

# CITY OF MORRISTOWN, TN GRANT APPLICATION



## SR343 COMPLETE STREETS & ITS TRAFFIC SIGNAL COORDINATION PROJECT

**Rebuilding American Infrastructure with Sustainability  
and Equity (RAISE) Discretionary Grant Program**

*Application Deadline is April 14, 2022  
Submission is through [Grants.gov](https://www.grants.gov).*



## TITLE VI NONDISCRIMINATION STATEMENT

The City of Morristown, Tennessee ensures compliance with Title VI of the Civil Rights Act of 1964; 49 CFR, part 26; related statutes and regulations to the end that no person shall be excluded from participation in or be denied the benefits of or be subjected to discrimination under any program or activity receiving federal assistance from the U.S. Department of Transportation on the grounds of race, color, sex, or national origin.

It is the policy of the City of Morristown, Tennessee not to discriminate on the basis of race, color, national origin, age, sex, or disability in operation of its programs, services, and activities.

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## INTRODUCTION

The City of Morristown, Tennessee is requesting the Rebuilding American Infrastructure with Sustainability and Equity (RAISE) discretionary grant program funding for the State Route 343 (SR343) Complete Streets and Intelligent Transportation Systems (ITS) Traffic Signal Coordination Project. The total amount of the project is **\$23,430,325.32**. SR343 is listed as a Minor Arterial roadway that is a runs through downtown Morristown, and connects to US Hwy 25E to the north and south. The SR343 Complete Streets and Intelligent Transportation Systems (ITS) Traffic Signal Coordination Project is within US Census Tracts 1001, 1002, 1003, and 1004.

According to the RAISE grant guidelines:

1. Morristown falls under a rural area,
2. Census Tracts 1001, 1003, and 1004 meets the definition of Persistent Poverty
3. Census Tracts 1001, 1002, 1003, and 1004 meets the definition of Historically Disadvantaged Community; and
4. Census Tract 1003 is also listed as an Opportunity zone.

The City of Morristown is requesting for **\$23,430,325.32** to be paid with **100% RAISE funds**, however the City of Morristown will be willing to put in a local match up to 20% of the total (**\$4,686,065.07**).

There is support from the Morristown City Council, the Hamblen County Commission, the Morristown Area Chamber of Commerce, as well as from state representatives to do the for the SR343 Complete Streets and Intelligent Transportation Systems (ITS) Traffic Signal Coordination Project.

## PROJECT DESCRIPTION

### SR343 ITS Traffic Signal Coordination and Complete Streets Project

Starting point is the N Liberty Hill Intersection to the north. The terminus point is the SR160 intersection to the south. The total length of this project is approximately 3.70 miles. This project comprises of 2 separate components, which are described below.

#### Part 1. Complete Street segment of SR343/ S Cumberland St from US Hwy 11E/ E-W Morris Blvd to SR160

The distance is approximately 1.60 miles in length with 17 intersections (4 of which are signalized). The existing corridor is a 4 or 5-lane undivided highway, with approximately 1 mile of the roadway does not have any sidewalks. This is an issue as S. Cumberland Street/ Lincoln Avenue intersection is within 500 feet of the nearest entrance to Lincoln Elementary and Middle Schools, thus no real safe walking areas for students to travel on.

It should be noted that the northern section of SR343, from Cherokee Lake and US25E to E-W Morris Blvd, is predominantly a 2 to 3 lane roadway. By narrowing down the S. Cumberland St roadway from US Hwy 11E/ Morris Blvd to SR160 to a 3-lane roadway, it would be consistent with the northern end of SR343, and would also provide better, and safer, transportation by adding and/or improving sidewalks and/or bike lanes throughout this section of the corridor.

#### Part 2. ITS Traffic Signal Coordination Project

There are thirteen (13) traffic signal intersections on SR343/ Buffalo Trail/ N Cumberland St/ S Cumberland St from the N Liberty Hill Rd intersection to the north to the Lincoln Avenue intersection to the south. Currently, most of these signals work independently of one another, and a majority of the traffic signal equipment is old and out of date. Also, several signals are on wires, and the City of Morristown would like to replace with mast arms. Several intersections have sidewalks, but will need to be upgraded to meet ADA standards, with pedestrian head crossing signals (8 ped-head crossing signals). A Systems Engineering Analysis (SEA) report is needed in order to implement the traffic signal coordination project. A breakdown of intersection improvements is shown in table 32.

The traffic signals along the Buffalo Trail and Cumberland Street (S.R. 343) corridor should be replaced with new steel poles and mast arms structures. The improvements should upgrade the pedestrian facilities including ramps, signals, and push buttons, providing more accessible pedestrian control and sidewalk accessibility in conformance with the American Disabilities Act (ADA). The traffic signal upgrades should retain the radar detection. Signal reconstruction should conform to the recommended practices of the traffic engineering profession and standards adopted by the Manual on Uniform Traffic Control Devices (MUTCD). The development of the S Cumberland Street corridor from SR 160 to US Hwy 11E/Morris Boulevard into a complete street (please refer to the companion Complete Street study) may present an opportunity to install conduit and fiber while the street is being reconstructed. The overlapping intersections where a complete street reconstruction project may benefit traffic signal operation are: US 11/Morris Boulevard, Louise Avenue, Brown Avenue, and Lincoln Avenue/Algonquin Drive. New conduit and fiber

along this portion of the corridor may allow the City to consider transitioning from leasing fiber to City-owned fiber.

### Background

There have been two corridor studies of SR343. The first was in 2008, completed by Wilbur Smith Associates in March 2008. This study had recommended a “road diet” at the time, but it was never implemented due to the recession at the time.

The most recent studies were completed in December 2021, by CDM Smith Associates. These studies are called the SR343 Complete Streets Plan ([cffdbd\\_e4e8a753f28a4f36994ec1cc184883ae.pdf \(lamtpo.com\)](https://lamtpo.com/cffdbd_e4e8a753f28a4f36994ec1cc184883ae.pdf)), and the Technical Study Buffalo Trail and South Cumberland Street State Route 343 Signal System Evaluation, and Optimization ([cffdbd\\_8f4fff262240418ab57486131413e74f.pdf \(lamtpo.com\)](https://lamtpo.com/cffdbd_8f4fff262240418ab57486131413e74f.pdf)). These studies were approved by a Tennessee Department of Transportation (TDOT) Urban Transportation Planning Grant (UTPG).

The Lakeway Area Bicycle and Pedestrian Master Plan (September 2019) states that sidewalks and shared-use paths to be along SR343/ S. Cumberland St.

The Morristown Greenway Plan (March 2002) also lists a multi-purpose greenway along S Cumberland St.



**Table 1. SR343 Intersection Improvements, as described in the study completed by CDM Smith Associates, December 2021.**

N Liberty Hill Rd	Retime signal; Adjust clearances; improve sidewalk access for ADA compliance, crosswalks, and install pedestrian signals
Fairview Rd/ Medlin Rd	Retime signal; Adjust clearances; improve sidewalk access for ADA compliance, crosswalks, and install pedestrian signals
Davis St	Reconstruct signal; Retime signal; Adjust clearances; improve sidewalk access for ADA compliance, crosswalks, and install pedestrian signals
Cherokee Dr	Reconstruct signal; Retime signal; Adjust clearances; improve sidewalk access for ADA compliance, crosswalks, and install pedestrian signals
W 3rd N St	Reconstruct signal; Retime signal; Adjust clearances; improve sidewalk access for ADA compliance, crosswalks, and install pedestrian signals
W 2nd N St	Reconstruct signal; Retime signal; Adjust clearances; improve sidewalk access and upgrade pedestrian operation for (APC) and countdown displays in conformance with ADA and MUTCD
W 1st N St	Reconstruct signal; Retime signal; Adjust clearances; improve sidewalk access and upgrade pedestrian operation for (APC) and countdown displays in conformance with ADA and MUTCD
Main St	Reconstruct signal; Retime signal; Adjust clearances; improve sidewalk access and upgrade pedestrian operation for (APC) and countdown displays in conformance with ADA and MUTCD; Address right-turn arrow conflict with pedestrian phase
W Morris Blvd	Reconstruct signal; Retime signal; Adjust clearances; improve sidewalk access and upgrade pedestrian operation for (APC) and countdown displays in conformance with ADA and MUTCD
Louise Av	Retime signal; Adjust clearances; improve sidewalk access for ADA compliance, crosswalks, and install pedestrian signals
Brown Av	Retime signal; Adjust clearances; improve sidewalk access for ADA compliance, crosswalks, and install pedestrian signals
Lincoln Av	Retime signal; Adjust clearances; improve sidewalk access for ADA compliance, crosswalks, and install pedestrian signals

## Goals and Objectives

The Goals and Objectives of the Complete Streets aspect of the project are as follows:

### 1. **Improve the safety for all transportation modes:**

- By adding a 5-foot wide sidewalk and a 10-foot wide multimodal path to be more pedestrian and bicyclist friendly;
- By Reducing the travel lanes from 4-5 lanes down to 3 lanes (center lane is a turn lane), thus minimizing vehicular speeding throughout the corridor;
- By decreasing the amount of road pavement will make it easier to cross the street;
- By adding striped crosswalks for better visibility and safer pedestrian crossing

- e. By adding pedestrian traffic devices (“ped-heads”) to allow for safer movement of non-motorized transportation users;
- f. By adding additional street lighting to brighten up the corridor.
- g. By improving all intersections, by adding ADA compliant ramps and sidewalks.

