AFTER RECORDING, RETURN TO:

City Secretary City of McKinney P.O. Box 517 222 N. Tennessee Street McKinney, Texas 75069

City of McKinney, Texas FACILITIES AGREEMENT

For

Property Situated at and about the Southeast Quadrant of the Intersection Between Existing Custer Road (F.M. 2478) and F.M. 1461 Owned by Haggard Rhea Mills, LLC

This FACILITIES AGREEMENT for certain Property (as defined below) situated at and about the southeast quadrant of the intersection between existing Custer Road (F.M. 2478) and F.M. 1461 (this "Agreement"), entered into effective the _____ day of _____ 2010, by and between the *CITY OF McKINNEY*, a

Texas municipal corporation and home-rule city ("CITY"), and HAGGARD RHEA MILLS, LLC, a Texas limited liability company, whose address is 800 Central Parkway East, Ste 100, Plano, TX 75074, and who is the present owner of the Property at the time of annexation into the City of McKinney, ("OWNER"), witnesseth that:

- WHEREAS, OWNER owns the property described on Exhibit "A" attached hereto (the "ETJ Property") that is located within the extraterritorial jurisdiction of CITY; and
- WHEREAS, OWNER also owns the property described on Exhibit "B" attached hereto (the "McKinney Property") that is located within the corporate limits of CITY (the ETJ Property and McKinney Property are collectively referred to as the "Property"); and
- WHEREAS, OWNER has requested the City Council to approve the annexation of the ETJ Property and the zoning of the Property; and
- WHEREAS, the physical location of the Property and the lack of adequate roadway and utility facilities to serve the Property demonstrate that infrastructure improvements will likely be required as a condition to development of the Property in the future; and
- WHEREAS, OWNER understands that prior to record platting of the Property the CITY's development standards and ordinances will require the then Owner or any Developer to fund and construct certain roadway and utility improvements,

as set forth in the CITY's Subdivision Ordinance, that are necessitated by the development of the Property and a general statement of such required public improvements (based on existing conditions) is outlined herein; and

- WHEREAS, an Agreement specific to the Property or a portion thereof may be executed at such time as development begins on all or a portion of the Property that would supersede or amend, in whole or in part, this Agreement, setting forth in detail the public improvements that will be required for the Property or the applicable portion of the Property being so developed; otherwise, all then applicable ordinances and the terms of this Agreement shall govern development of the Property and provide notice to OWNER of CITY development requirements; and
- WHEREAS, OWNER agrees and enters into this Agreement which shall operate as a covenant running with the land and shall be binding upon and inure to the benefit of OWNER, its successors and assigns, and all others holding a fee interest in the Property, or any part or portion thereof, now or in the future.

NOW THEREFORE, in consideration of the mutual covenants and agreements contained herein the OWNER and CITY agree as follows:

A. <u>PROPERTY</u>

This Agreement is for approximately one hundred thirty-four and forty-four-one hundredths (134.44) acres of land composed of the ETJ Property, which is the subject of a pending annexation proceeding, and the McKinney Property. The ETJ Property and the McKinney Property are described in Exhibits "A" and "B," respectively, attached hereto and incorporated herein by reference for all purposes allowed by law and are referred to herein collectively and in whole or in part as the Property.

B. ZONING & PLATTING

The Property shall be zoned and platted, if required by applicable ordinance or state law, in accordance with the CITY's Zoning Ordinance and Subdivision Ordinance, then in force, before any development permit or building permit will be issued for the development of the Property.

C. <u>PUBLIC IMPROVEMENTS</u>

All public improvements, including utilities, drainage structures and easements, sidewalks, hike and bike trails, street lighting, street signage, park land dedication and all other improvements and dedications required in connection with the development of the Property, or portion thereof, shall be constructed and provided by OWNER, at no cost to CITY, in accordance with the CITY's Ordinances which

are then in effect. Exhibit "C" attached to this Agreement identifies certain of the public improvements that must be constructed, at no cost to the CITY, to serve the proposed development of the Property. Exhibit "C" also identifies certain conditions that must be met regarding the provision of public improvements which may be required to serve the Property. The following, including Exhibit "C," provides a general description of the minimum construction requirements for roadways and utilities which, under current conditions, would be required as a condition to development of the Property or portion thereof (subject to the City's approval of phases or partial development).

1. THOROUGHFARES

OWNER acknowledges that the Traffic Impact Analysis ("TIA") attached as Exhibit "D" to this Agreement reflects that there currently does not exist sufficient capacity in and on the roadways in the vicinity of the Property to support the traffic that will be generated by the proposed development of the Property. OWNER further acknowledges that the TIA identifies certain roadway improvements that must be constructed at a minimum to serve the proposed development of the Property.

OWNER shall dedicate at no cost to CITY that amount of right-of-way along perimeter roadways adjacent to the Property, and each portion or phase of the Property, which will yield at least one-half ($\frac{1}{2}$) of the ultimate right-of-way width, or that amount of right-of-way which may be necessary to provide a complete installation of the roadway or bridge section, that is not already dedicated by plat or legal instrument as road right-of-way, including intersection flows and the Custer Road realignment at such time as development occurs. OWNER shall dedicate all right-of-way for the interior streets serving the Property, or portion thereof, at the time of development. Owner shall further dedicate all necessary right-of-way adjacent to the Property for the realignment of existing F.M. 2478 (Custer Road) as described in Exhibit "C." If platting or development of the Property is delayed and the F.M. 2478 (Custer Road) right-of-way described in Exhibit "C" has not previously been dedicated, the OWNER shall dedicate the right-of-way and related easements along such described F.M. 2478 (Custer Road) segment upon receipt of the written request of the CITY's Engineer.

OWNER shall construct, at no cost to CITY, all required roadway improvements adjacent to the Property in accordance with the CITY's Subdivision Ordinance and Street Design Standards, then in effect. OWNER shall, at no cost to CITY, also acquire and dedicate the necessary right-of-way for and construct the off-site roadway improvements that are identified on the TIA as being necessary to serve the proposed development of the Property in accordance with the CITY's Street Design Standards, then in effect, or as may be agreed by the CITY. All roadway construction plans shall be approved by the CITY's Engineer or his agent prior to approval of a Development Permit for any portion of the Property. The final

alignment of right-of-way dedications shall be consistent with the CITY's Thoroughfare Development Plan and as approved by the CITY Engineer.

OWNER's obligation to construct required roadway improvements described in this Agreement shall only be triggered by OWNER's development of any part, portion or phase or the entirety of said Property. In the event the Property is developed in phases or parts less than the entirety OWNER shall construct all such roadways as may be required to serve the part, portion or phase of the Property then being developed including any roadways that extend beyond the boundaries of such part, portion or phase being developed which the CITY Engineer determines to be reasonably required to navigate through the subdivision and provide sufficient ingress and egress to property owners as well as at least two points of access for emergency vehicles.

2. UTILITIES

OWNER shall dedicate, at no cost to CITY, that amount of easement across the Property as deemed necessary by the CITY Engineer for the construction of water and wastewater utilities as shown on the CITY's Master Plans for Water and Wastewater (hereafter referred to collectively as the "Master Plans") and as approved by the CITY Engineer. The final alignment of easement right-of-way dedications shall be consistent with the City's Master Plans and as approved by the City Engineer.

OWNER shall construct, at his sole cost, all necessary utility lines up to twelve inches (12") in diameter to serve the Property in accordance with CITY standards and the Master Plans, at such time as demand on the Property requires or concurrent with the development of the Property, as determined by CITY. OWNER shall construct all necessary utility lines to serve the interior of the Property; said lines shall be at least eight inches (8") in diameter or larger as demand of the development on the Property requires. Said utility lines shall be constructed of materials of a quality and grade at least meeting the minimum standards specified by the CITY Engineering Department. All utility plans and improvements are subject to the approval of the CITY Engineer. In addition to the requirements stated herein, OWNER shall construct any off-site and oversize utility improvements up to the sizes shown on Master Plans and as per City of McKinney standards.

3. HIKE AND BIKE TRAIL

To the extent that the CITY's Master Trail Plan shows a hike and bike trail along, across or adjacent to the Property, the OWNER shall, at no cost to the CITY, dedicate the easement or right-of-way for and construct all required concrete hike and bike trail improvements in accordance with the CITY's Subdivision Ordinance and Master Trail Plan in connection with the filing of the first record plat for development of any part, portion or phase of the Property. The hike and bike trail

shall be tied in or connected to the CITY's trail system or to the location(s)/area(s) identified as planned future extensions of the trail system specifically including, but not limited to, school sites, parkland sites and planned connections to creek and river greenways. Final location and all hike and bike trail construction plans shall be subject to review and approval by the Director of Parks and Recreation. All hike and bike trail construction plans must be approved by CITY's Parks Director or his agent prior to approval of a Development Permit for any portion of the Property being developed.

D. <u>PARK LAND</u>

OWNER shall dedicate required park land, if any, concurrent with platting and development of the residential portion(s) of the Property to provide for the recreational needs created by such development in accordance with the Subdivision Ordinance then in effect, or such other ordinance as may hereafter be adopted by the CITY regarding park land dedication, and as determined by the CITY Parks Department.

The above-described dedication of park land shall occur by dedication deed to CITY as the residential portion(s) and/or proposed school site(s), if any, adjacent to the particular park land areas are platted. The conveyance of such park land shall be by general warranty deed with an owner's title insurance policy in accordance with section 142-153, et seq., of the CITY's Subdivision Ordinance. The valuation of the park land for purposes of such owner's title insurance policy shall be based on the use of said property as open space or for park purposes rather than a highest and best use valuation.

E. AVAILABILITY OF WATER AND WASTEWATER SERVICE IN THE FUTURE

The CITY makes no guarantee that water supply or wastewater treatment capacity will be available at any particular time or place, it being fully understood by both parties hereto that the ability of the CITY to supply water and wastewater services is subject to its contract with the North Texas Municipal Water District, a governmental agency and body politic and corporate, hereinafter referred to as "N.T.M.W.D.", and that this Agreement will only allow utilization of the CITY's water and wastewater system capacity when and if same is present and available from the N.T.M.W.D. Notwithstanding the foregoing, the CITY will supply the Development with water supply and wastewater treatment capacity if such capacity is present and available from N.T.M.W.D. The CITY shall be the sole judge of the availability of such capacity of water supply and/or wastewater services, provided, however, that the CITY will attempt to insure that said water supply and wastewater treatment capacity is available.

F. <u>CITY DEVELOPMENT ORDINANCES</u>

The Property shall be developed in accordance with the standards as set forth in the City of McKinney's Zoning, Subdivision and other land development ordinances, including but not limited to provisions regarding drainage, erosion control, pro-rata payments, tree preservation, park land dedication, hike and bike trails, impact fees, Street Design Standards, Public Improvements Policy and construction standards. OWNER expressly acknowledges that by entering into this Agreement, OWNER shall not construe any language contained herein or in any exhibits attached hereto as waiving any of the requirements of the CITY's Zoning Ordinance or Subdivision Ordinance or any other ordinance of the CITY, as applicable.

G. TREE ORDINANCE

OWNER expressly acknowledges the McKinney Tree Preservation Ordinance and the duty to develop the Property in accordance with the standards contained therein and any amendments to those standards.

H. <u>STORMWATER</u>

OWNER agrees to abide by all terms of the McKinney Storm Water Ordinance No. 2006-12-145, as amended by Ordinance No. 2009-05-027 and as it may further be amended.

I. <u>PRO-RATA FEES</u>

Off-site water and sewer facilities may be subject to either pro-rata payments paid to third parties or reimbursements collected from third parties in accordance with CITY Ordinances. For existing facilities, OWNER shall be responsible to pay applicable pro-rata fees in the amount of one-half $(\frac{1}{2})$ of the actual construction and engineering costs of up to a twelve-inch (12") diameter pipe if off-site facilities are constructed adjacent to the Property. Should OWNER construct off-site water and sewer facilities such that pro-rata fees are due to OWNER. CITY agrees to collect any fees due to OWNER related to the construction of the line(s) as those properties utilizing such facilities are developed during the period of ten (10) years after the date of construction and acceptance of each such off-site water and sewer facility constructed by OWNER. OWNER shall submit final construction costs to CITY prior to final acceptance of any pro-rata eligible improvements for use in determining pro-rata fees to be owed to OWNER. OWNER shall not be required to pay pro-rata fees for any major transmission line(s) that may be constructed upon, through, under, across or adjacent to the Property that merely transport(s) water or wastewater to or from a treatment facility and to which line(s) Owner is not permitted any right to tap or tie in to or otherwise utilize for the Property's benefit.

J. PROPORTIONALITY FEE

OWNER shall pay to CITY a Proportionality Fee ("FEE") for development of the ETJ Property, which FEE represents a roughly proportional amount necessary to offset the roadway and water and wastewater infrastructure capacity needs of the ETJ Property. Regarding roadway infrastructure capacity needs, the FEE shall be the equivalent of the roadway impact fee assessed in the adjacent (abutting) roadway impact fee service area (or that service area nearest to the ETJ Property if not adjacent) in effect at the time of building permit and shall be paid at the time of issuance of any building permits for any improvements on the ETJ Property. In accordance with the methodology and provisions of the CITY'S roadway impact fee ordinance. OWNER shall receive credits which credits are subject to future reimbursements, payable after full development of the ETJ Property, for excess vehicle miles contributed by the ETJ Property for the construction of adjacent roadways, as such compare to the amount of vehicle miles of demand created by the entirety of the ETJ Property. However, OWNER shall receive reimbursement only if such roadways become eligible impact fee system roadways as defined by CITY Ordinance. The Fee paid by OWNER shall be included in any computations for credits or reimbursements for the construction of system roadways. However, if roadway impact fees become applicable to the ETJ Property due to a revision of service area maps or otherwise such that impact fees are applicable, the provisions of the impact fee ordinances regarding roadway impact fees will prevail over this paragraph.

Regarding water and wastewater infrastructure capacity needs, the FEE shall be the equivalent of the then existing fee charged for a particular use in accordance with the CITY's water and wastewater impact fee ordinance at the time of building permit and shall be paid at the time of issuance of any building permits for any improvements on the ETJ Property. However, if water and wastewater impact fees become applicable to the ETJ Property due to a revision of service area maps or otherwise such that impact fees are applicable, the provisions of the impact fee ordinances regarding sewer and water impact fees will prevail over this paragraph.

K. IMPACT FEES

Impact fees for the McKinney Property and if applicable to the ETJ Property, as discussed in Paragraph J above, shall be charged in accordance with Ordinance No. No. 97-10-54, as amended by Ordinance Nos. 2000-03-20, 2001-08-091, 2003-05-055, 2003-07-062, 2005-11-116 and 2008-11-102 (Roadway), and Ordinance No. 96-03-13, as amended by Ordinance Nos. 2001-08-092, 2003-05-056 and 2008-11-103 (Utility), and as these ordinances may be amended in the future, including any schedules or exhibits attached thereto. These fees shall be due upon the time established by these Ordinances has previously been granted

by the CITY and is contained in this Agreement or a separate agreement between the OWNER and CITY which agreement shall supersede and control.

L. <u>DEFAULT</u>

In the event the OWNER fails to comply with any of the provisions of this Agreement, the CITY shall be authorized to issue stop work orders, halt the issuance of further building permits, withhold the granting of Certificates of Occupancy and in the event that such failure creates a threat to the public health, safety and welfare revoke any and all Certificates of Occupancy that may have been previously issued in relation to the subdivision and/or development of the Property or any part thereof other than with respect to any portion of the Property previously released from this Agreement; and the CITY shall be further authorized to file this instrument in the records of Collin County as a Mechanic's Lien against the Property, and in the alternative, the CITY shall be authorized to levy an assessment against the Property for public improvements to be held as a tax lien against the Property by CITY.

M. ROUGH PROPORTIONALITY AND WAIVER OF CLAIMS

OWNER has been represented by legal counsel in the negotiation of this Agreement and been advised, or has had the opportunity to have legal counsel review this Agreement and advise OWNER, regarding the OWNER'S rights under Texas and federal law. The OWNER hereby waives any requirement that the CITY retain a professional engineer, licensed pursuant to Chapter 1001 of the Texas Occupations Code, to review and determine that the exactions required by the CITY as a condition of approval for the development of this Property are roughly proportional or roughly proportionate to the proposed development's anticipated impact. (These exactions may include but are not limited to the making of dedications or reservations of land, the payment of fees, the construction of facilities, and the payment of construction costs for public facilities.) The OWNER specifically reserves its right to appeal the apportionment of municipal infrastructure costs in accordance with Tex. Loc. Gov't Code § 212.904. However. notwithstanding the foregoing, the OWNER hereby releases the CITY from any and all liability under Tex. Loc. Gov't Code § 212.904 regarding or related to the cost of those municipal infrastructure improvements required for the development of the Property.

It is the intent of this Agreement that the provision for roadway and water, wastewater and stormwater infrastructure described in Paragraph C, above, made herein constitutes a proportional allocation of the OWNER'S responsibility for roadway and water and wastewater and stormwater infrastructure for the Property. The obligation of the OWNER herein set forth shall upon the OWNER'S completion of the Required Improvements (defined in Exhibit "C") and the CITY's final acceptance of the Required Improvements result in the granting of roadway impact

fee credits to the OWNER against its obligation to CITY for roadway impact fees for qualifying roadway improvements necessary to serve the Property and may also result in the granting of utility impact fee credits for oversizing water and sanitary sewer lines identified in the CITY's Impact Fee Capital Improvement Plan. The OWNER hereby waives any federal constitutional claims and any statutory or state constitutional takings claims under the Texas Constitution and Chapter 395 of the Tex, Loc, Gov't, Code. The OWNER further releases CITY from any and all claims based on excessive or illegal exactions; it being agreed that the OWNER'S infrastructure contribution(s) (after receiving all contractual offsets, credits and reimbursements) is roughly proportional or roughly proportionate to the demand that is placed on the roadway and utility systems by the PROPERTY. The OWNER further acknowledges that the benefits of zoning and platting have been accepted with full knowledge of potential claims and causes of action related thereto which may be raised now and in the future, and the OWNER acknowledges the receipt of good and valuable consideration for the release and waiver of such claims. The OWNER shall indemnify and hold CITY harmless from any claims and suits of third parties, including but not limited to the OWNER'S respective successors, assigns, grantees, vendors, trustees or representatives brought against the CITY pursuant to this Agreement.

