

Berryville Town Council
Joint Session with Clarke County Board of Supervisors

MEETING AGENDA

Berryville-Clarke County Government Center

101 Chalmers Court, Second Floor

Main Meeting Room

July 14, 2020

6:30 PM

COVID Notice: All attendees and participants must observe social-distancing guidelines mandating six-foot intervals between persons. Members of the public may be required to wear masks.

Item

Page

1. Call to Order

Harry Lee Arnold, Jr., Mayor
David Weiss, Chair

2. Approval of Agenda

3. Discussion: Southeast Collector Study

4. Adjourn: Board of Supervisors

5. Recess: Town Council

The Town Council will reconvene for its regular session at 7:30 p.m.

Town Council & Board of Supervisors Called Meeting Report Summary

July 14, 2020

Item Title

SE Collector Transportation Study Presentation

Prepared By

Christy Dunkle

Background/History/General Information

The Berryville Town Council and Clarke County Board of Supervisors entered in to a Memorandum of Understanding in January of 2019 to obtain a transportation study regarding a collector road identified in the 2015 Berryville Area Plan as the "Southeast Collector." The final draft was completed in April of 2020 and will be presented by David Metcalf, Vice President of Virginia Transportation for Prime AE Group, Inc. at a joint meeting scheduled for July 14, 2020.

Items that prompted discussion and implementation of the study include:

- The Clarke County Business Park is fully developed;
- The collector road system as established in the Berryville Area Plan (Mosby Boulevard, Hermitage Boulevard, Fairfax Street, Jack Enders Boulevard) is critical to the connectivity of the Berryville Area;
- Access for businesses in the Clarke County Business Park out to 340 was needed;
- Tractor trailer and general traffic impacts to East Main Street;
- Discussion of expanding business park uses; and
- At-grade railroad crossing that was originally identified in the 2009 Berryville Area Plan was questionable.

Four concepts were developed by Town and County staff which included three alternatives to extend Jack Enders Boulevard and a fourth which identified a combination of two other concepts as follows:

- Concept A: extend Jack Enders Boulevard at the Norfolk Southern tracks with an at-grade crossing.
- Concept B: Extend Jack Enders Boulevard to Smallwood Lane and improve the existing crossing at Smallwood Lane and US 340.
- Concept C: Extend Jack Enders Boulevard to US 340 and into the Southern Potential Future Growth Area as identified in the Berryville Area Plan. This is a combination of Concept A and Concept D.
- Concept D: New road in the Southern Potential Future Growth Area without a connection to Smallwood Lane.

Findings/Current Activity

Town and County staff worked with the consultant to determine future access in the southeast quadrant of the Town. The study, which began in May of 2019, started with the identification of the scope,

information gathering, identification of stakeholders, and discussion with Norfolk Southern staff to determine whether the at-grade crossing at the terminus of Jack Enders Boulevard would be permitted.

After several discussions with Norfolk Southern staff, the current at-grade crossing extending from the existing Jack Enders Boulevard terminus would likely not be an acceptable configuration. Analysis of discussions with the railroad concluded that the location of a new crossing (Concept A above) is not acceptable for the following reasons:

- At least one at-grade crossing in the Town or County would need to be closed to allow for a new crossing to be built. The determination of which crossing(s) would be closed would be made through an application process to Norfolk Southern.
- Norfolk Southern staff indicated that if there were major investment in rail facilities, such as a freight terminal or spur, a crossing could be conceivable in this location. They did identify concerns about stacking and impacts to adjacent existing crossings should a terminal or spur be constructed in this area.
- Safety issues were identified due to sight distance concerns (from north to south) due to a curve in the existing tracks.
- Norfolk Southern requires that a Concept Plan be developed and submitted to the railroad for review and approval which would incur engineering fees prior to any approvals or denials.

The final concepts recommended in the study identify several variations which are detailed in the attached Executive Summary. These include iterations of Concepts B and D, which phase the future proposed development, creating a connection to Smallwood Lane across an existing at-grade crossing at US 340.

Financial Considerations

The cost of the study was \$50,000 which was split evenly between the County and Town.

Schedule/Deadlines

A joint meeting between the Clarke County Board of Supervisors and Berryville Town Council will take place at the Berryville-Clarke County Government Center on Tuesday, July 14, 2020 at 6:30 p.m. Staff will be mailing affected property owner notifications prior to the meeting. The plan and the meeting announcement were posted on the Town's web site on May 27, 2020.

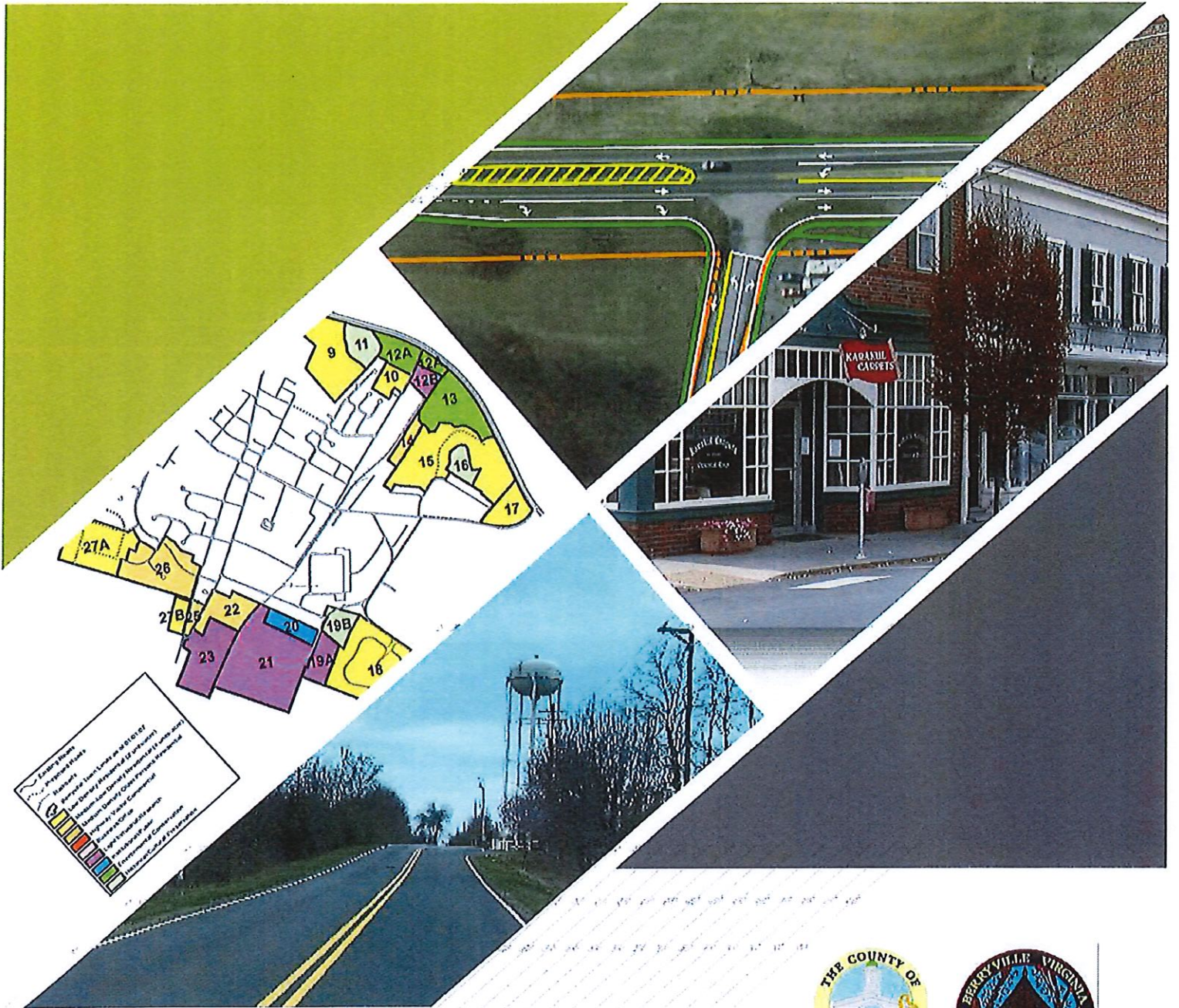
Other Considerations

N/A

Recommendation

Discuss next steps at the meeting.

