

CONNECTICUT DEPARTMENT
OF TRANSPORTATION

FTA TITLE VI PROGRAM

FFY 2018-2020



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Introduction

The Connecticut Department of Transportation (CTDOT) is a designated recipient for Federal Transit Administration (FTA) funding. The Department is responsible for service and planning decisions for rail, fixed-route bus, and complementary paratransit service in urbanized areas of the State.

The Governor has designated the CTDOT as the agency responsible for administering Sections 5307, 5310, and 5311 programs.

The information contained in this report is CTDOT's Title VI Program for the period of October 1, 2017 – September 30, 2020. CTDOT is scheduled to submit its next program by October 1, 2020. The Title VI Program has been prepared in compliance with the requirements set forth in U.S. Department of Transportation Federal Transit Administration (FTA) Circular 4702.1B, "Title VI Requirements and Guidelines for Federal Transit Administration Recipients." The program was accepted on September 13, 2017, with the approval of Commissioner James P. Redeker, as evidenced in the Title VI Program Approval on page 3 of the CTDOT FTA Title VI Program Appendix.

CTDOT will effectuate and ensure full compliance with the provisions of Title VI of the Civil Rights Act of 1964, as amended (referred to as Title VI), 49 CFR Part 21, and 23 CFR Part 200, and related statutes and regulations in all Department programs and activities.

The program was developed by the CTDOT Title VI Workgroup. The group's membership consists of agency personnel from the Bureaus of Public Transportation and Policy and Planning; the Commissioner's Office; and the CTDOT's Title VI Coordinator and Associate Title VI Coordinator.

Notifying Beneficiaries of Protection under Title VI

The Connecticut Department of Transportation (CTDOT) operates its programs and activities without regard to race, color and national origin. The CTDOT provides notification to beneficiaries of their rights under Title VI and the procedures to follow when filing a Title VI complaint. CTDOT disseminates this information on the CTDOT website; postings in public waiting areas, buses and rail stations; and other areas that are easily accessible to the public. This information is also made available at public meetings and hearings. CTDOT also requires that all sub recipients develop a notice to beneficiaries and post the notice in all areas that are accessible to the public.

To access Title VI information on CTDOT's website, click on the link [Non-Discrimination/Title VI Program](#). The CTDOT's Title VI webpage includes the following documents.

Connecticut Department of Transportation Title VI Policy Statement – This policy states that the CTDOT prohibits discrimination on the basis of race, color or national origin in its programs, benefits and activities. Information identifying who has been delegated the responsibility of implementing and monitoring the CTDOT's Title VI program is also provided in the policy statement. This document is signed by the Commissioner and is posted on CTDOT's website and bulletin boards. CTDOT will periodically check to ensure that postings are current and still intact. A copy of CTDOT's Title VI Policy can be found page 5 of the CTDOT FTA Title VI Program Appendix.

Title VI Notice to Beneficiaries– This document states CTDOT's commitment and responsibilities to prohibit discrimination on the basis of race, color and national origin in its programs, activities, services and benefits under Title VI. The document also provides information on how to request additional information about CTDOT's obligations under Title VI and how to file a discrimination complaint. The notice provides an overview of Title VI and CTDOT's responsibilities under Title VI. The document is posted on CTDOT's website and is distributed at meetings, hearings, and outreach events. English and Spanish versions of the notice can be found on pages 7-11 of the CTDOT FTA Title VI Program Appendix.

CTDOT posts notices to the public to ensure they are aware of CTDOT's commitment to Title VI. Notices are posted in areas such as:

- CTDOT Bulletin Boards
- Rail stations
- Bus stations
- Public Meetings/Hearings
- CTDOT Website
- CBO Mailing List
- Paid Advertisements
- Radio Announcements
- Transit Vehicles (bus and rail)

All subrecipients are required to post a Title VI Notice to Beneficiaries in areas that are accessible to the public, including any vehicles. On a rotating basis the Department audits its subrecipients to insure that

they have a Notice to the Public and that the notice is posted in areas that are accessible to the public, including but not limited to their websites.

The CTDOT has translated the notice, in its entirety, into Spanish. As a means to ensure that LEP populations are aware of their rights under Title VI, the statement below is included in Portuguese, Polish, Chinese, Italian, French, Haitian Creole, Russian, Vietnamese, Arabic, Korean, and Hindi on the English version of the Notice.

“The Connecticut Department of Transportation (CTDOT) operates its programs and activities without regard to race, color, or national origin. This is a notice informing the public of their rights under Title VI, including how to file a Title VI complaint, and how to request additional information regarding the Department’s Title VI Program. If this form is needed in another language, please contact CTDOT at (860) 594-2243.”

Title VI Complaint Form – This form can be used by the public to file a Title VI complaint. While using this form is not required for the public to file a Title VI complaint, it is encouraged. Using the form ensures that the necessary information to initiate an investigation is captured. The public can access the Title VI complaint form by visiting the CTDOT website, clicking on the link Non-Discrimination and External Civil Rights Programs, and then clicking the Non-Discrimination/Title VI Program link.

The CTDOT has translated the form, in its entirety, into Spanish. As a means to ensure that LEP populations are aware of their rights to file a complaint under Title VI, the following statement is included in Portuguese, Polish, Chinese, Italian, French, Haitian Creole, Russian, Vietnamese, Arabic, Korean, and Hindi on the English version of the Notice.

“A Title VI Complaint may be filed by any individual or group that believes they have been subjected to discrimination based on their race, color, or national origin. The Title VI complaint form may be used for filing a Title VI complaint with the Connecticut Department of Transportation (CTDOT). This form also explains the procedures the Department follows when investigating a Title VI complaint. If the form is needed in another language, please contact the CTDOT at (860) 594-2243.”

English and Spanish Title VI Complaint Forms can be found on pages 8-18 of the CTDOT FTA Title VI Program Appendix.

FTA Title VI Complaint Investigation Process and Procedure

What is an Investigation: An investigation is an official inquiry for the purpose of determining whether there has been a violation of the laws or statutes and includes a determination of appropriate relief where a violation has been found. An investigation requires an objective gathering and analysis of the evidence, which will ensure that the final decision is as accurate as possible.

Role of the Investigator: The investigator is a neutral party provided by the agency to conduct an investigation of the issues raised in a complaint. The investigator's behavior, demeanor, and attitude reflect the agency and may affect the degree of cooperation received from the parties. The investigator has an obligation to identify and obtain relevant evidence from all available sources in order to resolve all of the issues under investigation. ***The investigator is not an advocate for the complainant or the respondent.*** The investigator is a neutral fact finder.

Responsibilities of the Investigator:

The Investigator MUST:

- Never express his/her opinions;
- Never tell the parties that the complaint represents a good case or that the complaint is frivolous;
- Always remain NEUTRAL DO NOT take sides;
- Write the FACTS. State what the facts are based upon the evidence or testimony;
- Stay in control at all levels of the process;
- Decide who is to be interviewed. If the complainant or the respondent is adamant about a witness interview, perform the interview;
- Decide when sufficient evidence has been gathered to begin writing the investigative report;
- Always remain professional and polite;
- Be patient; and
- Be a good listener.

Theories of Discrimination: A Theory of Discrimination refers to the type of discrimination:

- INTENTIONAL DISCRIMINATION/DISPARATE TREATMENT – The decision maker was aware of the complainant's race, color, or national origin, and acted at least in part because of that information. The action was taken because of the complainant's race, color, or national origin,
- DISPARATE/ADVERSE IMPACT – Discrimination which occurs when a neutral policy or procedure has a disproportionate impact on a protected class. The practice, even though applied equally to all, has the effect of excluding or otherwise adversely affecting a particular group; and
- RETALIATION – Discrimination against persons because of the filing of a complaint, participation in an investigation, or opposing a practice made unlawful pursuant to the laws.

Elements of Proof: How does the investigator prove discrimination?

- Establish a Prima Facie Case – The complainant has the responsibility of initially establishing a prima facie case of discrimination. A prima facie case means the complainant has provided

information containing all of the elements necessary for a complaint of discrimination. Establishing a prima facie case requires the following elements:

1. Complainant is a member of a protected group;
2. Complainant was harmed by some decision; and
3. Similarly situated persons of a different group were not or would not have been harmed under similar circumstances.

These elements constitute an ideal complaint of discrimination and establish a prima facie case. However, in many situations, the investigator will not initially have all of these elements. It is the investigator's responsibility to obtain from the complainant all missing information.

- During the investigation – One of the first items that must be determined by the investigator from the respondent, are the reasons for the respondent's actions against the complainant. In other words, establish the respondent's legitimate non-discriminatory reasons for the actions taken against the complainant. The investigator must also obtain evidence to determine whether the respondent's reasons are true based upon the evidence or whether the reasons are an excuse (pretext) to discriminate against the complainant.
- Obtaining the evidence -- During the investigation, the investigator should obtain the following types of evidence:
 - Respondent's policies and procedures;
 - Evidence establishing actions taken against the complainant;
 - Evidence establishing how others, not in the complainant's group, were treated in similar situations;
 - Evidence establishing the normal policies and procedures and how the respondent followed or did not follow the normal policies and procedures when making the decision or taking action involving the complainant;
 - Evidence establishing whether the respondent followed the normal policies and procedures for similarly situated persons; and
 - A position statement from the respondent outlining the reasons for the action taken against the complainant.

Examples of Elements of Proof:

Intentional Discrimination –

- Complainant is a member of a protected group;
- Complainant was excluded from participation in or denied the benefits of a program or activity receiving federal financial assistance;
- Complainant was rejected despite his/her eligibility;
- Respondent selected applicants whose race, color, or national origin were different from the complainant; or
- The Program remained open and the respondent continued to accept applications from applicants of a different race, color, or national origin than the complainant.

Disparate/Adverse Impact –

- Respondent has a facially neutral policy or practice that has affected the complainant;
- The policy or practice operates to disproportionately exclude members of the protected group;
- The policy or practice is a business necessity; or
- There is an effective business alternative with a less adverse impact.

Retaliation –

- Complainant opposed any policy or practice made unlawful or participated in any manner in an activity pursuant to the laws prohibiting discrimination;
- The individual who allegedly retaliated against complainant knew or should have known of the opposition or participation;
- An adverse action was taken against the complainant subsequent to the protected activity;
- There was a ***causal connection** between the opposition or participation and the decision made involving the complainant;
- There was a legitimate non-discriminatory reason for the action taken; or
- The articulated reason is a pretext for retaliatory discrimination.

**Causal Connection:* To establish a causal connection, establish the following:

- Did the treatment of the complainant change after the protected activity;
- Time line: How long after the initial protest did the adverse action occur; and
- Compare the complainant’s treatment with others who were not engaged in the protected activity.

Tracking and Investigating Title VI Complaints - All Title VI complaints will be filed in accordance with the following Title VI Complaint Procedures:

Any person alleging to be aggrieved by a discriminatory practice may in person or through a legal representative, obtain a Title VI Complaint Form, and file the completed form with the Title VI Coordinator within 180 days following the date of the alleged discriminatory action or the date when the person(s) became aware of the alleged discriminatory action.

Complaints will be referred to the Department’s Title VI Coordinator. The Title VI Coordinator will review the complaint and inform the appropriate program area designee. Complaints must be in writing, signed by the complainant or a representative, and include the complainant's name, address, and telephone number, or other means by which the complainant may be contacted. Complaints shall explain as fully as possible the facts and circumstances surrounding the alleged discriminatory action, and identify the individual(s) and/or organization(s) responsible for the alleged discriminatory action. In cases where the complainant will be assisted in converting an oral complaint into a written complaint, the complainant is required to sign the written complaint. All discrimination complaints will be acknowledged in writing. Complaints received by telephone will be reduced to writing and provided to the complainant for confirmation, revision, and signature before processing.

The Title VI designee or the individual receiving the written complaint will review the complaint to ensure that the required information is provided, the complaint is timely, and is within the appropriate jurisdiction. The complaint will be accepted unless it is withdrawn, is not filed within the allowed time

period , or the complainant fails to provide required information after a written request for omitted/ additional information.

Internal Complaint Procedures: Written complaints filed with the Department will be analyzed and investigated by the Title VI Coordinator. The Department will notify a respondent named in a complaint by mail and the respondent will be contacted for an interview. The complaint investigation will be completed within forty (40) days of the date of receipt of the complaint. The Title VI Coordinator will prepare an investigative report (IR) after conducting the investigation. A complaint log will be maintained for all complaints filed with and investigated by the Department. The investigator will advise the complainant of his/her rights under Title VI, and related statutes.

Investigation Process: The Investigation Process includes the following:

- Investigative Plan
- Request for Information
- Conducting Interviews
- On-Site Visit
- Obtaining Evidence
- Analyzing Data
- Writing the Investigative Report

Investigative Plan: The Investigative Plan is an internal document for use by the investigator to define the issues of the complaint. The following elements are contained in an Investigative Plan:

- Complainant(s) Name and Address/Attorney For Complainant with Name and Address;
- Respondent(s) Name and Address/Attorney For Respondent with Name and Address;
- Applicable Law;
- Basis;
- Issue(s);
- Background;
- Name of Person(s) to be interviewed, including questions for the Complainant, Respondent and Witness(es); and
- Evidence to be obtained during the investigation.

Request for Information: Requests for Information are sent to the appropriate official(s) at the respondent's facility. Contact is made with the respondent to advise him/her of the complaint and to determine the appropriate official(s) to interview. The cover letter to transmit the Request for Information should explain the process and provide information regarding any meetings that have been scheduled. To facilitate the availability of evidence during the on-site visit, provide the Request for Information to the respondent prior to conducting the visit.

Conducting Interviews: Interviews are conducted of witnesses who can provide information that will either support or refute complaints. A list of major questions should be prepared that address the issues involved in the complaint. During the interview, the following steps are recommended:

- Introduce yourself and outline the interviewing process;
- Place the person being interviewed at ease;

- Listen effectively;
- Differentiate factual information from opinions;
- Ask questions best worded to provide factual responses;
- Take clear and precise notes; and
- Obtain a signed statement from the person being interviewed.

Complainant – The purpose of interviews is to gain a better understanding of the situation outlined in the complaint of discrimination. The investigator contacts the complainant to ensure that he/she understands the complainant’s allegation(s). It is recommended that the investigator interview the complainant prior to preparing the Investigative Plan. If this is not possible, changes are made as appropriate to the Investigative Plan based upon any new information provided by the complainant.

Respondent – Respondents are interviewed to provide an opportunity to respond to the allegations raised by the complainant as well as to provide the investigator the opportunity to understand the respondent’s operation or policies the complainant cites in the complaint. You will need to discuss the Request for Information with the respondent and be able to explain the need for requesting any document on the list. The respondent is informed of their right to submit a formal position statement addressing the complainant’s allegations. The investigator may also question the respondent regarding possible settlement opportunities.

Witnesses – The complainant or respondent may request that additional persons be interviewed. Determine what relevant information, if any, a witness has to provide prior to conducting an interview. Only interview persons who have information relevant to the allegations raised in the complaint of discrimination.

On-Site Visit - An On-Site visit will be conducted when:

- Personal contact with the complainant and the respondent may yield information and clarification that might not otherwise be discovered by only reviewing the written documents or by telephone contacts;
- It is necessary to review the physical environment;
- More effective communication can be established with representatives and witnesses of the complainant and respondent; and
- Documentation can only be examined on-site for reasons of convenience, cost, format, or volume.

Obtaining Evidence - Evidence requested should be related to issues cited in the complaint. An evidence request should contain some or all of the following:

- The policies and procedures regarding the practice that complainant has alleged;
- All documents relating to the Respondent’s dealing with the complainant in the situation described in the complaint;
- Documents which exhibit how others, not in the complainant’s group, were treated under similar circumstances;
- Respondent’s reason(s) for the action taken; and
- A formal position statement from respondent addressing complainant’s allegations.

Types of Evidence include the following:

- Circumstantial Evidence – Includes facts from which may be inferred intent or discriminatory motive and proves intent by using objectively observable data;
- Comparative Evidence – A comparison between similarly situated individuals;
- Direct Evidence – Related to the Respondent’s motive, it is defined as any statement or action by an official of the Respondent that indicates a bias against members of a particular group;
- Documentary Evidence – Written material generated during the course of normal business activity;
- Statistical Evidence – Statistics, facts, or data of a numerical type, which are assembled, classified, and tabulated so as to present significant information about a given subject; and
- Testimonial Evidence – Evidence that is provided orally.

Analyzing Data - Data will be analyzed to determine whether a violation has occurred. When analyzing data you must:

- Review what happened to the complainant;
- Compare the complainant’s treatment with the appropriate policies and procedures;
- Compare the complainant’s treatment with others in the same situation;
- Review the respondent’s reason(s) for the treatment afforded the complainant; and
- Compare the respondent’s treatment of the complainant with the treatment afforded others.

Writing the Investigative Report - The Investigative Report (IR) will contain the following sections:

- Complainant(s) Name and Address
- Respondent(s) Name and Address;
- Applicable Law;
- Basis;
- Issues;
- Findings and a corresponding conclusion for each issue;
- Recommended decision; and
- Recommendations (if applicable)

Transit Related Title VI Complaints, Investigations, and Lawsuits

The Department and Metro-North Railroad have developed a system for determining which organization would investigate and report complaints relative to New Haven Line rail services. All complaints occurring on the New Haven Line will be received and investigated by Metro-North Railroad. CTDOT will report, to FTA, all complaints where the complainant’s trip origin was Connecticut, and Metro-North Railroad will report, to FTA, all complaints where the complainant’s trip origin was New York. During the reporting period, January 1, 2014 – December 31, 2016, Metro-North Railroad received twelve complaints where the complainant trip origin was in Connecticut. These complaints are reported on the CTDOT Title VI Complaint Log, located on page 19 of the CTDOT FTA Title VI Program Appendix. CTDOT will monitor the complaint investigation process utilized by Metro-North relative to the processing of Connecticut Title VI complaints. Metro-North Railroad will provide notification to CTDOT

on a quarterly basis of any Connecticut Complaints filed and the status of active and pending complaints.

DRAFT

Public Participation Plan

CTDOT updated its Public Involvement Procedures (PIP) in August 2017. The update was an agency-wide effort and was available for public comment from June 15, 2017, until July 31, 2017. The updated document includes a chapter that details requirements for public engagement activities, including information outlining outreach methods to engage minority populations and Limited English Proficiency (LEP) individuals. The document was submitted to FTA and FHWA for approval on August 29, 2017. A copy of the Department's PIP will be posted on the Department's website. A roll out plan for the new PIP will be initiated by the Bureau of Policy and Planning, in conjunction with the Office of Contract Compliance.

The PIP is a proactive guide to public participation to insure that the Department provides complete information, timely public notice, full public access to key decision-making points, and an opportunity for early and continuing involvement. The PIP includes a process for identifying and addressing the needs of populations that are traditionally underserved by transportation systems. The PIP also codifies a uniform public engagement process for CTDOT staff and consultants, when planning and executing any and all public engagement activities.

At the end of each public engagement activity, Department staff is now required to submit the checklist pictured below, detailing their targeted outreach efforts, or justifying why these efforts may not have been applicable to their specific activity. The checklists are to be submitted to the Office of Contract Compliance on a monthly basis for review and follow-up, if needed.

PUBLIC ENGAGEMENT CHECKLIST

This checklist should be completed and submitted to the Office of Contract Compliance after each public engagement activity including, but not limited to, public meetings, or hearings to ensure meaningful and inclusive public participation

Subject: _____ Date/Time of Activity: _____ Location(s) of Activity: _____

Preparing for the Public Engagement Activity	Yes	No	If No, please explain
● Have you identified the population and composition of the individuals/communities impacted by the CTDOT program, service, or activity?			
● Have you reviewed the CTDOT Title VI Maps (Title VI Maps can be accessed from the CTDOT internet site by clicking Maps under the Publications tab) to determine if there are low income, minority or Limited English Proficiency populations in the affected area?			
● Have you researched and identified community and faith based organizations and community leaders within the affected area?			
Scheduling the Public Engagement Activity			
● Have you scheduled the public engagement activities during times and at locations that are easily accessible to low income and minority communities?			
● Is the venue ADA accessible?			
● Is the venue accessible with public transportation?			
● Have you notified the Office of Communication and the Secretary of State about the public engagement activity?			
Drafting and Distributing the Public Notice			
● Does the public notice detail the availability of language services and reasonable accommodations?			
● Does the public notice include the contact information and a deadline for requesting free language services and accessibility accommodations? Including a reference to 711?			
● If LEP populations were identified, did you translate the public notice and other related announcements based on the identified LEP populations? If yes, please attach copies of the notices/announcements to this checklist			
● If LEP populations were identified, did you identify targeted media that reaches the identified low income, minority and LEP populations?			
● Have you published the public notice with sufficient processing time for free language and accessibility accommodation requests?			
● Have you forwarded the English and translated public notice to all identified Community/Faith Based Organizations and community leaders?			
Prior to and During the Public Engagement Activity			
● Have you made arrangements for any requested language assistance or accommodations?			
● Have you translated meeting materials into identified LEP languages?			
● Did you provide the following Title VI documents at the public engagement activity?			
I Speak Cards			
Title VI Notice to Beneficiaries (in English and identified LEP languages)			
Demographics Survey (in English and identified LEP languages)			
After the Public Engagement Activity			
● Have you posted meeting minutes within seven days of the public meeting or hearing on the CTDOT internet site?			
● Have you acknowledged community/faith based organizations and community leaders for their outreach assist			
● Have you reminded community/faith based organizations and community leaders of the approach of the end of the comment period?			

Summary of Outreach Efforts

CTDOT, through *CTrides*, performed a number of outreach events and media buys which were targeted to minority, LEP, and low income populations. Below is a list of outreach events and a listing of media buys and outreach materials purchased and developed during the reporting period, are included on pages 20-22 of the CTDOT FTA Title VI Program Appendix.

Southwest Community Health Center (SWCHC): *CTrides* has conducted 15 outreach events at different Southwest Community Health Center sites between 2014 and 2016. SWCHC is a walk-in clinic, with high use by low-income and minority populations. SWCHC sees *CTrides* as a great resource to their employees and to patrons of the clinics. SWCHC has been inviting *CTrides* to attend general table events since 2015. The invitations are extended at least once a month to be sure staff and clientele are connected to our program. Bridgeport has a large number of low-income, Hispanic and African-American populations who use these facilities. We provide Spanish-language materials at SWCHC's request, and staff at SWCHC have been trained in navigating *CTrides.com* in Spanish.

Housatonic Community College (HCC): *CTrides* has held sixteen outreach events at Housatonic Community College between 2014 and 2016. HCC sees a large population of low-income and minority group students from the greater Bridgeport area. We provide Spanish-language materials at any tabling event conducted at the college. Events are also held at multiple venues throughout the year ranging from welcome events to club fairs to reach a wide range of students.

City of Waterbury: *CTrides* has conducted two outreach events for the City of Waterbury between 2014 and 2016. Waterbury has a large Hispanic, African-American, and low-income population. *CTrides* assists at events at or near City Hall, to reach employee populations and the general public. We provide general info handouts in English and Spanish at all events that we serve; we also bring Spanish-speaking coordinators out to events.

Stone Academy (Waterbury): *CTrides* has held thirteen outreach events at Stone Academy between 2014 and 2016. Stone Academy sees a large population of low-income, Hispanic, and African-American students training for positions in health care. This branch is based in Waterbury, but we service multiple branches of the school throughout the state. Many students are transit-captive or rely on outside rides, so the school sees value in having CTDOT reach out to all incoming rotations of students. Our informational handouts for *CTrides* are provided in both English and Spanish language.

Northwestern CT Community College (NCCC): *CTrides* has held three outreach events with NCCC between 2014 and 2016. The college has a high enrollment of low-income students and tabling here has been very student-focused. Since transit is not very common in this part of the state, we are always providing info on finding carpool options and custom commute plans. The college keeps copies of our information on site for bulletin boards, both in English and Spanish.

Naugatuck Valley Community College (NVCC): *CTrides* has conducted ten outreach events with NVCC between 2014 and 2016. NVCC is located in Waterbury and serves large populations of low-income, Hispanic, African-American and Asian-American students. Table events are focused on the student

population, and general information handouts are always available in English and Spanish. NVCC has a high population of bus riders, and we ensure that kiosks are stocked with bus maps for students when no outreach coordinator is on site.

People's United Bank: *CTrides* has held six outreach events at People's Bank between 2014 and 2016. The Bridgeport branch serves low-income, Hispanic, and African-American populations, including members and employees of the branch. We provide English and Spanish-language literature when we attend events at this location.

Lockheed Martin: *CTrides* has conducted eighteen outreach events at several different Lockheed Martin sites between 2014 and 2016. Lockheed Martin employs over 3,500 employees from the greater Stratford, Bridgeport, and Shelton areas; each of these areas have high African-American and Hispanic populations. Outreach here historically occurs once per year, per site around Earth Day. We provide English and Spanish language literature at all outreach events.

Homes for the Brave: *CTrides* has held two outreach events with Homes for the Brave between 2014 and 2016. This organization serves low-income, Hispanic, and African-American veteran populations. Their mission is to assist in job and home placement for homeless or displaced vets. Outreach occurs during Thursday "life skills" classes, where members of the organization have a chance to learn about important skills needed to assist them in finding living arrangements and jobs, as well as how to meet transportation needs. All outreach efforts here include English and Spanish literature; information is left with the site contact to have as a resource.

UConn Waterbury: *CTrides* has conducted two outreach events between 2014 and 2016 for UCONN's Waterbury Campus. In general the City of Waterbury has a high Hispanic, African-American, and low-income population that is serviced by this UCONN branch. Past outreach efforts have included providing information relative to *CTrides* programs to all students so they can be empowered to make smart commuting choices. Spanish materials are provided at all outreach efforts.

Waterbury Board of Education: *CTrides* has held one outreach event with the Waterbury Board of Education between 2014 and 2016. The event was held in the summer and focused on reaching administrative and maintenance staff who work for the school system year-round. Waterbury has a high percentage Hispanic and African-American populations, as well as low-income. *CTrides* provides Spanish-language literature at all Waterbury outreach events.

City of Waterbury - Dept. of Public Works: *CTrides* has held five outreach events here between 2014 and 2016. The City of Waterbury employs a large number Hispanic and African-Americans. *CTrides* provides English and Spanish literature at outreach events.

Porter and Chester – Stratford: *CTrides* has held four outreach events with Porter and Chester between 2014 and 2016. This technical school is in the greater Bridgeport area and has a high population of Hispanic and African-American students studying to work in trade industries. Outreach was targeted to students who are sometimes transit-captive, or may not have their own transportation, to encourage transit and carpool use.

University of Bridgeport (UB): *CTrides* has conducted twelve outreach events with UB between 2014 and 2016. Outreach events included targeting international students who have no choice but to use transit in most cases. *CTrides* has conducted outreach at this site more than four times annually in 2014, 2015, and 2016. The university has large populations of Hispanic and African-American students.

Greater Bridgeport Transit (GBT): *CTrides* partnered with Greater Bridgeport Transit on eight outreach events between 2014 and 2016, at various venues throughout the Greater Bridgeport area. Bridgeport has a large population of minority and low-income riders. GBT continues to participate in a 10-ride trial bus pass program to allow easier access for Bridgeport area residents to try transit.

City of Bridgeport: *CTrides* has held nine outreach events with the City of Bridgeport between 2014 and 2016. Audiences include city employees, minority groups, and Hispanic businesses. Bridgeport has high populations of low-income and minority populations. *CTrides* provides English and Spanish literature for all outreach activities.

St. Mary's Hospital: *CTrides* held four outreach events with St. Mary's hospital between 2014 and 2016. The hospital is located in Waterbury, a city with high numbers of low-income, Hispanic, and African-American populations. All outreach events at St. Mary's can be accessed by the general public as well as hospital staff. Outreach literature in English and Spanish is available at all events.

Waterbury Hospital: *CTrides* has held fifteen events with Waterbury Hospital between 2014 and 2016. The hospital is located in Waterbury, a city with large numbers of low-income, Hispanic, and African-American populations. All outreach events at Waterbury Hospital can be accessed by the general public as well as hospital staff. *CTrides* provides outreach literature in English and Spanish at all events.

Bridgeport Public Schools: *CTrides* has held six outreach events with Bridgeport Public Schools between 2014 and 2016. Much of the staff are local to Bridgeport, a city with high populations of low-income, Hispanic, and African-American residents. *CTrides* provides literature in English and Spanish at all outreach events. Once a year *CTrides* attends a convocation for Bridgeport Public Schools.

Southbury Training School: *CTrides* has held two outreach events with Southbury Training School between 2014 and 2016. The school serves intellectually disabled persons. Some staff travel from neighboring cities that have populations of low-income, Hispanic, and African-American populations. All outreach activities here reach all populations of employees; outreach materials are provided in English and Spanish.

PEP - Lacey Manufacturing: *CTrides* has held six events with PEP - Lacey Manufacturing between 2014 and 2016. Much of their population is low-income, Hispanic, African-American, and Asian-American. *CTrides* offers 10-ride trial bus passes, which provides more opportunities to the walking populations to try a transit options. All outreach materials at this site are provided in English and Spanish.

Department of Children and Families (DCF) – Bridgeport: *CTrides* has held three events with DCF between 2014 and 2016. Outreach here is general, with *CTrides* providing materials in English and

Spanish. *CTrides* has worked with three DCF offices in low-income, high minority population areas in Waterbury, Bridgeport, and Torrington.

Eastern Account System, Inc. (EAC): EAC reached out to *CTrides* in April of 2015 to assist with employee retention. After an initial meeting was held in April, a partnership was created and a plan was developed to provide on-site outreach to formulate vanpools. EAC's workforce is primarily made up of call center representatives who include individuals who are low income, and minority. *CTrides* identified clusters of employees coming from the Bridgeport and Waterbury areas and held joint events with *VRide* to form vanpools based on location, population density, and employee clusters. *CTrides* also worked with the organization to distribute commuter information in English and Spanish to target different employee segments.

Hispanic Advisory Council of Greater Stamford (HACGS): This organization includes primarily Hispanic low to middle income employees from various businesses who serve their community. Meetings are held monthly to focus on community events and how to reach Hispanic populations that rely on transit. *CTrides* participated in their Hispanic Community Fair in October of 2015 with various vendors who provided free clinic services and outreach materials were disseminated in both Spanish and English.

Norwalk Community Technical College: The students who attend this college are a mixed population coming from various areas such as Norwalk, Stamford, Bridgeport & Waterbury. The population is a mix of low to middle-income individuals who rely on transit and discounted transit fares. *CTrides* has participated in eleven new student orientations, Earth Day events, outreach events, and club fairs between 2015 and 2016.

Optimus Health Care: This organization has a workforce that is primarily low income and/or minority. Outreach materials have been provided in Spanish and English to serve their workforce and the community they serve. *CTrides* held three outreach events and one Community Health & Wellness Fair in 2015, and provided bilingual materials for their mostly Hispanic workforce and patients.

Stamford Family YMCA: *CTrides* partnered with Stamford YMCA and the City of Stamford during the Bike to Work Day in 2015. Stamford YMCA serves a low to middle-income populations with summer camp services, facilities to shower, and other developmental programs. Their child care programs are subsidized by the State's Care 4 Kids program and other corporate sponsors.

The Kennedy Center, Inc.: The Kennedy Center serves clients who are mentally and physically disabled, disadvantaged and mostly minority. *CTrides* has partnered with The Kennedy Center since 2013 to provide transportation workshops along with the transit agencies for the towns they serve to provide commute alternatives, information about transit connections as well as *NuRide*. Two events were held in 2014 and two in 2016 at St. Vincent's Hospital for their employees and case workers. *CTrides* has been asked by The Kennedy Center for input on kiosk locations in Fairfield County that will house materials for their clients and people with disabilities to access dial a ride and other services.

The Workplace: The Workplace provides job training workshops to low income populations. The training includes resume writing, interviewing skills and preparation, employment placement and

transportation resources. *CTrides* began partnering with The Workplace in 2016 and has participated in four workshops to provide transit options and to educate attendees on how to access NuRide and use it for carpooling.

Asnuntuck Community College: *CTrides* held eight events between 2014 and 2016. The two year college located in Enfield has a large population of low income students without ease of access to transportation. *CTrides* promoted the school's subsidy of bus passes and our free commuter rewards program.

Branford Hall (Windsor campus): *CTrides* began work with Branford Hall in late 2014, and hosted four events in 2016 for the campus. Branford Hall serves multiple campuses with high numbers of minority and low income students. *CTrides* targeted these groups by promoting ride sharing. The location of the Windsor Campus is not directly adjacent to mass transit. *CTrides* promoted rideshare through our free commuter rewards program.

Central CT State University (CCSU): *CTrides* held fourteen events with CCSU between 2014 and 2016. While *CTrides* programmed for the campus in its entirety, we were able to target low income and minority groups who were able to utilize the UPASS for *CTtransit* and *CTfastrak*. Faculty, staff and students were also offered our free commuter rewards program as an extra incentive to participate.

Connecticut Department of Labor (DOL): *CTrides* held three outreach events at the DOL between 2014 and 2016. The Department assists a large population of minority and low income employees in the town of Wethersfield. *CTrides* was able to target these groups by promoting the *CTfastrak* line, located .3 miles from the office, and offering trip bus passes and distributing information on the free commuter rewards program.

Hospital for Special Care: *CTrides* held one event and gave one formal presentation to the Hospital for Special care between 2014 and 2016. This facility is the largest employer in New Britain and *CTrides* was able to target minority and low income groups in need of information on ridesharing and public transit.

Duncaster Retirement Community: *CTrides* held four events with Duncaster Retirement Community between 2014 and 2016. This organization has a large population of low income and/or minority employees and *CTrides* assisted employees in finding the easiest modes of public transit near the Bloomfield location, access to free trail bus passes and information on the free commuter rewards program.

Goodwin College: *CTrides* held fourteen events with Goodwin College between 2014 and 2016. *CTrides* targeted minority and low income staff on campus by introducing them to the free commuter rewards program.

Jackson Laboratory: *CTrides* began working with Jackson Laboratory in 2015. Between 2015 and 2016, two outreach events were held. *CTrides* targeted minority groups who do not have ease of access to a vehicle due to their new relocation to the United States, leaving them with the inability to immediately

attain a driver's license. *CTrides* promoted *CTfastrak* and mass transit lines that service Jackson Laboratory directly in the Farmington Valley area.

Kimberly Hall Healthcare: *CTrides* held five outreach events with Kimberly Hall Healthcare between 2014 and 2016. The organization has a large population of minority and/or low income employees who work in a three shift system at the facility. *CTrides* was able to promote public transportation through the 10 free trip trial bus pass and ridesharing for those on overnight shifts through the free commuter rewards program.

Lincoln Culinary Institute (Hartford): *CTrides* began working with Lincoln Culinary Institute in 2014, and held four outreach events on their Hartford campus between 2014 and 2016. Located in Hartford, the school has a high population of low income students who do not have access to a vehicle. *CTrides* provides information about the *CTfastrak* stations and mass transit options immediately adjacent to campus.

Lincoln Technical Institute (New Britain): *CTrides* began working with Lincoln Technical institute in 2016, and held one outreach event on campus. Located in New Britain, we were able to target low income students who did not have access to a vehicle and provide them information about the *CTfastrak* East Street station and mass transit options immediately adjacent to campus.

Manchester Community College (MCC): *CTrides* held ten outreach events with the students, faculty and staff at Manchester Community College between 2014 and 2016. MCC has a high population of low income and minority students, and *CTrides* was able to provide information on *CTfastrak*, which has a stop on the MCC campus. *CTrides* promoted the free commuter rewards program as an extra incentive to staff and students.

New Britain Downtown District: *CTrides* collaborated frequently and held one event between 2014 and 2016 with the New Britain Downtown District. The agency focuses on minority and low income groups in New Britain, and works to enhance their ease of access to public transportation.

Office of the State Comptroller: *CTrides* participated in the annual benefits fairs in 2015 and 2016 with the Office of the State Comptroller's office. The benefits fairs have a large number of attendees, including low-income and/or minority populations, and provides information about their options specific to the Hartford based state agency including the guaranteed ride home program, free bus pass trials and free commuter rewards.

Tunxis Community College (TCC): *CTrides* held sixteen events for Tunxis Community College from 2014 and 2016. Programming was targeted to students coming from low income homes, because TCC has recently become unable to subsidize the bus passes for all students and had to switch to an interview and evaluation of need system. *CTrides'* commuter rewards program and 10 free trial passes were provided to those students in need.

UConn Health Center: *CTrides* facilitated twelve outreach events between 2014 and 2016. Many of the events revolved around employee benefits and wellness. During these events *CTrides* targeted minority

and low income employees of the health center and offered free commuter rewards as well as 10 trip free trial bus passes.

Amazon Sorting Center Wallingford: *CTrides* began working with Amazon in November 2016 with a commuter survey to identify issues associated with the employees commute to work and employee concerns. Amazon has a diverse population and many of Amazon's employees, at this location, are low income and part-time without access to a personal vehicle. *CTrides* has been working to assist employees without a personal vehicle to identify a carpool partner or a transit option. The goal has been to ensure that all employees have a reliable way to get to work.

Branford Hall (Branford campus): Branford Hall is a small for profit school on a transit line in Branford CT. Branford Hall has a diverse student population with a significant population of low income and minority students. *CTrides* has held events targeting students with transit needs. Events have included lunchtime table events promoting the custom commute and NuRide rewards.

Chabaso Bakery, Inc.: *CTrides* has been working with Chabaso Bakery since October 2016. The Chabaso workforce is approximately 75% Hispanic with many non-English speaking employees. *CTrides* has worked to ensure that all employees at Chabaso have access to *CTrides* services. *CTrides* has conducted a commuter survey, provided commuter resources and brochures and conducted educational sessions. All materials are provided in both English and Spanish and all educational sessions have a translator available to answer questions and translate commuter services information.

GoNHgo: *CTrides* has worked collaboratively with GoNHgo since its inception in 2013. GoNHgo encourages citizens and employees commuting into New Haven to avoid single occupancy vehicle use as often as possible. The City of New Haven is a diverse city with large populations of low income and minority populations. *CTrides* has supported GoNHgo by providing services at events and through promotional activities. These activities and events have targeted both employers and the community including those in New Haven's low income areas.

Job Corps New Haven: Job Corps is a program dedicated to providing educational and technical training to low income students. The majority of the population at Job Corps New Haven are minority and all are low income. *CTrides* has been providing services to Job Corps New Haven since October 2013 and has held monthly lunchtime table events promoting the custom commute and NuRide services. *CTrides* has also presented at informational sessions to new students highlighting the transit options and NuRide services available through *CTrides*.

Quinebaug Valley Community College Willimantic Center (QVCCWC): Quinebaug Valley Community College Willimantic Center is part of the Connecticut Community College System. QVCCWC is located in downtown Willimantic and has a mostly low income and/or minority student population. *CTrides* has provided commuter services targeting the needs of the QVCCWC population. *CTrides* customer service programs and the NuRide rewards program have been promoted to students.

Stone Academy (West Haven): *CTrides* began working with Stone Academy in 2016. Stone Academy has a significant population of low income and/or minority students with commuter needs. *CTrides* has

provided events designed to assist students with finding a carpool partner and options for transit. Information about the custom commute and NuRide has also been promoted and made available to students and staff.

Yale-New Haven Hospital: *CTrides* has worked alongside The Yale-New Haven Health System to provide commuter services to YNHH employees. There have been a number of events targeting low income employees and educating them on *CTrides* services, specifically the hospital subsidized *CTtransit* pass and free trial bus pass.

Lawrence + Memorial Hospital: Lawrence + Memorial Hospital is a New London area hospital that employs many minority and lower wage workers from the New London area. *CTrides* has developed programs to reward employees that are walking and carpooling to work by promoting NuRide.

Foxwoods Resort and Casino: Foxwoods Resort and Casino's employees are largely low wage workers. *CTrides* has hosted events on site to promote free NuRide deals and discounts for employees currently walking, taking the bus or taking the shuttle to work.

Middlesex Community College - Meriden Campus: Meriden's campus is largely comprised of students from underserved, minority neighborhoods. *CTrides* tables with Middletown Area Transit and 9 Town Transit to promote free NuRide deals and discounts for students currently walking, carpooling, or taking the bus to work.

Continuum of Care Inc.: Continuum of Care Inc. employs caregivers from the neighboring, primarily minority Dixwell neighborhood in New Haven. *CTrides* developed a program to reward employees who are walking and riding the bus to work by promoting NuRide.

Gateway Community College: Gateway Community College has a large minority student population in Downtown New Haven. *CTrides* frequently holds tabling events with *CTtransit* to promote bus service. *CTrides* hosted a "Commute Pursuit" social media contest, encouraging students to walk, bike, and take the bus for an opportunity to win prizes. The prizes were offered by Gateway Community College.

Three Rivers Community College: Gateway Community College's students largely come from the underserved Norwich area. *CTrides* frequently hosts tabling events, alongside with ECTC and Southeast Area Transit to help promote the student express bus service from New London/Groton.

Mohegan Sun Casino: *CTrides* has hosted several onsite events with Mohegan Sun for its employees. Many of Mohegan Sun's employees are minority and/or low income. *CTrides'* Spanish speaking staff was onsite for events and written materials were translated into Spanish, Chinese and Creole.

Capital Community College: Since 2014 *CTrides* has held sixteen outreach events with Capital Community College. Capital has a high minority population that uses public transit. At tabling events *CTrides* provides commuter rewards and money saving opportunities for transit users and registers individuals for the no-cost ride matching platform, NuRide.

Connecticut Children's Medical Center (CMCC): Between 2014 and 2016 *CTrides* has held fifteen outreach events with CCMC. CCMC employs a number of minority and/or low income individuals. *CTrides* has reached out to these individuals through tabling events and provided trial bus passes and commuter rewards for those using transit and those wanting to use transit. *CTrides* has also participated in safety and health fairs, which generally attract minority employees of lower income.

Homegoods Distribution: Between 2014 and 2016 *CTrides* held three outreach events at Homegoods. Homegoods distribution's employees are primarily minority and/or low income individuals with transportation needs. *CTrides* has worked with employees during the events to help them find public transit options as well as vanpools.

Job Corps (Hartford): Between 2014 and 2016 *CTrides* held seven onsite outreach events at the Hartford Job Corps Campus. There is a large population of low-income minority students aged 17-24 who have not completed high school. The school helps them get their GED, trains them in a variety of fields, and helps them get placed in good jobs upon program completion. *CTrides* provided a presentation for the students on how to use the resources available to help them get to work once they have secured employment. *CTrides* has also provided the students with commuter rewards.

University of Connecticut (Storrs): Between 2014 and 2016 *CTrides* held eight onsite outreach events with UCONN. UCONN employs many low income and/or minority individuals from the Windham area. *CTrides* has participated in employee fairs, targeting transit using individuals, providing commuter rewards and registering individuals for the no-cost ride matching platform, NuRide

Center for Latino Progress: Between 2014 and 2016 *CTrides* has held one outreach event with The Center for Latino Progress. The program works with the Latino community in Hartford and provides educational opportunities and programs that promote financial sustainability. *CTrides* provided Latino and African American youths with information on how to put their bikes on the bus safely and the various transit resources provided by *CTrides*.

Charter Oak Health Center: *CTrides* held one event with Charter Oak Health Center between 2014 and 2016. The event was a community health fair that targeted low income and minority groups in the north end of Hartford. *CTrides* provided attendees with information about their transit options, money saving commuter rewards, and registered them for NuRide, the no-cost ride matching platform.

Walgreens Distribution Center: The workforce at Walgreens Distribution has grown from 450 to 800, with 43% of the workforce with varying disabilities. Walgreens Distribution also has a high number of low income employees from the Hartford area. *CTrides* has held several events informing employees of their transportation options, and providing information language assistance through the *CTrides* website and customer service team.

YMCA Greater Hartford: YMCA is a stakeholder that invites *CTrides* to several events per year for opportunities to reach out to the community. These are primarily public events in low-income minority neighborhoods to inform them not only about other cost effective transportation alternatives, but the rewards features of the program.

Veterans Affairs Connecticut Healthcare System (Newington): Several outreach activities have been held at Veterans Affairs Connecticut HealthCare System in Newington, which has a significant minority population. *CTrides* has provided information on the free trial pass, along with targeted outreach with *Vride* for vanpool services.

DRAFT

Limited English Proficiency (LEP) Plan

Four-Factor Analysis

In order to ensure meaningful access to programs and activities, the CTDOT conducted a four-factor analysis to identify and determine the specific language services that are appropriate to communicate effectively with the LEP populations within our service areas.

The Four Factors include:

1. The number or proportion of LEP persons eligible to be served or likely to be encountered by a program, activity, or service of the recipient or grantee.
2. The frequency with which LEP individuals come in contact with the program.
3. The nature and importance of the program, activity, or service provided by the recipient to people's lives.
4. The resources available to the recipient and costs.

Factor 1: Number and Proportion of LEP Persons Eligible to be Served or Likely to be Encountered in the Service Area

The primary tool used for this Title VI study was the data from the 2011-2015 American Community Survey (ACS) data. The demographic analyses of the statewide, bus and rail service areas indicate that 85% of the total LEP population in Connecticut identified as speaking English "less than very well", spoke Spanish, Portuguese, Polish, Chinese, Italian, French, Haitian Creole, Russian, Vietnamese, Arabic, Korean or Hindi. CTDOT identified the occurrence of LEP populations statewide meeting "Safe Harbor" thresholds (5% or 1,000 individuals, whichever is less). Safe Harbor determinations were determined on a statewide basis and by reviewing seventeen bus service areas and the three rail lines that service Connecticut. The service area information allows CTDOT to do targeted outreach to LEP populations that reside in areas that may be affected by service changes.

The Service Areas were defined as the following:

New Haven Rail Line (Metro North): The "New Haven Rail Line Service Area" map (September 2017) includes the New Haven Main line, and the New Canaan, Danbury, and Waterbury Branch Lines.

Metro North Rail operates all lines seven days a week. The lines on the map extend from New Haven Union Station to the Connecticut/New York border near Greenwich, as well as the station stops for the branch lines that extend to New Canaan, Danbury, and Waterbury.

Amtrak New Haven – Springfield: The "Amtrak New-Haven – Springfield Rail Line Service Area" map (September 2017) includes the line currently operated by Amtrak that runs from New Haven, CT to Springfield, MA.

Amtrak operates the line seven days a week. The map shows the Connecticut portion of the New Haven – Springfield line and includes the defined service areas based on a 2.5 mile radius buffer around the rail stations of New Haven – Union, New Haven – State Street, Wallingford, Meriden, Berlin, Hartford – Union, Windsor, and Windsor Locks.

