Attachment E

CHARLOTTE.

October 9, 2012

Mr. Jason Rayfield
Mecklenburg County Air Quality
700 N. Tryon Street, Suite 205
Charlotte, NC 28202-2236

Re: Applicability Determination – Transportation Facility Permit
JW Clay Blvd. Station LYNX Blue Line Extension Northeast Corridor Light Rail Project

Dear Mr. Rayfield:

Charlotte Area Transit System (CATS) is proposing transit improvements in the Northeast Corridor of the Charlotte-Mecklenburg Region that includes the LYNX Blue Line Extension (LYNX BLE) Northeast Corridor Light Rail Project. The LYNX BLE will extend the existing LYNX Blue Line from the 7th Street terminus, approximately 9.3 miles to the University of North Carolina at Charlotte.

The proposed project includes 11 stations, four of which will contain park and ride facilities. One of those park and ride facilities, to be located at the JW Clay Blvd. Station, will be a regional station located at the intersection of JW Clay Boulevard and North Tryon Street/US-29 (see enclosed figure). The JW Clay Blvd. Park and Ride facility will encompass a 5-level parking garage with approximately 810 parking spaces.

The purpose of this correspondence is to request an Applicability Determination regarding the potential need for a Transportation Facility Permit (TFP) for the parking facility at this station. A summary of the parking garage configuration is below. Vehicular access will be from JW Clay Blvd.

Parking Capacity

JW Clay Blvd. Station Park and Ride Facility
Parking Summary

Parking Garage Configuration	
Number of Levels	5
Number of Spaces	810
Area	
Level 1	35,007 sf
Level 2	37,820 sf
Level 3	62,321 sf
Level 4	62,321 sf
Level 5	62,321 sf
Total	259,790 sf

CATS CHARLOTTE AREA TRANSIT SYSTEM

600 East Fourth Street
Charlotte, North Carolina 28202
Telephone: (704) 336-6917
Fax: (704) 353-0797

Adjacent Parking

The full acqusition of two parcels will be required for the construction of the JW Clay Blvd. Park and Ride facility and will result in the displacement of existing commercial/retail uses and their associated parking areas. The enclosed figure illustrates other, non-CATS parking that is currently located directly adjacent to the future JW Clay Blvd. Station Park and Ride. A summary of the ownership and number of spaces is as follows:

JW Clay Blvd. Station Park-and-Ride Facility
Current Adjacent* Parking Areas

Parking Lot No.	Owner	Number of Parking Spaces
1	William J. Degenhart	40
2	Branch Family Church Inc.	34
3	LLC Roseclay and c/o New South Properties	60
4	LLC Roseclay and c/o New South Properties	16
5	LLC Castro CS Shoppes At University Place	100
	Total	250

* Per Mecklenburg County Air Pollution Control Ordinance section 2.0805, "directly adjacent" is defined as within 100 meters, if there are no existing phycial barriers, such as buildings or terrain.

We appreciate the opportunity to consult with you on the effects of the LYNX BLE on air quality and look forward to hearing from you with a TFP Applicability Determination for the JW Clay Blvd. Station Park and Ride facility. Should you have any questions, please contact me at (704) 336-3513.

Sincerely,

Kelly Goforth
Project Development Manager
LYNX Blue Line Extension Light Rail Project

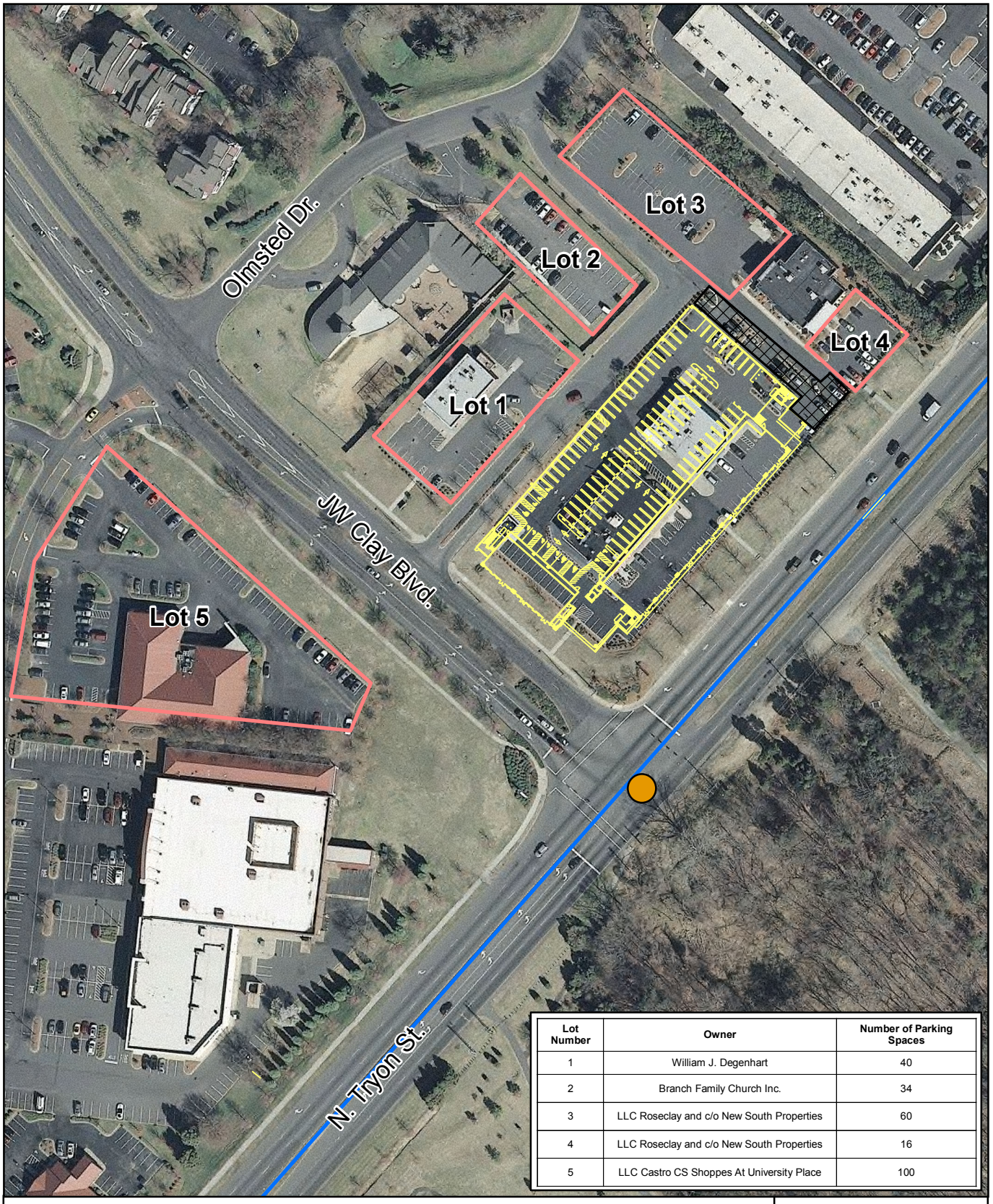
Enclosure

Cc: Danny Rogers, CATS Senior Project Manager
Robert Baughman, Project Manager, STV/RWA

Transmitted via email on October 9, 2012

LYNX RAPID TRANSIT SERVICES Blue Line Extension

Figure 1
JW Clay Blvd. Park-and-Ride
Applicability Determination - Transportation Facility Permit



Lot Number	Owner	Number of Parking Spaces
1	William J. Degenhart	40
2	Branch Family Church Inc.	34
3	LLC Roseclay and c/o New South Properties	60
4	LLC Roseclay and c/o New South Properties	16
5	LLC Castro CS Shoppes At University Place	100

Legend

- Proposed Light Rail Alignment
- Major Roads
- Proposed Station Platform
- Parking Lots Adjacent to Proposed Deck
- Proposed JW Clay Parking Deck
- Additional Parking Spaces to be Eliminated

N

0 50 100
Feet

Data Source:
CATS, City of Charlotte GIS, and Mecklenburg County GIS, STV Field Investigation, 2009

8.20.12

MECKLENBURG COUNTY

Land Use and Environmental Services Agency

-AIR QUALITY-

October 17, 2012

Ms. Kelly Goforth, Project Development Manager
Charlotte Area Transit System
600 East Fourth Street
Charlotte, NC 28202

Re: Transportation Facility Applicability Determination – Permit Required
JW Clay Blvd. Station Parking Facility for LYNX Blue Line Extension (LYNX BLE)

Dear Ms. Goforth,

Mecklenburg County Air Quality (MCAQ) has reviewed the information submitted in your October 9, 2012 letter requesting a transportation facility permit applicability determination for the JW Clay Blvd. Station Park and Ride Facility project at the corner of JW Clay Blvd. and North Tryon Street in Charlotte, North Carolina. Our review confirms that an Air Quality Permit to Construct is required before construction on the project may begin.

In accordance with the Mecklenburg County Air Pollution Control Ordinance (MCAPCO) Regulation 2.0805 - "Parking Facilities," an air quality permit to construct is required for construction of a new or expansion of an existing parking deck or garage resulting in a parking capacity of at least 750 spaces.

MCAQ finds that Charlotte Area Transit System (CATS) will be constructing a new 5-level parking deck, containing 810 parking spaces, located at the corner of JW Clay Blvd and North Tryon Street in Charlotte, North Carolina. This parking deck will serve the future JW Clay Station for the LYNX BLE from uptown Charlotte to the University of North Carolina at Charlotte campus.

In order to apply for an Air Quality Permit to Construct from MCAQ, CATS must provide a level-of-service (LOS) analysis for the following intersections:

- WT Harris Blvd. and North Tryon St.
- Normandy Rd. and North Tryon St.
- JW Clay Blvd. and North Tryon St.
- Institute Cir. and North Tryon St.
- Mallard Creek Church Rd. and Tryon St.

MCAQ finds these locations to be the signalized intersections located in closest proximity to the proposed parking facility. When submitting the intersection LOS analysis, include documentation to support the traffic data, intersection configuration, and traffic flow and volume calculations entered into the traffic software. Air quality dispersion modeling will be required if conditions at the examined intersections are found to be LOS E or F currently, or in the year of project completion.

MCAQ refers to the *Guidelines for Evaluating the Air Quality Impacts of Transportation Facilities* (September 2007) published by the North Carolina Department of Environment and Natural Resources (NCDENR) for direction pertaining to permitting of transportation facilities. Upon completion of the LOS and necessary modeling, submittal of a processing fee and Transportation Facility Application Forms T1 and T2 will be required (forms enclosed). Please call me at (704) 336-5430, if you have any questions.

Sincerely,

Jennifer Fickler
Air Quality Specialist

JJF:isp

Enclosures:
Forms T1 and T2

C : Jason Rayfield, MCAQ
Danny Rogers, CATS Senior Project Manager (Charlotte Area Transit System)

FACILITY (General Information) Instructions for Form T1

Form T1 contains general information on the facility being permitted. One Form T1 is to be completed for each permit application.

LEGAL NAME OF CORPORATE ENTITY - The legal name of the company that the permit will be issued to (i.e. the legal name of the owner of the business). This will be the name of the local business if it is incorporated and is not solely a marketing name. If the business operates under a marketing name, this will be the name of the corporate owner.

MAILING ADDRESS, CITY, STATE, ZIP CODE - The address at which the owner receives mail.

CORPORATE CONTACT PERSON - The corporate officer who is to be contacted for information concerning the facility.

TITLE, TELEPHONE, FAX, E-MAIL - For the corporate officer concerning the facility.

SITE NAME - Identify the name of the transportation facility. This could be Garage A, or the Seventh Street Parking Deck, *etc.* This may be the same as the legal name of the corporate entity.

MAILING ADDRESS, CITY, STATE, ZIP CODE - The address at which the facility receives mail.

SITE ADDRESS, CITY, COUNTY, ZIP CODE - The location where the agency would go to inspect the equipment.

ONSITE CONTACT PERSON - The person at the facility who is to be contacted for information concerning the facility.

TITLE, TELEPHONE, FAX, E-MAIL - For the contact person.

HIGHEST RANKING OFFICIAL IN MECKLENBURG COUNTY - The local person within the organizational hierarchy who is or is closest to the head of the national / international organization (i.e. owner, president, chairman, facility manager) with an office in Mecklenburg County.

TITLE - MAILING ADDRESS, CITY, STATE, ZIP CODE - The address at which the official receives mail.

TELEPHONE, FAX, E-MAIL - For the official.

TAX CODE PARCEL ID NO. - This number can be obtained from the tax office.

OWNER'S FEDERAL TAX PAYER ID NO. - This is the nine (9) digit corporate tax payer ID issued by the Internal Revenue Service. For example, North Carolina-based companies would have a number "56-#######."

APPLICATION / NOTIFICATION IS BEING MADE FOR:

1. NEW FACILITY - Application is made for construction of a new facility.

2. EXISTING PERMITTED FACILITY - Facility currently in operation, which holds an air quality permit.

3. EXISTING UNPERMITTED FACILITY - Facility currently in operation which does not hold an air quality permit.

IS THERE A GASOLINE DISPENSING FACILITY ON SITE?

THE FOLLOWING MUST BE INCLUDED OR THE APPLICATION MAY BE RETURNED:

- Zoning Verification Letter
- Application Fee
- Site Plan with parking labeled
- Table identifying other parking areas considered for the permit
- Signature of Responsible Company Official

Pursuant to MCAPCO 1.5600 – "Transportation Facility Procedures," all applicants are required to submit the following with each permit application. If these items are not submitted, the application may be returned as "incomplete:"

4. **Zoning Verification Letter** - The applicant must provide evidence that the new facility or expansion of an existing

facility is consistent with the local zoning ordinances in accordance with NCGS 143-215.108(f) and MCAPCO 1.5212(a)(5), when the following circumstances apply:

a. It is a new facility or a modification to an existing facility that has never received an air quality permit from the Mecklenburg County Air Quality ("MCAQ");

b. There has been a change in the facility's zoning since the last or original zoning verification;

c. The facility has been annexed by the City of Charlotte or one of the surrounding towns; or

d. The facility expansion creates a new use or affects the facility's zoning status according to the applicable zoning ordinances.

Existing permitted facilities are not required to submit a zoning verification letter, unless (b), (c) or (d) above applies; however, MCAQ may request a determination if it has reason to believe (b), (c) or (d) above applies. Write or type NA in the Zoning Verification parenthesis on form T1, if you claim that a determination is unnecessary.

The zoning verification letter shall consist of:

e. A letter from the local government indicating that all zoning or subdivision ordinances are met by the facility; or

f. A letter to the local government requesting a zoning verification letter that bears the date of receipt entered by the clerk of the local government. The zoning verification letter must be submitted prior to issuance of the permit.

5. Application Fee - The appropriate, non-refundable application processing fee in accordance with MCAPCO 1.5231(b).

6. Site Plan – A scale drawing that accurately shows proposed structures and uses for a land parcel and adheres to the zoning regulations with respect to the development proposal. Parking areas should be clearly marked on the site plans.

7. Other Parking Table - Table identifying the address, number of spaces and owner of surrounding parking areas that:

a. Were used to determine that a permit was required or

b. Due to their proximity to the proposed source were modeled to determine their impact on carbon monoxide levels.

8. Signature - Signature of the responsible person or company official as defined below.

METHOD USED TO DEMONSTRATE COMPLIANCE:

9. Dispersion Model - The facility shall submit a protocol identifying the parameters that will be used as input for the model to MCAQ for approval prior to execution of the model. These parameters include the public receptors at which carbon monoxide (CO) concentrations will be calculated. Once MCAQ approves the protocol, the application and compliance demonstration may be submitted.

Level of Service Analysis - The facility shall submit a protocol identifying the proposed site and signalized intersections that will be involved in the analysis to MCAQ for approval prior to execution of the model. Once approved, the Level of Service Analysis shall be submitted to MCAQ for review. MCAQ will confirm with the Charlotte Department of Transportation that no signalized intersection in the impact area has a Level of Service less than "D."

DO YOU CLAIM CONFIDENTIALITY OF DATA? - All information in this application and the attachments thereto are considered public information unless the applicant can demonstrate that specific information qualifies for confidential treatment under the provisions of North Carolina G.S 143-215.3(c). **Your request does not guarantee confidentiality.** If you request confidentiality, you must submit one confidential copy of the application package and one public copy of the application package as defined below:

10. Confidential copy: one complete application, stamped confidential on each relevant page and containing the confidential and non-confidential information; and

11. Public copy: one application containing only the non-confidential information.

Note: All application forms, including those deemed confidential by MCAQ, may be submitted to EPA. Because EPA has different guidelines for confidentiality, what may be deemed confidential by MCAQ may be released as public information by EPA; therefore, it is advised that both the North Carolina General Statutes and the federal laws concerning confidentiality be reviewed prior to submitting proprietary information to MCAQ.

SIGNATURE OF RESPONSIBLE PERSON OR COMPANY OFFICIAL, TITLE, DATE - Permit applications submitted pursuant to MCAPCO 1.5212(i) shall be signed as follows:

12. **for corporations**, by a principal executive officer of at least the level of vice-president, or their duly authorized representative, if such representative is responsible for the overall operation of the facility from which the emissions described in the permit application originate or will originate;

13. **for partnerships or limited partnerships**, by a general partner;

14. **for sole proprietorships**, by the proprietor; or

15. **for municipal, state, federal, or other public entities**, by a principal executive officer, ranking elected official, or duly authorized employee.

Each permit or modification application is considered incomplete for processing until all of the aforementioned required information is received.

SECTION T
FACILITY (General Information)

T1

LEGAL NAME OF CORPORATE ENTITY:			
MAILING ADDRESS:			
CITY:	STATE:	ZIPCODE:	
CORPORATE CONTACT PERSON:		TITLE:	
TELEPHONE:	FAX:	E-MAIL:	
SITE NAME (if different from above):			
MAILING ADDRESS:		SITE ADDRESS:	
CITY:		CITY:	COUNTY: Mecklenburg County
STATE:	ZIP CODE:	STATE:	ZIPCODE:
ONSITE CONTACT PERSON:		TITLE:	
TELEPHONE:	FAX:	E-MAIL:	
HIGHEST RANKING OFFICIAL IN MECKLENBURG COUNTY:		TITLE:	
MAILING ADDRESS:	CITY:	STATE:	ZIPCODE:
TELEPHONE:	FAX:	E-MAIL:	
TAX CODE PARCEL ID NO:		OWNER'S FEDERAL TAX PAYER ID NO:	

APPLICATION IS BEING MADE FOR:

☐ NEW FACILITY ☐ EXISTING PERMITTED FACILITY ☐ EXISTING UNPERMITTED FACILITY

IS THERE A GASOLINE DISPENSING OPERATION ON-SITE? ☐ YES ☐ NO

THE FOLLOWING MUST BE INCLUDED OR THE APPLICATION MAY BE RETURNED:

☐ ZONING VERIFICATION LETTER ☐ APPLICATION FEE ☐ SITE PLAN

☐ OTHER PARKING TABLE ☐ SIGNATURE

METHOD USED TO DEMONSTRATE COMPLIANCE

☐ DISPERSION MODEL ☐ LEVEL OF SERVICE ANALYSIS

DEPARTMENTAL USE ONLY

DO YOU CLAIM CONFIDENTIALITY OF DATA? ☐ YES ☐ NO

IF YES, BOTH COPIES MUST BE INCLUDED: ☐ PUBLIC COPY OF APPLICATION ☐ CONFIDENTIAL APPLICATION

DEPARTMENT USE ONLY:	PREMISE NUMBER:	PERMIT NUMBER:	PUBLIC COMMENT PERIOD:
	30 DAYS AFTER APPLICATION RECEIVED:	90 DAYS AFTER APPLICATION COMPLETE:	AQC AGENDA WITHIN 90 Days:

SECTION T
FACILITY (General Information)

T1

SIGNATURE OF RESPONSIBLE COMPANY OFFICIAL:

As specified in MCAPCO Reg. 1.5212 Paragraph (i), all permit applications submitted shall be signed by one of the following (Check which of the following applies):

- ☐ For Corporations:
  - ☐ by a principal executive officer of at least the level of vice - president or
  - ☐ by his duly authorized representative, if such representative is responsible for the overall operation of the facility from which the emissions described in the permit application originate or will originate
- ☐ For Partnerships or Limited Partnership, by a general partner
- ☐ For a Sole Proprietorship, by the proprietor
- ☐ For a municipal, state, federal, or other public entity:
  - ☐ by a principal executive officer or
  - ☐ by a ranking elected official or
  - ☐ by a duly authorized employee

The undersigned certifies that all information and statements provided in the application, based on information and belief formed after reasonable inquiry, are true, accurate, and complete.

Signature of responsible company official — Date

RESPONSIBLE COMPANY OFFICIAL:	TITLE:	
MAILING ADDRESS:		
CITY:	STATE:	ZIPCODE:

Technical Information — Instructions for Form T2

Form T2 should be completed for each parking facility. In this case, a parking facility is an individual lot, deck, or garage. The form also should be completed for an entire airport facility. Make as many copies of the form as necessary.

SITE NAME - Identify the name of the transportation facility. This could be Garage A, or the Seventh Street Parking Deck, *etc.* This may be the same as the legal name of the corporate entity.

SITE ADDRESS - Identify the legal address at which this transportation facility is located. This information will be used on your Permit to Construct; therefore, constructing the transportation facility at a location other than what is listed in the application would constitute a violation of the Mecklenburg County Air Pollution Control Ordinance ("MCAPCO").

CITY - Identify the city, town, or postal jurisdiction in which the transportation facility will be located.

ZIPCODE - Identify the postal zipcode for the area in which the transportation facility will be located.

TYPE OF FACILITY - Select the appropriate categor(y/ies). A single transportation facility may be a single parking structure with underground and elevated parking, in which case both categories would be checked. If there is surface parking around the structure *other than the level located at grade*, the surface parking category should be checked as well.

REASON FOR APPLICATION - If this is a new transportation facility that did not previously exist, or was not previously permitted, select New Facility. If this is an existing facility being modified, whether or not it previously had been permitted, select Modification. If this is a Cosmetic Modification that will involve repainting the lines and changing the capacity of one or more levels, select Modification.

DAILY HOURS OF OPERATION - The first box to the right of this item is for the *current* hours that the transportation facility is in use. The next box to the right is for the *future* hours that the transportation facility will be in use. These could be 06:00 - 19:00, 6:00 a.m. - 7:00 p.m., or 24-hours.

BUSIEST HOUR(S) OF THE DAY - The first box to the right of this item is for the *current* hour(s) that usage of the transportation facility is busiest. The next box to the right is for the *future* hour(s) that usage of the transportation facility is expected to be the busiest. These could be 08:00, 8:00 a.m., 17:00, or 5:00 p.m.

BUSIEST DAY(S) OF THE YEAR - The first box to the right of this item is for the *current* day(s) where usage is busiest. The next box to the right is for the *future* day(s) that usage is expected to be the busiest. These could be weekdays, Thanksgiving, July 5, *etc.*

CONSTRUCTION/OPERATION DATES - The first box to the right is the date construction/renovation will/did end. If the facility has been modified, the construction date and each modification date should be listed. The back of the form, or an attached sheet, may be used if additional space is required. The next box to the right is the date operation will begin following this construction/modification.

INFORMATION FOR PARKING FACILITIES -This section should be completed unless the only TYPE OF FACILITY indicated was an *airport facility* or a *highway project.* There are twelve (12) rows available for each parking facility. If there will be surface parking with or without a parking structure, the *Level Number/ID* of the surface parking should be "SURFACE."

For each level, indicate the *number of parking spaces*, *square footage*, *distance from grade* with a "+" indicating it is elevated above grade and a "-" indicating that it is below grade, and the *change since last permit* of the number of parking spaces. In the *Totals* row, sum the number of parking spaces, square footage, and change in number of parking spaces since the last permit.

For the *Number of Vehicles Entering/Leaving during Busiest Hour of Day* row, list the *current* number of vehicles in the first box to the right, and the *future* number of vehicles in the second box to the right.

For the *Number of Entrances* row, list the *current* number of entrances in the first box to the right, and the *future* number of entrances in the second box to the right.

For the *Number of Exits* row, list the *current* number of exits in the first box to the right, and the *future* number of exits in the second box to the right.

INFORMATION FOR AIRPORT FACILITIES -This section is to be used by airports. If your airport has multiple parking facilities, the aircraft information may be left blank on all but the first **T2** form.

For both *Annual Aircraft Take-off's/Landings* and *Peak Hour Aircraft Take-off's/Landings*, the first block to the right is for the *current* number while the second block to the right is for the *proposed* number.

SECTION T
Technical Information

SITE NAME:	
SITE ADDRESS:	
CITY:	ZIPCODE:

Information for All Facilities

TYPE OF FACILITY ☐ Surface Parking ☐ Underground Parking ☐ Elevated Parking Deck ☐ Airport Facility ☐ Highway Project

REASON FOR APPLICATION			☐ New Facility	☐ Modification	
Daily Hours of Operation (current/proposed)			**Busiest Hour(s) of the Day (current/proposed)**		
Busiest Day(s) of the Year (current/proposed)			**Construction/Operation Dates**		

Information for Parking Facilities

Level Number/ID	Number of Parking Spaces	Square Footage	Distance from Grade (+ or -)	Change Since Last Permit
Totals				

Number of Vehicles Entering/Leaving during Busiest Hour of Day		
Number of Entrances		
Number of Exits		

Information for Airport Facilities

Annual Aircraft Take-off's/Landings **(current/proposed)**			Peak Hour Aircraft Take-off's/Landings **(current/proposed)**		

STV/Ralph Whitehead Associates
LYNX Blue Line Extension Project Office
600 East Fourth Street
Charlotte, North Carolina 28202
(704) 432-2584 fax: (704) 432-2593

Memorandum

Date: December 20, 2012

To: CATS

From: STV/Ralph Whitehead Associates

Subject: Traffic Analysis for J.W. Clay Blvd. Parking Garage
Transportation Facilities Permit

INTRODUCTION

The purpose of this technical memorandum is to provide traffic analysis results so that the need for air quality dispersion modeling can be determined. Previously, STV/Ralph Whitehead Associates submitted the LYNX Blue Line Extension (Northeast Corridor) Light Rail Project Traffic Analysis Report (TAR) to the Charlotte Area Transit System (CATS) on April 5, 2011. The TAR was performed in order to determine the impacts of the proposed project for the year 2030.

Additional traffic analysis is now required due to recent changes in the size of the parking garage at the J.W. Clay Boulevard Station. The parking garage layout used in the TAR contained 690 parking spaces. The revised layout will accommodate up to 810 parking spaces. The Mecklenburg County Air Pollution Control Ordinance (MCAPCO) requires the approval of an air quality permit for construction when a garage capacity of 750 or more parking spaces is proposed.

CATS must provide Mecklenburg County Air Quality (MCAQ) with level of service (LOS) traffic analysis in order to apply for an air quality permit for construction. Air quality dispersion modeling may be required for intersections resulting in LOS E or F.

Traffic analysis was performed for the 2012 Existing, 2017 No-Build, and 2017 Build scenarios. The following signalized intersections were included in the analysis:

- North Tryon Street and W.T. Harris Boulevard
- North Tryon Street and J.M. Keynes Drive
- North Tryon Street and J.W. Clay Boulevard
- North Tryon Street and Institute Circle
- North Tryon Street and Mallard Creek Church Road

The location of this site and intersections included within the study are shown in **Figure 1: Location Map** and a description of the roads and existing lane geometry within the study area are shown in **Figure 2: 2012 Existing Lane Configurations**. A description of the roads and proposed lane geometry within the study area are shown in **Figure 3: Proposed Lane Configurations**.

EXISTING TRAFFIC VOLUMES

The Charlotte Department of Transportation (CDOT) provided peak hour turn movement traffic counts for the study intersections. These counts were conducted in 2012. It was determined from these traffic counts that the a.m. peak hour started at 7:30 a.m. and the p.m. peak hour started at 4:45 p.m. These peak hour volumes were then balanced through the study area as needed. The balanced peak hour traffic volumes are shown in **Figure 4: 2012 Existing Peak Hour Traffic Volumes**.

BACKGROUND TRAFFIC GROWTH

The opening year of the project would be 2017. No-Build traffic volumes for the opening year were estimated using a growth factor. The traffic growth factor was calculated based on the growth factor used in the TAR. The TAR used a growth factor of 1.25 between 2008 and 2030. This correlates to a growth factor of 1.05 between 2012 and 2017.

