CITY COUNCIL ACTION REPORT

February 27, 2013

TO: Brian Kischnick, City Manager

FROM: Mark Miller, Director of Economic and Community Development
Steven J. Vandette, City Engineer

SUBJECT: Approval of Second Amendment to MDOT Capital Contract for Troy Multi-Modal Transit Facility, MDOT Contract No. 2011-0231/A2

Background:

City Council approved Capital Contract No. 2011-0231 (Resolution No. 2011-09-210) with MDOT for the final design and construction of the Troy Multi-Modal Transit Facility on September 12, 2011. MDOT provided federal funding in the amount of $8,485,212 to the City for design and construction of the Transit Center.

On January 17, 2012, City Council approved the total cost of the Troy Multi-Modal Transit Center at $6,272,500 (Resolution No. 2012-01-008).

The First Amendment to the MDOT Capital Contract, approved on November 12, 2012 (Resolution No. 2012-11-203), reduced the grant funding amount from the original $8,485,212 to the $6,272,500 amount previously approved by City Council.

Canadian National Railroad (CN) has recently imposed a safety requirement that requires the addition of a crash wall for the west elevator/bridge support tower on the Birmingham side (no wall is needed on the Troy side). The wall will provide added protection to the elevator/bridge support tower in the event of a train derailment. This new requirement has resulted in a redesigned foundation and tower wall that is 2.5' thick, 12' high and approximately 60' long. The crash wall design has been reviewed and approved by CN. The cost of the wall, including engineering and construction, will add $348,236 to the Transit Center construction budget.

History of Crash Wall:

Provided below is a chronological summary of the CN clearance reviews and the crash wall:

In early May of 2012, CN was asked by the design team, including the team's Rail Engineering Specialist, to review critical clearances due to the many project site limitations. The review request contained all the horizontal and vertical clearances of the west tower, the platform and bridge. On May 25, 2012, CN provided the following by e-mail with regard to their determinations on these clearances.

Item	Proposed clearances	CN comments
Platform Height MDOT Close	8 inches above Top of Rail	**NOT APPROVED**, pending Clearance permit. Also, platform can be no closer than 5'1" from centerline of track.
Bridge Height	23 feet Minimum above Top of Rail	Approved
East Face of Stair/Elevator Structure	10 feet 6 inches from Centerline of West Track	Approved
East Face of Pedestrian Bridge Support	20 feet from Centerline of West Track	Approved

The approval of the east face of the pedestrian bridge support is given without exception. It is this clearance of 20 feet, which is less than the AREMA guidelines of 25 feet that CN can interpret as needing a crash wall.

Based on the above clearance approvals from CN, it was agreed that these clearances could be utilized as a basis for completing the final design of the project. To further confirm the clearances approved in the May 25, 2012 email, the design team of HRC Neumann/Smith Architecture and Quandel Consultants (Railway Engineering Specialist) prepared a Station Design Criteria Report for the project which listed these clearances along with many other key elements of the facility. The Report was submitted to CN and other project agencies on June 7, 2012. The Station Design Criteria Report that was submitted to CN for their review clearly states in Section 6.2, Horizontal Clearance, Design Recommendation, that a crashwall was not intended to be provided. Having not received any verbal or written statements from CN to the contrary, the project did not include a crash wall until required in writing by CN on February 14, 2013. Below is Section 6 of the Station Design Criteria report.

6 Track Overpass Clearances

6.1 Vertical Clearances

Alternatives Considered – Minimum vertical clearance between top of rail and overhead structures is governed by AREMA, the state and the host railroad. The state of Michigan is least conservative with a minimum requirement of 22’-6”. Both AREMA and CN require a minimum of 23’-0”. The vertical clearance guidelines are only required within the railroad dynamic envelope.

Design Recommendation – The minimum vertical clearance from Top of Rail elevation to the low point of the structure shall be 23 ft. as depicted in AREMA Figure 28-1-6 over the entire length of the bridge to the face of the towers within a lateral zone 6 ft. perpendicular to the track centerline. This dimension allows for a future track lift.

6.2 Horizontal Clearance

Alternatives Considered – AREMA recommends that overhead bridge piers be located a minimum of 25 ft. from the track centerline. Where site constraints require locating piers at a distance less than 25 feet, AREMA recommends that the piers be constructed with additional concrete to create a crash wall with the ability to resist the impact of a derailed train.

Design Recommendation – Due to site constraints, the Track Overpass support piers shall be located a minimum of 20 ft. from the track centerline which very nearly meets the lateral

clearance suggested by AREMA. **As a practical consideration in the vicinity of a passenger platform, crashwalls shall not be provided.** (emphasis added)

In August 2012, CN again reviewed the clearances shown on detailed plans that were provided to them during the mandatory Close Clearance Review meeting hosted by MDOT. The meeting was attended by a representative of CN. On August 21, 2012 CN provided the following by email with regard to their determinations on these clearances, without any crash wall requirement being made.