N. CONTINUITY AND ASSIGNMENT

This Agreement shall be a covenant running with the land, and be binding upon and inure to the benefit of OWNER and its successors and assigns and any person owning a fee interest in the Property. However, this Agreement shall not be assignable by OWNER without the prior written consent of the CITY, and such consent shall not be unreasonably withheld, conditioned or delayed. If CITY approves the assignment of this Agreement in writing and in advance of any such assignment for a part or all of the Property, the approval of such assignment shall release the OWNER from further liability for only that portion of the Property to which the assignment so approved applies. Owner shall continue to be responsible for all other obligations hereunder as may apply to the remaining portions of the Property.

O. TERMINATION AND RELEASE

Upon satisfactory completion and final acceptance by CITY of all public improvements required by this Agreement as well as the payment of any funds required by this Agreement or the CITY'S Code of Ordinances, the CITY will execute a release of covenant to the OWNER, its successors and assigns, and all others holding any interest now or in the future, confirming that OWNER'S obligations hereunder have been satisfied and the Property has been released herefrom. This Agreement shall not terminate until the requirements of all parties have been fulfilled.

Notwithstanding the foregoing, in the event of phased development of the Property the CITY will, upon the request of the OWNER, after satisfactory completion by the OWNER or its agents and final acceptance by the CITY of all public improvements required by this Agreement for a specific portion or phase of the Property, execute a release of covenant to the OWNER with respect to such portion or phase of the Property. The release will confirm with respect to such portion or phase of the Property that the OWNER'S obligations hereunder have been satisfied and that such portion or phase of the Property has been released from this Agreement. The grant of such a release for any portion or phase of the Property shall be subject to OWNER'S satisfaction of the following requirements:

- 1. The OWNER shall have satisfactorily completed and the CITY finally accepted all Required Improvements and other public improvements necessary to serve the portion or phase of the Property for which a release is sought plus any thoroughfares identified in Exhibit "C," the thresholds for which are triggered by the development of said portion or phase of the Property.
- 2. Any part or parcel of the portion or phase of the Property for which a release is sought shall not be the subject of any additional, amended, secondary, separate, supplemental or other agreement with the CITY that has not been fully, finally and completely performed as determined in the sole discretion of the CITY.
- 3. All fees, costs and expenses then due and owing and required to be paid to the CITY by the CITY'S Code of Ordinances and/or this Agreement shall have been paid in full with respect to the portion or phase to be released.
- 4. OWNER shall agree to indemnify and hold the CITY harmless from all thirdparty claims, suits, judgments, and demands, including its reasonable attorney's fees, brought against the CITY as a result of or arising out of the CITY's release of portions or phases of the Property prior to such time as the OWNER has satisfactorily completed and the CITY has finally accepted all Required Improvements and other public improvements necessary to serve the entirety of the Property including, but not limited to, the Required Improvements and the thoroughfares identified in Exhibit "C."

P. <u>GENERAL PROVISIONS</u>

- 1. OWNER agrees that construction shall not begin on any proposed improvements to Property prior to City Council approval of this Agreement.
- 2. OWNER agrees that all coordination required with public and/or private utility agencies to eliminate conflicts with proposed street grades or underground improvements shall be the responsibility of OWNER. Likewise, coordination with agencies requiring special conditions (i.e., railroads and

the Texas Department of Transportation) shall be the responsibility of OWNER.

- 3. It is understood that any obligation on the part of CITY to make any refunds with respect to infrastructure improvements constructed within the Property shall cease, with respect to such improvements, on the 10th anniversary after the improvements are completed, inspected, and accepted by CITY. Such 10-year period may be extended for good cause and agreed to in writing by CITY and OWNER.
- 4. This Agreement does not constitute a "permit" under Chapter 245, Texas Local Government Code and no "rights" are vested by this Agreement; however, nothing in this Agreement shall constitute a waiver by OWNER of any rights of OWNER under said Chapter 245.
- 5. The Agreement is conditioned upon the annexation of the ETJ Property and zoning of the Property as contemplated by this Agreement. If the ETJ Property is not annexed or the Property is not zoned as contemplated by this Agreement, then OWNER or CITY shall have the right to terminate this Agreement; whereupon, neither party shall have any further duties, obligations, rights, or remedies under this Agreement. If this Agreement is terminated by either party pursuant to this paragraph, the Property shall be developed in accordance with the standards as set forth in City of McKinney Zoning, Subdivision and land development ordinances, including but not limited to provisions regarding drainage, erosion control, pro rata payments, tree preservation, park land dedication, hike and bike trails, impact fees, Street Design Standards, Public Improvements Policy and construction standards.
- 6. In the event of any conflict between the main body of this Agreement and any of the Exhibits attached to this Agreement, the Exhibits shall control.

CITY OF McKINNEY

By: __

FRANK RAGAN City Manager

Date Signed: _____

ATTEST:

SANDY HART, TRMC, MMC City Secretary

HAGGARD RHEA MILLS, LLC, a Texas limited liability company

GE HADGAR Manager

Date Signed:

THE STATE OF TEXAS § COUNTY OF COLLIN §

BEFORE ME, the undersigned authority, in and for said County, Texas, on this day personally appeared **Frank Ragan**, City Manager of the City of McKinney, a Texas Municipal Corporation, known to me to be the person who's name is subscribed to the foregoing instrument, and acknowledged to me that he has executed the same on CITY's behalf.

GIVEN UNDER MY HAND AND SEAL OF OFFICE, this the ____day of _____, 20____.

Notary Public _____ County, Texas My commission expires _____

THE STATE OF TEXAS § COUNTY OF COLLIN §

BEFORE ME, the undersigned authority, in and for said County, Texas, on this day personally appeared **Rutledge Haggard**, in his capacity as Manager of Haggard Rhea Mills, LLC, a Texas limited liability company, known to me to be the person whose name is subscribed to the foregoing instrument, and acknowledged to me that he executed the same on behalf of and as the act of the limited liability company.

GIVEN UNDER MY HAND AND SEAL OF OFFICE, this the $\frac{12}{20}$ day of $\frac{1}{20}$.

Karly Alteho

Notary Public <u>Charle Fletcher</u> County, Texas My commission expires <u>11/24/24</u>



<u>EXHIBIT A</u>

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DESCRIPTION OF ETJ PROPERTY

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LEGAL DESCRIPTION WESTERLY 67.22 ACRES L.C. SEARCY SURVEY, ABSTRACT NO. 816 GEORGE HORN SURVEY, ABSTRACT NO. 412 CITY OF MCKINNEY, COLLIN COUNTY, TEXAS

SITUATED in the State of Texas, County of Collin, being part of the L.C. Searcy Survey, Abstract No. 816 and the George Horn Survey, Abstract No. 412, being the westerly portion of an originally called 137.812 acre tract as recorded in Volume 265, Page 194 of the Collin County Land Records, being the westerly one-half of a 134.44 acre tract surveyed on this date with said premises being more particularly described as follows;

BEGINNING at a PK nail in a shiner in a wood fence corner post in the east right-of-way line of F.M. Road 2478 (Custer Road) marking the southwest corner of said 134.44 acre tract and the northwest corner of a Danville Water Supply Corporation 0.5824 acre tract as recorded in Volume 1977, Page 12 of the Collin County Land Records;

THENCE with the east right-of-way line of F.M. Road 2478 (Custer Road), the west line of said 134.44 acre tract and the west line of said premises, North 02°29'02" West, 2021.29 feet to a 5/8-inch iron rod found marking a corner-clip at the intersection of the east right-of-way line of F.M. Road 2478 (Custer Road) with the south right-of-way line of F.M. Road 1461;

THENCE with said right-of-way corner-clip, the northwest line of said premises and said 134.44 acre tract, North 40°15'13" East, 97.67 feet to a concrete right-of-way monument found marking the end of said corner-clip in the south right-of-way line of F.M. Road 1461 and the north line of said 134.44 acre tract;

THENCE with the south right-of-way line of F.M. Road 1461, the north line of said 134.44 acre tract and said premises, North 88°27'09" East, 1349.36 feet to the northeast corner of said premises from which a 3/8-inch iron rod found marking the northeast corner of said 134.44 acre tract bears North 88°27'09" East, 1394.39 feet;

THENCE crossing an open field along the east line of said premises, South 01°32'51" East, 2093.04 feet to the southeast corner of said premises in the south line of said 134.44 acre tract, the south line of the original 137.812 acre tract and also being in a north line of a 388.054 acre tract as recorded under County Clerk No. 92-0053214 of the Collin County Land Records, from said corner a ½-inch iron rod found marking the southeast corner of said 134.44 acre tract bears North 88°14'24" East, 1406.18 feet;

THENCE with a south line of said premises, a south line of said 134.44 acre tract, a south line of said 137.812 acre tract and a north line of said 388.054 acre tract, South 88°14'24" West, 1279.08 feet to a ½-inch iron rod found marking the most northerly northwest corner of said 388.054 acre tract and the northeast corner of the aforementioned Danville Water Supply Corporation 0.5824 acre tract;

THENCE with a south line of said premises, a south line of said 134.44 acre tract, a south line of said 137.812 acre tract, and the north line of said 0.5824 acre tract, North 89°20'11" West, 102.44 feet to the **POINT OF BEGINNING** and containing 67.22 acres of land.

This document was prepared under 22 TAC §663.21, does not reflect the results of an on the ground survey, and is not to be used to convey or establish interests in real property except those rights and interests implied or established by the creation or reconfiguration of the boundary of the political subdivision for which it was prepared.

<u>EXHIBIT B</u>

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DESCRIPTION OF McKINNEY PROPERTY

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LEGAL DESCRIPTION EASTERLY 67.22 ACRES L.C. SEARCY SURVEY, ABSTRACT NO. 816 GEORGE HORN SURVEY, ABSTRACT NO. 412 CITY OF MCKINNEY, COLLIN COUNTY, TEXAS

SITUATED in the State of Texas, County of Collin, being part of the L.C. Searcy Survey, Abstract No. 816 and the George Horn Survey, Abstract No. 412, being the westerly portion of an originally called 137.812 acre tract as recorded in Volume 265, Page 194 of the Collin County Land Records, and being more particularly described as follows;

COMMENCING at a PK nail in a shiner in a wood fence corner post in the east right-of-way line of F.M. Road 2478 (Custer Road) marking the southwest corner of said 134.44 acre tract and the northwest corner of a Danville Water Supply Corporation 0.5824 acre tract as recorded in Volume 1977, Page 12 of the Collin County Land Records;

THENCE with a south line of said 134.44 acre tract and the north line of said 0.5824 acre tract, South 89°20'11" East, 102.44 feet to a 1/2-inch iron rod found marking the most northerly northwest corner of said 388.054 acre tract and the northeast corner of the aforementioned Danville Water Supply Corporation 0.5824 acre tract;

THENCE with a south line of said 134.44 acre tract, a south line of said 137.812 acre tract and a north line of said 388.054 acre tract, North 88°14'24" East, 1279.08 feet to the **POINT OF BEGINNING**;

THENCE crossing an open field, North 01°32'51" East, 2093.04 feet to the northwest corner of premises, from which a concrete right-of-way monument found marking the end of said corner-clip in the south right-of-way line of F.M. Road 1461 and the north line of said 134.44 acre tract bears South 88°27'09" West, 1349.36 feet;;

THENCE with the south right-of-way line of F.M. Road 1461 and the north line of said 134.44 acre tract, North 88°27'09" East, 1395.27 feet to the northeast corner of said tract from which a 3/8-inch iron rod found marking the northeast corner;

THENCE crossing an open field along the east line of said tract, South 01°50'48" East, 2087.85 feet to the southeast corner of said tract, the south line of the original 137.812 acre tract and also being in a north line of a 388.054 acre tract as recorded under County Clerk No. 92-0053214 of the Collin County Land Records, from said corner a ½-inch iron rod found marking the southeast corner;

THENCE with a south line of said 134.44 acre tract, a south line of said 137.812 acre tract and a north line of said 388.054 acre tract, South 88°14'24" West, 1406.18 feet to a to the **POINT OF BEGINNING** and containing 67.22 acres of land.

This document was prepared under 22 TAC §663.21, does not reflect the results of an on the ground survey, and is not to be used to convey or establish interests in real property except those rights and interests implied or established by the creation or reconfiguration of the boundary of the political subdivision for which it was prepared.

<u>EXHIBIT C</u>

PUBLIC IMPROVEMENTS

OWNER is responsible for the construction of the public improvements detailed below in conjunction with development of the Property, which specifically enumerated public improvements are the "Required Improvements" for this Agreement. Those public improvements required for each particular portion or phase of the Property then being developed, whether installed by the OWNER or a third party on behalf of the OWNER, must be complete and accepted by CITY prior to the issuance of a Final Acceptance letter for the Required Improvements. No Certificate of Occupancy shall be issued for any building on, about or in any phase of development of the Property until Final Acceptance of the public improvements necessary to serve that particular phase of development of the Property.

- A. <u>THOROUGHFARES</u>. Construction of required thoroughfare improvements in conjunction with development of the Property includes paving, drainage, striping, street lighting, sidewalks, electrical and irrigation conduits, erosion control and all other necessary appurtenances thereto required for a complete installation pursuant to the CITY Code.
 - 1. OWNER shall acquire, at no cost to CITY, all necessary right-of-way for and construct the on-site and off-site roadway improvements identified in the Traffic Impact Analysis ("TIA"), attached as Exhibit "D" to this Agreement, or as otherwise necessary to serve the portion or phase of the Property then being platted and developed, in the widths set forth on the CITY's Transportation Plan together with all appurtenances necessary thereto if such roadways and intersections, together with all necessary appurtenances thereto, have not been constructed prior to the filing of OWNER'S record plat.
 - 2. OWNER shall construct, as part of the Public Improvements and at no cost to CITY, the following thoroughfare improvements identified in the TIA together with all appurtenances necessary thereto, concurrent with the development and platting of the adjacent portion(s) of the Property or as otherwise determined by the CITY Engineer to serve the Property if such roadways and intersections together with all necessary appurtenances thereto have not been constructed and accepted by the CITY prior to the filing of OWNER'S record plat:
 - a. a westbound right turn lane on US 380 at its intersection with Custer Road (F.M. 2478); and
 - b. separate north-bound and west-bound left turn lanes adjacent to the site at the intersection of Custer Road (F.M. 2478) and F.M. 1461.

Adjacent to the Property boundary, the OWNER shall construct through lanes at the intersection of Custer Road (F.M. 2478) and F.M. 1461 per the City Participation (Sec. 142-40) provision of the City's Subdivision Ordinance if improvements at this intersection have not been provided by others.

- 3. OWNER shall participate in the cost of installing the signal lights at the intersection of Custer Road (F.M. 2478) and F.M. 1461 when said signalization is warranted. OWNER's participation shall be thirty-five percent (35 %) of the cost of said signalization.
- 4. In conjunction with the improvements of Custer Road (by others), the OWNER shall dedicate, at no cost to CITY, all right-of-way necessary for the realignment of existing F.M. 2478 (Custer Road) to remove the offset of said roadway at and approaching F.M. 1461. OWNER shall also dedicate, at no cost to CITY, all easements necessary to construct the pubic infrastructure related to the realignment of F.M. 2478 including, but not limited to, construction easements, slope easements and drainage easements.
- 5. Prior to the issuance of the first building permit for development within the Property, OWNER shall update the attached TIA if conditions reflected in the current TIA do not match future conditions when the Property develops. The updated TIA shall reflect the traffic anticipated to be generated by such development and shall identify changes, if any, to on-site and off-site roadway improvements required to support the development of the Property. In such event the OWNER shall implement, at no cost to CITY, the new recommendations as well as and in addition to the improvements recommended in the current TIA.
- 6. OWNER shall acquire all necessary right-of-way for and construct the onsite and off-site roadway improvements identified in the current TIA and any updated TIA in the widths set forth on the CITY's Transportation Plan if such roadways and intersections, together with all necessary appurtenances thereto, have not been constructed prior to the filing of OWNER'S record plat.
- 7. Access for Prosper properties along the "existing" or "old" alignment of Custer Road (F.M. 2478) must be maintained with a connection of "existing" or "old" Custer Road (F.M. 2478) to the new alignment when constructed.

B. <u>UTILITIES</u>.

1. OWNER shall construct water and wastewater improvements in conjunction with the development and platting of the adjacent portion(s) of the Property as necessary to support development of that portion of the Property.

- 2. OWNER shall also construct in conjunction with development of the Property the following water lines in accordance with the CITY's Master Water Plan:
 - a. a thirty-six inch (36") diameter water line along Custer Road; and
 - b. a thirty inch (30") diameter water line along FM 1461.
- 3. OWNER shall, at the time of development and at no cost to the CITY, perform a water analysis to ensure that adequate flow is provided to the development. OWNER shall also verify the existence of and provide, at the time of development and at no cost to the CITY, at least two sources of water in the appropriate pressure plane for the development in accordance with the CITY's Master Water Plan.
- 4. The water lines constructed along Custer Road (F.M. 2478) shall be constructed outside of the future ROW and easements of the roadway within a separate water easement.
- 5. Sanitary sewer will be designed to drain to the appropriate basins in accordance with the CITY's Master Sewer Plan using gravity flow only.

<u>EXHIBIT D</u>

TRAFFIC IMPACT ANALYSIS

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TRAFFIC IMPACT OVERVIEW for

The Haggard Tract at FM 2478 / FM 1461 McKinney, Texas

Submitted to:

The City of McKinney

Prepared for:

Double H Realty Services

Prepared by:

Innovative Transportation Solutions, Inc. 2701 Valley View Lane Farmers Branch, Texas 75234

August 2005

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I. **INTRODUCTION**

Innovative Transportation Solutions, Inc. (ITS) conducted a Traffic Impact Overview for the proposed Haggard Tract development, located at the southeast corner of the FM 2478 (Custer Road) FM 1461 intersection in McKinney, Texas (refer to Figure 1 - Area Map). A conceptual site plan for the proposed development has been prepared and is provided as Figure 2.

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FIGURE 1 Area Map



II. <u>PURPOSE AND METHODOLOGY OF STUDY</u>

ITS conducted a Traffic Impact Overview for the proposed Haggard Tract development at the request of the City of McKinney. The study focuses on the projected operations of the following major intersections:

- FM 2478 (Custer Road) at FM 1461
- US 380 at FM 2478 (Custer Road)

The study also focuses on the link capacity FM 2478 (Custer Road).