To account for the ongoing and future construction on the UNC Charlotte campus, the *Energy Production Infrastructure Center Traffic Impact Study* dated April 16, 2010 was used to estimate the generated trips. This study estimated the trips generated by using the parking deck that is constructed on the UNC Charlotte campus, just north of the J.W. Clay Boulevard intersection. The trip generation from this was added to the grown traffic volumes to account for this future development. The trip generation volumes from this study are shown in **Figure 5: EPIC Trip Generation**. The 2017 No-Build traffic volumes are presented in **Figure 6: 2017 No-Build Peak Hour Traffic Volumes**.

TRIP DISTRIBUTION AND GENERATION

The layout of the J.W. Clay Boulevard station has been changed since the TAR was submitted. This new layout resulted in an increase in generated trips. CATS provided the number of peak hour trips generated by the station for the opening year, 2017. The J.W. Clay Boulevard Station will generate 299 peak hour trips in the opening year. This new trip generation volume was applied to the trip distribution percentages used in the TAR. In addition, the TAR trip generation for the University City Boulevard station distributed trips through the intersections in this analysis. These trips will also be included in the 2017 Build scenarios. The trip generation volumes are shown in **Figure 7A: Trip Generation – J.W. Clay Boulevard Station** and **Figure 7B: Trip Generation – University City Boulevard Station**. **Figure 8: 2017 Build Peak Hour Traffic Volumes** shows the resulting traffic associated with the Build scenario.

CAPACITY ANALYSIS METHODOLOGY

The traffic analysis was performed for three scenarios: 2012 Existing, 2017 No-Build, and 2017 Build. The 2012 Existing scenario was based on the 2012 turn movement counts and existing lane configurations. The 2017 No-Build scenario included background traffic growth and existing lane configurations. The 2017 Build scenario included background traffic growth, generated trips, and proposed lane configurations. Signal timings were adjusted for the 2017 No-Build and 2017 Build scenarios as was done for the No-Build and Build scenarios in the TAR.

Synchro 7.0 was used to analyze intersection operations in the study area. Synchro was used to determine the LOS for each intersection. LOS is a valuable tool for measuring roadway congestion. It is determined by calculating the delay for the intersection and converting it to a letter. The LOS ranges from A (no congestion) to F (severe congestion). The LOS criteria for signalized intersections are shown in **Table 1: Level of Service Criteria**.

Table 1: Level of Service Criteria

LOS	Delay per Vehicle (seconds)
A	≤10
B	>10 and ≤20
C	>20 and ≤35
D	>35 and ≤55
E	>55 and ≤80
F	>80

Source: Highway Capacity Manual

CAPACITY ANALYSIS RESULTS

Table 2: Summary of Results

		a.m. peak hour			p.m. peak hour		
		2012 Existing	**2017 No-Build**	**2017 Build**	**2012 Existing**	**2017 No-Build**	**2017 Build**
N Tryon St & W.T. Harris Blvd	**LOS**	C	D	D	D	D	D
	Delay (sec)	32.8	43.0	51.7	44.9	49.0	51.7
N Tryon St & J.M. Keynes Dr	**LOS**	B	B	C	B	C	C
	Delay (sec)	13.0	14.5	21.5	17.5	21.8	31.3
N Tryon St & J.W. Clay Blvd	**LOS**	C	C	C	C	C	D
	Delay (sec)	22.5	20.5	27.5	23.1	27.3	39.0
N Tryon St & Institute Cir	**LOS**	C	C	C	C	C	D
	Delay (sec)	29.9	21.8	29.1	23.9	23.3	40.1
N Tryon St & Mallard Creek Church Rd	**LOS**	D	D	E	E	E	E
	Delay (sec)	46.4	49.7	63.1	60.4	55.9	64.2

CONCLUSION

The proposed project will maintain LOS D or better at the intersections along North Tryon Street except for the intersection of North Tryon Street and Mallard Creek Church Road in the a.m. Build scenario and all three p.m. peak hour scenarios. During these four scenarios the North Tryon Street and Mallard Creek Church Road intersection will operate at LOS E. The change from LOS D to LOS E in the a.m. peak period is approximately 13 seconds. In addition, the p.m. peak hour increases approximately 8 seconds between the No Build and Build scenarios.

INTERSECTION COUNTS

1. NORTH TRYON STREET AND W.T. HARRIS BOULEVARD
2. NORTH TRYON STREET AND J.M. KEYNES DRIVE
3. NORTH TRYON STREET AND J.W. CLAY BOULEVARD
4. NORTH TRYON STREET AND INSTITUTE CIRCLE
5. NORTH TRYON STREET AND MALLARD CREEK CHURCH ROAD

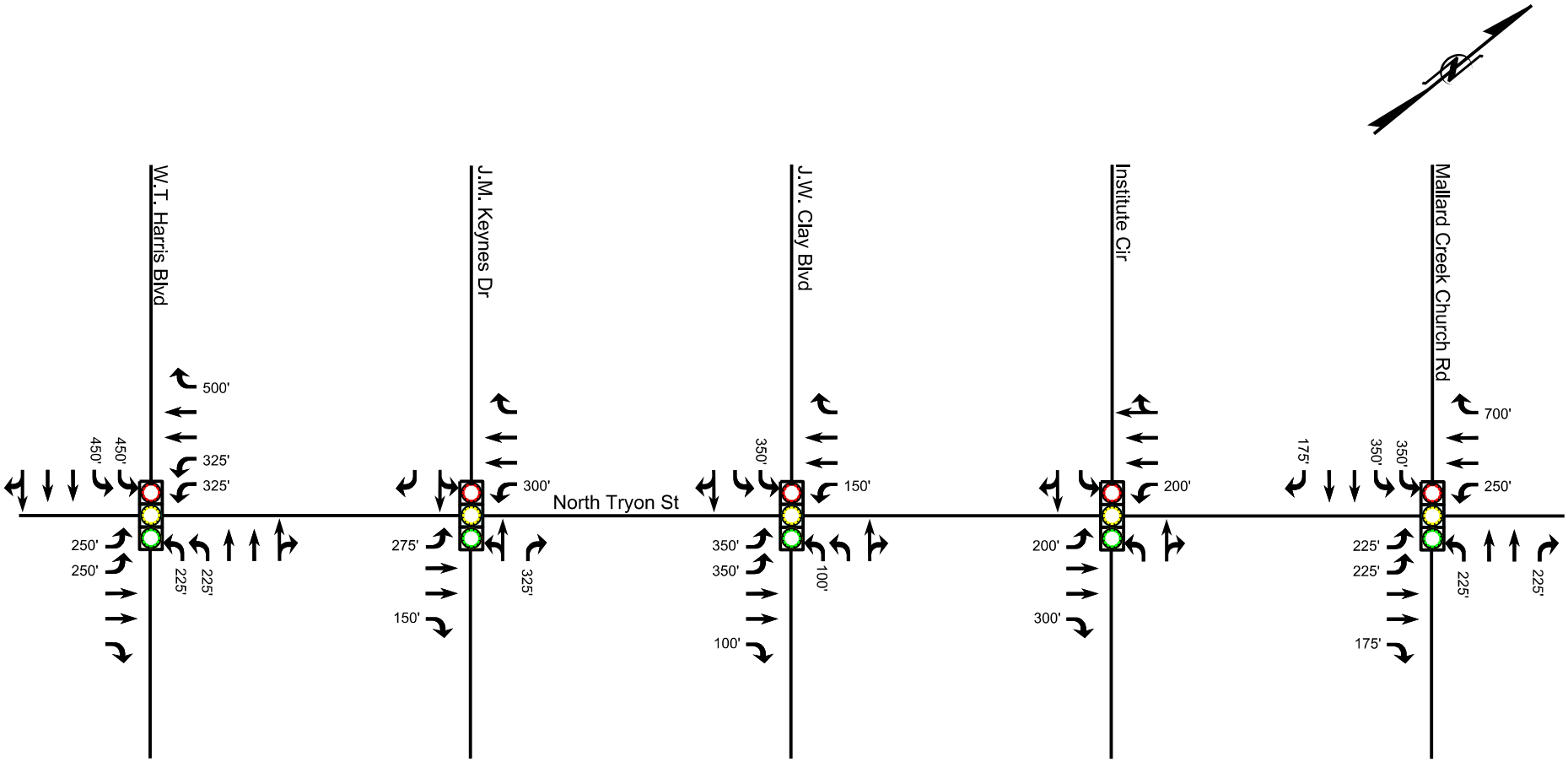
STV / Ralph Whitehead Associates, Inc.
1000 West Morehead St., Ste. 200
Charlotte, NC 28208

CATS CHARLOTTE AREA TRANSIT SYSTEM

LYNX BLUE LINE EXTENSION
NORTHEAST CORRIDOR LIGHT RAIL PROJECT

LOCATION MAP

DATE: 11/07/12
SHEET: FIGURE 1
CATS NO: 08-477



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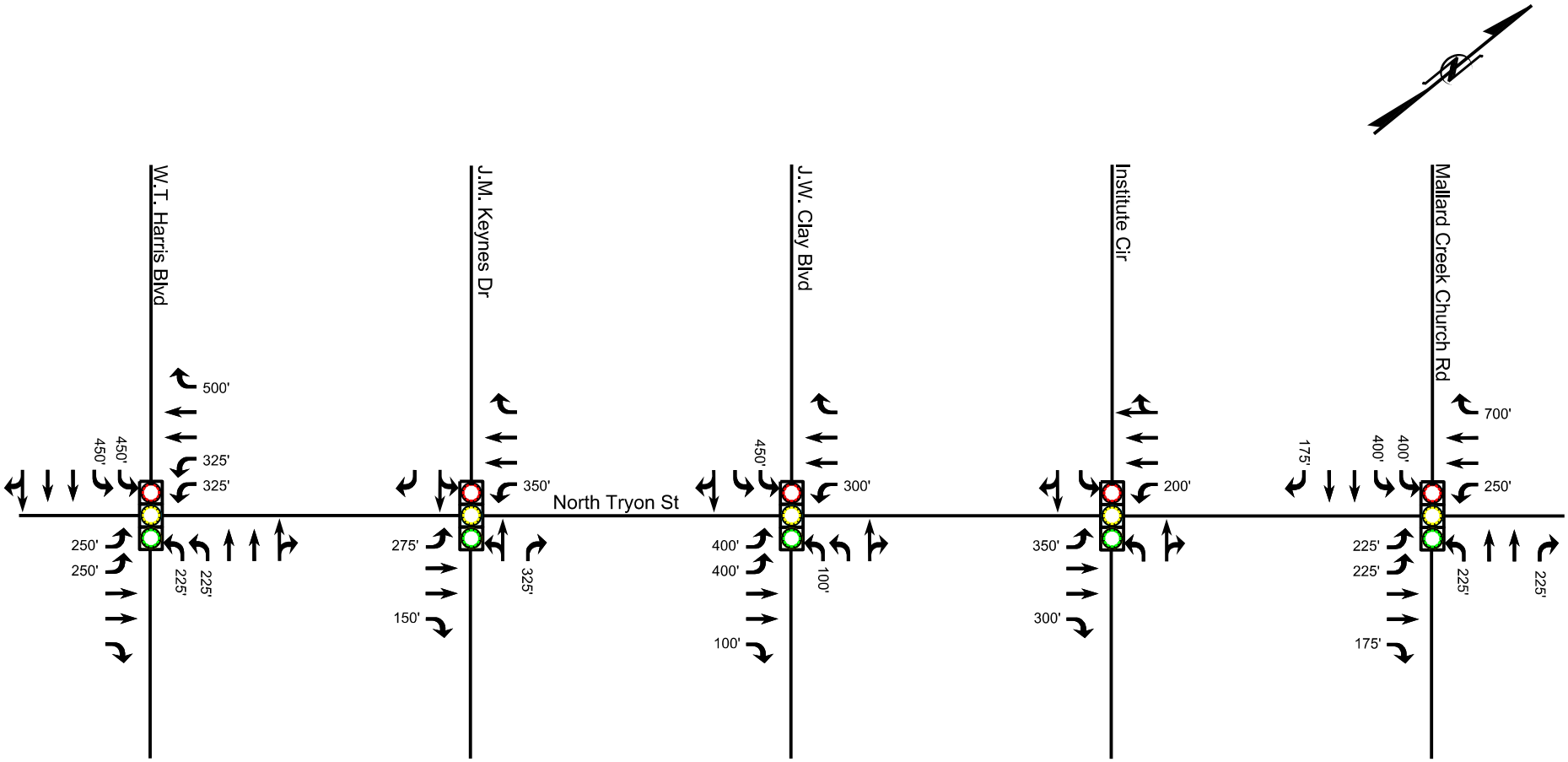
1000 West Morehead St., Ste. 200
Charlotte, NC 28208

CATS CHARLOTTE AREA TRANSIT SYSTEM

LYNX BLUE LINE EXTENSION
NORTHEAST CORRIDOR LIGHT RAIL PROJECT

EXISTING 2012 LANE CONFIGURATIONS

DATE: 11/07/12
SHEET: FIGURE 2
CATS NO: 08-477



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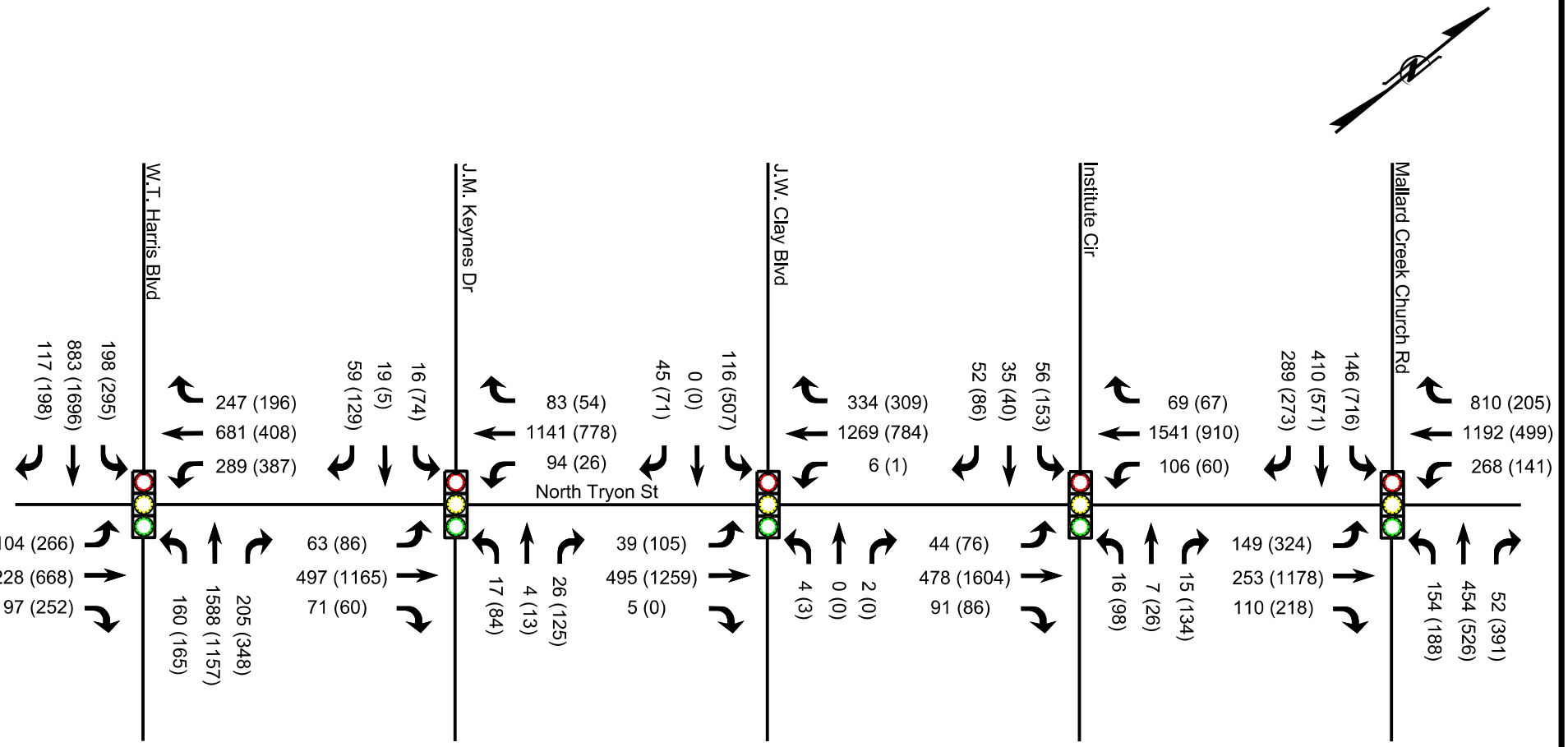
Charlotte, NC 28208

CATS CHARLOTTE AREA TRANSIT SYSTEM

LYNX BLUE LINE EXTENSION
NORTHEAST CORRIDOR LIGHT RAIL PROJECT

PROPOSED LANE CONFIGURATIONS

DATE: 11/07/12
SHEET: FIGURE 3
CATS NO: 08-477



AM Peak Hour Traffic Volume
(PM Peak Hour Traffic Volume)

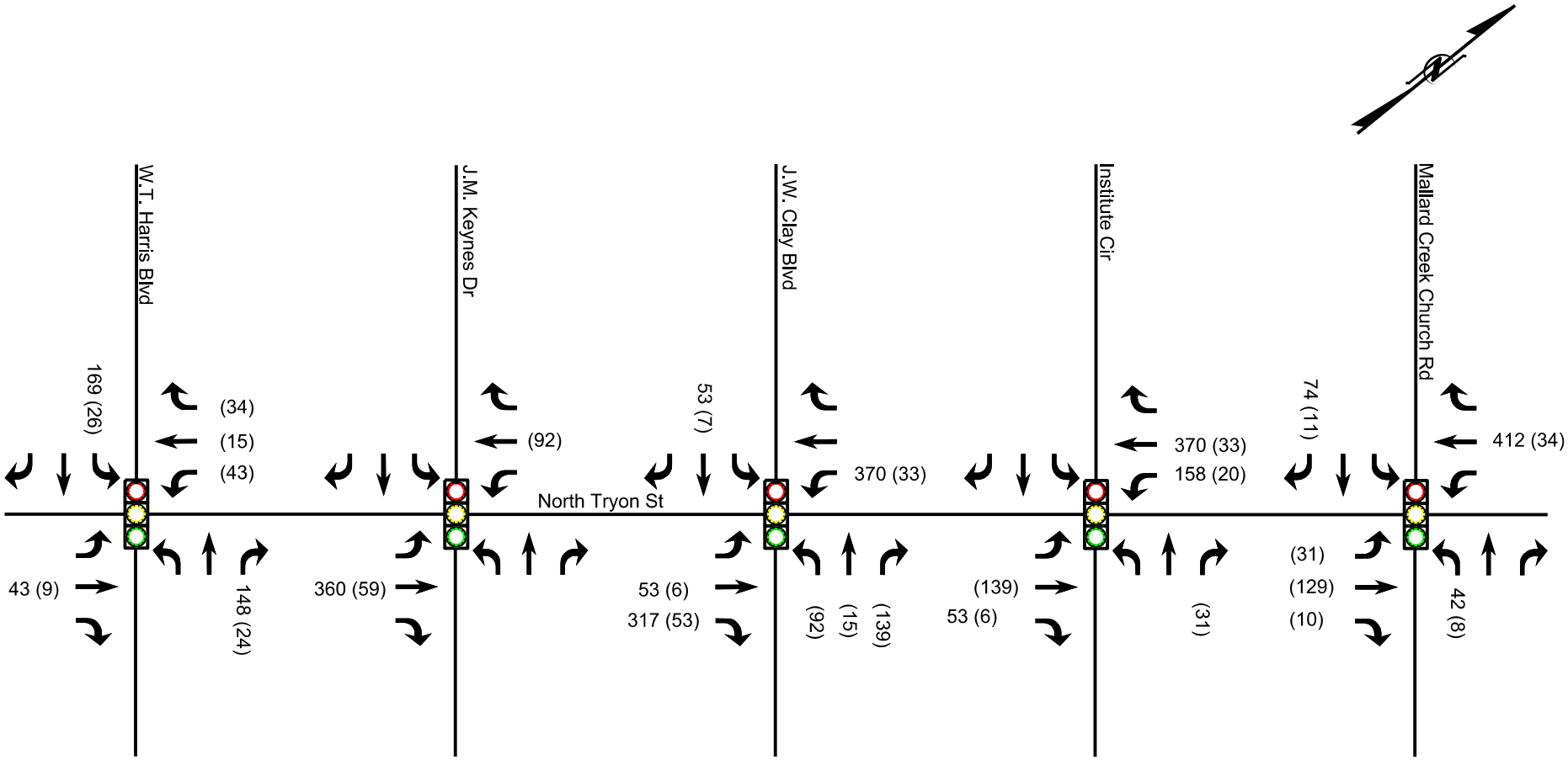
STV / Ralph Whitehead Associates, Inc.
1000 West Morehead St., Ste. 200
Charlotte, NC 28208

CATS CHARLOTTE AREA TRANSIT SYSTEM

LYNX BLUE LINE EXTENSION
NORTHEAST CORRIDOR LIGHT RAIL PROJECT
2012 EXISTING
PEAK HOUR TRAFFIC VOLUMES

DATE: 11/07/12
SHEET: FIGURE 4
CATS NO: 08-477

NOTE: FIGURE SHOWS TRIP GENERATION AT STUDY INTERSECTIONS ONLY. TRIPS MAY BE DISTRIBUTED TO ADDITIONAL INTERSECTIONS THAT ARE NOT INCLUDED IN THIS STUDY.



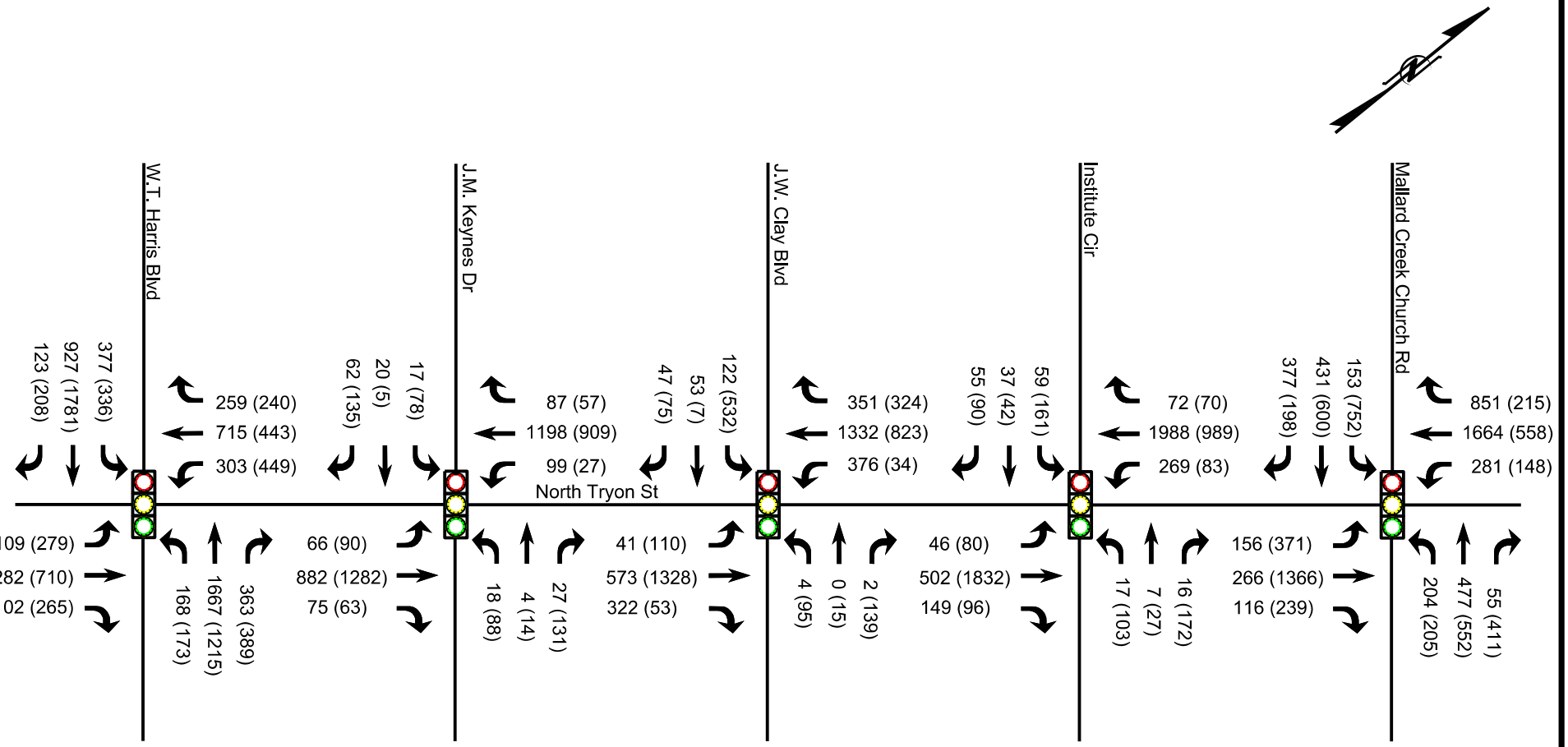
AM Peak Hour Trip Generation
(PM Peak Hour Trip Generation)

STV / Ralph Whitehead Associates, Inc.
1000 West Morehead St., Ste. 200
Charlotte, NC 28208

CATS CHARLOTTE AREA TRANSIT SYSTEM

LYNX BLUE LINE EXTENSION
NORTHEAST CORRIDOR LIGHT RAIL PROJECT
TRIP GENERATION
EPIC

DATE: 11/07/12
SHEET: FIGURE 5
CATS NO: 08-477



AM Peak Hour Traffic Volume
(PM Peak Hour Traffic Volume)

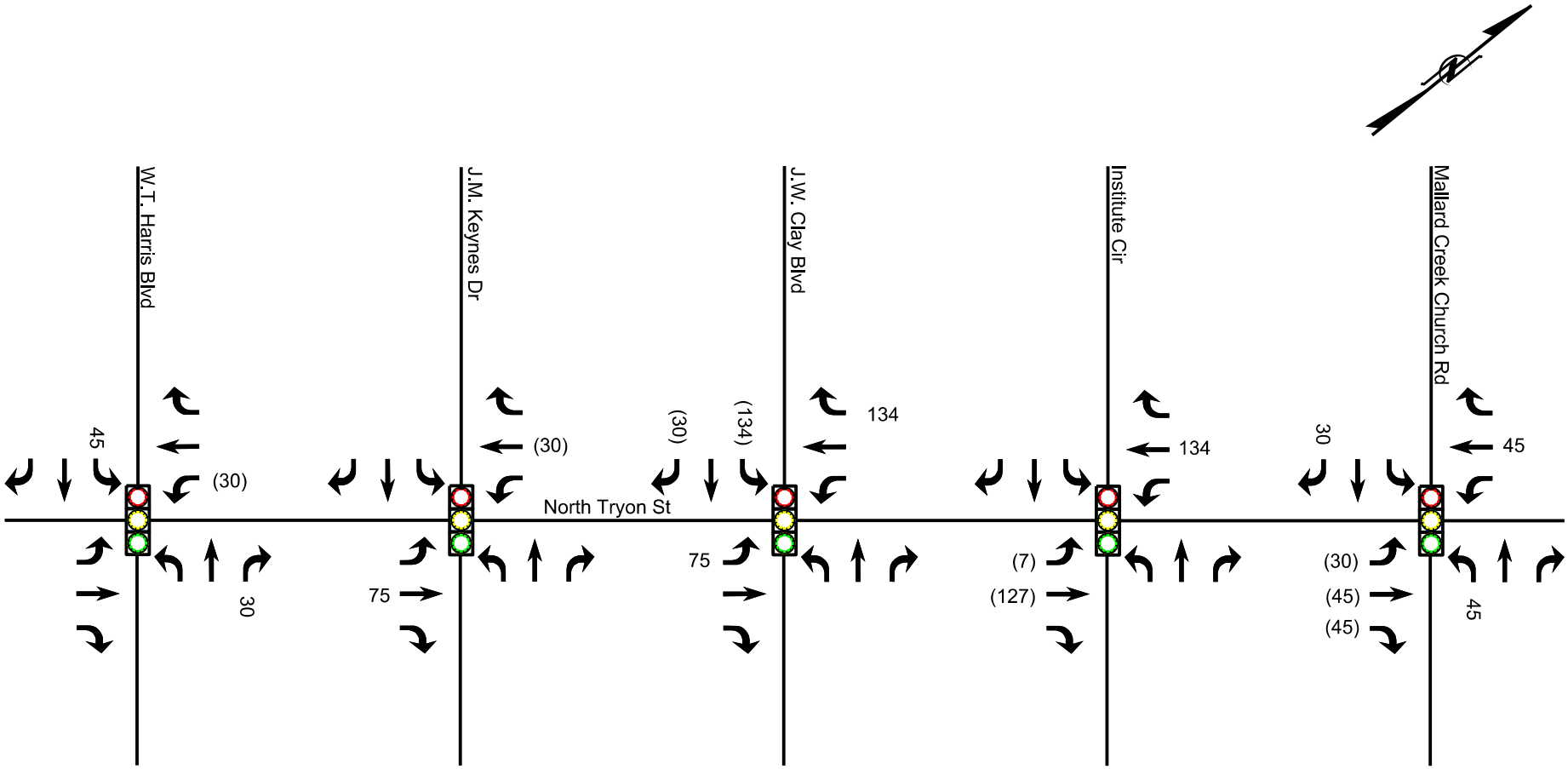
STV / Ralph Whitehead Associates, Inc.
1000 West Morehead St., Ste. 200
Charlotte, NC 28208

CATS CHARLOTTE AREA TRANSIT SYSTEM

LYNX BLUE LINE EXTENSION
NORTHEAST CORRIDOR LIGHT RAIL PROJECT
2017 NO-BUILD
PEAK HOUR TRAFFIC VOLUMES

DATE: 11/07/12
SHEET: FIGURE 6
CATS NO: 08-477

NOTE: FIGURE SHOWS TRIP GENERATION AT STUDY INTERSECTIONS ONLY. TRIPS MAY BE DISTRIBUTED TO ADDITIONAL INTERSECTIONS THAT ARE NOT INCLUDED IN THIS STUDY.



