



MEMORANDUM

Date: 10 MAR 2016
To: Planning Commission
RE: S15-09-III / Standard at Morgantown LLC / 1303 University Avenue
Matters raised during the Planning Commission's 10 DEC 2016 hearing

This communication is intended to respond to matters raised by the Planning Commission during its 10 DEC 2016 hearing concerning site plan petition S15-09-III that are enumerated in the Commission's approved minutes.

1. Why are there so many parking spaces above and beyond the requirement? Explain the intention of having the amount shown and how it relates to the floor area ratio (FAR) standard.

The following graphic is clipped from Article 1365.04 "Determining the Number of Spaces Required" concerning maximum parking standards in non-residential districts.

(I) In all non-residential districts the maximum number of spaces provided shall not exceed 115 percent of the minimum parking requirement, except for research and development centers, where there shall be no maximum.

The minimum parking requirement for the subject development is 422 spaces [see Article 1349.08(A)]. The maximum number of parking spaces is 485 spaces (422 x 1.15). Additionally, at least 14 residential loading spaces are required [see Article 1349.08(D)]. The total of maximum number of parking spaces AND minimum number of residential loading spaces is 499.

The following graphic is clipped from Article 1349.08 "Parking and Loading Standards" within the B-4 District.

(D) Loading - Residential uses containing thirty (30) or more dwelling units shall conform to the loading requirements set forth in Section 1365.10 as a "Type II Use" (see Table 1365.10.01). (Ord. 15-34. Passed 6-2-15.)

The minimum number of requisite residential loading spaces was correctly calculated based on the total area of the 276 dwelling units, which is identified as 334,092 square feet on the petitioner's site plan documents "Title Sheet." Specifically, the dwelling units generate demand for residential loading spaces and not the building's storage, services, and common areas.

The petitioner seeks to develop 692 parking spaces in a multi-level parking garage facility. This results in 193 parking spaces in excess of the maximum number of parking spaces AND minimum



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number of residential loading spaces. As such, the petitioner must obtain related variance relief from the Board of Zoning Appeals under Case No. V15-70.

The Commission's consideration of the demand for and merits of the proposed number of parking spaces in excess of the maximum standard should be directed toward the petitioner. The undersigned encourages the Commission to recognize the petitioner during the hearing to explore this matter.

The following graphic is clipped from Article 1329.02 establishing the definition for "Floor Area Ratio (FAR)".

FLOOR AREA RATIO (FAR) – The gross floor area of the principal and accessory buildings on a lot divided by the area of the lot. The ratio is an expression of the intensity of development. For example, an FAR of 1.0 would allow one square foot of building area to be constructed for each square foot of lot area; an FAR of 4.0 would allow four square feet of building area for each square foot of lot area.

The following graphic is clipped from Article 1349.06 establishing the Floor Area Ratio (FAR) standard for the B-4 District.

1349.06 FLOOR AREA RATIO (FAR).

The maximum FAR for all development in this district is 7.0. Area designed, constructed, and utilized to provide parking structure facilities shall be exempt from the maximum FAR, provided such area does not exceed 115% of the minimum parking requirement. (Ord. 07-57. Passed 11-6-07.)

The B-4 District FAR standard clearly exempts the area of a parking structure facility to be exempt from the maximum FAR calculation. However, the standard also unmistakably requires the area of a parking structure facility that exceeds the 115% maximum parking standard to be included in the development's maximum FAR calculation.

The following graphic is clipped from Page 7 of 9 of the 06 NOV 2015 Planning and Zoning Code Conformity Report. The bullets explain how the 193 parking spaces in excess of the maximum number of parking spaces AND minimum number of residential loading spaces was included in the FAR calculation.

- The assumed area of a parking space is $(8.5' \times 18') + (8.5' \times 12') = 255$ sf per space
- 193 parking spaces x 255 sf per space = 49,215 sf
- Proposed FAR: $[667,338$ sf (total) – 225,554 sf (parking)] + 49,215 sf = 490,999 sf
- 490,999 sf is still less than the maximum FAR standard of 594,594 sf



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The first 499 parking spaces were properly exempted from the maximum FAR calculation. The remaining 193 parking spaces above the by-right maximum parking requirement and minimum residential loading obligation were properly included in the maximum FAR calculation.

It should be noted that exempting parking structure facilities from the maximum FAR standard is intended to encourage density without penalizing the development of structured parking. The exemption is also intended to incentivize the development of structured parking over land consumptive surface parking lots. A surface parking lot in a downtown can arguably be viewed as an underutilization of prime real estate that can also undermine desired urban facade and streetscape rhythms of the built environment.

However, Morgantown caps this incentive in the B-4 District. Accordingly, the FAR calculation for the “Standard at Morgantown” development correctly penalizes the proposed development program for including more than 499 parking spaces.

It should be noted that the parking structure facilities FAR exemption cap cannot be read nor applied to require the total area of all parking structure facility space to be included in the maximum FAR calculation simply because the maximum number of parking spaces will be exceeded. The parking structure facilities FAR exemption cap is correctly read and properly applied to exempt only to the point of the maximum number of parking spaces AND the minimum number of residential loading spaces.

Concerning the issue of variance relief from the maximum parking standard, West Virginia State Code 8A-7-11(a) provides that, “A variance is a deviation from the minimum standards of the zoning ordinance and shall not involve permitting land uses that are otherwise prohibited in the zoning district nor shall it involve changing the zoning classifications of a parcel of land.”

