ATTACHMENT B

MEMORANDUM

To: Ms. Ann Cundy, AICP
Director of Transportation
Central Shenandoah Planning District Commission

From: Tyler Beduhn, P.E.
Ashley Fenouil, P.E.
Kimley-Horn and Associates, Inc.

Date: November 16, 2021

Subject: Lewis Street Transit Hub Redesign and Rehabilitation

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Introduction

The Central Shenandoah Planning District Commission (CSPDC) is the owner of the Lewis Street Hub ("the Hub") property in downtown Staunton, Virginia. The property is currently used as a transit hub and allows for City of Staunton free municipal parking. The existing pavement is in need of rehabilitation, and the CSPDC wants to redesign the hub to maximize its potential, creating an accessible and functional hub for BRITE transit riders and operators.

This memorandum summarizes current conditions at the Lewis Street Hub, existing transit services, future facility needs, and provides a concept plan and opinion of probable cost for redesigning and rehabilitating the Hub. The concept plan and opinion of probable cost will be used by the CSPDC in application to the Federal Transit Administration's (FTA) 5339(b) Grants for Buses and Bus Facilities Program.

Current Conditions and Transit Services

This section summarizes current conditions of the Hub, existing transit service, and multimodal activity. Kimley-Horn received the following information from the CSPDC to support this summary:

- Parking utilization and access/departure mode data for the Hub from CSPDC observations
- City of Staunton license agreement for municipal parking
- Existing conditions sketch
- Parcel data and map
- Transit ridership (on/off counts at the Hub completed by Virginia Regional Transit)
- Staunton Hub Parking Lot – Pavement Cores letter from Draper Aden Associates

SITE LOCATION AND CURRENT CONDITIONS

Site Location

The Lewis Street Hub is located at 240 N. Lewis Street in historic downtown Staunton. The parcel location is shown in **Figure 1** below. The Hub is situated on parcel number 4730, which contains 2.239 acres of land, and was purchased by the CSPDC in April 2021. The property was previously owned by American Shakespeare Center (ASC). The portions of the parcel not used for the Hub are wooded and contain steep grades. The parcel is adjacent to residential properties to the north and south, and the Howard Johnson hotel and commercial properties across the street to the east.

The Hub has two driveways onto Lewis Street, which has sidewalk on both sides of the street. The parking lot consists of a one-way drive lane that circles around the parking stalls in the center of the lot. A dirt trail exists that connects to Fillmore Street at the west end of the lot.

Figure 1: Lewis Street Hub Parcel Map

Current Conditions

The Hub is primarily used as a transfer location and end of line stop for multiple bus routes and trolleys in the BRITE Bus transit system. The facility also contains 34 parking spaces, and the CSPDC grants use of the lot to the City of Staunton for free municipal parking. **Table 1** shows an inventory of existing facility amenities. The lot is also lit by two parking lot lights—each mounted on a wood utility pole on the north and south ends of the lot—in addition to one street light on Lewis Street.

Table 1: Existing Hub Inventory

Amenities	Existing Quantity
Bus Shelters	2
Benches	2
Trash Receptacles	2
Bike Racks	1
Bus Stop Signs	2
Total Parking Spaces	34
Accessible Parking Spaces	2

Source: Kimley-Horn

The CSPDC had pavement conditions observed and asphalt cores taken by Draper Aden Associates in June 2021 to determine asphalt and stone base thickness and the soil subbase material type. According to the letter to the CSPDC dated July 2, 2021 the pavement contained alligator cracking, potholes, and full degradation of the asphalt down to the stone layer at many locations around the parking lot with a majority of the heavy damage located along the western drive lane. Asphalt thickness was measured to consist of 1 to 2 inches of Surface Mix (SM) asphalt while the stone thickness varied between 2 and 9 inches throughout the parking lot. The soil subgrade was visually classified as a Sandy Clay (CL).

TRANSIT SERVICES AND MULTIMODAL ACTIVITY

The Hub is served by six transit routes: the 250 Connector, Blue Ridge Community College (BRCC) Shuttle, Downtown Trolley, Saturday Night Trolley, North Loop and West Loop. Transit service is provided from the Hub on weekdays and Saturday. **Table 2** contains details on the hours of service (span) and how frequently each route serves the Hub (headway). **Figure 2** shows route maps.