Attachments: Southeastern Collector Study Executive Summary
Southeastern Collector Study PowerPoint by consultant



EXECUTIVE SUMMARY

Southeastern Collector Study

April 24, 2020

PRIME AE Group, Inc.
 3975 Fair Ridge Drive
 Suite 455N
 Fairfax, VA 22033



Executive Summary

Overview

The Town of Berryville and Clarke County, VA have long envisioned a Southeastern Collector to encourage expansion of the Clarke County Business Park. To determine how to best incorporate the existing roadway network, connect across the Norfolk Southern Rail Line and finance the collector, the Town of Berryville and Clarke County commissioned the *Southeastern Collector Transportation Study*.

Four concepts for the Southeastern Collector were developed by Town and County Staff. There are three general alternatives to extend Jack Enders Boulevard and the Business Park. The fourth concept is a combination of two other concepts. The four concepts are below:

1. Concept A. Extend Jack Enders Boulevard over NS railroad to US 340.
2. Concept B. Extend Jack Enders Boulevard to Smallwood Lane and improve Smallwood Lane to US 340.
3. Concept C. Extend Jack Enders Boulevard to US 340 and into Southern Potential Growth Area. This Concept is a combination of Concept A and D.
4. Concept D. New Road in Southern Potential Growth Area without a connection to Smallwood Lane.

See exhibits in appendix.

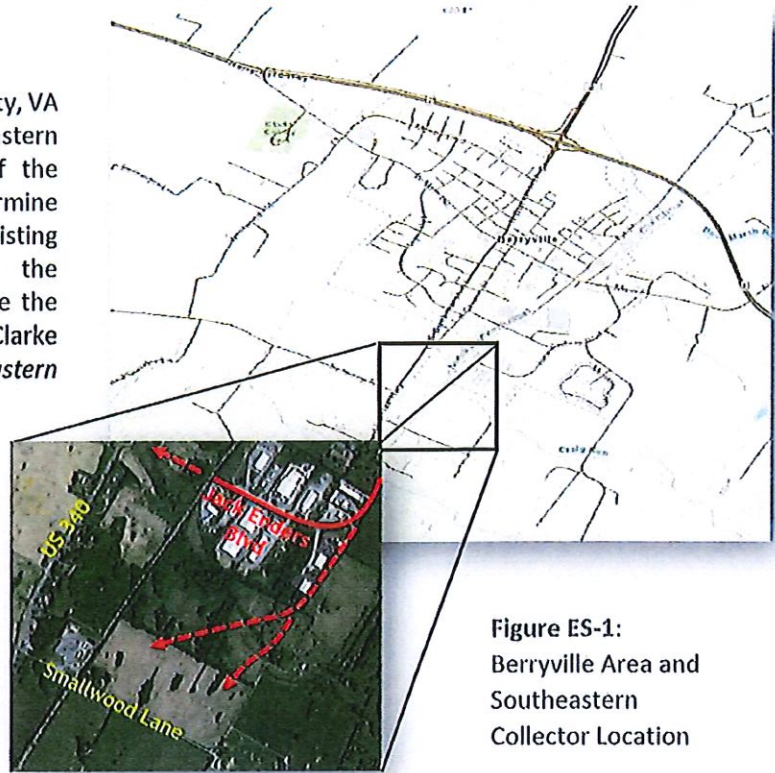


Figure ES-1:
Berryville Area and
Southeastern
Collector Location

Feasibility of New At-Grade Norfolk Southern Crossing

Although the Clarke County Business Park site plan shows an extension of Jack Enders Boulevard, the approval for a new-at-grade crossing is beyond the Town or County's control. As such, one of the objectives of this study is to determine the feasibility of a new crossing, and specifically of Concept A.

The feasibility of a new at-grade crossing depends on the answers to two key questions:

- 1) What would be necessary to obtain approval from Norfolk Southern for a new crossing?
- 2) Is the Jack Enders Boulevard extension the most optimal location for a new collector in the southeastern growth area?



Multiple conversations were held with Norfolk Southern staff. New, at grade crossings are not only highly discouraged, but also discouraged by Virginia State Statute¹. Two hypothetical scenarios were discussed with Norfolk Southern Staff to gage the feasibility of a new crossing. First, what if the Town closed two or more existing at grade crossings? Second, would Norfolk Southern be amenable if the Town created a new siding and rail related commercial area?

The Norfolk Southern staff were not amenable to these hypothetical scenarios. Norfolk Southern Staff cited Virginia State Statute, and current efforts to eliminate at grade crossings. Furthermore, the proposed location of the new at grade crossing for Concept A is located on a curve and has sight distance limitations for southbound trains and would be disruptive to local residents. Although Norfolk Southern staff were careful not to formally reject the proposed at grade crossing, they were very clear that it was not a realistic a concept².

To obtain approval of a new at grade crossing, Norfolk Southern requires a Concept Package be submitted³. Subsequent plans are normally reviewed by Norfolk Southern at the requester's expense. It is likely that the Town would need to enter into a Preliminary Engineering Agreement with Norfolk Southern and provide compensation to Norfolk Southern to continue applying the new at grade crossing.

The coordination with Norfolk Southern, research and analysis concluded:

1. The location of the new crossing for Concept A is not acceptable to Norfolk Southern. Even extraordinary efforts by the Town and County will be insufficient to overcome the general aversion to new at grade crossings, and especially in the proposed location.
2. The Town and County do not have existing crossings that can be eliminated to continue a dialog with Norfolk Southern. Nor does the Town and County have plans for major investment in a rail facility to make the new crossing part of a larger package.
3. To further pursue the new crossing for Concept A will require developing a Concept Package, and possibly enter into a Preliminary Engineering agreement with Norfolk Southern, and incur the expense of Norfolk Southern engineering reviews.
4. The location of Concept A is not superior to the other options. Concepts B and D create more developable property than Concept A. Concepts B and D have less wetland impacts than Concept A. Concept A's only advantage is lower construction cost.