**2. Improve the aesthetics of the corridor:**

- a. By adding grass, shrubs, and trees as currently this is very little landscaping along this corridor,
- b. By adding a Welcome to Morristown Gateway Sign, as SR343 is a major thoroughfare to downtown Morristown;
- c. By adding additional street lighting to brighten up the corridor.

**3. Reduce vehicular speeding along the corridor:**

- a. By decreasing the number of travel lanes, it should slow down vehicular traffic along the roadway
- b. By adding striped crosswalks for better visibility and safer pedestrian crossing.

The Goals and Objectives of the ITS Traffic Signal Coordination are as follows:

**1. Improve the traffic signal operations**

- a. By upgrading to radar detection than using loop detection
- b. By upgrading to mast arms instead of span-wire for traffic signals
- c. By adding pedestrian traffic devices (“ped-heads”) to allow for safer movement of non-motorized transportation users.

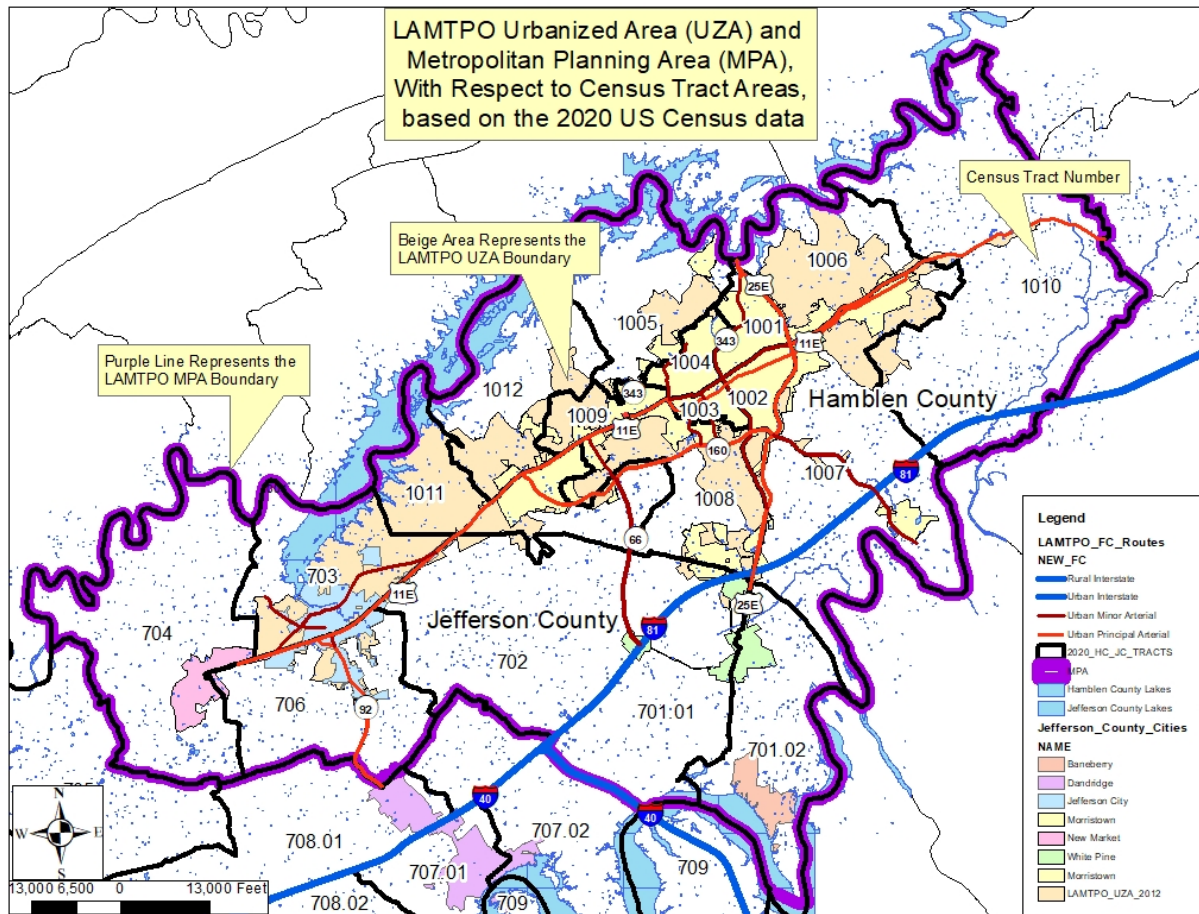
**2. Improve Traffic Flow**

- a. By having the traffic signals communicate with one another, it will allow for better free-flowing traffic along SR343;
- b. By installing pedestrian signals (ped-heads), it will allow for better and safer pedestrian crossing movement.

## Demographics

The City of Morristown is the county seat of Hamblen County, Tennessee. It is also within the Lakeway Area Metropolitan Transportation Planning Organization (LAMTPO). LAMTPO is a small MPO with an urbanized area (UZA) population of 59,355 people. The LAMTPO Metropolitan Planning Area (MPA) population is 89,944, based on the 2010 US Census.

**Map 1. The LAMTPO UZA and MPA boundary, with respect to the US Census Tract areas.**



The tables shown below illustrate the population of various cities and counties within Hamblen and Jefferson counties, as well as LAMTPO populations.

**TABLE 2. 2010 U.S CENSUS POPULATION FIGURES**

<b>PLACE</b>	<b>UZA POPULATION</b>	<b>MPA TOTAL POPULATION</b>
Morristown	29,026	29,137
Hamblen County	20,248	62,544
Jefferson City	7,433	8,047
White Pine	0	2,196
New Market	74	1,334
Jefferson County	2,574	51,407
<b>LAMTPO</b>	<b>59,355</b>	<b>89,944</b>

**TABLE 3. 2010 and 2020 U.S CENSUS POPULATION FIGURES**

<b>PLACE</b>	<b>2010 TOTAL POPULATION</b>	<b>2020 TOTAL POPULATION</b>
Morristown	29,137	30,431
Hamblen County	62,544	64,999
Jefferson City	8,047	8,419
White Pine	2,196	2,471
New Market	1,334	1,349
Jefferson County	51,407	54,683
<b>LAMTPO Study Area</b>	<b>89,944</b>	<b>93,210</b> <i>(based on 2010 MPA boundary)</i>

Morristown has a high Hispanic population. The city as a whole has a Hispanic population of 25%. When looking at the US Census Tracts 1001, 1002, 1003, and 1004, the minimum Hispanic population percentage is 25.10%, as shown on Table 4 on the next page.

**Table 4. Population Breakdown within US Census Tracts 1001, 1002, 1003, 1004 within Morristown, Hamblen County, Tennessee, based on the 2020 US Census Redistricting data, table P1.**