Four routes (250 Connector, BRCC Shuttle, Downtown Trolley, West Loop) serve the Hub on the half hour, and one route (North Loop) serves the Hub on the hour. This means at any one time, a maximum of four buses stop at the Hub. There are currently four spaces allocated for transit vehicles which is shown in **Figure 3.**

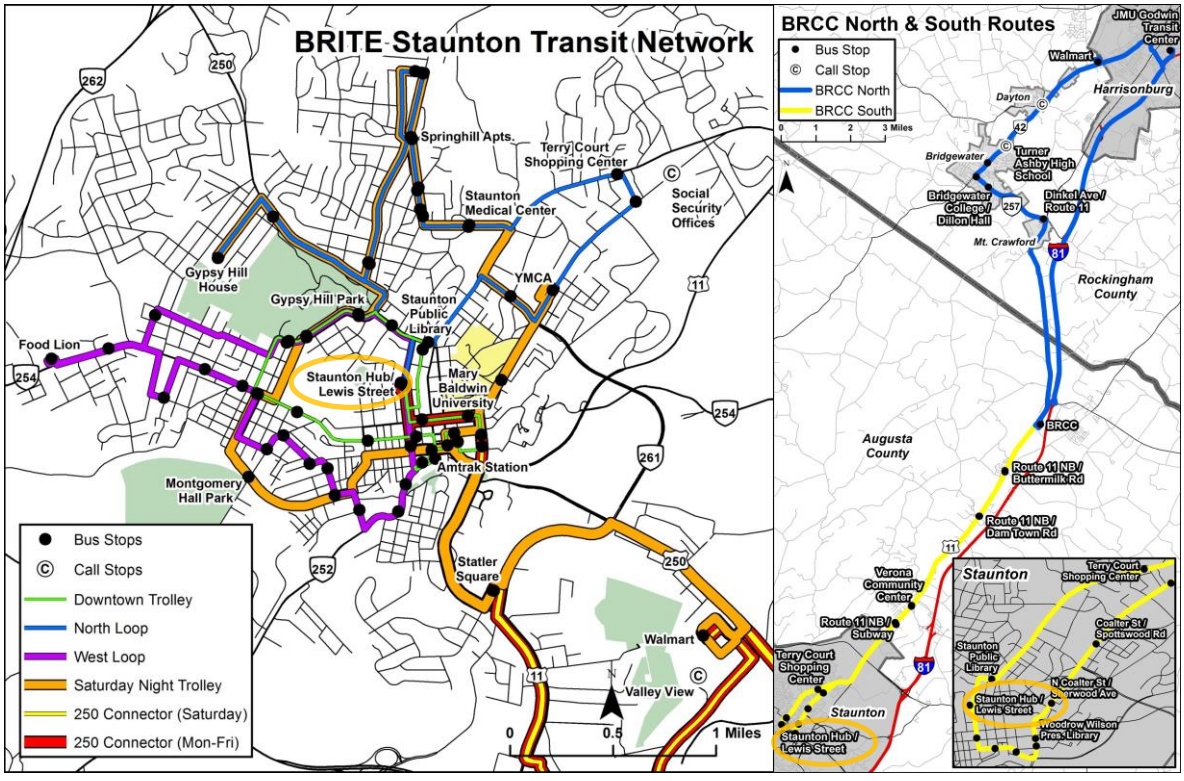
The routes are primarily operated with 30-foot body-on-chassis vehicles. One 32-foot heavy-duty bus is occasionally in used as a spare vehicle on the BRCC Shuttle which serves the Hub.