ITS used standard transportation engineering practices in conducting the traffic impact overview for the proposed development. ITS conducted AM (7:00 - 9:00 am) and PM (4:00 - 6:00 pm) peak period turning movement counts at the FM 1461 intersections with FM 2478 (Custer Road) on Tuesday – Thursday, February 15 – 17, 2005. ITS acquired a peak period turning movement traffic count at the US 380 / FM 2478 (Custer Road) intersection from the City of McKinney. (This count was conducted on Tuesday, March 2, 2004.) ITS conducted a 24-hour directional traffic count on FM 2478 just south of FM 1461 on Tuesday, February 22, 2205. ITS also acquired from the Texas Department of Transportation (TxDOT) 2002 traffic count map a traffic volume on FM 2478 just north of US 380.

Background traffic volumes were estimated by applying a five (5) percent annual growth rate, based on information provided by the City of McKinney, to the existing traffic volumes at the study intersections.

ITS then generated trips for the proposed development, assuming full build out of the residential portion of the development. Current plans, which are preliminary, include 233 single-family residential lots and 209 condominium / townhouse units. ITS utilized data from the *Institute of Transportation Engineers' Trip Generation Manual*, 7th Edition, to generate trips for the proposed development. The proposed development plan includes potential commercial development; for this study, only the residential component of the development was analyzed.

The trips were distributed at the two (2) major intersections identified by the City (US 380 at FM 2478, FM 1461 at FM 2478). The trips were then added to the background traffic volumes at the aforementioned intersections to give an estimate of the total traffic volumes at the study intersections.

ITS conducted peak hour intersection analyses for two (2) scenarios. Since the development straddles the future realignment of FM 2478, both scenarios assume FM 2478 is realigned to remove the existing offset intersections at FM 1461. The first scenario, designated **Case 1**, is for the year 2007, assuming build out of the residential portion of the development and assuming two (2) lanes of FM 2478 are in place from FM 1461 to US 380. **Case 2** examines the year 2009, and assumes FM 2478 (Custer Road) is

improved to a four-lane divided road. Further explanation on the study assumptions will be given later in the report.

For purposes of this report, ITS, the developer, and the City of McKinney agreed to examine the 2007 and 2009 study years with the residential component of the development fully built out.

Based on the results of the peak hour intersection and link analyses, ITS developed a set of improvements that would accommodate the traffic related to the residential component of the proposed Double H development.

III. <u>EXISTING TRAFFIC PATTERNS</u>

ITS conducted AM and PM peak hour turning movement traffic counts at FM 2478 (Custer Road) / FM 1461 intersections on Tuesday – Thursday, February 15 - 17, 2005. An AM and PM peak hour turning movement traffic count at the US 380 / FM 2478 (Custer Road) intersection was acquired from the City of McKinney (this count was conducted on Tuesday, March 4, 2004). In order to estimate the existing (year 2005) traffic volumes at the US 380 / FM 2478 (Custer Road) intersection ITS applied a five (5) percent annual growth rate, provided by the City of McKinney, to the year 2004 volumes.

ITS conducted a 24-hour directional traffic count on FM 2478 just south of FM 1461 on Tuesday, February 22, 2005. ITS also acquired from the TxDOT 2002 traffic count map a traffic volume for FM 2478 just north of US 380. In order to estimate the existing (year 2005) traffic volumes at this location, ITS applied a five (5) percent annual growth rate, provided by the City of McKinney, to the year 2005 volumes.

The traffic count data may be found in the Appendix. The existing (year 2005) AM and PM peak hour turning movement traffic volumes at the three (3) existing study intersections are shown in Figures 3 and 4 in the Appendix. The existing (year 2005) link volumes along FM 2478 are shown in Figure 5. (Note: the traffic volumes shown on TxDOT's traffic count maps are total volumes, not directional counts)



IV. LAND USES AND TRIP GENERATION

As previously mentioned, the land use for the residential component of the proposed development includes the following, as shown in **Table 1**.

 TABLE 1

 Land Use and Density of Proposed Development Expansion

Land Use	ITE Code	Density		
Single-Family Detached Housing	210	233 lots		
Condo / Townhouse	230	209 units		

Traffic projections for the respective land uses outlined in **Table 1** were prepared based upon historical data provided in the *Institute of Transportation Engineers' Trip* Generation Manual, 7^{th} Edition. **Table 2** shows the projected trip generation for the residential component of the proposed development at build out. ITS generated trips for the the AM and PM peak hours and for the typical 24-hour weekday period.

Land Use	AM Peak Hour of Adjacent Street Traffic			PM Peak Hour of Adjacent Street Traffic			24-Hour
(density)	In	Out	Total	In	Out	Total	Total
Single-Family Detached Housing (233 lots)	43	130	173	145	85	230	2,264
Condo / Townhouse (209 units)	16	77	93	74	36	110	1,202
Total	59	207	266	219	121	340	3,466

TABLE 2Estimated Site-Generated One-Way Trips

V. <u>SITE-GENERATED TRAFFIC DISTRIBUTIONS</u>

Trip distribution for the proposed development was determined based upon the existing traffic patterns in the area. The general trip distribution assumptions are as follows:

- To / from the east via US 380 40%
- To / from the west via US 380 25%
- To / from the west via FM 1461 10%
- To / from the south via FM 2478 (Custer Road) 20%
- To / from the north via FM 2478 (Custer Road) 5%

Based on information provided by the City of McKinney, FM 1461 is at or above capacity at the intersection with US 380 with existing traffic and near-term development. Because of this information, ITS chose not to route any of the trips from the Double H development along this section of FM 1461. (Because of the development's location at the intersection of FM 2478 and FM 1461 it is likely that few vehicles from the development would use FM 1461 to access the site to / from US 380.)

VI. <u>SITE-GENERATED TRAFFIC ASSIGNMENTS</u>

ITS distributed the AM and PM peak hour development trips at the study intersections utilizing the trip distribution percentages shown above. Figures 6 and 7 in the Appendix show the AM and PM peak hour generated trips distributed at the study intersections for both Case 1, which assumes FM 2478 (Custer Road) is a two-lane road, and Case 2, which assumes FM 2478 is improved to a four-lane divided road between FM 1461 and US 380. (Since the development straddles the ultimate alignment of FM 2478 at FM 1461, ITS assumed the realignment of FM 2478 would be constructed as part of the Double H development.)

ITS also distributed the 24-hour development trips along FM 2478. These volumes are shown in Figure 8.



VII. PROJECTED INTERSECTION VOLUMES

In order to estimate the background traffic volumes at the study intersections, ITS first modified the existing traffic volumes at the FM 2478 (Custer Road) intersections with FM 1461, assuming FM 2478 (Custer Road) has been realigned to remove the offset between the north and south legs, forming a typical four-leg intersection. The modified 2005 peak hour volumes at the intersection are shown in **Figure 9** below.



ITS increased the existing (year 2005) traffic volumes (shown in Figures 3 and 4 for the US 380 intersection with FM 2478, and in Figure 9 for the realigned FM 1461 / FM 2478 intersection) by a five (5) percent annual growth factor (provided by the City of McKinney). The Case 1 (year 2007) background traffic volumes at the study intersections are shown in Figures 10 and 11 in the Appendix. The Case 2 (year 2009) background traffic volumes at the study intersections are shown in Figures 12 and 13 in the Appendix.

ITS then added the development trips (Figures 6 and 7) to the Case 1 (year 2007) and Case 2 (year 2009) background traffic volumes (Figures 10 - 13) in order to estimate the total traffic volumes at the study intersections. These projected volumes are shown in Figures 14 - 17 in the Appendix.

VIII. PROJECTED LINK VOLUMES

In order to estimate the background traffic volumes along FM 2478, ITS increased the existing (year 2005) volumes by a five (5) percent annual growth rate for two (2) and four (4) years, respectively. This gives the estimated background traffic volumes for the Case 1 (year 2007) and Case 2 (year 2009) scenarios. These volumes are shown in Figures 18 and 19.





ITS then added the development generated trips (Figure 8) to the Case 1 (year 2007) and Case 2 (year 2009) background traffic volumes (Figures 18 - 19) to estimate the total traffic volumes for the two analysis scenarios. These volumes are shown in Figures 20 - 21.





IX. INTERSECTION ANALYSES

Analysis Scenarios

ITS conducted AM and PM peak hour (7:00 - 8:00 am, 5:00 - 6:00 pm) intersection analyses for the following scenarios:

- Existing (year 2005) traffic volumes
- Case 1 (year 2007) background volumes (year 2005 volumes plus 5% annual growth)
- Case 1 (year 2007) total volumes (Case 1 background volumes plus development generated trips)
- Case 2 (year 2009) background volumes (year 2005 volumes plus 5% annual growth)
- Case 2 (year 2009) total volumes (Case 2 background volumes plus development generated trips)

Intersection Geometrics

The existing (year 2005) analyses were conducted assuming existing geometrics and traffic control at the study intersections, as shown below:

<u>US 380 / FM 2478 (Custer Road)</u>

- Northbound shared left turn / through / right turn lane (one lane approach)
- Southbound shared left turn / through / right turn lane (one lane approach)
- Eastbound left turn lane, two through lanes, right turn lane* (four lane approach)
- Westbound -- left turn lane, two through lanes, right turn lane* (four lane approach)
- Signalized intersection
- * existing 10-foot shoulders along both sides of US 380 act as defacto right turn lanes, even though they are not explicitly marked as such

FM 1461 / FM 2478 (Custer Road) south leg

- Northbound shared left turn / right turn lane (one lane approach)
- Eastbound shared through / right turn lane (one lane approach)
- Westbound shared left turn / through lane (one lane approach)
- Two-way stop-control northbound FM 2478 (Custer Road) is stopped at FM 1461
FM 1461 / FM 2478 (Custer Road) north leg

- Southbound shared left turn / right turn lane (one lane approach)
- Eastbound -- shared left turn / through lane (one lane approach)
- Westbound shared through / right turn lane (one lane approach)
- Two-way stop-control southbound FM 2478 (Custer Road) is stopped at FM 1461

For the **Case 1** (year 2007) analyses, ITS assumed that FM 2478 (Custer Road) would be realigned at FM 1461, forming a typical four-leg intersection. ITS assumed that the realigned portion of FM 2478 would be a two-lane undivided cross-section, and that all four (4) approaches at the improved FM 2478 / FM 1461 intersection would have dedicated left turn lanes (two-lane approaches). ITS also assumed the intersection would be signalized. ITS assumed no improvements to the US 380 / FM 2478 intersection would be in place for the Case 1 (year 2007) scenario, nor would FM 2478 be widened.

For the **Case 2** (year 2009) analyses, ITS assumed that FM 2478 (Custer Road) would be realigned at FM 1461, forming a typical four-leg intersection. ITS also assumed that FM 2478 (Custer Road) would be improved to four-lane divided cross-section between FM 1461 and US 380. For both major study intersections (US 380 at FM 2478, FM 1461 at FM 2478), ITS assumed the following geometrics and traffic control for the **Case 2** (year 2009) analyses:

Both Study Intersections

- Northbound left turn lane, two through lanes, right turn lane (four lane approach)
- Southbound left turn lane, two through lanes, right turn lane (four lane approach)
- Eastbound left turn lane, two through lanes, right turn lane (four lane approach)
- Westbound left turn lane, two through lanes, right turn lane (four lane approach)
- Signalized intersection

Results of the peak hour intersection analyses were generated using standard procedures outlined in the <u>Highway Capacity Manual</u> (HCM) through the use of the Synchro software package. For reference, all Synchro output / worksheets are provided in the Appendix. Level-of-Service (LOS) and delay have been set by the nation's transportation officials based upon the amount of delay motorists will tolerate before reaching various degrees of frustration. The LOS criteria for unsignalized intersections may be found in Table 3. The LOS criteria for signalized intersections may be found in Table 4.

TABLE 3
Level-of-Service Criteria for Unsignalized Intersections

Level of Service	Description	Average Stopped Delay (seconds per vehicle)
A	Completely free-flow conditions	≤ <u>,</u> 10.0
В	Indicative of free-flow conditions, although the presence of other vehicles is noticeable	> 10.0 and ≤ 15.0
С	A range in which the influence of traffic density on operations becomes marked	> 15.0 and ≤ 25.0
D	A range in which the ability to maneuver is severely restricted due to congestion	> 25.0 and ≤ 35.0
E	Operations are at or near capacity and are unstable	> 35.0 and ≤ 50.0
F	Forced flow or breakdown characterized by queues	> 50.0

 TABLE 4

 Level-of-Service Criteria for Signalized Intersections

Level of Service	Description	Average Stopped Delay (seconds per vehicle)
A and B	No delays at intersection with smooth progression of traffic. Uncongested operations; all vehicles clear in a single signal cycle.	≤ 10.0 > 10.0 and ≤ 20.0
С	Moderate delays at intersections with satisfactory to good progression of traffic. Light congestion; occasional backups on critical approaches.	> 20.0 and ≤ 35.0
D	40-percent probability of delays of one cycle or more at every intersection. No progression of traffic along the roadway with 90 percent probability of being stopped at every intersection experiencing "D" condition. Significant congestion on eritical approaches, but intersections are functional. Vehicles required to wait through more than one cycle during short peaks. No long standing lines formed.	> 35.0 and ≤ 55.0
E	Heavy traffic flow condition. Delays of two or more cycles are probable. No progression. 100 percent probability of stopping at intersection. Blockage of intersection may occur if traffic signal does not provide for protected turning movements.	> 55.0 and ≤ 75.0
F	Unstable flow. Heavy congestion. Traffic moves in forced flow condition. Three or more cycles to pass through intersection. Total breakdown with stop-and-go operations.	> 75.0

August 2005 FM 2478 / FM 1461

Existing (Year 2005) Conditions

Tables 5 - 7 show the results of the existing (year 2005) intersection analyses for the study intersections.

TABLE 5 Existing (Year 2005) Volumes US 380 / FM 2478 (Custer Road) intersection Signalized Intersection Analysis

	EXISTING	(2005)
Approach and	AM (PN	1)
Movement	Delay	LOS
	(sec/veh)	105
Eastbound		
Left	14.2 (21.7)	В (С)
Thru	24.0 (35.4)	C (D)
Right	13.7 (18.5)	B (B)
Westbound		
Left	24.6 (27.2)	C (C)
Thnı	24.2 (20.1)	C (C)
, Right	13.4 (12.7)	В (В)
Northbound		
Left/Thru/Right	21.4 (30.2)	C (C)
Southbound		
Left/Thru/Right	143.4 (26.1)	B (C)
Intersection	22.1 (26.9)	C (C)

As shown in **Table 5**, above, the signalized US 380 intersection with FM 2478 (Custer Road) currently operates at an acceptable overall LOS C during both peak periods.

TABLE 6Existing (Year 2005) VolumesFM 1461 / FM 2478 (Custer Road) South Leg IntersectionUnsignalized Intersection Analysis

	EXISTING	(2005)
Approach and	AM (P	M)
Movement	Delay	LOS
	(sec/veh)	
Westbound		
Left/Thru	2.6 (2.4)	A (A)
Northbound		
Left/Right	10.9 (11.1)	B (B)

TABLE 7

Existing (Year 2005) Volumes FM 1461 / FM 2478 (Custer Road) North Leg Intersection Unsignalized Intersection Analysis

	EXISTING	(2005)				
Approach and	AM (PM)					
Movement	Delay	T OS				
	(sec/veh)	108				
Eastbound						
Left/Thru	1.4 (3.6)	A (A)				
Southbound						
Left/Right	9.4 (9.4)	A (A)				

As shown in **Tables 6 and 7**, above, the minor movements at the FM 1461 intersections with FM 2478 (Custer Road) currently operate at an acceptable LOS (LOS B or better) during both the AM and PM peak hours.

Case 1 (Year 2007) Conditions

Tables 8 - 9 show the results of the Case 1 (year 2007) intersection analyses (background and total) for the study intersections.

TABLE 8

Case 1 (Year 2007) Volumes US 380 / FM 2478 (Custer Road) intersection Signalized Intersection Analysis

CASE 1 BACK Approach and		EAR 2007) ROUND	CASE 1 (YEAR 2007) TOTAL			
Approach and Movement	AM (PM)	AM (I	PM)		
JATOAGUTEUL	Delay	Loc	Delay	LOS		
	(sec/vch)	L08	(sec/veh)	105		
Eastbound						
Left	14.4	B	15.1	B		
	(21.4)	(C)	(26.5)	(C)		
Thru	26.2	C	26.2	C		
	(37.9)	(D)	(37.9)	(D)		
Right	13.8	B	13.8	B		
	(18.0)	(B)	(18.0)	(B)		
Westbound						
Left	27.3	C	27.3	C		
	(33.4)	(C)	(33.4)	(C)		
Thru	26.4	C	26.4	C		
	(20.9)	(C)	(20.9)	(C)		
Right	13.5	B	13.6	B		
	(12.8)	(B)	(13.3)	(B)		
Northbound						
Left/Thru/Right	25.2	C	31.3	C		
	(35.6)	(D)	(43.6)	(D)		
Southbound						
Left/Thru/Right	15.3	B	27.1	C		
	(27.8)	(C)	(38.7)	(D)		
Intersection	24.3	C	26.5	C		
	(29.2)	(C)	(30.9)	(C)		

TABLE 9Case 1 (Year 2007) VolumesFM 1461 / FM 2478 (Custer Road) intersectionSignalized Intersection Analysis

	CASE 1 (Y	EAR 2007)	CASE 1 (YE	CAR 2007)
	BACKG	ROUND	TOT	AL
Approach and Movement	AM (PM)	AM (I	PM)
WIGYCHNEILL	Delay	TOS	Delay	TOS
	(sec/veh)	LUS	(sec/veh)	103
Eastbound				
Left	9.3	A	9.4	A
	(9.8)	(A)	(9.8)	(A)
Thru/Right	10.5	B	10.6	B
	(9.9)	(A)	(10.0)	(B)
Westbound				
Left	9.5	A	9.5	A
	(9.4)	(A)	(9.4)	(A)
Thru/Right	9.6	A	9.8	A
	(9.7)	(A)	(9.8)	(A)
Northbound			_	
Left	12.6	B	11.8	B
	(12.0)	(B)	(12.1)	(B)
Thru/Right	12.5	B	10.8	B
	(10.6)	(B)	(10.6)	(B)
Southbound				
Left	10.5	B	10.5	B
	(10.4)	(B)	(10.5)	(B)
Thru/Right	10.7	B	10.7	B
	(10.5)	(B)	(10.5)	(B)
Intersection	10.6	B	10.5	B
	(10.4)	(B)	(10.5)	(B)

As shown in **Tables 8 and 9** above, the proposed development is projected to have very little impact to the study intersections in the year 2007 (Case 1) scenario. The overall LOS for both intersections does not change from the background to total volume

scenarios. In addition, all movements at both intersections are projected to operate at acceptable LOS D or better for both peak periods.