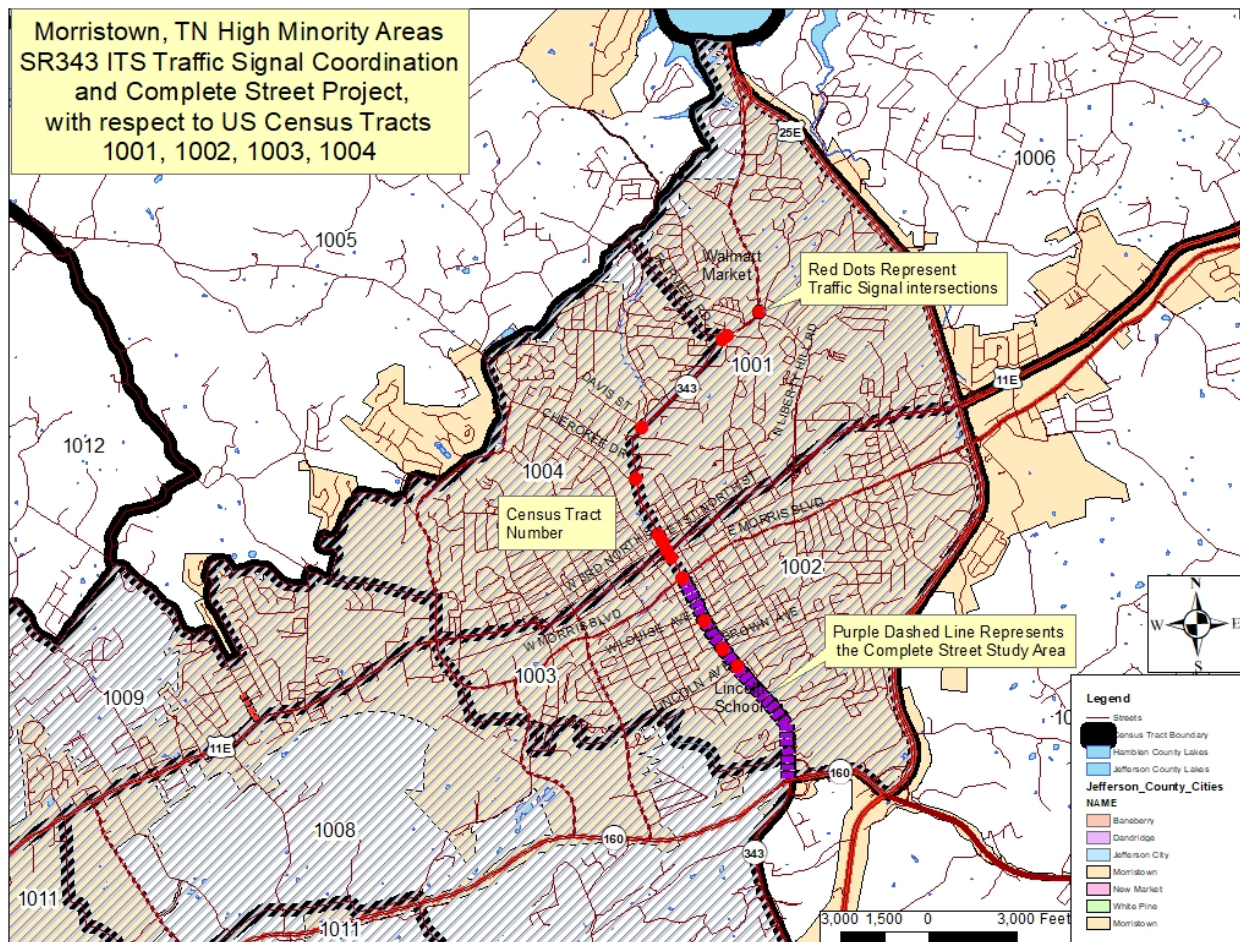
Census Tract	Total Population	White Alone	White %	Black or African American	Black%	American Indian and Alaska Native	American Indian %	Some Other Race	Other Race %	Hispanic or Latino	Hispanic %
<b>1001</b>	6,470	4,217	65.18%	280	4.33%	105	1.62%	995	15.38%	2,200	34.00%
<b>1002</b>	5,632	3,770	66.94%	306	5.43%	47	0.83%	916	16.26%	1,515	26.90%
<b>1003</b>	3,589	2,148	59.85%	260	7.24%	37	1.03%	688	19.17%	1,234	34.38%
<b>1004</b>	6,184	4,163	67.32%	526	8.51%	90	1.46%	824	13.32%	1,552	25.10%

**Table 5. Population and Poverty Levels of US Census Tracts 1001, 1002, 1003, and 1004 in Hamblen County, Tennessee, based on the 2019 5-year data. US Census table S1701.**

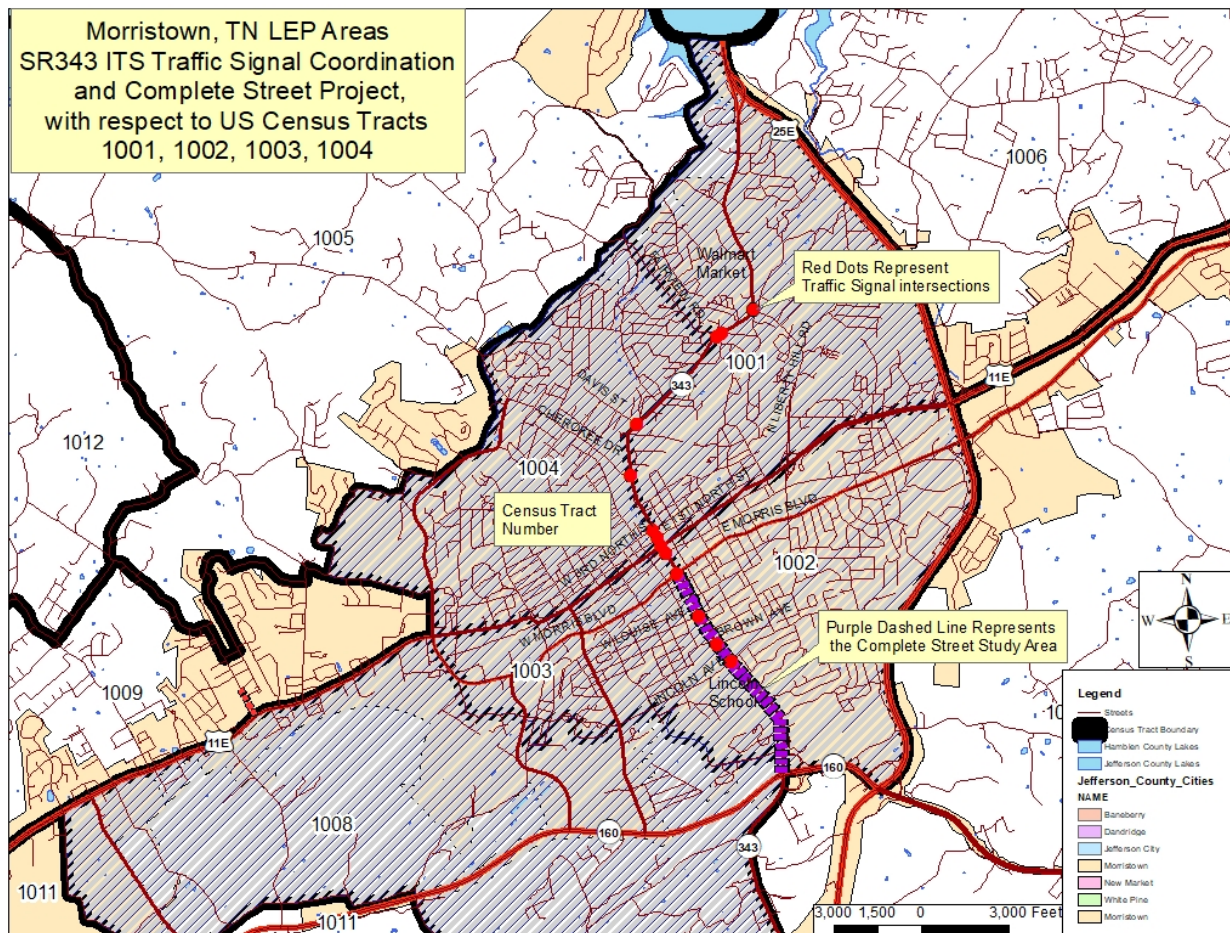
Census Tract	Population	Below Poverty Level	Percent Below Poverty Level
1001	6,296	1,854	29.4
1002	5,381	988	18.4
1003	3,193	1,615	50.6
1004	6,199	1,468	23.7



**Map 2. Location of the SR343 ITS Traffic Signal Coordination and Complete Street Project with respect to US Census Tracts 1001, 1002, 1003, and 1004, and within the High Minority Areas of Morristown, Tennessee.**



**Map 3. Location of the SR343 ITS Traffic Signal Coordination and Complete Street Project with respect to US Census Tracts 1001, 1002, 1003, and 1004, and within the High Limited English Proficiency (LEP) Areas of Morristown, Tennessee.**



**Table 6. 2015-2019 American Community Survey (ACS) data of Language Spoken at Home, based on Census Tract data (US Census table S1601), 2019 5-year estimates**

County	Census Tract	Total Population 5 years and older	Population Percentage speak English only or Speak English Very Well	Population Percentage that Speak English Less Than Very Well	Population Percentage that Speak only English	Population Percentage that speak a language other than English	Population Percentage that Speak only Spanish
Hamblen	1001	5807	92.4	7.6	83.7	16.3	16
Hamblen	1002	5068	95	5	82	18	13.3
Hamblen	1003	3062	84.3	15.7	69.2	30.8	29.6
Hamblen	1004	6569	91.7	8.3	85.3	14.7	14.4



## PROJECT LOCATION

The State Route 343 (SR343) ITS Traffic Signal Coordination and Complete Streets Project is located within Morristown, Hamblen County, Tennessee. Morristown is the county seat of Hamblen County. It should be noted that SR343 is a boundary between the US Census Tracts 1001 and 1004 and between 1002 and 1003.

Tables 7 and 8 shown below illustrates the beginning and ending point for the Complete Streets and the ITS Traffic Signal Coordination components, respectively.

