhonatan Guevara Ruiz Bach. Ever Waldir Torres Pedraza | | | | | | | | | | | | | | | | | | | | | | |
| Asesor | Doc. José Luis Piedra Tineo | | | | | | | | | | | | | | | | | | | | | | |
| Fecha: Viernes 04/07/2025 | Punto de conteo: Intersección de las calles Iquitos y Ejército | | | | Entrada: Calle Iquitos (Este) | | | Salida: Calle Iquitos (Oeste) | | | | | | | | | | | | | | | |
| HORA | MOTOS | | CARGUERO | AUTO | STATION WAGON | CAMIONETAS | | | CAMIONES | | | Total por hora | Total por horas punta | | | | | | | | | | |
| | TAXI | LINEAL | | | | PICK UP | PANEL | COMBI | 2E | 3E | 4E | | | | | | | | | | | | |
| |  |  | | | |  |  |  |  |  |  | | | | | | | | | | | | |
| 6:00 a.m - 6:15 a.m | 21 | 10 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 34 | 1423 | | | | | | | | | | |
| 6:15 a.m - 6:30 a.m | 32 | 13 | 1 | 1 | 1 | 1 | 0 | 1 | 1 | 0 | 0 | 51 | | 1423 | | | | | | | | | |
| 6:30 a.m - 6:45 a.m | 47 | 21 | 1 | 2 | 0 | 2 | 0 | 1 | 0 | 0 | 0 | 74 | | | 1423 | | | | | | | | |
| 6:45 a.m - 7:00 a.m | 76 | 30 | 0 | 1 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 110 | | | | 1423 | | | | | | | |
| 7:00 a.m - 7:15 a.m | 82 | 30 | 1 | 3 | 3 | 3 | 0 | 2 | 0 | 0 | 0 | 124 | | | | | 1423 | | | | | | |
| 7:15 a.m - 7:30 a.m | 83 | 35 | 0 | 2 | 3 | 2 | 0 | 1 | 0 | 0 | 0 | 126 | | | | | | 1423 | | | | | |
| 7:30 a.m - 7:45 a.m | 92 | 45 | 2 | 2 | 3 | 3 | 2 | 1 | 1 | 0 | 0 | 151 | | | | | | | 1423 | | | | |
| 7:45 a.m - 8:00 a.m | 99 | 57 | 1 | 1 | 2 | 3 | 0 | 0 | 0 | 0 | 0 | 163 | | | | | | | | 1423 | | | |
| 8:00 a.m - 8:15 a.m | 104 | 41 | 2 | 1 | 4 | 2 | 1 | 1 | 0 | 0 | 0 | 156 | | | | | | | | | 1423 | | |
| 8:15 a.m - 8:30 a.m | 108 | 46 | 1 | 1 | 5 | 2 | 0 | 1 | 1 | 0 | 0 | 165 | | | | | | | | | | 1423 | |
| 8:30 a.m - 8:45 a.m | 92 | 40 | 0 | 0 | 2 | 3 | 0 | 1 | 0 | 0 | 0 | 138 | | | | | | | | | | | 1423 |
| 8:45 a.m - 9:00 a.m | 87 | 42 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 131 | | | | | | | | | | | |
| 11:00 a.m - 11:15 a.m | 99 | 41 | 1 | 2 | 2 | 1 | 1 | 1 | 0 | 0 | 0 | 148 | 2525 | | | | | | | | | | |
| 11:15 a.m - 11:30 a.m | 103 | 43 | 1 | 3 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 153 | | 2525 | | | | | | | | | |
| 11:30 a.m - 11:45 a.m | 111 | 52 | 2 | 3 | 2 | 2 | 1 | 1 | 1 | 0 | 0 | 175 | | | 2525 | | | | | | | | |
| 11:45 a.m - 12:00 a.m | 117 | 56 | 1 | 4 | 2 | 2 | 1 | 0 | 0 | 0 | 0 | 183 | | | | 2525 | | | | | | | |
| 12:00 a.m - 12:15 p.m | 113 | 71 | 0 | 3 | 3 | 2 | 1 | 1 | 1 | 0 | 0 | 195 | | | | | 2525 | | | | | | |
| 12:15 p.m - 12:30 p.m | 118 | 75 | 2 | 2 | 2 | 3 | 1 | 1 | 0 | 0 | 0 | 204 | | | | | | 2525 | | | | | |
| 12:30 p.m - 12:45 p.m | 135 | 90 | 3 | 5 | 3 | 5 | 1 | 1 | 0 | 0 | 0 | 243 | | | | | | | 2525 | | | | |
| 12:45 p.m - 13:00 p.m | 146 | 101 | 2 | 6 | 3 | 3 | 1 | 2 | 1 | 0 | 0 | 265 | | | | | | | | 2525 | | | |
| 13:00 p.m - 13:15 p.m | 137 | 100 | 3 | 7 | 2 | 5 | 2 | 2 | 0 | 0 | 0 | 258 | | | | | | | | | 2525 | | |
| 13:15 p.m - 13:30 p.m | 152 | 94 | 2 | 4 | 3 | 4 | 2 | 2 | 1 | 0 | 0 | 264 | | | | | | | | | | 2525 | |
| 13:30 p.m - 13:45 p.m | 131 | 84 | 2 | 2 | 2 | 3 | 1 | 2 | 0 | 0 | 0 | 227 | | | | | | | | | | | 2525 |
| 13:45 p.m - 14:00 p.m | 124 | 78 | 1 | 1 | 1 | 3 | 1 | 1 | 0 | 0 | 0 | 210 | | | | | | | | | | | |
| 16:00 p.m - 16:15 p.m | 83 | 44 | 1 | 3 | 0 | 3 | 1 | 1 | 1 | 0 | 0 | 137 | 2034 | | | | | | | | | | |
| 16:15 p.m - 16:30 p.m | 66 | 46 | 1 | 2 | 1 | 3 | 1 | 2 | 0 | 0 | 0 | 122 | | 2034 | | | | | | | | | |
| 16:30 p.m - 16:45 p.m | 75 | 48 | 1 | 2 | 1 | 2 | 1 | 1 | 0 | 0 | 0 | 131 | | | 2034 | | | | | | | | |
| 16:45 p.m - 17:00 p.m | 70 | 53 | 1 | 1 | 1 | 2 | 0 | 1 | 0 | 0 | 0 | 129 | | | | 2034 | | | | | | | |
| 17:00 p.m - 17:15 p.m | 89 | 52 | 2 | 3 | 3 | 3 | 2 | 2 | 0 | 0 | 0 | 156 | | | | | 2034 | | | | | | |
| 17:15 p.m - 17:30 p.m | 93 | 49 | 3 | 3 | 3 | 3 | 1 | 1 | 0 | 0 | 0 | 156 | | | | | | 2034 | | | | | |
| 17:30 p.m - 17:45 p.m | 100 | 77 | 2 | 2 | 3 | 5 | 1 | 1 | 0 | 0 | 0 | 191 | | | | | | | 2034 | | | | |
| 17:45 p.m - 18:00 p.m | 108 | 84 | 1 | 4 | 2 | 6 | 0 | 1 | 0 | 0 | 0 | 206 | | | | | | | | 2034 | | | |
| 18:00 p.m - 18:15 p.m | 111 | 76 | 1 | 3 | 1 | 5 | 0 | 0 | 0 | 0 | 0 | 197 | | | | | | | | | 2034 | | |
| 18:15 p.m - 18:30 p.m | 119 | 74 | 1 | 2 | 2 | 6 | 1 | 1 | 0 | 0 | 0 | 206 | | | | | | | | | | 2034 | |
| 18:30 p.m - 18:45 p.m | 129 | 81 | 0 | 1 | 1 | 2 | 1 | 0 | 0 | 0 | 0 | 215 | | | | | | | | | | | 2034 |
| 18:45 p.m - 19:00 p.m | 114 | 70 | 0 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 188 | | | | | | | | | | | |
| Total por tipo | 3566 | 2049 | 44 | 84 | 71 | 97 | 26 | 36 | 9 | 0 | 0 | 5982 | | | | | | | | | | | |

|  | | UNIVERSIDAD NACIONAL DE JAÉN | | | | | | | | | |  | |
|---|--|---|---|--|---|---|---|---|---|---|---|---|-----------------------|
| Técnica de recolección de datos: Observación directa | | | | | | | | | | | | | |
| Tesis | ANÁLISIS VIAL EN LA INTERSECCIÓN DE LAS CALLES IQUITOS Y EJÉRCITO EMPLEANDO EL SOFTWARE SYNCHIRO 10 EN LA CIUDAD DE JAÉN, 2025 | | | | | | | | | | | | |
| Tesis | Bach. Kelvin Jhonatan Guevara Ruiz Bach. Ever Waldir Torres Pedraza | | | | | | | | | | | | |
| Asesor | Doc. José Luis Piedra Tineo | | | | | | | | | | | | |
| Fecha: Viernes 04/07/2025 | Punto de conteo: Intersección de las calles Iquitos y Ejército | | | | | Entrada: Calle Iquitos (Este) | | | Salida: Calle Ejército (Norte) | | | | |
| HORA | MOTOS | | CARGUERO | AUTO | STATION WAGON | CAMIONETAS | | | CAMIONES | | | Total por hora | Total por horas punta |
| | TAXI | LINEAL | | | | PICK UP | PANEL | COMBI | 2E | 3E | 4E | | |
| |  |  |  |  |  |  |  |  |  |  |  | | |
| 6:00 a.m - 6:15 a.m | 15 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 21 | 463 |
| 6:15 a.m - 6:30 a.m | 18 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 24 | |
| 6:30 a.m - 6:45 a.m | 19 | 7 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 28 | |
| 6:45 a.m - 7:00 a.m | 20 | 7 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 30 | |
| 7:00 a.m - 7:15 a.m | 25 | 10 | 1 | 1 | 2 | 1 | 1 | 1 | 0 | 0 | 0 | 42 | |
| 7:15 a.m - 7:30 a.m | 31 | 13 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 47 | |
| 7:30 a.m - 7:45 a.m | 30 | 11 | 1 | 1 | 1 | 1 | 2 | 1 | 1 | 0 | 0 | 49 | |
| 7:45 a.m - 8:00 a.m | 31 | 10 | 0 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 44 | |
| 8:00 a.m - 8:15 a.m | 33 | 13 | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 50 | |
| 8:15 a.m - 8:30 a.m | 32 | 13 | 0 | 0 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 48 | |
| 8:30 a.m - 8:45 a.m | 30 | 7 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 40 | |
| 8:45 a.m - 9:00 a.m | 29 | 9 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 40 | |
| 11:00 a.m - 11:15 a.m | 31 | 10 | 1 | 2 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 47 | |
| 11:15 a.m - 11:30 a.m | 34 | 10 | 1 | 1 | 0 | 2 | 0 | 1 | 0 | 0 | 0 | 49 | |
| 11:30 a.m - 11:45 a.m | 35 | 11 | 1 | 1 | 0 | 2 | 0 | 1 | 0 | 0 | 0 | 51 | |
| 11:45 a.m - 12:00 a.m | 38 | 15 | 0 | 1 | 0 | 2 | 1 | 0 | 1 | 0 | 0 | 58 | |
| 12:00 a.m - 12:15 p.m | 34 | 16 | 1 | 1 | 1 | 2 | 1 | 0 | 1 | 0 | 0 | 57 | |
| 12:15 p.m - 12:30 p.m | 33 | 18 | 1 | 2 | 2 | 1 | 1 | 1 | 0 | 0 | 0 | 59 | |
| 12:30 p.m - 12:45 p.m | 49 | 25 | 2 | 2 | 2 | 2 | 1 | 1 | 0 | 0 | 0 | 84 | |
| 12:45 p.m - 13:00 p.m | 62 | 29 | 1 | 2 | 2 | 2 | 2 | 1 | 1 | 0 | 0 | 102 | |
| 13:00 p.m - 13:15 p.m | 65 | 18 | 2 | 1 | 2 | 1 | 2 | 2 | 0 | 0 | 0 | 93 | |
| 13:15 p.m - 13:30 p.m | 60 | 17 | 2 | 2 | 1 | 2 | 1 | 2 | 1 | 0 | 0 | 88 | |
| 13:30 p.m - 13:45 p.m | 56 | 11 | 1 | 1 | 1 | 1 | 2 | 1 | 0 | 0 | 0 | 74 | |
| 13:45 p.m - 14:00 p.m | 57 | 11 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 72 | |
| 16:00 p.m - 16:15 p.m | 33 | 11 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 51 | |
| 16:15 p.m - 16:30 p.m | 41 | 12 | 1 | 0 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 58 | |
| 16:30 p.m - 16:45 p.m | 35 | 14 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 53 | |
| 16:45 p.m - 17:00 p.m | 36 | 14 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 52 | |
| 17:00 p.m - 17:15 p.m | 35 | 22 | 1 | 2 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 63 | |
| 17:15 p.m - 17:30 p.m | 36 | 37 | 1 | 1 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 78 | |
| 17:30 p.m - 17:45 p.m | 38 | 25 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 69 | |
| 17:45 p.m - 18:00 p.m | 32 | 26 | 1 | 1 | 1 | 2 | 1 | 0 | 0 | 0 | 0 | 64 | |
| 18:00 p.m - 18:15 p.m | 31 | 26 | 0 | 1 | 1 | 2 | 1 | 0 | 0 | 0 | 0 | 62 | |
| 18:15 p.m - 18:30 p.m | 31 | 20 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 51 | |
| 18:30 p.m - 18:45 p.m | 25 | 16 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 44 | |
| 18:45 p.m - 19:00 p.m | 19 | 14 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 34 | |
| Total por tipo | 1259 | 540 | 26 | 35 | 31 | 35 | 23 | 21 | 6 | 0 | 0 | 1976 | 679 |

| UNIVERSIDAD NACIONAL DE JAÉN | | Técnica de recolección de datos: Observación directa | | | | | | | | | | | |
|----------------------------------|-------------|---|-----------|-----------|---------------|-------------------------------|-----------|-----------|------------------------------|----------|----------|----------------|-----------------------|
| Tesis | | ANÁLISIS VIAL EN LA INTERSECCIÓN DE LAS CALLES IQUITOS Y EJÉRCITO EMPLEANDO EL SOFTWARE SYNCHRO 10 EN LA CIUDAD DE JAÉN, 2025 | | | | | | | | | | | |
| Tesistas | | Bach. Kelvin Jhonatan Guevara Ruiz Bach. Ever Waldir Torres Pedraza | | | | | | | | | | | |
| Asesor | | Doc. José Luis Piedra Tineo | | | | | | | | | | | |
| Fecha: Viernes 04/07/2025 | | Punto de conteo: Intersección de las calles Iquitos y Ejército | | | | Entrada: Calle Iquitos (Este) | | | Salida: Calle Ejército (Sur) | | | | |
| HORA | MOTOS | | CARGUERO | AUTO | STATION WAGON | CAMIONETAS | | | CAMIONES | | | Total por hora | Total por horas punta |
| | TAXI | LINEAL | | | | PICK UP | PANEL | COMBI | 2E | 3E | 4E | | |
| 6:00 a.m - 6:15 a.m | 10 | 4 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 16 | 368 |
| 6:15 a.m - 6:30 a.m | 11 | 6 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 20 | |
| 6:30 a.m - 6:45 a.m | 13 | 8 | 1 | 2 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 26 | |
| 6:45 a.m - 7:00 a.m | 16 | 8 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 27 | |
| 7:00 a.m - 7:15 a.m | 22 | 6 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 32 | |
| 7:15 a.m - 7:30 a.m | 30 | 8 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 40 | |
| 7:30 a.m - 7:45 a.m | 28 | 9 | 1 | 1 | 2 | 1 | 1 | 2 | 0 | 0 | 0 | 45 | |
| 7:45 a.m - 8:00 a.m | 28 | 11 | 0 | 1 | 1 | 2 | 0 | 0 | 1 | 0 | 0 | 44 | |
| 8:00 a.m - 8:15 a.m | 21 | 10 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 34 | |
| 8:15 a.m - 8:30 a.m | 18 | 11 | 1 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 32 | |
| 8:30 a.m - 8:45 a.m | 18 | 7 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 26 | |
| 8:45 a.m - 9:00 a.m | 17 | 7 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 26 | |
| 11:00 a.m - 11:15 a.m | 23 | 11 | 1 | 2 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 40 | 682 |
| 11:15 a.m - 11:30 a.m | 24 | 15 | 1 | 1 | 2 | 2 | 0 | 0 | 1 | 0 | 0 | 46 | |
| 11:30 a.m - 11:45 a.m | 25 | 14 | 2 | 2 | 2 | 1 | 1 | 1 | 0 | 0 | 0 | 48 | |
| 11:45 a.m - 12:00 a.m | 27 | 15 | 1 | 2 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 47 | |
| 12:00 a.m - 12:15 p.m | 31 | 17 | 1 | 2 | 0 | 2 | 1 | 0 | 0 | 0 | 0 | 54 | |
| 12:15 p.m - 12:30 p.m | 34 | 20 | 2 | 1 | 2 | 1 | 1 | 0 | 1 | 0 | 0 | 62 | |
| 12:30 p.m - 12:45 p.m | 37 | 21 | 1 | 2 | 2 | 2 | 2 | 2 | 1 | 0 | 0 | 70 | |
| 12:45 p.m - 13:00 p.m | 41 | 24 | 2 | 2 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 72 | |
| 13:00 p.m - 13:15 p.m | 46 | 19 | 3 | 1 | 2 | 2 | 1 | 0 | 0 | 0 | 0 | 74 | |
| 13:15 p.m - 13:30 p.m | 47 | 19 | 0 | 3 | 1 | 2 | 2 | 1 | 0 | 0 | 0 | 75 | |
| 13:30 p.m - 13:45 p.m | 33 | 15 | 1 | 2 | 2 | 2 | 1 | 1 | 0 | 0 | 0 | 57 | 634 |
| 13:45 p.m - 14:00 p.m | 20 | 13 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 37 | |
| 16:00 p.m - 16:15 p.m | 22 | 11 | 0 | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 37 | |
| 16:15 p.m - 16:30 p.m | 23 | 14 | 0 | 0 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 40 | |
| 16:30 p.m - 16:45 p.m | 23 | 12 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 38 | |
| 16:45 p.m - 17:00 p.m | 28 | 12 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 41 | |
| 17:00 p.m - 17:15 p.m | 31 | 15 | 0 | 1 | 1 | 2 | 1 | 0 | 0 | 0 | 0 | 51 | |
| 17:15 p.m - 17:30 p.m | 36 | 16 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 55 | |
| 17:30 p.m - 17:45 p.m | 43 | 20 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 69 | |
| 17:45 p.m - 18:00 p.m | 48 | 26 | 1 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 77 | |
| 18:00 p.m - 18:15 p.m | 43 | 24 | 2 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 71 | |
| 18:15 p.m - 18:30 p.m | 39 | 16 | 1 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 58 | |
| 18:30 p.m - 18:45 p.m | 39 | 13 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 53 | |
| 18:45 p.m - 19:00 p.m | 33 | 10 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 44 | |
| Total por tipo | 1028 | 487 | 30 | 35 | 38 | 33 | 15 | 13 | 5 | 0 | 0 | 1684 | |

| UNIVERSIDAD NACIONAL DE JAÉN | | Técnica de recolección de datos: Observación directa | | | | | | | | | | Total por hora | | Total por horas punta | |
|------------------------------|------------|--|---|---|--|---|---|---|---|---|---|---|----------------|-----------------------|--|
| | | ANÁLISIS VIAL EN LA INTERSECCIÓN DE LAS CALLES IQUITOS Y EJÉRCITO EMPLEANDO EL SOFTWARE SYNCHIRO 10 EN LA CIUDAD DE JAÉN, 2025 | | | | | | | | | | | | | |
| Tesis | | ANÁLISIS VIAL EN LA INTERSECCIÓN DE LAS CALLES IQUITOS Y EJÉRCITO EMPLEANDO EL SOFTWARE SYNCHIRO 10 EN LA CIUDAD DE JAÉN, 2025 | | | | | | | | | | | | | |
| Tesis | | Bach. Kelvin Jhonatan Guevara Ruiz | | | | | | | | | | | | | |
| Tesis | | Bach. Ever Waldir Torres Pedraza | | | | | | | | | | | | | |
| Asesor | | Doc. José Luis Piedra Tineo | | | | | | | | | | | | | |
| Fecha: Viernes 04/07/2025 | | Punto de conteo: Intersección de las calles Iquitos y Ejército | | | | | Entrada: Calle Ejército (Sur) | | | Salida: Calle Ejército (Norte) | | | | | |
| HORA | | MOTOS | | CARGUERO | AUTO | STATION WAGON | CAMIONETAS | | | CAMIONES | | | Total por hora | Total por horas punta | |
| | | TAXI | LINEAL | | | | PICK UP | PANEL | COMBI | 2E | 3E | 4E | | | |
| | |  |  |  |  |  |  |  |  |  |  |  | | | |
| 6:00 a.m - 6:15 a.m | 8 | 3 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 13 | 365 | |
| 6:15 a.m - 6:30 a.m | 10 | 3 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 15 | | |
| 6:30 a.m - 6:45 a.m | 11 | 5 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 18 | | |
| 6:45 a.m - 7:00 a.m | 11 | 7 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 20 | | |
| 7:00 a.m - 7:15 a.m | 17 | 10 | 0 | 0 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 30 | | |
| 7:15 a.m - 7:30 a.m | 19 | 11 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 31 | | |
| 7:30 a.m - 7:45 a.m | 23 | 13 | 0 | 1 | 1 | 2 | 1 | 1 | 0 | 0 | 0 | 0 | 42 | | |
| 7:45 a.m - 8:00 a.m | 32 | 13 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 48 | | |
| 8:00 a.m - 8:15 a.m | 29 | 14 | 0 | 2 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 48 | | |
| 8:15 a.m - 8:30 a.m | 23 | 14 | 0 | 1 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 40 | | |
| 8:30 a.m - 8:45 a.m | 19 | 9 | 0 | 1 | 0 | 3 | 1 | 0 | 0 | 0 | 0 | 0 | 33 | | |
| 8:45 a.m - 9:00 a.m | 17 | 7 | 0 | 1 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 27 | | |
| 11:00 a.m - 11:15 a.m | 21 | 11 | 1 | 1 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 37 | | |
| 11:15 a.m - 11:30 a.m | 21 | 11 | 1 | 0 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 36 | | |
| 11:30 a.m - 11:45 a.m | 22 | 14 | 0 | 0 | 2 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 40 | | |
| 11:45 a.m - 12:00 a.m | 23 | 15 | 1 | 0 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 42 | | |
| 12:00 a.m - 12:15 p.m | 25 | 16 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 43 | | |
| 12:15 p.m - 12:30 p.m | 25 | 16 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 43 | | |
| 12:30 p.m - 12:45 p.m | 27 | 13 | 2 | 1 | 2 | 1 | 2 | 2 | 0 | 0 | 0 | 0 | 50 | | |
| 12:45 p.m - 13:00 p.m | 25 | 12 | 2 | 3 | 1 | 2 | 1 | 1 | 1 | 0 | 0 | 0 | 48 | | |
| 13:00 p.m - 13:15 p.m | 36 | 16 | 3 | 2 | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 61 | | |
| 13:15 p.m - 13:30 p.m | 37 | 17 | 1 | 1 | 0 | 1 | 2 | 1 | 0 | 0 | 0 | 0 | 60 | | |
| 13:30 p.m - 13:45 p.m | 23 | 12 | 1 | 2 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 41 | | |
| 13:45 p.m - 14:00 p.m | 19 | 12 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 33 | | |
| 16:00 p.m - 16:15 p.m | 22 | 11 | 1 | 1 | 1 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 39 | | |
| 16:15 p.m - 16:30 p.m | 22 | 13 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 37 | | |
| 16:30 p.m - 16:45 p.m | 23 | 14 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 40 | | |
| 16:45 p.m - 17:00 p.m | 22 | 14 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 38 | | |
| 17:00 p.m - 17:15 p.m | 27 | 17 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 46 | | |
| 17:15 p.m - 17:30 p.m | 29 | 19 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 50 | | |
| 17:30 p.m - 17:45 p.m | 35 | 10 | 0 | 0 | 1 | 2 | 0 | 1 | 0 | 0 | 0 | 0 | 49 | | |
| 17:45 p.m - 18:00 p.m | 39 | 8 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 49 | | |
| 18:00 p.m - 18:15 p.m | 28 | 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 36 | | |
| 18:15 p.m - 18:30 p.m | 22 | 8 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 31 | | |
| 18:30 p.m - 18:45 p.m | 24 | 10 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 35 | | |
| 18:45 p.m - 19:00 p.m | 22 | 9 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 33 | | |
| Total por tipo | 838 | 415 | 19 | 20 | 22 | 45 | 10 | 9 | 4 | 0 | 0 | 0 | 1382 | 483 | |

|  | | UNIVERSIDAD NACIONAL DE JAÉN | | | | | | | | | |  | |
|---|---|--|----------|------|---------------|---|--|---|---|---|---|---|-----------------------|
| Técnica de recolección de datos: Observación directa | | | | | | | | | | | | | |
| Tesis | | ANÁLISIS VIAL EN LA INTERSECCIÓN DE LAS CALLES IQUITOS Y EJÉRCITO EMPLEANDO EL SOFTWARE SYNCHIRO 10 EN LA CIUDAD DE JAÉN, 2025 | | | | | | | | | | | |
| Tesistas | | Bach. Kelvin Jhonatan Guevara Ruiz Bach. Ever Waldir Torres Pedraza | | | | | | | | | | | |
| Asesor | | Doc. José Luis Piedra Tineo | | | | | | | | | | | |
| Fecha: Viernes 04/07/2025 | | Punto de conteo: Intersección de las calles Iquitos y Ejército | | | | Entrada: Calle Ejército (Sur) | | | Salida: Calle Iquitos (Oeste) | | | | |
| HORA | MOTOS | | CARGUERO | AUTO | STATION WAGON | CAMIONETAS | | | CAMIONES | | | Total por hora | Total por horas punta |
| | TAXI | LINEAL | | | | PICK UP | PANEL | COMBI | 2E | 3E | 4E | | |
| |  |  | | | |  |  |  |  |  |  | | |
| 6:00 a.m - 6:15 a.m | 4 | 2 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 195 |
| 6:15 a.m - 6:30 a.m | 5 | 2 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9 | |
| 6:30 a.m - 6:45 a.m | 7 | 3 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 13 | |
| 6:45 a.m - 7:00 a.m | 6 | 5 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 14 | |
| 7:00 a.m - 7:15 a.m | 9 | 6 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 16 | |
| 7:15 a.m - 7:30 a.m | 11 | 6 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 19 | |
| 7:30 a.m - 7:45 a.m | 12 | 7 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 23 | |
| 7:45 a.m - 8:00 a.m | 17 | 6 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 26 | |
| 8:00 a.m - 8:15 a.m | 12 | 6 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 21 | |
| 8:15 a.m - 8:30 a.m | 12 | 5 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 19 | |
| 8:30 a.m - 8:45 a.m | 8 | 4 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 15 | |
| 8:45 a.m - 9:00 a.m | 9 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 13 | |
| 11:00 a.m - 11:15 a.m | 9 | 5 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 16 | |
| 11:15 a.m - 11:30 a.m | 8 | 4 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 13 | |
| 11:30 a.m - 11:45 a.m | 10 | 3 | 1 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 16 | |
| 11:45 a.m - 12:00 a.m | 10 | 3 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 15 | |
| 12:00 a.m - 12:15 p.m | 11 | 5 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 17 | |
| 12:15 p.m - 12:30 p.m | 12 | 5 | 0 | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 20 | |
| 12:30 p.m - 12:45 p.m | 14 | 8 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 29 | |
| 12:45 p.m - 13:00 p.m | 17 | 10 | 2 | 2 | 2 | 2 | 1 | 0 | 1 | 0 | 0 | 37 | |
| 13:00 p.m - 13:15 p.m | 16 | 9 | 2 | 1 | 1 | 2 | 2 | 2 | 0 | 0 | 0 | 35 | |
| 13:15 p.m - 13:30 p.m | 16 | 9 | 0 | 2 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 29 | |
| 13:30 p.m - 13:45 p.m | 12 | 4 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 19 | |
| 13:45 p.m - 14:00 p.m | 11 | 3 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 16 | |
| 16:00 p.m - 16:15 p.m | 11 | 3 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 16 | |
| 16:15 p.m - 16:30 p.m | 9 | 5 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 16 | |
| 16:30 p.m - 16:45 p.m | 13 | 5 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 21 | |
| 16:45 p.m - 17:00 p.m | 14 | 6 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 22 | |
| 17:00 p.m - 17:15 p.m | 16 | 2 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 21 | |
| 17:15 p.m - 17:30 p.m | 16 | 7 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 24 | |
| 17:30 p.m - 17:45 p.m | 14 | 7 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 22 | |
| 17:45 p.m - 18:00 p.m | 12 | 6 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 19 | |
| 18:00 p.m - 18:15 p.m | 14 | 7 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 23 | |
| 18:15 p.m - 18:30 p.m | 14 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 21 | |
| 18:30 p.m - 18:45 p.m | 10 | 5 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 16 | |
| 18:45 p.m - 19:00 p.m | 9 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 12 | |
| Total por tipo | 410 | 187 | 13 | 22 | 10 | 25 | 9 | 10 | 4 | 0 | 0 | 690 | |

| UNIVERSIDAD NACIONAL DE JAÉN | | | | | | | | | | | | | |
|--|--|---|----------|------|---------------------------------|---|--|---|---|---|---|----------------|-----------------------|
| Técnica de recolección de datos: Observación directa | | | | | | | | | | | | | |
| Tesis | ANÁLISIS VIAL EN LA INTERSECCIÓN DE LAS CALLES IQUITOS Y EJÉRCITO EMPLEANDO EL SOFTWARE SYNCHIRO 10 EN LA CIUDAD DE JAÉN, 2025 | | | | | | | | | | | | |
| Tesistas | Bach. Kelvin Jhonatan Guevara Ruiz Bach. Ever Waldir Torres Pedraza | | | | | | | | | | | | |
| Asesor | Doc. José Luis Piedra Tineo | | | | | | | | | | | | |
| Fecha: Viernes 04/07/2025 | Punto de conteo: Intersección de las calles Iquitos y Ejército | | | | Entrada: Calle Ejército (Norte) | | | | Salida: Calle Ejército (Sur) | | | | |
| HORA | MOTOS | | CARGUERO | AUTO | STATION WAGON | CAMIONETAS | | | CAMIONES | | | Total por hora | Total por horas punta |
| | TAXI | LINEAL | | | | PICK UP | PANEL | COMBI | 2E | 3E | 4E | | |
| |  |  | | | |  |  |  |  |  |  | | |
| 6:00 a.m - 6:15 a.m | 6 | 2 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 9 | 266 |
| 6:15 a.m - 6:30 a.m | 8 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 10 | |
| 6:30 a.m - 6:45 a.m | 7 | 4 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 15 | |
| 6:45 a.m - 7:00 a.m | 9 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 14 | |
| 7:00 a.m - 7:15 a.m | 10 | 10 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 22 | |
| 7:15 a.m - 7:30 a.m | 12 | 13 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 26 | |
| 7:30 a.m - 7:45 a.m | 14 | 12 | 1 | 1 | 0 | 1 | 1 | 0 | 1 | 0 | 0 | 31 | |
| 7:45 a.m - 8:00 a.m | 16 | 14 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 35 | |
| 8:00 a.m - 8:15 a.m | 22 | 12 | 0 | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 38 | |
| 8:15 a.m - 8:30 a.m | 15 | 12 | 0 | 1 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 31 | |
| 8:30 a.m - 8:45 a.m | 11 | 8 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 20 | |
| 8:45 a.m - 9:00 a.m | 7 | 7 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 15 | |
| 11:00 a.m - 11:15 a.m | 10 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 15 | |
| 11:15 a.m - 11:30 a.m | 11 | 5 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 18 | |
| 11:30 a.m - 11:45 a.m | 13 | 6 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 22 | |
| 11:45 a.m - 12:00 a.m | 13 | 6 | 1 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 23 | |
| 12:00 a.m - 12:15 p.m | 17 | 5 | 0 | 1 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 26 | |
| 12:15 p.m - 12:30 p.m | 22 | 7 | 1 | 2 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 33 | |
| 12:30 p.m - 12:45 p.m | 25 | 10 | 2 | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 41 | |
| 12:45 p.m - 13:00 p.m | 27 | 9 | 2 | 2 | 0 | 2 | 1 | 2 | 1 | 0 | 0 | 46 | |
| 13:00 p.m - 13:15 p.m | 31 | 14 | 1 | 1 | 2 | 1 | 1 | 1 | 0 | 0 | 0 | 52 | |
| 13:15 p.m - 13:30 p.m | 31 | 13 | 1 | 1 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 49 | |
| 13:30 p.m - 13:45 p.m | 23 | 12 | 1 | 1 | 0 | 2 | 0 | 1 | 0 | 0 | 0 | 40 | |
| 13:45 p.m - 14:00 p.m | 18 | 10 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 31 | |
| 16:00 p.m - 16:15 p.m | 12 | 11 | 1 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 26 | |
| 16:15 p.m - 16:30 p.m | 12 | 7 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 22 | |
| 16:30 p.m - 16:45 p.m | 13 | 8 | 1 | 0 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 26 | |
| 16:45 p.m - 17:00 p.m | 17 | 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 27 | |
| 17:00 p.m - 17:15 p.m | 18 | 8 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 28 | |
| 17:15 p.m - 17:30 p.m | 22 | 8 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 31 | |
| 17:30 p.m - 17:45 p.m | 23 | 7 | 0 | 1 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 34 | |
| 17:45 p.m - 18:00 p.m | 19 | 8 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 29 | |
| 18:00 p.m - 18:15 p.m | 21 | 8 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 32 | |
| 18:15 p.m - 18:30 p.m | 21 | 7 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 31 | |
| 18:30 p.m - 18:45 p.m | 13 | 5 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 19 | |
| 18:45 p.m - 19:00 p.m | 12 | 5 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 18 | |
| Total por tipo | 581 | 295 | 21 | 23 | 21 | 24 | 7 | 9 | 4 | 0 | 0 | 985 | |



UNIVERSIDAD NACIONAL DE JAÉN



Técnica de recolección de datos: Observación directa

| Tesis | | ANÁLISIS VIAL EN LA INTERSECCIÓN DE LAS CALLES IQUITOS Y EJÉRCITO EMPLEANDO EL SOFTWARE SYNCHIRO 10 EN LA CIUDAD DE JAÉN, 2025 | | | | | | | | | | | | | | | | | | | | |
|---------------------------|-------|--|----------|------|---------------|------------|---------------------------------|-------|----------|-------------------------------|----|----------------|-----------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Tesisistas | | Bach. Kelvin Jhonatan Guevara Ruiz Bach. Ever Waldir Torres Pedraza | | | | | | | | | | | | | | | | | | | | |
| Asesor | | Doc. José Luis Piedra Tineo | | | | | | | | | | | | | | | | | | | | |
| Fecha: Viernes 04/07/2025 | | Punto de conteo: Intersección de las calles Iquitos y Ejército | | | | | Entrada: Calle Ejército (Norte) | | | Salida: Calle Iquitos (Oeste) | | | | | | | | | | | | |
| HORA | MOTOS | | CARGUERO | AUTO | STATION WAGON | CAMIONETAS | | | CAMIONES | | | Total por hora | Total por horas punta | | | | | | | | | |
| | TAXI | LINEAL | | | | PICK UP | PANEL | COMBI | 2E | 3E | 4E | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | |
| 6:00 a.m - 6:15 a.m | 5 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 8 | 189 | | | | | | | | | |
| 6:15 a.m - 6:30 a.m | 6 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9 | | 189 | | | | | | | | |
| 6:30 a.m - 6:45 a.m | 8 | 4 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 14 | | | 189 | | | | | | | |
| 6:45 a.m - 7:00 a.m | 8 | 3 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 12 | | | | 189 | | | | | | |
| 7:00 a.m - 7:15 a.m | 10 | 5 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 16 | | | | | 189 | | | | | |
| 7:15 a.m - 7:30 a.m | 10 | 5 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 16 | | | | | | 189 | | | | |
| 7:30 a.m - 7:45 a.m | 11 | 6 | 1 | 1 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 21 | | | | | | | 189 | | | |
| 7:45 a.m - 8:00 a.m | 11 | 9 | 0 | 0 | 0 | 1 | 1 | 0 | 1 | 0 | 0 | 23 | | | | | | | | 189 | | |
| 8:00 a.m - 8:15 a.m | 12 | 6 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 19 | | | | | | | | | 189 | |
| 8:15 a.m - 8:30 a.m | 13 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 19 | | | | | | | | | | 189 |
| 8:30 a.m - 8:45 a.m | 9 | 5 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 17 | 189 | | | | | | | | | |
| 8:45 a.m - 9:00 a.m | 10 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 15 | | 189 | | | | | | | | |
| 11:00 a.m - 11:15 a.m | 10 | 6 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 19 | | | 294 | | | | | | | |
| 11:15 a.m - 11:30 a.m | 9 | 8 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 18 | | | | 294 | | | | | | |
| 11:30 a.m - 11:45 a.m | 10 | 6 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 21 | | | | | 294 | | | | | |
| 11:45 a.m - 12:00 a.m | 12 | 8 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 22 | | | | | | 294 | | | | |
| 12:00 a.m - 12:15 p.m | 14 | 9 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 24 | | | | | | | 294 | | | |
| 12:15 p.m - 12:30 p.m | 13 | 8 | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 24 | | | | | | | | 294 | | |
| 12:30 p.m - 12:45 p.m | 18 | 10 | 1 | 0 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 32 | | | | | | | | | 294 | |
| 12:45 p.m - 13:00 p.m | 17 | 9 | 2 | 2 | 2 | 1 | 1 | 2 | 0 | 0 | 0 | 36 | | | | | | | | | | 294 |
| 13:00 p.m - 13:15 p.m | 17 | 10 | 1 | 1 | 1 | 2 | 1 | 1 | 1 | 0 | 0 | 35 | 294 | | | | | | | | | |
| 13:15 p.m - 13:30 p.m | 14 | 7 | 1 | 3 | 1 | 1 | 0 | 1 | 1 | 0 | 0 | 29 | | 294 | | | | | | | | |
| 13:30 p.m - 13:45 p.m | 10 | 5 | 0 | 1 | 1 | 0 | 2 | 0 | 0 | 0 | 0 | 19 | | | 294 | | | | | | | |
| 13:45 p.m - 14:00 p.m | 10 | 4 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 15 | | | | 294 | | | | | | |
| 16:00 p.m - 16:15 p.m | 15 | 8 | 1 | 1 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 28 | | | | | 259 | | | | | |
| 16:15 p.m - 16:30 p.m | 17 | 7 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 25 | | | | | | 259 | | | | |
| 16:30 p.m - 16:45 p.m | 13 | 6 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 20 | | | | | | | 259 | | | |
| 16:45 p.m - 17:00 p.m | 13 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 18 | | | | | | | | 259 | | |
| 17:00 p.m - 17:15 p.m | 12 | 8 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 24 | | | | | | | | | 259 | |
| 17:15 p.m - 17:30 p.m | 15 | 8 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 24 | | | | | | | | | | 259 |
| 17:30 p.m - 17:45 p.m | 14 | 8 | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 25 | 259 | | | | | | | | | |
| 17:45 p.m - 18:00 p.m | 14 | 4 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 19 | | 259 | | | | | | | | |
| 18:00 p.m - 18:15 p.m | 13 | 6 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 22 | | | 259 | | | | | | | |
| 18:15 p.m - 18:30 p.m | 14 | 5 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 21 | | | | 259 | | | | | | |
| 18:30 p.m - 18:45 p.m | 10 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 16 | | | | | 259 | | | | | |
| 18:45 p.m - 19:00 p.m | 8 | 6 | 1 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 17 | | | | | | 259 | | | | |
| Total por tipo | | 425 | 227 | 16 | 16 | 17 | 16 | 14 | 6 | 5 | 0 | 0 | | | | | | | 742 | | | |



UNIVERSIDAD NACIONAL DE JAÉN



Técnica de recolección de datos: Observación directa

| ANÁLISIS VIAL EN LA INTERSECCIÓN DE LAS CALLES IQUITOS Y EJÉRCITO EMPLEANDO EL SOFTWARE SYNCHRO 10 EN LA CIUDAD DE JAÉN, 2025 | | | | | | | | | | | | | |
|---|-------------|-------------|-----------|-----------|--------------------------------------|------------|-----------|-----------|--------------------------------------|----------|----------|----------------|-----------------------|
| Tesis | | | | | | | | | | | | | |
| Bach. Kelvin Jhonatan Guevara Ruiz | | | | | | | | | | | | | |
| Tesistas | | | | | | | | | | | | | |
| Bach. Ever Waldir Torres Pedraza | | | | | | | | | | | | | |
| Asesor | | | | | | | | | | | | | |
| Doc. José Luis Piedra Tineo | | | | | | | | | | | | | |
| Fecha: Sábado 05/07/2025 | | | | | | | | | | | | | |
| Punto de conteo: Intersección de las calles Iquitos y Ejército | | | | | Entrada: Calle Iquitos (Este) | | | | Salida: Calle Iquitos (Oeste) | | | | |
| HORA | MOTOS | | CARGUERO | AUTO | STATION WAGON | CAMIONETAS | | | CAMIONES | | | Total por hora | Total por horas punta |
| | TAXI | LINEAL | | | | PICK UP | PANEL | COMBI | 2E | 3E | 4E | | |
| | | | | | | | | | | | | | |
| 6:00 a.m - 6:15 a.m | 18 | 10 | 1 | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 33 | 1206 |
| 6:15 a.m - 6:30 a.m | 20 | 14 | 1 | 1 | 1 | 12 | 0 | 0 | 0 | 0 | 0 | 49 | |
| 6:30 a.m - 6:45 a.m | 30 | 17 | 1 | 0 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 51 | |
| 6:45 a.m - 7:00 a.m | 39 | 20 | 1 | 1 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 63 | |
| 7:00 a.m - 7:15 a.m | 65 | 28 | 2 | 1 | 2 | 1 | 1 | 1 | 1 | 0 | 0 | 102 | |
| 7:15 a.m - 7:30 a.m | 77 | 31 | 1 | 1 | 2 | 1 | 1 | 2 | 0 | 0 | 0 | 116 | |
| 7:30 a.m - 7:45 a.m | 71 | 29 | 1 | 0 | 2 | 2 | 1 | 0 | 1 | 0 | 0 | 107 | |
| 7:45 a.m - 8:00 a.m | 63 | 33 | 1 | 0 | 3 | 2 | 1 | 0 | 0 | 0 | 0 | 103 | |
| 8:00 a.m - 8:15 a.m | 98 | 42 | 1 | 1 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 145 | |
| 8:15 a.m - 8:30 a.m | 106 | 61 | 0 | 2 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 171 | |
| 8:30 a.m - 8:45 a.m | 95 | 44 | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 142 | |
| 8:45 a.m - 9:00 a.m | 81 | 41 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 124 | |
| 11:00 a.m - 11:15 a.m | 84 | 36 | 1 | 2 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 128 | |
| 11:15 a.m - 11:30 a.m | 93 | 40 | 2 | 2 | 2 | 0 | 1 | 1 | 0 | 0 | 0 | 141 | |
| 11:30 a.m - 11:45 a.m | 95 | 41 | 1 | 2 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 141 | |
| 11:45 a.m - 12:00 a.m | 105 | 62 | 0 | 2 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 171 | |
| 12:00 a.m - 12:15 p.m | 100 | 55 | 1 | 3 | 2 | 3 | 1 | 1 | 1 | 0 | 0 | 167 | |
| 12:15 p.m - 12:30 p.m | 92 | 61 | 1 | 3 | 3 | 3 | 1 | 1 | 0 | 0 | 0 | 165 | |
| 12:30 p.m - 12:45 p.m | 110 | 60 | 1 | 3 | 3 | 1 | 1 | 0 | 0 | 0 | 0 | 179 | |
| 12:45 p.m - 13:00 p.m | 126 | 71 | 1 | 4 | 3 | 1 | 2 | 0 | 0 | 0 | 0 | 208 | |
| 13:00 p.m - 13:15 p.m | 120 | 65 | 0 | 2 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 191 | |
| 13:15 p.m - 13:30 p.m | 116 | 63 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 180 | |
| 13:30 p.m - 13:45 p.m | 111 | 64 | 1 | 1 | 1 | 1 | 0 | 1 | 1 | 0 | 0 | 181 | |
| 13:45 p.m - 14:00 p.m | 101 | 58 | 0 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 162 | |
| 16:00 p.m - 16:15 p.m | 50 | 28 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 84 | |
| 16:15 p.m - 16:30 p.m | 55 | 31 | 0 | 2 | 1 | 2 | 0 | 2 | 0 | 0 | 0 | 93 | |
| 16:30 p.m - 16:45 p.m | 60 | 36 | 0 | 3 | 1 | 2 | 0 | 1 | 0 | 0 | 0 | 103 | |
| 16:45 p.m - 17:00 p.m | 63 | 37 | 1 | 3 | 0 | 3 | 1 | 2 | 0 | 0 | 0 | 110 | |
| 17:00 p.m - 17:15 p.m | 68 | 36 | 1 | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 109 | |
| 17:15 p.m - 17:30 p.m | 74 | 44 | 1 | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 123 | |
| 17:30 p.m - 17:45 p.m | 81 | 52 | 0 | 1 | 1 | 2 | 0 | 1 | 0 | 0 | 0 | 138 | |
| 17:45 p.m - 18:00 p.m | 88 | 55 | 0 | 0 | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 147 | |
| 18:00 p.m - 18:15 p.m | 84 | 50 | 1 | 1 | 3 | 1 | 1 | 0 | 0 | 0 | 0 | 141 | |
| 18:15 p.m - 18:30 p.m | 80 | 47 | 1 | 2 | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 134 | |
| 18:30 p.m - 18:45 p.m | 64 | 51 | 1 | 2 | 1 | 2 | 0 | 1 | 0 | 0 | 0 | 122 | |
| 18:45 p.m - 19:00 p.m | 59 | 39 | 0 | 0 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 101 | |
| Total por tipo | 2842 | 1552 | 26 | 51 | 52 | 54 | 19 | 24 | 5 | 0 | 0 | 4625 | |



UNIVERSIDAD NACIONAL DE JAÉN



Técnica de recolección de datos: Observación directa

| Tesis | | ANÁLISIS VIAL EN LA INTERSECCIÓN DE LAS CALLES IQUITOS Y EJÉRCITO EMPLEANDO EL SOFTWARE SYNCHRO 10 EN LA CIUDAD DE JAÉN, 2025 | | | | | | | | | | | | | | | | | | | | | |
|--------------------------|-------|---|----------|------|---------------|-------------------------------|-------|-------|--------------------------------|----|----|----------------|-----------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Tesistas | | Bach. Kelvin Jhonatan Guevara Ruiz Bach. Ever Waldir Torres Pedraza | | | | | | | | | | | | | | | | | | | | | |
| Asesor | | Doc. José Luis Piedra Tineo | | | | | | | | | | | | | | | | | | | | | |
| Fecha: Sábado 05/07/2025 | | Punto de conteo: Intersección de las calles Iquitos y Ejército | | | | Entrada: Calle Iquitos (Este) | | | Salida: Calle Ejército (Norte) | | | | | | | | | | | | | | |
| HORA | MOTOS | | CARGUERO | AUTO | STATION WAGON | CAMIONETAS | | | CAMIONES | | | Total por hora | Total por horas punta | | | | | | | | | | |
| | TAXI | LINEAL | | | | PICK UP | PANEL | COMBI | 2E | 3E | 4E | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | |
| 6:00 a.m - 6:15 a.m | 10 | 4 | 1 | 0 | 0 | 1 | 1 | 1 | 1 | 0 | 0 | 19 | 341 | | | | | | | | | | |
| 6:15 a.m - 6:30 a.m | 11 | 5 | 1 | 1 | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 21 | | 341 | | | | | | | | | |
| 6:30 a.m - 6:45 a.m | 11 | 7 | 0 | 1 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 22 | | | 341 | | | | | | | | |
| 6:45 a.m - 7:00 a.m | 19 | 8 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 31 | | | | 341 | | | | | | | |
| 7:00 a.m - 7:15 a.m | 20 | 10 | 0 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | 0 | 34 | | | | | 341 | | | | | | |
| 7:15 a.m - 7:30 a.m | 22 | 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 32 | | | | | | 341 | | | | | |
| 7:30 a.m - 7:45 a.m | 24 | 10 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 36 | | | | | | | 341 | | | | |
| 7:45 a.m - 8:00 a.m | 25 | 11 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 38 | | | | | | | | 341 | | | |
| 8:00 a.m - 8:15 a.m | 25 | 10 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 39 | | | | | | | | | 341 | | |
| 8:15 a.m - 8:30 a.m | 16 | 9 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 27 | | | | | | | | | | 341 | |
| 8:30 a.m - 8:45 a.m | 13 | 6 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 21 | | | | | | | | | | | 341 |
| 8:45 a.m - 9:00 a.m | 14 | 6 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 21 | | | | | | | | | | | |
| 11:00 a.m - 11:15 a.m | 14 | 10 | 1 | 1 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 28 | 655 | | | | | | | | | | |
| 11:15 a.m - 11:30 a.m | 25 | 14 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 41 | | 655 | | | | | | | | | |
| 11:30 a.m - 11:45 a.m | 28 | 15 | 0 | 1 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 46 | | | 655 | | | | | | | | |
| 11:45 a.m - 12:00 a.m | 30 | 16 | 1 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 49 | | | | 655 | | | | | | | |
| 12:00 a.m - 12:15 p.m | 34 | 16 | 1 | 0 | 0 | 1 | 1 | 1 | 1 | 0 | 0 | 55 | | | | | 655 | | | | | | |
| 12:15 p.m - 12:30 p.m | 40 | 18 | 0 | 0 | 0 | 2 | 0 | 2 | 0 | 0 | 0 | 62 | | | | | | 655 | | | | | |
| 12:30 p.m - 12:45 p.m | 41 | 25 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 69 | | | | | | | 655 | | | | |
| 12:45 p.m - 13:00 p.m | 45 | 27 | 1 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 75 | | | | | | | | 655 | | | |
| 13:00 p.m - 13:15 p.m | 56 | 25 | 1 | 1 | 1 | 0 | 2 | 1 | 0 | 0 | 0 | 87 | | | | | | | | | 655 | | |
| 13:15 p.m - 13:30 p.m | 40 | 26 | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 69 | | | | | | | | | | 655 | |
| 13:30 p.m - 13:45 p.m | 20 | 16 | 1 | 0 | 0 | 2 | 1 | 0 | 0 | 0 | 0 | 40 | | | | | | | | | | | 655 |
| 13:45 p.m - 14:00 p.m | 14 | 17 | 1 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 34 | | | | | | | | | | | |
| 16:00 p.m - 16:15 p.m | 20 | 11 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 35 | 509 | | | | | | | | | | |
| 16:15 p.m - 16:30 p.m | 26 | 11 | 1 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 40 | | 509 | | | | | | | | | |
| 16:30 p.m - 16:45 p.m | 30 | 14 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 46 | | | 509 | | | | | | | | |
| 16:45 p.m - 17:00 p.m | 32 | 14 | 0 | 0 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 49 | | | | 509 | | | | | | | |
| 17:00 p.m - 17:15 p.m | 25 | 20 | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 49 | | | | | 509 | | | | | | |
| 17:15 p.m - 17:30 p.m | 27 | 35 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 65 | | | | | | 509 | | | | | |
| 17:30 p.m - 17:45 p.m | 28 | 12 | 1 | 0 | 1 | 2 | 1 | 0 | 0 | 0 | 0 | 45 | | | | | | | 509 | | | | |
| 17:45 p.m - 18:00 p.m | 26 | 11 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 38 | | | | | | | | 509 | | | |
| 18:00 p.m - 18:15 p.m | 24 | 16 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 42 | | | | | | | | | 509 | | |
| 18:15 p.m - 18:30 p.m | 22 | 14 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 38 | | | | | | | | | | 509 | |
| 18:30 p.m - 18:45 p.m | 18 | 14 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 34 | | | | | | | | | | | 509 |
| 18:45 p.m - 19:00 p.m | 16 | 11 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 28 | | | | | | | | | | | |
| Total por tipo | 891 | 504 | 20 | 18 | 18 | 22 | 12 | 13 | 7 | 0 | 0 | 1505 | | | | | | | | | | | |



UNIVERSIDAD NACIONAL DE JAÉN



Técnica de recolección de datos: Observación directa









| Tesis | | ANÁLISIS VIAL EN LA INTERSECCIÓN DE LAS CALLES IQUITOS Y EJÉRCITO EMPLEANDO EL SOFTWARE SYNCHRO 10 EN LA CIUDAD DE JAÉN, 2025 | | | | | | | | | | | |
|--------------------------|-------|---|----------|------|---------------|-------------------------------|-------|-------|------------------------------|----|----|----------------|-----------------------|
| Tesisistas | | Bach. Kelvin Jhonatan Guevara Ruiz Bach. Ever Waldir Torres Pedraza | | | | | | | | | | | |
| Asesor | | Doc. José Luis Piedra Tineo | | | | | | | | | | | |
| Fecha: Sábado 05/07/2025 | | Punto de conteo: Intersección de las calles Iquitos y Ejército | | | | Entrada: Calle Iquitos (Este) | | | Salida: Calle Ejército (Sur) | | | | |
| HORA | MOTOS | | CARGUERO | AUTO | STATION WAGON | CAMIONETAS | | | CAMIONES | | | Total por hora | Total por horas punta |
| | TAXI | LINEAL | | | | PICK UP | PANEL | COMBI | 2E | 3E | 4E | | |
| | | | | | | | | | | | | | |
| 6:00 a.m - 6:15 a.m | 6 | 3 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 11 | 491 |
| 6:15 a.m - 6:30 a.m | 8 | 5 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 16 | |
| 6:30 a.m - 6:45 a.m | 10 | 6 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 20 | |
| 6:45 a.m - 7:00 a.m | 10 | 6 | 2 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 20 | |
| 7:00 a.m - 7:15 a.m | 15 | 7 | 1 | 0 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 28 | |
| 7:15 a.m - 7:30 a.m | 26 | 12 | 0 | 1 | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 43 | |
| 7:30 a.m - 7:45 a.m | 28 | 15 | 0 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 48 | |
| 7:45 a.m - 8:00 a.m | 32 | 17 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 50 | |
| 8:00 a.m - 8:15 a.m | 37 | 20 | 1 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 60 | |
| 8:15 a.m - 8:30 a.m | 42 | 24 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 66 | |
| 8:30 a.m - 8:45 a.m | 40 | 27 | 0 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 71 | |
| 8:45 a.m - 9:00 a.m | 32 | 22 | 1 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 58 | |
| 11:00 a.m - 11:15 a.m | 25 | 16 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 47 | |
| 11:15 a.m - 11:30 a.m | 27 | 14 | 0 | 0 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 45 | |
| 11:30 a.m - 11:45 a.m | 32 | 14 | 0 | 2 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 50 | |
| 11:45 a.m - 12:00 a.m | 36 | 16 | 1 | 2 | 0 | 2 | 0 | 1 | 0 | 0 | 0 | 58 | |
| 12:00 a.m - 12:15 p.m | 44 | 21 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 72 | |
| 12:15 p.m - 12:30 p.m | 42 | 26 | 1 | 2 | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 75 | |
| 12:30 p.m - 12:45 p.m | 48 | 31 | 0 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 82 | |
| 12:45 p.m - 13:00 p.m | 55 | 33 | 0 | 1 | 2 | 0 | 0 | 1 | 0 | 0 | 0 | 92 | |
| 13:00 p.m - 13:15 p.m | 46 | 29 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 78 | |
| 13:15 p.m - 13:30 p.m | 42 | 29 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 73 | |
| 13:30 p.m - 13:45 p.m | 39 | 21 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 62 | |
| 13:45 p.m - 14:00 p.m | 36 | 23 | 1 | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 63 | |
| 16:00 p.m - 16:15 p.m | 25 | 18 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 46 | |
| 16:15 p.m - 16:30 p.m | 29 | 15 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 47 | |
| 16:30 p.m - 16:45 p.m | 33 | 17 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 53 | |
| 16:45 p.m - 17:00 p.m | 36 | 18 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 56 | |
| 17:00 p.m - 17:15 p.m | 37 | 18 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 57 | |
| 17:15 p.m - 17:30 p.m | 37 | 20 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 60 | |
| 17:30 p.m - 17:45 p.m | 36 | 22 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 60 | |
| 17:45 p.m - 18:00 p.m | 32 | 24 | 1 | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 61 | |
| 18:00 p.m - 18:15 p.m | 28 | 18 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 47 | |
| 18:15 p.m - 18:30 p.m | 24 | 17 | 0 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 45 | |
| 18:30 p.m - 18:45 p.m | 20 | 13 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 35 | |
| 18:45 p.m - 19:00 p.m | 17 | 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 27 | |
| Total por tipo | 1112 | 647 | 21 | 23 | 25 | 25 | 14 | 12 | 3 | 0 | 0 | 1882 | 594 |



