

Capitol Region Council of Governments

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Lyle D. Wray, Executive Director

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Mr. James P. Redeker,
Commissioner
Connecticut Department of Transportation
2800 Berlin Turnpike
Newington, CT 06111

January 13, 2012

Dear Commissioner Redeker,

The Capitol Region Council of Governments (CRCOG) has reviewed the condition of Connecticut's municipally owned bridges in response to concerns from our region's municipalities. Of particular concern is the safety of these bridges and the lack of assistance to municipalities for necessary repairs or reconstruction. In April 2009, Public Act 09-2 de-funded the State Local Bridge Revolving Funding program which had provided such assistance. Attached is the CRCOG report on the Condition of Municipal Bridges in Connecticut. CRCOG is requesting that the information provided herein and attached be viewed in support of reestablishing funding for the State Local Bridge Revolving Fund and other programs that can assist in improving the condition and safety of our municipal bridges. Also, CRCOG is committed to work with you, the Connecticut Department of Energy and Environmental Protection, and local municipalities to streamline the permitting process for bridges in this program.

Based on CRCOG's review of bridge conditions, by most measures Connecticut's municipal bridges are in poorer condition than state bridges as a whole, and in much poorer condition than bridges nationwide. Additionally, the number of deficient bridges appears to be growing and will likely continue to grown without an increase in funding. Key findings of CRCOG's condition assessment:

- Of 15 infrastructure categories, the latest American Society of Civil Engineers (ASCE, 2009) Infrastructure Report Card listed "Bridges" as Connecticut's primary infrastructure concern
- Over a third (33.7% in 2010) of Connecticut's municipal bridges are considered either structurally deficient or functionally obsolete. This is similar to the statewide figure (also 33.7%) but higher than the national rate (24.3%).
- Approximately one in six (15.8%) municipal bridges were classified as structurally deficient (compared to 9.1% statewide and 11.5% nationally)

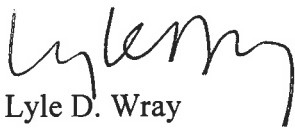
- Bridges are typically designed to last 50 years. The average age of Connecticut's municipal bridges is 51.4 years old (compared to 47.2 statewide and 42 nationally)
- Almost half (43%) of Connecticut's bridges were built in the 1950s and 1960s, and therefore many bridges statewide are approaching the end of their useful lives
- Bridge deficiency rates in Connecticut are increasing while national rates are decreasing
- There is very little recent data regarding the condition of the 64% of municipally owned structures that are not on the National Bridge Inventory. These bridges are not eligible for federal funding under the Local Bridge program and the primary source of State assistance for these bridges, the State Local Bridge Revolving Fund, is no longer funded.

Based on the above, there is a need for increased investment in municipal bridges. The recently de-funded State Local Bridge Revolving Funding program was actively used to maintain bridge safety by providing Towns financial assistance to remove, replace, reconstruct, or rehabilitate local bridges.

CRCOG supports the reinstatement of this and/or other programs that can assist in improving the condition and safety of our municipal bridges. CRCOG also supports the efforts of Connecticut Department of Transportation to implement initiatives that streamline the design and construction of local infrastructure, such as permitting and administrative streamlining, Design-Build initiatives and the implementation of Accelerated Bridge Construction techniques.

Thank you for your consideration.

Sincerely,



Lyle D. Wray
Executive Director

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cc:

CRCOG Policy Board Members

CRCOG Transportation Committee Members

Ms. Jennifer Carrier, CRCOG Director of Transportation Planning

Mr. Thomas Harley, ConnDOT Bureau of Engineering & Construction - Bureau Chief

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Condition of Municipal Bridges in Connecticut January 13, 2012

Maintaining adequate conditions for municipal bridges is a key element to providing safety and mobility within the transportation network. At the request of the member municipalities, CRCOG staff has drafted the following report on the condition of municipal bridges in Connecticut. Key findings of this assessment include:

- Of 15 infrastructure categories, the latest American Society of Civil Engineers (ASCE, 2009) Infrastructure Report Card listed “Bridges” as Connecticut’s primary infrastructure concern
- Over a third (33.7% in 2010) of Connecticut’s municipal bridges are considered either structurally deficient or functionally obsolete. This is similar to the statewide figure (also 33.7%) but much higher than the national rate (24.3%).
- Approximately one in six (15.8%) municipal bridges were classified as structurally deficient (compared to 9.1% statewide and 11.5% nationally)
- Bridges are typically designed to last 50 years. The average age of Connecticut’s municipal bridges is 51.4 years old (compared to 47.2 years old statewide, and 42 years old nationally)
- Almost half (43%) of Connecticut’s bridges were built in the 1950s and 1960s, and therefore many bridges statewide are approaching the end of their useful lives
- Recently, bridge deficiency rates in Connecticut are increasing while the national rate is decreasing
- There is very little recent data regarding the condition of the 64% of municipally owned structures that are not on the National Bridge Inventory. These bridges are not eligible for federal funding under the Local Bridge program, and the primary source of State assistance for these bridges (the State Local Bridge Revolving Fund) is no longer funded.

