

Downtown Columbia Transit Center – Location and Site Analysis Study

October 2017

Prepared by:

Howard County Office of Transportation



And:



Executive Summary

The Howard County Office of Transportation (OoT) initiated this Location and Site Analysis Study (Study) for the relocation, expansion, and reconfiguration of the existing Downtown Columbia Transit Center to serve as the central hub for future county and regional transit services. The purpose of this Study was to:

- Identify a preferred site, size and location for the new transit center;
- Estimate the number of bus bays that the transit center would need, including those to accommodate future BRT service;
- Develop site and transit center concepts to meet future needs;
- Provide estimates of improvement costs.

The existing Downtown Columbia Transit Center is located close to the Columbia Mall, in downtown Columbia on land owned by General Growth Properties (GGP). The transit center serves eight local Regional Transportation Agency (RTA) routes. The Maryland Transit Administration (MTA) operates six commuter and express routes at a separate location by the Mall's southwestern parking areas. The Columbia Transit Center has no commuter parking associated for RTA routes; however, the MTA has existing parking agreements with GGP for commuter customers.

Numerous studies, documents, and adjacent projects affect the future transit center including:

- Downtown Columbia Plan
- Development Rights and Responsibilities Agreement (DRRA)
- Downtown Columbia Development Memorandum of Understanding (MOU)
- Downtown Columbia Downtown Transit Center and Circulator Shuttle Feasibility Study
- Central Maryland Transit Development Plan
- US 29 Bus Rapid Transit
- Howard County Bikeshare Pilot Program
- Columbia Mall Redevelopment
- MTA Commuter Bus Growth and Investment Plan

The key implications of these past studies and other input into this Study for the transit center location and design are as follows:

- The Downtown Columbia Plan requires GGP¹ to provide a location for the transit center prior to issuance of a building permit for the 1.3 millionth square foot of development, which is expected by the end of 2017.
- The transit center needs to be in a central location, convenient to multiple transportation modes including local bus, regional bus, car, ridesharing services, biking, and walking.
- The center location, design, and layout need to consider future bus rapid transit.
- The transit center site will ultimately be developed by the Howard County Housing Commission as mixed use, mixed-income residential project. County Council expectations for the center are for it to be a part of a state-of-the art, well-designed, mixed-use development.
- The transit center portion of the project is intended to be funded from the Downtown Columbia property tax increment, not by the TIF. The residential component is intended to be funded by the

¹ References in the Downtown Plan to General Growth Properties now refer to Howard Hughes Corporation.

Housing Commission, utilizing Low Income Housing Tax Credits and other traditional sources of mixed income housing finance. A public parking component of the project is anticipated to be funded with TIF proceeds.

- Timing of the transit center needs to take into consideration longevity of the existing transit center, initiation of BRT service, Howard Hughes master development plans, Housing Commission interests and capacity, and availability of County funding.

The Study finds that the transit center will need the following accommodations to meet current and long-term needs:

- 14 bus bays
 - 8 bays for existing RTA routes
 - 2 bays for future RTA routes
 - 2 bays for MTA routes
 - 2 bays for BRT routes
- Sheltered waiting areas
- Bicycle parking facilities
- Transit information booth
- Break time accommodations for transit operators including restrooms
- Real-time service information (screens, audio)
- Commuter parking for MTA routes, as applicable

The Study included an alternatives analysis to determine the best location options for the transit center. The Study evaluated 10 sites using the following criteria: landowner; existing use; future use of location/surrounding land; location; parcel size; type of adjoining properties; proximity to activity centers; north/south of Little Patuxent Parkway; transit operating access to/from regional road network, including BRT; vehicular/pedestrian impacts; developer input.

From the Alternatives Analysis, sites 3 and 5 were selected for further investigation with conceptual designs. Site 3 is on the south side of the Mall Ring Road along Little Patuxent Parkway (near Union Jacks pub/restaurant) and is the recommended long-term, permanent site. This recommendation is consistent with the DRRA and the MOU. Site 5, along the Mall ring road, is a potential shorter-term alternative should the need for a Transit Center become great before Site 3 becomes available.

Two design concept options were developed for Site 3. The area of land needed for the transit center would be approximately 87,500 square feet under Option A and approximately 58,100 square feet under Option B. Option C is a concept for Site 5.

Conceptual cost estimates were prepared for the options. Since the nature of the redevelopment of Site 3 is not known with specificity, assumptions were made in order to develop the estimates. Costs vary widely depending on the option and the assumptions but range from approximately \$2.4 million to \$10.2 million.

The figures on the following page show the conceptual designs- see the Study text for detailed descriptions. The transit center layouts are delineated in white lines.

Option A: Long-Term Alternative (Site 3), Preferred



Option B: Long-Term Alternative (Site 3)



Option C: Short-Term Alternative (Site 5)



This Study recognizes that, at this time, for Howard Hughes to provide a location for the transit center prior to issuance of a building permit for the 1.3 millionth square foot of development is not practical and would not advance transit center development planning.

Therefore, to satisfy CEPPA 14², prior to issuance of a building permit for the 1.3 millionth square foot of development, this Study recommends the following:

1. Adjust the timing for CEPPA 14 to be satisfied prior to issuance of a building permit for the 3,200,000th square feet of development.
2. Adjust CEPPA 14 to state that Site 3 in the October 2017 Downtown Columbia Transit Center – Location and Site Analysis Study is the agreed location for the transit center. The specific square footage and configuration shall be determined as part of the planning process for this part of Symphony Woods Overlook (FDP and SDP), and shall address the concepts and considerations in the Location and Site Analysis Study and as depicted in Figures 7 and 8 (Options A and B) for Site 3.
3. Adjust CEPPA 14 to state that should the County determine that a Transit Center is required prior to Site 3 being available or prior to the 10-year window set forth in the MOU, Howard Hughes shall provide a temporary Transit Center site, at a location mutually determined by Howard Hughes and the County (possibly Site 5), until Site 3 is available or an alternative site is provided under the MOU. Howard Hughes and the County shall mutually agree on terms for the County's continued use of the temporary Transit Center site until a permanent Transit Center has been constructed.

Triggers for the County's determination shall include one or more of the following: i) written notice from GGP that it needs the current transit center land by the Mall for redevelopment and therefore is terminating its arrangement with the County for use of such land, ii) lack of capacity at the current transit center to meet RTA transit needs beyond those anticipated in the County's 2017 Transit Development Plan, iii) need for additional land for a bus rapid transit station or iv) written notice from GGP that it needs the current transit center land used by the MTA for redevelopment and therefore is terminating its agreement with MTA for such land by the Mall's southwestern parking areas.

Howard Hughes shall make the temporary site available no more than one year after the County has determined a temporary location is needed.

Next Steps

The Office of Transportation should coordinate its transit center planning with the Howard County Housing Commission, and should also continue to coordinate with Howard Hughes Corporation.

Beginning in 2018 the Office of Transportation should coordinate preliminary engineering investigations for Site 5 (the Ring Road) as a short-term transit center.

The Office of Transportation should investigate a short term downtown station for BRT, possibly at Site 5, as part of the US 29 Bus Rapid Transit Study.

The Office of Transportation should continue to monitor the need for a temporary transit center and Howard Hughes' development plans for Symphony Overlook.

The County should investigate potential grant funding support for the transit center. One promising option is the federal Transportation Investment Generating Economic Recovery (TIGER) program

² Community Enhancement, Program and Public Amenity requirements.

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1. Introduction

The Howard County Office of Transportation (OoT) initiated this Location and Site Analysis Study (Study) in the fall of 2016 for the expansion, reconfiguration, and relocation of the existing Downtown Columbia Transit Center to serve as the central hub for future transit services, including those on US 29. The transit center will serve as a location where the local, express, and commuter buses, including Bus Rapid Transit (BRT) service, connect so that riders can utilize and transfer to and from all services. It will also support alternate modes of travel including walking, biking, and ride sharing. The purpose of this Study is to:

- Identify a preferred site, size and location for the new transit center;
- Estimate the number of bus bays that the transit center would need, including those to accommodate future BRT service;
- Develop site and transit center concepts to meet future needs;
- Provide estimates of improvement costs.

2. Existing Conditions



Figure 3 – Existing Bus Bays at Columbia Transit Center

The existing Downtown Columbia Transit Center is located close to the Columbia Mall, in downtown Columbia on land owned by General Growth Properties (GGP). The transit center includes linear bus bays adjacent to the Sears entrance on the west side of the Mall. The transit center serves eight local Regional Transportation Agency (RTA) routes. The Maryland Transit Administration (MTA) operates six commuter and express routes at a separate location by the Mall's southwestern parking

areas. The Columbia Transit Center has no commuter parking associated for RTA routes; however, the MTA has existing parking agreements with GGP for commuter customers.

An agreement (not memorialized in writing) was made between a previous owner of the Columbia Mall and Howard County to allow for public transit use and access to the County's center. The existing transit facility structure consists of steel shelters and linear bus bays. The transit services have been designed around a pulse operation where every 60 minutes buses on all of the routes meet at the same time to allow passengers to transfer



Figure 4 – Existing Shelters at Columbia Transit Center

between routes without significant delay. Table 1 below shows the existing routes using the Columbia Transit Center along with their origins, destinations, general routes, frequencies, and types.

Table 1 – Existing Routes Using the Columbia Transit Center

Owner	Route	Origin	Destination	General Routing (Primary Roads Traveled)	Frequency (minutes)		Type
					Peak	Off-Peak	
RTA	401 / Green	Columbia Mall	Clary's Forest	Harpers Farm Road	30	30	Local
	404/Orange	Columbia Mall	Kings Contrivance Village Center	Little Patuxent Parkway	60	60	Local
	405/Yellow	Columbia Mall	Miller Library / Ellicott City Senior Center	Little Patuxent Parkway	60	60	Local
	406 / Red	Columbia Mall	Gateway	Snowden River Parkway	30	30	Local
	407 / Brown	Columbia Mall	Kings Contrivance Village Center	Little Patuxent Parkway	60	60	Local
	408 / Gold	Columbia Mall	MD Food Center	Little Patuxent Parkway	60	60	Local
	501 / Silver	Columbia Mall	BWI	Broken Land Parkway	90	90	Local
	503/E	Columbia Mall	Laurel / Savage	Broken Land Parkway	60	60	Local

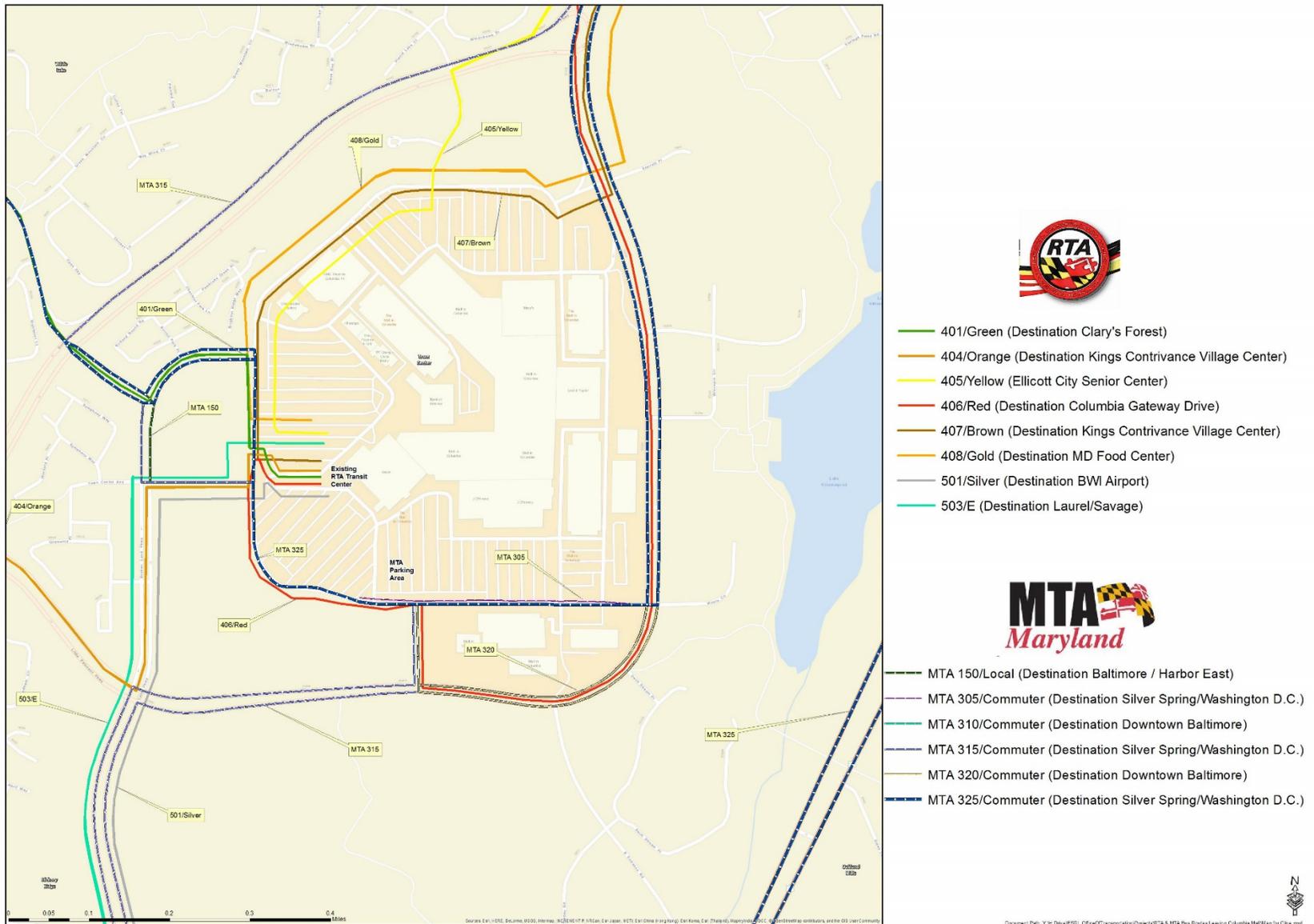
Additionally, there are six MTA routes (#150, #305, #310, #315, #320, and #325) with commuter parking that have stops within the Columbia Mall but not at the Columbia Transit Center. Table 2 provides information for these routes including origin, destination, general routing, frequency, and type.