Shore Line East Rail: The “Shore Line East Rail Line Service” area map (September 2017) includes the Shore Line East commuter rail service between New London and New Haven.

Amtrak operates Shore Line East for CTDOT seven days a week. The map shows the Shore Line East line which runs from New Haven to New London, and includes the defined service areas based on a 2.5 mile radius buffer around the rail stations of New Haven – Union, New Haven – State Street, Branford, Guilford, Madison, Clinton, Westbrook, Old Saybrook, and New London.

CTtransit Hartford Division: The Hartford Division operates 48 local bus routes. Routes operate 7 days a week, serving 28 towns in the Greater Hartford and New Britain Regions. The Hartford Division makes connections with Middletown Area Transit, CTtransit Waterbury Division, and CTtransit New Britain Division. The map uses ¼ miles buffers around the routes.

CTtransit New Haven Division: The New Haven Division operates 14 local routes, connecting with bus services in Meriden, Wallingford, Milford, and the lower Naugatuck Valley areas, as well as with the New Haven Line and Shore Line East rail services. Service is provided 7 days a week. The map uses ¼ mile buffers around the routes.

CTtransit Stamford Division: The Stamford Division operates 18 local bus routes. Routes operate 7 days a week. CTtransit Stamford buses connect with other state-subsidized services in Norwalk and with the New Haven Line in several locations. The map uses ¼ mile buffers around the routes.

CTfastrak: The CTtransit Hartford Division operates 8 routes for the CTfastrak bus rapid transit system. Routes operate 7 days a week and provide connections to the CTtransit New Britain and Bristol Divisions and the CTtransit Hartford Division. The map uses ¼ mile buffer around each of the stops.

CTtransit Hartford Express: 24 express bus routes are operated in the Hartford Division. All routes operate Monday through Friday, with the exception of the Waterbury Express which operates 7 days a week and provides a connection to the CTtransit Waterbury Division. The map uses 2 ½ mile buffers around each of the stops.

CTtransit Stamford Express: The CTtransit Stamford Division operates one express bus route between downtown Stamford and White Plains, New York. The route operates Monday through Friday and provides connections to the Harlem Line on Metro-North Railroad, and with Bee-Line buses in Westchester County New York. The map uses 2 ½ mile buffers around each of the stops.

CTtransit Waterbury Division: The Waterbury Division operates 28 local bus routes in Waterbury, Watertown, Middlebury, Wolcott, Prospect and Naugatuck with connections to the Waterbury Branch

of the New Haven Line. Fixed route bus service is provided 7 days a week. The map uses ¼ mile buffers around the routes.

CTtransit New Britain Division and Bristol Division: The New Britain and Bristol Divisions operate 12 local bus routes in Berlin, New Britain, Cromwell, Newington, Plainville, Bristol and Meriden. Fixed route service operates 7 days a week. Connections are available to CTfastrak, the CTtransit Meriden Division, and the CTtransit Hartford Division. The map uses ¼ mile buffers around the routes.

CTtransit Meriden Division: The Meriden Division has 5 local bus routes. Service in Meriden operates Monday through Saturday. Connections are available to the CTtransit New Haven Division. The map uses ¼ mile buffers around the routes.

CTtransit Wallingford Division: The Wallingford Division has 2 local bus routes. Service in Wallingford operates Monday through Friday. Connections are available to the CTtransit New Haven Division. The map uses ¼ mile buffers around the routes.

Estuary Transit District d.b.a. 9 Town Transit: The Estuary Transit District serves Chester, Clinton, Deep River, Durham, Essex, East Haddam, Haddam, Killingworth, Lyme, Old Lyme, Old Saybrook and Westbrook. The district provides demand response and flexible fixed route services throughout the region with its 9 Town Transit bus services. Connections are available to South East Area Transit, CTtransit Hartford Division, and Middletown Transit District. The map uses ¾ mile buffers around the routes.

Northeastern Connecticut Transit District: Northeastern Connecticut Transit District provides service in Brooklyn, Canterbury, Killingly, Putnam, Thompson, Eastford, Plainfield, Pomfret, Woodstock, and Union.

Deviated fixed route service operates 7 days a week with various scheduled stops located throughout the service area. Bus service operates Monday through Friday, between approximately 7AM and 5PM and Saturday 7AM to 1PM. The map uses a ¾ mile buffer around flexible routes.

Northeastern Connecticut Transit District Dial-a-Ride: Northeastern Connecticut Transit District provides service in Brooklyn, Canterbury, Killingly, Putnam, Thompson, Eastford, Plainfield, Pomfret, Woodstock, and Union. The dial-a-ride service for seniors and people with disabilities is available 7 days a week by reservation with NECTD in Brooklyn, Killingly, Putnam, and Thompson. The map represents the towns included in the service area.

Northwestern Connecticut Transit District: Northwestern Connecticut Transit District provides flexible route service in Torrington Monday through Saturday and in Winsted and Litchfield Monday through Friday. The map represents a ¾ mile buffer around flexible routes.

Northwestern Connecticut Transit District Dial-a-Ride: Public dial-a-ride service is available in Barkhamsted, Canaan, Falls Village, Litchfield (for seniors and people with disabilities only), Sharon, Salisbury, Colebrook, Cornwall, Goshen, Harwinton, Kent, Warren, Morris, New Hartford, Norfolk,

Torrington, Winchester, and Winsted. Days of service vary by town. The map represents the towns included in the service area.

Windham Region Transit District (WRTD): Windham Region Transit District operates 3 fixed routes and one flexible route. Service on some routes operates 7 days a week. The map represents a ¼ mile buffer around flexible routes and a ¼ mile buffer around fixed routes.

Windham Region Transit District Dial-a-Ride: Demand-response service is available Monday through Friday in Ashford, Chaplin, Columbia, Coventry, Hampton, Lebanon, Mansfield, Scotland, Willington, and Windham. The map represents the towns included in the service area.

CTDOT has developed updated service area LEP maps, using 2011-2015 ACS data to identify locations in the service area that have concentrations of LEP persons. Use of that mapping will help with specific projects or service changes to target language assistance services to the particular languages in that area. In the future, the Bureau of Public Transportation along with the Department's Information Technology unit, will work together to develop web based maps, that can provide up to date information on the language needs of a specific census tract or group of census tracts.

Based on each service area, CTDOT calculated the number and percentage of LEP populations by language. If the number of LEP persons exceeded 5% of the total population, it would be considered an LEP language. If the LEP population was 5% or 1,000 individuals, whichever was less, it would be considered a Safe Harbor language. Based on these calculations, it was determined that Spanish was the only language that exceeded 5% in any individual bus or rail service area. Spanish exceeded the 5% LEP threshold in the following eleven (11) service areas: New Haven Rail Line (MNR), Amtrak New Haven-Springfield, Shore Line East Rail, Hartford Local Bus Service Area, New Britain-Bristol Bus Service Area, CTfastrak Bus Service Area, New Haven Bus Service Area, Stamford Local Bus Service Area, Stamford Express Bus Service Area, Waterbury Bus Service Area and Meriden Bus Service Area.

The following LEP and Safe Harbor Languages and the number of speakers for each language in each service area are as follows:

New Haven Rail Line (MNR) –

Total Population: 1,201,338

1. Spanish or Creole Spanish – 90,643 (7.5%)
2. Portuguese or Portuguese Creole – 10,916 (.9%)
3. Chinese – 5,698 (.5%)
4. French/Creole – 4,071 (.3%)
5. Italian – 4,068 (.3%)
6. Polish – 4,013 (.3%)
7. French including Patois Cajun – 2,575 (.2%)
8. Arabic – 1,898 (.2%)
9. Russian – 1,802 (.2%)
10. Korean – 1,415 (.1%)

- 11. Vietnamese – 1,405 (.1%)
- 12. Greek – 1,257 (.1%)
- 13. Tagalog – 1,187 (.1%)
- 14. Japanese – 1,125 (.1%)

Amtrak New Haven-Springfield –

Total: 595,303

- 1. Spanish or Spanish Creole – 46,559 (7.8%)
- 2. Polish – 2,734 (.5%)
- 3. Chinese – 1,991 (.3%)
- 4. Portuguese or Portuguese Creole – 1,650 (.3%)
- 5. Italian – 1,632 (.3%)
- 6. French including Patois Cajun – 1,572 (.3%)

Shore Line East Rail –

Total: 366,760

- 1. Spanish – 20,253 (5.5%)
- 2. Chinese – 1,694 (.5%)
- 3. Italian – 1,192 (.3%)

Hartford Local Bus Service Area –

Total: 585,330

- 1. Spanish or Spanish Creole – 31,997 (5.5%)
- 2. Polish – 3,419 (.6%)
- 3. Portuguese – 2,364 (.4%)
- 4. Italian – 2,022 (.3%)
- 5. Chinese – 1,833 (.3%)
- 6. African – 1,329 (.2%)
- 7. French including Patois Cajun – 1,318 (.2%)
- 8. Vietnamese – 1,275 (.2%)
- 9. Russian – 1,238 (.2%)
- 10. Hindi – 1,205 (.2%)
- 11. Serbo-Croatian – 1,158 (.2%)
- 12. Urdu – 1,117 (.1%)

Hartford Express Bus Service Area -

Total: 1,380,877

- 1. Spanish or Spanish Creole – 58,855 (4.3%)
- 2. Polish – 8,961 (.6%)

- 3. Italian- 4,720 (.3%)
- 4. Chinese- 4,231 (.3%)
- 5. Portuguese- 3,468 (.3%)
- 6. French Including Patois Cajun- 3,031 (.2%)
- 7. Vietnamese- 2,071 (.1%)
- 8. Korean-1,659 (.1%)
- 9. African- 1,580 (.1%)
- 10. Hindi- 1,471 (.1%)
- 11. Arabic- 1,426 (.1%)
- 12. Russian- 1,407 (.1%)
- 13. SerboCroatian- 1,320 (.1%)
- 14. Gujarati- 1,254 (.1%)

New Britain Bus Service Area –

Total: 269,914

- 1. Spanish or Spanish Creole– 17,206 (6.4%)
- 2. Polish – 5,909 (2.2%)
- 3. Portuguese – 1,359 (.5%)
- 4. Italian – 1,079 (.4%)

CTfastrak Bus Service Area –

Total: 286,543

- 1. Spanish or Spanish Creole– 21,032 (7.3%)
- 2. Polish – 3,440 (1.2%)
- 3. Portuguese or Portuguese Creole – 1,449 (.5%)

New Haven Bus Service Area –

Total: 578,358

- 1. Spanish or Spanish Creole– 28,842 (5%)
- 2. Chinese – 3,050 (.5%)
- 3. Italian – 1,665 (.3%)
- 4. Polish – 1,543 (.3%)

Stamford Local Bus Service Area –

Total: 305,680

- 1. Spanish or Spanish Creole– 28,969 (9.5%)
- 2. French Creole – 2,510 (.8%)
- 3. Chinese – 1,873 (.6%)
- 4. Polish – 1,753 (.6%)

5. Italian – 1,207 (.4%)
6. French – 1,041 (.3%)

Stamford Express Bus Service Area –

Total: 50,128

1. Spanish or Spanish Creole – 8,846 (17.6%)

Waterbury Bus Service Area –

Total: 251,728

1. Spanish or Spanish Creole– 12,443 (5%)
2. Portuguese – 2,123 (.8%)
3. Italian – 1,208 (.5%)

Windham Bus Service Area –

Total: 122,987

1. Spanish or Spanish Creole – 5,699(4.6%)
2. Chinese – 1,816 (1.5%)

Windham Elderly Disabled Rural Bus Service Area –

Total: 89,071

1. Spanish or Spanish Creole – 3,978 (4.5%)

Wallingford Bus Service Area –

Total: 43,182

No LEP population groups reach the thresholds of 5% or 1000 persons

Meriden Bus Service Area –

Total: 66,567

1. Spanish or Spanish Creole – 4,402 (6.6%)

Estuary Bus Service Area –

Total: 203,372

1. Spanish or Spanish Creole – 4,628 (2.3%)

Northwest Rural Transit District Area –

Total: 64,965

1. Spanish or Spanish Creole – 1,643 (2.5%)

Northwest Elderly Disabled Rural Bus Area –

Total: 83,187

1. Spanish or Spanish Creole – 1,756 (.02%)

Northeast Rural Transit Bus Service Area –

Total: 53,337

No LEP population groups reach the thresholds of 5% or 1000 persons

Northeast Elderly Disabled Rural Bus Service Area –

Total: 43,676

No LEP population groups reach the thresholds of 5% or 1000 persons

LEP and Safe Harbor Languages Statewide

There were also a total of twenty-six (26) languages that met the Safe Harbor threshold based on statewide LEP populations. No language reached the 5% of the population threshold for LEP languages statewide. The following LEP languages and the number of speakers for each language state-wide are as follows:

Total Population:	3,401,777	
Spanish of Spanish/Creole:	155,812	4.58%
Portuguese and Portuguese Creole	15,715	0.46%
Polish	14,358	0.42%
Chinese	13,443	0.40%
Italian	9,894	0.29%
French Including Patois Cajun	6,528	0.19%
Other Indo European	6,156	0.18%
French Creole	5,234	0.15%
Other Asian	5,159	0.15%
Other Indic	4,700	0.14%
Russian	4,394	0.13%
Vietnamese	4,167	0.12%
Arabic	3,900	0.11%
Korean	3,523	0.10%
Hindi	3,090	0.09%
Tagalog	2,852	0.08%
African	2,612	0.08%
Greek	2,530	0.07%
Gujarati	2,338	0.07%
Serbo Croatian	2,182	0.06%
Other Slavic	2,156	0.06%
Urdu	1,711	0.05%
Japanese	1,618	0.05%
Laotian	1,499	0.04%
Mon-Khmer Cambodian	1,475	0.04%
German	1,328	0.04%
Total LEP:	281,627	8.28%

Factor 2: Frequency of Contact by LEP Persons with Transit Services

CTDOT examined the frequency with which LEP individuals come into contact with its services by conducting surveys and reviewing the use of website alternative language tools. In an effort to ensure that CTDOT is collecting sufficient rider demographic data, the Title VI workgroup will coordinate a department wide effort to confirm that all surveys include the demographic data necessary to accurately determine which LEP populations are being served by our transit system.

As part of the “Let’s Go CT!” plan, Connecticut’s 30 year transportation initiative, and the upcoming I-84 Viaduct Reconstruction Project, the CTDOT conducted an onboard and at stop survey to solicit input from Hartford area transit riders and determine who rides the bus and how riders use local transit. By learning about rider demographics and usage, CTDOT can project how bus service may be affected by various I-84 alternatives.

Over the course of two months, about 49,000 Hartford area transit riders were surveyed and of these riders, 29% indicated they spoke another language in addition to English. Of the 29%, 2% spoke English less than very well. The chart below indicates the primary languages spoken by Hartford riders.

Primary Language	
Language	Percent of Total
Arabic	0.34%
Chinese	0.57%
French	0.41%
Haitian Creole French	0.32%
Hindi	1.39%
Italian	0.29%
Jamaican	0.82%
Polish	0.41%
Spanish	21.72%
Other	2.88%
English Only	70.86%

In 2016, Metro-North Railroad conducted a survey with over 6,000 respondents, where 4,800 answered language-related questions. Their responses are summarized below:

- Which language would be most helpful for you to receive Metro-North written or electronically displayed information in?
 - 99.2% stated English or no preference
 - Less than 1% stated Spanish or another language
- Which language would be most helpful for you to understand Metro-North announcements or to converse in with Metro-North personnel (i.e. to ask for travel directions)?
 - 99.3% stated English or no preference
 - Less than 1% stated Spanish or another language
- What is the primary language spoken in your home?
 - 95% English
 - 1.6% Spanish
 - 3.3% another language
- How well do you speak English?

- 99.6% very well or well
- 0.3% not well
- 0.1% not at all

In an effort to ensure that we are providing adequate language assistance to the LEP riders, CTDOT plans to conduct a survey of front-line employees on an annual basis to monitor the number of LEP customer contacts for all languages, and make necessary adjustments should the frequency of encounters change. CTDOT will also continue to utilize the CBOs to determine whether they serve any LEP communities that frequently utilize bus and rail transportation.

Website Data Translations: The second tool used to gauge the level of interaction in order to improve the customer experience for LEP individuals was to analyze the use of website alternative language use.

CTtransit provides a custom-translated Spanish version of its website. CTtransit also offers Google Translate on its main website. MNR and SLE websites offer machine translations into Spanish and a number of other languages using Google Translate.

Google Translate is not as effective as custom translations on websites and elsewhere, but it is one tool that can be used to measure the level of interaction by LEP individuals. Google Translate offers machine translations so it is generally not desired to rely upon Google Translate for translation of vital documents or detailed information that would require more detailed translations. CTDOT has found that the major transit websites should have Google Analytics (GA) installed so that speakers of some of the non-Spanish, non-English languages can at least get some idea of the information on these websites, and so that Google Translate interactions can be tracked and give some indication of the number and variety of different languages that website visitors request.

For the two major websites under the direct control of CTDOT, the analysis showed:

www.cttransit.com

During the reporting period, English language sessions comprised over 97% of all site traffic and Spanish language sessions comprised approximately 2% of total site traffic. No other language represents over .2%.

www.shorelineeast.com

The primary used language based on GA was English at 98.51%. The next most used language was Chinese at 0.19% and Spanish at 0.19% while all other languages fell at a level of 0.08% or below. These levels did not reach our threshold level for additional analysis which for now has been established at 1% of all website visits for the quarter.

In summary, less than two percent (2%) of all visits to the CTtransit or SLE websites involve use of language assistance services. This statistic is only one measure, and not a very reliable measure, of the demand from customers or potential customers. But the analytics for these interactions are fairly consistent with data from other sources on the occurrences of various other non-English languages. In the 2014 Shore Line East customer satisfaction survey only one person called the number provided to fill

out the survey in Spanish. In 2016 there were no requests for a Spanish translation. This may not be an accurate measure since most people would likely skip filling out a survey instead of taking an extra step to call the translation number provided.

In summary, less than three percent (3%) of all visits to the CTtransit or SLE websites involve use of language assistance services. This statistic is only one measure, and not a very reliable measure, of the demand from customers or potential customers. But the analytics for these interactions are fairly consistent with data from other sources on the occurrences of various other non-English languages.

Intuitively it is expected that a substantial portion of the LEP encounters with state-owned transit services will occur on the bus or train. Accordingly, it is reasonable that resources for language assistance be focused heavily on on-board activities.

Factor 3: Nature and Importance of Transit

Public transit is a key means of achieving mobility for many LEP persons on both a daily basis and in the event of emergency or urgent situations. Providing services to ensure access to LEP persons may help to increase and retain ridership among CTtransit’s LEP communities. CTDOT has determined it’s most critical services are fares and tickets; routes and schedules; and safety and security. Barriers in these areas could: (1) limit a person’s ability to gain full benefit from services, or (2) safety and security issues could place a person in physical danger.

The table below, from the 2011-2015 American Community Survey, demonstrates why transit is more important to people who don’t speak English than it is to the general population. Though the LEP community comprises a little over 8% of the overall workforce in CT, the LEP community comprises close to 15% of the Public Transit users, indicating great importance in ensuring they have the ability to access and use the system.

Connecticut						
	2015	2014	2013	2012	2011	Average
Workers 16 years and over	1,773,121	1,765,420	1,736,156	1,728,325	1,711,088	1,742,822
Speak English Only	77.7%	78.3%	78.2%	78.2%	78.7%	78.2%
Speak Language Other Than English	22.3%	21.7%	21.8%	21.8%	21.3%	21.8%
Speak English "very well"	14.1%	13.5%	12.9%	13.4%	12.9%	13.4%
Speak English less than "very well"	8.2%	8.1%	8.9%	8.5%	8.5%	8.4%
Percent of Workers Speaking English Less Than "Very Well"	8.2%	8.1%	8.9%	8.5%	8.5%	8.4%

Connecticut						
	2015	2014	2013	2012	2011	Average

Public Transit Users (Workers 16 years and over)	87,516	84,731	89,137	82,482	80,026	84,778
Speak English Only	67.0%	68.3%	67.4%	67.5%	66.9%	67.4%
Speak Language Other Than English	33.0%	31.7%	32.6%	32.5%	33.1%	32.6%
Speak English "very well"	20.4%	17.2%	17.0%	16.9%	17.0%	17.7%
Speak English less than "very well"	12.7%	14.5%	15.6%	15.6%	16.1%	14.9%
Percent of Workers Who Use Public Transit Speaking English Less Than "Very Well"	12.7%	14.5%	15.6%	15.6%	16.1%	14.9%

https://factfinder.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=ACS_15_1YR_S0802&prodType=table

In addition, in certain situations, the delivery of clear instructions regardless of language is required. For example, emergency evacuation instructions in stations and vehicles should be either non-written/non-verbal or provided in languages that meet the thresholds of LEP. CTDOT will be investigating the potential implementation of a program that uses pictograms whenever possible to illustrate emergency procedures, travel directions, etc. on CTtransit buses.

Factor 4: Available Resources and Costs of Providing Language Assistance Services

This last step of the Four Factor Analysis allows CTDOT to weigh the demand for language assistance against current and projected financial and personnel resources.

As described in Factors 1 and 2 above, CTDOT used various strategies for determining non-English language populations and interactions. The approach included using results 2011-2015 American Community Survey data, mapping, website use, surveys, and partnerships with CBOs and FBOs to gauge the level of interaction of customers with various aspects of the transit system.

At the present time, CTDOT does not have sufficient data to determine the transit usage of LEP populations, which would be required to fully ensure the level to which the LEP populations are in need of the meaningful access to transit programs, services, and activities available. CTDOT intends to rectify this concern with ridership usage surveys, as well as the surveys of front-line staff that have direct interactions with the public, to be performed over the next year. CTDOT will translate all vital documents into Spanish and then provide a description of the document with contact information to receive language assistance in the top eleven Safe Harbor languages.

CTDOT's Voiance system is capable of translating into almost any language including all twenty-six statewide Safe Harbor Languages.

CTDOT can report on certain expenditures of funds on language-related services by the CTtransit bus operation.

- Cost for dynamic content translation at www.cttransit.com: approximately \$35,000.00 for the reporting period.
- Translation services for printed CTtransit materials (not including Spanish): \$6,043.00.
- Document translations for fare increases, new buses (replacement signs), new content, and the natural attrition of signs, interior cards on styrene for all eight Divisions in Spanish: approximately \$13,000.
- During the reporting period, the Office of Contract Compliance has expended \$3,317.04 on translation services, including the translation of vital documents and written materials for public hearings.

CTDOT will continue to expend a reasonable portion of the budgetary dollars to meet compliance goals and fulfill the provisions of the language assistance plan. CTDOT recognizes that to continue to expand the program, new sources of internal and/or external funding might be needed depending upon the cost and scope of new strategies and actions.

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Language Assistance Plan (LAP)

CTDOT being a recipient of FTA assistance is required to develop an implementation plan to address the needs of the LEP populations they serve. The CTDOT Implementation Plan includes the following elements:

- Current language assistance measures
- Language initiatives planned for the next three years
- Training
- Providing notice to LEP persons
- Monitoring and updating the plan

Successful Language Assistance Measures to Continue

Partnerships: CTDOT will continue to develop partnerships with community and faith based organizations that serve LEP populations and can assist with targeted outreach, translation of notices and postings on multi-lingual websites.

Oral Translation: CTDOT contracts for translation and interpretation services using a Department of Administrative Services master contract which includes vendors that provide services in all locations around the State. This contract has a list of preapproved firms that can provide translation and interpretation services by geographic location.

Through the master contract, CTDOT has contracted with Voiance to provide over the phone interpretation services. Voiance allows for someone who is not fluent in English to call into CTDOT with questions or requests for services or general information. CTDOT is able to call into Voiance, who will provide an interpreter to translate both ends of the call and provide the individual with the needed assistance. This service can also be utilized for in-person contacts with LEP persons by utilizing the speaker function on the phone. CTDOT has developed an internal reporting system for the use of Voiance that asks both the language translated and the purpose of the phone call. Tracking the usage of the translation system will help clarify the needs of LEP communities. CTDOT also uses available and authorized staff to translate upon immediate need.

CTDOT has sent notification to all known Community and Faith Based Organizations to inform them of the availability of this service and encourage them to disseminate this information to the people they serve. CTDOT has assigned Voiance access codes to 114 CTDOT employees and has provided language assistance training to the majority of these employees. Additional training sessions will also be scheduled for any employees who were unable to attend the initial training sessions or who are newly identified as needing a Voiance access code.

See Voiance Access Procedures and Guidelines, Connecticut Department of Transportation Employee User Guide on pages 23-31 of the CTDOT FTA Title VI Program Appendix.

Bus: CTtransit provides oral information in Spanish through a telephone Customer Service Center. LEP customers who call the Telephone Center have direct access to bilingual customer service representatives and can be connected to a telephonic interpretation service with linguists who speak other languages at a per minute rate for services.

Rail: Metro-North (MNR) Travel Information Center – Consistent with Metro-North’s Title VI Program, MNR customers have multi-language translation available through an outside language line telephone service.

Document Translation: CTDOT will continue to identify documents that are vital for our services and choose the formats to most effectively communicate the messages contained in those documents. Written translations are available through vendors on the DAS master contract for translation and interpretation services.

Vital documents for bus transit include:

- Service change notices – as they occur
- Fare change notices – as they occur
- Title VI notice to beneficiaries.
- Title VI Complaint form and procedure
- Notices of public hearings
- Applications or instructions on how to participate in a recipient’s program or activity or to receive recipient benefits or services (e.g., ADA Paratransit applications)

The following additional documents are defined as vital documents by Metro-North:

- Statement of rights under Title VI
- Title VI complaint procedure and complaint form
- Notice of public hearings
- Notice of service schedule changes and fare changes

CTDOT has translated its Title VI Notice to Beneficiaries and Title VI Complaint Form, in their entirety, into Spanish and has translated tag lines summarizing the documents and providing contact information for language assistance, into the top eleven statewide safe harbor languages, which comprises 85% of the statewide LEP population. CTDOT will continue to determine which documents are necessary to translate, the appropriate format to most effectively communicate the message, efforts necessary to provide timely relevant information about CTDOT programs and services to LEP communities, and how best to assess and monitor the effectiveness of CTDOT’s LAP Plan. When translating documents CTDOT will also consider the literacy needs of the LEP populations to insure effective communication.

All policy and informational interior notices, and written informational communication materials on buses are posted in English and Spanish. Materials critical for accessing and using CTtransit services and receiving transit benefits have been translated into Spanish and although to date, no inquires have been

received requesting written translation into other languages, other documents can be translated into other languages.

Electronic Media Translations: MNR and SLE websites offer machine translations into Spanish and a number of other languages using Google Translate. MNR utilizes print and electronic media sources and language translations to communicate with the public and riders, including offering multiple language formats on ticket vending machines.

CTtransit provides a custom-translated Spanish version of its website and though less desirable than the custom translations, CTDOT also offers Google Translate on CTtransit's main website and all of the websites of CTDOT's rural transit districts.

Outreach Materials: CTDOT will provide a notice of "right to free language assistance" at no cost for non-vital yet important outreach documents, including project fact sheets, meeting notifications and other open house materials in the primary language of those with Limited English Proficiency.

Through the utilization of Service Area Maps (and further dividing these according to individual census tracts), CTDOT is able to specifically target the areas affected by service/fare changes or other changes to Transit operations that could affect these communities, and ensure the outreach is directed to the specific LEP communities affected. The decisions regarding which documents to be translated may be impacted by feedback from the LEP community. This improved outreach will be supplemented by the use of printed documents to be placed in locations where customers or potential customers go for transit information, services, or questions.

Whenever CTDOT holds a public hearing/meeting (whether during Environmental Assessment, Design, or service planning/monitoring), the legal notice regarding the hearing/meeting will indicate that LEP persons requiring language assistance may make reasonable requests to CTDOT within the time period provided. CTDOT staff in need of translation services at any hearing may consult Department of Administrative Services list of contracted service providers for translation and interpreting services.

CTDOT will continue to conduct culturally-competent outreach to LEP communities to increase awareness and use of CTDOT services and programs. CTDOT regularly communicates with Community Based Organizations (CBOs) and Faith Based Organizations (FBOs) that serve LEP communities to gain a better understanding of the needs of LEP populations, and develop strategies to ensure the LEP communities are well informed and well-served.

Rail: MNR News releases are distributed to media outlets that include the Amsterdam News and Spanish print and cable and MNR advertises in local language paper LaVoz and local newspaper websites including Spanish language sites.

Bus: CTDOT and CTtransit work directly with the media outlets serving minority and ethnic populations to provide service information to their readers, listeners, and viewers. CTtransit also places Spanish language signage on vehicles for basic fare information and rights under Title VI as well as to

announce service changes and other situations important to customer safety. CTDOT will undertake the efforts necessary to address other languages identified under Safe-Harbor.

Training: CTDOT will continue to provide training to front-line and other staff on how to effectively engage and respond to LEP customers.

Customer Surveys: CTDOT will continue to collect demographic information and travel patterns through the use of customer surveys. Upon completion of the surveys, CTDOT will analyze the results to determine any changes related to the locations and concentrations of LEP populations, and to assist in evaluating the effectiveness of current outreach to LEP individuals. The Office of Contract Compliance will continue to monitor surveys to ensure that demographic questions are included.

Identifying Language Barriers: CTDOT is continuously enhancing its outreach to CBOs and other groups. This effort assists in assessing current gaps in dissemination of transit information to current users due to language barriers. It also helps to identify new potential customers who may not be accessing the system, due to language barriers.

The types of approaches to determine language barriers include, but are not limited to:

- CTDOT will continue to keep up to date contact information for CBOs in the various service areas and administer surveys and initiate conversations to determine any language gaps. The CTDOT is in the process of updating its CBO directory and developing a plan to monitor the directory to ensure the contact information is accurate, and that newly formed or identified organizations are included;
- CTDOT will continue to collect feedback information from public hearings and public meetings regarding language usage with voluntary demographic surveys;
- CTDOT will continue to monitor usage of its over the phone interpretation service for requested languages;
- The Office of Contract Compliance will send an annual reminder to all identified CBO's of the language assistance tools provided by the Department and ask that they disseminate this information to their clients/members.

Monitoring: The Title VI workgroup will continue to discuss Title VI compliance and the effectiveness of current programs and policies. The Committee has quarterly meetings, with additional meetings scheduled as needed. Committee members include CTDOT staff from Public Transit, Planning, the Commissioner's Office, and the Title VI Coordinator and staff.

Language Initiatives for the Next Three Years

Over the next three years specific actions will be taken to meet the needs for language assistance services and to develop and implement a strong program of enhanced language assistance services. Efforts will be made to provide language assistance in timely manner to those requesting services.

CTDOT will enhance its outreach to assess the current language gaps in the dissemination of vital information to current users. CTDOT will seek to identify new potential customers who may not be accessing the system due to language barriers.

Enhanced Monitoring: On an annual basis CTDOT will review the plan to update any changes in demographics, available services, or LEP community needs. The Office of Contract Compliance will develop and implement a plan to conduct these annual checkups to insure the Department is compliant with LEP and Title VI requirements.

Community Based Directory Update: The Office of Contract Compliance updates the CTDOT Community and Faith Based Directory on an ongoing basis. The Directory identifies organizations that serve LEP communities and includes the languages the organizations most frequently encounter.

Public Involvement Procedures (PIP) Update: Throughout the next year, the Department will develop and implement a roll-out plan for the updated PIP to insure that all of the Department's public engagement activities are compliant under Title VI, including providing meaningful access to LEP populations.

Enhanced Data Collection Tools: The data collection strategies to be utilized include the following:

- CTDOT will work with CTtransit and Shore Line to gain information from their front line employees and collect data from drivers, telephone call center employees, ticket agents, and security personnel regarding interactions with LEP population, language spoken, and nature of information request.
- Bus Rider Survey Data
- Rail Passenger Survey Data
- Collect information from Community Based Organizations (CBO) and Faith Based Organizations (FBO) relative to language gaps and information needs for LEP persons they serve for the purpose of having a more direct outreach to Safe Harbor populations and to provide translation services to those populations as CTDOT identifies the need. Office of Contract Compliance has compiled a database of CBOs and FBOs and will utilize the CBOs to help with outreach to the LEP populations. Outreach will be on-going to these organizations. The CTDOT is currently in the process of a major update of the Directory and will develop a process to continually monitor the accuracy of the contact information provided within the directory.
- Collecting feedback information from public hearings and public meetings regarding language assistance requests or issues of concern from LEP population and providing, and encouraging completion of voluntary demographic surveys at all public meetings/hearings;

Additional Language Assistance Measures to be Implemented:

- CTDOT will implement a program to require reporting on LEP experiences, whether communication was successful or not. Reminders will be sent to bus operators and supervisors on an annual basis to collect this data from their staff.

- CTDOT will post the following sentence on its website in the top eleven safe harbor languages, “For language assistance for transit services, please call (XXX) XXX-XXXX”.
- In addition to the vital documents, CTDOT will provide contact information for languages assistance, in the top 11 safe harbor languages to documents that explain how to use its services, including information on buying a ticket, parking, transfer information, and Title VI complaint information.
- CTDOT will reach out to a broad base of community organizations state-wide in order to assure enhanced public involvement in the transportation and transit service planning processes. A natural by-product of this initial outreach effort will be to learn first-hand what types of special language assistance services would best meet the needs of the agencies and their LEP clients. The information provided by CBOs and FBOs will allow CTDOT to develop strategies to enhance targeted efforts to address the needs of LEP individuals.

Training

CTDOT has developed a training curriculum and a Title VI Training booklet. The training booklet provides a Title VI overview with a brief history of the regulations and authorities. The FTA Title VI requirements cover the Limited English Proficiency (LEP) requirements, the Four Factor Analysis and Safe Harbor requirements and provide an explanation of Vital Documents. The PowerPoint presentation used during the training is included in the Title VI Training Booklet. A copy of the November 2016 Training Booklet can be found on pages 32-76 of the CTDOT FTA Title VI Program Appendix Training was most recently provided to CTDOT subrecipients and CTDOT staff in November 2016. Training is held annually or as requested by the subrecipients. The next subrecipient training is scheduled for August and September of 2017.

With the implementation of their over the phone interpretation service provider, CTtransit provided LEP training (a copy of the PowerPoint presentation can be found on pages 77-86 of the CTDOT FTA Title VI Program Appendix) to all customer service operators and senior staff. Training sessions were held on April 26, 2016 and April 27, 2016. CTtransit will continue to train their front line employees (including drivers, customer service representatives, operation supervisors, and other employees who have direct access to the public), on how to provide service to LEP customers (whether in person, by phone, or written communication). Training will also provide instruction on how to use phone translation service, and how to monitor encounters with LEP individuals. Individuals attending the training are also provided with a copy of the Title VI policy in the employee handbook.

Metro-North customer call center staff is trained in procedures to help LEP individual access the language line services in the event that language assistance is needed. In the future, as additional support services are made available, Metro-North will review the services and identify the most effective strategies for equipping key front line employees to connect customers to those services. Those strategies may include reference materials, informational meetings and/or formal training, as appropriate.

In addition to the training given to CTDOT service providers, CTDOT is also working on including a Title VI component to the CTDOT employee orientation training. This would include ensuring understanding of

what Title VI is, explaining the Title VI program is a department-wide responsibility, providing training on working with the LEP community (whether in person, by phone, or written communication), how to be in compliance with CTDOT's Title VI program, how to handle Title VI complaints, etc.

Providing Notice to LEP Persons

CTDOT has translated its Title VI Notice to Beneficiaries and Title VI Complaint Form, into Spanish, and has translated a description of the documents, along with contact information for language assistance into the top eleven identified safe harbor languages.

CTDOT will be adding the following statement on its website in the top eleven identified safe harbor languages, "For language assistance for transit services, please call (XXX) XXX-XXXX." If language assistance is needed and an LEP individual calls into this number the receiver will access CTDOT's over the phone interpretation provider to interpret the phone call and provide the LEP caller with the information they are requesting.

CTDOT will continue to frequently consult with the CBOs and FBOs regarding public meetings and hearings, service and fare changes, available language services to the LEP community (such as over the phone translation), and other programs, activities, and benefits available to the LEP community. CTDOT encourages their participation to ensure their needs and interests are known and addressed. When communicating with the CBOs and FBOs, CTDOT provides instructions on how to notify the department if interpretation services are needed, or if additional translations are needed.

CTDOT provides notice of "right to free language assistance". CTDOT will continue to determine which documents are vital for translation and choose the format(s) to most effectively communicate the messages contained in the vital documents; provide timely relevant information about CTDOT programs and services to LEP communities; and develop a means to assess and monitor the effectiveness of CTDOT's LAP.

Monitoring and Updating the LAP Plan

CTDOT will monitor its LAP on an ongoing basis to ensure new LEP populations are identified. The LAP will be reviewed each year and changes will be incorporated as needed. CTDOT will on an annual basis solicit feedback from the CBOs that serve LEP populations, and develop a plan to frequently update the Community Based Organization Directory. CTDOT will also monitor the LEP plan to ensure that it is effective. The plan will be evaluated annually unless it is determined that more frequent evaluations are necessary. Close attention will be given to requests for language assistance, census data changes and updates, complaints, feedback from community based organizations, faith based organizations, feedback from customers, changing technology or new resources available to provide language assistance, and other information that would enhance and help evaluate the effectiveness of the plan. Furthermore, CTDOT will include Title VI demographic questions as part of its ridership surveys in order to evaluate what LEP communities are included as part of CTDOT's ridership, and whether there are any issues or concerns from them receiving CTDOT's programs or benefits. Should any of these resources reveal issues with CTDOT's current LAP plan, CTDOT will make the necessary revisions and/or methods

for providing information/outreach to the public to ensure no one is denied access to programs or benefits due to language barriers or their national origin.

The Title VI Workgroup meets on a quarterly basis, or more frequently as needed to discuss the goals and the implementation efforts necessary to comply with the language assistance plan. The workgroup will discuss any trends or patterns requiring attention. The workgroup is guided by an agenda and meeting minutes are recorded. . All members of the workgroup provide research, ideas and solutions, strategies and concepts that assist in the developments of a meaningful Title VI/LEP Plan.

In addition to having quarterly meetings with CTtransit and Metro North Rail, to discuss updates and/or monitoring activities related to Title VI programs; starting in 2017, CTDOT has implemented a quarterly Title VI Activity Report to provide a written summary of Title VI activities, outreach events, and other related activities. This will allow CTDOT to continuously monitor transit related activities for Title VI Compliance.

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Monitoring Subrecipients

In an effort to ensure that subrecipients are complying with the requirements under Title VI, the Department of Transportation (CTDOT) utilizes a Title VI Compliance Assessment Survey. This document is mailed to subrecipients receiving funding under the 5307, 5310, and 5311 programs. The Office of Contract Compliance (OCC) is responsible for mailing the surveys and the Bureau of Public Transportation provides the listing of sub-recipients. The assessment was last conducted in 2014, and the OCC will be joining efforts with the Bureau of Public Transportation to combine our Title VI reviews with the Bureau's subrecipient audits.

The Department utilized the assessments as a tool to remind subrecipient grantees of their obligations and responsibilities under Title VI and to monitor the subrecipients' Title VI program implementation. The Department reviewed the surveys and the requested documents to determine if the subrecipients have implemented the necessary processes and procedures to comply with Title VI, Environmental Justice (EJ) and Limited English Proficiency (LEP).

Along with the survey, each subrecipient also received an "Information Packet" which included a copy of the CTDOT Title VI Policy Statement; the Department's Discrimination Complaint Process and Procedure and all applicable forms; LEP Implementation Plan Guidance for Subrecipients; a copy of the Department's Notice to Beneficiaries; and Title VI information posted on the Department's webpage. Sub-recipients had the option of using the Department's plan as a template to aid in the development of their plan, or to develop their own plan with their own format. Their Title VI programs must meet the requirements of the FTA Circular 4702.1B.

The survey responses were used to determine the training and technical assistance needs of the subrecipients. The OCC offered Title VI training to all subrecipients receiving federal funding. Individualized training was also available upon request.

To provide additional technical assistance, the OCC updated the Title VI training booklet for subrecipients and provided the booklet as a reference tool outlining the requirements of a compliant Title VI Program as per the requirements in the FTA Circular 4702. 1B. The booklet also included copies of the Title VI PowerPoint presentation used for training, the Title VI Policy Statement, Title VI Complaint Form, Title VI Assurances, Appendix A of the FTA Circular, and resources for services that can provide language assistance.

The Department will conduct periodic Title VI process reviews on Metropolitan Planning Organizations (MPOs). The Department sent out a "MPO Title VI Compliance Update Form" on February 26, 2014, to be completed and submitted to CTDOT. CTDOT performed follow-up reviews and MPOs were required to document their progress towards addressing any deficiencies identified. Additionally, the MPOs were required to address any areas of non-compliance as part of their required quarterly reporting to the Department.

In 2018, the Office of Contract Compliance will conduct Title VI process reviews, which will include a site visit, to all nine (9) MPOs.

The MPO's public participation plan is reviewed and approved by CTDOT, FHWA and FTA. CTDOT encourages the MPO to update their plan at least every five years. MPO websites are monitored to ensure that they include translation tools for the public to use based on their individual LEP plans.

2014 Subrecipient Survey Assessment Results

In July 2014, the Connecticut Department of Transportation (CTDOT), Office of Contract Compliance (OCC) conducted a survey of all sub-recipients receiving federal funding, including traditional and non-traditional 5310 subrecipients.

The initial survey was mailed on July 15, 2014, and was due on August 29, 2014. The agencies that were not able to submit by the August 29, 2014 due date, were given an extension to submit the information by September 15, 2014.

The OCC emailed all sub-recipients a copy of the cover letter and the Title VI Compliance Assessment. Templates were attached for their convenience. Using email was an interactive enhancement from previous years, because it provided sub-recipients with an opportunity to respond via email, ask questions, or provide comments related to the Title VI Compliance Assessment process.

The OCC received multiple calls from subrecipients for guidance and technical assistance in completing the Title VI Compliance Assessment; the understanding of Title VI had significantly increased from previous years. The phone calls received were a result of recently assigned Title VI Coordinators being new to the process, uncertainty on the type of funding they were receiving, questions on whether their current policies and procedures are acceptable, requests for templates of required documents, and requests for additional Title VI training. Additionally, many of the towns referred to their Metropolitan Planning Organizations (MPO) for guidance. After reviewing the submissions and the subrecipients questions, it was determined that subrecipient Title VI training continues to be needed .

The OCC mailed Title VI Compliance Assessment Surveys to 78 towns receiving USDOT funding through CTDOT. A total of forty (40) survey responses were received which was a 52% response rate. The percentages of subrecipient responses are as follows FHWA sub-recipients were mailed a total of 19 surveys; 16 surveys were returned at an 84% response rate; 59 FTA surveys were mailed to FTA sub recipients with 24 surveys returned, which was a 41% response rate.

In reviewing the documents, the following areas were reviewed:

- Title VI Coordinator attended Civil Rights Training?
- Do you provide Notices to Beneficiaries of their rights under Title VI?
- Submitted a copy of sub-recipients organizational chart?
- Submitted a copy of their Environmental Justice/Limited English Proficiency Plans?
- Do you have a Title VI Policy Statement?
- Do you have a Title VI Complaint Process and Procedure?
- Do you have a Title VI Complaint Log?
- Do you have a Public Involvement Plan?
- Are your Title VI Policies and Procedures posted on your website?

- Do you include the required non-discrimination language in all contracts?

The results of the assessment were as follows:

Title VI Coordinator Training – 43% said they have received Title VI Training, and 57% have not received training specific to Title VI.

Notices to Beneficiaries – 55% ensure that all posters are accessible to staff and beneficiaries, 45% did not answer the question.

Organizational Chart – 50% of the sub-recipients submitted a copy of their organizational chart showing the Title VI Coordinator position, and 50% did not submit a copy of their organizational chart.

Limited English Proficiency (LEP) Plan – 28% did not submit a copy of their LEP Plan. 72% did not submit a copy of their LEP plan.

Title VI Policy Statement – 52% submitted a copy of their Title VI Policy Statement and 48% did not submit a copy of their policy statement.

Title VI Complaint Process and Procedure – 45% of the sub-recipients submitted their Title VI Complaint Process and Procedure and 55% did not submit a copy of their process and procedure.

Title VI Complaint Log – 30% submitted a copy of their Title VI Complaint Log, and 70% did not submit a copy of their complaint log.

Public Involvement Plan – 20% of the sub-recipients submitted a copy of their Public Involvement Plan, and 80% did not answer the question.

Title VI policies posted on website – 40% posted their Title VI policies on their agency website and 60% did not post their policies on the website.

Title VI Signed Assurances – 50% of the sub-recipients signed the Title VI Assurances on the Title VI Compliance Assessment form, and 50% did not respond.

Non-Discrimination Language in Contracts – 40% of the sub-recipients included the non-discrimination language in all contracts, and 60% did not include language in all contracts.

The Department developed a “Title VI Review Report” that was mailed to sub-recipients, and required subrecipients who were not in compliance to review any deficiencies identified on the report and begin implementing corrective actions. The Title VI Review Report included a column listing each requirement, and columns to indicate compliance and provide comments. The reports were mailed to the audited subrecipients, with a due date to respond to areas of noncompliance.

Subrecipient Audits

Traditional Section 5310 Subrecipients

The Bureau of Public Transportation conducts 30 (thirty) audits each year for traditional Section 5310 grantees. They are conducted year-round (from July-June). Approximately 10 (ten) audits are conducted on-site at the subrecipients' location, and no more than 20 (twenty) are conducted 'electronically' or 'virtually' via a desk audit site visit. Applicants are typically not audited more than once every 3 years.

Some of the Title VI questions asked include:

- How do you make your clients aware of their rights under Title VI?
- Are the rights of individuals under Title VI of the Civil Rights of 1964 posted on your Section 5310 vehicle(s) and within your facility? Is this information on your organization's website?
- Please provide a copy of your Title VI Notice to Beneficiaries and a copy of your Title VI Complaint Log.

Beginning September 2017, the Bureau of Public Transportation and the Office of Contract Compliance (OCC) will be joining efforts to review the current auditing process and revise it to include the OCC in the auditing and review process, which includes a section on Title VI compliance. . The OCC will administer the Title VI compliance section of the audit/review.

