



Cary Multi-Modal Site Selection Analysis Report

Downtown Cary Multi-Modal Transit Facility Feasibility Study

1. Task Overview

The Downtown Cary Multi-Modal Center is envisioned to be a comprehensive multi-modal transportation facility in Downtown Cary, which will enrich and enhance the Town's recent Downtown development efforts, and provide Cary residents improved transportation options to connect regionally within the Triangle. The project is in the initial feasibility stage, and the output of this study will be project planning work which enable the Town to move the project into design and land acquisition.

This document presents a comprehensive assessment that determines the best possible location to connect Downtown Cary regionally and enhance the Town's recent Downtown investments. This assessment identified all possible sites, prepared a four-step analysis that evaluated all alternatives, and validated the recommended option for the final selection.

The site selection process involves input from the Technical Review Committee (TRC), whose membership includes major project stakeholders such as NCDOT Rail Division, NCDOT Division of Highways, GoTriangle and the North Carolina Railroad Company (NCRR).

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2. Analysis Methodology

The site selection analysis was completed in a four-step screening process. The methodology is illustrated in Figure 1 below. This methodology was reviewed by the Technical Review Committee to capture all of the spatial requirements and goals of the site, then the project team identified multiple potential sites that were screened for the Multi-Modal Center location.

Step 1: Prerequisite Screening

– Run an initial prerequisite screening process to identify all potential sites that are physically feasible for the future Multi-Modal Center.

Step 2: Site Selection Criteria and Weighting

– Introduce a site selection criteria screening tool organized into 3 categories: Multi-Modal Connectivity, Suitability & Feasibility, and Social & Economic Benefits. The criteria were reviewed and ranked by the Technical Review Committee.

Step 3: Potential Sites Evaluation

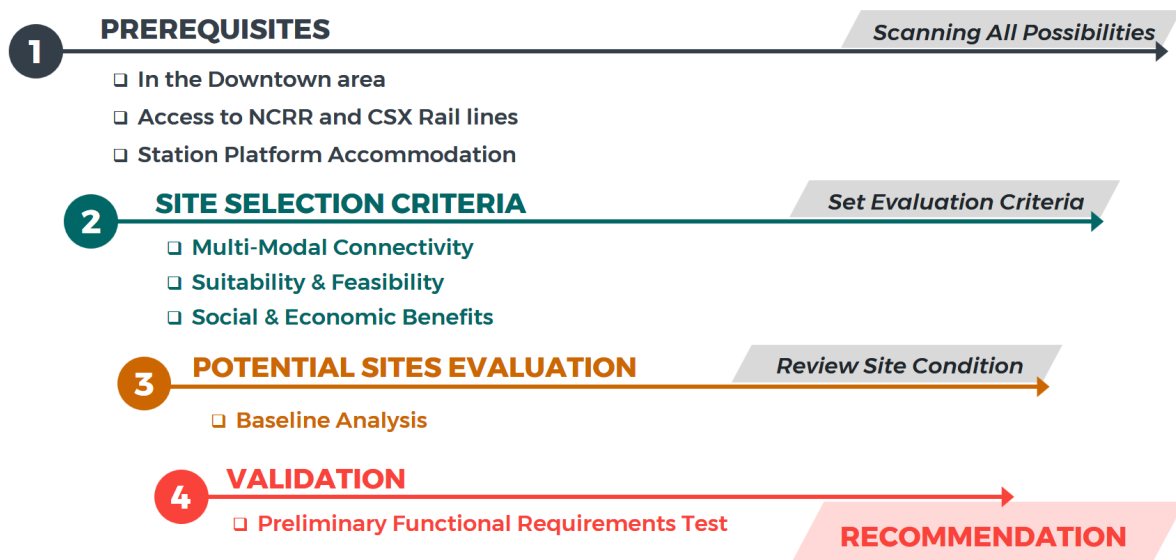
– Data collection of each site selection criterion is used to evaluate the condition for all potential sites.

Step 4: Validation and Recommendation

– after assessment and preliminary functional requirement test fits of the preferred site, the recommendation was validated.

