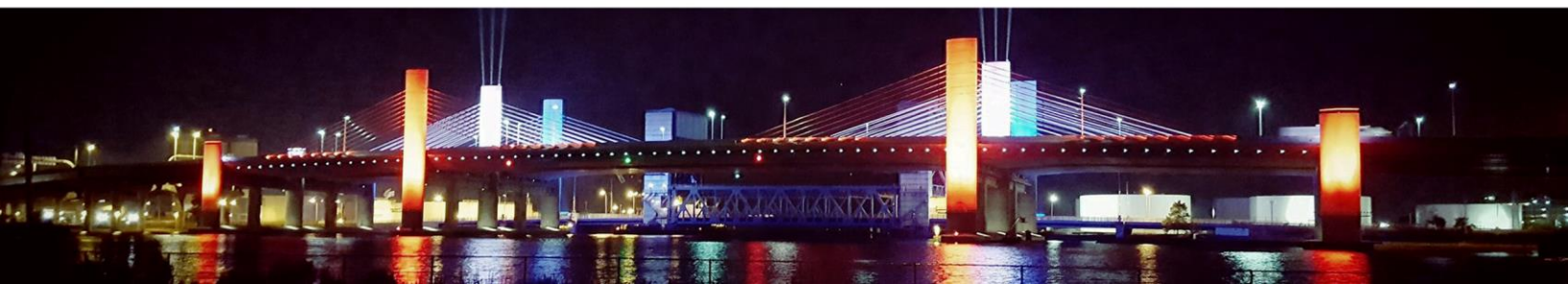




Connecticut Transportation Asset Management Plan

Bridge



Description

- CTDOT inspects 5,459 roadway bridges, 1,819 of which are National Bridge Inventory (NBI) structures on the National Highway System (NHS).
- 4,002 of these bridges are state maintained; the remaining 1,457 are maintained locally or under another jurisdiction.
- CTDOT defines a bridge as a crossing of at least six feet in length, including culverts. The Federal Highway Administration (FHWA) defines an NBI bridge as a structure measuring more than 20 feet in length.
- CTDOT has a distinct Major Bridge Program for large or expensive-to-replace bridges. 60 structures are currently categorized as Major Bridges.

State of Good Repair (SOGR)

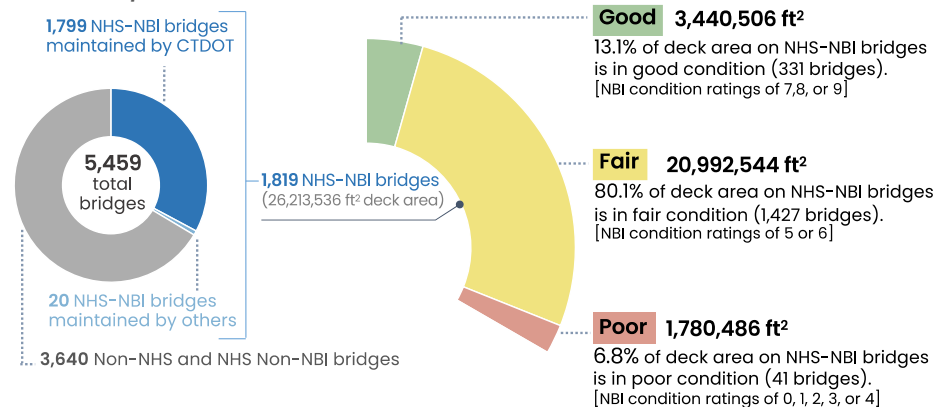
A bridge for which the condition rating for each of the three major components for a span bridge (Substructure, Deck, and Superstructure) or the structural condition of a culvert is rated at least a 5 on a 0-9 condition scale is classified as being in a SOGR.

Bridge Age

The average NHS-NBI bridge in Connecticut is 55 years old, which is 9 years older than the national average of 46 years. The state has a higher percentage of Poor bridges (by deck area) compared to the national average.

NHS-NBI Inventory and Condition

Federal Requirements

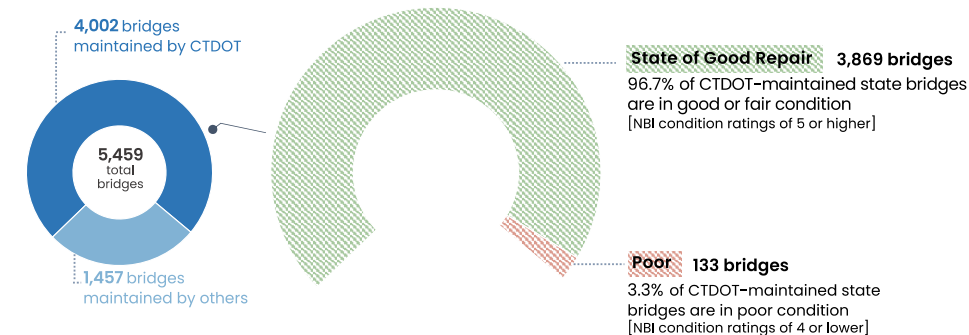


Based on CTDOT 3/15/24 NBI Submittal

Good-Fair-Poor defined by MAP-21/FAST Act

CTDOT-Maintained Inventory and Condition

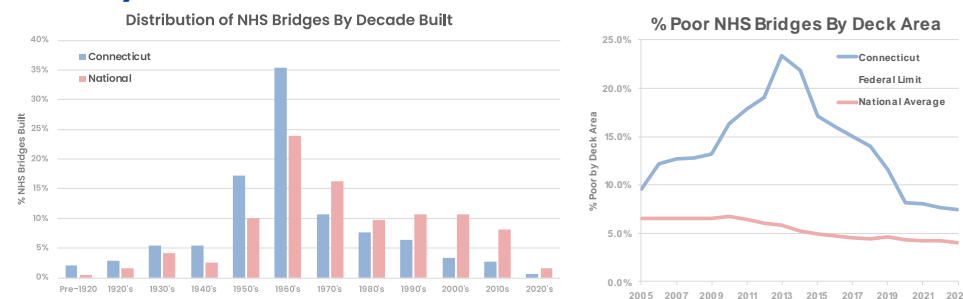
State Goals



Based on CTDOT 3/15/24 Snapshot

SOGR defined by CTDOT

History



Based on National Data available from FHWA LTBP InfoBridge as of 3/15/25



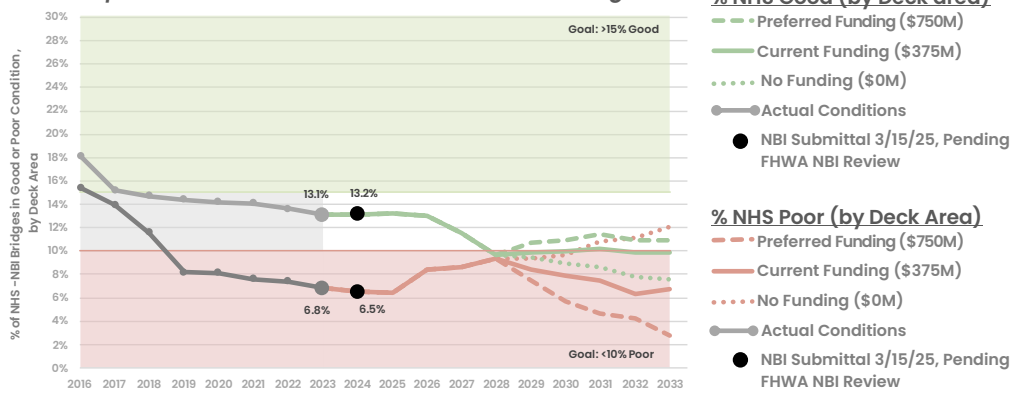
Connecticut Transportation Asset Management Plan

Bridge



NHS-NBI Bridge Performance Projections

Federal Requirements for deck area for 1,819 NHS-NBI bridges



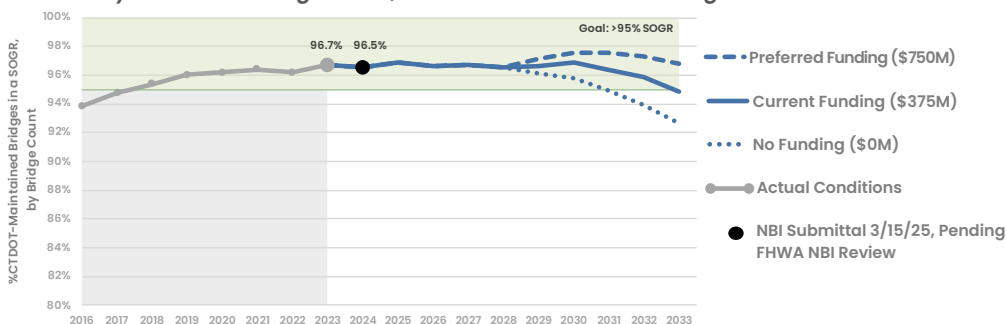
'No Funding' scenario assumes routine bridge maintenance continues, but all capital work is canceled

Performance Projections at Current Funding Level (\$375M Budget)

End of Year	2025	2026	2027	2028	2029	Goal
NHS Good (by deck area)	13.2%	13.0%	11.5%	9.6%	9.8%	>15.0%
NHS Poor (by deck area)	6.4%	8.4%	8.6%	9.4%	8.5%	<10.0%

CTDOT-Maintained Bridge Performance Projections

State Goals by number of bridges for 4,002 CTDOT-maintained bridges



'No Funding' scenario assumes routine bridge maintenance continues, but all capital work is canceled

Performance Projections at Current Funding Level (\$375M Budget)

End of Year	2025	2026	2027	2028	2029	Goal
SOGR	96.9%	96.6%	96.8%	96.6%	96.7%	95.0%

NOTE: "Current Funding" shown in the graphs is limited to funding programmed to address State of Good Repair. Projected performance is expected to be greater due to asset improvements funded through CTDOT's Capital Program which are not captured. The Department will soon be able to capture this funding through a project asset data system in development.

Performance Projections

The chart on the left depicts bridge condition for various funding scenarios. These were developed through an analysis program using CTDOT bridge condition data, as of Q1 CY 2025.

Asset Valuation

\$17,159,777,050

Asset value is estimated using the replacement value. For bridges, replacement value is the product of deck area and unit construction cost. For 4,002 bridges: 34,319,554 sqft * \$500/sqft = \$17.2 billion.

Measures and Goals

CTDOT has set the following bridge condition goals:

Federal Requirements:

- 10% or less Poor by deck area on NHS-NBI bridges (Federal minimum is less than 10% Poor)
- 15% or more Good by deck area on NHS-NBI bridges. (Percent Good is established by each state; no Federal minimum for this goal)

State Goal:

- 95% or more of State-Maintained bridges in a SOGR (State target)



Description

- There are 3,716 centerline miles of state-maintained routes and roads in Connecticut, 1,406 of which are on the National Highway System (NHS), including 346 Interstate miles.
- There are another 17,480 centerline miles of town maintained roads, 56 of which are on the NHS.
- 70.7% of CTDOT maintained centerline miles are flexible (asphalt) pavements, 29.0% are composite pavements (asphalt over concrete), and 0.3% are rigid (concrete) pavements.