Non-Traditional Section 5310 Subrecipients

In 2014, an audit of all subrecipients including non-traditional 5310 subrecipients. Over the next three years (2018-2020), at a rate of eight (8) per year, the OCC will audit all non-traditional 5310 subrecipients. The audits will be performed as desk audits, where subrecipients will be emailed an electronic assessment packet, including a questionnaire to be completed by the subrecipient and returned to OCC. The assessment will also instruct the subrecipient to submit copies of the documents required ensuring their compliance with Title VI; this will include all documents required under General Requirements (Chapter III) of FTA Circular, FTA C 4702.1B

5311 Subrecipients

In 2016, the Bureau of Public Transportation conducted a Transit System Audit of all 5311 subrecipients. During this time, the OCC conducted a civil rights audit. The audit included a site-visit and a review of all Title VI required documents. A corrective action plan was prepared to address any findings. The Title VI corrective action plan was then reviewed in a separate meeting, with each subrecipient. Since this review, all 5311 subrecipients have attended Title VI training, at the CTDOT.

Title VI Training

On September 18, 2014, the Office of Contract Compliance (OCC) conducted two, four-hour, sub-recipient Title VI training sessions. The training was held at the Connecticut Department of Transportation and was very well attended. The topics covered during the training included the following:

- What is Title VI and what are your responsibilities as a subrecipient?
- What is Environmental Justice and what are your responsibilities as a subrecipient?

- What is Limited English Proficiency and your responsibilities as a sub-recipient?
- How does Title VI impact what you do?
- Your Roles and Responsibilities Under Title VI
 - Notification to Beneficiaries
 - Title VI Assurances and Posters
 - Website Information
 - Title VI Contract Clauses
 - Title VI Sub-recipient Assessments
 - What is a Title VI Complaint/How to Process a Title VI Complaint
 - Public Involvement and Participation
 - Engaging LEP and EJ Populations
 - Public Hearings/Meetings

In November 2016, the OCC offered Title VI training to sub recipients and CTDOT staff. Sessions were offered on November 3, 2016 (AM and PM sessions); November 4, 2016 (AM session); and November 7, 2016 (PM session). In total, 54 people attended the sessions. At the training, participants received a training manual that included the presentation and Title VI compliance resources. Copies of the FTA Circular 4702.1B were also made available to attendees.

Future Subrecipient Monitoring Goals

The Department will continue to look for strategies to insure that all subrecipients are compliant with Title VI. We have included a future plan of action that consists of the following:

- Provide annual training for sub-recipients.
- Research the feasibility of a web-based training tool.
- Join efforts with the Bureau of Public Transportation to combine auditing/reviews of subrecipients.
- Create training evaluation/feedback forms for training attendees.
- Expand Title VI Training Guide to include additional template examples.
- Meet with the MPO's to clarify the Title VI responsibilities of the town sub-recipients with them.
- Coordinate with the Bureau of Public Transportation on subrecipient reviews.

Metro-North Railroad

The Department meets quarterly with Metro North Railroad (MNR) to review their ongoing compliance with Title VI and to discuss the status of any Title VI complaints filed with MNR relative to Connecticut based activities. The Department reviews the contents of MNR's portion of the Title VI program that reports on the NHL service in Connecticut and monitors their Title VI activities in Connecticut.

Title VI Equity Analysis

During the reporting period, CTDOT did not construct any facilities that required a Title VI equity analysis.

Bus System-Wide Service Standards and Policies

Service Availability

Coverage guidelines are only for the bus and rapid transit system service area (the urban-fixed route system) where customers are most likely to walk to transit. The guidelines are established to indicate the maximum distance that a passenger who lives in a densely populated area should need to walk to access transit service (regardless of the mode).

An important aspect of providing the region with adequate access to transit services is the geographic coverage of the system. Coverage is expressed as a guideline rather than a standard, because uniform geographic coverage cannot always be achieved due to constraints such as topographical and street network restrictions. In addition, coverage in some areas may not be possible due to the infeasibility of modifying existing routes without negatively affecting their performance.

The Coverage guidelines are established specifically for the service area in which bus, light rail, and heavy rail operate, as riders most frequently begin their trips to use these services by foot. Because commuter rail is usually accessed via the automobile, the coverage guidelines do not apply in areas where commuter rail is the only mode provided by the CTDOT.

Table 1

Service Availability

Service Days	Minimum Coverage
Weekdays & Saturday	Access to transit service will be provided within a 1/4 mile walk to residents of areas served by bus with a population density of greater than 5,000 persons per sq. /mile.
Sundays	On Sunday this range increases to a 1/2 mile walk.

Frequency of Service (Headways)

Ridership should determine the frequency of service on each route, although financial or equipment limitations may sometimes limit the level of service that can be provided.

Headway is the interval of time between two buses running in the same direction on the same route or along the same route corridor (e.g. Routes 60, 62, 64 & 66 along Farmington Avenue in Hartford and West Hartford). Headways for routes with multiple branches are measured along the trunk of the route,

with headways along the individual branches standardized to the extent that is practical. Headways are generally based on load factors (i.e. the ratio of customers to seating capacity).

Headways should conform as much as possible to regular intervals to make it easier for customers to understand. Intervals of 5, 10, 15, 20, 30, 40 or 60 minutes are considered ideal, although other headways may be used when better suited to a particular situation.

Loading standards, which are discussed in detail in subsequent sections, are generally used to determine minimum headways. However, for certain service periods and on certain routes, minimum headways should be set by policy. For example, during off- peak periods, ridership may be so light that using the loading standards would result in excessively wide headways. Therefore, in order to provide service in a manner that meets the community’s needs, it is necessary to establish policy headways.

CTDOT will provide 60 minute headways during off-peak periods. An exception to this policy would in rural areas or at night or on weekends, where financial considerations must be balanced against demand (e.g. Route 96 serving the US 5 corridor in South Windsor). These guidelines do not apply to headways for commuter express routes; express routes normally only operate during peak periods to accommodate work trips.

**Table 2
Frequency of Service (Headways)**

Service Type	Service Period	Minimum Headway
Local	Weekday - Peak	30 minutes
	All Other	60 minutes
Flyer	All	60 minutes
Express & Commuter Shuttles	Weekday – Peak	3 trips in peak direction

On-Time Performance

CTtransit defines “on-time” as a bus departing a timepoint zero to five minutes later than scheduled. Under no circumstances should buses depart any timepoint ahead of schedule, unless the timepoint for the particular trip has been flagged as “drop off only” and the bus operator given explicit permission to continue on if early. Late operation is defined as any trip leaving a time point in excess of five minutes beyond the scheduled time. To maintain efficient operation, schedules should be constructed in such a manner so that no bus arrives at the downtown hub more than two minutes early or at any other timepoint more than one minute early.

**Table 3
On-Time Performance Measures**

Performance Indicator	Downtown Hub	All Other Locations
Early Arrival	>2 minutes	>1 minute
Late Arrival	>5 minutes	>5 minutes
Early Departure	>0 minutes	>0 minutes

Late Departure	>5 minutes	>5 minutes
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Schedule adherence guidelines can vary with the quantity of service provided. During peak periods, on routes or along corridors with frequent service, it is acceptable to have a lower on-time performance, because buses come frequently. For instance, on routes or along corridors where headways are 10 minutes or less, it is acceptable to have 90% of the service “on-time”. On routes or during times of day that operate where service is less frequent, it is our goal that 95% of service runs “on-time”.

Table 4
Schedule Adherence Guidelines

Service Period	Headway		
	< 10 minutes	10 to 29 minutes	30 minutes or more
Weekday Peak	90%	90%	95%
Weekday Off-Peak	90%	95%	95%
Weekend	90%	95%	95%

CTDOT is in the process of changing over from manual collection of on-time performance information, to an Automated Vehicle Location (AVL) System. AVL systems collect data on a continuous basis, and will be used by CT*transit* to better refine schedules to reflect on-street conditions by time of day.

Load Factor

The vehicle load standard applies to the maximum number of passengers allowed on a service vehicle in order to ensure the safety and comfort of customers. The load standard is expressed as the ratio of passengers to the number of seats on the vehicle, and it varies by mode and by time of day. The average of all loads during the peak period should not exceed vehicles’ achievable capacities, shown in Table 5.

Table 5
Vehicle Capacity

Vehicle Size	Seats	Standees	Total
30'	28	10	38
40'	39	10	49
45'	55	0	66
60'	55	19	74

Table 6
Load Factors

Service Period	Maximum Load Factor	Minimum Load Factor
Weekday Peak	1.33	0.33

Weekday Midday	1.00	0.25
Evening	1.00	0.15
Nights (after 10PM)	1.00	0.15
Weekends	1.00	0.20

Bus Stop Amenities

Generally, in the State of Connecticut, individual municipalities are responsible for the provision, monitoring and maintenance of bus stop signs, shelters, benches and other amenities for the bus service operated in its locality. CTDOT installs and maintains shelters at park and ride lots and maintains bus stop signage on state roads and U.S. highways throughout the state. Bus stops and related amenities are considered part of the “local share”, and their provision is usually determined by the municipality where the services are located. CTtransit takes a proactive role by performing the installation and maintenance of bus stop signs in some communities.

Bus Stop Signs

All bus stops should be identified by a CTtransit bus stop sign. The number or letter designations for the routes serving each stop should be identified and the Customer Service Center telephone number should be posted. When funding is available, these signs are provided to municipalities at no charge and can be installed by CTtransit at no cost to the municipality. Stops with high boardings and major transfer points should have Guide-A-Ride schedule boxes installed with stop-specific route and schedule information.



Figure 10 CTtransit Bus Stop Sign



Figure 11 CTtransit Guide-a-Ride

Shelters

When placing shelters and identifying priority locations, two major factors should be considered: the number of boarding and/or transferring customers at a specific stop and the frequency of service at the stop. Shelters should be lighted and include route and schedule information posted and maintained by CTtransit. Shelters should be provided at all stops which serve 100 or more boarding riders during the course of a typical weekday; at all park and ride locations; and at all major downtown stop locations and major transfer points in accordance with existing physical conditions and the volume of customers served. Table 8 provides a guide for establishing priorities in the placement of customer shelters on the basis of customer demand and service frequency.

Table 7
Bus Shelter Priority Guide

Daily Customer Boardings at Location	Headway		
	30 Minutes	10 to 29	Less than 10
300 or More	1	1	2
200 to 299	1	2	3
100 to 199	2	3	4
50 to 99	2	3	4
25 to 49	3	4	4

The following criteria are used as a guide in the placement of customer shelters:

- Shelters should be placed at all established park and ride lots.
- A shelter should “aesthetically fit” its surroundings where economically feasible.
- Shelters can be standardized to some degree for possible cost effectiveness via quantity purchase prices, for maintenance purposes or to maintain aesthetic continuity.
- Shelters should afford protection and safety to waiting customers. Four- sided shelters should have at least two panels open for ease of entry and exit. All shelters must meet ADA compliance requirements.
- Shelter maintenance is the responsibility of the community in which it is located or the advertising agency which rents or owns them. It should be emphasized that a clean image is extremely important.
- Shelters should be installed at major transfer points between routes.
- Shelters should include amenities such as display space for route maps and schedules, benches, trash receptacles and lighting.

As noted earlier, CTtransit does not own or maintain any of the bus shelters along our routes. The decision to install a shelter at any given bus stop is at the discretion of local municipalities. CTtransit

works with regional agencies and individual towns to encourage shelter installations that meet the preceding guidelines and to encourage shelters are cleaned and maintained, including snow removal, on a regular basis.

Vehicle Assignment

Through several practical operational considerations, CTtransit assigns buses to service so that the average age of the buses serving each route does not exceed the average age of the fleet.

Vehicles are parked in line, front to back on pull-in, and assigned by pull-out time, according to the vehicle characteristic. This practice provides for a random bus assignment. Bus assignments do however take into account the operating characteristics of buses of various lengths and heights which are matched to the operating characteristics of the route (ridership volumes, turn restrictions, type of service and platform levels).

Hybrid vehicles are not permitted on routes with clearance restrictions; CTfastrak buses are specifically designed for the busway and used exclusively in that service; express buses are specifically designed for express service; articulated buses are deployed exclusively on routes with supportive ridership volumes.

Below is a sampling of vehicle assignments during the week of August 14, 2017 through August 18, 2017. The average age of our current fleet is 8.2 years as of August 24, 2017.

Block	Monday	Tuesday	Wednesday	Thursday	Friday	Average Age of Bus Assignment
88	530	1736	545	1743	1602	5.6
32	532	517	1709	520	1625	7.8
64	1718	506	716	437	1721	7.4

Because of the use of sub-fleets for express bus, CTfastrak, and downtown circulator routes like DASH, riders on those services will see a higher percentage of older vehicles as those fleets age and a higher percentage of newer vehicles when those branded fleets are replaced.

Rail System-Wide Service Standards and Policies

MTA Metro-North Railroad (MNR) has developed System-wide service standards that apply to MNR operations. CTDOT has adopted these system-wide service standards to apply to the New Haven Line and Shore Line East (SLE) rail services in Connecticut.

Service Availability

Service Availability is a general measure of the distribution of routes within the service areas. The commuter rail routes are distributed to provide rail service to commuters who reside within the service

territory. These service territories are each defined as all census tracts that are within (and touching) 2.5 miles of the commuter rail stations. The service territory in Connecticut includes all MNR stations in Fairfield and New Haven Counties and the Shore Line East stations along the shore line to New London. For purposes of conducting a Title VI analysis of service availability the total miles of the service area will compare the percentage of minority and non-minority tracts that lay within the service area and the percentage of the total miles within the service area of 'dense' (greater than 5,000 people per square mile) census tracts covered by the service area.

Segment and Branch Line Treatment

The New Haven Line is composed of the New Haven Main Line, part of the North East Corridor and the New Canaan, Danbury, and Waterbury branch lines. The Shore Line East is composed of two segments, New Haven east to Old Saybrook, and Old Saybrook east to New London. Stations along each branch line and segment will be analyzed against stations of that same segment or branch. This is due to the different infrastructure capabilities of each segment or branch. The New Canaan branch is a single track but is electrified and can run the more reliable M8 EMU units, the New Haven Main Line has 4 tracks but is the busiest single rail line in the country if not all of North America. Both the Danbury and Waterbury branch lines are not electrified and must run the P-32 diesel locomotives. The Shore Line East runs to Old Saybrook on either 3 or 4 tracks, however between Old Saybrook and New London no service can be added without the permission of the Connecticut Department of Energy and Environmental Protection (DEEP) due to moveable bridges and marine traffic congestion. In addition to DEEPs permission the department would need the approval of Amtrak who also operates on and owns this territory. It is important to note that this is part of the Amtrak North East Corridor and is a vital piece in the Boston to New York to Washington Intercity Passenger Rail service. It also follows the 2015 Title VI Plan which established different headway guidelines for each segment or branch line.

Service Periods

New Haven Line Peak Travel

For Title VI purposes, Peak travel is considered to be when inbound trains are scheduled to arrive at Grand Central Terminal (GCT) between 5:30 AM - 10 AM, Monday through Friday, while all other travel is considered off peak travel.

CTrail Shore Line East Peak Travel

For Title VI purposes, Shore Line East determines Peak travel for any station by the arrival of the first connecting train on the New Haven Line at GCT during the inbound AM peak travel the time period of 5:30 AM and when the last connecting train arrives at GCT on or before 10:00 AM. All other travel is designated off – peak travel.

On Time Performance (OTP)

On-time performance is a measure of runs completed as scheduled. OTP is a key measure for service reliability to its customers and is the standard the industry uses to compare existing services with other similar competitors. A train is recorded as on time if it arrives at its final destination within five minutes

and 59 seconds of its scheduled arrival. All trains operated should complete their assigned trips. Unless noted on the timetable, trains will not depart early from passenger stations where they are scheduled to receive passengers.

On Time Performance goal is 93% for the New Haven Line.

On Time Performance goal is 95% for Shore Line East.

While there is a 2% difference in the goal measures for the two services it is important to note that the larger New Haven Line is operated by Metro North Railroad and this performance measure goal is set by the Metropolitan Transit Authority, a quasi - public entity of the state of New York. Shore Line East service is contracted to Amtrak to operate the service and the performance measure goal is set by CTDOT.

Vehicle Headway

Vehicle Headway is a measure of how often a train is scheduled to stop at a particular station. Maximum Vehicle Headway is based upon the station's level of service (determined by ridership by station or average ridership within specific operating line segments). Factors considered when determining service frequency also include availability of equipment, track scheduling, and operating resources.

Figure 1: M8 E.M.U.



Maximum Vehicle Headway differs for peak, reverse peak, weekday off-peak, and weekends.

Maximum Vehicle Headway Guideline

The chart below presents the maximum vehicle headway by operating line segment and time of day for MNR NHL stations. Headway is determined by arrival time at Grand Central Terminal in New York City for the entire New Haven Line. It is the number of trains that stop at a station divided by the time difference between the first train to scheduled arrive at GCT within the time period (peak or off – peak)

and the last train to arrive at GCT within the designated time period. Metro – North Railroad has defined their peak operating period to be Monday through Friday between 5:30 AM and 10:00 AM.

Table 1: New Haven Line Headway

New Haven Line	Peak	Rev. Peak	Off-Peak	Weekend
Inner New Haven	20 minutes	30 minutes	60 minutes	60 minutes
Outer New Haven	25 minutes	30 minutes	60 minutes	60 minutes
New Canaan	30 minutes	60 minutes	60 minutes	60 minutes
Danbury Branch	45 minutes	60 minutes	120 minutes	120 minutes
Waterbury Branch	45 minutes	60 minutes	120 minutes	120 minutes

Table 2: Shore Line East Headways

Shore Line East	Peak	Rev. Peak	Off-Peak	Weekend
Line Segment				
New London	143 minutes	180+ minutes	180+ minutes	73 minutes
Old Saybrook	25 minutes	30 minutes	60 minutes	60 minutes
New Haven	30 minutes	60 minutes	60 minutes	60 minutes

Loading Guidelines

Loading standards are used to determine seating capacity, to assign equipment (e.g., number/type of railcars), and to make subsequent adjustments by lengthening or shortening trains. Because a primary method of controlling costs is to minimize surplus car-miles while providing a seat for every customer, The assignment of cars and length of trains will be adjusted in accordance with the below occupancy policies.

Train lengths are adjusted to conform to the loading standard using train-by- train ridership data, which is monitored throughout the year. Train lengths are modified to ensure that adequate seating is provided while controlling the total car-miles operated.

Table 3: Maximum Recommended Occupancy Policy

	Lengthening Trains If Occupancy Exceeds...	Shortening Trains If Occupancy (after reduction) Would Not Exceed...
AM Peak, PM Peak, Reverse Peak	95%	95%
Off-Peak Weekday	85%	85%
Weekend	75%	75%

Holiday/Special Event Adjustments: Adjustments to the regular equipment assignments are made to account for changes in travel patterns and demand on holidays and holiday weekends and other special events throughout the year. Load is determined by the maximum number of passengers on board the train at any one time divided by the total number of seats on the train.

Average Age of Fleet

Vehicles are assigned to trains based on required propulsion power (diesel or electric) for the route, individual train ridership and seating capacity, and maintenance and storage yard requirements.

Equipment Type	Book Count	Average Age	Unit Size	Unit Seating
M-2 EMU (NHL)	36	40	PAIR	A&B UNIT – 230/232
M-8 EMU (NHL)	275	6	PAIR	A&B UNIT – 110/101
ELECTRIC COACHES	311			
Bombardier Push/Pull Coach (NHL)	20	29	COACH	Cab 113, Tr. 131
Bombardier Push/Pull Coach (NHL)	20	25	COACH	Cab 113, Tr. 131
Bombardier Push/Pull Center Door Coach (NHL)	8	13	COACH	Cab 99, Trailer 115 Trailer w/ toilet 103
Mafersa Push/Pull Coach (SLE)	33	18.5	COACH	Cab 100, Tr. 109
PUSH-PULL COACHES	81			
TOTAL PASSENGER VEHICLES	392			

Equipment Type	Book Count	Average Age	Year Rebuilt
GP-40-2H Locomotive (SLE)	6	44	1996
P-32AC-DM Locomotive (NHL)	4	14	N/A
P-40 Locomotive (SLE)	8	23	N/A

P-40 Locomotive (SLE – ex-NJT)	4	23	N/A
BL20-GH Locomotive (NHL/Branch)	6	9	N/A
TOTAL PASSENGER DIESELS	28		

The age of the fleet in 2016 is listed in the table above.

Transit Amenities

Transit amenities are items of comfort and convenience made available to railroad customers.

Amenities available at train stations can include benches, waiting rooms, platform shelters, restrooms, vending machines, information kiosks, recycling/trash bins, public address (PA) speakers, visual information displays, escalators, elevators, and ramps. The station amenities provided are based on a station’s daily ridership, length of platform, and size of station, but may be limited or constrained by physical layout, available space, and utility infrastructure constraints (e.g., local commercial electric power availability). Stations are categorized into levels; stations in the highest ridership category receive the full range of amenities if available space allows.

Amenities onboard trains include heating and air conditioning, interior lighting, bathrooms, baggage racks, and public address systems. All trains regardless of car type (coaches or multiple-units) and method of propulsion (diesel or electric) are equipped with similar amenities.

Figure 3: Westbrook Station



Figure 2: New Haven Union Station



System Wide Service Policies

FTA guidance requires that the Connecticut Department of Transportation (CTDOT) adopt system-wide service policies for the distribution of transit amenities and vehicle assignment for each mode to ensure service design and operations practices do not result in discrimination on the basis of race, color, or national origin. Service policies differ from service standards in that they are not necessarily based on a quantitative threshold.

Transit amenities are described as follows by FTA Circular 4702.1B: Transit amenities refer to items of comfort, convenience, and safety that are available to the general riding public. Fixed-route transit providers must set a policy to ensure equitable distribution of transit amenities across the system. Transit providers may have different policies for the different modes of service that they provide. The

policy for transit amenities address how amenities are distributed within a transit system, and the manner of their distribution determines whether transit users have equal access to these amenities. FTA guidance requires CTDOT to set policy to ensure equitable distribution of transit amenities across the system. The following policies address how amenities are distributed within the transit system.

Generally, the installation of transit amenities along bus routes and in rail services is based upon several factors, i.e. the number of passenger boardings at stops or stations along the routes, transfer activity at designated stops, and proximity to major activity centers. CTDOT will strive to provide adequate amenities to meet the variable needs of its customers, and will review changes to activity as expressed by ridership figures and feedback from riders. This policy is not intended to impact funding decisions for transit amenities. Rather, this policy shall apply after CTDOT has decided to fund an amenity.

Transit amenities are distributed on a system-wide basis. Transit amenities include shelters, benches, trash receptacles, and other bus stop or rail and rapid transit station amenities such as electronic message signs. The location of transit amenities is determined by factors such as ridership, individual requests, staff recommendations, and other issues such as local control in the case of bus stop shelters which, to-date, are placed by municipalities and not the transit system.

Vehicle Assignment

Vehicle assignment is described as follows by FTA Circular 4702.1B: Vehicle assignment refers to the process by which transit vehicles are placed into service in depots and on routes throughout the transit provider's system.

Bus Assignment

The CTtransit Service Standards Guide notes that buses will be assigned to service without regard to race, color or national origin of riders or the communities they serve. Based upon the needs of the service (vehicle capacity needs, local roadway conditions, etc.) specific sub-fleets of buses are dedicated to commuter express, bus rapid transit, commuter connection or shuttle service (e.g. the Star Shuttle or railroad Commuter Connection shuttles) which require specific types or sizes of vehicles. Otherwise, within similar service styles, individual vehicles are not assigned to specific routes and circulate among the various routes in the system based upon operating constraints and equipment features. The exception to this would be that within the same type of service, such as local fixed-route in urban areas, buses with higher seating capacities are assigned to routes or individual bus trips with the highest historic customer demand.

CTtransit currently has five general types of buses in the fleet:

- 30-foot low-floor transit coaches
- 35-foot low-floor transit coaches
- 40-foot transit coaches
- 45-foot high-floor commuter coaches
- 60-foot articulated coaches

When CTtransit began operating articulated buses, these high-capacity vehicles were assigned to high-ridership routes or portions of routes where additional seating would alleviate overcrowding conditions. Largely these are routes that are defined in the CTDOT Title VI Plan as minority or low-

income routes already.

As replacement buses are purchased and placed into service, they are distributed among all routes where the older bus being replaced had previously been operated. On weekends and holidays, when bus requirements are lower, newer buses are used first before older equipment is dispatched.

All buses conform to Americans with Disabilities Act (ADA) requirements, including, but not limited to, kneeling features, audible/visual stop request, public address system and electronic destination signs. Destination signs are provided at the front of the bus above the windshield and are supplemented by a side sign adjacent to the front entrance door. A route identification sign is customarily provided on the rear of the bus when the bus design allows.

There are some differences in the amenities provided on each bus. All buses do now have, or will shortly have as final installations are completed, automatic bus stop announcements on board, and automated bus route identification announcements off-board. All buses will have automatic vehicle location equipment which will allow each bus location to be tracked and can provide real-time information to customers on next bus arrivals.

There is only one situation where amenities vary by bus type and service type. Commuter coaches on longer-distance multi-zone routes have cushioned seats and USB charging ports and Wi-Fi. CTDOT installed these amenities due to the trip lengths and the premium fares charged.

Data on vehicle assignment is analyzed as part of the monitoring for the Title VI program to compare the average vehicle age by route on routes that serve minority areas with the average vehicle age on routes that serve nonminority areas.

If the data demonstrates a disparity based on vehicle age for vehicle assignments on routes serving minority areas, CTDOT will review the distribution of vehicles by facility and the manner in which vehicles are assigned within each facility to evaluate the source of the problem. Appropriate actions would then be taken to modify either the distribution of vehicles to facilities or the route assignments of vehicles within each facility. Follow-up monitoring would be conducted six months later to determine whether the disparity has been rectified.

Rail Vehicle Assignment

CTDOT operates two passenger rail services – the New Haven Line which is operated under contract by MTA Metro-North and Shore Line East which is operated under contract by Amtrak.

The New Haven Line operates mainline service with electric multiple-unit (EMU) cars operating under catenary. The New Haven Line also has three branch lines – the New Canaan Line which is also an electric fleet and the Danbury and Waterbury branch lines which operate diesel locomotive and push-pull passenger coaches.

The primary criterion in assigning transit vehicles is the type of propulsion power required for a particular branch or line segment. Diesel locomotive-hauled coaches are used on non-electrified territory including the Danbury Branch and Waterbury Branch on MNR and on Shore Line East. The EMU vehicles are used on electrified territory (all remaining lines/branches). Where a train operates

over electrified and non- electrified territory, diesel locomotive hauled coaches must be assigned.

All coaches and EMUs have similar amenities including air conditioning, rest rooms, and décor, which provide the same level of customer comfort and convenience. Vehicles are assigned as required, with seating capacity and maintenance cycles driving the assignments. Cars are not assigned to specific routes or branches within electric or diesel territory, but are cycled from line/branch to line/branch to achieve optimum car utilization efficiency. Short-term rolling stock assignment plans are developed for deployment of railcars.

Vehicles are assigned to trains based on the required propulsion power (diesel or electric) for the route, individual train ridership and seating capacity, and maintenance and storage yard requirements, not age. However, the vast majority of the electric fleet on the New Haven Line is new within the past five years. Mainline trains all serve the same service area, there is no difference in the quality of the railcar that is dispatched for any given train consist.

Shore Line East operates a diesel fleet and push-pull passenger coaches of similarly aged equipment on a single line. Since all trains serve largely the same service area, there is no opportunity for dispatching substantially differently aged equipment to serve any population segment.

Given the different operating environments of the two different rail services, the equipment is generally not interchangeable.

In Connecticut, diesel and electric powered trains are operated on the NHL and SLE rail services. The primary criterion in assigning transit vehicles is the type of propulsion power required for a particular branch or line segment. Diesel locomotive-hauled coaches are used on non-electrified territory including the Danbury Branch and Waterbury Branch on MNR and on Shore Line East. Electric Multiple-Unit (EMU) vehicles are used on electrified territory (all remaining lines/branches). Where a train operates over a combination of electrified and non- electrified territory, diesel locomotive hauled coaches must be assigned.

All coaches and EMUs have similar amenities including air conditioning, rest rooms, and like decor which provide the same level of customer comfort and convenience. Vehicles are assigned as required, with seating capacity and maintenance cycles driving the assignments. Cars are not assigned to specific routes or branches within electric or diesel territory but are cycled from line/branch to line/branch to achieve optimum car utilization efficiency.

The following vehicles are assigned by service as follows:

M-8 EMU/M-2 EMU operate on the New Haven Main Line and the New Canaan Branch Line.

All Bombardier Push/Pull Coaches operate on the Danbury Branch and Waterbury Branch with limited Main Line use.

P-32AC-DM Diesel Locomotives operate on the Danbury Branch and Waterbury Branch Lines with limited Main Line use.

BL20-GH Diesel Locomotives operate on the Danbury Branch and Waterbury Branch Lines with limited Main Line use.

The Mafersa Push/Pull coaches operate on the Shore Line East and have limited operation on the New Haven Main Line.

GP-40-2H Diesel Locomotives operate on the Shore Line East and have limited operation on the New Haven Main Line.

All P-40 Diesel Locomotives operate on the Shore Line East and have limited operation on the New Haven Main Line.

Transit Amenities

Bus Stop Shelters: CTDOT and CTtransit do not own or maintain any of the on-street bus shelters along bus routes. The decision to install a shelter at any given bus stop is at the discretion of local municipalities. CTtransit works with regional agencies and individual towns to encourage shelter installations that meet policy guidelines and to encourage that shelters are cleaned and maintained, including snow removal, on a regular basis, however, it is ultimately the responsibility of the host municipality to maintain the shelters.

CTDOT does install and maintain shelters at park and ride lots and maintains bus stop signage on state roads and U.S.-numbered highways throughout the state.

CTDOT policy states that shelters are considered for installation based on the criteria shown in Table 11 of the CTtransit Service Standards guide:

Bus Shelter Priority Guide

Daily Customer Boardings at Location	Headway		
	30 Minutes or More	10 to 29 Minute	Less than 10 Minutes
300 or More	1	1	2
200 to 299	1	2	3
100 to 199	2	3	4
50 to 99	2	3	4
25 to 49	3	4	4

The priority guide generally supports the following:

- Stops served by routes with longer headways have priority over stops with shorter headways in order to provide protection for those customers with potentially longer wait times
- Stops with more activity have priority over stops with less activity, with all other factors being equal, in order to provide protection to a larger number of customers.

CTDOT in coordination with CTtransit, the Capitol Region Council of Governments and Greater Hartford Transit District has begun a pilot program to place bus stop shelters with advertising panels in towns in

the region. As the locations for system-owned shelters are selected; the placement standards to some degree will be influenced by the vendor, and satisfactory advertising locations. The aggregate of proposed locations will be analyzed for Title VI equity and to assure their placement is consistent with the distribution of minority Census tracts in the service area.

Benches and Trash Receptacles: At this time CTDOT does not place trash receptacles or benches at bus stops but does have such amenities at all fixed-guideway stops including CTfastrak stations and rail stations.

Electronic Signage: Electronic signage informing passengers of the predicted arrival of the next bus or train, or for relaying service status information can significantly improve the experience for customers. The current policy is to install electronic signage only at CTfastrak rapid transit stations and rail stations and multimodal terminals. If and when CTDOT is in a position to introduce a comprehensive, system-wide electronic signage program, new policies will be developed to ensure equitable siting.

Parking: At this point CTDOT provides parking only at Commuter Park and ride lots, and rail and rapid transit stations. These are locations where the customary method of access to the bus and rail system is by car. Parking is available at most rail and rapid transit stations. The stations where parking is not available are those where no land is available, or in areas where the customary means of access is by walking or by using other transit connections.

Rail Amenities: Amenities available at train stations can include benches, waiting rooms, platform shelters, restrooms, vending machines, information kiosks, recycling/trash bins, public address (PA) speakers, visual information displays, escalators, elevators, and ramps. The station amenities provided are based on a station's daily ridership, length of platform, and size of station; but may be limited or constrained by the physical layout, space available, and/or utility infrastructure constraints (e.g., local commercial electric power availability). Stations are categorized into levels; stations in the highest ridership category receive the full range of amenities if available and space allows. Amenities onboard trains include heating and air conditioning, interior lighting, bathrooms, baggage racks, and public address systems. All trains regardless of car type (coaches or multiple-units) and method of propulsion (diesel or electric) are equipped with similar amenities.

Demographic Service Area & Statewide Profile Maps and Charts

49 CFR Section 21.9(b) requires transit providers that operate 50 or more fixed route vehicles in peak service, and are located in a UZA of 200,000 or more in population, to collect and analyze racial and ethnic data. Service area maps were created of CTDOT's public transportation system (bus and rail). These maps include transit service areas, transit facilities, including transit route, fixed guideway alignment, and stations. The maps overlay Census tract data depicting minority populations with fixed transit facilities. The maps identify where the percentage of total minority population residing in a service area exceeds the average percentage of minority populations for the service area as a whole. The maps also identify low-income populations where the percentage of the total low-income population residing in a service area exceeds the average percentage of low-income populations for the service area as a whole. Maps identifying Limited English Proficient (LEP) populations have been developed for each service area and statewide. Maps are used to identify and analyze impacts to Title VI and low-income communities, and to insure that needs of LEP populations are considered and addressed.

The rail system mapping was compiled by first adding the various base layers including geographic boundary and highway system information. Rail system information was then added to the mapping and a 2.5 mile buffer was added around each of the stations to create a rail service area.

The bus system mapping was compiled with the same first layer as the rail maps and then various buffers were added depending on the type of route. Local bus routes were mapped with a quarter (1/4) mile buffer around the route, while a 2.5 mile buffer was established around express bus stops. Rural transit districts with deviated fixed route service were mapped with a three-quarter (3/4) mile buffer around the route, all other routes within the transit districts were mapped with a quarter mile buffer.

Elderly/Disabled Dial-A-Ride services, provided by rural transit districts, were mapped separately. In these maps, the service area was determined by the towns served.

In addition, 5310 vehicle grants were mapped separately. A statewide map was developed and towns with 5310 vehicles were plotted.

Demographic and socio-economic data layers were developed by using 2011-2015 American Community Survey (ACS) data. The data includes statewide and service-area based Limited English Proficiency (LEP) populations, minority populations, and poverty populations. Based on each bus and rail service area, maps were created to show the LEP and safe harbor populations within each service area, according to the census tract data. These maps depicted all LEP language groups that constitute 5% or 1000 persons, whichever is less, for the total populations within each bus or rail service area. Minority and low income maps were also created for each service area. These maps were plotted to highlight those census tracts where the percentage of the total poverty and minority populations residing in these areas exceed the average percentage for the service area as a whole.

Minority, Low-Income, LEP and Safe Harbor statewide maps were also created.

Surveys: Demographic Ridership and Travel Patterns

Bus and rail surveys were conducted during the reporting period to identify demographic information of bus and rail riders, as well as travel patterns. Below is a listing of the surveys conducted during the reporting period. A full copy of the surveys and results can be found on pages 87-359 of the CTDOT FTA Title VI Program Appendix.

Rail Surveys:

Shoreline East:

- 2014 Passenger Study
- 2016 Passenger Study

Metro-North Railroad:

- 2014 Customer Satisfaction Survey
- 2015 Customer Satisfaction Survey
- 2016 Customer Satisfaction Survey

Bus Surveys:

- Stamford Division Bus and Shuttle Survey
- CTfastrak "Before" Passenger Survey
- I-84 Hartford Rider On Board Survey

The FTA circular requires CTDOT to develop a demographic profile comparing minority riders and non-minority riders, and trips taken by minority riders and non-minority riders, as well as fare usage by fare type amongst minority users and low-income users. In an effort to collect this data, the CTDOT has incorporated demographic questions into its surveys. The 2017 Shore Line East Rail Passenger Study, 2016 New Haven Line Rail Customer Satisfaction Survey, and the CTDOT 2017 system-wide transit survey were used to develop this comparison.

Shore Line East Rail Customer Satisfaction Survey (CSS) 2017

CTDOT and CTrides contracted GreatBlue to conduct a Customer Satisfaction Survey (CSS) to learn about customer travel patterns, demographics, language preferences and other aspects of customer perception of service.

GreatBlue conducted the survey from May 5 through May 9, 2017 on board select SLE trains. 681 surveys were filled out by SLE riders.

CTDOT collects and analyzes ridership information which is used as part of the service monitoring for the four part analysis. This information, combined with census data, is used to help evaluate the provision of service in minority and low-income areas and to help determine if service changes are warranted and can also support evaluation of current service and of potential changes to service delivery.

Below are some highlights of the 2017 CSS:

Customer Satisfaction Surveys

<u>Hispanic Origin</u>	<u>%</u>
<u>Yes</u>	<u>6.6</u>
<u>No</u>	<u>93.4</u>
<u>Race/Ethnicity</u>	<u>%</u>
<u>White</u>	<u>86.6</u>
<u>Black or African American</u>	<u>5.5</u>
<u>American Indian or Alaska Native</u>	<u>0.7</u>
<u>Asian</u>	<u>6.2</u>
<u>Hawaiian</u>	<u>0.3</u>
<u>Indian Sub-Continent</u>	<u>0.7</u>
<u>2017 Household Income Range</u>	<u>%</u>
<u>Under \$12,500</u>	<u>5.0</u>
<u>\$12,500-\$24,999</u>	<u>3.1</u>
<u>\$25,000-\$37,499</u>	<u>4.8</u>
<u>\$37,500-\$49,999</u>	<u>8.2</u>
<u>\$50,000-\$74,999</u>	<u>13.9</u>
<u>\$75,000-\$99,999</u>	<u>12.5</u>
<u>\$100,000-\$149,999</u>	<u>18.9</u>
<u>\$150,000-\$199,999</u>	<u>11.5</u>
<u>\$200,000-\$299,999</u>	<u>9.8</u>
<u>\$300,000 or more</u>	<u>12.2</u>
<u>Median Household Income Range</u>	<u>\$100k - \$149k</u>

Source : 2017 SLE Customer Satisfaction Survey

People ride SLE for many reasons, the table below breaks down the responses to question 2. What is the purpose of your trip today?

Demographics	Total	Non-Minority	Minority	% Non-Minority	% Minority
Daily Commuters	364	282	82	77.5%	22.5%
Commute to school	31	21	10	67.7%	32.3%

Business	30	24	6	80.0%	20.0%
Social	205	160	45	78.0%	22.0%
Medical Appointment	2	2	0	100.00%	0.00%
Visit 2nd home	6	3	3	50.00%	50.00%
Returning Home	7	6	1	85.71%	14.29%
Transfer to another train	1	0	1	0.00%	100.00%
going to airport	1	0	1	0.00%	100.00%
Transit to NYC	1	1	0	100.00%	0.00%

The following table lists total boardings/alightings by station:

Station Use				
Station	Boarding	%	Alighting	%
New London	56	8.4%	38	5.7%
Old Saybrook	167	25.0%	68	10.2%
Westbrook	49	7.3%	26	3.9%
Clinton	34	5.1%	27	4.0%
Madison	64	9.6%	43	6.4%
Guilford	68	10.2%	53	7.9%
Branford	33	4.9%	30	4.5%
State Street	46	6.9%	104	15.6%
Union Station	138	20.7%	260	39.0%
West Haven	2	0.3%	6	0.9%
Bridgeport	2	0.3%	3	0.4%
Stamford	8	1.2%	9	1.3%
Total answered	667	100.0%	667	100.0%

At least 26.6 % of SLE riders surveyed were continuing on to NYC and at least 27.2 % of all SLE respondents had an ending destination in another state.

Below are the Station Boarding/Alighting demographics by minority status:

Shore Line East	Boarding's				
Station	Total	Non-Minority	NM %	Minority	M %
New London	56	30	53.6%	26	46.4%
Old Saybrook	162	132	81.5%	30	18.5%
Westbrook	46	39	84.8%	7	15.2%
Clinton	33	30	90.9%	3	9.1%
Madison	63	53	84.1%	10	15.9%
Guilford	61	55	90.2%	6	9.8%
Branford	29	26	89.7%	3	10.3%
State Street	43	35	81.4%	8	18.6%
Union Station	122	96	78.7%	26	21.3%
West Haven	3	2	66.7%	1	33.3%
Bridgeport	1	1	100.0%	0	0.0%
Stamford	8	8	100.0%	0	0.0%
Total answered	627	507	80.9%	120	19.1%
Shore Line East	Alighting's				
Station	Total	Non-Minority	NM %	Minority	M %
New London	30	18	60.0%	12	40.0%
Old Saybrook	62	55	88.7%	7	11.3%
Westbrook	22	20	90.9%	2	9.1%
Clinton	26	22	84.6%	4	15.4%
Madison	37	31	83.8%	6	16.2%

Guilford	44	38	86.4%	6	13.6%
Branford	25	24	96.0%	1	4.0%
State Street	94	85	90.4%	9	9.6%
Union Station	239	200	83.7%	39	16.3%
West Haven	6	6	100.0%	0	0.0%
Bridgeport	2	2	100.0%	0	0.0%
Stamford	8	6	75.0%	2	25.0%
Total answered	595	507	85.2%	88	14.8%

To determine low income populations the survey asked respondents what their annual household income was. CTDOT used a benchmark income of under \$25,000/year to designate as a low income household. The data was sorted, counted and analyzed by Low Income respondents by station. Then the total of non-minority low income respondents at the station was subtracted from the total low income respondents at the station to determine the minority low income respondents at the station. The table below shows the results for each SLE station boarded:

SLE	Total	Low Income	% LI	Non-Minority Low Income	% Non-Minority Low Income	Minority Low Income	% Minority
New London	44	11	25.0%	5	45.5%	6	54.5%
Old Saybrook	150	11	7.3%	5	45.5%	6	54.5%
Westbrook	41	2	4.9%	2	100.0%	0	0.0%
Clinton	31	3	9.7%	2	66.7%	1	33.3%
Madison	47	3	6.4%	2	66.7%	1	33.3%
Guilford	58	3	5.2%	3	100.0%	0	0.0%
Branford	26	2	7.7%	2	100.0%	0	0.0%
State Street	41	1	2.4%	0	0.0%	1	100.0%
Union Station	123	10	8.1%	4	40.0%	6	60.0%

West Haven	2	1	50.0%	1	100.0%	0	0.0%
Bridgeport	1	0	0.0%	0	0.0%	0	0.0%
Stamford	6	0	0.0%	0	0.0%	0	0.0%
Total answered	570	47	8.2%	26	55.3%	21	44.7%

The survey included five days of data collection in order to sample riders of each AM train scheduled on Weekdays and Weekends. Data representing the total sample is weighted to ensure proportionate representation of Weekday and Weekend riders.

The survey cover had a phone number to call to be interviewed in Spanish. There were 681 surveys collected. Of these survey responses, no one called in for a Spanish translation.

The table below is a comparison of minority/non-minority ridership by fare type purchased;

Ticket type	Non-Minority	% Non-Minority	Minority	% Minority	Total
One Way	175	72.3%	67	27.7%	242
10 trip	61	75.3%	20	24.7%	81
Discounted One Way	56	77.8%	16	22.2%	72
Discounted 10	9	90.0%	1	10.0%	10
Monthly	136	80.5%	33	19.5%	169
Monthly + bus	24	85.7%	4	14.3%	28
Uni One Way	12	85.7%	2	14.3%	14
Uni Weekly	0	0.0%	1	100.0%	1
Uni Monthly	26	78.8%	7	21.2%	33

The table below is a comparison of low income/non-low income ridership by fare type purchased;

Fare Type	Low Income	% Low Income	Non-LI	% Non-LI
One way	23	3.5%	219	33.7%
10 Trip	3	0.5%	78	12.0%
Senior one way	6	0.9%	66	10.2%
Senior 10 trip	2	0.3%	8	1.2%
Monthly	4	0.6%	165	25.4%
Monthly +	4	0.6%	24	3.7%

Unirail One Way	0	0.0%	14	2.2%
Uni Weekly	1	0.2%	0	0.0%
Uni Monthly	1	0.2%	32	4.9%
Other	0	0.0%	0	0.0%

The table below compares overall customer satisfaction levels by minority/non-minority status for the total answers received on Question 17, Overall, how satisfied are you overall with Shore Line East? :

Customer Satisfaction	Non-Minority	% Non-Min	Minority	% Min
Completely dissatisfied	4	0.6%	2	0.3%
Dissatisfied	16	2.4%	8	1.2%
Satisfied	233	35.2%	78	11.8%
Very Satisfied	258	39.0%	62	9.4%
Total	511	77.3%	150	22.7%

Below is the table comparing overall customer satisfaction levels by low income/non-low income for the total answers received on Question 17, Overall, how satisfied are you with Shore Line East?

Customer Satisfaction	Low Income	% LI	Non -LI	Non-LI%
Completely dissatisfied	1	0.2%	5	0.8%
Dissatisfied	1	0.2%	14	2.1%
Satisfied	11	1.7%	300	45.4%
Very Satisfied	33	5.0%	287	43.4%
Total	46	7.0%	615	93.0%

New Haven Line Analysis

MNR submits their monitoring analysis to FTA Region II using the survey methodology. The Department elected to review the MNR submission to FTA based upon the survey methodology and has determined that the survey had adequate coverage of the NHL to allow the Department to draw statistically correct assumptions about level and quality of service.

Below are the results of the 2016 Customer Satisfaction Survey and shows the analysis of rail service using multiple analytical techniques employed to monitor the quality of transit service between “minority” and “non-minority” areas (using customer based analyses), as well as “non - low income” and “low income” (as classified by Title VI definitions; using census tract and station-based analyses). The

source data for that analysis is from the customer surveys conducted by MNR using the responses from customers with Connecticut based trips.

Customer Satisfaction Surveys

Results of Title VI- Related Questions From the Metro-North 2016

New Haven Line Customer Satisfaction Survey:

Hispanic Origin

	<u>%</u>
<u>Yes</u>	<u>8.3</u>
<u>No</u>	<u>91.7</u>

Race/Ethnicity

	<u>%</u>
<u>White</u>	<u>79</u>
<u>Black or African American</u>	<u>4.7</u>
<u>American Indian or Alaska Native</u>	<u>7.3</u>
<u>Asian</u>	<u>.4</u>
<u>Other</u>	<u>4</u>

Household Size

	<u>%</u>
<u>1 person</u>	<u>12.8</u>
<u>2 people</u>	<u>33.9</u>
<u>3 people</u>	<u>18.1</u>
<u>4 people</u>	<u>21</u>
<u>5-6 people</u>	<u>13.4</u>
<u>7-8 people</u>	<u>0.004</u>
<u>9 or more people</u>	<u>0.003</u>

2016 Household Income Range

	<u>%</u>
<u>Under \$12,500</u>	<u>3.5</u>
<u>\$12,500-\$24,999</u>	<u>3.2</u>
<u>\$25,000-\$37,499</u>	<u>3.5</u>
<u>\$37,500-\$49,999</u>	<u>3.1</u>
<u>\$50,000-\$74,999</u>	<u>10.4</u>
<u>\$75,000-\$99,999</u>	<u>8.1</u>
<u>\$100,000-\$149,999</u>	<u>12.7</u>
<u>\$150,000-\$199,999</u>	<u>9.8</u>
<u>\$200,000-\$299,999</u>	<u>15.6</u>
<u>\$300,000 or more</u>	<u>30.3</u>
<u>Median Household Income Range</u>	<u>\$150k - \$199k</u>

Source : 2016 MNR Customer Satisfaction Survey

CTDOT used a travel frequency of 3-4 days per week on a New Haven Line train to define a commuter on the New Haven Line in the 2016 survey. 3-4 days per week or higher is a commuter. Anything else is not a commuter.