In other words, variance relief can be granted by the Board of Zoning Appeals provided doing so does not result in a land use otherwise prohibited or result in a zoning map amendment. In fact, West Virginia State Code 8A-7-11(b) provides that the board of zoning appeals *shall* grant a variance to the zoning ordinance if it finds that the variance:

- (1) Will not adversely affect the public health, safety or welfare, or the rights of adjacent property owners or residents;
- (2) Arises from special conditions or attributes which pertain to the property for which a variance is sought and which were not created by the person seeking the variance;
- (3) Would eliminate an unnecessary hardship and permit a reasonable use of the land; and
- (4) Will allow the intent of the zoning ordinance to be observed and substantial justice done.

The four (4) provisions above are referred to as the Board of Zoning Appeals’ findings of fact it must conclude in the affirmative before granting variance relief. The merits of approving or denying the related variance petition under Case No. V15-70 are matters for the Board of Zoning Appeals to determine.



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2. Explain the building height and how it falls within the allowable range.

The following graphics are clipped from Article 1329.02 establishing the definitions for “Building Height in Feet” and “Parapet.”

BUILDING HEIGHT IN FEET – The vertical distance measured from the lot ground level to the highest point of the roof for a flat roof, to the deck line of a mansard roof, and to the mean height between eaves and ridges of gable, hip, and gambrel roofs. On lots with topographic elevation changes, the lot ground level shall be construed to mean the halfway point between the highest and lowest elevations of the building footprint. Building height calculation shall not include chimneys, spires, elevator and mechanical penthouses, water tanks, radio antennas, and similar projections.

PARAPET – The portion of a wall which extends above the roofline.

By definition, a parapet is a part of a wall. It is not a part of the roof. Accordingly, the proposed building’s height in feet was correctly calculated as less than the 120 foot maximum standard. Specifically, the halfway point between the highest and lowest elevations of the building measured from ground level to the flat roof is less than 120 feet.

The following graphic is clipped from Article 1351.01 “Standards” identifying additional exemptions to the B-4 District maximum building height in feet standard.

1351.01 STANDARDS.

(A) Chimneys, cooling towers, elevator bulkheads, fire towers, penthouses, stacks, tanks, water towers, transmission towers, or essential mechanical appurtenances, may be erected to any height not prohibited by other laws or ordinances.

The exemptions from determining building height in feet and the additional exemptions from the maximum 120 feet height standard within the B-4 District are mechanical type appurtenances or architectural elements (i.e., spire) that rise above the plain of the roof and/or erected on the plain of the roof. The term “parapet” is not included because a parapet is a part of a wall and not a part of a roof as defined.

3. What is the resolution to the conditions that West Virginia Division of Highways (WVDOH) listed in their review of the applicant’s Traffic Impact Study?

Attached hereto is a memorandum from City Engineer Damien Davis, P.E. addressing WVDOH’s conditions included in its approval of the subject Traffic Impact Study (TIS).



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The following graphic is clipped from Article 1385.08 "Type III: Planning Commission Review of Developments of Significant Impact."

(D) For development which, in the opinion of the City Engineer, may create excessive negative impacts on traffic and/or dedicated City roadways, rights-of-way, or improvements in the immediate vicinity that serve the use, the City may require an analysis of the proposed development's impact on current or future traffic flows and/or dedicated City roadways, rights-of-way, or improvements, as the developer's expense, prepared by a qualified professional engineer. The Planning Commission may also table consideration of a development and refer such developments to the City Engineer to ask his or her opinion as to whether a traffic impact study, transportation route plan, and/or transportation route protection agreement may be warranted.

- (1) Traffic Impact Study. If the traffic impact study indicates that the projected traffic impact of the use would result in a two (2) full letter grade decline in the existing Level of Service (e.g., going from a Level of Service B to a Level of Service D) of any dedicated City street directly serving the use, such finding may be considered sufficient grounds for denial of the project, or a requirement that sufficient improvements be made to said streets, at the developer's expense, or that the project be reduced in size and scope to the point where no such negative impact on the Level of Service results. Level of Service refers to the traffic grading system described in the latest edition of the Highway Capacity Manual, published by the Transportation Research Board.
- (2) Approved WV Division of Highways Permit and/or Agreement, if applicable, is not required for Planning Commission site plan review, but shall be required prior to issuance of a building permit. In the event a traffic analysis or traffic impact study is required and the review of same involves WV Division of Highways, written/electronic correspondence from the WV Division of Highways documenting its approval of the traffic analysis or traffic impact study must be presented to the Planning Commission by the applicant prior to DSI site plan approval.

Paragraph (D)(2) requires DSI developers to submit evidence demonstrating WVDOH's approval of a Traffic Impact Study, when applicable. The subject applicant has fulfilled this obligation.

Paragraph (D)(1) establishes the grounds on which the Planning Commission may deny a DSI application, require roadway improvements, or require a reduction in the development's size and scope. The threshold at which point the Planning Commission may exercise this authority is when the TIS indicates that the projected traffic impact of the development would result in a two (2) full letter grade decline in the Level of Service (LOS) of any dedicated City street directly serving the use.

The TIS prepared by Trans Associates and approved by WVDOH indicates that the LOS of all intersections affected by the subject development should be no worse than the LOS before the



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new facility opens. Only the westbound Walnut Street left/through at University Avenue is anticipated to degrade from a LOS D to a LOS E and signal retiming was identified as a recommended mitigation.

The TIS concluded that the subject development will have minimum traffic impact on the surrounding intersections if recommended mitigation is provided. WVDOH concurred in its approval and included appropriate mitigation measures as conditions.

4. How will the pedestrian bridge be included in this project and when will it be constructed?

Please see memorandum from City Engineer Damien Davis, P.E. responding to related pedestrian circulation matters raised by the Planning Commission under Item 7 below. Of particular note is the concurring determinations by the City Engineer and WVDOH that existing pedestrian facilities are sufficient to accommodate the projected pedestrian trips to and from the development.