Table 2 – Existing Routes Using Stops near the Columbia Mall

Owner	Route	Origin	Destination	General Routing (Primary Roads Traveled)	Frequency (minutes)		Type
					Peak	Off-Peak	
MTA	150	Columbia	Baltimore / Harbor East	US 29	30	N/A	Express
	305	Columbia	Silver Spring / Washington D.C.	US 29	20	N/A	Commuter
	310	Columbia	Downtown Baltimore	MD 175	20	20-40	Commuter
	315	Columbia	Silver Spring / Washington D.C.	US 29	20	20-30	Commuter
	320	Columbia	Downtown Baltimore	MD 175	40	40-60	Commuter
	325	Columbia	Silver Spring / Washington D.C.	US 29	15	15-75	Commuter

A map of the current routes is shown in Figure 3.

Figure 5 – Existing Bus Routes near the Columbia Transit Center



3. Agreements

Howard County envisions the transit center as a key component of the infrastructure of Downtown Columbia and of managing transportation demand (i.e., reducing automobile trips to make efficient use of the road network). To further this vision the County has adopted several requirements for the transit center.

Downtown Columbia Plan

The 2010 Downtown Columbia Plan includes Community Enhancement, Program and Public Amenity (CEPPA) requirements. Among these, the master developer must assist with a transit center per the following sections:

- *CEPPA #5: GGP³ will commission at GGP's expense and in consultation with Howard County one or more feasibility studies for the following: (i) a new Broken Land Parkway/Route 29 north/south collector road connection to Little Patuxent Parkway and (ii) a new Downtown transit center and Downtown Circulator Shuttle. With regard to the collector road, the feasibility study will evaluate alternative alignments and geometry, capacity analysis, preliminary environmental assessments, right of way impacts, preliminary costs, design and phasing of construction for this connection. **With regard to the transit center, the study will evaluate both long and short term transit expectations and needs both locally and regionally so that an appropriate location and facility program can be determined. Consideration shall be given to how the facility will operate initially as a free standing building, and in the future as a mixed use component of the Downtown Plan. Recommendations will be provided with regard to goals, management and operations.** With regard to the Shuttle, the study will evaluate and determine appropriate levels of service and phasing in of service at various levels of development. As part of this, the study should examine the relationship between the shuttle and both long and short term, local and regional transit expectations and needs. The shuttle feasibility study will also analyze equipment recommendations, routes and stops, proposed vehicle types, and operational and capital costs. The feasibility study shall include an evaluation and recommendations regarding ownership, capital and operational funding opportunities, responsibilities and accountability to provide guidance to the Downtown Columbia Partnership and the County.*
 - o This feasibility study was completed by Nelson Nygaard for Howard Research and Development Corporation (HRD) in December 2011 entitled Downtown Columbia Downtown Transit Center and Circulator Shuttle Feasibility Study.
- *CEPPA #14: GGP in cooperation with Howard Transit shall identify a location in Downtown Columbia for a new Howard County Transit Center consistent with the recommendation(s) of the feasibility study (See CEPPA No. 5). GGP shall provide a location either by fee transfer at no cost or a long-term lease for a nominal sum subject to all applicable laws and regulations. Any contract of sale or lease may provide for the retention of air and subsurface development rights by GGP and allow for the co-location of public facilities or private development on the same parcel provided that any other use of any*

³ References in the Downtown Plan to General Growth Properties now refer to Howard Hughes Corporation because General Growth Properties currently only owns the Columbia Mall and Howard Hughes Corporation owns the surrounding area. Similarly, references to Howard Transit mean Howard County. Some of the agreements and legal documents refer to Howard Research and Development (HRD), but for simplicity, this Study consistently refers to Howard Hughes Corporation, except when quoting such documents.

portion of the property does not interfere with the County's ability to use, construct, or finance the facility in the manner most advantageous to the County.

- o This requirement must be satisfied prior to issuance of a building permit for the 1.3 millionth square foot of development which is expected by late-2017, according to Howard Hughes Corporation.
- *CEPPA #23: GGP will provide \$1,000,000 towards the initial funding of a Downtown Circulator Shuttle.*
 - o This requirement must be satisfied prior to issuance of a building permit for the 5 millionth square foot of development.
 - o Per the Master Plan, the goal of the circulator shuttle is to *reduce Downtown Columbia traffic as residents, employees and visitors "park once," then walk or take the shuttle to other destinations in Downtown Columbia. Frequent and attractive shuttle service could be provided along a double loop route. This service will provide easy access to all parts of Downtown Columbia. Shuttle stops will be co-located at Howard Transit stops and at parking garages to facilitate easy transfer. The shuttle may also include a route that provides service to Howard Community College and Howard County General Hospital.*

Development Rights and Responsibilities Agreement

A Development Rights and Responsibilities Agreement (DRRA) was agreed to by Howard County and Howard Hughes Corporation (HH) in October 2016. Among its other provisions, it states (Section 4.4.D):

The Downtown Columbia Plan envisions a new transit center as part of the redevelopment of Downtown Columbia. The December 2011 Nelson Nygaard transit study ("Study") provided to the County by HRD in satisfaction of CEPPA 5 recommended locating the new transit center in the Symphony Overlook Neighborhood, generally between the Mall and the Corporate Center buildings. In accordance with CEPPA 14, HRD, in cooperation with the Howard County Office of Transportation, will identify a site (the "Transit Center Site") prior to approval of the first SDP in the Symphony Overlook Neighborhood and will provide the Transit Center Site to the County by fee simple transfer at no cost for the County's construction of a new transit center. The Parties acknowledge that Howard County intends to convey the Future Downtown Transit Center Site to the Commission⁴. The Commission would then construct a Future Downtown Transit Center as a mixed use mixed-income residential project containing between 40 and 50 percent Low Income Units. Conveyance of the Transit Center Site to the Commission, as contemplated herein, is subject to County laws and procedures for the disposition of County property. At the time of conveyance of the Future Downtown Transit Center Site to the Commission, the County shall record a covenant on the Future Downtown Transit Center Site, running with the land, and enforceable by the Commission and CDHC [Columbia Downtown Housing Corporation], restricting the development of the Future Downtown Transit Center Site to the uses contemplated in this Section 4.4.D for the duration of the Restriction Period. Any residential development on the Future Downtown Transit Center Site shall not count against the 5,500 unit density cap established in the Downtown Columbia Plan, except to the extent that HRD or its affiliates are a partner in the development, in which case the number of units that will count against the 5,500 unit density cap will be equal to HRD's or its affiliates proportional share of the total number of market rate units included in the LIHTC Development. For example, if HRD is a partner having a 40% interest in a LIHTC Development that includes 100 total units, 50 of which are affordable and 50 of which are market rate, 20

⁴ I.e., the Howard County Housing Commission

of the 50 market rate units would count against the density cap and 30 of the market rate units would not count against the density cap. Upon conveyance of the Future Downtown Transit Center Site to the County, HRD shall be relieved of any and all further obligations under this Section 4.4.D.

Downtown Columbia Development Memorandum of Understanding

As part of the legislative packet adopted in October 2016 was a memorandum of understanding (MOU) between Howard County and Howard Hughes.

The MOU states that the area around the new Downtown Columbia Transit Center can be an ideal opportunity for transit-oriented development: development that maximizes the compactness, density, walkability, bikeability, and mix of uses surrounding a site to promote transportation choices beyond the single-occupancy vehicle.

The MOU further states that if the County accepts the location described in the DRRA, generally identified on the TIF maps and with the approximate square footage as shown in the 2011 CEPPA #5 study (see below) then Howard Hughes will transfer to Howard County the site at no cost (which, per the DRRA, the County will then convey to the Housing Commission). The transfer of the site is envisioned to occur in conjunction with the redevelopment of this area of Symphony Overlook. The MOU continues that if the transfer of the site has not occurred within ten years, the County may elect to extend this requirement or request an alternate site.

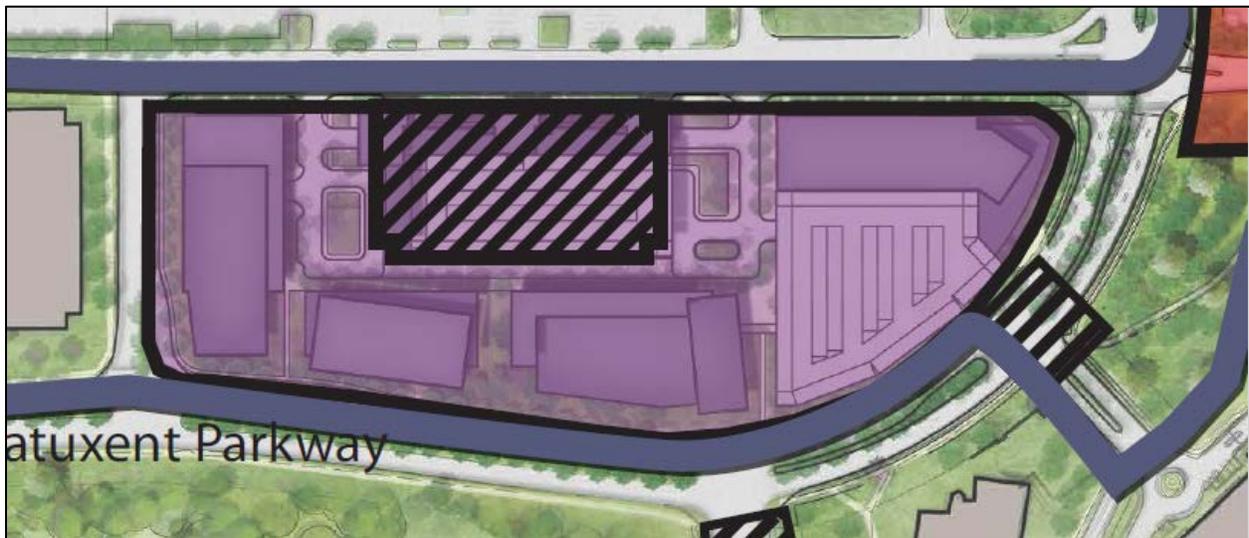


Figure 6 – Excerpt from TIF map showing proposed transit center / parking / mixed income residential site (hatched)

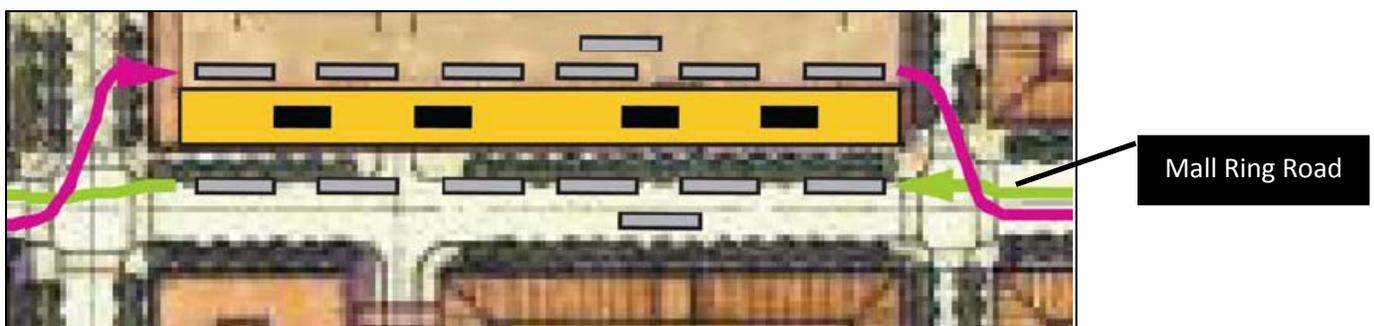


Figure 7 – Excerpt from 2011 Nelson-Nygaard Study prepared for CEPPA #5

The MOU envisions that after the future Downtown Columbia Transit Center location is identified and accepted by the County, the Developer (HRD, i.e., Howard Hughes) will work with the County to produce a first-class transit-oriented development, which utilizes national best practices for transit-oriented development.

Howard Hughes is currently redeveloping the Crescent neighborhood. As development in the Crescent neighborhood progresses, it plans to redevelop the Lakefront neighborhood, followed by the Symphony Overlook neighborhood, which includes the site outlined in the DRRRA and the MOU.