Below is a table describing the commuter demographics broken out by minority/non-minority status:

Commuter	Non-minority	% Non-Minority	Minority	% Minority	Frequency
66	34	51.5%	32	48.5%	6-7 days per week
558	425	76.2%	133	23.8%	5 days per week
145	119	82.1%	26	17.9%	3-4 days per week
769	578	75.2%	191	24.8%	Total Commuters

The table below describes discretionary riders by minority/non-minority status:

Discretionary	Non-minority	% Non-Minority	Minority	% Minority	Frequency
116	84	72.4%	32	27.6%	1-2 days per week
227	167	73.6%	60	26.4%	1-2 days a month
19	10	52.6%	9	47.4%	other
362	261	72.1%	101	27.9%	Total Discretionary

The table below is a demographic breakdown of home stations by minority/non-minority respondent status.

2016 New Haven Line

STATION	Total Riders	% Minority	Non-Minority	% Non-minority	Hispanic Origin	% Hispanic
NHV	100	20.0%	80	80.0%	7	7.0%
WHVN	16	31.3%	11	68.8%	2	12.5%
Milford	39	17.9%	32	82.1%	3	7.7%
Stratford	31	35.5%	20	64.5%	3	9.7%
Bridgeport	56	35.7%	36	64.3%	7	12.5%
Fairfield Metro	54	18.5%	44	81.5%	2	3.7%
Fairfield	71	11.3%	63	88.7%	6	8.5%

Southport	9	11.1%	8	88.9%	1	11.1%
Green's Farms	28	7.1%	26	92.9%	1	3.6%
Westport	50	10.0%	45	90.0%	1	2.0%
East Norwalk	21	9.5%	19	90.5%	0	0.0%
South Norwalk	62	22.6%	48	77.4%	6	9.7%
Rowayton	19	0.0%	19	100.0%	0	0.0%
Darien	44	9.1%	40	90.9%	3	6.8%
Noroton Heights	48	14.6%	41	85.4%	4	8.3%
Stamford	138	34.1%	91	65.9%	16	11.6%
Old Greenwich	53	17.0%	44	83.0%	4	7.5%
Riverside	31	29.0%	22	71.0%	4	12.9%
Cos Cob	23	21.7%	18	78.3%	1	4.3%
Greenwich	96	15.6%	81	84.4%	6	6.3%
New Haven - State Street	0	No data	0	No data	0	No data
New Canaan Branch						
Glenbrook	5	0.0%	5	100.0%	0	0.0%
Springdale	7	14.3%	6	85.7%	1	14.3%
Talmadge Hill	8	0.0%	8	100.0%	0	0.0%
New Canaan	10	10.0%	9	90.0%	0	0.0%
Danbury Branch						
Danbury	2	50.0%	1	50.0%	1	50.0%
Bethel	2	0.0%	2	100.0%	0	0.0%
Redding	0	No data	0	No data	0	No data
Branchville	0	No data	0	No data	0	No data
Cannondale	1	0.0%	1	100.0%	0	0.0%

Wilton	4	50.0%	2	50.0%	1	25.0%
Merritt 7	0	No data	0	No data	0	No data
Waterbury Branch						
Waterbury	1	100.0%	0	No data	1	No data
Naugatuck	0	No data	0	No data	0	No data
Beacon Falls	0	No data	0	No data	0	No data
Seymour	1	0.0%	1	100.0%	0	0.0%
Ansonia	0	No data	0	No data	0	No data
Derby - Shelton	0	No data	0	No data	0	No data
No Station Listed	109	29.4%	77	70.6%	14	12.8%
Respondents total	1139	21.0%	900	79.0%	95	8.3%

The table below describes the demographic breakdown of ticket types utilized by minority/non-minority status:

Ticket Type	Tickets	Non-Minority %	Minority %
Monthly	630	40.7%	12.2%
Week	19	0.6%	1.0%
10 trip	151	9.7%	3.0%
One Way	89	5.1%	2.4%
Round Trip	302	19.3%	6.0%
Uniticket MNR Bus	0	0.0%	0.0%
Unirail MNR SLE	0	0.0%	0.0%
Other	0	0.0%	0.0%

The table below is the demographic breakdown of ticket types by low income/non low income NHL riders from the 2016 MNR Customer Satisfaction survey:

Ticket Type	Total	Non LI	% Non LI	Low Income	% low Income
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Monthly	630	624	52.4%	6	0.5%
Week	19	19	1.6%	0	0.0%
10 Trip	151	148	12.4%	3	0.3%
One Way	89	74	6.2%	15	1.3%
Round Trip	302	272	22.8%	30	2.5%
Total	1191	1137	95.5%	54	4.5%

The table below is the demographic breakdown of overall customer satisfaction with Metro-North Train Service:

Customer Service	Non-Minority	%	Minority	%
Very Dissatisfied	21	2.5%	5	1.8%
Dissatisfied	74	8.8%	27	10.0%
Satisfied	485	57.6%	168	62.0%
Very Satisfied	262	31.1%	71	26.2%

Here is the same overall customer satisfaction question comparing Low Income/Non Low Income responses:

Customer Service	% Low Income	Low Income	% Non LI	Non LI
Very Dissatisfied	2.3%	26	1.8%	20
Dissatisfied	9.1%	101	7.4%	82
Satisfied	58.7%	653	38.4%	427
Very Satisfied	29.9%	333	72.1%	802

2017 System-wide Transit Rider Survey

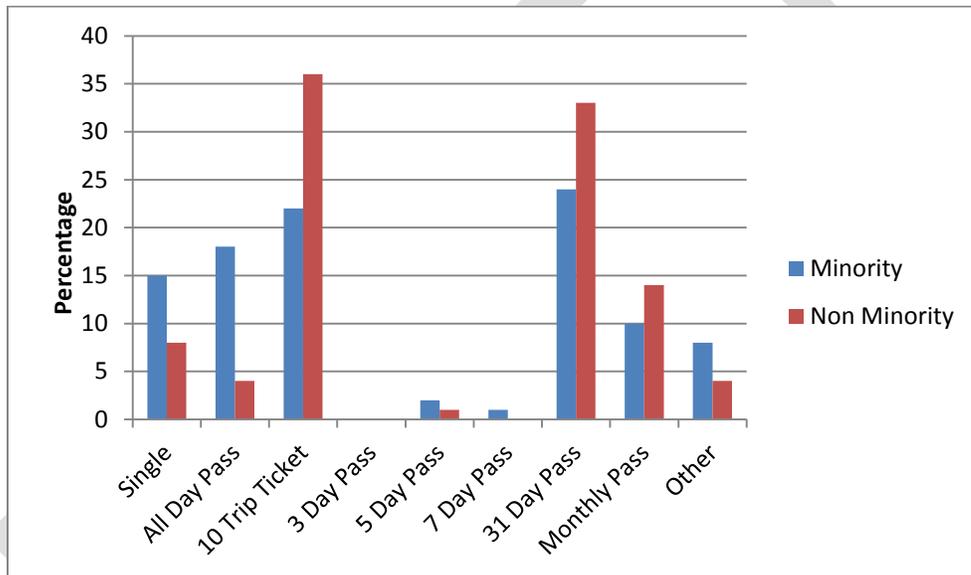
The CTDOT Office of Contract Compliance (OCC) conducted an electronic transit rider survey from June 22, 2017 – July 24, 2017. The survey was available to riders statewide and received 1064 responses. The OCC created survey cards, informing the public of the availability of the survey along with a QR code to access the survey, and distributed the survey card at stations in New Britain, Hartford, New Haven, Meriden, Wallingford, and Stamford. In addition, all riders who subscribe to CTtransit E-Alerts, or follow CTtransit on Facebook and Twitter, were made aware of the survey through email blasts and social media posts.

The OCC was able to compare minority and non-minority responses by filtering the responses by how the respondent answered “What race/ethnicity best describes you”. Respondents that answered American Indian or Alaskan Native, Asian/Pacific Islander, Black or African American, Hispanic, or Subcontinent Asian, were, for the purpose of this comparison, considered minority. Respondents who answered, White/Caucasian were considered non-minority. The OCC was able to compare low income and non-low income responses by how the respondent answered, “What is your approximate household income”. For purposes of this survey, respondents who answered less than \$30,000.00 were considered low income.

Below are some of the highlights from the survey.

1.) Fare Usage by Fare Type

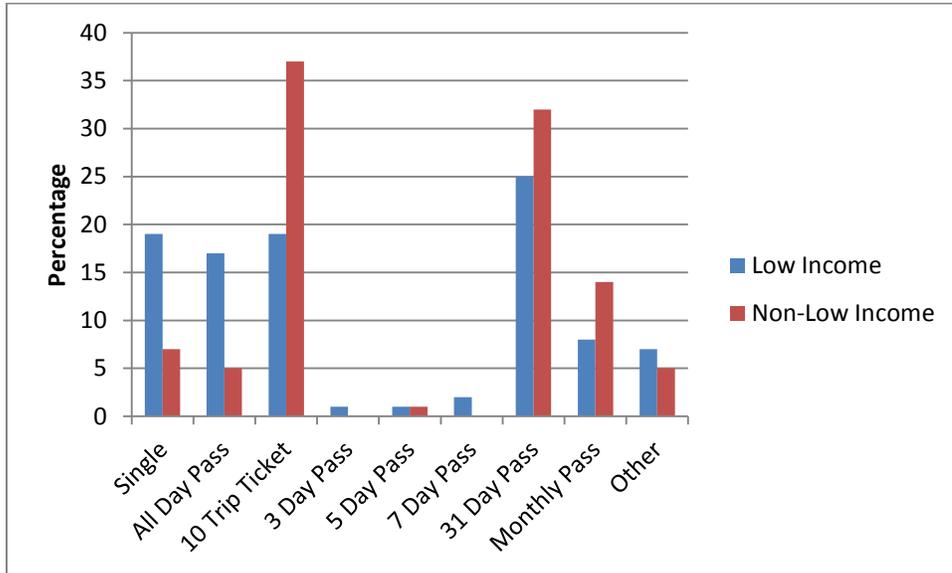
Minority and Non-Minority Comparison



	Minority	Non-Minority
Single	15%	8%
All Day Pass	18%	4%
10 Trip Ticket	22%	36%
3 Day Pass	0%	0%
5 Day Pass	2%	1%
7 Day Pass	1%	0%
31 Day Pass	24%	33%

Monthly Pass	10%	14%
Other	8%	4%

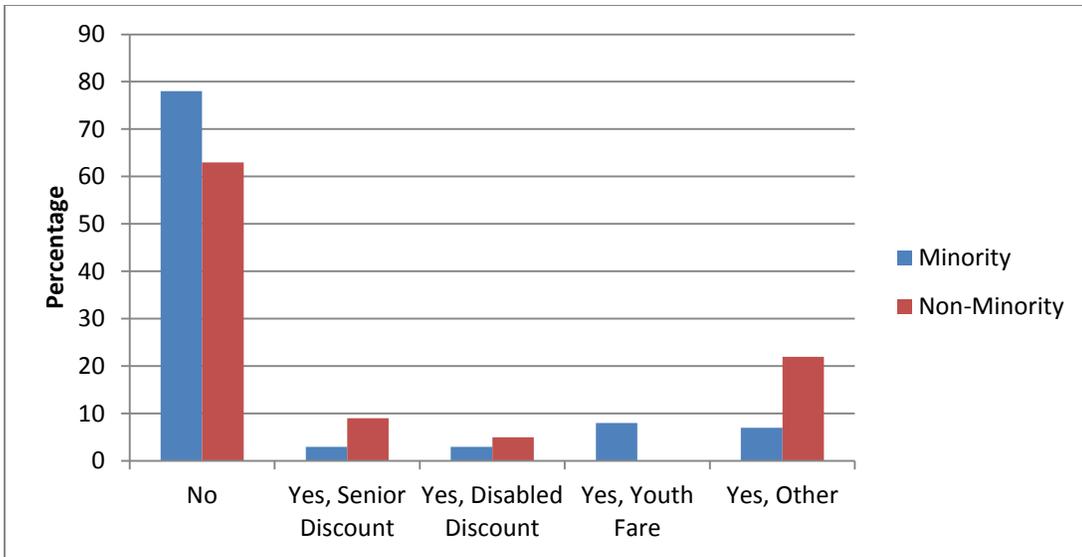
Low Income and Non Low Income Comparison



	Low Income	Non-Low Income
Single	19%	7%
All Day Pass	17%	5%
10 Trip Ticket	19%	37%
3 Day Pass	1%	0%
5 Day Pass	1%	1%
7 Day Pass	2%	0%
31 Day Pass	25%	32%
Monthly Pass	8%	14%
Other	7%	5%

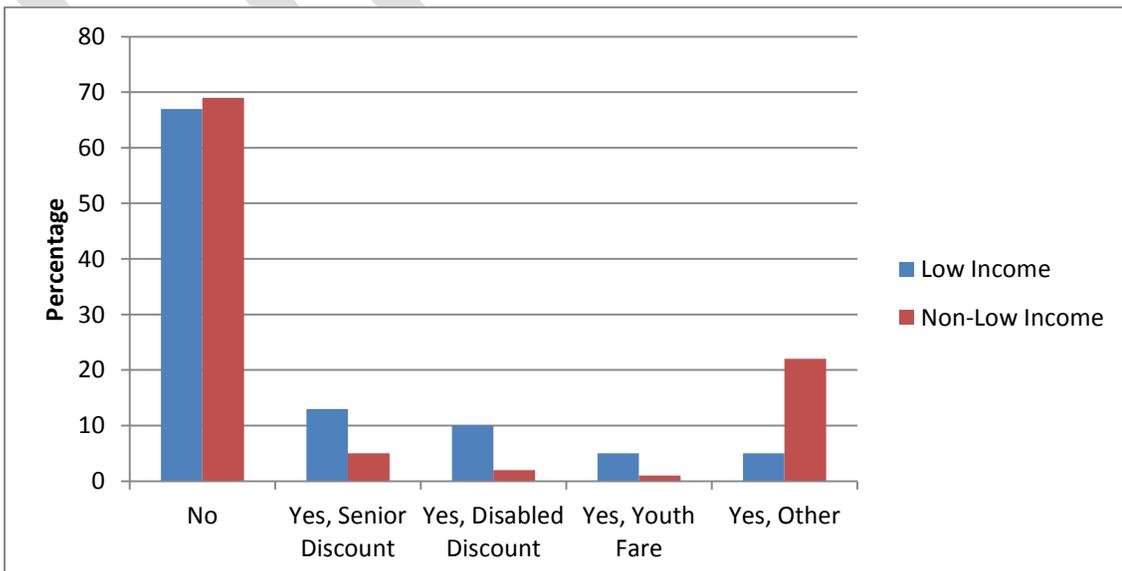
2.) Reduced Fare:

Minority and Non-Minority Comparison



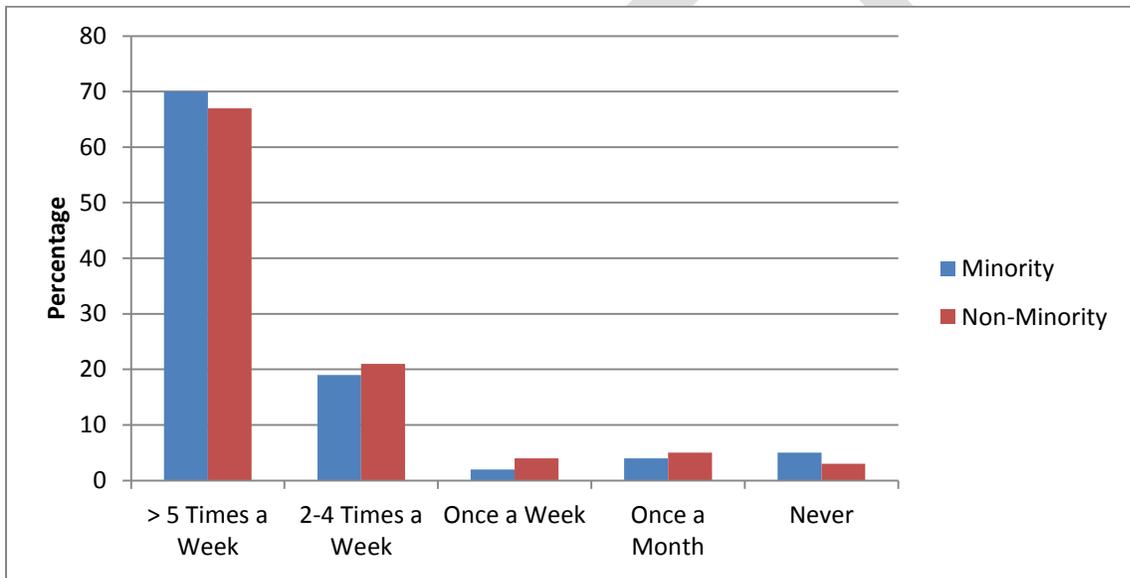
	Minority	Non-Minority
No	78	63
Yes, Senior Discount	3	9
Yes, Disabled Discount	3	5
Yes, Youth Fare	8	0
Yes, Other	7	22

Low Income and Non Low Income Comparison

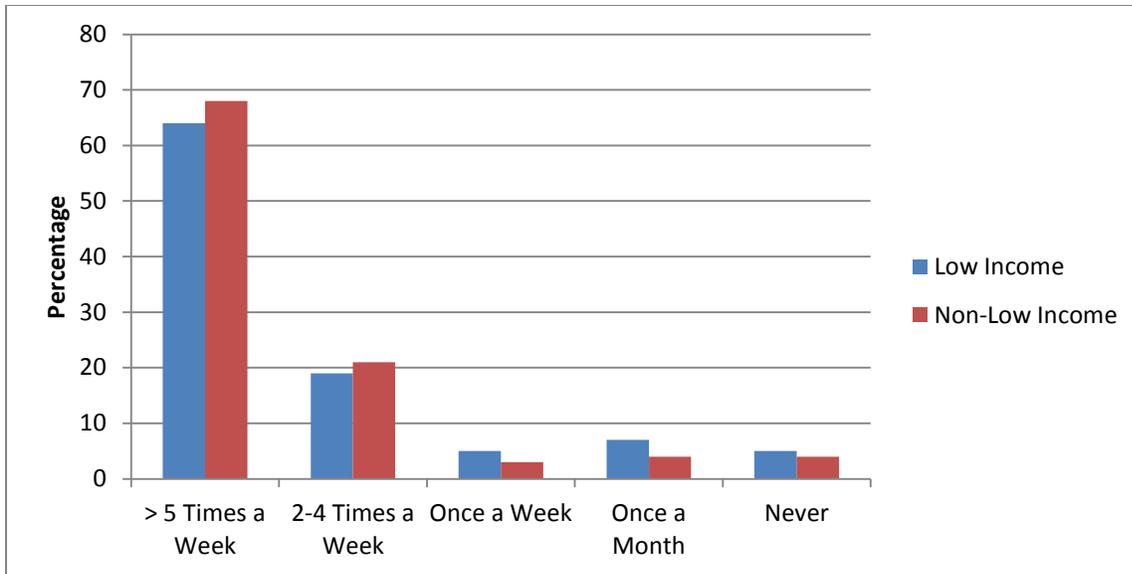


	Low Income	Non-Low Income
No	67	69
Yes, Senior Discount	13	5
Yes, Disabled Discount	10	2
Yes, Youth Fare	5	1
Yes, Other	5	22

3.) Frequency of Use:

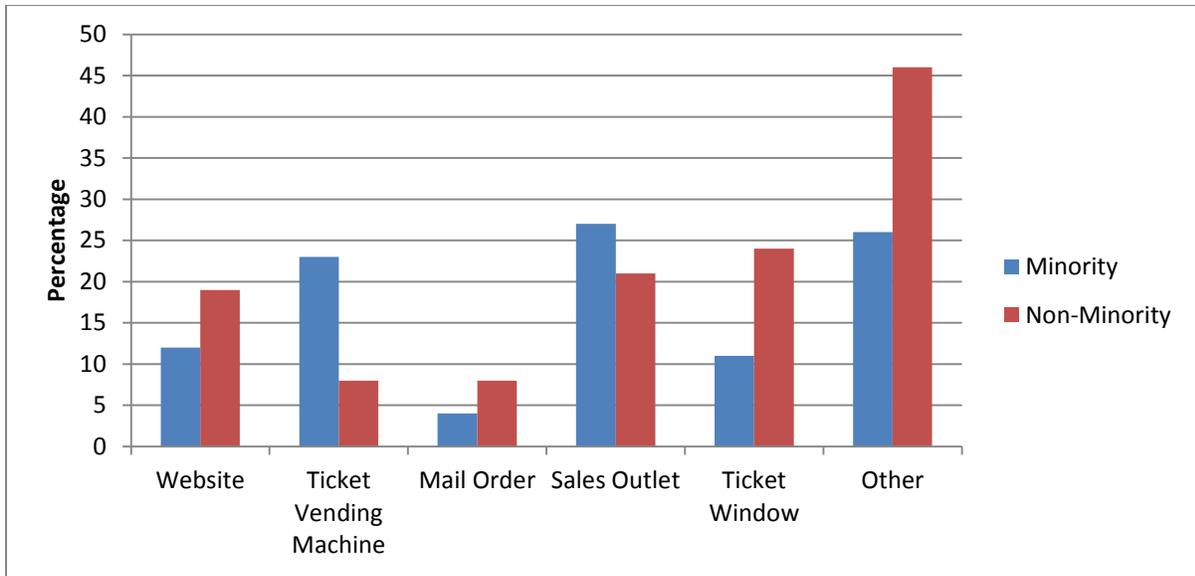


	Minority	Non-Minority
> 5 Times a Week	70	67
2-4 Times a Week	19	21
Once a Week	2	4
Once a Month	4	5
Never	5	3

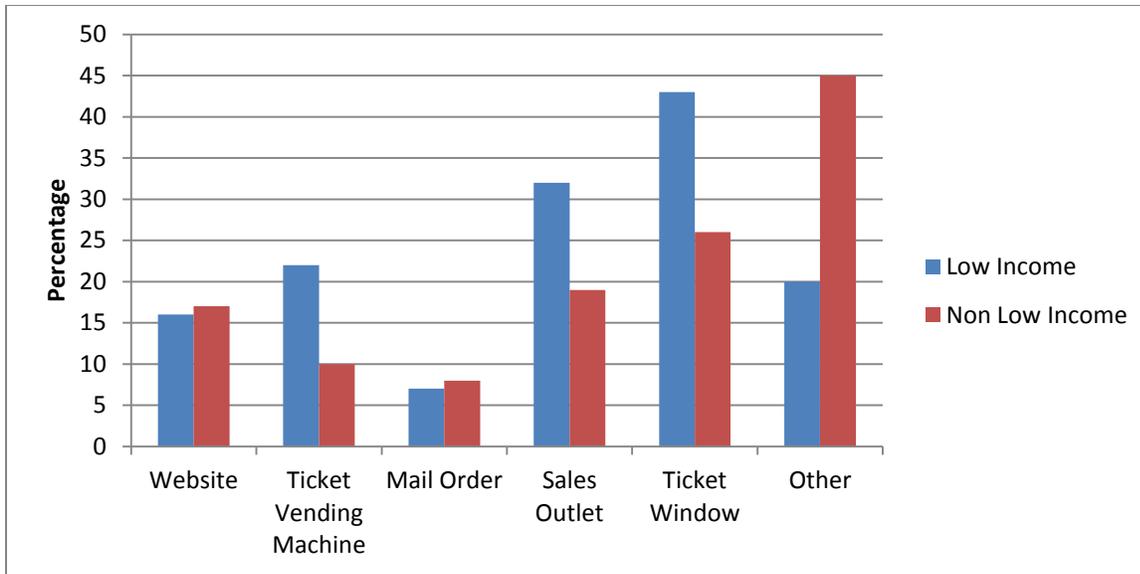


	Low Income	Non-Low Income
> 5 Times a Week	64	68
2-4 Times a Week	19	21
Once a Week	5	3
Once a Month	7	4
Never	5	4

4.) Ticket/Passes Purchase Location:



	Minority	Non-Minority
Website	12	19
Ticket Vending Machine	23	8
Mail Order	4	8
Sales Outlet	27	21
Ticket Window	11	24
Other	26	46



	Low Income	Non Low Income
Website	16	17
Ticket Vending Machine	22	10
Mail Order	7	8
Sales Outlet	32	19
Ticket Window	43	26
Other	20	45

2016 Rail Service Monitoring Analysis:

Background

FTA requires transit providers that operate 50 or more fixed route vehicles in peak service and are located in urbanized areas (UZA) of 200,000 or more people, or that otherwise meet the threshold defined in Chapter IV, to monitor their service standards and policies. Service standards and policies provide the framework for monitoring and assessment of service to compare service provided in areas with a percentage of minority population that exceeds the percentage of minority population in the service area to service provided in areas with a percentage of minority populations that is below the percentage of minority population in the service area.

Inventory of Services

The commuter rail network in Connecticut includes the New Haven Line (NHL) and Shore Line East (SLE) services. The NHL is a commuter rail service, owned by Connecticut, which operates between New Haven, Connecticut, and Grand Central Terminal in New York City. The service is operated for the Department through an agreement with MTA-Metro North Railroad, a direct recipient of FTA funds, who also prepares their own Title VI Plan and reports to FTA Region II. The NHL is primarily a four-track main line railroad and includes the Main Line and three branch lines. The NHL includes 20 Main Line stations in Connecticut, all of them in the New Haven or Bridgeport-Stamford urbanized area. The New Haven State Street and New Haven Union Stations are considered to be a single station as they are within 0.6 of a mile from each other. The Waterbury Branch Line operates between Waterbury and Devon (Milford) and has six stations, four of them in the New Haven urbanized area. The Danbury Branch Line operates between Danbury and Norwalk and has seven stations, four of them within the Bridgeport-Stamford urbanized area. The New Canaan Branch Line operates between New Canaan and Stamford and has four stations, all of them within the Bridgeport-Stamford urbanized area.

Shore Line East is a commuter rail service between New London and New Haven that is owned by Connecticut and operated by Amtrak under a service agreement with the Department. The SLE service consists of 34 daily weekday trains as well as through service to Bridgeport and Stamford on the NHL. There are nine stations on SLE, all of them within the extended New Haven urbanized area or the New London urbanized area.

The Metro North/CTDOT relationship on the New Haven Line

The Amended and Restated Agreement (ARSA)

The New York, New Haven and Hartford Railroad operated the New Haven Line until it merged with the Penn Central Transportation Company (Penn Central) in 1969 and subsequently entered a formal service agreement with both the New York Metropolitan Transit Authority (MTA) and the Connecticut

Transportation Authority (the predecessor to CTDOT) wherein Penn Central and its successor Conrail operated the service while MTA and CTDOT equally funded the New Haven Line deficit.

On December 31, 1982 Congress enacted the Northeast Rail Service Act and relieved Conrail of the obligation to operate the NHL. Accordingly, MTA and CTDOT entered a new agreement (the Interim Service Agreement) calling for the operation of the NHL by MTA Metro North Railroad. The financial responsibility and the allocation of net operating deficit or profit and service capital costs between MTA and CTDOT were determined through arbitration as seen in the table below;

CTDOT	Deficit/Profit Allocations of	Metro-North
56.29%	Main Line	43.71%
100%	Branch Lines	0%
53%	Grand Central Terminal	47%

These allocations were renegotiated in September 1998 through an arbitration process to the current allocation proportions are listed in the table below:

CTDOT	Deficit/Profit Allocations of	Metro-North
65%	Main Line	35%
100%	Branch Lines	0%
54.3%	Grand Central Terminal	45.7%

The Interim Agreement was finalized on June 21, 1985 with the creation of the Amended and Restated Agreement (ARSA). The ARSA provides for automatic five year renewals. The present term runs from January 1, 2015 through December 31, 2019.

The New York Metropolitan Transportation Authority (MTA) and CTDOT own the New Haven Line, which is operated and controlled by Metro-North Railroad. CTDOT owns the Connecticut portion and MTA owns the New York portion of the New Haven Line.

Minority and Non-Minority Serving Stations

In accordance with existing CTDOT Title VI policy, an analysis was performed by CTDOT on all rail service area census tracts within and/or intersected by the transit buffer zone (a 2.5 mile radius around any rail station) to identify census tracts as minority serving or non-minority serving. All census tract information was extracted from the ACS 2015 Minority tables: HD01_VD01 and HD01_VD03. The total census tract population from the ACS table was then subtracted by the total non-Hispanic Caucasian population to determine the total minority population for each census tract. The total minority population of the tract was divided by the total population of the census tract to determine the minority percentage for each census tract. CTDOT compared the service area average of the entire transit system against the minority population of each census tract. When a tract within the service area has a minority population percentage exceeding the transit system average, it was identified as a minority serving tract. Then, if the total number of minority serving census tracts divided by the total number of census tracts in a station service area are equal to or higher than the FTA guidance of 33.33% of the station service area

then that station is deemed minority serving. If the ratio is below 33.33% the station is deemed non-minority serving.

The New Haven Main Line minority serving stations are: Riverside, Old Greenwich, Stamford, Noroton Heights, Fairfield Metro, Bridgeport, Stratford, West Haven, New Haven Union Station. New Haven Main Line low income serving stations are: Fairfield Metro, Fairfield, Stratford, Bridgeport, West Haven, New Haven Union Station. While Old Greenwich, and Riverside stations both meet the definition for low income stations under the methodology applied, the 2016 Metro-North Customer Satisfaction Survey does not support a low income interpretation of the station ridership reflected by a strict census tract approach. There were no low income respondents out of the 36 that named Old Greenwich as their home station and only one low income respondent of the 21 that named Riverside as their home station. Of 78 respondents naming either station as their home station, 73 were heading into Grand Central Terminal as their destination. The station ridership is largely commuters traveling to and from work in New York City. It is also important to note that both station census tract income data puts the average low income population percentage for total population below the line average percentage.

The Danbury Line minority serving stations are Danbury, Bethel and Merritt 7. The low income serving stations are Danbury and Bethel.

The New Canaan Branch minority serving stations are Glenbrook and Springdale. The low income serving station is Glenbrook.

The Waterbury Branch Line minority serving stations is Waterbury. The low income serving station are Waterbury and Ansonia.

Shore Line east minority serving stations are New London, New Haven State Street/Union Station. Shore Line East low income serving stations are New London, and New Haven State Street/New Haven Union Station.

New Haven Rail Line Analysis

MNR submits their monitoring analysis to FTA Region II using the survey methodology. The Department elected to review the MNR submission to FTA based upon the survey methodology and has determined that the survey had adequate coverage of the NHL to allow the Department to draw statistically correct assumptions about level and quality of service.

Below are the results of the 2016 Customer Satisfaction Survey and shows the analysis of rail service using multiple analytical techniques employed to monitor the quality of transit service between “minority” and “non-minority” areas (using customer based analyses), as well as “non - low income” and “low income” (as classified by Title VI definitions; using census tract and station-based analyses). The source data for that analysis is from the customer surveys conducted by MNR using the responses from customers with Connecticut based trips.

Service Availability

Service Availability is a general measure of the distribution of routes within the service areas. The commuter rail routes are distributed to provide rail service to commuters who reside within the service territory. These service territories are each defined as all census tracts that are within (and touching) 2.5 miles of the commuter rail stations. The service territory in Connecticut includes all MNR stations in Fairfield and New Haven Counties and the Shore Line East stations along the shore line to New London. For purposes of conducting a Title VI analysis of service availability the total miles of the service area will compare the percentage of minority and non-minority tracts that lay within the service area and the percentage of the total miles within the service area of 'dense' (greater than 5,000 people per square mile) census tracts covered by the service area.

System	Designation	Total Miles	Service Area Miles	% Service Area coverage
New Haven Line	Minority Tracts	942	871	92.41%
	Non-Minority Tracts	204	198	97.21%

Conclusion –

For Service Availability it was concluded that there is no disparate impact or disproportionate burden for the New Haven Line service. The percentage of service area coverage is within the 15% CTDOT Title VI service disparate impact threshold for minority census tracts in the service area in comparison with non-minority census tracts.

On Time Performance

A train is recorded as on time if it arrives at its final destination within five minutes and 59 seconds of its scheduled arrival. On Time Performance for the New Haven Line for the three years was 90.59% overall and below the stated goal of 93.00%. The new Haven Main Line OTP was 89.78% for non-minority stations and 90.46% for minority stations. The New Canaan Branch Line OTP was 92.26%, the Danbury Branch was 89.86% and the Waterbury Branch was 92.01%.

New Haven Main Line Station OTP 2014-2016

Station	Street Address	OTP
Stamford	30 South State St Stamford	91.3%
Old Greenwich	1 Sound Beach Ave Old Greenwich	92.7%
Riverside	1 Riverside Ave	92.7%
Cos Cob	1 Cos Cob Ave	92.7%
Greenwich	20 Railroad Ave	91.8%
Noroton	325 Heights Road Darien	90.8%
Darien	33 West Ave.	89.3%
Rowayton	300 Rowayton Ave Norwalk	90.6%
South Norwalk	29 Monroe St.	89.9%

East Norwalk	281 East Ave	89.9%
Westport	1 Railroad Place	89.8%
Green's Farms	2 Post Office Lane Westport	84.7%
Southport	400 Center St	90.5%
Fairfield	165 Unquowa Rd	89.3%
Fairfield Metro	61 Constant Comment Way	89.3%
Bridgeport	525 Water Street	89.7%
Stratford	2480 main st	89.2%
Milford	1 railroad ave	89.2%
West Haven	20 Railroad ave	89.2%
New Haven US	50 Union ave	89.2%

Danbury Branch Station OTP 2014-2016

Danbury	1 patriot drive	89.9%
Bethel	13 Durant Ave	89.9%
Redding	3 long ridge road	89.9%
Branchville	787 branchville rd ridgefield	89.9%
Cannondale	22 cannon rd wilton	89.9%
Wilton	7 station road	89.9%
Merritt 7	1 glover ave Norwalk	89.9%

New Canaan Branch Station OTP 2014-2016

Glenbrook	502 glenbrook rd stamford	92.3%
Springdale	886 hope st stamford	92.3%
Talmadge Hill	1 talmadge hill rd new canaan	92.3%
New Canaan	198 elm st	92.3%

Waterbury Branch Station OTP 2014-2016

Waterbury	333 meadow st	92.0%
Naugatuck	195 water st	92.0%
Beacon Falls	1 railroad ave	92.0%
Seymour	1 main st	92.0%
Ansonia	40 w main st	92.0%
Derby Shelton	1 main st derby	92.0%

The Main Line OTP for Low Income population station service areas was 90.19% and the non-low income population service area stations had an OTP of 90.31%. While this was higher than the low income stations a t-test was performed and the results are not statistically significant.

Demographic	Mean	Variance
Low Income	90.31	4.2312
Non Low Income	89.58	0.3958
t-statistic	0.8383	
t-critical	2.101	
Statistically significant?	No	

Conclusion – There is no finding of a disparate impact or disproportionate burden for On Time Performance for the New Haven Line. While the Low Income service area population stations have a slightly lower OTP than the line as a whole it is not statistically significant. A t-test showed that there was no significant difference at the $p < .005$ level. It is interesting to note that the farther east one goes from GCT the worse the OTP gets due to the interconnected nature of rail travel. Looking at the three main stations of Stamford, Bridgeport and New Haven Union Station we can see the corresponding OTP of 91.31%, 89.72%, and 89.22% respectively, demonstrating that the farther out you travel the likelier an incident will affect a train serving a particular station. Of the six low income stations on the main line, five of the stations (Fairfield Metro, Bridgeport, Stratford, West Haven, and New Haven) are five of the six stations at the eastern end of the line. Only Milford station is not a low income station at this eastern end of the line and the OTP at Milford station is 89.2%.

For the New Canaan Branch Line OTP is 92.3% for Minority stations and 92.3% for Non-minority stations and 92.3% for Low Income stations and 92.3% for Non-low Income stations. Since the measures are equal there is no finding of disparate impact or disproportionate burden.

For the Danbury Branch Line OTP is 89.9% for Minority stations and 89.9% for Non-minority stations and 89.9% for Low Income stations and 89.9% for Non-low Income stations. Since the measures are equal there is no finding of disparate impact or disproportionate burden.

For the Waterbury Branch Line OTP is 92.0% for Minority stations and 92.0% for Non-minority stations and 92.0% for Low Income stations and 92.0% for Non-low Income stations. Since the measures are equal there is no finding of disparate impact or disproportionate burden.

Headway

Metro North determines Headway for any station for the Inbound AM peak travel the time between the first train scheduled to arrive at Grand Central Terminal (GCT) between the hours of 5:29 AM and the last train that arrives at GCT on or before 10:00 AM divided by the number of trains that stop at a particular station. All other travel is designated off – peak travel. The off – peak travel headway is the time between the first train that arrives at GCT after 10:00 AM and the last train that arrives at GCT on that days schedule divided by the number of trains that stop at that station.

Peak Headway on the NHL in Minutes (2014-2016)

Station	May, 2014	November, 2014	April, 2015	October, 2015	April, 2016	October, 2016
New Haven-State St.	120	120	120	120	120	120
New Haven	15	15	15	15	15	15
West Haven	15	15	15	15	15	15
Milford	17	17	17	17	17	17
Stratford	16	16	17	16	17	16
Bridgeport	11	11	13	11	13	11
Fairfield Metro	15	15	15	15	15	15
Fairfield	15	15	15	15	15	15
Southport	27	27	27	27	27	27
Green's Farms	27	27	27	27	27	27
Westport	18	18	18	18	18	18
East Norwalk	24	24	24	24	24	24
South Norwalk	12	11	11	11	11	11
Rowayton	30	30	30	30	30	30
Darien	20	20	20	20	20	20
Noroton Heights	24	24	24	24	24	24
Stamford	6	5	5	5	5	5
Old Greenwich	16	16	16	16	16	16
Riverside	16	16	16	16	16	16
Cos Cob	16	16	16	16	16	16
Greenwich	11	11	11	11	11	11

New Canaan Branch Peak Headway in Minutes (2014-2016)

Station	2014 S	2014 F	2015 S	2015 F	2016 S	2016 F
New Canaan	48	40	40	40	40	40
Talmadge Hill	48	40	40	40	40	40
Springdale	48	40	40	40	40	40
Glenbrook	48	40	40	40	40	40

Peak Danbury Branch Headway in Minutes (2014-2016)

Station	2014 S	2014 F	2015 S	2015 F	2016 S	2016 F
Danbury	41	41	41	41	41	41
Bethel	41	41	41	41	41	41

Redding	41	41	41	41	41	41
Branchville	41	41	41	41	41	41
Cannondale	41	41	41	41	41	41
Wilton	41	41	41	41	41	41
Merritt 7	41	41	41	41	41	41

Peak Waterbury Branch Headway in Minutes (2014-2016)

Station	2014 S	2014 F	2015 S	2015 F	2016 S	2016 F
Waterbury	32	32	32	32	32	32
Naugatuck	32	32	32	32	32	32
Beacon Falls	32	32	32	32	32	32
Seymour	32	32	32	32	32	32
Ansonia	32	32	32	32	32	32
Derby	32	32	32	32	32	32

OFF Peak NHL Headway in Minutes (2014-2016)

OFFPEAK HEADWAYS						
Station	May, 2014	November, 2014	April, 2015	October, 2015	April, 2016	October, 2016
New Haven-State St.	160	160	160	160	160	160
New Haven	42	37	37	37	37	37
West Haven	42	37	37	37	37	37
Milford	42	37	37	37	37	37
Stratford	42	37	37	37	37	37
Bridgeport	32	29	36	29	36	29
Fairfield Metro	40	36	36	36	36	36
Fairfield	40	36	36	36	36	36
Southport	53	53	53	53	53	53
Green's Farms	53	53	53	53	53	53
Westport	42	37	37	37	37	37
East Norwalk	53	53	53	53	53	53
South Norwalk	30	27	26	26	26	26
Rowayton	56	56	56	56	56	56
Darien	44	38	38	38	38	38
Noroton Heights	53	53	53	53	53	53
Stamford	14	13	13	13	13	13
Old Greenwich	33	33	33	33	33	33
Riverside	33	33	33	33	33	33

Cos Cob	33	33	33	33	33	33
Greenwich	25	25	25	25	25	25

OFF Peak New Canaan Branch Headway in Minutes (2014-2016)

Station	2014 S	2014 F	2015 S	2015 F	2016 S	2016 F
New Canaan	55	59	59	59	59	59
Talmadge Hill	55	59	59	59	59	59
Springdale	55	59	59	59	59	59
Glenbrook	55	59	59	59	59	59

OFF Peak Danbury Branch Headway in Minutes (2014-2016)

Station	2014 S	2014 F	2015 S	2015 F	2016 S	2016 F
Danbury	94	83	83	83	83	83
Bethel	94	83	83	83	83	83
Redding	94	83	83	83	83	83
Branchville	94	83	83	83	83	83
Cannondale	94	83	83	83	83	83
Wilton	94	83	83	83	83	83
Merritt 7	94	83	83	83	83	83

OFF Peak Waterbury Branch Headway in Minutes (2014-2016)

Station	2014 S	2014 F	2015 S	2015 F	2016 S	2016 F
Waterbury	130	130	130	130	130	130
Naugatuck	130	130	130	130	130	130
Beacon Falls	130	130	130	130	130	130
Seymour	130	130	130	130	130	130
Ansonia	130	130	130	130	130	130
Derby	130	130	130	130	130	130

Conclusion – For Headway it was concluded that there is no disparate impact for the New Haven Line service for peak travel. The Headway during the AM Peak travel period on the New Haven Main Line is 18 minutes, while the Minority stations have a headway of 16 minutes during this peak travel period. The Low Income stations have an average headway of 18 minutes for peak travel which equals the average. New Haven State Street Station is considered to be an extension of the New Haven Union Station due the close proximity of the two stations. The Branch Lines all have identical headways for each station on that line.

For Off peak travel Minority stations have an average headway of 36 minutes while the average of all the stations on the new haven main line have a headway of 38 minutes for off peak-travel. For Low Income the headway is slightly higher at 39 minutes over the average off-peak travel headway of 38 minutes but a t-test was performed and it is not a statistically significant difference between the low income average and the overall line average. The Branch Lines all have identical headways for each station on that line.

For reverse peak travel no disparate impact or disproportionate burden was found. The Low Income stations had an average headway of 26 minutes and the average of the New Haven main Line was 26 minutes. The Minority stations had an average headway of 24 minutes. The Branch Lines all have identical headways for each station on that line.

For weekend travel no disparate impact or disproportionate burden was found. The main line had an average headway of 41 minutes. Low Income stations on that line had average headways of 38 minutes and minority population stations had average headways of 36 minutes. The Branch Lines all have identical headways for each station on that line.

Load Factor

Metro North Railroad examines and adjusts the New Haven Line service schedule two times a year, one time in the spring and the other time in the fall. To determine if there is a disparate impact or disproportionate burden on the New Haven Line, CTDOT examined if Metro North adhered to the maximum loading guidelines set forth in the service standards. This is due to the ambiguity as to where a given train is at the maximum occupancy on any given trip (the train may be in New York at that point and would be covered by the MNR Title VI service monitoring). In the spring of 2014 three trains (1523, 1525, and 1570) met or exceeded the load factor guidelines and Metro North Railroad adjusted the schedule by adding 2 EMU's to train 1523 which lowered the load factors to within acceptable parameters and added a 6 consist train (1472) within 3 minutes of train 1570 in the fall schedule. This new train 1472 lowered 1570 load factor to acceptable levels. In fall 2014 Metro North had load factors exceeding the guidelines for 5 trains (1229, 1711, 1535, 1270, and 1472) and they addressed this by adding 1 passenger car to train 1229, adding 1 car to 1711, adding 1 car to 1535, adding 2 cars to 1270 and adding 2 cars to 1472 in the spring. In spring 2015 Metro North had 5 trains (1225, 1333, 1539, 1548, and 1552) exceed the loading guidelines. Metro North addressed this by adding 1 passenger car to train 1333, 1 car to 1539, 1 car to 1548, and 1 car to 1552 in the fall. In the fall of 2015 Metro North had 3 trains meet or exceed the loading guidelines (1225, 1429, and 1531) all three were at 95% load which is the maximum load guidance but does not require corrective action. In the spring of 2016 Metro North had 7 trains meet or exceed maximum loading guidelines (1225, 1327, 1333, 1431, 1433, 1535 and 1546). In fall 2016 Metro North addressed this by adding 1 car to 1225, adding 1 car to 1333, adding 1 car to 1433, adding 1 car to 1535, while 1327, 1431 were at the maximum allowed load factor of 95% and required no correction.

Conclusion – Metro North Railroad followed the Title VI Maximum Occupancy Policy set forth in the CTDOT Title VI Program in compliance with the Title VI policy.

New Facilities

There were no new facilities planned or constructed between 2014 through 2016.

Shore Line East Analysis

Service Availability

Service Availability is a general measure of the distribution of routes within the service areas. The commuter rail routes are distributed to provide rail service to commuters who reside within the service territory. These service territories are each defined as all census tracts that are within (and touching) 2.5 miles of the commuter rail stations. The service territory in Connecticut includes all MNR stations in Fairfield and New Haven Counties and the Shore Line East stations along the shore line to New London. For purposes of conducting a Title VI analysis of service availability the total miles of the service area will compare the percentage of minority and non-minority tracts that lay within the service area and the percentage of the total miles within the service area of 'dense' (greater than 5,000 people per square mile) census tracts covered by the service area.

System	Designation	Total Miles	Service Area Miles	% Service Area coverage
Shore Line East	Minority Tracts	704	663	94.21%
	Non-Minority Tracts	201	181	89.76%

Conclusion – For Service Availability it was concluded that there is no disparate impact or disproportionate burden for the Shore Line East service. The percentage of service area coverage is greater for minority census tracts in the service area than non-minority census tracts.