Table 2: Transit Routes Serving the Hub

Route	Weekday Service (Monday through Friday)		Saturday Service	
	Span	Headway (minutes)	Span	Headway (minutes)
250 Connector	7:30 a.m. – 9:30 p.m.	60	8:30 a.m. – 7:30 p.m.	60
Blue Ridge Community College Shuttle	7:15 a.m. – 10:30 p.m.[1]	60	-	-
Downtown Trolley	10:00 a.m. – 9:00 p.m.	60	10:00 a.m. – 6:00 p.m.	60
North Loop[2]	8:00 a.m. – 8:30 p.m.	60	8:00 a.m. – 5:30 p.m.	60
West Loop[2]	8:30 a.m. – 9:00 p.m.	60	8:30 a.m. – 6:00 p.m.	60

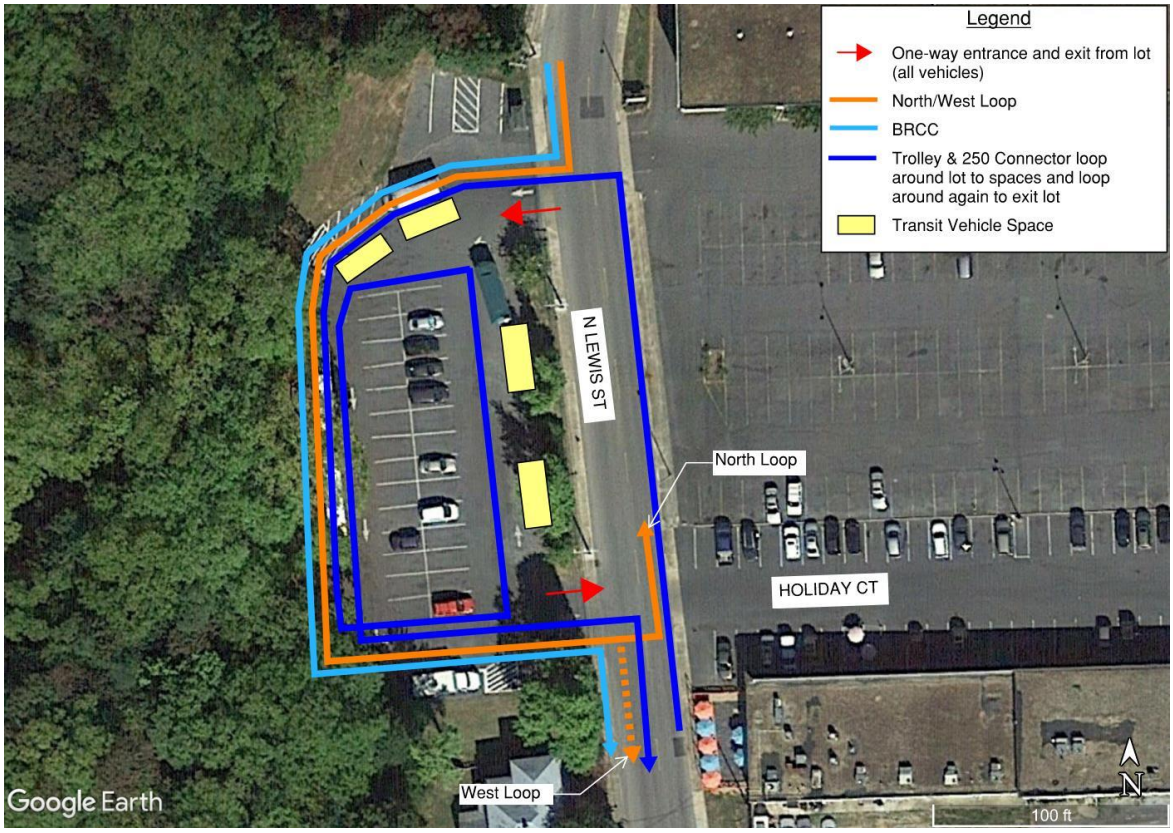
Notes:
[1]Route ends at 7:30 p.m. on Friday
[2]North and West Loops operate with the same bus
Source: CSPDC

Figure 2: Existing Transit Services



Source: CSPDC

Figure 3: Existing Transit Circulation



Source: Kimley-Horn

Existing transit ridership occurring at the Hub on an average weekday and Saturday is shown in **Table 3**. Over 250 people get on or off a bus at the Hub on a weekday and approximately 140 on a Saturday. On and off counts were collected by Virginia Regional Transit, which operates BRITE Bus service, Monday October 18 through Saturday October 23, 2021.