The full text of page 7 of the October 9, 2016 MOU is as follows:

A. General Statement. The Developer agrees that the area around the new Downtown Columbia Transit Center can be an ideal opportunity for transit-oriented development and in the furtherance of this objective, the Developer and the County have set the following goal:

i. Transit-Oriented Development. Should the County accept the proposed location in Symphony Overlook as discussed in the DRRRA/ as generally identified on the TIF maps, and with approximately the same footprint area as identified on p.11 of the 2011 Nelson/Nygaard Transit Study prepared for CEPPA No. 5, then the Developer shall provide the site and all air rights above the site to the County by fee simple absolute transfer for no cost to the County. The transfer of the site and air rights shall occur in conjunction with the redevelopment of this area of Symphony Overlook known as 10-30 Columbia Corporate Center and following approval of an SDP for such redevelopment, but the site identification contained herein and commitment to transfer the property in fee simple absolute, including the air rights above and placement of a recorded covenant on the site with these terms, is intended upon Planning Board approval to constitute full satisfaction of CEPPA No. 14. If such transfer of the site has not occurred within ten (10) years, the County may elect to extend this requirement or request an alternate site and immediate turnover under the same terms as described above, specifically transfer by fee simple absolute with air rights above. Any development on the Transit Center site, whether the Symphony Overlook site or another site, shall not count against the density caps established in the Downtown Columbia Plan, except to the extent that Developer or its affiliates are a partner in the project, in which case the amount of development that counts against the density caps shall be proportional to Developer or its affiliates' ownership. In the event that the County elects to/ following transfer of the Transit Center site, sell all or a portion of the Transit Center site. Developer shall have, assuming that no related tax-exempt bonds have been issued and remain outstanding which would preclude such a right, a right of first refusal to purchase the Transit Center site or portion thereof to be offered for sale. After the future Downtown Columbia Transit Center location is identified and accepted by the County, the Developer will work with the County to produce a first- class transit-oriented development, which utilizes national best practices for transit-oriented development, maximizing the compactness, density, walkability, bikeability, and mix of uses surrounding the site so as to promote transportation choices beyond the single-occupancy vehicle.

4. Related Projects and Studies

Several related projects and studies need to be considered for the Downtown Columbia Transit Center.

Downtown Columbia Downtown Transit Center and Circulator Shuttle Feasibility Study

A Downtown Columbia Downtown Transit Center and Circulator Shuttle Feasibility Study was completed in December 2011 by Nelson Nygaard for the Howard Research and Development Corporation. That study's key conclusions and recommendations were as follows:

- *Howard Transit⁵ is in need of an improved short-term transfer hub at the Columbia Mall because the current parking lot location does not have facilities that meet any current standards for transfer center bus or passenger amenities. Continued operation at the current facility affects the quality of service throughout the HT system due to confusing transfer facilities and delayed bus departures. A new outdoor transit center can be installed at relatively low cost (approximately \$150-250,000), not including land.*
- *An improved or new transit center for Downtown Columbia should include bus berths to serve up to 12 buses at one time, which is the maximum number of buses departing Downtown Columbia on an hourly "pulse" during weekdays. This number of berths is determined to be sufficient for the full build-out of Downtown Columbia and for all planned service expansions.*
- *There is no requirement for dedicated transit center parking to be provided in the short- or long-term. The majority of existing and planned transit service uses Columbia as a hub and secondarily as an employment destination. Relatively few riders originate in Columbia to commute inter-city, and their park and ride demand is – and will continue to be – accommodated in customer parking for the mall. Over time, ridership will grow with residential and employment density, but such trips will not require new parking as residents will walk to the bus from their homes and employees travel inbound by transit.*
- *The transit center should remain in or near the current location of Howard Transit's bus hub until it requires relocation due to redevelopment, or until development of a building at the long-term transit center site begins. There are no operational, total developed area, or ridership triggers that would necessitate relocation to the long-term site.*
- *This short-term transit center would include two outdoor bus medians each approximately 280-feet long serving six double-loaded bus berths each, with three berths located curbside where HT routes stop now. The remaining nine berths would be located parallel to and north of the on-street berths in three off-street lanes within the mall parking lot at a location that is planned to become a future development parcel. The footprint of this short-term transit center equals that of a planned parking garage on the development parcel, potentially allowing the parcel's adjacent building to be constructed without the garage while the transit center remains operational.*
- *The short-term transit center should include a minimum of four protected shelters with benches and map and schedule holders, eight uncovered benches, four trash receptacles, four APBP-compliant bicycle racks accommodating at least eight bikes each, a signpost for each berth, pedestrian scale lighting, and full ADA access to all amenities.*
- *The long-term transit center would be integrated into the southern edge of a future development parcel located south of the Columbia Mall's southern entrance. This location was selected due to its*

⁵ Now the RTA.

similarly central location close to the mall, as well as the longer block lengths (~550 feet) which enables a single transfer median serving six buses per side to be designed.

- *The recommended long-term transit center should include the same passenger amenities as the short-term center. It's location within a building footprint has a number of quality advantages that make transit attractive and well-integrated in Downtown Columbia, including:*
 - *A clear street-side presence that improves the visibility of transit in Downtown Columbia to attract riders*
 - *The least negative impact on streetscapes, on-street parking, and street-level uses*
 - *The opportunity to co-locate retail services on and near the bus median for improved passenger and passerby convenience, while preserving occupied floor space on the remainder of the development parcel*
 - *A covered transfer median and eastbound bus berths that will greatly improve passenger comfort, weather protection, and enjoyment while enabling easier maintenance*
 - *Adjacency to a mall parking garage for any park and ride demand*

Downtown Shuttle

- Since existing Columbia residents are already served by Howard Transit routes, a Downtown Columbia circulator should begin operations when there are enough new residents in Downtown Columbia seeking such service, as determined through the results of monitoring surveys.
- A transportation demand management plan should be established for Downtown Columbia with a periodic monitoring program that can establish a clear metric(s) for when a circulator shuttle is appropriate, ideally through direct surveys of Downtown Columbia employees and residents that demonstrate the need.
- The short-term circulator should utilize existing mall and surrounding roads with approximately six stops near existing buildings and the mall. The circulator should operate on a fixed schedule, departing the transit center every 20-minutes.
- In the long-term, the circulator should extend its route to the Merriweather District around the current Merriweather Pavilion when new development in that area is occupied and reporting a need through the monitoring program's surveys. Frequencies should increase to 15-minutes, with fixed departures from the short-term or long-term transit center.

Central Maryland Transit Development Plan

The Transit Development Plan (TDP) will serve as a guide for transit services in the Central Maryland region, including Anne Arundel County, Howard County, Northern Prince George's County, and the City of Laurel. It will provide a roadmap for implementing service and organizational improvements, including potential service expansions, during the next five years.

- Establish the region's goals and objectives for transit.
- Review and assess current transit services.
- Identify unmet transit needs and services issues.
- Develop service alternatives, recommendations, and an implementation plan.

A draft of the TDP is expected in November 2017.



US 29 Bus Rapid Transit

Montgomery County and Howard County are working with Maryland Transit Administration to deliver Bus Rapid Transit (BRT) service along the US 29 corridor between Downtown Columbia, Burtonsville, and Silver Spring. The BRT study is being developed in both Montgomery County and Howard County as a staged project, with Montgomery County expecting project delivery and service in 2020/2021. Howard County expects to extend the service to Downtown Columbia in 2021/2022. Howard County is also exploring extending the future US 29 BRT from Downtown Columbia to Route 100 at Long Gate Parkway. The downtown transit center needs to consider future BRT needs in its location and design.

Howard County Bikeshare Pilot Program

Howard County launched a pilot bikeshare program in mid-2017 with seven bikeshare stations and 70 bicycles serving the Columbia Lakefront, The Mall in Columbia, the new Crescent neighborhood, Howard County General Hospital, Howard Community College, Oakland Mills Village Center and Blandair Park.

HOWARD COUNTY BIKESHARE
POWERED BY THE **HORIZON FOUNDATION**

Columbia Mall Redevelopment

General Growth Properties, owner of the Columbia Mall, is considering development opportunities on the land within the footprint of the existing Columbia Mall and parking area. However, at the time of this report, GGP had not submitted any formal plans to the County outside the existing footprint of the mall.

MTA Commuter Bus Growth and Investment Plan

The MTA has been developing a commuter bus long range plan formally known as the Commuter Bus Growth and Investment Plan, modeled after the MARC Growth and Investment Plan. While this plan was not completed in time for the draft of the Transit Center Study, County staff met with MTA staff to get their input.

Summary of Related Studies

The following bullets summarize the implications of input and past studies for transit center location and design:

- Under CEPPA 14, the transit center site needs to be identified prior to issuance of a building permit for the 1.3 millionth square foot of development, which is expected by late 2017.
- The center needs to be in a central location.
- The center needs to be convenient to multiple transportation modes including local bus, regional bus, car, ridesharing services, biking, and walking.
- The center location, design, and layout needs to consider future bus rapid transit.
- The transit site will ultimately be developed by the Howard County Housing Commission.
- Under the Development Rights and Responsibilities Agreement between Howard County and Howard Hughes, the Commission would develop the center as a mixed use, mixed-income residential project.
- County Council expectations for the center are for it to be a part of a state-of-the art, well-designed, mixed-use development.
- The transit center portion of the project is intended to be funded from the Downtown Columbia property tax increment, not by the TIF. The residential component is intended to be funded by the Housing Commission, utilizing Low Income Housing Tax Credits and other traditional sources of mixed

income housing finance. A public parking component of the project is anticipated to be funded with TIF proceeds.

- Timing of the transit center needs to take into consideration longevity of the existing transit center, initiation of BRT service, Howard Hughes master development plans, Housing Commission interests and capacity, and availability of County and other funding.

5. Downtown Transit Center Facility Program Requirements

Howard County's objective is to combine all transit operations serving the downtown area into one central transit center location. This would include the RTA local routes, the MTA commuter and express routes, the future BRT service, and future downtown shuttle. The center would also include connections to other modes: taxi cabs, ride splitting (sometimes referred to as ride sourcing, e.g. Uber, Lyft), biking, and walking. In coordination with the RTA and MTA and the Central Maryland Transit Development Plan, Howard County projects that the following accommodations will be needed at the future transit center to meet current and long-term needs:

- 14 bus bays. Note: this is more than the 12 recommended by the 2011 Nelson Nygaard CEPPA #5 study
 - 8 bays for existing RTA routes
 - 2 bays for future RTA routes
 - 2 bays for MTA routes
 - 2 bays for BRT routes
- Sheltered waiting areas
- Bicycle parking facilities
- Transit information booth
- Break time accommodations for transit operators including restrooms
- Real-time service information (screens, audio)
- Possible commuter parking for MTA routes

As described previously under Section 3 – Agreements, the County is also required to provide for housing above the transit center. The October 2016 TIF-MOU states the following under the Transit-Oriented Development:

After the future Downtown Columbia Transit Center location is identified and accepted by the County, the Developer will work with the County to produce a first-class transit-oriented development, which utilizes national best practices for transit-oriented development, maximizing the compactness, density, walkability, bikeability, and mix of uses surrounding the site so as to promote transportation choices beyond the single-occupancy vehicle.

Howard Hughes has also expressed potential interest in working with the County and the Housing Commission to integrate the transit center and housing into a larger mixed-use development.

6. Alternatives Analysis

Consistent with CEPPA 14, this Study included an alternatives analysis to assess potential transit center locations. Figure 6 shows the sites evaluated and Table 3 summarizes the results of the analysis.

Evaluation Criteria

The analysis used the following evaluation criteria:

Criterion	Why Criterion is Important
Owner	Properties owned by HH would be preferable, though not required.
Existing Use	Vacant land would be preferable for ease of development
Future Use of location/surrounding land	Affects time when property would be available for transit center development, and compatibility of the center with future uses.
Location	Proximity and easy access to the mall (town center) would be preferable
Parcel Size	Sufficient area will be needed for the transit center
Type of Adjoining Properties	Non-residential adjacent existing/future uses would be preferable to reduce potential noise/traffic concerns
Proximity to Activity Centers (Columbia Mall/Merriweather District)	Close proximity would be preferable
North/South of Little Patuxent Parkway	North of Little Patuxent Parkway would be preferable to facilitate pedestrian access to the Mall area
Transit Operating Access to/from regional road network, including BRT	Easy access to/from US 29 would be preferable
Vehicular / Pedestrian Impacts	Good, barrier-free vehicular/pedestrian access is preferable
Developer Input	CEPPA and other input documents call for coordination with developers

Site Selection

After further review and coordination with the RTA, MTA, Howard Hughes Corporation, and GGP it was determined that the following sites were not good options for the transit center for the reasons listed below:

- Sites 1, 7: Located on the wrong (south) side of Little Patuxent Parkway, too far from the Mall/Activity Center
- Site 2: Not owned by Howard Hughes which would make increased development complexity; would have substantial impact parking on existing Mall parking.
- Sites 10: Too far from Mall/Activity Center
- Sites 4, 6, 8, 9: Bus access for most routes would be circuitous, adding time to journeys.