On Time Performance

The On Time Performance for the Shore Line East service for the years 2014 – 2016 was 91.7% overall, which is below the stated goal of 95%. Amtrak operates the SLE service and provides CTDOT with the OTP data monthly. The Shore Line East through trains to Bridgeport and Stamford are included in the New Haven Line analysis as the Shore Line East Amtrak crews turn over the train to Metro North crews at New Haven Union Station. While operating on the Shore Line East territory all trains stop at all stations with the exception of reverse travel at the Madison and Clinton stations due to physical infrastructure restrictions (the lack of a high platform on track 1 for each of these stations). Since every train stops at every station, the line has the same OTP at every station on that segment.

SLE Station	OTP
New London	91.7%
Old Saybrook	91.7%
Westbrook	91.7%

Clinton	91.7%
Madison	91.7%
Guilford	91.7%
Branford	91.7%
State Street	91.7%

Conclusion – CTDOT determined no findings of disparate impact or disproportionate burden for OTP on the Shore Line East service. The minority stations have an OTP of 91.7% and the non-minority stations have an OTP of 91.7%. The minority stations/non-minority and low income/non-low income stations have equal on time percentages.

Headway

Shore Line East determines Headway for any station by the arrival of the first connecting train on the New Haven Line at GCT during the Inbound AM peak travel the time period of 5:30 AM and when the last connecting train arrives at GCT on or before 10:00 AM divided by the number of trains that stop at that particular station. All other travel is designated off – peak travel. The off – peak travel headway is the time between the first train that arrives at GCT after 10:00 AM and the last train that arrives at GCT on that days schedule divided by the number of trains that stop at that station. The SLE through trains to Bridgeport and Stamford are included in the New Haven Line analysis.

The Headways are within the guidelines except for the Clinton and Madison stations during off peak travel times due to infrastructure limitations and the directional nature of Headway. It is important to note that in the reverse direction these stations match the rest of the line segment headways and both Madison and Clinton are Non-Minority, Non Low–Income stations.

On Shore Line East all reverse- peak trains stop at all stations and therefore have identical headways on that segment of the line.

On Shore Line East all weekend trains stop on all possible stations and therefore have identical headways on that segment of the line.

Station	Peak	Off Peak
New London	101	129
Old Saybrook	25	70
Westbrook	25	70
Clinton	25	194
Madison	25	194
Guilford	25	70
Branford	25	70
New Haven State	25	70

New Haven Union	25	70
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Conclusion – CTDOT determined no findings of a disparate impact or disproportionate burden for Headway on the Shore Line East service. The minority stations of the New London station equal 101 at peak and it is the sole station on the segment. The other segment the peak headway of minority stations is 25 minutes and the non-minority stations on this segment have headways of 25 minutes. All trains stop at each station every time the infrastructure limitations allow. Those infrastructure limitations affect the New London, Clinton and Madison stations.

Load Factor

Shore Line East train consists of either three or four passenger units which consist of 109 seat capacity Mafersa passenger coaches along with a single 100 seat capacity Mafersa cab car. The maximum number of passengers on board was divided by the total number of seats available to determine if Shore Line East was following the maximum loading guidelines for using the April statistics in 2014, 2015, and 2016. At no point did the average ridership reach the 95% requirement to add to the train consist. The highest load factor observed was 74.8% on train 1641 in 2015, well below the maximum occupancy guideline of 95%.

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Westbound						
Train	2014 riders	2014 Load	2015 riders	2015 Load	2016 riders	2016 Load
1621	88	27.7%	72	22.6%	70	22.0%
1627	111	34.9%	105	33.0%	97	30.5%
1633	197	61.9%	138	43.4%	134	42.1%
1641	227	71.4%	238	74.8%	218	68.6%
1645	135	42.5%	153	48.1%	162	50.9%
1649	72	22.6%	112	35.2%	121	38.1%
1651	81	25.5%	79	24.8%	79	24.8%
1659	41	12.9%	97	30.5%	119	37.4%
1667	33	10.4%	39	12.3%	40	12.6%
1671	42	13.2%	38	11.9%	43	13.5%
1675	21	6.6%	22	6.9%	42	13.2%
1681	41	12.9%	43	13.5%	15	4.7%
1687	33	10.4%	28	8.8%	29	9.1%
1691	42	13.2%	42	13.2%	43	13.5%
1695	33	10.4%	30	9.4%	29	9.1%
1697	28	8.8%	29	9.1%	30	9.4%
1699	25	7.9%	24	7.5%	23	7.2%
Eastbound						
1602	28	8.8%	25	7.9%	25	7.9%
1602	21	6.6%	25	7.9%	24	7.5%
1606	32	10.1%	27	8.5%	23	7.2%
1610	28	8.8%	28	8.8%	29	9.1%
1616	42	13.2%	41	12.9%	24	7.5%
1622	37	11.6%	65	20.4%	57	17.9%
1626	62	19.5%	35	11.0%	63	19.8%
1632	120	37.7%	102	32.1%	38	11.9%
1636	212	66.7%	209	65.7%	99	31.1%
1638	186	58.5%	181	56.9%	186	58.5%
1640	143	45.0%	125	39.3%	180	56.6%
1644	113	35.5%	101	31.8%	124	39.0%
1646	108	34.0%	94	29.6%	102	32.1%
1656	101	31.8%	102	32.1%	99	31.1%
1668	83	26.1%	76	23.9%	92	28.9%
1674	69	21.7%	56	17.6%	70	22.0%
1682	44	13.8%	46	14.5%	43	13.5%

Conclusion – CTDOT determined there was no disparate impact or disproportionate burden for maximum occupancy and passenger load. The overall highest load factor observed was 74.8% in 2015 and in order for a disparate impact or disproportionate burden to occur there must be overcrowding conditions aboard the trains.

New Facilities

There were no new facilities planned or constructed on the Shore Line East between 2014 through 2016.

Transit Amenities

Amenities available at train stations can include benches, waiting rooms, platform shelters, restrooms, vending machines, information kiosks, recycling/trash bins, public address (PA) speakers, visual information displays, escalators, elevators, and ramps. The station amenities provided are based on a station's daily ridership, length of platform, and size of station, but may be limited or constrained by physical layout, available space, and utility infrastructure constraints (e.g., local commercial electric power availability). Stations are categorized into levels; stations in the highest ridership category receive the full range of amenities if available space allows.

Amenities onboard trains include heating and air conditioning, interior lighting, bathrooms, baggage racks, and public address systems. All trains regardless of car type (coaches or multiple-units) and method of propulsion (diesel or electric) are equipped with similar amenities.

There were no changes in the Rail transit amenities between 2014 and 2016. There are escalators at the two largest train stations of Stamford and New Haven Union Station. These stations also have elevators, shops, some food vendors, and ticket offices.

Transit Service Monitoring

Introduction

This report presents the findings of the Title VI Service Monitoring conducted by t-HUB project team at University of Connecticut. This work provides an analysis of data for the evaluation of the equity of transit service. This document does not contain all the raw and processed datasets due to its excessive amount, but rather presents major findings and summaries associated with the Title VI Program guidelines by CTDOT.

Methodology

Hartford, New Haven bus systems, Shore Line East and CTDOT portion of Metro-North rail were analyzed to assess overall performance of these systems using the latest available spatial and demographic data. Detailed original and computed datasets are available upon request and are omitted from the current document due to their excessive volume.

Bus route performance is compared to established policies and standards associated with;

- the level of overall service (headways),
- service quality (load factors and on-time performance measures),
- distribution of amenities (age of fleet), and
- service accessibility by minority populations.

Data Description

In this report the transit systems of interest are the Hartford bus system, the New Haven bus system and Shore Line East and Metro-North rail divisions. The list of data sources that were utilized is presented in Table 1 and constitutes the latest data that are available. A large portion of original datasets are geographically defined features, such as bus stop and rail station locations, bus route configurations, and U.S. Census enumeration unit boundaries (census tracts).

Table 1. Used Data and Sources

Data Type	Agency/Source	Release
Demographic	U.S. Census Bureau	ACS 2011-2015
Bus Performance	CTtransit Real Time Data Archive	May-July, 2017
Stops/Routes/Stations (Spatial)	CTtransit GTFS Datasets	August, 2017
Metro-North Rail CTDOT Part (Spatial)	MTA Metro-North Railroad	2016
State Road Network Spatial Data	MAGIC at UConn Libraries/ U.S. Census Bureau	2010

Service Area Definition and Census Tract Classification

Demographic analysis focuses on identifying minority and low-income populations covered by the Connecticut public transit service. In this analysis spatial extent of the system-level transit service coverage area is determined separately for each transit division along with their minority and low-income characteristics. For the purpose of computing demographics a transit service area identifies what census tracts are considered as covered by the transit system and what their socio-economic profile is.

A transit system area is defined by combining all of currently serving route service areas within each transit division. Bus and rail service carry different specifications for their transit areas delineation. For CTtransit bus services it is a 0.25 mile buffer around local bus routes on Mondays through Saturdays; 0.5 mile buffer for local routes on Sundays and a 2.5 mile buffer for express bus routes on any day. A single route is represented by a collection of geographic locations (latitude/longitude) of all the stops that lie on the path of a route. Therefore a route service area is constructed by applying a corresponding buffer size to stop locations.

The American Community Survey (ACS) 2011-2015 5-year estimates were used to identify census tracts that are predominately minority and/or low income within the four service areas (Tables 2 and 3). Census tracts are considered predominately low income or minority if the percentage of low-income or minority populations were higher than the service area average. This census tract designation is in accordance with CTDOT Title VI Program.

Table 2. Minority and Low-Income Populations and Tract Designations by Type of Bus Route

System	Day of Week	Route Type	Average % Minority	Average % Low-Income	Minority Tracts	Low-Income Tracts	Minority and Low Income Tracts
Hartford	All	All	61.24	31.11	181 of 424	162 of 424	144 of 424
		Local	61.96	31.32	97 of 186	76 of 186	73 of 186
		Express	55.98	29.60	44 of 120	38 of 120	33 of 120
	Weekday	All	61.38	30.74	181 of 424	162 of 424	144 of 424
		Local	62.38	30.94	102 of 263	83 of 263	78 of 263
		Express	56.96	29.88	181 of 423	162 of 423	144 of 423
	Saturday	All	61.53	31.11	140 of 329	121 of 329	111 of 329
		Local	61.94	31.23	102 of 259	83 of 259	78 of 259
		Express	51.99	28.41	134 of 276	113 of 276	106 of 276
	Sunday	All	60.40	32.15	137 of 315	117 of 315	108 of 315
		Local	60.97	32.40	100 of 251	81 of 251	76 of 251
		Express	52.02	28.48	134 of 276	113 of 276	106 of 276
New Haven	All	Local	54.29	32.36	64 of 142	60 of 142	54 of 142
	Weekday	Local	53.81	32.55	64 of 142	60 of 142	54 of 142
	Saturday	Local	53.67	31.58	64 of 142	60 of 142	54 of 142
	Sunday	Local	56.65	33.14	61 of 130	57 of 130	51 of 130

Table 2 provides information which shows the minority and low-income population as a percentage of the total population of a service area.

When the percentage of the minority and/or low-income population of a tract exceed the average of the total service area, those tracts are designated as minority and/or low income serving tracts. The minority and low-income statistics of bus routes are then broken down by service period of week and route type. In the Hartford transit system there is a clear indication that local bus routes serve more minority and low-income tracts than express bus services during all service periods. In both New Haven and Hartford bus transit systems the percentage of minorities served by local bus route services areas is higher than that for express bus route types (i.e., 62.38% for local bus on weekday in Hartford versus 56.96% for express in the same week period). For each service type the number of tracts within the service area that meet the minority or low-income threshold is listed. In New Haven there is a slightly higher percentage of minority/low-income people served on Sunday than on weekdays and Saturday.

Table 3a. Minority and Low-Income Populations and Tract Designations by Rail Transit System

System	Total People	Average % Minority	Average % Low-Income	Minority Tracts	Low-Income Tracts	Minority and Low Income Tracts
Shore Line East	939,193	44.22%	20.87%	102 of 221	91 of 221	84 of 221
Metro-North Rail (CTDOT)	1,277,437	42.11%	19.98%	130 of 288	122 of 288	111 of 288

Table 3 provides summary statistics for the SLE and MNR rail systems. In Connecticut rail service tends to serve slightly lower proportions of minority and low-income people than Bus services. Compared to the two bus systems described above, rail transit areas serve a lower percentage of minority and low-income populations. The Hartford and New Haven bus service areas reach census tracts where the population is 51.53-61.96% minority and 28.41-32.55% low-income depending on route type (local or express). The SLE and MNR service areas reach census tracts where the population is 42.22% and 44.22% minority and/or 19.98% and 20.87% low-income, respectively. This is difference between bus and rail service access is due in part to demographic differences that have evolved over time. Today the southern and south-western parts of the state tend to be more affluent areas. These areas also have a different racial/ethnic demographic profile compared to the Hartford and New Haven areas. While the population density and financial constraints have limited the creation of new rail stations, bus services have been more widely distributed within the state.

Route Designation Classification

t-HUB at UConn relies heavily on the GTFS (Google Transit Feed Specification) data source in order to provide a spatial representation of bus routes and to use these data as a basis for spatial analysis of demographic and performance data. The project refers to the term sub-route instead of route by outlining major inconsistencies among unique trips of GTFS routes. Sub-routes are defined by t-HUB as the most representative instances of the GTFS routes. Essentially each GTFS route ID can have multiple paths (generated from trips.txt file in GTFS dataset) depending on the time of day, day of week and any variation the operator might implement for specific trip. Therefore the sub-route that the analysis is performed upon is an instance of the unique GTFS route. It leads to potential differences in designation of the route by minority or low-income designation depending on time of day and day of week.

In accordance with FTA Circular 4702.1B, a minority-serving transit route is defined in this analysis as one with greater than one-third of its route miles traversing minority designated census tracts. The system averages presented in Table 2 were used as the basis for comparison, and the route miles calculated accordingly. The percentage minority and low-income route miles were computed for each sub-route were derived to classify the route as minority and/or low-income.

In the Table 3b below are listed the number of sub-routes generated using GTFS data for Hartford and New Haven Area. Subroutes constitute the variations in route structure found within routes depending on day of week and time of day.

Table 3b: Subroute demographic designation summary

System	Route Type	Total Subroutes	Number Minority	Number Low-Income	% Minority Routes	% Low-Income Routes
Hartford	All	1,473	1,025	556	69.59%	37.75%
	Local	1,296	1,002	563	77.31%	43.44%
	Express	177	23	3	12.99%	1.69%
New Haven	All Local	766	503	442	65.67%	57.70%

Performance Measurement of Bus Transit Systems

Using the real-time feeds provided by CTtransit for Hartford and New Haven bus systems, the following route performance characteristics were computed: on-time performance (percent on-time, percent early and percent late), load factor (LF), route average vehicle capacity, vehicle assignment (Vehicle Age). Daily real-time bus information for vehicle locations and arrival/departure predictions were aggregated through the period of May-July, 2017. Headway performance measure was computed using GTFS datasets.

Tables 4 and 5 provide performance variables averaged over all routes and broken down by the time of day. As real-time feeds include on-time, early and late counts, the values are summed for all routes and used to calculate corresponding proportions which are expressed in percent on-time, early and late.

Table 4. Hartford Route Performance Characteristics Summarized by Week Day and Time of Day

Time of Day	% On-time	% Early	% Late	Average Vehicle Age (Years)	Average LF	Max LF	Average Headway
Weekday							
AM	75.06	9.38	15.56	7.98	14.44	55.28	28.52
MID	67.28	6.91	25.81	7.97	20.40	54.90	24.41
PM	59.43	8.91	31.66	8.17	22.17	55.15	30.84
OFF	67.31	14.33	18.36	6.66	20.43	55.71	35.92
Saturday							
AM	76.36	8.29	15.35	7.60	10.39	55.88	28.91
MID	65.43	5.72	28.86	7.85	18.28	55.83	11.77
PM	65.14	7.92	26.94	7.47	24.09	55.66	29.02
OFF	55.68	8.80	35.52	5.65	24.94	55.98	33.29

Sunday							
AM	70.64	7.07	22.29	6.37	9.57	59.07	39.17
MID	60.07	6.63	33.30	6.60	17.46	57.48	12.70
PM	54.68	7.59	37.73	6.21	24.36	57.13	29.43
OFF	69.21	12.12	18.67	5.40	23.06	57.07	46.64

In Hartford bus transit system routes have a tendency to have better on-time performance in AM peak hours compared to the midday and PM service hours. Additionally the average load factor tends to be higher during PM and off peak hours. Since there is less frequent bus service provided on Sunday, the average age of vehicles used is lower because there are fewer buses in use. Load factors overall are higher for the routes that operate on Sunday. Higher load factors on Sunday compared with the rest of the week could mean unmet demand for service.

Table 5. New Haven Route Performance Characteristics Summarized by Week Day and Time of Day

Time of Day	% On-time	% Early	% Late	Average Vehicle Age (Years)	Average LF	Max LF	Average Headway
Weekday							
AM	62.36	18.86	18.78	11.41	11.68	57.89	34.48
MID	51.61	12.23	36.16	11.25	14.55	57.58	20.92
PM	50.30	12.70	36.99	11.45	14.13	57.35	35.26
OFF	47.77	12.91	39.32	11.72	11.62	57.90	41.73
Saturday							
AM	70.37	13.99	15.64	12.55	12.02	58.07	36.42
MID	55.14	11.45	33.42	12.06	14.22	57.85	12.57
PM	52.34	14.23	33.43	11.66	13.39	57.70	36.08
OFF	31.76	9.23	59.01	11.43	12.92	58.06	36.90
Sunday							
AM	40.54	3.69	55.77	8.24	13.42	60.74	39.06
MID	28.39	5.39	66.22	8.68	15.11	61.82	20.04
PM	27.45	8.00	64.55	9.05	15.04	60.52	45.46
OFF	35.07	11.77	53.16	7.58	13.63	60.27	32.05

The New Haven transit system routes have a better on-time performance during AM peak on weekday, Saturday and Sunday. Saturday off-peak and Sunday PM hours are when the routes have the lowest on-time performance; not reaching a 50% mark of on-time performance. Similar to the Hartford division, the average age of the vehicles operating on Sunday is lower. Since fewer routes operate on the Sunday, CTtransit is able to the newer vehicles in its fleet. On weekdays, the load factor is higher during midday and PM peak hours. On the weekend, the load factor is higher during PM and off-peak hours on weekend. Load factors overall are higher for the routes that operate on Sunday.

Tables 6 – 18 below report performance measures for routes that are minority (Tables 7 and 9), low-income (Tables 11 and 12), and both minority and low-income (Tables 15 and 17) designations for Hartford and New Haven systems. For comparative analysis, tables for non-minority (Tables 8 and 10), non-low-income (Tables 12 and 14) and neither low-income nor minority (Tables 16 and 18) routes are presented. Summaries on performance measures for those routes can be compared with the measures of overall system performance and against each other.

As an example, one can compare the service performance across a single time of day/day of week. Examining Hartford AM Peak Weekday service, the performance for the various demographic groups is summarized in Table 6 Below. If non-minority & non-low income designation is used as the basis for comparison, it is evident that minority, low income and minority & low income routes experience better on-time performance and comparable vehicle age, load factor and headways. This observation is consistent across most times of day and days of the week, with higher variability seen on weekends.

Table 6: **Hartford AM Peak weekday** performance by route designation

Route designation	% On-time	% Early	% Late	Average Vehicle Age (Years)	Average LF	Max LF	Average Headway
Minority	76.86	7.78	15.37	8.26	14.70	56.72	24.59
Non-minority	71.64	12.33	16.03	7.02	14.03	52.63	25.72
Low Income	76.69	7.66	15.65	8.30	15.40	57.52	21.58
Non-low income	73.90	10.58	15.52	7.59	13.86	53.43	27.19
Minority & Low Income	76.61	7.69	15.70	8.58	15.29	57.85	21.98
Non-minority & non-low income	71.25	12.63	16.12	7.89	13.80	52.79	21.98

Table 7. **Hartford Minority** Route Performance Characteristics Summarized by Week Day and Time of Day

Time of Day	% On-time	% Early	% Late	Average Vehicle Age (Years)	Average LF	Max LF	Average Headway
Weekday							
AM	76.86	7.78	15.37	8.26	14.70	56.72	24.59
MID	64.54	7.05	28.41	8.17	23.01	56.41	17.18
PM	59.91	9.79	30.29	8.20	25.49	56.54	25.48
OFF	66.86	14.78	18.36	6.89	23.40	58.05	36.21
Saturday							

AM	76.75	7.69	15.56	7.89	10.98	57.60	28.85
MID	65.31	5.13	29.56	8.19	19.59	57.41	11.82
PM	64.27	7.58	28.15	7.95	26.04	57.24	29.32
OFF	50.71	8.30	40.99	5.85	28.89	58.12	33.32
Sunday							
AM	70.83	7.01	22.17	6.50	10.03	63.27	38.50
MID	57.53	5.36	37.11	6.96	19.88	60.74	11.06
PM	52.81	4.43	42.76	6.50	27.86	60.37	29.67
OFF	67.94	11.40	20.67	5.53	26.88	60.94	46.08

Table 8. **Hartford Non-Minority** Route Performance Characteristics Summarized by Day and Time of Day

Time of Day	% On-time	% Early	% Late	Average Vehicle Age (Years)	Average LF	Max LF	Average Headway
Weekday							
AM	71.64	12.33	16.03	7.02	14.03	52.63	25.72
MID	72.87	6.61	20.53	6.59	15.22	51.97	33.45
PM	58.51	7.25	34.24	7.97	15.75	52.53	24.00
OFF	68.31	13.36	18.33	5.76	13.67	50.38	33.52
Saturday							
AM	74.55	11.05	14.41	5.70	7.64	47.94	16.39
MID	66.00	8.66	25.35	5.38	11.74	47.92	6.94
PM	69.38	9.56	21.06	4.42	14.64	48.03	16.36
OFF	67.54	9.99	22.48	4.98	15.50	50.85	23.21
Sunday							
AM	70.19	7.23	22.58	5.85	8.43	48.61	34.22
MID	66.49	9.85	23.66	5.29	11.46	49.37	14.71
PM	59.63	15.96	24.41	5.32	15.09	48.57	21.80
OFF	72.13	13.76	14.12	5.02	14.35	48.28	44.83

Table 9. **New Haven Minority** Route Performance Characteristics Summarized by Day and Time of Day

Time of Day	% On-time	% Early	% Late	Average Vehicle Age (Years)	Average LF	Max LF	Average Headway
Weekday							
AM	62.95	18.69	18.37	11.64	10.79	57.26	27.43
MID	52.68	12.17	35.15	11.35	14.04	56.86	21.51

PM	51.20	12.52	36.28	11.66	14.35	56.87	27.86
OFF	46.36	12.12	41.52	11.86	11.76	57.36	39.11
Saturday							
AM	72.53	13.83	13.65	12.61	10.01	58.04	29.56
MID	57.11	10.47	32.42	12.15	13.88	57.53	9.26
PM	53.70	12.59	33.71	11.75	13.45	57.44	31.77
OFF	31.43	8.81	59.76	11.47	13.05	57.30	34.14
Sunday							
AM	39.61	3.36	57.03	7.99	11.54	59.46	36.30
MID	28.06	5.47	66.47	8.13	15.63	62.66	15.80
PM	27.48	8.08	64.44	8.70	15.27	60.85	37.88
OFF	36.88	11.24	51.88	7.41	15.68	61.20	28.05

Table 10. **New Haven Non-Minority** Route Performance Characteristics by Day and Time of Day

Time of Day	% On-time	% Early	% Late	Average Vehicle Age (Years)	Average LF	Max LF	Average Headway
Weekday							
AM	60.30	19.48	20.22	11.28	14.82	60.10	38.70
MID	45.65	12.57	41.78	11.35	17.42	61.62	17.82
PM	45.74	13.66	40.60	11.20	13.01	59.81	44.14
OFF	54.02	16.43	29.56	10.43	10.99	60.35	52.76
Saturday							
AM	63.88	14.48	21.63	12.28	18.04	58.13	45.57
MID	47.83	15.07	37.10	11.42	15.48	59.03	20.02
PM	47.77	19.72	32.51	11.04	13.20	58.60	49.52
OFF	36.10	14.91	48.99	10.54	10.99	68.62	48.75
Sunday							
AM	42.67	4.44	52.89	8.76	17.75	63.68	45.98
MID	30.23	4.97	64.80	11.39	12.24	57.22	22.17
PM	27.12	7.01	65.88	13.72	12.30	56.54	60.00
OFF	27.68	13.91	58.41	13.50	5.28	56.43	37.39

Table 11. **Hartford Low-Income** Route Performance Characteristics Summarized by Day and Time of Day

Time of Day	% On-time	% Early	% Late	Average Vehicle Age (Years)	Average LF	Max LF	Average Headway
Weekday							
AM	76.69	7.66	15.65	8.30	15.40	57.52	21.58

MID	64.89	7.51	27.60	8.57	24.70	57.35	15.70
PM	60.93	9.81	29.26	8.32	28.24	57.42	24.61
OFF	65.79	15.35	18.86	6.20	24.25	58.46	34.89
Saturday							
AM	75.64	7.71	16.65	8.22	10.84	58.05	28.66
MID	65.91	5.93	28.16	8.45	20.16	57.97	11.14
PM	67.18	9.42	23.40	7.63	25.52	57.37	29.29
OFF	51.89	7.93	40.18	5.71	30.77	58.89	30.56
Sunday							
AM	71.60	6.26	22.15	6.11	10.34	62.05	36.80
MID	58.34	6.92	34.74	6.37	19.56	61.09	9.78
PM	54.15	6.03	39.82	5.84	30.07	60.40	29.58
OFF	70.19	11.66	18.14	4.78	29.36	60.21	47.09

Table 12. **Hartford Non-Low-Income** Route Performance Characteristics by Day and Time of Day

Time of Day	% On-time	% Early	% Late	Average Vehicle Age (Years)	Average LF	Max LF	Average Headway
Weekday							
AM	73.90	10.58	15.52	7.59	13.86	53.43	27.19
MID	69.77	6.36	23.87	6.56	16.72	52.59	28.29
PM	58.51	8.07	33.43	7.90	17.39	53.22	24.83
OFF	69.16	12.99	17.84	7.66	16.23	52.54	35.19
Saturday							
AM	77.28	9.05	13.68	6.63	9.80	53.06	24.00
MID	64.83	5.46	29.71	6.75	16.01	53.24	10.85
PM	62.56	6.02	31.42	7.17	22.27	53.50	24.32
OFF	58.72	9.50	31.77	5.55	20.24	53.63	30.14
Sunday							
AM	69.91	7.70	22.39	6.69	8.98	56.77	37.65
MID	61.17	6.45	32.38	6.80	16.14	55.21	13.57
PM	55.05	8.70	36.25	6.55	20.31	54.82	26.04
OFF	68.42	12.49	19.09	6.13	17.93	54.52	44.52

Table 13. **New Haven Low-Income** Route Performance Characteristics by Day and Time of Day

Time of Day	% On-time	% Early	% Late	Average Vehicle Age (Years)	Average LF	Max LF	Average Headway
Weekday							

AM	63.37	18.76	17.87	11.57	11.41	58.04	29.85
MID	50.91	12.56	36.53	11.23	14.37	57.51	21.81
PM	50.04	12.40	37.56	11.49	14.48	57.59	29.07
OFF	48.50	11.76	39.74	11.84	12.31	57.62	40.07
Saturday							
AM	73.18	14.12	12.70	12.54	9.71	58.32	27.02
MID	58.16	9.69	32.15	11.94	13.41	57.73	7.31
PM	55.11	12.60	32.29	11.53	13.07	57.60	31.07
OFF	29.48	8.96	61.56	11.51	12.76	57.31	35.59
Sunday							
AM	40.41	4.31	55.27	7.98	12.79	60.25	33.81
MID	29.96	4.84	65.20	8.12	15.62	62.59	18.49
PM	27.07	8.74	64.19	7.94	16.31	61.86	40.67
OFF	34.77	12.79	52.44	6.78	16.10	61.98	29.39

Table 14. **New Haven Non-Low-Income** Route Performance Characteristics by Day and Time of Day

Time of Day	% On-time	% Early	% Late	Average Vehicle Age (Years)	Average LF	Max LF	Average Headway
Weekday							
AM	60.64	19.03	20.33	11.65	12.14	57.63	30.07
MID	53.98	11.61	34.42	11.75	15.11	57.67	19.91
PM	50.77	13.24	35.99	11.94	13.51	56.94	33.11
OFF	49.00	15.38	35.62	11.02	9.90	58.46	47.37
Saturday							
AM	66.15	13.80	20.06	12.57	15.49	57.68	43.38
MID	49.76	14.57	35.67	12.43	15.67	58.06	19.08
PM	47.71	16.96	35.33	12.01	13.94	57.88	43.82
OFF	43.22	10.62	46.16	10.98	13.71	61.97	34.18
Sunday							
AM	40.69	2.94	56.37	8.64	14.18	61.33	45.65
MID	26.06	5.61	68.32	10.24	13.35	59.47	14.33
PM	28.33	6.31	65.36	12.83	12.18	57.49	37.13
OFF	35.74	9.46	54.80	13.11	8.09	56.40	31.11

Table 15. **Hartford Minority and Low-Income** Route Performance Characteristics by Day and Time of Day

Time of Day	% On-time	% Early	% Late	Average Vehicle Age (Years)	Average LF	Max LF	Average Headway
Weekday							
AM	76.61	7.69	15.70	8.58	15.29	57.85	21.98
MID	64.39	7.53	28.08	8.82	24.72	57.66	15.90
PM	60.65	10.05	29.30	8.61	28.40	57.73	25.16
OFF	65.46	15.68	18.86	6.53	24.56	58.83	35.63
Saturday							
AM	75.64	7.71	16.65	8.22	10.84	58.05	28.66
MID	65.91	5.93	28.16	8.45	20.16	57.97	11.14
PM	67.18	9.42	23.40	7.63	25.52	57.37	29.29
OFF	51.89	7.93	40.18	5.71	30.77	58.89	30.56
Sunday							
AM	71.60	6.26	22.15	6.11	10.34	62.05	36.80
MID	58.34	6.92	34.74	6.37	19.56	61.09	9.78
PM	54.15	6.03	39.82	5.84	30.07	60.40	29.58
OFF	70.19	11.66	18.14	4.78	29.36	60.21	47.09

Table 16. **Hartford Non-Minority and Non-Low-Income** Route Performance by Day and Time of Day

Time of Day	% On-time	% Early	% Late	Average Vehicle Age (Years)	Average LF	Max LF	Average Headway
Weekday							
AM	71.25	12.63	16.12	7.89	13.80	52.79	21.98
MID	72.59	6.57	20.84	7.51	14.66	52.10	15.90
PM	58.01	7.43	34.56	8.92	15.28	52.68	25.16
OFF	67.91	13.79	18.29	7.14	13.41	50.43	35.63
Saturday							
AM	74.55	11.05	14.41	5.70	7.64	47.94	28.66
MID	66.00	8.66	25.35	5.38	11.74	47.92	11.14
PM	69.38	9.56	21.06	4.42	14.64	48.03	29.29
OFF	67.54	9.99	22.48	4.98	15.50	50.85	30.56
Sunday							
AM	70.19	7.23	22.58	5.85	8.43	48.61	36.80
MID	66.49	9.85	23.66	5.29	11.46	49.37	9.78
PM	59.63	15.96	24.41	5.32	15.09	48.57	29.58
OFF	72.13	13.76	14.12	5.02	14.35	48.28	47.09

Table 17. **New Haven Minority and Low-Income** Route Performance by Day and Time of Day

Time of Day	% On-time	% Early	% Late	Average Vehicle Age (Years)	Average LF	Max LF	Average Headway
Weekday							
AM	63.37	18.76	17.87	11.57	11.41	58.04	29.85
MID	50.37	12.55	37.08	11.17	14.27	57.54	21.49
PM	50.04	12.40	37.56	11.49	14.48	57.59	29.07
OFF	47.28	11.94	40.78	11.83	12.33	57.67	39.44
Saturday							
AM	73.18	14.12	12.70	12.54	9.71	58.32	27.02
MID	58.16	9.69	32.15	11.94	13.41	57.73	7.31
PM	55.11	12.60	32.29	11.53	13.07	57.60	31.07
OFF	29.48	8.96	61.56	11.51	12.76	57.31	35.59
Sunday							
AM	40.41	4.31	55.27	7.98	12.79	60.25	33.81
MID	29.85	5.25	64.90	7.88	16.20	63.29	18.30
PM	27.07	8.74	64.19	7.94	16.31	61.86	40.67
OFF	34.77	12.79	52.44	6.78	16.10	61.98	29.39

Table 18. **New Haven Non-Minority and Non-Low-Income** Route Performance Characteristics Summarized by Day and Time of Day

Time of Day	% On-time	% Early	% Late	Average Vehicle Age (Years)	Average LF	Max LF	Average Headway
Weekday							
AM	60.30	19.48	20.22	11.28	14.82	60.10	27.43
MID	45.65	12.57	41.78	11.35	17.42	61.62	21.51
PM	45.74	13.66	40.60	11.20	13.01	59.81	27.85
OFF	49.51	18.86	31.64	10.27	10.68	61.46	39.11
Saturday							
AM	63.88	14.48	21.63	12.28	18.04	58.13	29.55
MID	47.83	15.07	37.10	11.42	15.48	59.03	9.26
PM	47.77	19.72	32.51	11.04	13.20	58.60	31.76
OFF	36.10	14.91	48.99	10.54	10.99	68.62	34.13
Sunday							
AM	42.67	4.44	52.89	8.76	17.75	63.68	36.30
MID	29.61	8.41	61.98	12.08	13.54	57.48	15.80
PM	27.12	7.01	65.88	13.72	12.30	56.54	37.88
OFF	27.68	13.91	58.41	13.50	5.28	56.43	28.05

Tables 19 – 108 below provide more disaggregated performance measures of routes with each table summarizing a single route. It should be noted that the measures are derived using both in- and outbound directions. If, for instance, the route is scheduled to run hourly in two directions then the average headway will approach 30 minutes interval.

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Table 19. Route 101 Performance.

Time of Day	% On-time	% Early	% Late	Average Vehicle Age (Years)	Average LF	Max LF	Average Headway
Weekday							
AM	91.78	6.64	1.57	3.02	15.92	81.62	3.74
MID	86.5	5.92	7.58	3.01	19.29	81.83	5.64
PM	71.96	5.18	22.86	3.04	22.55	81.75	3.95
OFF	90.01	6.4	3.59	3.02	16.97	81.71	28.46
Saturday							
AM	92.23	4.43	3.34	3	9.38	81.3	6.29
MID	76.31	5.89	17.8	3.01	17.7	80.91	6.03
PM	80.42	8.71	10.87	3	22.16	81	5.93
OFF	75.78	14.13	10.08	3	21.06	81.18	36.22
Sunday							
AM	78.39	12.81	8.8	3	8.73	82	10
MID	77.76	6.94	15.3	3	18.55	82	10.05
PM	81.67	2.75	15.58	3	24.45	82	10.12
OFF	75.74	3.57	20.69	3	21.41	82	10.18

Table 20. Route 102 Performance.

Time of Day	% On-time	% Early	% Late	Average Vehicle Age (Years)	Average LF	Max LF	Average Headway
Weekday							
AM	79.96	6.82	13.22	3.62	18.18	49.71	13.89
MID	77.69	5.53	16.79	3.68	24.72	49.75	24.94
PM	69.67	2.85	27.48	3.76	24.85	49.86	15
OFF	73.1	8.27	18.63	3.75	18.04	49.83	95.4
Saturday							
AM	79.75	7.69	12.56	3.26	12.17	49.28	25
MID	66.74	8.6	24.67	3.36	21.68	49.41	28.23

PM	68.17	8.32	23.51	3.5	26.87	49.57	25.4
OFF	73.74	8.12	18.14	3.43	22.57	49.49	117.08
Sunday							
AM	73.52	4.28	22.21	3.25	12.85	49.28	24.33
MID	74.71	5.52	19.77	3.5	20.4	49.57	28.77
PM	74.23	9.38	16.38	3.54	22.05	49.62	26.8
OFF	76.5	9.25	14.25	3.34	19.18	49.39	35

Table 21. Route 121 Performance.

Time of Day	% On-time	% Early	% Late	Average Vehicle Age (Years)	Average LF	Max LF	Average Headway
Weekday							
AM	75.97	6.87	17.16	4.01	9.05	50.18	10
MID	70.45	5.43	24.12	3.46	13.27	49.49	13.67
PM	48.04	4.24	47.71	3.75	14.22	49.69	10.81
OFF	77.71	8.08	14.2	3.94	11.5	49.87	70.7
Saturday							
AM	79.6	8.05	12.35	3.24	5.48	49.27	14.73
MID	73.71	4.85	21.44	3.3	8.91	49.34	14.89
PM	70.46	7.56	21.98	3.36	10.28	49.42	14.64
OFF	72.27	9.64	18.09	3.34	9.96	49.39	98.07
Sunday							
AM	81.34	6.1	12.56	3.14	8.85	49.16	23
MID	76.95	6.53	16.51	3.18	9.47	49.2	28.62
PM	77.7	5.55	16.75	3.28	11.8	49.33	26.4
OFF	84.14	9.54	6.32	3.29	11.13	49.29	28

Table 22. Route 128 Performance.

Time of Day	% On-time	% Early	% Late	Average Vehicle Age (Years)	Average LF	Max LF	Average Headway
Weekday							
AM	90.08	4.95	4.97	3.75	12.66	49.94	10.06
MID	77.67	5.55	16.78	3.43	24.35	49.5	14.03
PM	55.28	5.54	39.18	3.79	28.36	49.8	10
OFF	76.79	12.07	11.14	3.89	21.3	49.99	16.33
Saturday							
AM	86.42	7.4	6.18	3.38	10.13	49.43	14.64

MID	70.91	3.99	25.1	3.54	25.27	49.62	14.85
PM	62.54	4.71	32.74	3.54	34.34	49.62	14.64
OFF	81.54	7.92	10.54	3.73	34.84	49.83	20.44
Sunday							
AM	84.89	10.12	4.99	3	12.06	49	25.8
MID	68.75	6.13	25.12	3	28.11	49	27.92
PM	69.38	3.02	27.6	3	38.31	49	24.8
OFF	68.67	18.73	12.61	3	33.97	49	20.33

Table 23. Route 140 Performance.

Time of Day	% On-time	% Early	% Late	Average Vehicle Age (Years)	Average LF	Max LF	Average Headway
Weekday							
AM	66.12	10.81	23.07	2.88	3.41	39.28	15
MID	89.59	3.67	6.74	2.83	4.25	39.21	18.41
PM	57.54	10.93	31.53	2.77	4.76	39.1	15
OFF	48.36	2.57	49.07	2.82	5.59	39.2	31.67
Saturday							
AM	85.4	3.65	10.95	2.75	3	39	20
MID	84.83	1.26	13.9	2.76	4.08	39	20
PM	76.18	1.18	22.65	2.76	5.34	39.14	20
OFF	56.52	0.54	42.93	2.81	4.51	39.62	32.22
Sunday							
AM	81.33	0	18.67	2.75	1.28	39	30
MID	83.4	2.57	14.03	2.76	4.64	39	30
PM	86.27	7.84	5.88	2.81	4.42	39	30
OFF	91.46	4.88	3.66	2.75	5.81	39	30

Table 24. Route 144 Performance.

Time of Day	% On-time	% Early	% Late	Average Vehicle Age (Years)	Average LF	Max LF	Average Headway
Weekday							
AM	93.23	1.93	4.85	3.09	5.94	39.88	24.8
MID	80.6	4.46	14.94	3.06	8.79	39.83	27.92
PM	86.5	4.89	8.61	3.05	11.93	39.81	25.2
OFF	89.88	3.88	6.24	3.06	9.92	39.82	25
Saturday							
AM	81.92	7.69	10.38	2.92	3.36	39.92	24.6

MID	70.98	4.08	24.94	2.87	6.63	39.75	27.92
PM	72.64	5.47	21.89	2.8	9.06	39.92	24.6
OFF	76.09	4.6	19.31	2.85	8.57	39.62	27.22
Sunday							
AM	80	4.88	15.12	2.86	3.95	39.47	21
MID	83.1	3.93	12.96	2.94	5.92	39.65	27.92
PM	70.67	3.2	26.13	2.89	8.32	39.53	24.6
OFF	74.63	1	24.38	2.84	6.15	39.42	21.33

Table 25. Route 153 Performance.

Time of Day	% On-time	% Early	% Late	Average Vehicle Age (Years)	Average LF	Max LF	Average Headway
Weekday							
AM	80.22	11.21	8.57	3.07	7.69	39.9	24.4
MID	62.8	4.33	32.88	3.06	12.37	39.86	27.85
PM	63.44	4.73	31.83	3.07	14.69	39.9	24.4
OFF	67.91	13.31	18.78	3.03	12.31	39.88	23.9
Saturday							
AM	80	4.62	15.38	4.58	5.02	44.39	24.4
MID	57.67	4.32	38.01	4.85	10.5	44.6	27.85
PM	72.96	9.07	17.96	4.83	13.36	44.52	24.4
OFF	74.27	11.22	14.51	5.08	13.47	45.19	26.33
Sunday							
AM	74.24	13.1	12.66	3.14	5	40.06	20.67
MID	60.13	7.88	31.99	3.19	7.9	40.06	27.85
PM	49.77	4.91	45.33	3.2	11.04	40.06	24.4
OFF	58.9	10.59	30.51	3.2	9.89	40.06	19

Table 26. Route 161 Performance.

Time of Day	% On-time	% Early	% Late	Average Vehicle Age (Years)	Average LF	Max LF	Average Headway
Weekday							
AM	80.37	2.91	16.73	2.74	8.4	39.11	7.5
MID	58.67	5.01	36.31	3.13	12.17	40.28	9.81
PM	78.66	7.54	13.8	3.23	13.05	40.45	10.12
OFF	85.75	8.69	5.56	2.97	7.84	39.63	50.66
Saturday							

AM	84.91	3.77	11.32	2.71	7.27	39	9.53
MID	76.62	2.64	20.74	2.71	9.96	39.5	9.8
PM	80.86	4.87	14.27	2.74	9	39.46	9.53
OFF	77.19	9.84	12.97	2.79	8.32	39	60.38
Sunday							
AM	84.37	11.42	4.21	2.82	5.88	39	20
MID	74.63	6.49	18.88	2.79	9.14	39.57	20
PM	51.86	4.13	44.01	2.71	12.71	40.65	20
OFF	63.96	15.55	20.49	2.76	14.34	40.65	19.6

Table 27. Route 30 Performance.

Time of Day	% On-time	% Early	% Late	Average Vehicle Age (Years)	Average LF	Max LF	Average Headway
Weekday							
AM	69.66	13.99	16.35	7.42	22.8	58.84	24.83
MID	63.86	10.65	25.49	8.33	27.79	57.06	36.18
PM	55.24	14.65	30.12	7.7	16.96	57	24.83
OFF	63.24	19.21	17.55	9.42	21.59	57.13	123.33
Saturday							
AM	78.81	13.25	7.95	8.67	19.47	57	30.8
MID	63.73	4.25	32.03	8.51	24.6	57	39.43
PM	55.17	1.72	43.1	8.68	34.58	57	53.67
OFF	49.32	10.68	40	8.78	25.02	57	167.5
Sunday							
AM	60.24	19.58	20.18	5.41	15.03	64.21	33.75
MID	43.05	3.29	53.66	6.96	20.74	60.39	35
PM	44.93	0.88	54.19	6.58	25.14	59.59	58.33
OFF	67.42	11.09	21.49	5.33	9.81	72.4	190

Table 28. Route 31-33 Performance.

Time of Day	% On-time	% Early	% Late	Average Vehicle Age (Years)	Average LF	Max LF	Average Headway
Weekday							
AM	74.05	9.01	16.94	7.95	16.13	60.33	5.11
MID	56.36	4.86	38.78	7.97	32.55	60.36	5
PM	49.05	6.17	44.78	8.07	39.47	60.03	5.16
OFF	70.31	8.29	21.4	7.67	28.58	66.21	74.2

Saturday							
AM	68.81	13.81	17.38	7.19	14.03	65.91	7.93
MID	53.22	3.42	43.36	6.9	30.91	63.77	7.38
PM	56.78	8.88	34.34	6.76	37.55	63.37	7.86
OFF	42.21	6.23	51.56	6.03	31.32	67.85	180.62
Sunday							
AM	72.24	7.12	20.64	5.96	14.18	74.91	36.75
MID	50.24	3.49	46.27	6.11	27.78	65.48	34.73
PM	42.58	3.35	54.07	5.72	35.8	63.89	35
OFF	62.63	19.74	17.63	5.61	21.58	63.78	232.5

Table 29. Route 32-36 Performance.

Time of Day	% On-time	% Early	% Late	Average Vehicle Age (Years)	Average LF	Max LF	Average Headway
Weekday							
AM	71.52	5.2	23.28	7.95	18.1	58.01	7.68
MID	71.22	6.13	22.65	8.03	21.34	57	14.32
PM	63.23	5.96	30.81	8.55	22.63	57	7.25
OFF	62.29	8.81	28.9	8.86	29.16	57	36.29
Saturday							
AM	78.07	9.63	12.3	9.9	12.71	57	30
MID	62.03	1.27	36.71	9.53	20.92	57	31
PM	46.56	0	53.44	9.98	29.32	57	28.4
OFF	10.81	0	89.19	10.38	35.18	57	22
Sunday							
AM	74.14	0	25.86	5.71	11.54	57	35
MID	46.9	0.78	52.33	6.02	23.86	57	35
PM	22.89	0.4	76.71	5.68	25.75	57	35
OFF	46	6	48	6.29	24.79	57	35

Table 30. Route 37-39 Performance.

Time of Day	% On-time	% Early	% Late	Average Vehicle Age (Years)	Average LF	Max LF	Average Headway
Weekday							
AM	76.9	8.66	14.44	8.92	13.36	57.32	5.53
MID	52.05	4.49	43.46	8.46	29.35	57.2	8.74
PM	57.05	9.22	33.73	8.3	34.71	57.14	6.88

OFF	62.96	12.84	24.2	8.8	35.33	57.13	112.54
Saturday							
AM	77.29	12.68	10.04	7.63	11.1	59.36	12.8
MID	62	8.54	29.46	6.81	25.83	59.66	9.76
PM	57.19	9.92	32.88	6.78	34.19	59.33	10
OFF	38.94	9.8	51.26	5.7	34.71	62.78	29
Sunday							
AM	67.35	2.04	30.61	6.31	11.97	76.78	35
MID	32.24	4.98	62.78	5.78	32.35	72.08	34.73
PM	35.28	0.87	63.85	5.64	48.94	69.67	35
OFF	68.54	4.49	26.97	5.53	47.69	71.31	36.5

Table 31. Route 38 Performance.