Figure 1: Site Selection Analysis Methodology

Site Selection Analysis Methodology - 4-Step Screening Process



3. Site Selection Analysis

Step 1 – Prerequisite Screening

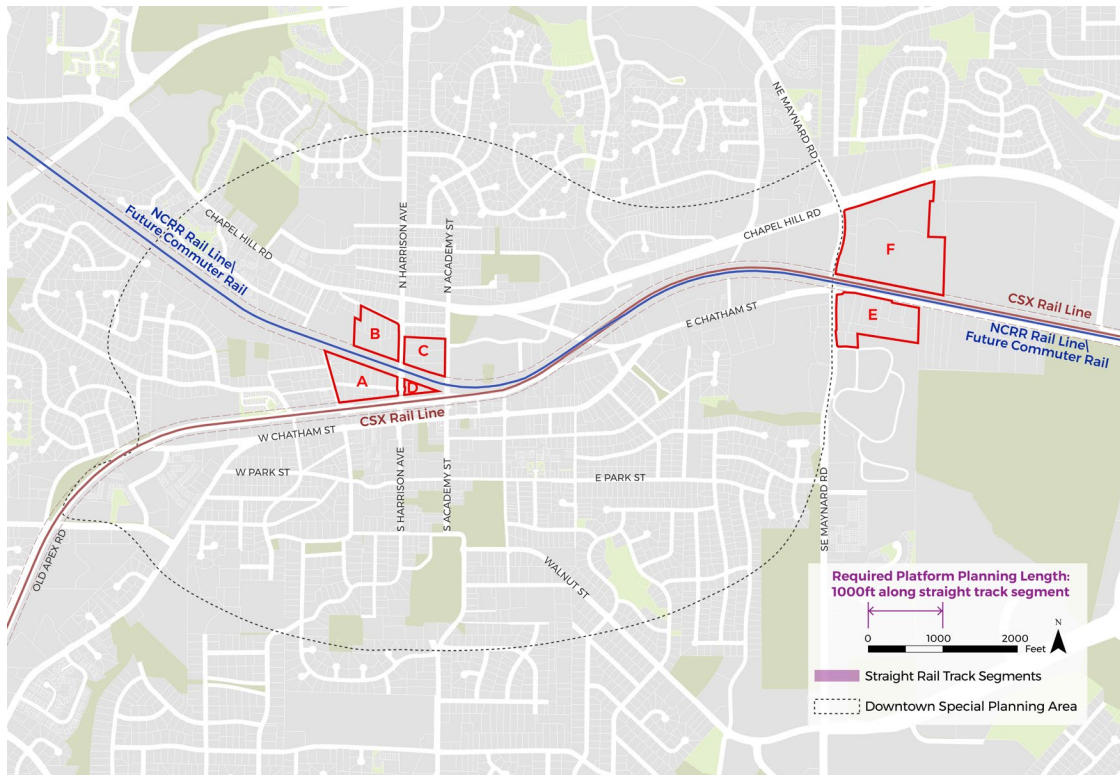
Step 1 identifies all potential sites that are physically feasible for the future Multi-Modal Center by 3 initial prerequisites:

1. **In the Downtown Area:** the study area was identified as Cary's Downtown Special Planning Area as described in the Cary Community Plan, and its adjacent sites.
2. **Access to both NCR and CSX Rail lines:** in the study area, NCR and CSX rail tracks are both along East Chatham Street road to the east, and split at the intersection with North Academy Street and East Cedar Street. Since the Multi-Modal Center will accommodate Amtrak users of the Carolinian and Silver Star trains that currently stop at the Cary Depot, any potential site should either have direct or proximal access to both rail lines.
3. **Meet platform accommodation requirements:** Amtrak stated that the required platform planning length are up to 1,000 feet and must be along a straight track segment. Straight segments of track were identified and measured along all possible site locations.

Through the screening process, six potential sites were identified, as shown in Figure 2 below.

Among these sites, A, E, F meet all of the prerequisites as an individual site for further screening, while sites B, C, D would need to be grouped with other identified sites to meet the prerequisite screening requirements.

Figure 2: Prerequisite Screened Sites

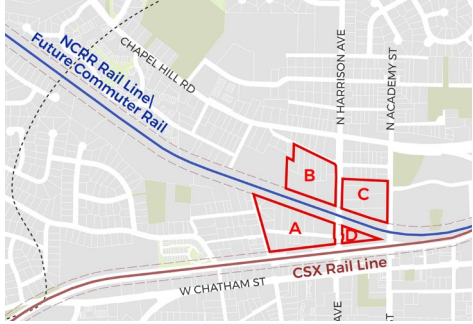
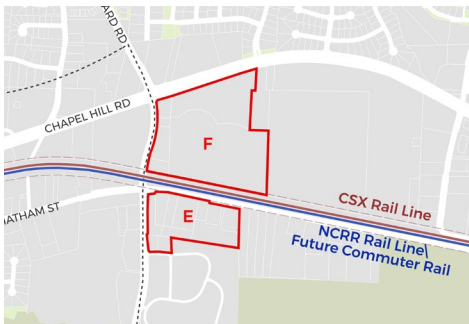


Sites A, B, C, and D were considered as the Downtown Core options, while sites E and F were in the Eastern Gateway area, directly adjacent to the Downtown Core. A compression of the two areas can be seen in Figure 3.