UNIVERSIDAD NACIONAL DE JAÉN



Técnica de recolección de datos: Observación directa

| Tesis | | ANÁLISIS VIAL EN LA INTERSECCIÓN DE LAS CALLES IQUITOS Y EJÉRCITO EMPLEANDO EL SOFTWARE SYNCHRO 10 EN LA CIUDAD DE JAÉN, 2025 | | | | | | | | | | | |
|--------------------------|---|---|-----------|-----------|---------------|---|--|---|---|---|---|----------------|-----------------------|
| Tesistas | | Bach. Kelvin Jhonatan Guevara Ruiz Bach. Ever Waldir Torres Pedraza | | | | | | | | | | | |
| Asesor | | Doc. José Luis Piedra Tineo | | | | | | | | | | | |
| Fecha: Sábado 05/07/2025 | | Punto de conteo: Intersección de las calles Iquitos y Ejército | | | | Entrada: Calle Ejército (Sur) | | | Salida: Calle Ejército (Norte) | | | | |
| HORA | MOTOS | | CARGUERO | AUTO | STATION WAGON | CAMIONETAS | | | CAMIONES | | | Total por hora | Total por horas punta |
| | TAXI | LINEAL | | | | PICK UP | PANEL | COMBI | 2E | 3E | 4E | | |
| |  |  | | | |  |  |  |  |  |  | | |
| 6:00 a.m - 6:15 a.m | 4 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 257 |
| 6:15 a.m - 6:30 a.m | 4 | 2 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 7 | |
| 6:30 a.m - 6:45 a.m | 5 | 2 | 1 | 1 | 1 | 0 | 1 | 1 | 1 | 0 | 0 | 13 | |
| 6:45 a.m - 7:00 a.m | 7 | 3 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 12 | |
| 7:00 a.m - 7:15 a.m | 12 | 5 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 19 | |
| 7:15 a.m - 7:30 a.m | 13 | 6 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 22 | |
| 7:30 a.m - 7:45 a.m | 16 | 7 | 0 | 1 | 0 | 1 | 1 | 1 | 1 | 0 | 0 | 28 | |
| 7:45 a.m - 8:00 a.m | 16 | 8 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 25 | |
| 8:00 a.m - 8:15 a.m | 20 | 11 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 36 | |
| 8:15 a.m - 8:30 a.m | 24 | 11 | 0 | 1 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 38 | |
| 8:30 a.m - 8:45 a.m | 16 | 10 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 28 | |
| 8:45 a.m - 9:00 a.m | 14 | 6 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 23 | |
| 11:00 a.m - 11:15 a.m | 14 | 9 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 26 | |
| 11:15 a.m - 11:30 a.m | 16 | 9 | 0 | 1 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 29 | |
| 11:30 a.m - 11:45 a.m | 19 | 8 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 31 | |
| 11:45 a.m - 12:00 a.m | 23 | 11 | 1 | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 38 | |
| 12:00 a.m - 12:15 p.m | 22 | 12 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 35 | |
| 12:15 p.m - 12:30 p.m | 30 | 16 | 0 | 0 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 49 | |
| 12:30 p.m - 12:45 p.m | 31 | 14 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 47 | |
| 12:45 p.m - 13:00 p.m | 28 | 15 | 0 | 0 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 46 | |
| 13:00 p.m - 13:15 p.m | 28 | 15 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 45 | |
| 13:15 p.m - 13:30 p.m | 26 | 16 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 45 | |
| 13:30 p.m - 13:45 p.m | 21 | 10 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 33 | |
| 13:45 p.m - 14:00 p.m | 16 | 12 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 29 | |
| 16:00 p.m - 16:15 p.m | 17 | 12 | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 32 | |
| 16:15 p.m - 16:30 p.m | 21 | 12 | 0 | 0 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 37 | |
| 16:30 p.m - 16:45 p.m | 23 | 13 | 1 | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 41 | |
| 16:45 p.m - 17:00 p.m | 25 | 12 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 39 | |
| 17:00 p.m - 17:15 p.m | 30 | 16 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 48 | |
| 17:15 p.m - 17:30 p.m | 27 | 16 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 47 | |
| 17:30 p.m - 17:45 p.m | 21 | 12 | 0 | 0 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 36 | |
| 17:45 p.m - 18:00 p.m | 22 | 13 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 36 | |
| 18:00 p.m - 18:15 p.m | 16 | 10 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 28 | |
| 18:15 p.m - 18:30 p.m | 14 | 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 22 | |
| 18:30 p.m - 18:45 p.m | 11 | 8 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 20 | |
| 18:45 p.m - 19:00 p.m | 11 | 6 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 18 | |
| Total por tipo | 663 | 357 | 14 | 13 | 20 | 27 | 9 | 7 | 4 | 0 | 0 | 1114 | 404 |



UNIVERSIDAD NACIONAL DE JAÉN



Técnica de recolección de datos: Observación directa

| Tesis | | ANÁLISIS VIAL EN LA INTERSECCIÓN DE LAS CALLES IQUITOS Y EJÉRCITO EMPLEANDO EL SOFTWARE SYNCHRO 10 EN LA CIUDAD DE JAÉN, 2025 | | | | | | | | | | | |
|--------------------------|-------|---|----------|------|---------------|-------------------------------|-------|-------|-------------------------------|----|----|----------------|-----------------------|
| Tesisistas | | Bach. Kelvin Jhonatan Guevara Ruiz Bach. Ever Waldir Torres Pedraza | | | | | | | | | | | |
| Asesor | | Doc. José Luis Piedra Tineo | | | | | | | | | | | |
| Fecha: Sábado 05/07/2025 | | Punto de conteo: Intersección de las calles Iquitos y Ejército | | | | Entrada: Calle Ejército (Sur) | | | Salida: Calle Iquitos (Oeste) | | | | |
| HORA | MOTOS | | CARGUERO | AUTO | STATION WAGON | CAMIONETAS | | | CAMIONES | | | Total por hora | Total por horas punta |
| | TAXI | LINEAL | | | | PICK UP | PANEL | COMBI | 2E | 3E | 4E | | |
| | | | | | | | | | | | | | |
| 6:00 a.m - 6:15 a.m | 3 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 9 | 173 |
| 6:15 a.m - 6:30 a.m | 4 | 2 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 8 | |
| 6:30 a.m - 6:45 a.m | 4 | 1 | 1 | 0 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 9 | |
| 6:45 a.m - 7:00 a.m | 5 | 3 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 10 | |
| 7:00 a.m - 7:15 a.m | 7 | 4 | 0 | 0 | 0 | 1 | 1 | 0 | 1 | 0 | 0 | 14 | |
| 7:15 a.m - 7:30 a.m | 8 | 4 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 13 | |
| 7:30 a.m - 7:45 a.m | 11 | 6 | 0 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 20 | |
| 7:45 a.m - 8:00 a.m | 13 | 6 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 21 | |
| 8:00 a.m - 8:15 a.m | 12 | 5 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 19 | |
| 8:15 a.m - 8:30 a.m | 13 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 19 | |
| 8:30 a.m - 8:45 a.m | 10 | 6 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 19 | |
| 8:45 a.m - 9:00 a.m | 7 | 4 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 12 | |
| 11:00 a.m - 11:15 a.m | 8 | 3 | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 14 | 220 |
| 11:15 a.m - 11:30 a.m | 10 | 6 | 0 | 1 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 19 | |
| 11:30 a.m - 11:45 a.m | 11 | 7 | 1 | 0 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 22 | |
| 11:45 a.m - 12:00 a.m | 10 | 7 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 19 | |
| 12:00 a.m - 12:15 p.m | 9 | 5 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 16 | |
| 12:15 p.m - 12:30 p.m | 10 | 5 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 16 | |
| 12:30 p.m - 12:45 p.m | 12 | 7 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 22 | |
| 12:45 p.m - 13:00 p.m | 13 | 8 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 22 | |
| 13:00 p.m - 13:15 p.m | 12 | 6 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 19 | |
| 13:15 p.m - 13:30 p.m | 11 | 6 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 18 | |
| 13:30 p.m - 13:45 p.m | 10 | 5 | 0 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 18 | |
| 13:45 p.m - 14:00 p.m | 8 | 6 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 15 | |
| 16:00 p.m - 16:15 p.m | 10 | 4 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 15 | 173 |
| 16:15 p.m - 16:30 p.m | 10 | 5 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 17 | |
| 16:30 p.m - 16:45 p.m | 8 | 3 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 12 | |
| 16:45 p.m - 17:00 p.m | 8 | 4 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 13 | |
| 17:00 p.m - 17:15 p.m | 11 | 5 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 18 | |
| 17:15 p.m - 17:30 p.m | 12 | 6 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 20 | |
| 17:30 p.m - 17:45 p.m | 9 | 6 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 17 | |
| 17:45 p.m - 18:00 p.m | 10 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 15 | |
| 18:00 p.m - 18:15 p.m | 9 | 4 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 14 | |
| 18:15 p.m - 18:30 p.m | 8 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 12 | |
| 18:30 p.m - 18:45 p.m | 6 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 11 | |
| 18:45 p.m - 19:00 p.m | 6 | 2 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 9 | |
| Total por tipo | 328 | 172 | 8 | 14 | 9 | 20 | 7 | 5 | 3 | 0 | 0 | 566 | |



UNIVERSIDAD NACIONAL DE JAÉN



Técnica de recolección de datos: Observación directa









| Tesis | | ANÁLISIS VIAL EN LA INTERSECCIÓN DE LAS CALLES IQUITOS Y EJÉRCITO EMPLEANDO EL SOFTWARE SYNCHRO 10 EN LA CIUDAD DE JAÉN, 2025 | | | | | | | | | | | |
|--------------------------|------------|---|-----------|-----------|---------------|---------------------------------|----------|----------|------------------------------|----------|----------|----------------|-----------------------|
| Tesisistas | | Bach. Kelvin Jhonatan Guevara Ruiz Bach. Ever Waldir Torres Pedraza | | | | | | | | | | | |
| Asesor | | Doc. José Luis Piedra Tineo | | | | | | | | | | | |
| Fecha: Sábado 05/07/2025 | | Punto de conteo: Intersección de las calles Iquitos y Ejército | | | | Entrada: Calle Ejército (Norte) | | | Salida: Calle Ejército (Sur) | | | | |
| HORA | MOTOS | | CARGUERO | AUTO | STATION WAGON | CAMIONETAS | | | CAMIONES | | | Total por hora | Total por horas punta |
| | TAXI | LINEAL | | | | PICK UP | PANEL | COMBI | 2E | 3E | 4E | | |
| | | | | | | | | | | | | | |
| 6:00 a.m - 6:15 a.m | 4 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 173 |
| 6:15 a.m - 6:30 a.m | 5 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 8 | |
| 6:30 a.m - 6:45 a.m | 5 | 2 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 12 | |
| 6:45 a.m - 7:00 a.m | 7 | 4 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 12 | |
| 7:00 a.m - 7:15 a.m | 8 | 5 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 17 | |
| 7:15 a.m - 7:30 a.m | 8 | 4 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 14 | |
| 7:30 a.m - 7:45 a.m | 10 | 6 | 0 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 20 | |
| 7:45 a.m - 8:00 a.m | 11 | 6 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 18 | |
| 8:00 a.m - 8:15 a.m | 13 | 5 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 19 | |
| 8:15 a.m - 8:30 a.m | 10 | 8 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 19 | |
| 8:30 a.m - 8:45 a.m | 8 | 4 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 14 | |
| 8:45 a.m - 9:00 a.m | 8 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 13 | |
| 11:00 a.m - 11:15 a.m | 9 | 5 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 17 | |
| 11:15 a.m - 11:30 a.m | 9 | 5 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 15 | |
| 11:30 a.m - 11:45 a.m | 10 | 6 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 18 | |
| 11:45 a.m - 12:00 a.m | 11 | 6 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 19 | |
| 12:00 a.m - 12:15 p.m | 13 | 7 | 1 | 1 | 0 | 1 | 1 | 0 | 1 | 0 | 0 | 25 | |
| 12:15 p.m - 12:30 p.m | 12 | 6 | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 21 | |
| 12:30 p.m - 12:45 p.m | 15 | 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 23 | |
| 12:45 p.m - 13:00 p.m | 16 | 8 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 25 | |
| 13:00 p.m - 13:15 p.m | 16 | 9 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 28 | |
| 13:15 p.m - 13:30 p.m | 15 | 9 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 24 | |
| 13:30 p.m - 13:45 p.m | 12 | 7 | 1 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 22 | |
| 13:45 p.m - 14:00 p.m | 10 | 5 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 17 | |
| 16:00 p.m - 16:15 p.m | 10 | 4 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 17 | |
| 16:15 p.m - 16:30 p.m | 12 | 7 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 21 | |
| 16:30 p.m - 16:45 p.m | 10 | 6 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 19 | |
| 16:45 p.m - 17:00 p.m | 11 | 7 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 21 | |
| 17:00 p.m - 17:15 p.m | 11 | 8 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 20 | |
| 17:15 p.m - 17:30 p.m | 10 | 6 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 19 | |
| 17:30 p.m - 17:45 p.m | 9 | 4 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 15 | |
| 17:45 p.m - 18:00 p.m | 8 | 5 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 15 | |
| 18:00 p.m - 18:15 p.m | 9 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 14 | |
| 18:15 p.m - 18:30 p.m | 9 | 5 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 16 | |
| 18:30 p.m - 18:45 p.m | 10 | 4 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 15 | |
| 18:45 p.m - 19:00 p.m | 8 | 6 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 15 | |
| Total por tipo | 362 | 200 | 14 | 14 | 13 | 14 | 9 | 5 | 3 | 0 | 0 | 634 | |



UNIVERSIDAD NACIONAL DE JAÉN



Técnica de recolección de datos: Observación directa









| ANÁLISIS VIAL EN LA INTERSECCIÓN DE LAS CALLES IQUITOS Y EJÉRCITO EMPLEANDO EL SOFTWARE SYNCHRO 10 EN LA CIUDAD DE JAÉN, 2025 | | | | | | | | | | | | | |
|---|---|---|----------|------|---------------------------------|---|--|---|---|---|---|----------------|-----------------------|
| Tesis | | | | | | | | | | | | | |
| Bach. Kelvin Jhonatan Guevara Ruiz | | | | | | | | | | | | | |
| Tesistas | | | | | | | | | | | | | |
| Bach. Ever Waldir Torres Pedraza | | | | | | | | | | | | | |
| Asesor | | | | | | | | | | | | | |
| Doc. José Luis Piedra Tineo | | | | | | | | | | | | | |
| Fecha: Sábado 05/07/2025 | | | | | | | | | | | | | |
| Punto de conteo: Intersección de las calles Iquitos y Ejército | | | | | Entrada: Calle Ejército (Norte) | | | | Salida: Calle Ejército (Sur) | | | | |
| HORA | MOTOS | | CARGUERO | AUTO | STATION WAGON | CAMIONETAS | | | CAMIONES | | | Total por hora | Total por horas punta |
| | TAXI | LINEAL | | | | PICK UP | PANEL | COMBI | 2E | 3E | 4E | | |
| |  |  | | | |  |  |  |  |  |  | | |
| 6:00 a.m - 6:15 a.m | 4 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 173 |
| 6:15 a.m - 6:30 a.m | 5 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 8 | |
| 6:30 a.m - 6:45 a.m | 5 | 2 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 12 | |
| 6:45 a.m - 7:00 a.m | 7 | 4 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 12 | |
| 7:00 a.m - 7:15 a.m | 8 | 5 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 17 | |
| 7:15 a.m - 7:30 a.m | 8 | 4 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 14 | |
| 7:30 a.m - 7:45 a.m | 10 | 6 | 0 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 20 | |
| 7:45 a.m - 8:00 a.m | 11 | 6 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 18 | |
| 8:00 a.m - 8:15 a.m | 13 | 5 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 19 | |
| 8:15 a.m - 8:30 a.m | 10 | 8 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 19 | |
| 8:30 a.m - 8:45 a.m | 8 | 4 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 14 | |
| 8:45 a.m - 9:00 a.m | 8 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 13 | |
| 11:00 a.m - 11:15 a.m | 9 | 5 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 17 | 254 |
| 11:15 a.m - 11:30 a.m | 9 | 5 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 15 | |
| 11:30 a.m - 11:45 a.m | 10 | 6 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 18 | |
| 11:45 a.m - 12:00 a.m | 11 | 6 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 19 | |
| 12:00 a.m - 12:15 p.m | 13 | 7 | 1 | 1 | 0 | 1 | 1 | 0 | 1 | 0 | 0 | 25 | |
| 12:15 p.m - 12:30 p.m | 12 | 6 | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 21 | |
| 12:30 p.m - 12:45 p.m | 15 | 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 23 | |
| 12:45 p.m - 13:00 p.m | 16 | 8 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 25 | |
| 13:00 p.m - 13:15 p.m | 16 | 9 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 28 | |
| 13:15 p.m - 13:30 p.m | 15 | 9 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 24 | |
| 13:30 p.m - 13:45 p.m | 12 | 7 | 1 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 22 | |
| 13:45 p.m - 14:00 p.m | 10 | 5 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 17 | |
| 16:00 p.m - 16:15 p.m | 10 | 4 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 17 | 207 |
| 16:15 p.m - 16:30 p.m | 12 | 7 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 21 | |
| 16:30 p.m - 16:45 p.m | 10 | 6 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 19 | |
| 16:45 p.m - 17:00 p.m | 11 | 7 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 21 | |
| 17:00 p.m - 17:15 p.m | 11 | 8 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 20 | |
| 17:15 p.m - 17:30 p.m | 10 | 6 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 19 | |
| 17:30 p.m - 17:45 p.m | 9 | 4 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 15 | |
| 17:45 p.m - 18:00 p.m | 8 | 5 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 15 | |
| 18:00 p.m - 18:15 p.m | 9 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 14 | |
| 18:15 p.m - 18:30 p.m | 9 | 5 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 16 | |
| 18:30 p.m - 18:45 p.m | 10 | 4 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 15 | |
| 18:45 p.m - 19:00 p.m | 8 | 6 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 15 | |
| Total por tipo | 362 | 200 | 14 | 14 | 13 | 14 | 9 | 5 | 3 | 0 | 0 | 634 | |



UNIVERSIDAD NACIONAL DE JAÉN



Técnica de recolección de datos: Observación directa

| ANÁLISIS VIAL EN LA INTERSECCIÓN DE LAS CALLES IQUITOS Y EJÉRCITO EMPLEANDO EL SOFTWARE SYNCHRO 10 EN LA CIUDAD DE JAÉN, 2025 | | | | | | | | | | | | | |
|---|---|---|----------|------|---------------|---|--|---|---|---|---|----------------|-----------------------|
| Tesis | ANÁLISIS VIAL EN LA INTERSECCIÓN DE LAS CALLES IQUITOS Y EJÉRCITO EMPLEANDO EL SOFTWARE SYNCHRO 10 EN LA CIUDAD DE JAÉN, 2025 | | | | | | | | | | | | |
| Tesistas | Bach. Kelvin Jhonatan Guevara Ruiz Bach. Ever Waldir Torres Pedraza | | | | | | | | | | | | |
| Asesor | Doc. José Luis Piedra Tineo | | | | | | | | | | | | |
| Fecha: Sábado 05/07/2025 | Punto de conteo: Intersección de las calles Iquitos y Ejército | | | | | Entrada: Calle Ejército (Norte) | | | Salida: Calle Iquitos (Oeste) | | | | |
| HORA | MOTOS | | CARGUERO | AUTO | STATION WAGON | CAMIONETAS | | | CAMIONES | | | Total por hora | Total por horas punta |
| | TAXI | LINEAL | | | | PICK UP | PANEL | COMBI | 2E | 3E | 4E | | |
| |  |  | | | |  |  |  |  |  |  | | |
| 6:00 a.m - 6:15 a.m | 5 | 2 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 8 | 162 |
| 6:15 a.m - 6:30 a.m | 5 | 3 | 1 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 12 | |
| 6:30 a.m - 6:45 a.m | 5 | 2 | 0 | 1 | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 11 | |
| 6:45 a.m - 7:00 a.m | 6 | 3 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 11 | |
| 7:00 a.m - 7:15 a.m | 7 | 4 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 13 | |
| 7:15 a.m - 7:30 a.m | 9 | 4 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 14 | |
| 7:30 a.m - 7:45 a.m | 8 | 4 | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 16 | |
| 7:45 a.m - 8:00 a.m | 9 | 3 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 13 | |
| 8:00 a.m - 8:15 a.m | 11 | 5 | 0 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 20 | |
| 8:15 a.m - 8:30 a.m | 12 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 17 | |
| 8:30 a.m - 8:45 a.m | 8 | 6 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 16 | |
| 8:45 a.m - 9:00 a.m | 8 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 11 | |
| 11:00 a.m - 11:15 a.m | 6 | 4 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 13 | 164 |
| 11:15 a.m - 11:30 a.m | 6 | 4 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 12 | |
| 11:30 a.m - 11:45 a.m | 5 | 4 | 1 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 12 | |
| 11:45 a.m - 12:00 a.m | 5 | 3 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 11 | |
| 12:00 a.m - 12:15 p.m | 6 | 3 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 10 | |
| 12:15 p.m - 12:30 p.m | 8 | 3 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 14 | |
| 12:30 p.m - 12:45 p.m | 8 | 4 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 14 | |
| 12:45 p.m - 13:00 p.m | 9 | 3 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 13 | |
| 13:00 p.m - 13:15 p.m | 10 | 6 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 18 | |
| 13:15 p.m - 13:30 p.m | 11 | 7 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 19 | |
| 13:30 p.m - 13:45 p.m | 8 | 5 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 15 | |
| 13:45 p.m - 14:00 p.m | 8 | 4 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 13 | |
| 16:00 p.m - 16:15 p.m | 7 | 4 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 12 | 182 |
| 16:15 p.m - 16:30 p.m | 8 | 5 | 0 | 0 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 16 | |
| 16:30 p.m - 16:45 p.m | 8 | 4 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 14 | |
| 16:45 p.m - 17:00 p.m | 6 | 3 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 11 | |
| 17:00 p.m - 17:15 p.m | 8 | 5 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 14 | |
| 17:15 p.m - 17:30 p.m | 10 | 5 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 16 | |
| 17:30 p.m - 17:45 p.m | 11 | 7 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 20 | |
| 17:45 p.m - 18:00 p.m | 11 | 6 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 19 | |
| 18:00 p.m - 18:15 p.m | 12 | 7 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 21 | |
| 18:15 p.m - 18:30 p.m | 9 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 15 | |
| 18:30 p.m - 18:45 p.m | 6 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 11 | |
| 18:45 p.m - 19:00 p.m | 7 | 5 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 13 | |
| Total por tipo | 286 | 156 | 10 | 13 | 12 | 15 | 10 | 4 | 2 | 0 | 0 | 508 | |



UNIVERSIDAD NACIONAL DE JAÉN



Técnica de recolección de datos: Observación directa

| Tesis | | ANÁLISIS VIAL EN LA INTERSECCIÓN DE LAS CALLES IQUITOS Y EJÉRCITO EMPLEANDO EL SOFTWARE SYNCHRO 10 EN LA CIUDAD DE JAÉN, 2025 | | | | | | | | | | | |
|---------------------------|-------|---|----------|------|---------------|-------------------------------|-------|-------|-------------------------------|----|----|----------------|-----------------------|
| Tesistas | | Bach. Kelvin Jhonatan Guevara Ruiz Bach. Ever Waldir Torres Pedraza | | | | | | | | | | | |
| Asesor | | Doc. José Luis Piedra Tineo | | | | | | | | | | | |
| Fecha: Domingo 06/07/2025 | | Punto de conteo: Intersección de las calles Iquitos y Ejército | | | | Entrada: Calle Iquitos (Este) | | | Salida: Calle Iquitos (Oeste) | | | | |
| HORA | MOTOS | | CARGUERO | AUTO | STATION WAGON | CAMIONETAS | | | CAMIONES | | | Total por hora | Total por horas punta |
| | TAXI | LINEAL | | | | PICK UP | PANEL | COMBI | 2E | 3E | 4E | | |
| | | | | | | | | | | | | | |
| 6:00 a.m - 6:15 a.m | 11 | 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 19 | 944 |
| 6:15 a.m - 6:30 a.m | 18 | 10 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 30 | |
| 6:30 a.m - 6:45 a.m | 19 | 12 | 1 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 34 | |
| 6:45 a.m - 7:00 a.m | 36 | 20 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 56 | |
| 7:00 a.m - 7:15 a.m | 48 | 25 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 76 | |
| 7:15 a.m - 7:30 a.m | 59 | 29 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 89 | |
| 7:30 a.m - 7:45 a.m | 68 | 35 | 0 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 108 | |
| 7:45 a.m - 8:00 a.m | 72 | 39 | 0 | 0 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 114 | |
| 8:00 a.m - 8:15 a.m | 75 | 42 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 119 | |
| 8:15 a.m - 8:30 a.m | 67 | 38 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 106 | |
| 8:30 a.m - 8:45 a.m | 63 | 34 | 0 | 1 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 101 | |
| 8:45 a.m - 9:00 a.m | 59 | 33 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 92 | |
| 11:00 a.m - 11:15 a.m | 43 | 26 | 1 | 1 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 74 | 1023 |
| 11:15 a.m - 11:30 a.m | 49 | 28 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 80 | |
| 11:30 a.m - 11:45 a.m | 52 | 30 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 83 | |
| 11:45 a.m - 12:00 a.m | 54 | 30 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 85 | |
| 12:00 a.m - 12:15 p.m | 59 | 34 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 99 | |
| 12:15 p.m - 12:30 p.m | 63 | 37 | 0 | 2 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 104 | |
| 12:30 p.m - 12:45 p.m | 66 | 41 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 111 | |
| 12:45 p.m - 13:00 p.m | 59 | 31 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 93 | |
| 13:00 p.m - 13:15 p.m | 53 | 33 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 87 | |
| 13:15 p.m - 13:30 p.m | 50 | 29 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 79 | |
| 13:30 p.m - 13:45 p.m | 45 | 27 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 73 | |
| 13:45 p.m - 14:00 p.m | 35 | 20 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 55 | |
| 16:00 p.m - 16:15 p.m | 33 | 19 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 54 | 915 |
| 16:15 p.m - 16:30 p.m | 38 | 22 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 62 | |
| 16:30 p.m - 16:45 p.m | 40 | 23 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 66 | |
| 16:45 p.m - 17:00 p.m | 44 | 28 | 0 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 75 | |
| 17:00 p.m - 17:15 p.m | 47 | 30 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 79 | |
| 17:15 p.m - 17:30 p.m | 46 | 33 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 81 | |
| 17:30 p.m - 17:45 p.m | 51 | 39 | 0 | 1 | 1 | 3 | 0 | 0 | 0 | 0 | 0 | 95 | |
| 17:45 p.m - 18:00 p.m | 50 | 36 | 1 | 1 | 1 | 3 | 0 | 1 | 0 | 0 | 0 | 93 | |
| 18:00 p.m - 18:15 p.m | 52 | 35 | 0 | 1 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 91 | |
| 18:15 p.m - 18:30 p.m | 46 | 30 | 0 | 0 | 1 | 3 | 0 | 0 | 0 | 0 | 0 | 80 | |
| 18:30 p.m - 18:45 p.m | 41 | 26 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 69 | |
| 18:45 p.m - 19:00 p.m | 43 | 25 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 70 | |
| Total por tipo | 1754 | 1037 | 10 | 20 | 20 | 27 | 6 | 7 | 1 | 0 | 0 | 2882 | |



UNIVERSIDAD NACIONAL DE JAÉN



Técnica de recolección de datos: Observación directa

| ANÁLISIS VIAL EN LA INTERSECCIÓN DE LAS CALLES IQUITOS Y EJÉRCITO EMPLEANDO EL SOFTWARE SYNCHRO 10 EN LA CIUDAD DE JAÉN, 2025 | | | | | | | | | | | | | |
|---|-------|--------|----------|------|-------------------------------|------------|-------|-------|--------------------------------|----|----|----------------|-----------------------|
| Tesis | | | | | | | | | | | | | |
| Bach. Kelvin Jhonatan Guevara Ruiz | | | | | | | | | | | | | |
| Bach. Ever Waldir Torres Pedraza | | | | | | | | | | | | | |
| Asesor | | | | | | | | | | | | | |
| Doc. José Luis Piedra Tineo | | | | | | | | | | | | | |
| Fecha: Domingo 06/07/2025 | | | | | | | | | | | | | |
| Punto de conteo: Intersección de las calles Iquitos y Ejército | | | | | Entrada: Calle Iquitos (Este) | | | | Salida: Calle Ejército (Norte) | | | | |
| HORA | MOTOS | | CARGUERO | AUTO | STATION WAGON | CAMIONETAS | | | CAMIONES | | | Total por hora | Total por horas punta |
| | TAXI | LINEAL | | | | PICK UP | PANEL | COMBI | 2E | 3E | 4E | | |
| | | | | | | | | | | | | | |
| 6:00 a.m - 6:15 a.m | 5 | 2 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 9 | 367 |
| 6:15 a.m - 6:30 a.m | 6 | 3 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 10 | |
| 6:30 a.m - 6:45 a.m | 6 | 3 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 11 | |
| 6:45 a.m - 7:00 a.m | 11 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 17 | |
| 7:00 a.m - 7:15 a.m | 13 | 7 | 1 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 23 | |
| 7:15 a.m - 7:30 a.m | 17 | 9 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 26 | |
| 7:30 a.m - 7:45 a.m | 20 | 11 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 33 | |
| 7:45 a.m - 8:00 a.m | 24 | 12 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 36 | |
| 8:00 a.m - 8:15 a.m | 28 | 15 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 45 | |
| 8:15 a.m - 8:30 a.m | 34 | 18 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 53 | |
| 8:30 a.m - 8:45 a.m | 30 | 17 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 49 | |
| 8:45 a.m - 9:00 a.m | 35 | 20 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 55 | |
| 11:00 a.m - 11:15 a.m | 16 | 11 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 31 | 287 |
| 11:15 a.m - 11:30 a.m | 17 | 10 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 29 | |
| 11:30 a.m - 11:45 a.m | 14 | 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 24 | |
| 11:45 a.m - 12:00 a.m | 16 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 22 | |
| 12:00 a.m - 12:15 p.m | 15 | 8 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 26 | |
| 12:15 p.m - 12:30 p.m | 19 | 8 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 29 | |
| 12:30 p.m - 12:45 p.m | 15 | 8 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 24 | |
| 12:45 p.m - 13:00 p.m | 12 | 6 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 19 | |
| 13:00 p.m - 13:15 p.m | 13 | 5 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 22 | |
| 13:15 p.m - 13:30 p.m | 13 | 6 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 20 | |
| 13:30 p.m - 13:45 p.m | 14 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 21 | |
| 13:45 p.m - 14:00 p.m | 13 | 6 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 20 | |
| 16:00 p.m - 16:15 p.m | 12 | 5 | 1 | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 22 | 306 |
| 16:15 p.m - 16:30 p.m | 12 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 18 | |
| 16:30 p.m - 16:45 p.m | 13 | 7 | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 24 | |
| 16:45 p.m - 17:00 p.m | 12 | 7 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 20 | |
| 17:00 p.m - 17:15 p.m | 13 | 7 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 22 | |
| 17:15 p.m - 17:30 p.m | 15 | 8 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 24 | |
| 17:30 p.m - 17:45 p.m | 16 | 9 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 28 | |
| 17:45 p.m - 18:00 p.m | 16 | 6 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 23 | |
| 18:00 p.m - 18:15 p.m | 19 | 10 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 30 | |
| 18:15 p.m - 18:30 p.m | 21 | 12 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 33 | |
| 18:30 p.m - 18:45 p.m | 25 | 11 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 38 | |
| 18:45 p.m - 19:00 p.m | 16 | 7 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 24 | |
| Total por tipo | 596 | 309 | 11 | 12 | 10 | 11 | 4 | 6 | 1 | 0 | 0 | 960 | |



UNIVERSIDAD NACIONAL DE JAÉN



Técnica de recolección de datos: Observación directa

| ANÁLISIS VIAL EN LA INTERSECCIÓN DE LAS CALLES IQUITOS Y EJÉRCITO EMPLEANDO EL SOFTWARE SYNCHRO 10 EN LA CIUDAD DE JAÉN, 2025 | | | | | | | | | | | | | |
|---|-------|--------|----------|------|-------------------------------|------------|-------|-------|------------------------------|----|----|----------------|-----------------------|
| Tesis | | | | | | | | | | | | | |
| Bach. Kelvin Jhonatan Guevara Ruiz | | | | | | | | | | | | | |
| Bach. Ever Waldir Torres Pedraza | | | | | | | | | | | | | |
| Asesor | | | | | | | | | | | | | |
| Doc. José Luis Piedra Tineo | | | | | | | | | | | | | |
| Fecha: Domingo 06/07/2025 | | | | | | | | | | | | | |
| Punto de conteo: Intersección de las calles Iquitos y Ejército | | | | | Entrada: Calle Iquitos (Este) | | | | Salida: Calle Ejército (Sur) | | | | |
| HORA | MOTOS | | CARGUERO | AUTO | STATION WAGON | CAMIONETAS | | | CAMIONES | | | Total por hora | Total por horas punta |
| | TAXI | LINEAL | | | | PICK UP | PANEL | COMBI | 2E | 3E | 4E | | |
| | | | | | | | | | | | | | |
| 6:00 a.m - 6:15 a.m | 4 | 2 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 7 | 214 |
| 6:15 a.m - 6:30 a.m | 5 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 8 | |
| 6:30 a.m - 6:45 a.m | 8 | 5 | 0 | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 16 | |
| 6:45 a.m - 7:00 a.m | 10 | 6 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 17 | |
| 7:00 a.m - 7:15 a.m | 11 | 5 | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 20 | |
| 7:15 a.m - 7:30 a.m | 11 | 6 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 19 | |
| 7:30 a.m - 7:45 a.m | 13 | 5 | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | 0 | 23 | |
| 7:45 a.m - 8:00 a.m | 12 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 18 | |
| 8:00 a.m - 8:15 a.m | 15 | 7 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 24 | |
| 8:15 a.m - 8:30 a.m | 16 | 9 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 26 | |
| 8:30 a.m - 8:45 a.m | 10 | 6 | 1 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 19 | |
| 8:45 a.m - 9:00 a.m | 10 | 6 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 17 | |
| 11:00 a.m - 11:15 a.m | 9 | 6 | 0 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 19 | |
| 11:15 a.m - 11:30 a.m | 8 | 3 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 13 | |
| 11:30 a.m - 11:45 a.m | 8 | 5 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 16 | |
| 11:45 a.m - 12:00 a.m | 10 | 5 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 16 | |
| 12:00 a.m - 12:15 p.m | 8 | 3 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 14 | |
| 12:15 p.m - 12:30 p.m | 12 | 7 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 21 | |
| 12:30 p.m - 12:45 p.m | 14 | 7 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 23 | |
| 12:45 p.m - 13:00 p.m | 17 | 9 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 27 | |
| 13:00 p.m - 13:15 p.m | 21 | 12 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 34 | |
| 13:15 p.m - 13:30 p.m | 20 | 13 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 34 | |
| 13:30 p.m - 13:45 p.m | 14 | 8 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 24 | |
| 13:45 p.m - 14:00 p.m | 12 | 6 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 19 | |
| 16:00 p.m - 16:15 p.m | 9 | 5 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 17 | |
| 16:15 p.m - 16:30 p.m | 9 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 14 | |
| 16:30 p.m - 16:45 p.m | 11 | 5 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 17 | |
| 16:45 p.m - 17:00 p.m | 9 | 5 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 16 | |
| 17:00 p.m - 17:15 p.m | 11 | 6 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 19 | |
| 17:15 p.m - 17:30 p.m | 13 | 5 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 19 | |
| 17:30 p.m - 17:45 p.m | 16 | 12 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 29 | |
| 17:45 p.m - 18:00 p.m | 19 | 10 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 30 | |
| 18:00 p.m - 18:15 p.m | 22 | 11 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 35 | |
| 18:15 p.m - 18:30 p.m | 24 | 13 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 38 | |
| 18:30 p.m - 18:45 p.m | 20 | 11 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 31 | |
| 18:45 p.m - 19:00 p.m | 20 | 13 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 33 | |
| Total por tipo | 461 | 250 | 8 | 10 | 15 | 14 | 5 | 8 | 1 | 0 | 0 | 772 | |



UNIVERSIDAD NACIONAL DE JAÉN



Técnica de recolección de datos: Observación directa









| ANÁLISIS VIAL EN LA INTERSECCIÓN DE LAS CALLES IQUITOS Y EJÉRCITO EMPLEANDO EL SOFTWARE SYNCHRO 10 EN LA CIUDAD DE JAÉN, 2025 | | | | | | | | | | | | | |
|---|-------|--------|----------|------|-------------------------------|------------|-------|-------|--------------------------------|----|----|----------------|-----------------------|
| Tesis | | | | | | | | | | | | | |
| Bach. Kelvin Jhonatan Guevara Ruiz | | | | | | | | | | | | | |
| Bach. Ever Waldir Torres Pedraza | | | | | | | | | | | | | |
| Asesor | | | | | | | | | | | | | |
| Doc. José Luis Piedra Tineo | | | | | | | | | | | | | |
| Fecha: Domingo 06/07/2025 | | | | | | | | | | | | | |
| Punto de conteo: Intersección de las calles Iquitos y Ejército | | | | | Entrada: Calle Ejército (Sur) | | | | Salida: Calle Ejército (Norte) | | | | |
| HORA | MOTOS | | CARGUERO | AUTO | STATION WAGON | CAMIONETAS | | | CAMIONES | | | Total por hora | Total por horas punta |
| | TAXI | LINEAL | | | | PICK UP | PANEL | COMBI | 2E | 3E | 4E | | |
| | | | | | | | | | | | | | |
| 6:00 a.m - 6:15 a.m | 3 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 6 | 275 |
| 6:15 a.m - 6:30 a.m | 5 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | |
| 6:30 a.m - 6:45 a.m | 7 | 3 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 14 | |
| 6:45 a.m - 7:00 a.m | 10 | 6 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 17 | |
| 7:00 a.m - 7:15 a.m | 12 | 6 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 19 | |
| 7:15 a.m - 7:30 a.m | 12 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 17 | |
| 7:30 a.m - 7:45 a.m | 16 | 6 | 1 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 25 | |
| 7:45 a.m - 8:00 a.m | 17 | 8 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 29 | |
| 8:00 a.m - 8:15 a.m | 20 | 13 | 0 | 0 | 0 | 1 | 1 | 0 | 1 | 0 | 0 | 36 | |
| 8:15 a.m - 8:30 a.m | 24 | 12 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 36 | |
| 8:30 a.m - 8:45 a.m | 23 | 12 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 36 | |
| 8:45 a.m - 9:00 a.m | 20 | 12 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 33 | |
| 11:00 a.m - 11:15 a.m | 12 | 6 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 19 | 220 |
| 11:15 a.m - 11:30 a.m | 13 | 9 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 25 | |
| 11:30 a.m - 11:45 a.m | 9 | 5 | 0 | 0 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 17 | |
| 11:45 a.m - 12:00 a.m | 10 | 4 | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 17 | |
| 12:00 a.m - 12:15 p.m | 12 | 7 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 20 | |
| 12:15 p.m - 12:30 p.m | 12 | 7 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 20 | |
| 12:30 p.m - 12:45 p.m | 10 | 7 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 19 | |
| 12:45 p.m - 13:00 p.m | 8 | 5 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 14 | |
| 13:00 p.m - 13:15 p.m | 13 | 6 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 20 | |
| 13:15 p.m - 13:30 p.m | 12 | 6 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 19 | |
| 13:30 p.m - 13:45 p.m | 10 | 5 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 17 | |
| 13:45 p.m - 14:00 p.m | 8 | 4 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 13 | |
| 16:00 p.m - 16:15 p.m | 10 | 6 | 0 | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 19 | 296 |
| 16:15 p.m - 16:30 p.m | 12 | 6 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 21 | |
| 16:30 p.m - 16:45 p.m | 13 | 6 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 20 | |
| 16:45 p.m - 17:00 p.m | 12 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 17 | |
| 17:00 p.m - 17:15 p.m | 12 | 5 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 19 | |
| 17:15 p.m - 17:30 p.m | 15 | 7 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 24 | |
| 17:30 p.m - 17:45 p.m | 18 | 9 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 27 | |
| 17:45 p.m - 18:00 p.m | 21 | 11 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 33 | |
| 18:00 p.m - 18:15 p.m | 22 | 13 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 37 | |
| 18:15 p.m - 18:30 p.m | 20 | 14 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 35 | |
| 18:30 p.m - 18:45 p.m | 14 | 6 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 23 | |
| 18:45 p.m - 19:00 p.m | 12 | 9 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 21 | |
| Total por tipo | 479 | 255 | 8 | 12 | 11 | 14 | 5 | 5 | 2 | 0 | 0 | 791 | |



UNIVERSIDAD NACIONAL DE JAÉN



Técnica de recolección de datos: Observación directa

| ANÁLISIS VIAL EN LA INTERSECCIÓN DE LAS CALLES IQUITOS Y EJÉRCITO EMPLEANDO EL SOFTWARE SYNCHRO 10 EN LA CIUDAD DE JAÉN, 2025 | | | | | | | | | | | | | |
|---|---|---|-----------|-----------|-------------------------------|---|--|---|---|---|---|----------------|-----------------------|
| Tesis | | | | | | | | | | | | | |
| Bach. Kelvin Jhonatan Guevara Ruiz | | | | | | | | | | | | | |
| Bach. Ever Waldir Torres Pedraza | | | | | | | | | | | | | |
| Asesor | | | | | | | | | | | | | |
| Doc. José Luis Piedra Tineo | | | | | | | | | | | | | |
| Fecha: Domingo 06/07/2025 | | | | | | | | | | | | | |
| Punto de conteo: Intersección de las calles Iquitos y Ejército | | | | | Entrada: Calle Ejército (Sur) | | | | Salida: Calle Iquitos (Oeste) | | | | |
| HORA | MOTOS | | CARGUERO | AUTO | STATION WAGON | CAMIONETAS | | | CAMIONES | | | Total por hora | Total por horas punta |
| | TAXI | LINEAL | | | | PICK UP | PANEL | COMBI | 2E | 3E | 4E | | |
| |  |  | | | |  |  |  |  |  |  | | |
| 6:00 a.m - 6:15 a.m | 2 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 3 | 142 |
| 6:15 a.m - 6:30 a.m | 3 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 5 | |
| 6:30 a.m - 6:45 a.m | 5 | 2 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 8 | |
| 6:45 a.m - 7:00 a.m | 7 | 4 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 12 | |
| 7:00 a.m - 7:15 a.m | 7 | 3 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 13 | |
| 7:15 a.m - 7:30 a.m | 7 | 3 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 11 | |
| 7:30 a.m - 7:45 a.m | 8 | 5 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 15 | |
| 7:45 a.m - 8:00 a.m | 7 | 3 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 12 | |
| 8:00 a.m - 8:15 a.m | 10 | 6 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 19 | |
| 8:15 a.m - 8:30 a.m | 11 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 17 | |
| 8:30 a.m - 8:45 a.m | 11 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 16 | |
| 8:45 a.m - 9:00 a.m | 8 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 11 | |
| 11:00 a.m - 11:15 a.m | 7 | 4 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 14 | |
| 11:15 a.m - 11:30 a.m | 6 | 3 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 10 | |
| 11:30 a.m - 11:45 a.m | 7 | 3 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 12 | |
| 11:45 a.m - 12:00 a.m | 7 | 3 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 12 | |
| 12:00 a.m - 12:15 p.m | 6 | 4 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 13 | |
| 12:15 p.m - 12:30 p.m | 6 | 3 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 10 | |
| 12:30 p.m - 12:45 p.m | 8 | 5 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 15 | |
| 12:45 p.m - 13:00 p.m | 6 | 3 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 12 | |
| 13:00 p.m - 13:15 p.m | 9 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 13 | |
| 13:15 p.m - 13:30 p.m | 10 | 5 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 17 | |
| 13:30 p.m - 13:45 p.m | 12 | 7 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 20 | |
| 13:45 p.m - 14:00 p.m | 10 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 16 | |
| 16:00 p.m - 16:15 p.m | 6 | 3 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 12 | |
| 16:15 p.m - 16:30 p.m | 5 | 3 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 9 | |
| 16:30 p.m - 16:45 p.m | 6 | 4 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 13 | |
| 16:45 p.m - 17:00 p.m | 6 | 3 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 11 | |
| 17:00 p.m - 17:15 p.m | 5 | 3 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 10 | |
| 17:15 p.m - 17:30 p.m | 7 | 4 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 13 | |
| 17:30 p.m - 17:45 p.m | 6 | 3 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 10 | |
| 17:45 p.m - 18:00 p.m | 5 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | |
| 18:00 p.m - 18:15 p.m | 8 | 5 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 16 | |
| 18:15 p.m - 18:30 p.m | 10 | 6 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 18 | |
| 18:30 p.m - 18:45 p.m | 10 | 6 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 17 | |
| 18:45 p.m - 19:00 p.m | 12 | 8 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 21 | |
| Total por tipo | 266 | 139 | 11 | 14 | 11 | 14 | 2 | 6 | 0 | 0 | 0 | 463 | |



UNIVERSIDAD NACIONAL DE JAÉN



Técnica de recolección de datos: Observación directa









| Tesis | | ANÁLISIS VIAL EN LA INTERSECCIÓN DE LAS CALLES IQUITOS Y EJÉRCITO EMPLEANDO EL SOFTWARE SYNCHRO 10 EN LA CIUDAD DE JAÉN, 2025 | | | | | | | | | | | |
|---------------------------|------------|---|-----------|-----------|---------------|---------------------------------|----------|----------|------------------------------|----------|----------|----------------|-----------------------|
| Tesisistas | | Bach. Kelvin Jhonatan Guevara Ruiz Bach. Ever Waldir Torres Pedraza | | | | | | | | | | | |
| Asesor | | Doc. José Luis Piedra Tineo | | | | | | | | | | | |
| Fecha: Domingo 06/07/2025 | | Punto de conteo: Intersección de las calles Iquitos y Ejército | | | | Entrada: Calle Ejército (Norte) | | | Salida: Calle Ejército (Sur) | | | | |
| HORA | MOTOS | | CARGUERO | AUTO | STATION WAGON | CAMIONETAS | | | CAMIONES | | | Total por hora | Total por horas punta |
| | TAXI | LINEAL | | | | PICK UP | PANEL | COMBI | 2E | 3E | 4E | | |
| | | | | | | | | | | | | | |
| 6:00 a.m - 6:15 a.m | 2 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 131 |
| 6:15 a.m - 6:30 a.m | 2 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | |
| 6:30 a.m - 6:45 a.m | 5 | 1 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 8 | |
| 6:45 a.m - 7:00 a.m | 6 | 3 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 11 | |
| 7:00 a.m - 7:15 a.m | 7 | 3 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 14 | |
| 7:15 a.m - 7:30 a.m | 6 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 8 | |
| 7:30 a.m - 7:45 a.m | 8 | 5 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 15 | |
| 7:45 a.m - 8:00 a.m | 7 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 10 | |
| 8:00 a.m - 8:15 a.m | 9 | 4 | 1 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 16 | |
| 8:15 a.m - 8:30 a.m | 10 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 13 | |
| 8:30 a.m - 8:45 a.m | 10 | 5 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 17 | |
| 8:45 a.m - 9:00 a.m | 7 | 4 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 12 | |
| 11:00 a.m - 11:15 a.m | 7 | 4 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 14 | 146 |
| 11:15 a.m - 11:30 a.m | 6 | 2 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9 | |
| 11:30 a.m - 11:45 a.m | 5 | 3 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 10 | |
| 11:45 a.m - 12:00 a.m | 5 | 3 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9 | |
| 12:00 a.m - 12:15 p.m | 6 | 4 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 12 | |
| 12:15 p.m - 12:30 p.m | 6 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 8 | |
| 12:30 p.m - 12:45 p.m | 5 | 4 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 11 | |
| 12:45 p.m - 13:00 p.m | 7 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 10 | |
| 13:00 p.m - 13:15 p.m | 9 | 4 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 16 | |
| 13:15 p.m - 13:30 p.m | 9 | 5 | 0 | 0 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 17 | |
| 13:30 p.m - 13:45 p.m | 9 | 5 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 16 | |
| 13:45 p.m - 14:00 p.m | 8 | 4 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 14 | |
| 16:00 p.m - 16:15 p.m | 7 | 2 | 1 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 13 | 132 |
| 16:15 p.m - 16:30 p.m | 8 | 2 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 12 | |
| 16:30 p.m - 16:45 p.m | 5 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | |
| 16:45 p.m - 17:00 p.m | 5 | 3 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 10 | |
| 17:00 p.m - 17:15 p.m | 5 | 3 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 9 | |
| 17:15 p.m - 17:30 p.m | 6 | 2 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 10 | |
| 17:30 p.m - 17:45 p.m | 5 | 3 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 9 | |
| 17:45 p.m - 18:00 p.m | 5 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | |
| 18:00 p.m - 18:15 p.m | 7 | 5 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 13 | |
| 18:15 p.m - 18:30 p.m | 9 | 3 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 13 | |
| 18:30 p.m - 18:45 p.m | 10 | 3 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 15 | |
| 18:45 p.m - 19:00 p.m | 9 | 5 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 15 | |
| Total por tipo | 242 | 111 | 10 | 11 | 11 | 15 | 5 | 4 | 0 | 0 | 0 | 409 | |