State of Good Repair (SOGR)

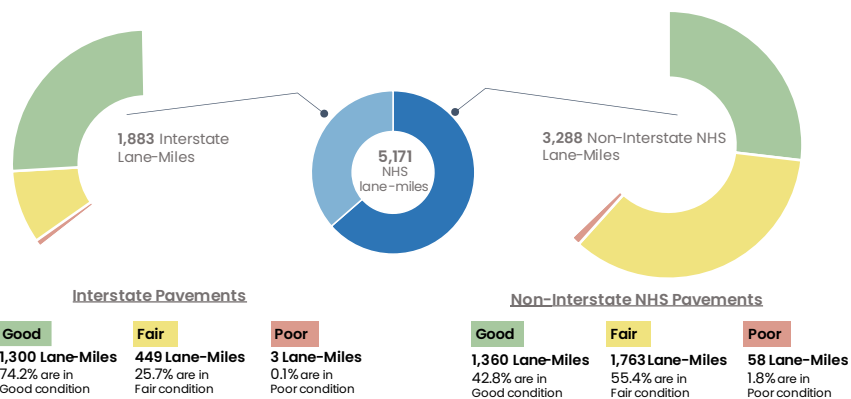
A pavement section for which the Pavement Condition Index (PCI) is 6 or greater is classified as being in a State of Good Repair (SOGR). The PCI is based on cracking, rutting, drainage disintegration, and ride. FHWA uses different condition measures for NHS pavements.

Pavement Age

The average Connecticut NHS pavement structure was constructed 49.9 years ago, and the average surface age is 7.1 years old, based on lane-miles.

NHS Roadways Inventory and Condition

Federal Requirements



Note on Interstate: Total condition lane miles of 1,752 excludes 131 lane miles coded as bridge.

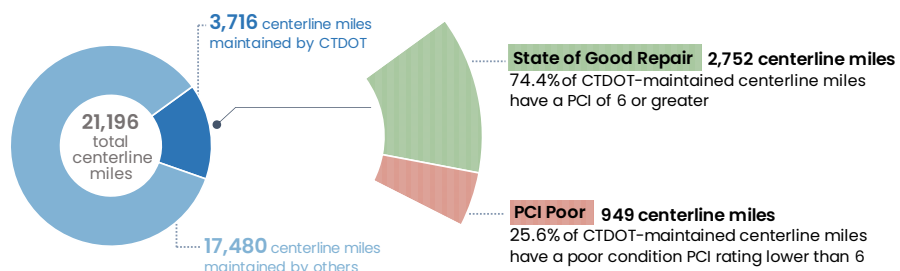
Note on Non-Interstate NHS: Total condition lane miles of 3,181 excludes 82 lane miles coded as bridge and 25 lane miles missing/invalid. Totals include 154 NHS lane miles which are locally maintained, 3.3% in good condition, 90.1% in fair condition and 6.6% in poor condition.

Based on 2023 HPMS pavement condition data submitted to FHWA June 14, 2024

Good-Fair-Poor defined by MAP-21/FAST Act

CTDOT-Maintained Roadways Inventory and Condition

State Goals



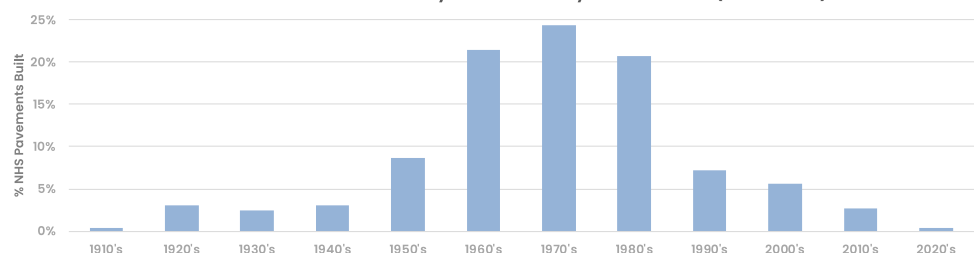
Note: Total condition centerline miles of 3,701 excludes 15 centerline miles missing/invalid.

Based on 2023 HPMS pavement condition data submitted to FHWA June 14, 2024

SOGR defined by CTDOT

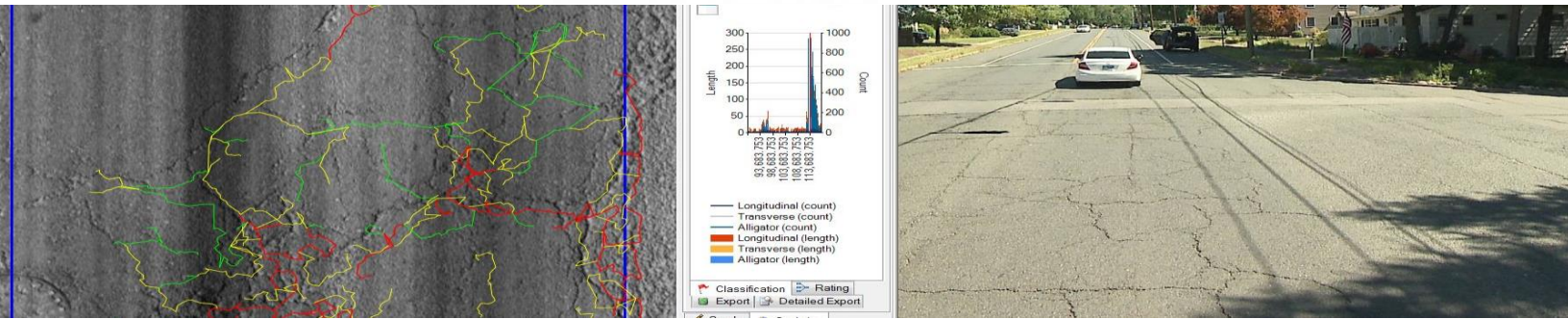
History

Distribution of CT NHS Roadway Pavements By Decade Built (lane miles)



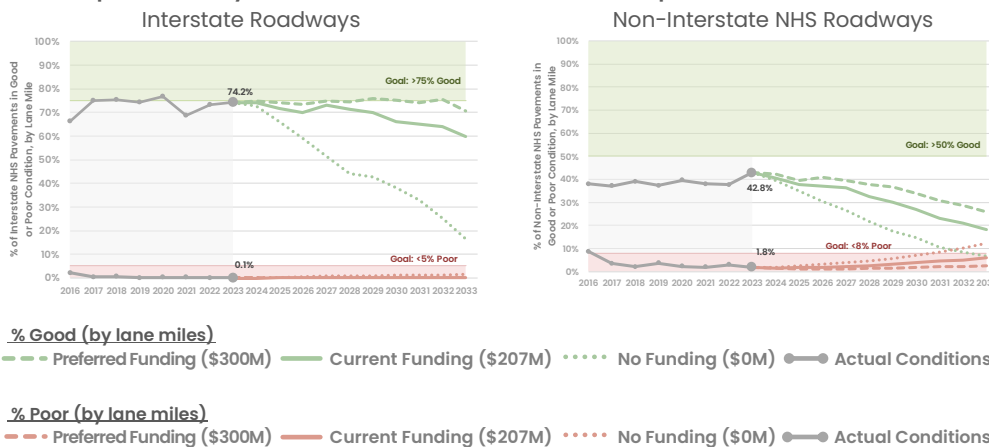


Pavement



NHS Pavement Performance Projections

Federal Requirements by lane miles for 4,933 lane miles of NHS pavement

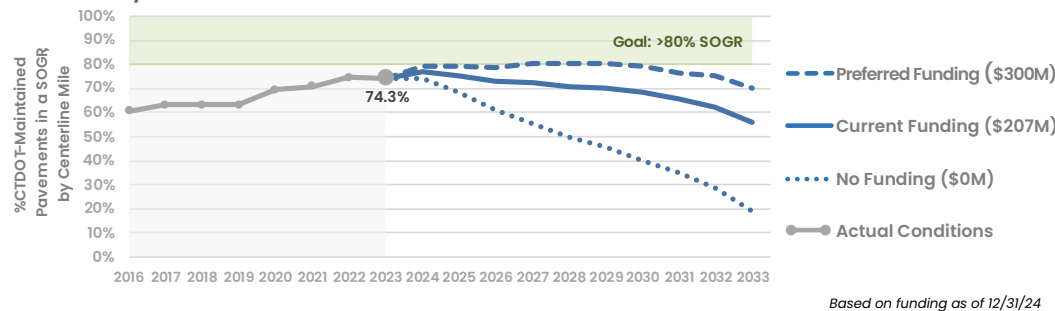


Performance Projections at Current Funding Level (\$207M Budget)

End of Year	2024	2025	2026	2027	2028	Goal
Interstate Good	74.2%	71.6%	70.0%	72.9%	71.4%	75.0%
Interstate Poor	0.1%	0.1%	0.1%	0.1%	0.2%	<5.0%
Non-Int NHS Good	40.6%	37.6%	36.9%	36.2%	32.4%	50.0%
Non-Int NHS Poor	1.4%	1.6%	1.7%	2.0%	2.5%	<8.0%

CTDOT-Maintained Pavement Performance Projections

State Goals by centerline miles for 3,716 centerline miles



Performance Projections at Current Funding Level (\$207M Budget)

End of Year	2024	2025	2026	2027	2028	Goal
SOGR	77.0%	75.3%	73.0%	72.2%	71.0%	80.0%

NOTE: "Current Funding" shown in the graphs is limited to funding programed to address State of Good Repair. Projected performance is expected to be greater due to asset improvements funded through CTDOT's Capital Program which are not captured. The Department will soon be able to capture this funding through a project asset data system in development.

Performance Projections

The charts on the left depict pavement condition for various funding scenarios developed through an analysis program using CTDOT pavement deterioration curves projected from 2023 pavement condition data.

Asset Valuation

\$12,132,738,891

Asset value is estimated using the replacement value. For pavements, replacement value is the product of pavement area (SY) and unit construction cost. For 3,716 centerline miles of pavement: 99 million SY * \$122/SY = \$12.1 Billion

Measures and Goals

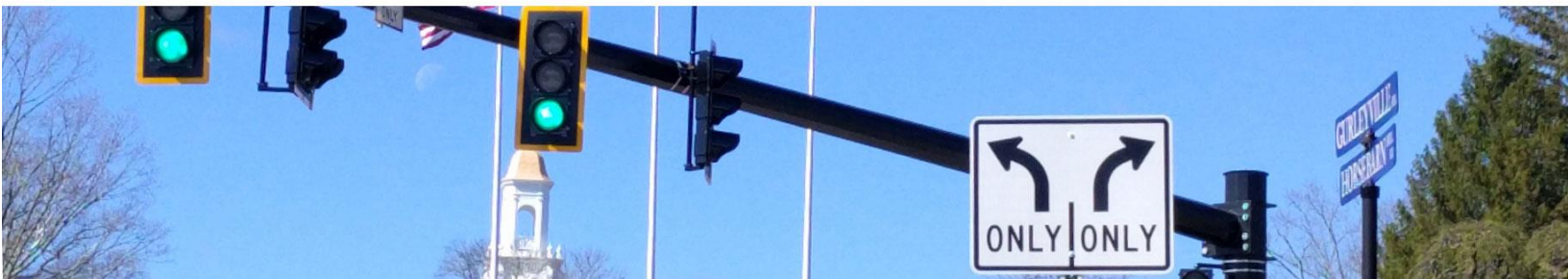
CTDOT has set the following pavement condition goals:

Federal Requirements:

- Interstate: 75% good condition and less than 5% poor condition (Federal minimum is less than 5% poor)
- Non-Interstate: 50% good condition and less than 8% poor condition

State Goal:

- 80% or more of State-maintained pavements in a SOGR (State)



Description

- CTDOT is currently responsible for maintaining 2,797 State owned traffic signals:
 - 2,574 Traditional traffic signals
 - 223 Overhead flashing beacons
- 1,005 of the traditional traffic signals are part of 111 computerized traffic signal systems (CTSS)
- CTDOT defines a traffic signal unit as all traffic control equipment at a given location
- There are 279 independent signs with flashers that are managed as part of the sign asset

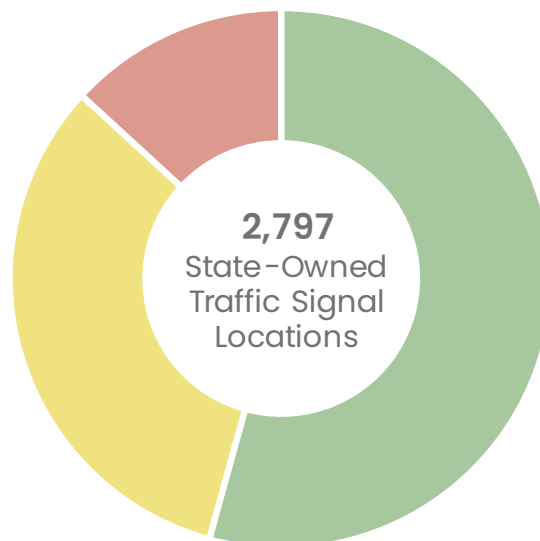
State of Good Repair (SOGR)

The SOGR for traffic signals, revised in 2024, uses a Good/Fair/Poor rating system for 4 components (structure, communication, detection, control box) of each traffic signal. The overall Good/Fair/Poor of the traffic signal is determined using a decision matrix of all 81 different possible outcomes. Good or Fair are considered SOGR.