City Administration commissioned a physical feasibility review to identify pedestrian bridge alignment options given the fact a City parking garage is located across University Avenue from the subject development site. Attached hereto is memorandum from Samer Petro, P.E. of HRG dated 05 FEB 2016 presenting six (6) alignment options and probable project costs.

This physical feasibility review was not a demand or needs analysis to determine whether a grade separated crosswalk (i.e., pedestrian bridge) is warranted based on pedestrian crossing impact on the LOS of affected intersections. The demand or needs analysis was performed by Trans Associates and reported in its May 2015 TIS, which was approved by WVDOH.

The following graphic is clipped from Article 1327.10 "Conditions."

1327.10 CONDITIONS.

The attachment of reasonable conditions to the use and development of land within the City as part of the approval of conditional uses, home occupations, temporary uses, variances, outline plans, development plans, plat vacations and amendments, or as otherwise authorized, is an exercise of valid police power delegated to the City by the State. The applicant has the duty of compliance with reasonable conditions laid down by the Planning Commission for design, dedication, improvement, and restrictive use of the land in order to conform to the physical and economical development of the City and to the safety and general welfare of present and future landowners and citizens of the City. The failure to comply with any such conditions may be cause for denial or revocation of the permits and approvals prescribed by these regulations and shall constitute a violation of the Zoning Ordinance.



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Article 1327.10 authorizes the Planning Commission to include conditions in its approval but it also restricts this authority to “reasonable conditions.” The term “reasonable” is debatable but the Planning Commission is obligated to establish justification or a rational nexus between a condition and the safety and general welfare of present and future landowners and citizens of the City.

Any condition requiring the developer to fund, in whole or in part, and/or construct a pedestrian bridge would not be considered a reasonable condition. Specifically,

- The analysis, findings, conclusions, and WVDOH approval of Trans Associates’ Traffic Impact analysis determined that existing pedestrian facilities are sufficient to accommodate the projected pedestrian trips to and from the development. In other words, a grade separated pedestrian crossing is not warranted.
- WVDOH has confirmed it does not want the foundation/piers of the pedestrian bridge structure located within WVDOH right-of-way, which may require acquisition of private property on the east side of University Avenue to construct a pedestrian bridge.
- The probable project costs identified by HRG are significant.
- The design of a pedestrian bridge must address accessibility requirements and “viewshed” considerations in terms of visibility and sight lines for overhead roadway signage and traffic control devices along with architectural aesthetic integration. Such matters require significant coordination with multiple public and private entities beyond the project delivery control of the developer.

A condition to this effect might be considered reasonable if the TIS and/or WVDOH determined that there was insufficient capacity for pedestrian crossings and a pedestrian bridge was an appropriate mitigation measure. This condition would be analogous to appropriate mitigation conditions like roadway improvements, tubular lane markers, lane striping, signal retiming, etc.

City Administration, as evidenced by the commissioning of the HRG physical feasibility review, engaged the developer from its earliest discussions to incorporate design elements for a pedestrian bridge to land at or on the subject development site (west side of University Avenue). The developer worked with HRG to identify alignment options including modifications to proposed development program. City Administration understands the developer has and will continue to consider design options that would provide a direct connection into the proposed building in addition to a public access point at grade, if, at a time in the future, construction of a pedestrian bridge is pursued.

5. What is the resolution to utilities present within the Wall Street right-of-way proposed for annulment?

On 16 FEB 2016, City Council passed Ordinance 16-11 to annul the subject portion of the Wall Street right-of-way. This decision should address the Planning Commission’s matter concerning existing or potential utilities within the subject right-of-way.



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6. There needs to be a housing capacity study done in partnership with WVU and the City of Morgantown to inform the appropriateness of this development.

The evaluation of the appropriateness of any development, in terms of need, is a function rightly performed in the marketplace. It is the fiscal responsibility of the developer and investor to investigate the details of a potential investment, verify material facts, and determine acceptable risk. This due diligence is largely based on an understanding of market demand, supply, and opportunity (capture rate); measuring cost estimates (pro forma); and, identifying financing options.

It is also the responsibility of the developer and investor to understand market absorption for their particular product. In this instance, an understanding of the type of housing students consider desirable (e.g., housing type, location, layout, amenities, age, quality, price points, etc.) is imperative.

It is common knowledge that West Virginia University is committed to the goal to grow to 40,000 students with emphasis on student retention. It is also common knowledge that the University has relied heavily on the private marketplace to house the majority of its student population. City Administration has received no indication of changes in these outlooks.

It is not the responsibility of the City's Planning and Zoning Code or its administrators to determine the market viability or market capacity appropriateness of a development. The Code and its administrators are obligated to operate within the confines of the regulations intended to address the physical attributes and performance and impact of a development to promote the public health, safety, comfort, convenience and general welfare of the City. Furthermore, no enabling legislation exists to permit local zoning regulations or its administrators to consider market capacity when granting approvals, granting conditioned approvals, or denying development applications.

7. What is the traffic solution as a result of this development? There needs to be an official opinion from the City Engineer as well as a summary of pedestrian movements across the street and how many minutes delay there will be during rush hour as a result of the street being blocked by pedestrian crossings.

Attached hereto is a memorandum from City Engineer Damien Davis, P.E. with two (2) related communications from Robert Goetz, P.E. of Trans Associates dated 22 JAN 2016 addressing pedestrian trips generated by the proposed development.

8. What is the appearance of the retail and commercial going to be along University Avenue? How will it be inviting to passers-by and serve the community rather than the residents of the development?

The Commission's consideration of the appearance and function of the commercial and nonresidential spaces along University Avenue should be directed toward the petitioner. The



Development Services

389 Spruce Street
Morgantown, WV 26505
304.284.7431

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undersigned encourages the Commission to recognize the petitioner during the hearing to explore this matter.