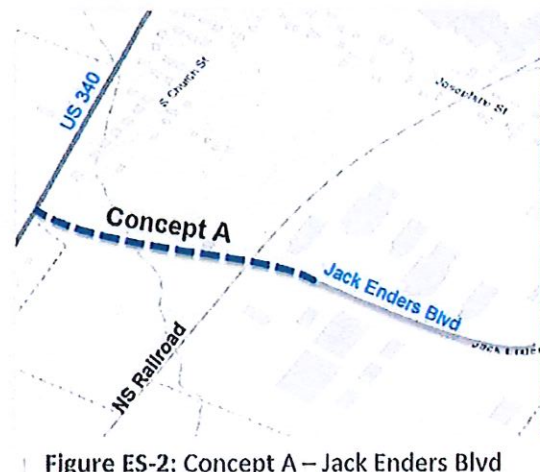


Figure ES-2: Concept A – Jack Enders Blvd Extended with new NS Railroad crossing.

¹ Va. Code Ann. § 56-363 (1996).

² Teleconference held June 19, 2019. Attendees from Norfolk Southern: Mr. Roger Bennett (NS Corp) and Mr. Scott Overbey (NS Corp).

³ Norfolk Southern Railway Company, Public Projects Manual, Rev 2; Section 4 page 3.



As such, the Study Team recommended that the Town and County discontinue consideration of Concept A as the proposed Southeastern Collector. Concept C is a combination of Concept A and Concept D; as such this concept is also eliminated.

Final Concepts Selected for Study

Concept B and Concept D were selected for further study. Within both concepts are two variations, resulting in four Concepts, shown in Figure ES-2 with a typical road profile in Figure ES-4. The northern Terminus is shown in Figure ES-5

1. Concept B1- Extend Jack Enders Boulevard into the Smallwood Property, perpendicular to Craig's Run and onto Smallwood Lane. Upgrade Smallwood Lane and Smallwood Lane's existing at grade crossing of Norfolk Southern RR.
2. Concept B2 – Similar to B1, however the roadway will run further east to take advantage of existing Smallwood Lane.
3. Concept D1 – Identical to B1, without the connection to Smallwood Lane. This alternative will not provide a crossing of Norfolk Southern for the expanded Business Park.
4. Concept D2 - Identical to B2, without the connection to Smallwood Lane. This alternative will not provide a crossing of Norfolk Southern for the expanded Business Park

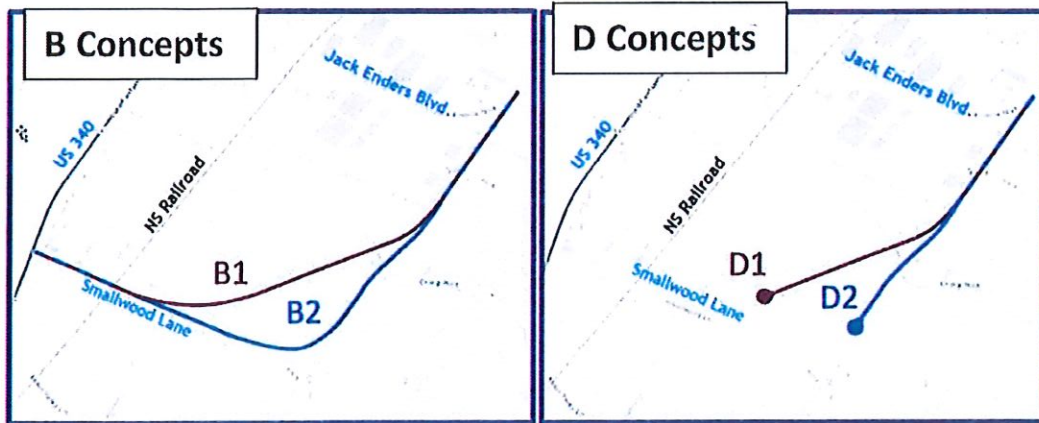


Figure ES-3: Concepts for Southeastern Collector

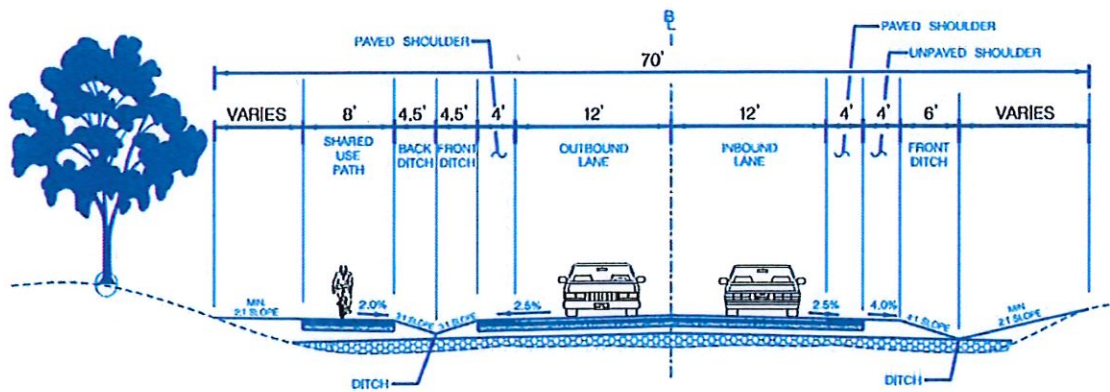


Figure ES-4: Typical Section of Southeastern Collector.





Figure ES-5: Southern Collector Northern Terminus

Changes in Travel Patterns

A microsimulation model of the Town was used to determine the changes in traffic patterns and changes in Level of Service at key intersections. The Land Use and Traffic Analysis found the following:

- The development associated with the Collector roadway is projected to be 500,000 square feet (SF) of light industrial. This development is projected to generate 340 vph *from* the area and 110 vph *to* the area (PM peak hour).
- The downtown Berryville Main Street Intersections are projected to have modest increases in traffic volume and intersection delay.
- Additional traffic from Concept D is expected to use local streets to avoid the center of Berryville. With Concept D nearly 200 vehicles during the PM peak hour are projected to divert away from the intersection of US 340 and Main Street.
- Concept B creates a route to bypass downtown Berryville. The model projects 130 vph to use Concept B as a bypass under normal conditions (PM peak hour).
- The traffic at the Jack Enders Boulevard / Main Street intersection will increase by 494 vph, over 60%, with Concept D. Current total volume is 812 vph.
- With Concept D additional capacity is needed at Jack Enders Boulevard and Main Street. A new signalized intersection with a dedicated westbound left turn lane and eastbound right turn lane will be necessary.
- Initially the negative impacts from Concept D will be manageable. A new signal at Jack Enders Boulevard will not be necessary until development is well underway.
- Traffic on Smallwood Lane will increase from 10 vph to 533 vph with Concept B. This will create the need for improvements to US 340 and, eventually, a new signal.



Environmental Impacts

Natural Environment – Both Concepts are largely located in farmland, as such impacts to habitat, forests, and endangered species are estimated to be minimal. The impacts will be limited to Craig’s Run, an intermittent stream which is surrounded by wetlands, and a freshwater forested wetland.

The B1 and D1 Concepts have the least impacts to wetlands. They were developed to have a clean, direct perpendicular crossing of Craig’s Run. Nonetheless the B2 and D2 Concepts are still estimated to impact only 1 acre of wetlands.

Historical Resources – The Concepts are not located near any state or federal registered historic properties. There are three structures impacted by Concepts B2 and D2 along Lindey Lane. These structures were determined by Clarke County to have some historic significance.