Traffic Signal Age

- 43.7% of traffic signals are at least 25 years old
- 1.4% of traffic signals are older than 54 years

Traffic Signal Inventory and Condition



Good

1,518 Locations
54.3% are in Good condition

Fair

911 Locations
32.5% are in Fair condition

Poor

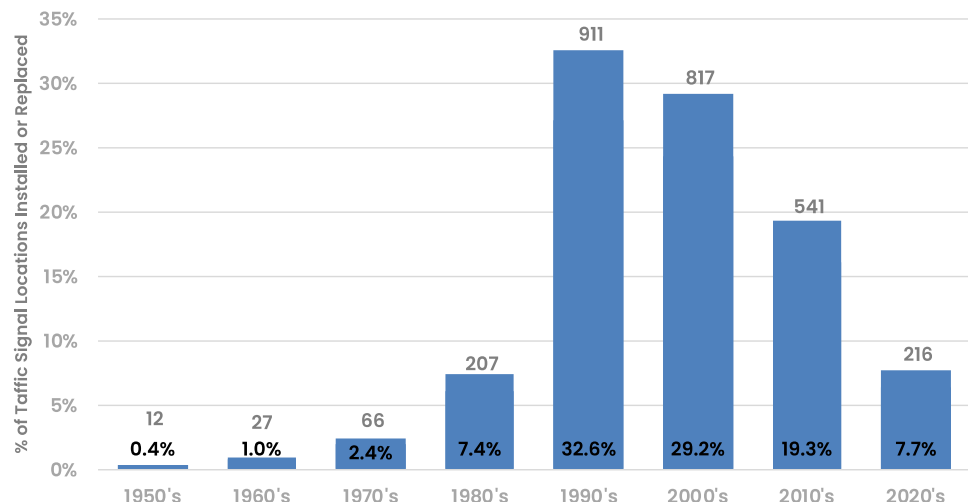
368 Locations
13.2% are in Poor condition

Good-Fair-Poor and SOGR defined by CTDOT

Based on CTDOT 1/18/25 Snapshot

History

Distribution of Traffic Signal Locations by Year Installed or Replaced



Based on CTDOT 1/18/25 Snapshot

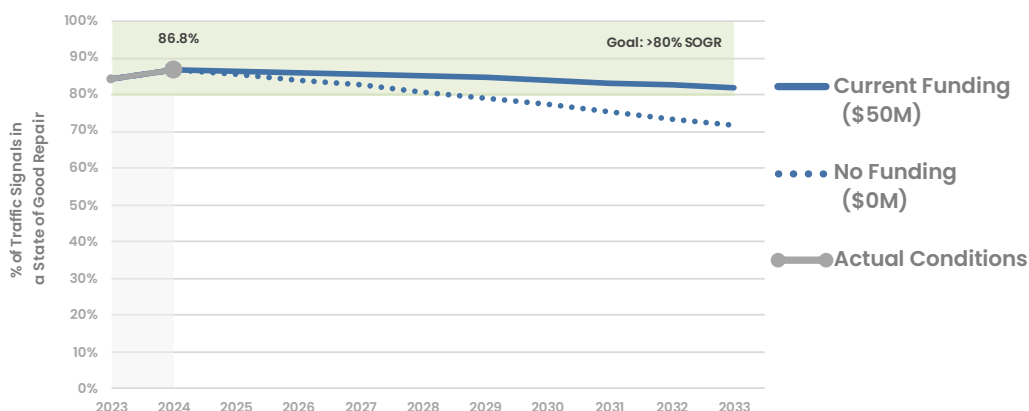


Traffic Signals



Traffic Signals Performance Projections

State Goals by traffic signal for 2,797 traffic signals



Based on funding as of 12/31/24

Projected Performance at Current Funding Level (\$50M Budget)

End of Year	2025	2026	2027	2028	2029	Goal
SOGR	86.5%	86.2%	85.7%	85.2%	84.6%	80.0%

NOTE: "Current Funding" shown in the graphs is limited to funding programed to address State of Good Repair. Projected performance is expected to be greater due to asset improvements funded through CTDOT's Capital Program which are not captured. The Department will soon be able to capture this funding through a project asset data system in development.

Performance Projections

In order to maintain SOGR, roughly 50 traffic signals need full replacement each year. With the new component-based SOGR, projections for the individual components are preliminary and are still being developed. Projections are expected to be enhanced in the future. This fact sheet includes funding for component replacement projects.

Asset Valuation

\$1,255,005,000

Asset value is estimated using the replacement value. For traffic signals, replacement value is the product of traffic signal and unit construction cost.

Traditional traffic signals: 1,569 * \$375k = \$588M
CTSS: 1,005 * \$650k = \$653M
Overhead flashing beacons: 223 * \$60k = \$13.4M

Measures and Goals

There are no Federal requirements at this time. CTDOT has set the following traffic signal condition goal:

State Goal:

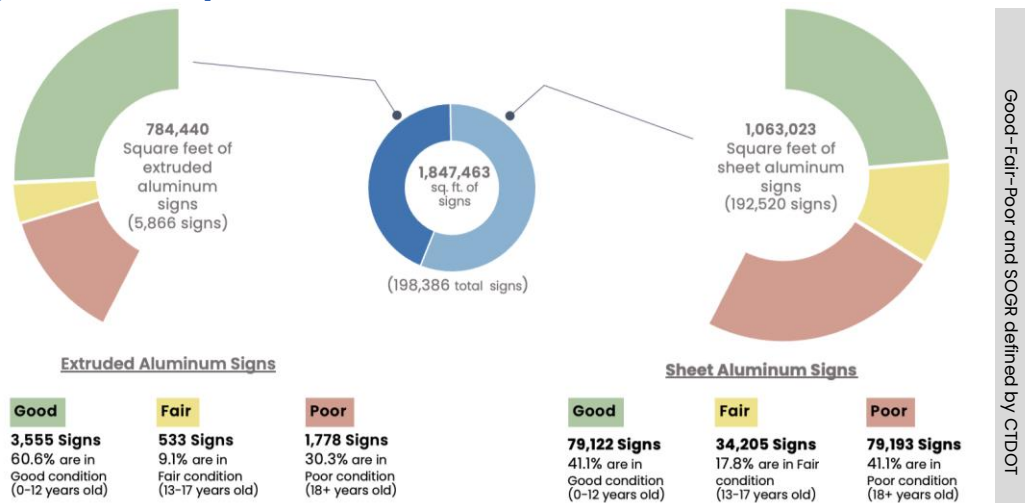
- 80% or more of state owned traffic signals in a SOGR



Description

- CTDOT is responsible for maintaining 198,386 signs (regulatory, warning, and guide) that are located on State owned and maintained roadways. Sign inventory is also represented as 1,847,463 square feet of sign area.
- CTDOT defines a sign as a panel attached to a post(s) or sign structure and a sign assembly as the combination of sign panel(s) and their post(s), support, or sign structure at a single location.
- Overhead sign supports and foundations are managed as a separate asset.

Sign Inventory and Condition



Based on CTDOT 1/2/25 snapshot

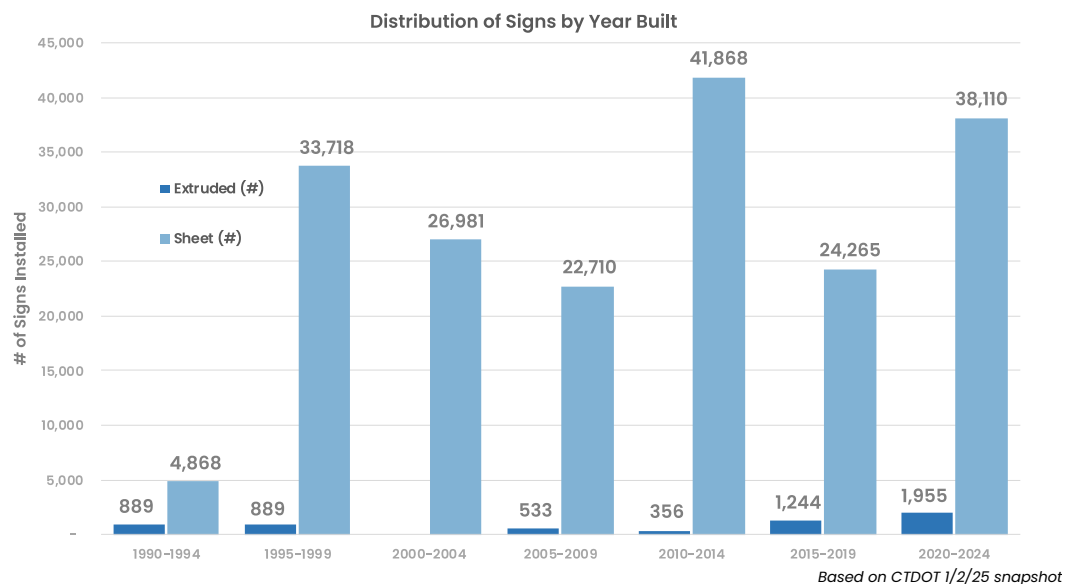
State of Good Repair (SOGR)

A sign installed within 17 years is classified as being in a State of Good Repair. This is based on expectations of retroreflectivity life. Retroreflectivity is a measure of the amount of light reflected by a surface back to the source of the light.

Sign Age

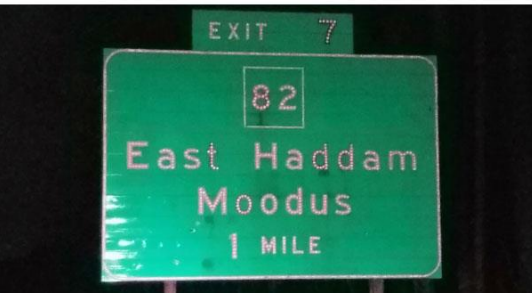
- More than 59% of all signs are within their expected sign life or effective service life.
- 70% of extruded aluminum signs are less than 25 years old.