Table 3: Average Daily Transit Ridership at the Hub

Route	Weekday			Saturday		
	On	Off	Total	On	Off	Total
250 Connector	50	43	93	36	27	63
Blue Ridge Community College Shuttle	19	22	41	-	-	-
Downtown Trolley	17	15	32	11	13	24
North and West Loops	37	52	89	22	32	54
Total	**123**	**132**	**255**	**69**	**72**	**141**

Notes:
Data collected Monday October 18 through Saturday October 23, 2021
Sources: Virginia Regional Transit, Kimley-Horn

The Hub serves as an important exchange point for multiple modes of travel. The CSPDC observed access and departure modes of travel for people using the Hub at the times of the day: morning, midday, and afternoon. Observations were made on Tuesday October 26 and Thursday October 28, 2021. **Table 4** shows a summary of the average multimodal activity for these weekdays.

Table 4: Existing Multimodal Activity

Mode	Morning (7:00 - 8:30 a.m.)		Midday (11:15 a.m. - 12:15 p.m.)		Afternoon (4:15 - 5:15 p.m.)		Overall (3.5 hours)	
Arrival at Hub								
Bus	8	(44%)	17	(71%)	12	(75%)	37	(64%)
Non-Transfer	*7*	*(39%)*	*11*	*(46%)*	*6*	*(38%)*	*24*	*(41%)*
Transfer	*1*	*(6%)*	*6*	*(25%)*	*6*	*(38%)*	*13*	*(22%)*
Dropped Off (Auto)	1	(6%)	0	(0%)	0	(0%)	1	(2%)
Parked (Auto)	1	(6%)	0	(0%)	0	(0%)	1	(2%)
Walk	6	(33%)	7	(29%)	4	(25%)	17	(29%)
Bike	2	(11%)	0	(0%)	0	(0%)	2	(3%)
Total	**18**	**(100%)**	**24**	**(100%)**	**16**	**(100%)**	**58**	**(100%)**
Departure from Hub								
Bus	12	(80%)	17	(89%)	8	(50%)	37	(74%)
Non-Transfer	*11*	*(73%)*	*11*	*(58%)*	*2*	*(13%)*	*24*	*(48%)*
Transfer	*1*	*(7%)*	*6*	*(32%)*	*6*	*(38%)*	*13*	*(26%)*
Picked Up (Auto)	1	(7%)	0	(0%)	1	(6%)	2	(4%)
Parked (Auto)	1	(7%)	1	(5%)	1	(6%)	3	(6%)
Walk	1	(7%)	1	(5%)	6	(38%)	8	(16%)
Bike	0	(0%)	0	(0%)	0	(0%)	0	(0%)
Total	**15**	**(100%)**	**19**	**(100%)**	**16**	**(100%)**	**50**	**(100%)**

Notes:
Percentages may not total 100% due to rounding
Average from observations collected on Tuesday October 26, 2021 and Thursday October 28, 2021
Sources: CSPDC, Kimley-Horn

As shown in **Table 4**, the primary mode of arrival at the Hub was via bus during the morning, midday, and afternoon time periods, with 44%, 71% and 75% of people arriving by this mode, respectively. Of the 44% of morning arrivals by bus, 39% were non-transfer. Of the 71% of midday bus arrivals, 46% were non-transfer. Of the 75% of bus arrivals in the afternoon, 38% were non-transfer. Auto drop-off and parking activity account for less than 10% of activity in every period. Walking was the second largest mode of arrival for all three time periods, with 33%, 29%, and 25% of people arriving by this mode in the morning, midday, and afternoon periods, respectively.

Buses were the primary mode of departure from the hub during the morning, midday, and afternoon time periods, with 80%, 89% and 50% of people leaving by this mode, respectively. In the morning period, 73% of the departures by bus were non-transfer while 58% of the bus departures were non-transfer for the midday period. Of the 50% of bus departures in the afternoon, 13% were non-transfer. Auto pick-up and parking accounted for less than 10% of the total overall departure activity. The afternoon period experienced a higher departure by walking mode share compare to the other periods, with 38% of departures taking place by walking.