The Town of Cary expressed a preference to retain the Multi-Modal Center in Downtown Cary. At the same time, NCDOT Rail Division also preferred to retain rail services in Downtown Cary, as it has grown as a destination through recent investments by the Town, and for its historical significance. Intercity passenger rail ridership is robust and expected to grow with the addition of new frequencies between Raleigh and Charlotte. Rail Division stated that there could be an increased trip time at a potential Eastern Cary Gateway station site because intercity passenger rail vehicles currently operate up to 79 mph in the straight section of track through sites E and F. Thus, site E and F were eliminated from further analysis based on conversations with key stakeholders.

The downtown core area sites, as the most suitable location for a well-connected Multi-Modal Center, moved on to the next step of analysis.

Figure 3: Downtown Core and Eastern Cary Gateway Comparison

Downtown Core Options	Eastern Cary Gateway Options
	
Separated rail platforms	Integrated rail platform
Traffic Impacts on Harrison Avenue and Academy Street	Rail passengers are removed from main downtown core and the historical rail connection
Walking distance to downtown destinations	Need connections to downtown destinations
Less impacts on current transit plan – all bus routes come to downtown around the depot location	Re-routing of transit services to serve East Gateway, while BRT would still need to serve downtown

Step 2 – Site Selection Criteria and Weighting

Step 2 proposes a comprehensive set of siting criteria that would be used to evaluate the conditions of all potential sites. The criteria included all the critical components of the site selection considerations in support of the goals for the Multi-Modal facility to enrich Downtown Cary by creating a connected, vibrant and sustainable public space. Investments in the Multi-Modal Center should enhance the area to meet development goals set forth in the Cary Community Plan. The criteria were organized under three categories: Multi-Modal Connectivity, Suitability & Feasibility, and Social & Economic Benefits, as shown in Figure 4 below.

Figure 4: Site Selection Criteria

Multi-Modal Connectivity	Suitability & Feasibility	Social & Economic Benefits
<ol style="list-style-type: none"> Public Transit Connections <ul style="list-style-type: none"> Rail Access Existing Bus Services Future BRT Connection Vehicular Accessibility Bicycle Infrastructure Pedestrian Connectivity Public Parking Availability 	<ol style="list-style-type: none"> Block Size and Geometry Transit Operational & Future Growth Needs Site Visibility Site Preparation Issue <ul style="list-style-type: none"> Physical Encumbrance Ownership Environmental Issue Easements, Liens, Deed Restrictions 	<ol style="list-style-type: none"> Align with Cary Community Plan Development Potential Proximity to Compatible Uses and Amenities Capture Ridership Promote Economic Development in Downtown Area

The final site selection criteria were reviewed and approved at TRC meeting #2 by the Town of Cary and the Technical Review Committee. At the same time, to determine the level of emphasis on particularly important criteria, a weighting questionnaire was distributed to all TRC members, with the question of “*What criteria is most important to you for the Cary Multi-Modal Transit Center site selection?*” and asked the participants to score each criterion in the range of 1 to 3 (3 is most important and 1 is least important). Seventeen questionnaires were collected. The results summary can be seen in Figure 5 below.