History



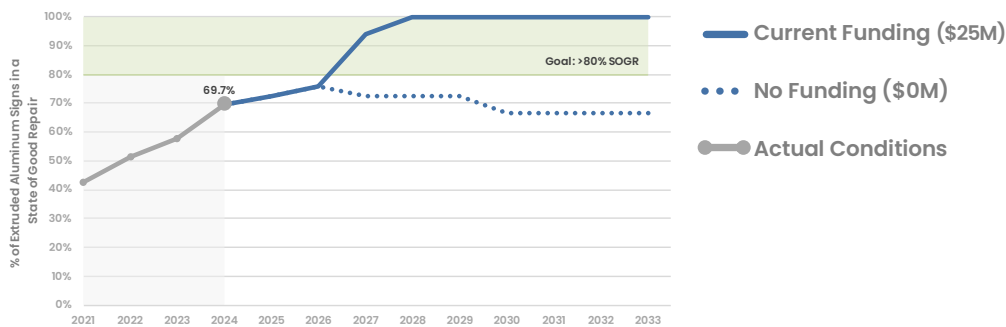


Signs



Extruded Aluminum Signs Performance Projections

State Goals by extruded aluminum sign for 5,866 signs



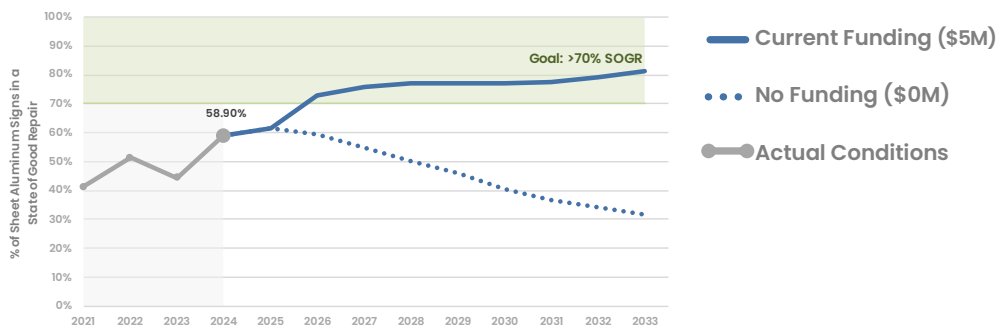
Based on funding as of 12/31/24

Projected Performance at Current Funding Level (\$25M Budget)

End of Year	2025	2026	2027	2028	2029	Goal
SOGR	72.7%	75.8%	93.9%	100.0%	100.0%	80.0%

Sheet Aluminum Signs Performance Projections

State Goals by sheet aluminum sign for 192,520 signs



Based on funding as of 12/31/24

Projected Performance at Current Funding Level (\$5M Budget)

End of Year	2025	2026	2027	2028	2029	Goal
SOGR	61.4%	72.7%	75.8%	76.9%	77.0%	70.0%

NOTE: "Current Funding" shown in the graphs is limited to funding programed to address State of Good Repair. Projected performance is expected to be greater due to asset improvements funded through CTDOT's Capital Program which are not captured. The Department will soon be able to capture this funding through a project asset data system in development.

Performance Projections

In order to maintain a State of Good Repair, approximately 350 extruded and 11,500 sheet signs need replacement each year. Currently, approximately 9,000 signs are replaced each year.

Asset Valuation

\$170,289,255

Asset value is estimated using the replacement value. For signs, replacement value is the product of square footage and unit construction cost.

Note: This value does not include the cost of overhead sign supports and foundations.

Measures and Goals

There are no Federal requirements at this time. CTDOT has set the following sign condition goals:

State Goals:

- 80% or more of extruded aluminum signs in a SOGR
- 70% or more of sheet aluminum signs in a SOGR



Sign Supports



Description

- CTDOT is responsible for maintaining approximately 1,594 overhead sign supports on state maintained roadways
- Sign supports are made up of three categories:
 - 676 Cantilevers
 - 635 Full-Span
 - 283 Bridge Mounted
- CTDOT defines a sign support as the structure (horizontal member(s), post(s) and foundation) carrying sign panels or variable message boards at a single location
- Sign panels attached to the sign support are managed as a separate asset

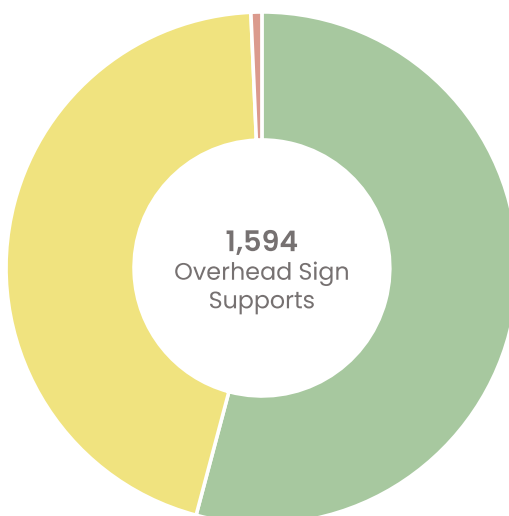
State of Good Repair (SOGR)

Condition ratings are determined via inspection of sign supports on a predetermined cycle. Sign supports with an overall rating of at least a 5 on a 0-9 condition scale are classified as being in a State of Good Repair.

Support Age

- Overhead sign supports are assigned a 34-year service life based on a 17-year sign replacement cycle
- 25% of sign supports are 35 years or older.
- 229 sign supports with unknown age were assigned to 1980's based on available imagery from DigitalHIWAY or Google Earth.

Sign Support Inventory and Condition



Good

863 Sign Supports

54.1% are in Good condition
[Condition ratings of 7, 8, or 9]

Fair

720 Sign Supports

45.2% are in Fair condition
[Condition ratings of 5 or 6]

Poor

11 Sign Supports

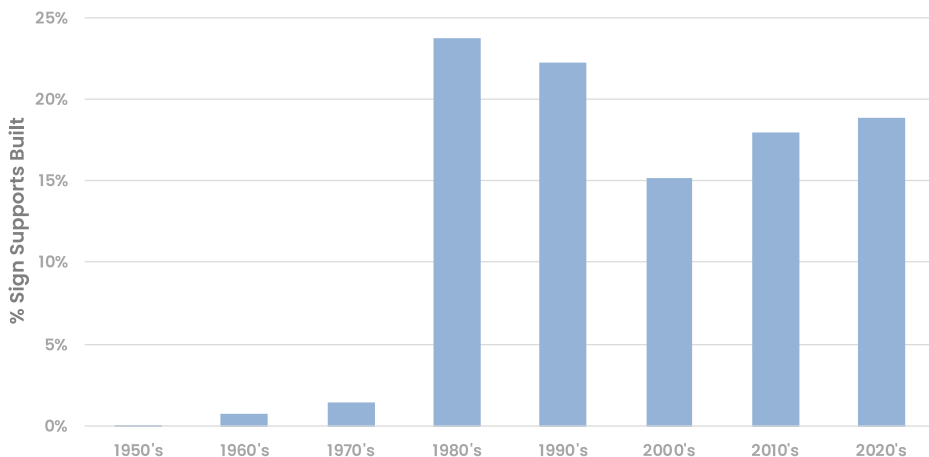
0.7% are in Poor condition
[Condition ratings of 0, 1, 2, 3, or 4]

Good-Fair-Poor and SOGR defined by CTDOT

Based on CTDOT 12/31/24 Snapshot

History

Distribution of Sign Supports By Decade Built



Based on CTDOT 12/31/24 Snapshot

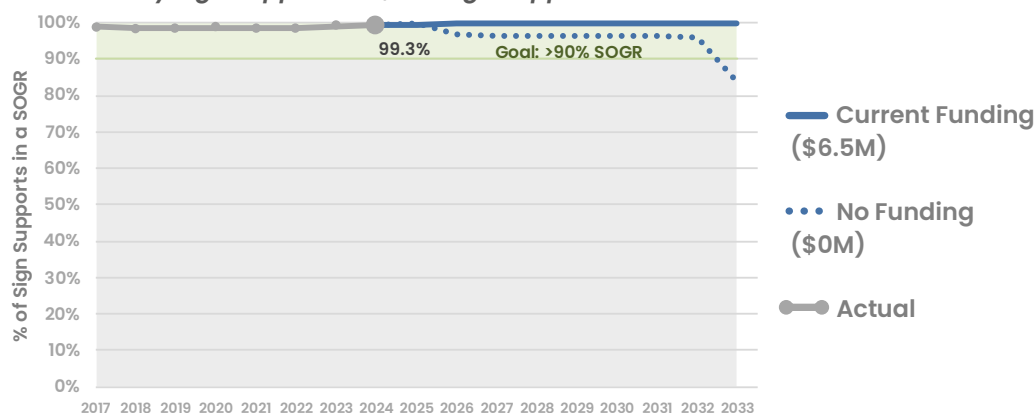


Sign Supports



Sign Support Performance Projections

State Goals by sign support for 1,594 sign supports



Projected Performance at Current Funding Level (\$6.5M Budget)

End of Year	2025	2026	2027	2028	2029	Goal
SOGR	99.4%	99.7%	99.7%	99.7%	99.7%	90.0%

NOTE: "Current Funding" shown in the graphs is limited to funding programed to address State of Good Repair. Projected performance is expected to be greater due to asset improvements funded through CTDOT's Capital Program which are not captured. The Department will soon be able to capture this funding through a project asset data system in development.

Performance Projections

Sign support projections use deterioration curves for the overall structure condition rating. These curves are based on the assigned 34-year service life of sign supports.

Asset Valuation

\$278,532,410

Asset value is estimated using the replacement value. For sign supports, replacement value is based on the average unit construction cost by type:

Cantilever \$150,182 * 676 = \$101,522,910

Full Span \$258,700 * 635 = \$164,274,500

Bridge Mount \$45,000 * 283 = \$12,735,000

Note: This value does not include the cost of the sign panels.

Measures and Goals

There are no Federal requirements at this time. CTDOT has set the following sign support condition goal:

State Goal:

- 90% or more of sign supports in a SOGR



Description

- CTDOT is responsible for maintaining pavement markings on approximately 3,716 centerline miles of State maintained roadways
- Pavement Markings include:
 - Line Striping
 - Symbols & Legends (arrows, crosswalks, etc.)
- CTDOT pavement marking applications are either water-based by State forces or Epoxy by Contractor

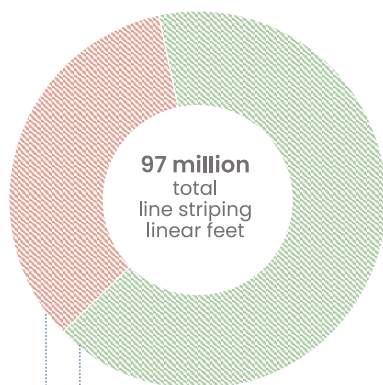
State of Good Repair (SOGR)

In-laid epoxy pavement markings installed within 6 years, epoxy pavement past 3 years and water-based pavement markings installed within 1 year are classified as being in a SOGR. This is based on expectations of retroreflectivity life and wear. Retroreflectivity is a measure of the amount of light reflected by a surface back to the source of the light.

Marking Age

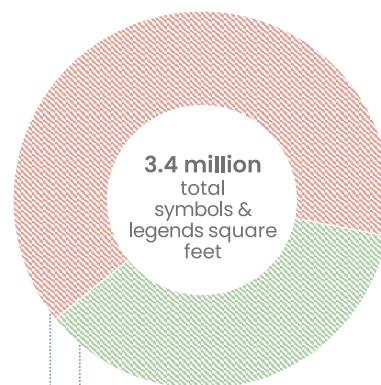
- More than 65% of all line striping and over 35% of all symbol and legend pavement markings have exceeded their expected service life.