Project Costs

Table ES-1 summarizes the cost of each Concept. Concept D1 and D2 are less costly by virtue of terminating before Smallwood Lane.

Table ES-1 Comparative Costs (\$ thousands)				
	B1	B2	D1	D2
Construction Cost				
Mainline	\$8,130	\$7,950	\$5,280	\$4,820
Intersection Improvements	\$560	\$560	\$430	\$430
New Traffic Signals	\$600	\$600	\$540	\$540
At Grade Railroad Crossing	\$160	\$160	\$0	\$0
Subtotal Construction Cost⁴	\$9,460	\$9,280	\$6,250	\$5,790
ROW Cost	\$100	\$100	\$60	\$70
Total Cost	\$9,560	\$9,380	\$6,310	\$5,870

⁴ Construction cost per mile: B1 - \$9,080; B2 - \$8,670; D1 - \$10,310; D2 - \$10,200



Summary – Advantages and Disadvantages of Each Concept

Concept B1 – This Concept is the most expensive but provides the most benefit. The alignment splits the Smallwood Property providing a central roadway for the new business park. The additional connection to US 340 aids the flow of traffic from the new and existing business park.

The alignment also minimizes the impact to Craig’s Run and surrounding wetlands. However, it is the costliest Concept with an estimated cost of \$9.6 Million

Concept B2 – This Concept is a variation of B1 and uses existing Lindey Lane. Compared with B1 it is located on the edge of the Smallwood Property, and has a less direct crossing of Craig’s Run and increased environmental impacts. However, this Concept has the same traffic benefits as B1 and a slightly lower cost of \$9.4 Million.

Concept D1 – This Concept follows the B1 alignment; however, it does not provide a new connection to US 340. As such it results in additional traffic through downtown Berryville and will require an upgrade to the intersection of Jack Enders Boulevard and East Main Street. The cost is lower than either of the “B” Concepts at \$6.3 Million.

Concept D2 – As with B2 this Concept is on the edge of the Smallwood Property and will not be a central roadway for the new business park. It also has a less direct crossing of Craig’s Run, which increases the environmental impacts to Craig’s Run. However, this Concept has the lowest cost of \$5.9 Million.

Table ES-2 Summary of Costs and Benefits				
	B1	B2	D1	D2
Land Use	Bisects Smallwood Property	Eastern Edge of Smallwood Property not optimal	Bisects Smallwood Property	Eastern Edge of Smallwood Property not optimal
Environmental	Minimal impact to Craig’s Run	Not as environmentally preferred crossing of Craig’s run	Minimal impact to Craig’s Run	Not as environmentally preferred crossing of Craig’s run
Traffic Flow	Improves traffic flow throughout	Improves traffic flow throughout	Large increase on Jack Enders Boulevard, traffic diversions onto Berryville streets	Large increase on Jack Enders Boulevard, traffic diversions onto Berryville streets
Implementation	More \$\$, includes new connection at US 340.	More \$\$, includes new connection at US 340.	Can be expanded after initial phase.	Can be expanded after initial phase
Total Cost	\$9,560	\$9,380	\$6,310	\$5,870



Conclusions, Implementation and Recommendations

Concept B1 best meet the needs of the Town and County. The Concept provides an upgraded crossing of the Norfolk Southern Railroad, improved traffic flow in and around Berryville and best promotes future development in the Southern Growth Area. The estimated cost is \$9.6 Million. A variety of funding sources are appropriate for this project as listed in table ES-3.

Planning, funding and building the new roadway will require a multi-pronged and multi-phased approach.

First, the Southern Growth Area, primarily on the Smallwood property, will need to be planned. With a vision of how this property will be redeveloped the Town and County can add this vision to the Comprehensive Plan and update the zoning. These initial planning steps will allow the roadway to compete for Smart SCALE funding and open the potential for grants and investment from private developers.

Table ES-3 Funding Sources	
Transportation Funds	Brief description
Smart SCALE	Primary source for roadway funding. Smart SCALE Prioritizes projects for use of transportation State and Federal funds.
Revenue Sharing	VDOT program, provides a 50% match for qualifying projects. Other funds can be used for 50% match
Public Private Partnerships	The Public Private Transportation Act enables local governments to partner with private entities to build roadways.
State Grant Funder	
Community Development Block Grant	Based upon demographics and community need
FEMA flood protection policies and regional planning	Flood education, policy enforcement, construction standard updates, ordinance review
VDOT SRTS	Safe routes to schools, walking trails, bike trails
Go Virginia, Growth and Opportunity	Tech sector partnerships to develop economy in rural areas
Federal Grant Program	
USDA/NRCS Watershed Protection grants	For water quality, water supply protection, habitat
US Forest Service Land and Water Conservation Fund	Purchase land for permanent protection
TIGER/Build grants	Public transportation program 20% for urban areas
Redismart, department of Energy	For smart grid design implementation
INFRA program	Transportation that promotes economic vitality, accountability along freight highway



Second, the Town and County need to actively pursue funds from State and Federal grants and investment from developers. An extension of Jack Enders Boulevard into the Smallwood Property, like Concept D1, will encourage some initial development on the Property. With this initial development it will be easier to attract other users or developers to the property. The site will be able to generate revenue and provide the funds to finish the Collector with either Smart SCALE or Revenue Sharing.

With a marketable vision the site and roadway will be a candidate for a Virginia Public Private Partnership (P3). This program will allow the Town and County to contract the development of the site. A private entity will assume much of the funding and risk, and in turn receive either future revenues or profits from the site.

Smart SCALE is the dominant program for allocating State and Federal transportation funds. In rural areas, the largest source of points is Economic Development. The Southern Growth Area will need to be planned for the Southeastern Collector to gain Economic Development points. Without Smart SCALE, the Town and County can also receive a 50% match using the Revenue Sharing program. With Concept B1, the Town and County will need to raise \$ 4.8 Million (one half of \$9.6 M). Other grants and private money can be used for this match.

Concept B1 could be implemented in four phases:

- I. Extend Jack Enders Boulevard into the Smallwood property to stimulate initial development.
- II. As development progresses, improve the Jack Enders Boulevard / Main Street Intersection.
- III. As development approaches 75% of buildout, extend the Connector to US 340.
- IV. When traffic warrants, add a signal at the intersection of Smallwood Lane and US 340.