Figure 8 – Alternative Sites



Table 3 – Alternative Site Analysis

No.	Owner	Existing Use	Future Use	Location	Parcel Size (Acres)	Type of Adjoining Properties	Proximity to Activity Center	North/South of Little Patuxent Parkway	Transit Operating Access to/from regional road network, including for BRT	Vehicular / Pedestrian Impacts	Developer Input	Recommendation
1	Howard County Maryland Library (future Howard Hughes)	Howard County Library	Residential / Relocated North-South Connector Road within 10 years	SW corner of Little Patuxent Parkway and North-South Connector	3+	Residential	Medium	South	High	Additional conflicts since located on south side of Little Patuxent Parkway	General Growth: No opinion Howard Hughes: Not in favor	<i>REMOVE</i> • Wrong side of LPP presents challenges for pedestrians
2	General Growth Properties	Mall Parking Lot	Unknown	South side of the mall	0.7	Commercial	Close	North	High	Additional access improvements needed along Mall Ring Road	General Growth: Would support if impacted parking was replaced Howard Hughes: Open to option; requires negotiation with GGP	<i>REMOVE</i> • Property is not owned by HH • Substantial parking impacts
3	Howard Hughes	Parking Garage	Mixed Use High Rise in 8-10 year timeframe	South side of the Mall Ring Road along Little Patuxent Parkway	2	Commercial/Residential	Close	North	High	Additional access improvements needed along Mall Ring Road	General Growth: No opinion Howard Hughes: Preferred option	<i>INCLUDE</i> • Close proximity to Mall • Has developer support
4	General Growth Properties	Mall Parking Lot	Unknown	South side of the Mall	1.4	Commercial	Close	North	Average	Additional access improvements needed along Mall Ring Road	General Growth: Would support if impacted parking was replaced Howard Hughes: Open to option; requires negotiation with GGP	<i>REMOVE</i> • Property is not owned by HH • Too many pedestrian conflicts
5	General Growth Properties	Mall Ring Road	No change	South side of the Mall	N/A	Commercial	Close	North	High	Additional traffic calming needed along Mall Ring Road	General Growth: Not in favor if GGP maintains ownership of Mall Ring Road Howard Hughes: Open to option	<i>INCLUDE</i> • Close proximity to Mall • Has developer support
6	Howard Hughes	Private Parking Lot	No change	West side of the Mall along Broken Land Parkway	1	Residential	Close	North	Poor	Additional pathways needed between site and Mall	General Growth: No opinion Howard Hughes: Open to option	<i>REMOVE</i> • Located adjacent to existing residential development • Access to Mall is not ideal • Bus access is not good • Parcel is too small
7	Howard Hughes	Merriweather Handicap Parking	Residential redevelopment within 10 year timeframe	South side of Little Patuxent Parkway, east of Broken Land Parkway	2.3	Commercial	Medium	South	Average	Additional conflicts since located on south side of Little Patuxent Parkway	General Growth: No opinion Howard Hughes: Not in favor	<i>REMOVE</i> • Wrong side of LPP presents challenges for pedestrians • Does not have developer support
8	General Growth Properties	Open Space with grading challenges	Open Space with grading challenges	East side of the Mall	3.4	Commercial	Close	North	Average	Potential ADA issues with existing grading challenges at site	General Growth: Preferred site Howard Hughes: No opinion	<i>REMOVE</i> • Numerous site challenges • Bus access is challenging
9	Columbia Land Holdings (future Howard Hughes)	Parking Lot/Mixed Use Development	Commercial redevelopment not in near-term	North side of the Mall	2.59	Commercial	Close	North	Poor	Additional access improvements needed along Mall Ring Road	General Growth: Potential Howard Hughes: Not in favor	<i>REMOVE</i> • Does not have developer support • Bus access is too far from US 29
10	State Highway Administration	US 29	US 29 with Bus Rapid Transit Service	Along US 29, east of Little Patuxent Parkway	N/A	Commercial	Far	South	High	Additional pedestrian pathways needed between site and Mall	General Growth: No opinion Howard Hughes: No opinion	<i>REMOVE</i> • Too far from Mall

Site Investigations

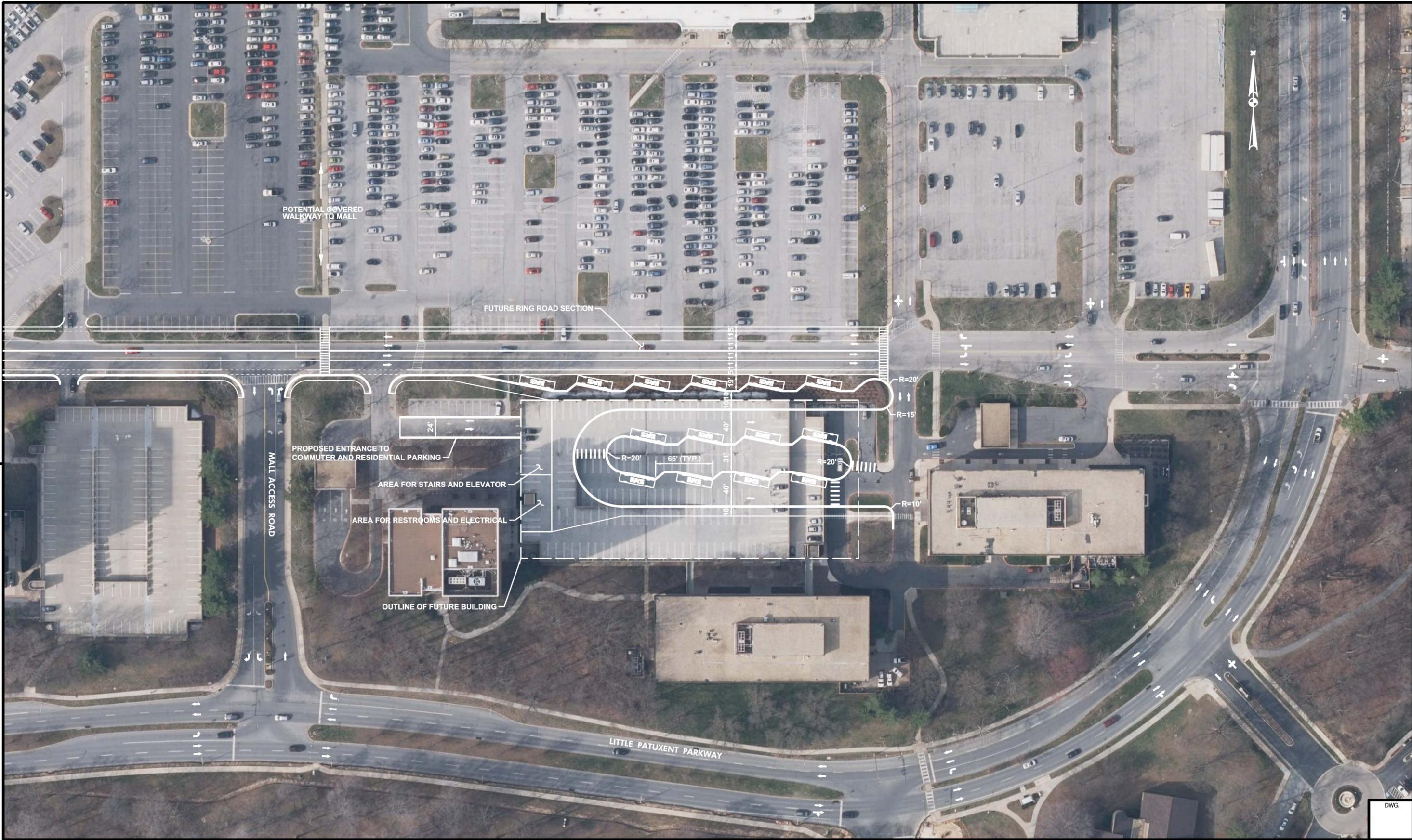
From the Alternatives Analysis, two sites, Sites 3 and 5, were selected for further investigation with conceptual designs. Site 3 aligns with the October 2016 MOU recommendation. This site is owned by Howard Hughes Corporation and currently is in a block containing office buildings, a pub/restaurant, and a parking structure. At the time of this report, Howard Hughes Corporation had begun initial concept investigations for the site but was not actively working on redevelopment plans. Hughes envisions that it will move forward within an 8- to 10-year timeframe as part of the Symphony Overlook neighborhood redevelopment and as leases for current tenants expire. Hughes envisions the redevelopment will likely be mixed-use including office and residential. They also envision potentially working with the Housing Commission to provide the required affordable housing component, possibly in a joint venture. Hughes noted, however, that the transit center affordable housing site is envisioned as the last of the five sites identified in the TIF funding schedules, which could affect the Commission's timing for the transit center.

Site 5 was analyzed as a shorter-term alternative should the need for a Transit Center become great before Site 3 becomes available. While Site 5 would not be inexpensive, it could be a viable option for some years if redevelopment of Site 3 is delayed beyond the 8- to 10-year time frame, if the RTA or MTA need to relocate from their current locations, or if there is a need for dedicated center to meet BRT service demands in the eight or fewer year timeframe. Designs for all options considered future BRT service, i.e., sufficient bus bay length, curb heights, route information, etc.

Two options were developed on Site 3. ***Option A is this Study's recommended option for the transit center in an 8- to 10-year time frame (Figure 7).*** It provides six sawtooth bus bays along the southern side of the mall ring road in between the Mall Access Road and the entrance to the 10-20 Corporate Center building, and eight sawtooth bus bays on a bus bay island located at the site of the existing parking garage for a total of fourteen bus bays. This location assumes the entire block between Little Patuxent Parkway, the ring road, and the mall access road is redeveloped, but it keeps the limits of the transit center within the footprint of the existing parking structure and the buffer area to the north. Buses would access the interior island by entering at the entrance to the existing 10-20 Corporate Center and then circulate the island in a clockwise movement before exiting at the 10-20 Corporate Center entrance.

The proposed lane configuration along the mall's ring road includes two 11-foot through lanes in both directions and one 5-foot bike lane in both directions, consistent with the Downtown Columbia Master Plan (Exhibit H. Street Framework Diagram). The bus bay areas measure 19 feet from the edge of the through lane to the face of curb at the widest point, and each sawtooth bay is 65 feet in length. This length should accommodate an articulated BRT bus (typically 60-feet long) but may need to be adjusted as Howard County's BRT study with Montgomery County continues. BRT design needs are different in other ways from standard buses and will need further consideration regarding bay configuration and elevation to ensure seamless boarding for passengers.

The transit center platform along the ring road is 20 feet wide and measures approximately 400 feet in length. There are three proposed crosswalks within the bus bay island area, and two crosswalks that cross the ring road. This option provides a building for restrooms, ticket/information center, and utilities. There is also potential to provide a covered walkway to the mall near the western limits of the proposed transit center. This option would allow for future development of the surrounding parcels by Howard Hughes for mixed use development. It also allows for possible MTA commuter parking and affordable housing above the transit center per CEPPA 14. The area of land needed for the transit center would be approximately 87,500 square feet with the mixed-use components integrated above.



DES:
 DRN:
 CHK:
 DATE: JAN. 2017

COLUMBIA TRANSIT CENTER
 FIGURE 7 – OPTION A: LONG-TERM ALTERNATIVE ON
 HOWARD HUGHES PARCEL (SITE 3), PREFERRED

DWG.
 SCALE
 1" = 100'
 SHEET
 1 OF 3

Option B is an alternative layout for Site 3 for consideration by the Housing Commission. It provides seven sawtooth bus bays along the southern side of the Mall's ring road in between the Mall Access Road and the entrance to the 10-20 Corporate Center and seven sawtooth bus bays on the other side of the bus bay island for a total of fourteen bus bays (Figure 8). The bus bay areas are the same size as Option A. Buses would access the interior bays by entering at the entrance to the 10-20 Corporate Center and then exiting along Mall Access Road. The proposed lane configuration along the ring road is the same as for Option A. The bus bay island is 20 feet wide and measures approximately 680 feet. Two crosswalks would be provided along the ring road. As with Option A, this option provides a building for restrooms, ticket/information center, utilities, and the potential for a covered walkway to the mall. The area of land needed for the transit center alone would be approximately 58,100 square feet.

Option B would require less area than Option A, but is longer and more linear in shape which may be less desirable for transit service functionality. Either option may integrate better with housing and other uses, but this would need to be considered by designers/architects as part of comprehensive site design.

Option C is a short term alternative on Site 5 that could be used if it becomes necessary to move forward with a transit center before Site 3 becomes fully available as mentioned previously. Option C provides seven sawtooth bus bays along each side of the Mall's ring road in between the Mall Access Road and the entrance to 10-20 Corporate Center for a total of fourteen bus bays (Figure 9). The current lane configuration along the ring road would be maintained, with one eastbound through lane and one westbound through lane; however, it would be upgraded to reinforced concrete pavement to accommodate the additional weight of the transit vehicles. The 10-foot through lanes would be separated by a 6-foot median and a fence to deter midblock crossing by pedestrians. Crosswalks would be provided at both ends of the transit center as well as a crosswalk near the middle to cross the ring road. The bus bay areas measure 19 feet from the edge of the through lane to the face of curb at the widest point, and each sawtooth bay is 65 feet in length, the same as Option A. The platforms are 13 feet wide and measure approximately 550 feet in length.

There are different canopy options including one that would span the length of the platforms and cover both the platforms and roadway (most expensive) and individual canopies that cover a portion of the bus, and the loading and waiting areas at each bay (least expensive). An entrance would be provided at the T-intersection of the Mall Access Road and the ring road that currently allows vehicles to access the Mall's parking lot. As with Options A and B, this option provides a building for restrooms, ticket/information center, utilities, and the potential for a covered walkway to the mall.