Pavement Markings Inventory and Condition: Line Striping and Symbols & Legends



State of Good Repair 63.4 million linear feet
65.3% of line striping is in a state of good repair

Poor 33.6 million linear feet
34.7% of line striping is in poor condition



State of Good Repair 1.2 million square feet
35.3% of symbols & legends are in a state of good repair

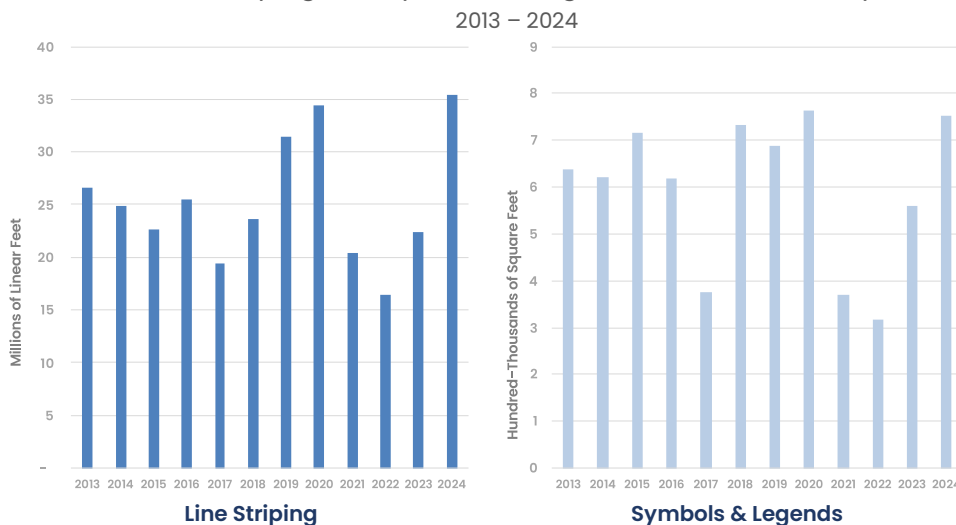
Poor 2.2 million square feet
64.7% of symbols & legends are in poor condition

Based on CTDOT 1/8/25 Snapshot

SOGR defined by CTDOT

History

Line Striping and Symbols & Legends Painted Annually



Based on CTDOT 1/8/25 Snapshot

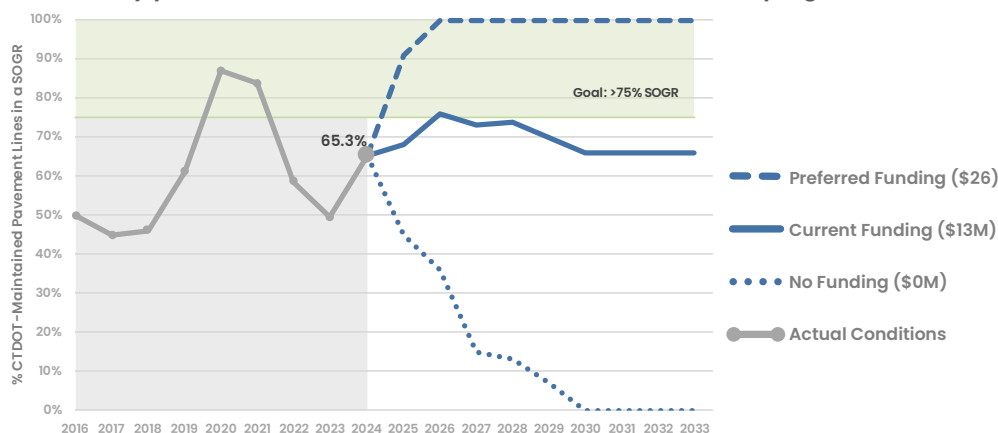


Pavement Markings



Pavement Markings Performance Projections

State Goals by pavement lines for 97 million linear feet of line striping

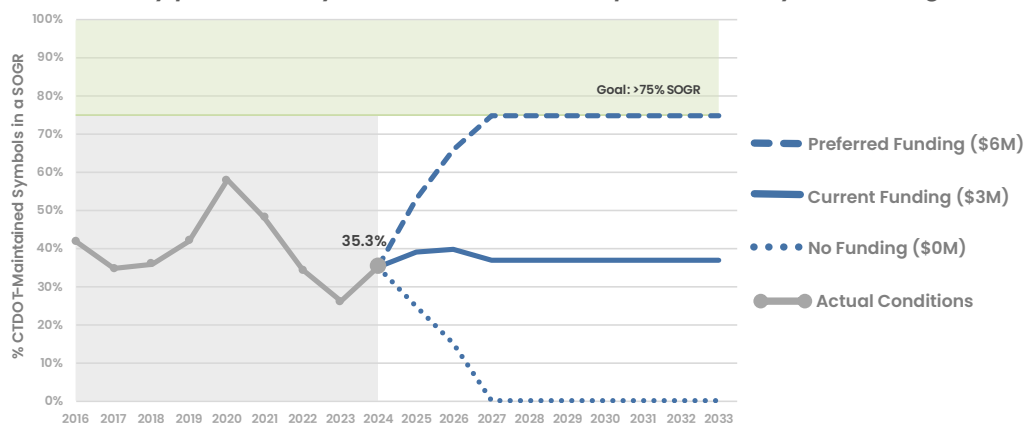


Based on funding as of 12/31/24

Performance Projections at Current Funding Level (\$13M Budget)

End of Year	2025	2026	2027	2028	2029	Goal
SOGR	68.0%	76.0%	73.0%	74.0%	70.0%	75.0%

State Goals by pavement symbols for 3.4 million square feet of symbols & legends



Based on funding as of 12/31/24

Performance Projections at Current Funding Level (\$3M Budget)

End of Year	2025	2026	2027	2028	2029	Goal
SOGR	39.0%	40.0%	37.0%	37.0%	37.0%	75.0%

NOTE: "Current Funding" shown in the graphs is limited to funding programed to address State of Good Repair. Projected performance is expected to be greater due to asset improvements funded through CTDOT's Capital Program which are not captured. The Department will soon be able to capture this funding through a project asset data system in development.

Performance Projections

In order to maintain a State of Good Repair, about 32 million linear feet of line striping and 1.1 million square feet of symbols & legends epoxy pavement markings need to be remarked each year. Currently, approximately 30 million linear feet and 640,000 square feet are remarked each year.

Asset Valuation

\$109,128,000

Asset value is estimated using the replacement value method. For pavement markings, replacement value is the product of square footage and unit construction cost considering epoxy only. Line striping: 97 million LF * \$1/LF = \$93,896,000 Symbols: 3.4 million SF * \$4.5/SF = \$15,232,000

Measures and Goals

There are no Federal requirements at this time. CTDOT has set the following pavement marking condition goals:

State Goals:

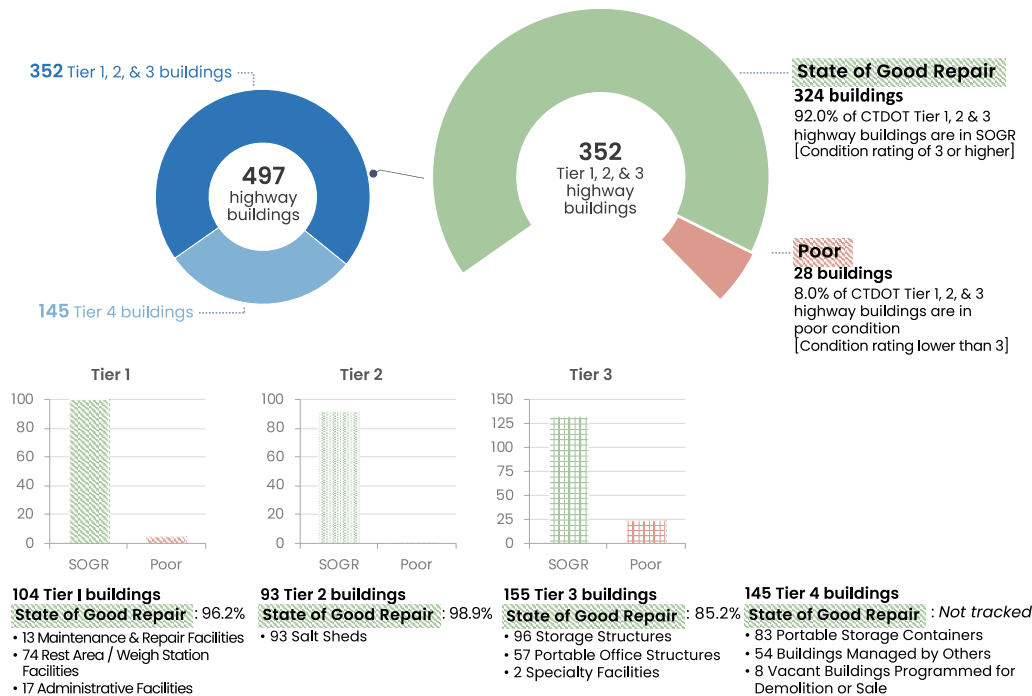
- 75% or more of line striping pavement markings in a SOGR
- 75% or more of symbols & legends pavement markings in a SOGR



Description

- CTDOT defines a highway building as a relatively permanent structure to house persons or property
- CTDOT owns 497 highway buildings classified into four Tiers:
 - Tier 1: significant structures normally occupied by employees or the public
 - Tier 2: salt sheds
 - Tier 3: specialty, storage, and portable office type structures
 - Tier 4: no asset management plan; portable storage containers, buildings managed by other entities or programmed for demolition or sale

CTDOT-Maintained Inventory and Condition



Based on CTDOT 12/31/24 Snapshot

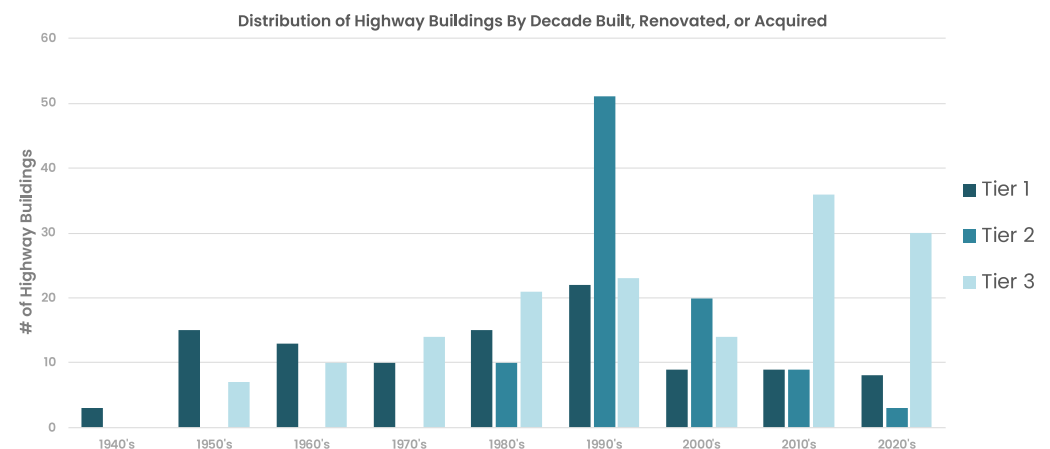
State of Good Repair (SOGR)

- Buildings with an overall rating of 3 or better on a scale of 1-5 are classified as being in a SOGR
- Building ratings are a combination of age-based and condition-based component ratings

Building Age

- Building age is based on the date CTDOT acquired the asset or the date of the last (like new) renovation
- Tier 1 buildings have a 60-year life cycle with a 30-year mid-life SOGR upgrade
- Life cycles and the need for mid-life SOGR upgrades vary for Tier 2 & 3 buildings