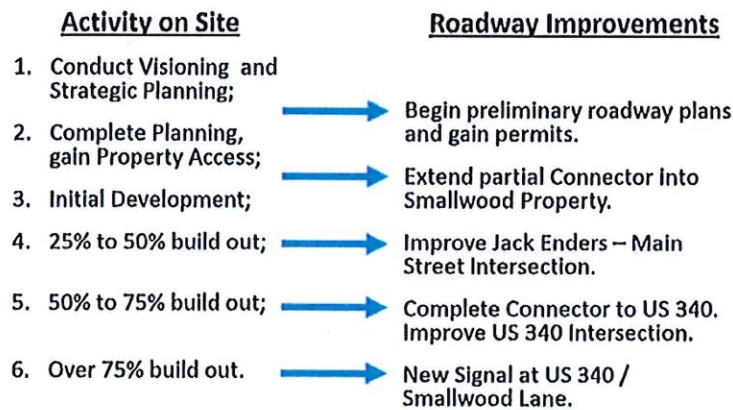


Figure ES-6: Timing of Connector Construction

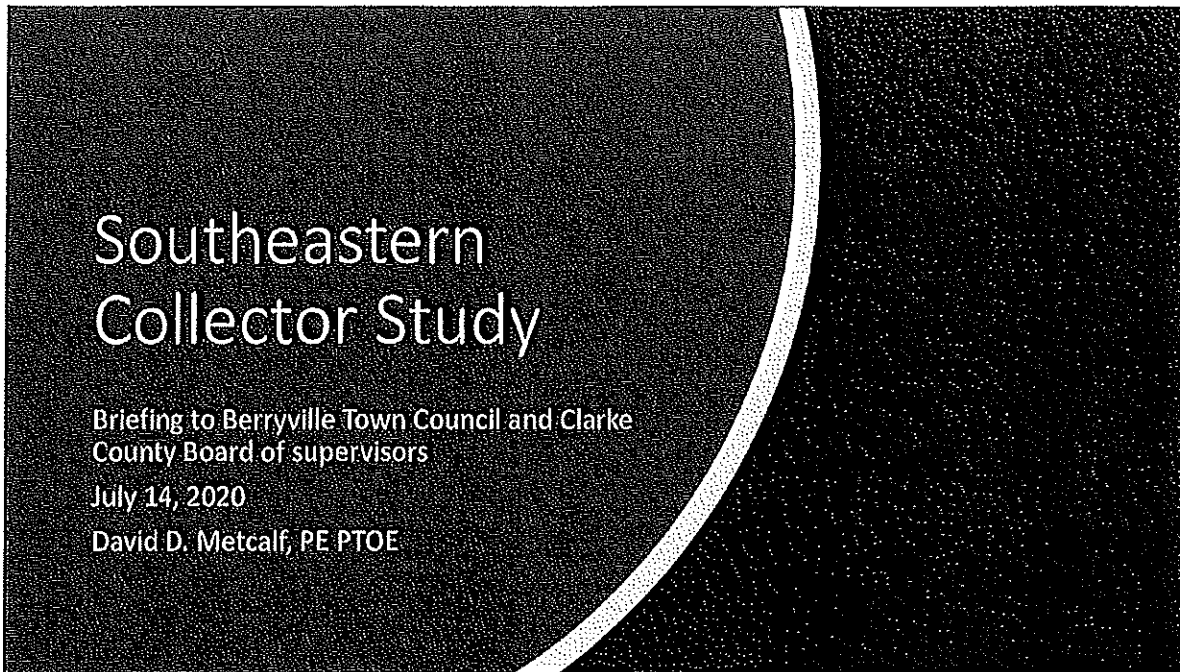
The timing of the phases will depend on the type of development and corresponding number of trips generated. When development reaches 25% of full buildout approximately 125 thousand SF of development will have occurred. For a typical industrial park this will create an additional 870 new daily trips and 107 new peak hour trips. This typical scenario is not likely to trigger the need for roadway improvements, however if the new development has greater than typical trip generation or a high number of trucks then roadway improvements may be necessary.



When the development reaches 50% of buildout and 250 thousand SF of development, improvements to Jack Enders Boulevard will be necessary. At this point it will also be necessary to gain environmental approvals and begin design of the Connector. By 75% of buildout and 375 thousand SF of development it will be time to complete the Connector to US 340. The final improvement is a signal at US 340 and Smallwood Lane. This improvement should be implemented when conditions warrant, likely after 75% development.

The Southeastern Collector and the accompanying development will create many benefits for the Town and County. We recommend that the Town and County select Concept B1 and begin the visioning and planning for the associated development.





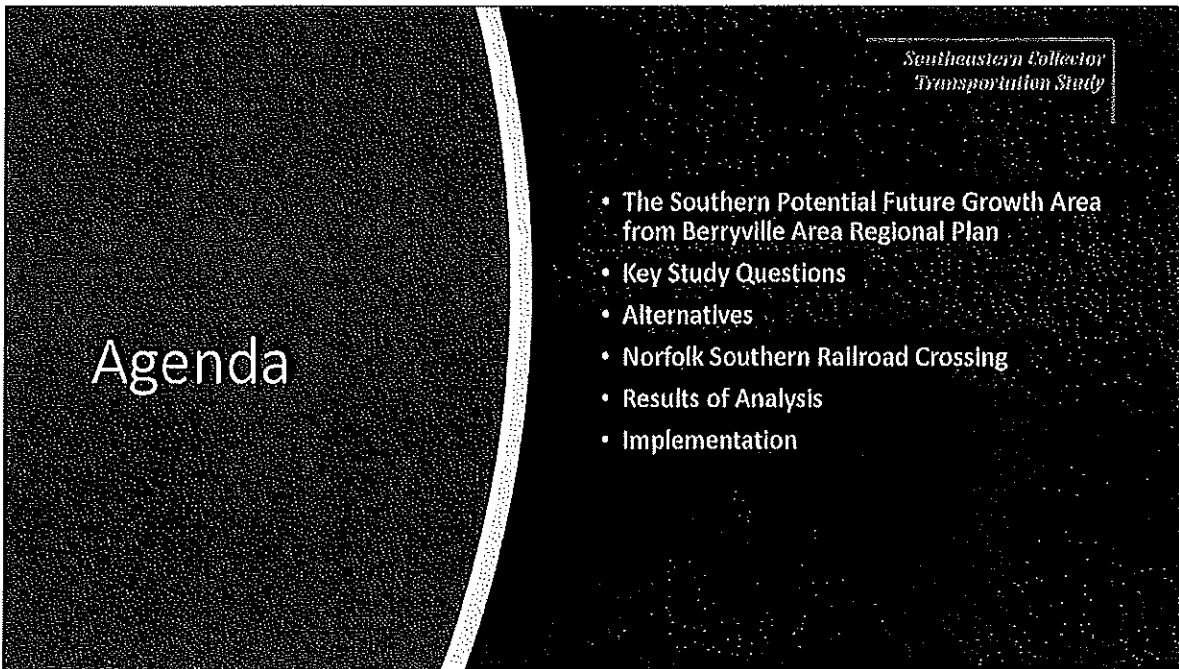
Southeastern Collector Study

Briefing to Berryville Town Council and Clarke
County Board of supervisors

July 14, 2020

David D. Metcalf, PE PTOE

1



*Southeastern Collector
Transportation Study*

Agenda

- The Southern Potential Future Growth Area from Berryville Area Regional Plan
- Key Study Questions
- Alternatives
- Norfolk Southern Railroad Crossing
- Results of Analysis
- Implementation