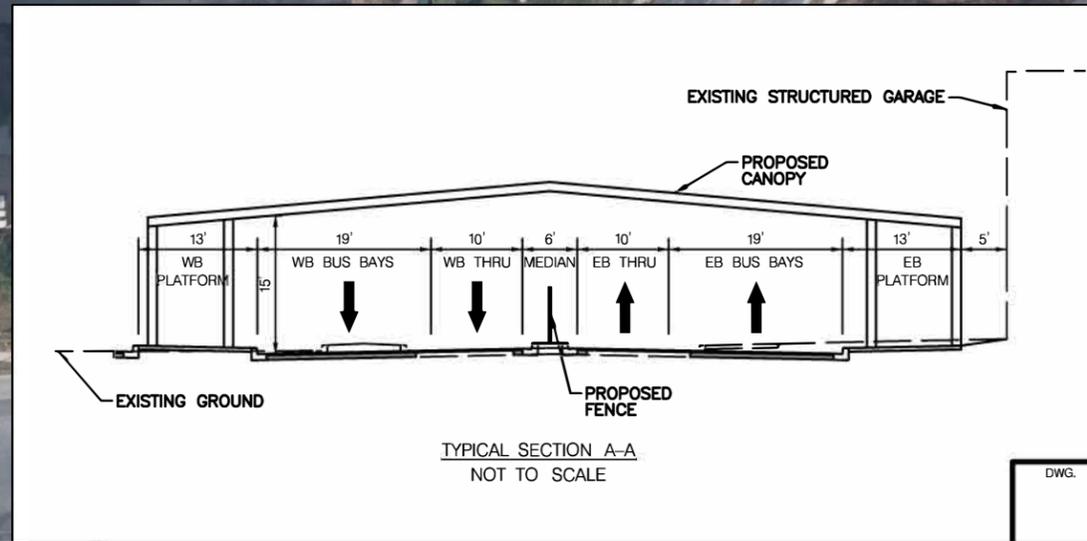
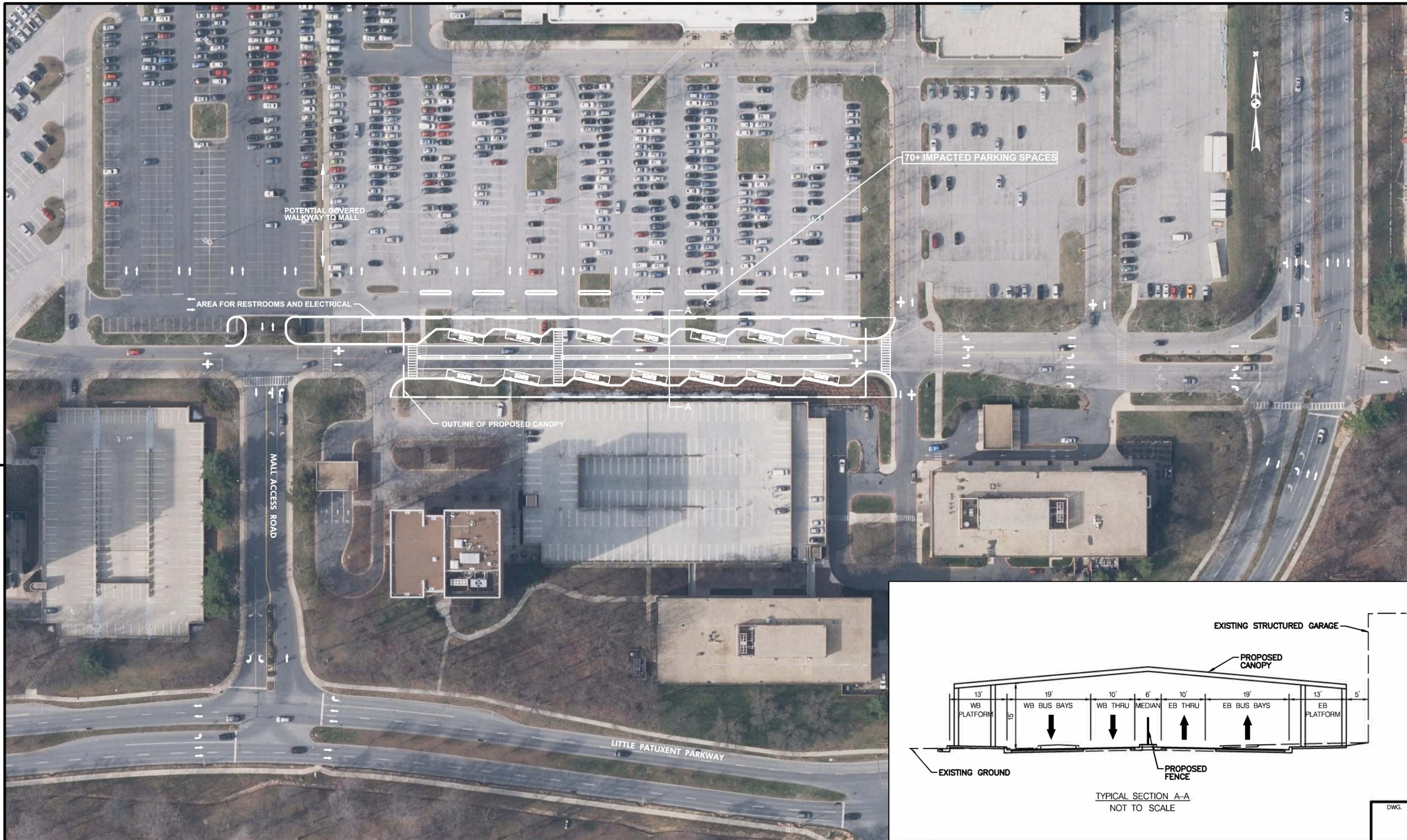
No existing structures would be impacted with this option, but it would impact approximately 77 parking spaces on the mall property, owned by GGP. GGP has expressed strong concern over the loss of mall parking. The option includes curb islands to define the limits of parking spaces and would allow the same two-way traffic flow that exists within the parking lot today. Under this option, the portion of the ring road adjacent to the transit center would have to be conveyed or leased to Howard County for maintenance and liability. The area of land needed for the transit center alone would be approximately 41,500 square feet not including approximately 17,200 square feet for the ring road.



DES:
 DRN:
 CHK:
 DATE: JAN. 2017

COLUMBIA TRANSIT CENTER
 FIGURE 8 – OPTION B: LONG-TERM ALTERNATIVE ON HOWARD
 HUGHES PARCEL (SITE 3), REDUCED FOOTPRINT

DWG.
 SCALE
 1" = 100'
 SHEET
 2 OF 3



Figures 10 through 23 in Section 8 are examples of transit centers at different locations around the country that could serve as models of transit centers/mixed use developments for the Downtown Columbia Transit Center. These include some images of what the transit center could look like along the ring road as proposed in Option C.

Cost Estimates

Conceptual cost estimates were prepared for Options A, B, and C, as set forth in Table 4. See Section 9 for the detailed cost estimates. The estimates include several assumptions:

- Since the nature of the redevelopment of Site 3 for Options A and B is not known with any specificity, two assumptions were made in order to make cost estimates. Under assumption 1 - see estimates for Option A and Option B - the Housing Commission would provide a space within a building and the cost represents what will be necessary to fit out the space to make it a transit center (paving, lighting, ventilation, transit amenities, information booth, restroom for drivers, signing, crosswalks, etc.). Under assumption 2 - see estimates for Options A-1 and B-1 - the cost represents the full cost of developing a transit center, as if it were standalone project.
- The cost for Option C represents the cost to construct a standalone transit center under 3 different canopy assumptions – C, C-1, and C-2.

Table 4 - Cost Estimates

Option	Costs per Option (2017 \$)		
	Neat Construction ¹	Contingency (25%)	Total (Rounded)
Option A – Construct a transit center in building space provided by others, e.g., Housing Commission	2,322,729	580,682	2,910,000
Option A-1 – Construct a transit center in one level of a parking structure	7,522,729	1,880,682	9,410,000
Option B – Construct a transit center in reduced footprint building space provided by others, e.g., the Housing Commission	1,897,004	474,251	2,380,000
Option B-1 – Construct a transit center plus the cost of an independent transit center canopy that would front on the Mall Ring Road	5,396,174	1,349,043	6,750,000
Option C – Construct a standalone transit center, with canopy over center and Mall Ring Road	8,143,785	2,035,946	10,180,000
Option C-1 – Construct a standalone transit center, with two canopies covering the entire bus, loading and waiting areas	5,641,285	1,410,321	7,060,000
Option C-2 – Construct a standalone transit center, with individual canopies that cover a portion of the bus, and the loading and waiting areas at each bus bay.	3,021,785	755,446	3,780,000

¹ Neat construction cost represents the cost to build the project. It does not include: engineering, right of way, or utility cost in advance of construction; third party costs; or overhead, administrative or general expenses, such as by Howard County.

7. Conclusions and Recommendations

Proposed Site Location

This Study recommends Site 3 as the best option for the Downtown Columbia Transit Center. This recommendation is consistent with the DRRA and the MOU. The Study includes two potential layouts for the center on this site (Figure 7 – Option A and Figure 8 – Option B). If a decision were needed at the time of this Study, the recommendation would be Option A as it has a larger footprint (approximately 87,500 square feet) and is a more compact layout for users and offers most flexibility. However, either option may integrate well with housing and other uses and this would need to be considered by designers/architects as part of comprehensive site design.

Timing of Development

CEPPA 14 requires that Howard Hughes provide “a location either by fee transfer at no cost or a long-term lease for a nominal sum” prior to issuance of a building permit for the 1.3 millionth square foot of development.

The DRRA states that *“In accordance with CEPPA 14, HRD, in cooperation with the Howard County Office of Transportation, will identify a site (the “Transit Center Site”) prior to approval of the first SDP in the Symphony Overlook Neighborhood and will provide the Transit Center Site to the County”*. The DRRA further states *“Howard County intends to convey the Future Downtown Transit Center Site to the (Housing) Commission. The Commission would then construct a Future Downtown Transit Center as a mixed use mixed-income residential project”*. The MOU states *“If such transfer of the site has not occurred within ten years, the County may elect to extend this requirement or request an alternate site and immediate turnover”*. The DRRA (Section 4.4.E) also states that HRD may propose a comparable substitute location for low income housing development.

The Office of Transportation believes that the 2016 DRRA and MOU add specificity to the 2010 Master Plan with regards to the transit center. The transit center is intended to be part of a mixed-use development, and this Location and Site Analysis Study agrees that the transit center is best to be planned and designed comprehensively with the other mixed uses. However, the timing of the transit center in relation to downtown Columbia development is a potential problem. The transit center would ideally be operational in the six- to seven-year time frame (2023-2024) to better integrate transit services downtown including BRT. Howard Hughes has stated its interest to move forward with redevelopment of the preferred site (Site 3, 10-20 Corporate Center) in an eight to ten-year timeframe as the current tenants’ lease agreements expire. This Study considers Howard Hughes’ timing as optimistic and unpredictable.

The 2011 Nelson Nygaard Transit Study prepared for CEPPA 5 concluded the existing transit center should remain until it requires relocation due to redevelopment, or until development of a building at the long-term transit center site begins. However, the Office of Transportation believes transit interests would not be served by delaying having a transit center much beyond the 8-year timeframe. This study also recognizes that at this time, i.e., the 1.3 millionth square foot of development, full compliance with CEPPA 14 to provide “a location either by fee transfer at no cost or a long-term lease” is not practical and would not advance transit center development planning.

Therefore, to satisfy CEPPA 14, prior to issuance of a building permit for the 1.3 millionth square foot of development, this Study recommends the following:

1. Adjust the timing for CEPPA 14 to be satisfied prior to issuance of a building permit for the 3,200,000th square feet of development.
2. Adjust CEPPA 14 to state that Site 3 in the October 2017 Downtown Columbia Transit Center – Location and Site Analysis Study is the agreed location for the transit center. The specific square

footage and configuration shall be determined as part of the planning process for this part of Symphony Woods Overlook (FDP and SDP), and shall address the concepts and considerations in the Location and Site Analysis Study and as depicted in Figures 7 and 8 (Options A and B) for Site 3.

3. Adjust CEPPA 14 to state that should the County determine that a Transit Center is required prior to Site 3 being available or prior to the 10-year window set forth in the MOU, Howard Hughes shall provide a temporary Transit Center site, at a location mutually determined by Howard Hughes and the County (possibly Site 5), until Site 3 is available or an alternative site is provided under the MOU. Howard Hughes and the County shall mutually agree on terms for the County's continued use of the temporary Transit Center site until a permanent Transit Center has been constructed.

Triggers for the County's determination shall include one or more of the following: i) written notice from GGP that it needs the current transit center land by the Mall for redevelopment and therefore is terminating its arrangement with the County for use of such land, ii) lack of capacity at the current transit center to meet RTA transit needs beyond those anticipated in the County's 2017 Transit Development Plan, iii) need for additional land for a bus rapid transit station or iv) written notice from GGP that it needs the current transit center land used by the MTA for redevelopment and therefore is terminating its agreement with MTA for such land by the Mall's southwestern parking areas.

Howard Hughes shall make the temporary site available no more than one year after the County has determined a temporary location is needed.

Next Steps

The Office of Transportation should coordinate its transit center planning with the Howard County Housing Commission, which, per the DRRR, is responsible for constructing the Transit Center as part of a mixed use mixed-income residential project. The Office should also continue to coordinate with Howard Hughes Corporation.

Beginning in 2018 the Office of Transportation should coordinate preliminary engineering investigations for Site 5 (the Ring Road) as a short-term transit center. The key is to be ready in case the need for a Transit Center becomes strong before Site 3 becomes available. As noted, Site 5 would be neither inexpensive nor simple. For example, GGP owns the ring road, a transit center would temporarily impact mall parking, and would increase bus traffic on this part of the Ring Road. If Site 5 appears infeasible, the Office of Transportation should look at other sites for temporary use, including those evaluated in this Study (see Alternatives Analysis).