Time of Day	% On-time	% Early	% Late	Average Vehicle Age (Years)	Average LF	Max LF	Average Headway
Weekday							
AM	86.25	5.58	8.17	7.6	22.31	57.32	14.18
MID	72.37	0.97	26.66	8.26	19.8	57.28	9.75
PM	82.56	1.33	16.11	8.08	18.79	57.1	14.42
OFF	74.14	14.29	11.57	9.09	13.36	57	17.67
Saturday							
AM	81.08	5.41	13.51	2.83	11.18	57	15
MID	90.36	0.12	9.52	2.93	9.55	57	14.96
PM	87.96	0.67	11.37	3.17	11.59	57	15.82
OFF	67.92	0	32.08	2.87	6.82	57	23.75
Sunday							
AM	24.14	0	75.86	6.44	2.99	72.56	0
MID	67.22	0.55	32.23	5.5	9.77	68.91	35.55
PM	52.53	1.01	46.46	5.65	15.86	73.55	35

Table 32. Route 40-42 Performance.

Time of Day	% On-time	% Early	% Late	Average Vehicle Age (Years)	Average LF	Max LF	Average Headway
Weekday							
AM	83.73	3.63	12.64	8.06	15.05	60.63	5.09
MID	58.52	4.33	37.15	8	28.75	59.76	5.04

PM	52.63	6.86	40.51	8.23	35.56	60.02	5
OFF	63.05	8.35	28.6	7.65	28.99	65.56	60.6
Saturday							
AM	78.87	7.74	13.4	6.93	10.61	65.86	7.65
MID	54.34	5.69	39.97	6.9	27.41	64.03	7.55
PM	57.02	8.27	34.71	6.88	34.19	62.95	7.58
OFF	14.43	0	85.57	6.25	41.88	70.47	31.86
Sunday							
AM	70.27	0	29.73	6.29	14.77	74.83	26.33
MID	71.74	1.99	26.27	6.3	29.43	73.33	34.91
PM	54.44	0.56	45	5.45	45.51	73.62	29.8
OFF	60.23	3.41	36.36	5.47	36.56	60.73	9

Table 33. Route 41 Performance.

Time of Day	% On-time	% Early	% Late	Average Vehicle Age (Years)	Average LF	Max LF	Average Headway
Weekday							
AM	74.16	11.39	14.45	8.9	12.1	56.78	10.07
MID	64.21	15.41	20.38	8.59	22.46	55.26	14.63
PM	62.94	18.05	19.01	8.32	20.01	55.52	10.07
OFF	66.43	9.87	23.69	8.94	24.81	56.94	113.69
Saturday							
AM	70.15	16.84	13.01	8.17	16.1	56.9	15
MID	60.84	21.26	17.91	7.51	17.46	56.98	14.52
PM	64.83	17.06	18.11	7.68	20.46	57	13.82
OFF	63.41	6.65	29.93	8.16	25.05	56.89	156.78
Sunday							
AM	77.22	0.77	22.01	9.07	10.57	57	30
MID	61.6	4.06	34.34	8.53	14.3	57	33.64
PM	57.54	6.67	35.79	8.89	16.46	57	32
OFF	72.17	10.43	17.39	8.45	18.12	57	20

Table 34. Route 43 Performance.

Time of Day	% On-time	% Early	% Late	Average Vehicle Age (Years)	Average LF	Max LF	Average Headway
Weekday							

AM	74.67	2.78	22.55	8.62	8.6	57	10.8
MID	70.54	6.15	23.31	8.16	18.45	57	14.74
PM	60.59	17.68	21.73	8.95	22.89	57	11.73
OFF	97.96	1.02	1.02	8.69	13.41	57	35
Saturday							
AM	61.18	0.66	38.16	10.11	8.14	57	29
MID	40.34	3.38	56.28	9.75	17.57	57	29.31
PM	42.22	0	57.78	9.2	23.18	57	27

Table 35. Route 44 Performance.

Time of Day	% On-time	% Early	% Late	Average Vehicle Age (Years)	Average LF	Max LF	Average Headway
Weekday							
AM	84.06	5.24	10.71	8.39	11.05	57	15.8
MID	78.74	9.85	11.41	8.36	18.11	57	28.57
PM	63.16	18.39	18.44	8.27	21.03	57	16.25
Saturday							
AM	86.43	1.43	12.14	9.08	8.17	57	26
MID	70.48	1.97	27.55	8.2	13.45	57	29.08
PM	73.51	0.54	25.95	8.03	21.6	57	27.5

Table 36. Route 45 Performance.

Time of Day	% On-time	% Early	% Late	Average Vehicle Age (Years)	Average LF	Max LF	Average Headway
Weekday							
AM	70.76	17.76	11.48	9.38	9.86	57	40
MID	64.29	7.14	28.57	6.5	4.48	57	
PM	70.49	3.89	25.62	9.84	7.94	57	43
OFF	64.18	3.09	32.73	8.43	31.78	57	57.33
Saturday							
OFF	55.15	14.43	30.41	8.31	12.2	57	57
Sunday							
AM	59.21	5.26	35.53	9.71	4.64	57	30
MID	60.7	7.04	32.26	6.21	5.71	57	76
PM	47.06	15.51	37.43	5.12	4.79	57	31.67
OFF	55.26	44.74	0	6.15	4.93	57	

Table 37. Route 46 Performance.

Time of Day	% On-time	% Early	% Late	Average Vehicle Age (Years)	Average LF	Max LF	Average Headway
Weekday							
AM	82.88	9.11	8	8.88	12.09	57	5.15
MID	65.61	4.52	29.87	8.19	27.43	57	9
PM	65.7	4.33	29.96	8.37	28.42	57	7.73
OFF	58.3	2.59	39.11	9.41	29.93	57	23.75
Saturday							
AM	88.99	5.73	5.29	7.58	10.29	58.61	12.5
MID	66.02	5.8	28.18	6.69	19.84	59.53	9.76
PM	57.95	6.75	35.29	7.19	30.08	58.72	12.14
OFF	37.58	1.34	61.07	7.2	45.4	57	26.67

Table 38. Route 47 Performance.

Time of Day	% On-time	% Early	% Late	Average Vehicle Age (Years)	Average LF	Max LF	Average Headway
Weekday							
AM	70.99	6.89	22.12	7.79	17.18	59.11	5.15
MID	50.67	5.34	43.99	7.89	30.97	58.64	4.9
PM	58.22	10.09	31.69	8.07	39.59	58.4	6
OFF	49.76	22.03	28.21	7.07	45.65	66.2	111.62
Saturday							
AM	72.66	11.75	15.59	9.05	18.39	57	9.09
MID	54.26	5.05	40.69	8.22	24.24	57	7.36
PM	48.68	13.25	38.08	6.87	33.23	57	8.53
OFF	41.11	16.98	41.91	7.3	48.6	57	32.43
Sunday							
AM	38.24	32.35	29.41	6.68	21.37	57	35
MID	33.97	32.64	33.38	5.67	28.59	57	35.45
PM	27.21	29.41	43.38	6.22	40.97	57	35
OFF	57.41	21.3	21.3	6.52	35.52	57	30

Table 39. Route 50-54 Performance.

Time of Day	% On-time	% Early	% Late	Average Vehicle Age (Years)	Average LF	Max LF	Average Headway
Weekday							
AM	74.45	9.2	16.35	7.72	16.76	59.05	4.49
MID	52.64	6.53	40.83	7.6	31.1	59.06	4.88
PM	58.03	9.74	32.23	8.05	36.81	58.44	4.71
OFF	56.43	10.27	33.3	7.87	33.03	60.83	64.48
Saturday							
AM	70.26	8.65	21.09	8.56	15.4	57	9.83
MID	49.95	4.11	45.94	7.92	25.73	57	7.54
PM	48.39	4.32	47.29	7.31	37.82	57.4	8.16
OFF	33.7	3.23	63.07	5.43	33.45	62.89	32.78
Sunday							
AM	58.33	6.77	34.9	5.79	10.61	72	28.4
MID	30.52	0.5	68.98	5.91	29.81	67.05	33.82
PM	27.04	9.26	63.7	6.06	34.1	63.12	23.33
OFF	51.79	11.4	36.81	6.45	27.33	65.77	42

Table 40. Route 53-55 Performance.

Time of Day	% On-time	% Early	% Late	Average Vehicle Age (Years)	Average LF	Max LF	Average Headway
Weekday							
AM	74.45	2.58	22.97	8.33	19.84	57	7.05
MID	50.78	4.93	44.29	7.91	29.96	57	12.48
PM	62.4	10.85	26.75	8.55	27.91	57	7.4
OFF	63.89	20.73	15.38	8.79	19.62	57	78.67
Saturday							
AM	63.09	0	36.91	7.28	18.97	57	18
MID	49.95	1.41	48.64	9.05	24.37	57	15.07
PM	58.61	3.79	37.61	8.89	32.32	57	13.64
OFF	66.67	33.33	0	9.97	21.74	57	267

Table 41. Route 542 Performance.

Time of Day	% On-time	% Early	% Late	Average Vehicle Age (Years)	Average LF	Max LF	Average Headway
Weekday							
AM	0	50	50	3	1.53	49	

MID	64.81	19.26	15.92	3.43	7.36	49.48	28
PM	41.67	8.33	50	4.6	6.34	50.56	8
OFF	45.07	15.46	39.47	3.49	7.31	49.53	27.56
Saturday							
AM	53.68	7.37	38.95	3.24	3.13	49.24	25.6
MID	75.68	7.88	16.44	3.14	6.33	49.16	28.31
PM	76.99	11.5	11.5	3.21	11.54	49.24	25.6
OFF	49.32	6.08	44.59	3.54	11.75	49.62	27.56
Sunday							
AM	25	38.24	36.76	3	2.71	49	22.67
MID	37.1	39.22	23.67	3.39	6.38	49.44	28.31
PM	74.79	13.45	11.76	3.45	8.62	49.51	25.6
OFF	23.08	46.15	30.77	3.83	8.28	49.95	8

Table 42. Route 56 Performance.

Time of Day	% On-time	% Early	% Late	Average Vehicle Age (Years)	Average LF	Max LF	Average Headway
Weekday							
AM	80	3.67	16.33	7.86	11.73	57	15
MID	45.15	1.66	53.18	7.55	21.09	57	27.43
PM	59.35	8.06	32.59	8.03	24.97	57	14.33
OFF	65	6.95	28.05	8.13	16.3	57	56
Saturday							
AM	95.9	1.64	2.46	8.29	8.13	57	27.5
MID	61.97	3.65	34.39	8.47	16.99	57	29.46
PM	58.87	2.02	39.11	8.8	27.97	57	28.75

Table 43. Route 58 Performance.

Time of Day	% On-time	% Early	% Late	Average Vehicle Age (Years)	Average LF	Max LF	Average Headway
Weekday							
AM	85.54	11.49	2.97	9.18	10.73	57.11	16
MID	67	7	26	7.95	18.33	57	26.07
PM	67.25	4.12	28.63	8.21	20.19	57	19.38
OFF	41.19	37.74	21.07	8.38	30.94	57	77
Saturday							
AM	73.27	11.52	15.21	9.53	8.82	57	33.33
MID	60.68	4.11	35.21	9.04	18.12	57	30.38
PM	59.87	6.02	34.11	8.42	24.78	57	28
OFF	37.11	13.4	49.48	5.8	31.65	57	47

Sunday							
AM	48.7	0	51.3	6.89	6.13	75.87	48
MID	26.26	0.65	73.1	6.43	24.05	68.18	34.18
PM	37.17	1.05	61.78	6.14	34.37	65.92	33.2
OFF	0	17.65	82.35	6.83	25.58	57	

Table 44. Route 59 Performance.

Time of Day	% On-time	% Early	% Late	Average Vehicle Age (Years)	Average LF	Max LF	Average Headway
Weekday							
AM	80.81	12.09	7.11	8.82	15.88	57	14.55
MID	77.54	16.09	6.37	7.69	16.87	57	26.53
PM	72.05	15.84	12.11	8.61	16.33	57	17.5
OFF	49.22	46.88	3.91	9.93	8.44	57	
Saturday							
AM	74.74	15.79	9.47	8.97	5.11	57	33.33
MID	68.38	15.81	15.81	8.01	11.3	57	30.77
PM	67.27	12.73	20	7.37	17.83	57	30

Table 45. Route 60-66 Performance.

Time of Day	% On-time	% Early	% Late	Average Vehicle Age (Years)	Average LF	Max LF	Average Headway
Weekday							
AM	77.57	7.64	14.8	7.51	18.77	60.53	4.55
MID	62.13	7.15	30.73	7.51	29.45	60.11	4.62
PM	59.12	11.98	28.9	8.74	31.28	59.3	4.71
OFF	64.42	9.17	26.41	7.74	35.62	70.26	73.5
Saturday							
AM	77.93	10.71	11.35	8.78	15.45	57	6.41
MID	56.66	6.64	36.7	8.01	21.25	57.14	4.94
PM	65.07	9.45	25.48	7.14	21.74	57.51	5.97
OFF	49.58	11.07	39.35	7.75	39.08	58.24	33
Sunday							
AM	71.23	5.36	23.41	7.39	12.4	68.59	23.5
MID	47.9	4.36	47.74	7.9	25.17	63.31	16.74
PM	43.83	5.5	50.67	8.19	36.28	61.43	20
OFF	63.49	3.17	33.33	6.18	54.37	79.91	38

Table 46. Route 61 Performance.

Time of Day	% On-time	% Early	% Late	Average Vehicle Age (Years)	Average LF	Max LF	Average Headway
Weekday							
AM	80.72	7.51	11.77	9.84	11.95	57	10.62
MID	76.62	6.97	16.41	8.96	22.03	57	13.97
PM	60.2	4.38	35.42	9.23	28.21	57	11
OFF	74.37	5.52	20.11	9.74	16.35	57.2	23.75
Saturday							
AM	88.26	3.39	8.35	8.28	6.99	57	13.71
MID	85.68	2.39	11.93	8.53	15.02	57	14.48
PM	84.07	3.33	12.59	8.71	20.72	57	14.38

Table 47. Route 63 Performance.

Time of Day	% On-time	% Early	% Late	Average Vehicle Age (Years)	Average LF	Max LF	Average Headway
Weekday							
AM	75.88	10.09	14.03	9.48	8.21	57	10.44
MID	69.38	12.05	18.57	8.83	17.03	57	13.93
PM	58.23	8.86	32.91	9.12	22.41	57	10.29
OFF	90.26	7.18	2.56	11.28	7.18	59.06	10
Saturday							
AM	79.84	7.75	12.4	7.59	4.95	57	31
MID	74.13	6.18	19.69	7.59	13.11	57	30.38
PM	70.05	15.21	14.75	6.5	22.69	57	30.6
OFF	100	0	0	5.5	18.86	57	
Sunday							
AM	40.82	1.02	58.16	7.13	6.1	57	36
MID	40.12	1.85	58.02	7.13	9.28	57	35.27
PM	40.65	0	59.35	7.64	13.28	57	35
OFF	100	0	0	7.67	18.57	57	38

Table 48. Route 69 Performance.

Time of Day	% On-time	% Early	% Late	Average Vehicle Age (Years)	Average LF	Max LF	Average Headway
Weekday							
AM	77.01	11.07	11.92	7.9	9.85	57	15
MID	70.87	9.76	19.38	7.69	13.84	57	14.71
PM	64.12	6.6	29.28	8.11	18.65	57	16.67

OFF	62	13.61	24.4	8.91	16.77	57	26.38
Saturday							
AM	71	14.07	14.93	2.89	3.33	57	13.91
MID	64.2	10.25	25.55	3.06	6.84	57	14.56
PM	63.34	8.35	28.31	2.7	8.54	57	15
OFF	52.85	7.6	39.54	3.03	8.65	57	36.8

Table 49. Route 72 Performance.

Time of Day	% On-time	% Early	% Late	Average Vehicle Age (Years)	Average LF	Max LF	Average Headway
Weekday							
AM	73.37	9.25	17.38	8.72	10.32	57	10
MID	69.34	12.54	18.13	9.23	13.43	57	16.79
PM	57.58	6.14	36.29	9.02	22.45	57	7.94

Table 50. Route 74 Performance.

Time of Day	% On-time	% Early	% Late	Average Vehicle Age (Years)	Average LF	Max LF	Average Headway
Weekday							
AM	73.66	5.77	20.57	8.15	11.29	57	13.64
MID	56.9	3.34	39.76	7.82	21.4	57	18.9
PM	57.52	7.77	34.72	7.69	30.71	57	17.78
OFF	64.79	24.97	10.24	8.46	17.58	57	13.67
Saturday							
AM	80.57	8.28	11.15	8.75	7.14	57	32.75
MID	60.78	4.21	35.01	8.17	14.35	57	31.62
PM	60.04	4.2	35.77	7.51	19.86	57	33.75
OFF	84.34	14.46	1.2	8	21.25	57	46

Table 51. Route 76 Performance.

Time of Day	% On-time	% Early	% Late	Average Vehicle Age (Years)	Average LF	Max LF	Average Headway
Weekday							
AM	83.88	11.32	4.81	7.33	11.82	57	7.52
MID	82.03	4.04	13.93	6.93	22.68	57	9.53
PM	73.87	10.12	16.01	6.99	33.21	57	8.89
OFF	57.23	13.63	29.14	6.14	26.81	57	21.5
Saturday							

AM	79.46	1.16	19.38	6.95	7.65	57	15.38
MID	67.24	6.98	25.78	6.49	16	57	14.56
PM	64.68	8.72	26.61	6.12	18.64	57	14.5
OFF	48.07	2.31	49.61	4.88	23.17	57	34.29
Sunday							
AM	60.53	5.26	34.21	7.33	8.38	57	34.33
MID	63.29	1.77	34.94	8.24	12.83	57	34.82
PM	32.29	0	67.71	7.76	30.99	57	35
OFF	71.21	1.52	27.27	8.33	17.34	57	35

Table 52. Route 80 Performance.

Time of Day	% On-time	% Early	% Late	Average Vehicle Age (Years)	Average LF	Max LF	Average Headway
Saturday							
MID	85.33	5.33	9.33	7.79	31.71	57	29
PM	80.87	6.52	12.61	9.56	41.02	57	32
OFF	69.09	8.64	22.27	9.76	27.25	57	27.5

Table 53. Route 82-84 Performance.

Time of Day	% On-time	% Early	% Late	Average Vehicle Age (Years)	Average LF	Max LF	Average Headway
Weekday							
AM	77.63	6.77	15.6	8.51	20.81	57.14	11.2
MID	63.17	6.12	30.71	8.27	34.62	57.23	13.21
PM	58.16	6.91	34.93	8.33	36.26	57.21	9.93
OFF	68.86	6.86	24.27	8.36	32.54	57.31	19.47
Saturday							
AM	66.86	14.73	18.41	7.81	19.6	68.13	30
MID	44.44	3.54	52.02	7.88	33.75	63.94	30
PM	46.81	1.49	51.7	6.9	39.54	64.25	32.25
OFF	38.97	2.56	58.46	7.18	33.65	64.92	34.29
Sunday							
AM	62.43	5.72	31.84	5.22	11.84	72.31	35
MID	29.33	2.08	68.59	5.13	20.81	67.7	36.55
PM	46.34	1.73	51.92	4.98	27.67	65.83	35

OFF	63.55	9.97	26.48	4.99	26.71	68.94	18
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Table 54. Route 83 Performance.

Time of Day	% On-time	% Early	% Late	Average Vehicle Age (Years)	Average LF	Max LF	Average Headway
Weekday							
AM	71.72	10.77	17.51	8.74	14.29	57	13
MID	59.48	7.1	33.41	8.15	32.48	57	15.19
PM	54.53	11.46	34	8.25	32.05	57.06	10.46
OFF	56.02	8.31	35.67	7.86	30.99	57.11	24.64
Saturday							
AM	71.45	14.35	14.2	8.95	9.29	58.75	18.78
MID	60.88	6.68	32.43	8.29	25.09	61.08	19.68
PM	63.75	8.32	27.92	8.98	36.95	57.56	17.86
OFF	53.98	10.69	35.32	9.08	46.61	57	30
Sunday							
AM	61.39	15.01	23.59	7.68	11.64	57	25.67
MID	52.71	9.43	37.86	7.9	25.45	57	32.36
PM	63.08	4.97	31.95	8.47	36.85	57	28.8
OFF	74.52	5.73	19.75	7.86	39.14	57	66

Table 55. Route 85 Performance.

Time of Day	% On-time	% Early	% Late	Average Vehicle Age (Years)	Average LF	Max LF	Average Headway
Weekday							
AM	94.29	0	5.71	9.23	5.28	57	23.33
MID	58.76	38.7	2.54	8.64	15.41	57	29.23
PM	67.9	32.1	0	9.23	7.37	57	35
OFF	68.39	20.65	10.97	9.53	39.3	57	130

Table 56. Route 86 Performance.

Time of Day	% On-time	% Early	% Late	Average Vehicle Age (Years)	Average LF	Max LF	Average Headway
Weekday							
AM	86.57	2.07	11.37	8.69	11.39	57	17.33
MID	70.94	7.06	22	10.02	15.99	57	48.75
PM	83.38	5.87	10.74	9.38	23.34	57	15.6

OFF	64.49	35.51	0	9.48	9.84	57	9
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Table 57. Route 87 Performance.

Time of Day	% On-time	% Early	% Late	Average Vehicle Age (Years)	Average LF	Max LF	Average Headway
Weekday							
AM	81.52	2.26	16.21	8.41	10.06	57	14
MID	64.93	6.55	28.52	7.92	12.96	57	27.64
PM	55.92	6.66	37.42	7.28	23.39	57	16.62
OFF	95.56	0	4.44	9.87	3.74	57	30
Saturday							
MID	66.67	9.52	23.81	8.47	10.84	57	52.14
PM	84.62	15.38	0	8.59	14.86	57	5

Table 58. Route 88 Performance.

Time of Day	% On-time	% Early	% Late	Average Vehicle Age (Years)	Average LF	Max LF	Average Headway
Weekday							
AM	79.23	8.04	12.73	8.65	18.37	57	8.6
MID	58.47	5.74	35.8	8.35	38.87	57	14.1
PM	55.23	6.87	37.9	8.32	41.91	57	7.83
OFF	58.44	10.24	31.32	8.64	42.08	57.63	97.4
Saturday							
AM	75	3.5	21.5	8.41	15.18	57	14.17
MID	55.32	3.99	40.7	8.47	26.64	57	14.93
PM	63.45	8.1	28.45	8.74	32.25	57	14.91
OFF	29.6	4.86	65.54	7.74	24.04	57	37.29
Sunday							
AM	64.47	7.24	28.29	9.94	14.05	57	33.33
MID	30.91	0.65	68.44	9.94	30.49	57	34.55
PM	28.24	0.88	70.88	9.14	46.81	57	35
OFF	61.08	5.39	33.53	8.88	44.06	57	35

Table 59. Route 901 Performance.

Time of Day	% On-time	% Early	% Late	Average Vehicle Age (Years)	Average LF	Max LF	Average Headway
Weekday							
AM	68.16	15.34	16.5	9.9	16.19	57	15.88
MID	76.45	3.99	19.56	9.61	23.64	56.32	102.5

PM	47.95	1.74	50.31	9.64	14.14	57	18.67
OFF	57.61	22.28	20.11	10	7.58	57	20

Table 60. Route 902 Performance.

Time of Day	% On-time	% Early	% Late	Average Vehicle Age (Years)	Average LF	Max LF	Average Headway
Weekday							
AM	78.52	14.23	7.25	9.91	7.29	57	14.5
MID	95.2	3.2	1.6	10	1.27	57	457
PM	47.28	32.1	20.61	9.46	18	57	15.33

Table 61. Route 903 Performance.

Time of Day	% On-time	% Early	% Late	Average Vehicle Age (Years)	Average LF	Max LF	Average Headway
Weekday							
AM	82.29	10.38	7.34	9.31	21.77	55.59	11.69
MID	81.33	13.05	5.61	7.75	12.35	60.55	20
PM	74.81	6.89	18.3	8.44	14.64	60.03	17.5

Table 62. Route 904 Performance.

Time of Day	% On-time	% Early	% Late	Average Vehicle Age (Years)	Average LF	Max LF	Average Headway
Weekday							
AM	77.85	2.04	20.11	9.74	13.05	57	14.44
MID	95.57	3.59	0.84	9.66	9.7	57	442
PM	68.56	21.03	10.41	9.52	12.8	56.07	15.12

Table 63. Route 905 Performance.

Time of Day	% On-time	% Early	% Late	Average Vehicle Age (Years)	Average LF	Max LF	Average Headway
Weekday							
AM	70.84	18.65	10.51	9.8	21.02	53.16	5.12
MID	76.04	16.05	7.91	8.32	18.07	51.17	31.43

PM	68.8	17.47	13.73	9.65	13.07	53.96	6.09
OFF	58.3	31.98	9.72	8.75	14.92	54.03	10
Saturday							
MID	33.33	16.16	50.51	9.53	14.71	57	175
Sunday							
MID	50.98	15.69	33.33	8.92	4.04	57	175

Table 64. Route 906 Performance.

Time of Day	% On-time	% Early	% Late	Average Vehicle Age (Years)	Average LF	Max LF	Average Headway
Weekday							
AM	84.7	8.42	6.87	9.78	13.1	56.8	12.78
MID	85.7	1.88	12.42	12.87	9.43	51.89	97.5
PM	57.11	6.65	36.24	10	7.58	55.7	12.5
OFF	65.55	0	34.45	9.65	6.18	50.19	22

Table 65. Route 907 Performance.

Time of Day	% On-time	% Early	% Late	Average Vehicle Age (Years)	Average LF	Max LF	Average Headway
Weekday							
AM	78.09	15.59	6.32	8.94	8.64	57	22.5
MID	87.88	9.09	3.03	11.65	4.51	57	463
PM	79.85	1.7	18.45	9.92	6.18	57	32.5

Table 66. Route 909 Performance.

Time of Day	% On-time	% Early	% Late	Average Vehicle Age (Years)	Average LF	Max LF	Average Headway
Weekday							
AM	55.45	27.53	17.02	9.6	21.44	57	30.5
PM	49.61	0.34	50.06	8.82	17.47	57	49

Table 67. Route 91 Performance.

Time of Day	% On-time	% Early	% Late	Average Vehicle Age (Years)	Average LF	Max LF	Average Headway
Weekday							
AM	67.56	6.12	26.32	8.24	8.21	57	32.5

MID	47.11	2.32	50.57	7.72	11.11	57	29.23
PM	29.04	1.04	69.92	7.64	16.92	57	32
OFF	52.87	9.28	37.85	7.15	10.14	57	25.56
Saturday							
AM	85.48	2.19	12.33	10.73	5.55	57	25.4
MID	57.41	3.69	38.9	10.06	14.13	57	28.62
PM	61.5	1.21	37.29	9.9	17.73	57	30.4
OFF	62.4	11.26	26.34	8.05	13.74	57	27.14
Sunday							
AM	73.23	12.2	14.57	9.97	4.63	57	27.33
MID	55.04	3.89	41.07	9.19	9.34	57	32.91
PM	34.98	3.5	61.52	8.12	9.32	57	27.33
OFF	75.43	12.5	12.07	8.37	12.26	57	23.33

Table 68. Route 910 Performance.

Time of Day	% On-time	% Early	% Late	Average Vehicle Age (Years)	Average LF	Max LF	Average Headway
Weekday							
AM	63.67	20.68	15.65	9.88	20.93	54.27	21
PM	63.83	9.34	26.83	9.55	18.89	55.18	19.6

Table 69. Route 912 Performance.

Time of Day	% On-time	% Early	% Late	Average Vehicle Age (Years)	Average LF	Max LF	Average Headway
Weekday							
AM	78.91	15.19	5.9	9.83	20.01	56.09	15.75
MID	76.63	10.81	12.56	8.5	13.59	53.51	50
PM	60.06	4.6	35.34	9.75	13.54	55.81	18.12
OFF	42.16	51.89	5.95	11.31	5.58	52.96	20

Table 70. Route 913 Performance.

Time of Day	% On-time	% Early	% Late	Average Vehicle Age (Years)	Average LF	Max LF	Average Headway
Weekday							
AM	79.94	4.49	15.57	6.44	12.01	50	24.17
MID	80.99	6.6	12.41	6.87	8.83	50	30
PM	68.38	0.85	30.77	7.94	15.43	50.1	26.67
OFF	70.42	12.32	17.25	8	7.16	50.16	136.5

Saturday							
AM	62.5	6.25	31.25	9.62	2.14	50	26.67
MID	65.67	4.48	29.85	9.2	8.93	50	29.62
PM	53.33	10	36.67	8.5	9.08	50	29
OFF	73.08	19.23	7.69	8.27	3.9	50	70
Sunday							
AM	72.22	0	27.78	5	2.59	50	27.2
MID	69.74	7.89	22.37	5	6.84	50	29.62
PM	88.57	5.71	5.71	5	7.54	50	29
OFF	63.64	27.27	9.09	5	6.95	50	45

Table 71. Route 914 Performance.

Time of Day	% On-time	% Early	% Late	Average Vehicle Age (Years)	Average LF	Max LF	Average Headway
Weekday							
AM	77.34	12.18	10.48	10.29	24.41	50.56	9.64
MID	71.03	9.31	19.65	9.86	15.06	50.02	102.5
PM	67.99	7.69	24.32	10.49	13.4	50.67	12.91
OFF	14.94	82.47	2.6	7.31	6.9	50	

Table 72. Route 915 Performance.

Time of Day	% On-time	% Early	% Late	Average Vehicle Age (Years)	Average LF	Max LF	Average Headway
Weekday							
AM	83.67	10.2	6.12	9.01	8.82	57	18
PM	87.1	0	12.9	7.38	5.23	57	568

Table 73. Route 92 Performance.

Time of Day	% On-time	% Early	% Late	Average Vehicle Age (Years)	Average LF	Max LF	Average Headway
Weekday							
AM	71.86	4.89	23.25	8.36	6.49	57	26.8
MID	52.17	3.88	43.95	8.24	11.85	57	28
PM	53.95	5.71	40.34	7.45	16.47	57	32.5
OFF	69.18	9.05	21.77	7.95	18.78	57	17
Saturday							
AM	79.7	3.47	16.83	10.72	5.76	57	19
MID	64.07	6.56	29.37	10.24	17.97	57	28.15

PM	63.72	10.32	25.96	8.85	15.33	57	34
OFF	80.95	6.12	12.93	9.68	16.59	57	40

Table 74. Route 921 Performance.

Time of Day	% On-time	% Early	% Late	Average Vehicle Age (Years)	Average LF	Max LF	Average Headway
Weekday							
AM	67.39	19.16	13.45	6.07	14.74	50	30
MID	75.64	4.27	20.09	3.23	12.63	50	205
PM	56.19	15.66	28.16	6.47	10.94	50	30
OFF	33.33	0	66.67	5	8.58	50	30

Table 75. Route 923 Performance.

Time of Day	% On-time	% Early	% Late	Average Vehicle Age (Years)	Average LF	Max LF	Average Headway
Weekday							
AM	69.52	8.84	21.64	6.57	14.13	50	24
MID	69.25	1.77	28.98	6.54	12.06	50	68.33
PM	42.75	2.36	54.89	6.6	12.17	50	24.4
OFF	98.01	1.99	0	6.01	5.56	50	10

Table 76. Route 924 Performance.

Time of Day	% On-time	% Early	% Late	Average Vehicle Age (Years)	Average LF	Max LF	Average Headway
Weekday							
AM	62.18	30.09	7.72	6.4	17.36	50	27
MID	73.1	2.07	24.83	6.9	17.38	50	459
M	51.6	7.43	40.97	6.87	16.04	50	34

Table 77. Route 925 Performance.

Time of Day	% On-time	% Early	% Late	Average Vehicle Age (Years)	Average LF	Max LF	Average Headway
Weekday							
AM	45.55	18.23	36.22	5.4	17.79	50	24.33
MID	51.03	0.34	48.63	3.25	41.09	50	487
PM	47.02	4.06	48.92	5.31	26.82	50	34
OFF	94.12	2.61	3.27	3.12	3.6	50	25

Table 78. Route 928 Performance.

Time of Day	% On-time	% Early	% Late	Average Vehicle Age (Years)	Average LF	Max LF	Average Headway
Weekday							
AM	60.7	12.31	26.99	4.13	12.07	50	41
MID	58.4	11.12	30.48	4.44	19.68	50	30.08
PM	54.7	13.31	31.99	4.43	26.59	50	39.25
OFF	55.82	15.23	28.94	5.34	21.07	50	124.08
Saturday							
AM	66.6	24.35	9.05	6.71	8.37	50	31.6
MID	58.56	14.3	27.15	6.7	13.82	50	30.62
PM	62.22	14.03	23.76	6.59	18.12	50	31.6
OFF	58.73	9.96	31.31	6.62	18.66	50	31.1
Sunday							
AM	73.98	17.1	8.92	6.52	5.72	50	30
MID	70.34	16.1	13.56	6.48	9.55	50	30.62
PM	63.24	19.54	17.22	6.67	11.82	50	31.6
OFF	60.49	23.46	16.05	6.72	11.6	50	31.5

Table 79. Route 94-96 Performance.

Time of Day	% On-time	% Early	% Late	Average Vehicle Age (Years)	Average LF	Max LF	Average Headway
Weekday							
AM	77.37	2.68	19.95	7.64	22.2	57	10.21
MID	67.49	3.9	28.61	8.01	30.24	57	23.88
PM	68.55	9.42	22.03	8.61	23.45	57	12
OFF	66.78	22.32	10.9	8.92	12.11	57	16
Saturday							
AM	81.56	7.09	11.35	8	13.49	57	27.33
MID	69.25	7.76	22.98	8.56	17.36	57	29.54
PM	72.88	14.83	12.29	8.59	19.35	57	31.33
Sunday							
MID	69.85	3.57	26.58	7.86	7.81	57	34.73
PM	77.32	2.06	20.62	5.12	4.46	57	32

Table 80. Route 95 Performance.

Time of Day	% On-time	% Early	% Late	Average Vehicle Age (Years)	Average LF	Max LF	Average Headway
Weekday							
AM	82.01	5.84	12.15	9.55	21.52	57	10.44
MID	66.74	7.5	25.76	8.64	28.98	57	14.11
PM	57.85	11.73	30.42	8.48	32.49	57	10.31
OFF	66.45	6.25	27.29	8.9	37.33	57	128.64
Saturday							
AM	69.61	19.71	10.68	10.4	13.64	57	17.78
MID	59.05	8.41	32.54	10.16	22.92	57	18.95
PM	65.43	8.16	26.42	10.25	33.22	57	20.57
OFF	38.6	0.96	60.45	9.19	28.89	57	39.57
Sunday							
AM	74.58	4.68	20.74	8.71	10.21	57	35.33
MID	55.3	2.88	41.82	8.41	25.55	57	35.09
PM	43.43	5.08	51.48	8.41	34.78	57	35
OFF	64.93	12.8	22.27	8.41	35.31	57	32.5

Table 81. Route AHS Performance.

Time of Day	% On-time	% Early	% Late	Average Vehicle Age (Years)	Average LF	Max LF	Average Headway
Weekday							
AM	66.53	18.14	15.33	9.47	9.95	54.25	4.38
MID	78.34	1.19	20.47	9.89	10.65	50.6	41.4
PM	84.63	5.91	9.46	9.55	6.35	55.07	6.84

Table 82. Route CBS Performance.

Time of Day	% On-time	% Early	% Late	Average Vehicle Age (Years)	Average LF	Max LF	Average Headway
Weekday							
AM	48.98	23.35	27.67	9.83	4.81	56.68	6.58
MID	71.75	8.92	19.33	9.62	6.16	55.54	38
PM	72.17	10.85	16.98	10.16	8.35	56.29	9.47

Table 83. Route DASH Performance.

Time of Day	% On-time	% Early	% Late	Average Vehicle Age (Years)	Average LF	Max LF	Average Headway
Weekday							
AM	82.1	6.8	11.1	5.01	4.01	45.18	15
MID	79.84	2.69	17.47	4.95	7.79	45.48	15
PM	77.7	2.93	19.37	4.99	10.35	45.54	15
OFF	19.23	80.77	0	4.88	9.79	45.56	

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Table 84. Route 55 Performance.

Time of Day	% On-time	% Early	% Late	Average Vehicle Age (Years)	Average LF	Max LF	Average Headway
Weekday							
AM	70.97	22.18	6.85	11.44	16.74	57	29
MID	54.47	16.72	28.81	11.79	12.68	57.1	90
PM	46.45	45.81	7.74	12.75	12.69	56.92	140
OFF	75	0	25	8.5	2.34	57	
Saturday							
MID	64.29	0	35.71	11.71	25.31	57	0
PM	80.49	0	19.51	12.79	11.7	57	188
OFF	23.23	30.3	46.46	11.54	12.87	58.77	35
Sunday							
AM	30.56	0	69.44	10.9	11.04	55.5	57
MID	44.64	12.5	42.86	11.01	6.82	62.96	57.86
PM	23.86	15.91	60.23	10.84	6.89	58.97	27.5
OFF	31.82	0	68.18	11.62	8.34	56.08	65

Table 85. Route BC Performance.

Time of Day	% On-time	% Early	% Late	Average Vehicle Age (Years)	Average LF	Max LF	Average Headway
Weekday							
AM	69.73	10.45	19.82	12.64	18.81	56.68	5.67
MID	49.95	7.12	42.92	12.34	22.08	57.18	6.9
PM	52.12	12.75	35.12	12.35	20.72	56.94	6.69

OFF	47.99	7.51	44.5	12.73	22.02	56.83	65
Saturday							
AM	68.98	27.7	3.32	12.72	18.49	56.87	10.24
MID	58.68	19.66	21.66	12.43	20.66	56.87	10
PM	57.72	13.46	28.82	12.06	16.67	56.83	10.12
OFF	14.29	2.31	83.4	12.05	22.84	56.97	137.4
Sunday							
AM	54.75	4.94	40.3	11.46	19.28	57	28.4
MID	35.06	4.95	59.99	11.06	17.05	57.09	16.54
PM	15.49	2.3	82.21	10.82	19.99	57	20.62
OFF	31.61	4.39	64	11.01	18.99	57	149.78

Table 86. Route BW Performance.

Time of Day	% On-time	% Early	% Late	Average Vehicle Age (Years)	Average LF	Max LF	Average Headway
Weekday							
AM	68.11	9.71	22.18	12.55	12.5	57.17	4.57
MID	46.27	7.08	46.65	12.39	21.46	56.75	6.26
PM	46.25	8.12	45.63	12.48	18.38	56.75	5.97
OFF	43.34	7.22	49.43	12.68	18.04	56.79	46.56
Saturday							
AM	72.2	12.28	15.52	12.75	10.61	56.87	9.16
MID	61.49	12.72	25.79	12.37	18.6	56.87	10.02
PM	57.85	14.19	27.96	12.34	16.61	56.89	9.71
OFF	11.07	1.11	87.82	12.32	15.89	56.95	84.76
Sunday							
AM	53.26	6.23	40.51	11.22	10.97	57	30
MID	21.78	1.16	77.06	11.51	16.39	57	33.75
PM	15.24	0.21	84.55	11.02	18.23	57	32.2
OFF	20.27	2.51	77.22	11.02	17.06	57	149.67

Table 87. Route C Performance.

Time of Day	% On-time	% Early	% Late	Average Vehicle Age (Years)	Average LF	Max LF	Average Headway
Weekday							
AM	57.67	25.67	16.67	11.1	17.55	62.09	9.23
MID	54.25	17.26	28.49	11.64	21.45	59.29	21.32

PM	52.56	10.65	36.78	12.09	16.51	57.96	16.25
OFF	51.61	6.3	42.08	11.45	13.57	61.27	95.33
Saturday							
AM	54.5	4.5	41.01	12.23	22.41	57	37.5
MID	49.55	6.42	44.03	12.4	19.13	56.76	36.5
PM	43.29	7.34	49.37	12.06	20.4	56.39	35
OFF	61.6	0.8	37.6	11.65	4.46	57	46
Sunday							
OFF	49.21	50.79	0	11.29	1.13	59.12	60

Table 88. Route DD Performance.

Time of Day	% On-time	% Early	% Late	Average Vehicle Age (Years)	Average LF	Max LF	Average Headway
Weekday							
AM	56.39	22.98	20.62	10.26	12.7	65.36	5.15
MID	43.92	13.03	43.05	9.62	19.27	68.15	4.84
PM	42.81	12.72	44.47	10.63	20.43	63.24	5.65
OFF	40.7	13.02	46.28	10.87	21.89	62.84	63.52
Saturday							
AM	48.92	22.5	28.58	12.16	17.28	57.2	12
MID	39.21	10.07	50.72	11.64	18.84	56.98	6
PM	38.35	13.8	47.85	11.57	20.24	56.75	6.58
OFF	25.72	10.47	63.81	11.78	20.39	56.85	68.81
Sunday							
AM	39.87	11	49.12	7.45	15.85	80.84	20.86
MID	34.63	15.41	49.96	7.33	20.22	79.84	15.77
PM	38.9	19.31	41.79	7.81	24.03	76.2	13.75
OFF	24.44	8.44	67.12	8.39	27.63	72.35	149.89

Table 89. Route DG Performance.

Time of Day	% On-time	% Early	% Late	Average Vehicle Age (Years)	Average LF	Max LF	Average Headway
Weekday							
AM	60.85	17.78	21.38	9.61	15.65	68.62	5.03

MID	43.33	14.06	42.61	10	23.21	66.57	5.06
PM	43.84	18.23	37.93	10.39	20.62	64.7	5.83
OFF	37.85	4.16	57.99	10.46	20.65	64.33	58.08
Saturday							
AM	66.54	7	26.46	12.43	20.51	57.27	11.36
MID	44.1	10.4	45.51	11.66	19.38	56.97	6.09
PM	34.37	9.03	56.6	11.58	19.77	56.78	7.65
OFF	32.33	3.42	64.25	11.66	16.04	56.87	72.05
Sunday							
AM	44.16	12.99	42.86	7.03	16.87	83.93	23.86
MID	35.45	5.77	58.78	7.5	21	78.69	16.25
PM	27.3	4.83	67.87	7.43	21.38	78.7	15.56
OFF	26.81	4.97	68.22	8.75	21.81	68.98	72.5

Table 90. Route FE Performance.

Time of Day	% On-time	% Early	% Late	Average Vehicle Age (Years)	Average LF	Max LF	Average Headway
Weekday							
AM	64.28	22.8	12.92	12.48	9.46	56.6	10
MID	39.85	8.94	51.22	11.7	11.9	56.67	14.7
PM	65.02	11.82	23.16	11.56	12.92	56.85	11.15
OFF	59.62	15.65	24.73	12.22	12.38	56.79	37
Saturday							
AM	74.43	9.73	15.84	12.92	6.81	56.67	18.75
MID	46.57	6.81	46.62	12.32	8.8	56.81	14.44
PM	48.02	6.5	45.48	11.57	9.54	56.89	26.17
OFF	36	4	60	13	3.64	56.79	

Table 91. Route FW Performance.

Time of Day	% On-time	% Early	% Late	Average Vehicle Age (Years)	Average LF	Max LF	Average Headway
Weekday							
AM	61.55	22.27	16.18	12.53	14.86	56.65	8.65
MID	47.12	9.44	43.43	11.56	20.61	56.65	12.5
PM	53.19	7.31	39.5	11.84	16.95	56.78	7.47
OFF	56.86	9.23	33.9	12.11	15.47	57.01	19.8
Saturday							
AM	70.92	13.68	15.39	12.26	10.41	58.02	12.31
MID	44.69	9.09	46.22	12.28	15.29	56.85	14.81

PM	35.78	13.98	50.24	12.2	14.7	56.85	13.89
OFF	56.67	16.67	26.67	11.23	11.99	57	

Table 92. Route GL Performance.

Time of Day	% On-time	% Early	% Late	Average Vehicle Age (Years)	Average LF	Max LF	Average Headway
Weekday							
AM	58.14	10.88	30.98	12.31	10.23	56.86	12
MID	41.48	6.76	51.77	12.55	13.74	56.81	18.95
PM	41.87	8.62	49.51	12.45	12.37	56.7	15
OFF	35.82	9.47	54.71	10.76	11.16	56.69	24.12
Saturday							
AM	71.33	15.77	12.9	12.22	7.34	56.82	17.86
MID	50.13	6.24	43.62	12.27	11.21	56.87	22.5
PM	41.33	13.71	44.96	12.2	13.05	56.87	22.14
OFF	41.11	10	48.89	12	7.9	56.53	37
Sunday							
AM	40.36	0.45	59.19	10.72	9.18	56.96	27.67
MID	27.48	1.43	71.1	9.93	10.95	56.96	33.27
PM	28.9	4.09	67.01	9.41	10.3	57	33.75

Table 93. Route GS Performance.

Time of Day	% On-time	% Early	% Late	Average Vehicle Age (Years)	Average LF	Max LF	Average Headway
Weekday							
AM	62.88	21.95	15.16	12.18	6.21	56.74	11.75
MID	47.97	13.94	38.09	12.48	8.6	56.83	18.86
PM	60.49	11.62	27.89	12.41	12.29	56.81	17.43
OFF	100	0	0	11.56	4.19	57	5
Saturday							
AM	81.02	15.33	3.65	12.51	4.59	57	19.88
MID	79.02	8.82	12.16	12.33	6.96	56.71	22.5
PM	71.72	11.62	16.67	12.09	9.07	56.87	22.86
OFF	100	0	0	11.14	6.02	57	

Table 94. Route JK Performance.

Time of Day	% On-time	% Early	% Late	Average Vehicle Age (Years)	Average LF	Max LF	Average Headway
Weekday							

AM	66.13	16.3	17.57	10.18	13.22	65.08	5.61
MID	47.25	15.93	36.82	10.37	17.26	63.58	8.71
PM	34.84	8.91	56.24	10.59	17.17	63.73	7.74
OFF	49.96	7.04	43	9.95	14.31	66.24	15.76
Saturday							
AM	66.79	23.25	9.96	8.29	10	73.27	14.09
MID	48.91	9.35	41.75	9.35	15.77	67.43	14.81
PM	53.6	6.77	39.63	9.8	14.98	65.63	14.82
OFF	23.47	4.29	72.24	12.08	17.38	59.15	29.17
Sunday							
AM	21.07	0	78.93	10.5	11.35	56.7	23.5
MID	26.01	3.64	70.34	10.91	14.11	56.35	22.12
PM	33.68	4.44	61.88	10.57	17.14	56.7	27
OFF	35.43	3.14	61.43	11.37	7.06	56.55	43.5

Table 95. Route JW Performance.