9. Does the proposed development meet the Fire Code?

The City Fire Marshal's Office is the authority having jurisdiction of plans review, conformity determination, and approval under the Fire Code. The Fire Code is not within the administration or oversight jurisdiction of the Planning Commission or the Board of Zoning Appeals. The Planning and Zoning Code does not require Type III Site Plan applications for Developments of Significant Impact (DSI) to demonstrate Fire Code compliance. Further, a Type III Site Plan approval by the Planning Commission simply establishes a vested right for the developer to proceed with further design and to seek approvals of related building permit application(s). Building permits may not be issued if compliance with the Fire Code or the Building Code is not accomplished.

Atts: Memorandum from Damien Davis, P.E., City Engineer dated 02 MAR 2016
Memorandum from Samer Petro, P.E., of HRG dated 05 FEB 2016

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ATTACHMENT

Memorandum from
Damien Davis, P.E.
City Engineer
dated 02 MAR 2016

Memo

City of Morgantown Department of Public Works and Engineering

To: Chris Fletcher, AICP
Director of Development Services

From: Damien Davis, PE 
Director of Public Works/City Engineer

Subject: Review of TIS for "The Standard"

Date: March 2, 2016

Chris,

In response to questions raised during the December 10, 2015 Planning Commission Meeting regarding the "The Standard" development I offer you the following:

3. What is the resolution to the conditions that West Virginia Division of Highways (WVDOH) listed in their review of the applicant's Traffic Impact Study?

The applicant will need to include the conditions required by the WV DOH's review of their Traffic Impact Study (ie. tubular markers on University, signal head at Walnut, lane restriping on Willey and retiming) into their construction plans. The City of Morgantown and the WV DOH District 4 Office will review the applicant's constructions plans for compliance with all State and City requirements and conditions. All requirements and conditions must be met before the applicant can receive Building Permits from the City or an Encroachment and/or Utility permits from the State.

The WV DOH's conditions from their review of the Traffic Impact Study are equivalent to the reasonable conditions the Planning Commission may set forth in moving this project forward.

7. What is the traffic solution as a result of this development? There needs to be an official opinion from the City Engineer as well as a summary of pedestrian movements across the street and how many minutes delay there will be during rush hour as a result of the street being blocked by pedestrian crossing?

The WV DOH personnel in Charleston and I have reviewed and accepted the applicant's Traffic Impact Study. Furthermore the applicant's engineer has submitted a memo clarifying their findings regarding the impact pedestrians will have on the operations of the intersection (See attached). From the review of the submitted material, the City and the WV DOH concur that the existing pedestrian facilities are sufficient to accommodate the projected pedestrian trips to and from the development.



January 22, 2016

Christopher M. Fletcher, AICP
Director of Development Services
City of Morgantown
389 Spruce Street
Morgantown, WV 26505

Re: The Standard at Morgantown
University Avenue Pedestrian Accommodations

Dear Mr. Fletcher,

The purpose of this letter is to respectfully and formally respond to the concerns of the Planning Commission regarding the pedestrian accommodations on University Avenue and the impact of pedestrian traffic on the roadway network's traffic operations.

Based on the *Traffic Impact Study for the Standard at Morgantown Student Apartment Development* by Trans Associates dated October 2015, pedestrian traffic volumes generated by the proposed development will not have a material impact on the operation of the existing roadway network. The existing signalized intersections have pedestrian signals and crosswalks. All of the signalized intersections provide adequate capacity for the pedestrian traffic that will be generated by the proposed development. The traffic signals allocate adequate time for pedestrian and vehicular movements to operate at acceptable levels of service. The marked crosswalks provide sufficient width to allow the anticipated flow of pedestrian traffic to safely navigate the intersections.

Due to the proximity of the proposed building's main entrance to the existing pedestrian crosswalks at Walnut Street/University Avenue (200') and at Fayette Street/University Avenue (264'), pedestrian traffic destined for either campus or High Street is expected to utilize the crosswalks at those signalized intersections. Based on the anticipated volumes of pedestrian traffic generated by the Standard detailed in the enclosed memo and the existing capacity at the nearby intersection, a pedestrian bridge is not warranted based on pedestrian volume at this location.

Unlike the midblock pedestrian crossing at Grumbein's Island, where there is not a traffic signal directing the heavy pedestrian volume, the Standard has direct access to nearby crosswalks at signalized intersections.

The attached technical memorandum summarizes the methodology, calculations and output from the *Traffic Impact Study for the Standard at Morgantown Student Apartment Development* by Trans Associates. The technical memorandum details the pedestrian impacts and the DOH approval conditions.

If you would like to discuss this issue in further detail, please contact me at (412) 490-0630.



Mr. Christopher M. Fletcher, AICP
January 22, 2016
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Sincerely,

A handwritten signature in black ink that reads "Robert Goetz". The signature is written in a cursive style with a prominent "R" and "G".

Robert E. Goetz, P.E.
Principal

REG:reg

Enclosure

cc: Jason Doornbos, Landmark Collegiate Acquisitions, LLC
Jon Williams, Williams & Associates, PC
Mike Greenlee, Williams & Associates, PC
File: landm02/15115/Correspondence/Letter of Transmittal of 1-22-16 Morgantown Memo



Twin Towers, Suite 400, 4955 Steubenville Pike,
Pittsburgh, Pennsylvania 15205
Phone: (412) 490-0630 / Fax: (412) 490-0631

Memo

To: Damien Davis, P.E. – City of Morgantown; Chris Fletcher, AICP – City of Morgantown
cc: J. Doornbos – Landmark Collegiate Acquisitions; M. Greenlee, P.E., PTOE – Williams and Associates; J. Treiber – BKV Group; File:w/landm02/15115/Memos
From: Robert Goetz, P.E.
Date: January 22, 2016
Re: Standard at Morgantown Traffic Impact Study; Pedestrian Impacts and DOH Approval

The purpose of this memo is to clarify the impact of pedestrian traffic generated by the Standard at Morgantown student housing development and to clarify the conditional approval of the Traffic Impact Study for the project granted by the West Virginia Division of Highways (DOH).