The Office of Transportation should investigate a short term downtown station for BRT, possibly at Site 5, as part of the US 29 Bus Rapid Transit Study.

The Office of Transportation should continue to monitor the need for a temporary transit center and Howard Hughes' development plans for Symphony Overlook.

The County should investigate potential grant funding support for the transit center. One promising option is the federal Transportation Investment Generating Economic Recovery (TIGER) program, a competitive program that supports projects that will have a significant impact on the Nation, a metropolitan area, or a region. An application could emphasize the significance of a transit center to:

- Improvements to passenger experience for RTA and MTA riders across the County and region
- Regional BRT
- Operational improvements for downtown traffic circulation, and
- Transportation Demand Management that supports Downtown Columbia growth

TIGER grants require matching funds that could be made through the County's Capital Improvements Program.

8. Transit Center Examples and Design Elements

Figure 10 – Example Mixed Use Development at a Transit Center, Eden Prairie, MN



Source: <http://finance-commerce.com/2015/05/potential-southwest-rail-cuts-total-500m/>

Figure 10 – Example Mixed Use Development at a Transit Center, Eden Prairie, MN



Source: <http://finance-commerce.com/files/2015/06/SWTransit5.jpg>

Figure 11 – Example Mixed Use Development at a Transit Center, Red Rose Transit Center Lancaster, PA



Source: <http://www.redrosetransit.com/red-rose-transit/services/transit-center>

Figure 12 – Example Transit Center with Mixed Use Development, Red Rose Transit Center Lancaster, PA



Source: <http://www.redrosetransit.com/wp-content/uploads/2014/08/Information-Center.jpg>

Figure 13 – Example Transit Center with Mixed Use Development, Moore Square Transit Center, Raleigh, NC



Source: Clearscapes Architecture + Art

Figure 14 – Example Transit Center with Mixed Use Development, Moore Square Transit Center, Raleigh, NC



Source: Clearscapes Architecture + Art

Figure 15 – Example Transit Stops with Development, Moore Square Transit Center, Raleigh, NC



Figure 12 – Example Transit Center with Development, Winston-Salem Transit Center, NC



Figure 17 – Example Transit Shelter, Montgomery Mall, MD



Source: Michael Koryta

Figure 18 – Example Transit Shelter, Montgomery Mall, MD



Source: Michael Koryta

Figure 19 – Example Transit Shelter, Montgomery Mall, MD



Source: Michael Koryta

Figure 20 – Example Transit Shelter, Xpress Passenger Pavilion



Figure 21 – Example Transit Shelter, Xpress Passenger Pavilion



Figure 13 – Example Bays and Canopy at Freestanding Transit Center, Savannah, GA.



Figure 14 – Example Canopy at Freestanding Transit Center, Savannah, GA.



9. Cost Estimates

COLUMBIA TRANSIT CENTER

**CONCEPTUAL COST ESTIMATE
OPTION A**

LONG-TERM ALTERNATIVE, PREFERRED, FIT OUT SPACE PROVIDED

Category Code	Item Description	Unit	Quantity	Unit Cost	Total Cost
CATEGORY 1	PRELIMINARY				\$519,168.30
100000	30% OF CATEGORY 2, 4, 5, 6	LS	1	\$519,168.30	\$519,168.30
CATEGORY 2	GRADING				\$0.00
	ASSUMED TO BE PART OF THE HOWARD HUGHES CORPORATION REDEVELOPMENT				\$0.00
CATEGORY 3	DRAINAGE				\$0.00
	ASSUMED TO BE PART OF THE HOWARD HUGHES CORPORATION REDEVELOPMENT				\$0.00
CATEGORY 4	STRUCTURES				\$909,000.00
	TRANSIT COVER - ASSUMED TO BE PART OF THE HOWARD HUGHES CORPORATION REDEVELOPMENT				\$0.00
400000	ELECTRICAL ALLOWANCE TO ACCOMMODATE LED LIGHTING UNDER HOWARD HUGHES CORPORATION STRUCTURE	SF	87500	\$3.50	\$306,250.00
400000	MECHANICAL ALLOWANCE TO ACCOMMODATE VENTILATION UNDER HOWARD HUGHES CORPORATION STRUCTURE	SF	87500	\$4.00	\$350,000.00
400000	PASSENGER AMENITIES AND INFORMATION PER BUS BAY	EA	14	\$6,000.00	\$84,000.00
400000	ELECTRICAL BUILDING WITH TRANSIT INFORMATION BOOTHS AND RESTROOMS	SF	675	\$250.00	\$168,750.00
CATEGORY 5	PAVING				\$554,791.00
504500	SUPERPAVE ASPHALT MIX 9.5MM FOR SURFACE, PG 64S-22, LEVEL 2	TON	200	\$95.00	\$19,000.00
504560	SUPERPAVE ASPHALT MIX 19.0MM FOR BASE, PG 64S-22, LEVEL 2	TON	200	\$95.00	\$19,000.00
520113	6 INCH GRADED AGGREGATE BASE COURSE	SY	4500	\$12.00	\$54,000.00
530100	GRINDING HOT MIX ASPHALT PAVEMENT 0 INCH TO 2 INCH	SY	500	\$5.00	\$2,500.00
560108	8 INCH PORTLAND CEMENT CONCRETE MIX 7	SY	3700	\$120.00	\$444,000.00
585405	5 INCH WHITE LEAD FREE REFLECTIVE THERMOPLASTIC PAVEMENT MARKINGS	LF	6120	\$1.00	\$6,120.00
585407	5 INCH YELLOW LEAD FREE REFLECTIVE THERMOPLASTIC PAVEMENT MARKINGS	LF	2030	\$1.00	\$2,030.00
585621	12 INCH WHITE PREFORMED THERMOPLASTIC PAVEMENT MARKING LINES	LF	613	\$7.00	\$4,291.00
585625	24 INCH WHITE PREFORMED THERMOPLASTIC PAVEMENT MARKING LINES	LF	190	\$15.00	\$2,850.00
585627	WHITE PREFORMED THERMOPLASTIC PAVEMENT MARKINGS LEG & SYMB	SF	50	\$20.00	\$1,000.00
CATEGORY 6	SHOULDER				\$266,770.00
634300	STD TYPE A COMBINATION CURB & GUTTER 12"X8"	LF	2510	\$35.00	\$87,850.00
655105	5 INCH CONCRETE SIDEWALK	SF	28820	\$6.00	\$172,920.00
655120	DETECTABLE WARNING SURFACES CLAY BRICK PAVERS	SF	100	\$60.00	\$6,000.00
CATEGORY 7	LANDSCAPING				\$0.00
	ASSUMED TO BE PART OF THE HOWARD HUGHES CORPORATION REDEVELOPMENT				\$0.00
CATEGORY 8	TRAFFIC				\$73,000.00
800000	ROADWAY LIGHT POLE	EA	6	\$10,000.00	\$60,000.00
800000	SIGNS	EA	26	\$500.00	\$13,000.00
CATEGORY 9	UTILITIES				\$0.00
	ASSUMED TO BE PART OF THE HOWARD HUGHES CORPORATION REDEVELOPMENT				\$0.00
MISC					\$0.00
					\$0.00

NEAT CONSTRUCTION COST
25% Contingency
TOTAL
TOTAL (ROUNDED)

\$2,322,729.30
\$580,682.33
\$2,903,411.63
\$2,910,000.00

NOTES:

1. NEAT CONSTRUCTION COSTS WERE DEVELOPED IN 2017 DOLLARS. INFLATION TO CONSTRUCTION HAS NOT BEEN APPLIED.
2. A 25% CONTINGENCY WAS APPLIED TO ACCOUNT FOR UNKNOWN/UNDEFINED COST ITEMS.
3. NO COSTS HAVE BEEN INCLUDED FOR RIGHT-OF-WAY.
4. NO VEHICLE RELATED SYSTEM COSTS SUCH AS CHARGING HAVE BEEN INCLUDED.
5. THE COST ESTIMATE FOR THIS OPTION IDENTIFIES ADDITIONAL COSTS REQUIRED TO FIT OUT THE SPACE PROVIDED BY HOWARD HUGHES CORPORATION'S REDEVELOPMENT FOR A TRANSIT CENTER.

COLUMBIA TRANSIT CENTER
CONCEPTUAL COST ESTIMATE
OPTION A-1
LONG-TERM ALTERNATIVE, PREFERRED, INCLUDING PARKING STRUCTURE COSTS

Category Code	Item Description	Unit	Quantity	Unit Cost	Total Cost
CATEGORY 1	PRELIMINARY				\$1,719,168.30
100000	30% OF CATEGORY 2, 4, 5, 6	LS	1	\$1,719,168.30	\$1,719,168.30
CATEGORY 2	GRADING				\$0.00
	ASSUMED TO BE PART OF THE HOWARD HUGHES CORPORATION REDEVELOPMENT				\$0.00
CATEGORY 3	DRAINAGE				\$0.00
	ASSUMED TO BE PART OF THE HOWARD HUGHES CORPORATION REDEVELOPMENT				\$0.00
CATEGORY 4	STRUCTURES				\$4,909,000.00
400000	ONE LEVEL OF A MULTI-LEVEL PARKING STRUCTURE	LS	1	\$4,000,000.00	\$4,000,000.00
400000	ELECTRICAL ALLOWANCE TO ACCOMMODATE LED LIGHTING IN PARKING STRUCTURE	SF	87500	\$3.50	\$306,250.00
400000	MECHANICAL ALLOWANCE TO ACCOMMODATE VENTILATION IN PARKING STRUCTURE	SF	87500	\$4.00	\$350,000.00
400000	PASSENGER AMENITIES AND INFORMATION PER BUS BAY	EA	14	\$6,000.00	\$84,000.00
400000	ELECTRICAL BUILDING WITH TRANSIT INFORMATION BOOTHS AND RESTROOMS	SF	675	\$250.00	\$168,750.00
CATEGORY 5	PAVING				\$554,791.00
504500	SUPERPAVE ASPHALT MIX 9.5MM FOR SURFACE, PG 64S-22, LEVEL 2	TON	200	\$95.00	\$19,000.00
504560	SUPERPAVE ASPHALT MIX 19.0MM FOR BASE, PG 64S-22, LEVEL 2	TON	200	\$95.00	\$19,000.00
520113	6 INCH GRADED AGGREGATE BASE COURSE	SY	4500	\$12.00	\$54,000.00
530100	GRINDING HOT MIX ASPHALT PAVEMENT 0 INCH TO 2 INCH	SY	500	\$5.00	\$2,500.00
560108	8 INCH PORTLAND CEMENT CONCRETE MIX 7	SY	3700	\$120.00	\$444,000.00
585405	5 INCH WHITE LEAD FREE REFLECTIVE THERMOPLASTIC PAVEMENT MARKINGS	LF	6120	\$1.00	\$6,120.00
585407	5 INCH YELLOW LEAD FREE REFLECTIVE THERMOPLASTIC PAVEMENT MARKINGS	LF	2030	\$1.00	\$2,030.00
585621	12 INCH WHITE PREFORMED THERMOPLASTIC PAVEMENT MARKING LINES	LF	613	\$7.00	\$4,291.00
585625	24 INCH WHITE PREFORMED THERMOPLASTIC PAVEMENT MARKING LINES	LF	190	\$15.00	\$2,850.00
585627	WHITE PREFORMED THERMOPLASTIC PAVEMENT MARKINGS LEG & SYMB	SF	50	\$20.00	\$1,000.00
CATEGORY 6	SHOULDER				\$266,770.00
634300	STD TYPE A COMBINATION CURB & GUTTER 12"X8"	LF	2510	\$35.00	\$87,850.00
655105	5 INCH CONCRETE SIDEWALK	SF	28820	\$6.00	\$172,920.00
655120	DETECTABLE WARNING SURFACES CLAY BRICK PAVERS	SF	100	\$60.00	\$6,000.00
CATEGORY 7	LANDSCAPING				\$0.00
	ASSUMED TO BE PART OF THE HOWARD HUGHES CORPORATION REDEVELOPMENT				\$0.00
CATEGORY 8	TRAFFIC				\$73,000.00
800000	ROADWAY LIGHT POLE	EA	6	\$10,000.00	\$60,000.00
800000	SIGNS	EA	26	\$500.00	\$13,000.00
CATEGORY 9	UTILITIES				\$0.00
	ASSUMED TO BE PART OF THE HOWARD HUGHES CORPORATION REDEVELOPMENT				\$0.00
MISC					\$0.00
					\$0.00

NEAT CONSTRUCTION COST
25% Contingency
TOTAL
TOTAL (ROUNDED)

\$7,522,729.30
\$1,880,682.33
\$9,403,411.63
\$9,410,000.00

NOTES:

1. NEAT CONSTRUCTION COSTS WERE DEVELOPED IN 2017 DOLLARS. INFLATION TO CONSTRUCTION HAS NOT BEEN APPLIED.
2. A 25% CONTINGENCY WAS APPLIED TO ACCOUNT FOR UNKNOWN/UNDEFINED COST ITEMS.
3. NO COSTS HAVE BEEN INCLUDED FOR RIGHT-OF-WAY.
4. NO VEHICLE RELATED SYSTEM COSTS SUCH AS CHARGING HAVE BEEN INCLUDED.
5. THE COST ESTIMATE FOR THIS OPTION ASSUMES THE TRANSIT CENTER WILL OCCUPY ONE LEVEL OF A FUTURE PARKING STRUCTURE CONSTRUCTED AS PART OF HOWARD HUGHES REDEVELOPMENT. THE COST INCLUDED FOR THIS LEVEL OF A PARKING STRUCTURES ASSUMES A FOOTPRINT OF 200 SPACES AT \$20,000 PER SPACE.

