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To:	Cost Review Subcommittee and Transportation Committee
From:	Robert Aloise, Principal Transportation Engineer
Date:	July 14, 2017
Subject:	2017 LOTCIP Solicitation - Phase 1 Proposals Memorandum
cc:	Policy Board Municipalities Submitting Projects Jennifer Carrier, CRCOG Director of Transportation Planning

CRCOG received nine (9) eligible bridge improvement proposals representing almost $11.7 million in response to its 2017 LOTCIP Solicitation - Phase 1. Per CRCOG's Selection Policy, $10 million was reserved for this solicitation phase, including up to $1.5 million for structures that have not been inspected in the most recent 10 years.

At the June Transportation Committee meeting staff recommended that, upon submission of completed LOTCIP applications, the top seven projects (representing approx. $10.8 million) receive CRCOG's endorsement in the amount requested to pursue a CTDOT commitment of LOTCIP funding. Staff also recommended that the Committee consider allowing the City of Hartford and Somers to receive Phase 2 funding without having to compete with the other projects under the next solicitation. This recommendation was made understanding that established regional LOTCIP rating criteria does not favor bridge reconstruction, that the Hartford and Somers bridge estimates are each less than $500k, and that CRCOG anticipates issuing a Phase 2 solicitation shortly.

At the June meeting, the Committee requested more information about the conditions of the bridges and tabled action until adequate information is provided. Additional information on each proposal, including a short description of the improvements proposed and bridge condition data (sufficiency rating, National Bridge Inventory ratings, and structural deficient and structural obsolete designations) are shown in the Table on the following page. The table is color coded with red cells indicating reported inspection values that staff considers merit immediate corrective action and orange cells indicating reported inspection values that staff considers potentially in need of corrective action very soon.

As can be seen in the table, each of the top seven ranked bridges has information in multiple columns of condition data highlighted red, indicating that the bridges have issues that merit immediate corrective action. Based on this information, staff continues to recommend that the top seven projects (representing $10.9 million) receive CRCOG's endorsement in the amount requested to pursue a CTDOT commitment of LOTCIP funding. This conforms to the initial intent of the solicitation to fund approximately $10 million of the most worthy bridge improvement projects summited.

In light of the additional provided information, staff would again like the Committee to consider allowing the City of Hartford and Somers projects to receive Phase 2 funding without having to compete with the other projects under the next solicitation.