Case 2 (Year 2009) Conditions

As previously mentioned, the Case 2 (year 2009) analyses assume FM 2478 (Custer Road) is improved to a four-lane divided road (through projects by TxDOT, the City of McKinney, and / or others) between US 380 and FM 1461. For ITS' Case 2 (year 2009) analyses, all approaches at both study intersections were assumed to be improved to provide the following geometrics:

- Left turn only lane
- Two (2) through lanes
- Right turn only lane

As with the Case 1 (year 2007) scenario, the FM 2478 / FM 1461 intersection was assumed to be signalized for the Case 2 (year 2009) analysis scenario.

Tables 10 - 11 show the results of the Case 2 (year 2009) intersection analyses (background and total) for the study intersections.

TABLE 10Case 2 (Year 2009) VolumesUS 380 / FM 2478 (Custer Road) intersectionSignalized Intersection Analysis

	CASE 2 (Y) BACKG	C 2 (YEAR 2009) CASE 2 (YEAR 2009) CKGROUND TOTAL AM (PM) AM (PM)		
Approach and Movement	AM (PM)	<u>AM (</u>]	PM)
ITTOACUTCIIT	Delay	LOG	Delay	LOS
	(sec/veh)	T02	(sec/veh)	
Eastbound				
Left	13.6	B	14.3	B
	(18.5)	(B)	(18.4)	(B)
Thru	26.4	C	26.4	С
	(32.9)	(C)	(32.9)	(С)
Right	16.1	B	16.1	B
	(19.6)	(B)	(19.6)	(B)
Westbound	_		- —	
Left	20.1	C	20.1	C
	(31.1)	(C)	(31.1)	(C)
Thru	22.1	C	22.1	C
	(16.1)	(B)	(19.3)	(B)
Right	14.2	B	14.3	B
	(11.3)	(B)	(14.0)	(B)
Northbound				
Left	18.4	B	18.8	B
	(33.7)	(C)	(34.0)	(C)
Thru	15.7	B	15.8	B
	(30.2)	(C)	(30.9)	(C)
Right	16.8	B	16.8	B
	(30.1)	(C)	(30.1)	(C)
Southbound	_			
Left	14.0	B	17.0	B
	(28.6)	(C)	(31.8)	(C)
Thru	15.6	B	16.6	B
	(29.9)	(C)	(30.3)	(C)
Right	14.5	B	16.4	B
	(29.0)	(C)	(29.3)	(C)
Intersection	21.2	C	21.0	C
	(25.6)	(C)	(26.4)	(C)

TABLE 11Case 2 (Year 2009) VolumesFM 1461/ FM 2478 (Custer Road) intersectionSignalized Intersection Analysis

	CASE 2 (YI	EAR 2009)	CASE 2 (YEAR 2009)			
	BACKGI	ROUND	TOTAL			
Approach and Movement	AM (PM)	AM ()	PM)		
MOAeuteur	Delay	TOP	Delay	LOS		
	(sec/veh)	TO2	(sec/veh)	108		
Eastbound						
Left	12.4	B	12.4	B		
	(14.4)	(B)	(14.4)	(B)		
Thru	16.2	B	16.2	B		
	(16.6)	(B)	(16.7)	(B)		
Right	16.1	B	16.1	B		
	(16.5)	(B)	(16.5)	(B)		
Westbound		_				
Left	12.4	B	12.5	B		
	(13.8)	(B)	(13.8)	(B)		
Thru	15.9	B	15.9	B		
	(16.6)	(B)	(16.7)	(B)		
Right	15.5	B	15.5	B		
	(16.2)	(B)	(16.3)	(B)		
Northbound						
Left	17.5	B	15.7	B		
	(11.8)	(B)	(11.9)	(B)		
Thru	19.4	B	17.9	B		
	(13.5)	(B)	(13.5)	(B)		
Right	26.7	C	23.0	C		
	(13.5)	(B)	(13.5)	(B)		
Southbound		_	_			
Left	12.4	B	12.4	B		
	(11.6)	(B)	(11.7)	(B)		
Thru	15.6	B	15.6	B		
	(14.1)	(B)	(14.1)	(B)		
Right	15.7	B	15.7	B		
	(14.2)	(B)	(14.2)	(B)		
Intersection	16.0	B	15.7	B		
	(14.4)	(B)	(14.5)	(B)		

The results of the Case 2 (year 2009) analyses, as shown in Tables 14 - 16, indicate that with the study intersections improved to provide four-lane approaches in each direction (left turn lane, two through lanes, right turn lane), both intersections will operate at acceptable overall LOS (LOS C or better) during both peak periods with the residential component of the proposed development fully built out. In addition, the analysis results indicate the proposed development will have very little impact on the study intersections. The LOS of each movement at both intersections is projected to remain the same in the background and total volume scenarios.

X. <u>LINK ANALYSES along FM 2478 (Custer Road)</u>

FM 2478 (Custer Road) is currently a two-lane undivided road with a posted speed limit of 50 miles per hour (mph) between US 380 and FM 1461. ITS estimates the capacity of FM 2478 in its current condition at approximately 10,000 vehicles ped day (vpd). Using the City of McKinney's standard of level-of-service (LOS) D operation, the acceptable capacity of FM 2478 is currently 8,000 vpd.

Existing (Year 2005) Volumes

As previously mentioned, ITS conducted a traffic count on FM 2478 just south of FM 1461 in February 2005. ITS also acquired a TxDOT year 2002 traffic count on FM 2478 just north of US 380 and increased this volume by a five (5) percent annual growth rate to give the estimated year 2005 traffic volume. These volumes, and the corresponding LOS, are:

- Just south of FM 1461 = 2,698 vpd LOS B
- Just north of US 380 = 4,515 vpd LOS C

Case 1 (Year 2007) Volumes

For purposes of this report, ITS assumed in the year 2007 the residential component of the proposed development would be fully built out, FM 2478 would be realigned through the development to remove the existing offset intersections at FM 1461, but would not be widened from its existing two-lane undivided cross-section. Thus the "allowable capacity," based on City of McKinney standards, would remain 8,000 vpd (LOS D operation).

Case 1 (Year 2007) Background Volumes

The Case 1 (Year 2007) background volumes along FM 2478 are:

- Just south of FM 1461 = 2,974 vpd LOS B
- Just north of US 380 = 4,978 vpd LOS C

Case 1 (Year 2007) Total Volumes

The Case 1 (Year 2007) total volumes along FM 2478 are:

- Just south of FM 1461 = 5,920 vpd LOS C
- Just north of US 380 = 7,924 vpd LOS D

The results of the link analyses indicate there is adequate capacity on FM 2478 to accommodate full build out of the residential component of the proposed development in the year 2007 with no capacity improvements to the road. There is projected to be a surplus capacity of 2,080 vpd on the section just south of FM 1461 and 76 vpd on the section just north of US 380, based on the City's LOS D (8,000 vpd) standard.

Case 2 (Year 2009) Volumes

For the Case 2 (Year 2009) scenario, ITS assumed FM 2478 would be improved to a four-lane divided cross-section between FM 1461 and US 380. This would increase the capacity of the road to approximately 28,000 vpd. At LOS D operation, this equates to an allowable daily volume of 22,400 vpd.

Case 2 (Year 2009) Background Volumes

The Case 2 (Year 2009) background volumes along FM 2478 are:

- Just south of FM 1461 = 3,280 vpd LOS A
- Just north of US 380 = 5,488 vpd LOS B

Case 2 (Year 2009) Total Volumes

The Case 2 (Year 2009) total volumes along FM 2478 are:

- Just south of FM 1461 = 6,226 vpd LOS B
- Just north of US 380 = 8,434 vpd LOS B

The results of the link analyses indicate that with FM 2478 improved to a four-lane divided road between FM 1461 and US 380 there is significant surplus capacity to accommodate background traffic plus development trips.

XI. <u>SUMMARY</u>

ITS conducted a Traffic Impact Overview for the proposed Haggard Tract development, to be located along the south side of FM 1461 at FM 2478 (Custer Road), at the request of the City of McKinney. The traffic study addressed the projected AM and PM peak hour operations at the following major intersections, as identified by the City of McKinney:

- US 380 / FM 2478 (Custer Road)
- FM 1461 / FM 2478 (Custer Road)

The traffic study also addresses link capacity along FM 2478.

ITS developed two (2) analysis scenarios for this project. The first scenario, **Case 1**, examines the operations of the intersections in the year 2007. This scenario assumed the residential component of the development, 233 single-family lots and 209 condo / townhouse units, was fully built out. In addition, FM 2478 was realigned at FM 1461 in order to form a typical four-leg intersection, removing the existing offset intersections. (This assumption was made because of the location of the realigned section of FM 2478 would be constructed before or during construction of the development.) The intersection would be signalized, with each approach having a dedicated left turn lane and a shared through / right turn lane (two-lane approach). No improvements were assumed for the US 380 / FM 2478 intersection or along FM 2478 (the road remains a two-lane undivided road between US 380 and FM 1461).

The second scenario, Case 2, examines the operations of the intersections in the year 2009, and assumed FM 2478 (Custer Road) was improved to a four-lane divided road between US 380 and FM 1461 (through projects by TxDOT, the City of McKinney, and / or others). In addition, the Case 2 scenario assumes all approaches to all study intersections are improved to provide a left turn only lane, two (2) through lanes, and a right turn only lane (four-lane approaches).

ITS generated trips for the residential component of the proposed development, which includes 233 single-family lots and 209 condo / townhouse units. Development trips were distributed at the study intersections and combined with background volumes (estimated by applying a five percent annual growth factor to the existing volumes) to produce the projected total volumes at the study intersections and along FM 2478. The AM and PM peak hour operations at the study intersections were then analyzed using the Synchro software package. Based on information provided by the City of McKinney regarding the lack of capacity on FM 1461 at US 380, and due to the location of the proposed development at the intersection of FM 2478 and FM 1461, ITS did not route any development trips along FM 2478 towards US 380, 10 percent of the trips were routed to the west via FM 1461, and the remaining five (5) percent were routed to the north via FM 2478.

The results of the peak hour intersection analyses indicate that with the aforementioned geometric assumptions in place, the study intersections can accommodate the background and development traffic and maintain acceptable LOS operations (LOS D or better) for all analysis scenarios. Furthermore, the impact that the proposed development trips has on the operations of the study intersections is minimal; there is very little difference in the delays for the total volume scenario (which includes development trips) versus the background scenario (which does not).

Traffic Impact Overview Double H Realty Services – Haggard Tract McKinney, Texas

The results of the link analyses along FM 2478 indicate the road is projected to have adequate surplus capacity to accommodate the year 2007 background traffic (year 2005 volumes plus 5 percent annual growth) and the residential component of the development on the road's existing two-lane undivided cross-section. (The 85 percent of development trips routed along FM 2478 corresponds to 2,946 daily weekday trips.) The widening of FM 2478 to a four-lane divided cross-section will accommodate year 2009 background traffic plus development trips, while also providing significant reserve capacity on the road.

APPENDIX

Traffic Count Data

24-Hour Directional Count

FM 2478 just south of FM 1461

AM and PM Peak Hour Turning Movement Counts

US 380 / FM 2478 (Custer Road)

FM 1461 / FM 2478 (Custer Road) north leg

FM 1461 / FM 2478 (Custer Road) south leg

Traffic Data of Texas, Inc. 413 Bronco Circle

Veather: Clear roject Name: ount: 24-Hour Volume omments: 413 Bronco Circle Denton, TX 76208 Phone & FAX: 940.321.0888 Site Code: 7733-022105 Station ID: 7733 FM 2478 - Custer Rd South of FM 1461

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17-1**1**-

TMC3801.VOL 15 Minute Turning Movement Count US 380 @ CUSTER at US 380: 03/02/04

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QUALITY COUNTS, INC DATA COLLECTION & ANALYSIS 214-349-4861

CUSTER NORTH @ FM 1461 ACKINNEY, TX AILD CK

File Name : CUSTER NORTH @ FM 1461 Site Code : 00000003 Start Date : 02/17/2005 Page No : 1

	Groups Printed- Unshifted																				
	[Southbound					v	Vestbou	nd	l		٢	lorthbou	nd			I	Eastbour	d		
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Factor	1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		
07:00 AM	2	0	14	0	16	0	17	- O	_0	17	0	0	0	0	0	3	26	0	0	29	62
07:15 AM	4	0	19	0	23	0	11	5	0	16	0	0	0	0	0	2	17	0	0	19	58
07:30 AM	4	0	15	0	19	0	28	3	0	31	0	0	0	0	0	12	34	0	0	46	96
07:45 AM	9	0	14	0	23	0	15	4	0	19	0	0	0	0	0	5	23	0	0	28	70
Totai	19	0	62	0	81	0	71	12	0	83	0	0	0	0	0	22	100	0	0	122	286
08:00 AM	7	0	19	0	26	0	20	5	0	25	0	0	٥	0	0	11	30	0	0	41	92
08:15 AM	6	0	3	0	9	0	20	0	0	20	0	0	0	0	0	8	19	0	0	27	56
08:30 AM	5	0	18	0	23	0	9	3	0	12	0	0	0	0	0	7	12	0	0	19	54
08:45 AM	4	0	11	0	15	0	<u>11</u>	4	0	15	0	0	0	0	0	10	11	0	0	21	51
Total	22	0	51	0	73	0	60	12	0	72	0	0	0	0	0]	36	72	0	0	108	253
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04:30 PM	~ /	0	40	0	16	ň	18	5	ň	23	ō	õ	Ď	ō	ō	14	15	Ō	Ō	29	68
	<u>6</u>	0	39	0	57	<u> </u>	57	19	<u>ŏ</u>	76	0	Ŏ	0	0	0	53	76	0	0	129	262
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05-20 PM	5	ň	10	õ	15	ō	11	3	0	14	0	0	0	0	0	18	17	0	0	35	64
05.30 PM	ň	ň	11	õ	11	ō	16	4	0	20	0	0	0	0	0	21	23	0_		44	75
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Grand Total	71	0	191	0	262	0	248	56	0	304	0	0	0	0	0	1/9	328	0	~~~	307	10/3
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Total %	6.6	0.0	17.8	0.0	24.4	0.0	23.1	5.2	0.0	28.3	0.0	0.0	0.0	0.0	0.0	16.7	30.6	0,0	0.0	47.3	

QUALITY COUNTS, INC DATA COLLECTION & ANALYSIS 214-349-4861

CUSTER SOUTH AT FM 1461 McKINNEY, TX MILD CK

File Name : CUSTER SOUTH @ FM 1461 Site Code : 00000002 Start Date : 02/16/2005 Page No : 1

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Factor	1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0	_	_ 1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		
07:00 AM	0	0	0	0	0	12	14	0		26	9	0	3	0	12	0	19	17	0	36	74
07:15 AM	0	0	0	0	0	8	27	0	0	35	14	0	3	0	17 (0	23	22	0	45 (97
07:30 AM	0	0	0	0	0	10	28	0	0	38	13	0	7	0	20	0	30	33	0	63	1 21
07:45 AM	0	0	0	0	0	12	26	0	0	_38	_ 11	0	5	0	16	0	23	21	0	44	98
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08:00 AM	0	0	0	0	0	11	25	0	0	36	19	0	9	0	28	0	26	31	٥	57	121
08:15 AM	0	0	٥	0	0	14	20	0	0	34	17	0	5	0	22	0	28	21	0	49	105
08:30 AM	٥	0	0	0	0	6	17	0	0	23	16	0	2	0	18	0	16	20	0	3 6 (77
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05:30 PM	0	0	0	0	0	9	20	0	0	29	22	0	19	0	41	0	33	8	0	41	111
05:45 PM	0	0	0	0	0	11	18	0	0	29	26	0	12		38	0	23	12			102
Total	0	0	0	0	0	34	81	0	0	115	95	0	48	0	143	0	102	44	U	146	404
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Total %	0.0	0.0	0.0	0.0	0.0	9,6	20.9	0.0	0.0	30,5	18.3	0.0	8.6	0.0	26.9	0.0	24.5	18.1	0.0	42.5	

Figures

Figure 3 – Existing (2005) volumes – AM Peak Figure 4 – Existing (2005) volumes – PM Peak

Figure 6 – Development trips – AM Peak Figure 7 – Development trips – PM Peak

Figure 10 – Case 1 (2007) background volumes – AM Peak

Figure 11 – Case 1 (2007) background volumes – PM Peak

Figure 12 - Case 2 (2009) background volumes – AM Peak

Figure 13 – Case 2 (2009) background volumes – PM Peak

Figure 14 – Case 1 (2007) total volumes – AM Peak Figure 15 – Case 1 (2007) total volumes – PM Peak

Figure 16 – Case 2 (2009) total volumes – AM Peak Figure 17 – Case 2 (2009) total volumes – PM Peak



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PM Peak





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Synchro Output

US 380 / FM 2478 (Custer Road)