UNIVERSIDAD NACIONAL DE JAÉN






Técnica de recolección de datos: Observación directa

| Tesis | | ANÁLISIS VIAL EN LA INTERSECCIÓN DE LAS CALLES IQUITOS Y EJÉRCITO EMPLEANDO EL SOFTWARE SYNCHRO 10 EN LA CIUDAD DE JAÉN, 2025 | | | | | | | | | | | |
|---------------------------|---|---|----------|------|---------------|---|--|---|---|---|---|----------------|-----------------------|
| Tesisistas | | Bach. Kelvin Jhonatan Guevara Ruiz Bach. Ever Waldir Torres Pedraza | | | | | | | | | | | |
| Asesor | | Doc. José Luis Piedra Tineo | | | | | | | | | | | |
| Fecha: Domingo 06/07/2025 | | Punto de conteo: Intersección de las calles Iquitos y Ejército | | | | Entrada: Calle Ejército (Norte) | | | Salida: Calle Iquitos (Oeste) | | | | |
| HORA | MOTOS | | CARGUERO | AUTO | STATION WAGON | CAMIONETAS | | | CAMIONES | | | Total por hora | Total por horas punta |
| | TAXI | LINEAL | | | | PICK UP | PANEL | COMBI | 2E | 3E | 4E | | |
| |  |  | | | |  |  |  |  |  |  | | |
| 6:00 a.m - 6:15 a.m | 1 | 0 | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 4 | 131 |
| 6:15 a.m - 6:30 a.m | 2 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 4 | |
| 6:30 a.m - 6:45 a.m | 4 | 0 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 7 | |
| 6:45 a.m - 7:00 a.m | 6 | 2 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 9 | |
| 7:00 a.m - 7:15 a.m | 6 | 3 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 11 | |
| 7:15 a.m - 7:30 a.m | 7 | 4 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 12 | |
| 7:30 a.m - 7:45 a.m | 8 | 3 | 1 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 15 | |
| 7:45 a.m - 8:00 a.m | 8 | 5 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 14 | |
| 8:00 a.m - 8:15 a.m | 9 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 14 | |
| 8:15 a.m - 8:30 a.m | 9 | 4 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 14 | |
| 8:30 a.m - 8:45 a.m | 8 | 3 | 1 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 15 | |
| 8:45 a.m - 9:00 a.m | 7 | 4 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 12 | |
| 11:00 a.m - 11:15 a.m | 6 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9 | 131 |
| 11:15 a.m - 11:30 a.m | 6 | 2 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 10 | |
| 11:30 a.m - 11:45 a.m | 5 | 2 | 1 | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 12 | |
| 11:45 a.m - 12:00 a.m | 4 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | |
| 12:00 a.m - 12:15 p.m | 4 | 4 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 10 | |
| 12:15 p.m - 12:30 p.m | 6 | 2 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 10 | |
| 12:30 p.m - 12:45 p.m | 5 | 2 | 0 | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 11 | |
| 12:45 p.m - 13:00 p.m | 6 | 3 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 10 | |
| 13:00 p.m - 13:15 p.m | 9 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 14 | |
| 13:15 p.m - 13:30 p.m | 8 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 13 | |
| 13:30 p.m - 13:45 p.m | 8 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 12 | |
| 13:45 p.m - 14:00 p.m | 9 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 13 | |
| 16:00 p.m - 16:15 p.m | 6 | 3 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 10 | 120 |
| 16:15 p.m - 16:30 p.m | 8 | 2 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 12 | |
| 16:30 p.m - 16:45 p.m | 5 | 3 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9 | |
| 16:45 p.m - 17:00 p.m | 6 | 2 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 9 | |
| 17:00 p.m - 17:15 p.m | 5 | 3 | 1 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 11 | |
| 17:15 p.m - 17:30 p.m | 5 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 8 | |
| 17:30 p.m - 17:45 p.m | 5 | 2 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 9 | |
| 17:45 p.m - 18:00 p.m | 4 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | |
| 18:00 p.m - 18:15 p.m | 7 | 3 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 11 | |
| 18:15 p.m - 18:30 p.m | 6 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9 | |
| 18:30 p.m - 18:45 p.m | 8 | 5 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 14 | |
| 18:45 p.m - 19:00 p.m | 6 | 5 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 12 | |
| Total por tipo | 222 | 107 | 9 | 8 | 13 | 11 | 5 | 7 | 0 | 0 | 0 | 382 | |

|  UNIVERSIDAD NACIONAL DE JAÉN  | | | | | | | | | | | | | |
|---|---|---|---|---|--|---|---|---|---|---|---|----------------|-----------------------|
| Técnica de recolección de datos: Observación directa | | | | | | | | | | | | | |
| Tesis | ANÁLISIS VIAL EN LA INTERSECCIÓN DE LAS CALLES IQUITOS Y EJÉRCITO EMPLEANDO EL SOFTWARE SYNCHRO 10 EN LA CIUDAD DE JAÉN, 2025 | | | | | | | | | | | | |
| Testistas | Bach. Kelvin Jhonatan Guevara Ruiz Bach. Ever Waldir Torres Pedraza | | | | | | | | | | | | |
| Asesor | Doc. José Luis Piedra Tineo | | | | | | | | | | | | |
| Fecha: Lunes 07/07/2025 | Punto de conteo: Intersección de las calles Iquitos y Ejército | | | | | | | | | | | | |
| | Entrada: Calle Iquitos (Este) Salida: Calle Iquitos (Oeste) | | | | | | | | | | | | |
| HORA | MOTOS | | CARGUERO | AUTO | STATION WAGON | CAMIONETAS | | | CAMIONES | | | Total por hora | Total por horas punta |
| | TAXI | LINEAL | | | | PICK UP | PANEL | COMBI | 2E | 3E | 4E | | |
| |  |  |  |  |  |  |  |  |  |  |  | | |
| 6:00 a.m - 6:15 a.m | 14 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 20 | |
| 6:15 a.m - 6:30 a.m | 24 | 11 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 35 | |
| 6:30 a.m - 6:45 a.m | 40 | 13 | 2 | 0 | 0 | 2 | 2 | 1 | 1 | 0 | 0 | 61 | |
| 6:45 a.m - 7:00 a.m | 48 | 20 | 0 | 1 | 1 | 1 | 0 | 1 | 2 | 0 | 0 | 74 | |
| 7:00 a.m - 7:15 a.m | 86 | 29 | 1 | 2 | 3 | 2 | 2 | 2 | 2 | 0 | 0 | 129 | |
| 7:15 a.m - 7:30 a.m | 89 | 36 | 1 | 0 | 2 | 1 | 0 | 0 | 1 | 0 | 0 | 130 | |
| 7:30 a.m - 7:45 a.m | 105 | 47 | 0 | 2 | 1 | 3 | 1 | 0 | 0 | 0 | 0 | 159 | |
| 7:45 a.m - 8:00 a.m | 125 | 53 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 178 | |
| 8:00 a.m - 8:15 a.m | 111 | 55 | 1 | 1 | 3 | 2 | 0 | 0 | 0 | 0 | 0 | 173 | |
| 8:15 a.m - 8:30 a.m | 100 | 50 | 0 | 0 | 4 | 3 | 0 | 0 | 0 | 0 | 0 | 157 | |
| 8:30 a.m - 8:45 a.m | 81 | 37 | 0 | 0 | 3 | 1 | 0 | 0 | 0 | 0 | 0 | 122 | |
| 8:45 a.m - 9:00 a.m | 69 | 35 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 105 | |
| 11:00 a.m - 11:15 a.m | 85 | 34 | 1 | 2 | 0 | 1 | 1 | 0 | 1 | 0 | 0 | 125 | |
| 11:15 a.m - 11:30 a.m | 90 | 45 | 0 | 2 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 138 | |
| 11:30 a.m - 11:45 a.m | 96 | 46 | 2 | 2 | 0 | 1 | 2 | 1 | 0 | 0 | 0 | 150 | |
| 11:45 a.m - 12:00 p.m | 104 | 54 | 1 | 1 | 3 | 2 | 1 | 0 | 1 | 0 | 0 | 167 | |
| 12:00 p.m - 12:15 p.m | 106 | 70 | 2 | 2 | 2 | 1 | 1 | 2 | 0 | 0 | 0 | 186 | |
| 12:15 p.m - 12:30 p.m | 160 | 70 | 0 | 2 | 1 | 2 | 1 | 0 | 0 | 0 | 0 | 236 | |
| 12:30 p.m - 12:45 p.m | 143 | 85 | 2 | 4 | 1 | 3 | 0 | 2 | 1 | 0 | 0 | 241 | |
| 12:45 p.m - 13:00 p.m | 148 | 90 | 1 | 6 | 2 | 3 | 0 | 0 | 1 | 0 | 0 | 251 | |
| 13:00 p.m - 13:15 p.m | 156 | 94 | 0 | 5 | 1 | 4 | 0 | 1 | 0 | 0 | 0 | 261 | |
| 13:15 p.m - 13:30 p.m | 134 | 90 | 0 | 3 | 2 | 3 | 0 | 0 | 0 | 0 | 0 | 232 | |
| 13:30 p.m - 13:45 p.m | 122 | 75 | 0 | 2 | 2 | 3 | 0 | 0 | 0 | 0 | 0 | 204 | |
| 13:45 p.m - 14:00 p.m | 100 | 70 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 171 | |
| 16:00 p.m - 16:15 p.m | 65 | 45 | 0 | 0 | 0 | 2 | 0 | 1 | 1 | 0 | 0 | 114 | |
| 16:15 p.m - 16:30 p.m | 70 | 54 | 0 | 0 | 2 | 0 | 2 | 1 | 0 | 0 | 0 | 129 | |
| 16:30 p.m - 16:45 p.m | 70 | 70 | 2 | 1 | 2 | 1 | 0 | 3 | 2 | 0 | 0 | 151 | |
| 16:45 p.m - 17:00 p.m | 80 | 70 | 0 | 2 | 3 | 2 | 0 | 0 | 1 | 0 | 0 | 158 | |
| 17:00 p.m - 17:15 p.m | 93 | 95 | 2 | 3 | 3 | 3 | 1 | 2 | 0 | 0 | 0 | 202 | |
| 17:15 p.m - 17:30 p.m | 90 | 91 | 1 | 1 | 1 | 3 | 1 | 1 | 2 | 0 | 0 | 191 | |
| 17:30 p.m - 17:45 p.m | 105 | 95 | 2 | 3 | 2 | 6 | 1 | 3 | 0 | 0 | 0 | 217 | |
| 17:45 p.m - 18:00 p.m | 116 | 90 | 2 | 2 | 2 | 3 | 0 | 2 | 0 | 0 | 0 | 217 | |
| 18:00 p.m - 18:15 p.m | 110 | 86 | 0 | 3 | 3 | 4 | 0 | 0 | 0 | 0 | 0 | 206 | |
| 18:15 p.m - 18:30 p.m | 100 | 90 | 0 | 2 | 1 | 4 | 0 | 0 | 0 | 0 | 0 | 197 | |
| 18:30 p.m - 18:45 p.m | 105 | 81 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 187 | |
| 18:45 p.m - 19:00 p.m | 110 | 69 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 181 | |
| Total por tipo | 3450 | 2151 | 23 | 54 | 51 | 70 | 16 | 23 | 17 | 0 | 0 | 5855 | |

| UNIVERSIDAD NACIONAL DE JAÉN | | | | | | | | | | | | | |
|--|---|---|---|--|---|---|---|---|---|---|---|----------------|-----------------------|
| Técnica de recolección de datos: Observación directa | | | | | | | | | | | | | |
| Tesis | ANÁLISIS VIAL EN LA INTERSECCIÓN DE LAS CALLES IQUITOS Y EJÉRCITO EMPLEANDO EL SOFTWARE SYNCHRO 10 EN LA CIUDAD DE JAÉN, 2025 | | | | | | | | | | | | |
| Testistas | Bach. Kelvin Jhonatan Guevara Ruiz Bach. Ever Waldir Torres Pedraza | | | | | | | | | | | | |
| Asesor | Doc. José Luis Piedra Tineo | | | | | | | | | | | | |
| Fecha: Lunes 07/07/2025 | Punto de conteo: Intersección de las calles Iquitos y Ejército | | | | | Entrada: Calle Iquitos (Este) | | | Salida: Calle Ejército (Norte) | | | | |
| HORA | MOTOS | | CARGUERO | AUTO | STATION WAGON | CAMIONETAS | | | CAMIONES | | | Total por hora | Total por horas punta |
| | TAXI | LINEAL | | | | PICK UP | PANEL | COMBI | 2E | 3E | 4E | | |
| |  |  |  |  |  |  |  |  |  |  |  | | |
| 6:00 a.m - 6:15 a.m | 3 | 3 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 8 | |
| 6:15 a.m - 6:30 a.m | 6 | 5 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 12 | |
| 6:30 a.m - 6:45 a.m | 7 | 7 | 1 | 0 | 0 | 0 | 2 | 1 | 1 | 0 | 0 | 19 | |
| 6:45 a.m - 7:00 a.m | 11 | 8 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 20 | |
| 7:00 a.m - 7:15 a.m | 24 | 9 | 1 | 1 | 1 | 2 | 1 | 2 | 0 | 0 | 0 | 41 | |
| 7:15 a.m - 7:30 a.m | 26 | 11 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 40 | |
| 7:30 a.m - 7:45 a.m | 30 | 13 | 0 | 2 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 49 | |
| 7:45 a.m - 8:00 a.m | 35 | 21 | 0 | 0 | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 60 | |
| 8:00 a.m - 8:15 a.m | 28 | 20 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 50 | |
| 8:15 a.m - 8:30 a.m | 26 | 17 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 45 | |
| 8:30 a.m - 8:45 a.m | 25 | 10 | 0 | 2 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 39 | |
| 8:45 a.m - 9:00 a.m | 22 | 8 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 32 | |
| 11:00 a.m - 11:15 a.m | 13 | 10 | 1 | 0 | 0 | 0 | 2 | 1 | 1 | 0 | 0 | 28 | |
| 11:15 a.m - 11:30 a.m | 15 | 10 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 27 | |
| 11:30 a.m - 11:45 a.m | 21 | 11 | 2 | 1 | 0 | 2 | 1 | 0 | 1 | 0 | 0 | 39 | |
| 11:45 a.m - 12:00 p.m | 24 | 14 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 40 | |
| 12:00 p.m - 12:15 p.m | 33 | 15 | 0 | 2 | 1 | 3 | 1 | 0 | 0 | 0 | 0 | 55 | |
| 12:15 p.m - 12:30 p.m | 30 | 18 | 0 | 1 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 52 | |
| 12:30 p.m - 12:45 p.m | 38 | 16 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 57 | |
| 12:45 p.m - 13:00 p.m | 30 | 20 | 2 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 54 | |
| 13:00 p.m - 13:15 p.m | 41 | 21 | 0 | 2 | 2 | 2 | 1 | 1 | 0 | 0 | 0 | 70 | |
| 13:15 p.m - 13:30 p.m | 39 | 19 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 59 | |
| 13:30 p.m - 13:45 p.m | 26 | 13 | 0 | 3 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 44 | |
| 13:45 p.m - 14:00 p.m | 22 | 12 | 0 | 2 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 39 | |
| 16:00 p.m - 16:15 p.m | 15 | 12 | 1 | 0 | 0 | 0 | 2 | 0 | 2 | 0 | 0 | 32 | |
| 16:15 p.m - 16:30 p.m | 20 | 13 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 34 | |
| 16:30 p.m - 16:45 p.m | 23 | 10 | 1 | 0 | 0 | 1 | 1 | 0 | 1 | 0 | 0 | 37 | |
| 16:45 p.m - 17:00 p.m | 30 | 17 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 50 | |
| 17:00 p.m - 17:15 p.m | 37 | 27 | 1 | 2 | 1 | 2 | 0 | 1 | 0 | 0 | 0 | 71 | |
| 17:15 p.m - 17:30 p.m | 31 | 25 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 58 | |
| 17:30 p.m - 17:45 p.m | 40 | 28 | 0 | 2 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 72 | |
| 17:45 p.m - 18:00 p.m | 36 | 22 | 2 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 64 | |
| 18:00 p.m - 18:15 p.m | 33 | 23 | 1 | 2 | 1 | 2 | 2 | 0 | 0 | 0 | 0 | 64 | |
| 18:15 p.m - 18:30 p.m | 28 | 21 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 52 | |
| 18:30 p.m - 18:45 p.m | 31 | 20 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 53 | |
| 18:45 p.m - 19:00 p.m | 26 | 16 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 44 | |
| Total por tipo | 925 | 545 | 21 | 37 | 16 | 32 | 17 | 9 | 8 | 0 | 0 | 1610 | |

| UNIVERSIDAD NACIONAL DE JAÉN | | | | | | | | | | | | | |
|--|---|---|---|--|---|---|---|---|---|---|---|----------------|-----------------------|
| Técnica de recolección de datos: Observación directa | | | | | | | | | | | | | |
| Tesis | ANÁLISIS VIAL EN LA INTERSECCIÓN DE LAS CALLES IQUITOS Y EJÉRCITO EMPLEANDO EL SOFTWARE SYNCHRO 10 EN LA CIUDAD DE JAÉN, 2025 | | | | | | | | | | | | |
| Testistas | Bach. Kelvin Jhonatan Guevara Ruiz Bach. Ever Waldir Torres Pedraza | | | | | | | | | | | | |
| Asesor | Doc. José Luis Piedra Tineo | | | | | | | | | | | | |
| Fecha: Lunes 07/07/2025 | Punto de conteo: Intersección de las calles Iquitos y Ejército | | | | | Entrada: Calle Iquitos (Este) | | | Salida: Calle Ejército (Sur) | | | | |
| HORA | MOTOS | | CARGUERO | AUTO | STATION WAGON | CAMIONETAS | | | CAMIONES | | | Total por hora | Total por horas punta |
| | TAXI | LINEAL | | | | PICK UP | PANEL | COMBI | 2E | 3E | 4E | | |
| |  |  |  |  |  |  |  |  |  |  |  | | |
| 6:00 a.m - 6:15 a.m | 4 | 4 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 9 | |
| 6:15 a.m - 6:30 a.m | 5 | 5 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 11 | |
| 6:30 a.m - 6:45 a.m | 7 | 7 | 1 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 17 | |
| 6:45 a.m - 7:00 a.m | 13 | 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 23 | |
| 7:00 a.m - 7:15 a.m | 22 | 15 | 2 | 1 | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 44 | |
| 7:15 a.m - 7:30 a.m | 25 | 17 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 43 | |
| 7:30 a.m - 7:45 a.m | 26 | 18 | 1 | 2 | 1 | 3 | 1 | 1 | 1 | 0 | 0 | 54 | 409 |
| 7:45 a.m - 8:00 a.m | 32 | 20 | 1 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 55 | |
| 8:00 a.m - 8:15 a.m | 25 | 15 | 0 | 2 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 43 | |
| 8:15 a.m - 8:30 a.m | 23 | 15 | 0 | 1 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 41 | |
| 8:30 a.m - 8:45 a.m | 19 | 12 | 0 | 1 | 0 | 2 | 0 | 2 | 0 | 0 | 0 | 36 | |
| 8:45 a.m - 9:00 a.m | 18 | 13 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 33 | |
| 11:00 a.m - 11:15 a.m | 18 | 10 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 30 | |
| 11:15 a.m - 11:30 a.m | 19 | 13 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 33 | |
| 11:30 a.m - 11:45 a.m | 22 | 13 | 1 | 0 | 0 | 1 | 1 | 1 | 1 | 0 | 0 | 40 | |
| 11:45 a.m - 12:00 p.m | 25 | 12 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 37 | |
| 12:00 p.m - 12:15 p.m | 23 | 16 | 1 | 2 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 44 | |
| 12:15 p.m - 12:30 p.m | 29 | 26 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 55 | |
| 12:30 p.m - 12:45 p.m | 28 | 20 | 2 | 1 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 54 | 553 |
| 12:45 p.m - 13:00 p.m | 31 | 21 | 1 | 1 | 0 | 1 | 1 | 2 | 0 | 0 | 0 | 58 | |
| 13:00 p.m - 13:15 p.m | 36 | 20 | 0 | 2 | 0 | 2 | 1 | 1 | 0 | 0 | 0 | 62 | |
| 13:15 p.m - 13:30 p.m | 34 | 18 | 0 | 2 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 57 | |
| 13:30 p.m - 13:45 p.m | 30 | 13 | 0 | 1 | 1 | 2 | 0 | 1 | 0 | 0 | 0 | 48 | |
| 13:45 p.m - 14:00 p.m | 23 | 10 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 35 | |
| 16:00 p.m - 16:15 p.m | 20 | 12 | 0 | 0 | 2 | 0 | 0 | 1 | 1 | 0 | 0 | 36 | |
| 16:15 p.m - 16:30 p.m | 22 | 13 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 36 | |
| 16:30 p.m - 16:45 p.m | 25 | 10 | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 41 | |
| 16:45 p.m - 17:00 p.m | 30 | 18 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 50 | |
| 17:00 p.m - 17:15 p.m | 33 | 23 | 1 | 1 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 60 | |
| 17:15 p.m - 17:30 p.m | 33 | 21 | 2 | 1 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 59 | |
| 17:30 p.m - 17:45 p.m | 43 | 26 | 0 | 2 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 74 | 698 |
| 17:45 p.m - 18:00 p.m | 46 | 34 | 2 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 84 | |
| 18:00 p.m - 18:15 p.m | 37 | 30 | 1 | 2 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 72 | |
| 18:15 p.m - 18:30 p.m | 42 | 27 | 0 | 1 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 72 | |
| 18:30 p.m - 18:45 p.m | 33 | 20 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 53 | |
| 18:45 p.m - 19:00 p.m | 39 | 22 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 61 | |
| Total por tipo | 940 | 599 | 18 | 26 | 14 | 30 | 10 | 15 | 8 | 0 | 0 | 1660 | |

|  UNIVERSIDAD NACIONAL DE JAÉN  | | | | | | | | | | | | | |
|---|---|---|-----------|-----------|---------------|---|---|---|---|---|---|----------------|-----------------------|
| Técnica de recolección de datos: Observación directa | | | | | | | | | | | | | |
| Tesis | ANÁLISIS VIAL EN LA INTERSECCIÓN DE LAS CALLES IQUITOS Y EJÉRCITO EMPLEANDO EL SOFTWARE SYNCHRO 10 EN LA CIUDAD DE JAÉN, 2025 | | | | | | | | | | | | |
| Testistas | Bach. Kelvin Jhonatan Guevara Ruiz Bach. Ever Waldir Torres Pedraza | | | | | | | | | | | | |
| Asesor | Doc. José Luis Piedra Tineo | | | | | | | | | | | | |
| Fecha: Lunes 07/07/2025 | Punto de conteo: Intersección de las calles Iquitos y Ejército | | | | | | | | | | | | |
| | Entrada: Calle Ejército (Sur) Salida: Calle Ejército (Norte) | | | | | | | | | | | | |
| HORA | MOTOS | | CARGUERO | AUTO | STATION WAGON | CAMIONETAS | | | CAMIONES | | | Total por hora | Total por horas punta |
| | TAXI | LINEAL | | | | PICK UP | PANEL | COMBI | 2E | 3E | 4E | | |
| |  |  | | | |  |  |  |  |  |  | | |
| 6:00 a.m - 6:15 a.m | 3 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 375 |
| 6:15 a.m - 6:30 a.m | 6 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 10 | |
| 6:30 a.m - 6:45 a.m | 7 | 4 | 1 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 14 | |
| 6:45 a.m - 7:00 a.m | 11 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 17 | |
| 7:00 a.m - 7:15 a.m | 19 | 13 | 1 | 0 | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 37 | |
| 7:15 a.m - 7:30 a.m | 19 | 16 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 37 | |
| 7:30 a.m - 7:45 a.m | 27 | 14 | 0 | 1 | 1 | 2 | 0 | 1 | 0 | 0 | 0 | 46 | |
| 7:45 a.m - 8:00 a.m | 30 | 25 | 0 | 1 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 59 | |
| 8:00 a.m - 8:15 a.m | 24 | 16 | 0 | 2 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 44 | |
| 8:15 a.m - 8:30 a.m | 21 | 13 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 36 | |
| 8:30 a.m - 8:45 a.m | 22 | 15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 37 | |
| 8:45 a.m - 9:00 a.m | 19 | 13 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 33 | |
| 11:00 a.m - 11:15 a.m | 13 | 8 | 2 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 24 | |
| 11:15 a.m - 11:30 a.m | 17 | 11 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 28 | |
| 11:30 a.m - 11:45 a.m | 16 | 11 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 30 | |
| 11:45 a.m - 12:00 p.m | 19 | 12 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 33 | |
| 12:00 p.m - 12:15 p.m | 24 | 14 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 40 | |
| 12:15 p.m - 12:30 p.m | 22 | 17 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 40 | |
| 12:30 p.m - 12:45 p.m | 27 | 19 | 2 | 2 | 0 | 1 | 1 | 1 | 1 | 0 | 0 | 54 | |
| 12:45 p.m - 13:00 p.m | 31 | 26 | 0 | 1 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 61 | |
| 13:00 p.m - 13:15 p.m | 33 | 28 | 0 | 1 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 65 | |
| 13:15 p.m - 13:30 p.m | 32 | 19 | 0 | 2 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 54 | |
| 13:30 p.m - 13:45 p.m | 27 | 15 | 0 | 0 | 2 | 3 | 0 | 0 | 0 | 0 | 0 | 47 | |
| 13:45 p.m - 14:00 p.m | 24 | 10 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 35 | |
| 16:00 p.m - 16:15 p.m | 16 | 10 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 28 | |
| 16:15 p.m - 16:30 p.m | 20 | 13 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 34 | |
| 16:30 p.m - 16:45 p.m | 20 | 14 | 0 | 0 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 37 | |
| 16:45 p.m - 17:00 p.m | 26 | 17 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 44 | |
| 17:00 p.m - 17:15 p.m | 31 | 21 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 55 | |
| 17:15 p.m - 17:30 p.m | 27 | 18 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 46 | |
| 17:30 p.m - 17:45 p.m | 30 | 19 | 2 | 2 | 1 | 2 | 0 | 2 | 0 | 0 | 0 | 58 | |
| 17:45 p.m - 18:00 p.m | 31 | 21 | 1 | 2 | 2 | 3 | 0 | 1 | 0 | 0 | 0 | 61 | |
| 18:00 p.m - 18:15 p.m | 27 | 24 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 54 | |
| 18:15 p.m - 18:30 p.m | 29 | 19 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 50 | |
| 18:30 p.m - 18:45 p.m | 25 | 17 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 42 | |
| 18:45 p.m - 19:00 p.m | 27 | 14 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 41 | |
| Total por tipo | 802 | 538 | 14 | 21 | 12 | 32 | 6 | 7 | 4 | 0 | 0 | 1436 | |

| UNIVERSIDAD NACIONAL DE JAÉN | | | | | | | | | | | | | |
|--|---|---|---|--|---|---|---|---|---|---|---|----------------|-----------------------|
| Técnica de recolección de datos: Observación directa | | | | | | | | | | | | | |
| Tesis | ANÁLISIS VIAL EN LA INTERSECCIÓN DE LAS CALLES IQUITOS Y EJÉRCITO EMPLEANDO EL SOFTWARE SYNCHRO 10 EN LA CIUDAD DE JAÉN, 2025 | | | | | | | | | | | | |
| Testistas | Bach. Kelvin Jhonatan Guevara Ruiz Bach. Ever Waldir Torres Pedraza | | | | | | | | | | | | |
| Asesor | Doc. José Luis Piedra Tineo | | | | | | | | | | | | |
| Fecha: Lunes 07/07/2025 | Punto de conteo: Intersección de las calles Iquitos y Ejército | | | | | Entrada: Calle Ejército (Sur) | | | Salida: Calle Iquitos (Oeste) | | | | |
| HORA | MOTOS | | CARGUERO | AUTO | STATION WAGON | CAMIONETAS | | | CAMIONES | | | Total por hora | Total por horas punta |
| | TAXI | LINEAL | | | | PICK UP | PANEL | COMBI | 2E | 3E | 4E | | |
| |  |  |  |  |  |  |  |  |  |  |  | | |
| 6:00 a.m - 6:15 a.m | 3 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 191 |
| 6:15 a.m - 6:30 a.m | 3 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | |
| 6:30 a.m - 6:45 a.m | 4 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 7 | |
| 6:45 a.m - 7:00 a.m | 7 | 3 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 11 | |
| 7:00 a.m - 7:15 a.m | 8 | 7 | 2 | 0 | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 21 | |
| 7:15 a.m - 7:30 a.m | 10 | 8 | 1 | 0 | 0 | 2 | 0 | 0 | 1 | 0 | 0 | 22 | |
| 7:30 a.m - 7:45 a.m | 9 | 9 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 20 | |
| 7:45 a.m - 8:00 a.m | 15 | 11 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 26 | |
| 8:00 a.m - 8:15 a.m | 11 | 8 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 22 | |
| 8:15 a.m - 8:30 a.m | 9 | 9 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 19 | |
| 8:30 a.m - 8:45 a.m | 7 | 7 | 0 | 0 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 17 | |
| 8:45 a.m - 9:00 a.m | 7 | 5 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 14 | |
| 11:00 a.m - 11:15 a.m | 4 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 8 | |
| 11:15 a.m - 11:30 a.m | 11 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 16 | |
| 11:30 a.m - 11:45 a.m | 6 | 6 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 14 | |
| 11:45 a.m - 12:00 p.m | 9 | 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 17 | |
| 12:00 p.m - 12:15 p.m | 11 | 8 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 21 | |
| 12:15 p.m - 12:30 p.m | 13 | 11 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 24 | |
| 12:30 p.m - 12:45 p.m | 15 | 9 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 26 | |
| 12:45 p.m - 13:00 p.m | 18 | 14 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 32 | |
| 13:00 p.m - 13:15 p.m | 15 | 14 | 0 | 1 | 1 | 2 | 0 | 1 | 0 | 0 | 0 | 34 | |
| 13:15 p.m - 13:30 p.m | 12 | 10 | 0 | 1 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 26 | |
| 13:30 p.m - 13:45 p.m | 10 | 6 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 18 | |
| 13:45 p.m - 14:00 p.m | 7 | 5 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 14 | |
| 16:00 p.m - 16:15 p.m | 8 | 5 | 0 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 0 | 16 | |
| 16:15 p.m - 16:30 p.m | 9 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 16 | |
| 16:30 p.m - 16:45 p.m | 10 | 9 | 1 | 0 | 2 | 0 | 1 | 0 | 1 | 0 | 0 | 24 | |
| 16:45 p.m - 17:00 p.m | 12 | 8 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 22 | |
| 17:00 p.m - 17:15 p.m | 20 | 11 | 0 | 1 | 0 | 2 | 0 | 0 | 1 | 0 | 0 | 35 | |
| 17:15 p.m - 17:30 p.m | 15 | 8 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 26 | |
| 17:30 p.m - 17:45 p.m | 19 | 11 | 0 | 0 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 33 | |
| 17:45 p.m - 18:00 p.m | 16 | 12 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 28 | |
| 18:00 p.m - 18:15 p.m | 17 | 10 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 29 | |
| 18:15 p.m - 18:30 p.m | 16 | 9 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 26 | |
| 18:30 p.m - 18:45 p.m | 13 | 8 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 23 | |
| 18:45 p.m - 19:00 p.m | 16 | 8 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 25 | |
| Total por tipo | 395 | 280 | 10 | 13 | 9 | 21 | 3 | 5 | 8 | 0 | 0 | 744 | |

| UNIVERSIDAD NACIONAL DE JAÉN | | | | | | | | | | | | | |
|--|---|---|----------|------|---------------|---|---|---|---|---|---|----------------|-----------------------|
| Técnica de recolección de datos: Observación directa | | | | | | | | | | | | | |
| Tesis | ANÁLISIS VIAL EN LA INTERSECCIÓN DE LAS CALLES IQUITOS Y EJÉRCITO EMPLEANDO EL SOFTWARE SYNCHRO 10 EN LA CIUDAD DE JAÉN, 2025 | | | | | | | | | | | | |
| Testistas | Bach. Kelvin Jhonatan Guevara Ruiz Bach. Ever Waldir Torres Pedraza | | | | | | | | | | | | |
| Asesor | Doc. José Luis Piedra Tineo | | | | | | | | | | | | |
| Fecha: Lunes 07/07/2025 | Punto de conteo: Intersección de las calles Iquitos y Ejército | | | | | Entrada: Calle Ejército (Norte) | | | Salida: Calle Ejército (Sur) | | | | |
| HORA | MOTOS | | CARGUERO | AUTO | STATION WAGON | CAMIONETAS | | | CAMIONES | | | Total por hora | Total por horas punta |
| | TAXI | LINEAL | | | | PICK UP | PANEL | COMBI | 2E | 3E | 4E | | |
| |  |  | | | |  |  |  |  |  |  | | |
| 6:00 a.m - 6:15 a.m | 3 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 290 |
| 6:15 a.m - 6:30 a.m | 5 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 8 | |
| 6:30 a.m - 6:45 a.m | 8 | 4 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 14 | |
| 6:45 a.m - 7:00 a.m | 9 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 13 | |
| 7:00 a.m - 7:15 a.m | 13 | 11 | 2 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 28 | |
| 7:15 a.m - 7:30 a.m | 15 | 14 | 0 | 2 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 33 | |
| 7:30 a.m - 7:45 a.m | 20 | 12 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 39 | |
| 7:45 a.m - 8:00 a.m | 26 | 15 | 1 | 1 | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 47 | |
| 8:00 a.m - 8:15 a.m | 20 | 14 | 0 | 2 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 39 | |
| 8:15 a.m - 8:30 a.m | 16 | 11 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 27 | |
| 8:30 a.m - 8:45 a.m | 9 | 9 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 20 | |
| 8:45 a.m - 9:00 a.m | 10 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 17 | |
| 11:00 a.m - 11:15 a.m | 8 | 4 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 13 | 299 |
| 11:15 a.m - 11:30 a.m | 10 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 16 | |
| 11:30 a.m - 11:45 a.m | 10 | 7 | 0 | 0 | 1 | 2 | 1 | 1 | 1 | 0 | 0 | 23 | |
| 11:45 a.m - 12:00 p.m | 9 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 15 | |
| 12:00 p.m - 12:15 p.m | 15 | 7 | 1 | 1 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 27 | |
| 12:15 p.m - 12:30 p.m | 12 | 9 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 21 | |
| 12:30 p.m - 12:45 p.m | 14 | 8 | 1 | 2 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 27 | |
| 12:45 p.m - 13:00 p.m | 23 | 12 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 37 | |
| 13:00 p.m - 13:15 p.m | 25 | 14 | 0 | 2 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 44 | |
| 13:15 p.m - 13:30 p.m | 18 | 11 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 31 | |
| 13:30 p.m - 13:45 p.m | 14 | 9 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 25 | |
| 13:45 p.m - 14:00 p.m | 11 | 7 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 20 | |
| 16:00 p.m - 16:15 p.m | 10 | 7 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 19 | 287 |
| 16:15 p.m - 16:30 p.m | 10 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 17 | |
| 16:30 p.m - 16:45 p.m | 9 | 6 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 16 | |
| 16:45 p.m - 17:00 p.m | 11 | 9 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 22 | |
| 17:00 p.m - 17:15 p.m | 12 | 12 | 1 | 2 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 28 | |
| 17:15 p.m - 17:30 p.m | 18 | 9 | 1 | 0 | 0 | 2 | 0 | 1 | 1 | 0 | 0 | 32 | |
| 17:30 p.m - 17:45 p.m | 16 | 13 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 32 | |
| 17:45 p.m - 18:00 p.m | 14 | 9 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 25 | |
| 18:00 p.m - 18:15 p.m | 14 | 10 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 26 | |
| 18:15 p.m - 18:30 p.m | 13 | 9 | 0 | 2 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 25 | |
| 18:30 p.m - 18:45 p.m | 14 | 8 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 24 | |
| 18:45 p.m - 19:00 p.m | 10 | 9 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 21 | |
| Total por tipo | 474 | 313 | 10 | 23 | 11 | 25 | 6 | 7 | 7 | 0 | 0 | 876 | |

| UNIVERSIDAD NACIONAL DE JAÉN | | | | | | | | | | | | | |
|--|---|---|---|--|---|---|---|---|---|---|---|----------------|-----------------------|
| Técnica de recolección de datos: Observación directa | | | | | | | | | | | | | |
| Tesis | ANÁLISIS VIAL EN LA INTERSECCIÓN DE LAS CALLES IQUITOS Y EJÉRCITO EMPLEANDO EL SOFTWARE SYNCHRO 10 EN LA CIUDAD DE JAÉN, 2025 | | | | | | | | | | | | |
| Testistas | Bach. Kelvin Jhonatan Guevara Ruiz Bach. Ever Waldir Torres Pedraza | | | | | | | | | | | | |
| Asesor | Doc. José Luis Piedra Tineo | | | | | | | | | | | | |
| Fecha: Lunes 07/07/2025 | Punto de conteo: Intersección de las calles Iquitos y Ejército | | | | | Entrada: Calle Ejército (Norte) | | | Salida: Calle Iquitos (Oeste) | | | | |
| HORA | MOTOS | | CARGUERO | AUTO | STATION WAGON | CAMIONETAS | | | CAMIONES | | | Total por hora | Total por horas punta |
| | TAXI | LINEAL | | | | PICK UP | PANEL | COMBI | 2E | 3E | 4E | | |
| |  |  |  |  |  |  |  |  |  |  |  | | |
| 6:00 a.m - 6:15 a.m | 4 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | |
| 6:15 a.m - 6:30 a.m | 7 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 11 | |
| 6:30 a.m - 6:45 a.m | 6 | 4 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 11 | |
| 6:45 a.m - 7:00 a.m | 8 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 14 | |
| 7:00 a.m - 7:15 a.m | 9 | 5 | 0 | 2 | 0 | 1 | 1 | 0 | 1 | 0 | 0 | 19 | |
| 7:15 a.m - 7:30 a.m | 8 | 7 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 18 | |
| 7:30 a.m - 7:45 a.m | 9 | 8 | 1 | 1 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 21 | |
| 7:45 a.m - 8:00 a.m | 12 | 14 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 29 | |
| 8:00 a.m - 8:15 a.m | 10 | 9 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 22 | |
| 8:15 a.m - 8:30 a.m | 9 | 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 17 | |
| 8:30 a.m - 8:45 a.m | 10 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 17 | |
| 8:45 a.m - 9:00 a.m | 7 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 12 | |
| 11:00 a.m - 11:15 a.m | 8 | 4 | 1 | 0 | 2 | 0 | 0 | 0 | 1 | 0 | 0 | 16 | |
| 11:15 a.m - 11:30 a.m | 7 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 13 | |
| 11:30 a.m - 11:45 a.m | 8 | 6 | 0 | 2 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 18 | |
| 11:45 a.m - 12:00 p.m | 9 | 4 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 15 | |
| 12:00 p.m - 12:15 p.m | 11 | 5 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 18 | |
| 12:15 p.m - 12:30 p.m | 14 | 7 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 22 | |
| 12:30 p.m - 12:45 p.m | 12 | 5 | 1 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 20 | |
| 12:45 p.m - 13:00 p.m | 13 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 20 | |
| 13:00 p.m - 13:15 p.m | 12 | 7 | 0 | 1 | 0 | 2 | 0 | 1 | 0 | 0 | 0 | 23 | |
| 13:15 p.m - 13:30 p.m | 11 | 6 | 0 | 2 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 20 | |
| 13:30 p.m - 13:45 p.m | 11 | 5 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 17 | |
| 13:45 p.m - 14:00 p.m | 9 | 4 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 14 | |
| 16:00 p.m - 16:15 p.m | 7 | 4 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 13 | |
| 16:15 p.m - 16:30 p.m | 9 | 6 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 16 | |
| 16:30 p.m - 16:45 p.m | 8 | 5 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 17 | |
| 16:45 p.m - 17:00 p.m | 12 | 7 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 20 | |
| 17:00 p.m - 17:15 p.m | 15 | 9 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 27 | |
| 17:15 p.m - 17:30 p.m | 11 | 5 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 19 | |
| 17:30 p.m - 17:45 p.m | 14 | 7 | 1 | 0 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 25 | |
| 17:45 p.m - 18:00 p.m | 13 | 8 | 1 | 2 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 26 | |
| 18:00 p.m - 18:15 p.m | 10 | 7 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 18 | |
| 18:15 p.m - 18:30 p.m | 13 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 19 | |
| 18:30 p.m - 18:45 p.m | 10 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 14 | |
| 18:45 p.m - 19:00 p.m | 8 | 5 | 0 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 16 | |
| Total por tipo | 354 | 218 | 12 | 19 | 10 | 16 | 4 | 5 | 5 | 0 | 0 | 643 | |



UNIVERSIDAD NACIONAL DE JAÉN



Técnica de recolección de datos: Observación directa












| Tesis | | ANÁLISIS VIAL EN LA INTERSECCIÓN DE LAS CALLES IQUITOS Y EJÉRCITO EMPLEANDO EL SOFTWARE SYNCHRO 10 EN LA CIUDAD DE JAÉN, 2025 | | | | | | | | | | | | |
|--------------------------|-------------|---|-----------|-----------|---------------|------------|-------------------------------|-----------|----------|-------------------------------|----------|-------------|----------------|-----------------------|
| Tesistas | | Bach. Kelvin Jhonatan Guevara Ruiz Bach. Ever Waldir Torres Pedraza | | | | | | | | | | | | |
| Asesor | | Doc. José Luis Piedra Tineo | | | | | | | | | | | | |
| Fecha: Martes 08/07/2025 | | Punto de conteo: Intersección de las calles Iquitos y Ejército | | | | | Entrada: Calle Iquitos (Este) | | | Salida: Calle Iquitos (Oeste) | | | Total por hora | Total por horas punta |
| HORA | MOTOS | | CARGUERO | AUTO | STATION WAGON | CAMIONETAS | | | CAMIONES | | | | | |
| | TAXI | LINEAL | | | | PICK UP | PANEL | COMBI | 2E | 3E | 4E | | | |
| | | | | | | | | | | | | | | |
| 6:00 a.m - 6:15 a.m | 13 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 18 | 1313 | |
| 6:15 a.m - 6:30 a.m | 17 | 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 25 | | |
| 6:30 a.m - 6:45 a.m | 33 | 15 | 2 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 51 | | |
| 6:45 a.m - 7:00 a.m | 34 | 17 | 0 | 2 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 55 | | |
| 7:00 a.m - 7:15 a.m | 74 | 31 | 1 | 2 | 1 | 2 | 2 | 1 | 1 | 0 | 0 | 115 | | |
| 7:15 a.m - 7:30 a.m | 81 | 33 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 117 | | |
| 7:30 a.m - 7:45 a.m | 93 | 44 | 2 | 2 | 1 | 3 | 1 | 2 | 0 | 0 | 0 | 148 | | |
| 7:45 a.m - 8:00 a.m | 109 | 49 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 160 | | |
| 8:00 a.m - 8:15 a.m | 127 | 49 | 0 | 2 | 3 | 2 | 0 | 1 | 0 | 0 | 0 | 184 | | |
| 8:15 a.m - 8:30 a.m | 121 | 43 | 0 | 1 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 167 | | |
| 8:30 a.m - 8:45 a.m | 116 | 29 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 148 | | |
| 8:45 a.m - 9:00 a.m | 102 | 22 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 125 | | |
| 11:00 a.m - 11:15 a.m | 77 | 38 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 116 | | |
| 11:15 a.m - 11:30 a.m | 82 | 43 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 127 | | |
| 11:30 a.m - 11:45 a.m | 81 | 47 | 1 | 2 | 1 | 2 | 2 | 0 | 1 | 0 | 0 | 137 | | |
| 11:45 a.m - 12:00 p.m | 92 | 47 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 139 | | |
| 12:00 p.m - 12:15 p.m | 102 | 57 | 0 | 3 | 2 | 0 | 1 | 0 | 1 | 0 | 0 | 166 | | |
| 12:15 p.m - 12:30 p.m | 109 | 66 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 176 | | |
| 12:30 p.m - 12:45 p.m | 117 | 80 | 0 | 4 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 202 | | |
| 12:45 p.m - 13:00 p.m | 120 | 85 | 0 | 3 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 211 | | |
| 13:00 p.m - 13:15 p.m | 122 | 87 | 0 | 5 | 1 | 3 | 0 | 2 | 0 | 0 | 0 | 220 | | |
| 13:15 p.m - 13:30 p.m | 132 | 82 | 0 | 2 | 1 | 3 | 0 | 0 | 0 | 0 | 0 | 220 | | |
| 13:30 p.m - 13:45 p.m | 94 | 73 | 0 | 3 | 2 | 3 | 0 | 0 | 0 | 0 | 0 | 175 | | |
| 13:45 p.m - 14:00 p.m | 69 | 67 | 0 | 2 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 140 | | |
| 16:00 p.m - 16:15 p.m | 54 | 48 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 104 | | |
| 16:15 p.m - 16:30 p.m | 65 | 51 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 118 | | |
| 16:30 p.m - 16:45 p.m | 67 | 57 | 2 | 0 | 2 | 1 | 0 | 1 | 0 | 0 | 0 | 130 | | |
| 16:45 p.m - 17:00 p.m | 72 | 61 | 1 | 0 | 0 | 2 | 0 | 2 | 1 | 0 | 0 | 139 | | |
| 17:00 p.m - 17:15 p.m | 78 | 69 | 1 | 1 | 2 | 3 | 0 | 1 | 0 | 0 | 0 | 155 | | |
| 17:15 p.m - 17:30 p.m | 76 | 75 | 0 | 2 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 156 | | |
| 17:30 p.m - 17:45 p.m | 100 | 90 | 0 | 2 | 2 | 3 | 0 | 2 | 0 | 0 | 0 | 199 | | |
| 17:45 p.m - 18:00 p.m | 97 | 87 | 0 | 1 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 187 | | |
| 18:00 p.m - 18:15 p.m | 91 | 88 | 0 | 3 | 3 | 3 | 0 | 0 | 0 | 0 | 0 | 188 | | |
| 18:15 p.m - 18:30 p.m | 95 | 85 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 183 | | |
| 18:30 p.m - 18:45 p.m | 84 | 78 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 164 | | |
| 18:45 p.m - 19:00 p.m | 87 | 71 | 0 | 1 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 162 | | |
| Total por tipo | 3083 | 1977 | 14 | 46 | 32 | 44 | 8 | 18 | 5 | 0 | 0 | 5227 | | |



UNIVERSIDAD NACIONAL DE JAÉN



Técnica de recolección de datos: Observación directa

| ANÁLISIS VIAL EN LA INTERSECCIÓN DE LAS CALLES IQUITOS Y EJÉRCITO EMPLEANDO EL SOFTWARE SYNCHRO 10 EN LA CIUDAD DE JAÉN, 2025 | | | | | | | | | | | | | |
|---|---|---|---|--|---|---|---|---|---|---|---|----------------|-----------------------|
| Tesis | ANÁLISIS VIAL EN LA INTERSECCIÓN DE LAS CALLES IQUITOS Y EJÉRCITO EMPLEANDO EL SOFTWARE SYNCHRO 10 EN LA CIUDAD DE JAÉN, 2025 | | | | | | | | | | | | |
| Tesistas | Bach. Kelvin Jhonatan Guevara Ruiz Bach. Ever Waldir Torres Pedraza | | | | | | | | | | | | |
| Asesor | Doc. José Luis Piedra Tineo | | | | | | | | | | | | |
| Fecha: Martes 08/07/2025 | Punto de conteo: Intersección de las calles Iquitos y Ejército | | | | | Entrada: Calle Iquitos (Este) | | | Salida: Calle Ejército (Norte) | | | | |
| HORA | MOTOS | | CARGUERO | AUTO | STATION WAGON | CAMIONETAS | | | CAMIONES | | | Total por hora | Total por horas punta |
| | TAXI | LINEAL | | | | PICK UP | PANEL | COMBI | 2E | 3E | 4E | | |
| |  |  |  |  |  |  |  |  |  |  |  | | |
| 6:00 a.m - 6:15 a.m | 5 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 8 | 329 |
| 6:15 a.m - 6:30 a.m | 8 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 14 | |
| 6:30 a.m - 6:45 a.m | 9 | 8 | 1 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 20 | |
| 6:45 a.m - 7:00 a.m | 12 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 19 | |
| 7:00 a.m - 7:15 a.m | 21 | 9 | 1 | 2 | 1 | 1 | 1 | 0 | 2 | 0 | 0 | 38 | |
| 7:15 a.m - 7:30 a.m | 19 | 11 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 30 | |
| 7:30 a.m - 7:45 a.m | 22 | 12 | 0 | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 37 | |
| 7:45 a.m - 8:00 a.m | 24 | 15 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 41 | |
| 8:00 a.m - 8:15 a.m | 21 | 13 | 0 | 2 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 38 | |
| 8:15 a.m - 8:30 a.m | 19 | 10 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 30 | |
| 8:30 a.m - 8:45 a.m | 14 | 12 | 0 | 1 | 1 | 2 | 0 | 1 | 0 | 0 | 0 | 31 | |
| 8:45 a.m - 9:00 a.m | 15 | 7 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 23 | |
| 11:00 a.m - 11:15 a.m | 11 | 9 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 22 | 442 |
| 11:15 a.m - 11:30 a.m | 17 | 12 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 30 | |
| 11:30 a.m - 11:45 a.m | 14 | 13 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 31 | |
| 11:45 a.m - 12:00 p.m | 17 | 14 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 33 | |
| 12:00 p.m - 12:15 p.m | 18 | 13 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 34 | |
| 12:15 p.m - 12:30 p.m | 21 | 16 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 39 | |
| 12:30 p.m - 12:45 p.m | 22 | 17 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 41 | |
| 12:45 p.m - 13:00 p.m | 28 | 19 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 47 | |
| 13:00 p.m - 13:15 p.m | 29 | 20 | 0 | 1 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 53 | |
| 13:15 p.m - 13:30 p.m | 23 | 16 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 40 | |
| 13:30 p.m - 13:45 p.m | 22 | 14 | 0 | 0 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 39 | |
| 13:45 p.m - 14:00 p.m | 17 | 13 | 0 | 2 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 33 | |
| 16:00 p.m - 16:15 p.m | 17 | 10 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 29 | 507 |
| 16:15 p.m - 16:30 p.m | 16 | 11 | 0 | 0 | 1 | 0 | 2 | 0 | 0 | 0 | 0 | 30 | |
| 16:30 p.m - 16:45 p.m | 18 | 9 | 1 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 30 | |
| 16:45 p.m - 17:00 p.m | 21 | 15 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 37 | |
| 17:00 p.m - 17:15 p.m | 22 | 19 | 1 | 1 | 1 | 2 | 1 | 0 | 0 | 0 | 0 | 47 | |
| 17:15 p.m - 17:30 p.m | 25 | 25 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 51 | |
| 17:30 p.m - 17:45 p.m | 26 | 22 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 50 | |
| 17:45 p.m - 18:00 p.m | 30 | 21 | 0 | 2 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 54 | |
| 18:00 p.m - 18:15 p.m | 27 | 24 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 53 | |
| 18:15 p.m - 18:30 p.m | 24 | 20 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 45 | |
| 18:30 p.m - 18:45 p.m | 25 | 17 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 45 | |
| 18:45 p.m - 19:00 p.m | 21 | 14 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 36 | |
| Total por tipo | 700 | 496 | 8 | 18 | 16 | 21 | 9 | 6 | 4 | 0 | 0 | 1278 | |



UNIVERSIDAD NACIONAL DE JAÉN



Técnica de recolección de datos: Observación directa

| ANÁLISIS VIAL EN LA INTERSECCIÓN DE LAS CALLES IQUITOS Y EJÉRCITO EMPLEANDO EL SOFTWARE SYNCHRO 10 EN LA CIUDAD DE JAÉN, 2025 | | | | | | | | | | | | | |
|---|------------|------------|----------|-----------|-------------------------------|------------|----------|----------|------------------------------|----------|----------|----------------|-----------------------|
| Tesis | | | | | | | | | | | | | |
| Bach. Kelvin Jhonatan Guevara Ruiz | | | | | | | | | | | | | |
| Bach. Ever Waldir Torres Pedraza | | | | | | | | | | | | | |
| Asesor | | | | | | | | | | | | | |
| Doc. José Luis Piedra Tineo | | | | | | | | | | | | | |
| Fecha: Martes 08/07/2025 | | | | | | | | | | | | | |
| Punto de conteo: Intersección de las calles Iquitos y Ejército | | | | | Entrada: Calle Iquitos (Este) | | | | Salida: Calle Ejército (Sur) | | | | |
| HORA | MOTOS | | CARGUERO | AUTO | STATION WAGON | CAMIONETAS | | | CAMIONES | | | Total por hora | Total por horas punta |
| | TAXI | LINEAL | | | | PICK UP | PANEL | COMBI | 2E | 3E | 4E | | |
| | | | | | | | | | | | | | |
| 6:00 a.m - 6:15 a.m | 4 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 383 |
| 6:15 a.m - 6:30 a.m | 5 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 12 | |
| 6:30 a.m - 6:45 a.m | 7 | 8 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 17 | |
| 6:45 a.m - 7:00 a.m | 11 | 8 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 20 | |
| 7:00 a.m - 7:15 a.m | 22 | 11 | 1 | 2 | 1 | 0 | 1 | 0 | 1 | 0 | 0 | 39 | |
| 7:15 a.m - 7:30 a.m | 24 | 13 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 38 | |
| 7:30 a.m - 7:45 a.m | 29 | 15 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 48 | |
| 7:45 a.m - 8:00 a.m | 29 | 19 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 49 | |
| 8:00 a.m - 8:15 a.m | 28 | 14 | 0 | 2 | 1 | 2 | 0 | 1 | 0 | 0 | 0 | 48 | |
| 8:15 a.m - 8:30 a.m | 25 | 12 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 39 | |
| 8:30 a.m - 8:45 a.m | 21 | 12 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 34 | |
| 8:45 a.m - 9:00 a.m | 19 | 11 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 32 | |
| 11:00 a.m - 11:15 a.m | 15 | 8 | 1 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 26 | |
| 11:15 a.m - 11:30 a.m | 15 | 9 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 24 | |
| 11:30 a.m - 11:45 a.m | 16 | 8 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 26 | |
| 11:45 a.m - 12:00 p.m | 18 | 12 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 31 | |
| 12:00 p.m - 12:15 p.m | 21 | 16 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 39 | |
| 12:15 p.m - 12:30 p.m | 24 | 13 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 37 | |
| 12:30 p.m - 12:45 p.m | 23 | 14 | 0 | 1 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 41 | |
| 12:45 p.m - 13:00 p.m | 29 | 18 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 48 | |
| 13:00 p.m - 13:15 p.m | 34 | 17 | 0 | 2 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 56 | |
| 13:15 p.m - 13:30 p.m | 31 | 15 | 0 | 0 | 0 | 2 | 0 | 1 | 0 | 0 | 0 | 49 | |
| 13:30 p.m - 13:45 p.m | 19 | 12 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 33 | |
| 13:45 p.m - 14:00 p.m | 17 | 9 | 0 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 29 | |
| 16:00 p.m - 16:15 p.m | 14 | 10 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 25 | |
| 16:15 p.m - 16:30 p.m | 17 | 14 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 32 | |
| 16:30 p.m - 16:45 p.m | 18 | 13 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 34 | |
| 16:45 p.m - 17:00 p.m | 21 | 15 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 37 | |
| 17:00 p.m - 17:15 p.m | 28 | 21 | 1 | 1 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 54 | |
| 17:15 p.m - 17:30 p.m | 34 | 19 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 53 | |
| 17:30 p.m - 17:45 p.m | 32 | 28 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 61 | |
| 17:45 p.m - 18:00 p.m | 29 | 22 | 0 | 2 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 54 | |
| 18:00 p.m - 18:15 p.m | 32 | 24 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 58 | |
| 18:15 p.m - 18:30 p.m | 27 | 18 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 45 | |
| 18:30 p.m - 18:45 p.m | 22 | 19 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 41 | |
| 18:45 p.m - 19:00 p.m | 17 | 15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 32 | |
| Total por tipo | 777 | 502 | 7 | 20 | 12 | 18 | 2 | 6 | 4 | 0 | 0 | 1348 | 526 |



UNIVERSIDAD NACIONAL DE JAÉN



Técnica de recolección de datos: Observación directa









| ANÁLISIS VIAL EN LA INTERSECCIÓN DE LAS CALLES IQUITOS Y EJÉRCITO EMPLEANDO EL SOFTWARE SYNCHRO 10 EN LA CIUDAD DE JAÉN, 2025 | | | | | | | | | | | | | |
|---|-------|--------|----------|------|-------------------------------|------------|-------|-------|--------------------------------|----|----|----------------|-----------------------|
| Tesis | | | | | | | | | | | | | |
| Bach. Kelvin Jhonatan Guevara Ruiz | | | | | | | | | | | | | |
| Bach. Ever Waldir Torres Pedraza | | | | | | | | | | | | | |
| Asesor | | | | | | | | | | | | | |
| Doc. José Luis Piedra Tineo | | | | | | | | | | | | | |
| Fecha: Martes 08/07/2025 | | | | | | | | | | | | | |
| Punto de conteo: Intersección de las calles Iquitos y Ejército | | | | | Entrada: Calle Ejército (Sur) | | | | Salida: Calle Ejército (Norte) | | | | |
| HORA | MOTOS | | CARGUERO | AUTO | STATION WAGON | CAMIONETAS | | | CAMIONES | | | Total por hora | Total por horas punta |
| | TAXI | LINEAL | | | | PICK UP | PANEL | COMBI | 2E | 3E | 4E | | |
| | | | | | | | | | | | | | |
| 6:00 a.m - 6:15 a.m | 5 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9 | 356 |
| 6:15 a.m - 6:30 a.m | 6 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 12 | |
| 6:30 a.m - 6:45 a.m | 6 | 5 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 13 | |
| 6:45 a.m - 7:00 a.m | 8 | 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 16 | |
| 7:00 a.m - 7:15 a.m | 17 | 14 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 34 | |
| 7:15 a.m - 7:30 a.m | 20 | 17 | 1 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 40 | |
| 7:30 a.m - 7:45 a.m | 24 | 16 | 0 | 1 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 43 | |
| 7:45 a.m - 8:00 a.m | 25 | 18 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 44 | |
| 8:00 a.m - 8:15 a.m | 22 | 17 | 0 | 1 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 42 | |
| 8:15 a.m - 8:30 a.m | 21 | 16 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 37 | |
| 8:30 a.m - 8:45 a.m | 17 | 13 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 31 | |
| 8:45 a.m - 9:00 a.m | 19 | 15 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 35 | |
| 11:00 a.m - 11:15 a.m | 12 | 8 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 21 | |
| 11:15 a.m - 11:30 a.m | 17 | 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 25 | |
| 11:30 a.m - 11:45 a.m | 16 | 9 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 27 | |
| 11:45 a.m - 12:00 p.m | 18 | 13 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 31 | |
| 12:00 p.m - 12:15 p.m | 20 | 16 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 38 | |
| 12:15 p.m - 12:30 p.m | 21 | 14 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 35 | |
| 12:30 p.m - 12:45 p.m | 19 | 16 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 37 | |
| 12:45 p.m - 13:00 p.m | 25 | 19 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 45 | |
| 13:00 p.m - 13:15 p.m | 29 | 17 | 0 | 2 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 49 | |
| 13:15 p.m - 13:30 p.m | 26 | 17 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 44 | |
| 13:30 p.m - 13:45 p.m | 16 | 11 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 29 | |
| 13:45 p.m - 14:00 p.m | 19 | 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 27 | |
| 16:00 p.m - 16:15 p.m | 14 | 11 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 25 | |
| 16:15 p.m - 16:30 p.m | 17 | 12 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 29 | |
| 16:30 p.m - 16:45 p.m | 18 | 14 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 33 | |
| 16:45 p.m - 17:00 p.m | 16 | 18 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 34 | |
| 17:00 p.m - 17:15 p.m | 27 | 19 | 0 | 1 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 49 | |
| 17:15 p.m - 17:30 p.m | 29 | 20 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 49 | |
| 17:30 p.m - 17:45 p.m | 29 | 20 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 51 | |
| 17:45 p.m - 18:00 p.m | 25 | 19 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 45 | |
| 18:00 p.m - 18:15 p.m | 25 | 21 | 1 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 49 | |
| 18:15 p.m - 18:30 p.m | 23 | 18 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 42 | |
| 18:30 p.m - 18:45 p.m | 24 | 16 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 40 | |
| 18:45 p.m - 19:00 p.m | 20 | 18 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 38 | |
| Total por tipo | 695 | 511 | 4 | 10 | 1 | 23 | 1 | 1 | 2 | 0 | 0 | 1248 | |