COLUMBIA TRANSIT CENTER

**CONCEPTUAL COST ESTIMATE
OPTION B**

LONG-TERM ALTERNATIVE, REDUCED FOOTPRINT, FIT OUT SPACE PROVIDED

Category Code	Item Description	Unit	Quantity	Unit Cost	Total Cost
CATEGORY 1	PRELIMINARY				\$420,924.00
100000	30% OF CATEGORY 2, 4, 5, 6	LS	1	\$420,924.00	\$420,924.00
CATEGORY 2	GRADING				\$0.00
	ASSUMED TO BE PART OF THE HOWARD HUGHES CORPORATION REDEVELOPMENT				\$0.00
CATEGORY 3	DRAINAGE				\$0.00
	ASSUMED TO BE PART OF THE HOWARD HUGHES CORPORATION REDEVELOPMENT				\$0.00
CATEGORY 4	STRUCTURES				\$688,500.00
	TRANSIT COVER - ASSUMED TO BE PART OF THE HOWARD HUGHES CORPORATION REDEVELOPMENT				\$0.00
400000	ELECTRICAL ALLOWANCE TO ACCOMMODATE LED LIGHTING UNDER HOWARD HUGHES CORPORATION STRUCTURE	SF	58100	\$3.50	\$203,350.00
400000	MECHANICAL ALLOWANCE TO ACCOMMODATE VENTILATION UNDER HOWARD HUGHES CORPORATION STRUCTURE	SF	58100	\$4.00	\$232,400.00
400000	PASSENGER AMENITIES AND INFORMATION PER BUS BAY	EA	14	\$6,000.00	\$84,000.00
400000	ELECTRICAL BUILDING WITH TRANSIT INFORMATION BOOTHS AND RESTROOMS	SF	675	\$250.00	\$168,750.00
CATEGORY 5	PAVING				\$523,020.00
504500	SUPERPAVE ASPHALT MIX 9.5MM FOR SURFACE, PG 64S-22, LEVEL 2	TON	300	\$95.00	\$28,500.00
504560	SUPERPAVE ASPHALT MIX 19.0MM FOR BASE, PG 64S-22, LEVEL 2	TON	400	\$95.00	\$38,000.00
520113	6 INCH GRADED AGGREGATE BASE COURSE	SY	4400	\$12.00	\$52,800.00
530100	GRINDING HOT MIX ASPHALT PAVEMENT 0 INCH TO 2 INCH	SY	900	\$5.00	\$4,500.00
560108	8 INCH PORTLAND CEMENT CONCRETE MIX 7	SY	3200	\$120.00	\$384,000.00
585405	5 INCH WHITE LEAD FREE REFLECTIVE THERMOPLASTIC PAVEMENT MARKINGS	LF	6150	\$1.00	\$6,150.00
585407	5 INCH YELLOW LEAD FREE REFLECTIVE THERMOPLASTIC PAVEMENT MARKINGS	LF	2050	\$1.00	\$2,050.00
585621	12 INCH WHITE PREFORMED THERMOPLASTIC PAVEMENT MARKING LINES	LF	860	\$7.00	\$6,020.00
585627	WHITE PREFORMED THERMOPLASTIC PAVEMENT MARKINGS LEG & SYMB	SF	50	\$20.00	\$1,000.00
CATEGORY 6	SHOULDER				\$191,560.00
634300	STD TYPE A COMBINATION CURB & GUTTER 12"x8"	LF	2540	\$35.00	\$88,900.00
655105	5 INCH CONCRETE SIDEWALK	SF	16710	\$6.00	\$100,260.00
655120	DETECTABLE WARNING SURFACES CLAY BRICK PAVERS	SF	40	\$60.00	\$2,400.00
CATEGORY 7	LANDSCAPING - TO BE DONE BY HOWARD HUGHES CORPORATION				\$0.00
	ASSUMED TO BE PART OF THE HOWARD HUGHES CORPORATION REDEVELOPMENT	LS	1	\$0.00	\$0.00
CATEGORY 8	TRAFFIC				\$73,000.00
800000	ROADWAY LIGHT POLE	EA	6	\$10,000.00	\$60,000.00
800000	SIGNS	EA	26	\$500.00	\$13,000.00
CATEGORY 9	UTILITIES				\$0.00
	ASSUMED TO BE PART OF THE HOWARD HUGHES CORPORATION REDEVELOPMENT				\$0.00
MISC					\$0.00
					\$0.00

NEAT CONSTRUCTION COST
25% Contingency
TOTAL
TOTAL (ROUNDED)

\$1,897,004.00
\$474,251.00
\$2,371,255.00
\$2,380,000.00

NOTES:

1. NEAT CONSTRUCTION COSTS WERE DEVELOPED IN 2017 DOLLARS. INFLATION TO CONSTRUCTION HAS NOT BEEN APPLIED.
2. A 25% CONTINGENCY WAS APPLIED TO ACCOUNT FOR UNKNOWN/UNDEFINED COST ITEMS.
3. NO COSTS HAVE BEEN INCLUDED FOR RIGHT-OF-WAY.
4. NO VEHICLE RELATED SYSTEM COSTS SUCH AS CHARGING HAVE BEEN INCLUDED.
5. THE COST ESTIMATE FOR THIS OPTION IDENTIFIES ADDITIONAL COSTS REQUIRED TO FIT OUT THE SPACE PROVIDED BY HOWARD HUGHES CORPORATION'S REDEVELOPMENT FOR A TRANSIT CENTER.

COLUMBIA TRANSIT CENTER

**CONCEPTUAL COST ESTIMATE
OPTION B-1**

LONG-TERM ALTERNATIVE, REDUCED FOOTPRINT, INCLUDING COST FOR TRANSIT CENTER CANOPY

Category Code	Item Description	Unit	Quantity	Unit Cost	Total Cost
CATEGORY 1	PRELIMINARY				\$1,157,199.00
100000	30% OF CATEGORY 2, 4, 5, 6	LS	1	\$1,157,199.00	\$1,157,199.00
CATEGORY 2	GRADING				\$280,000.00
202065	COMMON BORROW	CY	10000	\$28.00	\$280,000.00
CATEGORY 3	DRAINAGE				\$248,645.00
300000	25% OF CATEGORY 2, 5, & 6	LS	1	\$248,645.00	\$248,645.00
CATEGORY 4	STRUCTURES				\$2,862,750.00
400000	TRANSIT CANOPY	SF	26100	\$100.00	\$2,610,000.00
400000	PASSENGER AMENITIES AND INFORMATION PER BUS BAY	EA	14	\$6,000.00	\$84,000.00
400000	ELECTRICAL BUILDING WITH TRANSIT INFORMATION BOOTHS AND RESTROOMS	SF	675	\$250.00	\$168,750.00
CATEGORY 5	PAVING				\$523,020.00
504500	SUPERPAVE ASPHALT MIX 9.5MM FOR SURFACE, PG 64S-22, LEVEL 2	TON	300	\$95.00	\$28,500.00
504560	SUPERPAVE ASPHALT MIX 19.0MM FOR BASE, PG 64S-22, LEVEL 2	TON	400	\$95.00	\$38,000.00
520113	6 INCH GRADED AGGREGATE BASE COURSE	SY	4400	\$12.00	\$52,800.00
530100	GRINDING HOT MIX ASPHALT PAVEMENT 0 INCH TO 2 INCH	SY	900	\$5.00	\$4,500.00
560108	8 INCH PORTLAND CEMENT CONCRETE MIX 7	SY	3200	\$120.00	\$384,000.00
585405	5 INCH WHITE LEAD FREE REFLECTIVE THERMOPLASTIC PAVEMENT MARKINGS	LF	6150	\$1.00	\$6,150.00
585407	5 INCH YELLOW LEAD FREE REFLECTIVE THERMOPLASTIC PAVEMENT MARKINGS	LF	2050	\$1.00	\$2,050.00
585621	12 INCH WHITE PREFORMED THERMOPLASTIC PAVEMENT MARKING LINES	LF	860	\$7.00	\$6,020.00
585627	WHITE PREFORMED THERMOPLASTIC PAVEMENT MARKINGS LEG & SYMB	SF	50	\$20.00	\$1,000.00
CATEGORY 6	SHOULDER				\$191,560.00
634300	STD TYPE A COMBINATION CURB & GUTTER 12"X8"	LF	2540	\$35.00	\$88,900.00
655105	5 INCH CONCRETE SIDEWALK	SF	16710	\$6.00	\$100,260.00
655120	DETECTABLE WARNING SURFACES CLAY BRICK PAVERS	SF	40	\$60.00	\$2,400.00
CATEGORY 7	LANDSCAPING				\$60,000.00
700000	LANDSCAPING	LS	1	\$60,000.00	\$60,000.00
CATEGORY 8	TRAFFIC				\$73,000.00
800000	ROADWAY LIGHT POLE	EA	6	\$10,000.00	\$60,000.00
800000	SIGNS	EA	26	\$500.00	\$13,000.00
CATEGORY 9	UTILITIES				\$0.00
	ASSUMED TO BE PART OF THE HOWARD HUGHES CORPORATION REDEVELOPMENT				\$0.00
MISC					\$0.00
					\$0.00

NEAT CONSTRUCTION COST

25% Contingency

TOTAL

TOTAL (ROUNDED)

\$5,396,174.00

\$1,349,043.50

\$6,745,217.50

\$6,750,000.00

NOTES:

1. NEAT CONSTRUCTION COSTS WERE DEVELOPED IN 2017 DOLLARS. INFLATION TO CONSTRUCTION HAS NOT BEEN APPLIED.
2. A 25% CONTINGENCY WAS APPLIED TO ACCOUNT FOR UNKNOWN/UNDEFINED COST ITEMS.
3. NO COSTS HAVE BEEN INCLUDED FOR RIGHT-OF-WAY.
4. NO VEHICLE RELATED SYSTEM COSTS SUCH AS CHARGING HAVE BEEN INCLUDED.
5. THE COST ESTIMATE FOR THIS OPTION ASSUMES THE TRANSIT CENTER WILL HAVE A CANOPY THAT IS INDEPENDENT OF THE HOWARD HUGHES REDEVELOPMENT STRUCTURES.

COLUMBIA TRANSIT CENTER
CONCEPTUAL COST ESTIMATE
OPTION C
SHORT TERM ALTERNATIVE, INCLUDING FULL TRANSIT CENTER CANOPY

Category Code	Item Description	Unit	Quantity	Unit Cost	Total Cost	
CATEGORY 1	PRELIMINARY					\$1,634,898.00
100000	30% OF CATEGORY 2, 4, 5, 6	LS	1	\$1,634,898.00	\$1,634,898.00	
CATEGORY 2	GRADING					\$30,300.00
201030	CLASS 1 EXCAV	CY	1100	\$25.00	\$27,500.00	
202065	COMMON BORROW	CY	100	\$28.00	\$2,800.00	
CATEGORY 3	DRAINAGE					\$174,227.50
300000	25% OF CATEGORY 2, 5, & 6	LS	1	\$174,227.50	\$174,227.50	
CATEGORY 4	STRUCTURES					\$4,752,750.00
400000	FULL TRANSIT CENTER CANOPY	SF	45000	\$100.00	\$4,500,000.00	
400000	PASSENGER AMENITIES AND INFORMATION PER BUS BAY	EA	14	\$6,000.00	\$84,000.00	
400000	ELECTRICAL BUILDING WITH TRANSIT INFORMATION BOOTHS AND RESTROOMS	SF	675	\$250.00	\$168,750.00	
CATEGORY 5	PAVING					\$327,060.00
504500	SUPERPAVE ASPHALT MIX 9.5MM FOR SURFACE, PG 64S-22, LEVEL 2	TON	400	\$95.00	\$38,000.00	
504560	SUPERPAVE ASPHALT MIX 19.0MM FOR BASE, PG 64S-22, LEVEL 2	TON	200	\$95.00	\$19,000.00	
520113	6 INCH GRADED AGGREGATE BASE COURSE	SY	2200	\$12.00	\$26,400.00	
530100	GRINDING HOT MIX ASPHALT PAVEMENT 0 INCH TO 2 INCH	SY	3600	\$5.00	\$18,000.00	
560108	8 INCH PORTLAND CEMENT CONCRETE MIX 7	SY	1800	\$120.00	\$216,000.00	
585405	5 INCH WHITE LEAD FREE REFLECTIVE THERMOPLASTIC PAVEMENT MARKINGS	LF	2300	\$1.00	\$2,300.00	
585407	5 INCH YELLOW LEAD FREE REFLECTIVE THERMOPLASTIC PAVEMENT MARKINGS	LF	970	\$1.00	\$970.00	
585621	12 INCH WHITE PREFORMED THERMOPLASTIC PAVEMENT MARKING LINES	LF	770	\$7.00	\$5,390.00	
585627	WHITE PREFORMED THERMOPLASTIC PAVEMENT MARKINGS LEG & SYMB	SF	50	\$20.00	\$1,000.00	
CATEGORY 6	SHOULDER					\$339,550.00
600000	SAFETY FENCE	LF	480	\$70.00	\$33,600.00	
634300	STD TYPE A COMBINATION CURB & GUTTER 12"X8"	LF	2690	\$35.00	\$94,150.00	
648140	MONOLITHIC CONCRETE MEDIAN 4 FEET 0 INCH WIDE TYPE A-1	LF	500	\$150.00	\$75,000.00	
655105	5 INCH CONCRETE SIDEWALK	SF	22200	\$6.00	\$133,200.00	
655120	DETECTABLE WARNING SURFACES CLAY BRICK PAVERS	SF	60	\$60.00	\$3,600.00	
CATEGORY 7	LANDSCAPING					\$60,000.00
700000	LANDSCAPING	LS	1	\$60,000.00	\$60,000.00	
CATEGORY 8	TRAFFIC					\$290,000.00
800000	PEDESTRIAN LIGHT POLE	EA	16	\$15,000.00	\$240,000.00	
800000	ROADWAY LIGHT POLE	EA	4	\$10,000.00	\$40,000.00	
800000	SIGNS	EA	20	\$500.00	\$10,000.00	
CATEGORY 9	UTILITIES					\$150,000.00
900000	WATER CONNECTION	EA	1	\$50,000.00	\$50,000.00	
900000	SEWER CONNECTION	EA	1	\$50,000.00	\$50,000.00	
900000	COMMUNICATION CONNECTION	EA	1	\$25,000.00	\$25,000.00	
900000	ELECTRICAL CONNECTION	EA	1	\$25,000.00	\$25,000.00	
MISC						\$385,000.00
	MALL PARKING REPLACEMENT	EA	77	\$5,000.00	\$385,000.00	
	NEAT CONSTRUCTION COST					\$8,143,785.50
	25% Contingency					\$2,035,946.38
	TOTAL					\$10,179,731.88
	TOTAL (ROUNDED)					\$10,180,000.00