History



Based on CTDOT 12/31/24 Snapshot

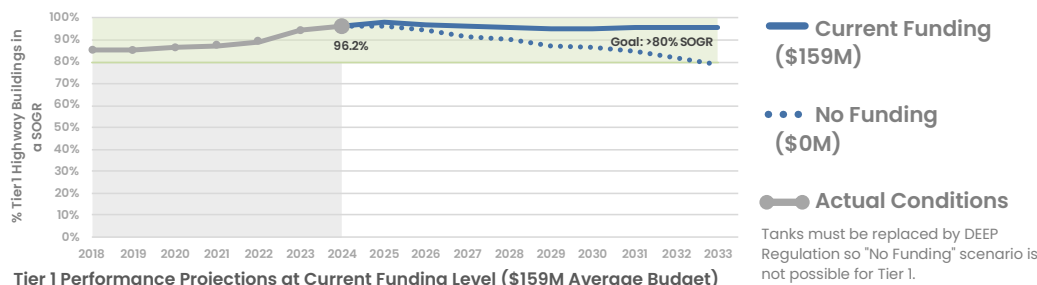


Highway Buildings



Highway Buildings Performance Projections

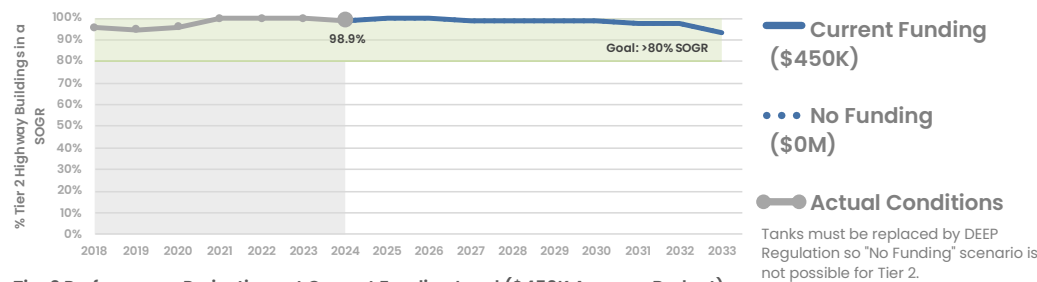
State Goals by Tier 1 highway building for 104 highway buildings



Tier 1 Performance Projections at Current Funding Level (\$159M Average Budget)

End of Year	2025	2026	2027	2028	2029	Goal
SOGR	98.0%	97.1%	96.0%	96.0%	95.0%	80.0%

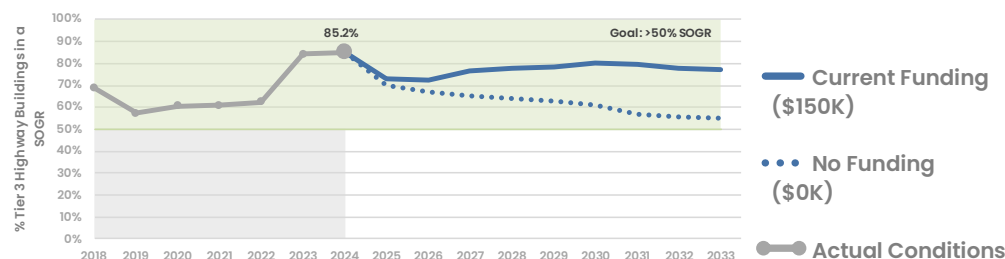
State Goals by Tier 2 highway building for 93 highway buildings



Tier 2 Performance Projections at Current Funding Level (\$450K Average Budget)

End of Year	2025	2026	2027	2028	2029	Goal
SOGR	100.0%	100.0%	98.9%	98.9%	98.9%	80.0%

State Goals by Tier 3 highway building for 155 highway buildings



Tier 3 Performance Projections at Current Funding Level (\$150K Average Budget)

End of Year	2025	2026	2027	2028	2029	Goal
SOGR	73.0%	72.2%	76.6%	77.9%	78.4%	50.0%

Tier 1, 2, and 3 projections based on funding as of 12/31/22

NOTE: "Current Funding" shown in the graphs is limited to funding programmed to address State of Good Repair. Projected performance is expected to be greater due to asset improvements funded through CTDOT's Capital Program which are not captured.

Performance Projections

Performance projection funding levels are based on the replacement value and include a 1.6 factor to account for non-building related project administration costs for engineering, rights-of-way, and construction incidentals and contingencies.

Asset Valuation

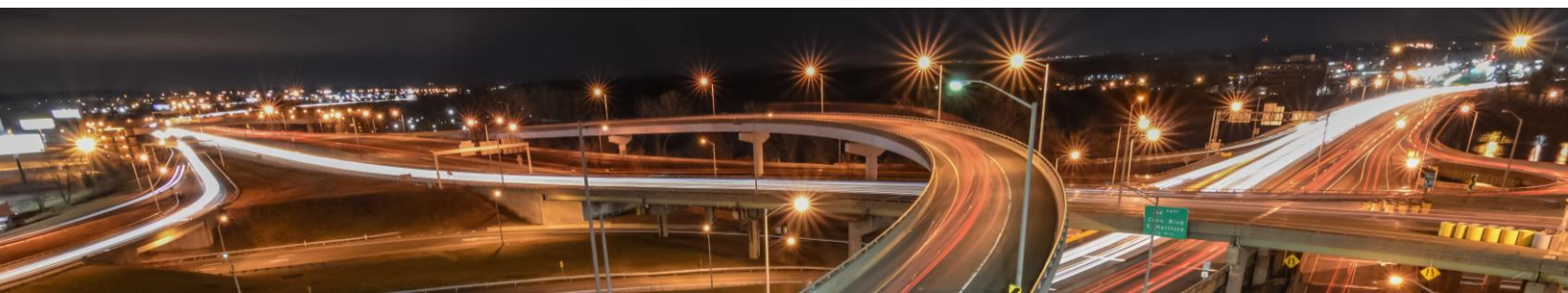
\$1,076,000,000

- Tier 1 buildings: \$960M
 - Tier 2 buildings: \$88M
 - Tier 3 buildings: \$28M
- Asset valuation is the replacement cost of the asset in current year dollars. For buildings, the replacement costs includes any site work necessary for the building to function such as water and sewer systems, generators, and fuel stations as applicable.

Measures and Goals

Federal targets for buildings have not yet been established. The following State Goals have been set:

- Tier 1 buildings: maintain 80% in a SOGR
- Tier 2 buildings: maintain 80% in a SOGR
- Tier 3 buildings: maintain 50% in a SOGR



Description

- CTDOT owns and maintains a total of 208 lighting systems that include 24,306 light fixtures.
- The majority of lighting systems are located along the roadway network.
- A typical lighting system includes a control cabinet, conduit, conductors, cabinet and light pole foundations, handholes, transformer bases, light poles, light fixture brackets and light fixtures.
- Specialized lighting systems exist for underpasses, tunnels, commuter lots and decorative lighting.

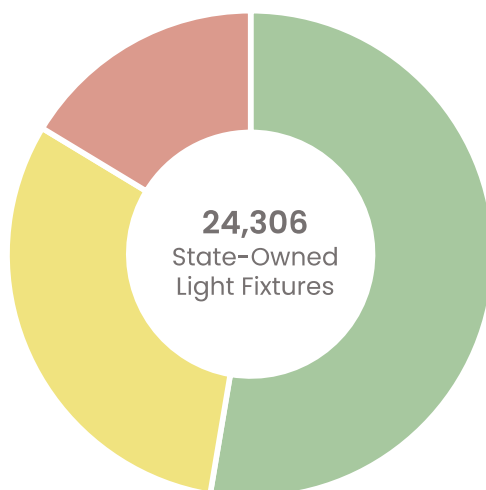
State of Good Repair (SOGR)

- Lighting systems installed within the last 40 years are classified as being in a SOGR.

Asset Age

- Lighting systems and components have an average projected useful life (PUL) of 40 years.
- 16.3% of light fixtures are beyond the end of their PUL.

CTDOT-Maintained Inventory and Condition



Good

12,801 Light Fixtures

52.7% are in Good condition
(0-30 years old)

Fair

7,533 Light Fixtures

31.0% are in Fair condition
(31-40 years old)

Poor

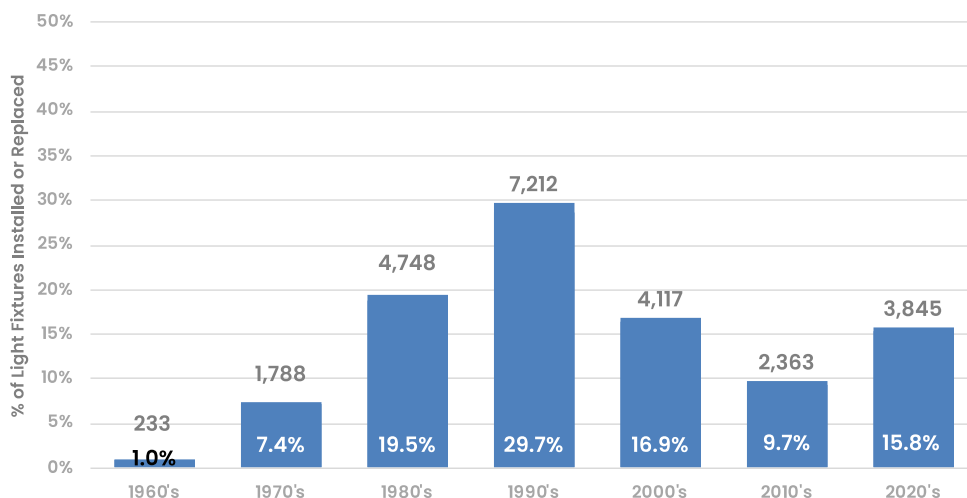
3,972 Light Fixtures

16.3% are in Poor condition
(41+ years old)

Based on CTDOT 12/31/24 Snapshot

History

Distribution of Light Fixtures by Year Installed or Replaced



Based on CTDOT 12/31/24 Snapshot

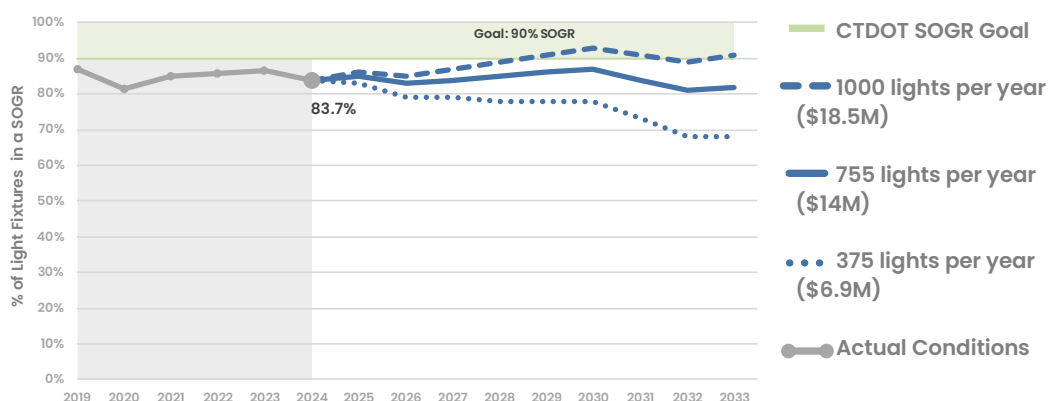


Illumination



Light Fixture Performance Projections

State Goals by Light Fixture for 24,306 Light Fixtures



Performance Projections at Current Funding Level (\$14M Average Budget)

Year	2025	2026	2027	2028	2029	Goal
SOGR	85.0%	83.0%	84.0%	85.0%	86.0%	90.0%

Projections based on funding as of 12/31/24

NOTE: "Current Funding" shown in the graphs is limited to funding programed to address State of Good Repair. Projected performance is expected to be greater due to asset improvements funded through CTDOT's Capital Program which are not captured. The Department will soon be able to capture this funding through a project asset data system in development.