UNIVERSIDAD NACIONAL DE JAÉN



Técnica de recolección de datos: Observación directa

| ANÁLISIS VIAL EN LA INTERSECCIÓN DE LAS CALLES IQUITOS Y EJÉRCITO EMPLEANDO EL SOFTWARE SYNCHRO 10 EN LA CIUDAD DE JAÉN, 2025 | | | | | | | | | | | | | |
|---|---|---|----------|------|---------------|---|--|---|---|---|---|----------------|-----------------------|
| Tesis | ANÁLISIS VIAL EN LA INTERSECCIÓN DE LAS CALLES IQUITOS Y EJÉRCITO EMPLEANDO EL SOFTWARE SYNCHRO 10 EN LA CIUDAD DE JAÉN, 2025 | | | | | | | | | | | | |
| Tesistas | Bach. Kelvin Jhonatan Guevara Ruiz Bach. Ever Waldir Torres Pedraza | | | | | | | | | | | | |
| Asesor | Doc. José Luis Piedra Tineo | | | | | | | | | | | | |
| Fecha: Martes 08/07/2025 | Punto de conteo: Intersección de las calles Iquitos y Ejército | | | | | Entrada: Calle Ejército (Sur) | | | Salida: Calle Iquitos (Oeste) | | | | |
| HORA | MOTOS | | CARGUERO | AUTO | STATION WAGON | CAMIONETAS | | | CAMIONES | | | Total por hora | Total por horas punta |
| | TAXI | LINEAL | | | | PICK UP | PANEL | COMBI | 2E | 3E | 4E | | |
| |  |  | | | |  |  |  |  |  |  | | |
| 6:00 a.m - 6:15 a.m | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 185 |
| 6:15 a.m - 6:30 a.m | 3 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | |
| 6:30 a.m - 6:45 a.m | 5 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 10 | |
| 6:45 a.m - 7:00 a.m | 7 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 12 | |
| 7:00 a.m - 7:15 a.m | 10 | 6 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 19 | |
| 7:15 a.m - 7:30 a.m | 13 | 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 21 | |
| 7:30 a.m - 7:45 a.m | 11 | 7 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 20 | |
| 7:45 a.m - 8:00 a.m | 14 | 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 22 | |
| 8:00 a.m - 8:15 a.m | 10 | 8 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 19 | |
| 8:15 a.m - 8:30 a.m | 9 | 7 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 18 | |
| 8:30 a.m - 8:45 a.m | 9 | 8 | 0 | 1 | 0 | 2 | 0 | 1 | 0 | 0 | 0 | 21 | |
| 8:45 a.m - 9:00 a.m | 7 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 13 | |
| 11:00 a.m - 11:15 a.m | 5 | 4 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 11 | 177 |
| 11:15 a.m - 11:30 a.m | 8 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 12 | |
| 11:30 a.m - 11:45 a.m | 6 | 5 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 12 | |
| 11:45 a.m - 12:00 p.m | 8 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 12 | |
| 12:00 p.m - 12:15 p.m | 9 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 15 | |
| 12:15 p.m - 12:30 p.m | 7 | 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 15 | |
| 12:30 p.m - 12:45 p.m | 8 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 14 | |
| 12:45 p.m - 13:00 p.m | 9 | 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 17 | |
| 13:00 p.m - 13:15 p.m | 12 | 9 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 23 | |
| 13:15 p.m - 13:30 p.m | 11 | 8 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 20 | |
| 13:30 p.m - 13:45 p.m | 8 | 6 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 16 | |
| 13:45 p.m - 14:00 p.m | 6 | 3 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 10 | |
| 16:00 p.m - 16:15 p.m | 7 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 12 | 231 |
| 16:15 p.m - 16:30 p.m | 10 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 15 | |
| 16:30 p.m - 16:45 p.m | 8 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 14 | |
| 16:45 p.m - 17:00 p.m | 9 | 8 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 19 | |
| 17:00 p.m - 17:15 p.m | 17 | 9 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 28 | |
| 17:15 p.m - 17:30 p.m | 12 | 7 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 20 | |
| 17:30 p.m - 17:45 p.m | 13 | 9 | 1 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 25 | |
| 17:45 p.m - 18:00 p.m | 14 | 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 24 | |
| 18:00 p.m - 18:15 p.m | 13 | 9 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 24 | |
| 18:15 p.m - 18:30 p.m | 11 | 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 19 | |
| 18:30 p.m - 18:45 p.m | 9 | 6 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 16 | |
| 18:45 p.m - 19:00 p.m | 8 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 15 | |
| Total por tipo | 328 | 232 | 5 | 8 | 1 | 14 | 2 | 2 | 1 | 0 | 0 | 593 | |



UNIVERSIDAD NACIONAL DE JAÉN



Técnica de recolección de datos: Observación directa












| ANÁLISIS VIAL EN LA INTERSECCIÓN DE LAS CALLES IQUITOS Y EJÉRCITO EMPLEANDO EL SOFTWARE SYNCHRO 10 EN LA CIUDAD DE JAÉN, 2025 | | | | | | | | | | | | | |
|---|-------|--------|----------|------|---------------------------------|------------|-------|-------|------------------------------|----|----|----------------|-----------------------|
| Tesis | | | | | | | | | | | | | |
| Bach. Kelvin Jhonatan Guevara Ruiz | | | | | | | | | | | | | |
| Bach. Ever Waldir Torres Pedraza | | | | | | | | | | | | | |
| Asesor | | | | | | | | | | | | | |
| Doc. José Luis Piedra Tineo | | | | | | | | | | | | | |
| Fecha: Martes 08/07/2025 | | | | | | | | | | | | | |
| Punto de conteo: Intersección de las calles Iquitos y Ejército | | | | | Entrada: Calle Ejército (Norte) | | | | Salida: Calle Ejército (Sur) | | | | |
| HORA | MOTOS | | CARGUERO | AUTO | STATION WAGON | CAMIONETAS | | | CAMIONES | | | Total por hora | Total por horas punta |
| | TAXI | LINEAL | | | | PICK UP | PANEL | COMBI | 2E | 3E | 4E | | |
| | | | | | | | | | | | | | |
| 6:00 a.m - 6:15 a.m | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 265 |
| 6:15 a.m - 6:30 a.m | 2 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | |
| 6:30 a.m - 6:45 a.m | 5 | 6 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 13 | |
| 6:45 a.m - 7:00 a.m | 8 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 16 | |
| 7:00 a.m - 7:15 a.m | 14 | 11 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 27 | |
| 7:15 a.m - 7:30 a.m | 15 | 14 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 29 | |
| 7:30 a.m - 7:45 a.m | 15 | 12 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 30 | |
| 7:45 a.m - 8:00 a.m | 18 | 17 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 36 | |
| 8:00 a.m - 8:15 a.m | 17 | 15 | 0 | 2 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 35 | |
| 8:15 a.m - 8:30 a.m | 14 | 14 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 30 | |
| 8:30 a.m - 8:45 a.m | 10 | 10 | 0 | 0 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 23 | |
| 8:45 a.m - 9:00 a.m | 9 | 7 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 17 | |
| 11:00 a.m - 11:15 a.m | 6 | 6 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 14 | 237 |
| 11:15 a.m - 11:30 a.m | 8 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 13 | |
| 11:30 a.m - 11:45 a.m | 8 | 4 | 0 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 0 | 15 | |
| 11:45 a.m - 12:00 p.m | 10 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 15 | |
| 12:00 p.m - 12:15 p.m | 11 | 8 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 21 | |
| 12:15 p.m - 12:30 p.m | 13 | 7 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 21 | |
| 12:30 p.m - 12:45 p.m | 16 | 8 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 25 | |
| 12:45 p.m - 13:00 p.m | 14 | 9 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 23 | |
| 13:00 p.m - 13:15 p.m | 17 | 10 | 0 | 2 | 0 | 2 | 0 | 1 | 0 | 0 | 0 | 32 | |
| 13:15 p.m - 13:30 p.m | 14 | 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 22 | |
| 13:30 p.m - 13:45 p.m | 12 | 6 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 20 | |
| 13:45 p.m - 14:00 p.m | 9 | 6 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 16 | |
| 16:00 p.m - 16:15 p.m | 6 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 11 | 217 |
| 16:15 p.m - 16:30 p.m | 8 | 9 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 18 | |
| 16:30 p.m - 16:45 p.m | 8 | 7 | 1 | 0 | 1 | 0 | 0 | 2 | 1 | 0 | 0 | 20 | |
| 16:45 p.m - 17:00 p.m | 9 | 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 17 | |
| 17:00 p.m - 17:15 p.m | 11 | 9 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 21 | |
| 17:15 p.m - 17:30 p.m | 8 | 7 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 16 | |
| 17:30 p.m - 17:45 p.m | 10 | 8 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 20 | |
| 17:45 p.m - 18:00 p.m | 14 | 11 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 26 | |
| 18:00 p.m - 18:15 p.m | 11 | 9 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 22 | |
| 18:15 p.m - 18:30 p.m | 10 | 8 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 19 | |
| 18:30 p.m - 18:45 p.m | 8 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 15 | |
| 18:45 p.m - 19:00 p.m | 6 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 12 | |
| Total por tipo | 376 | 294 | 4 | 14 | 5 | 11 | 3 | 6 | 6 | 0 | 0 | 719 | |



UNIVERSIDAD NACIONAL DE JAÉN



Técnica de recolección de datos: Observación directa

| ANÁLISIS VIAL EN LA INTERSECCIÓN DE LAS CALLES IQUITOS Y EJÉRCITO EMPLEANDO EL SOFTWARE SYNCHRO 10 EN LA CIUDAD DE JAÉN, 2025 | | | | | | | | | | | | | |
|---|---|---|---|--|---|---|---|---|---|---|---|----------------|-----------------------|
| Tesis | | | | | | | | | | | | | |
| Bach. Kelvin Jhonatan Guevara Ruiz | | | | | | | | | | | | | |
| Bach. Ever Waldir Torres Pedraza | | | | | | | | | | | | | |
| Asesor | | | | | | | | | | | | | |
| Doc. José Luis Piedra Tineo | | | | | | | | | | | | | |
| Fecha: Martes 08/07/2025 | | | | | | | | | | | | | |
| Punto de conteo: Intersección de las calles Iquitos y Ejército | | | | | Entrada: Calle Ejército (Norte) | | | | Salida: Calle Iquitos (Oeste) | | | | |
| HORA | MOTOS | | CARGUERO | AUTO | STATION WAGON | CAMIONETAS | | | CAMIONES | | | Total por hora | Total por horas punta |
| | TAXI | LINEAL | | | | PICK UP | PANEL | COMBI | 2E | 3E | 4E | | |
| |  |  |  |  |  |  |  |  |  |  |  | | |
| 6:00 a.m - 6:15 a.m | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 171 |
| 6:15 a.m - 6:30 a.m | 5 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 8 | |
| 6:30 a.m - 6:45 a.m | 5 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 11 | |
| 6:45 a.m - 7:00 a.m | 6 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 12 | |
| 7:00 a.m - 7:15 a.m | 8 | 6 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 16 | |
| 7:15 a.m - 7:30 a.m | 7 | 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 15 | |
| 7:30 a.m - 7:45 a.m | 10 | 7 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 19 | |
| 7:45 a.m - 8:00 a.m | 11 | 8 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 20 | |
| 8:00 a.m - 8:15 a.m | 9 | 7 | 0 | 2 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 19 | |
| 8:15 a.m - 8:30 a.m | 10 | 8 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 20 | |
| 8:30 a.m - 8:45 a.m | 8 | 6 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 16 | |
| 8:45 a.m - 9:00 a.m | 5 | 5 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 12 | |
| 11:00 a.m - 11:15 a.m | 6 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 12 | |
| 11:15 a.m - 11:30 a.m | 9 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 16 | |
| 11:30 a.m - 11:45 a.m | 8 | 6 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 16 | |
| 11:45 a.m - 12:00 p.m | 9 | 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 17 | |
| 12:00 p.m - 12:15 p.m | 10 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 17 | |
| 12:15 p.m - 12:30 p.m | 13 | 9 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 22 | |
| 12:30 p.m - 12:45 p.m | 12 | 10 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 23 | |
| 12:45 p.m - 13:00 p.m | 13 | 10 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 24 | |
| 13:00 p.m - 13:15 p.m | 9 | 7 | 0 | 1 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 19 | |
| 13:15 p.m - 13:30 p.m | 12 | 6 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 19 | |
| 13:30 p.m - 13:45 p.m | 8 | 7 | 0 | 1 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 19 | |
| 13:45 p.m - 14:00 p.m | 7 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 12 | |
| 16:00 p.m - 16:15 p.m | 6 | 4 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 12 | |
| 16:15 p.m - 16:30 p.m | 8 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 15 | |
| 16:30 p.m - 16:45 p.m | 9 | 5 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 15 | |
| 16:45 p.m - 17:00 p.m | 9 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 16 | |
| 17:00 p.m - 17:15 p.m | 17 | 11 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 30 | |
| 17:15 p.m - 17:30 p.m | 14 | 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 22 | |
| 17:30 p.m - 17:45 p.m | 12 | 8 | 1 | 2 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 25 | |
| 17:45 p.m - 18:00 p.m | 15 | 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 25 | |
| 18:00 p.m - 18:15 p.m | 14 | 8 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 24 | |
| 18:15 p.m - 18:30 p.m | 10 | 5 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 17 | |
| 18:30 p.m - 18:45 p.m | 10 | 7 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 18 | |
| 18:45 p.m - 19:00 p.m | 8 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 13 | |
| Total por tipo | 334 | 242 | 4 | 12 | 2 | 18 | 0 | 5 | 2 | 0 | 0 | 619 | 232 |



UNIVERSIDAD NACIONAL DE JAÉN



Técnica de recolección de datos: Observación directa









| ANÁLISIS VIAL EN LA INTERSECCIÓN DE LAS CALLES IQUITOS Y EJÉRCITO EMPLEANDO EL SOFTWARE SYNCHRO 10 EN LA CIUDAD DE JAÉN, 2025 | | | | | | | | | | | | | |
|---|-------|--------|----------|------|--------------------------------------|------------|-------|-------|--------------------------------------|----|----|----------------|-----------------------|
| Tesis | | | | | | | | | | | | | |
| Bach. Kelvin Jhonatan Guevara Ruiz | | | | | | | | | | | | | |
| Tesistas | | | | | | | | | | | | | |
| Bach. Ever Waldir Torres Pedraza | | | | | | | | | | | | | |
| Asesor | | | | | | | | | | | | | |
| Doc. José Luis Piedra Tineo | | | | | | | | | | | | | |
| Fecha: Miércoles 09/07/2025 | | | | | | | | | | | | | |
| Punto de conteo: Intersección de las calles Iquitos y Ejército | | | | | Entrada: Calle Iquitos (Este) | | | | Salida: Calle Iquitos (Oeste) | | | | |
| HORA | MOTOS | | CARGUERO | AUTO | STATION WAGON | CAMIONETAS | | | CAMIONES | | | Total por hora | Total por horas punta |
| | TAXI | LINEAL | | | | PICK UP | PANEL | COMBI | 2E | 3E | 4E | | |
| | | | | | | | | | | | | | |
| 6:00 a.m - 6:15 a.m | 11 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 18 | 1208 |
| 6:15 a.m - 6:30 a.m | 21 | 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 31 | |
| 6:30 a.m - 6:45 a.m | 34 | 11 | 1 | 0 | 0 | 2 | 1 | 0 | 1 | 0 | 0 | 50 | |
| 6:45 a.m - 7:00 a.m | 41 | 15 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 58 | |
| 7:00 a.m - 7:15 a.m | 81 | 22 | 2 | 2 | 1 | 2 | 1 | 1 | 2 | 0 | 0 | 114 | |
| 7:15 a.m - 7:30 a.m | 85 | 28 | 1 | 0 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 117 | |
| 7:30 a.m - 7:45 a.m | 123 | 45 | 2 | 2 | 2 | 2 | 1 | 0 | 1 | 0 | 0 | 178 | |
| 7:45 a.m - 8:00 a.m | 115 | 40 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 157 | |
| 8:00 a.m - 8:15 a.m | 100 | 39 | 0 | 2 | 2 | 3 | 0 | 1 | 0 | 0 | 0 | 147 | |
| 8:15 a.m - 8:30 a.m | 95 | 37 | 0 | 2 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 135 | |
| 8:30 a.m - 8:45 a.m | 80 | 25 | 0 | 2 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 109 | |
| 8:45 a.m - 9:00 a.m | 70 | 19 | 0 | 1 | 0 | 2 | 0 | 2 | 0 | 0 | 0 | 94 | |
| 11:00 a.m - 11:15 a.m | 90 | 35 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 127 | 2241 |
| 11:15 a.m - 11:30 a.m | 95 | 44 | 0 | 0 | 0 | 2 | 2 | 0 | 0 | 0 | 0 | 143 | |
| 11:30 a.m - 11:45 a.m | 100 | 53 | 2 | 2 | 0 | 1 | 1 | 0 | 2 | 0 | 0 | 161 | |
| 11:45 a.m - 12:00 p.m | 106 | 57 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 165 | |
| 12:00 p.m - 12:15 p.m | 107 | 66 | 1 | 1 | 1 | 0 | 1 | 0 | 1 | 0 | 0 | 178 | |
| 12:15 p.m - 12:30 p.m | 108 | 71 | 0 | 3 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 184 | |
| 12:30 p.m - 12:45 p.m | 130 | 93 | 0 | 4 | 2 | 2 | 0 | 2 | 0 | 0 | 0 | 233 | |
| 12:45 p.m - 13:00 p.m | 135 | 100 | 0 | 4 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 241 | |
| 13:00 p.m - 13:15 p.m | 141 | 89 | 0 | 5 | 1 | 5 | 0 | 1 | 0 | 0 | 0 | 242 | |
| 13:15 p.m - 13:30 p.m | 129 | 85 | 0 | 3 | 1 | 3 | 0 | 1 | 0 | 0 | 0 | 222 | |
| 13:30 p.m - 13:45 p.m | 100 | 75 | 0 | 2 | 2 | 3 | 0 | 2 | 0 | 0 | 0 | 184 | |
| 13:45 p.m - 14:00 p.m | 90 | 68 | 0 | 0 | 0 | 2 | 0 | 1 | 0 | 0 | 0 | 161 | |
| 16:00 p.m - 16:15 p.m | 64 | 49 | 0 | 0 | 2 | 0 | 0 | 1 | 1 | 0 | 0 | 117 | 2044 |
| 16:15 p.m - 16:30 p.m | 65 | 55 | 0 | 1 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 123 | |
| 16:30 p.m - 16:45 p.m | 70 | 62 | 2 | 1 | 1 | 0 | 1 | 2 | 2 | 0 | 0 | 141 | |
| 16:45 p.m - 17:00 p.m | 73 | 65 | 0 | 0 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 141 | |
| 17:00 p.m - 17:15 p.m | 99 | 70 | 3 | 2 | 0 | 2 | 2 | 0 | 2 | 0 | 0 | 180 | |
| 17:15 p.m - 17:30 p.m | 92 | 65 | 0 | 0 | 3 | 4 | 0 | 0 | 0 | 0 | 0 | 164 | |
| 17:30 p.m - 17:45 p.m | 108 | 83 | 2 | 2 | 2 | 3 | 0 | 1 | 0 | 0 | 0 | 201 | |
| 17:45 p.m - 18:00 p.m | 112 | 89 | 0 | 3 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 209 | |
| 18:00 p.m - 18:15 p.m | 107 | 91 | 1 | 3 | 1 | 5 | 0 | 1 | 0 | 0 | 0 | 209 | |
| 18:15 p.m - 18:30 p.m | 103 | 93 | 0 | 3 | 1 | 3 | 0 | 1 | 0 | 0 | 0 | 204 | |
| 18:30 p.m - 18:45 p.m | 92 | 81 | 1 | 1 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 177 | |
| 18:45 p.m - 19:00 p.m | 88 | 86 | 0 | 2 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 178 | |
| Total por tipo | 3260 | 2023 | 18 | 55 | 28 | 65 | 10 | 19 | 15 | 0 | 0 | 5493 | |



UNIVERSIDAD NACIONAL DE JAÉN



Técnica de recolección de datos: Observación directa












| Tesis | | ANÁLISIS VIAL EN LA INTERSECCIÓN DE LAS CALLES IQUITOS Y EJÉRCITO EMPLEANDO EL SOFTWARE SYNCHRO 10 EN LA CIUDAD DE JAÉN, 2025 | | | | | | | | | | | |
|-----------------------------|---|---|----------|------|---------------|---|--|---|---|---|---|----------------|-----------------------|
| Tesisistas | | Bach. Kelvin Jhonatan Guevara Ruiz Bach. Ever Waldir Torres Pedraza | | | | | | | | | | | |
| Asesor | | Doc. José Luis Piedra Tineo | | | | | | | | | | | |
| Fecha: Miércoles 09/07/2025 | | Punto de conteo: Intersección de las calles Iquitos y Ejército | | | | Entrada: Calle Iquitos (Este) | | | Salida: Calle Ejército (Norte) | | | | |
| HORA | MOTOS | | CARGUERO | AUTO | STATION WAGON | CAMIONETAS | | | CAMIONES | | | Total por hora | Total por horas punta |
| | TAXI | LINEAL | | | | PICK UP | PANEL | COMBI | 2E | 3E | 4E | | |
| |  |  | | | |  |  |  |  |  |  | | |
| 6:00 a.m - 6:15 a.m | 4 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 335 |
| 6:15 a.m - 6:30 a.m | 6 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 13 | |
| 6:30 a.m - 6:45 a.m | 7 | 6 | 2 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 18 | |
| 6:45 a.m - 7:00 a.m | 9 | 7 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 18 | |
| 7:00 a.m - 7:15 a.m | 18 | 12 | 1 | 0 | 0 | 1 | 1 | 1 | 2 | 0 | 0 | 36 | |
| 7:15 a.m - 7:30 a.m | 22 | 13 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 36 | |
| 7:30 a.m - 7:45 a.m | 25 | 13 | 0 | 2 | 1 | 2 | 0 | 0 | 1 | 0 | 0 | 44 | |
| 7:45 a.m - 8:00 a.m | 27 | 17 | 0 | 2 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 48 | |
| 8:00 a.m - 8:15 a.m | 20 | 13 | 0 | 0 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 36 | |
| 8:15 a.m - 8:30 a.m | 16 | 9 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 25 | |
| 8:30 a.m - 8:45 a.m | 13 | 11 | 0 | 1 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 28 | |
| 8:45 a.m - 9:00 a.m | 14 | 8 | 0 | 1 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 26 | |
| 11:00 a.m - 11:15 a.m | 14 | 11 | 2 | 0 | 0 | 1 | 2 | 0 | 1 | 0 | 0 | 31 | 433 |
| 11:15 a.m - 11:30 a.m | 13 | 14 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 28 | |
| 11:30 a.m - 11:45 a.m | 15 | 10 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 28 | |
| 11:45 a.m - 12:00 p.m | 18 | 15 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 34 | |
| 12:00 p.m - 12:15 p.m | 19 | 13 | 1 | 1 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 36 | |
| 12:15 p.m - 12:30 p.m | 20 | 16 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 36 | |
| 12:30 p.m - 12:45 p.m | 22 | 14 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 38 | |
| 12:45 p.m - 13:00 p.m | 20 | 17 | 0 | 2 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 40 | |
| 13:00 p.m - 13:15 p.m | 28 | 20 | 0 | 1 | 1 | 2 | 0 | 1 | 0 | 0 | 0 | 53 | |
| 13:15 p.m - 13:30 p.m | 25 | 17 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 44 | |
| 13:30 p.m - 13:45 p.m | 19 | 13 | 0 | 2 | 0 | 2 | 0 | 1 | 0 | 0 | 0 | 37 | |
| 13:45 p.m - 14:00 p.m | 14 | 10 | 0 | 1 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 28 | |
| 16:00 p.m - 16:15 p.m | 13 | 7 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 22 | 515 |
| 16:15 p.m - 16:30 p.m | 16 | 10 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 27 | |
| 16:30 p.m - 16:45 p.m | 19 | 14 | 0 | 0 | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 37 | |
| 16:45 p.m - 17:00 p.m | 26 | 15 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 43 | |
| 17:00 p.m - 17:15 p.m | 30 | 20 | 2 | 1 | 2 | 4 | 0 | 1 | 0 | 0 | 0 | 60 | |
| 17:15 p.m - 17:30 p.m | 28 | 19 | 0 | 1 | 0 | 2 | 0 | 0 | 1 | 0 | 0 | 51 | |
| 17:30 p.m - 17:45 p.m | 26 | 21 | 1 | 2 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 52 | |
| 17:45 p.m - 18:00 p.m | 29 | 21 | 1 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 54 | |
| 18:00 p.m - 18:15 p.m | 25 | 15 | 1 | 2 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 46 | |
| 18:15 p.m - 18:30 p.m | 22 | 19 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 43 | |
| 18:30 p.m - 18:45 p.m | 24 | 17 | 0 | 1 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 44 | |
| 18:45 p.m - 19:00 p.m | 19 | 16 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 36 | |
| Total por tipo | 685 | 483 | 13 | 24 | 18 | 36 | 7 | 8 | 9 | 0 | 0 | 1283 | |



UNIVERSIDAD NACIONAL DE JAÉN



Técnica de recolección de datos: Observación directa












| ANÁLISIS VIAL EN LA INTERSECCIÓN DE LAS CALLES IQUITOS Y EJÉRCITO EMPLEANDO EL SOFTWARE SYNCHRO 10 EN LA CIUDAD DE JAÉN, 2025 | | | | | | | | | | | | | |
|---|---|---|---|--|---|---|---|---|---|---|---|----------------|-----------------------|
| Tesis | | | | | | | | | | | | | |
| Bach. Kelvin Jhonatan Guevara Ruiz | | | | | | | | | | | | | |
| Bach. Ever Waldir Torres Pedraza | | | | | | | | | | | | | |
| Asesor | | | | | | | | | | | | | |
| Doc. José Luis Piedra Tineo | | | | | | | | | | | | | |
| Fecha: Miércoles 09/07/2025 | | | | | | | | | | | | | |
| Punto de conteo: Intersección de las calles Iquitos y Ejército | | | | | Entrada: Calle Iquitos (Este) | | | | Salida: Calle Ejército (Sur) | | | | |
| HORA | MOTOS | | CARGUERO | AUTO | STATION WAGON | CAMIONETAS | | | CAMIONES | | | Total por hora | Total por horas punta |
| | TAXI | LINEAL | | | | PICK UP | PANEL | COMBI | 2E | 3E | 4E | | |
| |  |  |  |  |  |  |  |  |  |  |  | | |
| 6:00 a.m - 6:15 a.m | 4 | 3 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 9 | 368 |
| 6:15 a.m - 6:30 a.m | 7 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 12 | |
| 6:30 a.m - 6:45 a.m | 8 | 6 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 15 | |
| 6:45 a.m - 7:00 a.m | 9 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 14 | |
| 7:00 a.m - 7:15 a.m | 27 | 12 | 1 | 1 | 0 | 1 | 0 | 1 | 2 | 0 | 0 | 45 | |
| 7:15 a.m - 7:30 a.m | 28 | 13 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 41 | |
| 7:30 a.m - 7:45 a.m | 29 | 17 | 1 | 2 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 52 | |
| 7:45 a.m - 8:00 a.m | 33 | 19 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 54 | |
| 8:00 a.m - 8:15 a.m | 22 | 14 | 0 | 1 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 40 | |
| 8:15 a.m - 8:30 a.m | 19 | 14 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 34 | |
| 8:30 a.m - 8:45 a.m | 14 | 8 | 1 | 1 | 0 | 1 | 0 | 2 | 0 | 0 | 0 | 27 | |
| 8:45 a.m - 9:00 a.m | 15 | 7 | 0 | 0 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 25 | |
| 11:00 a.m - 11:15 a.m | 13 | 8 | 1 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 24 | |
| 11:15 a.m - 11:30 a.m | 16 | 11 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 27 | |
| 11:30 a.m - 11:45 a.m | 17 | 10 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 30 | |
| 11:45 a.m - 12:00 p.m | 19 | 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 29 | |
| 12:00 p.m - 12:15 p.m | 23 | 12 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 37 | |
| 12:15 p.m - 12:30 p.m | 20 | 15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 35 | |
| 12:30 p.m - 12:45 p.m | 22 | 16 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 39 | |
| 12:45 p.m - 13:00 p.m | 26 | 17 | 0 | 2 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 46 | |
| 13:00 p.m - 13:15 p.m | 28 | 20 | 0 | 2 | 0 | 2 | 0 | 1 | 0 | 0 | 0 | 53 | |
| 13:15 p.m - 13:30 p.m | 27 | 16 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 44 | |
| 13:30 p.m - 13:45 p.m | 23 | 12 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 37 | |
| 13:45 p.m - 14:00 p.m | 25 | 9 | 0 | 0 | 0 | 1 | 0 | 2 | 0 | 0 | 0 | 37 | |
| 16:00 p.m - 16:15 p.m | 13 | 9 | 0 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 0 | 25 | |
| 16:15 p.m - 16:30 p.m | 16 | 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 26 | |
| 16:30 p.m - 16:45 p.m | 18 | 12 | 1 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 33 | |
| 16:45 p.m - 17:00 p.m | 19 | 16 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 36 | |
| 17:00 p.m - 17:15 p.m | 33 | 25 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 62 | |
| 17:15 p.m - 17:30 p.m | 28 | 21 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 50 | |
| 17:30 p.m - 17:45 p.m | 31 | 27 | 0 | 1 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 62 | |
| 17:45 p.m - 18:00 p.m | 33 | 25 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 58 | |
| 18:00 p.m - 18:15 p.m | 33 | 21 | 1 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 57 | |
| 18:15 p.m - 18:30 p.m | 31 | 22 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 55 | |
| 18:30 p.m - 18:45 p.m | 24 | 20 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 45 | |
| 18:45 p.m - 19:00 p.m | 20 | 17 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 39 | |
| Total por tipo | 773 | 503 | 10 | 18 | 12 | 18 | 3 | 9 | 8 | 0 | 0 | 1354 | |



UNIVERSIDAD NACIONAL DE JAÉN



Técnica de recolección de datos: Observación directa









| ANÁLISIS VIAL EN LA INTERSECCIÓN DE LAS CALLES IQUITOS Y EJÉRCITO EMPLEANDO EL SOFTWARE SYNCHRO 10 EN LA CIUDAD DE JAÉN, 2025 | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|----------------|-----------------------|
| Tesis | ANÁLISIS VIAL EN LA INTERSECCIÓN DE LAS CALLES IQUITOS Y EJÉRCITO EMPLEANDO EL SOFTWARE SYNCHRO 10 EN LA CIUDAD DE JAÉN, 2025 | | | | | | | | | | | | |
| Tesistas | Bach. Kelvin Jhonatan Guevara Ruiz Bach. Ever Waldir Torres Pedraza | | | | | | | | | | | | |
| Asesor | Doc. José Luis Piedra Tineo | | | | | | | | | | | | |
| Fecha: Miércoles 09/07/2025 | Punto de conteo: Intersección de las calles Iquitos y Ejército | | | | | Entrada: Calle Ejército (Sur) | | | Salida: Calle Ejército (Norte) | | | | |
| HORA | MOTOS | | CARGUERO | AUTO | STATION WAGON | CAMIONETAS | | | CAMIONES | | | Total por hora | Total por horas punta |
| | TAXI | LINEAL | | | | PICK UP | PANEL | COMBI | 2E | 3E | 4E | | |
| |  |  |  |  |  |  |  |  |  |  |  | | |
| 6:00 a.m - 6:15 a.m | 3 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 6 | 324 |
| 6:15 a.m - 6:30 a.m | 5 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 10 | |
| 6:30 a.m - 6:45 a.m | 6 | 5 | 1 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 14 | |
| 6:45 a.m - 7:00 a.m | 9 | 9 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 19 | |
| 7:00 a.m - 7:15 a.m | 15 | 17 | 1 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 35 | |
| 7:15 a.m - 7:30 a.m | 18 | 13 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 32 | |
| 7:30 a.m - 7:45 a.m | 20 | 15 | 0 | 1 | 1 | 3 | 0 | 0 | 0 | 0 | 0 | 40 | |
| 7:45 a.m - 8:00 a.m | 24 | 19 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 43 | |
| 8:00 a.m - 8:15 a.m | 21 | 15 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 38 | |
| 8:15 a.m - 8:30 a.m | 18 | 13 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 32 | |
| 8:30 a.m - 8:45 a.m | 15 | 14 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 31 | |
| 8:45 a.m - 9:00 a.m | 12 | 10 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 24 | |
| 11:00 a.m - 11:15 a.m | 11 | 5 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 17 | 359 |
| 11:15 a.m - 11:30 a.m | 13 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 20 | |
| 11:30 a.m - 11:45 a.m | 12 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 19 | |
| 11:45 a.m - 12:00 p.m | 14 | 11 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 26 | |
| 12:00 p.m - 12:15 p.m | 17 | 10 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 29 | |
| 12:15 p.m - 12:30 p.m | 18 | 12 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 31 | |
| 12:30 p.m - 12:45 p.m | 20 | 13 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 33 | |
| 12:45 p.m - 13:00 p.m | 22 | 15 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 39 | |
| 13:00 p.m - 13:15 p.m | 25 | 16 | 0 | 1 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 45 | |
| 13:15 p.m - 13:30 p.m | 26 | 15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 41 | |
| 13:30 p.m - 13:45 p.m | 19 | 9 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 30 | |
| 13:45 p.m - 14:00 p.m | 21 | 6 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 29 | |
| 16:00 p.m - 16:15 p.m | 15 | 3 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 19 | 487 |
| 16:15 p.m - 16:30 p.m | 18 | 10 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 30 | |
| 16:30 p.m - 16:45 p.m | 17 | 12 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 30 | |
| 16:45 p.m - 17:00 p.m | 18 | 13 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 31 | |
| 17:00 p.m - 17:15 p.m | 26 | 17 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 46 | |
| 17:15 p.m - 17:30 p.m | 29 | 19 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 48 | |
| 17:30 p.m - 17:45 p.m | 30 | 20 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 52 | |
| 17:45 p.m - 18:00 p.m | 29 | 23 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 53 | |
| 18:00 p.m - 18:15 p.m | 25 | 22 | 0 | 1 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 50 | |
| 18:15 p.m - 18:30 p.m | 29 | 19 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 49 | |
| 18:30 p.m - 18:45 p.m | 24 | 18 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 45 | |
| 18:45 p.m - 19:00 p.m | 19 | 15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 34 | |
| Total por tipo | 663 | 452 | 6 | 9 | 4 | 26 | 2 | 0 | 8 | 0 | 0 | 1170 | |



UNIVERSIDAD NACIONAL DE JAÉN



Técnica de recolección de datos: Observación directa












| Tesis | | ANÁLISIS VIAL EN LA INTERSECCIÓN DE LAS CALLES IQUITOS Y EJÉRCITO EMPLEANDO EL SOFTWARE SYNCHRO 10 EN LA CIUDAD DE JAÉN, 2025 | | | | | | | | | | | |
|-----------------------------|---|---|-----------|-----------|---------------|---|--|---|---|---|---|----------------|-----------------------|
| Tesisistas | | Bach. Kelvin Jhonatan Guevara Ruiz Bach. Ever Waldir Torres Pedraza | | | | | | | | | | | |
| Asesor | | Doc. José Luis Piedra Tineo | | | | | | | | | | | |
| Fecha: Miércoles 09/07/2025 | | Punto de conteo: Intersección de las calles Iquitos y Ejército | | | | Entrada: Calle Ejército (Sur) | | | Salida: Calle Iquitos (Oeste) | | | | |
| HORA | MOTOS | | CARGUERO | AUTO | STATION WAGON | CAMIONETAS | | | CAMIONES | | | Total por hora | Total por horas punta |
| | TAXI | LINEAL | | | | PICK UP | PANEL | COMBI | 2E | 3E | 4E | | |
| |  |  | | | |  |  |  |  |  |  | | |
| 6:00 a.m - 6:15 a.m | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 162 |
| 6:15 a.m - 6:30 a.m | 3 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | |
| 6:30 a.m - 6:45 a.m | 3 | 4 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 9 | |
| 6:45 a.m - 7:00 a.m | 4 | 3 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 9 | |
| 7:00 a.m - 7:15 a.m | 5 | 5 | 2 | 0 | 0 | 1 | 2 | 0 | 2 | 0 | 0 | 17 | |
| 7:15 a.m - 7:30 a.m | 8 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 15 | |
| 7:30 a.m - 7:45 a.m | 11 | 9 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 22 | |
| 7:45 a.m - 8:00 a.m | 13 | 11 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 25 | |
| 8:00 a.m - 8:15 a.m | 9 | 8 | 0 | 2 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 20 | |
| 8:15 a.m - 8:30 a.m | 6 | 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 16 | |
| 8:30 a.m - 8:45 a.m | 4 | 5 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 11 | |
| 8:45 a.m - 9:00 a.m | 5 | 3 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 10 | |
| 11:00 a.m - 11:15 a.m | 3 | 2 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 7 | 155 |
| 11:15 a.m - 11:30 a.m | 7 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 10 | |
| 11:30 a.m - 11:45 a.m | 6 | 3 | 2 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 12 | |
| 11:45 a.m - 12:00 p.m | 6 | 4 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 11 | |
| 12:00 p.m - 12:15 p.m | 7 | 2 | 1 | 1 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 14 | |
| 12:15 p.m - 12:30 p.m | 8 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 11 | |
| 12:30 p.m - 12:45 p.m | 7 | 4 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 13 | |
| 12:45 p.m - 13:00 p.m | 11 | 5 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 17 | |
| 13:00 p.m - 13:15 p.m | 12 | 8 | 0 | 0 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 23 | |
| 13:15 p.m - 13:30 p.m | 8 | 7 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 17 | |
| 13:30 p.m - 13:45 p.m | 5 | 4 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 10 | |
| 13:45 p.m - 14:00 p.m | 6 | 3 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 10 | |
| 16:00 p.m - 16:15 p.m | 7 | 3 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 11 | 258 |
| 16:15 p.m - 16:30 p.m | 8 | 6 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 15 | |
| 16:30 p.m - 16:45 p.m | 9 | 5 | 1 | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 18 | |
| 16:45 p.m - 17:00 p.m | 9 | 7 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 17 | |
| 17:00 p.m - 17:15 p.m | 18 | 8 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 29 | |
| 17:15 p.m - 17:30 p.m | 15 | 7 | 0 | 2 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 25 | |
| 17:30 p.m - 17:45 p.m | 16 | 10 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 27 | |
| 17:45 p.m - 18:00 p.m | 17 | 8 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 26 | |
| 18:00 p.m - 18:15 p.m | 17 | 10 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 28 | |
| 18:15 p.m - 18:30 p.m | 15 | 9 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 24 | |
| 18:30 p.m - 18:45 p.m | 9 | 9 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 19 | |
| 18:45 p.m - 19:00 p.m | 12 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 19 | |
| Total por tipo | 310 | 206 | 10 | 13 | 9 | 10 | 6 | 5 | 6 | 0 | 0 | 575 | |



UNIVERSIDAD NACIONAL DE JAÉN



Técnica de recolección de datos: Observación directa












| ANÁLISIS VIAL EN LA INTERSECCIÓN DE LAS CALLES IQUITOS Y EJÉRCITO EMPLEANDO EL SOFTWARE SYNCHRO 10 EN LA CIUDAD DE JAÉN, 2025 | | | | | | | | | | | | | |
|---|---|---|---|--|---|---|---|---|---|---|---|----------------|-----------------------|
| Bach. Kelvin Jhonatan Guevara Ruiz | | | | | | | | | | | | | |
| Bach. Ever Waldir Torres Pedraza | | | | | | | | | | | | | |
| Doc. José Luis Piedra Tineo | | | | | | | | | | | | | |
| Fecha: Miércoles 09/07/2025 | | | | | | | | | | | | | |
| Punto de conteo: Intersección de las calles Iquitos y Ejército | | | | | Entrada: Calle Ejército (Norte) | | | | Salida: Calle Ejército (Sur) | | | | |
| HORA | MOTOS | | CARGUERO | AUTO | STATION WAGON | CAMIONETAS | | | CAMIONES | | | Total por hora | Total por horas punta |
| | TAXI | LINEAL | | | | PICK UP | PANEL | COMBI | 2E | 3E | 4E | | |
| |  |  |  |  |  |  |  |  |  |  |  | | |
| 6:00 a.m - 6:15 a.m | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 4 | |
| 6:15 a.m - 6:30 a.m | 3 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | |
| 6:30 a.m - 6:45 a.m | 7 | 4 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 12 | |
| 6:45 a.m - 7:00 a.m | 7 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 15 | |
| 7:00 a.m - 7:15 a.m | 14 | 10 | 2 | 0 | 1 | 0 | 2 | 1 | 1 | 0 | 0 | 31 | |
| 7:15 a.m - 7:30 a.m | 14 | 13 | 1 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 30 | |
| 7:30 a.m - 7:45 a.m | 21 | 14 | 1 | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 40 | |
| 7:45 a.m - 8:00 a.m | 21 | 19 | 0 | 3 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 44 | |
| 8:00 a.m - 8:15 a.m | 16 | 14 | 0 | 2 | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 36 | |
| 8:15 a.m - 8:30 a.m | 16 | 11 | 0 | 2 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 30 | |
| 8:30 a.m - 8:45 a.m | 11 | 12 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 23 | |
| 8:45 a.m - 9:00 a.m | 10 | 9 | 0 | 0 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 22 | |
| 11:00 a.m - 11:15 a.m | 6 | 3 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 11 | |
| 11:15 a.m - 11:30 a.m | 7 | 4 | 0 | 0 | 0 | 0 | 1 | 0 | 2 | 0 | 0 | 14 | |
| 11:30 a.m - 11:45 a.m | 7 | 3 | 1 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 13 | |
| 11:45 a.m - 12:00 p.m | 8 | 5 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 14 | |
| 12:00 p.m - 12:15 p.m | 10 | 4 | 1 | 2 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 19 | |
| 12:15 p.m - 12:30 p.m | 11 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 17 | |
| 12:30 p.m - 12:45 p.m | 12 | 9 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 22 | |
| 12:45 p.m - 13:00 p.m | 15 | 10 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 26 | |
| 13:00 p.m - 13:15 p.m | 14 | 8 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 23 | |
| 13:15 p.m - 13:30 p.m | 12 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 19 | |
| 13:30 p.m - 13:45 p.m | 9 | 5 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 15 | |
| 13:45 p.m - 14:00 p.m | 7 | 5 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 13 | |
| 16:00 p.m - 16:15 p.m | 6 | 6 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 14 | |
| 16:15 p.m - 16:30 p.m | 6 | 5 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 12 | |
| 16:30 p.m - 16:45 p.m | 9 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 17 | |
| 16:45 p.m - 17:00 p.m | 8 | 8 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 17 | |
| 17:00 p.m - 17:15 p.m | 10 | 7 | 2 | 2 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 23 | |
| 17:15 p.m - 17:30 p.m | 9 | 10 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 21 | |
| 17:30 p.m - 17:45 p.m | 9 | 7 | 0 | 2 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 19 | |
| 17:45 p.m - 18:00 p.m | 10 | 6 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 17 | |
| 18:00 p.m - 18:15 p.m | 10 | 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 18 | |
| 18:15 p.m - 18:30 p.m | 8 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 15 | |
| 18:30 p.m - 18:45 p.m | 6 | 4 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 11 | |
| 18:45 p.m - 19:00 p.m | 7 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 13 | |
| Total por tipo | 358 | 267 | 9 | 17 | 13 | 16 | 5 | 4 | 7 | 0 | 0 | 696 | |



UNIVERSIDAD NACIONAL DE JAÉN



Técnica de recolección de datos: Observación directa












| ANÁLISIS VIAL EN LA INTERSECCIÓN DE LAS CALLES IQUITOS Y EJÉRCITO EMPLEANDO EL SOFTWARE SYNCHRO 10 EN LA CIUDAD DE JAÉN, 2025 | | | | | | | | | | | | | |
|---|---|---|---|--|---|---|---|---|---|---|---|----------------|-----------------------|
| Tesis | | | | | | | | | | | | | |
| Bach. Kelvin Jhonatan Guevara Ruiz | | | | | | | | | | | | | |
| Bach. Ever Waldir Torres Pedraza | | | | | | | | | | | | | |
| Asesor | | | | | | | | | | | | | |
| Doc. José Luis Piedra Tineo | | | | | | | | | | | | | |
| Fecha: Miércoles 09/07/2025 | | | | | | | | | | | | | |
| Punto de conteo: Intersección de las calles Iquitos y Ejército | | | | | Entrada: Calle Ejército (Norte) | | | | Salida: Calle Iquitos (Oeste) | | | | |
| HORA | MOTOS | | CARGUERO | AUTO | STATION WAGON | CAMIONETAS | | | CAMIONES | | | Total por hora | Total por horas punta |
| | TAXI | LINEAL | | | | PICK UP | PANEL | COMBI | 2E | 3E | 4E | | |
| |  |  |  |  |  |  |  |  |  |  |  | | |
| 6:00 a.m - 6:15 a.m | 3 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 148 |
| 6:15 a.m - 6:30 a.m | 4 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | |
| 6:30 a.m - 6:45 a.m | 3 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | |
| 6:45 a.m - 7:00 a.m | 6 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 10 | |
| 7:00 a.m - 7:15 a.m | 7 | 5 | 1 | 1 | 0 | 1 | 1 | 0 | 1 | 0 | 0 | 17 | |
| 7:15 a.m - 7:30 a.m | 6 | 5 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 14 | |
| 7:30 a.m - 7:45 a.m | 8 | 7 | 0 | 1 | 0 | 2 | 0 | 1 | 2 | 0 | 0 | 21 | |
| 7:45 a.m - 8:00 a.m | 8 | 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 16 | |
| 8:00 a.m - 8:15 a.m | 10 | 7 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 20 | |
| 8:15 a.m - 8:30 a.m | 7 | 6 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 14 | |
| 8:30 a.m - 8:45 a.m | 6 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 10 | |
| 8:45 a.m - 9:00 a.m | 4 | 4 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 9 | |
| 11:00 a.m - 11:15 a.m | 6 | 5 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 12 | 192 |
| 11:15 a.m - 11:30 a.m | 6 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 11 | |
| 11:30 a.m - 11:45 a.m | 8 | 4 | 1 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 15 | |
| 11:45 a.m - 12:00 p.m | 7 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 12 | |
| 12:00 p.m - 12:15 p.m | 9 | 5 | 1 | 2 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 19 | |
| 12:15 p.m - 12:30 p.m | 10 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 16 | |
| 12:30 p.m - 12:45 p.m | 11 | 7 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 20 | |
| 12:45 p.m - 13:00 p.m | 13 | 7 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 21 | |
| 13:00 p.m - 13:15 p.m | 14 | 5 | 0 | 0 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 22 | |
| 13:15 p.m - 13:30 p.m | 11 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 16 | |
| 13:30 p.m - 13:45 p.m | 12 | 5 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 18 | |
| 13:45 p.m - 14:00 p.m | 6 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 10 | 201 |
| 16:00 p.m - 16:15 p.m | 4 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 8 | |
| 16:15 p.m - 16:30 p.m | 9 | 5 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 15 | |
| 16:30 p.m - 16:45 p.m | 6 | 4 | 1 | 1 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 14 | |
| 16:45 p.m - 17:00 p.m | 10 | 8 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 19 | |
| 17:00 p.m - 17:15 p.m | 11 | 6 | 0 | 2 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 21 | |
| 17:15 p.m - 17:30 p.m | 8 | 5 | 0 | 0 | 0 | 2 | 0 | 1 | 0 | 0 | 0 | 16 | |
| 17:30 p.m - 17:45 p.m | 13 | 6 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 22 | |
| 17:45 p.m - 18:00 p.m | 12 | 9 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 23 | |
| 18:00 p.m - 18:15 p.m | 14 | 7 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 22 | |
| 18:15 p.m - 18:30 p.m | 10 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 16 | |
| 18:30 p.m - 18:45 p.m | 8 | 4 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 13 | |
| 18:45 p.m - 19:00 p.m | 6 | 5 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 12 | |
| Total por tipo | 296 | 188 | 7 | 12 | 7 | 14 | 3 | 7 | 7 | 0 | 0 | 541 | |



UNIVERSIDAD NACIONAL DE JAÉN



Técnica de recolección de datos: Observación directa

| ANÁLISIS VIAL EN LA INTERSECCIÓN DE LAS CALLES IQUITOS Y EJÉRCITO EMPLEANDO EL SOFTWARE SYNCHRO 10 EN LA CIUDAD DE JAÉN, 2025 | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|----------|------|-------------------------------|---|---|--|---|---|---|----------------|-----------------------|---|---|---|------|------|------|------|------|
| Tesis | ANÁLISIS VIAL EN LA INTERSECCIÓN DE LAS CALLES IQUITOS Y EJÉRCITO EMPLEANDO EL SOFTWARE SYNCHRO 10 EN LA CIUDAD DE JAÉN, 2025 | | | | | | | | | | | | | | | | | | | | |
| Tesistas | Bach. Kelvin Jhonatan Guevara Ruiz Bach. Ever Waldir Torres Pedraza | | | | | | | | | | | | | | | | | | | | |
| Asesor | Doc. José Luis Piedra Tineo | | | | | | | | | | | | | | | | | | | | |
| Fecha: Jueves 10/07/2025 | Punto de conteo: Intersección de las calles Iquitos y Ejército | | | | Entrada: Calle Iquitos (Este) | | | | Salida: Calle Iquitos (Oeste) | | | | | | | | | | | | |
| HORA | MOTOS | | CARGUERO | AUTO | STATION WAGON | CAMIONETAS | | | CAMIONES | | | Total por hora | Total por horas punta | | | | | | | | |
| | TAXI | LINEAL | | | | PICK UP | PANEL | COMBI | 2E | 3E | 4E | | | | | | | | | | |
| |  |  | | | |  |  |  |  |  |  | | |  |  |  | | | | | |
| 6:00 a.m - 6:15 a.m | 12 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 19 | 1079 | | | | | | | | |
| 6:15 a.m - 6:30 a.m | 19 | 9 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 28 | | 1079 | | | | | | | |
| 6:30 a.m - 6:45 a.m | 28 | 12 | 1 | 1 | 1 | 1 | 0 | 1 | 1 | 0 | 0 | 46 | | | 1079 | | | | | | |
| 6:45 a.m - 7:00 a.m | 41 | 15 | 0 | 1 | 1 | 1 | 0 | 2 | 0 | 0 | 0 | 61 | | | | 1079 | | | | | |
| 7:00 a.m - 7:15 a.m | 70 | 26 | 1 | 2 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 102 | | | | | 1079 | | | | |
| 7:15 a.m - 7:30 a.m | 73 | 30 | 1 | 0 | 0 | 2 | 0 | 1 | 1 | 0 | 0 | 108 | | | | | | 1079 | | | |
| 7:30 a.m - 7:45 a.m | 89 | 34 | 2 | 1 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 129 | | | | | | | 1079 | | |
| 7:45 a.m - 8:00 a.m | 93 | 39 | 0 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 135 | | | | | | | | 1079 | |
| 8:00 a.m - 8:15 a.m | 88 | 38 | 0 | 1 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 130 | | | | | | | | | 1079 |
| 8:15 a.m - 8:30 a.m | 84 | 29 | 0 | 0 | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 117 | | | | | | | | | |
| 8:30 a.m - 8:45 a.m | 73 | 28 | 0 | 2 | 2 | 1 | 0 | 1 | 0 | 0 | 0 | 107 | 1079 | | | | | | | | |
| 8:45 a.m - 9:00 a.m | 68 | 26 | 0 | 0 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 97 | | 1079 | | | | | | | |
| 11:00 a.m - 11:15 a.m | 69 | 33 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 103 | | | 1985 | | | | | | |
| 11:15 a.m - 11:30 a.m | 77 | 34 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 113 | | | | 1985 | | | | | |
| 11:30 a.m - 11:45 a.m | 96 | 41 | 0 | 0 | 0 | 2 | 1 | 1 | 1 | 0 | 0 | 142 | | | | | 1985 | | | | |
| 11:45 a.m - 12:00 p.m | 103 | 50 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 156 | | | | | | 1985 | | | |
| 12:00 p.m - 12:15 p.m | 106 | 59 | 1 | 1 | 1 | 2 | 0 | 1 | 0 | 0 | 0 | 171 | | | | | | | 1985 | | |
| 12:15 p.m - 12:30 p.m | 95 | 51 | 0 | 2 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 149 | | | | | | | | 1985 | |
| 12:30 p.m - 12:45 p.m | 101 | 83 | 0 | 2 | 1 | 2 | 1 | 1 | 0 | 0 | 0 | 191 | | | | | | | | | 1985 |
| 12:45 p.m - 13:00 p.m | 120 | 88 | 0 | 2 | 0 | 2 | 1 | 0 | 0 | 0 | 0 | 213 | | | | | | | | | |
| 13:00 p.m - 13:15 p.m | 111 | 93 | 0 | 3 | 1 | 4 | 0 | 0 | 0 | 0 | 0 | 212 | 1985 | | | | | | | | |
| 13:15 p.m - 13:30 p.m | 105 | 90 | 0 | 2 | 2 | 3 | 0 | 0 | 0 | 0 | 0 | 202 | | 1985 | | | | | | | |
| 13:30 p.m - 13:45 p.m | 92 | 80 | 0 | 4 | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 180 | | | 1985 | | | | | | |
| 13:45 p.m - 14:00 p.m | 84 | 63 | 0 | 2 | 0 | 2 | 0 | 2 | 0 | 0 | 0 | 153 | | | | 1985 | | | | | |
| 16:00 p.m - 16:15 p.m | 52 | 42 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 95 | | | | | 1926 | | | | |
| 16:15 p.m - 16:30 p.m | 64 | 52 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 116 | | | | | | 1926 | | | |
| 16:30 p.m - 16:45 p.m | 69 | 67 | 0 | 2 | 1 | 2 | 0 | 1 | 1 | 0 | 0 | 143 | | | | | | | 1926 | | |
| 16:45 p.m - 17:00 p.m | 78 | 67 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 147 | | | | | | | | 1926 | |
| 17:00 p.m - 17:15 p.m | 76 | 73 | 1 | 1 | 2 | 2 | 1 | 0 | 0 | 0 | 0 | 156 | | | | | | | | | 1926 |
| 17:15 p.m - 17:30 p.m | 71 | 73 | 2 | 1 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 150 | | | | | | | | | |
| 17:30 p.m - 17:45 p.m | 100 | 93 | 0 | 3 | 2 | 3 | 0 | 1 | 0 | 0 | 0 | 202 | 1926 | | | | | | | | |
| 17:45 p.m - 18:00 p.m | 91 | 93 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 186 | | 1926 | | | | | | | |
| 18:00 p.m - 18:15 p.m | 93 | 91 | 0 | 1 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 188 | | | 1926 | | | | | | |
| 18:15 p.m - 18:30 p.m | 97 | 88 | 0 | 2 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 190 | | | | 1926 | | | | | |
| 18:30 p.m - 18:45 p.m | 89 | 88 | 0 | 2 | 0 | 2 | 1 | 1 | 0 | 0 | 0 | 183 | | | | | 1926 | | | | |
| 18:45 p.m - 19:00 p.m | 83 | 83 | 0 | 1 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 170 | | | | | | 1926 | | | |
| Total por tipo | 2860 | 1968 | 11 | 42 | 26 | 54 | 7 | 15 | 7 | 0 | 0 | 4990 | | | | | | | | | |