In 2009, Public Act 09-2 eliminated funding to the Local Bridge Revolving Fund, a major source of grant and loan monies available to rehabilitate and reconstruct municipal bridges. This report underlines the importance of reinstating this and/or similar programs.

Connecticut’s Bridge Infrastructure and Available Data

Within the State of Connecticut, there are currently 7,505 spanning structures, with 3,435 being municipally owned¹. The *National Bridge Inventory* (NBI) monitors all bridges with spans greater than 20 feet and requires states to regularly inspect all such bridges. Of the 604,000 bridges listed in the NBI, 4,191 are located in Connecticut with 1,239 of them owned by Connecticut municipalities. Due to the completeness and availability of bridge inspection data from the NBI, this report relies heavily upon this resource. *Unless otherwise specified all figures and statistics in this report were obtained through CRCOG analysis of the 2010 National Bridge Inventory Database and refer to bridges that span more than 20 feet.*

It should be noted that about 64% of Connecticut’s municipally owned structures span less than 20 feet and therefore are not required to undergo regular inspections and are not represented in the NBI statistics. Perhaps most concerning is that the condition of these bridges is largely unknown. ConnDOT records

contain inspection data for most of these bridges, however almost all of the data (over 90%) was compiled in a statewide inspection effort performed in 1991, making most of the data irrelevant. Only 6% of these bridges have been inspected in the last 20 yearsⁱⁱ.

Current Bridge Deficiency Rates

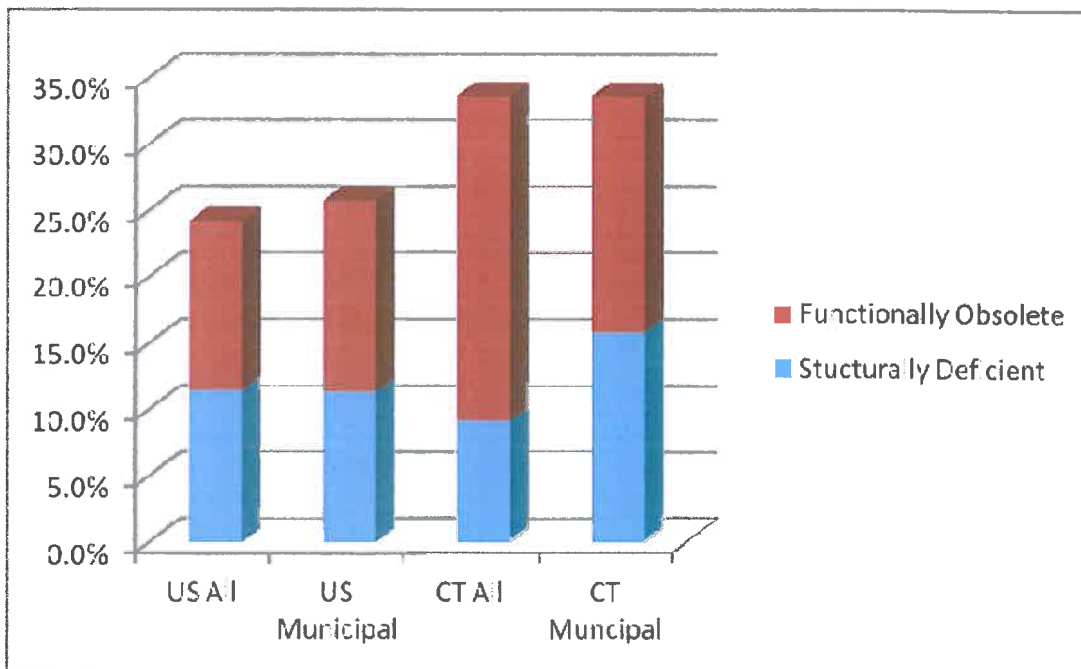
A bridge is considered deficient if it is categorized as either *structurally deficient* or *functionally obsolete*. In reviewing bridge deficiency rates, 33.7% of Connecticut’s municipal bridges were categorized as deficient, which is similar to the 33.7% rate for all Connecticut bridges but above the nationwide figure of 24.3%. These high deficiency rates may be the reason why of 15 infrastructure categories, the latest (2009) ASCE Infrastructure Report Card listed “Bridges” as Connecticut’s primary infrastructure concern.

Structural deficiency is generally considered a more critical measure of a bridge’s condition and may result in speed and weight carrying restrictions, closure, or in the worst cases the potential for collapse. In this category the results for Connecticut are mixed. Statewide, the 9.1% structural deficiency rate is less than the national average of 11.5%, however the 15.8% rate for municipally owned bridges is higher than either the state or national average.