**Table 7. Complete Streets component Beginning and Ending points.**

	<b>SR343 Intersection</b>	<b>X Coordinate</b>	<b>Y Coordinate</b>	<b>Nearest Landmark</b>
<b>Beginning Point</b>	East-West Morris Blvd/ US Hwy 11E	36.211990	-83.291100	Morristown's Farmers market and Walgreens
<b>Ending Point</b>	SR160	36.191389	-83.279799	Morristown Central Services

**Table 8. ITS Traffic Signal Coordination component Beginning and Ending points.**

	<b>SR343 Intersection</b>	<b>X Coordinate</b>	<b>Y Coordinate</b>	<b>Nearest Landmark</b>
<b>Beginning Point</b>	N Liberty Hill Rd	36.236636	-83.281495	Walmart Neighborhood Market
<b>Ending Point</b>	Lincoln Av/ Algonquin Ave	36.203642	-83.285095	Wolfs Tire and Muffler Center

**Map 4. Location Map of SR343 ITS Traffic Signal Coordination and Complete Street Project, with respect to US Census Tracts 1001, 1002, 1003, and 1004.**

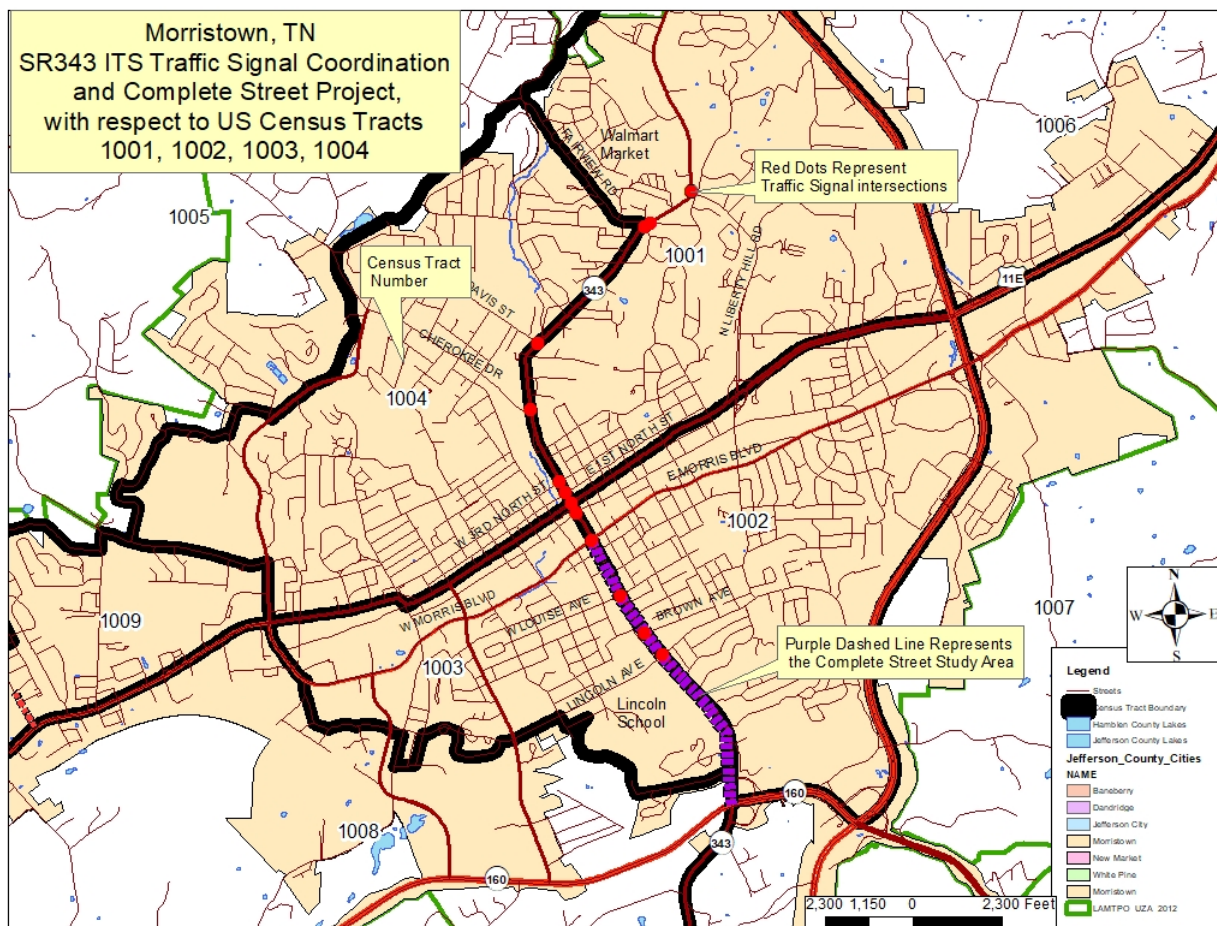


Table 9 on page 18 lists the US Census Tracts within Hamblen County Tennessee that meets the definition of Persistent Poverty and/ or a Historically Disadvantaged Community. For the SR343 ITS Traffic Signal Coordination and Complete Street Project, Census Tracts 1001, 1002, 1003, and 1004 are listed as meeting the definition of a Historically Disadvantaged Community. Census Tracts 1001, 1003, and 1004 are also listed as being a Persistent Poverty area.

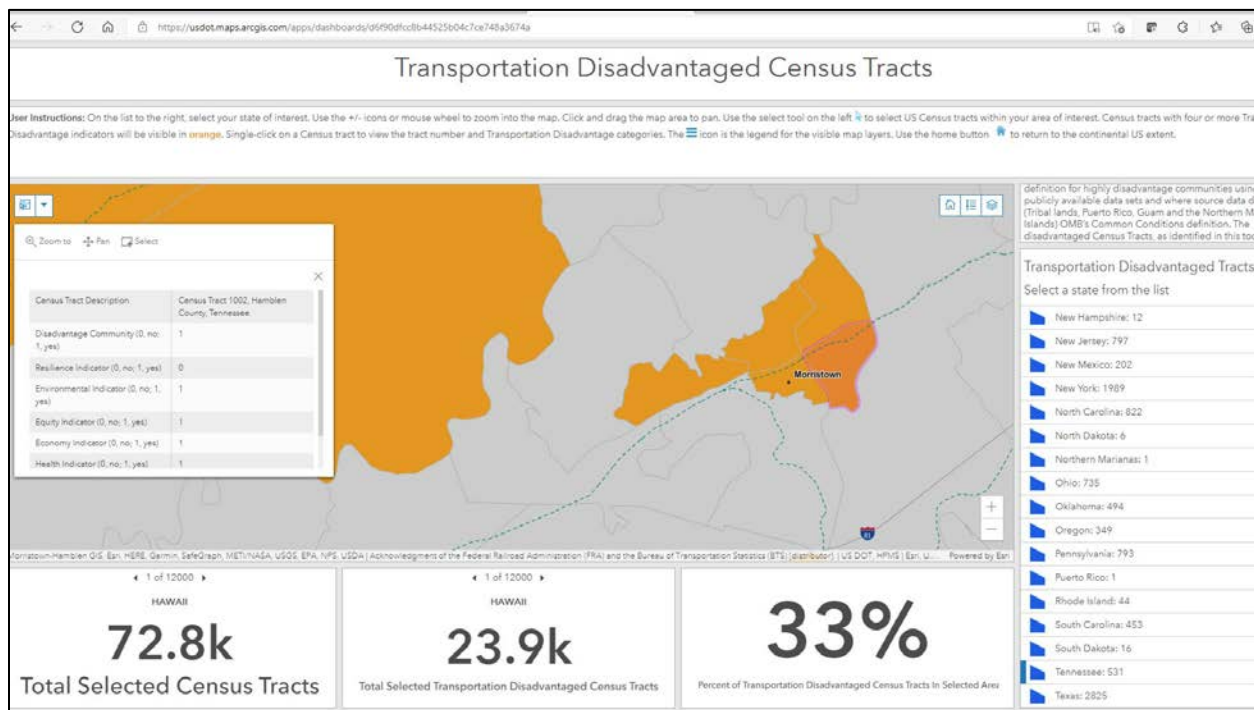
#### Persistent Poverty

On information from the United States Department of Transportation (USDOT), US Census Tracts 1001, 1003, and 1004 are listed as areas of Persistent Poverty. Table 9 shown on page 19 illustrates this information.

## Historically Disadvantaged Community

On information from the United States Department of Transportation (USDOT), US Census Tracts 1001, 1002, 1003, and 1004 are listed as areas of Historically Disadvantaged Communities. Table 9 shown on the page 19 illustrates this information.

### Map 5. Historically Disadvantaged Community Map of Hamblen County, TN. Information provided by USDOT [Transportation Disadvantaged Census Tracts \(arcgis.com\)](https://arcgis.com).