Time of Day	% On-time	% Early	% Late	Average Vehicle Age (Years)	Average LF	Max LF	Average Headway
Weekday							
AM	64.04	12.08	23.88	9.08	18.67	70.85	7.26
MID	46.28	8.95	44.77	9.05	21.1	70.56	11.71
PM	44.21	6.6	49.19	9.87	19.11	67.47	9.22
OFF	46.11	10.38	43.5	10.11	10.09	66	89.31
Saturday							
AM	69.04	14.45	16.51	10.6	15.44	63.23	15
MID	48.29	9.12	42.59	9.56	19.23	66.46	15.15
PM	45.04	8.75	46.21	9.74	13.79	65.01	14.45
OFF	33.52	12.89	53.58	10.31	11.6	67.51	273
Sunday							
AM	45.41	5.68	48.91	10.89	10.93	57.18	20.8
MID	29.4	7.61	62.99	10.51	13.31	57.2	17.57
PM	27.85	4.51	67.64	10.95	11.77	56.33	27
OFF	22.97	29.73	47.3	11.46	6.15	56.94	594

Table 96. Route L1 Performance.

Time of Day	% On-time	% Early	% Late	Average Vehicle Age (Years)	Average LF	Max LF	Average Headway
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Weekday							
AM	66.7	19.07	14.22	12.3	4.96	56.83	33
PM	52.44	8.36	39.2	12.16	6.37	56.82	35

Table 97. Route MS Performance.

Time of Day	% On-time	% Early	% Late	Average Vehicle Age (Years)	Average LF	Max LF	Average Headway
Weekday							
AM	59.58	30.94	9.48	12.76	14.63	56.74	11.33
MID	60.08	11.54	28.38	12.45	15.91	56.95	12.8
PM	55.45	10.99	33.56	12.26	15.55	56.99	15.18
OFF	44.17	11.19	44.64	11.82	7.37	58.55	22.1
Saturday							
AM	79.4	15.88	4.72	11.5	6.98	56.71	17
MID	66.74	13.65	19.6	11.34	8.26	56.88	19.75
PM	62.45	3.72	33.83	11.06	6.54	56.82	14.88
OFF	100	0	0	11.67	0.29	57	27
Sunday							
AM	45.65	0	54.35	10.33	5.57	56.94	43
MID	40.19	0.71	59.1	9.79	5.4	56.95	33.75
PM	37.5	0	62.5	8.94	8.12	57	37.5

Table 98. Route MW Performance.

Time of Day	% On-time	% Early	% Late	Average Vehicle Age (Years)	Average LF	Max LF	Average Headway
Weekday							
AM	64.82	28.9	6.29	12.66	10.77	56.7	8.1
MID	48.3	8.39	43.31	12.52	14.37	57.34	12.19
PM	55.46	8.38	36.16	12.07	13.85	56.93	16.9
OFF	42.73	1.16	56.11	11.74	7.37	56.89	28.71
Saturday							
AM	85.77	7.87	6.37	11.12	12.16	56.74	22
MID	67.54	3.14	29.32	11.36	12.58	56.88	20
PM	59.25	3.75	37	10.87	8.92	56.89	20.38
OFF	61.9	38.1	0	12.4	0.79	56.7	

Table 99. Route OS Performance.

Time of Day	% On-time	% Early	% Late	Average Vehicle Age (Years)	Average LF	Max LF	Average Headway
Weekday							
AM	62.38	5.9	31.73	12.15	24.51	56.78	10.35
MID	46.35	9.44	44.21	12.04	25.25	56.97	8.91
PM	47.74	13.07	39.19	12.08	24.95	56.88	9.72
OFF	53.01	11.11	35.89	11.9	20.32	57.31	18.87
Saturday							
AM	60.3	16.23	23.47	12.14	23.3	56.74	13.33
MID	41.16	15.33	43.51	11.86	27.54	56.7	9.52
PM	32.83	12.69	54.48	11.95	26.83	56.87	10.71
OFF	28.03	10.61	61.36	12.03	21.69	57.17	25.56
Sunday							
AM	24.64	1.81	73.55	11.33	33.62	56.45	60
MID	12.1	2.47	85.43	9.52	28.03	68.4	27.69
PM	28	0.8	71.2	11.05	17.25	58.97	16.88
OFF	53.07	0.92	46.01	11.28	13.36	56.5	60

Table 100. Route OW Performance.

Time of Day	% On-time	% Early	% Late	Average Vehicle Age (Years)	Average LF	Max LF	Average Headway
Weekday							
AM	62.06	18.24	19.69	12.2	7.91	56.81	11.14
MID	62.46	17.45	20.09	11.99	10.35	56.79	17.04
PM	47.06	16.17	36.77	11.5	10.77	56.79	14.09
OFF	37.84	7.26	54.9	12.11	7.95	56.83	32.67
Saturday							
AM	58.95	11.32	29.74	12	5.84	56.88	15.67
MID	48.23	10.37	41.4	12.03	12.38	56.67	19.11
PM	45.43	9.97	44.6	11.41	13.44	56.68	17.43
OFF	100	0	0	10	1.93	57	44
Sunday							
AM	47.94	0	52.06	11.2	8.25	56.46	46
MID	28.42	10.57	61.01	11.39	9.93	56.56	33.75
PM	25.37	12.2	62.44	12.13	10.81	56.88	36.67

Table 101. Route QB Performance.

Time of Day	% On-time	% Early	% Late	Average Vehicle Age (Years)	Average LF	Max LF	Average Headway
Weekday							
AM	74.48	10.54	14.98	12.09	9.97	56.63	9.65
MID	62.39	8.7	28.91	12.2	12.67	56.62	12.66
PM	57.5	6.35	36.14	12.09	13.38	56.6	12.5
OFF	69.6	2.61	27.79	12.48	7.15	56.51	27
Saturday							
AM	81.09	3.48	15.42	12.3	7.08	56.45	20
MID	74.43	9.03	16.54	12.3	11.94	56.53	19.43
PM	63.64	13.48	22.88	12.58	10.15	56.44	16.67
OFF	9.44	2.66	87.89	11.14	24.05	57	29
Sunday							
AM	27.27	0.76	71.97	11.87	16.9	56.81	28.33
MID	23.75	1.72	74.52	11.82	23.12	56.89	33.64
PM	23.22	9.6	67.18	11.81	19.9	56.92	34.33

Table 102. Route QL Performance.

Time of Day	% On-time	% Early	% Late	Average Vehicle Age (Years)	Average LF	Max LF	Average Headway
Weekday							
AM	63.24	11.35	25.41	12.15	11.14	56.62	9.12
MID	56.58	14.43	28.98	12.31	15.16	56.6	11.97
PM	52.94	17.74	29.32	12.21	13	56.61	11.33
OFF	39.71	7.33	52.96	12.82	7.7	56.66	17.25
Saturday							
AM	69.15	7.44	23.42	12.34	7.51	56.42	19.25
MID	56.32	9.39	34.3	12.23	11.73	56.65	19.16
PM	55.22	15.31	29.47	12.42	11.98	56.62	16.6
OFF	22.14	2.86	75	11.55	8.39	56.97	59.5
Sunday							
AM	46.03	0	53.97	11.61	6.32	56.65	20.75
MID	41.75	5.44	52.82	11.64	9.7	56.88	33.75
PM	30.77	13.36	55.87	11.82	9.35	56.89	33.75
OFF	87.5	0	12.5	8.5	10.53	57	419

Table 103. Route S Performance.

Time of Day	% On-time	% Early	% Late	Average Vehicle Age (Years)	Average LF	Max LF	Average Headway
Weekday							
AM	60.09	34.49	5.42	11.44	13.35	61.27	18.4
MID	38.79	16.59	44.62	11.85	13.66	59.47	33.75
PM	39.12	28.91	31.97	12.3	11.06	57.44	20
OFF	54.35	38.93	6.72	12.57	9.16	56.6	68
Saturday							
AM	66.14	24.87	8.99	12.31	21.09	56.18	35
MID	46.61	32.13	21.27	12.6	8.45	56.53	135
PM	36.48	59.75	3.77	12.69	8.04	57	525

Table 104. Route SLCA Performance.

Time of Day	% On-time	% Early	% Late	Average Vehicle Age (Years)	Average LF	Max LF	Average Headway
Weekday							
AM	45.77	38.72	15.51	12.59	3.93	56.63	32.25
MID	54.7	43.07	2.23	12.69	3.65	56.49	65
OFF	42.86	35.71	21.43	13.48	0.81	56.18	30

Table 105. Route SLCP Performance.

Time of Day	% On-time	% Early	% Late	Average Vehicle Age (Years)	Average LF	Max LF	Average Headway
Weekday							
MID	42.86	27.62	29.52	9.97	2.59	56.81	62
PM	70.27	21.76	7.97	11.86	4.39	56.71	30
OFF	56.46	36.22	7.32	11.91	4.26	56.7	58

Table 106. Route US Performance.

Time of Day	% On-time	% Early	% Late	Average Vehicle Age (Years)	Average LF	Max LF	Average Headway
Weekday							
AM	49.39	37.57	13.05	6.07	7.54	45.88	9.71
MID	46.62	15.44	37.93	6.32	12.76	46.09	10

PM	35.09	6.95	57.96	6.19	14.36	46.09	10
OFF	39.75	13	47.26	6.29	10.75	46.18	10.28

Table 107. Route ZS Performance.

Time of Day	% On-time	% Early	% Late	Average Vehicle Age (Years)	Average LF	Max LF	Average Headway
Weekday							
AM	70.12	23.14	6.74	12.27	9.09	56.78	7.5
MID	58.01	18.49	23.49	12.32	11.77	56.72	10.76
PM	49.24	24.79	25.97	12.21	8.02	57.73	11.67
OFF	47.36	19.25	33.4	12.91	7.23	56.28	33.33
Saturday							
AM	93.33	6.67	0	12.54	4.72	57	21.2
MID	69.07	4.17	26.76	12.21	6.32	56.82	22.5
PM	71.35	13.48	15.17	12.45	7.96	56.8	22.5

Table 108. Route ZW Performance.

Time of Day	% On-time	% Early	% Late	Average Vehicle Age (Years)	Average LF	Max LF	Average Headway
Weekday							
AM	60.51	15.04	24.46	12.17	7.36	56.72	9.72
MID	56.34	7.28	36.38	12.25	10.51	56.75	13.63
PM	51.54	12.19	36.27	12.35	11.9	56.6	12.31
OFF	37.97	21.1	40.93	12.87	3.66	56.36	21.5
Saturday							
AM	59.76	6.5	33.74	12.49	5.22	56.65	22.86
MID	46.74	7.15	46.1	12.38	8.57	56.85	22.5
PM	45.81	17.32	36.87	12.02	7.7	56.79	26.67

Service Availability

For the service availability analysis, census tracts were laid over the road network. Then the appropriate buffers by type of service were added. Tracts with high population density (>5,000 people/square mile) were then added to determine service coverage. Also, since each tract within a system is classified as either minority or non-minority and low-income or non-low-income, the total miles covered by the service area were computed for each of these categories of tracts. Table 109 below lists percentages of service area road miles that are covered by a corresponding service area.

For the Hartford transit system, 92.12% of all roads that have minority census tracts with a population density greater than 5,000 people per square mile are covered by the service area. This is essentially

equal to percentage for non-minority tracts. The biggest discrepancy between minority and non-minority tract designations is in the New Haven transit area, where 81.69% of the road miles that have minority census tracts with a population density greater than 5,000 people per square mile, are covered by the transit system versus 91.89% for non-minority tract designations. This is partly due to the overestimation of the exact service area of the transit system, because census tracts do not conform to the service area buffer, resulting in tracts of various shapes being included in the system, even when portions of the tracts are beyond service area buffer. Because it is not possible to determine the precise distribution of population within those tracts the whole tract has to be considered as a part of the transit system.

Because prior service monitoring by CTDOT did not include service availability monitoring, CTDOT will first perform additional analyses to better understand possible underlying causes for the apparent discrepancy in coverage in the New Haven transit service area. We will review the service availability standard that was developed, and review more data about the region being served to determine whether the standard adequately addresses service availability for the region. If after this review, it is determined that the service availability standard correctly represents that the New Haven service area provides more service to non-minority areas, CTDOT will take steps to correct the balance of service availability in the New Haven service area.

Table 109. Transit System Coverage by Minority Tract Designation

System	Tract Designation	Total Miles	Miles Covered by Service Area	% Miles Covered by Service Area
Hartford Bus	Minority Tracts	927	854	92.12%
	Non-Minority Tracts	127	117	92.49%
New Haven Bus	Minority Tracts	446	364	81.69%
	Non-Minority Tracts	83	76	91.89%
Shore Line East	Minority Tracts	704	663	94.21%
	Non-Minority Tracts	201	181	89.76%
Metro-North Rail	Minority Tracts	942	871	92.41%
	Non-Minority Tracts	204	198	97.21%

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Appendix A. Transit Systems Maps

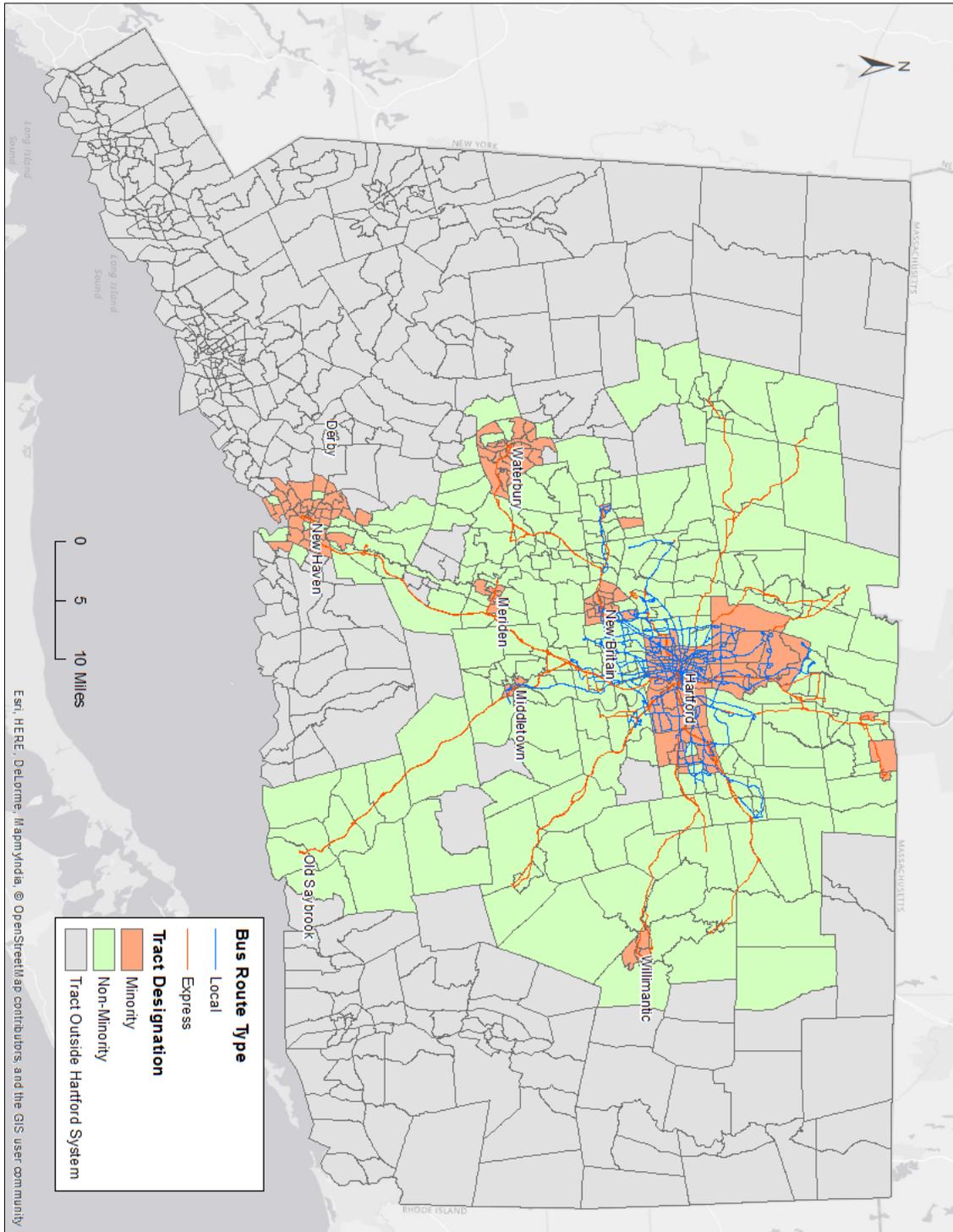


Figure 1. Minority Tract Designation in Hartford Bus Transit Area

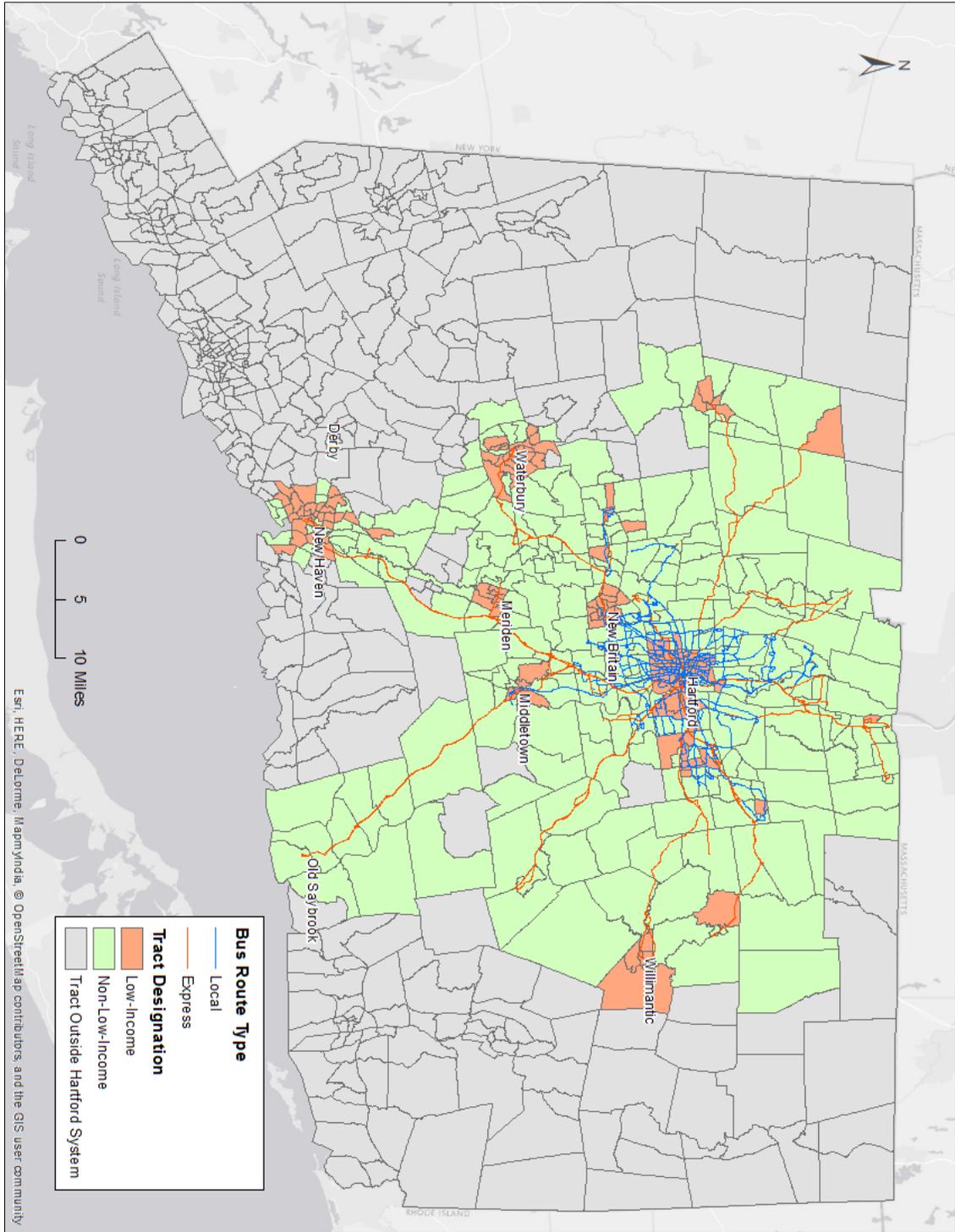


Figure 2. Low-Income Tract Designation in Hartford Bus Transit Area

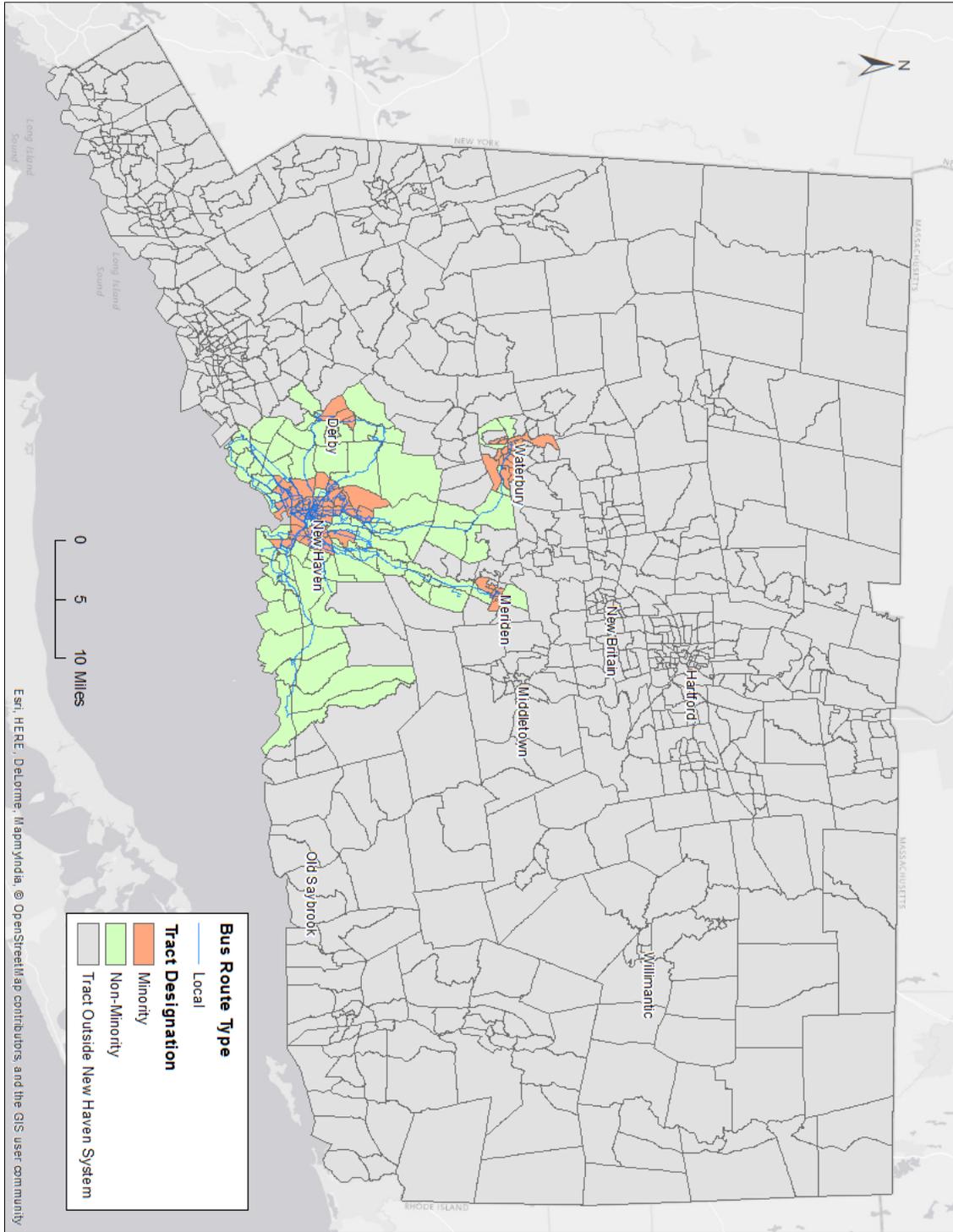


Figure 3. Minority Tract Designation in New Haven Bus Transit Area

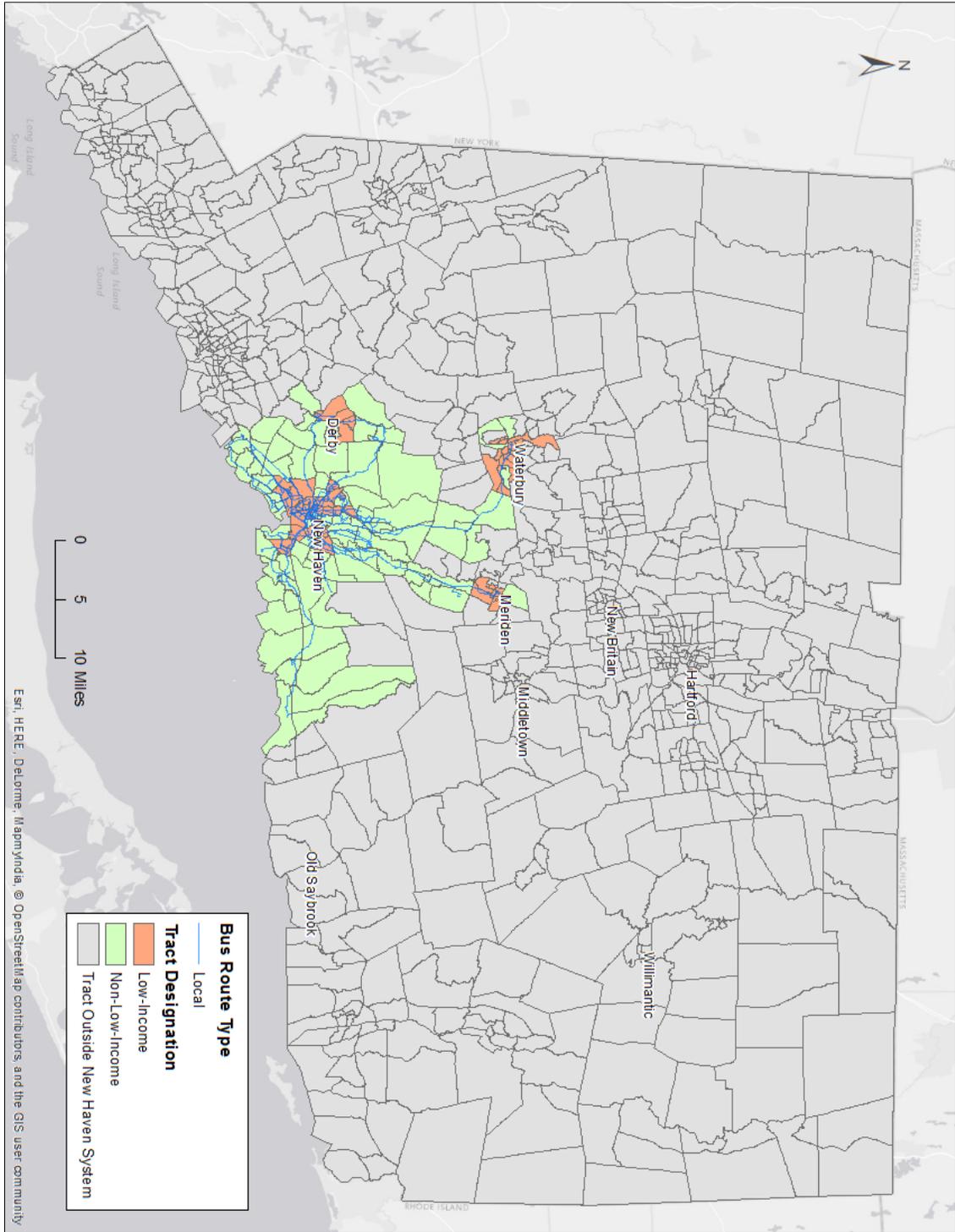


Figure 4. Low-Income Tract Designation in New Haven Bus Transit Area

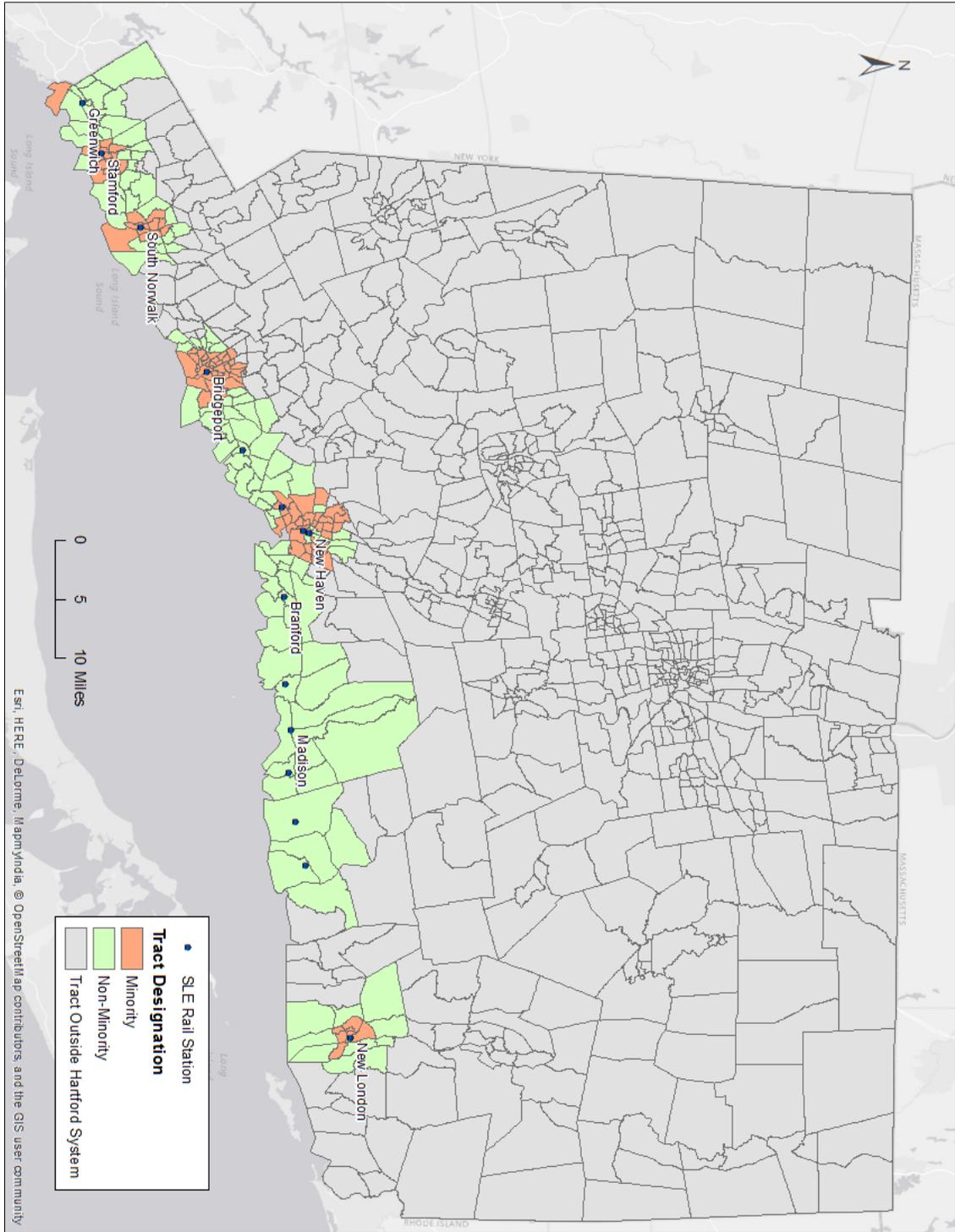


Figure 5. Minority Tract Designation in Shore Line East Rail Transit Area

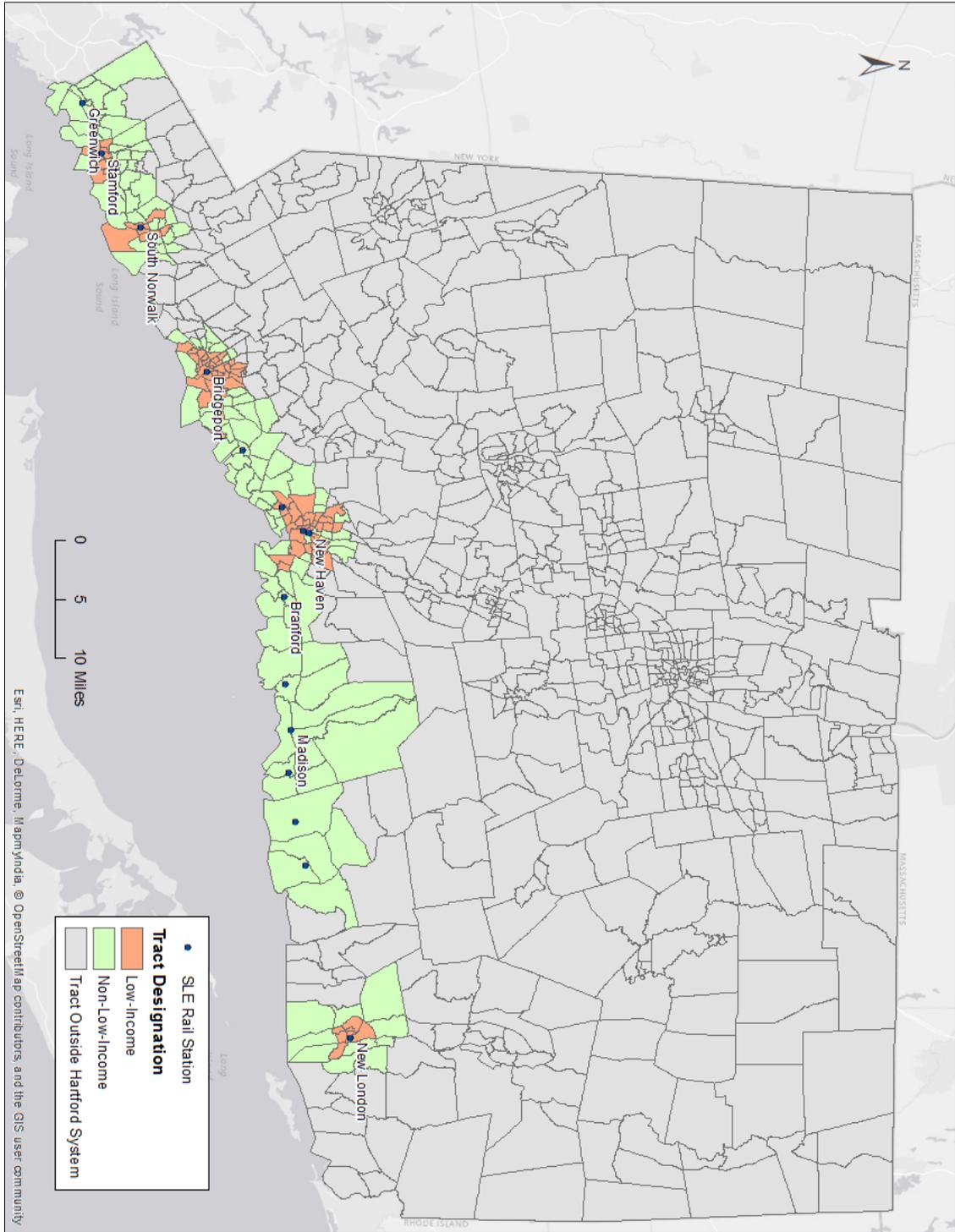


Figure 6. Low-Income Tract Designation in Shore Line East Rail Transit Area

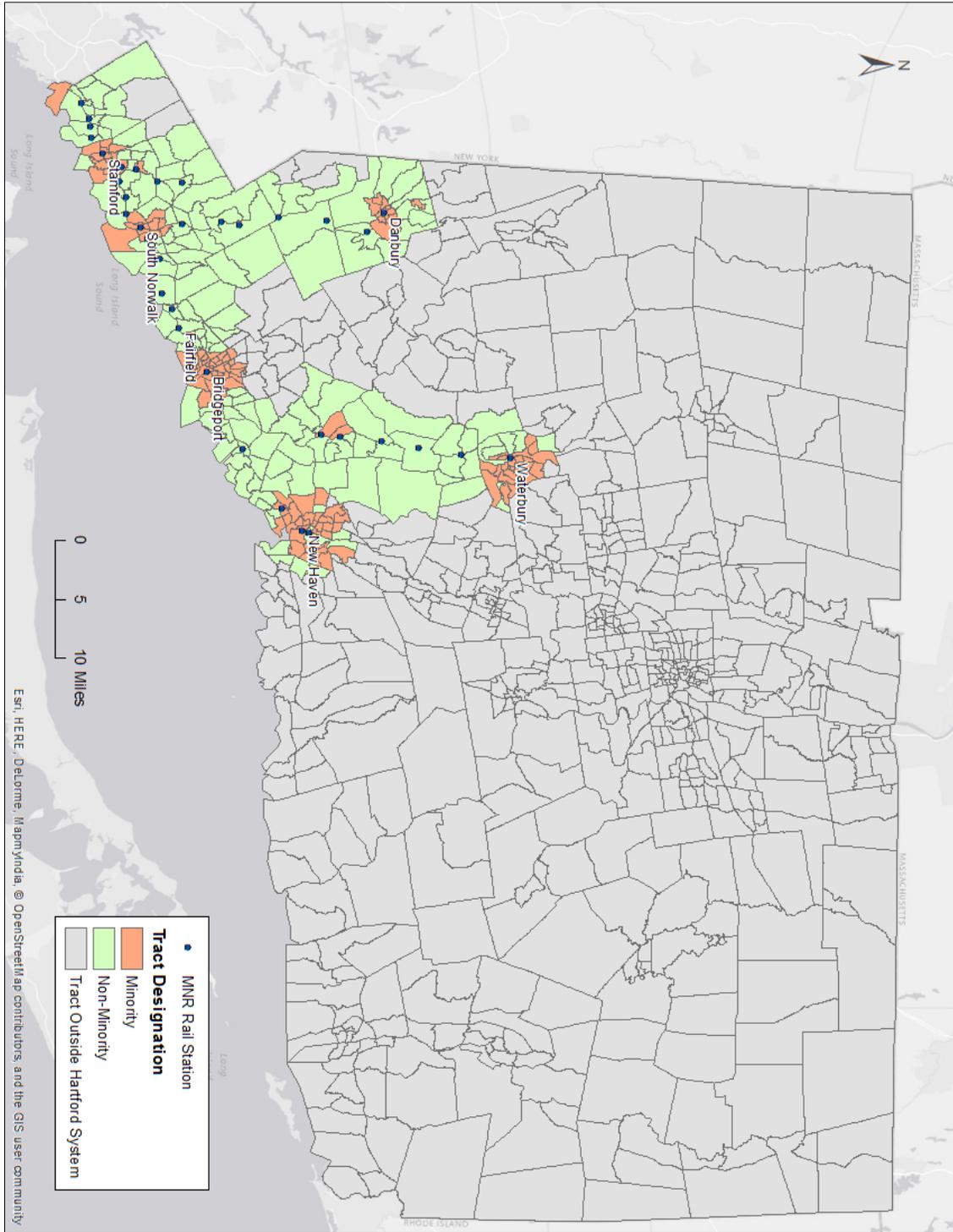


Figure 7. Minority Tract Designation in Metro-North Rail Transit Area

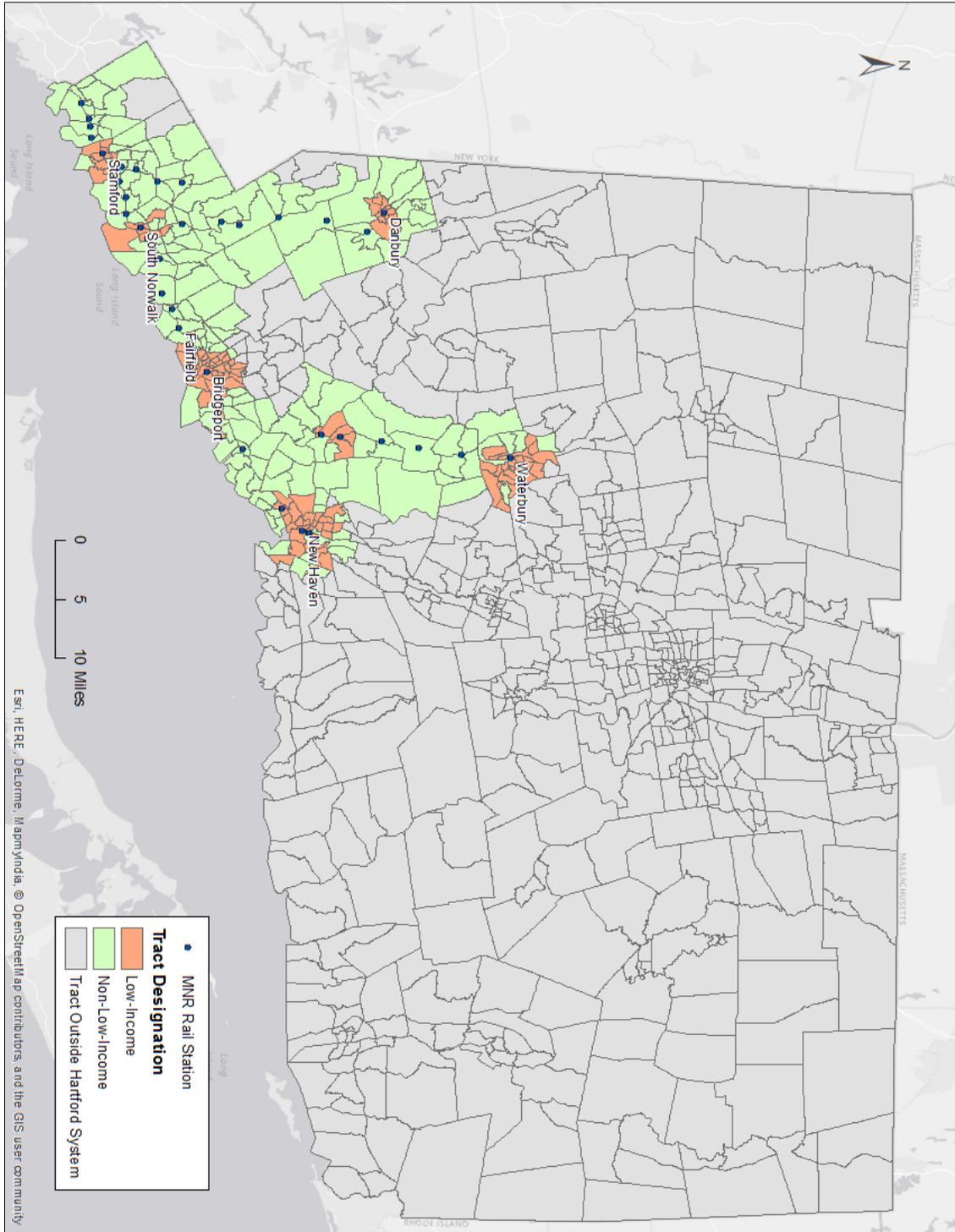


Figure 8. Low-Income Tract Designation in Metro-North Rail Transit Area

Service and Fare Equity Analysis Policy

Pursuant to Federal Transit Administration (“FTA”) Circular 4702.1B, FTA Circular 4703.1, and Title VI of the Civil Rights Act of 1964, and their related regulations, the following is the policy of the Connecticut Department of Transportation (CTDOT) for service and fare equity analyses and determination of disparate impact and disproportionate burden.

Disparate impact refers to a facially neutral policy or practice that disproportionately affects members of a group identified by race, color, or national origin, when the recipient’s policy or practice lacks a substantial legitimate justification and when there exists one or more alternatives that would serve the same legitimate objectives but with less disproportionate effect on the basis of race, color, or national origin.

Disproportionate burden refers to a facially neutral policy or practice that disproportionately affects low-income population’s more than non-low-income populations. A finding of disproportionate burden requires the recipient to evaluate alternatives and mitigate adverse effects where practicable.

Section I: Service Equity Analysis

Major Service Change Policy:

All changes in service meeting the definition of a “Major Service Change” are subject to a Title VI Service Equity Analysis and a public hearing prior to presentation to the Commissioner of Transportation for approval and implementation actions. The following are considered “major service changes” that would require a public hearing and a service equity analysis prior to approval by CTDOT:

1. A proposal to abandon all service on an entire bus route or rail line, or elimination of a route or a branch that reduces the span of service by more than five percent (5%);
2. a proposal to eliminate service on a portion of a bus route or rail line that represents more than twenty percent (20%) of the route miles of the particular route or line. (No major service change will be considered if alternative transit service is available on existing duplicative service provided by another transit provider or by transfer to another route, and if the elimination does not trigger any other threshold for a major service change);
3. a proposal to substantially reduce service on a bus route or rail line, specifically where reduction of service increases the headway of the peak period service by more than fifty percent (50%) or more than doubles the off-peak headway.
4. The addition of, or reduction in, more than ten percent (10%) of the rail or bus system’s overall riders or vehicle revenue hours through one or more route changes

A Service Equity Analysis will be conducted whenever CTDOT implements a major service change to the rail or bus system as defined in this policy when it would remain in effect in excess of twelve (12) months. Further, when a service change is proposed, there shall be a twelve-month look-back to

ascertain if the aggregate of any changes in the prior twelve (12) months would have triggered one of these major service change criteria and therefore an equity analysis.

The following service changes are exempted:

1. Standard seasonal variations in service: a Seasonal route or routing variation is usually a modification to service to provide “added” access that is not broadly needed year round, or the discontinuation of same. Any temporary service addition, change, or discontinuation of a route with the intention that it will be in operation for less than twelve months¹;
2. Changes on routes serving sporting events, special events, or service contracted through other cities or agencies;
3. Any service change that does not meet the definition of a major service change such as minor route alignments, frequency, span, or time point adjustments; route or bus stop changes due to temporary road detours caused by construction, maintenance, closures, emergencies, labor disruptions or strikes, fuel shortages, or safety concerns; etc.

Section II: Fare Equity Analysis

Fare Changes:

A fare equity analysis will be conducted whenever CTDOT implements a fare change, regardless of the amount of increase or decrease, except for those fare changes mandated by Federal, state or local law. A fare change is defined as an increase or decrease in fares: (a) on the entire system, (b) on certain transit modes, or (c) by fare payment type or fare media. The exceptions are as follows:

1. “Spare the air days” or other instances when a local municipality, the state or CTDOT has declared that all passengers ride free;
2. Temporary fare reductions that are mitigating measures for other actions (i.e. construction activities that close a segment of the rail system); or
3. Promotional fare reductions that last less than six (6) months.