Pedestrian Impacts

Trans Associates' (TA) Traffic Impact Study (TIS) revised August 2015 included weekday AM and PM peak hour projections of pedestrian traffic generated by the development at the 13 existing study intersections. Pedestrian trips for the development were determined as follows:

- Total trips for the development were based on Institute of Transportation Engineers (ITE) *Trip Generation Manual* (2012) data for apartments and retail.
- Vehicular trips for the development were based on *Trip Generation Study for Private Student Housing* data prepared by Spack Consulting dated 4/12/12. This study has been accepted by ITE.
- Pedestrian trips were determined by the difference between the total trips and vehicular trips.

The DOH agreed with this methodology. The projected number of pedestrian trips generated by the development was 82 during the AM peak hour and 61 during the PM peak hour. The pedestrian trips were distributed through the study intersections based on principal destinations such as the WVU Downtown campus and the PRT station. The AM and PM peak hour pedestrian trips are presented in Figure 10 in the TIS which is attached to this memo. As shown on the figure, approximately one-half of the pedestrian trips were routed to the PRT station and one-half were routed to the WVU Downtown campus. These trips were added to existing pedestrians counted by TA.

It is noted that six of the nine signalized study intersections operate with pedestrian actuated exclusive pedestrian phases, i.e. all vehicular traffic is stopped while "Walk" indications are displayed. At the remaining three signalized study intersections pedestrians cross concurrently with vehicular traffic. The six intersections with exclusive pedestrian phases, along with the duration of the signal cycle length, exclusive

pedestrian phase length per cycle and the total minutes per hour allotted to the pedestrian phase, if called every signal cycle, are as follows:

Study Intersections With Exclusive Pedestrian Phases

Intersection	AM / PM Peak Hour Cycle Length	Exclusive Pedestrian Phase Length	Cumulative Minutes per Peak Hour if Ped Phase Actuated Every Cycle
University Avenue and Walnut Street	115 seconds	15 seconds	7.8 minutes
Willey Street and Spruce Street	85 seconds	14 seconds	9.9 minutes
Willey Street and High Street	85 seconds	14 seconds	9.9 minutes
Pleasant Street and Spruce Street	85 seconds	15 seconds	10.6 minutes
Pleasant Street and High Street	85 seconds	15 seconds	10.6 minutes
Walnut Street and Spruce Street	85 seconds	15 seconds	10.6 minutes

It is important to note that the cumulative minutes per hour shown in the table assume that the pedestrian phase is called every signal cycle. In reality, based on TA's observations, the exclusive pedestrian phases are not called every signal cycle, particularly outside the AM and PM peak hours.

Based on observations of the signal operations, the exclusive pedestrian phase was called on more than a sporadic basis at the following three intersections:

- University Avenue and Walnut Street
- Willey Street and Spruce Street
- Willey Street and High Street

Therefore, the analysis in the TIS assumed that the exclusive pedestrian phases at these three intersections were called every cycle.

A capacity analysis of the study intersections was performed without and with the additional pedestrian and vehicular trips generated by the development. The results of that analysis concluded that even with the additional pedestrians and vehicles generated by the development, minimal increases in overall delay were incurred to vehicular traffic at the study intersections.

Based on TA's analysis, the additional pedestrian traffic generated by the development can be accommodated at the study intersections without mitigation beyond that already recommended in the TIS.