NOTES:

1. NEAT CONSTRUCTION COSTS WERE DEVELOPED IN 2017 DOLLARS. INFLATION TO CONSTRUCTION HAS NOT BEEN APPLIED.
2. A 25% CONTINGENCY WAS APPLIED TO ACCOUNT FOR UNKNOWN/UNDEFINED COST ITEMS.
3. NO COSTS HAVE BEEN INCLUDED FOR RIGHT-OF-WAY.
4. NO VEHICLE RELATED SYSTEM COSTS SUCH AS CHARGING HAVE BEEN INCLUDED.
5. THE COST ESTIMATE FOR THIS OPTION PROVIDES A CANOPY OVER THE ENTIRE TRANSIT CENTER.

COLUMBIA TRANSIT CENTER

**CONCEPTUAL COST ESTIMATE
OPTION C-1**

SHORT TERM ALTERNATIVE, FULL LENGTH CANOPIES OVER EACH SIDE OF THE TRANSIT CENTER

Category Code	Item Description	Unit	Quantity	Unit Cost	Total Cost	
CATEGORY 1	PRELIMINARY					\$1,057,398.00
100000	30% OF CATEGORY 2, 4, 5, 6	LS	1	\$1,057,398.00	\$1,057,398.00	
CATEGORY 2	GRADING					\$30,300.00
201030	CLASS 1 EXCAV	CY	1100	\$25.00	\$27,500.00	
202065	COMMON BORROW	CY	100	\$28.00	\$2,800.00	
CATEGORY 3	DRAINAGE					\$174,227.50
300000	25% OF CATEGORY 2, 5, & 6	LS	1	\$174,227.50	\$174,227.50	
CATEGORY 4	STRUCTURES					\$2,827,750.00
400000	CONTINUOUS TRANSIT CENTER CANOPIES	SF	25750	\$100.00	\$2,575,000.00	
400000	PASSENGER AMENITIES AND INFORMATION PER BUS BAY	EA	14	\$6,000.00	\$84,000.00	
400000	ELECTRICAL BUILDING WITH TRANSIT INFORMATION BOOTHS AND RESTROOMS	SF	675	\$250.00	\$168,750.00	
CATEGORY 5	PAVING					\$327,060.00
504500	SUPERPAVE ASPHALT MIX 9.5MM FOR SURFACE, PG 64S-22, LEVEL 2	TON	400	\$95.00	\$38,000.00	
504560	SUPERPAVE ASPHALT MIX 19.0MM FOR BASE, PG 64S-22, LEVEL 2	TON	200	\$95.00	\$19,000.00	
520113	6 INCH GRADED AGGREGATE BASE COURSE	SY	2200	\$12.00	\$26,400.00	
530100	GRINDING HOT MIX ASPHALT PAVEMENT 0 INCH TO 2 INCH	SY	3600	\$5.00	\$18,000.00	
560108	8 INCH PORTLAND CEMENT CONCRETE MIX 7	SY	1800	\$120.00	\$216,000.00	
585405	5 INCH WHITE LEAD FREE REFLECTIVE THERMOPLASTIC PAVEMENT MARKINGS	LF	2300	\$1.00	\$2,300.00	
585407	5 INCH YELLOW LEAD FREE REFLECTIVE THERMOPLASTIC PAVEMENT MARKINGS	LF	970	\$1.00	\$970.00	
585621	12 INCH WHITE PREFORMED THERMOPLASTIC PAVEMENT MARKING LINES	LF	770	\$7.00	\$5,390.00	
585627	WHITE PREFORMED THERMOPLASTIC PAVEMENT MARKINGS LEG & SYMB	SF	50	\$20.00	\$1,000.00	
CATEGORY 6	SHOULDER					\$339,550.00
600000	SAFETY FENCE	LF	480	\$70.00	\$33,600.00	
634300	STD TYPE A COMBINATION CURB & GUTTER 12"X8"	LF	2690	\$35.00	\$94,150.00	
648140	MONOLITHIC CONCRETE MEDIAN 4 FEET 0 INCH WIDE TYPE A-1	LF	500	\$150.00	\$75,000.00	
655105	5 INCH CONCRETE SIDEWALK	SF	22200	\$6.00	\$133,200.00	
655120	DETECTABLE WARNING SURFACES CLAY BRICK PAVERS	SF	60	\$60.00	\$3,600.00	
CATEGORY 7	LANDSCAPING					\$60,000.00
700000	LANDSCAPING	LS	1	\$60,000.00	\$60,000.00	
CATEGORY 8	TRAFFIC					\$290,000.00
800000	PEDESTRIAN LIGHT POLE	EA	16	\$15,000.00	\$240,000.00	
800000	ROADWAY LIGHT POLE	EA	4	\$10,000.00	\$40,000.00	
800000	SIGNS	EA	20	\$500.00	\$10,000.00	
CATEGORY 9	UTILITIES					\$150,000.00
900000	WATER CONNECTION	EA	1	\$50,000.00	\$50,000.00	
900000	SEWER CONNECTION	EA	1	\$50,000.00	\$50,000.00	
900000	COMMUNICATION CONNECTION	EA	1	\$25,000.00	\$25,000.00	
900000	ELECTRICAL CONNECTION	EA	1	\$25,000.00	\$25,000.00	
MISC						\$385,000.00
	MALL PARKING REPLACEMENT	EA	77	\$5,000.00	\$385,000.00	
	NEAT CONSTRUCTION COST					\$5,641,285.50
	25% Contingency					\$1,410,321.38
	TOTAL					\$7,051,606.88
	TOTAL (ROUNDED)					\$7,060,000.00

NOTES:

1. NEAT CONSTRUCTION COSTS WERE DEVELOPED IN 2017 DOLLARS. INFLATION TO CONSTRUCTION HAS NOT BEEN APPLIED.
2. A 25% CONTINGENCY WAS APPLIED TO ACCOUNT FOR UNKNOWN/UNDEFINED COST ITEMS.
3. NO COSTS HAVE BEEN INCLUDED FOR RIGHT-OF-WAY.
4. NO VEHICLE RELATED SYSTEM COSTS SUCH AS CHARGING HAVE BEEN INCLUDED.
5. THE COST ESTIMATE FOR THIS OPTION PROVIDES TWO CONTINUOUS CANOPIES OVER A PORTION OF THE BUS AND THE LOADING AND WAITING AREAS.

COLUMBIA TRANSIT CENTER

**CONCEPTUAL COST ESTIMATE
OPTION C-2**

SHORT TERM ALTERNATIVE, INCLUDING INDIVIDUAL BUS BAY CANOPIES

Category Code	Item Description	Unit	Quantity	Unit Cost	Total Cost
CATEGORY 1 PRELIMINARY					
100000	30% OF CATEGORY 2, 4, 5, 6	LS	1	\$452,898.00	\$452,898.00
CATEGORY 2 GRADING					
201030	CLASS 1 EXCAV	CY	1100	\$25.00	\$27,500.00
202065	COMMON BORROW	CY	100	\$28.00	\$2,800.00
CATEGORY 3 DRAINAGE					
300000	25% OF CATEGORY 2, 5, & 6	LS	1	\$174,227.50	\$174,227.50
CATEGORY 4 STRUCTURES					
400000	INDIVIDUAL BUS BAY CANOPIES	SF	5600	\$100.00	\$560,000.00
400000	PASSENGER AMENITIES AND INFORMATION PER BUS BAY	EA	14	\$6,000.00	\$84,000.00
400000	ELECTRICAL BUILDING WITH TRANSIT INFORMATION BOOTHS AND RESTROOMS	SF	675	\$250.00	\$168,750.00
CATEGORY 5 PAVING					
504500	SUPERPAVE ASPHALT MIX 9.5MM FOR SURFACE, PG 64S-22, LEVEL 2	TON	400	\$95.00	\$38,000.00
504560	SUPERPAVE ASPHALT MIX 19.0MM FOR BASE, PG 64S-22, LEVEL 2	TON	200	\$95.00	\$19,000.00
520113	6 INCH GRADED AGGREGATE BASE COURSE	SY	2200	\$12.00	\$26,400.00
530100	GRINDING HOT MIX ASPHALT PAVEMENT 0 INCH TO 2 INCH	SY	3600	\$5.00	\$18,000.00
560108	8 INCH PORTLAND CEMENT CONCRETE MIX 7	SY	1800	\$120.00	\$216,000.00
585405	5 INCH WHITE LEAD FREE REFLECTIVE THERMOPLASTIC PAVEMENT MARKINGS	LF	2300	\$1.00	\$2,300.00
585407	5 INCH YELLOW LEAD FREE REFLECTIVE THERMOPLASTIC PAVEMENT MARKINGS	LF	970	\$1.00	\$970.00
585621	12 INCH WHITE PREFORMED THERMOPLASTIC PAVEMENT MARKING LINES	LF	770	\$7.00	\$5,390.00
585627	WHITE PREFORMED THERMOPLASTIC PAVEMENT MARKINGS LEG & SYMB	SF	50	\$20.00	\$1,000.00
CATEGORY 6 SHOULDER					
600000	SAFETY FENCE	LF	480	\$70.00	\$33,600.00
634300	STD TYPE A COMBINATION CURB & GUTTER 12"X8"	LF	2690	\$35.00	\$94,150.00
648140	MONOLITHIC CONCRETE MEDIAN 4 FEET 0 INCH WIDE TYPE A-1	LF	500	\$150.00	\$75,000.00
655105	5 INCH CONCRETE SIDEWALK	SF	22200	\$6.00	\$133,200.00
655120	DETECTABLE WARNING SURFACES CLAY BRICK PAVERS	SF	60	\$60.00	\$3,600.00
CATEGORY 7 LANDSCAPING					
700000	LANDSCAPING	LS	1	\$60,000.00	\$60,000.00
CATEGORY 8 TRAFFIC					
800000	PEDESTRIAN LIGHT POLE	EA	16	\$15,000.00	\$240,000.00
800000	ROADWAY LIGHT POLE	EA	4	\$10,000.00	\$40,000.00
800000	SIGNS	EA	20	\$500.00	\$10,000.00
CATEGORY 9 UTILITIES					
900000	WATER CONNECTION	EA	1	\$50,000.00	\$50,000.00
900000	SEWER CONNECTION	EA	1	\$50,000.00	\$50,000.00
900000	COMMUNICATION CONNECTION	EA	1	\$25,000.00	\$25,000.00
900000	ELECTRICAL CONNECTION	EA	1	\$25,000.00	\$25,000.00
MISC					
	MALL PARKING REPLACEMENT	EA	77	\$5,000.00	\$385,000.00
NEAT CONSTRUCTION COST					\$3,021,785.50
25% Contingency					\$755,446.38
TOTAL					\$3,777,231.88
TOTAL (ROUNDED)					\$3,780,000.00

NOTES:

1. NEAT CONSTRUCTION COSTS WERE DEVELOPED IN 2017 DOLLARS. INFLATION TO CONSTRUCTION HAS NOT BEEN APPLIED.
2. A 25% CONTINGENCY WAS APPLIED TO ACCOUNT FOR UNKNOWN/UNDEFINED COST ITEMS.
3. NO COSTS HAVE BEEN INCLUDED FOR RIGHT-OF-WAY.
4. NO VEHICLE RELATED SYSTEM COSTS SUCH AS CHARGING HAVE BEEN INCLUDED.
5. THE COST ESTIMATE FOR THIS OPTION PROVIDES INDIVIDUAL CANOPIES FOR EACH BUS BAY WAITING AREA.