Existing (2005) volumes

Case 1 (Year 2007) background volumes Case 1 (Year 2007) total volumes

Case 2 (Year 2009) background volumes Case 2 (Year 2009) total volumes

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Satd. Flow (perm)	466	3539	1583	466	3539	1583		1317			<u>_1324</u>	-
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Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj alon wohl	0.412	-02 <i>(</i> 1)			19(9)11					<u></u>		23
RIOR Reduction (vph)		U 1965 - 1965	66	U	0	20	0	49	U	0	/ 	0 80.550
Lane Group How (Vorus		19007	8- AB)				C. S. S.	10.55 (1 0.7			<u> </u>	
Turn Type	pm+pt	Ę)m+ov	pm+pt		om+ov	pm+pt			pm+pt		5483 B.M.
Protected Phases	的項目的			338 S	S. Sale			and the second second	hid and the set	<u> स</u> ्ति स्वित्य	S. (* 2)	
Permitted Phases	4		4 • • • • • • •	8	1. K. S. 10. S.	8	ے میں 1998		and a large F	0 Alia		
Effective Croop q (c)	20.0	16.0	20.0	20.0	16.0	20.0		24 0			24 0	
Action of the circle of the ci	20.0	10.0	20.0	20.0	10.0	20.0	and the sea	24.0	8 	140 846	24.0	100 E.T
Clearance Time (s)	Λ ∩		4 0	4 0	4 ∩	4.0	10284	$4 \cap$		and and the second	4 0	
	4.0		<u></u>									
Lanesonsoaptivolimos		0 10		c0 04	~0 10	0.00	<u></u>	~^^ 05			Δ 02	
	290104	0.15				0.00		0.00	7.4-3.47 × 4		0.02 MONG2	
v/c Ratio	0.05	0 70	0.05	0.58	0.70	0.02		83 N			036	
		್ಷಣ್ಣ		C.CO	10.10	0.02	M. Carol	and the second	to a statu	Go 2553	2.9.9.2.C	1
Progression Factor	1 00	1.00	1.00	1.00	1.00	1.00	2	1.00		in against an	1.00	
Inonemenel Delavora	21 (624)	11/11/1				10 (2)-	· ·	1.2 (4.1.2.2.2.2	Manala	
Delav (s)	14.2	24.0	13.7	24.6	24.2	13.4		21.4			14.4	
Levelof Set lees any	2. Cost and an ar	**** * S a*	6 .				1	1. 1. C.			v c	(T) (
Approach Delay (s)		22.6			23.8			21.4			14.4	
Appropries			S 2.8 3	999. 1997 - 199	e e e e e e e e e e e e e e e e e e e	-	•		. A set u	1. 5,50		4.603
Contractor and the first of the second s		r	entrale ter en a	· : :>								
	Pro marine	a an	N. SAYALISK	and is	Walling and		in ann an Star		ANNE DEL	21 m - 34-	1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1	
HCM Volume to Cancel	ty ratio		93.0		and With the	Medi (Glan	Tes al Sist	AND BUR ADDRESS				
	iy ialio	in statistic	0.00	2-6-11		aide and the		tres. A to de			54.62.64	N. S. Star
Intersection Canacity III	ilization		62 7%	28)7	CHEW	el of Se	rvice		R			
Analysis Palanting	onzenon Passas						and the second	199 B	a the cline of	Sec. 1	1	E CANARA
Intersection Capacity UI	lilization	628-31-1	62.7%		CU Lev	el of Se	rvice		B			

	*	-+	~	4	+		~		1	4	+	4
Movements recting from	2		C R C L L			Carlos and				.	ૻૢૼૣ૱ૻ	
Lane Configurations	٢	<u>†</u> †	۴	ሻ	<u>^</u>	۲		4	<u>8.176.19-17 - 1</u>	*¥24 ⁹ 56÷344 ≈ 4€ ² 66, 5.	4	- 1000 (The Col
Ideals and a start as	Self- (eles	an Olche L	State 1	7. k(cic)".	and stores of	~i€\$;;)thins:	L (2)6]81 7	teleler.	-in-(0(6)-#	- Kelaja	se en cir	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	_	4.0			4.0	
Lancaultificious and			SF (0)01	W. States	STABLE COLOR	CP LORD	A. 46. 32				Sek (00).	
	1.00	1.00	0.85	1.00	1.00	0.85	E STATE	0.95			0.98	1. SM 1 . SM 1.
Fitterencenteer contact	4770	2520	4500	4770	2520	4 5 9 3		4707			4 70 4	
Sato. Flow (prot)	1770	3039 2000	1083	1770	3539	1083		1/3/	100 AD	r often See	1791	
Satd Flow (nerm)	624	2520	1583	222 222	3530	1592		1440	1. S.		1400	
	024		1303	200	0000	1000		(440 (440	1.10154	- Stack	1400	ES SAT
Peak-bour factor PHE	n 0 2	0 02	0.92	0 02	0.02	0.02	Δ Q2	0 07	0.02	0.02		0.02
Adi Novi Golder A	9.02 See Sign	SELECTION SECTION			0.02 P-124-19	0.02	0.02	0.52	0.52	0.52	0.52	0.32
RTOR Reduction (voh)	0	0	118	0	0	48	0	23	0	0	6	0
Lands Guden Antown Monar		19(0)SE	Sec. 3. 4	200 20 ASS			and the second second	1 dece	()		a Mino 23	505.40
Turn Type	pm+pt	Į	m+ov	pm+pt		om+ov i	om+pt			om+pt		
Propage Planks		这 .言语"		s in Sta			×. 49.	31 - 1943) A	and a start of the	Street Aler	4 Y 10	ares Car
Permitted Phases	4		4	8		8	2			6		
ADM REPRESENCE ASIA	1. 2016		金属語語	3-41-00		્લ કેવુધો ્		->. 3j2x21.;		13 F.	- Acal	
Effective Green, g (s)	33.0	28.0	34.0	48.0	39.0	43.0		32.0			28.0	
Advancetopulatanio		₹ (II Sib	્યાસ્ક્ર	¥. (0.) E		, (0,448).		્ િંડીઝન	5 6. John Star		(0),	1. C. (24)
Clearance Time (s)		4.0	4.0	4.0		4.0		4.0		2010 - 5 6 4	4.0	
Lant- Entering to and the	<u>, 29</u> 2,		j≥1;(6(c)	39 0 5	564	ંગોરી	t in the second	3674	And the state		456	a state in the second
v/s Ratio Prot	0.02	c0.25	0.01	c0.12	0.23	0.00		c0.04			0.02	Contrast of
V/SINANCE CIMENTS	0.24	0.00			0.62		1. S. S. S.			S	009	and the second
V/C Katio	U.31	U.82	0.11	0.09	U.33	CU.U	1127 See 1913	U.04		1. 1. 1. T. 1. 1.	0.35 888	
Progression Eactor	1 00	1 00	1 00	1 00	1 00	1.00	1987 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 -	1 00	iter water of the	-97 E	1 00	
International			1.00	1.00			150 800		a de la come	W' N BE I	1.00 1.00	
Delay (s)	21.7	35.4	18.5	27.7	20.1	12.7	2 - 404 - 6 - 5 - 5	30.2			26.1	
1 STATISTICS	9.8 C &	inite grande		2 Notes			1				1. 19. 19. 19. 19. 19. 19. 19. 19. 19. 19.	California de la
Approach Delay (s)		31.6			21.2			30.2			26.1	
Amire all martines	in the cost of	- S		an in a sin a s Sin a sin a	ğış ing		Cal at	an a		a far fre soir .	· · · · · C3	1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1
Example of the Sector Sector Sector Sector		en in	Salar.				4					te grandele
	and the second second			n Anne i Feilige an t		at i i i i i i i i i i i i i i i i i i i	- 0.7 ²	<u> </u>		1	8 S	
HCM Volume to Capaci	tv ratio	and the staff	0.74	199 - Jan -			2019 A		200 100	and the second		
America Gysteressal		di sana		5	LINE OF	- Sulling			. a. a. ()	tas and		
Intersection Capacity U	tilization		70.9%		CU Lev	el of Sea	vice		С			
Anelysisteenstituut		A Carles and Sectors	10. Jah		26. (L.)				1. N. S.		戸長校	

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AM Peak HCM Signalized Intersection Capacity Analysis

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				****	Ver POT	520 - 5 8 0				Sa costa	and the second s	
Lane Configurations	۲	竹	۴	ሻ	个个	7		4)	An and a set of the			
Ideal Power on the sec	APPENDER T	F 8015	2 10 0 0 C	S [2[0]]	SZ(Q ^{SI} :	Yeler-		L'internet	- Sinter		(IS(C)	21900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0		4.0			4.0	
Lane will state on she she	潮汕的	NOR			16.96%			1.300		a la constante de la constante La constante de la constante de	e - E MA	
Frt	1.00	1.00	0.85	1.00	1.00	0.85		0.94			0.99	**************************************
FILLERO CENTRE A	4770			4770	2520	4500		4740	4. 59 S. M.		643 U. C. (E) +	a states.
Sato. Flow (prot)	1770	3539	1583	1770	3539	1583		1710		1.45 S 1. 1. 1. 1.	1795	and the second
Setd Elow (perm)	466	2520	4500	466	2520	1502		1202		-23 S. F.	1000	
	400	3039	1000	400	3539	1000	1630	1302	ALC: NA	11 - 12 - 12 - 1	1202	
Volumeter PUE		2.00 N	0.02	0.02	0.02	0.02	18%# 0.02	0.02	0.02	0.02	0.02	0.02
	0.52	0.32	0.52	0.92 1 สเล้ม	0.92	0.52	0.52	0.92	0.92	0.92	0.92	0.92
RTOR Reduction (voh)	0 0	0	73	0	0	23	Û	50	0	0	7	
Laneschouse law approx					1.12.24	्यः स्थितः		in skalings				
Turn Type	om+pt	1	om+ov	pm+pt		om+ov	pm+pt	an San Ing Kang San	A CONTRACTOR	om+ot		
Protected Presessor			(4.36). M	1.								
Permitted Phases	4		4	8		8	2			6		
AddelierVergela Clusse	f en joi en f	ina(c)	. Aster		18.0	֮Q.		21.01.			÷£ (240 (69	
Effective Green, g (s)	20.0	16.0	20.0	20.0	16.0	20.0		24.0			24.0	
Actually give series that	101-26-11	4.405-70	- 3.5.81	રામકો છે. રો	9. 1991	<u>: 16756</u> -		181.4.161			in or you	
<u>Clearance Time (s)</u>	4.0	4.0	4.0	<u>4.0</u>	4.0	4.0		4.0			4.0	
Lane Grp. Sap. (volu), as	1442	a statut	2 4 5 C - S /	S. 12. 3	S	S. Of all St.			A Star Park	and store is	tes in the	
v/s Ratio Prot	0.00	0.20	0.00	c0.04	c0.21	0.00		c0.05			0.03	
VIS Ration construction				C (U).	0.77			0.70				
v/c Ratio	0.05	0.77	0.06	0.64	0.77	0.02		0.76			0.41	
Unitomatical Frances	1 00	4 00	1 00		4.00	1.00	A. Carton San	1 00	- 6- 6 Cr. 6- 6- 6-	*13 - ²	1 02	
Progression Factor	1.00			1.00	1.00	1.00		1.00	at a S		1.02	
Delay (s)	14.4	26.2	13.8	27.3	26.4	13.5		25.2		147127 1993	15.3	
Press Sealer		<u>ر بالم</u> 1997 - الم		2.1.10 2.1.10					1			
Approach Delay (s)		24.4	and the	4.44/>-	26.1		-42- * 3	25.2		1	15.3	
Approved				- 1 - 1 34 m - 1		4				ور میشد. اور با استرکین که دارمو از وار استان	201 P	an an an an
and the second				25 F B					a series		i ay jew	
	23 24		· · · · · · · · · · · · · · · · · · ·	1.2.2.	. A. 16 14 14 14	Brend and stan	an a			1	and the second	
HCM Volume to Canacit	v ratio		ስ 75		والمعارفة والمعرابة	1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1	and Alson the	and the second second	an an air an air an an air an			
Achelicity and a second	5 1010 Sas 10 58	5.4.5 × 34				le të nëstatore	1. 11 1. 200	teriti je	- 5 TAN	Sin Sir		
Intersection Capacity Ut	lization		67.8%		CU Lev	el of Se	rvice	- A 10 - 10 - 10 - 10 - 10 - 10 - 10 - 1	C			664 (A. 1997)
Amalysis Plever and the	3.5. C. S. S. A.		1			2N - 2N	ini na kata			1. A. A.	6	

Case 1 (Year 2007) Background Volumes 5: US 380 & FM 2478

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Mevzanie in the second	. Sat		States -		1	1. S.	Single 1		AN ASING	Sile	े अस्थि ।	- Frit
Lane Configurations	۲	<u>†</u> †	۴	ሻ	**	オ		\$	**************************************	and a state of the state	<u>.</u>	
Carel Astrony (State) and the VE	States a	enter(1.e	1900	States and the second s	B AR RES	- ALTO PAR	- felsie":	S. Stoles	· · · (\$13)	- Kelalar	\$1.9)0ie i	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0		4.0			4.0	
entertologi schediole Station	2 (A) (A)	0.000	1 Section	t Stoke	Transference T	Ring		E BAOL				
Frt	1.00	1.00	0.85	1.00	1.00	0.85		0.95			0.98	
PLIP CONTRACT STATES			195. (0).1	¥:30F955.	Reader (Call Charles	ا (ملخو،		- Contractor	N. 75	101018	S-45
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	a di seconda da second	1737	Alway 1		1792	
	1 26 - S.J		2013)	- 19 - 19 -			. A BERN		Sec. 1			1.10
Satd. Flow (perm)	511	3539	<u>1583</u>	226	3539	1583		<u>1419</u>			<u>1394</u>	
Volume and starting and				N. 8. 9198-14			: (E-16)	5.6		- Offer		12 3
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Agi noveleting (inclusion			400		148 B	<u>. 1986 .</u> 50						20
RTOR Reduction (vpn)	U	U	120	U	U	53	U	24	U	U	0	U Rispersión
		22 1 Tom			San Star	a de casa a com		<u></u>	States - change	atan ar a		ALC: NOT
iurniype	pm+pt			pm+pt	in in the	om+ov	pm+pi	e de la ser	الانيمية بالتين المانين. الانيمية بالتين	om+pt		
Receited Dhooce	A	1 6		0	in the		Y	St. S. Kar		6	1. 1.	
	4		++ 	0	1201.81	0	ک میں جوند		ويدور المتعالم لاربع	U 1990 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 -	18 A. 18	12111111
Effective Green a (s)	35.0	29.0	35.0	40 0	30.0	13 0	14. St. 1997	310	St Binner F		27 ∩	
			60.0									
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0		4.0			4.0	
	15282		1686					- 59 K	24 J. A.		436	Part of C
v/s Ratio Prot	0.02	c0.28	0.01	c0.13	0.25	0.00		c0.05			0.02	
VISIRATOPETOT		A. Carl	10.04	\$1 (0 1 -2(a);	5 P	C. O. A.	Sec. 2	S				
v/c Ratio	0.35	0.87	0.12	0.76	0.58	0.06		0.75			0.40	1986:1 44:144:14
Uther of Second Reverse	1 N. 1997	1. 18	2.176	S. 9 S.	, 19 S			- 2 <u>c</u> iu			***2X7~j	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00		1.00			1.00	
TRUCTOR FOR SUPER SOLAR	-231.241	200 C	····	1.1840	8 N 8	1.		S. ()	2. 19 St. 1		aler of high	
Delay (s)	21.4	37.9	18.0	33.4	20.9	12.8	_	35.6			27.8	
Levelan service states		ទី ខែ ខែ		1997 - 1995 - 1995 - 1995 - 1995 - 1995 - 1995 - 1995 - 1995 - 1995 - 1995 - 1995 - 1995 - 1995 - 1995 - 1995 -	3- KU			<u>.</u>	N THE CARD			
Approach Delay (s)		33.4			23.2			35.6			27.8	
Adamenting		<u>16</u>		e da la constanta da la constan La constanta da la constanta da	gad se la dela T			State State	5		Q	
	je s		1. No.			1.00		and the second			at some some	
	Hallowski.		S. C. Martin		10/10		-	<u></u>	and an and a second	 Alternative constraints Alternative constraints 	میں بر اور اور اور اور اور اور اور اور اور او	
HCM Volume to Capaci	itv ratio	× ×	0.82		1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 -		14 5 6 9 5 9				5 5 ¹ X	
Actuated with the restortion	Calm and		ા ગોવી દ		ANTER OIL		N. S. Sala	- -	25 6 5 2 5 3	and the second	ni vite aver	
Intersection Capacity U	tilization		77.2%		CU Lev	el of Se	rvice		D			
Apalysis Harlos (clig) 2				- Dest Ert. 1	an a			લ્લા હતું કરતાં કરતાં સંકુત ઉત્તર કરવા રે	the second second		<u>i</u> 1.,	

Case 1 (Year 2007) Total Volumes 5: US 380 & FM 2478

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Maximum					R
Lane Configurations 5 AA 7	ካ ቶቶ ፖ	<u>ب</u>		<u>.</u>	100 J
Ideals how was been set is the set of the se	(IN) COULCE SOLUTION	· · · · · · · · · · · · · · · · · · ·	885-210(189-3*)3(0)*j*	1906 3719	do
Total Lost time (s) 4.0 4.0 4	4.0 4.0 4.0) 4.0		4.0	
				Rep0102 Not	2
Frt 1.00 1.00 0.85 1.0	00 1.00 0.85	50.94		0.97	
FIG2 Growthe state of the state state state state				20 C 1 2	
Satd. Flow (prot) 1770 3539 1583 17	70 3539 1583	<u> </u>		1773	
				0.67	
Satd. Flow (perm) 466 3539 1583 40	<u>66 3539 1583</u>	<u> </u>			Aught
Volumestaday and the second second second second		1000 建建石油、油油			75
Peak-hour factor, PHF 0.92 0.92 0.92 0.9	.92 0.92 0.92	2 0.92 0.92	0.92 0.92	0.92 0.	92
Administration					82
RIOR Reduction (vph) U U 73	0 0 40) () 47		14	0
	9 <u>9</u>				щu
lurn lype pm+pt pm+ov pm+	+pt pm+o	v pm+pt	pm+pt	A PARTICIPATION OF AL	* **
Protosted Phoses					
	O REPS AND	D ∠ 8		A MARINA A	
Effective Green σ (s) 20.0 16.0 20.0 20	00 160 200	0 24.0		24.0	
$\Delta = \frac{1}{2} $		24.0	and a stand of the owner		
Clearance Time (s) 40 40 40	4.0 4.0 4.1	0 4.0		4.0	Links.
		Contraction and a second			
V/s Ratio Prot 0.01 0.20 0.00 c0	04 c0 21 0 0	0.00 c0.06	an a	0.05	a an
VISITATION CONTRACTOR OF CONTRAC	are care			CARLES STATE	
v/c Ratio 0.12 0.77 0.06 0.	.64 0.77 0.0	3 0.84		0.78	
United and a second state of the					<u>.</u>
Progression Factor 1.00 1.00 1.00 1.	.00 1.00 1.0	0 1.00)	1.02	101: 57(2 -1 .74
Incremental delay and a second second second	23. 24. 3	્ર ગયા છે. જે મેં મેં મેં મેં મેં મેં મેં મેં મેં મે			
Delay (s) 15.1 26.2 13.8 2	7.3 26.4 13.	6 31.3	}	27.1	
LevelorSeallier and a subscript Commence					
Approach Delay (s) 24.3	25.7	31.3	}	27.1	
Appleton			and the second secon Second second		2 21
The sector of th					
How Press for the Barrier State	Call and st	Cara Cara Cara Cara Cara Cara Cara Cara	See Store See	1.2	5185
HCM Volume to Capacity ratio 0.80		· · · · · · · · · · · · · · · · · · ·	مينية ^و الدري والمراجعة المتراجعة المتراجعة المتراجعة المتراجعة المتراجعة المتراجعة المتراجعة المتراجعة المتراجعة		12 4 6
Active and the second states and the second					
	a set of a set of the	in the second states of the			
Intersection Capacity Utilization 68.2%	ICU Level of S	ie	C		