The CSPDC observations show that existing bus shelters are frequently used and the number of waiting passengers often exceeds the capacity of the two shelters.

PARKING

The Hub currently contains 34 parking spaces, 2 of which are accessible spaces. Signage for designated tour bus parking exists along the western drive lane, but this is left over from the previous owner and is not a requirement for future design.

As defined by its lease agreement with the City of Staunton, the CSPDC grants the City use of the Hub for free municipal parking.

The CSDPC collected parking utilization data on two weekdays, Tuesday October 26 and Thursday October 28, 2021. Utilization was recorded during three time periods throughout the day: morning, midday, and afternoon. This data is summarized in **Table 5**. The maximum utilization during this data collection period was 10 vehicles or 29% of spaces.

Table 5: Weekday Parking Utilization by Time of Day

Period	Tuesday October 26, 2021		Thursday October 28, 2021		Average	
Morning (7:00 - 8:30 a.m.)	8	(24%)	7	(21%)	8	(24%)
Midday (11:15 a.m. - 12:15 p.m.)	10	(29%)	8	(24%)	9	(26%)
Afternoon (4:15 - 5:15 p.m.)	7	(21%)	7	(21%)	7	(21%)

Sources: CSPDC, Kimley-Horn

Parking observations showed the Hub is used for both long-term parking (vehicles parked during multiple time periods and on both days) as well as short-term parking (vehicles observed in one time period but not the next). Four vehicles—one tractor cab, one box truck, and two passenger vehicles—were parked all day on Tuesday October 26 and were also parked on Thursday October 28. Short-term parking activity included people parking to board a bus, passengers being dropped off to board a bus, or people parking and leaving the lot as a pedestrian.

Future Service and Facility Needs

The CSPDC is currently developing a Transit Development Plan to understand the future needs of the BRITE transit system. At this time, there are no anticipated changes in transit service that would require additional space for buses at the Hub compared to existing conditions. The CSPDC plans to maintain capacity for four buses and does not anticipate the need for additional bus spaces.

The data collected established the existing parking utilization to be around 29%, which is significantly below the capacity. There is no apparent need to expand the number of provided spaces because there is sufficient capacity for future use. Additionally, a slight reduction if number of spaces, if required to optimize circulation and transit activity, would not reduce the functionality of the Hub.

The future amenity needs for the Hub were discussed at meeting between the CSPDC, City of Staunton, Virginia Regional Transit, and Kimley-Horn on October 26, 2021. The future facility needs and considerations are as follows:

- Shelters
  - There are two existing bus shelters which should be maintained and relocated if necessary
  - An additional shelter is needed given high utilization of existing shelters
- Benches
  - There are two existing benches within the existing bus shelters
  - People sit on the hill in the northwest corner of the Hub, and there is a need for additional seating
- Trash Receptacles
  - The two existing trash receptacles adjacent to bus shelters should be maintained
  - There is a need to potentially increase number of trash receptacles—it was noted that the most people are willing to walk to throw out trash is about 20 to 30 feet
- Bike Racks
  - The existing bike rack is lightly used but should maintained and relocated if needed
  - Most bikes using the Hub are exchanged from one bus to the next

- Static Signage
  - Currently have bus stop signage near each shelter, which should be maintained and relocated
  - Allow space to add route maps in the future
  - Maintain wayfinding signage for path up to Fillmore Street
- Dynamic Signage
  - Plan space to accommodate real-time information stanchions in the future
  - Include conduit/stub-ups for future power/communication
- Lighting
  - Need to work within historic context and design standards for lighting, similar to what is being used on Central Avenue
- Buses
  - Current vehicles using the Hub ranges from 30- to 32-foot buses
  - No future need to accommodate larger buses
- Parking
  - Include at least three electric vehicle parking spaces in the future design of the lot
  - Maintain as many parking spaces as possible
  - Consider porous pavement if not cost-prohibitive
- Other Facilities
  - Driver facilities (e.g., bathroom) are not recommended due to the added maintenance requirements and overall cost

Concept Plan and Opinion of Probable Cost

Design Considerations

Conceptual designs to redesign the existing Hub were compiled based on the facility needs and uses listed in the preceding sections. A few key features of the final drafted concept are described below.