UNIVERSIDAD NACIONAL DE JAÉN



Técnica de recolección de datos: Observación directa

| ANÁLISIS VIAL EN LA INTERSECCIÓN DE LAS CALLES IQUITOS Y EJÉRCITO EMPLEANDO EL SOFTWARE SYNCHRO 10 EN LA CIUDAD DE JAÉN, 2025 | | | | | | | | | | | | | |
|---|-------|--------|----------|------|-------------------------------|------------|-------|-------|--------------------------------|----|----|----------------|-----------------------|
| Tesis | | | | | | | | | | | | | |
| Bach. Kelvin Jhonatan Guevara Ruiz | | | | | | | | | | | | | |
| Bach. Ever Waldir Torres Pedraza | | | | | | | | | | | | | |
| Asesor | | | | | | | | | | | | | |
| Doc. José Luis Piedra Tineo | | | | | | | | | | | | | |
| Fecha: Jueves 10/07/2025 | | | | | | | | | | | | | |
| Punto de conteo: Intersección de las calles Iquitos y Ejército | | | | | Entrada: Calle Iquitos (Este) | | | | Salida: Calle Ejército (Norte) | | | | |
| HORA | MOTOS | | CARGUERO | AUTO | STATION WAGON | CAMIONETAS | | | CAMIONES | | | Total por hora | Total por horas punta |
| | TAXI | LINEAL | | | | PICK UP | PANEL | COMBI | 2E | 3E | 4E | | |
| | | | | | | | | | | | | | |
| 6:00 a.m - 6:15 a.m | 2 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 328 |
| 6:15 a.m - 6:30 a.m | 6 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 13 | |
| 6:30 a.m - 6:45 a.m | 8 | 6 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 16 | |
| 6:45 a.m - 7:00 a.m | 11 | 9 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 22 | |
| 7:00 a.m - 7:15 a.m | 12 | 13 | 1 | 0 | 0 | 0 | 1 | 2 | 1 | 0 | 0 | 30 | |
| 7:15 a.m - 7:30 a.m | 25 | 15 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 41 | |
| 7:30 a.m - 7:45 a.m | 22 | 12 | 1 | 2 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 40 | |
| 7:45 a.m - 8:00 a.m | 24 | 14 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 39 | |
| 8:00 a.m - 8:15 a.m | 23 | 13 | 0 | 2 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 39 | |
| 8:15 a.m - 8:30 a.m | 19 | 12 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 32 | |
| 8:30 a.m - 8:45 a.m | 17 | 11 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 29 | |
| 8:45 a.m - 9:00 a.m | 12 | 9 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 22 | |
| 11:00 a.m - 11:15 a.m | 11 | 14 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 25 | 483 |
| 11:15 a.m - 11:30 a.m | 17 | 13 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 30 | |
| 11:30 a.m - 11:45 a.m | 15 | 17 | 1 | 0 | 0 | 1 | 1 | 0 | 1 | 0 | 0 | 36 | |
| 11:45 a.m - 12:00 p.m | 16 | 16 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 33 | |
| 12:00 p.m - 12:15 p.m | 17 | 19 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 39 | |
| 12:15 p.m - 12:30 p.m | 19 | 23 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 42 | |
| 12:30 p.m - 12:45 p.m | 23 | 20 | 0 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 47 | |
| 12:45 p.m - 13:00 p.m | 26 | 23 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 49 | |
| 13:00 p.m - 13:15 p.m | 29 | 29 | 0 | 2 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 62 | |
| 13:15 p.m - 13:30 p.m | 26 | 24 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 52 | |
| 13:30 p.m - 13:45 p.m | 17 | 17 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 37 | |
| 13:45 p.m - 14:00 p.m | 15 | 14 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 31 | |
| 16:00 p.m - 16:15 p.m | 12 | 9 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 23 | 507 |
| 16:15 p.m - 16:30 p.m | 17 | 15 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 33 | |
| 16:30 p.m - 16:45 p.m | 19 | 12 | 1 | 0 | 2 | 1 | 1 | 0 | 1 | 0 | 0 | 37 | |
| 16:45 p.m - 17:00 p.m | 20 | 15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 35 | |
| 17:00 p.m - 17:15 p.m | 22 | 26 | 1 | 2 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 53 | |
| 17:15 p.m - 17:30 p.m | 27 | 23 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 52 | |
| 17:30 p.m - 17:45 p.m | 31 | 22 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 55 | |
| 17:45 p.m - 18:00 p.m | 25 | 25 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 52 | |
| 18:00 p.m - 18:15 p.m | 29 | 20 | 0 | 2 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 52 | |
| 18:15 p.m - 18:30 p.m | 22 | 16 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 38 | |
| 18:30 p.m - 18:45 p.m | 22 | 15 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 38 | |
| 18:45 p.m - 19:00 p.m | 19 | 19 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 39 | |
| Total por tipo | 677 | 570 | 8 | 19 | 11 | 15 | 6 | 8 | 4 | 0 | 0 | 1318 | |



UNIVERSIDAD NACIONAL DE JAÉN



Técnica de recolección de datos: Observación directa

| ANÁLISIS VIAL EN LA INTERSECCIÓN DE LAS CALLES IQUITOS Y EJÉRCITO EMPLEANDO EL SOFTWARE SYNCHRO 10 EN LA CIUDAD DE JAÉN, 2025 | | | | | | | | | | | | | |
|---|-------|--------|----------|------|-------------------------------|------------|-------|-------|------------------------------|----|----|----------------|-----------------------|
| Tesis | | | | | | | | | | | | | |
| Bach. Kelvin Jhonatan Guevara Ruiz | | | | | | | | | | | | | |
| Bach. Ever Waldir Torres Pedraza | | | | | | | | | | | | | |
| Asesor | | | | | | | | | | | | | |
| Doc. José Luis Piedra Tineo | | | | | | | | | | | | | |
| Fecha: Jueves 10/07/2025 | | | | | | | | | | | | | |
| Punto de conteo: Intersección de las calles Iquitos y Ejército | | | | | Entrada: Calle Iquitos (Este) | | | | Salida: Calle Ejército (Sur) | | | | |
| HORA | MOTOS | | CARGUERO | AUTO | STATION WAGON | CAMIONETAS | | | CAMIONES | | | Total por hora | Total por horas punta |
| | TAXI | LINEAL | | | | PICK UP | PANEL | COMBI | 2E | 3E | 4E | | |
| | | | | | | | | | | | | | |
| 6:00 a.m - 6:15 a.m | 5 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9 | 388 |
| 6:15 a.m - 6:30 a.m | 8 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 13 | |
| 6:30 a.m - 6:45 a.m | 7 | 6 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 14 | |
| 6:45 a.m - 7:00 a.m | 9 | 9 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 19 | |
| 7:00 a.m - 7:15 a.m | 24 | 11 | 2 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 40 | |
| 7:15 a.m - 7:30 a.m | 33 | 13 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 48 | |
| 7:30 a.m - 7:45 a.m | 29 | 17 | 1 | 1 | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 52 | |
| 7:45 a.m - 8:00 a.m | 34 | 19 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 54 | |
| 8:00 a.m - 8:15 a.m | 24 | 16 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 42 | |
| 8:15 a.m - 8:30 a.m | 21 | 14 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 36 | |
| 8:30 a.m - 8:45 a.m | 18 | 11 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 31 | |
| 8:45 a.m - 9:00 a.m | 17 | 10 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 30 | |
| 11:00 a.m - 11:15 a.m | 11 | 9 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 21 | 447 |
| 11:15 a.m - 11:30 a.m | 17 | 11 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 29 | |
| 11:30 a.m - 11:45 a.m | 19 | 10 | 1 | 0 | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 33 | |
| 11:45 a.m - 12:00 p.m | 20 | 12 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 33 | |
| 12:00 p.m - 12:15 p.m | 21 | 17 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 41 | |
| 12:15 p.m - 12:30 p.m | 21 | 16 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 38 | |
| 12:30 p.m - 12:45 p.m | 24 | 18 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 43 | |
| 12:45 p.m - 13:00 p.m | 27 | 19 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 48 | |
| 13:00 p.m - 13:15 p.m | 26 | 23 | 0 | 2 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 52 | |
| 13:15 p.m - 13:30 p.m | 23 | 20 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 45 | |
| 13:30 p.m - 13:45 p.m | 18 | 15 | 0 | 1 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 37 | |
| 13:45 p.m - 14:00 p.m | 15 | 11 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 27 | |
| 16:00 p.m - 16:15 p.m | 14 | 11 | 0 | 0 | 2 | 0 | 0 | 0 | 1 | 0 | 0 | 28 | 527 |
| 16:15 p.m - 16:30 p.m | 16 | 13 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 30 | |
| 16:30 p.m - 16:45 p.m | 19 | 14 | 2 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 37 | |
| 16:45 p.m - 17:00 p.m | 21 | 15 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 38 | |
| 17:00 p.m - 17:15 p.m | 30 | 22 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 54 | |
| 17:15 p.m - 17:30 p.m | 29 | 18 | 0 | 0 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 50 | |
| 17:30 p.m - 17:45 p.m | 31 | 27 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 61 | |
| 17:45 p.m - 18:00 p.m | 28 | 19 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 49 | |
| 18:00 p.m - 18:15 p.m | 27 | 20 | 0 | 2 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 50 | |
| 18:15 p.m - 18:30 p.m | 29 | 22 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 51 | |
| 18:30 p.m - 18:45 p.m | 23 | 19 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 43 | |
| 18:45 p.m - 19:00 p.m | 20 | 16 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 36 | |
| Total por tipo | 758 | 532 | 10 | 17 | 16 | 17 | 4 | 4 | 4 | 0 | 0 | 1362 | |



UNIVERSIDAD NACIONAL DE JAÉN



Técnica de recolección de datos: Observación directa

| ANÁLISIS VIAL EN LA INTERSECCIÓN DE LAS CALLES IQUITOS Y EJÉRCITO EMPLEANDO EL SOFTWARE SYNCHRO 10 EN LA CIUDAD DE JAÉN, 2025 | | | | | | | | | | | | | |
|---|-------|--------|----------|------|-------------------------------|------------|-------|-------|--------------------------------|----|----|----------------|-----------------------|
| Tesis | | | | | | | | | | | | | |
| Bach. Kelvin Jhonatan Guevara Ruiz | | | | | | | | | | | | | |
| Bach. Ever Waldir Torres Pedraza | | | | | | | | | | | | | |
| Asesor | | | | | | | | | | | | | |
| Doc. José Luis Piedra Tineo | | | | | | | | | | | | | |
| Fecha: Jueves 10/07/2025 | | | | | | | | | | | | | |
| Punto de conteo: Intersección de las calles Iquitos y Ejército | | | | | Entrada: Calle Ejército (Sur) | | | | Salida: Calle Ejército (Norte) | | | | |
| HORA | MOTOS | | CARGUERO | AUTO | STATION WAGON | CAMIONETAS | | | CAMIONES | | | Total por hora | Total por horas punta |
| | TAXI | LINEAL | | | | PICK UP | PANEL | COMBI | 2E | 3E | 4E | | |
| | | | | | | | | | | | | | |
| 6:00 a.m - 6:15 a.m | 3 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 346 |
| 6:15 a.m - 6:30 a.m | 5 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9 | |
| 6:30 a.m - 6:45 a.m | 7 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 12 | |
| 6:45 a.m - 7:00 a.m | 10 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 17 | |
| 7:00 a.m - 7:15 a.m | 20 | 15 | 2 | 1 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 40 | |
| 7:15 a.m - 7:30 a.m | 21 | 18 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 39 | |
| 7:30 a.m - 7:45 a.m | 19 | 19 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 40 | |
| 7:45 a.m - 8:00 a.m | 25 | 21 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 47 | |
| 8:00 a.m - 8:15 a.m | 21 | 17 | 0 | 1 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 41 | |
| 8:15 a.m - 8:30 a.m | 20 | 13 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 35 | |
| 8:30 a.m - 8:45 a.m | 18 | 15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 33 | |
| 8:45 a.m - 9:00 a.m | 16 | 12 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 28 | |
| 11:00 a.m - 11:15 a.m | 10 | 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 18 | 380 |
| 11:15 a.m - 11:30 a.m | 12 | 9 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 22 | |
| 11:30 a.m - 11:45 a.m | 13 | 10 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 26 | |
| 11:45 a.m - 12:00 p.m | 12 | 9 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 23 | |
| 12:00 p.m - 12:15 p.m | 20 | 12 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 34 | |
| 12:15 p.m - 12:30 p.m | 21 | 13 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 34 | |
| 12:30 p.m - 12:45 p.m | 23 | 14 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 37 | |
| 12:45 p.m - 13:00 p.m | 25 | 16 | 0 | 0 | 0 | 2 | 1 | 0 | 0 | 0 | 0 | 44 | |
| 13:00 p.m - 13:15 p.m | 27 | 18 | 0 | 0 | 0 | 1 | 2 | 1 | 0 | 0 | 0 | 49 | |
| 13:15 p.m - 13:30 p.m | 23 | 16 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 41 | |
| 13:30 p.m - 13:45 p.m | 18 | 11 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 30 | |
| 13:45 p.m - 14:00 p.m | 13 | 9 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 22 | 456 |
| 16:00 p.m - 16:15 p.m | 11 | 9 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 21 | |
| 16:15 p.m - 16:30 p.m | 15 | 12 | 2 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 30 | |
| 16:30 p.m - 16:45 p.m | 17 | 10 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 29 | |
| 16:45 p.m - 17:00 p.m | 19 | 13 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 34 | |
| 17:00 p.m - 17:15 p.m | 21 | 20 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 43 | |
| 17:15 p.m - 17:30 p.m | 23 | 20 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 44 | |
| 17:30 p.m - 17:45 p.m | 26 | 21 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 49 | |
| 17:45 p.m - 18:00 p.m | 21 | 19 | 0 | 0 | 0 | 2 | 2 | 0 | 0 | 0 | 0 | 44 | |
| 18:00 p.m - 18:15 p.m | 22 | 21 | 0 | 1 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 46 | |
| 18:15 p.m - 18:30 p.m | 25 | 18 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 44 | |
| 18:30 p.m - 18:45 p.m | 22 | 17 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 39 | |
| 18:45 p.m - 19:00 p.m | 19 | 14 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 33 | |
| Total por tipo | 643 | 487 | 8 | 7 | 3 | 15 | 10 | 4 | 5 | 0 | 0 | 1182 | |



UNIVERSIDAD NACIONAL DE JAÉN



Técnica de recolección de datos: Observación directa












| Tesis | | ANÁLISIS VIAL EN LA INTERSECCIÓN DE LAS CALLES IQUITOS Y EJÉRCITO EMPLEANDO EL SOFTWARE SYNCHRO 10 EN LA CIUDAD DE JAÉN, 2025 | | | | | | | | | | | |
|--------------------------|------------|---|----------|----------|---------------|-------------------------------|----------|-----------|-------------------------------|----------|----------|----------------|-----------------------|
| Tesisistas | | Bach. Kelvin Jhonatan Guevara Ruiz Bach. Ever Waldir Torres Pedraza | | | | | | | | | | | |
| Asesor | | Doc. José Luis Piedra Tineo | | | | | | | | | | | |
| Fecha: Jueves 10/07/2025 | | Punto de conteo: Intersección de las calles Iquitos y Ejército | | | | Entrada: Calle Ejército (Sur) | | | Salida: Calle Iquitos (Oeste) | | | | |
| HORA | MOTOS | | CARGUERO | AUTO | STATION WAGON | CAMIONETAS | | | CAMIONES | | | Total por hora | Total por horas punta |
| | TAXI | LINEAL | | | | PICK UP | PANEL | COMBI | 2E | 3E | 4E | | |
| | | | | | | | | | | | | | |
| 6:00 a.m - 6:15 a.m | 3 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 195 |
| 6:15 a.m - 6:30 a.m | 4 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9 | |
| 6:30 a.m - 6:45 a.m | 5 | 5 | 2 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 14 | |
| 6:45 a.m - 7:00 a.m | 6 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 11 | |
| 7:00 a.m - 7:15 a.m | 10 | 6 | 1 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 19 | |
| 7:15 a.m - 7:30 a.m | 12 | 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 20 | |
| 7:30 a.m - 7:45 a.m | 15 | 8 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 25 | |
| 7:45 a.m - 8:00 a.m | 13 | 9 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 22 | |
| 8:00 a.m - 8:15 a.m | 11 | 7 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 20 | |
| 8:15 a.m - 8:30 a.m | 9 | 6 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 17 | |
| 8:30 a.m - 8:45 a.m | 10 | 5 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 17 | |
| 8:45 a.m - 9:00 a.m | 8 | 5 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 15 | |
| 11:00 a.m - 11:15 a.m | 6 | 3 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 10 | |
| 11:15 a.m - 11:30 a.m | 6 | 4 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 12 | |
| 11:30 a.m - 11:45 a.m | 7 | 5 | 1 | 0 | 1 | 0 | 0 | 2 | 0 | 0 | 0 | 16 | |
| 11:45 a.m - 12:00 p.m | 9 | 8 | 0 | 0 | 2 | 0 | 0 | 1 | 0 | 0 | 0 | 20 | |
| 12:00 p.m - 12:15 p.m | 10 | 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 20 | |
| 12:15 p.m - 12:30 p.m | 11 | 11 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 23 | |
| 12:30 p.m - 12:45 p.m | 13 | 11 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 26 | |
| 12:45 p.m - 13:00 p.m | 16 | 12 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 30 | |
| 13:00 p.m - 13:15 p.m | 19 | 15 | 0 | 1 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 37 | |
| 13:15 p.m - 13:30 p.m | 14 | 14 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 29 | |
| 13:30 p.m - 13:45 p.m | 10 | 11 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 23 | |
| 13:45 p.m - 14:00 p.m | 8 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 15 | |
| 16:00 p.m - 16:15 p.m | 6 | 5 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 12 | |
| 16:15 p.m - 16:30 p.m | 8 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 15 | |
| 16:30 p.m - 16:45 p.m | 10 | 6 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 18 | |
| 16:45 p.m - 17:00 p.m | 11 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 18 | |
| 17:00 p.m - 17:15 p.m | 16 | 9 | 0 | 1 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 28 | |
| 17:15 p.m - 17:30 p.m | 17 | 10 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 29 | |
| 17:30 p.m - 17:45 p.m | 12 | 8 | 0 | 0 | 0 | 1 | 2 | 1 | 0 | 0 | 0 | 24 | |
| 17:45 p.m - 18:00 p.m | 15 | 9 | 0 | 1 | 0 | 0 | 1 | 2 | 0 | 0 | 0 | 28 | |
| 18:00 p.m - 18:15 p.m | 16 | 7 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 24 | |
| 18:15 p.m - 18:30 p.m | 13 | 8 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 22 | |
| 18:30 p.m - 18:45 p.m | 15 | 5 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 21 | |
| 18:45 p.m - 19:00 p.m | 12 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 19 | |
| Total por tipo | 386 | 271 | 5 | 8 | 7 | 17 | 6 | 12 | 2 | 0 | 0 | 714 | |



UNIVERSIDAD NACIONAL DE JAÉN



Técnica de recolección de datos: Observación directa

| ANÁLISIS VIAL EN LA INTERSECCIÓN DE LAS CALLES IQUITOS Y EJÉRCITO EMPLEANDO EL SOFTWARE SYNCHRO 10 EN LA CIUDAD DE JAÉN, 2025 | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|----------------|-----------------------|
| Bach. Kelvin Jhonatan Guevara Ruiz | | | | | | | | | | | | | |
| Bach. Ever Waldir Torres Pedraza | | | | | | | | | | | | | |
| Doc. José Luis Piedra Tineo | | | | | | | | | | | | | |
| Fecha: Jueves 10/07/2025 | | | | | | | | | | | | | |
| Punto de conteo: Intersección de las calles Iquitos y Ejército | | | | | Entrada: Calle Ejército (Norte) | | | | Salida: Calle Ejército (Sur) | | | | |
| HORA | MOTOS | | CARGUERO | AUTO | STATION WAGON | CAMIONETAS | | | CAMIONES | | | Total por hora | Total por horas punta |
| | TAXI | LINEAL | | | | PICK UP | PANEL | COMBI | 2E | 3E | 4E | | |
| |  |  |  |  |  |  |  |  |  |  |  | | |
| 6:00 a.m - 6:15 a.m | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 285 |
| 6:15 a.m - 6:30 a.m | 5 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9 | |
| 6:30 a.m - 6:45 a.m | 5 | 4 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 10 | |
| 6:45 a.m - 7:00 a.m | 6 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 11 | |
| 7:00 a.m - 7:15 a.m | 16 | 13 | 2 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 33 | |
| 7:15 a.m - 7:30 a.m | 18 | 15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 33 | |
| 7:30 a.m - 7:45 a.m | 19 | 15 | 0 | 2 | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 40 | |
| 7:45 a.m - 8:00 a.m | 21 | 18 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 41 | |
| 8:00 a.m - 8:15 a.m | 16 | 14 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 32 | |
| 8:15 a.m - 8:30 a.m | 13 | 12 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 26 | |
| 8:30 a.m - 8:45 a.m | 14 | 10 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 26 | |
| 8:45 a.m - 9:00 a.m | 10 | 8 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 20 | |
| 11:00 a.m - 11:15 a.m | 6 | 4 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 11 | 277 |
| 11:15 a.m - 11:30 a.m | 9 | 7 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 18 | |
| 11:30 a.m - 11:45 a.m | 10 | 5 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 17 | |
| 11:45 a.m - 12:00 p.m | 11 | 7 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 20 | |
| 12:00 p.m - 12:15 p.m | 16 | 8 | 0 | 1 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 28 | |
| 12:15 p.m - 12:30 p.m | 13 | 10 | 0 | 1 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 26 | |
| 12:30 p.m - 12:45 p.m | 12 | 11 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 24 | |
| 12:45 p.m - 13:00 p.m | 17 | 13 | 0 | 2 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 33 | |
| 13:00 p.m - 13:15 p.m | 20 | 15 | 0 | 1 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 38 | |
| 13:15 p.m - 13:30 p.m | 14 | 9 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 24 | |
| 13:30 p.m - 13:45 p.m | 11 | 9 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 20 | |
| 13:45 p.m - 14:00 p.m | 9 | 9 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 18 | |
| 16:00 p.m - 16:15 p.m | 9 | 7 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 18 | 289 |
| 16:15 p.m - 16:30 p.m | 10 | 8 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 19 | |
| 16:30 p.m - 16:45 p.m | 10 | 8 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 20 | |
| 16:45 p.m - 17:00 p.m | 11 | 7 | 1 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 21 | |
| 17:00 p.m - 17:15 p.m | 14 | 9 | 2 | 1 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 29 | |
| 17:15 p.m - 17:30 p.m | 11 | 12 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 24 | |
| 17:30 p.m - 17:45 p.m | 15 | 13 | 0 | 1 | 0 | 2 | 0 | 2 | 0 | 0 | 0 | 33 | |
| 17:45 p.m - 18:00 p.m | 13 | 11 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 26 | |
| 18:00 p.m - 18:15 p.m | 12 | 12 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 26 | |
| 18:15 p.m - 18:30 p.m | 15 | 15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 30 | |
| 18:30 p.m - 18:45 p.m | 13 | 11 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 24 | |
| 18:45 p.m - 19:00 p.m | 10 | 9 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 19 | |
| Total por tipo | 436 | 349 | 9 | 16 | 8 | 17 | 5 | 9 | 2 | 0 | 0 | 851 | |



UNIVERSIDAD NACIONAL DE JAÉN



Técnica de recolección de datos: Observación directa

| ANÁLISIS VIAL EN LA INTERSECCIÓN DE LAS CALLES IQUITOS Y EJÉRCITO EMPLEANDO EL SOFTWARE SYNCHRO 10 EN LA CIUDAD DE JAÉN, 2025 | | | | | | | | | | | | | |
|---|------------|------------|----------|----------|---------------------------------|------------|----------|-----------|-------------------------------|----------|----------|----------------|-----------------------|
| Bach. Kelvin Jhonatan Guevara Ruiz | | | | | | | | | | | | | |
| Bach. Ever Waldir Torres Pedraza | | | | | | | | | | | | | |
| Doc. José Luis Piedra Tineo | | | | | | | | | | | | | |
| Fecha: Jueves 10/07/2025 | | | | | | | | | | | | | |
| Punto de conteo: Intersección de las calles Iquitos y Ejército | | | | | Entrada: Calle Ejército (Norte) | | | | Salida: Calle Iquitos (Oeste) | | | | |
| HORA | MOTOS | | CARGUERO | AUTO | STATION WAGON | CAMIONETAS | | | CAMIONES | | | Total por hora | Total por horas punta |
| | TAXI | LINEAL | | | | PICK UP | PANEL | COMBI | 2E | 3E | 4E | | |
| | | | | | | | | | | | | | |
| 6:00 a.m - 6:15 a.m | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 199 |
| 6:15 a.m - 6:30 a.m | 5 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 8 | |
| 6:30 a.m - 6:45 a.m | 6 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 11 | |
| 6:45 a.m - 7:00 a.m | 6 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 11 | |
| 7:00 a.m - 7:15 a.m | 12 | 6 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 21 | |
| 7:15 a.m - 7:30 a.m | 10 | 7 | 0 | 1 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 20 | |
| 7:30 a.m - 7:45 a.m | 12 | 9 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 24 | |
| 7:45 a.m - 8:00 a.m | 15 | 11 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 27 | |
| 8:00 a.m - 8:15 a.m | 11 | 9 | 0 | 2 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 24 | |
| 8:15 a.m - 8:30 a.m | 8 | 7 | 0 | 0 | 1 | 0 | 2 | 2 | 0 | 0 | 0 | 20 | |
| 8:30 a.m - 8:45 a.m | 6 | 8 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 15 | |
| 8:45 a.m - 9:00 a.m | 7 | 6 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 14 | |
| 11:00 a.m - 11:15 a.m | 8 | 7 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 17 | |
| 11:15 a.m - 11:30 a.m | 8 | 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 16 | |
| 11:30 a.m - 11:45 a.m | 9 | 7 | 1 | 0 | 1 | 2 | 0 | 1 | 0 | 0 | 0 | 21 | |
| 11:45 a.m - 12:00 p.m | 10 | 9 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 19 | |
| 12:00 p.m - 12:15 p.m | 12 | 8 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 21 | |
| 12:15 p.m - 12:30 p.m | 10 | 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 20 | |
| 12:30 p.m - 12:45 p.m | 11 | 11 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 22 | |
| 12:45 p.m - 13:00 p.m | 14 | 12 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 28 | |
| 13:00 p.m - 13:15 p.m | 16 | 14 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 31 | |
| 13:15 p.m - 13:30 p.m | 12 | 11 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 23 | |
| 13:30 p.m - 13:45 p.m | 11 | 8 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 21 | |
| 13:45 p.m - 14:00 p.m | 8 | 7 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 16 | |
| 16:00 p.m - 16:15 p.m | 6 | 4 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 11 | |
| 16:15 p.m - 16:30 p.m | 7 | 7 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 16 | |
| 16:30 p.m - 16:45 p.m | 7 | 5 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 13 | |
| 16:45 p.m - 17:00 p.m | 12 | 8 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 22 | |
| 17:00 p.m - 17:15 p.m | 13 | 8 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 24 | |
| 17:15 p.m - 17:30 p.m | 11 | 7 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 19 | |
| 17:30 p.m - 17:45 p.m | 18 | 8 | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 29 | |
| 17:45 p.m - 18:00 p.m | 13 | 11 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 26 | |
| 18:00 p.m - 18:15 p.m | 12 | 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 22 | |
| 18:15 p.m - 18:30 p.m | 16 | 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 24 | |
| 18:30 p.m - 18:45 p.m | 11 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 17 | |
| 18:45 p.m - 19:00 p.m | 13 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 19 | |
| Total por tipo | 368 | 277 | 4 | 6 | 7 | 12 | 9 | 11 | 2 | 0 | 0 | 696 | |



UNIVERSIDAD NACIONAL DE JAÉN



Técnica de recolección de datos: Observación directa












| Tesis | | ANÁLISIS VIAL EN LA INTERSECCIÓN DE LAS CALLES IQUITOS Y EJÉRCITO EMPLEANDO EL SOFTWARE SYNCHRO 10 EN LA CIUDAD DE JAÉN, 2025 | | | | | | | | | | | |
|---------------------------|-------|---|----------|------|---------------|-------------------------------|-------|-------|-------------------------------|----|----|----------------|-----------------------|
| Tesistas | | Bach. Kelvin Jhonatan Guevara Ruiz Bach. Ever Waldir Torres Pedraza | | | | | | | | | | | |
| Asesor | | Doc. José Luis Piedra Tineo | | | | | | | | | | | |
| Fecha: Viernes 11/07/2025 | | Punto de conteo: Intersección de las calles Iquitos y Ejército | | | | Entrada: Calle Iquitos (Este) | | | Salida: Calle Iquitos (Oeste) | | | | |
| HORA | MOTOS | | CARGUERO | AUTO | STATION WAGON | CAMIONETAS | | | CAMIONES | | | Total por hora | Total por horas punta |
| | TAXI | LINEAL | | | | PICK UP | PANEL | COMBI | 2E | 3E | 4E | | |
| | | | | | | | | | | | | | |
| 6:00 a.m - 6:15 a.m | 12 | 7 | 1 | 0 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 23 | 1356 |
| 6:15 a.m - 6:30 a.m | 20 | 10 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 32 | |
| 6:30 a.m - 6:45 a.m | 35 | 19 | 1 | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 59 | |
| 6:45 a.m - 7:00 a.m | 46 | 22 | 0 | 2 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 72 | |
| 7:00 a.m - 7:15 a.m | 58 | 29 | 1 | 1 | 1 | 2 | 1 | 0 | 1 | 0 | 0 | 94 | |
| 7:15 a.m - 7:30 a.m | 72 | 38 | 1 | 0 | 2 | 2 | 1 | 0 | 0 | 0 | 0 | 116 | |
| 7:30 a.m - 7:45 a.m | 84 | 51 | 1 | 2 | 2 | 1 | 1 | 1 | 0 | 0 | 0 | 143 | |
| 7:45 a.m - 8:00 a.m | 99 | 50 | 0 | 2 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 154 | |
| 8:00 a.m - 8:15 a.m | 105 | 62 | 0 | 1 | 2 | 2 | 1 | 0 | 0 | 0 | 0 | 173 | |
| 8:15 a.m - 8:30 a.m | 109 | 67 | 1 | 1 | 3 | 2 | 1 | 0 | 0 | 0 | 0 | 184 | |
| 8:30 a.m - 8:45 a.m | 98 | 55 | 1 | 0 | 2 | 1 | 1 | 1 | 1 | 0 | 0 | 160 | |
| 8:45 a.m - 9:00 a.m | 93 | 50 | 0 | 0 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 146 | |
| 11:00 a.m - 11:15 a.m | 85 | 44 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 135 | |
| 11:15 a.m - 11:30 a.m | 91 | 46 | 1 | 2 | 1 | 2 | 1 | 1 | 0 | 0 | 0 | 145 | |
| 11:30 a.m - 11:45 a.m | 101 | 59 | 1 | 2 | 1 | 2 | 1 | 1 | 0 | 0 | 0 | 168 | |
| 11:45 a.m - 12:00 a.m | 104 | 63 | 2 | 3 | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 176 | |
| 12:00 a.m - 12:15 p.m | 96 | 45 | 1 | 3 | 2 | 2 | 1 | 0 | 1 | 0 | 0 | 151 | |
| 12:15 p.m - 12:30 p.m | 100 | 52 | 1 | 2 | 2 | 2 | 1 | 0 | 0 | 0 | 0 | 160 | |
| 12:30 p.m - 12:45 p.m | 106 | 50 | 1 | 1 | 1 | 2 | 1 | 1 | 0 | 0 | 0 | 163 | |
| 12:45 p.m - 13:00 p.m | 119 | 74 | 2 | 3 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 201 | |
| 13:00 p.m - 13:15 p.m | 128 | 71 | 1 | 2 | 1 | 2 | 1 | 1 | 0 | 0 | 0 | 207 | |
| 13:15 p.m - 13:30 p.m | 136 | 67 | 1 | 3 | 0 | 1 | 2 | 1 | 0 | 0 | 0 | 211 | |
| 13:30 p.m - 13:45 p.m | 120 | 60 | 1 | 1 | 0 | 2 | 1 | 1 | 0 | 0 | 0 | 186 | |
| 13:45 p.m - 14:00 p.m | 111 | 52 | 0 | 1 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 166 | |
| 16:00 p.m - 16:15 p.m | 61 | 28 | 0 | 1 | 1 | 3 | 1 | 1 | 0 | 0 | 0 | 96 | |
| 16:15 p.m - 16:30 p.m | 66 | 36 | 1 | 2 | 0 | 2 | 1 | 1 | 0 | 0 | 0 | 109 | |
| 16:30 p.m - 16:45 p.m | 72 | 38 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 115 | |
| 16:45 p.m - 17:00 p.m | 70 | 29 | 1 | 1 | 1 | 2 | 0 | 1 | 0 | 0 | 0 | 105 | |
| 17:00 p.m - 17:15 p.m | 82 | 62 | 2 | 1 | 1 | 2 | 1 | 0 | 1 | 0 | 0 | 152 | |
| 17:15 p.m - 17:30 p.m | 87 | 60 | 3 | 3 | 2 | 3 | 1 | 0 | 0 | 0 | 0 | 159 | |
| 17:30 p.m - 17:45 p.m | 92 | 58 | 1 | 1 | 1 | 2 | 1 | 1 | 0 | 0 | 0 | 157 | |
| 17:45 p.m - 18:00 p.m | 99 | 60 | 1 | 1 | 1 | 3 | 0 | 0 | 0 | 0 | 0 | 165 | |
| 18:00 p.m - 18:15 p.m | 104 | 63 | 1 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 171 | |
| 18:15 p.m - 18:30 p.m | 119 | 66 | 0 | 1 | 0 | 3 | 1 | 0 | 0 | 0 | 0 | 190 | |
| 18:30 p.m - 18:45 p.m | 102 | 59 | 0 | 1 | 1 | 2 | 1 | 1 | 1 | 0 | 0 | 168 | |
| 18:45 p.m - 19:00 p.m | 90 | 55 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 147 | |
| Total por tipo | 3172 | 1757 | 30 | 47 | 41 | 63 | 24 | 19 | 6 | 0 | 0 | 5159 | |



UNIVERSIDAD NACIONAL DE JAÉN



Técnica de recolección de datos: Observación directa

| ANÁLISIS VIAL EN LA INTERSECCIÓN DE LAS CALLES IQUITOS Y EJÉRCITO EMPLEANDO EL SOFTWARE SYNCHRO 10 EN LA CIUDAD DE JAÉN, 2025 | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|----------|------|---------------|---|--|---|---|---|---|----------------|-----------------------|---|---|---|-----|-----|-----|-----|-----|-----|-----|
| Tesis | ANÁLISIS VIAL EN LA INTERSECCIÓN DE LAS CALLES IQUITOS Y EJÉRCITO EMPLEANDO EL SOFTWARE SYNCHRO 10 EN LA CIUDAD DE JAÉN, 2025 | | | | | | | | | | | | | | | | | | | | | | |
| Tesistas | Bach. Kelvin Jhonatan Guevara Ruiz Bach. Ever Waldir Torres Pedraza | | | | | | | | | | | | | | | | | | | | | | |
| Asesor | Doc. José Luis Piedra Tineo | | | | | | | | | | | | | | | | | | | | | | |
| Fecha: Viernes 11/07/2025 | Punto de conteo: Intersección de las calles Iquitos y Ejército | | | | | Entrada: Calle Iquitos (Este) | | | Salida: Calle Ejército (Norte) | | | | | | | | | | | | | | |
| HORA | MOTOS | | CARGUERO | AUTO | STATION WAGON | CAMIONETAS | | | CAMIONES | | | Total por hora | Total por horas punta | | | | | | | | | | |
| | TAXI | LINEAL | | | | PICK UP | PANEL | COMBI | 2E | 3E | 4E | | | | | | | | | | | | |
| |  |  | | | |  |  |  |  |  |  | | |  |  |  | | | | | | | |
| 6:00 a.m - 6:15 a.m | 8 | 4 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 16 | 464 | | | | | | | | | | |
| 6:15 a.m - 6:30 a.m | 9 | 5 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 19 | | 464 | | | | | | | | | |
| 6:30 a.m - 6:45 a.m | 11 | 5 | 1 | 1 | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 21 | | | 464 | | | | | | | | |
| 6:45 a.m - 7:00 a.m | 11 | 5 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 17 | | | | 464 | | | | | | | |
| 7:00 a.m - 7:15 a.m | 15 | 8 | 1 | 1 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 28 | | | | | 464 | | | | | | |
| 7:15 a.m - 7:30 a.m | 23 | 12 | 1 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 38 | | | | | | 464 | | | | | |
| 7:30 a.m - 7:45 a.m | 29 | 15 | 1 | 0 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 49 | | | | | | | 464 | | | | |
| 7:45 a.m - 8:00 a.m | 30 | 16 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 48 | | | | | | | | 464 | | | |
| 8:00 a.m - 8:15 a.m | 35 | 18 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 55 | | | | | | | | | 464 | | |
| 8:15 a.m - 8:30 a.m | 40 | 25 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 66 | | | | | | | | | | 464 | |
| 8:30 a.m - 8:45 a.m | 40 | 19 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 61 | | | | | | | | | | | 464 |
| 8:45 a.m - 9:00 a.m | 31 | 14 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 46 | | | | | | | | | | | |
| 11:00 a.m - 11:15 a.m | 20 | 9 | 1 | 1 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 33 | 691 | | | | | | | | | | |
| 11:15 a.m - 11:30 a.m | 25 | 9 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 36 | | 691 | | | | | | | | | |
| 11:30 a.m - 11:45 a.m | 28 | 16 | 0 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 49 | | | 691 | | | | | | | | |
| 11:45 a.m - 12:00 a.m | 30 | 14 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 45 | | | | 691 | | | | | | | |
| 12:00 a.m - 12:15 p.m | 30 | 11 | 1 | 1 | 0 | 2 | 1 | 0 | 1 | 0 | 0 | 47 | | | | | 691 | | | | | | |
| 12:15 p.m - 12:30 p.m | 33 | 16 | 1 | 0 | 0 | 2 | 1 | 0 | 0 | 0 | 0 | 53 | | | | | | 691 | | | | | |
| 12:30 p.m - 12:45 p.m | 39 | 21 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 64 | | | | | | | 691 | | | | |
| 12:45 p.m - 13:00 p.m | 44 | 23 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 69 | | | | | | | | 691 | | | |
| 13:00 p.m - 13:15 p.m | 50 | 22 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 77 | | | | | | | | | 691 | | |
| 13:15 p.m - 13:30 p.m | 53 | 31 | 0 | 1 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 88 | | | | | | | | | | 691 | |
| 13:30 p.m - 13:45 p.m | 42 | 29 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 73 | | | | | | | | | | | 691 |
| 13:45 p.m - 14:00 p.m | 38 | 18 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 57 | | | | | | | | | | | |
| 16:00 p.m - 16:15 p.m | 18 | 9 | 1 | 1 | 1 | 1 | 0 | 1 | 1 | 0 | 0 | 33 | 467 | | | | | | | | | | |
| 16:15 p.m - 16:30 p.m | 20 | 11 | 1 | 0 | 2 | 0 | 0 | 1 | 0 | 0 | 0 | 35 | | 467 | | | | | | | | | |
| 16:30 p.m - 16:45 p.m | 20 | 10 | 1 | 0 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 35 | | | 467 | | | | | | | | |
| 16:45 p.m - 17:00 p.m | 21 | 10 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 33 | | | | 467 | | | | | | | |
| 17:00 p.m - 17:15 p.m | 23 | 10 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 39 | | | | | 467 | | | | | | |
| 17:15 p.m - 17:30 p.m | 22 | 13 | 0 | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 38 | | | | | | 467 | | | | | |
| 17:30 p.m - 17:45 p.m | 30 | 16 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 48 | | | | | | | 467 | | | | |
| 17:45 p.m - 18:00 p.m | 32 | 15 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 49 | | | | | | | | 467 | | | |
| 18:00 p.m - 18:15 p.m | 32 | 15 | 1 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 50 | | | | | | | | | 467 | | |
| 18:15 p.m - 18:30 p.m | 26 | 16 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 43 | | | | | | | | | | 467 | |
| 18:30 p.m - 18:45 p.m | 21 | 14 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 37 | | | | | | | | | | | 467 |
| 18:45 p.m - 19:00 p.m | 17 | 9 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 27 | | | | | | | | | | | |
| Total por tipo | 996 | 513 | 17 | 14 | 20 | 23 | 19 | 14 | 6 | 0 | 0 | 1622 | | | | | | | | | | | |



UNIVERSIDAD NACIONAL DE JAÉN



Técnica de recolección de datos: Observación directa












| Tesis | | ANÁLISIS VIAL EN LA INTERSECCIÓN DE LAS CALLES IQUITOS Y EJÉRCITO EMPLEANDO EL SOFTWARE SYNCHRO 10 EN LA CIUDAD DE JAÉN, 2025 | | | | | | | | | | | |
|---------------------------|------------|---|-----------|-----------|---------------|-------------------------------|-----------|-----------|------------------------------|----------|----------|----------------|-----------------------|
| Tesisistas | | Bach. Kelvin Jhonatan Guevara Ruiz Bach. Ever Waldir Torres Pedraza | | | | | | | | | | | |
| Asesor | | Doc. José Luis Piedra Tineo | | | | | | | | | | | |
| Fecha: Viernes 11/07/2025 | | Punto de conteo: Intersección de las calles Iquitos y Ejército | | | | Entrada: Calle Iquitos (Este) | | | Salida: Calle Ejército (Sur) | | | | |
| HORA | MOTOS | | CARGUERO | AUTO | STATION WAGON | CAMIONETAS | | | CAMIONES | | | Total por hora | Total por horas punta |
| | TAXI | LINEAL | | | | PICK UP | PANEL | COMBI | 2E | 3E | 4E | | |
| | | | | | | | | | | | | | |
| 6:00 a.m - 6:15 a.m | 8 | 4 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 14 | 382 |
| 6:15 a.m - 6:30 a.m | 8 | 5 | 1 | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 18 | |
| 6:30 a.m - 6:45 a.m | 10 | 6 | 1 | 1 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 20 | |
| 6:45 a.m - 7:00 a.m | 11 | 5 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 18 | |
| 7:00 a.m - 7:15 a.m | 15 | 6 | 1 | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 25 | |
| 7:15 a.m - 7:30 a.m | 19 | 8 | 1 | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 31 | |
| 7:30 a.m - 7:45 a.m | 21 | 12 | 0 | 1 | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 38 | |
| 7:45 a.m - 8:00 a.m | 21 | 14 | 0 | 0 | 0 | 2 | 0 | 1 | 0 | 0 | 0 | 38 | |
| 8:00 a.m - 8:15 a.m | 26 | 13 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 44 | |
| 8:15 a.m - 8:30 a.m | 31 | 19 | 1 | 1 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 55 | |
| 8:30 a.m - 8:45 a.m | 27 | 16 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 45 | |
| 8:45 a.m - 9:00 a.m | 24 | 12 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 36 | |
| 11:00 a.m - 11:15 a.m | 15 | 10 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 31 | |
| 11:15 a.m - 11:30 a.m | 18 | 9 | 1 | 1 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 32 | |
| 11:30 a.m - 11:45 a.m | 18 | 7 | 0 | 1 | 1 | 2 | 0 | 0 | 1 | 0 | 0 | 30 | |
| 11:45 a.m - 12:00 a.m | 14 | 8 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 25 | |
| 12:00 a.m - 12:15 p.m | 20 | 10 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 35 | |
| 12:15 p.m - 12:30 p.m | 22 | 12 | 1 | 2 | 2 | 2 | 1 | 0 | 0 | 0 | 0 | 42 | |
| 12:30 p.m - 12:45 p.m | 28 | 16 | 0 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 49 | |
| 12:45 p.m - 13:00 p.m | 31 | 15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 46 | |
| 13:00 p.m - 13:15 p.m | 33 | 15 | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 54 | |
| 13:15 p.m - 13:30 p.m | 38 | 21 | 0 | 1 | 0 | 2 | 1 | 0 | 0 | 0 | 0 | 63 | |
| 13:30 p.m - 13:45 p.m | 29 | 18 | 1 | 1 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 52 | |
| 13:45 p.m - 14:00 p.m | 24 | 13 | 1 | 0 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 41 | |
| 16:00 p.m - 16:15 p.m | 14 | 8 | 1 | 0 | 1 | 2 | 1 | 1 | 0 | 0 | 0 | 28 | |
| 16:15 p.m - 16:30 p.m | 14 | 6 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 23 | |
| 16:30 p.m - 16:45 p.m | 19 | 9 | 1 | 0 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 32 | |
| 16:45 p.m - 17:00 p.m | 20 | 11 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 33 | |
| 17:00 p.m - 17:15 p.m | 20 | 12 | 0 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 36 | |
| 17:15 p.m - 17:30 p.m | 23 | 121 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 146 | |
| 17:30 p.m - 17:45 p.m | 25 | 10 | 1 | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 40 | |
| 17:45 p.m - 18:00 p.m | 30 | 16 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 46 | |
| 18:00 p.m - 18:15 p.m | 32 | 18 | 1 | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 54 | |
| 18:15 p.m - 18:30 p.m | 26 | 14 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 42 | |
| 18:30 p.m - 18:45 p.m | 24 | 13 | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 40 | |
| 18:45 p.m - 19:00 p.m | 20 | 10 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 32 | |
| Total por tipo | 778 | 522 | 22 | 19 | 24 | 38 | 15 | 11 | 5 | 0 | 0 | 1434 | |



UNIVERSIDAD NACIONAL DE JAÉN



Técnica de recolección de datos: Observación directa

| ANÁLISIS VIAL EN LA INTERSECCIÓN DE LAS CALLES IQUITOS Y EJÉRCITO EMPLEANDO EL SOFTWARE SYNCHRO 10 EN LA CIUDAD DE JAÉN, 2025 | | | | | | | | | | | | | |
|---|---|---|---|--|---|---|---|---|---|---|---|----------------|-----------------------|
| Tesis | ANÁLISIS VIAL EN LA INTERSECCIÓN DE LAS CALLES IQUITOS Y EJÉRCITO EMPLEANDO EL SOFTWARE SYNCHRO 10 EN LA CIUDAD DE JAÉN, 2025 | | | | | | | | | | | | |
| Tesistas | Bach. Kelvin Jhonatan Guevara Ruiz Bach. Ever Waldir Torres Pedraza | | | | | | | | | | | | |
| Asesor | Doc. José Luis Piedra Tineo | | | | | | | | | | | | |
| Fecha: Viernes 11/07/2025 | Punto de conteo: Intersección de las calles Iquitos y Ejército | | | | | Entrada: Calle Ejército (Sur) | | | Salida: Calle Ejército (Norte) | | | | |
| HORA | MOTOS | | CARGUERO | AUTO | STATION WAGON | CAMIONETAS | | | CAMIONES | | | Total por hora | Total por horas punta |
| | TAXI | LINEAL | | | | PICK UP | PANEL | COMBI | 2E | 3E | 4E | | |
| |  |  |  |  |  |  |  |  |  |  |  | | |
| 6:00 a.m - 6:15 a.m | 5 | 2 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 9 | 341 |
| 6:15 a.m - 6:30 a.m | 5 | 3 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 10 | |
| 6:30 a.m - 6:45 a.m | 6 | 4 | 1 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 15 | |
| 6:45 a.m - 7:00 a.m | 7 | 3 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 13 | |
| 7:00 a.m - 7:15 a.m | 11 | 6 | 0 | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 21 | |
| 7:15 a.m - 7:30 a.m | 15 | 10 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 27 | |
| 7:30 a.m - 7:45 a.m | 21 | 12 | 0 | 0 | 1 | 2 | 1 | 1 | 0 | 0 | 0 | 38 | |
| 7:45 a.m - 8:00 a.m | 26 | 16 | 0 | 1 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 45 | |
| 8:00 a.m - 8:15 a.m | 30 | 12 | 1 | 1 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 46 | |
| 8:15 a.m - 8:30 a.m | 26 | 12 | 0 | 1 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 41 | |
| 8:30 a.m - 8:45 a.m | 25 | 14 | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 45 | |
| 8:45 a.m - 9:00 a.m | 18 | 11 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 31 | |
| 11:00 a.m - 11:15 a.m | 16 | 8 | 1 | 0 | 1 | 2 | 1 | 0 | 1 | 0 | 0 | 30 | 394 |
| 11:15 a.m - 11:30 a.m | 16 | 7 | 1 | 1 | 0 | 2 | 0 | 0 | 1 | 0 | 0 | 28 | |
| 11:30 a.m - 11:45 a.m | 17 | 9 | 0 | 0 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 29 | |
| 11:45 a.m - 12:00 a.m | 21 | 7 | 0 | 0 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 31 | |
| 12:00 a.m - 12:15 p.m | 20 | 7 | 1 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 31 | |
| 12:15 p.m - 12:30 p.m | 20 | 7 | 0 | 1 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 30 | |
| 12:30 p.m - 12:45 p.m | 18 | 10 | 1 | 0 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 32 | |
| 12:45 p.m - 13:00 p.m | 22 | 11 | 0 | 0 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 36 | |
| 13:00 p.m - 13:15 p.m | 25 | 16 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 42 | |
| 13:15 p.m - 13:30 p.m | 25 | 14 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 40 | |
| 13:30 p.m - 13:45 p.m | 22 | 11 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 35 | |
| 13:45 p.m - 14:00 p.m | 18 | 10 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 30 | |
| 16:00 p.m - 16:15 p.m | 16 | 9 | 1 | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 29 | 436 |
| 16:15 p.m - 16:30 p.m | 17 | 9 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 29 | |
| 16:30 p.m - 16:45 p.m | 15 | 9 | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 28 | |
| 16:45 p.m - 17:00 p.m | 20 | 11 | 0 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 34 | |
| 17:00 p.m - 17:15 p.m | 21 | 15 | 0 | 0 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 39 | |
| 17:15 p.m - 17:30 p.m | 23 | 15 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 39 | |
| 17:30 p.m - 17:45 p.m | 28 | 13 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 42 | |
| 17:45 p.m - 18:00 p.m | 33 | 16 | 0 | 1 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 52 | |
| 18:00 p.m - 18:15 p.m | 30 | 15 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 46 | |
| 18:15 p.m - 18:30 p.m | 26 | 11 | 1 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 40 | |
| 18:30 p.m - 18:45 p.m | 22 | 8 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 31 | |
| 18:45 p.m - 19:00 p.m | 18 | 7 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 27 | |
| Total por tipo | 704 | 360 | 15 | 15 | 20 | 33 | 11 | 8 | 5 | 0 | 0 | 1171 | |