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Mexima					Sar Dow	-infire-	NEE	the second		TANK TANK		S
Lane Configurations	٢	<u>^</u>	7	ሻ	ተተ	م ر	<u></u>	¢	n an	6 200 ⁶ 1 [°]	4	
deals an impossible as		este (ofer t	seni)-	\$FK=[6]0=	K TORY	· TESIOTOR	tistelet.	S-In(c)G	e fileioles -	s selener -	A STELLE	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0		4.0			4.0	
Langaline Pacific -	ALCONT Y	a ne G			and the second second					1445.	12617	聖聖
Frt	1.00	1.00	0.85	1.00	1.00	0.85		0.96			0.97	
	4770	2520		4770	2520	4.502	の行うではよ	4750	$\mathcal{A}_{i} = \mathcal{A}_{i} = \mathcal{A}_{i}$		4775	
Sata. Flow (prot)	1770	9555	1003	1770	3539	1003		UCTI I COLI		N	CIII	
Satd Flow (nerm)	511	3539	1583	226	3539	1583	and the second	1408			1234	
		Ne le		11010						s 6 783 -	Single State	106 3
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adi How York A	interel-	11.96%	161 S	S.S.C.			- NE22		Alese -	<u> </u>	al aleer	258
RTOR Reduction (vph)	0	0	128	0	0	103	0	20	0	0	10	0
Lane erado riov (vev)	્રેન્ટ તેલિકોર્ટ,		125	\$ Stork	- Service	્રાષ્ટ્ર			(C)=-		2828	0.38
Turn Type	pm+pt		pm+ov	pm+pt		pm+ov	pm+pt			pm+pt		
Platerie			3-9-1 5		1.1000		Jul Cort		1. Same		1. 18. 98.	Y TO
Permitted Phases	4		4	8		8	2			6		
Advancements		<u>- 2950</u> 2	050	19.01		23200				a ford a start of		12000
Effective Green, g (s)	35.0	29.0 29.0	35.U 2000	49.0	39.0 29.0	43.U	Externa Har	31.0			27.0	States
Clearance Time (s)	4 û	4 0	4 0	4 0	4 0	4.0	a sea a la ser a la ser a la sea a la ser a la ser al	4 0			4 ∩	的目的
			2000	 A 6430126		 		170 1561315	14		10020	
v/s Ratio Prot	0.04	c0.28	0.01	c0 13	0.25	0.01	ينا يكور اكتر م مندرية 	c0.06	5.1		0.03	
V/SPaller Permission	A 195185		10.0004	56.8%P			Sec. Sec.			S. 10 - 10 - 1		
v/c Ratio	0.57	0.87	0.12	0.76	0.58	0.11		0.85			0.72	2007- 2149-1
Unternetweet Street		20 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 -		1. 1. U	a jan mar bi		A. S. S. S. S.	1	and the second second		28	22
Progression Factor	1.00	1.00	1,00	1.00	1.00	1.00		1.00			1.00	
Interent Parter Dickery as		7. 7° N. C.	ter and the	S. Care					招募 医常花	Same a	4 3 7 8 9	。 "这个个
Delay (s)	26.5	37.9	18.0	33.4	20.9	13.3		43.6			38.7	
		22.5	2. C. 124			10	- (a	42.6			207	
Approach Delay (s)		33.3	si narwa s		22.3			43.0		4.1	30.7	
		S. Mar. (1997)	an a	Actional Strong 5.	2-11 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		_			1993 - 1995 -		
				Sand Star	-		in the second	· · · · · · · · · · · · · · · · · · ·		ister Sekastinationalister Sekastinationalister		-11 - 5
High in the reader that the		i ester i j	ୁକ ୁର୍ଗା ଧ ୍ୟା:	Maria a	e le genere	Mericine)	ૡૢૢૢૢૢૢૢૢૢૢૢૢૡૺૡૻૡ૱ૻ		2-3 - C	s siv ka s		
HCM Volume to Capac	ity ratio	Mr. Same to Barrow	0.86	¥	17. mm	1 - Asta 1 - Am			the second second			
Actuatizer sydie depoint	(Silving) Hilizotion	1. Sec. 200	79 / 9/		<u>ីកព្រះក្</u> តុ ភូវិវាល័ក្ខភាព		nuice					
mersection Capacity U	unzation		70.470	Sec. Sugar		ei 01 30		State - 6		2 	at a a	
CAREAGE	1 - COM - F				the stand of the strength	1. N. Y	"s" \$ 5.5 st 1					

Case 2 (Year 2009) Background Volumes

5: US 380 & FM 2478

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Maximization Constant States	1.2	ACTING F		alge Rar - 1	LYAL .	1		· 11205				SER
Lane Configurations	ኘ	^	7	۲	^	7	ኘ	<u>*</u> *	7	۲	* *	7
Ideal Flow (Volici)	M 2 6191-3	S PERION	n. S€ (6): j3	leisien	antecá.	1316161	一些的行为	st Selatory	- Cleice	with the felter	APONIS	190 0
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Unideacores Site	71-011 -	(-0)-15 v		131.CT01-	16	St. (c (e).	S. J. Liller	-10)47178	1919. 17	-1.11.16(0)5	ર છે. છે.	1,1200
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Figeroresteel	्दाः (द्वाः)		A BOLL	(9 5 2)-5	દારે દ્વીર	10.05	计话点		The Aleithe	A Datai	0.01:00%	41:00
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	3539	1583	1770	3539	1583
FIERenotted	_395 <u>2</u> 450		COLOR BAL				191 (Sint)	8 . (f) (s)	011		-11 (0) (4	00
Satd. Flow (perm)	438	3539	1583		3539	1583	1270	3539_	_1583	<u>1350</u>	3539	1583
Volumeze ale	08 - 19 4	16518 · ·	法制行业			345		19 22 2	28 38	ં છે.	10	26
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adjantowa (up k) - State (1 - FA 9 &	0 12 1			1945	- 22 P		to Preser	1.200		》·派·梁
RIOR Reduction (vph)	() ()	0	87	0	0	25	0	0	168	0	0 •••••••	20
Lane Group Lane And	2008-94	23790	0.04		<u>1</u> 5 - 2025 -	() + / 4 	14.		2 <u>, j</u> ejek	1.11		6,00
Turn Type	pm+pt		Perm	pm+pt		Perm	pm+pt		Perm	pm+pt		Perm
Projecteo Prinasese	are & Quan	A	ercente				क्तु कर द			See and the second	1.10	
Permitted Phases	4 ********		4	8		8	2		2	6		6
Actuated Green Crist				225.03								ZEAU
Effective Green, g (s)	21.0 1933	17.0 Secons	17.U	25.U	19.0	19.0	21.0	17.U Homene	17.U 17.5	21.0	17.0	17.0
Actuated detration	4.0		4.0	4.0	4.0	4.0	4.0	1.0			MIU COL	
Clearance Time (s)	4.0	4.U	4.0	4.U	4.0	4.0	4.U	4.U	4.U	4.0	4.0	4.0
Lane Groves Phyphies	2423			-0.00		્રગ્રેણન			tige light So			0.3149
V/S Ratio Prot	0.00	U.23	8. 10 A T	CU.UO	C0.23	. نواح و	CU.U3	10.0		U.UZ	0.03	158834
Visit and terms of the		0 20		0.67	0.72	0.02		0.05	0.15	0.22	0.11	
		U.OV	0.00	0.57	0.72	0.02	0.50	0.05	0.10 19	U.ZO	U. (I	
Dimonitrigeravite	1 00	1 00	1.00	1.00	1.00	1.00	1.00	1.00	1 00	0.05	0.07	0.03
Progression racion	1.00 1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00		0.97	0.93
Delay (s)	13.6	26.4	16.1	20.1	22.1	14.2	18.4	15.7	16.8	14.0	15.6	14.5
	ale and a second	20.4 20.4	्रेड छन्नस							3351 (B)		
Approach Delay (s)		24.9	ing ing ing i	nd and in the	21.4			17.4			14 7	
Approventional	· Castor Participation	1. (B)				·	1. v 1. v	an a	he have			
Intersection Sector Plant	and the second second	an Anteria		. Collection and the		<u></u>	<u></u>					Sec. Sec.
HEMAVEREEKEPRIFE		S. Sec.	2. Z . A	1. (A. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1.	IC Ří le	Vellion C	સાં મળા શેરું ન	Section of the section	a sin perio	C Star inter th	A. A. A. A.	and some
HCM Volume to Capaci	ty ratio		0.62									
Actorated Gycle Length	Se) instan		2460 Q		şaa		at the second	a shere has	4 N 8 1 9 1	e y system	and the	
Intersection Capacity U	ilization		57.7%	an an an Indiana an	CU Lev	el of Se	ervice		B	ere details in the	t enter a the second	
Analysis Rendo Inin So		a an inte	2.210					x 5. 55				

Case 2 (Year 2009) Background Volumes 5: US 380 & FM 2478

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Most and the first	**:		(+ cor 19 (e - (all a	17 # 40 Jun			41. (E) E		in er	1 V 44 (B 1 B) 3 5 1 5 1 6
Lane Configurations	ሻ	<u>†</u> †	7	ሻ	<u>^</u>	7	ሻ	<u>†</u> †	7	7	<u>^</u>	7
dealestern (without contraction	dif signal a		S CICISI	(1)(2)(\$[P])	法會領的	s factor)	- :4:10[5].	- Electro	See 16	ૺ૾ૺૡૡૻૺૣ		
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
	a Uni	2.0.45	r at Qi	221 9 63	30.615	T JE QAQUE	- Buller	after ta f	とれ 一項。	t M	301000	1,00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
	Kel 9 e	100	Data Ole E	15 Fe) (91 745	HE SHEET	e de la figure	- (C) (N)	C CIAL	şali(())	(g) (g) =		-9500
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	3539	1583	1770	3539	1583
FIGPER THE	202	0.500	4.502			4502	4005	20100			0.500	4500
Satd. Flow (perm)	528	3539	1583	201	3539	1583	7295	3539	1583	_1266_	3539	1583
V olumetevolution and			S. 32 - 33			0.00	*******			5		20
Peak-nour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Addition (uph)		19095	4 4 7			(이 4월 (28) E E	and the second		404			65
RIOR Reduction (vpn)	U	U	147	U	U	20	U A A A A A A A A A A A A A A A A A A A	U	131	U	U	2.2 58 8 8 8
Late Cooperioway		-TUSOL	<u>Deres</u>	222 O 2/23	(*(*)(e)(e)	12 9 3 Y			Severations) Denem	6 - Carlo U.S.		
	om+pt	Sec. Sec.	Perm	pm+pt	1	Perm	pm+pt	2 () - 2 ()	Perm	pm+pt		Perm
Pretere Plases 7.	A	Sector Sector		A	C. Seater St. C.	0	2		ະ ທີ່ ທີ່	6	486-949-9189-7	6
A Permilled Phases	44 **********	NO SALFACE	4 1.200 163	O Server let	Sec.	0 	<u>ل</u>		<u>_</u>	O National An	2013 (D) 615	080797
Effective Green a (s)	30 N	33.0	33 N	56 0	46.0	46.0	22.0	18 0	18 0	22 ∩	18 0	18.0
Actual active of certi, g (a)		401-2174		00.0	CONDUST	10.0	22.0					0.20
Clearance Time (s)	4 0	4 0	4.0	4 ()	4 0	4.0	4 0	4.0	4.0	4.0	4 በ	4 0
	133462	24298-	S-2580	E 44569	Real	1. 2010			2 - 20 7		in stars	223.77
v/s Ratio Prot	0.02	c0.31		c0.15	0.28	. w.s. 52. a c.e.	c0.02	0.03	1000 - D. 1.	0.01	0.03	
V/SRahoweenau	50432	0.85-272	0.05	4080	trape in all the se	+rr5.5) (DPat	550 (Star	-2.74. A.S.	e (1).	12-201-01-50	1. C . S	0.00
v/c Ratio	0.35	0.84	0.15	0.73	0.55	0.07	0.49	0.16	0.10	0.24	0.13	0.02
Uniterrar apresate off	Are to a lui		୍ୟହାଳ	1.12 65		2	Ast	×2(11)	- Qu. 14	14 736 . (S)	S. (2) (3)	-28.9
Progression 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
Ineratorie, Debyuitet.	S. 5	S. Angel		n iz Seller	ित्त हो 74	S. S.	\$1. 新潮	9 3 P	្លែកលេដ្	1	Salt is	
Delay (s)	18.5	32.9	19.6	31.1	16.1	11.3	33.7	30.2	30.1	28.6	29.9	29.0
served entratery deterior of the	10.5	5 (M) (C) A	N. 80 12				riet - Er		Sec. No.		2	6
Approach Delay (s)		29.6	_		19.2			31.5			29.3	
Agenolatessian			5	a sa bara	e state			gërje jë 🖓	5-4.5 1 1	e de la com		5
The state of the second second second	467 D. A		2. d. 10					1	<i>v</i>			1.1.1.2.3
Hellowerster	r-ik-y	V Hereight		Sall Sale S		end acts	-	News	1.5 140	- t. 1 2 4 5 -	98. M. 2	100
HCM Volume to Capacit	v ratio		0 71	ene pamo				the start in a		1999 - 1999 -	75.00	
Aginal Agina and a subscription	Contraction States		and a second		Shiristan	IN SUCCESSION	16.816 My	1	9- SKSYO	to de tatos	N 12 - S	
Intersection Canacity Ut	ilization	4.2.15	69,9%		CU Lev	el of Se	rvice		C			
Addition of the total (mile)	经济网络		in the second	na il din	Y		- 19 AS		1. S. 1. 1. 1.	i tire de cat		1251 27

Case 2 (Year 2009) Total Volumes 5: US 380 & FM 2478

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	States .			statel.	State of the	15/ 41/4 1			A BUSH	ふる際化さ		- S II
Lane Configurations	۲	<u>^</u>	7	ሻ	<u>^</u>	7	۲	^	۴	٢	* *	7
Ideals Route Contract	diskene (or f		SIGME	HOUR	ZA COUL	Stel F	Section-	42101014	a kelen i t	RY CINOP	- Grenera	00213
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanexelin reactors and	1- 11/0191-	a see se	1914 (0 16)	Rolfins	b	ង)ែរ	in al oler	19421	Mir (eff)	a stater	0109144A	1 00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Financial set of the set of		-12(0)04	- 10)a)-	3-10pel5		្ស	- N	4.4.560.666	in it at the	5 003 Se	- Aleler	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	3539	1583	1770	3539	1583
FURATIONAL	-07442	4×14(0,000)	1311 6(0)4	家的人主	State .	一月接近	S. 19:403-50		. A O	S . W. O.L.	(A-3)-0161+	12.1-010
Satd, Flow (perm)	438	3539	1583	392	3539	<u>1583</u>	<u>1218</u>	3539	1583	1333	3539	1583
Volume (non) the second	1. A.			S MILLE	6. 4. 20	ate	1 25 2	<u>્</u>		୍ ି କାହା	An Alter S	78
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Addenies	625	142.05	3.4.24	如今你消费		. izik.	- Defil	1 516F	17 72 St.	0@j^	~ (B) ~	20 3 6
RTOR Reduction (vph)	0	0	87	0	0	43	0	0	168	0	0	61
LanerGreenstrowerson		A 4982	<u>. 1. 6-1.</u>			220	Same and the second second	<u></u>	<u> 9</u>			14
Turn Type	pm+pt		Perm	pm+pt		Perm	pm+pt		Perm	pm+pt		Perm
Protected Presses.		1. 小小小	544	Sec. 3	1725 J		5	1		1. A. 1.	2 - C	
Permitted Phases	4	· · · · · · · · · · · · · · · · · · ·	4	8		8	2		2	6		6
Activate of one of the second second		2 . <u>1</u> 64 . Vi	34 <u>16 0</u> 2	101. AND 10		(a)))(a)			192201			
Effective Green, g (s)	21.0	17.0	17.0	25.0	19.0	19.0	21.0	17.0	17.0	21.0	17.0	17.0
Actuatedio/Gittatio				- U 42							6.40	A HAO
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane: Groscap/Copus	66646		 449	A SUL		57815	ALC: NO.	1006	(* 977-1 ⁴ 19),	2 K 95	AN DIO SE	23449
v/s Ratio Prot	0.01	0.23		c0.06	c0.23		c0.03	0.02		0.03	0.04	
v/sikatoreeno	1.00					0.461					7.3.23	<u>0002</u>
v/c Ratio	0.12	0.80	80.0	0.57	0.72	0.04	0.51	0.06	0.15	0.41	0.15	0.05
Unitermouleiavent	4.00					4.00			4 00			200
Progression Factor	1.00	00. (1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.01	1.01	1.03
	14.2		10.1	20.1	S 10 1	14.2	10.0	45.0	16.9	47.0	16.6	
Delay (S)	14.0	∠0.4 80000758	10.1	20.1 Sec. 1	22.1 	14.3	10.0	0,CI	10.0	17.U	0.01	10.4
Approach Doloy (a)	2. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1.	24 Z	150 - C 24		21.2	<u>+</u> ;	<u>. 15</u>	176		B	16.9	
	a e i i i i i i i i	ረግ (መንመድርሻ	See Sugar	· Nothanias	21.0 8		ور مورد م	17.0	Sec. Carl		0.0) E	1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1
And the second		1. A.					-	i da se	<u>de le sé</u>	<u>(1) 111</u>		1. 1997 (P. 17)
E Stasient Merch St.	, Anna an a		Sala Sanda matri		dente and			· · · ·	ا در ماند. در ماندهای کرد		h Na shi mataa	5.35
HE With a view star of fein what fe	14657	i die i	R 2st Q	by Atalia A	ŧCiùl ∙.	્ય એ છે. ર	85 (N.F.		ીને તેને	12.00	1. A 3. 4	
HCM Volume to Capaci	ty ratio		0.63									
Actes to Contract of A		and the second second	(ULU)	· Series	જીવું તે છે.	1937 BC		19 - 19 - 19				Antonia
Intersection Capacity Ut	ilization		58.4%		ICU Lev	el of Se	ervice		B			
Analysis Redold Gullis	Sec. 5 Bis		12 14 JO	10 A.	Улг.	1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1	р ^р 71. / 22.3	1. 1. 1.	al	Sec. 10	to the last	CALCULAT .