Performance Projections

In order to achieve a SOGR an average of 755 light fixtures need to be replaced each year for approximately 10 years; replacements then drop to an average of 400 lighting fixtures per year to maintain a SOGR. Highway Safety Improvement Projects currently replace an average of 250 light fixtures per year, leaving the remainder to be installed by roadway lighting replacement projects. The preferred scenario includes approximately 755 light fixtures replaced through illumination specific projects and 250 light fixtures replaced through safety improvement projects.

Asset Valuation

\$461,760,000

Asset value is estimated using an average replacement value per lighting system.

208 lighting systems * \$2.22M each = \$461.8million

Measures and Goals

There are no Federal requirements for illumination at this time. CTDOT has set the following State goal:

- 90% of lighting systems in a SOGR



Retaining Walls



Description

- CTDOT defines a retaining wall as a structure that provides a grade separation by retaining earth and/or rock.
- CTDOT has currently identified and incorporated 1,109 retaining walls into its asset database. Plans to capture and rate the remaining wall population are ongoing.
- There are 12 different retaining wall categories.
- Bridge abutments, wingwalls, culvert headwalls and noise walls are considered separate assets.

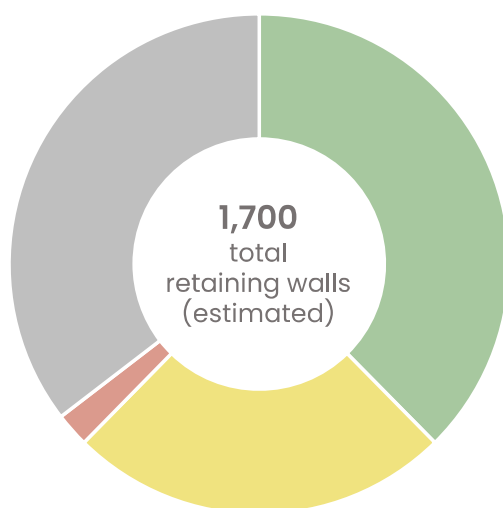
State of Good Repair (SOGR)

Retaining walls with a total rating of 3 or higher on a 0-6 condition scale are classified as being in a State of Good Repair.

Retaining Wall Age

While there is limited data available on life expectancy of retaining walls, empirical evidence indicate life expectancy ranging from 50 years (for Metal Bin walls and Concrete Crib walls) to well over 100 years (for Masonry walls).

CTDOT-Maintained Inventory and Condition



Good

637 Retaining walls

58.3% are in Good condition
[Condition ratings of 5 or 6]

Fair

419 Retaining walls

38.3% are in Fair condition
[Condition ratings of 3 or 4]

Poor

37 Retaining walls

3.4% are in Poor condition
[Condition ratings of 0, 1, or 2]

Unknown

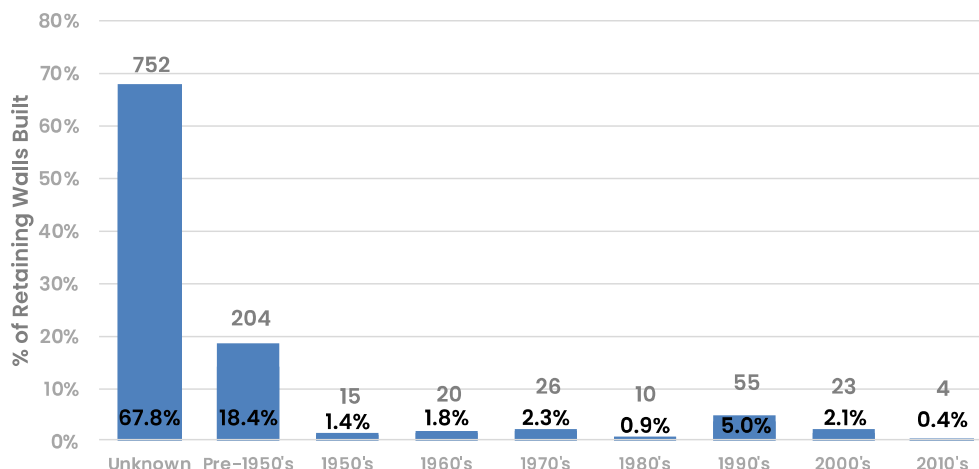
600+ Retaining walls

Good-Fair-Poor and SOGR defined by CTDOT

Based on CTDOT 2010 inventory, with 2024 updates

History

Distribution of Retaining Walls by Decade Built



Based on CTDOT 2010 inventory, with 2023 updates

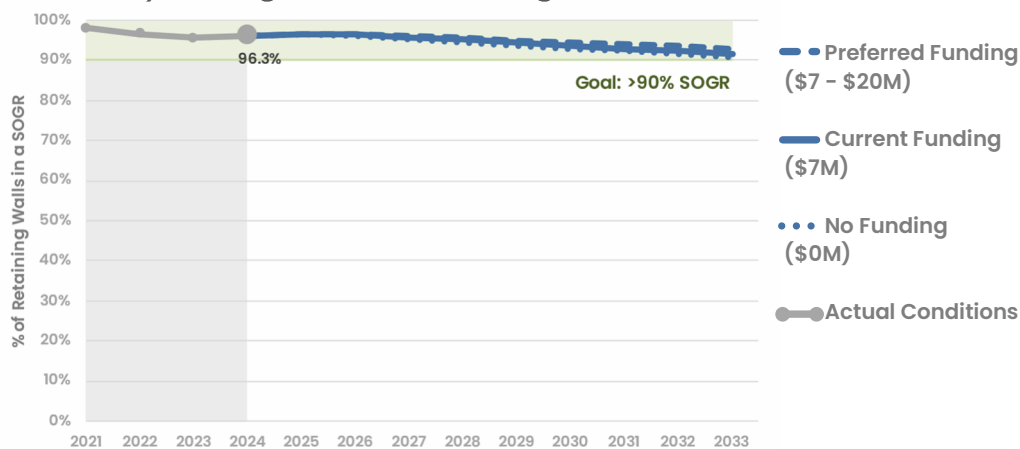


Retaining Walls



Retaining Walls Performance Projections

State Goals by retaining wall for 1,093 retaining walls



Based on CTDOT 2010 inventory, with 2024 updates

Projected Performance at Current Funding Level (\$7M Budget)

End of Year	2025	2026	2027	2028	2029	Goal
SOGR	96.6%	96.5%	95.8%	95.2%	94.5%	90.0%

NOTE: "Current Funding" shown in the graphs is limited to funding programed to address State of Good Repair. Projected performance is expected to be greater due to asset improvements funded through CTDOT's Capital Program which are not captured. The Department will soon be able to capture this funding through a project asset data system in development.

Preferred funding assumes \$7 million in annual funding until 2028, followed by \$20m in annual funding through 2032.

Performance Projections

The projections assume the CTDOT retaining wall fund invests in improvements to walls 60+ yrs old. Current data shows that concrete (cantilever & gravity) and masonry walls are in better condition compared to concrete crib and metal bin walls. Due to the longevity of retaining walls, 10-year projections do not fully capture the financial needs of this asset.

Asset Valuation

\$460,465,672

Asset value is estimated using an average replacement cost per retaining wall unit area. For retaining walls, the average unit cost to replace a wall is estimated to be \$118/sq ft. For 1,109 retaining walls with 3,902,251 sq ft (total average area) x \$118/sq ft = \$460,465,672

Measures and Goals

There are no Federal requirements at this time. CTDOT has set the following retaining wall condition goal:

State Goal:

- 90% or more of retaining walls in a SOGR



Drainage Culverts



Data Confidence
Low



Description

- CTDOT is responsible for a complex drainage system including storm drains, manholes, closed conveyance pipes, culverts, headwalls, and endwalls.
- Culverts convey watercourses or stormwater runoff underneath state roads. In Connecticut, the majority of culverts are reinforced concrete pipes (RCPs) or corrugated metal pipes (CMPs). CMPs can have asphalt coating.
- Culverts with a diameter of 6' and larger are considered bridge structures and are inspected and tracked as bridges. Culverts smaller than 6' in diameter (<72" horizontal dimension for box culverts) are considered drainage culverts.

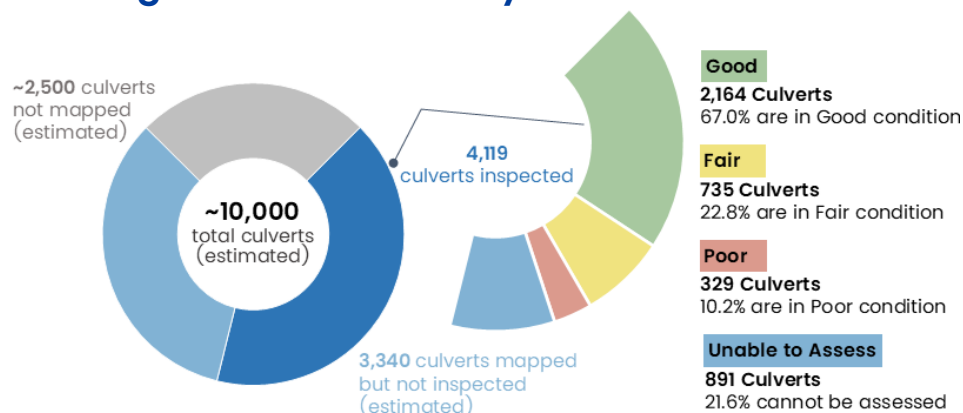
State of Good Repair (SOGR)

A culvert which has been rated Fair or Good is classified as being in a State of Good Repair (SOGR). This rating is based on the Culvert Condition Rating Assessment developed by the CTDOT Office of Environmental Planning.

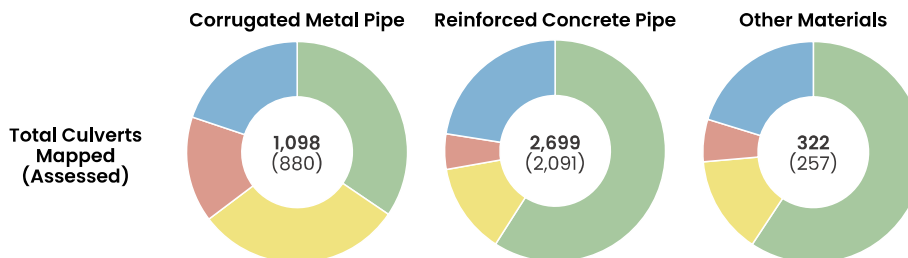
Drainage Culvert Age

The average drainage culvert in the CTDOT network is 68 years old. The average drainage CMP in the CTDOT network is 62 years old.