UNIVERSIDAD NACIONAL DE JAÉN



Técnica de recolección de datos: Observación directa

| Tesis | | ANÁLISIS VIAL EN LA INTERSECCIÓN DE LAS CALLES IQUITOS Y EJÉRCITO EMPLEANDO EL SOFTWARE SYNCHRO 10 EN LA CIUDAD DE JAÉN, 2025 | | | | | | | | | | | |
|---------------------------|-------|---|----------|------|---------------|-------------------------------|-------|-------|-------------------------------|----|----|----------------|-----------------------|
| Tesisistas | | Bach. Kelvin Jhonatan Guevara Ruiz Bach. Ever Waldir Torres Pedraza | | | | | | | | | | | |
| Asesor | | Doc. José Luis Piedra Tineo | | | | | | | | | | | |
| Fecha: Viernes 11/07/2025 | | Punto de conteo: Intersección de las calles Iquitos y Ejército | | | | Entrada: Calle Ejército (Sur) | | | Salida: Calle Iquitos (Oeste) | | | | |
| HORA | MOTOS | | CARGUERO | AUTO | STATION WAGON | CAMIONETAS | | | CAMIONES | | | Total por hora | Total por horas punta |
| | TAXI | LINEAL | | | | PICK UP | PANEL | COMBI | 2E | 3E | 4E | | |
| | | | | | | | | | | | | | |
| 6:00 a.m - 6:15 a.m | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 2 | 157 |
| 6:15 a.m - 6:30 a.m | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | |
| 6:30 a.m - 6:45 a.m | 4 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | |
| 6:45 a.m - 7:00 a.m | 6 | 4 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 11 | |
| 7:00 a.m - 7:15 a.m | 9 | 5 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 20 | |
| 7:15 a.m - 7:30 a.m | 9 | 5 | 1 | 1 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 18 | |
| 7:30 a.m - 7:45 a.m | 9 | 4 | 0 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 16 | |
| 7:45 a.m - 8:00 a.m | 10 | 6 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 18 | |
| 8:00 a.m - 8:15 a.m | 9 | 4 | 0 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 18 | |
| 8:15 a.m - 8:30 a.m | 12 | 6 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 19 | |
| 8:30 a.m - 8:45 a.m | 9 | 4 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 15 | |
| 8:45 a.m - 9:00 a.m | 6 | 4 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 12 | |
| 11:00 a.m - 11:15 a.m | 4 | 5 | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 12 | 172 |
| 11:15 a.m - 11:30 a.m | 6 | 4 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 12 | |
| 11:30 a.m - 11:45 a.m | 6 | 3 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 11 | |
| 11:45 a.m - 12:00 a.m | 7 | 3 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 11 | |
| 12:00 a.m - 12:15 p.m | 7 | 5 | 0 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 17 | |
| 12:15 p.m - 12:30 p.m | 8 | 3 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 12 | |
| 12:30 p.m - 12:45 p.m | 7 | 4 | 0 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 15 | |
| 12:45 p.m - 13:00 p.m | 10 | 6 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 18 | |
| 13:00 p.m - 13:15 p.m | 11 | 6 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 18 | |
| 13:15 p.m - 13:30 p.m | 10 | 5 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 17 | |
| 13:30 p.m - 13:45 p.m | 9 | 5 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 16 | |
| 13:45 p.m - 14:00 p.m | 7 | 3 | 0 | 0 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 13 | |
| 16:00 p.m - 16:15 p.m | 6 | 3 | 0 | 1 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 13 | 159 |
| 16:15 p.m - 16:30 p.m | 5 | 3 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 10 | |
| 16:30 p.m - 16:45 p.m | 6 | 2 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 10 | |
| 16:45 p.m - 17:00 p.m | 8 | 5 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 14 | |
| 17:00 p.m - 17:15 p.m | 8 | 5 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 15 | |
| 17:15 p.m - 17:30 p.m | 8 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 13 | |
| 17:30 p.m - 17:45 p.m | 10 | 6 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 18 | |
| 17:45 p.m - 18:00 p.m | 8 | 5 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 14 | |
| 18:00 p.m - 18:15 p.m | 9 | 5 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 16 | |
| 18:15 p.m - 18:30 p.m | 8 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 14 | |
| 18:30 p.m - 18:45 p.m | 8 | 4 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 15 | |
| 18:45 p.m - 19:00 p.m | 6 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | |
| Total por tipo | 267 | 145 | 9 | 11 | 11 | 21 | 12 | 12 | 0 | 0 | 0 | 488 | |



UNIVERSIDAD NACIONAL DE JAÉN



Técnica de recolección de datos: Observación directa












| Tesis | | ANÁLISIS VIAL EN LA INTERSECCIÓN DE LAS CALLES IQUITOS Y EJÉRCITO EMPLEANDO EL SOFTWARE SYNCHRO 10 EN LA CIUDAD DE JAÉN, 2025 | | | | | | | | | | | |
|---------------------------|-------|---|----------|------|---------------|---------------------------------|-------|-------|------------------------------|----|----|----------------|-----------------------|
| Tesisistas | | Bach. Kelvin Jhonatan Guevara Ruiz Bach. Ever Waldir Torres Pedraza | | | | | | | | | | | |
| Asesor | | Doc. José Luis Piedra Tineo | | | | | | | | | | | |
| Fecha: Viernes 11/07/2025 | | Punto de conteo: Intersección de las calles Iquitos y Ejército | | | | Entrada: Calle Ejército (Norte) | | | Salida: Calle Ejército (Sur) | | | | |
| HORA | MOTOS | | CARGUERO | AUTO | STATION WAGON | CAMIONETAS | | | CAMIONES | | | Total por hora | Total por horas punta |
| | TAXI | LINEAL | | | | PICK UP | PANEL | COMBI | 2E | 3E | 4E | | |
| | | | | | | | | | | | | | |
| 6:00 a.m - 6:15 a.m | 2 | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 5 | 215 |
| 6:15 a.m - 6:30 a.m | 5 | 3 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 11 | |
| 6:30 a.m - 6:45 a.m | 5 | 2 | 1 | 0 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 13 | |
| 6:45 a.m - 7:00 a.m | 6 | 4 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 11 | |
| 7:00 a.m - 7:15 a.m | 9 | 6 | 0 | 0 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 19 | |
| 7:15 a.m - 7:30 a.m | 11 | 6 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 18 | |
| 7:30 a.m - 7:45 a.m | 10 | 6 | 1 | 1 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 20 | |
| 7:45 a.m - 8:00 a.m | 15 | 9 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 24 | |
| 8:00 a.m - 8:15 a.m | 19 | 11 | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 33 | |
| 8:15 a.m - 8:30 a.m | 14 | 12 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 27 | |
| 8:30 a.m - 8:45 a.m | 10 | 8 | 1 | 1 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 22 | |
| 8:45 a.m - 9:00 a.m | 6 | 4 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 12 | |
| 11:00 a.m - 11:15 a.m | 6 | 3 | 1 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 13 | 322 |
| 11:15 a.m - 11:30 a.m | 8 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 12 | |
| 11:30 a.m - 11:45 a.m | 8 | 5 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 19 | |
| 11:45 a.m - 12:00 a.m | 9 | 4 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 15 | |
| 12:00 a.m - 12:15 p.m | 12 | 6 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 22 | |
| 12:15 p.m - 12:30 p.m | 16 | 9 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 27 | |
| 12:30 p.m - 12:45 p.m | 20 | 11 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 33 | |
| 12:45 p.m - 13:00 p.m | 21 | 12 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 34 | |
| 13:00 p.m - 13:15 p.m | 21 | 12 | 1 | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 37 | |
| 13:15 p.m - 13:30 p.m | 26 | 15 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 42 | |
| 13:30 p.m - 13:45 p.m | 21 | 14 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 38 | |
| 13:45 p.m - 14:00 p.m | 18 | 9 | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 30 | |
| 16:00 p.m - 16:15 p.m | 8 | 4 | 1 | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 17 | 238 |
| 16:15 p.m - 16:30 p.m | 9 | 5 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 15 | |
| 16:30 p.m - 16:45 p.m | 9 | 5 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 16 | |
| 16:45 p.m - 17:00 p.m | 11 | 5 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 18 | |
| 17:00 p.m - 17:15 p.m | 11 | 6 | 1 | 1 | 1 | 2 | 1 | 1 | 0 | 0 | 0 | 24 | |
| 17:15 p.m - 17:30 p.m | 14 | 5 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 21 | |
| 17:30 p.m - 17:45 p.m | 19 | 10 | 1 | 1 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 34 | |
| 17:45 p.m - 18:00 p.m | 14 | 10 | 0 | 0 | 2 | 0 | 1 | 0 | 1 | 0 | 0 | 28 | |
| 18:00 p.m - 18:15 p.m | 12 | 8 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 21 | |
| 18:15 p.m - 18:30 p.m | 11 | 6 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 18 | |
| 18:30 p.m - 18:45 p.m | 8 | 3 | 1 | 0 | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 16 | |
| 18:45 p.m - 19:00 p.m | 6 | 2 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 10 | |
| Total por tipo | 430 | 244 | 13 | 14 | 20 | 25 | 13 | 11 | 5 | 0 | 0 | 775 | |



UNIVERSIDAD NACIONAL DE JAÉN



Técnica de recolección de datos: Observación directa

| ANÁLISIS VIAL EN LA INTERSECCIÓN DE LAS CALLES IQUITOS Y EJÉRCITO EMPLEANDO EL SOFTWARE SYNCHRO 10 EN LA CIUDAD DE JAÉN, 2025 | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|----------|------|---------------|---|--|---|---|---|---|----------------|-----------------------|---|---|---|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Tesis | ANÁLISIS VIAL EN LA INTERSECCIÓN DE LAS CALLES IQUITOS Y EJÉRCITO EMPLEANDO EL SOFTWARE SYNCHRO 10 EN LA CIUDAD DE JAÉN, 2025 | | | | | | | | | | | | | | | | | | | | | | | | | |
| Tesistas | Bach. Kelvin Jhonatan Guevara Ruiz Bach. Ever Waldir Torres Pedraza | | | | | | | | | | | | | | | | | | | | | | | | | |
| Asesor | Fecha: Viernes 11/07/2025 | | | | | | | | | | | | | | | | | | | | | | | | | |
| Fecha: Viernes 11/07/2025 | Punto de conteo: Intersección de las calles Iquitos y Ejército | | | | | Entrada: Calle Ejército (Norte) | | | Salida: Calle Iquitos (Oeste) | | | | | | | | | | | | | | | | | |
| HORA | MOTOS | | CARGUERO | AUTO | STATION WAGON | CAMIONETAS | | | CAMIONES | | | Total por hora | Total por horas punta | | | | | | | | | | | | | |
| | TAXI | LINEAL | | | | PICK UP | PANEL | COMBI | 2E | 3E | 4E | | | | | | | | | | | | | | | |
| |  |  | | | |  |  |  |  |  |  | | |  |  |  | | | | | | | | | | |
| 6:00 a.m - 6:15 a.m | 2 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 3 | 155 | | | | | | | | | | | | | |
| 6:15 a.m - 6:30 a.m | 2 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 5 | | 155 | | | | | | | | | | | | |
| 6:30 a.m - 6:45 a.m | 4 | 2 | 1 | 0 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 11 | | | 155 | | | | | | | | | | | |
| 6:45 a.m - 7:00 a.m | 6 | 4 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 13 | | | | 155 | | | | | | | | | | |
| 7:00 a.m - 7:15 a.m | 7 | 4 | 1 | 1 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 15 | | | | | 155 | | | | | | | | | |
| 7:15 a.m - 7:30 a.m | 7 | 4 | 0 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 14 | | | | | | 155 | | | | | | | | |
| 7:30 a.m - 7:45 a.m | 8 | 5 | 1 | 1 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 17 | | | | | | | 155 | | | | | | | |
| 7:45 a.m - 8:00 a.m | 7 | 5 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 13 | | | | | | | | 155 | | | | | | |
| 8:00 a.m - 8:15 a.m | 9 | 6 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 18 | | | | | | | | | 155 | | | | | |
| 8:15 a.m - 8:30 a.m | 11 | 6 | 0 | 0 | 0 | 1 | 1 | 0 | 1 | 0 | 0 | 20 | | | | | | | | | | 155 | | | | |
| 8:30 a.m - 8:45 a.m | 8 | 4 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 15 | | | | | | | | | | | 155 | | | |
| 8:45 a.m - 9:00 a.m | 7 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 11 | | | | | | | | | | | | 155 | | |
| 11:00 a.m - 11:15 a.m | 6 | 4 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 12 | | | | | | | | | | | | | 194 | |
| 11:15 a.m - 11:30 a.m | 7 | 3 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 11 | | | | | | | | | | | | | | 194 |
| 11:30 a.m - 11:45 a.m | 7 | 4 | 1 | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 15 | | | | | | | | | | | | | | |
| 11:45 a.m - 12:00 a.m | 8 | 5 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 15 | 194 | | | | | | | | | | | | | |
| 12:00 a.m - 12:15 p.m | 11 | 6 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 20 | | 194 | | | | | | | | | | | | |
| 12:15 p.m - 12:30 p.m | 10 | 5 | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 18 | | | 194 | | | | | | | | | | | |
| 12:30 p.m - 12:45 p.m | 10 | 6 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 18 | | | | 194 | | | | | | | | | | |
| 12:45 p.m - 13:00 p.m | 11 | 6 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 19 | | | | | 194 | | | | | | | | | |
| 13:00 p.m - 13:15 p.m | 12 | 6 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 20 | | | | | | 194 | | | | | | | | |
| 13:15 p.m - 13:30 p.m | 8 | 6 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 15 | | | | | | | 194 | | | | | | | |
| 13:30 p.m - 13:45 p.m | 8 | 5 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 16 | | | | | | | | 194 | | | | | | |
| 13:45 p.m - 14:00 p.m | 9 | 5 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 15 | | | | | | | | | 194 | | | | | |
| 16:00 p.m - 16:15 p.m | 10 | 6 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 18 | | | | | | | | | | 202 | | | | |
| 16:15 p.m - 16:30 p.m | 10 | 7 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 19 | | | | | | | | | | | 202 | | | |
| 16:30 p.m - 16:45 p.m | 8 | 4 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 15 | | | | | | | | | | | | 202 | | |
| 16:45 p.m - 17:00 p.m | 12 | 7 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 20 | | | | | | | | | | | | | 202 | |
| 17:00 p.m - 17:15 p.m | 10 | 4 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 17 | | | | | | | | | | | | | | 202 |
| 17:15 p.m - 17:30 p.m | 13 | 6 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 21 | | | | | | | | | | | | | | |
| 17:30 p.m - 17:45 p.m | 12 | 7 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 22 | 202 | | | | | | | | | | | | | |
| 17:45 p.m - 18:00 p.m | 11 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 16 | | 202 | | | | | | | | | | | | |
| 18:00 p.m - 18:15 p.m | 10 | 4 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 16 | | | 202 | | | | | | | | | | | |
| 18:15 p.m - 18:30 p.m | 8 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 11 | | | | 202 | | | | | | | | | | |
| 18:30 p.m - 18:45 p.m | 9 | 5 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 19 | | | | | 202 | | | | | | | | | |
| 18:45 p.m - 19:00 p.m | 6 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 8 | | | | | | 202 | | | | | | | | |
| Total por tipo | 304 | 165 | 12 | 14 | 14 | 18 | 12 | 8 | 4 | 0 | 0 | 551 | | | | | | | | | | | | | | |



UNIVERSIDAD NACIONAL DE JAÉN



Técnica de recolección de datos: Observación directa

| ANÁLISIS VIAL EN LA INTERSECCIÓN DE LAS CALLES IQUITOS Y EJÉRCITO EMPLEANDO EL SOFTWARE SYNCHRO 10 EN LA CIUDAD DE JAÉN, 2025 | | | | | | | | | | | | | | |
|---|-------|--------|----------|------|-------------------------------|------------|-------|-------|-------------------------------|----|----|----------------|-----------------------|------|
| Tesis | | | | | | | | | | | | | | |
| Bach. Kelvin Jhonatan Guevara Ruiz | | | | | | | | | | | | | | |
| Bach. Ever Waldir Torres Pedraza | | | | | | | | | | | | | | |
| Asesor | | | | | | | | | | | | | | |
| Doc. José Luis Piedra Tineo | | | | | | | | | | | | | | |
| Fecha: Sábado 12/07/2025 | | | | | | | | | | | | | | |
| Punto de conteo: Intersección de las calles Iquitos y Ejército | | | | | Entrada: Calle Iquitos (Este) | | | | Salida: Calle Iquitos (Oeste) | | | | | |
| HORA | MOTOS | | CARGUERO | AUTO | STATION WAGON | CAMIONETAS | | | CAMIONES | | | Total por hora | Total por horas punta | |
| | TAXI | LINEAL | | | | PICK UP | PANEL | COMBI | 2E | 3E | 4E | | | |
| | | | | | | | | | | | | | | |
| 6:00 a.m - 6:15 a.m | 14 | 8 | 2 | 1 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 27 | 1154 | |
| 6:15 a.m - 6:30 a.m | 20 | 11 | 1 | 0 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 36 | | |
| 6:30 a.m - 6:45 a.m | 22 | 11 | 1 | 1 | 1 | 1 | 0 | 1 | 1 | 0 | 0 | 39 | | |
| 6:45 a.m - 7:00 a.m | 34 | 18 | 1 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 55 | | |
| 7:00 a.m - 7:15 a.m | 49 | 26 | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | 0 | 80 | | |
| 7:15 a.m - 7:30 a.m | 63 | 33 | 0 | 1 | 2 | 1 | 1 | 0 | 0 | 0 | 0 | 101 | | |
| 7:30 a.m - 7:45 a.m | 76 | 39 | 1 | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 119 | | |
| 7:45 a.m - 8:00 a.m | 80 | 42 | 0 | 0 | 0 | 2 | 1 | 0 | 0 | 0 | 0 | 125 | | |
| 8:00 a.m - 8:15 a.m | 90 | 42 | 0 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 137 | | |
| 8:15 a.m - 8:30 a.m | 96 | 50 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 150 | | |
| 8:30 a.m - 8:45 a.m | 99 | 53 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 154 | | |
| 8:45 a.m - 9:00 a.m | 86 | 44 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 131 | | |
| 11:00 a.m - 11:15 a.m | 76 | 47 | 1 | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 128 | | 1869 |
| 11:15 a.m - 11:30 a.m | 89 | 40 | 1 | 2 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 136 | | |
| 11:30 a.m - 11:45 a.m | 91 | 46 | 1 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 141 | | |
| 11:45 a.m - 12:00 a.m | 94 | 50 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 146 | | |
| 12:00 a.m - 12:15 p.m | 100 | 50 | 0 | 2 | 1 | 1 | 0 | 1 | 1 | 0 | 0 | 156 | | |
| 12:15 p.m - 12:30 p.m | 106 | 58 | 0 | 3 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 170 | | |
| 12:30 p.m - 12:45 p.m | 114 | 53 | 1 | 3 | 0 | 2 | 1 | 0 | 0 | 0 | 0 | 174 | | |
| 12:45 p.m - 13:00 p.m | 120 | 67 | 0 | 2 | 0 | 2 | 2 | 0 | 0 | 0 | 0 | 193 | | |
| 13:00 p.m - 13:15 p.m | 104 | 72 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 180 | | |
| 13:15 p.m - 13:30 p.m | 97 | 58 | 0 | 2 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 158 | | |
| 13:30 p.m - 13:45 p.m | 93 | 55 | 1 | 2 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 154 | | |
| 13:45 p.m - 14:00 p.m | 81 | 50 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 133 | | |
| 16:00 p.m - 16:15 p.m | 76 | 31 | 1 | 2 | 1 | 2 | 1 | 1 | 0 | 0 | 0 | 115 | 1371 | |
| 16:15 p.m - 16:30 p.m | 68 | 31 | 0 | 1 | 2 | 2 | 1 | 2 | 0 | 0 | 0 | 107 | | |
| 16:30 p.m - 16:45 p.m | 62 | 30 | 1 | 1 | 2 | 2 | 1 | 1 | 0 | 0 | 0 | 100 | | |
| 16:45 p.m - 17:00 p.m | 62 | 37 | 0 | 2 | 1 | 2 | 0 | 1 | 0 | 0 | 0 | 105 | | |
| 17:00 p.m - 17:15 p.m | 66 | 34 | 0 | 2 | 2 | 0 | 1 | 1 | 1 | 0 | 0 | 107 | | |
| 17:15 p.m - 17:30 p.m | 74 | 40 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 115 | | |
| 17:30 p.m - 17:45 p.m | 80 | 46 | 0 | 1 | 1 | 2 | 0 | 1 | 0 | 0 | 0 | 131 | | |
| 17:45 p.m - 18:00 p.m | 90 | 51 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 143 | | |
| 18:00 p.m - 18:15 p.m | 82 | 48 | 1 | 0 | 0 | 2 | 1 | 0 | 0 | 0 | 0 | 134 | | |
| 18:15 p.m - 18:30 p.m | 76 | 43 | 0 | 1 | 0 | 3 | 1 | 0 | 0 | 0 | 0 | 124 | | |
| 18:30 p.m - 18:45 p.m | 65 | 31 | 1 | 0 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 100 | | |
| 18:45 p.m - 19:00 p.m | 58 | 29 | 1 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 90 | | |
| Total por tipo | 2753 | 1474 | 19 | 40 | 24 | 40 | 21 | 19 | 4 | 0 | 0 | 4394 | | |



UNIVERSIDAD NACIONAL DE JAÉN



Técnica de recolección de datos: Observación directa












| ANÁLISIS VIAL EN LA INTERSECCIÓN DE LAS CALLES IQUITOS Y EJÉRCITO EMPLEANDO EL SOFTWARE SYNCHRO 10 EN LA CIUDAD DE JAÉN, 2025 | | | | | | | | | | | | | |
|---|-------|--------|----------|------|-------------------------------|------------|-------|-------|--------------------------------|----|----|----------------|-----------------------|
| Tesis | | | | | | | | | | | | | |
| Bach. Kelvin Jhonatan Guevara Ruiz | | | | | | | | | | | | | |
| Bach. Ever Waldir Torres Pedraza | | | | | | | | | | | | | |
| Asesor | | | | | | | | | | | | | |
| Doc. José Luis Piedra Tineo | | | | | | | | | | | | | |
| Fecha: Sábado 12/07/2025 | | | | | | | | | | | | | |
| Punto de conteo: Intersección de las calles Iquitos y Ejército | | | | | Entrada: Calle Iquitos (Este) | | | | Salida: Calle Ejército (Norte) | | | | |
| HORA | MOTOS | | CARGUERO | AUTO | STATION WAGON | CAMIONETAS | | | CAMIONES | | | Total por hora | Total por horas punta |
| | TAXI | LINEAL | | | | PICK UP | PANEL | COMBI | 2E | 3E | 4E | | |
| | | | | | | | | | | | | | |
| 6:00 a.m - 6:15 a.m | 8 | 5 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 15 | 349 |
| 6:15 a.m - 6:30 a.m | 10 | 6 | 2 | 0 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 21 | |
| 6:30 a.m - 6:45 a.m | 10 | 6 | 1 | 1 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 20 | |
| 6:45 a.m - 7:00 a.m | 15 | 8 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 24 | |
| 7:00 a.m - 7:15 a.m | 21 | 10 | 0 | 1 | 1 | 0 | 1 | 1 | 1 | 0 | 0 | 36 | |
| 7:15 a.m - 7:30 a.m | 22 | 11 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 35 | |
| 7:30 a.m - 7:45 a.m | 24 | 10 | 0 | 0 | 1 | 0 | 1 | 1 | 1 | 0 | 0 | 38 | |
| 7:45 a.m - 8:00 a.m | 27 | 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 37 | |
| 8:00 a.m - 8:15 a.m | 21 | 12 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 38 | |
| 8:15 a.m - 8:30 a.m | 18 | 9 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 29 | |
| 8:30 a.m - 8:45 a.m | 18 | 8 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 28 | |
| 8:45 a.m - 9:00 a.m | 18 | 9 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 28 | |
| 11:00 a.m - 11:15 a.m | 17 | 7 | 0 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 28 | 654 |
| 11:15 a.m - 11:30 a.m | 22 | 10 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 33 | |
| 11:30 a.m - 11:45 a.m | 26 | 12 | 0 | 1 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 42 | |
| 11:45 a.m - 12:00 a.m | 31 | 18 | 1 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 52 | |
| 12:00 a.m - 12:15 p.m | 33 | 18 | 1 | 1 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 56 | |
| 12:15 p.m - 12:30 p.m | 38 | 15 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 55 | |
| 12:30 p.m - 12:45 p.m | 42 | 23 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 67 | |
| 12:45 p.m - 13:00 p.m | 45 | 25 | 1 | 1 | 0 | 2 | 0 | 1 | 0 | 0 | 0 | 75 | |
| 13:00 p.m - 13:15 p.m | 51 | 29 | 1 | 1 | 1 | 2 | 1 | 0 | 0 | 0 | 0 | 86 | |
| 13:15 p.m - 13:30 p.m | 46 | 22 | 1 | 0 | 2 | 1 | 1 | 0 | 0 | 0 | 0 | 73 | |
| 13:30 p.m - 13:45 p.m | 35 | 18 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 54 | |
| 13:45 p.m - 14:00 p.m | 20 | 12 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 33 | |
| 16:00 p.m - 16:15 p.m | 16 | 9 | 2 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 30 | 449 |
| 16:15 p.m - 16:30 p.m | 20 | 11 | 1 | 1 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 35 | |
| 16:30 p.m - 16:45 p.m | 23 | 11 | 1 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 38 | |
| 16:45 p.m - 17:00 p.m | 29 | 13 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 44 | |
| 17:00 p.m - 17:15 p.m | 30 | 18 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 50 | |
| 17:15 p.m - 17:30 p.m | 30 | 14 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 48 | |
| 17:30 p.m - 17:45 p.m | 28 | 15 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 45 | |
| 17:45 p.m - 18:00 p.m | 28 | 15 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 44 | |
| 18:00 p.m - 18:15 p.m | 20 | 12 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 33 | |
| 18:15 p.m - 18:30 p.m | 21 | 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 31 | |
| 18:30 p.m - 18:45 p.m | 18 | 8 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 28 | |
| 18:45 p.m - 19:00 p.m | 14 | 9 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 23 | |
| Total por tipo | 895 | 458 | 19 | 16 | 16 | 20 | 12 | 10 | 6 | 0 | 0 | 1452 | |



UNIVERSIDAD NACIONAL DE JAÉN



Técnica de recolección de datos: Observación directa









| ANÁLISIS VIAL EN LA INTERSECCIÓN DE LAS CALLES IQUITOS Y EJÉRCITO EMPLEANDO EL SOFTWARE SYNCHRO 10 EN LA CIUDAD DE JAÉN, 2025 | | | | | | | | | | | | | |
|---|---|---|---|--|---|---|---|---|---|---|---|----------------|-----------------------|
| Tesis | ANÁLISIS VIAL EN LA INTERSECCIÓN DE LAS CALLES IQUITOS Y EJÉRCITO EMPLEANDO EL SOFTWARE SYNCHRO 10 EN LA CIUDAD DE JAÉN, 2025 | | | | | | | | | | | | |
| Tesistas | Bach. Kelvin Jhonatan Guevara Ruiz Bach. Ever Waldir Torres Pedraza | | | | | | | | | | | | |
| Asesor | Doc. José Luis Piedra Tineo | | | | | | | | | | | | |
| Fecha: Sábado 12/07/2025 | Punto de conteo: Intersección de las calles Iquitos y Ejército | | | | | Entrada: Calle Iquitos (Este) | | | Salida: Calle Ejército (Sur) | | | | |
| HORA | MOTOS | | CARGUERO | AUTO | STATION WAGON | CAMIONETAS | | | CAMIONES | | | Total por hora | Total por horas punta |
| | TAXI | LINEAL | | | | PICK UP | PANEL | COMBI | 2E | 3E | 4E | | |
| |  |  |  |  |  |  |  |  |  |  |  | | |
| 6:00 a.m - 6:15 a.m | 7 | 4 | 1 | 0 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 15 | 469 |
| 6:15 a.m - 6:30 a.m | 10 | 5 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 20 | |
| 6:30 a.m - 6:45 a.m | 10 | 5 | 1 | 0 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 21 | |
| 6:45 a.m - 7:00 a.m | 11 | 5 | 2 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 20 | |
| 7:00 a.m - 7:15 a.m | 14 | 6 | 1 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 23 | |
| 7:15 a.m - 7:30 a.m | 20 | 11 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 31 | |
| 7:30 a.m - 7:45 a.m | 27 | 13 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 44 | |
| 7:45 a.m - 8:00 a.m | 32 | 19 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 54 | |
| 8:00 a.m - 8:15 a.m | 32 | 20 | 1 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 56 | |
| 8:15 a.m - 8:30 a.m | 40 | 23 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 63 | |
| 8:30 a.m - 8:45 a.m | 37 | 27 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 70 | |
| 8:45 a.m - 9:00 a.m | 32 | 20 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 52 | |
| 11:00 a.m - 11:15 a.m | 21 | 10 | 0 | 1 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 35 | 712 |
| 11:15 a.m - 11:30 a.m | 24 | 13 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 40 | |
| 11:30 a.m - 11:45 a.m | 30 | 13 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 48 | |
| 11:45 a.m - 12:00 a.m | 33 | 12 | 0 | 2 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 50 | |
| 12:00 a.m - 12:15 p.m | 40 | 19 | 0 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 62 | |
| 12:15 p.m - 12:30 p.m | 43 | 23 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 68 | |
| 12:30 p.m - 12:45 p.m | 48 | 26 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 78 | |
| 12:45 p.m - 13:00 p.m | 50 | 27 | 1 | 1 | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 83 | |
| 13:00 p.m - 13:15 p.m | 48 | 24 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 75 | |
| 13:15 p.m - 13:30 p.m | 40 | 23 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 63 | |
| 13:30 p.m - 13:45 p.m | 36 | 20 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 59 | |
| 13:45 p.m - 14:00 p.m | 30 | 20 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 51 | |
| 16:00 p.m - 16:15 p.m | 22 | 12 | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 38 | 577 |
| 16:15 p.m - 16:30 p.m | 25 | 13 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 40 | |
| 16:30 p.m - 16:45 p.m | 30 | 16 | 0 | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 50 | |
| 16:45 p.m - 17:00 p.m | 36 | 20 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 57 | |
| 17:00 p.m - 17:15 p.m | 37 | 19 | 1 | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 61 | |
| 17:15 p.m - 17:30 p.m | 41 | 22 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 63 | |
| 17:30 p.m - 17:45 p.m | 43 | 20 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 65 | |
| 17:45 p.m - 18:00 p.m | 36 | 21 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 57 | |
| 18:00 p.m - 18:15 p.m | 29 | 18 | 0 | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 50 | |
| 18:15 p.m - 18:30 p.m | 24 | 15 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 40 | |
| 18:30 p.m - 18:45 p.m | 18 | 10 | 1 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 31 | |
| 18:45 p.m - 19:00 p.m | 14 | 10 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 25 | |
| Total por tipo | 1070 | 584 | 20 | 20 | 21 | 16 | 11 | 14 | 2 | 0 | 0 | 1758 | |



UNIVERSIDAD NACIONAL DE JAÉN



Técnica de recolección de datos: Observación directa

| ANÁLISIS VIAL EN LA INTERSECCIÓN DE LAS CALLES IQUITOS Y EJÉRCITO EMPLEANDO EL SOFTWARE SYNCHRO 10 EN LA CIUDAD DE JAÉN, 2025 | | | | | | | | | | | | | |
|---|---|---|----------|------|---------------|---|--|---|---|---|---|----------------|-----------------------|
| Tesis | ANÁLISIS VIAL EN LA INTERSECCIÓN DE LAS CALLES IQUITOS Y EJÉRCITO EMPLEANDO EL SOFTWARE SYNCHRO 10 EN LA CIUDAD DE JAÉN, 2025 | | | | | | | | | | | | |
| Tesistas | Bach. Kelvin Jhonatan Guevara Ruiz Bach. Ever Waldir Torres Pedraza | | | | | | | | | | | | |
| Asesor | Doc. José Luis Piedra Tineo | | | | | | | | | | | | |
| Fecha: Sábado 12/07/2025 | Punto de conteo: Intersección de las calles Iquitos y Ejército | | | | | Entrada: Calle Ejército (Sur) | | | Salida: Calle Ejército (Norte) | | | | |
| HORA | MOTOS | | CARGUERO | AUTO | STATION WAGON | CAMIONETAS | | | CAMIONES | | | Total por hora | Total por horas punta |
| | TAXI | LINEAL | | | | PICK UP | PANEL | COMBI | 2E | 3E | 4E | | |
| |  |  | | | |  |  |  |  |  |  | | |
| 6:00 a.m - 6:15 a.m | 3 | 0 | 0 | 0 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 6 | 265 |
| 6:15 a.m - 6:30 a.m | 4 | 2 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 9 | |
| 6:30 a.m - 6:45 a.m | 4 | 3 | 1 | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 11 | |
| 6:45 a.m - 7:00 a.m | 6 | 3 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 10 | |
| 7:00 a.m - 7:15 a.m | 11 | 5 | 0 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 20 | |
| 7:15 a.m - 7:30 a.m | 14 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 19 | |
| 7:30 a.m - 7:45 a.m | 16 | 8 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 27 | |
| 7:45 a.m - 8:00 a.m | 14 | 8 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 24 | |
| 8:00 a.m - 8:15 a.m | 21 | 10 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 37 | |
| 8:15 a.m - 8:30 a.m | 25 | 13 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 40 | |
| 8:30 a.m - 8:45 a.m | 20 | 10 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 34 | |
| 8:45 a.m - 9:00 a.m | 16 | 12 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 28 | |
| 11:00 a.m - 11:15 a.m | 9 | 6 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 20 | |
| 11:15 a.m - 11:30 a.m | 11 | 5 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 17 | |
| 11:30 a.m - 11:45 a.m | 12 | 5 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 23 | |
| 11:45 a.m - 12:00 a.m | 11 | 5 | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 19 | |
| 12:00 a.m - 12:15 p.m | 20 | 10 | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 33 | |
| 12:15 p.m - 12:30 p.m | 25 | 13 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 40 | |
| 12:30 p.m - 12:45 p.m | 33 | 16 | 0 | 1 | 1 | 1 | 0 | 1 | 1 | 0 | 0 | 54 | |
| 12:45 p.m - 13:00 p.m | 30 | 12 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 44 | |
| 13:00 p.m - 13:15 p.m | 26 | 10 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 38 | |
| 13:15 p.m - 13:30 p.m | 23 | 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 33 | |
| 13:30 p.m - 13:45 p.m | 20 | 8 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 29 | |
| 13:45 p.m - 14:00 p.m | 16 | 8 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 26 | |
| 16:00 p.m - 16:15 p.m | 14 | 9 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 29 | |
| 16:15 p.m - 16:30 p.m | 20 | 10 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 32 | |
| 16:30 p.m - 16:45 p.m | 21 | 11 | 0 | 1 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 36 | |
| 16:45 p.m - 17:00 p.m | 25 | 13 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 39 | |
| 17:00 p.m - 17:15 p.m | 28 | 13 | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 44 | |
| 17:15 p.m - 17:30 p.m | 32 | 12 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 45 | |
| 17:30 p.m - 17:45 p.m | 33 | 20 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 55 | |
| 17:45 p.m - 18:00 p.m | 25 | 14 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 41 | |
| 18:00 p.m - 18:15 p.m | 14 | 9 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 23 | |
| 18:15 p.m - 18:30 p.m | 10 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 16 | |
| 18:30 p.m - 18:45 p.m | 8 | 7 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 16 | |
| 18:45 p.m - 19:00 p.m | 9 | 4 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 14 | |
| Total por tipo | 629 | 315 | 9 | 9 | 20 | 27 | 12 | 8 | 2 | 0 | 0 | 1031 | 390 |



UNIVERSIDAD NACIONAL DE JAÉN



Técnica de recolección de datos: Observación directa









| Tesis | | ANÁLISIS VIAL EN LA INTERSECCIÓN DE LAS CALLES IQUITOS Y EJÉRCITO EMPLEANDO EL SOFTWARE SYNCHRO 10 EN LA CIUDAD DE JAÉN, 2025 | | | | | | | | | | | | |
|--------------------------|-------|---|----------|------|---------------|-------------------------------|-------|-------|-------------------------------|----|----|----------------|-----------------------|--|
| Tesisistas | | Bach. Kelvin Jhonatan Guevara Ruiz Bach. Ever Waldir Torres Pedraza | | | | | | | | | | | | |
| Asesor | | Doc. José Luis Piedra Tineo | | | | | | | | | | | | |
| Fecha: Sábado 12/07/2025 | | Punto de conteo: Intersección de las calles Iquitos y Ejército | | | | Entrada: Calle Ejército (Sur) | | | Salida: Calle Iquitos (Oeste) | | | | | |
| HORA | MOTOS | | CARGUERO | AUTO | STATION WAGON | CAMIONETAS | | | CAMIONES | | | Total por hora | Total por horas punta | |
| | TAXI | LINEAL | | | | PICK UP | PANEL | COMBI | 2E | 3E | 4E | | | |
| | | | | | | | | | | | | | | |
| 6:00 a.m - 6:15 a.m | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 3 | 175 | |
| 6:15 a.m - 6:30 a.m | 3 | 1 | 1 | 0 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 8 | | |
| 6:30 a.m - 6:45 a.m | 5 | 3 | 0 | 1 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 12 | | |
| 6:45 a.m - 7:00 a.m | 5 | 3 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 9 | | |
| 7:00 a.m - 7:15 a.m | 6 | 3 | 1 | 0 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 15 | | |
| 7:15 a.m - 7:30 a.m | 8 | 5 | 0 | 0 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 17 | | |
| 7:30 a.m - 7:45 a.m | 10 | 5 | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 18 | | |
| 7:45 a.m - 8:00 a.m | 12 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 18 | | |
| 8:00 a.m - 8:15 a.m | 13 | 7 | 1 | 1 | 1 | 0 | 1 | 0 | 1 | 0 | 0 | 25 | | |
| 8:15 a.m - 8:30 a.m | 13 | 7 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 21 | | |
| 8:30 a.m - 8:45 a.m | 11 | 7 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 20 | | |
| 8:45 a.m - 9:00 a.m | 6 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9 | | |
| 11:00 a.m - 11:15 a.m | 7 | 4 | 1 | 0 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 17 | 205 | |
| 11:15 a.m - 11:30 a.m | 8 | 4 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 13 | | |
| 11:30 a.m - 11:45 a.m | 10 | 4 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 20 | | |
| 11:45 a.m - 12:00 a.m | 10 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 16 | | |
| 12:00 a.m - 12:15 p.m | 10 | 6 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 17 | | |
| 12:15 p.m - 12:30 p.m | 9 | 4 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 14 | | |
| 12:30 p.m - 12:45 p.m | 10 | 5 | 1 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 19 | | |
| 12:45 p.m - 13:00 p.m | 12 | 7 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 21 | | |
| 13:00 p.m - 13:15 p.m | 14 | 7 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 24 | | |
| 13:15 p.m - 13:30 p.m | 10 | 6 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 17 | | |
| 13:30 p.m - 13:45 p.m | 9 | 4 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 14 | | |
| 13:45 p.m - 14:00 p.m | 9 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 13 | | |
| 16:00 p.m - 16:15 p.m | 7 | 4 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 14 | 153 | |
| 16:15 p.m - 16:30 p.m | 8 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 11 | | |
| 16:30 p.m - 16:45 p.m | 7 | 4 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 14 | | |
| 16:45 p.m - 17:00 p.m | 8 | 3 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 12 | | |
| 17:00 p.m - 17:15 p.m | 10 | 5 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 16 | | |
| 17:15 p.m - 17:30 p.m | 10 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 15 | | |
| 17:30 p.m - 17:45 p.m | 11 | 5 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 18 | | |
| 17:45 p.m - 18:00 p.m | 9 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 13 | | |
| 18:00 p.m - 18:15 p.m | 8 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 12 | | |
| 18:15 p.m - 18:30 p.m | 6 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9 | | |
| 18:30 p.m - 18:45 p.m | 6 | 3 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 10 | | |
| 18:45 p.m - 19:00 p.m | 5 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9 | | |
| Total por tipo | | 305 | 159 | 9 | 5 | 13 | 21 | 11 | 7 | 3 | 0 | 0 | 533 | |



UNIVERSIDAD NACIONAL DE JAÉN



Técnica de recolección de datos: Observación directa









| ANÁLISIS VIAL EN LA INTERSECCIÓN DE LAS CALLES IQUITOS Y EJÉRCITO EMPLEANDO EL SOFTWARE SYNCHRO 10 EN LA CIUDAD DE JAÉN, 2025 | | | | | | | | | | | | | |
|---|---|---|-----------|----------|---------------|---|--|---|---|---|---|----------------|-----------------------|
| Tesis | ANÁLISIS VIAL EN LA INTERSECCIÓN DE LAS CALLES IQUITOS Y EJÉRCITO EMPLEANDO EL SOFTWARE SYNCHRO 10 EN LA CIUDAD DE JAÉN, 2025 | | | | | | | | | | | | |
| Tesistas | Bach. Kelvin Jhonatan Guevara Ruiz Bach. Ever Waldir Torres Pedraza | | | | | | | | | | | | |
| Asesor | Doc. José Luis Piedra Tineo | | | | | | | | | | | | |
| Fecha: Sábado 12/07/2025 | Punto de conteo: Intersección de las calles Iquitos y Ejército | | | | | Entrada: Calle Ejército (Norte) | | | Salida: Calle Ejército (Sur) | | | | |
| HORA | MOTOS | | CARGUERO | AUTO | STATION WAGON | CAMIONETAS | | | CAMIONES | | | Total por hora | Total por horas punta |
| | TAXI | LINEAL | | | | PICK UP | PANEL | COMBI | 2E | 3E | 4E | | |
| |  |  | | | |  |  |  |  |  |  | | |
| 6:00 a.m - 6:15 a.m | 3 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 164 |
| 6:15 a.m - 6:30 a.m | 3 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 7 | |
| 6:30 a.m - 6:45 a.m | 4 | 2 | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 0 | 0 | 12 | |
| 6:45 a.m - 7:00 a.m | 8 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 13 | |
| 7:00 a.m - 7:15 a.m | 7 | 4 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 14 | |
| 7:15 a.m - 7:30 a.m | 8 | 5 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 14 | |
| 7:30 a.m - 7:45 a.m | 10 | 6 | 0 | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 19 | |
| 7:45 a.m - 8:00 a.m | 10 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 15 | |
| 8:00 a.m - 8:15 a.m | 12 | 6 | 1 | 1 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 22 | |
| 8:15 a.m - 8:30 a.m | 9 | 4 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 14 | |
| 8:30 a.m - 8:45 a.m | 9 | 5 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 17 | |
| 8:45 a.m - 9:00 a.m | 8 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 12 | |
| 11:00 a.m - 11:15 a.m | 7 | 4 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 13 | |
| 11:15 a.m - 11:30 a.m | 7 | 3 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 11 | |
| 11:30 a.m - 11:45 a.m | 9 | 5 | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 17 | |
| 11:45 a.m - 12:00 a.m | 11 | 5 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 17 | |
| 12:00 a.m - 12:15 p.m | 11 | 5 | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 0 | 0 | 22 | |
| 12:15 p.m - 12:30 p.m | 10 | 4 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 16 | |
| 12:30 p.m - 12:45 p.m | 13 | 5 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 19 | |
| 12:45 p.m - 13:00 p.m | 15 | 5 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 21 | |
| 13:00 p.m - 13:15 p.m | 15 | 9 | 1 | 0 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 29 | |
| 13:15 p.m - 13:30 p.m | 14 | 8 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 23 | |
| 13:30 p.m - 13:45 p.m | 14 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 20 | |
| 13:45 p.m - 14:00 p.m | 9 | 4 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 14 | |
| 16:00 p.m - 16:15 p.m | 7 | 3 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 15 | |
| 16:15 p.m - 16:30 p.m | 7 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 11 | |
| 16:30 p.m - 16:45 p.m | 6 | 4 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 13 | |
| 16:45 p.m - 17:00 p.m | 10 | 6 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 18 | |
| 17:00 p.m - 17:15 p.m | 11 | 6 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 19 | |
| 17:15 p.m - 17:30 p.m | 11 | 7 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 19 | |
| 17:30 p.m - 17:45 p.m | 10 | 6 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 18 | |
| 17:45 p.m - 18:00 p.m | 9 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 13 | |
| 18:00 p.m - 18:15 p.m | 8 | 4 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 14 | |
| 18:15 p.m - 18:30 p.m | 8 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 13 | |
| 18:30 p.m - 18:45 p.m | 7 | 4 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 12 | |
| 18:45 p.m - 19:00 p.m | 7 | 3 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 11 | |
| Total por tipo | 327 | 166 | 17 | 9 | 10 | 14 | 8 | 7 | 4 | 0 | 0 | 562 | |



UNIVERSIDAD NACIONAL DE JAÉN



Técnica de recolección de datos: Observación directa

| ANÁLISIS VIAL EN LA INTERSECCIÓN DE LAS CALLES IQUITOS Y EJÉRCITO EMPLEANDO EL SOFTWARE SYNCHRO 10 EN LA CIUDAD DE JAÉN, 2025 | | | | | | | | | | | | | |
|---|---|---|----------|------|---------------|---|--|---|---|---|---|----------------|-----------------------|
| Tesis | ANÁLISIS VIAL EN LA INTERSECCIÓN DE LAS CALLES IQUITOS Y EJÉRCITO EMPLEANDO EL SOFTWARE SYNCHRO 10 EN LA CIUDAD DE JAÉN, 2025 | | | | | | | | | | | | |
| Tesistas | Bach. Kelvin Jhonatan Guevara Ruiz Bach. Ever Waldir Torres Pedraza | | | | | | | | | | | | |
| Asesor | Doc. José Luis Piedra Tineo | | | | | | | | | | | | |
| Fecha: Sábado 12/07/2025 | Punto de conteo: Intersección de las calles Iquitos y Ejército | | | | | Entrada: Calle Ejército (Norte) | | | Salida: Calle Iquitos (Oeste) | | | | |
| HORA | MOTOS | | CARGUERO | AUTO | STATION WAGON | CAMIONETAS | | | CAMIONES | | | Total por hora | Total por horas punta |
| | TAXI | LINEAL | | | | PICK UP | PANEL | COMBI | 2E | 3E | 4E | | |
| |  |  | | | |  |  |  |  |  |  | | |
| 6:00 a.m - 6:15 a.m | 4 | 3 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 9 | 168 |
| 6:15 a.m - 6:30 a.m | 5 | 2 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 9 | |
| 6:30 a.m - 6:45 a.m | 4 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 12 | |
| 6:45 a.m - 7:00 a.m | 6 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 8 | |
| 7:00 a.m - 7:15 a.m | 6 | 3 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 12 | |
| 7:15 a.m - 7:30 a.m | 7 | 3 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 12 | |
| 7:30 a.m - 7:45 a.m | 9 | 5 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 20 | |
| 7:45 a.m - 8:00 a.m | 9 | 5 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 15 | |
| 8:00 a.m - 8:15 a.m | 11 | 6 | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 20 | |
| 8:15 a.m - 8:30 a.m | 11 | 7 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 19 | |
| 8:30 a.m - 8:45 a.m | 9 | 5 | 0 | 0 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 17 | |
| 8:45 a.m - 9:00 a.m | 9 | 5 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 15 | |
| 11:00 a.m - 11:15 a.m | 5 | 2 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 11 | 155 |
| 11:15 a.m - 11:30 a.m | 5 | 2 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 9 | |
| 11:30 a.m - 11:45 a.m | 4 | 3 | 1 | 1 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 12 | |
| 11:45 a.m - 12:00 a.m | 5 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | |
| 12:00 a.m - 12:15 p.m | 6 | 3 | 1 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 12 | |
| 12:15 p.m - 12:30 p.m | 7 | 4 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 13 | |
| 12:30 p.m - 12:45 p.m | 8 | 5 | 0 | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 17 | |
| 12:45 p.m - 13:00 p.m | 7 | 4 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 12 | |
| 13:00 p.m - 13:15 p.m | 10 | 6 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 18 | |
| 13:15 p.m - 13:30 p.m | 10 | 4 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 15 | |
| 13:30 p.m - 13:45 p.m | 9 | 4 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 15 | |
| 13:45 p.m - 14:00 p.m | 9 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 14 | |
| 16:00 p.m - 16:15 p.m | 5 | 5 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 11 | 169 |
| 16:15 p.m - 16:30 p.m | 7 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 11 | |
| 16:30 p.m - 16:45 p.m | 8 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 12 | |
| 16:45 p.m - 17:00 p.m | 9 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 14 | |
| 17:00 p.m - 17:15 p.m | 9 | 5 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 16 | |
| 17:15 p.m - 17:30 p.m | 10 | 4 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 15 | |
| 17:30 p.m - 17:45 p.m | 11 | 6 | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 21 | |
| 17:45 p.m - 18:00 p.m | 10 | 4 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 15 | |
| 18:00 p.m - 18:15 p.m | 13 | 6 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 20 | |
| 18:15 p.m - 18:30 p.m | 9 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 13 | |
| 18:30 p.m - 18:45 p.m | 6 | 4 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 12 | |
| 18:45 p.m - 19:00 p.m | 5 | 3 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9 | |
| Total por tipo | 277 | 146 | 14 | 13 | 14 | 15 | 7 | 6 | 0 | 0 | 0 | 492 | |



UNIVERSIDAD NACIONAL DE JAÉN



Técnica de recolección de datos: Observación directa

| ANÁLISIS VIAL EN LA INTERSECCIÓN DE LAS CALLES IQUITOS Y EJÉRCITO EMPLEANDO EL SOFTWARE SYNCHRO 10 EN LA CIUDAD DE JAÉN, 2025 | | | | | | | | | | | | | | |
|---|-------|--------|----------|------|-------------------------------|------------|-------|-------|-------------------------------|----|----|----------------|-----------------------|------|
| Tesis | | | | | | | | | | | | | | |
| Bach. Kelvin Jhonatan Guevara Ruiz | | | | | | | | | | | | | | |
| Bach. Ever Waldir Torres Pedraza | | | | | | | | | | | | | | |
| Asesor | | | | | | | | | | | | | | |
| Doc. José Luis Piedra Tineo | | | | | | | | | | | | | | |
| Fecha: Domingo 13/07/2025 | | | | | | | | | | | | | | |
| Punto de conteo: Intersección de las calles Iquitos y Ejército | | | | | Entrada: Calle Iquitos (Este) | | | | Salida: Calle Iquitos (Oeste) | | | | | |
| HORA | MOTOS | | CARGUERO | AUTO | STATION WAGON | CAMIONETAS | | | CAMIONES | | | Total por hora | Total por horas punta | |
| | TAXI | LINEAL | | | | PICK UP | PANEL | COMBI | 2E | 3E | 4E | | | |
| | | | | | | | | | | | | | | |
| 6:00 a.m - 6:15 a.m | 8 | 5 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 16 | 903 | |
| 6:15 a.m - 6:30 a.m | 12 | 7 | 1 | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 24 | | |
| 6:30 a.m - 6:45 a.m | 20 | 11 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 33 | | |
| 6:45 a.m - 7:00 a.m | 26 | 13 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 41 | | |
| 7:00 a.m - 7:15 a.m | 34 | 15 | 0 | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 53 | | |
| 7:15 a.m - 7:30 a.m | 49 | 23 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 72 | | |
| 7:30 a.m - 7:45 a.m | 61 | 34 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 97 | | |
| 7:45 a.m - 8:00 a.m | 70 | 30 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 102 | | |
| 8:00 a.m - 8:15 a.m | 78 | 32 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 113 | | |
| 8:15 a.m - 8:30 a.m | 84 | 38 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 122 | | |
| 8:30 a.m - 8:45 a.m | 76 | 38 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 117 | | |
| 8:45 a.m - 9:00 a.m | 70 | 40 | 0 | 0 | 2 | 0 | 0 | 1 | 0 | 0 | 0 | 113 | | |
| 11:00 a.m - 11:15 a.m | 40 | 22 | 1 | 1 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 66 | | 1026 |
| 11:15 a.m - 11:30 a.m | 45 | 24 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 71 | | |
| 11:30 a.m - 11:45 a.m | 51 | 28 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 81 | | |
| 11:45 a.m - 12:00 a.m | 51 | 26 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 79 | | |
| 12:00 a.m - 12:15 p.m | 56 | 30 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 90 | | |
| 12:15 p.m - 12:30 p.m | 61 | 32 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 96 | | |
| 12:30 p.m - 12:45 p.m | 68 | 37 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 110 | | |
| 12:45 p.m - 13:00 p.m | 68 | 40 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 109 | | |
| 13:00 p.m - 13:15 p.m | 59 | 31 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 91 | | |
| 13:15 p.m - 13:30 p.m | 51 | 30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 81 | | |
| 13:30 p.m - 13:45 p.m | 48 | 37 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 87 | | |
| 13:45 p.m - 14:00 p.m | 40 | 24 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 65 | | |
| 16:00 p.m - 16:15 p.m | 30 | 18 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 51 | 776 | |
| 16:15 p.m - 16:30 p.m | 31 | 16 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 48 | | |
| 16:30 p.m - 16:45 p.m | 35 | 19 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 56 | | |
| 16:45 p.m - 17:00 p.m | 40 | 21 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 61 | | |
| 17:00 p.m - 17:15 p.m | 41 | 20 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 64 | | |
| 17:15 p.m - 17:30 p.m | 44 | 21 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 67 | | |
| 17:30 p.m - 17:45 p.m | 46 | 26 | 0 | 0 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 76 | | |
| 17:45 p.m - 18:00 p.m | 50 | 28 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 80 | | |
| 18:00 p.m - 18:15 p.m | 50 | 30 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 81 | | |
| 18:15 p.m - 18:30 p.m | 42 | 28 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 72 | | |
| 18:30 p.m - 18:45 p.m | 38 | 24 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 65 | | |
| 18:45 p.m - 19:00 p.m | 34 | 20 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 55 | | |
| Total por tipo | 1707 | 918 | 11 | 15 | 22 | 13 | 8 | 11 | 0 | 0 | 0 | 2705 | | |



UNIVERSIDAD NACIONAL DE JAÉN



Técnica de recolección de datos: Observación directa

| ANÁLISIS VIAL EN LA INTERSECCIÓN DE LAS CALLES IQUITOS Y EJÉRCITO EMPLEANDO EL SOFTWARE SYNCHRO 10 EN LA CIUDAD DE JAÉN, 2025 | | | | | | | | | | | | | |
|---|-------|--------|----------|------|-------------------------------|------------|-------|-------|--------------------------------|----|----|----------------|-----------------------|
| Tesis | | | | | | | | | | | | | |
| Bach. Kelvin Jhonatan Guevara Ruiz | | | | | | | | | | | | | |
| Bach. Ever Waldir Torres Pedraza | | | | | | | | | | | | | |
| Asesor | | | | | | | | | | | | | |
| Doc. José Luis Piedra Tineo | | | | | | | | | | | | | |
| Fecha: Domingo 13/07/2025 | | | | | | | | | | | | | |
| Punto de conteo: Intersección de las calles Iquitos y Ejército | | | | | Entrada: Calle Iquitos (Este) | | | | Salida: Calle Ejército (Norte) | | | | |
| HORA | MOTOS | | CARGUERO | AUTO | STATION WAGON | CAMIONETAS | | | CAMIONES | | | Total por hora | Total por horas punta |
| | TAXI | LINEAL | | | | PICK UP | PANEL | COMBI | 2E | 3E | 4E | | |
| | | | | | | | | | | | | | |
| 6:00 a.m - 6:15 a.m | 5 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 335 |
| 6:15 a.m - 6:30 a.m | 5 | 2 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 10 | |
| 6:30 a.m - 6:45 a.m | 6 | 4 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 12 | |
| 6:45 a.m - 7:00 a.m | 10 | 6 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 17 | |
| 7:00 a.m - 7:15 a.m | 11 | 6 | 1 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 20 | |
| 7:15 a.m - 7:30 a.m | 18 | 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 28 | |
| 7:30 a.m - 7:45 a.m | 22 | 10 | 1 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 36 | |
| 7:45 a.m - 8:00 a.m | 22 | 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 32 | |
| 8:00 a.m - 8:15 a.m | 26 | 12 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 39 | |
| 8:15 a.m - 8:30 a.m | 31 | 16 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 47 | |
| 8:30 a.m - 8:45 a.m | 26 | 13 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 44 | |
| 8:45 a.m - 9:00 a.m | 28 | 15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 43 | |
| 11:00 a.m - 11:15 a.m | 14 | 8 | 1 | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 27 | |
| 11:15 a.m - 11:30 a.m | 14 | 9 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 23 | |
| 11:30 a.m - 11:45 a.m | 16 | 8 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 25 | |
| 11:45 a.m - 12:00 a.m | 16 | 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 24 | |
| 12:00 a.m - 12:15 p.m | 14 | 6 | 0 | 0 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 23 | |
| 12:15 p.m - 12:30 p.m | 18 | 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 26 | |
| 12:30 p.m - 12:45 p.m | 18 | 11 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 30 | |
| 12:45 p.m - 13:00 p.m | 17 | 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 27 | |
| 13:00 p.m - 13:15 p.m | 15 | 9 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 28 | |
| 13:15 p.m - 13:30 p.m | 12 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 19 | |
| 13:30 p.m - 13:45 p.m | 10 | 5 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 17 | |
| 13:45 p.m - 14:00 p.m | 12 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 18 | |
| 16:00 p.m - 16:15 p.m | 10 | 6 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 20 | |
| 16:15 p.m - 16:30 p.m | 10 | 5 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 16 | |
| 16:30 p.m - 16:45 p.m | 11 | 7 | 1 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 21 | |
| 16:45 p.m - 17:00 p.m | 10 | 7 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 18 | |
| 17:00 p.m - 17:15 p.m | 12 | 6 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 19 | |
| 17:15 p.m - 17:30 p.m | 12 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 19 | |
| 17:30 p.m - 17:45 p.m | 15 | 8 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 26 | |
| 17:45 p.m - 18:00 p.m | 18 | 10 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 29 | |
| 18:00 p.m - 18:15 p.m | 18 | 9 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 28 | |
| 18:15 p.m - 18:30 p.m | 20 | 11 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 32 | |
| 18:30 p.m - 18:45 p.m | 19 | 12 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 32 | |
| 18:45 p.m - 19:00 p.m | 15 | 9 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 25 | |
| Total por tipo | 556 | 298 | 10 | 9 | 13 | 13 | 2 | 6 | 0 | 0 | 0 | 907 | |