	٠	-	\mathbf{r}	4	4	*	•	1	1	1	¥	4
Maxemeters	ិ៍ ខ្លាំងទី ២។ ទីស្លឹងនៅរៀប ត្រូ		(1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	121	\$\$ 19			() জিলা হৈছি		Quint		18 18
Lane Configurations	ሻ	**	7		* *	7	<u> </u>	<u>**</u>	7	Andreas Andreas Andreas Andreas A Andreas Andreas	**	<u> </u>
Ideals low volately visit	SIG002			199002	FEIDIO	ALLON	5F2(4)(0);-	KANON .	i Statojor'		(inc)elaise	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
新的 和目的目标的问题。	例如	r (). (c)	ૢૼૡૼૡૢ૱૱ૣ				ાં શેદ				eres?	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
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Permitted Phases	4	an sait sa ta s	<u>4</u>	8		8	2		2	6		6
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Effective Green, q (s)	43.0	33.0	33.0	56.0	42.0	42.0	22.0	18.0	18.0	22.0	18.0	18.0
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Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
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v/c Ratio	0.48	0.84	0.15	0.73	0.60	0.13	0.50	0.23	0.10	0.41	0.17	0.04
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Progression 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
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FM 1461 / FM 2478 (Custer Road)

Existing (2005) volumes

Case 1 (Year 2007) background volumes Case 1 (Year 2007) total volumes

Case 2 (Year 2009) background volumes Case 2 (Year 2009) total volumes

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Existing (Year 2005) Volumes

PM Peak HCM Unsignalized Intersection Capacity Analysis

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Case 1 (Year 2007) Background Volumes 1: FM 1461 & FM 2478

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Effective Green, g (s)	27.0	27.0		27.0	27.0		25.0	25.0		25.0	25.0	
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Case 1 (Year 2007) Background Volumes

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Ideal Flow (volus) 4.0 </td <td>Lane Configurations</td> <td></td> <td>4</td> <td></td> <td>ሻ</td> <td>ĥ</td> <td></td> <td>ሻ</td> <td>4î</td> <td></td> <td>۲</td> <td>1</td> <td></td>	Lane Configurations		4		ሻ	ĥ		ሻ	4 î		۲	1	
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Lane Wild Felow 100	Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
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Satd Flow (prot) 1770 1737 1770 1811 1770 1709 1770 1673	FIG Protentedka units	×0195×	*****(0 <u>0</u>).	21 7	570 9 57	\$ - ₂₁ :n8]8)		ି ପ୍ରଥନ୍ତି	at dis .		01907	1.004	
	Satd. Flow (prot)	1770	1737		1770	1811		1770	1709	in the state of the state	1770	1673	
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Volumer volume 79	Volumenvolu		S SNOOL	9849	2	S. 2. 591		Bei sp			i Kor		<u>9792</u> 9
Peak-hour tactor, PHF 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92	Peak-hour tactor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
	Adminione (voltage)		2000			କୁମ୍ବର୍ତ୍ତର			10			10	
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				and the second		1. B		Fenn	் இ		reini Maria da	1. 33 M	a same and
Permitted Phases 4 8 2 6	Permitted Phases	Δ	1998 (A.S.)	రితి ఉన్న కొర్టి	8			2		H	6		
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Effective Green q (s) 27.0 27.0 27.0 27.0 25.0 25.0 25.0 25.0	Effective Green a (s)	27.0	27.0		27.0	27.0		25.0	25.0		25.0	25.0	
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Delay (s) 9.8 9.9 9.4 9.7 12.0 10.6 10.4 10.5	Delay (s)	9.8	9.9		9.4	9.7		12.0	10.6		10.4	10.5	
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HCM Volume to Capacity ratio 0.16	HCM Volume to Capaci	ty ratio		0.16									
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Intersection Capacity Utilization 28.6% ICU Level of Service A	Intersection Capacity U	tilization		28.6%		ICU Leve	el of Se	rvice		A			
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Lane Configurations	٢	1 2		ሻ	ĥ		٢	ţ,		ሻ	4	
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Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
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Frt	1.00	0.92	ne staarderst	1.00	0.97		1.00	0.91		1.00	0.90	*****
FILPHOLEIAGU	4 7 7 6			619					1.200			
Satd. Flow (prot)	1770	1/18	and the second state	1770	1804		1770	1591		1//0	16/6 2005	
	1005	4740		4407	4004	1. G.S. 4	1210	4004		4.970	1676	
Said. Flow (perm)	1290	1710	1	1127	1004		1319	1091		13/9	10/0	
Volume role/ a star	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02		40
Peak-nour factor, Phr	U.92	U.92	U.92	0.92	0.92	0.92	0.92	U.92	0.92	0.92	0.92	0.92
RTOR Reduction (vph)	\wedge	63	0	0 0	11	C, 249	0	<u>с</u> ,	0	\cap	29	n N
						Chaol fails	Sever.					EXC IN
	Perm		66212 1022	Perm	S	and the second	Perm	William Street Works, or other		Perm		<u></u>
Philippe					1			- 19 I			()	
Permitted Phases	4			8			2			6	· ····································	Signal (
Aduated States Site		500 8 27	1	: : : : : : : : : : : : : : : : : : : :			i zateli i	10:00	19. 20. 65	- Alexandra	. Hanog	A MAR SIG
Effective Green, q (s)	27.0	27.0		27.0	27.0		25.0	25.0		25.0	25.0	
Adresses the PENET	10 25	i de si	Sector Print	A. 1.50	C. Artekas	مېر بې د مېر د	0 7 al 9. 6	-{1-j2}-;-		11 11 12 1	C (0, 1, 9, 1)	12-31-5
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane car Car Molai "				- Soler-S	S 18 1.70		្រីស្រី	1327.15		STATI-	1316	1000
v/s Ratio Prot		c0.09			0.05			0.01			0.03	
V/S RECIG REPARTS IN A	STONOV2			- eno2	all to be	يسي فأرب الم	169-015	5 - 19 9	arm- 185	0.10	\$ 8. S. G	
v/c Ratio	0.04	0.21		0.05	0.10		0.12	0.02		0,04	0.07	
Umanon的解除。這些主义		\$3-79) (fr	400-1. 6. 913 - 65	1.41.5.03	S KOLS		1. U. C.			8×10,4**	h di ka	
Progression Factor	1.00	1.00		1.00	1.00		1.06	1.04		1.00	1.00	
Internation tentinglar terror	2.29			10 . T. O. E.	2 2 3 8 3 5	a de la deserva de la deserv La deserva de la deserva de		40.0	N. 6. 1			
Delay (S)	9.4	10.0	No March	9.0 Free tra	9.8		11.8	10.8		U.S	10.7	
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	s:	10.5			.। জন্ম	and an st	enter a de Car	11.0 Main Sta			10,0	
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		ر میں دیکھی چین میں میں میں	ر با ماند. و با ماند م	لأبراهم والمرادر	 	<u></u>	. <u></u>	kana <u>ana a</u> ng	n Cara a <u>Cara an</u>	ور الالتي <u>والمانية مشكور</u>		Sa Frida 1. mil . Ma
HEMEWREECEDMAN		1.6	ويتوفى المرد	April 1998	ર્શ સાથક છે.	upi ci al	hannie, s	ne va		5 - Y.	The second	
HCM Volume to Capaci	ty ratio		0.17									
ACUMENTAN				Carl and the second	SUITE OF		「「「「「	Marsi Can				
Intersection Capacity U	ilization		35.1%		CU Leve	el of Ser	VICE		A		111 North 212	
Anely as reddentalige	are to the set		17 S	e de la cis	Sec. 2. 2	1. S. S. S.	The AV.	9 1 TO 40	A STATE			

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Lane Configurations	۲	1+		ሻ	ĥ		٢	4	and address and the same of	۲	÷1	
dealph owner and the	(e)))*	Pristelator	19008	×1900	Sec. 16101	- P- (0) e	S dates	R Taiarais J	Vietefet.	Stelelop-	A190014	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	a landara ta za
Lane Automación	ELOD.		1997 - 1997 - 1998 -				(ile.)	10,000	Ser Ora	ST CIEP.	024003	SM.
	1.00	0.93		1.00	0.97		1.00	0.92		1.00	0.91	1988 -1
FDEforements	1770	4705		1770	1902		1770	1746		1770	1004	
Salu. Flow (prot)		001 	and the states		1003		1770	1/10	a contraction of the		1094	
Sate Flow (perm)	1298	1735		1241	1803		1346	1716		1336	1604	
Voltana (penn)		5.00		040282	1000	19	1040	\$ 2) 2	1.00			1 100
Peak-hour factor PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	n 92	0.92
Adia Flat Adia	656			21051	S SECTOR			0.02 00		Seven S		FS1 32
RTOR Reduction (vph)	0	36	0	0	11	0	0	19	0	0	19	0
Lane Group How Wood	5.	37: 1910 a.	S. S. Salar	1.5	Sec. Sec.		14 34	1. Star 1.	martin		5644	6.1.20
Turn Type	Perm			Perm			Perm			Perm		
PIONERICARPARES	The second				÷.			·				
Permitted Phases	4			8			2			6		
Addened Green Giesk	17.21981	The states	3. 7 3	1	(1997年)		三气的)-	2. 2475 101-		5- 6 at . 8 81	S-2(5)(9)	
Effective Green, g (s)	27.0	27.0		27.0	27.0		25.0	25.0		25.0	25.0	
Actualed and have	v (04450)			1000		Contrast.	0.9223			330 <i>- 2</i> 2-	R 042	
Ciearance Lime (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lancierosaptivito	Port -			ે સંગોગ(લે કે			ଅଟ୍ୟୁ:			9 9 P. 1		
V/S Ratio Prot		CU.U5			0.05		2. 10 G 12. 1	0.02		1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1	0.02	
V/S Faue Police		0 14	is the first the second	0.04	0.10	94 294.92	0.22	0 06		0.04	D 05	
	0.05	0.14	1815 24	0.04		and the second	0.22	0.00			0.05	
Progression Factor	1 00	1 00		1 00	1 00	gafra, Joan	1.00	1.00		1 00	1 00	
norementar del del del	185.55	Kelen a			e see	24	- 10K9 He	<u>.</u>	140	<u>()</u>		
Delay (s)	9.8	10.0		9.4	9.8		12.1	10.6		10.5	10.5	
Levelson and a				The second		· •	70 st	5	the second second	57 32		
Approach Delay (s)		10.0			9.7			11.6			10.5	
Appresention		••••••••••••••••••••••••••••••••••••••			$= \int_{F}^{\infty} \int_$				15 - C			
Marker Barline States and			م من الحولي ال	S. S.		··· _ =						
Helimateredesitest	SIE STOR	Se 11 - 1	e a	a ang ang ang ang ang ang ang ang ang an	IN LA				12.00	Ser Press		
HCM Volume to Capacit	v ratio		0.17	at water and the		29.4				atra di di m		
A GINIFICE STORE VERTICITY	Ser Ser St	Second to	60.0	den a naret	Datempil	aley Mont	. Anto, Se		Sec. 64	1. 141.9	L	
Intersection Capacity Uti	lization		33.6%	1	CU Lev	el of Se	rvice		A		~~~~	1995 - 1997 - 19 97
Analysis a lot failur t	1.642	5 . 5 . 6	14	E Malling)	Sec. 1		يۇر مەربىيە مەربىيە	1.1		$\#S^{*}$	3 C 15	

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Lane Configurations	ኘ	<u>†</u> †	7	ኝ	^	7	ሻ	<u>^</u>	7	7	<u>*</u> *	7
Ideally was wanted by Y		51900	A COON	1900	Selejer'	Stelet .	Figure .		Separate	់ដំខែ(ខ(ទី))	18 9(6)(6)	61900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Laneden	S ALCIO				State State		21401915		e siblerer	<u>ि हो</u> (0)तेष	80 Q 5 Q	1,100
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
FIRSDeerses	(O S) 552	101,00	100	0595	i liter		SOLS IN	\$1. h0(0)).	પ્રયોધીને .	16.846	SALE JUL	. 1 00
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	3539	1583	1770	3539	1583
	4004		45.00	4000	COLOR DE COLOR	4500	4077		1500	00/31	25120004	
Sato. Flow (perm)	1321	3539	1583	1266	3539	1583	13/7	3539	1583	1405	3539	1583
Volume reader DUF				0.00	0.00							
Peak-nour ractor, PHF	0.9Z	U.92 2000	0.92	0.92 828768	0.92	0.92	U.92	U.9Z	U.92	0.92	0.9Z	
PTOP Peduction (vph)			99		یاند در ا	5 . 5 . 1 1			12		0	20
	5 99 N				ত শিল্পান্থ নিশান্দ					5. 98.50	0 1-2006	39
Turn Type	om+nt		Derm	nm+nt	a dia anna anna anna anna anna anna anna	Porm	om+ot	<u></u>	Parm	nm+nt		Perm
Prancipal Harses	Citie Dia	A. Section	1 CHU				pin pr	N		Pini pi Rosi Ka	Sec. Sec.	
Permitted Phases	4		4	8		8	2		2	6		6
Actuales and comp		- A 0/			17.700		22.08		. Weder	17 2 EV	S-104 at	170
Effective Green, g (s)	22.0	17.0	17.0	22.0	17.0	17.0	22.0	17.0	17.0	22.0	17.0	17 0
Actuacial C. Relie		SEC 285	10-28-	() () ()	-1218) A.	10,445	18 8 16 16	J. 2481	102	Q. St.	\$10.288	0128
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Char Carping of Co	5.2	A LAICK	- ANON	23.50(c)	A FEIGHT		States	an laiters	A State	Sorto.	Kejejst	2,449
v/s Ratio Prot	0.00	c0.03		c0.00	0.02		c0.01	0.00		0.00	0.01	
V/SERVICE PARE SPACE	5. 6 (116		20-01Z	16Fe)%	25 2 3	iensia-	s. 75 (0)/		- 0000			2001
v/c Ratio	0.05	0.11	0.08	0.06	0.07	0.01	0.12	0.00	0.01	0.05	0.03	0.03
United that of the state	્ જેવ્ય 🖓	N 554.91	2 15 COM	+3251A			·治理:是:63		્રાહ્ય 🤤	. Alter	U. 80.04	6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.37	1.26	1.73	1.00	1.00	1.00
ngren er te skar førs					and their	يوية موالي مير. مريد الموالي مير.				23-0172 4 0172		
Delay (s)	12.4	10.Z	10.1	1Z.4	15.9	15.5	17.5	19.4	20.7 20.7	LZ.4	0.C1 C25000).C। जन्मक
Approach Dolay (s)		15.8	TERM EA		14.0		4	10.6			1/0	D STATE
Approach Delay (S)		10.0			14.J		55 - A - S -	15.0	at e de s		14.5	
		and the provided in								SSAL (SAL		
necessia. Summary	1994. 		1.2	Sec. 3.	6.75 <u>1</u> (1.27)	<u></u> .						
How	2(EFV)		1.012			ieloi S	(He fills)	20 F.S	e Stanlar	Ser Cart	tit the si	and the
HCM Volume to Capac	ity ratio		0.11	ويتعارف المتراجع التقار								and the second second second
Agenty Agentering			C 00.01	1. S.	State 199	OSCIENT.		an internet				
Intersection Capacity U	Itilization	a contra contra da c	24.7%		ICU Lev	el of Se	rvice		A			en seren in .
Analysis renoted in 5	C. Starter		a starter and	1 Sugar Sec.	1. S	Service C	5.6. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1.	A. 12	for als participation	6 A CA		

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Monestantestantesta	្រុះខ្លាំង			ុកខ្សែទ	Aletter		18.81		NA REAL	356 6	Statt 2	
Lane Configurations	ሻ	* *	۴	ሻ	<u></u>	7	٢	朴朴	7	ሻ	* *	<u>******</u>
Idea Manay / Contains to an		112.016.0	3. LE (0. 10) -	511616161			i dette	Section-		42. (a) a (a)	45(CIO)025	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lancebult makelon 2	2 N 56 074		a sief		- August	S. S. LAN	,	15	S.C. ale	42 - 64 (C)	10796	00.111
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
FILE FOLCE	101.912		· 1 9[6]	1.68		2. j.		1.00	5.eQ	ian bila she	20.05	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3539	_1583	1770	3539	1583	1770	3539	1583
Fill Participation of the second		a de Ciola					- 皮(油)	(00) (00)	Section.		J. Olt	1.00
Satd. Flow (perm)	1317	3539	1583	<u>1318</u>	3539	1583	1320	3539	1583	1373	3539	1583
Volumers pay	CT11 200				- 5 1			A. A.				32
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adjalation and a start						24		29				35
RIOR Reduction (vph)	0	()	43	0	U Second	12	0	U	23	0	0	24
Lenenaroup From Typpi		- (Z-)			ta in		<u> </u>				ji Diβ	
Turn Type	pm+pt		Perm	pm+pt	and a constant	Perm	pm+pt	and the second	Perm	pm+pt		Perm
Protected Phases	A 199		4	0		0	2			6		
Permilieo Phases	4 1935-1956		4	O Destanting	1 -4 5 - 4 1	0	2	. Artakini.		O A A A A A A A A A A A A A A A A A A A		D
Effective Green a (c)	20.0	16 D	16.0	20.0	16.0	16.0	25.0	20.0	20.0	23 0	10.0	10.0
	20.0	10.0				70.0 71 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	20.0	20.0		20.0	13.0	
Clearance Time (s)	4 0	4 ∩	4 ∩	4 0	4 0	4 በ	4 0	4 0	40	4 0	4 0	4 ∩
	N ZEO 3		492	E MARKER		0.00	4.0	1.0	1.598			504
v/s Ratio Prot	c0 01	<u>0 02</u>		0.00	0.02		c0.02	0.01		0 00	0.00	
VISEREILGEREIM	Stantes		s er okt	0.5.(976)21		្ទុំស្ថាល់ព្រំ			÷ Si GA	S COM		CEO 1
v/c Ratio	0.13	0.08	0.04	0.06	0.08	0.01	0.21	0.02	0.02	0.03	0.02	0.02
United - noteled . St. C		1. 10 B				195.94	1			14.0	Se 145 16	
Progression 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
International and Breinsteineras	<u>ি</u>	S- 21 (*) 201	Ter 18)52	A 10.7	1		, és	the angle		ે ુત્વા 🤤	- 1 C	. () 2
Delay (s)	14.4	16.6	16.5	13.8	16.6	16.2	11.8	13.5	13.5	11.6	14.1	14.2
Levelor Stephens and			- B	- 63 - B	S, K	10 10	(a)	. ∼r ģ			<u> 문</u> 화학	B
Approach Delay (s)		15.9			15.9			12.4		_	13.6	
Appro- On U+ A	n seletek di. Terretak seletek		eter word in		· · ·				ين مي المي المي المي المي المي المي المي ا			(Alternation
Internations Storman	Altaine		بشر در ۱۰	र हे कि दिन	1 - Q. 1				10		युरे तथप्र	
HOMMAN	11	8485 Bec	ewrychisch	a second second		W2 10 5	in the second				1822	
HCM Volume to Capac	citv ratio		0.16									
Actualed Overentered		- 19 an	1000	6. K) & F215	STEPP DA	istain the	છું દેવની જ	a la sa sa		S. Onto	Alto ha and	- Standard
Intersection Capacity L	Jtilization		29.5%		ICU Lev	el of Se	ervice		A			NUMBER OF STREET
Analysis Period and the	16.28	ales des	A	an a		1 S.X.				S. Marte	Sta Stille	- 1 1-121.5