A functionally obsolete bridge has non-conforming design features and geometrics, either because the amount of traffic carried by the bridge exceeds what it was designed for, or because its features do not meet current design standards. Functionally obsolete rates for municipal and statewide bridges are 24.5% and 17.8% respectively, which exceed the national figure of 12.8%.

Figure 1 summarizes bridge deficiency rates for the nation and Connecticut.

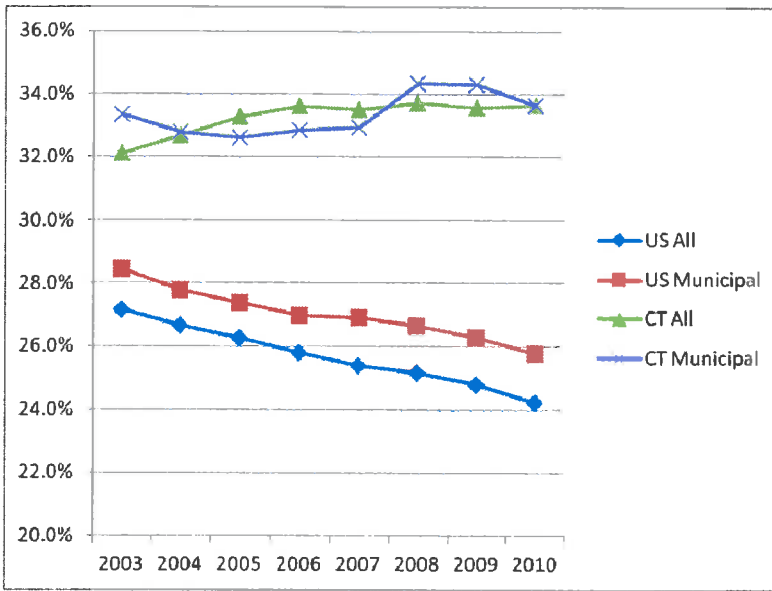
Figure 1: National and Connecticut Bridge Deficiency (Source: FHWA 2010 NBI)



Bridge Deficiency Trends

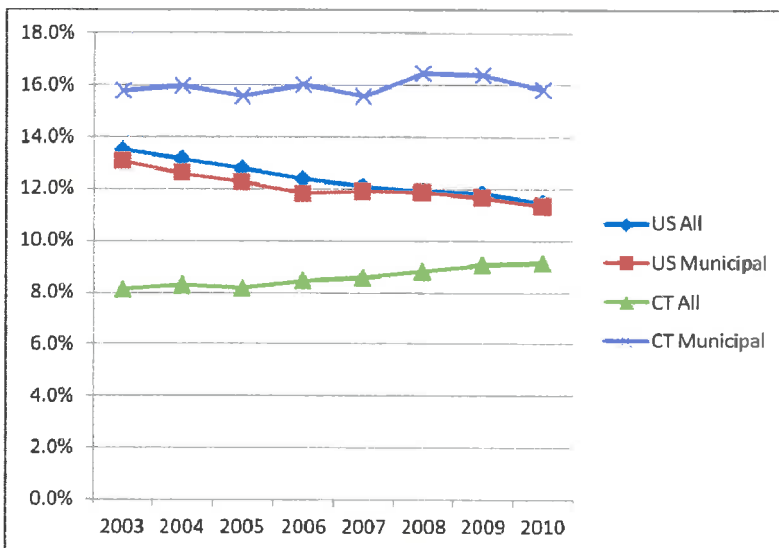
Nationally, steady progress has been made recently in reducing the number of deficient bridges, however conditions for Connecticut Bridges appear to have degraded. These trends are illustrated in Figure 2, which also captures the increasing gap between conditions nationwide and in Connecticut. The result is that for the past decade, deficiency for Connecticut’s bridges compared to the 50 states has slipped from 33rd to 43rd (1 being best, 50 being worst).

Figure 2: U.S. and Connecticut Bridge Deficiency Trends (Source: FHWA 2003-2010 NBI)



Recent trends are similar in the critical structural deficiency category. Figure 3 shows that although steady progress is being made nationally, Connecticut structural deficiency rates are climbing. Structural deficiency for municipally owned bridges remains noticeably higher than the national averages, and if trends continue it appears that Connecticut’s overall structural deficiency rate will be higher than the nations by around 2015.