UNIVERSIDAD NACIONAL DE JAÉN



Técnica de recolección de datos: Observación directa









| ANÁLISIS VIAL EN LA INTERSECCIÓN DE LAS CALLES IQUITOS Y EJÉRCITO EMPLEANDO EL SOFTWARE SYNCHRO 10 EN LA CIUDAD DE JAÉN, 2025 | | | | | | | | | | | | | |
|---|------------|------------|-----------|-----------|-------------------------------|------------|----------|----------|------------------------------|----------|----------|----------------|-----------------------|
| Tesis | | | | | | | | | | | | | |
| Bach. Kelvin Jhonatan Guevara Ruiz | | | | | | | | | | | | | |
| Bach. Ever Waldir Torres Pedraza | | | | | | | | | | | | | |
| Asesor | | | | | | | | | | | | | |
| Doc. José Luis Piedra Tineo | | | | | | | | | | | | | |
| Fecha: Domingo 13/07/2025 | | | | | | | | | | | | | |
| Punto de conteo: Intersección de las calles Iquitos y Ejército | | | | | Entrada: Calle Iquitos (Este) | | | | Salida: Calle Ejército (Sur) | | | | |
| HORA | MOTOS | | CARGUERO | AUTO | STATION WAGON | CAMIONETAS | | | CAMIONES | | | Total por hora | Total por horas punta |
| | TAXI | LINEAL | | | | PICK UP | PANEL | COMBI | 2E | 3E | 4E | | |
| | | | | | | | | | | | | | |
| 6:00 a.m - 6:15 a.m | 5 | 3 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 9 | 203 |
| 6:15 a.m - 6:30 a.m | 5 | 2 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 9 | |
| 6:30 a.m - 6:45 a.m | 6 | 4 | 0 | 1 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 14 | |
| 6:45 a.m - 7:00 a.m | 9 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 14 | |
| 7:00 a.m - 7:15 a.m | 9 | 5 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 19 | |
| 7:15 a.m - 7:30 a.m | 10 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 15 | |
| 7:30 a.m - 7:45 a.m | 12 | 6 | 1 | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 23 | |
| 7:45 a.m - 8:00 a.m | 14 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 20 | |
| 8:00 a.m - 8:15 a.m | 14 | 8 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 24 | |
| 8:15 a.m - 8:30 a.m | 15 | 7 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 23 | |
| 8:30 a.m - 8:45 a.m | 11 | 6 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 19 | |
| 8:45 a.m - 9:00 a.m | 8 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 14 | |
| 11:00 a.m - 11:15 a.m | 8 | 5 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 17 | 264 |
| 11:15 a.m - 11:30 a.m | 10 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 16 | |
| 11:30 a.m - 11:45 a.m | 10 | 4 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 17 | |
| 11:45 a.m - 12:00 a.m | 9 | 5 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 16 | |
| 12:00 a.m - 12:15 p.m | 10 | 5 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 17 | |
| 12:15 p.m - 12:30 p.m | 12 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 19 | |
| 12:30 p.m - 12:45 p.m | 11 | 6 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 20 | |
| 12:45 p.m - 13:00 p.m | 15 | 6 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 23 | |
| 13:00 p.m - 13:15 p.m | 18 | 9 | 1 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 30 | |
| 13:15 p.m - 13:30 p.m | 22 | 13 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 35 | |
| 13:30 p.m - 13:45 p.m | 18 | 10 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 30 | |
| 13:45 p.m - 14:00 p.m | 15 | 9 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 24 | |
| 16:00 p.m - 16:15 p.m | 7 | 4 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 14 | 252 |
| 16:15 p.m - 16:30 p.m | 9 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 14 | |
| 16:30 p.m - 16:45 p.m | 9 | 4 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 16 | |
| 16:45 p.m - 17:00 p.m | 10 | 5 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 16 | |
| 17:00 p.m - 17:15 p.m | 10 | 5 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 18 | |
| 17:15 p.m - 17:30 p.m | 9 | 4 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 14 | |
| 17:30 p.m - 17:45 p.m | 14 | 8 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 24 | |
| 17:45 p.m - 18:00 p.m | 14 | 9 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 24 | |
| 18:00 p.m - 18:15 p.m | 20 | 12 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 33 | |
| 18:15 p.m - 18:30 p.m | 21 | 11 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 33 | |
| 18:30 p.m - 18:45 p.m | 16 | 8 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 27 | |
| 18:45 p.m - 19:00 p.m | 11 | 6 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 19 | |
| Total por tipo | 426 | 229 | 11 | 11 | 13 | 18 | 4 | 7 | 0 | 0 | 0 | 719 | |



UNIVERSIDAD NACIONAL DE JAÉN



Técnica de recolección de datos: Observación directa












| Tesis | | ANÁLISIS VIAL EN LA INTERSECCIÓN DE LAS CALLES IQUITOS Y EJÉRCITO EMPLEANDO EL SOFTWARE SYNCHRO 10 EN LA CIUDAD DE JAÉN, 2025 | | | | | | | | | | | |
|---------------------------|---|---|----------|----------|---------------|---|--|---|---|---|---|----------------|-----------------------|
| Tesisistas | | Bach. Kelvin Jhonatan Guevara Ruiz Bach. Ever Waldir Torres Pedraza | | | | | | | | | | | |
| Asesor | | Doc. José Luis Piedra Tineo | | | | | | | | | | | |
| Fecha: Domingo 13/07/2025 | | Punto de conteo: Intersección de las calles Iquitos y Ejército | | | | Entrada: Calle Ejército (Sur) | | | Salida: Calle Ejército (Norte) | | | | |
| HORA | MOTOS | | CARGUERO | AUTO | STATION WAGON | CAMIONETAS | | | CAMIONES | | | Total por hora | Total por horas punta |
| | TAXI | LINEAL | | | | PICK UP | PANEL | COMBI | 2E | 3E | 4E | | |
| |  |  | | | |  |  |  |  |  |  | | |
| 6:00 a.m - 6:15 a.m | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 263 |
| 6:15 a.m - 6:30 a.m | 4 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | |
| 6:30 a.m - 6:45 a.m | 6 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 10 | |
| 6:45 a.m - 7:00 a.m | 7 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 10 | |
| 7:00 a.m - 7:15 a.m | 10 | 5 | 1 | 0 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 20 | |
| 7:15 a.m - 7:30 a.m | 9 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 14 | |
| 7:30 a.m - 7:45 a.m | 13 | 7 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 25 | |
| 7:45 a.m - 8:00 a.m | 19 | 9 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 29 | |
| 8:00 a.m - 8:15 a.m | 22 | 12 | 1 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 38 | |
| 8:15 a.m - 8:30 a.m | 26 | 15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 41 | |
| 8:30 a.m - 8:45 a.m | 20 | 10 | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 33 | |
| 8:45 a.m - 9:00 a.m | 20 | 11 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 32 | |
| 11:00 a.m - 11:15 a.m | 10 | 6 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 19 | |
| 11:15 a.m - 11:30 a.m | 9 | 5 | 1 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 17 | |
| 11:30 a.m - 11:45 a.m | 10 | 4 | 1 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 17 | |
| 11:45 a.m - 12:00 a.m | 9 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 14 | |
| 12:00 a.m - 12:15 p.m | 11 | 6 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 22 | |
| 12:15 p.m - 12:30 p.m | 10 | 6 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 17 | |
| 12:30 p.m - 12:45 p.m | 12 | 6 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 20 | |
| 12:45 p.m - 13:00 p.m | 11 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 16 | |
| 13:00 p.m - 13:15 p.m | 15 | 8 | 0 | 0 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 26 | |
| 13:15 p.m - 13:30 p.m | 15 | 9 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 25 | |
| 13:30 p.m - 13:45 p.m | 10 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 15 | |
| 13:45 p.m - 14:00 p.m | 9 | 5 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 15 | |
| 16:00 p.m - 16:15 p.m | 8 | 5 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 15 | |
| 16:15 p.m - 16:30 p.m | 8 | 4 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 13 | |
| 16:30 p.m - 16:45 p.m | 10 | 6 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 17 | |
| 16:45 p.m - 17:00 p.m | 8 | 5 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 14 | |
| 17:00 p.m - 17:15 p.m | 11 | 6 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 20 | |
| 17:15 p.m - 17:30 p.m | 13 | 9 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 22 | |
| 17:30 p.m - 17:45 p.m | 15 | 9 | 0 | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 28 | |
| 17:45 p.m - 18:00 p.m | 18 | 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 28 | |
| 18:00 p.m - 18:15 p.m | 20 | 9 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 29 | |
| 18:15 p.m - 18:30 p.m | 20 | 12 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 32 | |
| 18:30 p.m - 18:45 p.m | 16 | 9 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 27 | |
| 18:45 p.m - 19:00 p.m | 11 | 6 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 18 | |
| Total por tipo | 449 | 244 | 8 | 9 | 11 | 15 | 5 | 8 | 0 | 0 | 0 | 749 | |



UNIVERSIDAD NACIONAL DE JAÉN



Técnica de recolección de datos: Observación directa

| ANÁLISIS VIAL EN LA INTERSECCIÓN DE LAS CALLES IQUITOS Y EJÉRCITO EMPLEANDO EL SOFTWARE SYNCHRO 10 EN LA CIUDAD DE JAÉN, 2025 | | | | | | | | | | | | | |
|---|---|---|---|--|---|---|---|---|---|---|---|----------------|-----------------------|
| Tesis | ANÁLISIS VIAL EN LA INTERSECCIÓN DE LAS CALLES IQUITOS Y EJÉRCITO EMPLEANDO EL SOFTWARE SYNCHRO 10 EN LA CIUDAD DE JAÉN, 2025 | | | | | | | | | | | | |
| Tesistas | Bach. Kelvin Jhonatan Guevara Ruiz Bach. Ever Waldir Torres Pedraza | | | | | | | | | | | | |
| Asesor | Doc. José Luis Piedra Tineo | | | | | | | | | | | | |
| Fecha: Domingo 13/07/2025 | Punto de conteo: Intersección de las calles Iquitos y Ejército | | | | | Entrada: Calle Ejército (Sur) | | | Salida: Calle Iquitos (Oeste) | | | | |
| HORA | MOTOS | | CARGUERO | AUTO | STATION WAGON | CAMIONETAS | | | CAMIONES | | | Total por hora | Total por horas punta |
| | TAXI | LINEAL | | | | PICK UP | PANEL | COMBI | 2E | 3E | 4E | | |
| |  |  |  |  |  |  |  |  |  |  |  | | |
| 6:00 a.m - 6:15 a.m | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 2 | 148 |
| 6:15 a.m - 6:30 a.m | 1 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 3 | |
| 6:30 a.m - 6:45 a.m | 4 | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 7 | |
| 6:45 a.m - 7:00 a.m | 6 | 2 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 9 | |
| 7:00 a.m - 7:15 a.m | 8 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 16 | |
| 7:15 a.m - 7:30 a.m | 8 | 5 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 14 | |
| 7:30 a.m - 7:45 a.m | 7 | 5 | 0 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 15 | |
| 7:45 a.m - 8:00 a.m | 9 | 5 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 15 | |
| 8:00 a.m - 8:15 a.m | 9 | 6 | 1 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 18 | |
| 8:15 a.m - 8:30 a.m | 10 | 7 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 18 | |
| 8:30 a.m - 8:45 a.m | 9 | 6 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 17 | |
| 8:45 a.m - 9:00 a.m | 8 | 5 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 14 | |
| 11:00 a.m - 11:15 a.m | 6 | 3 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 10 | |
| 11:15 a.m - 11:30 a.m | 6 | 3 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 11 | |
| 11:30 a.m - 11:45 a.m | 8 | 5 | 1 | 1 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 18 | |
| 11:45 a.m - 12:00 a.m | 6 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 8 | |
| 12:00 a.m - 12:15 p.m | 5 | 3 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 11 | |
| 12:15 p.m - 12:30 p.m | 7 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 11 | |
| 12:30 p.m - 12:45 p.m | 7 | 4 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 14 | |
| 12:45 p.m - 13:00 p.m | 7 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 10 | |
| 13:00 p.m - 13:15 p.m | 8 | 5 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 16 | |
| 13:15 p.m - 13:30 p.m | 11 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 17 | |
| 13:30 p.m - 13:45 p.m | 10 | 6 | 0 | 0 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 19 | |
| 13:45 p.m - 14:00 p.m | 8 | 5 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 14 | |
| 16:00 p.m - 16:15 p.m | 6 | 4 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 13 | |
| 16:15 p.m - 16:30 p.m | 7 | 5 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 13 | |
| 16:30 p.m - 16:45 p.m | 7 | 3 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 11 | |
| 16:45 p.m - 17:00 p.m | 5 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | |
| 17:00 p.m - 17:15 p.m | 5 | 3 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 12 | |
| 17:15 p.m - 17:30 p.m | 5 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | |
| 17:30 p.m - 17:45 p.m | 6 | 4 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 12 | |
| 17:45 p.m - 18:00 p.m | 6 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 10 | |
| 18:00 p.m - 18:15 p.m | 7 | 4 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 14 | |
| 18:15 p.m - 18:30 p.m | 9 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 14 | |
| 18:30 p.m - 18:45 p.m | 9 | 4 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 14 | |
| 18:45 p.m - 19:00 p.m | 13 | 9 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 22 | |
| Total por tipo | 254 | 142 | 7 | 11 | 11 | 17 | 7 | 7 | 0 | 0 | 0 | 456 | |



UNIVERSIDAD NACIONAL DE JAÉN



Técnica de recolección de datos: Observación directa









| Tesis | | ANÁLISIS VIAL EN LA INTERSECCIÓN DE LAS CALLES IQUITOS Y EJÉRCITO EMPLEANDO EL SOFTWARE SYNCHRO 10 EN LA CIUDAD DE JAÉN, 2025 | | | | | | | | | | | |
|---------------------------|------------|---|-----------|-----------|---------------|---------------------------------|----------|----------|------------------------------|----------|----------|----------------|-----------------------|
| Tesisistas | | Bach. Kelvin Jhonatan Guevara Ruiz Bach. Ever Waldir Torres Pedraza | | | | | | | | | | | |
| Asesor | | Doc. José Luis Piedra Tineo | | | | | | | | | | | |
| Fecha: Domingo 13/07/2025 | | Punto de conteo: Intersección de las calles Iquitos y Ejército | | | | Entrada: Calle Ejército (Norte) | | | Salida: Calle Ejército (Sur) | | | | |
| HORA | MOTOS | | CARGUERO | AUTO | STATION WAGON | CAMIONETAS | | | CAMIONES | | | Total por hora | Total por horas punta |
| | TAXI | LINEAL | | | | PICK UP | PANEL | COMBI | 2E | 3E | 4E | | |
| | | | | | | | | | | | | | |
| 6:00 a.m - 6:15 a.m | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 139 |
| 6:15 a.m - 6:30 a.m | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 2 | |
| 6:30 a.m - 6:45 a.m | 4 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | |
| 6:45 a.m - 7:00 a.m | 6 | 4 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 11 | |
| 7:00 a.m - 7:15 a.m | 7 | 4 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 13 | |
| 7:15 a.m - 7:30 a.m | 7 | 5 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 13 | |
| 7:30 a.m - 7:45 a.m | 6 | 3 | 0 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 14 | |
| 7:45 a.m - 8:00 a.m | 9 | 4 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 16 | |
| 8:00 a.m - 8:15 a.m | 9 | 4 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 16 | |
| 8:15 a.m - 8:30 a.m | 11 | 5 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 18 | |
| 8:30 a.m - 8:45 a.m | 9 | 5 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 17 | |
| 8:45 a.m - 9:00 a.m | 6 | 3 | 0 | 2 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 12 | |
| 11:00 a.m - 11:15 a.m | 5 | 3 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 10 | |
| 11:15 a.m - 11:30 a.m | 5 | 3 | 1 | 1 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 12 | |
| 11:30 a.m - 11:45 a.m | 6 | 4 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 11 | |
| 11:45 a.m - 12:00 a.m | 5 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | |
| 12:00 a.m - 12:15 p.m | 5 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 8 | |
| 12:15 p.m - 12:30 p.m | 6 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 10 | |
| 12:30 p.m - 12:45 p.m | 7 | 4 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 13 | |
| 12:45 p.m - 13:00 p.m | 8 | 5 | 1 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 17 | |
| 13:00 p.m - 13:15 p.m | 10 | 7 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 19 | |
| 13:15 p.m - 13:30 p.m | 8 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 12 | |
| 13:30 p.m - 13:45 p.m | 7 | 4 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 13 | |
| 13:45 p.m - 14:00 p.m | 7 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 12 | |
| 16:00 p.m - 16:15 p.m | 5 | 4 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 11 | |
| 16:15 p.m - 16:30 p.m | 5 | 4 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 11 | |
| 16:30 p.m - 16:45 p.m | 6 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9 | |
| 16:45 p.m - 17:00 p.m | 5 | 2 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 8 | |
| 17:00 p.m - 17:15 p.m | 6 | 2 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 10 | |
| 17:15 p.m - 17:30 p.m | 7 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 10 | |
| 17:30 p.m - 17:45 p.m | 6 | 4 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 12 | |
| 17:45 p.m - 18:00 p.m | 5 | 3 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 10 | |
| 18:00 p.m - 18:15 p.m | 7 | 3 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 11 | |
| 18:15 p.m - 18:30 p.m | 6 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 11 | |
| 18:30 p.m - 18:45 p.m | 7 | 3 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 12 | |
| 18:45 p.m - 19:00 p.m | 6 | 4 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 11 | |
| Total por tipo | 225 | 126 | 12 | 11 | 10 | 10 | 7 | 8 | 0 | 0 | 0 | 409 | |



UNIVERSIDAD NACIONAL DE JAÉN



Técnica de recolección de datos: Observación directa

| ANÁLISIS VIAL EN LA INTERSECCIÓN DE LAS CALLES IQUITOS Y EJÉRCITO EMPLEANDO EL SOFTWARE SYNCHRO 10 EN LA CIUDAD DE JAÉN, 2025 | | | | | | | | | | | | | |
|---|---|---|----------|------|---------------|---|--|---|---|---|---|----------------|-----------------------|
| Tesis | ANÁLISIS VIAL EN LA INTERSECCIÓN DE LAS CALLES IQUITOS Y EJÉRCITO EMPLEANDO EL SOFTWARE SYNCHRO 10 EN LA CIUDAD DE JAÉN, 2025 | | | | | | | | | | | | |
| Tesistas | Bach. Kelvin Jhonatan Guevara Ruiz Bach. Ever Waldir Torres Pedraza | | | | | | | | | | | | |
| Asesor | Doc. José Luis Piedra Tineo | | | | | | | | | | | | |
| Fecha: Domingo 13/07/2025 | Punto de conteo: Intersección de las calles Iquitos y Ejército | | | | | Entrada: Calle Ejército (Norte) | | | Salida: Calle Iquitos (Oeste) | | | | |
| HORA | MOTOS | | CARGUERO | AUTO | STATION WAGON | CAMIONETAS | | | CAMIONES | | | Total por hora | Total por horas punta |
| | TAXI | LINEAL | | | | PICK UP | PANEL | COMBI | 2E | 3E | 4E | | |
| |  |  | | | |  |  |  |  |  |  | | |
| 6:00 a.m - 6:15 a.m | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 129 |
| 6:15 a.m - 6:30 a.m | 2 | 1 | 1 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 6 | |
| 6:30 a.m - 6:45 a.m | 1 | 2 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 5 | |
| 6:45 a.m - 7:00 a.m | 5 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 8 | |
| 7:00 a.m - 7:15 a.m | 6 | 3 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 12 | |
| 7:15 a.m - 7:30 a.m | 5 | 3 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 9 | |
| 7:30 a.m - 7:45 a.m | 7 | 4 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 13 | |
| 7:45 a.m - 8:00 a.m | 7 | 4 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 13 | |
| 8:00 a.m - 8:15 a.m | 10 | 6 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 21 | |
| 8:15 a.m - 8:30 a.m | 9 | 4 | 1 | 1 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 17 | |
| 8:30 a.m - 8:45 a.m | 8 | 5 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 14 | |
| 8:45 a.m - 9:00 a.m | 6 | 3 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 10 | |
| 11:00 a.m - 11:15 a.m | 5 | 3 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 9 | 128 |
| 11:15 a.m - 11:30 a.m | 5 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 8 | |
| 11:30 a.m - 11:45 a.m | 4 | 2 | 1 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 9 | |
| 11:45 a.m - 12:00 a.m | 5 | 3 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 9 | |
| 12:00 a.m - 12:15 p.m | 4 | 4 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9 | |
| 12:15 p.m - 12:30 p.m | 5 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 8 | |
| 12:30 p.m - 12:45 p.m | 4 | 2 | 1 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 9 | |
| 12:45 p.m - 13:00 p.m | 6 | 3 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 10 | |
| 13:00 p.m - 13:15 p.m | 8 | 4 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 13 | |
| 13:15 p.m - 13:30 p.m | 9 | 5 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 17 | |
| 13:30 p.m - 13:45 p.m | 8 | 5 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 16 | |
| 13:45 p.m - 14:00 p.m | 7 | 3 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 11 | |
| 16:00 p.m - 16:15 p.m | 5 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 116 |
| 16:15 p.m - 16:30 p.m | 6 | 3 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 11 | |
| 16:30 p.m - 16:45 p.m | 5 | 3 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 10 | |
| 16:45 p.m - 17:00 p.m | 6 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9 | |
| 17:00 p.m - 17:15 p.m | 5 | 4 | 0 | 0 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 13 | |
| 17:15 p.m - 17:30 p.m | 6 | 4 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 12 | |
| 17:30 p.m - 17:45 p.m | 4 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | |
| 17:45 p.m - 18:00 p.m | 5 | 3 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 10 | |
| 18:00 p.m - 18:15 p.m | 7 | 4 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 13 | |
| 18:15 p.m - 18:30 p.m | 5 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 8 | |
| 18:30 p.m - 18:45 p.m | 7 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 11 | |
| 18:45 p.m - 19:00 p.m | 4 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | |
| Total por tipo | 201 | 116 | 9 | 13 | 10 | 13 | 4 | 7 | 0 | 0 | 0 | 373 | |

**Anexo 8. CONVERSION A VEHÍCULOS EQUIVALENTES EN EL DÍA DE
MAYOR CONCENTRACIÓN DE TRÁFICO VEHICULAR.**



UNIVERSIDAD NACIONAL DE JAÉN



Técnica de recolección de datos: Observación directa

| Tesis | | ANÁLISIS VIAL EN LA INTERSECCIÓN DE LAS CALLES IQUITOS Y EJÉRCITO EMPLEANDO EL SOFTWARE SYNCHRO 10 EN LA CIUDAD DE JAÉN, 2025 | | | | | | | | | | | | | | | | | | | | | | |
|---------------------------|-------------|---|-------------|------------|--------------------|-------------|-------------------------|--------------|--------------|-----------|-----------|-------------------------------|-----------|-----------|----------------|---------------------------------------|-------------------------------|--|----------|----------|-------------|-------------|-------------|-------------|
| Tesisistas | | Bach. Kelvin Jhonatan Guevara Ruiz Bach. Ever Waldir Torres Pedraza | | | | | | | | | | | | | | | | | | | | | | |
| Asesor | | Doc. José Luis Piedra Tineo | | | | | | | | | | | | | | | | | | | | | | |
| Fecha: Viernes 04/07/2025 | | Punto de conteo: Intersección de las calles Iquitos y Ejército | | | | | | | | | | Entrada: Calle Iquitos (Este) | | | | | Salida: Calle Iquitos (Oeste) | | | | | | | |
| HORA | MOTOS | | | | CARGUERO (1.00) | AUTO (1.00) | STATION WAGON (1.00) | | CAMIONETAS | | | CAMIONES | | | Total por hora | Total convertido a autos equivalentes | Total por horas punta | Total por horas punta (autos equivalentes) | | | | | | |
| | TAXI (0.33) | LINEAL (0.25) | | | | | PICK UP (1.00) | PANEL (1.00) | COMBI (1.00) | 2E (3.00) | 3E | 4E | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | |
| 6:00 a.m - 6:15 a.m | 21 | 7 | 10 | 3 | 1 | 1 | 0 | 0 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 34 | 12 | 519 | 190 | |
| 6:15 a.m - 6:30 a.m | 32 | 11 | 13 | 3 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 3 | 0 | 0 | 51 | 22 | | | |
| 6:30 a.m - 6:45 a.m | 47 | 16 | 21 | 5 | 1 | 1 | 2 | 2 | 0 | 0 | 2 | 2 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 74 | 27 | | | |
| 6:45 a.m - 7:00 a.m | 76 | 25 | 30 | 8 | 0 | 0 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 3 | 0 | 0 | 110 | | | 39 |
| 7:00 a.m - 7:15 a.m | 82 | 27 | 30 | 8 | 1 | 1 | 3 | 3 | 3 | 3 | 3 | 3 | 0 | 0 | 2 | 2 | 0 | 0 | 0 | 124 | 47 | | | |
| 7:15 a.m - 7:30 a.m | 83 | 27 | 35 | 9 | 0 | 0 | 2 | 2 | 3 | 3 | 2 | 2 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 126 | 44 | | | |
| 7:30 a.m - 7:45 a.m | 92 | 30 | 45 | 11 | 2 | 2 | 2 | 2 | 3 | 3 | 3 | 3 | 2 | 2 | 1 | 1 | 1 | 3 | 0 | 0 | 151 | 58 | | |
| 7:45 a.m - 8:00 a.m | 99 | 33 | 57 | 14 | 1 | 1 | 1 | 1 | 2 | 2 | 3 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 163 | 54 | | | |
| 8:00 a.m - 8:15 a.m | 104 | 34 | 41 | 10 | 2 | 2 | 1 | 1 | 4 | 4 | 2 | 2 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 156 | 56 | | | |
| 8:15 a.m - 8:30 a.m | 108 | 36 | 46 | 12 | 1 | 1 | 1 | 1 | 5 | 5 | 2 | 2 | 0 | 0 | 1 | 1 | 1 | 3 | 0 | 0 | 165 | 60 | | |
| 8:30 a.m - 8:45 a.m | 92 | 30 | 40 | 10 | 0 | 0 | 0 | 0 | 2 | 2 | 3 | 3 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 138 | 46 | | | |
| 8:45 a.m - 9:00 a.m | 87 | 29 | 42 | 11 | 0 | 0 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 131 | 41 | | | |
| 11:00 a.m - 11:15 a.m | 99 | 33 | 41 | 10 | 1 | 1 | 2 | 2 | 2 | 2 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 148 | 51 | | | |
| 11:15 a.m - 11:30 a.m | 103 | 34 | 43 | 11 | 1 | 1 | 3 | 3 | 1 | 1 | 1 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 153 | 52 | | | |
| 11:30 a.m - 11:45 a.m | 111 | 37 | 52 | 13 | 2 | 2 | 3 | 3 | 2 | 2 | 2 | 2 | 1 | 1 | 1 | 1 | 3 | 0 | 0 | 175 | 64 | | | |
| 11:45 a.m - 12:00 a.m | 117 | 39 | 56 | 14 | 1 | 1 | 4 | 4 | 2 | 2 | 2 | 2 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 183 | 63 | | | |
| 12:00 a.m - 12:15 p.m | 113 | 37 | 71 | 18 | 0 | 0 | 3 | 3 | 3 | 3 | 2 | 2 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 194 | 65 | | | |
| 12:15 p.m - 12:30 p.m | 118 | 39 | 75 | 19 | 2 | 2 | 2 | 2 | 2 | 2 | 3 | 3 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 204 | 69 | | | |
| 12:30 p.m - 12:45 p.m | 135 | 45 | 90 | 23 | 3 | 3 | 5 | 5 | 3 | 3 | 5 | 5 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 243 | 85 | | | |
| 12:45 p.m - 13:00 p.m | 146 | 48 | 101 | 25 | 2 | 2 | 6 | 6 | 3 | 3 | 3 | 3 | 1 | 1 | 2 | 2 | 1 | 3 | 0 | 0 | 265 | 93 | | |
| 13:00 p.m - 13:15 p.m | 137 | 45 | 100 | 25 | 3 | 3 | 7 | 7 | 2 | 2 | 5 | 5 | 2 | 2 | 2 | 2 | 0 | 0 | 0 | 258 | 91 | | | |
| 13:15 p.m - 13:30 p.m | 152 | 50 | 94 | 24 | 2 | 2 | 4 | 4 | 3 | 3 | 4 | 4 | 2 | 2 | 2 | 2 | 1 | 3 | 0 | 0 | 264 | 94 | | |
| 13:30 p.m - 13:45 p.m | 131 | 43 | 84 | 21 | 2 | 2 | 2 | 2 | 2 | 2 | 3 | 3 | 1 | 1 | 2 | 2 | 0 | 0 | 0 | 227 | 76 | | | |
| 13:45 p.m - 14:00 p.m | 124 | 41 | 78 | 20 | 1 | 1 | 1 | 1 | 1 | 1 | 3 | 3 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 210 | 68 | | | |
| 16:00 p.m - 16:15 p.m | 83 | 27 | 44 | 11 | 1 | 1 | 3 | 3 | 0 | 0 | 3 | 3 | 1 | 1 | 1 | 1 | 1 | 3 | 0 | 0 | 137 | 50 | | |
| 16:15 p.m - 16:30 p.m | 66 | 22 | 46 | 12 | 1 | 1 | 2 | 2 | 1 | 1 | 3 | 3 | 1 | 1 | 2 | 2 | 0 | 0 | 0 | 122 | 43 | | | |
| 16:30 p.m - 16:45 p.m | 75 | 25 | 48 | 12 | 1 | 1 | 2 | 2 | 1 | 1 | 2 | 2 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 131 | 45 | | | |
| 16:45 p.m - 17:00 p.m | 70 | 23 | 53 | 13 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 2 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 129 | 42 | | | |
| 17:00 p.m - 17:15 p.m | 89 | 29 | 52 | 13 | 2 | 2 | 3 | 3 | 3 | 3 | 3 | 3 | 2 | 2 | 2 | 2 | 0 | 0 | 0 | 156 | 57 | | | |
| 17:15 p.m - 17:30 p.m | 93 | 31 | 49 | 12 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 156 | 57 | | | |
| 17:30 p.m - 17:45 p.m | 100 | 33 | 77 | 19 | 2 | 2 | 2 | 2 | 3 | 3 | 5 | 5 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 191 | 66 | | | |
| 17:45 p.m - 18:00 p.m | 108 | 36 | 84 | 21 | 1 | 1 | 4 | 4 | 2 | 2 | 6 | 6 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 206 | 71 | | | |
| 18:00 p.m - 18:15 p.m | 111 | 37 | 76 | 19 | 1 | 1 | 3 | 3 | 1 | 1 | 5 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 197 | 66 | | | |
| 18:15 p.m - 18:30 p.m | 119 | 39 | 74 | 19 | 1 | 1 | 2 | 2 | 2 | 2 | 6 | 6 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 206 | 71 | | | |
| 18:30 p.m - 18:45 p.m | 129 | 43 | 81 | 20 | 0 | 0 | 1 | 1 | 1 | 1 | 2 | 2 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 215 | 68 | | | |
| 18:45 p.m - 19:00 p.m | 114 | 38 | 70 | 18 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 188 | 59 | | | |
| Total por tipo | 3566 | 1177 | 2049 | 512 | 44 | 44 | 84 | 84 | 71 | 71 | 97 | 97 | 26 | 26 | 36 | 36 | 8 | 24 | 0 | 0 | 5981 | 2071 | 5981 | 2071 |



UNIVERSIDAD NACIONAL DE JAÉN



Técnica de recolección de datos: Observación directa

| Tesis | | ANÁLISIS VIAL EN LA INTERSECCIÓN DE LAS CALLES IQUITOS Y EJÉRCITO EMPLEANDO EL SOFTWARE SYNCHRO 10 EN LA CIUDAD DE JAÉN, 2025 | | | | | | | | | | | | | | | | | | | | | | |
|---------------------------|-------------|---|--------------------|----------------|--------------|----------------------------|--------------|-----------|-----------|-----------|-----------|-------------------------------|----------------|---------------------------------------|-----------------------|--|----------|--------------------------------|----------|----------|-------------|------------|----|--|
| Tesisistas | | Bach. Kelvin Jhonatan Guevara Ruiz Bach. Ever Waldir Torres Pedraza | | | | | | | | | | | | | | | | | | | | | | |
| Asesor | | Doc. José Luis Piedra Tineo | | | | | | | | | | | | | | | | | | | | | | |
| Fecha: Viernes 04/07/2025 | | Punto de conteo: Intersección de las calles Iquitos y Ejército | | | | | | | | | | Entrada: Calle Iquitos (Este) | | | | | | Salida: Calle Ejército (Norte) | | | | | | |
| HORA | MOTOS | | CARGUERO (1.00) | AUTO (1.00) | | STATION WAGON (1.00) | CAMIONETAS | | | CAMIONES | | | Total por hora | Total convertido a autos equivalentes | Total por horas punta | Total por horas punta (autos equivalentes) | | | | | | | | |
| | TAXI (0.33) | LINEAL (0.25) | | PICK UP (1.00) | PANEL (1.00) | | COMBI (1.00) | 2E (3.00) | 3E | 4E | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | |
| 6:00 a.m - 6:15 a.m | 15 | 5 | 6 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 21 | 6 | 193 | 70 | |
| 6:15 a.m - 6:30 a.m | 18 | 6 | 6 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 25 | 8 | | | |
| 6:30 a.m - 6:45 a.m | 19 | 6 | 7 | 2 | 1 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 28 | 10 | | | |
| 6:45 a.m - 7:00 a.m | 20 | 7 | 7 | 2 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 30 | 11 | | | |
| 7:00 a.m - 7:15 a.m | 25 | 8 | 10 | 3 | 1 | 1 | 1 | 1 | 2 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 42 | 18 | | | |
| 7:15 a.m - 7:30 a.m | 31 | 10 | 13 | 3 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 47 | 16 | | | |
| 7:30 a.m - 7:45 a.m | 30 | 10 | 11 | 3 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 2 | 1 | 1 | 1 | 3 | 0 | 49 | 23 | | | |
| 7:45 a.m - 8:00 a.m | 31 | 10 | 10 | 3 | 0 | 0 | 1 | 1 | 1 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 44 | 16 | | | |
| 8:00 a.m - 8:15 a.m | 33 | 11 | 13 | 3 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 50 | 18 | | | |
| 8:15 a.m - 8:30 a.m | 32 | 11 | 13 | 3 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 48 | 17 | | | |
| 8:30 a.m - 8:45 a.m | 30 | 10 | 7 | 2 | 0 | 0 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 40 | 15 | | | |
| 8:45 a.m - 9:00 a.m | 29 | 10 | 9 | 2 | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 40 | 14 | | | |
| 11:00 a.m - 11:15 a.m | 31 | 10 | 10 | 3 | 1 | 1 | 2 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 47 | 19 | | | |
| 11:15 a.m - 11:30 a.m | 34 | 11 | 10 | 3 | 1 | 1 | 1 | 1 | 0 | 0 | 2 | 2 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 49 | 19 | | | |
| 11:30 a.m - 11:45 a.m | 35 | 12 | 11 | 3 | 1 | 1 | 1 | 1 | 0 | 0 | 2 | 2 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 51 | 19 | | | |
| 11:45 a.m - 12:00 a.m | 38 | 13 | 15 | 4 | 0 | 0 | 1 | 1 | 0 | 0 | 2 | 2 | 1 | 1 | 0 | 0 | 1 | 3 | 0 | 58 | 23 | | | |
| 12:00 a.m - 12:15 p.m | 34 | 11 | 16 | 4 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 2 | 1 | 1 | 0 | 0 | 1 | 3 | 0 | 57 | 24 | | | |
| 12:15 p.m - 12:30 p.m | 33 | 11 | 18 | 5 | 1 | 1 | 2 | 2 | 2 | 2 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 59 | 23 | | | |
| 12:30 p.m - 12:45 p.m | 49 | 16 | 25 | 6 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 84 | 32 | | | |
| 12:45 p.m - 13:00 p.m | 62 | 20 | 29 | 7 | 1 | 1 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 1 | 1 | 1 | 3 | 0 | 0 | 102 | 41 | | | |
| 13:00 p.m - 13:15 p.m | 65 | 21 | 18 | 5 | 2 | 2 | 1 | 1 | 2 | 2 | 1 | 1 | 2 | 2 | 2 | 0 | 0 | 0 | 0 | 93 | 36 | | | |
| 13:15 p.m - 13:30 p.m | 60 | 20 | 17 | 4 | 2 | 2 | 2 | 2 | 1 | 1 | 2 | 2 | 1 | 1 | 2 | 2 | 1 | 3 | 0 | 88 | 37 | | | |
| 13:30 p.m - 13:45 p.m | 56 | 18 | 11 | 3 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 2 | 1 | 1 | 0 | 0 | 0 | 74 | 28 | | | |
| 13:45 p.m - 14:00 p.m | 57 | 19 | 11 | 3 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 72 | 26 | | | |
| 16:00 p.m - 16:15 p.m | 33 | 11 | 11 | 3 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 3 | 0 | 51 | 23 | | | |
| 16:15 p.m - 16:30 p.m | 41 | 14 | 12 | 3 | 1 | 1 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 58 | 22 | | | |
| 16:30 p.m - 16:45 p.m | 35 | 12 | 14 | 4 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 53 | 19 | | | |
| 16:45 p.m - 17:00 p.m | 36 | 12 | 14 | 4 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 52 | 17 | | | |
| 17:00 p.m - 17:15 p.m | 35 | 12 | 22 | 6 | 1 | 1 | 2 | 2 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 63 | 23 | | | |
| 17:15 p.m - 17:30 p.m | 36 | 12 | 37 | 9 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 78 | 26 | | | |
| 17:30 p.m - 17:45 p.m | 38 | 13 | 25 | 6 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 69 | 25 | | | |
| 17:45 p.m - 18:00 p.m | 32 | 11 | 26 | 7 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 2 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 64 | 23 | | | |
| 18:00 p.m - 18:15 p.m | 31 | 10 | 26 | 7 | 0 | 0 | 1 | 1 | 1 | 1 | 2 | 2 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 62 | 22 | | | |
| 18:15 p.m - 18:30 p.m | 31 | 10 | 20 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 51 | 15 | | | |
| 18:30 p.m - 18:45 p.m | 25 | 8 | 16 | 4 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 44 | 15 | | | |
| 18:45 p.m - 19:00 p.m | 19 | 6 | 14 | 4 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 34 | 11 | | | |
| Total por tipo | 1259 | 415 | 540 | 135 | 26 | 26 | 35 | 35 | 31 | 31 | 35 | 35 | 24 | 24 | 21 | 21 | 6 | 18 | 0 | 0 | 1977 | 740 | | |



UNIVERSIDAD NACIONAL DE JAÉN



Técnica de recolección de datos: Observación directa

| Tesis | | ANÁLISIS VIAL EN LA INTERSECCIÓN DE LAS CALLES IQUITOS Y EJÉRCITO EMPLEANDO EL SOFTWARE SYNCHRO 10 EN LA CIUDAD DE JAÉN, 2025 | | | | | | | | | | | | | | | | | | | | | | |
|---------------------------|-------------|---|---------------|------------|-----------------|-----------|-------------|-----------|----------------------|-----------|----------------|-------------------------------|--------------|-----------|--------------|-----------|-----------|------------------------------|----------|----------------|---------------------------------------|-----------------------|--|------------|
| Tesisistas | | Bach. Kelvin Jhonatan Guevara Ruiz Bach. Ever Waldir Torres Pedraza | | | | | | | | | | | | | | | | | | | | | | |
| Asesor | | Doc. José Luis Piedra Tineo | | | | | | | | | | | | | | | | | | | | | | |
| Fecha: Viernes 04/07/2025 | | Punto de conteo: Intersección de las calles Iquitos y Ejército | | | | | | | | | | Entrada: Calle Iquitos (Este) | | | | | | Salida: Calle Ejército (Sur) | | | | | | |
| HORA | MOTOS | | | | CARGUERO (1.00) | | AUTO (1.00) | | STATION WAGON (1.00) | | CAMIONETAS | | | | | | CAMIONES | | | Total por hora | Total convertido a autos equivalentes | Total por horas punta | Total por horas punta (autos equivalentes) | |
| | TAXI (0.33) | | LINEAL (0.25) | | | | | | | | PICK UP (1.00) | | PANEL (1.00) | | COMBI (1.00) | | 2E (3.00) | | 3E | | | | | 4E |
| | | | | | | | | | | | | | | | | | | | | | | | | |
| 6:00 a.m - 6:15 a.m | 10 | 3 | 4 | 1 | 0 | 0 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 16 | 6 | 161 | 65 |
| 6:15 a.m - 6:30 a.m | 11 | 4 | 6 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 20 | 8 | | |
| 6:30 a.m - 6:45 a.m | 13 | 4 | 8 | 2 | 1 | 1 | 2 | 2 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 3 | 0 | 0 | 26 | 13 | | |
| 6:45 a.m - 7:00 a.m | 16 | 5 | 8 | 2 | 1 | 1 | 1 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 27 | 10 | | |
| 7:00 a.m - 7:15 a.m | 22 | 7 | 6 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 32 | 13 | | |
| 7:15 a.m - 7:30 a.m | 30 | 10 | 8 | 2 | 1 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 40 | 14 | | |
| 7:30 a.m - 7:45 a.m | 28 | 9 | 9 | 2 | 1 | 1 | 1 | 1 | 2 | 2 | 1 | 1 | 1 | 1 | 2 | 2 | 0 | 0 | 0 | 0 | 45 | 19 | | |
| 7:45 a.m - 8:00 a.m | 28 | 9 | 11 | 3 | 0 | 0 | 1 | 1 | 1 | 1 | 2 | 2 | 0 | 0 | 0 | 0 | 1 | 3 | 0 | 0 | 44 | 19 | | |
| 8:00 a.m - 8:15 a.m | 21 | 7 | 10 | 3 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 34 | 12 | | |
| 8:15 a.m - 8:30 a.m | 18 | 6 | 11 | 3 | 1 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 32 | 12 | | |
| 8:30 a.m - 8:45 a.m | 18 | 6 | 7 | 2 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 26 | 9 | | |
| 8:45 a.m - 9:00 a.m | 17 | 6 | 7 | 2 | 0 | 0 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 26 | 9 | | |
| 11:00 a.m - 11:15 a.m | 23 | 8 | 11 | 3 | 1 | 1 | 2 | 2 | 1 | 1 | 1 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 40 | 16 | | |
| 11:15 a.m - 11:30 a.m | 24 | 8 | 15 | 4 | 1 | 1 | 1 | 1 | 2 | 2 | 2 | 2 | 0 | 0 | 0 | 0 | 1 | 3 | 0 | 0 | 46 | 21 | | |
| 11:30 a.m - 11:45 a.m | 25 | 8 | 14 | 4 | 2 | 2 | 2 | 2 | 2 | 2 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 48 | 21 | | |
| 11:45 a.m - 12:00 a.m | 27 | 9 | 15 | 4 | 1 | 1 | 2 | 2 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 47 | 18 | | |
| 12:00 a.m - 12:15 p.m | 31 | 10 | 17 | 4 | 1 | 1 | 2 | 2 | 0 | 0 | 2 | 2 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 54 | 20 | | |
| 12:15 p.m - 12:30 p.m | 34 | 11 | 20 | 5 | 2 | 2 | 1 | 1 | 2 | 2 | 1 | 1 | 1 | 1 | 0 | 0 | 1 | 3 | 0 | 0 | 62 | 26 | | |
| 12:30 p.m - 12:45 p.m | 37 | 12 | 21 | 5 | 1 | 1 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 1 | 3 | 0 | 0 | 70 | 31 | | |
| 12:45 p.m - 13:00 p.m | 41 | 14 | 24 | 6 | 2 | 2 | 2 | 2 | 1 | 1 | 1 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 72 | 27 | | |
| 13:00 p.m - 13:15 p.m | 46 | 15 | 19 | 5 | 3 | 3 | 1 | 1 | 2 | 2 | 2 | 2 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 74 | 29 | | |
| 13:15 p.m - 13:30 p.m | 47 | 16 | 19 | 5 | 0 | 0 | 3 | 3 | 1 | 1 | 2 | 2 | 2 | 2 | 2 | 1 | 1 | 0 | 0 | 0 | 75 | 29 | | |
| 13:30 p.m - 13:45 p.m | 33 | 11 | 15 | 4 | 1 | 1 | 2 | 2 | 2 | 2 | 2 | 2 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 57 | 24 | | |
| 13:45 p.m - 14:00 p.m | 20 | 7 | 13 | 3 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 37 | 14 | | |
| 16:00 p.m - 16:15 p.m | 22 | 7 | 11 | 3 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 37 | 14 | | |
| 16:15 p.m - 16:30 p.m | 23 | 8 | 14 | 4 | 0 | 0 | 0 | 0 | 2 | 2 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 40 | 14 | | |
| 16:30 p.m - 16:45 p.m | 23 | 8 | 12 | 3 | 1 | 1 | 0 | 0 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 38 | 14 | | |
| 16:45 p.m - 17:00 p.m | 28 | 9 | 12 | 3 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 41 | 13 | | |
| 17:00 p.m - 17:15 p.m | 31 | 10 | 15 | 4 | 0 | 0 | 1 | 1 | 1 | 1 | 2 | 2 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 51 | 19 | | |
| 17:15 p.m - 17:30 p.m | 36 | 12 | 16 | 4 | 1 | 1 | 1 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 55 | 19 | | |
| 17:30 p.m - 17:45 p.m | 43 | 14 | 20 | 5 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 69 | 25 | | |
| 17:45 p.m - 18:00 p.m | 48 | 16 | 26 | 7 | 1 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 77 | 25 | | |
| 18:00 p.m - 18:15 p.m | 43 | 14 | 24 | 6 | 2 | 2 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 71 | 24 | | |
| 18:15 p.m - 18:30 p.m | 39 | 13 | 16 | 4 | 1 | 1 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 58 | 20 | | |
| 18:30 p.m - 18:45 p.m | 39 | 13 | 13 | 3 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 53 | 17 | | |
| 18:45 p.m - 19:00 p.m | 33 | 11 | 10 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 44 | 14 | | |
| Total por tipo | 1028 | 339 | 487 | 122 | 30 | 30 | 35 | 35 | 38 | 38 | 33 | 33 | 15 | 15 | 13 | 13 | 5 | 15 | 0 | 0 | 1684 | 640 | 1684 | 640 |



UNIVERSIDAD NACIONAL DE JAÉN



Técnica de recolección de datos: Observación directa












| Tesis | | ANÁLISIS VIAL EN LA INTERSECCIÓN DE LAS CALLES IQUITOS Y EJÉRCITO EMPLEANDO EL SOFTWARE SYNCHRO 10 EN LA CIUDAD DE JAÉN, 2025 | | | | | | | | | | | | | | | | | | | | | | |
|---------------------------|-------------|---|---------------|------------|-----------|-------------|----------------------|----------------|--------------|--------------|-----------|------------------------------|-----------|----------------|---------------------------------------|-----------------------|--|-----------|----------|----------|-------------|------------|-------------|------------|
| Tesis | | Bach. Kelvin Jhonatan Guevara Ruiz | | | | | | | | | | | | | | | | | | | | | | |
| Asesor | | Doc. José Luis Piedra Tineo | | | | | | | | | | | | | | | | | | | | | | |
| Fecha: Viernes 04/07/2025 | | Punto de conteo: Intersección de las calles Iquitos y Ejército | | | | | | | | | | Salida: Calle Ejército (Sur) | | | | | Salida: Calle Ejército (Norte) | | | | | | | |
| HORA | MOTOS | | | | CARGUERO | AUTO (1.00) | STATION WAGON (1.00) | CAMIONETAS | | | CAMIONES | | | Total por hora | Total convertido a autos equivalentes | Total por horas punta | Total por horas punta (autos equivalentes) | | | | | | | |
| | TAXI (0.33) | | LINEAL (0.25) | | (1.00) | (1.00) | (1.00) | PICK UP (1.00) | PANEL (1.00) | COMBI (1.00) | 2E (3.00) | 3E | 4E | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | |
| 6:00 a.m - 6:15 a.m | 8 | 3 | 3 | 1 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 13 | 5 | 127 | 49 |
| 6:15 a.m - 6:30 a.m | 10 | 3 | 3 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 15 | 6 | | |
| 6:30 a.m - 6:45 a.m | 11 | 4 | 5 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 3 | 0 | 0 | 18 | 9 | | |
| 6:45 a.m - 7:00 a.m | 11 | 4 | 7 | 2 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 20 | 7 | | |
| 7:00 a.m - 7:15 a.m | 17 | 6 | 10 | 3 | 0 | 0 | 0 | 0 | 1 | 1 | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 30 | 11 | | |
| 7:15 a.m - 7:30 a.m | 19 | 6 | 11 | 3 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 31 | 10 | | |
| 7:30 a.m - 7:45 a.m | 23 | 8 | 13 | 3 | 0 | 0 | 1 | 1 | 1 | 1 | 2 | 2 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 42 | 17 | | |
| 7:45 a.m - 8:00 a.m | 32 | 11 | 13 | 3 | 0 | 0 | 0 | 0 | 0 | 3 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 48 | 17 | | |
| 8:00 a.m - 8:15 a.m | 29 | 10 | 14 | 4 | 0 | 0 | 2 | 2 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 48 | 18 | | |
| 8:15 a.m - 8:30 a.m | 23 | 8 | 14 | 4 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 1 | 3 | 0 | 0 | 40 | 16 | | |
| 8:30 a.m - 8:45 a.m | 19 | 6 | 9 | 2 | 0 | 0 | 1 | 1 | 0 | 0 | 3 | 3 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 33 | 14 | | |
| 8:45 a.m - 9:00 a.m | 17 | 6 | 7 | 2 | 0 | 0 | 1 | 1 | 0 | 0 | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 27 | 10 | | |
| 11:00 a.m - 11:15 a.m | 21 | 7 | 11 | 3 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 37 | 15 | | |
| 11:15 a.m - 11:30 a.m | 21 | 7 | 11 | 3 | 1 | 1 | 0 | 0 | 1 | 1 | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 36 | 14 | | |
| 11:30 a.m - 11:45 a.m | 22 | 7 | 14 | 4 | 0 | 0 | 0 | 0 | 2 | 2 | 1 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 40 | 15 | | |
| 11:45 a.m - 12:00 a.m | 23 | 8 | 15 | 4 | 1 | 1 | 0 | 0 | 1 | 1 | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 42 | 15 | | |
| 12:00 a.m - 12:15 p.m | 25 | 8 | 16 | 4 | 1 | 1 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 43 | 14 | | |
| 12:15 p.m - 12:30 p.m | 25 | 8 | 16 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 43 | 14 | | |
| 12:30 p.m - 12:45 p.m | 27 | 9 | 13 | 3 | 2 | 2 | 1 | 1 | 2 | 2 | 1 | 1 | 2 | 2 | 2 | 2 | 0 | 0 | 0 | 0 | 50 | 22 | | |
| 12:45 p.m - 13:00 p.m | 25 | 8 | 12 | 3 | 2 | 2 | 3 | 3 | 1 | 1 | 2 | 2 | 1 | 1 | 1 | 1 | 3 | 0 | 0 | 0 | 48 | 24 | | |
| 13:00 p.m - 13:15 p.m | 36 | 12 | 16 | 4 | 3 | 3 | 2 | 2 | 2 | 2 | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 61 | 25 | | |
| 13:15 p.m - 13:30 p.m | 37 | 12 | 17 | 4 | 1 | 1 | 1 | 1 | 0 | 0 | 1 | 1 | 2 | 2 | 1 | 1 | 0 | 0 | 0 | 0 | 60 | 22 | | |
| 13:30 p.m - 13:45 p.m | 23 | 8 | 12 | 3 | 1 | 1 | 2 | 2 | 1 | 1 | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 41 | 17 | | |
| 13:45 p.m - 14:00 p.m | 19 | 6 | 12 | 3 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 33 | 11 | | |
| 16:00 p.m - 16:15 p.m | 22 | 7 | 11 | 3 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 1 | 1 | 1 | 3 | 0 | 0 | 39 | 18 | | |
| 16:15 p.m - 16:30 p.m | 22 | 7 | 13 | 3 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 37 | 13 | | |
| 16:30 p.m - 16:45 p.m | 23 | 8 | 14 | 4 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 40 | 14 | | |
| 16:45 p.m - 17:00 p.m | 22 | 7 | 14 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 38 | 13 | | |
| 17:00 p.m - 17:15 p.m | 27 | 9 | 17 | 4 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 46 | 15 | | |
| 17:15 p.m - 17:30 p.m | 29 | 10 | 19 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 50 | 16 | | |
| 17:30 p.m - 17:45 p.m | 35 | 12 | 10 | 3 | 0 | 0 | 0 | 0 | 1 | 1 | 2 | 2 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 49 | 18 | | |
| 17:45 p.m - 18:00 p.m | 39 | 13 | 8 | 2 | 1 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 49 | 17 | | |
| 18:00 p.m - 18:15 p.m | 28 | 9 | 8 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 36 | 11 | | |
| 18:15 p.m - 18:30 p.m | 22 | 7 | 8 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 31 | 10 | | |
| 18:30 p.m - 18:45 p.m | 24 | 8 | 10 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 35 | 11 | | |
| 18:45 p.m - 19:00 p.m | 22 | 7 | 9 | 2 | 1 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 33 | 12 | | |
| Total por tipo | 838 | 277 | 415 | 104 | 19 | 19 | 20 | 20 | 22 | 22 | 45 | 45 | 10 | 10 | 9 | 9 | 4 | 12 | 0 | 0 | 1382 | 517 | 1382 | 517 |