Mission H P P </th <th></th> <th>≯</th> <th>></th> <th>\mathbf{i}</th> <th>4</th> <th>-</th> <th>♦</th> <th>•</th> <th>1</th> <th>1</th> <th>- \</th> <th>Ļ</th> <th>~</th>		≯	>	\mathbf{i}	4	-	♦	•	1	1	- \	Ļ	~
Lane Configurations H	Molente		ាត្តទទ័ព		- William) Transferration			4 - NU (្រុះខ្លុំដំរាំ្	SBR
Ideal From the set of the second s	Lane Configurations	۲	<u>^</u>	۲	۲	<u> </u>	f	٢	<u>^</u>	۲	ሻ	^	7
Total Lost time (s) 4.0<	de la compare de la	STRE (of the	S((9))	14 63 (O)67	CH CIDIES	se neito an	·**********	្រុះប្រៀវព្រំទ្រួ	Caperology	THE COLOR	(vi)(2)()(0),	elfite(uls);	31900
12504 100 100 100 0.85 1.00 0.85 1.00 1.00 0.85 1.00 1.00 0.85 1.00 1.00 0.85 1.00 1.00 0.85 1.00 1.00 0.85 1.00 1.00 0.85 1.00 0.85 1.00 0.85 1.00 0.85 1.00 0.85 1.00 0.85 1.00 0.85 1.00 0.85 1.00 0.85 1.00 0.85 1.00 0.85 1.00 0.85 1.00 0.85 1.00 0.85 1.00 0.85 1.00 0.85 1.00 0.85 1.00 0.85 1.00 1.00 0.85 1.00 0.85 1.00 1.00 0.85 1.00 1.00 0.85 1.00 1.00 0.85 1.00 <	Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Frt 1.00 1.00 0.85 1.00 1.00 0.85 1.00 1.00 0.85 1.00 1.00 0.85 1.00 1.00 0.85 1.00 1.00 0.85 1.00 1.00 0.85 1.00 1.00 0.85 1.00 1.00 0.85 1.00 1.00 0.85 1.00 1.00 0.85 1.00 1.00 0.85 1.00 1.00 0.85 1.00 1.00 1.00 0.85 1.00 1.00 0.85 1.00 1.00 1.00 0.85 1.00 <th1.00< th=""> 1.00 1.00 <</th1.00<>		્ર જે શકાર	19.5	Sh cle	新劇	ું દુઈ છે. જે	46	ું પૂર્વ	ALL BA	Selfler	÷ − L Qi si		1,00
Fig2edia Fig3e	Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Satd. Flow (prot) 1770 3539 1583 1770 3539 1583 1770 3539 1583 1770 3539 1583 1770 3539 1583 1770 3539 1583 1770 3539 1583 1770 3539 1583 1377 3539 1583 1397 3539 1583 1397 3539 1583 1377 3539 1583 1397 3539 1583 1397 3539 1583 1397 3539 1583 1397 3539 1583 1397 3539 1583 1397 3539 1583 1397 3539 1583 1397 3539 1583 1397 3539 1583 1397 3539 1583 1397 3539 1583 1397 3539 1583 1397 3539 1583 1397 3539 1583 1397 3539 1583 1397 3539 1583 1397 3539 1583 1397 3539 1583 149 149 149 149 149 149 149 149 149 149	FILE Construction of the second	39)S)S	S. O.S.			TA ROLEN		5.15	1000	Family C(U)	Contraction of the	() - i - 2 (1)() -	004100
Flicketonics Over 11:00 100 520 100 120 100 120 100 120 <th120< th=""> 120 120<!--</td--><td>Satd. Flow (prot)</td><td>1770</td><td>3539</td><td>1583</td><td>1770</td><td>3539</td><td>1583</td><td>1770</td><td>3539</td><td>1583</td><td>1770</td><td>3539</td><td>1583</td></th120<>	Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	3539	1583	1770	3539	1583
Satc How (perm) 1306 3539 1583 1263 3539 1583 1376 3539 1583 1397 3539 1583 Velence Velence<	FIRED MARKED AND AND AND AND AND AND AND AND AND AN	Part of the second			P1:57 007	r Ji Eli-r				Salet	1 ang Palanta	5 : 54010-	55500
Victor Victor<	Satd. Flow (perm)	<u>1306</u>	3539	1583	1263	_3539_	1583	<u>1376</u>	3539		1397	3539	1583
Peak-hour factor, PHF 0.92 <t< td=""><td>Volume 2000 no. 6.9 2.5 2</td><td></td><td><u>45,40</u>8,</td><td></td><td></td><td></td><td>Sec. 243).</td><td></td><td></td><td></td><td>1. 1.</td><td></td><td></td></t<>	Volume 2000 no. 6.9 2.5 2		<u>45,40</u> 8,				Sec. 243).				1. 1.		
Addition Value	Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
RTOR Reduction (vpn) 0 0 90 0 0 16 0 0 13 0 0 39 Lane car rescue pm+pt Perm pm+pt	Adjustance and a start and a			20									20155
Lane - Goar Bay optimized Perm pm+pt	RIOR Reduction (vph)	U	U	90	U	U	16	U	U Niceration	13	U	U	39
Turn Type pm+pt Perm Permitted Phases 4 4 8 8 2 2 6 6 Adjustic 200 17.0 17.0 22.0	LSINE STORES TRANSPORT			634.50	<u>1009</u> 4-5-1	16 . 18		<u></u>				<u> 31 5</u>	CENTER O
Protect coases 4 4 8 8 2 2 6 6 Adman and A 200 17.0	ium iype	pm+pt	5	Perm	pm+pt		Perm	pm+pt		Perm	pm+pt		Perm
Permitted Phases 4 4 4 6 6 2 2 6 6 Action Construction 200 1/40 <	Protected Phases	4	ara dizi			all sintly?	- -		19 - 17 4 2	2010-00 1	6	S.C.S.	
Active Green, g (s) 22.0 17.0 17.0 <th1< td=""><td>Pennilleu Phases</td><td>4</td><td></td><td>4 19</td><td>0</td><td>S. The second</td><td>Q National Section</td><td><u>ک</u> (۲۸۹۲ د ۲۸۹۶ (۲۸۹۶)</td><td>1 4 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1</td><td>2 North Farley</td><td></td><td>8. APR -</td><td>O A BARA</td></th1<>	Pennilleu Phases	4		4 19	0	S. The second	Q National Section	<u>ک</u> (۲۸۹۲ د ۲۸۹۶ (۲۸۹۶)	1 4 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	2 North Farley		8. APR -	O A BARA
Activate or Ratio 4.0 <td>Effective Green d (a)</td> <td>22.0</td> <td>17 ∩</td> <td>17 ∩</td> <td>22 O</td> <td>17 N</td> <td>17.0</td> <td>22.0</td> <td>17 0</td> <td>17 N</td> <td>22 0</td> <td>17 0</td> <td>17.0</td>	Effective Green d (a)	22.0	17 ∩	17 ∩	22 O	17 N	17.0	22.0	17 0	17 N	22 0	17 0	17.0
Clearance Time (s) 4.0 </td <td>Actuation of Paral</td> <td>22.0</td> <td>17.0</td> <td></td> <td>22.0</td> <td></td> <td>17.0</td> <td>22.U</td> <td>17.0 Mil 201</td> <td></td> <td>22.U</td> <td>17.0</td> <td></td>	Actuation of Paral	22.0	17.0		22.0		17.0	22.U	17.0 Mil 201		22.U	17.0	
Clearance mile (s) 4.0 </td <td>Cloarance Time (s)</td> <td>10</td> <td>4 N</td> <td>Δ ∩</td> <td>4 ∩</td> <td>4 0</td> <td>4 0</td> <td>4 ∩</td> <td>4.0</td> <td>4 0</td> <td>4 ∩</td> <td><u> </u></td> <td>10</td>	Cloarance Time (s)	10	4 N	Δ ∩	4 ∩	4 0	4 0	4 ∩	4.0	4 0	4 ∩	<u> </u>	10
v/s Ratio Prot 0.00 c0.03 c0.00 0.02 c0.01 0.00 0.00 0.01 v/s Ratio Prot 0.01 0.02 c0.01 0.00 0.00 0.01 0.00 0.01 v/s Ratio 0.05 0.12 0.08 0.06 0.08 0.01 0.01 0.05 0.03 0.03 v/c Ratio 0.05 0.12 0.08 0.06 0.08 0.01 0.14 0.01 0.01 0.05 0.03 0.03 V/c Ratio 0.05 0.12 0.08 0.06 0.08 0.01 0.14 0.01 0.01 0.05 0.03 0.03 V/c Ratio 0.05 0.12 0.08 0.06 0.08 0.01 0.14 0.01 0.01 0.05 0.03 0.03 Progression Factor 1.00 1.00 1.00 1.00 1.00 1.21 1.15 1.49 1.00 1.00 1.00 Interaction of the state of t		4.0		 				-,0				0. -	0.1-
v/s Ratio Frot 0.00 (0.03) 0.00 (0.02) 0.02 (0.02) 0.00 (0.01) 0.00 (0.01) 0.00 (0.01) v/s Ratio 0.05 (0.12) 0.02 (0.02) 0.02 (0.02) 0.04 (0.01) 0.01 (0.01) 0.01 (0.01) v/c Ratio 0.05 (0.12) 0.08 (0.06) 0.08 (0.01) 0.14 (0.01) 0.01 (0.05) 0.03 (0.03) V/c Ratio 0.05 (0.12) 0.08 (0.06) 0.08 (0.01) 0.14 (0.01) 0.01 (0.05) 0.03 (0.03) Progression Factor 1.00 (1.00) 1.00 (1.00) 1.00 (1.00) 1.01 (1.01) 1.01 (1.00) 1.00 (1.01) Internetion 0.01 (0.01) 0.02 (0.02) 0.02 (0.02) 0.02 (0.01) 0.01 (0.01) 0.05 (0.03) 0.03 (0.03) Internetion 0.01 (0.01) 0.00 (1.00) 1.00 (1.00) 1.00 (1.01) 0.01 (0.01) 0.01 (0.01) 0.01 (0.01) Internetion 0.02 (0.01) 0.02 (0.01) 0.02 (0.01) 0.02 (0.01) 0.01 (0.01) 0.01 (0.01) 0.01 (0.01) 0.01 (0.01) 0.01 (0.01) 0.01 (0.01) 0.01 (0.01) 0.01 (0.01) 0.01 (0.01) 0.01 (0.01) 0.01 (0.01) 0.01 (0.01) 0.01 (0.01) 0.01 (0.01) <td>Land Prot</td> <td>0.00</td> <td><u>~0 03</u></td> <td></td> <td></td> <td>0.02</td> <td>1.44</td> <td>c0 01</td> <td></td> <td>de se pas</td> <td>0.00</td> <td>0.01</td> <td></td>	Land Prot	0.00	<u>~0 03</u>			0.02	1.44	c0 01		de se pas	0.00	0.01	
v/c Ratio 0.05 0.12 0.08 0.06 0.08 0.01 0.14 0.01 0.01 0.05 0.03 0.03 United 4.04 1.05 1.05 1.05 1.02 1.02 1.02 1.02 1.03 1.03 1.03 1.03 1.03 1.03 1.03 1.03 1.03 1.03 1.00 1.00 1.00 1.01 1.01 1.00 1.00 1.00 1.00 1.00 1.01 1.01 1.00 1.00 1.00 1.00 1.01 1.00				620.00		0.02	and the	00.01	0.00				101
United 1.00	v/c Ratio	0.05	0 12	0.08	0.06	0.08	0.01	0 14	0.01	0.01	0.05	0.03	0.03
Progression Factor 1.00 <td>1 The Proto Providence and the Protocol</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>100</td> <td>1 310</td> <td>1999 C</td> <td>No. 10</td> <td></td>	1 The Proto Providence and the Protocol								100	1 310	1999 C	No. 10	
Inflem Operation O	Progression Eactor	1.00	1.00	1.00	1.00	1.00	1.00	1.21	1.15	1.49	1.00	1.00	1.00
Delay (s) 12.4 16.2 16.1 12.5 15.9 15.5 15.7 17.9 23.0 12.4 15.6 15.7 Lavelor	Infrance in Diezk cz	1. A. S. A.	74 . 6172			S (682		(W)		ું છે.			
	Delay (s)	12.4	16.2	16.1	12.5	15.9	15.5	15.7	17.9	23.0	12.4	15.6	15.7
	Lavelint second a set		AL AL				4 		10.00 × 12.0	1.00	13. STAR	1. S.	B
Approach Delay (s) 15.8 15.1 17.2 14.9	Approach Delay (s)		15.8			15.1			17.2			14.9	
	Antonio		्रि	Prof. No. 2	e eren er de	2			\$				
	Exercise and a state of the sta			. مُرَجَب وَوَدَه			1			· · · · · · · · · · · · · · · · · · ·	1. Starter	* * · · · · · · · · · · · · · · · · · ·	
		in and here		9.5.5	مىلىدىن مىلىدىكى يىلى 16- يىلى دەرىكى 16- ي	ar-2112.25	o sta						
HCM Volume to Conscitutation 0.12	HCM Volume to Conne	vity ratio	1. P. 1. P. 1.				ALC: NO.		and the star			2 S. S.	
			10 X 10			Salara	1.5	- 17 S	1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1		1. S.	10 Same	
Intersection Canacity Utilization 25.2% ICUL evel of Service A	Intersection Canacity I	Itilization		25.2%			iel of Se	arvice	and shares a	A	ه از این در این این معرم ا ا		
	ATENSICE of contrainty								a Maria Ca	Art Car		A Starts	

Case 2 (Year 2009) Total Volumes 1: FM 1461 & FM 2478

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Movement	San and a star	35.°b(*)		ter a	AVY	11	$= i_{E} + i_{e}$	A.2.70	TREP: 6		Ser 1	SBR
Lane Configurations	ኘ	<u>†</u> †	۴	ሻ	ተተ	7	ሻ	* *	ሻ	<u>ጉ</u>	ተተ	7
Ideal Floweve and Massing	· Republic	\$.]@[9]\$*;,		s peleine		- 12(0) e -	al ant	(Levela)	100,661		19000	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanexultractory				11,000				<u>्</u> ष) - हि		55 (0)	0.055	1.60 0
	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Sold Flow (prot)		3530	1592	1770	2520	1592	1770	3530	1592	1770	2520	1592
FILE ALL MARKED		0009	1000		3335	1000 Paddiniae		3335 3080	1000		3339	-1505 Elenn
Satd Flow (nerm)	1309	3539	1583	1303	3539	1583	1312	3539	1583	1368	3539	1583
	5.56	Sec. 1						Sign		22.200		2002
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adio Filowa Maine and Adams		84	S. 40.	A. 12.	CL CL	3 - 11	£. 2.		A State	S. 1. 2.2.	5r.59284	35
RTOR Reduction (vph)	0	0	51	0	0	16	0	0	23	0	0	24
Lane Stoppiniov (vicit)		12,784	<u>.</u>	s_2	ž (103	1. 1.			225	12.22		<u>11</u>
Turn Type	pm+pt		Perm	pm+pt		Perm	pm+pt		Perm	pm+pt		Perm
Protected Plases	Sec. The	E.							1			
Permitted Phases	4		4	8	M. Laker and	8	2		2	6		6
Actualed College College	20.01					4 (0145)		2.0110				19.0
Effective Green, g (s)	20.0 	10.U	10.U	20.0 20.0	10.0	15.0	25.U	20.0 Rigisti	20.0 	23.U	19.0 19.0	19.0 19.0
Clearance Time (s)	4 0	40	4 0	4 0	4 ∩	4 0	4.0	 	4 0	A 0	40	A 0
		ACOMMEN						0	1.0			4.0
v/s Ratio Prot	c0 01	0.02	N	0.00	0.02	1	c0.02	0.01		0.00	0.01	141000
VS Rail@ Rentil-Street	60.03	NY AND	12 (61 (Chile)			i Right.			- Selfent.	02010		20 01
v/c Ratio	0.13	0.09	0.04	0.06	0.08	0.01	0.23	0.03	0.02	0.04	0.02	0.02
United to Delet Holling S		- Teller	je Krister	×	S lês S	Alt: 12	ন কি	ে হয় উ		一种 的	ં ાષ્ટ્રા કૃષ્	- <u>184</u> 94
Progression 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
	2.20042		VIC INTA	64. st.			. <u>(</u> 4	ા ફોલ્ફો	e der	Sec. 19 . 1	1.35.20	a-(0.51
Delay (s)	14.4	16.7	16.5	13.8	16.7	16.3	11.9	13.5	13.5	11.7	14.1	14.2
LevelorService			- - - -				5		8. 9 .			- i∠ B
Approach Delay (s)		16.0	ster en e	and the second second	16.0			12.5			13.5	
Apple Rest Constraints		29.			(D)			(D)	<u> </u>		Har.	
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