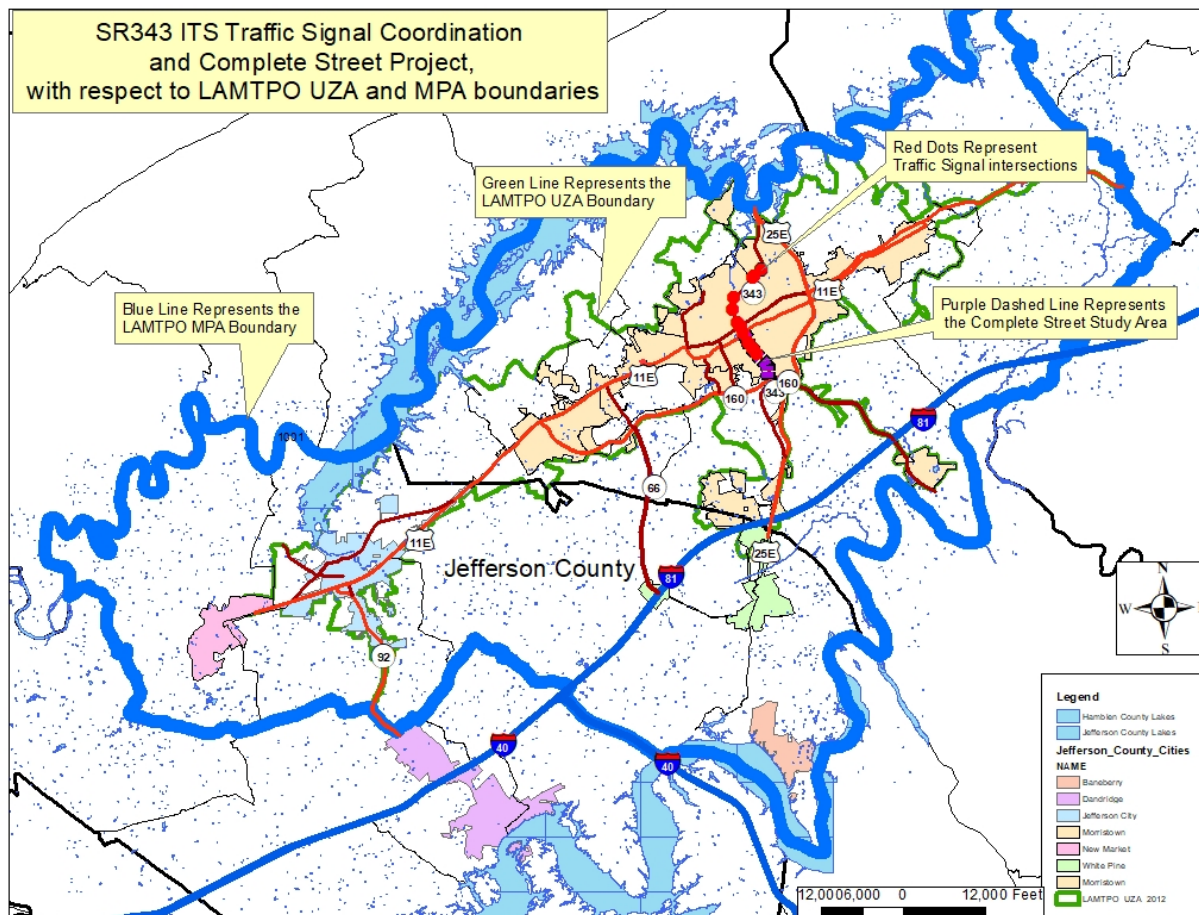
**Table 9. Persistent Poverty and/ or Historically Disadvantaged Community Table. Information provided by USDOT [RAISE Discretionary Grants](#) | [US Department of Transportation](#).**

B. County	C. Census Tract Name	E. APP - COUNTY Meets Definition? Persistent Poverty	F. APP - CENSUS TRACT Meets Definition? Persistent Poverty	G. HDC - CENSUS TRACT Meets Definition? Historically Disadvantaged Community	Resilience Indicator	Environmental Indicator	Equity Indicator	Economy Indicator	Health Indicator	Transportation Indicator
Hamblen County	Census Tract 1001	No	Yes	Yes	No	Yes	Yes	Yes	Yes	No
Hamblen County	Census Tract 1002	No	No	Yes	No	Yes	Yes	Yes	Yes	Yes
Hamblen County	Census Tract 1003	No	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes
Hamblen County	Census Tract 1004	No	Yes	Yes	No	Yes	Yes	Yes	Yes	No

### Census Designated Urbanized Area

The SR343 Complete Streets and ITS Traffic Signal Coordination project is within the Lakeway Area Metropolitan Transportation Planning Organization (LAMTPO). LAMTPO is a small MPO with an urbanized area (UZA) population of 59,355 people. The LAMTPO Metropolitan Planning Area (MPA) population is 89,944, based on the 2010 US Census.

**Map 6. SR343 ITS Traffic Signal Coordination and Complete Streets Project, with respect to LAMTPO UZA and MPA Boundaries.**

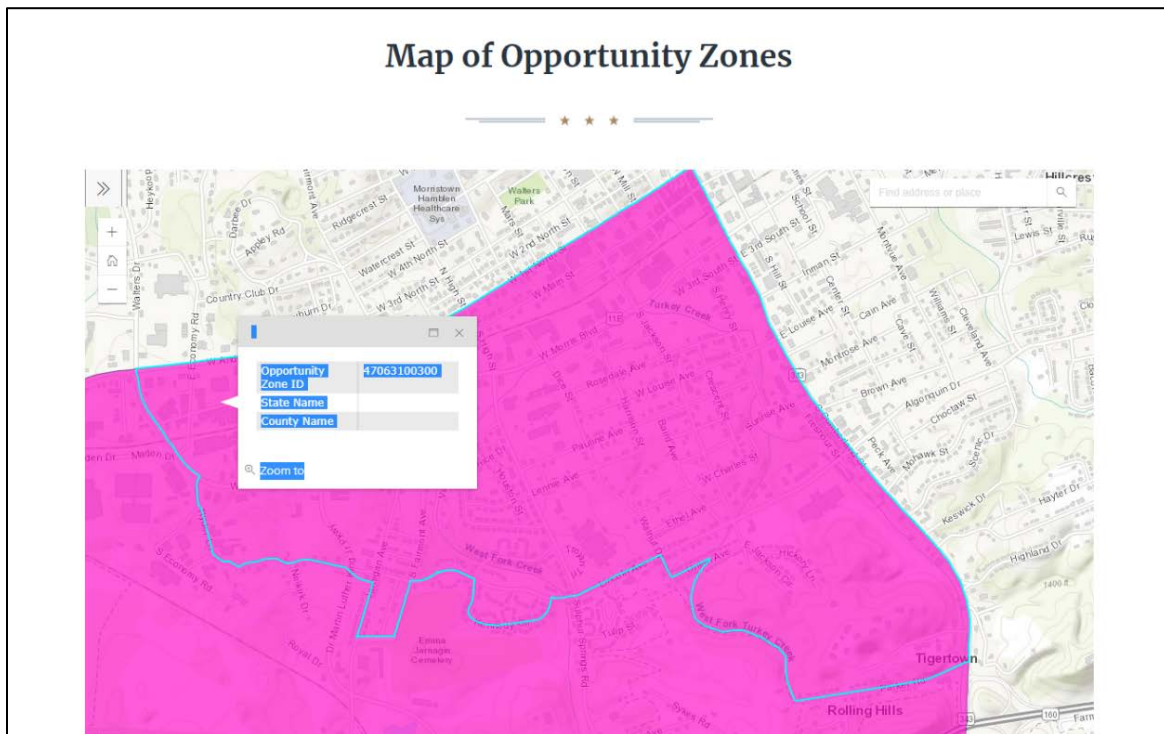




## Opportunity Zones

According to the Housing and Urban Development (HUD), US Census Tract 1003 and 1008 within Hamblen County, Tennessee are listed as Opportunity Zones.

**Map. 7. US Census Tract 1003 in Morristown, Hamblen County, Tennessee is shown as an Opportunity Zone** [Opportunity Zones - Map | opportunityzones.hud.gov](https://www.opportunityzones.hud.gov).



## GRANT FUNDING

The City of Morristown, Tennessee, under the RAISE grant guidelines, is:

1. Morristown falls under a rural area,
2. Census Tracts 1001, 1003, and 1004 meets the definition of Persistent Poverty
3. Census Tracts 1001, 1002, 1003, and 1004 meets the definition of Historically Disadvantaged Community; and
4. Census Tract 1003 is also listed as an Opportunity zone.

Due to this, the City of Morristown TN is requesting that the SR343 Complete Streets and ITS Traffic Signal Coordination Project be completely funded with **100%** of the RAISE funds. The City will be willing to negotiate to pay up to 20% of the total project costs (not to exceed \$5,000,000.00).