UNIVERSIDAD NACIONAL DE JAÉN



Técnica de recolección de datos: Observación directa

| Tesis | | ANÁLISIS VIAL EN LA INTERSECCIÓN DE LAS CALLES IQUITOS Y EJÉRCITO EMPLEANDO EL SOFTWARE SYNCHRO 10 EN LA CIUDAD DE JAÉN, 2025 | | | | | | | | | | | | | | | | | | | | | | |
|---------------------------|---|---|---|---|---|--|---|---|---|---|---|-------------------------------|--------------|-----------|-----------|-----------|----------------|---------------------------------------|-----------------------|--|------------|------------|------------|------------|
| Tesis | | Bach. Kelvin Jhonatan Guevara Ruiz | | | | | | | | | | | | | | | | | | | | | | |
| Asesor | | Bach. Ever Waldir Torres Pedraza | | | | | | | | | | | | | | | | | | | | | | |
| Asesor | | Doc. José Luis Piedra Tineo | | | | | | | | | | | | | | | | | | | | | | |
| Fecha: Viernes 04/07/2025 | | Punto de conteo: Intersección de las calles Iquitos y Ejército | | | | | | | | | | Entrada: Calle Ejército (Sur) | | | | | | Salida: Calle Iquitos (Oeste) | | | | | | |
| HORA | MOTOS | | | | CARGUERO (1.00) | | AUTO (1.00) | | STATION WAGON (1.00) | | CAMIONETAS | | | CAMIONES | | | Total por hora | Total convertido a autos equivalentes | Total por horas punta | Total por horas punta (autos equivalentes) | | | | |
| | TAXI (0.33) | | LINEAL (0.25) | | | | | | | | PICK UP (1.00) | PANEL (1.00) | COMBI (1.00) | 2E (3.00) | 3E | 4E | | | | | | | | |
| |  |  |  |  |  |  |  |  |  |  |  | | | | | | | | | | | | | |
| 6:00 a.m - 6:15 a.m | 4 | 1 | 2 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 3 | 78 | 32 | |
| 6:15 a.m - 6:30 a.m | 5 | 2 | 2 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9 | 4 | | | |
| 6:30 a.m - 6:45 a.m | 7 | 2 | 3 | 1 | 1 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 13 | 6 | | | |
| 6:45 a.m - 7:00 a.m | 6 | 2 | 5 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 14 | 6 | | | |
| 7:00 a.m - 7:15 a.m | 9 | 3 | 6 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 16 | 5 | | | |
| 7:15 a.m - 7:30 a.m | 11 | 4 | 6 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 19 | 7 | | | |
| 7:30 a.m - 7:45 a.m | 12 | 4 | 7 | 2 | 0 | 0 | 1 | 1 | 1 | 1 | 0 | 0 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 23 | 10 | | | |
| 7:45 a.m - 8:00 a.m | 17 | 6 | 6 | 2 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 26 | 10 | | | |
| 8:00 a.m - 8:15 a.m | 12 | 4 | 6 | 2 | 1 | 1 | 1 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 21 | 8 | | | |
| 8:15 a.m - 8:30 a.m | 12 | 4 | 5 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 19 | 7 | | | |
| 8:30 a.m - 8:45 a.m | 8 | 3 | 4 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 15 | 7 | | | |
| 8:45 a.m - 9:00 a.m | 9 | 3 | 4 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 13 | 4 | | | |
| 11:00 a.m - 11:15 a.m | 9 | 3 | 5 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 16 | 6 | | | |
| 11:15 a.m - 11:30 a.m | 8 | 3 | 4 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 13 | 5 | | | |
| 11:30 a.m - 11:45 a.m | 10 | 3 | 3 | 1 | 1 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 3 | 0 | 0 | 16 | 9 | | | |
| 11:45 a.m - 12:00 a.m | 10 | 3 | 3 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 15 | 6 | | | |
| 12:00 a.m - 12:15 p.m | 11 | 4 | 5 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 17 | 6 | | | |
| 12:15 p.m - 12:30 p.m | 12 | 4 | 5 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 20 | 8 | | | |
| 12:30 p.m - 12:45 p.m | 14 | 5 | 8 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 3 | 0 | 0 | 0 | 29 | 16 | | | |
| 12:45 p.m - 13:00 p.m | 17 | 6 | 10 | 3 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 1 | 1 | 0 | 0 | 1 | 3 | 0 | 37 | 20 | | | |
| 13:00 p.m - 13:15 p.m | 16 | 5 | 9 | 2 | 2 | 2 | 1 | 1 | 1 | 2 | 2 | 2 | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 35 | 18 | | | |
| 13:15 p.m - 13:30 p.m | 16 | 5 | 9 | 2 | 0 | 0 | 2 | 2 | 0 | 0 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 29 | 12 | | | |
| 13:30 p.m - 13:45 p.m | 12 | 4 | 4 | 1 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 19 | 8 | | | |
| 13:45 p.m - 14:00 p.m | 11 | 4 | 3 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 16 | 6 | | | |
| 16:00 p.m - 16:15 p.m | 11 | 4 | 3 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 16 | 6 | | | |
| 16:15 p.m - 16:30 p.m | 9 | 3 | 5 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 3 | 0 | 16 | 8 | | | |
| 16:30 p.m - 16:45 p.m | 13 | 4 | 5 | 1 | 1 | 1 | 0 | 0 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 21 | 9 | | | |
| 16:45 p.m - 17:00 p.m | 14 | 5 | 6 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 22 | 8 | | | |
| 17:00 p.m - 17:15 p.m | 16 | 5 | 2 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 21 | 9 | | | |
| 17:15 p.m - 17:30 p.m | 16 | 5 | 7 | 2 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 24 | 8 | | | |
| 17:30 p.m - 17:45 p.m | 14 | 5 | 7 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 22 | 7 | | | |
| 17:45 p.m - 18:00 p.m | 12 | 4 | 6 | 2 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 19 | 6 | | | |
| 18:00 p.m - 18:15 p.m | 14 | 5 | 7 | 2 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 23 | 8 | | | |
| 18:15 p.m - 18:30 p.m | 14 | 5 | 7 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 21 | 6 | | | |
| 18:30 p.m - 18:45 p.m | 10 | 3 | 5 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 16 | 6 | | | |
| 18:45 p.m - 19:00 p.m | 9 | 3 | 3 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 12 | 4 | | | |
| Total por tipo | 410 | 135 | 187 | 47 | 13 | 13 | 22 | 22 | 10 | 10 | 25 | 25 | 9 | 9 | 10 | 10 | 4 | 12 | 0 | 0 | 690 | 283 | 690 | 283 |



UNIVERSIDAD NACIONAL DE JAÉN



Técnica de recolección de datos: Observación directa












| Tesis | | ANÁLISIS VIAL EN LA INTERSECCIÓN DE LAS CALLES IQUITOS Y EJÉRCITO EMPLEANDO EL SOFTWARE SYNCHRO 10 EN LA CIUDAD DE JAÉN, 2025 | | | | | | | | | | | | | | | | | | | | | | |
|---------------------------|-------------|---|---------------|-----------|-----------|-------------|----------------------|----------------|--------------|--------------|-----------|---------------------------------|----------|----------------|---------------------------------------|-----------------------|--|-----------|----------|----------|------------|------------|------------|------------|
| Tesistas | | Bach. Kelvin Jhonatan Guevara Ruiz Bach. Ever Waldir Torres Pedraza | | | | | | | | | | | | | | | | | | | | | | |
| Asesor | | Doc. José Luis Piedra Tineo | | | | | | | | | | | | | | | | | | | | | | |
| Fecha: Viernes 04/07/2025 | | Punto de conteo: Intersección de las calles Iquitos y Ejército | | | | | | | | | | Entrada: Calle Ejército (Norte) | | | | | Entrada: Calle Ejército (Sur) | | | | | | | |
| HORA | MOTOS | | | | CARGUERO | AUTO (1.00) | STATION WAGON (1.00) | CAMIONETAS | | | CAMIONES | | | Total por hora | Total convertido a autos equivalentes | Total por horas punta | Total por horas punta (autos equivalentes) | | | | | | | |
| | TAXI (0.33) | | LINEAL (0.25) | | | | | PICK UP (1.00) | PANEL (1.00) | COMBI (1.00) | 2E (3.00) | 3E | 4E | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | |
| 6:00 a.m - 6:15 a.m | 6 | 2 | 2 | 1 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9 | 3 | 96 | 34 |
| 6:15 a.m - 6:30 a.m | 8 | 3 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 10 | 3 | | |
| 6:30 a.m - 6:45 a.m | 7 | 2 | 4 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 15 | 7 | | |
| 6:45 a.m - 7:00 a.m | 9 | 3 | 5 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 14 | 4 | | |
| 7:00 a.m - 7:15 a.m | 10 | 3 | 10 | 3 | 1 | 1 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 22 | 8 | | |
| 7:15 a.m - 7:30 a.m | 12 | 4 | 13 | 3 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 26 | 8 | | |
| 7:30 a.m - 7:45 a.m | 14 | 5 | 12 | 3 | 1 | 1 | 1 | 1 | 0 | 0 | 1 | 1 | 1 | 1 | 0 | 0 | 1 | 3 | 0 | 0 | 31 | 15 | | |
| 7:45 a.m - 8:00 a.m | 16 | 5 | 14 | 4 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 35 | 14 | | |
| 8:00 a.m - 8:15 a.m | 22 | 7 | 12 | 3 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 38 | 14 | | |
| 8:15 a.m - 8:30 a.m | 15 | 5 | 12 | 3 | 0 | 0 | 1 | 1 | 1 | 1 | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 31 | 12 | | |
| 8:30 a.m - 8:45 a.m | 11 | 4 | 8 | 2 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 20 | 7 | | |
| 8:45 a.m - 9:00 a.m | 7 | 2 | 7 | 2 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 15 | 5 | | |
| 11:00 a.m - 11:15 a.m | 10 | 3 | 5 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 15 | 5 | | |
| 11:15 a.m - 11:30 a.m | 11 | 4 | 5 | 1 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 18 | 7 | | |
| 11:30 a.m - 11:45 a.m | 13 | 4 | 6 | 2 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 22 | 9 | | |
| 11:45 a.m - 12:00 a.m | 13 | 4 | 6 | 2 | 1 | 1 | 1 | 1 | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 23 | 10 | | |
| 12:00 a.m - 12:15 p.m | 17 | 6 | 5 | 1 | 0 | 0 | 1 | 1 | 1 | 1 | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 26 | 11 | | |
| 12:15 p.m - 12:30 p.m | 22 | 7 | 7 | 2 | 1 | 1 | 2 | 2 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 33 | 13 | | |
| 12:30 p.m - 12:45 p.m | 25 | 8 | 10 | 3 | 2 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 41 | 17 | | |
| 12:45 p.m - 13:00 p.m | 27 | 9 | 9 | 2 | 2 | 2 | 2 | 2 | 0 | 0 | 2 | 2 | 1 | 1 | 2 | 2 | 1 | 3 | 0 | 0 | 46 | 23 | | |
| 13:00 p.m - 13:15 p.m | 31 | 10 | 14 | 4 | 1 | 1 | 1 | 1 | 2 | 2 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 52 | 21 | | |
| 13:15 p.m - 13:30 p.m | 31 | 10 | 13 | 3 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 1 | 3 | 0 | 0 | 0 | 49 | 20 | | |
| 13:30 p.m - 13:45 p.m | 23 | 8 | 12 | 3 | 1 | 1 | 1 | 1 | 0 | 0 | 2 | 2 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 40 | 16 | | |
| 13:45 p.m - 14:00 p.m | 18 | 6 | 10 | 3 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 31 | 11 | | |
| 16:00 p.m - 16:15 p.m | 12 | 4 | 11 | 3 | 1 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 26 | 10 | | |
| 16:15 p.m - 16:30 p.m | 12 | 4 | 7 | 2 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 3 | 0 | 0 | 22 | 11 | | |
| 16:30 p.m - 16:45 p.m | 13 | 4 | 8 | 2 | 1 | 1 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 26 | 11 | | |
| 16:45 p.m - 17:00 p.m | 17 | 6 | 10 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 27 | 8 | | |
| 17:00 p.m - 17:15 p.m | 18 | 6 | 8 | 2 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 28 | 10 | | |
| 17:15 p.m - 17:30 p.m | 22 | 7 | 8 | 2 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 31 | 10 | | |
| 17:30 p.m - 17:45 p.m | 23 | 8 | 7 | 2 | 0 | 0 | 1 | 1 | 1 | 1 | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 34 | 13 | | |
| 17:45 p.m - 18:00 p.m | 19 | 6 | 8 | 2 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 29 | 10 | | |
| 18:00 p.m - 18:15 p.m | 21 | 7 | 8 | 2 | 1 | 1 | 1 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 32 | 12 | | |
| 18:15 p.m - 18:30 p.m | 21 | 7 | 7 | 2 | 1 | 1 | 1 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 31 | 12 | | |
| 18:30 p.m - 18:45 p.m | 13 | 4 | 5 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 19 | 7 | | |
| 18:45 p.m - 19:00 p.m | 12 | 4 | 5 | 1 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 18 | 6 | | |
| Total por tipo | 581 | 192 | 295 | 74 | 21 | 21 | 23 | 23 | 21 | 21 | 24 | 24 | 7 | 7 | 9 | 9 | 4 | 12 | 0 | 0 | 985 | 382 | 985 | 382 |



UNIVERSIDAD NACIONAL DE JAÉN



Técnica de recolección de datos: Observación directa

| Tesis | | ANÁLISIS VIAL EN LA INTERSECCIÓN DE LAS CALLES IQUITOS Y EJÉRCITO EMPLEANDO EL SOFTWARE SYNCHRO 10 EN LA CIUDAD DE JAÉN, 2025 | | | | | | | | | | | | | | | | | | | | | | |
|---------------------------|---|---|---|---|---|--|---|---|---|---|---|---------------------------------|---------------------------------------|-----------------------|--|----------|----------|-------------------------------|----------|----------|------------|------------|------------|------------|
| Tesistas | | Bach. Kelvin Jhonatan Guevara Ruiz Bach. Ever Waldir Torres Pedraza | | | | | | | | | | | | | | | | | | | | | | |
| Asesor | | Doc. José Luis Piedra Tineo | | | | | | | | | | | | | | | | | | | | | | |
| Fecha: Viernes 04/07/2025 | | Punto de conteo: Intersección de las calles Iquitos y Ejército | | | | | | | | | | Entrada: Calle Ejército (Norte) | | | | | | Salida: Calle Iquitos (Oeste) | | | | | | |
| HORA | MOTOS | | CARGUERO (1.00) | AUTO (1.00) | STATION WAGON (1.00) | CAMIONETAS | | | CAMIONES | | | Total por hora | Total convertido a autos equivalentes | Total por horas punta | Total por horas punta (autos equivalentes) | | | | | | | | | |
| | TAXI (0.33) | LINEAL (0.25) | | | | PICK UP (1.00) | PANEL (1.00) | COMBI (1.00) | 2E (3.00) | 3E | 4E | | | | | | | | | | | | | |
| |  |  |  |  |  |  |  |  |  |  |  | | | | | | | | | | | | | |
| 6:00 a.m - 6:15 a.m | 5 | 2 | 3 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 8 | 2 | 76 | 29 |
| 6:15 a.m - 6:30 a.m | 6 | 2 | 3 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9 | 3 | | |
| 6:30 a.m - 6:45 a.m | 8 | 3 | 4 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 14 | 6 | | |
| 6:45 a.m - 7:00 a.m | 8 | 3 | 3 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 12 | 4 | | |
| 7:00 a.m - 7:15 a.m | 10 | 3 | 5 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 3 | 0 | 0 | 0 | 17 | 9 | | |
| 7:15 a.m - 7:30 a.m | 10 | 3 | 5 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 16 | 6 | | |
| 7:30 a.m - 7:45 a.m | 11 | 4 | 6 | 2 | 1 | 1 | 1 | 1 | 0 | 0 | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 21 | 9 | | |
| 7:45 a.m - 8:00 a.m | 11 | 4 | 9 | 2 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 0 | 0 | 1 | 3 | 0 | 0 | 0 | 23 | 11 | | |
| 8:00 a.m - 8:15 a.m | 12 | 4 | 6 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 19 | 6 | | |
| 8:15 a.m - 8:30 a.m | 13 | 4 | 6 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 19 | 6 | | |
| 8:30 a.m - 8:45 a.m | 9 | 3 | 5 | 1 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 17 | 7 | | |
| 8:45 a.m - 9:00 a.m | 10 | 3 | 5 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 15 | 5 | | |
| 11:00 a.m - 11:15 a.m | 10 | 3 | 6 | 2 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 19 | 8 | | |
| 11:15 a.m - 11:30 a.m | 9 | 3 | 8 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 3 | 0 | 0 | 0 | 18 | 8 | | |
| 11:30 a.m - 11:45 a.m | 10 | 3 | 6 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 21 | 10 | | |
| 11:45 a.m - 12:00 a.m | 12 | 4 | 8 | 2 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 22 | 8 | | |
| 12:00 a.m - 12:15 p.m | 14 | 5 | 9 | 2 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 24 | 8 | | |
| 12:15 p.m - 12:30 p.m | 13 | 4 | 8 | 2 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 24 | 9 | | |
| 12:30 p.m - 12:45 p.m | 18 | 6 | 10 | 3 | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 32 | 12 | | |
| 12:45 p.m - 13:00 p.m | 17 | 6 | 9 | 2 | 2 | 2 | 2 | 2 | 2 | 1 | 1 | 1 | 1 | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 36 | 18 | | |
| 13:00 p.m - 13:15 p.m | 17 | 6 | 10 | 3 | 1 | 1 | 1 | 1 | 1 | 2 | 2 | 1 | 1 | 1 | 1 | 3 | 0 | 0 | 0 | 0 | 35 | 18 | | |
| 13:15 p.m - 13:30 p.m | 14 | 5 | 7 | 2 | 1 | 1 | 3 | 3 | 1 | 1 | 1 | 1 | 0 | 0 | 1 | 1 | 3 | 0 | 0 | 0 | 29 | 16 | | |
| 13:30 p.m - 13:45 p.m | 10 | 3 | 5 | 1 | 0 | 0 | 1 | 1 | 1 | 1 | 0 | 0 | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 19 | 9 | | |
| 13:45 p.m - 14:00 p.m | 10 | 3 | 4 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 15 | 5 | | |
| 16:00 p.m - 16:15 p.m | 15 | 5 | 8 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 1 | 3 | 0 | 0 | 0 | 28 | 14 | | |
| 16:15 p.m - 16:30 p.m | 17 | 6 | 7 | 2 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 25 | 8 | | |
| 16:30 p.m - 16:45 p.m | 13 | 4 | 6 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 20 | 7 | | |
| 16:45 p.m - 17:00 p.m | 13 | 4 | 5 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 18 | 6 | | |
| 17:00 p.m - 17:15 p.m | 12 | 4 | 8 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 24 | 10 | | |
| 17:15 p.m - 17:30 p.m | 15 | 5 | 8 | 2 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 24 | 8 | | |
| 17:30 p.m - 17:45 p.m | 14 | 5 | 8 | 2 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 25 | 10 | | |
| 17:45 p.m - 18:00 p.m | 14 | 5 | 4 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 19 | 7 | | |
| 18:00 p.m - 18:15 p.m | 13 | 4 | 6 | 2 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 22 | 9 | | |
| 18:15 p.m - 18:30 p.m | 14 | 5 | 5 | 1 | 0 | 0 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 21 | 8 | | |
| 18:30 p.m - 18:45 p.m | 10 | 3 | 6 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 16 | 5 | | |
| 18:45 p.m - 19:00 p.m | 8 | 3 | 6 | 2 | 1 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 17 | 7 | | |
| Total por tipo | 425 | 140 | 227 | 57 | 16 | 16 | 16 | 16 | 17 | 17 | 16 | 16 | 14 | 14 | 6 | 6 | 6 | 18 | 0 | 0 | 743 | 300 | 743 | 300 |

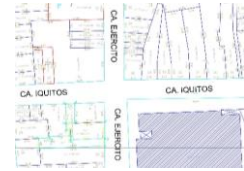
**Anexo 9. RESUMEN TOTAL DEL VOLUMEN DE VEHÍCULOS, TOMANDO
EN CUENTA LAS HORAS CRÍTICAS Y EL CORRESPONDIENTE FACTOR
DE HORA PICO**

FLUJO VEHICULAR TOTAL POR ACCESO (AUTO PATRON)

INTERSECCIÓN: CALLE IQUITOS CON CALLE EJÉRCITO

FECHA: VIERNES 04 DE JULIO 2025

REGIÓN: CAJAMARCA PROVINCIA: JAÉN DISTRITO: JAÉN



| HORA | SENTIDOS | | | | | | | | TOTAL X 15 MIN | TOTAL HORARIA |
|----------------------------|----------|------|------|------|------|------|------|------|----------------|---------------|
| | E-O | E-N | E-S | S-N | S-O | N-S | N-O | | | |
| 6:00 a.m - 6:15 a.m | 12 | 6 | 6 | 5 | 3 | 3 | 2 | 39 | 39 | |
| 6:15 a.m - 6:30 a.m | 22 | 8 | 8 | 6 | 4 | 3 | 3 | 54 | 94 | |
| 6:30 a.m - 6:45 a.m | 27 | 10 | 13 | 9 | 6 | 7 | 6 | 78 | 172 | |
| 6:45 a.m - 7:00 a.m | 39 | 11 | 10 | 7 | 6 | 4 | 4 | 82 | 254 | |
| 7:00 a.m - 7:15 a.m | 47 | 18 | 13 | 11 | 5 | 8 | 9 | 110 | 325 | |
| 7:15 a.m - 7:30 a.m | 44 | 16 | 14 | 10 | 7 | 8 | 6 | 105 | 376 | |
| 7:30 a.m - 7:45 a.m | 58 | 23 | 19 | 17 | 10 | 15 | 9 | 150 | 448 | |
| 7:45 a.m - 8:00 a.m | 54 | 16 | 19 | 17 | 10 | 14 | 11 | 140 | 506 | |
| 8:00 a.m - 8:15 a.m | 56 | 18 | 12 | 18 | 8 | 14 | 6 | 133 | 529 | |
| 8:15 a.m - 8:30 a.m | 60 | 17 | 12 | 16 | 7 | 12 | 6 | 130 | 553 | |
| 8:30 a.m - 8:45 a.m | 46 | 15 | 9 | 14 | 7 | 7 | 7 | 104 | 507 | |
| 8:45 a.m - 9:00 a.m | 41 | 14 | 9 | 10 | 4 | 5 | 5 | 88 | 455 | |
| 11:00 a.m - 11:15 a.m | 51 | 19 | 16 | 15 | 6 | 5 | 8 | 119 | 441 | |
| 11:15 a.m - 11:30 a.m | 52 | 19 | 21 | 14 | 5 | 7 | 8 | 124 | 436 | |
| 11:30 a.m - 11:45 a.m | 64 | 19 | 21 | 15 | 9 | 9 | 10 | 146 | 478 | |
| 11:45 a.m - 12:00 a.m | 63 | 23 | 18 | 15 | 6 | 10 | 8 | 143 | 532 | |
| 12:00 a.m - 12:15 p.m | 65 | 24 | 20 | 14 | 6 | 11 | 8 | 149 | 562 | |
| 12:15 p.m - 12:30 p.m | 69 | 23 | 26 | 14 | 8 | 13 | 9 | 163 | 600 | |
| 12:30 p.m - 12:45 p.m | 85 | 32 | 31 | 22 | 16 | 17 | 12 | 216 | 670 | |
| 12:45 p.m - 13:00 p.m | 93 | 41 | 27 | 24 | 20 | 23 | 18 | 246 | 774 | |
| 13:00 p.m - 13:15 p.m | 91 | 36 | 29 | 25 | 18 | 21 | 18 | 237 | 862 | |
| 13:15 p.m - 13:30 p.m | 94 | 37 | 29 | 22 | 12 | 20 | 16 | 231 | 930 | |
| 13:30 p.m - 13:45 p.m | 76 | 28 | 24 | 17 | 8 | 16 | 9 | 177 | 891 | |
| 13:45 p.m - 14:00 p.m | 68 | 26 | 14 | 11 | 6 | 11 | 5 | 142 | 787 | |
| 16:00 p.m - 16:15 p.m | 50 | 23 | 14 | 18 | 6 | 10 | 14 | 135 | 685 | |
| 16:15 p.m - 16:30 p.m | 43 | 22 | 14 | 13 | 8 | 11 | 8 | 119 | 573 | |
| 16:30 p.m - 16:45 p.m | 45 | 19 | 14 | 14 | 9 | 11 | 7 | 118 | 514 | |
| 16:45 p.m - 17:00 p.m | 42 | 17 | 13 | 13 | 8 | 8 | 6 | 108 | 479 | |
| 17:00 p.m - 17:15 p.m | 57 | 23 | 19 | 15 | 9 | 10 | 10 | 143 | 488 | |
| 17:15 p.m - 17:30 p.m | 57 | 26 | 19 | 16 | 8 | 10 | 8 | 145 | 513 | |
| 17:30 p.m - 17:45 p.m | 66 | 25 | 25 | 18 | 7 | 13 | 10 | 165 | 560 | |
| 17:45 p.m - 18:00 p.m | 71 | 23 | 25 | 17 | 6 | 10 | 7 | 159 | 612 | |
| 18:00 p.m - 18:15 p.m | 66 | 22 | 24 | 11 | 8 | 12 | 9 | 152 | 620 | |
| 18:15 p.m - 18:30 p.m | 71 | 15 | 20 | 10 | 6 | 12 | 8 | 142 | 618 | |
| 18:30 p.m - 18:45 p.m | 68 | 15 | 17 | 11 | 6 | 7 | 5 | 129 | 582 | |
| 18:45 p.m - 19:00 p.m | 59 | 11 | 14 | 12 | 4 | 6 | 7 | 113 | 535 | |
| Hora pico mañana | 227 | 73 | 63 | 68 | 35 | 55 | 32 | 553 | 2036 | |
| MAX*4 | 241 | 91 | 78 | 72 | 40 | 58 | 44 | 600 | 2213 | |
| F.H.P | 0.94 | 0.81 | 0.80 | 0.94 | 0.88 | 0.93 | 0.74 | 0.92 | 0.92 | |
| Hora pico medio día | 363 | 146 | 116 | 94 | 65 | 81 | 65 | 930 | 3236 | |
| MAX*4 | 375 | 163 | 126 | 100 | 80 | 93 | 72 | 984 | 3720 | |
| F.H.P | 0.97 | 0.90 | 0.92 | 0.94 | 0.81 | 0.88 | 0.89 | 0.95 | 0.87 | |
| Hora pico tarde | 259 | 96 | 94 | 62 | 30 | 46 | 33 | 620 | 2305 | |
| MAX*4 | 283 | 105 | 101 | 72 | 33 | 53 | 38 | 658 | 2481 | |
| F.H.P | 0.92 | 0.92 | 0.92 | 0.87 | 0.90 | 0.86 | 0.86 | 0.94 | 0.93 | |

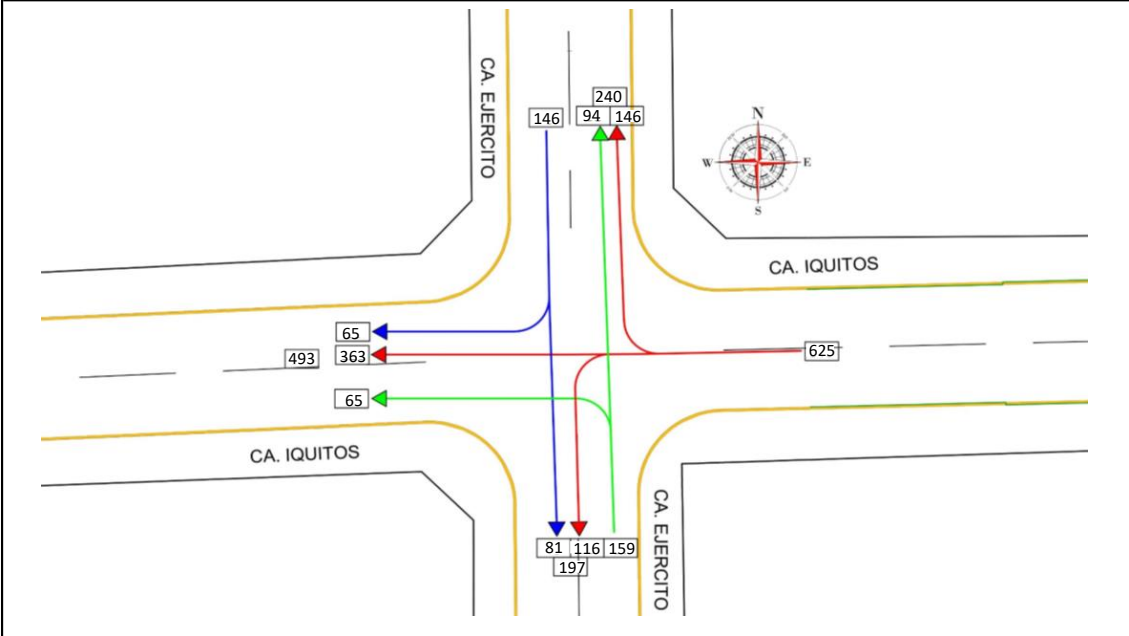
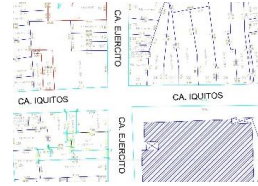
Anexo 10. FLUJOGRAMA DE HORA PICO (TURNO MAÑANA)

Anexo 11. FLUJOGRAMA DE HORA PICO (TURNO MEDIO DÍA)




**FLUJOGRAMA
TRÁNSITO VEHICULAR POR SENTIDO EN HORA PUNTA**

INTERSECCIÓN: Calle Iquitos y Calle Ejército **REGIÓN :** Cajamarca
FECHA : Viernes 04 de Julio 2025 (Medio día) **PROVINCIA :** Jaén
TESISTAS : Bach. Kelvin Jhonatan Guevara Ruiz **DISTRITO :** Jaén
: Bach. Ever Waldir Torres Pedraza



RESUMEN DE TRÁNSITO VEHICULAR EN AUTO PATRÓN

| Tipo de Vehículo | E-O | E-N | E-S | S-N | S-O | N-S | N-O | |
|---|--------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
|  | 188 | 78 | 56 | 41 | 21 | 38 | 22 | |
| | 96 | 22 | 21 | 15 | 9 | 12 | 9 | |
| | 10 | 7 | 6 | 8 | 5 | 6 | 5 | |
| | 22 | 7 | 8 | 7 | 6 | 5 | 6 | |
| | 11 | 7 | 6 | 5 | 4 | 4 | 5 | |
| | 17 | 7 | 7 | 6 | 6 | 5 | 5 | |
| | 6 | 6 | 5 | 5 | 5 | 2 | 2 | |
| | 7 | 6 | 4 | 4 | 3 | 4 | 5 | |
| | 6 | 6 | 3 | 3 | 6 | 6 | 6 | |
| | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | Total | 363 | 146 | 116 | 94 | 65 | 81 | 65 |
| | F.H.P | 0.97 | 0.90 | 0.92 | 0.94 | 0.81 | 0.88 | 0.89 |

Anexo 12. FLUJOGRAMA DE HORA PICO (TURNO TARDE)

**FLUJOGRAMA
TRÁNSITO VEHICULAR POR SENTIDO EN HORA PUNTA**

INTERSECCIÓN: Calle Iquitos y Calle Ejército

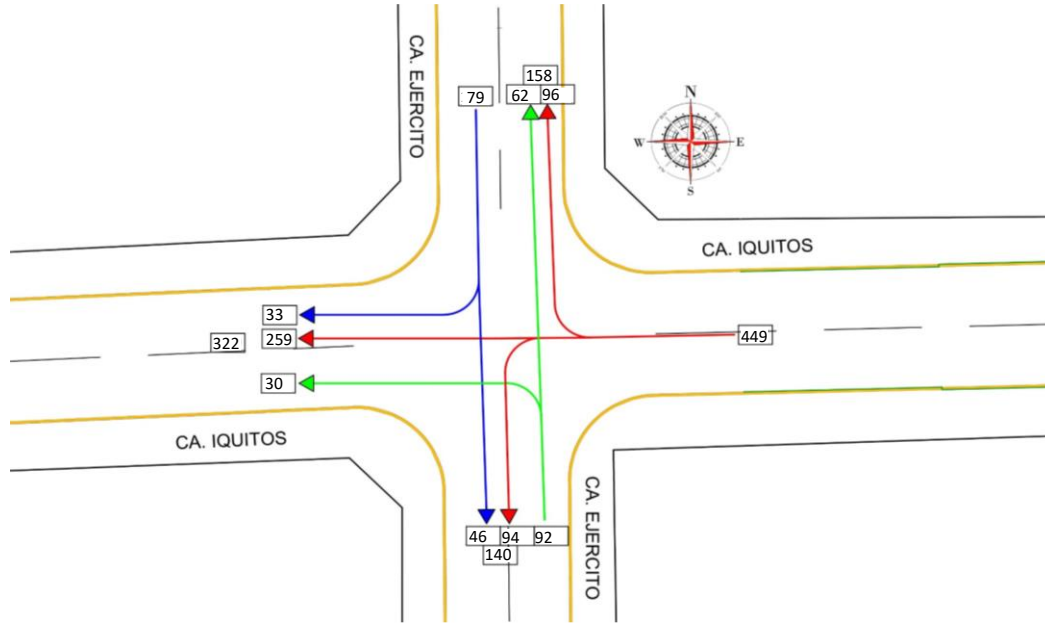
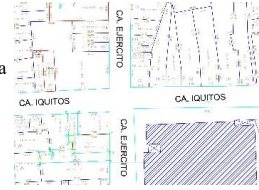
REGIÓN: Cajamarca

FECHA: Viernes 04 de Julio 2025 (Tarde)


PROVINCIA: Jaén

TESISTAS:
: Bach. Kelvin Jhonatan Guevara Ruiz
: Bach. Ever Waldir Torres Pedraza

DISTRITO: Jaén



RESUMEN DE TRÁNSITO VEHICULAR EN AUTO PATRÓN

| Tipo de Vehículo | E-O | E-N | E-S | S-N | S-O | N-S | N-O |
|---|--------------|-------------|-------------|-------------|-------------|-------------|-------------|
|  | 136 | 45 | 56 | 43 | 18 | 28 | 18 |
| | 72 | 29 | 22 | 11 | 7 | 8 | 7 |
| | 7 | 3 | 5 | 1 | 1 | 2 | 2 |
| | 12 | 4 | 2 | 0 | 2 | 3 | 2 |
| | 9 | 4 | 2 | 2 | 0 | 1 | 2 |
| | 19 | 7 | 3 | 3 | 1 | 4 | 1 |
| | 2 | 3 | 3 | 0 | 1 | 0 | 1 |
| | 3 | 1 | 1 | 2 | 0 | 0 | 0 |
| | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | Total | 259 | 96 | 94 | 62 | 30 | 46 |
| F.H.P | 0.92 | 0.92 | 0.92 | 0.87 | 0.90 | 0.86 | 0.86 |

Anexo 13. RESULTADOS DE AFORO PEATONAL

AFORO PEATONAL



INTERSECCIÓN : Calle Iquitos y Calle Ejército

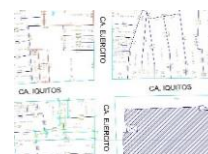
REGIÓN : Cajamarca

FECHA : Lunes 14 de Julio 2025

PROVINCIA : Jaén

TESISTAS : Bach. Kelvin Jhonatan Guevara Ruiz
: Bach. Ever Waldir Torres Pedraza

DISTRITO : Jaén



| HORA | ACCESO PEATONAL | | | | | | | |
|---------------|-----------------|---------------|-----|---------------|------|---------------|-------|---------------|
| | NORTE | TOTAL HORARIO | SUR | TOTAL HORARIO | ESTE | TOTAL HORARIO | OESTE | TOTAL HORARIO |
| 06:00 - 06:15 | 1 | | 0 | | 1 | | 0 | |
| 06:15 - 06:30 | 2 | | 1 | | 0 | | 0 | |
| 06:30 - 06:45 | 2 | | 1 | | 3 | | 1 | |
| 06:45 - 07:00 | 4 | 9 | 3 | 5 | 5 | 9 | 2 | 3 |
| 07:00 - 07:15 | 8 | 16 | 6 | 11 | 9 | 17 | 4 | 7 |
| 07:15 - 07:30 | 10 | 24 | 6 | 16 | 8 | 25 | 7 | 14 |
| 07:30 - 07:45 | 10 | 32 | 8 | 23 | 10 | 32 | 7 | 20 |
| 07:45 - 08:00 | 12 | 40 | 10 | 30 | 14 | 41 | 8 | 26 |
| 08:00 - 08:15 | 15 | 47 | 15 | 39 | 20 | 52 | 12 | 34 |
| 08:15 - 08:30 | 16 | 53 | 11 | 44 | 20 | 64 | 14 | 41 |
| 08:30 - 08:45 | 15 | 58 | 13 | 49 | 15 | 69 | 9 | 43 |
| 08:45 - 09:00 | 11 | 57 | 12 | 51 | 10 | 65 | 12 | 47 |
| | | | | | | | | |
| 11:00 - 11:15 | 8 | | 6 | | 4 | | 2 | |
| 11:15 - 11:30 | 8 | | 8 | | 5 | | 6 | |
| 11:30 - 11:45 | 7 | | 10 | | 4 | | 5 | |
| 11:45 - 12:00 | 10 | 33 | 10 | 34 | 10 | 23 | 8 | 21 |
| 12:00 - 12:15 | 15 | 40 | 14 | 42 | 17 | 36 | 15 | 34 |
| 12:15 - 12:30 | 22 | 54 | 15 | 49 | 20 | 51 | 17 | 45 |
| 12:30 - 12:45 | 23 | 70 | 14 | 53 | 24 | 71 | 14 | 54 |
| 12:45 - 13:00 | 20 | 80 | 17 | 60 | 27 | 88 | 14 | 60 |
| 13:00 - 13:15 | 11 | 76 | 13 | 59 | 14 | 85 | 12 | 57 |
| 13:15 - 13:30 | 13 | 67 | 13 | 57 | 12 | 77 | 13 | 53 |
| 13:30 - 13:45 | 12 | 56 | 12 | 55 | 13 | 66 | 11 | 50 |
| 13:45 - 14:00 | 11 | 47 | 9 | 47 | 8 | 47 | 7 | 43 |
| | | | | | | | | |
| 16:00 - 16:15 | 7 | | 6 | | 5 | | 1 | |
| 16:15 - 16:30 | 7 | | 5 | | 6 | | 3 | |
| 16:30 - 16:45 | 9 | | 5 | | 8 | | 5 | |
| 16:45 - 17:00 | 8 | 31 | 6 | 22 | 10 | 29 | 5 | 14 |
| 17:00 - 17:15 | 10 | 34 | 6 | 22 | 13 | 37 | 7 | 20 |
| 17:15 - 17:30 | 14 | 41 | 9 | 26 | 10 | 41 | 10 | 27 |
| 17:30 - 17:45 | 9 | 41 | 12 | 33 | 14 | 47 | 9 | 31 |
| 17:45 - 18:00 | 9 | 42 | 8 | 35 | 11 | 48 | 8 | 34 |
| 18:00 - 18:15 | 8 | 40 | 5 | 34 | 9 | 44 | 8 | 35 |
| 18:15 - 18:30 | 6 | 32 | 7 | 32 | 6 | 40 | 7 | 32 |
| 18:30 - 18:45 | 7 | 30 | 5 | 25 | 9 | 35 | 6 | 29 |
| 18:45 - 19:00 | 5 | 26 | 6 | 23 | 7 | 31 | 4 | 25 |

AFORO PEATONAL



INTERSECCIÓN : Calle Iquitos y Calle Ejército

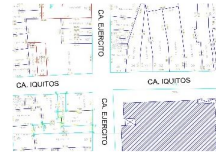
REGIÓN : Cajamarca

FECHA : Miércoles 16 de Julio 2025

PROVINCIA : Jaén

TESISTAS : Bach. Kelvin Jhonatan Guevara Ruiz
: Bach. Ever Waldir Torres Pedraza

DISTRITO : Jaén



| HORA | ACCESO PEATONAL | | | | | | | |
|---------------|-----------------|---------------|-----|---------------|------|---------------|-------|---------------|
| | NORTE | TOTAL HORARIO | SUR | TOTAL HORARIO | ESTE | TOTAL HORARIO | OESTE | TOTAL HORARIO |
| 06:00 - 06:15 | 0 | | 1 | | 0 | | 1 | |
| 06:15 - 06:30 | 1 | | 0 | | 1 | | 0 | |
| 06:30 - 06:45 | 3 | | 1 | | 2 | | 2 | |
| 06:45 - 07:00 | 3 | 7 | 2 | 4 | 3 | 6 | 1 | 4 |
| 07:00 - 07:15 | 7 | 14 | 4 | 7 | 7 | 13 | 2 | 5 |
| 07:15 - 07:30 | 9 | 22 | 5 | 12 | 6 | 18 | 4 | 9 |
| 07:30 - 07:45 | 9 | 28 | 6 | 17 | 8 | 24 | 8 | 15 |
| 07:45 - 08:00 | 10 | 35 | 9 | 24 | 11 | 32 | 9 | 23 |
| 08:00 - 08:15 | 12 | 40 | 12 | 32 | 16 | 41 | 12 | 33 |
| 08:15 - 08:30 | 16 | 47 | 12 | 39 | 15 | 50 | 13 | 42 |
| 08:30 - 08:45 | 14 | 52 | 10 | 43 | 14 | 56 | 11 | 45 |
| 08:45 - 09:00 | 12 | 54 | 9 | 43 | 8 | 53 | 10 | 46 |
| | | | | | | | | |
| 11:00 - 11:15 | 6 | | 4 | | 3 | | 0 | |
| 11:15 - 11:30 | 8 | | 9 | | 5 | | 4 | |
| 11:30 - 11:45 | 8 | | 11 | | 3 | | 6 | |
| 11:45 - 12:00 | 11 | 33 | 13 | 37 | 8 | 19 | 9 | 19 |
| 12:00 - 12:15 | 12 | 39 | 12 | 45 | 15 | 31 | 11 | 30 |
| 12:15 - 12:30 | 20 | 51 | 16 | 52 | 21 | 47 | 16 | 42 |
| 12:30 - 12:45 | 20 | 63 | 14 | 55 | 21 | 65 | 17 | 53 |
| 12:45 - 13:00 | 18 | 70 | 15 | 57 | 26 | 83 | 16 | 60 |
| 13:00 - 13:15 | 17 | 75 | 11 | 56 | 16 | 84 | 11 | 60 |
| 13:15 - 13:30 | 11 | 66 | 9 | 49 | 12 | 75 | 11 | 55 |
| 13:30 - 13:45 | 12 | 58 | 8 | 43 | 10 | 64 | 9 | 47 |
| 13:45 - 14:00 | 10 | 50 | 11 | 39 | 6 | 44 | 6 | 37 |
| | | | | | | | | |
| 16:00 - 16:15 | 6 | | 6 | | 4 | | 0 | |
| 16:15 - 16:30 | 8 | | 4 | | 6 | | 2 | |
| 16:30 - 16:45 | 10 | | 7 | | 6 | | 6 | |
| 16:45 - 17:00 | 8 | 32 | 9 | 26 | 9 | 25 | 6 | 14 |
| 17:00 - 17:15 | 9 | 35 | 5 | 25 | 14 | 35 | 5 | 19 |
| 17:15 - 17:30 | 12 | 39 | 7 | 28 | 11 | 40 | 8 | 25 |
| 17:30 - 17:45 | 8 | 37 | 11 | 32 | 10 | 44 | 6 | 25 |
| 17:45 - 18:00 | 7 | 36 | 7 | 30 | 14 | 49 | 7 | 26 |
| 18:00 - 18:15 | 8 | 35 | 6 | 31 | 10 | 45 | 9 | 30 |
| 18:15 - 18:30 | 5 | 28 | 8 | 32 | 7 | 41 | 6 | 28 |
| 18:30 - 18:45 | 7 | 27 | 6 | 27 | 5 | 36 | 6 | 28 |
| 18:45 - 19:00 | 3 | 23 | 4 | 24 | 8 | 30 | 3 | 24 |

AFORO PEATONAL



INTERSECCIÓN : Calle Iquitos y Calle Ejército

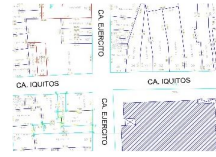
REGIÓN : Cajamarca

FECHA : Viernes 18 de Julio 2025

PROVINCIA : Jaén

TESISTAS : Bach. Kelvin Jhonatan Guevara Ruiz
: Bach. Ever Waldir Torres Pedraza

DISTRITO : Jaén

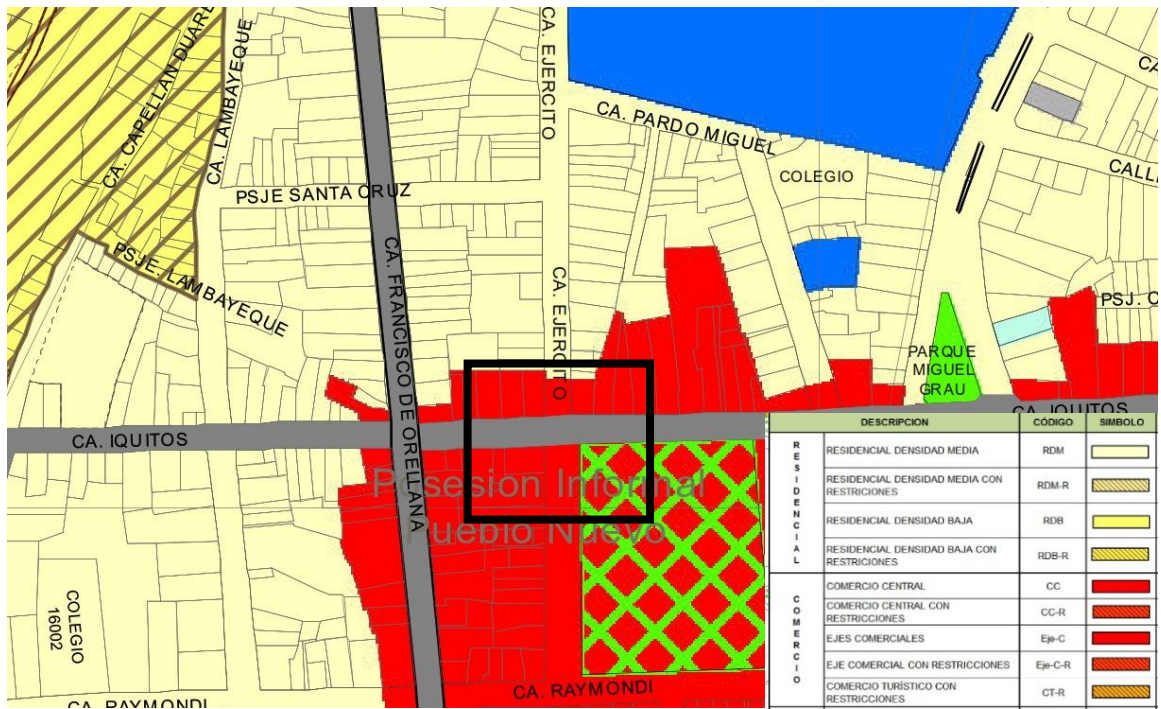


| HORA | ACCESO PEATONAL | | | | | | | |
|---------------|-----------------|---------------|-----|---------------|------|---------------|-------|---------------|
| | NORTE | TOTAL HORARIO | SUR | TOTAL HORARIO | ESTE | TOTAL HORARIO | OESTE | TOTAL HORARIO |
| 06:00 - 06:15 | 2 | | 0 | | 0 | | 1 | |
| 06:15 - 06:30 | 2 | | 2 | | 3 | | 0 | |
| 06:30 - 06:45 | 3 | | 1 | | 2 | | 2 | |
| 06:45 - 07:00 | 5 | 12 | 4 | 7 | 5 | 10 | 2 | 5 |
| 07:00 - 07:15 | 9 | 19 | 5 | 12 | 10 | 20 | 6 | 10 |
| 07:15 - 07:30 | 13 | 30 | 9 | 19 | 13 | 30 | 11 | 21 |
| 07:30 - 07:45 | 13 | 40 | 11 | 29 | 14 | 42 | 10 | 29 |
| 07:45 - 08:00 | 15 | 50 | 10 | 35 | 14 | 51 | 15 | 42 |
| 08:00 - 08:15 | 17 | 58 | 13 | 43 | 17 | 58 | 10 | 46 |
| 08:15 - 08:30 | 17 | 62 | 13 | 47 | 20 | 65 | 14 | 49 |
| 08:30 - 08:45 | 11 | 60 | 11 | 47 | 14 | 65 | 9 | 48 |
| 08:45 - 09:00 | 8 | 53 | 8 | 45 | 12 | 63 | 7 | 40 |
| | | | | | | | | |
| 11:00 - 11:15 | 8 | | 8 | | 3 | | 2 | |
| 11:15 - 11:30 | 9 | | 10 | | 3 | | 5 | |
| 11:30 - 11:45 | 9 | | 10 | | 5 | | 5 | |
| 11:45 - 12:00 | 11 | 37 | 11 | 39 | 10 | 21 | 9 | 21 |
| 12:00 - 12:15 | 16 | 45 | 12 | 43 | 15 | 33 | 12 | 31 |
| 12:15 - 12:30 | 17 | 53 | 13 | 46 | 19 | 49 | 14 | 40 |
| 12:30 - 12:45 | 26 | 70 | 15 | 51 | 23 | 67 | 18 | 53 |
| 12:45 - 13:00 | 24 | 83 | 18 | 58 | 24 | 81 | 19 | 63 |
| 13:00 - 13:15 | 18 | 85 | 15 | 61 | 18 | 84 | 13 | 64 |
| 13:15 - 13:30 | 17 | 85 | 17 | 65 | 19 | 84 | 15 | 65 |
| 13:30 - 13:45 | 11 | 70 | 11 | 61 | 15 | 76 | 8 | 55 |
| 13:45 - 14:00 | 8 | 54 | 10 | 53 | 11 | 63 | 7 | 43 |
| | | | | | | | | |
| 16:00 - 16:15 | 6 | | 5 | | 3 | | 1 | |
| 16:15 - 16:30 | 9 | | 6 | | 7 | | 0 | |
| 16:30 - 16:45 | 10 | | 5 | | 7 | | 3 | |
| 16:45 - 17:00 | 11 | 36 | 8 | 24 | 8 | 25 | 6 | 10 |
| 17:00 - 17:15 | 11 | 41 | 8 | 27 | 11 | 33 | 9 | 18 |
| 17:15 - 17:30 | 12 | 44 | 10 | 31 | 13 | 39 | 10 | 28 |
| 17:30 - 17:45 | 10 | 44 | 14 | 40 | 14 | 46 | 10 | 35 |
| 17:45 - 18:00 | 12 | 45 | 11 | 43 | 13 | 51 | 9 | 38 |
| 18:00 - 18:15 | 13 | 47 | 8 | 43 | 11 | 51 | 10 | 39 |
| 18:15 - 18:30 | 9 | 44 | 8 | 41 | 10 | 48 | 6 | 35 |
| 18:30 - 18:45 | 9 | 43 | 9 | 36 | 8 | 42 | 8 | 33 |
| 18:45 - 19:00 | 8 | 39 | 7 | 32 | 9 | 38 | 8 | 32 |

Anexo 14. ZONIFICACIÓN DE LA INTERSECCIÓN IQUITOS Y EJÉRCITO

Figura 17.

Zonificación



Nota: Plan de zonificación de la MPJ 2013-2025

Anexo 15. PANEL FOTOGRÁFICO

Figura 18.

Vista de la intersección en estudio



Nota: Elaboración propia

Figura 19.

Vista de la intersección en estudio



Nota: Elaboración propia

Figura 20.

Medición de vereda



Nota: Elaboración propia

Figura 21.

Configuración de GPS diferencial



Nota: Elaboración propia

Figura 22.

Levantamiento topográfico



Nota: Elaboración propia

Figura 23.

Nivelación para el cálculo de la pendiente de las calles



Nota: Elaboración propia

Figura 24.

Nivelación para el cálculo de la pendiente de las calles



Nota: Elaboración propia

Figura 25.

Conteo vehicular en la intersección de las calles Iquitos y Ejército (Turno mañana)



Nota: Elaboración propia

Figura 26.

Conteo vehicular en la intersección de las calles Iquitos y Ejército (Turno mañana)



Nota: Elaboración propia

Figura 27.

Conteo vehicular en la intersección de las calles Iquitos y Ejército (Turno medio día)



Nota: Elaboración propia

Figura 28.

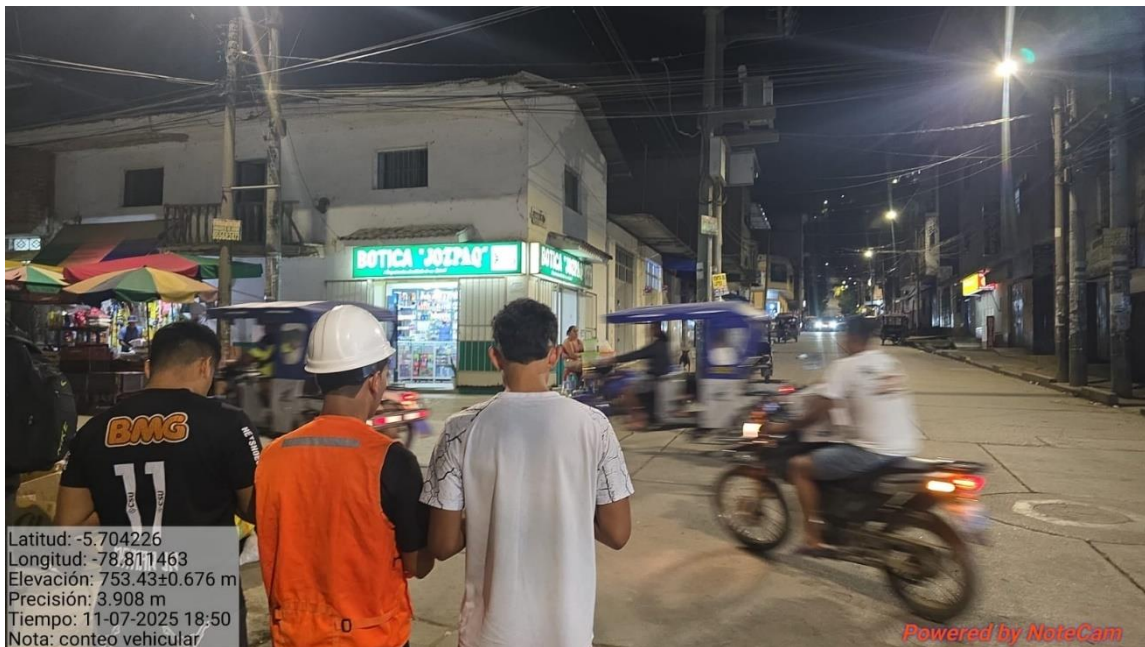
Conteo vehicular en la intersección de las calles Iquitos y Ejército (Turno medio día)



Nota: Elaboración propia

Figura 29.

Conteo vehicular en la intersección de las calles Iquitos y Ejército (Turno tarde)



Nota: Elaboración propia