Figure 3: Structural Deficiency Trends (Source: FHWA 2003-2010 NBI)



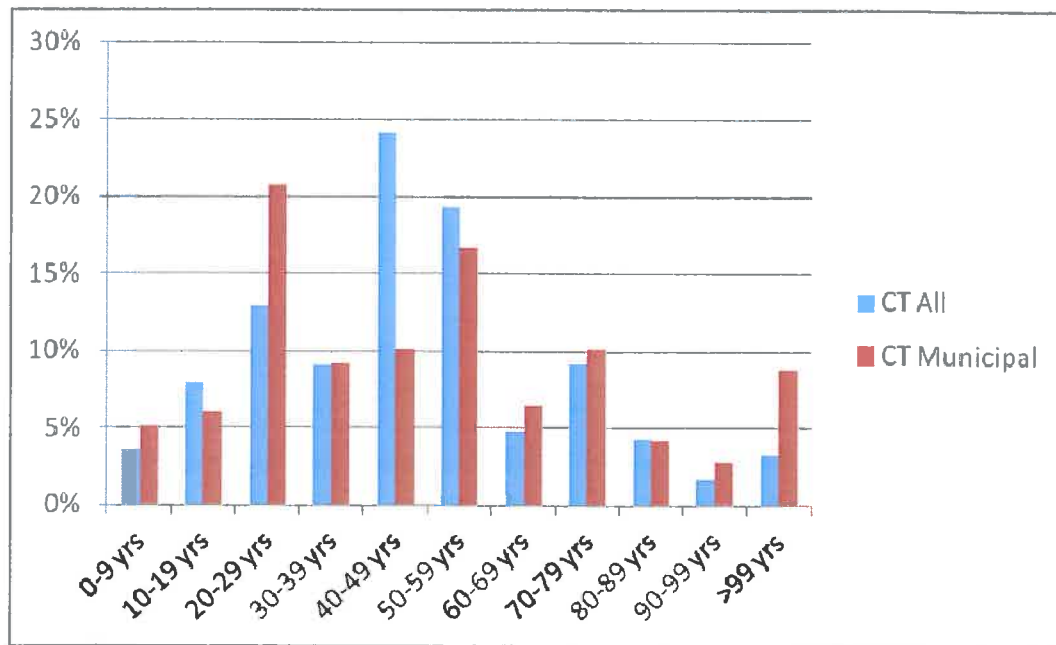
Connecticut’s Aging Bridge Infrastructure

Connecticut’s bridge infrastructure is aging, and increasing investments will likely be necessary to maintain current bridge conditions. Most bridges are designed to last roughly 50 years. The average age of the Connecticut’s municipal bridges is 51.4 years old and over half of these bridges have exceeded a 50 year life expectancy. The average age of all of all Connecticut bridges is 47.2 years old exceeding the national average age of 42 yearsⁱⁱⁱ.

Adding to the concern are the number of bridges that will soon be approaching the expected end of their useful life. Heavy investments in new bridge infrastructure took place between 40 and 60 years ago, with approximately 43% of all Connecticut’s bridges constructed between 1950 and 1970. These bridges are now reaching an age where major rehabilitation or replacement will likely be necessary soon. This, coupled with a lack of investment in the past few years (only 11% of the State’s structures have been constructed in the past 20 years), has resulted in the projection that the number of Connecticut bridges over 50 years old will increase by more than 75% in the next 20 years^{iv}. It is clear that increasing investments will be necessary just to maintain current bridge conditions.

Figure 4 shows the age distributions of Connecticut’s bridges.

Figure 4: Age of Connecticut’s Bridges (Source: FHWA 2010 NBI)



Bridge Funding

As evident from the recent increase in bridge deficiency rates and future projected increases in the age of bridges, it is likely that significant increases in capital investment for bridges are needed to maintain or improve the condition of Connecticut’s bridges. Based on bridge deficiency and age statistics identified in this report, funding for municipally owned bridges can be viewed as even more critical.

While federal local bridge program funding is available for some municipal bridges, the majority of municipal bridges (64%) span less than 20 feet, and therefore are not eligible for the funding. Also, of municipal bridges spanning over 20 feet, ConnDOT’s 2011 municipal bridge deficiency list indicates that only 233 (43%) of the 536 entries are categorized as eligible for federal funding.

Municipal bridges spanning less than 20 feet were not excluded from funding under Connecticut's Local Bridge Revolving Funding program. The program was able to provide grants from 10 to 33% of project costs, as well as loans up to 50%, to help correct bridges categorized as structurally deficient or functionally obsolete. However, Public Act 09-2 closed the Connecticut's Local Bridge Revolving Funding program to new applications.

If you have any questions regarding this report please feel free to contact Robert Aloise, CRCOG Principal Transportation Engineer at raloise@crcog.org, or Jennifer Carrier, CRCOG Director of Transportation Planning at jcarrier@crcog.org.

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- i CRCOG analysis of 2011 ConnDOT Bridge Inventory data
 - ii Ibid.
 - iii The Fix We're In: The State of Connecticut Bridges by T4America - Page 9
 - iv Ibid.