AM Peak Hour Trip Generation
(PM Peak Hour Trip Generation)

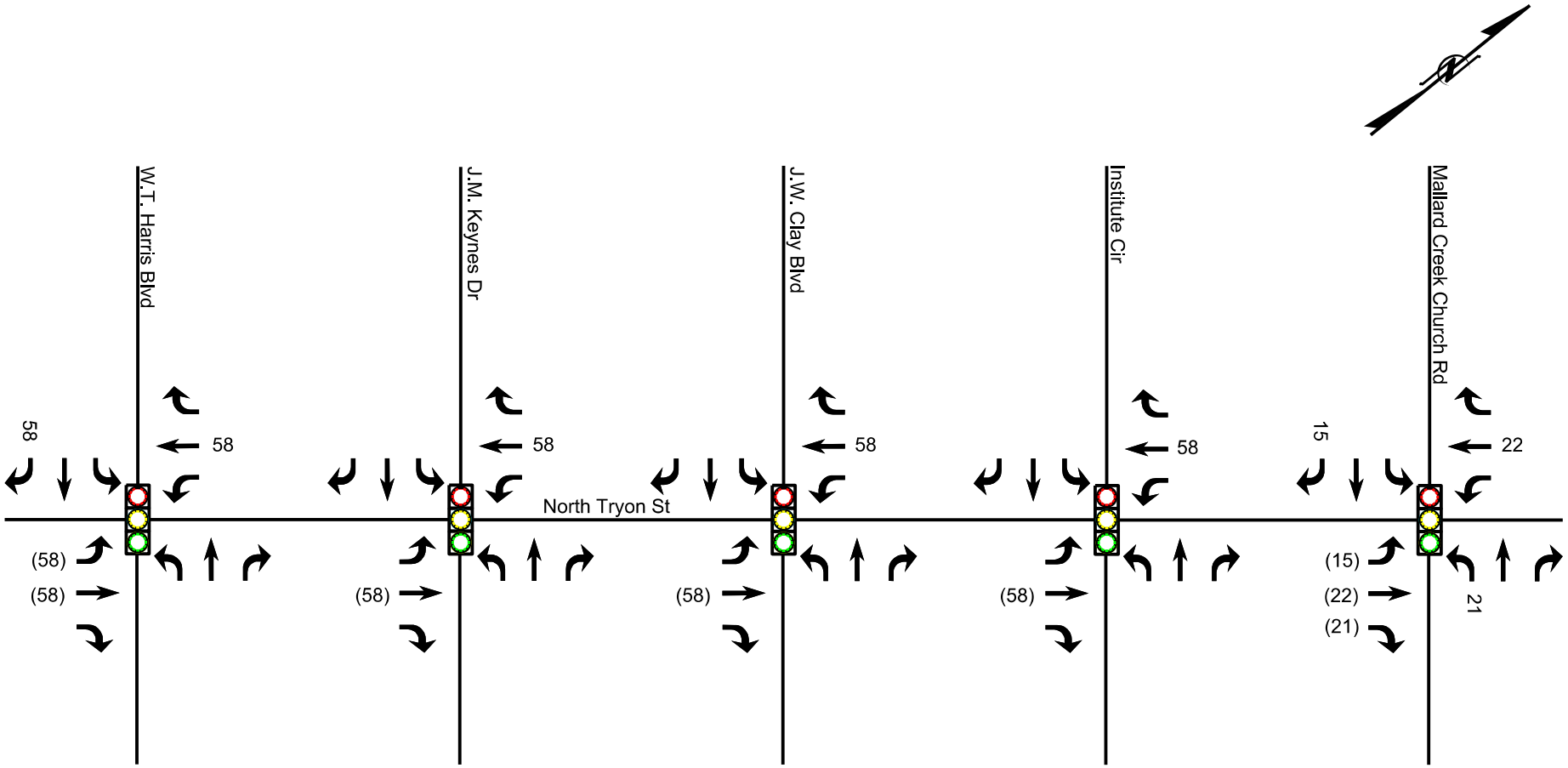
STV / Ralph Whitehead Associates, Inc.
1000 West Morehead St., Ste. 200
Charlotte, NC 28208

CATS CHARLOTTE AREA TRANSIT SYSTEM

LYNX BLUE LINE EXTENSION
NORTHEAST CORRIDOR LIGHT RAIL PROJECT
TRIP GENERATION
JW CLAY BLVD STATION (LPA)

DATE: 11/07/12
SHEET: FIGURE 7A
CATS NO: 08-477

NOTE: FIGURE SHOWS TRIP GENERATION AT STUDY INTERSECTIONS ONLY. TRIPS MAY BE DISTRIBUTED TO ADDITIONAL INTERSECTIONS THAT ARE NOT INCLUDED IN THIS STUDY.



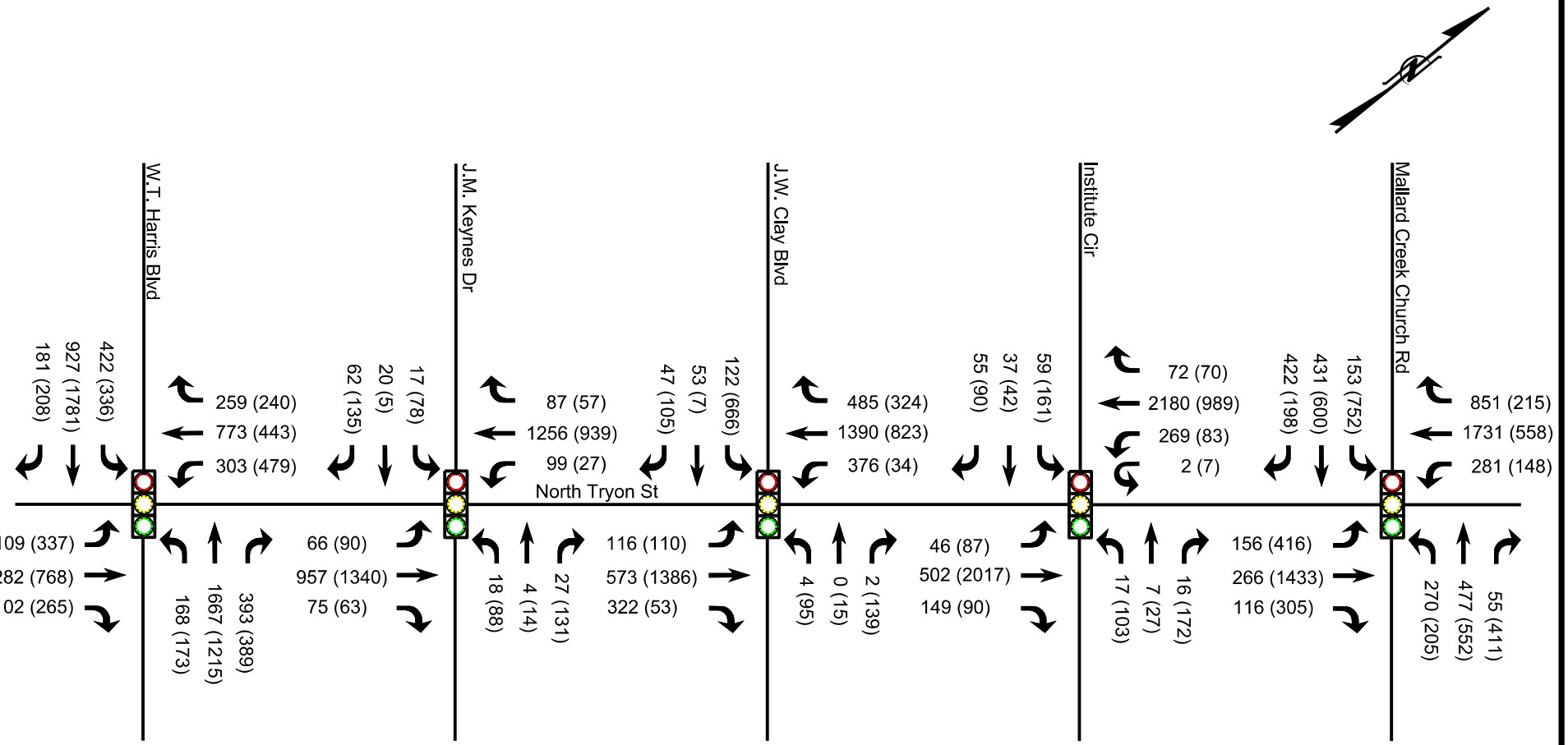
AM Peak Hour Trip Generation
(PM Peak Hour Trip Generation)

STV / Ralph Whitehead Associates, Inc.
1000 West Morehead St., Ste. 200
Charlotte, NC 28208

CATS CHARLOTTE AREA TRANSIT SYSTEM

LYNX BLUE LINE EXTENSION
NORTHEAST CORRIDOR LIGHT RAIL PROJECT
TRIP GENERATION
UNIVERSITY CITY BLVD STATION (LPA)

DATE: 11/07/12
SHEET: FIGURE 7B
CATS NO: 08-477



AM Peak Hour Traffic Volume
(PM Peak Hour Traffic Volume)

STV / Ralph Whitehead Associates, Inc.
1000 West Morehead St., Ste. 200
Charlotte, NC 28208

CATS CHARLOTTE AREA TRANSIT SYSTEM

LYNX BLUE LINE EXTENSION
NORTHEAST CORRIDOR LIGHT RAIL PROJECT
2017 BUILD
PEAK HOUR TRAFFIC VOLUMES

DATE: 11/07/12
SHEET: FIGURE 8
CATS NO: 08-477

STV/Ralph Whitehead Associates
LYNX Blue Line Extension Project Office
600 East Fourth Street
Charlotte, North Carolina 28202
(704) 432-2584 fax: (704) 432-2593

Memorandum

Date: March 29, 2013

To: CATS

From: STV/Ralph Whitehead Associates

Subject: **LYNX Blue Line Extension Northeast Corridor Light Rail Project**
Transportation Facility Permit – Air Quality Analysis
JW Clay Blvd. Station

In a letter to CATS dated October 17, 2012, Mecklenburg County LUESA determined that the proposed parking garage at the corner of JW Clay Boulevard and North Tryon Street/US-29 would require an air quality permit per Mecklenburg County Air Pollution Control Ordinance (MCAPCO) Regulation 2.0805. The letter stated that a Level of Service (LOS) analysis was required for five intersections located near the proposed garage and that any intersection with a LOS of E or F would require a detailed air quality analysis. The LOS analysis revealed that the Mallard Creek Church and North Tryon Street/US-29 intersection would require further analysis because it would operate at LOS E. A protocol for the modeling of the proposed JW Clay parking garage and surrounding intersections was submitted to and subsequently approved by Mecklenburg County LUESA in March 2013 (attached).

This memo outlines the results of the air quality analysis.

Regulatory Status

The EPA website was accessed to determine NAAQS compliance for the project corridor. The Charlotte-Gastonia-Rock Hill area currently is classified by the EPA as a nonattainment area for O_3 (2008 and 1997 8-hour average). Mecklenburg County is classified as a maintenance area for CO and as an attainment area for NO_2, SO_2, PM_{10}, $PM_{2.5}$, and Pb.

Microscale Air Quality Guidance

Guidance from the following documents was used for microscale carbon monoxide modeling of the selected intersection and proposed parking facility.

- NC Division of Air Quality, (September 2007) *Guidelines for Evaluating the Air Quality Impacts of Transportation Facilities.*
- US EPA Office of Air Quality Planning and Standards, EPA-454/R-92-005, (November 1992), *Guidelines for Modeling Carbon Monoxide from Roadway Intersections.*
- Federal Highway Administration, (July 2001), *Transportation Conformity Reference Guide.*
- All applicable federal, State, and local regulations, including:
    - 40 CFR 93 (Determining Conformity of Federal Actions to State or Federal Implementation Plans)
    - 15 North Carolina Administrative Code 2D.0800, 2D.1600 (General Conformity), 2D.2000 (Transportation Conformity)
    - Mecklenburg County Air Pollution Control Ordinance (MCAPCO)

In accordance with 40 CFR 93.105(c)(1)(i), Interagency Consultation Procedures, the Air Quality Section of the Mecklenburg County Land Use and Environmental Services Agency (LUESA) was consulted in February 2013, prior to initiating the microscale assessment and employing the planned project methodology.

Three computer models were utilized as part of the Transportation Facility Permit (TFP) Air Quality Analysis. MOBILE6.2 was used to generate emission factors; CAL3QHC Version 2.0 was employed for microscale intersection analyses; and, Point, Area, and Line Source Algorithm (PAL2.1) aided in the analysis of parking facility.

MOBILE6.2 Emissions Factors

The MOBILE6.2 emission factor model was used to provide vehicular emission factors for use in the CAL3QHC and the PAL2.1 model for estimating CO concentrations at the selected intersection and at the proposed parking facility. According to 40 CFR Part 51, Appendix W, Section 5.2.3, the latest version of the MOBILE model should be used for emissions input to intersection models. MOBILE6.2 is the latest update to the MOBILE model for use by state and local governments to meet Clean Air Act requirements. MOBILE6.2 was used for the regional transportation conformity demonstration as part of the 2035 Long Range Transportation Plan (LRTP), which includes the LYNX BLE. Input and assistance from the Mecklenburg County LUESA Air Quality Section was necessary to determine the emissions factors and to confirm use of MOBILE6.2 for this project-level hot-spot analysis.

The MOBILE6.2 emission factors by roadway type for 2017 can be found in Table 1. Since this parking garage will primarily serve as a park-and-ride facility for weekday commuters, most cars are expected to be idle for hours at a time. Car engines started after resting for 6 or more hours (cold starts) give off higher emissions than those that are started sooner. A conservative vehicular travel speed of 5 mph was used to model the vehicles traveling in the parking garage. Emissions factors for cold starts are also listed in Table 1. The MOBILE6.2 input and output files used to generate the various emission factors for 2017 are shown in the Appendix of this report.

Table 1: Mobile 6.2 Emissions Factors

2017	CO Emission Factors			CO Emission Factors (Cold)
Road Type	g/mi[1] @ 2.5 mph	g/mi @ 45 mph[2]	Idle-g/hr[3]	g/mi @ 5 mph
Urban principal arterial	20.82	9.93	52.05	17.98

[1] g/mi - (grams per mile traveled)
[2] mph - (miles traveled per hour)
[3] g/hr - (grams emitted per hour, derived by multiplying 2.5 mph emission factor by 2.5 mph)

CAL3QHC Modeling

CAL3QHC Version 2.0 is a line-source dispersion model that predicts pollutant concentrations near congested intersections and heavily traveled roadways. Input variables include: calculated free flow and idle emission factors, roadway geometries, traffic volumes, site characteristics, background pollutant concentrations, signal timing, and meteorological conditions. CAL3QHC Version 2.0 predicts inert pollutant concentrations, averaged over a 1-hour period near roadways. This model was used to predict concentrations at the intersection of Mallard Creek Church and North Tryon Street/US-29.

The use of peak hour baseline and project-generated traffic conditions would also result in conservative predictions of pollutant levels and project impacts. Peak hour traffic represents the highest hourly traffic during the study period.

MCAPO regulations requires a detailed air quality analysis for any intersection operating at an LOS of E or F that is located in the vicinity of a proposed transportation facility. For the Mallard Creek Church and North Tryon Street/US-29 intersection selected for detailed study, receptor locations were identified in accordance with the *Guidelines for Modeling Carbon Monoxide from Roadway Intersections* (EPA, 1992). The following criteria, as defined in the guidance, were used to select receptors:

- Receptors must be at least ten feet from each of the traveled roadways that comprise the intersection and must be at a height of six feet; these criteria generally apply to all receptors, with further refinements listed below.
- Receptors nearby occupied lots must be located along the nearest edge within the lot to which the general public has continuous access. If this cannot be determined, the property line of the lot nearest to traffic lanes should be used.
- Receptors nearby vacant lots must be located using the same criteria for receptors near occupied lots.
- For sidewalks, receptors should be located at least ten feet from each of the traveled roadways that comprise the intersection. If the width of the sidewalk allows, it is recommended that receptors be placed at the midpoint between the curb and the building line. At a minimum, receptors should be located near the corner and at midblock for each approach and departure at the intersection. Receptors should be placed on both sides of the road. For long approaches, it is recommended that receptors be located 80 feet and 160 feet from the intersection corner.
- Receptors (any location type) near breathing height (six feet) to which the general public has continuous access.

For the project study area, the latest background hourly average CO concentration and the persistence factor to be used for modeling purposes were provided by the Mecklenburg County LUESA Air Quality Section in March 2013. The use of these background concentrations represents a worst-case scenario that conservatively results in the highest predicted 1-hour CO concentration. The background concentration provided by the LUESA was 1.1 parts per million (ppm) for 1-hour averages and 0.912 ppm for 8-hour averages. The persistence factor used was 0.8288.

Table 2 details the CAL3QHC Version 2.0 inputs that were used to predict CO concentrations for the modeled intersection.

Table 2: CAL3QHC Modeling Inputs

Meteorological Variables	**Unit of Measurement**
Settling/Deposition Velocities	0/0 centimeters per second (cm/sec)
Surface Roughness (Zo)	175 cm (urban area)
Wind Speed (U)	1.0 meters per second (m/sec)
Averaging Time (ATIM)	60 minutes
Mixing Height	1,000 m
Ambient Concentrations	1.1 ppm
Stability Class	D
Site Variables	**Receptor Location**
Receptor Height:	6 feet
Receptor Locations	various locations in all four quadrants
Links	Most links at-grade; links on structures and depressed links were modeled as required. Approach and departure free-flow links. Left-turn, right-turn, and through queue links.
Traffic Variables	**Unit of Measurement**
Traffic Speed[1]	45 mph on modeled roadways
Traffic volumes	Projected 2017 a.m. and/or p.m. peak traffic volumes and turning movements

1. 45 mph travel speed for roadways supplied by traffic studies done by STV/Ralph Whitehead Associates

The results of the mobile source air quality modeling analysis or the 2017 traffic conditions are provided in Table 3. The values shown are the maximum CO concentrations estimated near the intersection during the peak traffic period. As shown in Table 3, no violations of the 1-hour or 8-hour NAAQS for CO are projected to occur.

Table 3: Maximum CO Concentrations at Selected Intersections

Intersection	**Maximum CO Concentration (ppm)**		**Location of Maximum CO Concentration**
	1-Hour Average NAAQS - 35ppm	**8-Hour Average NAAQS – 9ppm**	
North Tryon Street/US-29 & Mallard Creek Church Road	3.2	2.7	Receptor 14- West of East Mallard Creek Church Road and about 120 feet north of N. Tryon Street/US-29

PAL2.1 Dispersion Modeling

The proposed parking facility at the JW Clay Blvd. Station was analyzed in accordance with Mecklenburg County Air Pollution Control Ordinance (MCAPCO) and the *Guidelines for Evaluating the Air Quality Impacts of Transportation Facilities* (EPA, 1992). As outlined in these guidance documents, the PAL algorithm was used to model CO concentrations under worst case conditions at the proposed parking facility. The worst-case scenario demonstrates the number of spaces if the maximum allowable parking spaces and maximum available square footage are used. Using the maximum amount of parking spaces and square footage will produce a worst case pollutant concentration since the emissions are a direct result of the number of cars idling and traveling in the garage. The area of the largest parking level was used to model all of the levels to ensure a conservative analysis. If this worst case scenario does not violate any state or federal air quality standard, then any lesser amount of vehicles or parking area will not violate any air quality standard either.

The PAL model inputs that were used to predict CO concentrations for the proposed parking garage at the JW Clay Blvd. Station are shown in Table 4. These inputs represent a conservative, worst-case scenario analysis.

Table 4: PAL Model Inputs for the Proposed JW Clay Blvd. Parking Garage

Parking Lot Configuration	
Number of Levels:	Five levels
Spaces per Level:	Level 1: 108 Level 2: 119 Level 3: 193 Level 4: 194 Level 5: 189
Total Spaces[1]:	803 spaces
Dimensions:	315 feet x 185 feet
Area:	5,414 square meters per level[2]
Parking Level Emission Rates	
Parking Level 1:	0.0001059 g-sec-m^2*
Parking Level 2:	0.0000917 g-sec-m^2*
Parking Level 3:	0.0000759 g-sec-m^2*
Parking Level 4:	0.0000505 g-sec-m^2*
Parking Level 5:	0.0000249 g-sec-m^2*
Traffic Variables	
Traffic Speed:	5 mph in the garage
Traffic volumes[3]:	Assume all 803 cars leave garage during PM peak hour (worst case scenario)

*grams per second per meter squared (g-sec-m^2)
[1] Parking garage analysis was based on worst case scenario estimates
[2] The area of the largest parking level was used to model all five levels to ensure a conservative analysis.
[2] Vehicles exiting the garage structure would be assumed to be in cold start mode

Carbon monoxide concentrations from the PAL model output were given in grams/cubic meter and were converted to ppm and are listed in Table 5 below.

Table 5: Predicted Maximum Carbon Monoxide Concentration at Proposed Parking Garage (2017)

Station Name	Maximum CO Concentration (ppm)*		Location of Maximum CO Concentration
	1-Hour Average NAAQS – 35 ppm	8-Hour Average NAAQS – 9 ppm	
JW Clay Blvd.	4.6	3.8	Southwest Corner of Garage

*includes background concentration of 1.1 ppm for 1-hour average and 0.912 ppm for 8-hour average

As shown in Table 5, no violations of the 1-hour or 8-hour NAAQS for CO are expected due to the operation of the proposed parking facility. These results are consistent with the results of the analysis in the previous Air Quality Technical Report for the LYNX BLE in which no violations of the NAAQS for carbon monoxide were found. The emissions from the operation of this parking facility would also be in compliance with the local transportation conformity plan since the proposed LYNX BLE is an element of MUMPO's adopted 2035 LRTP, and is included in the County's conformity document as a regionally significant project.

The results of this analysis are expected to satisfy the requirements for the Transportation Facilities Permit as outlined by MCAPCO.

MECKLENBURG COUNTY
Land Use and Environmental Services Agency
- AIR QUALITY -

March 5, 2013

Ms. Meghan Makoid, ACIP
Charlotte Area Transit System (CATS)
Development Division – LYNX Blue Line Extension Light Rail Project
600 East Fourth Street
Charlotte, NC 28202

RE: Transportation Facility Permit Modeling Protocol Approval
LYNX Blue Line Extension Light Rail Project

Dear Ms. Makoid:

Mecklenburg County Air Quality ("MCAQ") has reviewed the modeling protocol submitted by STV/Ralph Whitehead Associates on behalf of Charlotte Area Transit System (CATS) on February 27, 2013, for a Transportation Facility Permit for the JW Clay Boulevard Station Park and Ride deck construction project. The proposed project includes construction of a five (5) level, 810 space parking deck at the intersection of JW Clay Blvd. and North Tryon Street (US-29) in Charlotte, NC. MCAQ finds this protocol acceptable as submitted.

Please be advised that this approval does not prevent MCAQ from requesting additional information at a later date. If you have any questions please call me at (704) 336-5420.

Sincerely,

Eric Moore
Air Quality Specialist

EWM:isp

C: Jennifer Fickler, MCAQ

STV/Ralph Whitehead Associates
LYNX Blue Line Extension Project Office
600 East Fourth Street
Charlotte, North Carolina 28202
(704) 432-2584 fax: (704) 432-2593

Memorandum

Date: February 25, 2013

To: CATS

From: STV/Ralph Whitehead Associates

Subject: LYNX Blue Line Extension Northeast Corridor Light Rail Project
Transportation Facility Air Quality Permit – Modeling Protocol
JW Clay Blvd. Station

In a letter to CATS dated October 17, 2012, Mecklenburg County LUESA determined that the JW Clay Blvd. Station parking garage, to be located at the intersection of JW Clay Boulevard and North Tryon Street/US-29, will require an air quality permit per Mecklenburg County Air Pollution Control Ordinance (MCAPCO) Regulation 2.0805. The letter stated that a Level of Service (LOS) analysis was required for intersections located near the proposed garage and that any intersection with a LOS of E or F would require a detailed air quality analysis. A LOS analysis was submitted and in further electronic correspondence from you on February 13, 2013, it was confirmed that the air quality permit application would need to include model data as the Mallard Creek Church Road intersection would operate a LOS E. In conformance with the process for obtaining a Transportation Facility Air Quality Permit, this memorandum outlines the proposed methodology for calculating CO concentrations at the Mallard Creek Church Road and North Tryon Street/US-29 intersection. This methodology will be followed to meet the requirements of the LUESA regarding the acquisition of a Transportation Facility Permit.

During previous air quality analysis for the LYNX Blue Line Extension Northeast Corridor Light Rail Project (LYNX BLE), guidance from the following documents was used for microscale carbon monoxide modeling for various intersections and proposed parking facilities within the project study area. These same documents will be utilized in the forthcoming air quality analysis of the JW Clay Blvd. parking garage.

- NC Division of Air Quality, (September 2007) *Guidelines for Evaluating the Air Quality Impacts of Transportation Facilities.*
- US EPA Office of Air Quality Planning and Standards, EPA-454/R-92-005, (November 1992), *Guidelines for Modeling Carbon Monoxide from Roadway Intersections.*
- Federal Highway Administration, (July 2001), *Transportation Conformity Reference Guide.*

- Applicable federal, State, and local regulations, including:
  - 40 CFR 93 (Determining Conformity of Federal Actions to State or Federal Implementation Plans)
  - 15 North Carolina Administrative Code 2D.0800, 2D.1600 (General Conformity), 2D.2000 (Transportation Conformity)
  - Mecklenburg County Air Pollution Control Ordinance (MCAPCO)

In accordance with 40 CFR 93.105(c)(1)(i), Interagency Consultation Procedures, the Air Quality Section of the Mecklenburg County Land Use and Environmental Services Agency (LUESA) was consulted in March 2009, prior to initiating the microscale assessment and employing the planned project methodology. Additionally during previous air quality analysis efforts, three computer models were utilized. MOBILE6.2 was used to generate emission factors; CAL3QHC Version 2.0 was employed for microscale intersection analyses; and, Point, Area, and Line Source Algorithm (PAL) aided in the analysis of parking facilities. Use of these computer models will be carried forward into the forthcoming analysis of the JW Clay Blvd. parking garage.

Mobile6.2 Modeling Methodology

The MOBILE6.2 emission factor model will be used to provide input to the microscale models (CAL3QHC Version 2.0) and the PAL model for estimating CO concentrations along roadways and at the parking facility. According to 40 CFR Part 51, Appendix W, Section 5.2.3, the latest version of the MOBILE model should be used for emissions input to intersection models. MOBILE6.2 is the latest update to the MOBILE model for use by state and local governments to meet Clean Air Act requirements. MOBILE6.2 was used for the regional transportation conformity demonstration as part of the 2030 Long Range Transportation Plan (LRTP) update, which included the LYNX BLE. Input (such as local vehicle age files and I/M data) and assistance from the Mecklenburg County LUESA Air Quality Section was necessary to determine the emissions factors and to confirm use of MOBILE6.2 for this project-level hot-spot analysis. Emission factors by roadway type for warm and cold starts were developed as they were necessary for CAL3QHC Version 2.0 and PAL input files.