DOH Approval

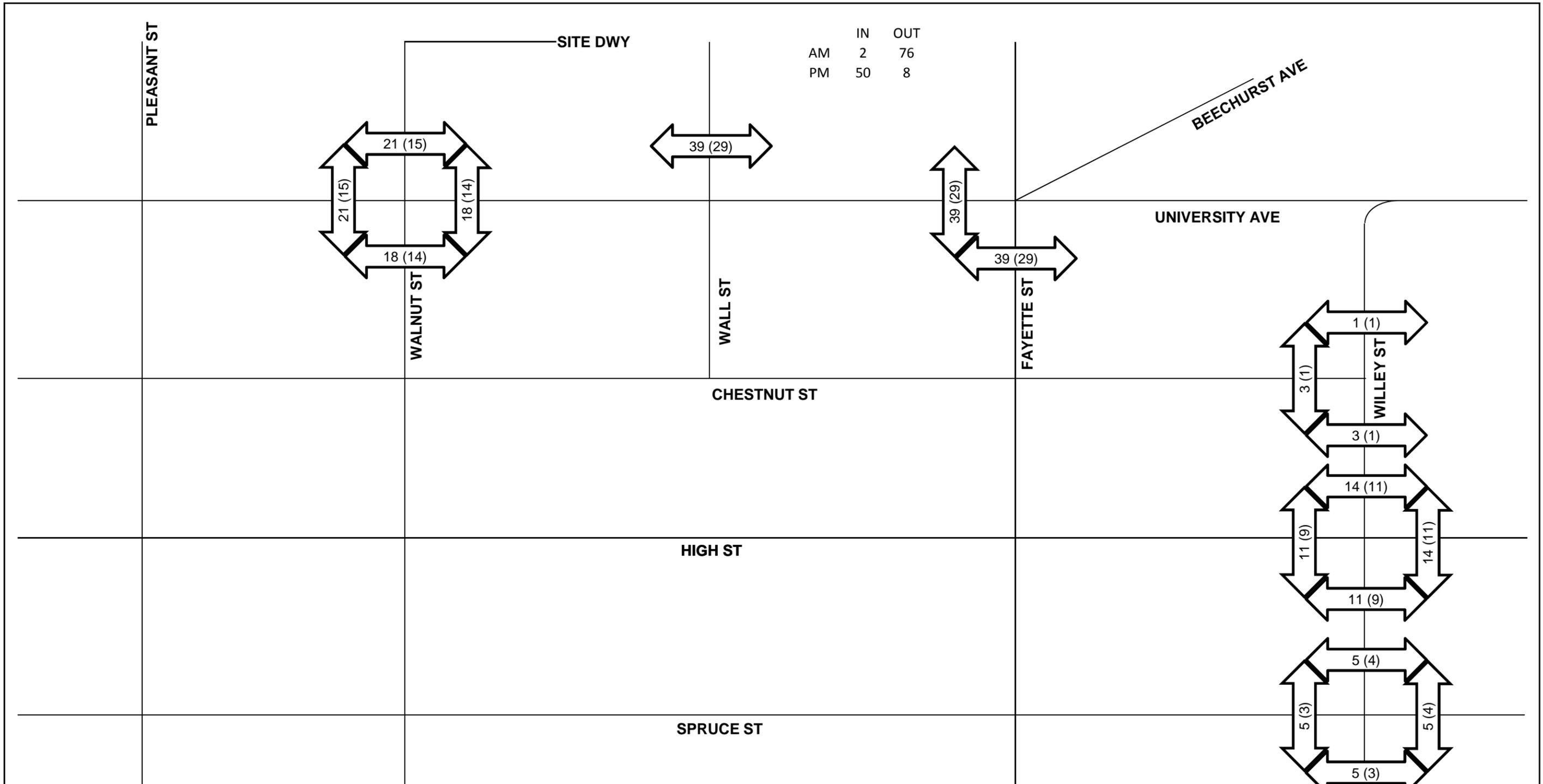
The DOH's letter dated September 21, 2015 provides conditional approval of the TIS subject to several stipulations. Those stipulations and TA's response to / clarification of them, are as follows.

- The DOH requested additional narrative or analysis that considers retiming the coordinated signal system including cycle lengths. TA performed an additional evaluation that optimized signal timing and cycle length and determined that the current cycle length along University Avenue during the AM and PM peak hours was already optimized at 115 seconds. The remaining study intersections off University Avenue were also reevaluated and the analysis calculated a shorter cycle length than the existing 85 seconds may be optimal. Upon further review, the shorter cycle length resulted in minimal reductions to queue length (one car in some cases) and would not be practical particularly when exclusive pedestrian phases are actuated. Therefore, TA recommended that the existing signal system timings be retained.

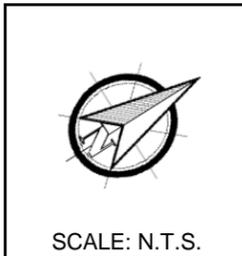
- The DOH reserves the right to restrict the northbound left turn movement from the inside lane on University Avenue onto Walnut Street and the site driveway should this movement experience more traffic than what was projected in the TIS. TA acknowledges this stipulation.
- The developer's plan should include tubular markers along University Avenue at the proposed right-in/right-out access to the site. The developer has agreed that tubular markers will be provided as part of the driveway permit application.

The DOH's conditional approval can be compared to a planning-level approval where the permitting of the agreed-upon recommendations and their implementation represents the final approval.

This concludes TA's clarification of the impact of pedestrian traffic generated by the Standard at Morgantown student housing development and the conditional approval of the Traffic Impact Study for the project granted by the DOH. Should you have any questions, please contact me.



Legend
 - Pedestrian Crossing
 10 - AM Peak Hour Pedestrian Volume
 (10) - PM Peak Hour Pedestrian Volume




Transportation Solutions for Today and Tomorrow
 4955 Steubenville Pike / Suite 400
 Pittsburgh, Pennsylvania / 412 - 490 - 0630

PROJECT NO:	LANDM02-15115
PROJECT:	Standard at Morgantown Student Apartment Development TIS
TITLE:	Site Generated AM and PM Peak Hour Pedestrian Trips

FIGURE	10
D.B. MJY C.B. MDS REV.	

ATTACHMENT

Memorandum from
Samer Petro, P.E.
Herbert, Rowland & Grubic, Inc. (HRG)
dated 05 FEB 2016

MEMORANDUM

TO: Damien Davis, P.E.
Chris Fletcher, AICP

FROM: Samer H. Petro, P.E.

DATE: February 5, 2016

RE: University Avenue Pedestrian Bridge

Herbert, Rowland & Grubic, Inc. (HRG) provides this memorandum to update our January 7, 2016 PRELIMINARY recommendations regarding the proposed pedestrian bridge spanning University Avenue for a planned large-scale redevelopment in downtown Morgantown. This memorandum has been updated to incorporate comments received from City Engineering department.

As noted in our January 7, 2016 memo, we have met with the redevelopment civil/site engineer, Gregory Foreman, P.E. of CTL Engineering. During this meeting, it was discussed that access will not be provided directly from the proposed building to the pedestrian bridge. Allowing access directly from the proposed building to the bridge would require pedestrians and the general public to enter the building at all times. Thus requiring a comprehensive safety and security plan.

Additionally, it was discussed that the emergency generator and transformers located adjacent to the proposed building's access driveway on University Avenue cannot be easily relocated. This limits the area available to construct a foundation or access building for the pedestrian bridge.

Our review is based on The Standard at Morgantown October 2, 2015 Planning Commission Submission drawings and an architectural plan view provided by Mr. Foreman on January 6, 2016, which will be referred to as the Drawings.