The fare equity analysis will evaluate the effects of the proposed fare changes on minority populations and low-income populations. For proposed changes that would increase or decrease the fares on the entire system, or on certain modes, or by fare payment type or fare media, CTDOT will analyze any available information generated from ridership surveys indicating whether minority and/or low-income riders are disproportionately more likely to use the mode of service, payment type or payment media that would be subject to the change.

Section III: Disparate Impact Policy

¹ While all changes from regular service to seasonal service and the reverse are exempt, should there be changes within the seasonal service from one year to the next, CTDOT will conduct a SAFE analysis should the change exceed fifty percent (50%), regardless of increase or decrease in service.

The purpose of this policy is to establish a threshold which identifies when adverse effects of a major service or fare change are borne disproportionately by minority populations. For the purpose of this policy, a minority population is defined as any readily identifiable group of minority persons who live in geographical proximity.

Service Changes:

A major service change to the rail or bus system will be deemed to have a disparate impact on minority populations if the percentage of riders or vehicle revenue hours on minority-classified routes affected by the major service change is at least fifteen (15%) percentage points higher than the percentage of riders or vehicle revenue hours on non-minority-classified routes affected by the major service change.

The quantitative methodology used to determine when an impact meets or exceeds the disparate impact thresholds set in this policy is as follows:

To determine the impacts of major service changes on specific routes, the ratio of minority population and non-minority population within the impacted tract areas will be compared to the ratio of minority and non-minority population within the service area as a whole. (Example: if minorities make up 30 percent of the overall population, but would bear 45 percent of the impacts, and the non-minority group would bear 55 percent, there may be a disparate impact insofar as the minority group bears 15 percent more than its expected share, from 45 percent of the burden to 30 percent of the population; while the non-minority group bears 15 percent less than its expected share of 55 percent burden compared to 70 percent of the population.). Comparisons of impacts between minority and non-minority populations will be made for all changes for each day of service — weekday, Saturday, and Sunday.

Fare Changes:

For fare changes, a fare change will be deemed to have a disparate impact on minority populations if its implementation results in either:

1. When one fare change is proposed, the percentage of impacts of the proposed fare change borne by minority riders as a result of the proposed fare change is at least ten percentage points higher than the percentage of impacts of that proposed fare change on the overall rider population; or
2. When more than one fare change is proposed:
 - a. For each fare change in the package: the percentage of impacts of each individual proposed fare change borne by minority riders as a result of the proposed fare change is at least ten percentage points higher than the percentage of impacts of that proposed fare change on the overall rider population; and
 - b. For the total package of fare changes: the aggregate percentage of impacts for the proposed fare changes borne by minority riders as a result of the proposed fare changes is at least five percentage points higher than the aggregate percentage of impacts on the overall rider population.

The quantitative methodology used to determine when a fare change meets or exceeds the disparate impact thresholds set in this policy is as follows:

To determine the impact of a fare change, the ratio of minority population and non-minority population within the impacted tract areas will be compared to the ratio of minority and non-minority population within the service area as a whole. (Example: if minorities make up 30 percent of the overall population, but would bear 45 percent of the impacts, and the non-minority group would bear 55 percent, there may be a disparate impact insofar as the minority group bears 15 percent more than its expected share, from 45 percent of the burden to 30 percent of the population; while the non-minority group bears 15 percent less than its expected share of 55 percent burden compared to 70 percent of the population.). Differences in the use of fare options between minority populations and other populations include all such differences that are documented as statistically significant at the 95 percent confidence level.

FTA Circular 4702.1B states that a recipient can implement a fare increase that would have a disproportionate or adverse effect provided that it demonstrates the action meets a substantial need that is in the public interest and that alternatives would have more severe adverse effects than the preferred alternative.

Section IV: Disproportionate Burden Policy

A major service change to the rail or bus system will be deemed to have a disproportionate burden on low-income populations if the percentage of riders or vehicle revenue hours on below-poverty-level classified routes affected by the major service change is at least fifteen percentage points (15%) higher than the percentage of riders or vehicle revenue hours on above-poverty-level classified routes affected by the major service change.

The quantitative methodology used to determine when an impact meets or exceeds the disproportionate burden thresholds set in this policy is as follows:

To determine the impacts of major service changes on specific routes, the ratio of low-income and non-low income population within the impacted tract areas will be compared to the ratio of low-income and non-low-income population within the service area as a whole. (Example: if the low income group makes up 30 percent of the overall population, but would bear 45 percent of the burden, and the non-low income group would bear 55 percent, there may be a disproportionate burden insofar as the low income group bears 15 percent more than its expected share, from 45 percent of the burden to 30 percent of the population; while the non-low-income group bears 15 percent less than its expected share of 55 percent burden compared to 70 percent of the population.) Comparisons of impacts between low-income and non-low-income populations will be made for all changes for each day of service — weekday, Saturday, and Sunday.

A fare change will be deemed to have a disproportionate burden on low-income populations if its implementation results in either:

1. When one (1) fare change is proposed, the percentage of impacts of the proposed fare change borne by low-income riders as a result of the proposed fare change is at least ten percentage points (10%) higher than the percentage of impacts of that proposed fare change on the overall rider population; or
2. When more than one (1) fare change is proposed:
 - a. For each fare change in the package: the percentage of impacts of a single proposed fare change borne by low-income riders as a result of the proposed fare change is at least ten percentage points (10%) higher than the percentage of impacts of that proposed fare change on the overall rider population; and
 - b. For the total package of fare changes: the aggregate percentage of impacts for the proposed fare changes borne by low-income riders as a result of the proposed fare changes is at least five percent (5%) greater than the aggregate percentage of impacts on the overall rider population.

The quantitative methodology used to determine when an impact meets or exceeds the disproportionate burden thresholds set in this policy is as follows:

To determine the impacts of fare changes, the ratio of low-income and non-low income population within the impacted tract areas will be compared to the ratio of low-income and non-low-income population within the service area as a whole. (Example: if the low income group makes up 30 percent of the overall population, but would bear 45 percent of the burden, and the non-low income group would bear 55 percent, there may be a disproportionate burden insofar as the low income group bears 15 percent more than its expected share, from 45 percent of the burden to 30 percent of the population; while the non-low-income group bears 15 percent less than its expected share of 55 percent burden compared to 70 percent of the population.) Differences in the use of fare options between minority populations and other populations include all such differences that are documented as statistically significant at the 95 percent confidence level.

Section V: When a Major Service or Fare Change is deemed to have a Disparate Impact and/or Disproportionate Burden

Avoid, Minimize, or Mitigate Impact and/or Burden:

If a proposed major service change or fare change is deemed to have a disparate impact and/or disproportionate burden, CTDOT shall consider modifying the proposed changes in order to avoid, minimize or mitigate the disparate impact(s) or disproportionate burden(s) of the proposed change. Any modifications to the proposed change must be reanalyzed according to the policies in Sections I and II to determine whether the proposed change removed the disparate impacts and/or disproportionate burdens of the change.

No Alterations or Unable to Remove Impact and/or Burden:

If CTDOT chooses not to alter the proposed major service or fare change, or if modifications to the proposed major service or fare change do not remove the disparate impact(s) or disproportionate burden(s), the following steps must be taken:

1. If CTDOT chooses not to alter the proposed major service or fare change, or if modifications to the proposed major service or fare change do not remove the disparate impact, CTDOT may implement the major service or fare change only if:
 - a. CTDOT has determined there is a substantial legitimate justification for the proposed service or fare change, and
 - b. CTDOT can show that there are no alternatives that would have a smaller disparate impact on minority riders that would still accomplish the state's legitimate program goals.
2. If CTDOT chooses not to alter the proposed major service change or fare change, or if modifications to the proposed major service change or fare change do not remove the disproportionate burden on low-income riders:
 - a. CTDOT shall take steps to avoid, minimize, or mitigate those impacts where practicable, and
 - b. CTDOT should describe alternative service and/or fares available to low income customers.

Section VI: Adverse Effects

As per the guidance, the CTDOT will analyze adverse effects related to major service changes, and pay attention to the fact that the elimination of a route will likely have a greater adverse effect than a reduced frequency (headway change) in service.

The CTDOT will analyze the difference between the existing and proposed service, and consider the degree of the adverse effects when planning service changes.

Public Outreach Activities to Adopt Policies on Service and Fare Equity

On September 1st, 2nd and 3rd, 2015, CTDOT held public hearings to consult with the public as part of its process to adopt new policies on transit service and fare equity, and to define major service changes and determinations of disparate impact and disproportionate burdens. The following activities were undertaken to publicize the public hearings and opportunities for public comment.

A Connecticut Department of Transportation news release announcing the public hearings with the dates and locations of each hearing was posted to the CTDOT website on August 6, 2015. In addition, legal notices were published in eight predominant newspapers in areas heavily served by public transportation. These notices were published as indicated in the newspapers listed below.

Hartford Courant <i>posted on August 18th</i>
New Haven Register <i>posted on August 18th</i>
CT (Bridgeport) <i>posted on August 18th</i>
Stamford Advocate <i>posted on August 18th</i>
New London Day <i>posted on August 18th</i>
Waterbury Republican-American <i>posted on August 18th</i>
Danbury News-Times <i>posted on August 18th</i>
La Voz Hispana <i>posted on August 20th</i>

Interior notices regarding the public hearings and the opportunity for public comment were placed on board buses in all eight divisions of CTtransit (Hartford, New Haven, Stamford, Waterbury, New Britain, Bristol, Meriden and Wallingford) during the week of August 17, 2015.

On August 21, 2015 posters announcing the hearings and the opportunity for public comment were placed at New Haven Line rail stations and the Shore Line East rail stations in English and Spanish versions.

With an intended goal of having sufficient outreach efforts so there could be public participation from minority and low-income communities, the Office of Contract Compliance (OCC) began public outreach to Community Based Organizations (CBOs) and Faith Based Organizations (FBOs) on August 20, and performed additional follow up on August 25 and August 27.

- On August 20, 2015, the Office of Contract Compliance (OCC) emailed English and Spanish versions of the 'Notice of Intent' to hold a public hearing to 205 CBOs and FBOs.
- On August 25, 2015, the OCC emailed the 'Service and Fare Analysis Meeting Summary' to 205 CBOs and FBOs.
- On August 27, 2015, English and Spanish versions of the 'Notice of Intent' and the press

release were emailed to 205 CBOs and FBOs, and 33 planning organization contacts.

- A follow up to the August 27, 2015 email was sent to all CBOs, FBOs and planning organizations detailing how to request language assistance and the date by which it should be requested to allow CTDOT sufficient time to make the necessary arrangements.

While there were no requests for language assistance the CTDOT had a Spanish speaking employee available at all of the public hearings in the event translation was needed.

At each public hearing, CTDOT provided the following documents to attendees:

- Your Rights Under Title VI (English and Spanish)
- Draft of SAFE Policies (English and Spanish)
- A one-page summary of the SAFE Policies (English and Spanish)
- A comment form and instructions to send comments, either by mail or e-mail (English and Spanish)
- Voluntary Demographic Survey for either Individuals or Organizations (English and Spanish)

A final email was sent to 205 CBOs and FBOs, and 33 planning organizations on September 4, 2015, thanking those who attended any of the public hearings and to provide details on how to submit comments during the comment period for those who were unable to attend or unable to provide comments during the hearings. English and Spanish versions of the 'Notice of Intent' and the 'Service and Fare Analysis Meeting Summary' were attached to the final email.

Public Hearings

The Department extended a welcome to the attendees and introduced the CTDOT staff participating at the hearing. Sign language professionals opened each meeting in conjunction with CTDOT representatives.

Randal Davis, Special Assistant to the Commissioner, delivered the opening comments. Mr. Davis provided an overview of why the hearing was being held. He discussed the Department's responsibility to develop Service and Fare Equity Policies that define what constitutes a "Major Service Change," while also providing the Department's guidelines for determining when a disparate impact and/or disproportionate burden exists for any proposed service or fare change. He further explained this was to be a collaborative effort to develop the Service and Fare Equity ("SAFE") policies, definitions, and thresholds. He made clear that this hearing and the policies themselves were part of the Department's responsibilities and requirements under Title VI of the Civil Rights Act of 1964.

Michael Sanders, Transit Administrator for the CTDOT, provided an in-depth and detailed explanation of the process and purpose of the SAFE analysis. He explained that the SAFE policies provide minimum or maximum thresholds that determine the need for a SAFE analysis. The SAFE analysis then

determines if the planned service or fare change will have a disparate impact on Title VI populations or imposes a disproportionate burden on low-income and minority populations. Mr. Sanders explained that when a SAFE analysis indicates that a disparate impact and/or disproportionate burden exists, the Department will take steps to mitigate this impact or justify not doing so, if no practical alternatives exist.

Mr. Sanders provided definitions for the terms being used, including major service change, disparate impact for minority groups, and disproportionate burden for low-income groups. Examples were provided to illustrate what the actual impact of these policies could be on the public. Mr. Sanders discussed how the past historic thresholds were set and provided suggestions for new thresholds. He explained how the thresholds would be used to determine when an in-depth SAFE analysis would occur. He also explained that the Title VI regulations require that service and fare changes not disproportionately impact target populations across our system, and where possible and reasonable that the Department take affirmative steps to reduce or eliminate negative impacts to minority and/or low-income populations.

Mr. Sanders reiterated that the purpose of the hearing was to engage the public in the decision-making process of developing the SAFE policies and defining the thresholds. He described how their participation and comments would be used to develop the draft SAFE policies and thresholds. Mr. Sanders noted that comments from the public would be considered and incorporated into the final policy, and that the policies and thresholds would become final once accepted by the Commissioner. It was also explained that once the policies became final, they would only be changed through the initiation of an additional public engagement process.

The public was invited to speak at the hearing. Those wishing to speak were encouraged to indicate their desire to speak by signing-up on the sign-in sheet. The public was also told that if they did not wish to speak at the hearing but had comments, there was information in the back of the room in both Spanish and English providing instructions on how to submit comments by letter or email. Cards were also provided for those wishing to leave a written comment at the hearing.

The participants were reminded that if they had comments involving service problems or had other non- SAFE-related questions, representatives were in attendance from the Department and local service providers who were available to speak with them separately.

During the open discussion, most of the questions/comments during these open sessions were related to issues outside of the Service and Fare change policies, which were answered by CTDOT staff off-the-record at the meeting. If it couldn't be addressed during the hearing, the individual was given contact information as to who within the Department, CTtransit, or Metro North would best be able to address their concern.

At the meeting in New Haven, on September 1, 2015, thirteen (13) people were in attendance.

Specific to the SAFE policies, a question was asked about the impact of major service changes, and whether CTDOT looked at environmental effect, as well as the access, to minority/low-income/LEP populations, specifically such as the increase/decrease of pollution created by having more buses or fewer cars on the roads after adding/removing routes or stops. CTDOT responded that the purpose of the SAFE policies was to establish thresholds in order to determine when service or fare changes themselves had a disproportionate impact on minority or low-income populations of an affected area. If it is determined that the impact is disproportionately felt among those populations, then CTDOT would look into the nature of the impact, which could include addressing environmental as well as socio-economic factors as possible mitigation strategies to best address the disparate impact or disproportionate burden.

A comment was made that the policies appeared more reactive to the service/fare changes, rather than proactive. The individual asked whether CTDOT was looking at what happens if no changes are done, as it seems that it had been 20 years since a study of New Haven crosstown routes was performed. CTDOT explained to the individual that New Haven studies had been done within the past 20 years, and one was currently on-going.

Finally, there was a request at the end of the meeting for clarification of the description of service changes under the disparate impact policy. CTDOT gave the example of if the threshold is established as 15%, and in the analysis it is determined that minorities make up 20% of a given service area, but would bear 50% of the impacts should a particular route be removed, that would be an adverse effect because there is a difference of 30%, which exceeds the threshold by 15%. Since there is a disparate impact, this would require additional analysis. CTDOT also offered the individual the opportunity to propose new language to the existing policy in their comments, though nothing was received at the meeting.

At the meeting in Bridgeport, on September 2, 2015, four (4) people were in attendance. There were no questions or comments specific to the SAFE policies.

At the meeting in Hartford, on September 3, 2015, twelve (12) people were in attendance. There were no questions or comments specific to the SAFE policies.

During the comment period, CTDOT received one comment to the online mailbox set-up for the specific purpose of receiving comments regarding the SAFE policies. The individual noted five areas where he believed that terminology such as “significant”, “practicable”, and “minor” were not specifically defined. Though these terms are understandable in the context of the whole policy, and while CTDOT gave specific examples during the public meeting to help clarify the thresholds and terminology, CTDOT recognized that additional clarification in the document itself would be useful for ensuring complete comprehension of the document and its purpose. CTDOT revised the SAFE Policies and re-posted the policies to the CTDOT website for review and comment on October 16, 2015. Additionally, the policies were re-submitted to the CBOs, FBOs, and planning organizations. CTDOT gave the public until October 30, 2015 to comment on the revisions. No comments were received.

On November 5, 2015, the Title VI Workgroup met with Commissioner James Redeker to review the recommended Title VI SAFE policies and to request his approval. The Commissioner asked questions regarding the descriptions of the policies and made suggestions for implementing these policies going forward. The Workgroup satisfactorily answered the Commissioner's questions, and the plan was approved on November 5, 2015.

On December 17, 2015 a follow-up meeting was held with the Commissioner to discuss clarifications made to the SAFE policies. The changes discussed were relative to the inclusion of seasonal thresholds; clarifying the Department's use of vehicle revenue hours as a threshold for determining a major service change and removed an erroneous additional reference to ridership; and the clarifications to the methodologies used for determining disproportionate burden and disparate impact.

Future Fare and Service Equity Analyses

The Connecticut Department of Transportation (CTDOT) will conduct equity analyses whenever fare changes and/or major service changes, defined by the SAFE Policy, are planned. Equity analyses will be conducted prior to notifying the public of the proposed change regardless of whether the changes will cause positive or negative impacts to riders.

CTDOT will utilize a four step process as detailed below:

- 1) CTDOT will develop the narrative of fare and/or service changes. These narratives are prepared as part of the normal service review process and analysis of proposed changes, or as part of the financial analysis package for a fare increase that is done as part of the budgeting process.
- 2) CTDOT will analyze the proposed major service and/or fare changes and to determine if the change falls under CTDOT's adverse effects definition provided in the SAFE Policies. If it is determined a disparate impact or disproportionate burden exists, based on the established thresholds of the SAFE Policies, we will examine whether alternatives exist to maintain the effect of the service and/or fare change, while taking steps to avoid, minimize, or mitigate impacts where practicable. Should an alternative not be present that avoids, minimizes, or mitigates the disparate impact or disproportionate burden to the minority/low-income populations an explanation and justification of the proposed changes will be prepared to present at the public hearings. In the Service and Fare Equity Analysis – Final Statement of Impacts and Mitigations, CTDOT will clearly state whether the changes will result in a disparate impact on the basis of race, color, or national origin; and/or a disproportionate burden on the basis of income.
- 3) CTDOT will conduct a comprehensive community outreach process, to afford the public with opportunities to provide input, alternatives, or request clarification prior to the adoption of major service changes that may result in a disparate impact or disproportionate burden, and, in accordance

with long-standing practice, any fare level or structure change regardless of if there is a determination of disparate impact or disproportionate burden.

A Connecticut Department of Transportation news release announcing the public hearings with the dates and locations of each hearing will be posted to the CTDOT website at least two weeks prior to the public hearings. In addition, legal notices will be published in newspapers. Interior notices regarding the public hearings and the opportunity for public comment will be placed on board buses and at New Haven Line rail stations and the Shore Line East rail stations as appropriate for the changes proposed.

To ensure sufficient public participation from minority and low-income communities the Department will conduct outreach to Community Based Organizations (CBOs) and Faith Based Organizations (FBOs). This will involve emailing all CBOs and FBOs within the affected service areas (for statewide service changes and fare changes, all CBOs and FBOs in the Department's database will be contacted) with the public hearing information and a copy of the news release. The email announcement will include details on how their members can request language assistance at the hearings and the date by which it should be requested to allow CTDOT sufficient time to make the necessary arrangements for the hearings. The Department will also refer to the LEP and Safe Harbor maps and include information, in the safe harbor languages identified in the targeted service area(s), on how to request interpretation and translation services of documents describing the proposed changes and the SAFE analysis conducted for the proposed changes.

In addition to contacting the CBOs and FBOs the Department will provide this information to all Regional Planning Organizations (RPOs). During the two weeks leading up to the public hearings, the Department will periodically send reminders and any updates to all CBOs, FBOs and RPOs.

These notices are considered to be vital documents and CTDOT will adhere to its Language Assistance Plan to ensure that Limited English Proficient (LEP) populations within the affected service area(s) are informed of the proposed service or fare changes and can participate in community discussions. CTDOT will refer to the LEP and Safe Harbor maps to determine what languages should be considered when written materials are produced. Documents detailing the proposed changes will be translated into identified LEP languages including Safe Harbor languages that are requested in response to the notices announcing the hearings.

During the hearing the Department will explain the purpose of the hearing and the proposed changes. CTDOT will discuss strategies used to minimize and mitigate any disparate impacts or disproportionate burdens found during the analyses (should any exist). The moderator will open the hearings to provide the public with the opportunity to ask questions and make comments. All questions and comments pertaining to the proposed changes will be documented and addressed as appropriate for the final hearing record.

After all scheduled public hearings have been held, a final email will be sent to CBOs, FBOs, RPOs, and individuals who provided an email on the public hearing sign in sheet, thanking those who attended and providing details on how to submit comments during the comment period for those who were unable to attend or unable to provide comments during the hearings.

4) CTDOT will review all comments and feedback received during the public hearings and make any necessary revisions to the proposed changes. If the major service changes and/or fare changes must be implemented, despite disparate impacts or disproportionate burdens, the Department will demonstrate that it has a substantial legitimate justification and has analyzed the alternatives to determine that the proposed service and/or fare changes have had their impacts minimized to the extent possible.

Results of Service and Fare Equity Analysis

The CTDOT implemented a system wide fare increase in December 2016. The fare equity analysis completed in October 2016, can be found on pages 360- 402, of the CTDOT FTA Title VI Program Appendix. The Department is currently in the process of completing a service and fare change equity analysis for new rail service from New Haven, CT to Springfield, MA. In the analysis, the CTDOT has analyzed the service and fare structure to identify any disparate impacts on the basis of race, color, or national origin, as well as any disproportionate burdens to low income communities.

Impacts of Distribution of State and Federal Funds

Rail

As part of the CTDOT October 1, 2017 – September 30, 2019 Title VI program, FTA requires a review of the previous three years of capital investments to determine if any disparate impact exists. There are many factors that drive public transit capital project spending, grant awards for infrastructure improvements (adding a second high speed rail track on the ‘Hartford Line’) to ownership of the property (Shore Line East Right of Way is owned by Amtrak and the capital work for this section is administered by FRA and is not reported to CTDOT). Yet another factor is ridership, the New Haven Main Line is the busiest section of track in North America. The ‘New Haven Line’ reports 41,000,000 passenger trips per year, whereas the Shore Line East service has a ridership of about 800,000 passenger trips per year. Other factors include the nature and concentration of the fixed guideway infrastructure – a five track system with an overhead catenary is more expensive and requires more resources than a single tracked non–electrified fixed guideway. Other factors include the age and condition of the fleet which impacts the planned purchase of new capital equipment, as well as ‘aged equipment’ phase out and/or refurbishments programs. All of these are subject to available funding which may be limited by budgetary constraints.

This three year look back period is only a snapshot of the capital spending for transit projects. Capital projects often take far longer than three years for design and completion. Moreover, in many cases the infrastructure will have a useful life that spans decades. For example, the ‘Hartford Line’ Rail Service project (est. 2018), completed its environmental impact statement in 2012, its design phase was completed in 2014 and track improvements will be ongoing through 2020. This single project will span more than 8 years for project completion, and it will remain in service for decades.

Capital investments are an integral part of the state's Strategic Long Range Transportation Plan. As such on-going capital investment is required for equipment purchases, facilities repair, other support structures, and state of good repair programs. These capital investments are evaluated either through the CTDOT's Title VI engagement and planning process for siting new facilities or through service monitoring, which is done every three years to determine if any disparate impact or disproportionate burden exists within our program. If any analysis finds that a disparate impact or disproportionate burden exists, CTDOT will review the issue to determine if the burden/impact can be avoided or mitigated.

Rail Capital Analysis Methodology

In accordance with existing CTDOT Title VI policy, an analysis was performed by CTDOT on all rail service area census tracts within, and/or intersected by, the specific transit buffer zone to identify tracts as minority or non-minority. For rail services, a buffer zone is defined as any area within 2.5 miles of a passenger rail station. Census tract information was extracted from the ACS 2015 Minority table. The total census tract population from the ACS table was subtracted by the total non-Hispanic Caucasian population to determine the total minority population for each census tract. The total minority population was then divided by the total population for each census tract to determine the percentage of each census tract that is minority. CTDOT compared the average minority state population (30.78%) against the minority population of each census tract. When a tract within the service area has a minority population that represents more than 30.78% of the residents within that tract, it was identified as a minority serving tract in this study. When designating an entire transit system (i.e. The New Haven Line) as a minority or non-minority serving system, the Department follows federal guidance which uses a 33.33% threshold. Under the federal standard, if the total number of minority serving census tracts for a given service area is more than 33.33% (or 1/3) of the total number of number of tracts in that system, then then the entire transit service is designated as a minority serving system. To determine the distribution of funds spent on public transit capital projects, the state totals the capital expenditures by each service system area (i.e. Shore Line East, New Haven Line, etc.). To the extent possible, the amounts spent within minority serving tracts are compared to amounts spent in non-minority serving tracts to determine if there is any disparate impact evident.

Rail Distribution of Capital Funds Analysis and Conclusion

During the three year look back used for this analysis (Federal Fiscal Years 2014/2015/2016), \$958,894,502.06 was spent on rail transit capital projects that serve population areas with a minority population that is higher than the state average of 30.78%. During the same period, \$26,419,714.37 was spent on rail transit capital projects that serve population areas where the percent of minority residents is lower than the state average minority population. Thus, CTDOT spent 97.32% of all capital rail transportation funding on rail transit projects that serve population areas where the minority portion of that area excess the state average of 30.78%.

In the state of Connecticut, the majority of our urban centers have a higher proportion of minority residents when compared to the more sparsely populated suburban centers. CTDOT's Rail service areas include several urban population centers with a high proportion of minority and low-income residents. Capital project spending generally occurs at higher rates in these areas as they have higher density

populations which better support transit service initiatives. It should be noted that within a given system (Shore line East, etc.) rolling stock improvements benefit all passengers within the total service area. CTDOT has no finding of disparate impact through rail capital project funding.

Bus

As part of the CTDOT October 1, 2017 – September 30, 2019 Title VI program FTA requires a review of the previous three years of capital investments to determine if any disparate impact exists. There are many factors that drive public transit capital project spending, grant awards for infrastructure improvements (adding CTfastrak – A Bus rapid Transit System) to ownership of the property (CTfastrak guideway travels within the Amtrak right of way). Other factors include ridership; the eight divisions of CTtransit (which includes the CTfastrak Brand) record over 38,000,000 passenger trips per year per year. The nature and concentration of the infrastructure also impact funding distribution – CTfastrak has a dedicated roadway whose expense was captured in this 3-year period. However the vast majority of bus routes traverse state and local roads; the capital cost for those roads is never captured as a transit capital expense since their use is not exclusive to transit service.

This three year look back period is only a snapshot of the capital spending for transit projects. Capital projects often take far longer than three years from design and completion. CTfastrak was envisioned following a 1997 mobility study, construction started in 2012, and the service opened in 2015. Moreover, in some cases the infrastructure will have a useful life that spans decades. For example, the CTtransit Bus Facility in Watertown CT will have a useful life that exceeds 30 years.

Capital investments are an integral part of the state's Strategic Long Range Transportation Plan. As such on-going capital investment is required for equipment purchases, facilities repair, other support structures, and state of good repair programs. These capital investments are evaluated either through the CTDOT's Title VI engagement and planning process for siting new facilities or through service monitoring, which is done every three years to determine if any disparate impact or disproportionate burden exists within our program. If any analysis finds that a disparate impact or disproportionate burden exists, CTDOT will review the issue to determine if the burden/impact can be avoided or mitigated.

Bus Capital Analysis Methodology

In accordance with existing CTDOT Title VI policy, an analysis was performed by CTDOT on all Bus service area census tracts within, and/or intersected by, the specific transit buffer zone to identify tracts as minority or non-minority. For Bus services, a buffer zone is defined as any area within ¼ from any bus route and any area within 2.5 miles of a passenger rail station. Census tract information was extracted from the ACS 2015 Minority table. The total census tract population from the ACS table was subtracted by the total non-Hispanic Caucasian population to determine the total minority population for each census tract. The total minority population was then divided by the total population for each census tract to determine the percentage of each census tract that is minority. CTDOT compared the average minority population of the state (30.78%) against the minority population of each census tract. When a tract within the service area has a minority population that represents more than 30.78% of the residents within that tract, it was identified as a minority serving tract in this study. When designating

an entire transit system (i.e. CTtransit New Haven Division, etc.) as a minority or non-minority serving system, the Department follows federal guidance which uses a 33.33% threshold. Under the federal standard, if the total number of minority serving census tracts for a specific transit system service area is more than 33.33% (or 1/3) of the total number of number of tracts in that system, then then the entire transit service is designated as a minority serving system. To determine the distribution of funds spent on public transit capital projects, the state totals the capital expenditures by each service system area (i.e. CTtransit Harford, CTtransit New Haven, etc.). To the extent possible, the amounts spent within minority serving tracts are compared to amounts spent in non-minority serving tracts to determine if there is any disparate impact evident.

Bus Distribution of Capital Funds Analysis and Conclusion

During the three year look back used for this analysis (Federal Fiscal Years 2014/2015/2016), CTDOT spent \$409,793,823.16 on bus transit capital projects that serve population areas where the total percentage of minority residents is higher than state average of 30.78%. During the same period, CTDOT spent \$5,958,837.20 on bus transit capital projects that serve population areas where the minority population is lower than the state average of 30.78%. As a result, CTDOT spent 98.57% of all capital bus transportation funding on bus transit projects which serve population centers where the minority population is higher than 30.78% of the total service area population.

In the state of Connecticut, the majority of our urban centers have a higher proportion of minority residents when compared to the more sparsely populated suburban centers. CTDOT's Bus service areas include some suburban centers, but the vast majority of CTtransit services emanate from the State's urban population centers. These urban areas have a higher proportion of minority residents. Capital project spending generally occurs at higher rates in these areas because they have higher density populations which better supports transit service initiatives. It should be noted that within a given system (CTtransit New Haven, etc.) rolling stock improvements generally benefit all passengers within the total service area. CTDOT has no finding of disparate impact through bus capital project funding.

Overall Conclusion: CTDOT

Overall, the Public Transit capital spending for CTDOT state and federally funded projects totaled \$1,401,066,876.79 between the federal fiscal years 2014 through 2016. \$1,368,688,325.22 of those fund were spent on public transit capital projects that serve population centers where the total percentage of minority residents in that service area is higher than the state average of 30.78%. At the same time, \$32,378,551.57 was spent on public transit capital projects in service areas where the number of minority residents was less than 30.78% of the total service area population. Using this methodology CTDOT spent 92.71% of all capital public transportation funding on public transit projects that reach a high proportion of the state's minority residents.

This finding is reasonable and consistent with the states demographics and comports to the mission of CTDOT. The state's general transportation priority is to a deliver high quality, safe, multimodal transportation system. To achieve these goals, CTDOT generally seeks to maximize efficiency which often means investing strategically in more densely populated areas. In the state of Connecticut, many

of the urban and/or more densely populated areas also have a higher proportion of minority residents than our more sparsely populated suburbs.

As a result of the data presented, it is clear that CTDOT's capital investments in rail and bus systems are accessible to a large proportion of the state's minority population. CTDOT has no finding of any disparate impact through the bus or rail capital project funding.

Please refer to pages 438-441 of the CTDOT FTA Title VI Program Appendix.

Statewide Planning Process - Identifying the Transportation Needs of Minority Populations

Existing (codified) Activities: The Connecticut Department of Transportation employs a number of mechanisms to engage minority populations in the planning process to assess their needs. These mechanisms range in effectiveness. Some are codified in our planning procedures, and others are exhibited in our project specific public involvement activities. For example, the Department's existing Title VI Plan, Public Involvement Procedures, Long Range Transportation Plan, and Statewide Transportation Improvement Plan all contain either individual public involvement activities that adhere to our existing policies or, in many cases, go above and beyond the Public Involvement Procedure requirements to engage stakeholders identified in the plan's specific topic areas. The Department's primary procedures for public involvement are the Department's Public Involvement Procedures. This document is intended to provide the framework for an early, often, and continuous public involvement process.

Current Activities (Ongoing update of the Long Range Transportation Plan, aka. "TransformCT"):

Through the initiative of developing a Strategic Long Range Transportation Plan (LRP), known as TransformCT, or "Let's Go CT!" the Department increased its efforts for public engagement, including targeting geographic areas in the state that have large minority populations. The update of the long range transportation plan is intended to satisfy the US DOT requirements of the FAST Act to prepare a long-range transportation plan. Additionally, the LRP will be an action-oriented strategic plan based on a collective vision for the transportation system for the next fifty (50) years. In order to develop this vision, the Department has employed a number of techniques in addition to those included in our existing public involvement plans to ensure participation by all users of the system.

The Department has taken steps to ensure that affirmative efforts are made to engage minority communities and encourage them to provide input in the planning process. The Department has utilized existing contacts in other state agencies, legislative committees, including the African Affairs committee, and Latino and Puerto Rican Affairs Commission to reach out to minority populations and people with Limited English Proficiency (LEP).

Additionally, the Department conducted three large statewide events with all material published in English and Spanish. Spanish is the second most spoken language in the state of Connecticut. The Department also engaged Radio Cumbre, an all-Spanish speaking radio show to promote the statewide

public meetings. The Department offered to engage community groups in their settings, or at their regular meetings to learn of the needs of the populations typically underrepresented in the transportation planning process. Additionally, statewide public meeting promotion material was distributed on all of our rail commuter service lines in English and Spanish. Posters were also posted on all fixed route bus services throughout the state including those areas identified in our Title VI mapping having large minority populations.

In an effort to increase the numbers of minority persons engaged in the planning process the Department will be working towards developing additional resources and strategies to reach and engage minority populations.

Near-Term Activities

We have identified the following resources and strategies:

- Expand and update the database of community based organizations; faith-based organizations; neighborhood organizations; non-profit and for-profit social service providers; and minority advocacy groups, including the NAACP, AARP, and others that have established connections to minority populations throughout the state and encourage them to provide input. The Department has begun to collect willing participants who elect to identify themselves as a resource for outreach to their respective groups,
- Develop a process to quickly deploy language translation services related to planning, both verbal and written. The Department will utilize its LAP as a guide when identifying language needs and providing language assistance.

Minority Community Outreach and Needs - The LRP process engaged minority communities to participate in the Department's Long Range Plan development process. The project team conducted over 110 public meetings, the majority in urban areas, and held focus groups and work sessions with established community groups and organizations including minority owned business leaders; faith-based groups; neighborhood groups; and minority legislative sub- committees and their constituents, i.e. Legislative Subcommittee on Puerto Rican affairs, African American Legislative Subcommittee, Waterbury Puerto Rican Chamber of Commerce. Many of these users echoed what other system users had identified as concerns; including the need for more fixed route bus and rail service within and connecting our urban cores to urban fringe. This included more frequency, later service, greater coordination among the modes, and expanded routes. The result of this engagement led to the development of a statewide vision and strategies grouped along geographic areas which included up to 25% more fixed route services in our urban areas. The vision and strategies were accompanied by a statewide transportation funding proposal that included an additional 2.8 billion dollars to jump start this investment. The proposal recently won legislative support and the two-year biennial budget passed with this increased investment.

Procedures to Ensure Nondiscriminatory Pass-through of FTA Financial Assistance.

CTDOT is permitted to retain up to 15 percent of the state’s fiscal year apportionment of 5311 program funding for state administration, planning and technical assistance and up to 10 percent of the fiscal year apportionment of 5310 program funding for state administration, planning and technical assistance.

CTDOT uses these funds for staff, support costs associated with managing the grant programs, and to provide technical assistance. Examples of assistance include:

- Conducting site visits and desk reviews.
- Meeting with the staff of providers and applicants to clarify requirements.
- Obtaining and updating the required assurances and documentation.
- Developing grant application to FTA.
- Developing and monitoring the grant agreements with grantees
- Preparing required reports to FTA.
- Providing technical assistance.
- Updating the State Management Plan.
- Legal advertisements and room rental costs for applicant workshops.
- Conducting requests for proposals.

Generally, the applications and the instructions for these programs guide and assist eligible subrecipients in applying for operating, administrative, capital, and/or training assistance under the federal programs. The information provided by the applicant is used by CTDOT to evaluate, approve and prioritize proposed projects, and to incorporate them in CTDOT’s applications to FTA for funding.

Section 5310

Applications for Section 5310 funding require the applicant to estimate the number of individuals in the following groups to receive service:

Black	
Asian/Pacific Islander	
Hispanic	
American Indian/Alaskan Native	
Other	

Depending on the type of project, it may be based on actual client records or it may be estimated based on census data for the service area. Applicants must explain the data source being used to capture this demographic information (for example, is it based on the current client base; based on Census data for their service area; or some other source?)

The demographic information submitted as part of the application is also used to determine whether the minority and low-income populations are being reached. If not, additional outreach is required in order to reach those populations. The Department then makes more targeted efforts to identify and assist organizations that serve the minority and low-income populations.

For example, is there a significant population of older adults whose race is Alaskan Native in an area? Is there an organization that serves that population? Have they applied for funding from the 5310 program? Have they been turned down for 5310 funding? Is there assistance the Department can provide to make it possible for them to competitively compete for or receive those grant funds?

As indicated in the Section 5310 State Management Plan, ridership demographics and race/ethnic data is part of the routine project monitoring and quarterly reporting. To verify compliance during site visits, staff reviews how the grantee provides information about the services they provide, how they inform people of their rights under Title VI, and how they put into practice their public participation plan and language assistance plan.

Section 5311

CTDOT conducts a Transit System Audit of Section 5311 subrecipients on a triennial basis. Prior to the audit, the subrecipient completes a questionnaire. CTDOT then conducts an on-site visit in which follow-up questions are asked, pertinent documentation (i.e., policies) is reviewed, and a bus ride checklist is completed. A final report is prepared and issued to the subrecipient noting any findings, with the required submission of a corrective action plan addressing each finding to bring the subrecipient into compliance.

As part of Transit System Audits, subrecipients are also required to provide their Limited English Proficiency (LEP) Plan which requires them to perform four factor analyses. Other Title VI related information is also verified during Transit System Audits and includes, but is not limited to: EEO postings; the subrecipient's Title VI Plan; Title VI Complaint Procedures; Title VI postings on the schedules and on the vehicles visible to the passengers; and what efforts are made to hire DBE firms.

Procedures to Provide Assistance to Subrecipients/Efforts to Assist Applicants who Serve Predominantly Minority Populations

CTDOT maintains a record of all requests for 5310 and 5311 Elderly Individuals and Individuals with Disabilities, Rural and Small Urban Area formula Funding, JARC and New Freedom funding. The record identifies applicants that use grant program funds` to provide assistance to minority populations and low-income populations. The record also identifies which applications were funded and those that were not funded. These records are reviewed at every State Management Review by FTA.

Section 5310

The Section 5310 grant program provides formula funding to states for the purpose of assisting private nonprofit groups in meeting the transportation needs of older adults and people with disabilities when the transportation service provided is unavailable, insufficient, or inappropriate to meeting these needs. The funding allocated to large urbanized (over 200,000) areas can only be used for projects in those areas. Funding allocated to small urbanized (50,000-200,000) areas and rural (<50,000) areas cannot be used in large urbanized areas. The program aims to improve mobility for seniors and individuals with disabilities by removing barriers to transportation service and expanding transportation mobility options. This program supports transportation services planned, designed, and carried out to meet the special transportation needs of seniors and individuals with disabilities. Projects that are awarded funding must be derived from the locally coordinated public transit – human services transportation plan.

Eligible projects include both “traditional” capital investment (vehicle grants) and “nontraditional” investment beyond the Americans with Disabilities Act (ADA) complementary paratransit services. 49 U.S.C. Section 5310 requires that 55% of funding be used for traditional vehicle grants to non-profit agencies or municipalities to meet the transportation needs of the elderly and persons with disabilities when public transportation service is unavailable, insufficient, or inappropriate to meeting their needs. The balance of funds these can be used for nontraditional projects, such as:

- Travel training
- Volunteer driver programs
- Building an accessible path to a bus stop, including curb-cuts, sidewalks, accessible pedestrian signals or other accessible features
- Improving signage, or way-finding technology
- Incremental cost of providing same day service or door-to-door service
- Purchasing vehicles to support new accessible taxi, rides sharing and/or vanpooling programs
- Mobility management programs

On an annual basis, CTDOT opens the application cycle and keeps it open for a minimum of three (3) months. CTDOT created a one page application notice to briefly explain the program and how to apply.

When distributing the application notice, the Office of Transit and Ridesharing requests updated contact lists for community and faith-based organizations from the Office of Contract Compliance. The application notice is distributed by email to prior recipients, interested parties that have asked to be included in the distribution, community and faith-based organizations, transportation providers, and Regional Planning Organizations (RPOs). The application is also posted to Biznet, which is a state administered portal for information on state contracts, solicitations, and vendor information.

The annual application process is conducted in cooperation with RPOs throughout the state. CTDOT and the RPOs provide assistance to potential applicants through the application process.

The RPOs, most of whom also have metropolitan planning responsibilities and Title VI pass-through responsibilities under the statewide metropolitan planning program are familiar with the local human service agencies who are the targeted subrecipients of 5310 grants. The RPOs reach out to many localized agencies and are familiar with the needs of Title VI and Environmental Justice communities in their service area. The RPOs must submit an analysis of their outreach efforts; they often provide the first tier of technical assistance to potential applicants.

The CTDOT website includes a webpage on the Section 5310 program. This page provides application information and explains the reporting requirements. The CTDOT staff is available by phone or by email to provide technical assistance to applicants completing the application. At the request of a potential applicant, the Department will review any section of the application prior to submittal to make sure the proposer understands what is required.

The RPO and CTDOT separately review each application to ensure that all required documentation has been submitted. If there are any issues that require a resolution before the application can be reviewed, CTDOT will notify the applicants of any issues that require resolution before the application can be reviewed.

CTDOT provides that a rating criteria be used to select service providers for participation in any FTA grant program. The applications are reviewed separately by the local RPOs and by CTDOT, each using the established evaluation criteria. The RPOs submit their list to CTDOT, and the two lists are compared, any discrepancies in scoring are discussed and reconciled to create a single prioritized awards list are presenting all of the regions. Applicants are notified of grant approval/denial in writing.

During TIP/STIP approval, a list of approved projects is provided for review and comment.

Section 5311

The Federal Transit Administration (FTA) Section 5311 program makes federal funds available to the states to assist in the development, implementation and promotion of public transportation systems in rural and small urban areas, using a population based distribution formula. The goal of the program is to:

- Enhance the access of people in non-urbanized areas to health care, shopping, education, employment, public services and recreation.

- Assist in the maintenance, development, improvement, and use of public transportation systems in non-urbanized areas.
- Encourage and facilitate the most efficient use of all transportation funds used to provide passenger transportation in non-urbanized areas through the coordination of programs and services.
- Assist in the development and support of intercity bus transportation.
- Provide for the participation of private transportation providers in non-urbanized transportation.

Every four years CTDOT solicits Section 5311 Grant Applications from current Section 5311 Subrecipients and private bus companies operating intercity service in non-urbanized areas. The grant application is posted on the CTDOT website for public view. Entities that are not current recipients are welcome to submit their proposal and complete an application.

CTDOT staff is available to provide technical assistance to help applicants to complete the application; this assistance is available by via phone, email or in person at the applicant's office. Prior to the submittal due date, CTDOT sends an email reminder and makes follow-up phone calls to subrecipients to answer any questions about the application process.

In the Section 5311 grant application, subrecipients must provide data indicating the percentage of minority, low income and LEP populations they serve. Upon receipt of applications, CTDOT reviews each application to ensure that the application has been completed correctly and the required documentation has been submitted. Subrecipients are notified that they are required to address any outstanding or pending issues with their application that was determined necessary by CTDOT. CTDOT also offers to meet with the subrecipients to go over their application to make sure they understand what is required. If after review, the completed application is approved by CTDOT, a letter is mailed to the applicant notifying them of their approval.

For over three decades CTDOT has provided Section 5311 operating and capital funding to five (5) rural transit districts. On an annual basis CTDOT seeks proposals from Intercity Bus Service providers as required by the Circular 9040.1F. The Department does not limit which rural areas may submit proposals for rural demonstration project funding. Because 5311 funding is not growing at a level that would allow for increases in service, CTDOT prioritizes continuation of existing services over introducing new services. If increased federal funding levels are provided, applications would be solicited by CTDOT for feasibility of implementation.

CTDOT invites and encourages rural transit operators to participate in Quarterly Transit Meetings. These meetings are facilitated by CTDOT staff, and attendees include rural and urban transit districts, private bus operators, and other interested parties. Information is disseminated to participants on a broad range of transportation issues, such as, budgets, insurance, bus operations, capital equipment, service enhancements, and federal/state program regulations. They also serve as an opportunity for transit operators to bring forth and discuss any issues affecting their agency or bus services being provided to the general public.

Through the Section 5311 grant application process, CTDOT requires applicants to describe their public involvement efforts and community outreach.

Each Section 5311 subrecipient is required to have a public participation plan in place which is reviewed and approved by CTDOT. The public participation plan contains information to assist with engaging minority, low income and LEP communities. Strategies may include:

- a) Scheduling meetings at times and locations which are convenient and accessible for minority, low-income and LEP communities;
- b) Employing different meeting sizes and formats;
- c) Coordinating with community- and faith-based organizations, educational institutions, and other organizations to implement public engagement strategies that reach out specifically to members of affected minority, low income and/or LEP communities;
- d) Radio, television, or newspaper ads on stations and in publications that serve LEP populations. Outreach to LEP populations could also include audio programming available on podcasts; and
- e) Providing opportunities for public participation through means other than written communication, such as personal interviews or use of audio or video recording devices to capture oral comments.