The estimated cost from the CDM Smith Associates Complete Street segment is \$19,054,094.30, as shown in **Table 10 on page 22**. The estimated cost for the ITS Traffic Signal Coordination component is \$3,476,231.02, as shown in **Table 11 on page 23**. The overall estimated cost is **\$23,430,325.32**. It should be noted that these cost estimates are based on year 2022 costs, plus an inflation factor of **seven percent (7%)** for each year to the year 2026, when the project is anticipated to go to construction. These costs also factor in Preliminary Engineering (PE)-NEPA costs, PE-Design costs, as well as Construction costs. It is anticipated that Right-Of-Way (ROW) **will not** be needed for either component.

If it is determined that the City of Morristown, Tennessee does not qualify for 100% RAISE funding, then the breakdown will be 80% RAISE funding for a total of \$18,744,260.25, with a local match of \$4,686,065.07.

Since this project has two different components, the breakdown will be shown for each component.

**Table 10. Complete Streets Cost Breakdown**

Item	Unit Measure	# Units	Cost Per Unit	Total Cost (2026) 100% RAISE Funds	Total RAISE Funds (80%)	Total Local Match (20%)
Mobilization	LS	1	\$700,000.00	\$917,557.21	\$734,045.77	\$183,511.44
Remove Asphalt Payment	SY	44000	\$10.00	\$576,750.24	\$461,400.20	\$115,350.05
Remove Rigid Pavement	SY	6700	\$12.00	\$105,388.00	\$84,310.40	\$21,077.60
Remove Existing Curb and Gutter	LF	36000	\$15.00	\$707,829.85	\$566,263.88	\$141,565.97
Cold Plane	SY	72000	\$4.00	\$377,509.25	\$302,007.40	\$75,501.85
B-M2 Course 2"	TON	7160	\$130.00	\$1,220,088.93	\$976,071.14	\$244,017.79
D Mix Surface 1.5"	TON	4198	\$145.00	\$797,894.64	\$638,315.71	\$159,578.93
Mineral Aggregate Base	TON	14000	\$35.00	\$642,290.04	\$513,832.04	\$128,458.01
Concrete Sidewalk	SF	260000	\$6.50	\$2,215,245.26	\$1,772,196.21	\$443,049.05
Concrete Curb and Gutter	LF	36000	\$35.00	\$1,651,602.97	\$1,321,282.38	\$330,320.59
Catch Basins	Each	90	\$4,800.00	\$566,263.88	\$453,011.10	\$113,252.78
RCP Storm Piping	LF	35000	\$75.00	\$3,440,839.53	\$2,752,671.62	\$688,167.91
Lighting	LS	1	\$800,000.00	\$1,048,636.81	\$838,909.45	\$209,727.36
Signage and Pavement Marking	LS	1	\$360,000.00	\$471,886.56	\$377,509.25	\$94,377.31
Erosion Control	LS	1	\$200,000.00	\$262,159.20	\$209,727.36	\$52,431.84
Traffic Control and MOT	LS	1	\$125,000.00	\$163,849.50	\$131,079.60	\$32,769.90
Landscaping/ Gateway feature	LS	1	\$140,000.00	\$183,511.44	\$146,809.15	\$36,702.29
<b>Sub-total</b>				<b>\$15,349,303.31</b>	<b>\$12,279,442.64</b>	<b>\$3,069,860.66</b>
<b>PE-NEPA Costs (15% of Construction Costs)</b>				\$2,302,395.50	\$1,841,916.40	\$460,479.10
<b>PE-Design Costs (15% of Construction Costs)</b>				\$2,302,395.50	\$1,841,916.40	\$460,479.10
<b>ROW</b>				\$0.00	\$0.00	\$0.00
<b>TOTALS</b>				<b>\$19,954,094.30</b>	<b>\$15,963,275.44</b>	<b>\$3,990,818.86</b>



**Table 11. ITS Traffic Signal Coordination Cost Breakdown**

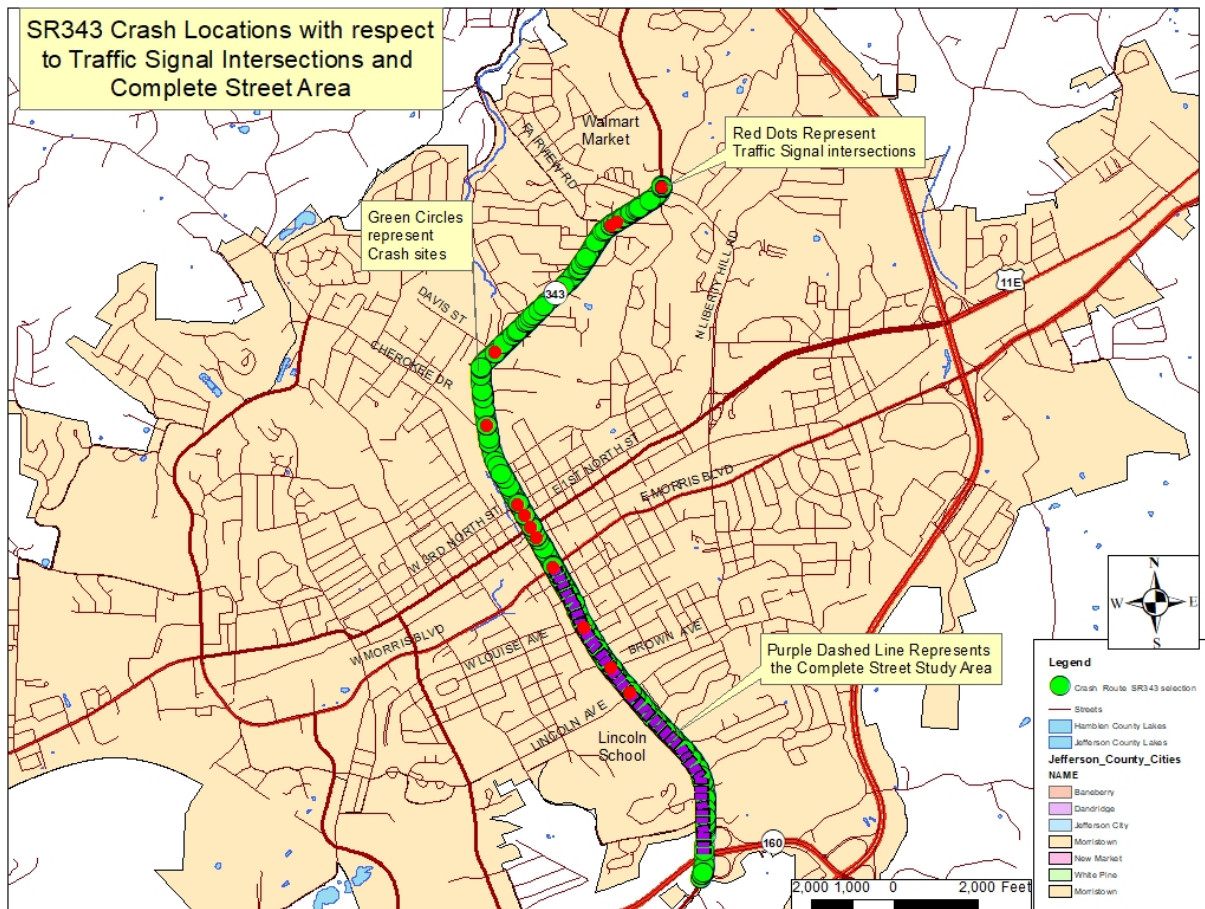
<b>SR343 Intersection</b>	<b>RAISE (100%)Cost Estimate (2026)</b>		<b>RAISE (80%)</b>	<b>Local Match (20%)</b>
N Liberty Hill Rd	\$131,079.60		\$104,863.68	\$26,215.92
Medlin Rd	\$65,539.80		\$52,431.84	\$13,107.96
Fairview Rd	\$275,267.16		\$220,213.73	\$55,053.43
Davis St	\$203,173.38		\$162,538.71	\$40,634.68
Cherokee Dr	\$203,173.38		\$162,538.71	\$40,634.68
W 3rd N St	\$255,605.22		\$204,484.18	\$51,121.04
W 2nd N St	\$229,389.30		\$183,511.44	\$45,877.86
W 1st N St	\$229,389.30		\$183,511.44	\$45,877.86
Main St	\$196,619.40		\$157,295.52	\$39,323.88
W Morris Blvd	\$294,929.10		\$235,943.28	\$58,985.82
Louise Av	\$196,619.40		\$157,295.52	\$39,323.88
Brown Av	\$196,619.40		\$157,295.52	\$39,323.88
Lincoln Av	\$196,619.40		\$157,295.52	\$39,323.88
<b>SUB-TOTALS</b>	<b>\$2,674,023.86</b>		<b>\$2,139,219.09</b>	<b>\$534,804.77</b>
PE-NEPA Costs (15% of Construction Costs)	\$401,103.58		\$320,882.86	\$80,220.72
PE-Design Costs (15% of Construction Costs)	\$401,103.58		\$320,882.86	\$80,220.72
<b>ROW</b>	\$0.00		\$0.00	\$0.00
<b>TOTALS</b>	<b>\$3,476,231.02</b>		<b>\$2,780,984.81</b>	<b>\$695,246.21</b>

## MERIT CRITERIA

### Safety

Since 2016, there has been 713 crashes along SR343 from N Liberty Hill Rd to SR160, as shown in the map below. The majority of the accidents occurred at or near intersections. There were 593 accidents that had property damage, 108 crashes that are listed as suspected minor injuries, 9 crashes with suspected serious injuries, and 3 crashes with 3 fatalities. 2 of the 3 fatalities were pedestrian fatalities, and both of those occurred within the Complete Street section where currently there are no sidewalks. Crash data was provided by the State of Tennessee e-TRIMS program.