Bridge Proposal Conditions Summary - 2017 LOTCIP Bridge Improvement Solicitation

July 14, 2017

Municipality	Bridge Number	Location	Requested Funding	Cumulative Requested	Proposed Improvements	Sufficiency Rating (Adjusted rating*)	NBI 58: Deck Condition Structural	NBI 59: Superstructure	NBI 60: Substructure (NBI 62: Culvert)	NBI 61: Channel and Channel Protections	NBI 67, 68, 69, 71, 72, 113 rated 3 or lower	NBI 67, 68, 69, 71, 72, 113 rated 4 or 5	Structurally Deficient	Functionally Obsolete	Additional Comments
1. Southington	131016	Marion Avenue over Falls Brook	$1,107,600	$1,107,600	**Complete Replacement** Correct Structural Deficiencies	Not recently inspected	≥ 6	≤ 5	≤ 5	Not available	Not available	Not available	Not available	Not available	There are major structural deficiencies in need of addressing
2. Granby	4528	Moosehorn Road over Moosehorn Brook	$2,528,750	$3,636,350	**Complete Replacement** Correct Structural Deficiencies	47.1	7	4	7	7	Deck Geom. (3)	Structural Eval. (4)	Yes	No	The bridge is categorized as Structurally Deficient and therefore there are major structural deficiencies in need of addressing immediately.
3.Stafford	4783	South Road over Roaring Brook	$570,000	$4,206,350	**Complete Replacement** Correct Structural Deficiencies	47.7	7	5	6	5	Scour Critical (3)	Structural Eval. (4) Deck Geom. (5)	No	No	A sufficiency rating of 47.7 and structural evaluation rating of 4 indicate that there are major structural deficiencies in need of addressing, including significant scour.
4. West Hartford	4081	Fern Street over West Branch of Trout Brook	$3,000,000	$7,206,350	**Complete Replacement** Correct Structural Deficiencies and eliminate Functional Obsolescence	62.4 (60.4*)	6	5	6	6	Deck Geom. (3) Scour Critical (3)	Structural Eval. (5)	No	Yes	Substandard elements include a superstructure rating of 5 and scour critical rating of 3, and categorization as Functionally Obsolete. The town contracted out a bridge type study which determined replacement as the appropriate treatment.
5. Berlin	3657	Kensington Road over Mattabassett River	$738,000	$7,944,350	**Repair** Line four CMP Arches and replace the fifth. Provide new headwalls, end walls, parapet, and guiderail and eliminate Functional Obsolescence.	64.9	Does not apply	Does not apply	(5)	6	Deck Geom. (2)	Structural Eval. (5)	No	Yes	Substandard elements include a culvert structural rating of 5, deck geometry rating of 2, and categorization as Functionally Obsolete. Repairs to four culverts are proposed along with replacement to one at a lower invert to protect fisheries.
6. Coventry	4632	Folly Lane over Skungamaug River	$922,800	$8,867,150	**Complete Replacement** Replace functionally obsolete single lane bridge with two lane bridge to minimum standards	67.6	Not available	7	5	6	Deck Geom. (2)	Structural Eval. (5)	No	Yes	Substandard elements include superstructure/structural evaluation ratings of 5 and a categorization of the one-lane bridge as Functionally Obsolete. Complete replacement with a two lane bridge is needed for structural and traffic safety reasons.
7. Vernon	3936	Dart Hill Road over Hockanum River	$2,014,800	$10,881,950	**Complete Replacement** Replace functionally obsolete bridge to minimum standards, upgrading structurally inadequate sidewalk, guiderail, and utility accommodations	76.1	Not available	6	6	6	Deck Geom. (2) Scour Critical (3)	None	No	Yes	Substandard inspection ratings include deck geometry of 2, scour critical of 3, a categorization as Functionally Obsolete. Additionally the report showed guiderail/railing in poor condition and the separate sidewalk superstructure rated at a 3. To address these and Functional Obsolete status, replacement is needed.
8. Hartford	5354	Boce Barlow Way over Amtrak & CT Southern RR	$468,000	$11,349,950	**Repair** Deck repair by replacing pavement structure, waterproof membrane and bridge joints	79.3	7	7	6	Does not apply	None	Deck Geom. (4)	No	No	Substandard inspection ratings include deck geometry of 4. City inspection photos show poor pavement conditions and expansion joint conditions, likely due to waterproofing failure, which the proposed repairs aim to address.
9. Somers	4439	Kibbe Grove Road over Scantic River	$336,000	$11,685,950	**Repair** Extend existing wing-walls, replace deck pavement and waterproof membrane, clean and paint superstructure	82.5	7	6	6	7	None	Deck Geom. (4)	No	No	There is a 25" x 8" x 1" deep spall in the bituminous overlay near the west abutment joint along with a transverse crack open up to 1-1/2" wide. The concrete retaining walls supporting the approach barriers are severely scaled and are no longer supporting the barrier in some locations. The condition of the walls continues to worsen and need to be repaired.

* Per Selection Policy, adjustment (2 of 5 points) for completed design phase efforts to accelerate project delivery

Sufficiency Rating is an overall rating of a bridge's fitness for the duty that it performs based on factors derived from over 20 NBI data fields. In general, a bridge with a ratings of:

- **less than 60%** ■ merits replacement (although some may only need repair)
- **between 60% and 80%** ■ merits repair (although some may need replacement)
- **over 80%** indicates overall adequate conditions, however there may be specific elements in dire need of repair

National Bridge Inventory includes a structural evaluation of deck, superstructure, substructure, culvert, etc. on a 0-9 scale. In general, a rating of:

- **below 3** ■ represents intolerable conditions needing immediate corrective action
- **4 or 5** ■ represents conditions below minimum criteria, potentially needing corrective action very soon
- **6 or 7** represents conditions at or just above minimum criteria
- **8 or 9** represents conditions at or above desired criteria

Structurally Deficient ■ The condition of the bridge includes a significant defect, which often means that speed or weight limits must be put on the bridge to ensure safety.

Functionally Obsolete ■ The design of a bridge is not suitable for its current use, such as lack of safety shoulders or the inability to handle current traffic volume, speed, size, or weight.