Drainage Culvert Inventory and Condition



Inspected Culvert Inventory and Condition by Material



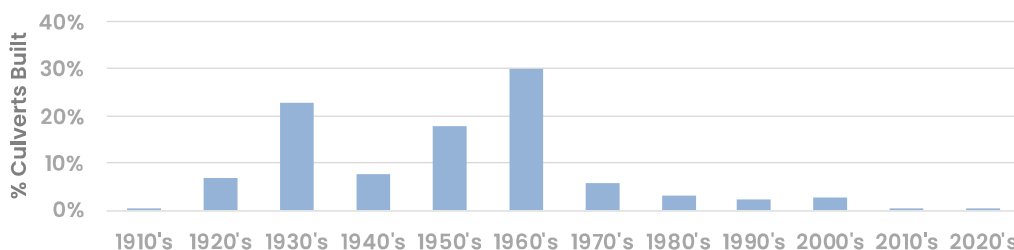
Condition	Corrugated Metal Pipe	Reinforced Concrete Pipe	Other Materials
Good	379 (43.1%)	1,594 (76.2%)	191 (74.3%)
Fair	331 (37.6%)	358 (17.1%)	46 (17.9%)
Poor	170 (19.3%)	139 (6.6%)	20 (7.8%)
Unable to Assess	218 (19.9%)	608 (22.5%)	65 (20.2%)

Note: Percentages of culverts in Good/Fair/Poor condition are based on the number of assessed culverts

Based on CTDOT 12/31/24 Snapshot

History

Distribution of Culverts By Decade Built



Based on CTDOT 12/31/24 Snapshot

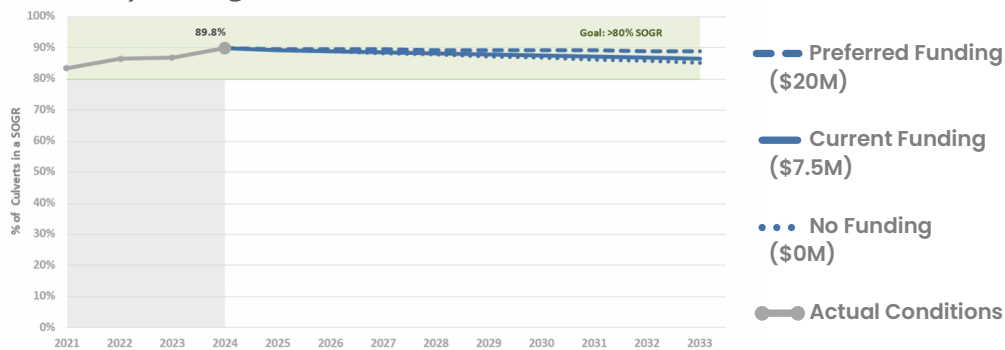


Drainage Culverts



Drainage Culvert Performance Projections

State Goals by drainage culvert for 4,119 culverts



Projected Performance at Current Funding Level (\$7.5M Budget)

Based on funding as of 12/31/24

End of Year	2025	2026	2027	2028	2029	Goal
SOGR	89.5%	89.1%	88.8%	88.4%	88.1%	80.0%

NOTE: "Current Funding" shown in the graphs is limited to funding programed to address State of Good Repair. Projected performance is expected to be greater due to asset improvements funded through CTDOT's Capital Program which are not captured. The Department will soon be able to capture this funding through a project asset data system in development.

Performance Projections

Culvert performance projections were created using very limited data from culverts that had both age and condition data associated with them. Due to the longevity of drainage culverts, 10 years of projections does not fully capture the financial needs of this asset.

Asset Valuation

\$2,000,000,000

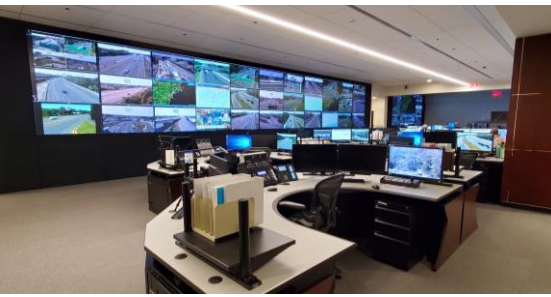
Asset value is estimated using the replacement value. For 10,000 estimated culverts, replacement value is 10,000 * \$200,000 = \$2,000,000,000

Measures and Goals

There are no Federal requirements for drainage culverts at this time. CTDOT has set the following state goal:

State Goal:

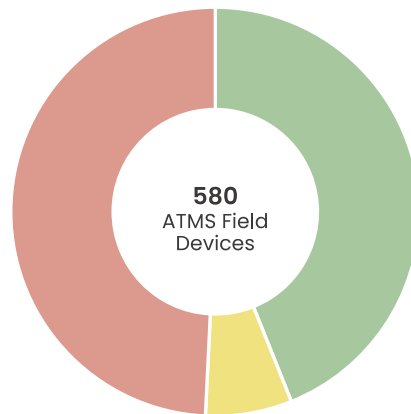
- 80% of culverts in a SOGR



Description

- CTDOT currently owns and maintains a total of 580 Advanced Traffic Management System (ATMS) field devices.
- ATMS field devices are comprised of 394 Closed Circuit Television Cameras (CCTV), 146 Variable Message Signs (VMS), and 40 Roadway Weather Information Systems (RWIS)
- ATMS field devices relies on Operation Centers, Fiber Hubs, and Video Data Transport that are tracked as part of the Highways Buildings Asset.
- ATMS field devices also rely on servers, software, central equipment, and 264 miles of fiber optic cable trunkline to communicate to ATMS field devices. These assets are being evaluated and will be considered for future updates.

CTDOT-Maintained Inventory and Condition



Good

257 ATMS Field Devices

44.3% are in Good condition (0-10 years old)

Fair

40 ATMS Field Devices

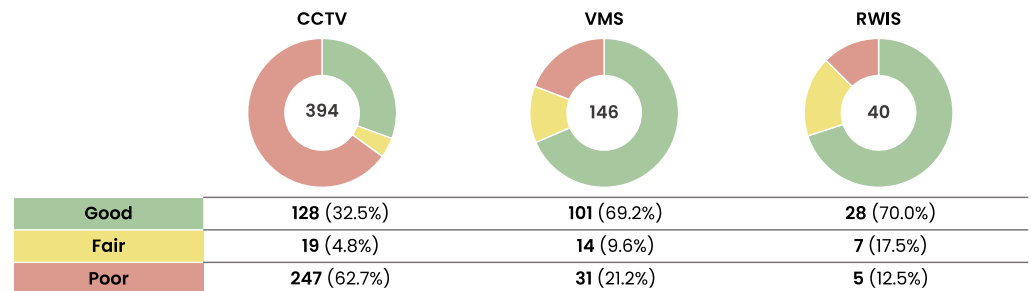
6.9% are in Fair condition (11-15 years old)

Poor

283 ATMS Field Devices

48.8% are in Poor condition (16+ years old)

ATMS Inventory and Condition by Type



Based on CTDOT 1/4/25 Snapshot

State of Good Repair (SOGR)

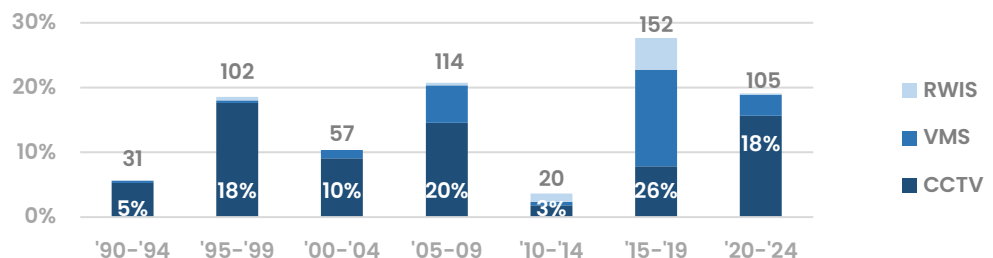
- ATMS field devices installed within the last 10 years are classified as being in a SOGR.

Asset Age

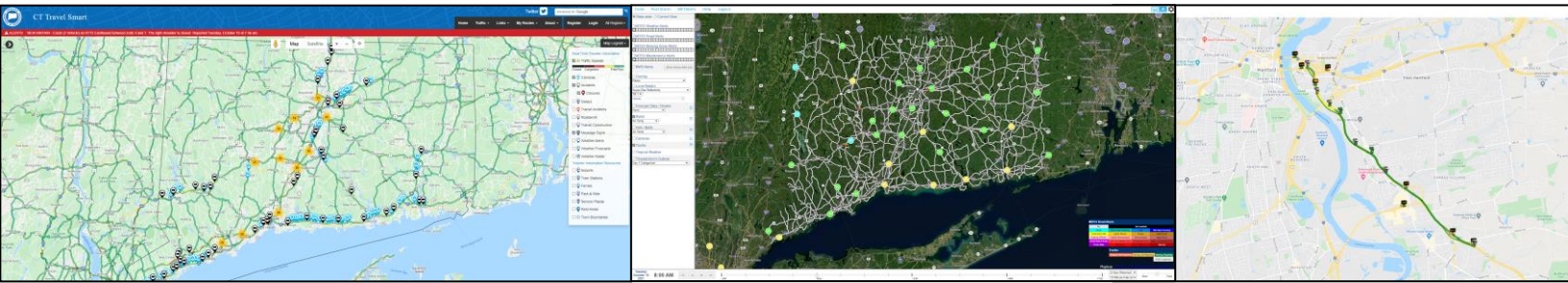
- ATMS field devices have an average projected useful life (PUL) of 15 years.
- 50% of ATMS field devices have aged beyond their PUL.

History

Distribution of ATMS Field Devices by Year Installed

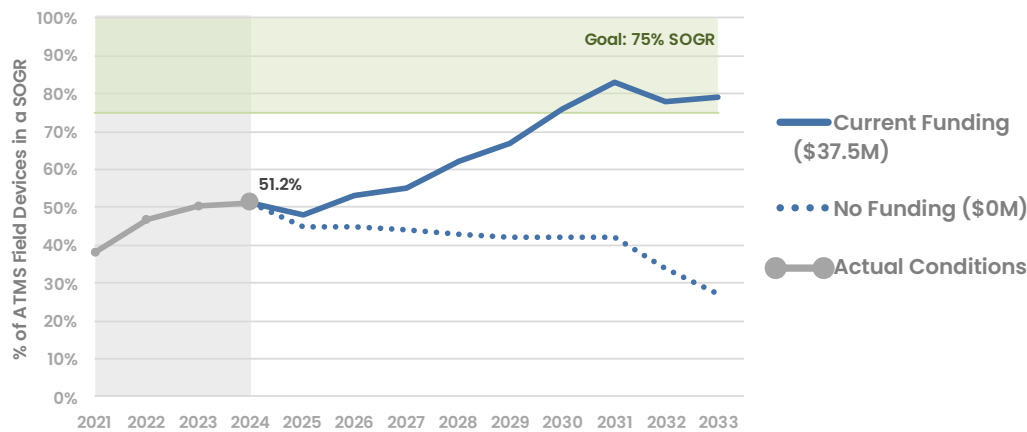


Based on CTDOT 1/4/25 Snapshot



ITS: ATMS Performance Projections

State Goals by ATMS field device for 580 ATMS field devices



Projected Performance at Current Funding Level (\$37.5M Budget)

Based on funding as of 12/31/24

End of Year	2025	2026	2027	2028	2029	Goal
SOGR	51.0%	48.0%	53.0%	55.0%	62.0%	75%

NOTE: "Current Funding" shown in the graphs is limited to funding programed to address State of Good Repair. Projected performance is expected to be greater due to asset improvements funded through CTDOT's Capital Program which are not captured. The Department will soon be able to capture this funding through a project asset data system in development.

Performance Projections

In order to achieve a SOGR of above 75% within 10 years, Highway Operations has been approved for 9 projects that will replace an average of 25 ATMS field devices per project and install new 12 ATMS field devices per project. Highway Operations projects currently replace an average of 20 ATMS field devices per year, leaving the remainder to be installed by other various projects.

Asset Valuation

\$177,500,000

Asset value is estimated using an average replacement value per ATMS field device. Asset value does not include the cost for communication network, hardware, software, or portable ATMS field devices.

394 CCTV* \$0.25M each
146 VMS* \$0.5M each
40 RWIS* \$0.15M each
Total = \$177.5 M

Measures and Goals

There are no Federal requirements for ATMS field devices at this time. CTDOT has set the following state goal:

- 75% of ATMS in a SOGR