Figure 5: Questionnaire Results Summary

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	Average	Total
Multi-modal Connectivity																			
1 Public Transit Connections	3	3	3	3	3	3	3	3	3	2	1	3	3	3	3	3	3	2.8	48
2 Pedestrian Connectivity	3	3	3	2	3	3	2	3	2	3	1	3	1	1	3	3	2	2.4	41
3 Public Parking Availability	1	2	3	1	1	2	2	2	3	2	2	2	2	1	2	1	2	1.8	31
4 Vehicular Accessibility	2	2	2	1	2	2	3	2	1	1	3	2	1	2	1	1	2	1.8	30
5 Bicycle Infrastructure	2	1	2	2	2	1	1	2	3	1	2	1	1	1	2	2	3	1.7	28.5
Suitability & Feasibility																			
1 Transit Operational & Future Growth Needs	3	3	3	3	3	3	3	2	3	3	1	3	3	3	3	3	2	2.8	47
2 Site Visibility	2	2	2	2	2	1	2	2	3	3	2	3	2	1	3	1	2	2.1	35
3 Block Size and Geometry	2	2		2	2	2	2	1	2	2	2	2	2	2	2	3	2	2.0	32
4 Site Preparation Issue	3	3		2	3	2	2	1	1	2	1	1	1	2	2	2	3	1.9	31
5 Easements, Liens, or Deed Restrictions	2	2		1	1	3	1	1	2	1	2	1	1	1	2	2	2	1.6	25
Social & Economic Benefit																			
1 Capture Ridership	3	2		3	3	2	3	3	1	2	1	2	3	2	2	3	3	2.4	38
2 Proximity to Compatible Uses and Amenities	2	1		2	3	3	3	2	3	2	2	3	2	2	2	3	3	2.4	38
3 Promote Economic Development in DT Area	1	2		1	3	2	2	1	3	3	2	3	1	2	3	2	2	2.1	33
4 Development Potential	3	2		2	2	2	2	1	2	3	1	2	2	2	2	2	2	2.0	32
5 Align with Cary Community Plan	1	3		2	2	3	2	2	2	3	1	1	1	1	3	2	2	1.9	31

Step 3 – Evaluate Potential Options by Each Criterion

Based on prerequisite screening in Step 1, two options of potential locations for the Multi-Modal Center were identified for the detailed baseline analysis, as shown in Figure 6 below:

Figure 6: Evaluation of Potential Sites for the Multi-Modal Center



Step 3 completes a baseline analysis to compare the performance of the potential sites based on the site selection criteria. There are two different approaches to the analysis based on the three different categories of site selection criterion.

Analysis Method	Multi-Modal Connectivity	Suitability & Feasibility	Social & Economic Benefits
Mapping Analysis	✓	✓	
Issues and Opportunities Narrative			✓

- Mapping Analysis

Data was collected from North Carolina, Wake County, the Town of Cary, and through Google Earth or Google Maps analysis to evaluate site conditions for each criterion and visualize the key findings and analysis results.

- Issues and Opportunities Narrative

This narrative gives a summary of the analysis for both options. The narrative description is necessary when the results between the two options would not differ. The two options are very close in location, so if the criteria are on a more regional scale, the criteria would have the same score and therefore be neutral. Our team’s analysis indicates that Downtown Cary has attractive fundamentals for new development and potential sites Downtown are so close together that our findings for economic development potential apply to sites A, B and C:

- Downtown Cary is an attractive, walkable environment with an appealing amenity base and sense of place.
- The Downtown has seen quick absorption and tightening vacancy for its core office and multifamily sectors.
- Downtown is well-positioned to attract additional investment in the context of a fast-growing region and desirable community.
- This study will be key in defining a multimodal center site location that can accommodate feasible development typologies.

The final site selection results were reviewed by the Town of Cary and the TRC to ensure a comprehensive analysis. Option 2 (Site B, C, D combination) was eliminated due to restrictions on Site D and no direct access to the CSX rail line. Option 1 (Site A) was determined as the preferred site for future analysis.


Step 4 – Preliminary Functional Requirements Test

To finalize the site selection recommendation, preliminary test fits for Site A were applied based on functional requirements for the multi-modal center identified in Task 2 to validate that site conditions can meet all technical requirements to integrate rail, bus, BRT, parking facilities and potential development.

Facility Functional Requirements Summary

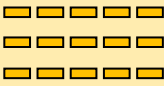

A. Functional Requirements for Rail Services

3 boarding platforms with the minimum planning lengths as follows:

Boarding Platforms and lengths: <ul style="list-style-type: none">• NCRR – 800-1000’• Commuter Rail – 600’• CSX – 800’	3	 3 Platforms
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B. Facility Requirements for Bus Services

13 bus bays for GoCary and GoTriangle buses, with 2 bays for future expansion, and 4 bays for the GoRaleigh and Longer Term BRT buses.