**Map 8. SR343 Crash Locations since 2016.**



The SR343 Complete Streets Plan also states that the reduction in lanes would still have acceptable Levels of Service. Also, by reducing the number of lanes from 4/ 5 lanes to 3 lanes, this will be more in line to the design of SR343/ N Cumberland St/ Buffalo Trail, thus being more consistent. The Crash Modification Factors (CMF) Clearinghouse shows that converting a four-lane roadway to a three-lane roadway, which includes a center turn lane, results in a 47% reduction in crashes in suburban areas.

**Table 12. Crash data of SR343 at signalized intersections, as provided by the ITS Traffic Signal Study by CDM Smith Associates (December 2021).**

<b>SR343 Intersection</b>	<b>Total # of crashes</b>	<b>Rear End Collisions</b>	<b>Angle Collisions</b>	<b>Property Damage</b>	<b>Injury</b>	<b>Fatality</b>
N Liberty Hill Rd	23	9	7	17	6	0
Fairview Rd/ Medlin Rd	33	14	5	27	6	0
Davis St	19	14	2	17	2	0
Cherokee Dr	16	8	2	13	3	0
W 3rd N St	23	6	8	17	6	0
W 2nd N St	26	12	10	24	2	0
W 1st N St	50	26	15	46	4	0
Main St	35	19	11	31	4	0
W Morris Blvd	117	63	23	108	9	0
Louise Av	18	2	9	12	6	0
Brown Av	26	8	23	24	2	0
Lincoln Av	60	22	20	47	12	1
<b>TOTALS</b>	<b>446</b>	<b>203</b>	<b>135</b>	<b>383</b>	<b>62</b>	<b>1</b>

The SR343 Complete Streets Plan recommends a 6-foot sidewalk along the eastern side of SR343, and a 10-foot wide multiuse path along the western side of SR343. There will also be a landscape buffer to help separate non-motorist and motorist travelers.

The two pictures below show a Before and After scenario of what SR343 looks like currently, and what SR343 will look like after the completion of the Complete Streets Project.



### Environmental Sustainability

A major component of the Complete Streets section is adding landscaping. Currently, there is very little landscaping along SR343 between US Hwy 11E and SR160. This project, based on the CDM Study (December 2021) will be to add approximately 90 trees along SR343/ S Cumberland St. between US Hwy 11E/ E-W Morris Blvd and SR160.

From the Environmental Protection Agency, [Reducing Urban Heat Islands: Compendium of Strategies: Trees and Vegetation \(epa.gov\)](https://www.epa.gov/heat-islands/reducing-urban-heat-islands-compendium-of-strategies-trees-and-vegetation), Suburban areas with mature trees that are 4 to 6°F (2 to 3°C) cooler than new suburbs without trees and that tree shading reduces the temperatures inside parked cars by about 45°F (25°C). Shading pavement in parking lots and on streets can be an effective way to help cool a community. Trees can be planted around perimeters and in medians inside parking lots or along the length of streets. The use of trees and vegetation in the urban environment brings many benefits, including lower energy use, reduced air pollution and greenhouse gas emissions, protection from harmful exposure to ultraviolet (UV) rays, decreased stormwater runoff, potential reduced pavement maintenance, and other quality-of-life benefits.

The City of Morristown currently has a Horticulturist and landscaping crew on staff for maintaining trees/ shrubs and mowing.

### Quality of Life

A survey was done during the development of the SR343 Complete Streets Study, and several responses was that people did not feel safe along this corridor due to a lack of sidewalks, vehicular speeding along the roadway, and lack of landscaping. The recommendations from this study will definitely improve the safety and quality of life in the area.

Trees and vegetation can provide a range of quality-of life benefits. Adding trees and vegetation to urban parks, streets, parking lots, or roofs can provide a habitat for birds, insects, and other living things. Urban trees and vegetation have been linked to reduced crime, increased property values, and other psychological and social benefits that help decrease stress and aggressive behavior.

### Improves Mobility and Community Connectivity

Within the past 5 years, 2 pedestrian fatalities occurred within the Complete Streets section of this project, in areas that do not have sidewalks. A survey was done during the development of the SR343 Complete Streets Study, and several responses was that people did not feel safe along this corridor due to a lack of sidewalks.

The SR343 Complete Streets Plan recommends a 6-foot sidewalk along the eastern side of SR343, and a 10-foot wide multiuse path along the western side of SR343. There will also be a landscape buffer to help separate non-motorist and motorist travelers. All sidewalks and greenway trails will be made to ADA compliant, and where there are existing sidewalks, they will be improved and brought up to ADA compliant standards.

### Economic Competitiveness and Opportunity

Census Tract 1003 is listed as an Opportunity Zone. Along SR343, it is predominately a commercial land use area, with mostly small businesses. Several property owners had used the City of Morristown's Community Development Block Grant (CDBG) Façade grants along this improve their properties. By implementing the Complete Streets project, it will make this corridor more aesthetically pleasing and it will complement what some of the property owners had done to improve their properties.

By having the ITS Traffic Signal Coordination, it will improve all modes of transportation movement, especially for non-motorists. According to the study completed by CDM Smith Associates (December 2021), reducing from 4/ 5 lane roadway to a 3-lane roadway will still have an acceptable Level of Service (level C or better).

### State of Good Repair

This project will be to repair and/or replace the existing traffic signal equipment in order for the traffic signals to coordinate with one another. Existing sidewalks will be brought up to ADA compliance, if needed. The City of Morristown Public Works Department and GIS Department have an asset management database and will monitor the conditions of the sidewalks, signage, traffic signals, landscaping, etc., on a yearly basis.

It should be noted that the Tennessee Department of Transportation (TDOT) plans on resurfacing SR343 within the next 3 years, which would coincide with the construction of the Complete Streets and ITS Traffic Signal Coordination Project, if selected.

### Partnership and Collaboration

If awarded the grant, the project will be advertised in English and in Spanish, as there is a high Hispanic population in Morristown, TN. Due to the high estimated cost of this project, requesting for Disadvantaged Business Enterprise (DBE) will be done, and DBE overall goal for Morristown is at least 10%. Besides advertising in newspapers and placed on social media (Facebook, LinkedIn, Morristown website, TDOT website, etc.) information will be sent to the East Tennessee Hispanic Chamber of Commerce and Hola Lakeway website.

It should be noted that the Tennessee Department of Transportation (TDOT) plans on resurfacing SR343 within the next 3 years, which would coincide with the construction of the Complete Streets and ITS Traffic Signal Coordination Project, if selected.

The City of Morristown will work closely with LAMTPO and TDOT to make sure information is placed in the current Transportation Improvement Program (TIP). It should be noted that these projects are listed in the current LAMTPO 2045 Metropolitan Transportation Plan (MTP).

### Innovation

This project will be to repair and/or replace the existing traffic signal equipment in order for the traffic signals to coordinate with one another. Morristown Utilities System has fibernet wire throughout the city, thus the ability for the traffic signals to "communicate" with each other is in place, just need to upgrade traffic signal equipment. Radar detection equipment will also be installed to replace loop detection devices.

It should be noted that the Tennessee Department of Transportation (TDOT) plans on resurfacing SR343 within the next 3 years, which would coincide with the construction of the Complete Streets and ITS Traffic Signal Coordination Project, if selected.

The City of Morristown, TN is requesting for **100% RAISE funding** for this project due to:

1. Morristown falls under a rural area,
2. Census Tracts 1001, 1003, and 1004 meets the definition of Persistent Poverty
3. Census Tracts 1001, 1002, 1003, and 1004 meets the definition of Historically Disadvantaged Community; and
4. Census Tract 1003 is also listed as an Opportunity zone.

## PROJECT READINESS

### Environmental Risk

It is anticipated that there will not be any detriment to adjacent properties, the environment, or to human or wildlife as the SR343 Complete Streets and Intelligent Transportation Systems (ITS) Traffic Signal Coordination Project is to occur within the existing right of way.