The following is a list of items that need to be addressed

1 - the 10' platform has to be 8'-6" from center line of track.
2 - the ramp has to be gated both at the entrance at the bottom of the ramp and gated at the open end of the platform.
3 - funds will have to be made available tie and surface the track prior to construction so as not to disturb the platform height of 8" above the rail for the next 10 - 15 years.
4 - install a drain pipe below at the end of the tie for the length of the platform extending beyond the platform to provide drainage for the track structure.
5 - is CN responsible to install the close clearance signs or the contractor?
6 - slope of the platform should be away from the track so runoff, especially in the winter with salt and chloride, runs away from the track.
7 - Agreement needed for platform located on CN property which should include, but not limited to:
a - reimbursement for all maintenance cost to maintain platform 8" above rail.
b - snow removal ,by whomever is maintaining the platform, must not be dumped on tracks.
c - the platform and area surrounding platform must be maintained, weed controlled, and kept clean of debris and garbage.
8 - Station and platform must be removed if Amtrak or City of Troy closes the station.
9 - It was already agreed that the old Birmingham facility would be removed and graded to its original state, funds would need to be made available to remove the existing crossing timber in main 1 and the concrete between main 1 and main 2 and reestablish the grade.

The Final Plans for the project were submitted to CN and other project agencies on August 30, 2012 for review and approval. The final plans did not include a crash wall per the approved clearances and the Station Design Criteria Report. Discussions following the submittal of final plans were held between the design team and CN and verbal acceptance of the plans was given. Tooles/Clark had separate discussions and meetings with CN prior to starting construction and they were granted a right of entry permit from CN and began construction of the project in November. The acceptance by CN to allow Tooles/Clark to begin construction within the CN right of way and CN providing inspection for this work, confirmed that CN had approved the plans as submitted.

On February 6, 2013, CN representatives from Chicago met with the entire project team to discuss CN crash wall requirements. This meeting was the result of approximately one month of multiple discussions with CN and requests for a determination on whether or not they would require a crash wall. On this date CN stated for the first time that a crash wall will be required. It was determined that HRC would provide CN with additional information on the structural components of the west tower so that their structures group could review and provide a written response (determination) regarding the crash wall. The foregoing was reflected in the meeting minutes.

Crash Wall
• HRC is to provide the original design criteria and a written description with additional information on the structural

components of the West tower to CN.
• CN will review this information internally with their structures group and provide a written response regarding the crash wall and any other design concerns.

On February 14, 2013, CN provided the first written statement on requiring a crash wall in an email:

> CN Engineering Bridge design group has reviewed the submitted Troy MMTF drawings and the calculations. The proposed pedestrian bridges meets our CN vertical clearance requirements. The horizontal clearance from the west track requires a crash wall.

Representatives from HRC (design team) and Tooles/Clark (construction team) will be present at the Council meeting to answer any questions concerning the design and construction of Transit Center and the late addition of the crash wall requirement.

MDOT Funding:

MDOT has agreed to amend the funding contract to increase the grant amount to include the cost of adding the safety crash wall. The funding comes from approximately $2.2 million that the City turned back to MDOT last November when Amendment A1 was approved. MDOT continues to hold these funds for future construction of access to the platform from the Birmingham side, which the Federal Rail Administration cited as an objective of the project; to service both communities by strengthening the existing transportation options in the area.

In April of 2011 Birmingham pulled out of the project due to their inability at that time to acquire property at fair market value for access to the platform. Their withdrawal from the project caused, among other things, the tunnel to become a bridge and the west elevator/bridge support tower to be wholly located within the CN right-of-way. Had the tunnel been built as originally planned, there would be no need for the tower or crash wall. Had the elevator/bridge tower been located outside the CN right-of-way on land that Birmingham was to acquire, there would be no need for the crash wall. Taking back some of the $2.2 million will make Troy's project whole.

Financial Considerations:

The total project cost, including the cost of the crash wall, continues to be fully funded, 100% with federal ARRA funds. No city funding is needed for construction of the Transit Center.

A summary of actions taken to date is provided below:

Original Contract	$8,485,212	Original Grant Amount
Amendment #1	**$6,272,500**	Council Compromise – Reduction approved by City Council
Amendment #2 Tooles/Clark	$287,623	Crash Wall Construction
Amendment #2 HRC	$60,613	Crash Wall Design, Testing and Staking
Recommended Revised Contract	**$6,620,736**	

Recommendation:

Staff recommends that City Council approve a Second Contract Amendment to MDOT Capital Contract No. 2011-0231 for the purpose of increasing grant funds to $6,620,736 for design and construction of the Transit Center.