A. Pedestrian Bridge Location

Six (6) alignment options have been considered. A description of each option is provided below. Please refer to the exhibits located in Appendix A-D for a graphical representation of each option.

• **Option No. 1:**

This option consists of an approximately 80 foot span pedestrian bridge located on the north side of Wall Street and normal to University Avenue. The proposed bridge would be supported by pier wall foundations on each side of University Avenue. Small buildings (for example, 22 feet x 22 feet) will be required at each end of the bridge to house elevators and stairwells which will allow pedestrians to access the pedestrian bridge at grade level. This alignment would provide an ADA compliant route that would not impact or require modifications to the existing parking garage. Therefore, Option No. 1 is considered to be the most likely alignment for the proposed pedestrian bridge (Preferred Alignment).

An important consideration for this option is that a portion of the parking area north of Wall Street will need to be acquired to accommodate the location of the bridge foundation and a building to house the elevator/stairwell. Right-of-way will also be required for the elevator/stairwell building on the west side of University Avenue, but for the purposes of this memorandum, it is assumed that the required right-of-way would be dedicated to the City by the developer.

- **Option No. 1A**

This option is similar to Option No. 1 discussed above, but the alignment of the pedestrian bridge has been skewed to allow the bridge foundation and elevator/stairwell building on the east side of University Avenue to be located within the Wall Street right-of-way.

Providing a skewed bridge will allow the bridge foundation and elevator/stairwell building on the east side of University Avenue to be located within the City's right-of-way thus eliminating the need to acquire a portion of the parking lot discussed under Option No. 1. However Option No. 1A will require the relocation of the underground utilities (sanitary sewer and possibly gas) currently occupying the Wall Street right-of-way.

- **Option No. 2:**

This option is similar to Option No. 1 discussed above, but the alignment of the pedestrian bridge has been skewed to allow access to the bridge on the west side of University Avenue from a stairwell constructed between the building and the roadway. To avoid conflict with the existing parking garage foundations and sanitary sewer lines, the proposed elevator/stairwell building has not been located within the Wall Street right-of-way.

As shown by the plan view exhibit in Appendix B, there is insufficient space between the proposed building and roadway to construct a building large enough to house the elevator. There is approximately 12 feet from the proposed building to the edge of the curb. The result is that only stair access to the pedestrian bridge would be available on the west side of University Avenue, so there would not be an ADA compliant route. Due to the limited width between the proposed building and the edge of curb (approximately 12 feet), Option No. 2 is not considered to be a likely alignment.

- **Option No. 2A:**

This option is similar to Option No. 2 discussed above, but the alignment of the pedestrian bridge has been skewed to allow the bridge foundation and elevator/stairwell building on the east side of University Avenue to be located within the Wall Street right-of-way.

Providing a skewed bridge will allow the bridge foundation and elevator/stairwell building on the east side of University Avenue to be located within the City's right-of-way thus eliminating the need to acquire a portion of the parking lot that would be required with Option No. 2. However Option No. 2A will require the relocation of the underground utilities (sanitary sewer and possibly gas) currently occupying the Wall Street right-of-way and there will not be an elevator/stairwell on the west side of University Avenue because of space constraints. Due to these factors, Option No. 2A is not considered to be a likely alignment.

- **Option No. 3:**

This option consists of an approximately 70 foot span pedestrian bridge. The proposed bridge would be supported by a pier foundation wall at each end and would allow access directly from the existing parking garage to the pedestrian bridge on the east side of University Avenue.

Access on the west side of University Avenue would only be available through the stairwell as described under Option No. 2.

This option would also require a modification to the existing parking garage structure to allow access to the pedestrian bridge. As we understand that the parking garage is a post-tensioned concrete structure, which could make modifications to this structure undesirable. Additionally there may not be an ADA compliant accessible route for pedestrians once they have entered the parking garage. Due to these factors, Option No. 3 is not considered to be a likely alignment.

- ***Option No. 4:***

This option is similar to Option No. 2 discussed above, but the alignment is located on the north side of Walnut Street. As this option requires the construction of the elevator/stairwell building to access the bridge, the access building would be constructed directly in front of the existing building at the corner of Walnut Street and University Avenue and will require significant right-of-way acquisition. Additionally, there is a utility pole on the corner of Walnut Street and University Avenue that will require significant cost to relocate. Therefore, Option No. 4 is unlikely.

B. Accessible Route (ADA) Considerations

Due to the limited space available for the construction of the elevator/stairwell building on the west side of University Avenue, an ADA compliant accessible route cannot be incorporated into the design of the pedestrian bridge for Option Nos. 2 through 4.

The alignments for Option No. 1 and Option No. 1A appears to provide sufficient space for the elevator/stairwell building at each end of the pedestrian bridge and will therefore allow an ADA compliant accessible route. Coordination with the building architect will be required to ensure the proposed building to house the elevator/stairwell to the access the pedestrian bridge will not project vertically and interfere with the proposed building facade.

C. Pedestrian Bridge Structure Design Considerations

- Applicable current standards including the International Building Code and the AASHTO Specifications for the Design of Pedestrian Bridges will likely be used, in addition to all applicable City codes. As the pedestrian bridge could potentially serve as a building exit and will likely be located within the West Virginia Division of Highways (WVDOH) right-of-way, the building code official and the WVDOH will be consulted to develop a consensus for the design standards and specifications.
- A minimum width of 10 feet will be considered to provide an ADA compliant route.
- A steel truss superstructure with concrete deck spanning approximately 80 feet is anticipated. The superstructure may be enclosed or open.
- The desired finish of the steel superstructure must be determined. Options commonly available are painted, galvanized, or weathering steel. Each option has advantages and disadvantages that should be considered. However weathering steel is an option that may be excluded from further consideration due to the possibility of staining adjacent surfaces from the weathering steel.