CAL3QHC Modeling Methodology

CAL3QHC Version 2.0 is a line-source dispersion model that predicts pollutant concentrations near congested intersections and heavily traveled roadways. Input variables include: calculated free flow and idle emission factors, roadway geometries, traffic volumes, site characteristics, background pollutant concentrations, signal timing, and meteorological conditions. CAL3QHC Version 2.0 predicts inert pollutant concentrations, averaged over a 1-hour period near roadways. This model was used to predict concentrations at the identified affected study area intersections and will be used to predict concentrations in the forthcoming analysis of the JW Clay Blvd. parking garage.

The use of peak hour baseline and project-generated traffic conditions will also result in conservative predictions of pollutant levels and project impacts. Peak hour traffic represents the highest hourly traffic during the study period.

For the Mallard Creek Church Road and North Tryon Street/US-29 intersection selected for detailed study, receptor locations will be identified in accordance with the *Guidelines for Modeling Carbon Monoxide from Roadway Intersections* (EPA, 1992). The following criteria, as defined in the guidance, were used previous to select receptors and will be carried forward in the forthcoming analysis of the JW Clay Blvd. parking garage:

- Receptors must be at least ten feet from each of the traveled roadways that comprise the intersection and must be at a height of six feet; these criteria generally apply to all receptors, with further refinements listed below.
- Receptors nearby occupied lots must be located along the nearest edge within the lot to which the general public has continuous access. If this cannot be determined, the property line of the lot nearest to traffic lanes should be used.
- Receptors nearby vacant lots must be located using the same criteria for receptors near occupied lots.
- For sidewalks, receptors should be located at least ten feet from each of the traveled roadways that comprise the intersection. If the width of the sidewalk allows, it is recommended that receptors be placed at the midpoint between the curb and the building line. At a minimum, receptors should be located near the corner and at midblock for each approach and departure at the intersection. Receptors should be placed on both sides of the road. For long approaches, it is recommended that receptors be located 80 feet and 160 feet from the intersection corner.
- Receptors (any location type) near breathing height (six feet) to which the general public has continuous access.

For the project study area, the latest background hourly average CO concentration and the persistence factor to be used for modeling purposes were provided previously by the Mecklenburg County LUESA Air Quality Section. The use of these background concentrations represents a worst-case scenario that conservatively results in the highest predicted 1-hour CO concentration. The background concentration provided by the LUESA was 1.1 parts per million (ppm) for 1-hour averages and 0.912 ppm for 8-hour averages. The persistence factor used was 0.83.

The following table details the CAL3QHC Version 2.0 inputs that were used to predict CO concentrations for each modeled intersection. These inputs will also be used for the forthcoming air quality analysis of the JW Clay Blvd. parking garage.

CAL3QHC Modeling Inputs

Meteorological Variables	**Unit of Measurement**
Settling/Deposition Velocities	0/0 centimeters per second (cm/sec)
Surface Roughness (Zo)	175 cm (urban area)
Wind Speed (U)	1.0 meters per second (m/sec)
Averaging Time (ATIM)	60 minutes
Mixing Height	1,000 m
Ambient Concentrations	1.1 ppm
Stability Class	D
Site Variables	**Receptor Location**
Receptor Height:	6 feet
Receptor Locations	various locations in all four quadrants
Links	Most links at-grade; links on structures and depressed links were modeled as required. Approach and departure free-flow links. Left-turn, right-turn, and through queue links.
Traffic Variables	**Unit of Measurement**
Traffic Speed	Various
Traffic volumes	Projected 2017 a.m. and/or p.m. peak traffic volumes and turning movements

PAL Modeling Methodology

The proposed JW Clay Blvd. parking garage will be analyzed in accordance with MCAPCO and the *Guidelines for Evaluating the Air Quality Impacts of Transportation Facilities* (EPA, 1992). As outlined in these guidance documents, the PAL algorithm will be used to model carbon monoxide concentrations under worst case conditions at the JW Clay Blvd. parking garage. The JW Clay Blvd. parking garage will be evaluated using 2017 emissions factors and traffic volumes generated by full operation of the parking facility. It will be conservatively assumed that the parking garage will operate at 100 percent capacity during the a.m. and p.m. peak hours and that all cars will be entering in the a.m. and exiting in the p.m. The worst-case scenario demonstrates the number of spaces if the maximum allowable parking spaces and maximum available square footage are used. Using the maximum amount of parking spaces and square footage will produce a worst case pollutant concentration since the emissions are a direct result of the number of cars idling and traveling in the garage. If this worst case scenario does not violate any state or federal air quality standard, then any lesser amount of vehicles will not violate any air quality standard either.

APPENDIX

PAL Calculation Spreadsheet

Mobile6.2 Output Files

CAL3QHC Output Files

PAL Output Files

JW Clay Parking Deck Analysis

Project Conditions:

Parking Spaces Level 1	108
Parking Spaces Level 2	119
Parking Spaces Level 3	193
Parking Spaces Level 4	194
Parking Spaces Level 5	189
JW Clay Parking Deck Total Capacity (cars)	803
Length of Lot (feet)	315
Length of Lot (m) (1ft = 0.3048 m)	96.012
Width of Lot (feet)	185
Width of Lot (m)	56.388
Area of lot (square feet)	58275
Area of lot (square meters)	5413.92
Max travel distance: (Length + Width) (feet)	500.00
Max travel distance: (Length + Width) (miles) 1 mile = 5280 feet	0.09
Vehicle idle time (min)	1.00
Mobile 6.2 CO Cold start emissions factor for 5 mph @ 12 hrs rest time (g/mi) (2017)	17.979
Travel Emissions: Vehicles x CO Starting Emissions Factor x Distance (g/s)	0.379764757
Mobile 6.2 CO Idle emission factor (g/hr) (2017)	52.05
Idle Emissions: Idle Time x Idle emission factor; 1 min idle veh (grams/sec)	0.193500694
Composite Emissions: Cold Start + Idle (grams/sec)	0.573265451
Parking Level 1 Area Source Strength: Composite/Area (grams/sec-sq. meter)	0.000105887
Parking Level 2 Area Source Strength: Composite/Area (grams/sec-sq. meter)	0.000091646
Parking Level 3 Area Source Strength: Composite/Area (grams/sec-sq. meter)	0.000075954
Parking Level 4 Area Source Strength: Composite/Area (grams/sec-sq. meter)	0.000050504
Parking Level 5 Area Source Strength: Composite/Area (grams/sec-sq. meter)	0.000024922
Garage Total (grams/sec-sq. meter)	0.000348914
PAL 2.1 Model output Maximum 1 hour CO concentration (grams/cubic meter)	0.004041
Molecular Weight CO (grams)	28.01
Temperature (Celsius)	25
Atmospheric Pressure (mm of Mercury Hg)	760
Maximum 1 hour CO concentration (ppm)	**3.53**
1 hour CO background concentration (ppm)	1.1
Total 1 hour CO concentration (ppm) (Maximum + background)	**4.63**
Maximum 8 hour CO concentration (ppm) Persistence factor = 0.8288	**2.93**
8 hour CO background concentration (ppm)	0.912
Total 8 hour CO concentration (ppm) (Maximum + background)	**3.84**

Assumptions used for analysis

1. Worst case scenario was modeled to ensure a conservative analysis.

2. All 803 cars were assumed to leave garage during PM peak hour after 12 hours of inactivity
3. All cars were assumed to idle for 1 minute in garage before leaving
4. Travel speed of 5 mph was used for cars in garage
5. Background concentrations and persistence factors from LUESA
6. Assume a height of 8 feet for each garage level
7. The area of the largest parking level was used to model the smaller levels.
8. Maximum PAL CO concentration found at 61 degree wind angle

```
*******************************************************************************
* MOBILE6.2.03 (24-Sep-2003)                                                  *
* Input file: CATSP17.IN (file 1, run 1).                                     *
*******************************************************************************
* OBDII

* Reading Registration Distributions from the following external
* data file: MEKAGE08.PRN
  M 49 Warning:
                1.00     MYR sum not = 1. (will normalize)
  M 49 Warning:
                1.00     MYR sum not = 1. (will normalize)
  M 49 Warning:
                1.00     MYR sum not = 1. (will normalize)
  M 49 Warning:
                1.00     MYR sum not = 1. (will normalize)
  M 49 Warning:
                1.00     MYR sum not = 1. (will normalize)
  M 49 Warning:
               0.998     MYR sum not = 1. (will normalize)
  M 49 Warning:
               0.998     MYR sum not = 1. (will normalize)
*>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>1

* # # # # # # # # # # # # # # # # # # # # # # # # #
* I/M WINTER - Urban Principal Arterial

* File 1, Run 1, Scenario 1.
* # # # # # # # # # # # # # # # # # # # # # # # # #
  M615 Comment:
                User supplied VMT mix.
  M583 Warning:
             The user supplied arterial average speed of 45.0
             will be used for all hours of the day.  100% of VMT
             has been assigned to the arterial/collector roadway
             type for all hours of the day and all vehicle types.
*>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>1
*** I/M credits for Tech1&2 vehicles were read from the following external
    data file: TECH12.D

  M 48 Warning:
             there are no sales for vehicle class HDGV8b
  M 48 Warning:
             there are no sales for vehicle class LDDT12

                   Calendar Year:  2017
                           Month:  Jan.
                        Altitude:  Low
              Minimum Temperature:  32.0 (F)
              Maximum Temperature:  53.0 (F)
                Absolute Humidity:   75. grains/lb
                 Nominal Fuel RVP:  15.0 psi
                    Weathered RVP:  15.0 psi
              Fuel Sulfur Content:   30. ppm

              Exhaust I/M Program:  Yes
                 Evap I/M Program:  Yes
                      ATP Program:  Yes
                 Reformulated Gas:  No

       Vehicle Type:      LDGV    LDGT12    LDGT34      LDGT      HDGV      LDDV
 LDDT      HDDV        MC   All Veh
              GVWR:                <6000     >6000     (All)
```

```
                        ------    ------    ------    ------    ------    ------
------    ------    ------    ------
   VMT Distribution:    0.3919    0.4033    0.1374              0.0253    0.0004
0.0021    0.0338    0.0058    1.0000

-------------------------------------------------------------------------------
---------------------------------
 Composite Emission Factors (g/mi):
     Composite CO  :      9.47     12.00      8.45     11.10      5.69     0.500
0.259     0.234     11.12     9.929

-------------------------------------------------------------------------------
---------------------------------

* # # # # # # # # # # # # # # # # # # # # # # #
* I/M WINTER - Urban Principal Arterial

* File 1, Run 1, Scenario 2.
* # # # # # # # # # # # # # # # # # # # # # # #
  M615 Comment:
                User supplied VMT mix.
  M583 Warning:
            The user supplied arterial average speed of  5.0
            will be used for all hours of the day.  100% of VMT
            has been assigned to the arterial/collector roadway
            type for all hours of the day and all vehicle types.

* Reading start SOAK distribution from the following external
* data file: CLDSOAK.D

*>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>1
  M 48 Warning:
               there are no sales for vehicle class HDGV8b
  M 48 Warning:
               there are no sales for vehicle class LDDT12

                     Calendar Year:  2017
                             Month:  Jan.
                          Altitude:  Low
               Minimum Temperature:  32.0 (F)
               Maximum Temperature:  53.0 (F)
                 Absolute Humidity:   75. grains/lb
                  Nominal Fuel RVP:  15.0 psi
                     Weathered RVP:  15.0 psi
               Fuel Sulfur Content:   30. ppm

               Exhaust I/M Program:  Yes
                  Evap I/M Program:  Yes
                       ATP Program:  Yes
                  Reformulated Gas:  No

       Vehicle Type:      LDGV    LDGT12    LDGT34      LDGT      HDGV      LDDV
 LDDT      HDDV        MC   All Veh
                GVWR:               <6000     >6000     (All)
                        ------    ------    ------    ------    ------    ------
------    ------    ------    ------
   VMT Distribution:    0.3919    0.4033    0.1374              0.0253    0.0004
0.0021    0.0338    0.0058    1.0000

-------------------------------------------------------------------------------
---------------------------------
 Composite Emission Factors (g/mi):
     Composite CO  :     16.36     20.59     14.49     19.04     31.78     1.911
```

1.051 1.279 72.95 17.979

---

* #
* I/M WINTER - Urban Principal Arterial

* File 1, Run 1, Scenario 3.
* #
M615 Comment:
User supplied VMT mix.
M583 Warning:
The user supplied arterial average speed of 15.0
will be used for all hours of the day. 100% of VMT
has been assigned to the arterial/collector roadway
type for all hours of the day and all vehicle types.

* Reading start SOAK distribution from the following external
* data file: CLDSOAK.D

*>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>1
M 48 Warning:
there are no sales for vehicle class HDGV8b
M 48 Warning:
there are no sales for vehicle class LDDT12

Calendar Year: 2017
Month: Jan.
Altitude: Low
Minimum Temperature: 32.0 (F)
Maximum Temperature: 53.0 (F)
Absolute Humidity: 75. grains/lb
Nominal Fuel RVP: 15.0 psi
Weathered RVP: 15.0 psi
Fuel Sulfur Content: 30. ppm

Exhaust I/M Program: Yes
Evap I/M Program: Yes
ATP Program: Yes
Reformulated Gas: No

Vehicle Type:	LDGV	LDGT12	LDGT34	LDGT	HDGV	LDDV	LDDT	HDDV	MC	All Veh
GVWR:		<6000	>6000	(All)						
VMT Distribution:	0.3919	0.4033	0.1374		0.0253	0.0004	0.0021	0.0338	0.0058	1.0000

Composite Emission Factors (g/mi):

Composite CO :	12.78	15.89	11.06	14.66	14.86	1.189	0.629	0.636	31.05	13.514

---

* #
* Winter Idle Emission Factors

* File 1, Run 1, Scenario 4.

```
* # # # # # # # # # # # # # # # # # # # # # # # # #
  M583 Warning:
            The user supplied arterial average speed of  2.5
            will be used for all hours of the day.  100% of VMT
            has been assigned to the arterial/collector roadway
            type for all hours of the day and all vehicle types.
  M 48 Warning:
              there are no sales for vehicle class HDGV8b
  M 48 Warning:
              there are no sales for vehicle class LDDT12

                    Calendar Year:  2017
                            Month:  Jan.
                         Altitude:  Low
              Minimum Temperature:  32.0 (F)
              Maximum Temperature:  53.0 (F)
                Absolute Humidity:   75. grains/lb
                 Nominal Fuel RVP:  15.0 psi
                    Weathered RVP:  15.0 psi
              Fuel Sulfur Content:   30. ppm

              Exhaust I/M Program:  Yes
                 Evap I/M Program:  Yes
                      ATP Program:  Yes
                 Reformulated Gas:  No

       Vehicle Type:      LDGV    LDGT12    LDGT34      LDGT      HDGV      LDDV
 LDDT      HDDV        MC   All Veh
            GVWR:                <6000     >6000     (All)
                      ------    ------    ------    ------    ------    ------
------    ------    ------    ------
   VMT Distribution:    0.2915    0.3787    0.1773              0.0393    0.0003
0.0027    0.1059    0.0043    1.0000

-------------------------------------------------------------------------------------------
-----------------------------------
 Composite Emission Factors (g/mi):
     Composite CO  :     19.13     24.42     17.49     22.21     40.30     1.997
1.134     1.793    110.84    20.186

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```

 CAL3QHC: LINE SOURCE DISPERSION MODEL - VERSION 2.0 Dated 95221
 PAGE 1

JOB: S5MallCr & NTr RUN: MallCr& NtryBDL1PM

DATE : 3/26/13
TIME : 19:46: 2

The MODE flag has been set to c for calculating CO averages.

SITE & METEOROLOGICAL VARIABLES

VS = 0.0 CM/S VD = 0.0 CM/S Z0 = 175. CM
U = 1.0 M/S CLAS = 4 (D) ATIM = 60. MINUTES MIXH = 1000. M AMB = 0.0 PPM BRG = 0. DEGREES

LINK VARIABLES

	LINK DESCRIPTION	*	LINK COORDINATES (FT)				*	LENGTH	BRG	TYPE	VPH	EF	H	W	V/C	QUEUE
		*	X1	Y1	X2	Y2	*	(FT)	(DEG)			(G/MI)	(FT)	(FT)		(VEH)
1.	MallCrSET @ NTryon	*	1093.0	2663.0	1149.0	2509.0	*	164.	160.	AG	1550.	9.9	0.0	42.0		
2.	MallCrSET @ NTry	*	1149.0	2509.0	1235.0	2336.0	*	193.	154.	AG	1550.	9.9	0.0	42.0		
3.	MallCrSET@ NTry	*	1235.0	2336.0	1355.0	2185.0	*	193.	142.	AG	1550.	9.9	0.0	42.0		
4.	Mall SETR@ NTry	*	1355.0	2185.0	1432.0	2105.0	*	111.	136.	AG	798.	9.9	0.0	42.0		
5.	Mall SET @ NTry	*	1432.0	2105.0	1570.0	1989.0	*	180.	130.	AG	600.	9.9	0.0	42.0		
6.	Mall SET @ NTry	*	1570.0	1989.0	1735.0	1869.0	*	204.	126.	AG	600.	9.9	0.0	42.0		
7.	MallSET @ NTryQ	*	1735.0	1869.0	1590.4	1974.2	*	179.	306.	AG	203.	100.0	0.0	22.0	0.38	9.1
8.	Mall SED@ NTry	*	1735.0	1869.0	1864.0	1780.0	*	157.	125.	AG	600.	9.9	0.0	42.0		
9.	Mall SED@ NTry	*	1864.0	1780.0	2668.0	1198.0	*	993.	126.	AG	1053.	9.9	0.0	42.0		
10.	Mall SEL @ NTry	*	1355.0	2185.0	1450.0	2118.0	*	116.	125.	AG	752.	9.9	0.0	44.0		
11.	Mall SEL @ NTry	*	1450.0	2118.0	1580.0	2012.0	*	168.	129.	AG	752.	9.9	0.0	44.0		
12.	Mall SEL @ NTry	*	1580.0	2012.0	1730.0	1902.0	*	186.	126.	AG	752.	9.9	0.0	44.0		
13.	Mall SEL@ NTryQ	*	1730.0	1902.0	1542.7	2039.4	*	232.	306.	AG	210.	100.0	0.0	24.0	0.55	11.8
14.	Mall SLD@ NTry	*	1730.0	1902.0	1916.0	1918.0	*	187.	85.	AG	752.	9.9	0.0	44.0		
15.	Mall SER @ NTry	*	1432.0	2105.0	1560.0	1975.0	*	182.	135.	AG	198.	9.9	0.0	31.0		
16.	Mall SER @ NTry	*	1560.0	1975.0	1724.0	1853.0	*	204.	127.	AG	198.	9.9	0.0	31.0		
17.	Mall SER@ NTryQ	*	1724.0	1853.0	1618.1	1931.8	*	132.	307.	AG	112.	100.0	0.0	11.0	0.81	6.7
18.	Mall SRD@ NTry	*	1724.0	1853.0	1740.0	1785.0	*	70.	167.	AG	198.	9.9	0.0	31.0		
19.	Mall NWT@ NTry	*	2692.0	1235.0	2240.0	1562.0	*	558.								