- **Access**: The proposed concept maintains two access points off of Lewis Street; in the proposed condition both will be converted to two-way access points to allow entering and exiting vehicular traffic. This will provide ease of use for vehicles whose destination is the asphalt parking lot at the center of the Hub. Transit vehicles will continue to use the northern access as an entrance only, and the southern access as an exit only—due to circulation patterns and routes this will be the most efficient use of the space. All transit routes will circulate counterclockwise to reach drop-off lanes on the west side of the site. The existing trail connection to Fillmore Street will be provided from the bus drop-off and pick-up area.
- **Transit Lanes**: There is space for four to five parked buses at one time along the western curb line. Buses will pull up via a 12-foot dedicated lane, and have a 10-foot passing lane to

utilize if schedules don't allow a "first-in first-out" circulation pattern. The two existing shelters will be relocated to this area for reuse. An additional shelter is proposed to accommodate additional seating needs. This configuration will consolidate all passenger activity to one area and provide safe, dedicated, pedestrian infrastructure to navigate the Hub.

- **Seating and Amenities**: Short retaining wall seating and earthen terraced seating are shown nearest the transit lanes and the northwest corner of the site where there is an existing hill. The existing topography will be leveraged to accommodate seating for waiting passengers. The shelters will feature benches, and trash receptacles will be provided. The existing bike rack will also be relocated; the concept shows it placed on the north side of the site.
- **Lighting**: The proposed layout encourages activity on the west side of the site. Since this is further from the existing roadway and adjacent developments, lighting is important to encourage a safe environment. Conceptual light pole locations are shown near the shelters.
- **Parking**: The proposed layout accommodates 29 parking spaces. The parking space count includes two ADA accessible spaces and four dedicated for electric vehicle (EV) charging stations. The ADA spaces are closest to the ADA path that leads users via accessible ramps, sidewalk, and crosswalk to the bus drop-off and pick-up area. The EV charging stations are located on the northern side of the site—in existing conditions those are ADA spaces. The remainder of spaces are for vehicular parking and passenger pick-up and drop-off. It is anticipated that about ten spaces will be used for transit-related needs: temporary parking (kiss-and-ride) use, and longer term parking (park-and-ride) use. The remaining 13 spaces are anticipated to be used by City patrons for municipal parking (as discussed in previous sections).
- **Landscaping**: Green space is incorporated into the lot and conceptually shown to consider landscaping and plantings. Plant types will be specified in a future phase of design and will consider local regulations, safety, and placemaking.

ELECTRIC VEHICLE CHARGING STATIONS

VDOT STD CG-12 ADA RAMP (TYP)

RELOCATED BIKE RACK

EARTHEN TERRACED SEATING

LANDSCAPING (TYP)

VDOT STD CG-12 ADA RAMP (TYP)

8' SIDEWALK

BUS SHELTERS
2 - RELOCATED
1 - NEW

TRASH RECEPTACLE (TYP.)

EXISTING DIRT TRAIL CONNECTION

18" SHORT WALL (FOR SEATING)

NEW LIGHT POLES (TYP)

VDOT STD CG-12 ADA RAMP (TYP)

VDOT STD CG-12 ADA RAMP (TYP)

BUS TRAFFIC ONLY

EXIT ONLY

N LEWIS ST

FILLMORE ST

ADA RELATED IMPROVEMENT

NON-TRANSIT RELATED IMPROVEMENT

NORTH

GRAPHIC SCALE IN FEET
0 10 20 40

No.	REVISIONS	DATE	BY

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KHA PROJECT

DATE	11/15/2021
SCALE	AS SHOWN
DESIGNED BY	AAF
DRAWN BY	TMG
CHECKED BY	AAF

CONCEPTUAL LAYOUT OPTION 1B

LEWIS STREET LOT

STAUNTON VIRGINIA

SHEET NUMBER
CS001B