- The bridge superstructure will likely be supported by concrete pier foundations that are isolated from the adjacent structures.
- Coordination between the proposed pedestrian bridge foundation locations and foundations of existing structures will be required. A subsurface geotechnical investigation will also be required and conducted to determine the recommended foundation for the bridge and associated design parameters. Additionally, a geotechnical consultant should determine if any impacts to existing foundations are anticipated due to loads from the pedestrian bridge foundations. Review of existing parking garage drawings is required (provided to HRG).

D. Impacts to Adjacent Areas

In consideration of impacts to adjacent areas, the following items have been identified:

- There will be a loss of parking in the lot north of Wall Street with Option Nos. 1 and 2. It is also likely that parking in this area will be disrupted during construction activities.
- With Option No. 4, the stairwell/elevator building would block the front of the building on the corner of University Avenue and Walnut Street.
- The pedestrian bridge may limit visibility of the overhead traffic signs across University Avenue in this area, and these signs will likely need to be relocated. It may be possible for the signs to be attached directly to the pedestrian bridge.
- It is likely that visibility of the traffic light at the intersection of University Avenue and Walnut Street would be limited with Option No. 4.

E. Impacts Due to Construction

- Due to the limited area for construction staging, it is likely that Wall Street will need to be temporarily shut down throughout construction to utilize this area for construction staging.
- It is anticipated that traffic control measures will be required on University Avenue during the erection and placement of the prefabricated superstructure, as well as the construction of the substructure units, using a crane or multiple cranes.

F. Utilities

- Relocation of the overhead electric lines will be required on the west side of University Avenue. The Drawings indicate that the overhead electric will be relocated underground.
- The Drawings show gas valves near the intersection of Wall Street and University Avenue on the parking garage side but do not show any gas lines. For Option Nos. 1, 1A, 2 and 2A, an investigation will be required to determine the location(s) of buried gas lines and relocation may be required.
- The Drawings show buried utility lines (gas and electric) along the west side of University Avenue. Due to the close proximity of the proposed building with the roadway, these lines may require relocation for Option No. 4 or the locations available for the pedestrian bridge foundations may be limited with this option.

G. Opinion of Probable Project Cost

The following tables present the preliminary opinion of probable project cost for Option Nos. 1 (Preferred Alignment), 1A, 2, and 2A. Please note that these estimates are only an approximation at this time and must be refined once additional information is available.

We have based the cost for the pedestrian bridge superstructure and foundation on a comparable pedestrian superstructure/substructure project, as well as, information provided by a pedestrian bridge manufacturer, Contech. We have used current bid results for a project in the PennBID system to determine the estimated elevator cost.

Additionally, as noted in the tables, we have used assumed values for right-of-way acquisition and utility relocation for the purposes of this study. Further evaluation will be required once more refined costs are available. For example, different flow paths for the sanitary sewer should be evaluated to determine the best point of connection considering the capacity available and cost effectiveness.

Based on the tables below, the preliminary opinion of probable project cost is in the range of \$800,000 to \$1,300,000.00

OPINION OF PROBABLE PROJECT COST OPTION NO. 1 (Preferred Alignment)				
Description	Quantity	Unit	Unit Cost	Extended Cost
Mobilization/Traffic Control	1	LS	\$50,000	\$50,000
Pedestrian Bridge Superstructure & Foundation	1	LS	\$175,000	\$175,000
Elevator Buildings ⁽¹⁾	968	SF	\$200	\$193,600
Elevator	2	EA	\$150,000	\$300,000
Right-of-way Acquisition ⁽²⁾	1	LS	\$25,000	\$25,000
Subtotal				\$743,600
Contingency	30%			\$223,080
Legal, Engineering, & Administration	25%			\$185,900
Probable Total Project Cost				\$1,152,580
1. Assumes two buildings that are each 22 foot square to house an elevator and stairwell. 2. Assumed value for parking area lost due to elevator/stairwell building north of Wall Street.				

OPINION OF PROBABLE PROJECT COST OPTION NO. 1A (Alternate Alignment)				
Description	Quantity	Unit	Unit Cost	Extended Cost
Mobilization/Traffic Control	1	LS	\$50,000	\$50,000
Pedestrian Bridge Superstructure & Foundation	1	LS	\$175,000	\$175,000
Elevator Buildings ⁽¹⁾	968	SF	\$200	\$193,600
Elevator	2	EA	\$150,000	\$300,000
Utility Relocation ⁽²⁾	460	LF	\$250	\$115,000
Subtotal				\$833,600
Contingency	30%			\$250,080
Legal, Engineering, & Administration	25%			\$208,400
Probable Total Project Cost				\$1,292,080
1. Assumes two buildings that are each 22 foot square to house an elevator and stairwell. 2. Assumed length of relocation equal to distance along Wall Street between University Avenue and Chestnut Street and the intersection of Wall and Chestnut Streets to Walnut Street.				

OPINION OF PROBABLE PROJECT COST OPTION NO. 2 (Alternate Alignment)				
Description	Quantity	Unit	Unit Cost	Extended Cost
Mobilization/Traffic Control	1	LS	\$50,000	\$50,000
Pedestrian Bridge Superstructure & Foundation	1	LS	\$175,000	\$175,000
Elevator Buildings ⁽¹⁾	484	SF	\$200	\$96,800
Elevator	1	EA	\$150,000	\$150,000
Right-of-way Acquisition ⁽²⁾	1	LS	\$25,000	\$25,000
Subtotal				\$496,800
Contingency	30%			\$149,040
Legal, Engineering, & Administration	35%			\$173,880
Probable Total Project Cost				\$819,720
1. Assumes one building that is 22 foot square to house an elevator and stairwell. 2. Assumed value for parking area lost due to elevator/stairwell building north of Wall Street.				