```
306. AG   1168.   9.9   0.0 46.0
      20. Mall NWTR@ NTry     *   2240.0    1562.0    2102.0    1662.0 *     170.
306. AG    963.   9.9   0.0 46.0
      21. Mall NWT @ NTry     *   2102.0    1662.0    1893.0    1818.0 *     261.
307. AG    552.   9.9   0.0 46.0
      22. Mall NWT @ NTryQ    *   1893.0    1818.0    2038.1    1709.7 *     181.
127. AG    223. 100.0   0.0 26.0 0.50   9.2
      23. Mall NWT @ NTryD    *   1893.0    1818.0    1760.0    1919.0 *     167.
307. AG    552.   9.9   0.0 46.0
      24. Mall NWT @ NTryD    *   1760.0    1919.0    1515.0    2102.0 *     306.
307. AG   1183.   9.9   0.0 46.0
      25. Mall NWT @ NTryD    *   1515.0    2102.0    1330.0    2290.0 *     264.
315. AG   1183.   9.9   0.0 46.0
      26. Mall NWT @ NTryD    *   1330.0    2290.0    1185.0    2528.0 *     279.
329. AG   1183.   9.9   0.0 46.0
      27. Mall NWT @ NTryD    *   1185.0    2528.0    1135.0    2680.0 *     160.
342. AG   1183.   9.9   0.0 46.0
      28. Mall NWR @ NTry     *   2102.0    1662.0    2070.0    1713.0 *      60.
328. AG    411.   9.9   0.0 32.0
      29. Mall NWR @ NTry     *   2070.0    1713.0    1905.0    1833.0 *     204.
306. AG    411.   9.9   0.0 32.0
      30. Mall NWR @ NTryQ    *   1905.0    1833.0    3523.9     655.6 *    2002.
126. AG    112. 100.0   0.0 12.0 1.68 101.7
      31. Mall NWR @ NTryD    *   1905.0    1833.0    1916.0    1918.0 *      86.
 7. AG    411.   9.9   0.0 32.0
      32. Mall NWL @ NTry     *   2240.0    1562.0    2093.0    1650.0 *     171.
301. AG    205.   9.9   0.0 32.0
      33. Mall NWL @ NTry     *   2093.0    1650.0    1880.0    1802.0 *     262.
306. AG    205.   9.9   0.0 32.0
      34. Mall NWL @ NTryQ    *   1880.0    1802.0    2007.0    1711.3 *     156.
126. AG    115. 100.0   0.0 12.0 0.90   7.9
      35. Mall NWL @ NTryD    *   1880.0    1802.0    1740.0    1785.0 *     141.
263. AG    205.   9.9   0.0 32.0
      36. N TryEB@ Mallard    *   1188.0    1075.0    1530.0    1472.0 *     524.
41. AG   2154.   9.9   0.0 42.0
      37. N TryEBT@ Mallard   *   1530.0    1472.0    1618.0    1574.0 *     135.
41. AG   1433.   9.9   0.0 42.0
      38. N TryEBT@ Mallard   *   1618.0    1574.0    1785.0    1764.0 *     253.
41. AG   1433.   9.9   0.0 42.0
      39. N TryEBT@ MallardQ  *   1785.0    1764.0    1567.9    1517.0 *     329.
221. AG    156. 100.0   0.0 22.0 0.52  16.7
      40. N TryEBT@ MallardD  *   1785.0    1764.0    1916.0    1918.0 *     202.
40. AG   1433.   9.9   0.0 42.0
      41. N TryEBT@ MallardD  *   1916.0    1918.0    2543.0    2652.0 *     965.
41. AG   2596.   9.9   0.0 42.0
      42. N TryEBR@ Mallard   *   1530.0    1472.0    1630.0    1568.0 *     139.
46. AG    305.   9.9   0.0 32.0
      43. N TryEBR@ Mallard   *   1630.0    1568.0    1799.0    1753.0 *     251.
42. AG    305.   9.9   0.0 32.0
      44. N TryEBR@ MallQ     *   1799.0    1753.0     940.0     812.7 *    1274.
222. AG    115. 100.0   0.0 12.0 1.50  64.7
□
```


JOB: S5MallCr & NTr RUN: MallCr& NtryBDL1PM

DATE : 3/26/13
TIME : 19:46: 2

LINK VARIABLES

LINK DESCRIPTION	*	LINK COORDINATES (FT)				*	LENGTH	BRG	TYPE	VPH	EF	H	W	V/C	QUEUE

		* X1	Y1	X2	Y2	*	(FT)	(DEG)	(G/MI)	(FT)	(FT)	(VEH)
45.	N TryEBR@ MallD	* 1799.0	1753.0	1864.0	1780.0	*	70.	67. AG	305.	9.9	0.0	32.0
46.	N Try EBL@ Mall	* 1530.0	1472.0	1602.0	1588.0	*	137.	32. AG	416.	9.9	0.0	46.0
47.	N Try EBL@ Mall	* 1602.0	1588.0	1768.0	1778.0	*	252.	41. AG	416.	9.9	0.0	46.0
48.	N Try EBL@ MallQ	* 1768.0	1778.0	1678.2	1675.2	*	136.	221. AG	223.	100.0	0.0	26.0 0.39 6.9
49.	N Try EBL@MallD	* 1768.0	1778.0	1760.0	1919.0	*	141.	357. AG	416.	9.9	0.0	46.0
50.	N TrySW@ Mallard	* 2510.0	2682.0	2300.0	2445.0	*	317.	222. AG	921.	9.9	0.0	42.0
51.	NTrySWTL@ Mall	* 2300.0	2445.0	2119.0	2220.0	*	289.	219. AG	706.	9.9	0.0	42.0
52.	N TrySWT@ Mall	* 2119.0	2220.0	1980.0	2070.0	*	205.	223. AG	558.	9.9	0.0	42.0
53.	N TrySWT@ Mall	* 1980.0	2070.0	1860.0	1929.0	*	185.	220. AG	558.	9.9	0.0	42.0
54.	NTryST@ MallQ	* 1860.0	1929.0	1955.9	2041.7	*	148.	40. AG	181.	100.0	0.0	22.0 0.26 7.5
55.	N TrySWT@ MallD	* 1860.0	1929.0	1740.0	1785.0	*	187.	220. AG	558.	9.9	0.0	42.0
56.	NTrySWT@ MallD	* 1740.0	1785.0	1150.0	1102.0	*	903.	221. AG	961.	9.9	0.0	42.0
57.	N rySWR@ Mall	* 2300.0	2445.0	2212.0	2367.0	*	118.	228. AG	215.	9.9	0.0	33.0
58.	N TrySWR@ Mall	* 2212.0	2367.0	1839.0	1949.0	*	560.	222. AG	215.	9.9	0.0	33.0
59.	N TrySWR@ MallQ	* 1839.0	1949.0	1927.4	2048.1	*	133.	42. AG	105.	100.0	0.0	13.0 0.68 6.7
60.	N TrySWR@ MallD	* 1839.0	1949.0	1760.0	1919.0	*	85.	249. AG	215.	9.9	0.0	33.0
61.	N TrySWL@ Mallard	* 2119.0	2220.0	1995.0	2060.0	*	202.	218. AG	148.	9.9	0.0	32.0
62.	NTrySWL@ Mall	* 1995.0	2060.0	1874.0	1918.0	*	187.	220. AG	148.	9.9	0.0	32.0
63.	NTrySWL@ MallQ	* 1874.0	1918.0	2120.9	2207.8	*	381.	40. AG	124.	100.0	0.0	12.0 1.18 19.3
64.	NTrySWL@ MallD	* 1874.0	1918.0	1864.0	1780.0	*	138.	184. AG	148.	9.9	0.0	32.0

JOB: S5MallCr & NTr RUN: MallCr& NtryBDL1PM

DATE : 3/26/13
TIME : 19:46: 2

ADDITIONAL QUEUE LINK PARAMETERS

LINK DESCRIPTION	*	CYCLE LENGTH (SEC)	RED TIME (SEC)	CLEARANCE LOST TIME (SEC)	APPROACH VOL (VPH)	SATURATION FLOW RATE (VPH)	IDLE EM FAC (gm/hr)	SIGNAL TYPE	ARRIVAL RATE

7. MallSET @ NTryQ	*	150	109	4.0	600	3421
52.05 2 3						
13. Mall SEL@ NTryQ	*	150	113	4.0	752	3319
52.05 2 3						
17. Mall SER@ NTryQ	*	150	120	4.0	198	1531
52.05 2 3						
22. Mall NWT @ NTryQ	*	150	120	4.0	552	3421
52.05 2 3						
30. Mall NWR @ NTryQ	*	150	120	4.0	411	1531
52.05 2 3						
34. Mall NWL @ NTryQ	*	150	124	4.0	205	1711
52.05 2 3						
39. N TryEBT@ MallardQ	*	150	84	4.0	1433	3421
52.05 2 3						
44. N TryEBR@ MallQ	*	150	124	4.0	305	1531
52.05 2 3						
48. N Try EBL@ MallQ	*	150	120	4.0	416	3319
52.05 2 3						
54. NTryST@ MallQ	*	150	97	4.0	558	3421
52.05 2 3						
59. N TrySWR@ MallQ	*	150	113	4.0	215	1531
52.05 2 3						
63. NTrySWL@ MallQ	*	150	133	4.0	148	1711
52.05 2 3						

RECEPTOR LOCATIONS

RECEPTOR	*	COORDINATES (FT) X	Y	Z	*
1. Rec1	*	2050.0	1749.0	6.0	*
2. Rec2	*	1990.0	1799.0	6.0	*
3. Rec3	*	1928.0	1842.0	6.0	*
4. Rec4	*	1940.0	1860.0	6.0	*
5. Rec5	*	1950.0	1899.0	6.0	*
6. Rec6	*	2005.0	1970.0	6.0	*
7. Rec7	*	1932.0	2092.0	6.0	*
8. Rec8	*	1887.0	2028.0	6.0	*
9. Rec9	*	1832.0	1982.0	6.0	*
10. Rec10	*	1812.0	1962.0	6.0	*
11. Rec11	*	1758.0	1966.0	6.0	*
12. Rec12	*	1720.0	1992.0	6.0	*
13. Rec13	*	1580.0	1930.0	6.0	*
14. Rec14	*	1650.0	1880.0	6.0	*
15. Rec15	*	1700.0	1850.0	6.0	*
16. Rec16	*	1700.0	1830.0	6.0	*
17. Rec17	*	1694.0	1767.0	6.0	*
18. Rec18	*	1638.0	1702.0	6.0	*
19. Rec19	*	1710.0	1610.0	6.0	*
20. Rec20	*	1760.0	1660.0	6.0	*
21. Rec21	*	1810.0	1730.0	6.0	*
22. Rec22	*	1820.0	1735.0	6.0	*
23. Rec23	*	1882.0	1731.0	6.0	*
24. Rec24	*	1945.0	1682.0	6.0	*

MODEL RESULTS

REMARKS : In search of the angle corresponding to
the maximum concentration, only the first
angle, of the angles with same maximum
concentrations, is indicated as maximum.

WIND ANGLE RANGE: 0.-360.

WIND ANGLE (DEGR)	*	CONCENTRATION (PPM) REC1	REC2	REC3	REC4	REC5	REC6	REC7	REC8	REC9	REC10	REC11	REC12	REC13	REC14	REC15	REC16	REC17	REC18	REC19	REC20
0.	*	0.3	0.4	1.0	0.8	1.2	1.1	0.0	0.0	0.0	0.0	0.0	0.0	1.0	1.5	1.6	1.4	0.8	0.4	1.8	1.5
10.	*	0.2	0.5	0.8	0.8	1.3	1.2	0.0	0.0	0.0	0.0	0.0	0.0	1.0	1.4	1.6	1.2	0.7	0.5	1.6	1.1
20.	*	0.2	0.4	0.7	0.8	1.2	1.2	0.0	0.0	0.0	0.0	0.0	0.0	1.1	1.4	1.5	1.1	0.5	0.5	1.4	1.4
30.	*	0.1	0.3	0.7	0.8	1.0	1.1	0.0	0.2	0.0	0.0	0.0	0.0	1.1	1.4	1.4	1.0	0.7	0.4	1.3	1.0
40.	*	0.1	0.1	0.4	0.4	0.7	0.7	0.3	0.3	0.4	0.4	0.1	0.1	1.2	1.5	1.5	1.2	1.0	1.1	0.7	0.7
50.	*	0.0	0.0	0.2	0.2	0.3	0.3	0.7	0.8	0.8	0.8	0.2	0.2	1.3	1.6	1.8	1.2	1.3	1.2	0.3	0.4
60.	*	0.0	0.0	0.0	0.0	0.1	0.1	0.7	1.3	1.1	1.1	0.6	0.2	1.4	1.9	1.8	1.1	1.1	1.2	0.2	0.4
70.	*	0.0	0.0	0.0	0.0	0.0	0.0	0.7	1.3	1.2	1.3	0.7	0.5	1.7	1.8	1.5	1.0	1.1	1.6	0.3	0.4
80.	*	0.0	0.0	0.0	0.0	0.0	0.0	0.8	1.3	1.3	1.3	0.8	0.6	1.8	1.9	1.0	0.8	1.5	1.9	0.2	0.3
90.	*	0.0	0.0	0.0	0.0	0.0	0.0	0.8	1.4	1.2	1.1	0.8	0.6	1.7	1.5	0.9	0.9	1.4	1.7	0.2	0.2
100.	*	0.0	0.0	0.0	0.0	0.0	0.0	0.7	1.4	1.1	1.1	0.7	0.6	1.6	1.4	1.1	1.1	1.8	1.5	0.3	0.2
110.	*	0.1	0.1	0.1	0.0	0.0	0.0	0.7	1.4	1.1	0.9	0.5	0.5	1.3	1.2	1.3	1.2	1.6	1.5	0.3	0.3
120.	*	0.6	0.3	0.6	0.1	0.1	0.0	0.7	1.3	1.3	0.9	0.6	0.7	1.0	0.7	1.0	1.1	1.5	1.4	0.0	0.2
130.	*	0.8	1.0	1.1	0.5	0.3	0.1	0.8	1.4	1.5	1.3	1.0	0.8	0.6	0.6	0.9	1.0	1.3	1.0	0.0	0.0
140.	*	1.2	1.1	1.6	1.1	0.4	0.3	0.9	1.6	1.6	1.3	0.8	0.9	0.4	0.5	0.9	0.8	1.4	1.0	0.0	0.0
150.	*	1.0	1.2	1.6	1.0	0.5	0.3	0.9	1.5	1.7	1.3	0.8	1.1	0.5	0.6	0.6	1.0	1.3	1.0	0.0	0.0
160.	*	1.0	1.3	1.5	1.1	0.6	0.2	1.1	1.5	1.1	0.9	0.7	1.2	0.5	0.6	1.0	1.1	1.3	0.9	0.0	0.0
170.	*	0.8	1.4	1.6	1.1	0.8	0.3	1.2	1.6	0.8	0.8	1.0	1.3	0.4	0.5	1.0	1.1	1.4	0.9	0.0	0.0
180.	*	0.9	1.3	1.3	1.0	0.8	0.3	1.3	1.5	0.7	1.0	1.2	1.5	0.4	0.5	1.0	1.0	1.5	1.1	0.0	0.0
190.	*	0.9	1.2	1.3	1.0	0.8	0.6	1.2	1.3	0.9	1.2	1.1	1.6	0.3	0.6	0.8	1.0	1.3	1.2	0.0	0.0
200.	*	1.0	1.2	1.3	0.9	0.6	0.5	1.4	1.5	1.2	1.2	1.6	1.5	0.3	0.3	0.8	0.9	1.5	1.3	0.0	0.0
210.	*	1.1	1.2	1.2	1.0	0.9	0.5	1.4	1.4	1.1	1.4	1.5	1.4	0.1	0.3	0.5	0.6	1.4	1.1	0.2	0.2
220.	*	1.1	1.3	1.5	1.2	1.0	1.1	0.7	1.2	0.8	0.9	1.3	1.1	0.0	0.1	0.3	0.3	0.9	0.9	0.7	0.8
230.	*	1.5	1.7	2.1	1.5	1.2	1.3	0.4	0.6	0.6	0.9	1.1	1.1	0.0	0.0	0.0	0.1	0.4	0.4	1.0	1.0
240.	*	1.7	1.7	1.8	1.2	1.3	1.3	0.3	0.3	0.9	1.0	1.1	1.0								

0.0	0.0	0.0	0.0	0.1	0.1	1.4	1.3						
250.	*	1.7	1.7	1.3	1.0	0.9	1.3	0.3	0.4	0.9	0.9	1.1	1.0
0.0	0.0	0.0	0.0	0.0	0.0	1.3	1.4						
260.	*	2.1	1.7	1.0	0.7	0.9	1.6	0.2	0.4	0.7	0.9	1.1	1.0
0.0	0.0	0.0	0.0	0.0	0.0	1.4	1.2						
270.	*	2.0	1.4	0.8	1.0	1.3	1.6	0.1	0.2	0.6	0.8	1.1	1.0
0.0	0.0	0.0	0.0	0.0	0.0	1.2	1.2						
280.	*	1.7	1.5	1.1	1.0	1.4	1.4	0.0	0.1	0.3	0.7	0.9	1.0
0.0	0.0	0.0	0.0	0.0	0.0	1.1	1.3						
290.	*	1.6	1.3	1.2	1.1	1.2	1.2	0.0	0.1	0.3	0.3	0.8	0.9
0.0	0.0	0.0	0.0	0.0	0.0	1.1	1.3						
300.	*	1.3	1.0	1.0	0.9	1.3	1.2	0.0	0.0	0.2	0.3	0.5	0.7
0.0	0.0	0.3	0.0	0.0	0.0	1.1	1.4						
310.	*	0.8	0.5	0.8	0.8	1.2	1.2	0.0	0.0	0.0	0.1	0.3	0.3
0.2	0.3	0.7	0.3	0.0	0.0	1.1	1.4						
320.	*	0.5	0.5	0.6	0.9	1.1	1.0	0.0	0.0	0.0	0.0	0.1	0.1
0.4	1.1	1.6	0.9	0.1	0.0	1.2	1.4						
330.	*	0.4	0.4	0.9	1.1	1.1	1.0	0.0	0.0	0.0	0.0	0.0	0.0
0.5	1.5	1.8	1.3	0.4	0.0	1.2	1.7						
340.	*	0.4	0.4	1.0	1.1	1.2	0.9	0.0	0.0	0.0	0.0	0.0	0.0
0.7	1.5	1.9	1.4	0.8	0.1	1.6	1.7						
350.	*	0.3	0.5	1.1	1.0	1.3	1.1	0.0	0.0	0.0	0.0	0.0	0.0
0.9	1.5	1.9	1.4	0.8	0.3	1.7	1.7						
360.	*	0.3	0.4	1.0	0.8	1.2	1.1	0.0	0.0	0.0	0.0	0.0	0.0
1.0	1.5	1.6	1.4	0.8	0.4	1.8	1.5						

JOB: S5MallCr & NTr RUN: MallCr& NtryBDL1PM

MODEL RESULTS

REMARKS : In search of the angle corresponding to the maximum concentration, only the first angle, of the angles with same maximum concentrations, is indicated as maximum.

WIND ANGLE RANGE: 0.-360.

WIND ANGLE (DEGR)	*	CONCENTRATION (PPM) REC21	REC22	REC23	REC24
0.	*	0.9	0.9	1.2	1.3
10.	*	1.1	1.2	1.2	1.4
20.	*	1.2	1.1	1.5	1.3
30.	*	1.2	1.2	1.4	1.2
40.	*	1.1	1.1	1.2	1.1
50.	*	0.9	0.9	1.1	1.0
60.	*	0.6	0.7	1.0	0.9
70.	*	0.7	0.7	1.1	0.8
80.	*	0.7	0.7	1.1	0.6
90.	*	0.7	0.7	1.0	0.8
100.	*	0.5	0.7	0.9	0.7
110.	*	0.4	0.6	1.1	0.8
120.	*	0.4	0.4	0.8	0.7
130.	*	0.1	0.1	0.5	0.4
140.	*	0.0	0.0	0.1	0.1
150.	*	0.0	0.0	0.0	0.0
160.	*	0.0	0.0	0.0	0.0
170.	*	0.0	0.0	0.0	0.0
180.	*	0.0	0.0	0.0	0.0

190.	*	0.0	0.0	0.0	0.0
200.	*	0.0	0.0	0.0	0.0
210.	*	0.2	0.2	0.0	0.0
220.	*	1.0	0.8	0.2	0.0
230.	*	1.5	1.4	0.6	0.2
240.	*	1.8	1.6	0.8	0.3
250.	*	1.8	1.7	0.8	0.5
260.	*	1.8	1.7	0.9	0.4
270.	*	1.8	1.7	0.9	0.5
280.	*	1.7	1.4	0.7	0.5
290.	*	1.4	1.4	0.5	0.5
300.	*	1.4	1.3	0.7	0.7
310.	*	1.6	1.2	0.9	0.7
320.	*	2.0	1.7	0.9	0.8
330.	*	1.7	1.1	1.0	0.8
340.	*	1.3	1.1	0.8	0.9
350.	*	1.1	0.8	0.9	1.3
360.	*	0.9	0.9	1.2	1.3

THE HIGHEST CONCENTRATION OF 2.10 PPM OCCURRED AT RECEPTOR REC3 .

JOB: S5MallCr & NTr RUN: MallCr& NtryBDL1PM

DATE : 3/26/13
TIME : 19:46: 2

RECEPTOR - LINK MATRIX FOR THE ANGLE PRODUCING
THE MAXIMUM CONCENTRATION FOR EACH RECEPTOR

	*	CO/LINK (PPM)											
	*	ANGLE (DEGREES)											
	*	REC1	REC2	REC3	REC4	REC5	REC6	REC7	REC8	REC9	REC10	REC11	REC12
REC13	REC14	REC15	REC16	REC17	REC18	REC19	REC20						
LINK #	*	260	230	230	230	280	260	210	140	150	210	200	190
80	80	340	0	100	80	0	330						

1	*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0						
2	*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0						
3	*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0						
4	*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0						
5	*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0						
6	*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1
0.2	0.1	0.2	0.1	0.0	0.0	0.0	0.0						
7	*	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.1	0.2	0.2
0.4	0.4	0.5	0.4	0.0	0.0	0.1	0.1						
8	*	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0						
9	*	0.2	0.2	0.1	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.0						
10	*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0						
11	*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0						
12	*	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.1	0.1

```
0.1   0.1   0.2   0.1   0.0   0.0   0.0   0.0
     13  *   0.0   0.0   0.0   0.0   0.1   0.1   0.0   0.0   0.0   0.0   0.1   0.3
0.3   0.1   0.4   0.3   0.0   0.0   0.1   0.1
     14  *   0.0   0.0   0.0   0.0   0.2   0.1   0.1   0.0   0.1   0.2   0.1   0.0
0.0   0.1   0.0   0.0   0.0   0.0   0.0   0.0
     15  *   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0
0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0
     16  *   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0
0.1   0.1   0.1   0.1   0.0   0.0   0.0   0.0
     17  *   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.1   0.1
0.1   0.3   0.3   0.2   0.0   0.0   0.0   0.0
     18  *   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0
0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0
     19  *   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.1   0.0   0.0   0.0   0.0
0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0
     20  *   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0
0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0
     21  *   0.2   0.1   0.1   0.0   0.0   0.0   0.0   0.0   0.1   0.0   0.0   0.0
0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0
     22  *   0.5   0.5   0.3   0.2   0.0   0.0   0.0   0.0   0.2   0.0   0.0   0.0
0.0   0.0   0.0   0.0   0.1   0.1   0.0   0.0
     23  *   0.0   0.0   0.1   0.1   0.0   0.0   0.0   0.0   0.0   0.1   0.0   0.0
0.0   0.1   0.0   0.0   0.0   0.0   0.0   0.0
     24  *   0.0   0.0   0.0   0.0   0.1   0.1   0.0   0.0   0.0   0.0   0.3   0.3
0.2   0.1   0.2   0.2   0.0   0.0   0.1   0.1
     25  *   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0
0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0
     26  *   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0
0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0
     27  *   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0
0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0
     28  *   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0
0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0
     29  *   0.2   0.1   0.1   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0
0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0
     30  *   0.3   0.2   0.2   0.1   0.0   0.0   0.0   0.1   0.1   0.0   0.0   0.0
0.0   0.0   0.0   0.0   0.1   0.1   0.0   0.0
     31  *   0.0   0.0   0.0   0.1   0.1   0.0   0.0   0.0   0.0   0.0   0.0   0.0
0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0
     32  *   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0
0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0
     33  *   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0
0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0
     34  *   0.2   0.1   0.1   0.0   0.0   0.0   0.0   0.0   0.1   0.0   0.0   0.0
0.0   0.0   0.0   0.0   0.1   0.0   0.0   0.0
     35  *   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0
0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0
     36  *   0.0   0.1   0.1   0.1   0.0   0.0   0.1   0.0   0.0   0.1   0.1   0.0
0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0
     37  *   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0
0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0
     38  *   0.1   0.1   0.2   0.1   0.0   0.0   0.1   0.0   0.0   0.1   0.1   0.1
0.0   0.0   0.0   0.0   0.2   0.2   0.4   0.3
     39  *   0.1   0.1   0.2   0.2   0.0   0.0   0.1   0.0   0.0   0.1   0.1   0.1
0.0   0.0   0.0   0.0   0.2   0.2   0.3   0.3
     40  *   0.0   0.0   0.1   0.1   0.3   0.0   0.1   0.0   0.2   0.0   0.0   0.0
0.0   0.1   0.0   0.0   0.1   0.1   0.0   0.0
     41  *   0.0   0.0   0.0   0.0   0.1   0.8   0.0   0.4   0.0   0.0   0.0   0.0
0.2   0.2   0.0   0.0   0.0   0.0   0.0   0.0
     42  *   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0
0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0
     43  *   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0
0.0   0.0   0.0   0.0   0.0   0.0   0.1   0.1
```

```
      44  *   0.1   0.1   0.2   0.2   0.0   0.0   0.1   0.0   0.0   0.1   0.1   0.1
 0.0   0.0   0.0   0.0   0.1   0.1   0.2   0.2
      45  *   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0
 0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0
```



```
          *    CO/LINK  (PPM)
          *    ANGLE (DEGREES)
          *  REC1  REC2  REC3  REC4  REC5  REC6  REC7  REC8  REC9  REC10 REC11 REC12
REC13 REC14 REC15 REC16 REC17 REC18 REC19 REC20
   LINK # *   260   230   230   230   280   260   210   140   150   210   200   190
  80    80   340     0   100    80     0   330

-------*-------------------------------------------------------------------------
-----------------------------------------
      46  *   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0
 0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0
      47  *   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0
 0.0   0.0   0.0   0.0   0.1   0.1   0.1   0.1
      48  *   0.1   0.0   0.1   0.1   0.0   0.0   0.1   0.0   0.0   0.1   0.1   0.1
 0.0   0.0   0.0   0.0   0.4   0.5   0.3   0.3
      49  *   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.1   0.0   0.0
 0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0
      50  *   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0
 0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0
      51  *   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0
 0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0
      52  *   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0
 0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0
      53  *   0.0   0.0   0.0   0.0   0.0   0.1   0.1   0.1   0.1   0.0   0.0   0.0
 0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0
      54  *   0.0   0.0   0.0   0.0   0.1   0.2   0.2   0.3   0.2   0.0   0.0   0.0
 0.1   0.1   0.0   0.0   0.0   0.0   0.0   0.0
      55  *   0.0   0.0   0.0   0.0   0.1   0.0   0.0   0.0   0.1   0.0   0.0   0.0
 0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0
      56  *   0.1   0.1   0.1   0.1   0.0   0.0   0.1   0.0   0.0   0.2   0.1   0.1
 0.0   0.0   0.0   0.0   0.3   0.4   0.1   0.1
      57  *   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0
 0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0
      58  *   0.0   0.0   0.0   0.0   0.0   0.0   0.1   0.1   0.1   0.0   0.0   0.0
 0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0
      59  *   0.0   0.0   0.0   0.0   0.0   0.0   0.2   0.3   0.2   0.0   0.0   0.0
 0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0
      60  *   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.1   0.0   0.0
 0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0
      61  *   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0
 0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0
      62  *   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0
 0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0
      63  *   0.0   0.0   0.0   0.0   0.1   0.1   0.0   0.1   0.1   0.0   0.0   0.0
 0.1   0.1   0.0   0.0   0.0   0.0   0.0   0.0
      64  *   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0
 0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0
```


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RECEPTOR - LINK MATRIX FOR THE ANGLE PRODUCING
THE MAXIMUM CONCENTRATION FOR EACH RECEPTOR

LINK #	* CO/LINK (PPM) ANGLE (DEGREES) REC21	REC22	REC23	REC24
	* 320	260	20	10
1	* 0.0	0.0	0.0	0.0
2	* 0.0	0.0	0.0	0.0
3	* 0.0	0.0	0.0	0.0
4	* 0.0	0.0	0.0	0.0
5	* 0.0	0.0	0.0	0.0
6	* 0.1	0.0	0.0	0.0
7	* 0.2	0.0	0.0	0.0
8	* 0.0	0.0	0.0	0.0
9	* 0.0	0.0	0.3	0.3
10	* 0.0	0.0	0.0	0.0
11	* 0.0	0.0	0.0	0.0
12	* 0.1	0.0	0.0	0.0
13	* 0.2	0.0	0.0	0.0
14	* 0.0	0.0	0.0	0.0
15	* 0.0	0.0	0.0	0.0
16	* 0.0	0.0	0.0	0.0
17	* 0.1	0.0	0.0	0.0
18	* 0.0	0.0	0.0	0.0
19	* 0.0	0.0	0.0	0.0
20	* 0.0	0.0	0.0	0.0
21	* 0.0	0.0	0.1	0.1
22	* 0.0	0.0	0.3	0.3
23	* 0.0	0.0	0.0	0.0
24	* 0.1	0.0	0.0	0.0
25	* 0.0	0.0	0.0	0.0
26	* 0.0	0.0	0.0	0.0
27	* 0.0	0.0	0.0	0.0
28	* 0.0	0.0	0.0	0.0
29	* 0.0	0.0	0.0	0.1
30	* 0.0	0.0	0.1	0.1
31	* 0.0	0.0	0.0	0.0
32	* 0.0	0.0	0.0	0.0
33	* 0.0	0.0	0.0	0.0
34	* 0.0	0.0	0.1	0.1
35	* 0.0	0.0	0.0	0.0
36	* 0.0	0.0	0.0	0.0
37	* 0.0	0.0	0.0	0.0
38	* 0.2	0.4	0.0	0.0
39	* 0.2	0.3	0.0	0.0
40	* 0.1	0.0	0.1	0.0
41	* 0.0	0.0	0.3	0.3
42	* 0.0	0.0	0.0	0.0
43	* 0.1	0.1	0.0	0.0
44	* 0.2	0.3	0.0	0.0
45	* 0.0	0.0	0.0	0.0

* CO/LINK (PPM)
* ANGLE (DEGREES)
* REC21 REC22 REC23 REC24

LINK #	*	320	260	20	10
46	*	0.0	0.0	0.0	0.0
47	*	0.0	0.1	0.0	0.0
48	*	0.2	0.3	0.0	0.0
49	*	0.1	0.0	0.0	0.0
50	*	0.0	0.0	0.0	0.0
51	*	0.0	0.0	0.0	0.0
52	*	0.0	0.0	0.0	0.0
53	*	0.0	0.0	0.0	0.0
54	*	0.0	0.0	0.1	0.0
55	*	0.1	0.0	0.0	0.0
56	*	0.0	0.2	0.0	0.0
57	*	0.0	0.0	0.0	0.0
58	*	0.0	0.0	0.0	0.0
59	*	0.0	0.0	0.0	0.0
60	*	0.0	0.0	0.0	0.0
61	*	0.0	0.0	0.0	0.0
62	*	0.0	0.0	0.0	0.0
63	*	0.0	0.0	0.1	0.1
64	*	0.0	0.0	0.0	0.0

 CAL3QHC: LINE SOURCE DISPERSION MODEL - VERSION 2.0 Dated 95221
PAGE 1

JOB: S5MallCr & NTr Exam RUN: MallCr& NTrBDL1AM

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The MODE flag has been set to c for calculating CO averages.

SITE & METEOROLOGICAL VARIABLES

VS = 0.0 CM/S VD = 0.0 CM/S Z0 = 175. CM
U = 1.0 M/S CLAS = 4 (D) ATIM = 60. MINUTES MIXH = 1000. M AMB = 0.0 PPM BRG = 0. DEGREES

LINK VARIABLES

LINK DESCRIPTION	*	LINK COORDINATES (FT)				*	LENGTH	BRG	TYPE	VPH	EF	H	W	V/C	QUEUE
	*	X1	Y1	X2	Y2	*	(FT)	(DEG)			(G/MI)	(FT)	(FT)		(VEH)
1. MallCrSET @ NTryon	*	1093.0	2663.0	1149.0	2509.0	*	164.	160.	AG	1006.	9.9	0.0	42.0		
2. MallCrSET @ NTry	*	1149.0	2509.0	1235.0	2336.0	*	193.	154.	AG	1006.	9.9	0.0	42.0		
3. MallCrSET@ NTry	*	1235.0	2336.0	1355.0	2185.0	*	193.	142.	AG	1006.	9.9	0.0	42.0		
4. Mall SETR@ NTry	*	1355.0	2185.0	1432.0	2105.0	*	111.	136.	AG	853.	9.9	0.0	42.0		
5. Mall SET @ NTry	*	1432.0	2105.0	1570.0	1989.0	*	180.	130.	AG	431.	9.9	0.0	42.0		
6. Mall SET @ NTry	*	1570.0	1989.0	1735.0	1869.0	*	204.	126.	AG	431.	9.9	0.0	42.0		
7. MallSET @ NTryQ	*	1735.0	1869.0	1623.8	1949.9	*	138.	306.	AG	218.	100.0	0.0	22.0	0.35	7.0
8. Mall SED@ NTry	*	1735.0	1869.0	1864.0	1780.0	*	157.	125.	AG	431.	9.9	0.0	42.0		
9. Mall SED@ NTry	*	1864.0	1780.0	2668.0	1198.0	*	993.	126.	AG	828.	9.9	0.0	42.0		
10. Mall SEL @ NTry	*	1355.0	2185.0	1450.0	2118.0	*	116.	125.	AG	153.	9.9	0.0	44.0		
11. Mall SEL @ NTry	*	1450.0	2118.0	1580.0	2012.0	*	168.	129.	AG	153.	9.9	0.0	44.0		
12. Mall SEL @ NTry	*	1580.0	2012.0	1730.0	1902.0	*	186.	126.	AG	153.	9.9	0.0	44.0		
13. Mall SEL@ NTryQ	*	1730.0	1902.0	1690.1	1931.2	*	49.	306.	AG	222.	100.0	0.0	24.0	0.14	2.5
14. Mall SLD@ NTry	*	1730.0	1902.0	1916.0	1918.0	*	187.	85.	AG	153.	9.9	0.0	44.0		
15. Mall SER @ NTry	*	1432.0	2105.0	1560.0	1975.0	*	182.	135.	AG	422.	9.9	0.0	31.0		
16. Mall SER @ NTry	*	1560.0	1975.0	1724.0	1853.0	*	204.	127.	AG	422.	9.9	0.0	31.0		
17. Mall SER@ NTryQ	*	1724.0	1853.0	-1268.3	4078.9	*	3729.	307.	AG	126.	100.0	0.0	11.0	4.64	189.5
18. Mall SRD@ NTry	*	1724.0	1853.0	1740.0	1785.0	*	70.	167.	AG	422.	9.9	0.0	31.0		
19. Mall NWT@ NTry	*	2692.0	1235.0	2240.0	1562.0	*	558.								

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306. AG    802.   9.9   0.0 46.0
      20. Mall NWTR@ NTry     *   2240.0    1562.0    2102.0    1662.0 *     170.
306. AG    532.   9.9   0.0 46.0
      21. Mall NWT @ NTry     *   2102.0    1662.0    1893.0    1818.0 *     261.
307. AG    477.   9.9   0.0 46.0
      22. Mall NWT @ NTryQ    *   1893.0    1818.0    2020.2    1723.0 *     159.
127. AG    227. 100.0   0.0 26.0 0.48   8.1
      23. Mall NWT @ NTryD    *   1893.0    1818.0    1760.0    1919.0 *     167.
307. AG    477.   9.9   0.0 46.0
      24. Mall NWT @ NTryD    *   1760.0    1919.0    1515.0    2102.0 *     306.
307. AG   1484.   9.9   0.0 46.0
      25. Mall NWT @ NTryD    *   1515.0    2102.0    1330.0    2290.0 *     264.
315. AG   1484.   9.9   0.0 46.0
      26. Mall NWT @ NTryD    *   1330.0    2290.0    1185.0    2528.0 *     279.
329. AG   1484.   9.9   0.0 46.0
      27. Mall NWT @ NTryD    *   1185.0    2528.0    1135.0    2680.0 *     160.
342. AG   1484.   9.9   0.0 46.0
      28. Mall NWR @ NTry     *   2102.0    1662.0    2070.0    1713.0 *      60.
328. AG     55.   9.9   0.0 32.0
      29. Mall NWR @ NTry     *   2070.0    1713.0    1905.0    1833.0 *     204.
306. AG     55.   9.9   0.0 32.0
      30. Mall NWR @ NTryQ    *   1905.0    1833.0    1934.7    1811.4 *      37.
126. AG    114. 100.0   0.0 12.0 0.25   1.9
      31. Mall NWR @ NTryD    *   1905.0    1833.0    1916.0    1918.0 *      86.
 7. AG     55.   9.9   0.0 32.0
      32. Mall NWL @ NTry     *   2240.0    1562.0    2093.0    1650.0 *     171.
301. AG    270.   9.9   0.0 32.0
      33. Mall NWL @ NTry     *   2093.0    1650.0    1880.0    1802.0 *     262.
306. AG    270.   9.9   0.0 32.0
      34. Mall NWL @ NTryQ    *   1880.0    1802.0    2414.4    1420.6 *     657.
126. AG    115. 100.0   0.0 12.0 1.18  33.4
      35. Mall NWL @ NTryD    *   1880.0    1802.0    1740.0    1785.0 *     141.
263. AG    270.   9.9   0.0 32.0
      36. N TryEB@ Mallard    *   1188.0    1075.0    1530.0    1472.0 *     524.
41. AG    538.   9.9   0.0 42.0
      37. N TryEBT@ Mallard   *   1530.0    1472.0    1618.0    1574.0 *     135.
41. AG    266.   9.9   0.0 42.0
      38. N TryEBT@ Mallard   *   1618.0    1574.0    1785.0    1764.0 *     253.
41. AG    266.   9.9   0.0 42.0
      39. N TryEBT@ MallardQ  *   1785.0    1764.0    1737.0    1709.4 *      73.
221. AG    186. 100.0   0.0 22.0 0.13   3.7
      40. N TryEBT@ MallardD  *   1785.0    1764.0    1916.0    1918.0 *     202.
40. AG    266.   9.9   0.0 42.0
      41. N TryEBT@ MallardD  *   1916.0    1918.0    2543.0    2652.0 *     965.
41. AG    474.   9.9   0.0 42.0
      42. N TryEBR@ Mallard   *   1530.0    1472.0    1630.0    1568.0 *     139.
46. AG    116.   9.9   0.0 32.0
      43. N TryEBR@ Mallard   *   1630.0    1568.0    1799.0    1753.0 *     251.
42. AG    116.   9.9   0.0 32.0
      44. N TryEBR@ MallQ     *   1799.0    1753.0    1746.0    1694.9 *      79.
222. AG    115. 100.0   0.0 12.0 0.55   4.0
□
                              PAGE  2
      JOB: S5MallCr & NTr Exam                                  RUN: MallCr&
NTrBDL1AM

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       LINK VARIABLES
       --------------
         LINK DESCRIPTION     *          LINK COORDINATES (FT)          *    LENGTH
BRG TYPE   VPH    EF      H   W    V/C QUEUE
```