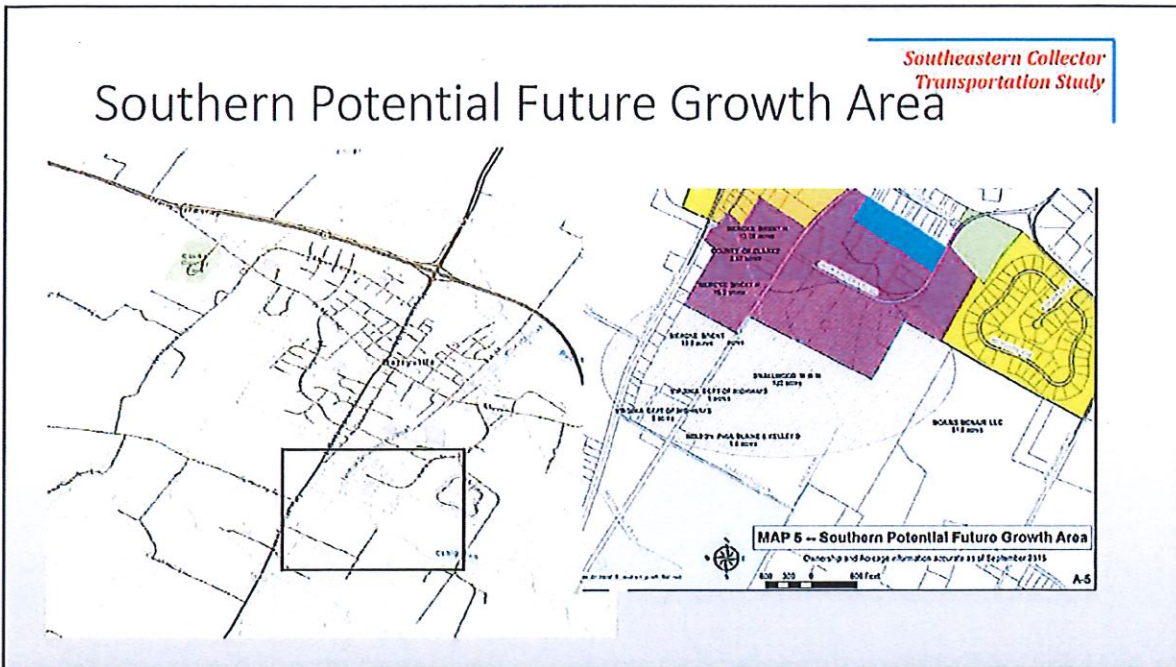
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*Southeastern Collector
Transportation Study*

- Study conducted for:
- Conducted by:




3



4

Key Collector Questions

- Is a new at grade crossing of Norfolk Southern Railroad feasible?
- Is a connection with US 340 necessary?
- What changes to traffic patterns are expected?
 - How much external traffic will use the Collector?
 - How will downtown be affected?
 - What other roadway improvements will be necessary?

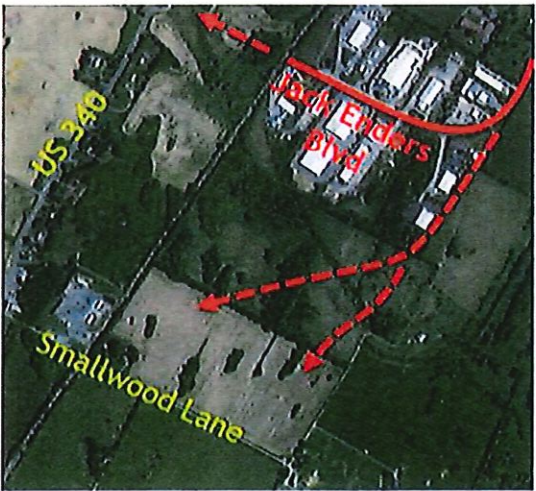


The map displays a network of roads and a railroad line. A red dashed line indicates the proposed collector route. An inset aerial photograph provides a detailed view of the collector road, showing its intersection with US 340 and Smallwood Lane, and its proximity to the Norfolk Southern Railroad tracks.

5

Key Collector Questions (Part 2)

- Which Collector Alternatives will support desired land uses?
- What are impacts and costs for Collector Alternatives?
- How can the Collector be funded and implemented?



This aerial photograph shows a section of the collector road. Red dashed arrows indicate the direction of traffic flow. Labels in yellow and red identify 'US 340', 'Smallwood Lane', and 'Park Enders Blvd'. The collector road is shown as a red dashed line with arrows.

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Norfolk Southern Railroad At Grade Crossing

- Railroad and Virginia working to eliminate at grade crossings.
- At grade crossing to support railroad terminal?
- Eliminate 2, 3 or 4 other crossings?
- Process to receive formal decision.
- Stacking
- Site distance



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Challenges

- Process to receive formal decision.
- Stacking
- Site distance

8

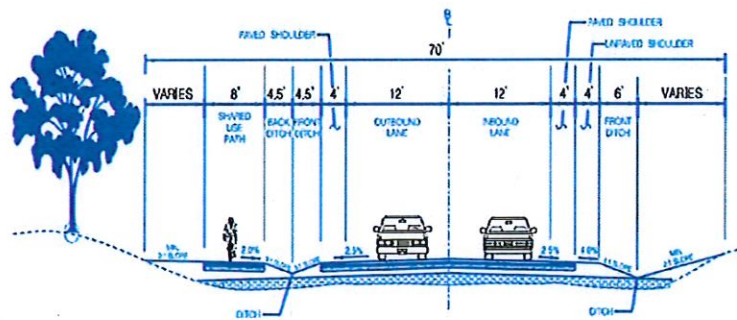
Conclusions

*Southeastern Collector
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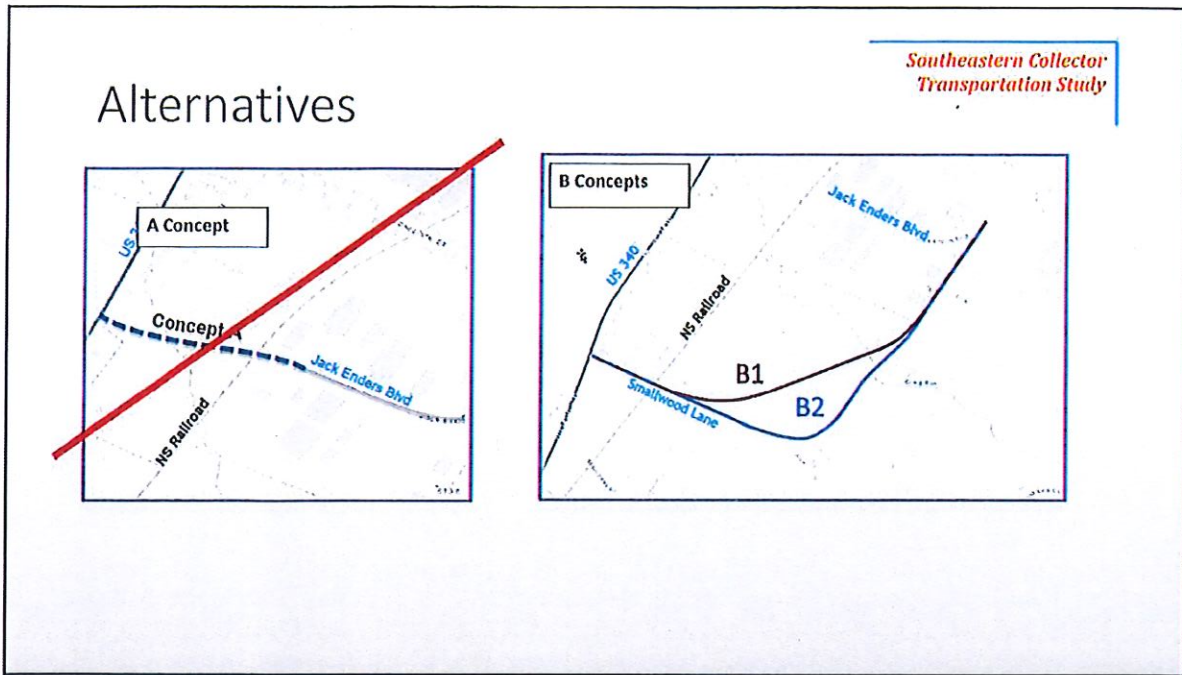
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Potential Road Profile