GoCary fixed route bus bays	8		13+2* Bus Bays
GoCary paratransit bus bays	2		
GoTriangle bus bays	2		
GoTriangle paratransit bus bays	1		
Future expansion	2*		
GoRaleigh BRT Bus Bays	2	 (60' articulated bus)	4 Bus Bays
Longer term BRT (CAMPO 2045 plan)	2		


C. Indoor Space Requirements

Required indoor space for bus services is approximately 9,000 square feet, including shared waiting areas, restrooms, passenger services and ticketing, among others. In addition, rail services require approximately 5,000 square feet, including shared waiting areas and other indoor spaces.

Bus	Capacity	
Shared waiting area and restrooms	120	
Passenger services and ticketing	3	
Driver breakroom, restrooms and quiet room	12	
Ticket Vending Machine area	2	
GoCary transit staff office space	10	
		approx. 9,000 sq. ft.
Rail		
Shared waiting area	120	
Station manager office and baggage handling	6	
		approx. 5,000 sq. ft.
Non-Transit Development		
Transit Oriented Development		
Meeting room (up to 100 people)	100	
Cary Police Department patrol space	4	
		TBD

D. Parking Needs

Parking requirements include 140 spaces for transit parking. In addition, the town expressed the desire to add another 480 spaces for non-transit public parking. The test fit uses a 3-bay typical garage layout to accommodate a total of 620 parking spaces.

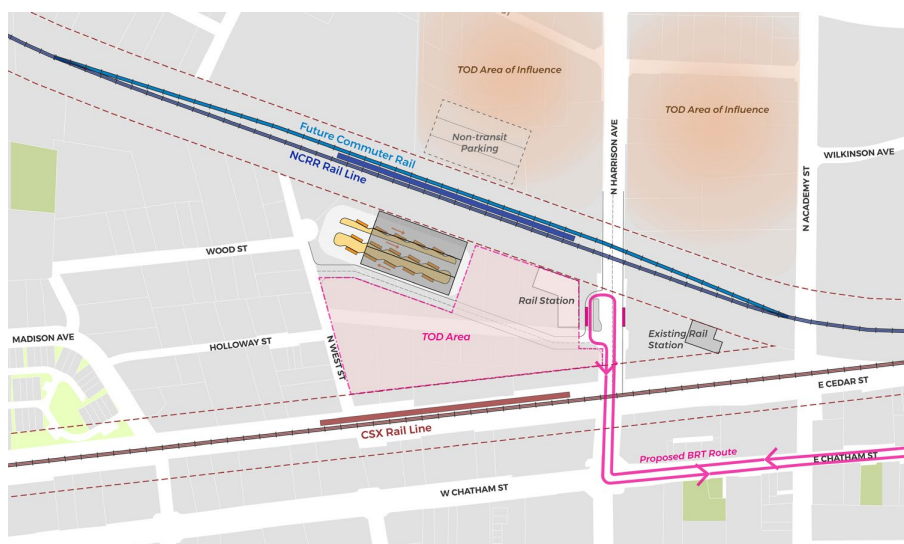
Transit Parking	140	 620 Parking Spaces
Non-Transit Public Parking	480	

Preliminary Test Fit on Site A

Based on functional requirements listed above, the preliminary test fit indicates that Site A could accommodate required facilities for all transit uses. As shown in Figure 7 below, Site A integrates 15 bus bays for local buses, a parking garage overbuild, a multi-modal transit center serving both rail and bus riders, and is connected to BRT stops on Harrison Avenue. All transit operations and parking for transit users were located compactly to provide easy connection, while considering the option to accommodate non-transit public parking in the adjacent sites to release the pressure of high traffic volume.

The analysis also shows the potential area on site A for transit-oriented development, as well as the TOD opportunities in the adjacent area that would be influenced by the Multi-Modal Center. Detailed design considerations for intermodal connections, transit operations, traffic circulation, and transit-oriented development will be further developed in the conceptual design phase.

Figure 7: Preliminary Test Fit on Site A



4. Recommendation

After a comprehensive review and evaluation of all potential Downtown sites, the pre-requisite that the site must have access to both rail lines (NCRR and CSX) determined the final location of the preferred site (Site A). The criteria ranked as most important by stakeholders – public transit connections and transit operational and future growth needs - can be accommodated the best at Site A. The next most important criteria - pedestrian connections and proximity to compatible uses and amenities - will be important considerations as the WSP team moves into concept design for the Multi-Modal Center and recommendations will be made to strengthen the pedestrian connections from the Multi-Modal Center to Downtown attractions on S. Academy Street and to Cary's Civic campus.