		* X1	Y1	X2	Y2	* (FT)	(DEG) (G/MI) (FT) (FT) (VEH)
45.	N TryEBR@ MallD	* 1799.0	1753.0	1864.0	1780.0	* 70.	67. AG 116. 9.9 0.0 32.0
46.	N Try EBL@ Mall	* 1530.0	1472.0	1602.0	1588.0	* 137.	32. AG 156. 9.9 0.0 46.0
47.	N Try EBL@ Mall	* 1602.0	1588.0	1768.0	1778.0	* 252.	41. AG 156. 9.9 0.0 46.0
48.	N Try EBL@ MallQ	* 1768.0	1778.0	1728.9	1733.3	* 59.	221. AG 251. 100.0 0.0 26.0 0.74 3.0
49.	N Try EBL@MallD	* 1768.0	1778.0	1760.0	1919.0	* 141.	357. AG 156. 9.9 0.0 46.0
50.	N TrySW@ Mallard	* 2510.0	2682.0	2300.0	2445.0	* 317.	222. AG 2863. 9.9 0.0 42.0
51.	NTrySWTL@ Mall	* 2300.0	2445.0	2119.0	2220.0	* 289.	219. AG 2012. 9.9 0.0 42.0
52.	N TrySWT@ Mall	* 2119.0	2220.0	1980.0	2070.0	* 205.	223. AG 1731. 9.9 0.0 42.0
53.	N TrySWT@ Mall	* 1980.0	2070.0	1860.0	1929.0	* 185.	220. AG 1731. 9.9 0.0 42.0
54.	NTryST@ MallQ	* 1860.0	1929.0	2086.8	2195.5	* 350.	40. AG 138. 100.0 0.0 22.0 0.52 17.8
55.	N TrySWT@ MallD	* 1860.0	1929.0	1740.0	1785.0	* 187.	220. AG 1731. 9.9 0.0 42.0
56.	NTrySWT@ MallD	* 1740.0	1785.0	1150.0	1102.0	* 903.	221. AG 2423. 9.9 0.0 42.0
57.	N rySWR@ Mall	* 2300.0	2445.0	2212.0	2367.0	* 118.	228. AG 851. 9.9 0.0 33.0
58.	N TrySWR@ Mall	* 2212.0	2367.0	1839.0	1949.0	* 560.	222. AG 851. 9.9 0.0 33.0
59.	N TrySWR@ MallQ	* 1839.0	1949.0	6177.5	6810.9	* 6516.	42. AG 111. 100.0 0.0 13.0 3.24 331.0
60.	N TrySWR@ MallD	* 1839.0	1949.0	1760.0	1919.0	* 85.	249. AG 851. 9.9 0.0 33.0
61.	N TrySWL@ Mallard	* 2119.0	2220.0	1995.0	2060.0	* 202.	218. AG 281. 9.9 0.0 32.0
62.	NTrySWL@ Mall	* 1995.0	2060.0	1874.0	1918.0	* 187.	220. AG 281. 9.9 0.0 32.0
63.	NTrySWL@ MallQ	* 1874.0	1918.0	1982.6	2045.5	* 167.	40. AG 101. 100.0 0.0 12.0 0.68 8.5
64.	NTrySWL@ MallD	* 1874.0	1918.0	1864.0	1780.0	* 138.	184. AG 281. 9.9 0.0 32.0

JOB: S5MallCr & NTr Exam RUN: MallCr& NTrBDL1AM

DATE : 3/26/13
TIME : 19:45: 3

ADDITIONAL QUEUE LINK PARAMETERS

LINK DESCRIPTION	* CYCLE LENGTH (SEC)	RED TIME (SEC)	CLEARANCE LOST TIME (SEC)	APPROACH VOL (VPH)	SATURATION FLOW RATE (VPH)	IDLE EM FAC (gm/hr)	SIGNAL TYPE	ARRIVAL RATE

7. MallSET @ NTryQ	*	150	117	4.0	431	3421
52.05 2 3						
13. Mall SEL@ NTryQ	*	150	119	4.0	153	3319
52.05 2 3						
17. Mall SER@ NTryQ	*	150	135	4.0	422	1531
52.05 2 3						
22. Mall NWT @ NTryQ	*	150	122	4.0	477	3421
52.05 2 3						
30. Mall NWR @ NTryQ	*	150	122	4.0	55	1531
52.05 2 3						
34. Mall NWL @ NTryQ	*	150	124	4.0	270	1711
52.05 2 3						
39. N TryEBT@ MallardQ	*	150	100	4.0	266	3539
52.05 2 3						
44. N TryEBR@ MallQ	*	150	124	4.0	116	1583
52.05 2 3						
48. N Try EBL@ MallQ	*	150	135	4.0	156	1770
52.05 2 3						
54. NTryST@ MallQ	*	150	74	4.0	1731	3539
52.05 2 3						
59. N TrySWR@ MallQ	*	150	119	4.0	851	1583
52.05 2 3						
63. NTrySWL@ MallQ	*	150	109	4.0	281	1770
52.05 2 3						

RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (FT) X	Y	Z
1. Rec1	2050.0	1749.0	6.0
2. Rec2	1990.0	1799.0	6.0
3. Rec3	1928.0	1842.0	6.0
4. Rec4	1940.0	1860.0	6.0
5. Rec5	1950.0	1899.0	6.0
6. Rec6	2005.0	1970.0	6.0
7. Rec7	1932.0	2092.0	6.0
8. Rec8	1887.0	2028.0	6.0
9. Rec9	1832.0	1982.0	6.0
10. Rec10	1812.0	1962.0	6.0
11. Rec11	1758.0	1966.0	6.0
12. Rec12	1720.0	1992.0	6.0
13. Rec13	1580.0	1930.0	6.0
14. Rec14	1650.0	1880.0	6.0
15. Rec15	1700.0	1850.0	6.0
16. Rec16	1700.0	1830.0	6.0
17. Rec17	1694.0	1767.0	6.0
18. Rec18	1638.0	1702.0	6.0
19. Rec19	1710.0	1610.0	6.0
20. Rec20	1760.0	1660.0	6.0
21. Rec21	1810.0	1730.0	6.0
22. Rec22	1820.0	1735.0	6.0
23. Rec23	1882.0	1731.0	6.0
24. Rec24	1945.0	1682.0	6.0

MODEL RESULTS

REMARKS : In search of the angle corresponding to
the maximum concentration, only the first
angle, of the angles with same maximum
concentrations, is indicated as maximum.

WIND ANGLE RANGE: 0.-360.

WIND ANGLE (DEGR)	*	CONCENTRATION (PPM) REC1	REC2	REC3	REC4	REC5	REC6	REC7	REC8	REC9	REC10	REC11	REC12	REC13	REC14	REC15	REC16	REC17	REC18	REC19	REC20
0.	*	0.4	0.6	0.8	0.8	0.9	0.9	0.0	0.0	0.0	0.0	0.0	0.0	0.7	1.1	1.5	1.2	0.8	0.4	0.9	1.3
10.	*	0.3	0.6	0.9	0.8	1.0	0.9	0.0	0.0	0.0	0.0	0.0	0.0	0.7	1.1	1.5	1.2	0.6	0.4	0.7	0.7
20.	*	0.3	0.5	0.7	0.7	0.9	0.8	0.0	0.1	0.0	0.0	0.0	0.0	0.7	1.1	1.4	1.1	0.7	0.6	1.0	1.0
30.	*	0.2	0.4	0.7	0.7	0.9	0.9	0.3	0.5	0.2	0.2	0.0	0.0	0.7	1.2	1.4	1.2	1.0	0.7	0.8	0.8
40.	*	0.1	0.1	0.4	0.4	0.5	0.4	0.8	1.3	1.0	1.0	0.4	0.1	0.8	1.4	2.0	1.5	1.6	1.3	0.4	0.4
50.	*	0.0	0.0	0.0	0.0	0.1	0.2	1.4	1.9	1.5	1.5	0.7	0.4	1.0	2.1	2.0	1.5	1.8	1.5	0.1	0.3
60.	*	0.0	0.0	0.0	0.0	0.0	0.0	1.5	2.0	1.7	1.5	0.9	0.5	1.4	2.0	2.0	1.2	1.5	1.4	0.3	0.3
70.	*	0.0	0.0	0.0	0.0	0.0	0.0	1.5	1.7	1.5	1.6	1.0	0.5	1.5	1.8	1.3	0.8	1.3	1.6	0.3	0.3
80.	*	0.0	0.0	0.0	0.0	0.0	0.0	1.4	1.8	1.5	1.6	0.8	0.5	1.6	1.6	1.0	0.7	1.6	1.5	0.2	0.3
90.	*	0.0	0.0	0.0	0.0	0.0	0.0	1.4	1.5	1.4	1.3	0.8	0.6	1.6	1.3	0.9	0.6	1.6	1.5	0.2	0.2
100.	*	0.0	0.0	0.0	0.0	0.0	0.0	1.2	1.5	1.3	1.2	0.8	0.6	1.3	1.2	0.9	0.8	1.7	1.0	0.2	0.2
110.	*	0.0	0.0	0.0	0.0	0.0	0.0	1.0	1.5	1.2	1.0	0.4	0.4	1.4	1.0	0.9	0.9	1.6	0.8	0.1	0.2
120.	*	0.2	0.0	0.2	0.0	0.0	0.0	1.0	1.5	1.0	0.9	0.7	0.5	1.0	0.8	0.8	1.0	1.6	0.7	0.0	0.1
130.	*	0.4	0.4	0.6	0.3	0.2	0.0	1.2	1.5	1.3	0.9	0.8	0.8	0.7	0.6	0.8	0.8	1.4	0.8	0.0	0.0
140.	*	0.7	0.5	0.8	0.4	0.2	0.0	1.1	1.7	1.4	1.1	0.8	0.9	0.2	0.5	0.8	1.0	1.2	0.8	0.0	0.0
150.	*	0.6	0.7	1.1	0.6	0.4	0.2	1.4	1.8	1.3	1.1	0.9	0.8	0.2	0.4	0.8	1.1	0.9	0.7	0.0	0.0
160.	*	0.5	0.7	1.1	0.6	0.5	0.2	1.6	1.7	1.2	1.0	0.7	0.8	0.2	0.4	0.9	0.7	0.8	0.8	0.0	0.0
170.	*	0.4	0.9	1.2	0.7	0.5	0.3	1.7	1.7	1.0	0.8	0.9	1.1	0.2	0.3	0.6	0.7	0.9	0.9	0.0	0.0
180.	*	0.4	0.7	1.1	0.8	0.6	0.3	1.5	1.6	0.9	0.8	0.9	1.3	0.2	0.3	0.5	0.5	1.0	1.0	0.0	0.0
190.	*	0.4	0.8	1.0	0.8	0.7	0.4	1.5	1.6	1.0	1.1	0.9	1.3	0.2	0.3	0.5	0.6	1.1	1.1	0.0	0.0
200.	*	0.3	0.8	1.1	0.7	0.6	0.4	1.4	1.4	1.0	1.2	1.1	1.3	0.2	0.3	0.5	0.6	1.2	1.2	0.0	0.0
210.	*	0.4	0.8	1.0	0.7	0.6	0.2	1.2	1.6	0.9	1.2	1.3	1.2	0.1	0.3	0.5	0.6	1.4	1.5	0.0	0.0
220.	*	0.5	0.9	1.1	0.9	0.3	0.3	0.8	1.2	0.9	1.0	1.3	1.0	0.0	0.1	0.3	0.4	1.2	1.2	0.3	0.2
230.	*	0.8	1.0	1.2	0.9	0.8	0.4	0.5	0.9	0.7	0.8	1.1	0.8	0.0	0.0	0.1	0.1	0.7	0.7	0.4	0.3
240.	*	1.0	1.0	1.1	0.9	0.8	0.6	0.3	0.5	0.7	0.8	1.0	0.8								

0.0 0.0 0.0 0.0 0.3 0.3 0.4 0.4
250. * 1.1 1.2 0.9 0.7 0.5 0.8 0.2 0.3 0.6 0.8 0.9 0.7
0.0 0.0 0.0 0.0 0.1 0.1 0.4 0.5
260. * 1.2 1.3 0.8 0.6 0.6 0.9 0.2 0.3 0.5 0.8 0.8 0.8
0.0 0.0 0.0 0.0 0.1 0.1 0.5 0.5
270. * 1.1 0.9 0.7 0.6 0.7 1.2 0.2 0.2 0.4 0.5 0.8 0.6
0.0 0.0 0.0 0.0 0.1 0.1 0.5 0.5
280. * 1.0 1.0 0.7 0.7 0.8 1.1 0.2 0.3 0.3 0.4 0.6 0.6
0.0 0.0 0.0 0.0 0.0 0.0 0.5 0.4
290. * 1.0 0.9 0.8 0.9 0.8 1.1 0.1 0.2 0.4 0.5 0.8 0.8
0.1 0.1 0.2 0.0 0.0 0.0 0.5 0.4
300. * 0.8 0.7 0.9 0.9 1.1 1.0 0.1 0.1 0.3 0.4 0.7 0.7
0.2 0.2 0.4 0.2 0.1 0.0 0.5 0.4
310. * 0.4 0.4 0.6 0.6 0.9 0.9 0.0 0.0 0.1 0.3 0.4 0.5
0.6 0.6 1.2 0.5 0.2 0.1 0.6 0.5
320. * 0.2 0.3 0.4 0.7 0.9 0.9 0.0 0.0 0.0 0.0 0.1 0.2
0.9 0.9 1.3 0.9 0.3 0.1 0.6 0.6
330. * 0.2 0.5 0.6 0.6 0.9 0.8 0.0 0.0 0.0 0.0 0.0 0.0
1.1 1.2 1.5 1.1 0.5 0.2 0.5 1.0
340. * 0.4 0.5 0.6 0.7 0.9 0.9 0.0 0.0 0.0 0.0 0.0 0.0
0.8 1.2 1.5 1.2 0.6 0.3 0.7 1.3
350. * 0.5 0.6 0.7 0.8 0.9 0.8 0.0 0.0 0.0 0.0 0.0 0.0
0.9 1.2 1.6 1.1 0.8 0.4 0.7 1.4
360. * 0.4 0.6 0.8 0.8 0.9 0.9 0.0 0.0 0.0 0.0 0.0 0.0
0.7 1.1 1.5 1.2 0.8 0.4 0.9 1.3

JOB: S5MallCr & NTr Exam RUN: MallCr& NTrBDL1AM

MODEL RESULTS

REMARKS : In search of the angle corresponding to the maximum concentration, only the first angle, of the angles with same maximum concentrations, is indicated as maximum.

WIND ANGLE RANGE: 0.-360.

WIND ANGLE (DEGR)	* CONCENTRATION (PPM) REC21	REC22	REC23	REC24
0.	* 0.6	0.6	1.1	1.1
10.	* 0.9	0.9	1.0	1.2
20.	* 0.9	1.0	1.4	1.1
30.	* 0.9	1.0	1.3	0.9
40.	* 0.5	0.7	0.8	0.8
50.	* 0.4	0.4	0.7	0.6
60.	* 0.5	0.5	0.8	0.6
70.	* 0.5	0.5	1.0	0.6
80.	* 0.6	0.6	1.0	0.6
90.	* 0.6	0.6	0.9	0.6
100.	* 0.4	0.5	0.8	0.5
110.	* 0.3	0.3	0.7	0.7
120.	* 0.2	0.3	0.6	0.5
130.	* 0.1	0.1	0.3	0.3
140.	* 0.0	0.0	0.1	0.1
150.	* 0.0	0.0	0.0	0.0
160.	* 0.0	0.0	0.0	0.0
170.	* 0.0	0.0	0.0	0.0
180.	* 0.0	0.0	0.0	0.0

190.	*	0.0	0.0	0.0	0.0
200.	*	0.0	0.0	0.0	0.0
210.	*	0.1	0.0	0.0	0.0
220.	*	0.2	0.2	0.1	0.0
230.	*	0.6	0.5	0.2	0.1
240.	*	0.9	0.7	0.3	0.2
250.	*	0.9	1.0	0.5	0.2
260.	*	1.2	1.1	0.6	0.2
270.	*	1.3	1.2	0.6	0.2
280.	*	1.5	1.2	0.6	0.4
290.	*	1.3	1.3	0.5	0.3
300.	*	1.4	1.1	0.6	0.7
310.	*	1.5	1.2	0.8	0.6
320.	*	1.4	1.1	0.7	0.6
330.	*	0.9	0.9	0.6	0.7
340.	*	1.0	0.6	0.7	0.9
350.	*	0.7	0.7	0.6	1.1
360.	*	0.6	0.6	1.1	1.1

THE HIGHEST CONCENTRATION OF 2.10 PPM OCCURRED AT RECEPTOR REC14.

JOB: S5MallCr & NTr Exam RUN: MallCr& NTrBDL1AM

DATE : 3/26/13
TIME : 19:45: 3

RECEPTOR - LINK MATRIX FOR THE ANGLE PRODUCING
THE MAXIMUM CONCENTRATION FOR EACH RECEPTOR

	*	CO/LINK (PPM) ANGLE (DEGREES)											
	*	REC1	REC2	REC3	REC4	REC5	REC6	REC7	REC8	REC9	REC10	REC11	REC12
REC13	REC14	REC15	REC16	REC17	REC18	REC19	REC20						
LINK #	*	260	260	170	220	300	270	170	60	60	80	220	180
80	50	40	40	50	70	20	350						

1	*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0						
2	*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0						
3	*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0						
4	*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0						
5	*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0						
6	*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0
0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0						
7	*	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.2	0.2
0.4	0.4	0.4	0.2	0.0	0.0	0.0	0.1						
8	*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0						
9	*	0.1	0.1	0.1	0.1	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0						
10	*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0						
11	*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0						
12	*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

```
0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0
     13  *   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.3   0.2
0.1   0.2   0.1   0.0   0.0   0.0   0.0   0.0
     14  *   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0
0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0
     15  *   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0
0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0
     16  *   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0
0.1   0.1   0.1   0.1   0.0   0.0   0.0   0.0
     17  *   0.0   0.0   0.0   0.0   0.1   0.1   0.0   0.0   0.0   0.0   0.1   0.1
0.3   0.3   0.3   0.1   0.0   0.0   0.0   0.1
     18  *   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0
0.0   0.0   0.0   0.0   0.1   0.0   0.0   0.0
     19  *   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0
0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0
     20  *   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0
0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0
     21  *   0.1   0.1   0.1   0.1   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0
0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0
     22  *   0.5   0.5   0.5   0.3   0.0   0.0   0.1   0.0   0.0   0.0   0.0   0.0
0.0   0.0   0.0   0.0   0.0   0.1   0.0   0.0
     23  *   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0
0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0
     24  *   0.0   0.0   0.0   0.0   0.1   0.1   0.0   0.0   0.0   0.0   0.4   0.4
0.2   0.2   0.1   0.1   0.0   0.0   0.0   0.1
     25  *   0.0   0.0   0.0   0.0   0.1   0.0   0.0   0.0   0.0   0.0   0.0   0.0
0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0
     26  *   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0
0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0
     27  *   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0
0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0
     28  *   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0
0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0
     29  *   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0
0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0
     30  *   0.0   0.0   0.2   0.1   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0
0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0
     31  *   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0
0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0
     32  *   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0
0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0
     33  *   0.1   0.0   0.1   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0
0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0
     34  *   0.2   0.1   0.2   0.1   0.0   0.0   0.1   0.0   0.0   0.0   0.0   0.0
0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0
     35  *   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0
0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0
     36  *   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0
0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0
     37  *   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0
0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0
     38  *   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0
0.0   0.0   0.0   0.0   0.0   0.0   0.1   0.1
     39  *   0.0   0.1   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0
0.0   0.0   0.0   0.0   0.0   0.1   0.1   0.3
     40  *   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0
0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0
     41  *   0.0   0.0   0.0   0.0   0.1   0.1   0.1   0.1   0.1   0.1   0.0   0.0
0.0   0.0   0.0   0.0   0.1   0.0   0.0   0.0
     42  *   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0
0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0
     43  *   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0
0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0
```

```
      44  *   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0
 0.0   0.0   0.0   0.0   0.0   0.1   0.1   0.2
      45  *   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0
 0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0
```



```
          *    CO/LINK  (PPM)
          *    ANGLE (DEGREES)
          *  REC1  REC2  REC3  REC4  REC5  REC6  REC7  REC8  REC9  REC10 REC11 REC12
REC13 REC14 REC15 REC16 REC17 REC18 REC19 REC20
   LINK # *   260   260   170   220   300   270   170    60    60    80   220   180
  80    50    40    40    50    70    20   350

-------*-------------------------------------------------------------------------------
-----------------------------------------
      46  *   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0
 0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0
      47  *   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0
 0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0
      48  *   0.0   0.1   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.1
 0.0   0.0   0.0   0.0   0.0   0.2   0.1   0.2
      49  *   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0
 0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0
      50  *   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0
 0.0   0.1   0.1   0.1   0.0   0.0   0.0   0.0
      51  *   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.1   0.1   0.0   0.0   0.0
 0.0   0.1   0.1   0.1   0.0   0.0   0.0   0.0
      52  *   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.3   0.2   0.0   0.0   0.0
 0.0   0.1   0.1   0.1   0.1   0.0   0.0   0.0
      53  *   0.0   0.0   0.0   0.0   0.2   0.3   0.4   0.2   0.3   0.4   0.0   0.0
 0.1   0.1   0.1   0.1   0.1   0.0   0.1   0.0
      54  *   0.0   0.0   0.0   0.0   0.1   0.2   0.3   0.3   0.3   0.3   0.0   0.0
 0.1   0.1   0.1   0.1   0.1   0.0   0.1   0.0
      55  *   0.0   0.1   0.0   0.0   0.1   0.0   0.0   0.0   0.0   0.0   0.0   0.1
 0.0   0.0   0.0   0.1   0.5   0.1   0.2   0.1
      56  *   0.2   0.2   0.0   0.2   0.0   0.0   0.0   0.0   0.0   0.0   0.2   0.2
 0.0   0.0   0.0   0.0   0.5   1.0   0.1   0.2
      57  *   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0
 0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0
      58  *   0.0   0.0   0.0   0.0   0.1   0.1   0.3   0.5   0.4   0.3   0.0   0.0
 0.1   0.1   0.1   0.1   0.1   0.0   0.0   0.0
      59  *   0.0   0.0   0.0   0.0   0.1   0.1   0.2   0.5   0.3   0.3   0.0   0.0
 0.1   0.2   0.2   0.2   0.1   0.0   0.1   0.0
      60  *   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.1   0.0   0.0
 0.0   0.0   0.1   0.1   0.0   0.0   0.0   0.0
      61  *   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0
 0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0
      62  *   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0
 0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0
      63  *   0.0   0.0   0.0   0.0   0.1   0.1   0.1   0.0   0.0   0.1   0.0   0.0
 0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0
      64  *   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0
 0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0
```


DATE : 3/26/13
TIME : 19:45: 3

RECEPTOR - LINK MATRIX FOR THE ANGLE PRODUCING
THE MAXIMUM CONCENTRATION FOR EACH RECEPTOR

LINK #	* CO/LINK (PPM) ANGLE (DEGREES) REC21 310	REC22 290	REC23 20	REC24 10
1	0.0	0.0	0.0	0.0
2	0.0	0.0	0.0	0.0
3	0.0	0.0	0.0	0.0
4	0.0	0.0	0.0	0.0
5	0.0	0.0	0.0	0.0
6	0.0	0.0	0.0	0.0
7	0.1	0.0	0.0	0.0
8	0.0	0.0	0.0	0.0
9	0.0	0.0	0.2	0.2
10	0.0	0.0	0.0	0.0
11	0.0	0.0	0.0	0.0
12	0.0	0.0	0.0	0.0
13	0.0	0.0	0.0	0.0
14	0.0	0.0	0.0	0.0
15	0.0	0.0	0.0	0.0
16	0.0	0.0	0.0	0.0
17	0.2	0.0	0.0	0.0
18	0.0	0.0	0.0	0.0
19	0.0	0.0	0.0	0.0
20	0.0	0.0	0.0	0.0
21	0.0	0.0	0.1	0.1
22	0.0	0.0	0.3	0.3
23	0.0	0.0	0.0	0.0
24	0.0	0.0	0.0	0.0
25	0.0	0.0	0.0	0.0
26	0.0	0.0	0.0	0.0
27	0.0	0.0	0.0	0.0
28	0.0	0.0	0.0	0.0
29	0.0	0.0	0.0	0.0
30	0.0	0.0	0.1	0.0
31	0.0	0.0	0.0	0.0
32	0.0	0.0	0.0	0.0
33	0.0	0.0	0.0	0.0
34	0.0	0.0	0.1	0.1
35	0.0	0.0	0.0	0.0
36	0.0	0.0	0.0	0.0
37	0.0	0.0	0.0	0.0
38	0.1	0.1	0.0	0.0
39	0.3	0.3	0.0	0.0
40	0.0	0.0	0.0	0.0
41	0.0	0.0	0.1	0.0
42	0.0	0.0	0.0	0.0
43	0.0	0.0	0.0	0.0
44	0.2	0.2	0.0	0.0
45	0.0	0.0	0.0	0.0

* CO/LINK (PPM)
* ANGLE (DEGREES)
* REC21 REC22 REC23 REC24

LINK #	*	310	290	20	10
46	*	0.0	0.0	0.0	0.0
47	*	0.0	0.0	0.0	0.0
48	*	0.3	0.3	0.0	0.0
49	*	0.0	0.0	0.0	0.0
50	*	0.0	0.0	0.0	0.0
51	*	0.0	0.0	0.0	0.0
52	*	0.0	0.0	0.1	0.1
53	*	0.0	0.0	0.1	0.1
54	*	0.0	0.0	0.1	0.1
55	*	0.1	0.1	0.0	0.0
56	*	0.2	0.3	0.0	0.0
57	*	0.0	0.0	0.0	0.0
58	*	0.0	0.0	0.1	0.1
59	*	0.0	0.0	0.1	0.1
60	*	0.0	0.0	0.0	0.0
61	*	0.0	0.0	0.0	0.0
62	*	0.0	0.0	0.0	0.0
63	*	0.0	0.0	0.0	0.0
64	*	0.0	0.0	0.0	0.0

PAL-2.1 (DATE 89272)

JW Clay Parking Deck Permit

DATE 89272

URBAN OPTION (IURB) = 1 (1 - PASQUILL-GIFFORD DISPERSION CURVES, 2 - BRIGGS/MCELROY-POOLER DISPERSION CURVES)

PINA = 0.02000 PINL = 0.02000

	SOURCE INCLUDED	WIND INCREASE WITH HEIGHT
POINT	NO	NO
AREA	YES	NO
HORIZONTAL LINE SOURCE	NO	NO
CURVE PATH SOURCE	NO	NO
SPECIAL LINE SOURCE	NO	NO
SPECIAL PATH SOURCE	NO	NO

AVERAGE NO DIURNAL NO HEIGHT AT WIND SPEED 10.0 METERS

WIND CONSTANT BELOW 10.0 METERS AND ABOVE 10.0 METERS. MINIMUM WIND SPEED SET TO: 1.0M/S.