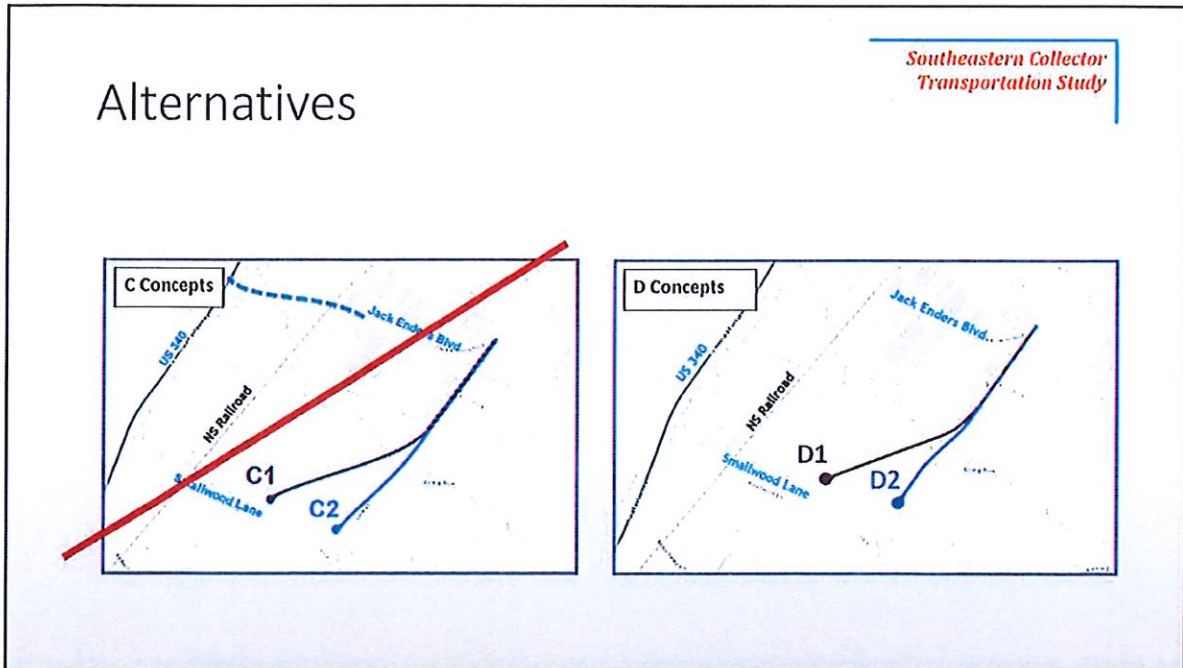
*Southeastern Collector
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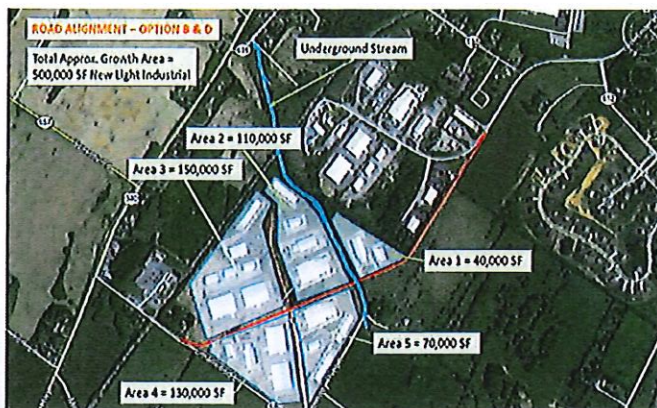


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Results: Land Use

*Southeastern Collector
Transportation Study*

- B1 and D1 – through Smallwood property.
- B2 and D2 – on eastern edge.
- 500K SF assumed.
- 500K SF = 450 new PM (rush hour) vehicles per hour.



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Results Traffic – Primer

*Southeastern Collector
Transportation Study*

- Level of Service LOS – based on Peak Hour.
- LOS A through F.
- Intersection analysis for this study.
- Intersection LOS based on average delay.

Level of Service (Signalized Intersections)	Average Vehicle Delay at Intersection (seconds)
A	<10
B	>10 and <20
C	>20 and <35
D	>35 and <55
E	>55 and <80
F	>80

A	B	C
D	E	F

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Results: Traffic

*Southeastern Collector
Transportation Study*

Table 3.5 Changes in Level of Service.

	Existing	Projected Concept B	Projected Concept D
	PM Delay Sec	PM Delay Sec	PM Delay Sec
US 340 – Main Street			
Northbound	21.0/ C	16.2/B	24.8/C
Southbound	23.9/ C	25.0/C	27.6/C
Eastbound	28.5/ C	25.5/C	28.1/C
Westbound	27.8/ C	29.2/C	33.4/C
	25.0/C	23.5/C	28.8/C
Main Street – Jack Enders Blvd			
Northbound	13.8/ B	12.9/B	27.6/C
Southbound	12.6/ B	14.8/B	19.8/B
Eastbound	0.5/ A	0.7/A	32.0/C
Westbound	1.0/ A	2.3/A	26.5/C
			28.3/C
US 340 – Church Street			
Northbound	(0.0)	(0.0)	(0.0)
Southbound	(0.0)	(0.0)	(0.0)
Westbound	29.6/ D	39.6/E	40.0 / E
US 340 – Smallwood Lane			
Northbound	NA	4.1/A	NA
Southbound	NA	4.1/A	NA
Westbound	NA	9.5/A	NA
		5.3/A	

Notes: Bold indicates unsignalized analysis.