Norfolk Southern Railroad does cross SR343 between main St and Morris Blvd, however, this will not be affected as a signalized intersection is not right at the railroad, and the railroad is not near the Complete Streets segment of the project.

There are no streams or other water bodies near the project, thus will not be affected. Stormwater pipes will be upgraded during the complete streets project.

Using federal funds will need to go through the Preliminary Engineering (PE) NEPA and Design, Right-of-Way, and Construction phases. The City of Morristown will work closely with TDOT and LAMTPO to make sure the project will be placed in the TIP, as well as following the TDOT Local Government Guidelines document.

## PROJECT SCHEDULE

**Table 13. Project Schedule**

Action Item	Date
Applications Due	04/14/22
Applications Awarded	08/12/22
Item added to TIP	10/30/22
FHWA/ TDOT Contract	11/01/22
Notice to Proceed (PE-NEPA)/ Public Comment	01/01/23
PE-NEPA Approval	12/01/23
Notice to Proceed (PE-Design)/ Public Comment	01/24/24
PE-Design Approval	12/01/24
Notice to Proceed ROW/ Public Comment (if needed)	01/25/25
ROW Approval	11/01/25
Notice to Proceed Construction / Public Comment (if needed)	01/01/26
RAISE Funds obligation deadline	09/30/26
Construction Completed	01/30/27
Project Completion	01/30/27
RAISE Funds must be expended	9/30/2031



## BENEFIT COST ANALYSIS

There are 129 parcels along SR343/ S Cumberland St between US Hwy 11E/ E-W Morris Blvd to the SR160 intersection. The current appraised value for all of these properties is \$21,525,700.00. There are various estimates as to how much trees increase property values, ranging from 3% increase to 25% increase. The United States Department of Agriculture (USDA) states that healthy, mature trees add an average of 10 percent (10%) to a property's value. By using the 10% value, the appraised value will increase to a total of **\$23,678,270.00**. This would generate an additional **\$861,028.00** in annual property taxes alone.

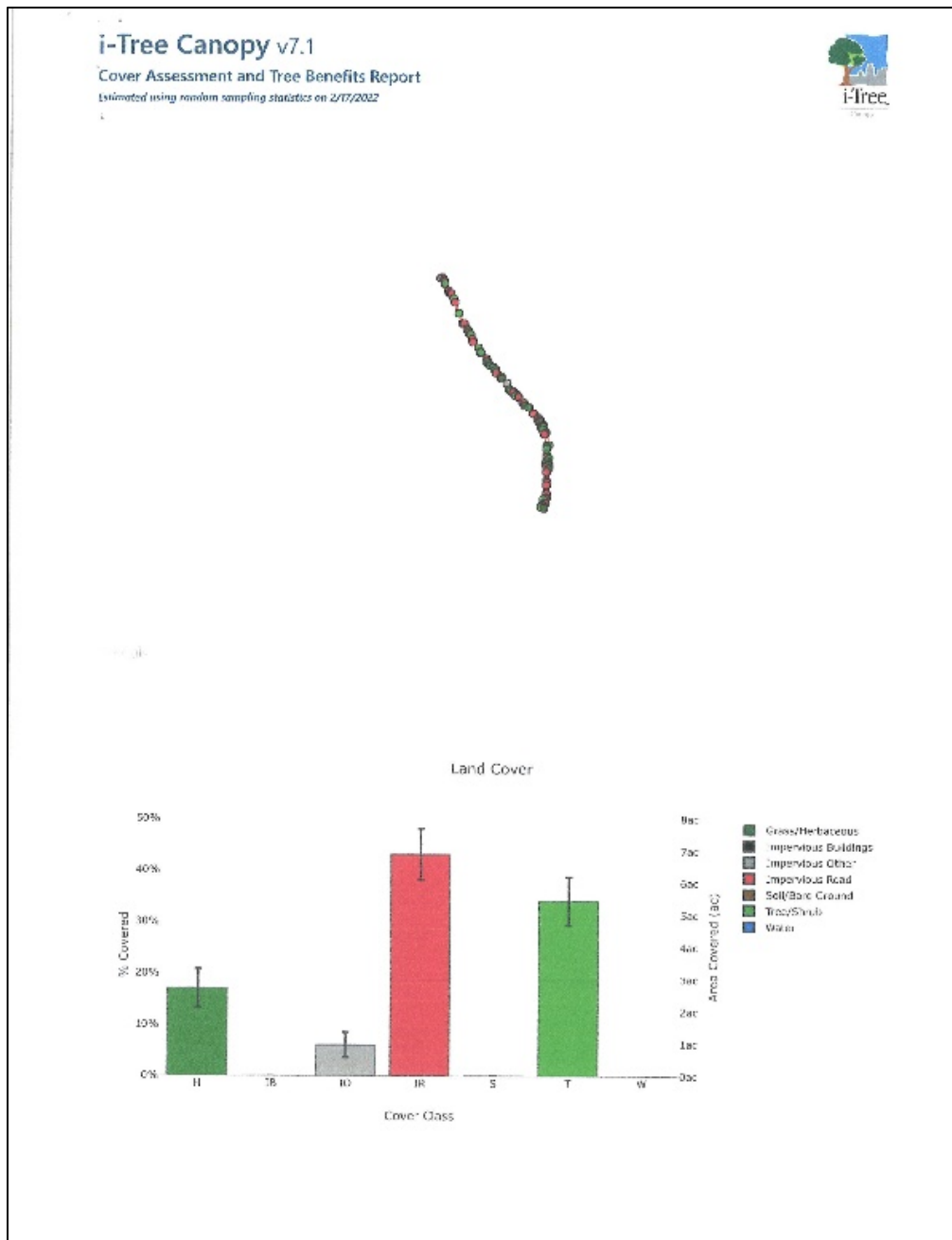
Using the web-based program **I-Tree Canopy (version 7.1)**, the tree benefits estimates are as follows:

**Carbon emissions** reduction:

- a. Sequestered annually in trees: \$1,266.00 savings
- b. Stored in trees (not annual rate): \$31,791.00 savings

**Air Pollution** reduction annually is approximately a \$1,299.00 savings





From [urbanforestrynetwork.org](http://urbanforestrynetwork.org), researchers projected that the value of the air pollution attenuation, energy-saving, hydrologic and other benefits provided by trees would exceed the costs to plant and maintain them by an average of nearly three-to-one.

It was estimated that investments in trees yield an average net present value (benefits less costs) of \$402 per tree planted and to have an average payback period of between 8 and 19 years (depending on location, species and discount-rate assumption).

## SUMMARY

The City of Morristown, Tennessee is applying for the RAISE grant for the SR343 Complete Streets and ITS Traffic Signal Coordination Project. The City of Morristown will work with Federal Highway Administration (FHWA) and the Tennessee Department of Transportation (TDOT) closely in all phases of this construction project. The rationale for this project are:

1. To improve safety for all modes of transportation (motorized and non-motorized)
2. Have better traffic movement for all modes of transportation (motorized and non-motorized)
3. Have new and/or improved pedestrian sidewalks and multi-use paths along the corridor and
4. Have more landscaping to beautify the corridor to make it more aesthetically pleasing, and to decrease the “heat island” effect.

The information for this grant application is based on the studies done by CDM Smith Associates (December 2021), which can be found at [cfffdbd\\_e4e8a753f28a4f36994ec1cc184883ae.pdf \(lamtpo.com\)](#), and [cfffdbd\\_8f4fff262240418ab57486131413e74f.pdf \(lamtpo.com\)](#).

The City of Morristown, TN is located within the Lakeway Area Metropolitan Transportation Planning Organization (LAMTPO). By the RAISE grant guidelines, it falls within a RURAL category.

This project is located within the City of Morristown, Hamblen County, TN, and within United States Census Tracts 1001, 1002, 1003, and 1004. US Census Tract 1003 is listed as an Opportunity Zone. US Census Tracts 1001, 1003, and 1004 are listed as Areas of Persistent Poverty. US Census Tracts 1001, 1002, 1003, and 1004 are listed as Historically Disadvantaged Communities. These four (4) US Census Tracts also have a high minority population (Hispanic), with the lowest population percentage being 25.10%. All of these US Census Tracts have a high Limited English Proficiency (LEP) percentages as well.

The Total cost of the project is \$23,430,325.32. Since this project is within an Opportunity Zone, an Area of Persistent Poverty, and a Historically Disadvantage Community, The City of Morristown is requesting for 100% RAISE funding for the project. If the federal government decides that Morristown does not meet the requirement for 100% funding, The City of Morristown will go for the 80/20 split, where the amount of RAISE funding being requested will be \$18,744,260.25, and Morristown’s local match will be \$4,686,065.07. If awarded, it is estimated that the project would be completed by the end of January 2027.

## APPENDIX

### Resolutions and Letters of Support