WIND PROFILE EXPONENTS FOR STABILITY CLASSES (A-F) 0.07 0.07 0.10 0.15 0.35 0.55

* * A R E A S O U R C E S * * *

NO.	AREA SOURCE STRENGTH (G/SEC-M**2)	AREA SOURCE HEIGHT (METERS)	COORDINATES SW-CORNER EAST (KM)	COORDINATES SW-CORNER NORTH (KM)	AREA SIZE EAST-WEST (KM)	AREA SIZE NORTH-SOUTH (KM)
1	0.00010589	0.0	0.017	0.020	0.096	0.056
2	0.00009165	2.4	0.017	0.020	0.096	0.056
3	0.00007595	4.9	0.017	0.020	0.096	0.056
4	0.00005050	7.3	0.017	0.020	0.096	0.056
5	0.00002492	9.8	0.017	0.020	0.096	0.056

* * R E C E P T O R S * * *

NO.	RREC(KM)	SREC(KM)	Z (M)
1	0.000	0.000	1.8
2	-0.021	0.000	1.8

```
 * * M E T E O R O L O G Y * * *
      NO.  THETA(DEG)    U (M/SEC)    KST   HL (M)  T (DEG-K)           DIURNAL
VARIATIONS (FRACTIONS OF GIVEN Q)

   HORIZONTAL CURVED   SPECIAL  SPECIAL                                    POINT
AREA     LINE     PATH     LINE     PATH
        1.        0.       1.0         4      400.      273.             1.0000
1.0000   1.0000   1.0000   1.0000   1.0000
        2.       10.       1.0         4      400.      273.             1.0000
1.0000   1.0000   1.0000   1.0000   1.0000
        3.       20.       1.0         4      400.      273.             1.0000
1.0000   1.0000   1.0000   1.0000   1.0000
        4.       30.       1.0         4      400.      273.             1.0000
1.0000   1.0000   1.0000   1.0000   1.0000
        5.       40.       1.0         4      400.      273.             1.0000
1.0000   1.0000   1.0000   1.0000   1.0000
        6.       50.       1.0         4      400.      273.             1.0000
1.0000   1.0000   1.0000   1.0000   1.0000
        7.       60.       1.0         4      400.      273.             1.0000
1.0000   1.0000   1.0000   1.0000   1.0000
        8.       70.       1.0         4      400.      273.             1.0000
1.0000   1.0000   1.0000   1.0000   1.0000
        9.       80.       1.0         4      400.      273.             1.0000
1.0000   1.0000   1.0000   1.0000   1.0000
       10.       90.       1.0         4      400.      273.             1.0000
1.0000   1.0000   1.0000   1.0000   1.0000
       11.      100.       1.0         4      400.      273.             1.0000
1.0000   1.0000   1.0000   1.0000   1.0000
       12.      110.       1.0         4      400.      273.             1.0000
1.0000   1.0000   1.0000   1.0000   1.0000
       13.      120.       1.0         4      400.      273.             1.0000
1.0000   1.0000   1.0000   1.0000   1.0000
       14.      130.       1.0         4      400.      273.             1.0000
1.0000   1.0000   1.0000   1.0000   1.0000
       15.      140.       1.0         4      400.      273.             1.0000
1.0000   1.0000   1.0000   1.0000   1.0000
       16.      150.       1.0         4      400.      273.             1.0000
1.0000   1.0000   1.0000   1.0000   1.0000
       17.      160.       1.0         4      400.      273.             1.0000
1.0000   1.0000   1.0000   1.0000   1.0000
       18.      170.       1.0         4      400.      273.             1.0000
1.0000   1.0000   1.0000   1.0000   1.0000
       19.      180.       1.0         4      400.      273.             1.0000
1.0000   1.0000   1.0000   1.0000   1.0000


 * * C O N C E N T R A T I O N S   A T   R E C E P T O R S * * *
    CONCENTRATIONS IN GRAMS PER CUBIC METER                        FROM      FROM
 FROM       FROM
HOUR RECEPTOR    RECEPTOR COORDINATES    FROM      FROM        HORIZONTAL  CURVED
SPECIAL    SPECIAL
       NO.     EAST    NORTH   HEIGHT   POINTS    AREAS         LINES     PATHS
 LINES     PATHS       TOTAL


   1    1      0.000    0.000   1.80     0.000E-01  1.737E-06  0.000E-01  0.000E-01
0.000E-01  0.000E-01  1.737E-06
   1    2     -0.021    0.000   1.80     0.000E-01  0.000E-01  0.000E-01  0.000E-01
0.000E-01  0.000E-01  0.000E-01
```

* * C O N C E N T R A T I O N S A T R E C E P T O R S * * *
CONCENTRATIONS IN GRAMS PER CUBIC METER

HOUR	RECEPTOR NO.	RECEPTOR EAST	RECEPTOR NORTH	RECEPTOR HEIGHT	FROM POINTS	FROM AREAS	FROM HORIZONTAL LINES	FROM CURVED PATHS	FROM SPECIAL LINES	FROM SPECIAL PATHS	TOTAL
2	1	0.000	0.000	1.80	0.000E-01	2.234E-04	0.000E-01	0.000E-01	0.000E-01	0.000E-01	2.234E-04
2	2	-0.021	0.000	1.80	0.000E-01	4.208E-08	0.000E-01	0.000E-01	0.000E-01	0.000E-01	4.208E-08

* * C O N C E N T R A T I O N S A T R E C E P T O R S * * *
CONCENTRATIONS IN GRAMS PER CUBIC METER

HOUR	RECEPTOR NO.	RECEPTOR EAST	RECEPTOR NORTH	RECEPTOR HEIGHT	FROM POINTS	FROM AREAS	FROM HORIZONTAL LINES	FROM CURVED PATHS	FROM SPECIAL LINES	FROM SPECIAL PATHS	TOTAL
3	1	0.000	0.000	1.80	0.000E-01	1.452E-03	0.000E-01	0.000E-01	0.000E-01	0.000E-01	1.452E-03
3	2	-0.021	0.000	1.80	0.000E-01	3.442E-05	0.000E-01	0.000E-01	0.000E-01	0.000E-01	3.442E-05

* * C O N C E N T R A T I O N S A T R E C E P T O R S * * *
CONCENTRATIONS IN GRAMS PER CUBIC METER

HOUR	RECEPTOR NO.	RECEPTOR EAST	RECEPTOR NORTH	RECEPTOR HEIGHT	FROM POINTS	FROM AREAS	FROM HORIZONTAL LINES	FROM CURVED PATHS	FROM SPECIAL LINES	FROM SPECIAL PATHS	TOTAL
4	1	0.000	0.000	1.80	0.000E-01	2.606E-03	0.000E-01	0.000E-01	0.000E-01	0.000E-01	2.606E-03
4	2	-0.021	0.000	1.80	0.000E-01	6.475E-04	0.000E-01	0.000E-01	0.000E-01	0.000E-01	6.475E-04

* * C O N C E N T R A T I O N S A T R E C E P T O R S * * *
CONCENTRATIONS IN GRAMS PER CUBIC METER

HOUR	RECEPTOR NO.	RECEPTOR EAST	RECEPTOR NORTH	RECEPTOR HEIGHT	FROM POINTS	FROM AREAS	FROM HORIZONTAL LINES	FROM CURVED PATHS	FROM SPECIAL LINES	FROM SPECIAL PATHS	TOTAL
5	1	0.000	0.000	1.80	0.000E-01	3.395E-03	0.000E-01	0.000E-01	0.000E-01	0.000E-01	3.395E-03
5	2	-0.021	0.000	1.80	0.000E-01	1.857E-03	0.000E-01	0.000E-01	0.000E-01	0.000E-01	

0.000E-01 0.000E-01 1.857E-03

* * C O N C E N T R A T I O N S A T R E C E P T O R S * * *
CONCENTRATIONS IN GRAMS PER CUBIC METER

HOUR	RECEPTOR NO.	RECEPTOR COORDINATES EAST	NORTH	HEIGHT	FROM POINTS	FROM AREAS	FROM HORIZONTAL LINES	FROM CURVED PATHS	FROM SPECIAL LINES	FROM SPECIAL PATHS	TOTAL
6	1	0.000	0.000	1.80	0.000E-01	3.938E-03	0.000E-01	0.000E-01	0.000E-01	0.000E-01	3.938E-03
6	2	-0.021	0.000	1.80	0.000E-01	3.096E-03	0.000E-01	0.000E-01	0.000E-01	0.000E-01	3.096E-03

* * C O N C E N T R A T I O N S A T R E C E P T O R S * * *
CONCENTRATIONS IN GRAMS PER CUBIC METER

HOUR	RECEPTOR NO.	RECEPTOR COORDINATES EAST	NORTH	HEIGHT	FROM POINTS	FROM AREAS	FROM HORIZONTAL LINES	FROM CURVED PATHS	FROM SPECIAL LINES	FROM SPECIAL PATHS	TOTAL
7	1	0.000	0.000	1.80	0.000E-01	3.778E-03	0.000E-01	0.000E-01	0.000E-01	0.000E-01	3.778E-03
7	2	-0.021	0.000	1.80	0.000E-01	4.089E-03	0.000E-01	0.000E-01	0.000E-01	0.000E-01	4.089E-03

* * C O N C E N T R A T I O N S A T R E C E P T O R S * * *
CONCENTRATIONS IN GRAMS PER CUBIC METER

HOUR	RECEPTOR NO.	RECEPTOR COORDINATES EAST	NORTH	HEIGHT	FROM POINTS	FROM AREAS	FROM HORIZONTAL LINES	FROM CURVED PATHS	FROM SPECIAL LINES	FROM SPECIAL PATHS	TOTAL
8	1	0.000	0.000	1.80	0.000E-01	2.449E-03	0.000E-01	0.000E-01	0.000E-01	0.000E-01	2.449E-03
8	2	-0.021	0.000	1.80	0.000E-01	3.218E-03	0.000E-01	0.000E-01	0.000E-01	0.000E-01	3.218E-03

* * C O N C E N T R A T I O N S A T R E C E P T O R S * * *
CONCENTRATIONS IN GRAMS PER CUBIC METER

HOUR	RECEPTOR NO.	RECEPTOR COORDINATES EAST	NORTH	HEIGHT	FROM POINTS	FROM AREAS	FROM HORIZONTAL LINES	FROM CURVED PATHS	FROM SPECIAL LINES	FROM SPECIAL PATHS	TOTAL
9	1	0.000	0.000	1.80	0.000E-01	5.616E-04	0.000E-01	0.000E-01	0.000E-01	0.000E-01	5.616E-04

9	2	-0.021	0.000	1.80	0.000E-01	9.886E-04	0.000E-01	0.000E-01	0.000E-01	0.000E-01	9.886E-04

* * C O N C E N T R A T I O N S A T R E C E P T O R S * * *
CONCENTRATIONS IN GRAMS PER CUBIC METER

HOUR	RECEPTOR NO.	RECEPTOR EAST	COORDINATES NORTH	HEIGHT	FROM POINTS	FROM AREAS	FROM LINES	FROM PATHS	HORIZONTAL LINES	CURVED PATHS	SPECIAL TOTAL
10	1	0.000	0.000	1.80	0.000E-01	7.771E-06	0.000E-01	0.000E-01	0.000E-01	0.000E-01	7.771E-06
10	2	-0.021	0.000	1.80	0.000E-01	2.318E-05	0.000E-01	0.000E-01	0.000E-01	0.000E-01	2.318E-05

* * C O N C E N T R A T I O N S A T R E C E P T O R S * * *
CONCENTRATIONS IN GRAMS PER CUBIC METER

HOUR	RECEPTOR NO.	RECEPTOR EAST	COORDINATES NORTH	HEIGHT	FROM POINTS	FROM AREAS	FROM LINES	FROM PATHS	HORIZONTAL LINES	CURVED PATHS	SPECIAL TOTAL
11	1	0.000	0.000	1.80	0.000E-01	0.000E-01	0.000E-01	0.000E-01	0.000E-01	0.000E-01	0.000E-01
11	2	-0.021	0.000	1.80	0.000E-01	0.000E-01	0.000E-01	0.000E-01	0.000E-01	0.000E-01	0.000E-01

* * C O N C E N T R A T I O N S A T R E C E P T O R S * * *
CONCENTRATIONS IN GRAMS PER CUBIC METER

HOUR	RECEPTOR NO.	RECEPTOR EAST	COORDINATES NORTH	HEIGHT	FROM POINTS	FROM AREAS	FROM LINES	FROM PATHS	HORIZONTAL LINES	CURVED PATHS	SPECIAL TOTAL
12	1	0.000	0.000	1.80	0.000E-01	0.000E-01	0.000E-01	0.000E-01	0.000E-01	0.000E-01	0.000E-01
12	2	-0.021	0.000	1.80	0.000E-01	0.000E-01	0.000E-01	0.000E-01	0.000E-01	0.000E-01	0.000E-01

* * C O N C E N T R A T I O N S A T R E C E P T O R S * * *
CONCENTRATIONS IN GRAMS PER CUBIC METER

HOUR	RECEPTOR NO.	RECEPTOR EAST	COORDINATES NORTH	HEIGHT	FROM POINTS	FROM AREAS	FROM LINES	FROM PATHS	HORIZONTAL LINES	CURVED PATHS	SPECIAL TOTAL
13	1	0.000	0.000	1.80	0.000E-01	0.000E-01	0.000E-01	0.000E-01	0.000E-01	0.000E-01	0.000E-01

0.000E-01 0.000E-01 0.000E-01
13 2 -0.021 0.000 1.80 0.000E-01 0.000E-01 0.000E-01 0.000E-01
0.000E-01 0.000E-01 0.000E-01

* * C O N C E N T R A T I O N S A T R E C E P T O R S * * *
CONCENTRATIONS IN GRAMS PER CUBIC METER

HOUR	RECEPTOR NO.	RECEPTOR EAST	RECEPTOR NORTH	RECEPTOR HEIGHT	FROM POINTS	FROM AREAS	FROM LINES	FROM PATHS	HORIZONTAL LINES	CURVED PATHS	SPECIAL TOTAL
14	1	0.000	0.000	1.80	0.000E-01	0.000E-01	0.000E-01	0.000E-01	0.000E-01	0.000E-01	0.000E-01
14	2	-0.021	0.000	1.80	0.000E-01	0.000E-01	0.000E-01	0.000E-01	0.000E-01	0.000E-01	0.000E-01

* * C O N C E N T R A T I O N S A T R E C E P T O R S * * *
CONCENTRATIONS IN GRAMS PER CUBIC METER

HOUR	RECEPTOR NO.	RECEPTOR EAST	RECEPTOR NORTH	RECEPTOR HEIGHT	FROM POINTS	FROM AREAS	FROM LINES	FROM PATHS	HORIZONTAL LINES	CURVED PATHS	SPECIAL TOTAL
15	1	0.000	0.000	1.80	0.000E-01	0.000E-01	0.000E-01	0.000E-01	0.000E-01	0.000E-01	0.000E-01
15	2	-0.021	0.000	1.80	0.000E-01	0.000E-01	0.000E-01	0.000E-01	0.000E-01	0.000E-01	0.000E-01

* * C O N C E N T R A T I O N S A T R E C E P T O R S * * *
CONCENTRATIONS IN GRAMS PER CUBIC METER

HOUR	RECEPTOR NO.	RECEPTOR EAST	RECEPTOR NORTH	RECEPTOR HEIGHT	FROM POINTS	FROM AREAS	FROM LINES	FROM PATHS	HORIZONTAL LINES	CURVED PATHS	SPECIAL TOTAL
16	1	0.000	0.000	1.80	0.000E-01	0.000E-01	0.000E-01	0.000E-01	0.000E-01	0.000E-01	0.000E-01
16	2	-0.021	0.000	1.80	0.000E-01	0.000E-01	0.000E-01	0.000E-01	0.000E-01	0.000E-01	0.000E-01

* * C O N C E N T R A T I O N S A T R E C E P T O R S * * *
CONCENTRATIONS IN GRAMS PER CUBIC METER

HOUR	RECEPTOR NO.	RECEPTOR EAST	RECEPTOR NORTH	RECEPTOR HEIGHT	FROM POINTS	FROM AREAS	FROM LINES	FROM PATHS	HORIZONTAL LINES	CURVED PATHS	SPECIAL TOTAL

17	1	0.000	0.000	1.80	0.000E-01	0.000E-01	0.000E-01	0.000E-01	0.000E-01	0.000E-01	0.000E-01
17	2	-0.021	0.000	1.80	0.000E-01	0.000E-01	0.000E-01	0.000E-01	0.000E-01	0.000E-01	0.000E-01

* * C O N C E N T R A T I O N S A T R E C E P T O R S * * *
CONCENTRATIONS IN GRAMS PER CUBIC METER

HOUR	RECEPTOR NO.	RECEPTOR COORDINATES EAST	NORTH	HEIGHT	FROM POINTS	FROM AREAS	FROM HORIZONTAL LINES	FROM CURVED PATHS	FROM SPECIAL LINES	FROM SPECIAL PATHS	TOTAL
18	1	0.000	0.000	1.80	0.000E-01	0.000E-01	0.000E-01	0.000E-01	0.000E-01	0.000E-01	0.000E-01
18	2	-0.021	0.000	1.80	0.000E-01	0.000E-01	0.000E-01	0.000E-01	0.000E-01	0.000E-01	0.000E-01

* * C O N C E N T R A T I O N S A T R E C E P T O R S * * *
CONCENTRATIONS IN GRAMS PER CUBIC METER

HOUR	RECEPTOR NO.	RECEPTOR COORDINATES EAST	NORTH	HEIGHT	FROM POINTS	FROM AREAS	FROM HORIZONTAL LINES	FROM CURVED PATHS	FROM SPECIAL LINES	FROM SPECIAL PATHS	TOTAL
19	1	0.000	0.000	1.80	0.000E-01	0.000E-01	0.000E-01	0.000E-01	0.000E-01	0.000E-01	0.000E-01
19	2	-0.021	0.000	1.80	0.000E-01	0.000E-01	0.000E-01	0.000E-01	0.000E-01	0.000E-01	0.000E-01

PAL-2.1 (DATE 89272)

JW Clay Parking Deck Permit

DATE 89272

URBAN OPTION (IURB) = 1 (1 - PASQUILL-GIFFORD DISPERSION CURVES, 2 - BRIGGS/MCELROY-POOLER DISPERSION CURVES)

PINA = 0.02000 PINL = 0.02000

	SOURCE INCLUDED	WIND INCREASE WITH HEIGHT
POINT	NO	NO
AREA	YES	NO
HORIZONTAL LINE SOURCE	NO	NO
CURVE PATH SOURCE	NO	NO
SPECIAL LINE SOURCE	NO	NO
SPECIAL PATH SOURCE	NO	NO

AVERAGE NO DIURNAL NO HEIGHT AT WIND SPEED 10.0 METERS

WIND CONSTANT BELOW 10.0 METERS AND ABOVE 10.0 METERS. MINIMUM WIND SPEED SET TO: 1.0M/S.

WIND PROFILE EXPONENTS FOR STABILITY CLASSES (A-F) 0.07 0.07 0.10 0.15 0.35 0.55

* * A R E A S O U R C E S * * *

NO.	AREA SOURCE STRENGTH (G/SEC-M**2)	AREA SOURCE HEIGHT (METERS)	COORDINATES SW-CORNER EAST (KM)	COORDINATES SW-CORNER NORTH (KM)	AREA SIZE EAST-WEST (KM)	AREA SIZE NORTH-SOUTH (KM)
1	0.00010589	0.0	0.017	0.020	0.096	0.056
2	0.00009165	2.4	0.017	0.020	0.096	0.056
3	0.00007595	4.9	0.017	0.020	0.096	0.056
4	0.00005050	7.3	0.017	0.020	0.096	0.056
5	0.00002492	9.8	0.017	0.020	0.096	0.056

* * R E C E P T O R S * * *

NO.	RREC(KM)	SREC(KM)	Z (M)
1	0.000	0.000	1.8
2	-0.021	0.000	1.8

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 * * M E T E O R O L O G Y * * *
      NO.  THETA(DEG)    U (M/SEC)    KST   HL (M)  T (DEG-K)           DIURNAL
VARIATIONS (FRACTIONS OF GIVEN Q)

   HORIZONTAL CURVED   SPECIAL  SPECIAL                                    POINT
AREA     LINE     PATH     LINE     PATH
        1.      190.       1.0        4      400.      273.              1.0000
1.0000   1.0000   1.0000   1.0000   1.0000
        2.      200.       1.0        4      400.      273.              1.0000
1.0000   1.0000   1.0000   1.0000   1.0000
        3.      210.       1.0        4      400.      273.              1.0000
1.0000   1.0000   1.0000   1.0000   1.0000
        4.      220.       1.0        4      400.      273.              1.0000
1.0000   1.0000   1.0000   1.0000   1.0000
        5.      230.       1.0        4      400.      273.              1.0000
1.0000   1.0000   1.0000   1.0000   1.0000
        6.      240.       1.0        4      400.      273.              1.0000
1.0000   1.0000   1.0000   1.0000   1.0000
        7.      250.       1.0        4      400.      273.              1.0000
1.0000   1.0000   1.0000   1.0000   1.0000
        8.      260.       1.0        4      400.      273.              1.0000
1.0000   1.0000   1.0000   1.0000   1.0000
        9.      270.       1.0        4      400.      273.              1.0000
1.0000   1.0000   1.0000   1.0000   1.0000
       10.      280.       1.0        4      400.      273.              1.0000
1.0000   1.0000   1.0000   1.0000   1.0000
       11.      290.       1.0        4      400.      273.              1.0000
1.0000   1.0000   1.0000   1.0000   1.0000
       12.      300.       1.0        4      400.      273.              1.0000
1.0000   1.0000   1.0000   1.0000   1.0000
       13.      310.       1.0        4      400.      273.              1.0000
1.0000   1.0000   1.0000   1.0000   1.0000
       14.      320.       1.0        4      400.      273.              1.0000
1.0000   1.0000   1.0000   1.0000   1.0000
       15.      330.       1.0        4      400.      273.              1.0000
1.0000   1.0000   1.0000   1.0000   1.0000
       16.      340.       1.0        4      400.      273.              1.0000
1.0000   1.0000   1.0000   1.0000   1.0000
       17.      350.       1.0        4      400.      273.              1.0000
1.0000   1.0000   1.0000   1.0000   1.0000
       18.      360.       1.0        4      400.      273.              1.0000
1.0000   1.0000   1.0000   1.0000   1.0000


 * * C O N C E N T R A T I O N S   A T   R E C E P T O R S * * *
    CONCENTRATIONS IN GRAMS PER CUBIC METER                        FROM      FROM
 FROM       FROM
HOUR RECEPTOR    RECEPTOR COORDINATES    FROM      FROM        HORIZONTAL  CURVED
SPECIAL    SPECIAL
       NO.     EAST     NORTH    HEIGHT   POINTS     AREAS         LINES     PATHS
 LINES     PATHS       TOTAL


   1    1      0.000    0.000   1.80     0.000E-01  0.000E-01  0.000E-01  0.000E-01
0.000E-01  0.000E-01  0.000E-01
   1    2     -0.021    0.000   1.80     0.000E-01  0.000E-01  0.000E-01  0.000E-01
0.000E-01  0.000E-01  0.000E-01
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* * C O N C E N T R A T I O N S A T R E C E P T O R S * * *
CONCENTRATIONS IN GRAMS PER CUBIC METER

HOUR	RECEPTOR NO.	RECEPTOR EAST	RECEPTOR NORTH	RECEPTOR HEIGHT	FROM POINTS	FROM AREAS	FROM HORIZONTAL LINES	FROM CURVED PATHS	FROM SPECIAL LINES	FROM SPECIAL PATHS	FROM TOTAL
2	1	0.000	0.000	1.80	0.000E-01	0.000E-01	0.000E-01	0.000E-01	0.000E-01	0.000E-01	0.000E-01
2	2	-0.021	0.000	1.80	0.000E-01	0.000E-01	0.000E-01	0.000E-01	0.000E-01	0.000E-01	0.000E-01

* * C O N C E N T R A T I O N S A T R E C E P T O R S * * *
CONCENTRATIONS IN GRAMS PER CUBIC METER

HOUR	RECEPTOR NO.	RECEPTOR EAST	RECEPTOR NORTH	RECEPTOR HEIGHT	FROM POINTS	FROM AREAS	FROM HORIZONTAL LINES	FROM CURVED PATHS	FROM SPECIAL LINES	FROM SPECIAL PATHS	FROM TOTAL
3	1	0.000	0.000	1.80	0.000E-01	0.000E-01	0.000E-01	0.000E-01	0.000E-01	0.000E-01	0.000E-01
3	2	-0.021	0.000	1.80	0.000E-01	0.000E-01	0.000E-01	0.000E-01	0.000E-01	0.000E-01	0.000E-01

* * C O N C E N T R A T I O N S A T R E C E P T O R S * * *
CONCENTRATIONS IN GRAMS PER CUBIC METER

HOUR	RECEPTOR NO.	RECEPTOR EAST	RECEPTOR NORTH	RECEPTOR HEIGHT	FROM POINTS	FROM AREAS	FROM HORIZONTAL LINES	FROM CURVED PATHS	FROM SPECIAL LINES	FROM SPECIAL PATHS	FROM TOTAL
4	1	0.000	0.000	1.80	0.000E-01	0.000E-01	0.000E-01	0.000E-01	0.000E-01	0.000E-01	0.000E-01
4	2	-0.021	0.000	1.80	0.000E-01	0.000E-01	0.000E-01	0.000E-01	0.000E-01	0.000E-01	0.000E-01

* * C O N C E N T R A T I O N S A T R E C E P T O R S * * *
CONCENTRATIONS IN GRAMS PER CUBIC METER

HOUR	RECEPTOR NO.	RECEPTOR EAST	RECEPTOR NORTH	RECEPTOR HEIGHT	FROM POINTS	FROM AREAS	FROM HORIZONTAL LINES	FROM CURVED PATHS	FROM SPECIAL LINES	FROM SPECIAL PATHS	FROM TOTAL
5	1	0.000	0.000	1.80	0.000E-01	0.000E-01	0.000E-01	0.000E-01	0.000E-01	0.000E-01	0.000E-01
5	2	-0.021	0.000	1.80	0.000E-01	0.000E-01	0.000E-01	0.000E-01	0.000E-01	0.000E-01	0.000E-01

* * C O N C E N T R A T I O N S A T R E C E P T O R S * * *
CONCENTRATIONS IN GRAMS PER CUBIC METER

HOUR	RECEPTOR NO.	EAST	NORTH	HEIGHT	FROM POINTS	FROM AREAS	FROM HORIZONTAL LINES	FROM CURVED PATHS	FROM SPECIAL LINES	FROM SPECIAL PATHS	TOTAL
6	1	0.000	0.000	1.80	0.000E-01	0.000E-01	0.000E-01	0.000E-01	0.000E-01	0.000E-01	0.000E-01
6	2	-0.021	0.000	1.80	0.000E-01	0.000E-01	0.000E-01	0.000E-01	0.000E-01	0.000E-01	0.000E-01

* * C O N C E N T R A T I O N S A T R E C E P T O R S * * *
CONCENTRATIONS IN GRAMS PER CUBIC METER

HOUR	RECEPTOR NO.	EAST	NORTH	HEIGHT	FROM POINTS	FROM AREAS	FROM HORIZONTAL LINES	FROM CURVED PATHS	FROM SPECIAL LINES	FROM SPECIAL PATHS	TOTAL
7	1	0.000	0.000	1.80	0.000E-01	0.000E-01	0.000E-01	0.000E-01	0.000E-01	0.000E-01	0.000E-01
7	2	-0.021	0.000	1.80	0.000E-01	0.000E-01	0.000E-01	0.000E-01	0.000E-01	0.000E-01	0.000E-01

* * C O N C E N T R A T I O N S A T R E C E P T O R S * * *
CONCENTRATIONS IN GRAMS PER CUBIC METER

HOUR	RECEPTOR NO.	EAST	NORTH	HEIGHT	FROM POINTS	FROM AREAS	FROM HORIZONTAL LINES	FROM CURVED PATHS	FROM SPECIAL LINES	FROM SPECIAL PATHS	TOTAL
8	1	0.000	0.000	1.80	0.000E-01	0.000E-01	0.000E-01	0.000E-01	0.000E-01	0.000E-01	0.000E-01
8	2	-0.021	0.000	1.80	0.000E-01	0.000E-01	0.000E-01	0.000E-01	0.000E-01	0.000E-01	0.000E-01

* * C O N C E N T R A T I O N S A T R E C E P T O R S * * *
CONCENTRATIONS IN GRAMS PER CUBIC METER

HOUR	RECEPTOR NO.	EAST	NORTH	HEIGHT	FROM POINTS	FROM AREAS	FROM HORIZONTAL LINES	FROM CURVED PATHS	FROM SPECIAL LINES	FROM SPECIAL PATHS	TOTAL
9	1	0.000	0.000	1.80	0.000E-01	0.000E-01	0.000E-01	0.000E-01	0.000E-01	0.000E-01	0.000E-01
9	2	-0.021	0.000	1.80	0.000E-01	0.000E-01	0.000E-01	0.000E-01	0.000E-01	0.000E-01	0.000E-01

* * C O N C E N T R A T I O N S A T R E C E P T O R S * * *
CONCENTRATIONS IN GRAMS PER CUBIC METER

HOUR	RECEPTOR NO.	RECEPTOR EAST	RECEPTOR NORTH	RECEPTOR HEIGHT	FROM POINTS	FROM AREAS	FROM HORIZONTAL LINES	FROM CURVED PATHS	FROM SPECIAL LINES	FROM SPECIAL PATHS	TOTAL
10	1	0.000	0.000	1.80	0.000E-01	0.000E-01	0.000E-01	0.000E-01	0.000E-01	0.000E-01	0.000E-01
10	2	-0.021	0.000	1.80	0.000E-01	0.000E-01	0.000E-01	0.000E-01	0.000E-01	0.000E-01	0.000E-01

* * C O N C E N T R A T I O N S A T R E C E P T O R S * * *
CONCENTRATIONS IN GRAMS PER CUBIC METER

HOUR	RECEPTOR NO.	RECEPTOR EAST	RECEPTOR NORTH	RECEPTOR HEIGHT	FROM POINTS	FROM AREAS	FROM HORIZONTAL LINES	FROM CURVED PATHS	FROM SPECIAL LINES	FROM SPECIAL PATHS	TOTAL
11	1	0.000	0.000	1.80	0.000E-01	0.000E-01	0.000E-01	0.000E-01	0.000E-01	0.000E-01	0.000E-01
11	2	-0.021	0.000	1.80	0.000E-01	0.000E-01	0.000E-01	0.000E-01	0.000E-01	0.000E-01	0.000E-01

* * C O N C E N T R A T I O N S A T R E C E P T O R S * * *
CONCENTRATIONS IN GRAMS PER CUBIC METER

HOUR	RECEPTOR NO.	RECEPTOR EAST	RECEPTOR NORTH	RECEPTOR HEIGHT	FROM POINTS	FROM AREAS	FROM HORIZONTAL LINES	FROM CURVED PATHS	FROM SPECIAL LINES	FROM SPECIAL PATHS	TOTAL
12	1	0.000	0.000	1.80	0.000E-01	0.000E-01	0.000E-01	0.000E-01	0.000E-01	0.000E-01	0.000E-01
12	2	-0.021	0.000	1.80	0.000E-01	0.000E-01	0.000E-01	0.000E-01	0.000E-01	0.000E-01	0.000E-01

* * C O N C E N T R A T I O N S A T R E C E P T O R S * * *
CONCENTRATIONS IN GRAMS PER CUBIC METER

HOUR	RECEPTOR NO.	RECEPTOR EAST	RECEPTOR NORTH	RECEPTOR HEIGHT	FROM POINTS	FROM AREAS	FROM HORIZONTAL LINES	FROM CURVED PATHS	FROM SPECIAL LINES	FROM SPECIAL PATHS	TOTAL
13	1	0.000	0.000	1.80	0.000E-01	0.000E-01	0.000E-01	0.000E-01	0.000E-01	0.000E-01	0.000E-01
13	2	-0.021	0.000	1.80	0.000E-01	0.000E-01	0.000E-01	0.000E-01	0.000E-01	0.000E-01	0.000E-01

0.000E-01 0.000E-01 0.000E-01

* * C O N C E N T R A T I O N S A T R E C E P T O R S * * *
CONCENTRATIONS IN GRAMS PER CUBIC METER

HOUR	RECEPTOR NO.	RECEPTOR COORDINATES EAST	NORTH	HEIGHT	FROM POINTS	FROM AREAS	FROM HORIZONTAL LINES	FROM CURVED PATHS	FROM SPECIAL LINES	FROM SPECIAL PATHS	TOTAL
14	1	0.000	0.000	1.80	0.000E-01	0.000E-01	0.000E-01	0.000E-01	0.000E-01	0.000E-01	0.000E-01
14	2	-0.021	0.000	1.80	0.000E-01	0.000E-01	0.000E-01	0.000E-01	0.000E-01	0.000E-01	0.000E-01

* * C O N C E N T R A T I O N S A T R E C E P T O R S * * *
CONCENTRATIONS IN GRAMS PER CUBIC METER

HOUR	RECEPTOR NO.	RECEPTOR COORDINATES EAST	NORTH	HEIGHT	FROM POINTS	FROM AREAS	FROM HORIZONTAL LINES	FROM CURVED PATHS	FROM SPECIAL LINES	FROM SPECIAL PATHS	TOTAL
15	1	0.000	0.000	1.80	0.000E-01	0.000E-01	0.000E-01	0.000E-01	0.000E-01	0.000E-01	0.000E-01
15	2	-0.021	0.000	1.80	0.000E-01	0.000E-01	0.000E-01	0.000E-01	0.000E-01	0.000E-01	0.000E-01

* * C O N C E N T R A T I O N S A T R E C E P T O R S * * *
CONCENTRATIONS IN GRAMS PER CUBIC METER

HOUR	RECEPTOR NO.	RECEPTOR COORDINATES EAST	NORTH	HEIGHT	FROM POINTS	FROM AREAS	FROM HORIZONTAL LINES	FROM CURVED PATHS	FROM SPECIAL LINES	FROM SPECIAL PATHS	TOTAL
16	1	0.000	0.000	1.80	0.000E-01	0.000E-01	0.000E-01	0.000E-01	0.000E-01	0.000E-01	0.000E-01
16	2	-0.021	0.000	1.80	0.000E-01	0.000E-01	0.000E-01	0.000E-01	0.000E-01	0.000E-01	0.000E-01

* * C O N C E N T R A T I O N S A T R E C E P T O R S * * *
CONCENTRATIONS IN GRAMS PER CUBIC METER

HOUR	RECEPTOR NO.	RECEPTOR COORDINATES EAST	NORTH	HEIGHT	FROM POINTS	FROM AREAS	FROM HORIZONTAL LINES	FROM CURVED PATHS	FROM SPECIAL LINES	FROM SPECIAL PATHS	TOTAL
17	1	0.000	0.000	1.80	0.000E-01	0.000E-01	0.000E-01	0.000E-01	0.000E-01	0.000E-01	0.000E-01

17 2 -0.021 0.000 1.80 0.000E-01 0.000E-01 0.000E-01 0.000E-01
0.000E-01 0.000E-01 0.000E-01

* * C O N C E N T R A T I O N S A T R E C E P T O R S * * *
CONCENTRATIONS IN GRAMS PER CUBIC METER

HOUR	RECEPTOR NO.	EAST	NORTH	HEIGHT	FROM POINTS	FROM AREAS	FROM HORIZONTAL LINES	FROM CURVED PATHS	FROM SPECIAL LINES	FROM SPECIAL PATHS	TOTAL
18	1	0.000	0.000	1.80	0.000E-01	1.705E-06	0.000E-01	0.000E-01	0.000E-01	0.000E-01	1.705E-06
18	2	-0.021	0.000	1.80	0.000E-01	0.000E-01	0.000E-01	0.000E-01	0.000E-01	0.000E-01	0.000E-01

PAL-2.1 (DATE 89272)

JW Clay Parking Deck Permit

DATE 89272

URBAN OPTION (IURB) = 1 (1 - PASQUILL-GIFFORD DISPERSION CURVES, 2 - BRIGGS/MCELROY-POOLER DISPERSION CURVES)

PINA = 0.02000 PINL = 0.02000

	SOURCE INCLUDED	WIND INCREASE WITH HEIGHT
POINT	NO	NO
AREA	YES	NO
HORIZONTAL LINE SOURCE	NO	NO
CURVE PATH SOURCE	NO	NO
SPECIAL LINE SOURCE	NO	NO
SPECIAL PATH SOURCE	NO	NO

AVERAGE NO DIURNAL NO HEIGHT AT WIND SPEED 10.0 METERS

WIND CONSTANT BELOW 10.0 METERS AND ABOVE 10.0 METERS. MINIMUM WIND SPEED SET TO: 1.0M/S.

WIND PROFILE EXPONENTS FOR STABILITY CLASSES (A-F) 0.07 0.07 0.10 0.15 0.35 0.55

* * A R E A S O U R C E S * * *

NO.	AREA SOURCE STRENGTH (G/SEC-M**2)	AREA SOURCE HEIGHT (METERS)	COORDINATES SW-CORNER EAST (KM)	COORDINATES SW-CORNER NORTH (KM)	AREA SIZE EAST-WEST (KM)	AREA SIZE NORTH-SOUTH (KM)
1	0.00010589	0.0	0.017	0.020	0.096	0.056
2	0.00009165	2.4	0.017	0.020	0.096	0.056
3	0.00007595	4.9	0.017	0.020	0.096	0.056
4	0.00005050	7.3	0.017	0.020	0.096	0.056
5	0.00002492	9.8	0.017	0.020	0.096	0.056

* * R E C E P T O R S * * *

NO.	RREC(KM)	SREC(KM)	Z (M)
1	0.000	0.000	1.8
2	-0.021	0.000	1.8

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 * * M E T E O R O L O G Y * * *
      NO.  THETA(DEG)    U (M/SEC)    KST   HL (M)  T (DEG-K)           DIURNAL
VARIATIONS (FRACTIONS OF GIVEN Q)

   HORIZONTAL CURVED   SPECIAL  SPECIAL                                      POINT
AREA     LINE     PATH     LINE     PATH
        1.       50.       1.0         4      400.      273.              1.0000
1.0000   1.0000   1.0000   1.0000   1.0000
        2.       51.       1.0         4      400.      273.              1.0000
1.0000   1.0000   1.0000   1.0000   1.0000
        3.       52.       1.0         4      400.      273.              1.0000
1.0000   1.0000   1.0000   1.0000   1.0000
        4.       53.       1.0         4      400.      273.              1.0000
1.0000   1.0000   1.0000   1.0000   1.0000
        5.       54.       1.0         4      400.      273.              1.0000
1.0000   1.0000   1.0000   1.0000   1.0000
        6.       55.       1.0         4      400.      273.              1.0000
1.0000   1.0000   1.0000   1.0000   1.0000
        7.       56.       1.0         4      400.      273.              1.0000
1.0000   1.0000   1.0000   1.0000   1.0000
        8.       57.       1.0         4      400.      273.              1.0000
1.0000   1.0000   1.0000   1.0000   1.0000
        9.       58.       1.0         4      400.      273.              1.0000
1.0000   1.0000   1.0000   1.0000   1.0000
       10.       59.       1.0         4      400.      273.              1.0000
1.0000   1.0000   1.0000   1.0000   1.0000
       11.       60.       1.0         4      400.      273.              1.0000
1.0000   1.0000   1.0000   1.0000   1.0000
       12.       61.       1.0         4      400.      273.              1.0000
1.0000   1.0000   1.0000   1.0000   1.0000
       13.       62.       1.0         4      400.      273.              1.0000
1.0000   1.0000   1.0000   1.0000   1.0000
       14.       63.       1.0         4      400.      273.              1.0000
1.0000   1.0000   1.0000   1.0000   1.0000
       15.       64.       1.0         4      400.      273.              1.0000
1.0000   1.0000   1.0000   1.0000   1.0000
       16.       65.       1.0         4      400.      273.              1.0000
1.0000   1.0000   1.0000   1.0000   1.0000
       17.       66.       1.0         4      400.      273.              1.0000
1.0000   1.0000   1.0000   1.0000   1.0000
       18.       67.       1.0         4      400.      273.              1.0000
1.0000   1.0000   1.0000   1.0000   1.0000
       19.       68.       1.0         4      400.      273.              1.0000
1.0000   1.0000   1.0000   1.0000   1.0000
       20.       69.       1.0         4      400.      273.              1.0000
1.0000   1.0000   1.0000   1.0000   1.0000
       21.       70.       1.0         4      400.      273.              1.0000
1.0000   1.0000   1.0000   1.0000   1.0000


 * * C O N C E N T R A T I O N S   A T   R E C E P T O R S * * *
    CONCENTRATIONS IN GRAMS PER CUBIC METER                          FROM      FROM
 FROM       FROM
HOUR RECEPTOR    RECEPTOR COORDINATES    FROM      FROM        HORIZONTAL  CURVED
SPECIAL    SPECIAL
       NO.     EAST    NORTH   HEIGHT   POINTS     AREAS         LINES     PATHS
 LINES     PATHS       TOTAL
```

1	1	0.000	0.000	1.80	0.000E-01	3.938E-03	0.000E-01	0.000E-01	0.000E-01	0.000E-01	3.938E-03
1	2	-0.021	0.000	1.80	0.000E-01	3.096E-03	0.000E-01	0.000E-01	0.000E-01	0.000E-01	3.096E-03

* * C O N C E N T R A T I O N S A T R E C E P T O R S * * *
CONCENTRATIONS IN GRAMS PER CUBIC METER

HOUR	RECEPTOR NO.	RECEPTOR COORDINATES EAST	NORTH	HEIGHT	FROM POINTS	FROM AREAS	HORIZONTAL LINES	CURVED PATHS	FROM SPECIAL LINES	FROM SPECIAL PATHS	TOTAL
2	1	0.000	0.000	1.80	0.000E-01	3.976E-03	0.000E-01	0.000E-01	0.000E-01	0.000E-01	3.976E-03
2	2	-0.021	0.000	1.80	0.000E-01	3.224E-03	0.000E-01	0.000E-01	0.000E-01	0.000E-01	3.224E-03

* * C O N C E N T R A T I O N S A T R E C E P T O R S * * *
CONCENTRATIONS IN GRAMS PER CUBIC METER

HOUR	RECEPTOR NO.	RECEPTOR COORDINATES EAST	NORTH	HEIGHT	FROM POINTS	FROM AREAS	HORIZONTAL LINES	CURVED PATHS	FROM SPECIAL LINES	FROM SPECIAL PATHS	TOTAL
3	1	0.000	0.000	1.80	0.000E-01	4.005E-03	0.000E-01	0.000E-01	0.000E-01	0.000E-01	4.005E-03
3	2	-0.021	0.000	1.80	0.000E-01	3.351E-03	0.000E-01	0.000E-01	0.000E-01	0.000E-01	3.351E-03

* * C O N C E N T R A T I O N S A T R E C E P T O R S * * *
CONCENTRATIONS IN GRAMS PER CUBIC METER

HOUR	RECEPTOR NO.	RECEPTOR COORDINATES EAST	NORTH	HEIGHT	FROM POINTS	FROM AREAS	HORIZONTAL LINES	CURVED PATHS	FROM SPECIAL LINES	FROM SPECIAL PATHS	TOTAL
4	1	0.000	0.000	1.80	0.000E-01	4.025E-03	0.000E-01	0.000E-01	0.000E-01	0.000E-01	4.025E-03
4	2	-0.021	0.000	1.80	0.000E-01	3.476E-03	0.000E-01	0.000E-01	0.000E-01	0.000E-01	3.476E-03

* * C O N C E N T R A T I O N S A T R E C E P T O R S * * *
CONCENTRATIONS IN GRAMS PER CUBIC METER

HOUR	RECEPTOR NO.	RECEPTOR COORDINATES EAST	NORTH	HEIGHT	FROM POINTS	FROM AREAS	HORIZONTAL LINES	CURVED PATHS	FROM SPECIAL LINES	FROM SPECIAL PATHS	TOTAL

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   5    1      0.000    0.000   1.80     0.000E-01  4.033E-03  0.000E-01  0.000E-01
0.000E-01  0.000E-01  4.033E-03
   5    2     -0.021    0.000   1.80     0.000E-01  3.600E-03  0.000E-01  0.000E-01
0.000E-01  0.000E-01  3.600E-03


 * * C O N C E N T R A T I O N S   A T   R E C E P T O R S * * *
    CONCENTRATIONS IN GRAMS PER CUBIC METER                      FROM      FROM
 FROM       FROM
HOUR RECEPTOR    RECEPTOR COORDINATES    FROM      FROM        HORIZONTAL  CURVED
SPECIAL    SPECIAL
       NO.     EAST    NORTH   HEIGHT   POINTS     AREAS         LINES     PATHS
 LINES     PATHS       TOTAL


   6    1      0.000    0.000   1.80     0.000E-01  4.027E-03  0.000E-01  0.000E-01
0.000E-01  0.000E-01  4.027E-03
   6    2     -0.021    0.000   1.80     0.000E-01  3.718E-03  0.000E-01  0.000E-01
0.000E-01  0.000E-01  3.718E-03


 * * C O N C E N T R A T I O N S   A T   R E C E P T O R S * * *
    CONCENTRATIONS IN GRAMS PER CUBIC METER                      FROM      FROM
 FROM       FROM
HOUR RECEPTOR    RECEPTOR COORDINATES    FROM      FROM        HORIZONTAL  CURVED
SPECIAL    SPECIAL
       NO.     EAST    NORTH   HEIGHT   POINTS     AREAS         LINES     PATHS
 LINES     PATHS       TOTAL


   7    1      0.000    0.000   1.80     0.000E-01  4.007E-03  0.000E-01  0.000E-01
0.000E-01  0.000E-01  4.007E-03
   7    2     -0.021    0.000   1.80     0.000E-01  3.823E-03  0.000E-01  0.000E-01
0.000E-01  0.000E-01  3.823E-03


 * * C O N C E N T R A T I O N S   A T   R E C E P T O R S * * *
    CONCENTRATIONS IN GRAMS PER CUBIC METER                      FROM      FROM
 FROM       FROM
HOUR RECEPTOR    RECEPTOR COORDINATES    FROM      FROM        HORIZONTAL  CURVED
SPECIAL    SPECIAL
       NO.     EAST    NORTH   HEIGHT   POINTS     AREAS         LINES     PATHS
 LINES     PATHS       TOTAL


   8    1      0.000    0.000   1.80     0.000E-01  3.971E-03  0.000E-01  0.000E-01
0.000E-01  0.000E-01  3.971E-03
   8    2     -0.021    0.000   1.80     0.000E-01  3.919E-03  0.000E-01  0.000E-01
0.000E-01  0.000E-01  3.919E-03


 * * C O N C E N T R A T I O N S   A T   R E C E P T O R S * * *
    CONCENTRATIONS IN GRAMS PER CUBIC METER                      FROM      FROM
 FROM       FROM
HOUR RECEPTOR    RECEPTOR COORDINATES    FROM      FROM        HORIZONTAL  CURVED
SPECIAL    SPECIAL
       NO.     EAST    NORTH   HEIGHT   POINTS     AREAS         LINES     PATHS
 LINES     PATHS       TOTAL
```

9	1	0.000	0.000	1.80	0.000E-01	3.921E-03	0.000E-01	0.000E-01	0.000E-01	0.000E-01
9	2	-0.021	0.000	1.80	0.000E-01	3.996E-03	0.000E-01	0.000E-01	0.000E-01	0.000E-01

* * C O N C E N T R A T I O N S A T R E C E P T O R S * * *
CONCENTRATIONS IN GRAMS PER CUBIC METER

HOUR	RECEPTOR NO.	RECEPTOR EAST	COORDINATES NORTH	HEIGHT	FROM POINTS	FROM AREAS	FROM HORIZONTAL LINES	FROM CURVED PATHS	FROM SPECIAL LINES	FROM SPECIAL PATHS	TOTAL
10	1	0.000	0.000	1.80	0.000E-01	3.856E-03	0.000E-01	0.000E-01	0.000E-01	0.000E-01	3.856E-03
10	2	-0.021	0.000	1.80	0.000E-01	4.053E-03	0.000E-01	0.000E-01	0.000E-01	0.000E-01	4.053E-03

* * C O N C E N T R A T I O N S A T R E C E P T O R S * * *
CONCENTRATIONS IN GRAMS PER CUBIC METER

HOUR	RECEPTOR NO.	RECEPTOR EAST	COORDINATES NORTH	HEIGHT	FROM POINTS	FROM AREAS	FROM HORIZONTAL LINES	FROM CURVED PATHS	FROM SPECIAL LINES	FROM SPECIAL PATHS	TOTAL
11	1	0.000	0.000	1.80	0.000E-01	3.778E-03	0.000E-01	0.000E-01	0.000E-01	0.000E-01	3.778E-03
11	2	-0.021	0.000	1.80	0.000E-01	4.089E-03	0.000E-01	0.000E-01	0.000E-01	0.000E-01	4.089E-03

* * C O N C E N T R A T I O N S A T R E C E P T O R S * * *
CONCENTRATIONS IN GRAMS PER CUBIC METER

HOUR	RECEPTOR NO.	RECEPTOR EAST	COORDINATES NORTH	HEIGHT	FROM POINTS	FROM AREAS	FROM HORIZONTAL LINES	FROM CURVED PATHS	FROM SPECIAL LINES	FROM SPECIAL PATHS	TOTAL
12	1	0.000	0.000	1.80	0.000E-01	3.687E-03	0.000E-01	0.000E-01	0.000E-01	0.000E-01	3.687E-03
12	2	-0.021	0.000	1.80	0.000E-01	4.101E-03	0.000E-01	0.000E-01	0.000E-01	0.000E-01	4.101E-03

* * C O N C E N T R A T I O N S A T R E C E P T O R S * * *
CONCENTRATIONS IN GRAMS PER CUBIC METER

HOUR	RECEPTOR NO.	RECEPTOR EAST	COORDINATES NORTH	HEIGHT	FROM POINTS	FROM AREAS	FROM HORIZONTAL LINES	FROM CURVED PATHS	FROM SPECIAL LINES	FROM SPECIAL PATHS

HOUR	RECEPTOR NO.	EAST	NORTH	HEIGHT	FROM POINTS	FROM AREAS	FROM HORIZONTAL LINES	FROM CURVED PATHS	FROM SPECIAL LINES	FROM SPECIAL PATHS	TOTAL
13	1	0.000	0.000	1.80	0.000E-01	3.585E-03	0.000E-01	0.000E-01	0.000E-01	0.000E-01	3.585E-03
13	2	-0.021	0.000	1.80	0.000E-01	4.085E-03	0.000E-01	0.000E-01	0.000E-01	0.000E-01	4.085E-03

* * C O N C E N T R A T I O N S A T R E C E P T O R S * * *
CONCENTRATIONS IN GRAMS PER CUBIC METER

HOUR	RECEPTOR NO.	EAST	NORTH	HEIGHT	FROM POINTS	FROM AREAS	FROM HORIZONTAL LINES	FROM CURVED PATHS	FROM SPECIAL LINES	FROM SPECIAL PATHS	TOTAL
14	1	0.000	0.000	1.80	0.000E-01	3.473E-03	0.000E-01	0.000E-01	0.000E-01	0.000E-01	3.473E-03
14	2	-0.021	0.000	1.80	0.000E-01	4.049E-03	0.000E-01	0.000E-01	0.000E-01	0.000E-01	4.049E-03

* * C O N C E N T R A T I O N S A T R E C E P T O R S * * *
CONCENTRATIONS IN GRAMS PER CUBIC METER

HOUR	RECEPTOR NO.	EAST	NORTH	HEIGHT	FROM POINTS	FROM AREAS	FROM HORIZONTAL LINES	FROM CURVED PATHS	FROM SPECIAL LINES	FROM SPECIAL PATHS	TOTAL
15	1	0.000	0.000	1.80	0.000E-01	3.352E-03	0.000E-01	0.000E-01	0.000E-01	0.000E-01	3.352E-03
15	2	-0.021	0.000	1.80	0.000E-01	3.989E-03	0.000E-01	0.000E-01	0.000E-01	0.000E-01	3.989E-03

* * C O N C E N T R A T I O N S A T R E C E P T O R S * * *
CONCENTRATIONS IN GRAMS PER CUBIC METER

HOUR	RECEPTOR NO.	EAST	NORTH	HEIGHT	FROM POINTS	FROM AREAS	FROM HORIZONTAL LINES	FROM CURVED PATHS	FROM SPECIAL LINES	FROM SPECIAL PATHS	TOTAL
16	1	0.000	0.000	1.80	0.000E-01	3.223E-03	0.000E-01	0.000E-01	0.000E-01	0.000E-01	3.223E-03
16	2	-0.021	0.000	1.80	0.000E-01	3.888E-03	0.000E-01	0.000E-01	0.000E-01	0.000E-01	3.888E-03

* * C O N C E N T R A T I O N S A T R E C E P T O R S * * *
CONCENTRATIONS IN GRAMS PER CUBIC METER

HOUR RECEPTOR NO. RECEPTOR COORDINATES EAST NORTH HEIGHT FROM POINTS FROM AREAS FROM HORIZONTAL LINES FROM CURVED PATHS FROM SPECIAL LINES FROM SPECIAL PATHS

HOUR	RECEPTOR NO.	EAST	NORTH	HEIGHT	FROM POINTS	FROM AREAS	FROM LINES	FROM PATHS	FROM LINES	FROM PATHS	HORIZONTAL TOTAL
17	1	0.000	0.000	1.80	0.000E-01	3.086E-03	0.000E-01	0.000E-01	0.000E-01	0.000E-01	3.086E-03
17	2	-0.021	0.000	1.80	0.000E-01	3.790E-03	0.000E-01	0.000E-01	0.000E-01	0.000E-01	3.790E-03

* * C O N C E N T R A T I O N S A T R E C E P T O R S * * *
CONCENTRATIONS IN GRAMS PER CUBIC METER

HOUR	RECEPTOR NO.	EAST	NORTH	HEIGHT	FROM POINTS	FROM AREAS	FROM LINES	FROM PATHS	FROM LINES	FROM PATHS	HORIZONTAL TOTAL
18	1	0.000	0.000	1.80	0.000E-01	2.940E-03	0.000E-01	0.000E-01	0.000E-01	0.000E-01	2.940E-03
18	2	-0.021	0.000	1.80	0.000E-01	3.673E-03	0.000E-01	0.000E-01	0.000E-01	0.000E-01	3.673E-03

* * C O N C E N T R A T I O N S A T R E C E P T O R S * * *
CONCENTRATIONS IN GRAMS PER CUBIC METER

HOUR	RECEPTOR NO.	EAST	NORTH	HEIGHT	FROM POINTS	FROM AREAS	FROM LINES	FROM PATHS	FROM LINES	FROM PATHS	HORIZONTAL TOTAL
19	1	0.000	0.000	1.80	0.000E-01	2.785E-03	0.000E-01	0.000E-01	0.000E-01	0.000E-01	2.785E-03
19	2	-0.021	0.000	1.80	0.000E-01	3.538E-03	0.000E-01	0.000E-01	0.000E-01	0.000E-01	3.538E-03

* * C O N C E N T R A T I O N S A T R E C E P T O R S * * *
CONCENTRATIONS IN GRAMS PER CUBIC METER

HOUR	RECEPTOR NO.	EAST	NORTH	HEIGHT	FROM POINTS	FROM AREAS	FROM LINES	FROM PATHS	FROM LINES	FROM PATHS	HORIZONTAL TOTAL
20	1	0.000	0.000	1.80	0.000E-01	2.622E-03	0.000E-01	0.000E-01	0.000E-01	0.000E-01	2.622E-03
20	2	-0.021	0.000	1.80	0.000E-01	3.386E-03	0.000E-01	0.000E-01	0.000E-01	0.000E-01	3.386E-03

* * C O N C E N T R A T I O N S A T R E C E P T O R S * * *
CONCENTRATIONS IN GRAMS PER CUBIC METER

HOUR	RECEPTOR NO.	EAST	NORTH	HEIGHT	FROM POINTS	FROM AREAS	FROM LINES	FROM PATHS	FROM LINES	FROM PATHS	HORIZONTAL TOTAL

SPECIAL NO.	SPECIAL EAST	NORTH	HEIGHT	POINTS	AREAS	LINES	PATHS
LINES	PATHS	TOTAL					
21	1	0.000	0.000	1.80	0.000E-01	2.449E-03	0.000E-01	0.000E-01
0.000E-01	0.000E-01	2.449E-03						
21	2	-0.021	0.000	1.80	0.000E-01	3.218E-03	0.000E-01	0.000E-01
0.000E-01	0.000E-01	3.218E-03						