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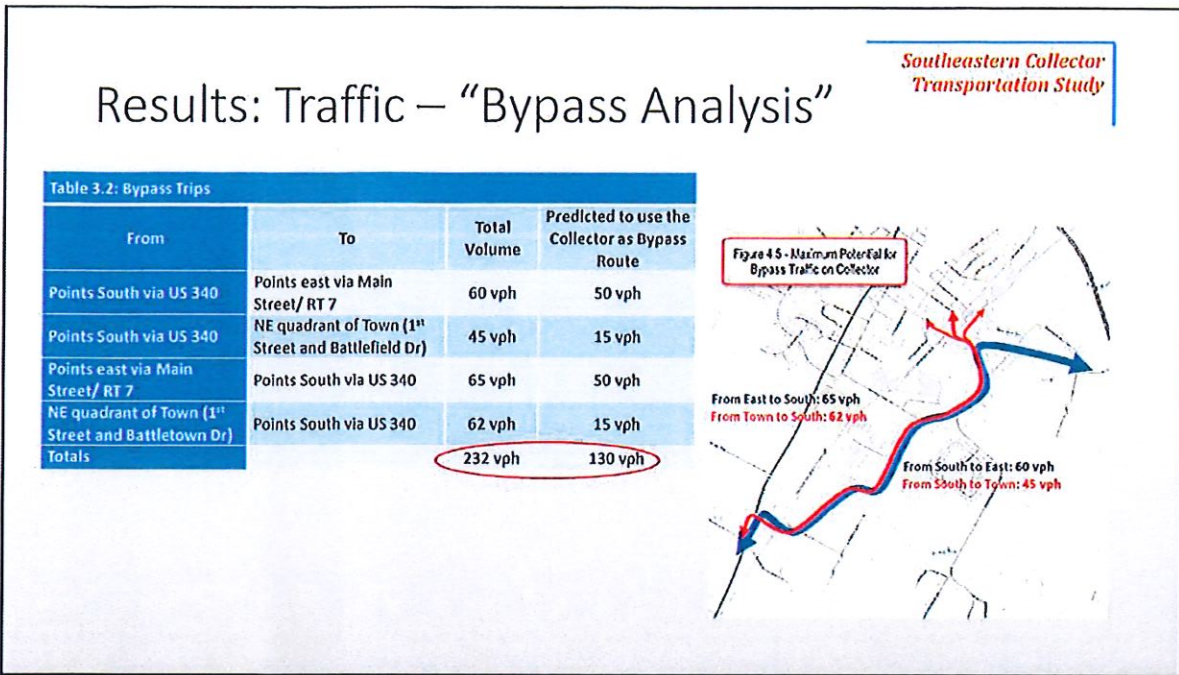
Results: Traffic – Change in Intersection Volumes

*Southeastern Collector
Transportation Study*

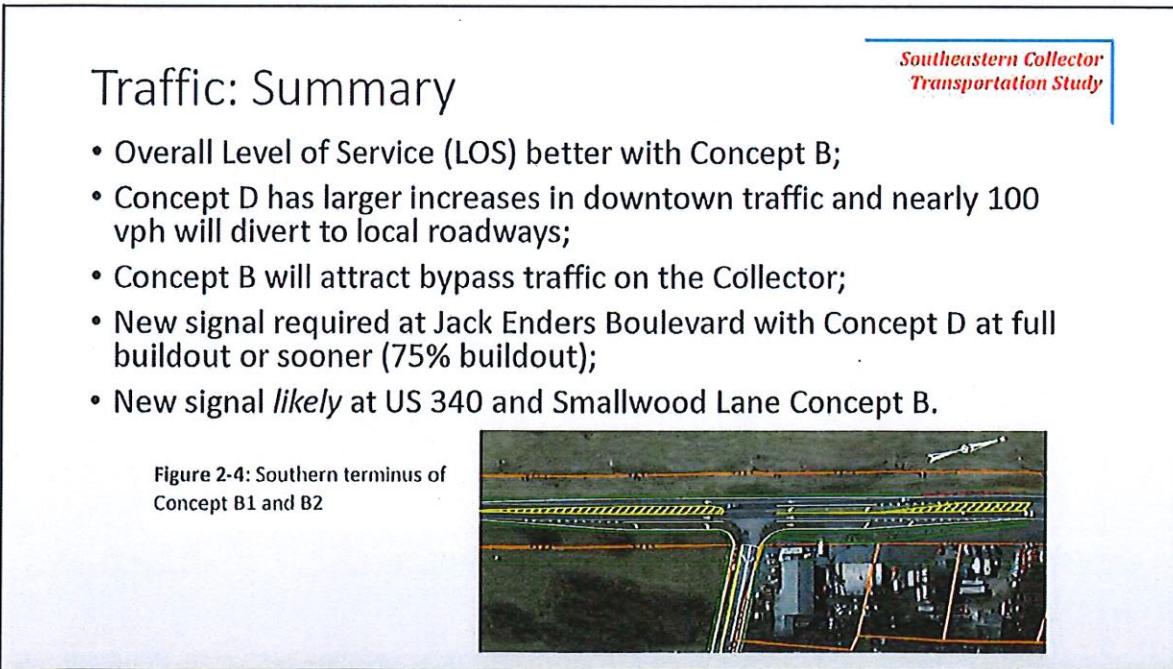
Table 3.3 Change in Traffic From Concepts

Location	Existing vph	Change B	Change D
US 340 Main Street Intersection	1381	+32	+216
Main Street / Jack Enders Intersection	812	+72	+450
US 340 Church Street Intersection	1092	+111	+107
US 340 – Smallwood Lane	1040	+407	+62

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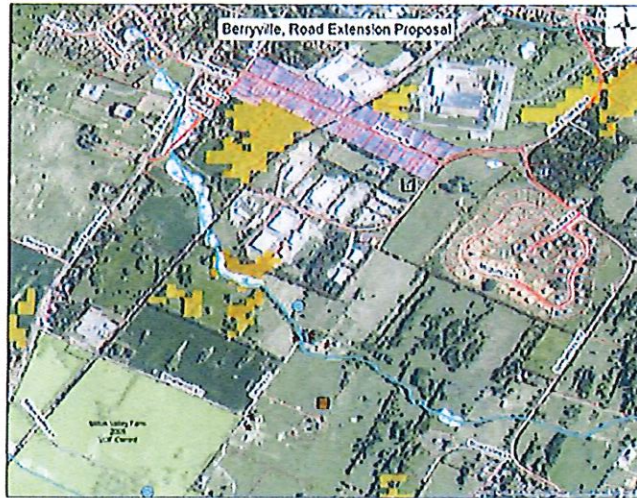
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Impacts

**Southeastern Collector
Transportation Study**



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Impacts

**Southeastern Collector
Transportation Study**

Table 3.2 Summary of Natural Environment Impacts				
	Concept B1	Concept B2	Concept D1	Concept D2
Impacts to wetlands	.50* acres	1.0 acres	0.50* acres	1.0 acres
Impacts to Forests	1.79 acres	1.64 acres	1.79 acres	1.64 acres

Table 3.3 Summary of Historic Resource Impacts				
	Concept B1	Concept B2	Concept D1	Concept D2
Historic Structures within 100 feet	none	3 County Designated	none	3 County Designated

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Costs

*Southeastern Collector
Transportation Study*

Table ES-1 Comparative Costs (\$ thousands)

	B1	B2	D1	D2
Construction Cost				
Malnline	\$8,130	\$7,950	\$5,280	\$4,820
Intersection Improvements	\$560	\$560	\$430	\$430
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At Grade Railroad Crossing	\$160	\$160	\$0	\$0
Subtotal Construction Cost	\$9,460	\$9,280	\$6,250	\$5,790
ROW Cost	\$100	\$100	\$60	\$70
Total Cost	\$9,560	\$9,380	\$6,310	\$5,870

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Summary – Benefits, Impacts and Costs

*Southeastern Collector
Transportation Study*

Table ES-2 Summary of Costs and Benefits

	B1	B2	D1	D2
Land Use	Bisects Smallwood Property	Eastern edge of Smallwood Property not optimal	Bisects Smallwood Property	Eastern edge of Smallwood Property not optimal
Environmental	Minimal Impact to Craig's Run	Moderate impact to Craig's Run	Minimal Impact to Craig's Run	Moderate impact to Craig's run
Traffic Flow	Improves traffic flow throughout	Improves traffic flow throughout	Large Increase on Jack Enders Boulevard, traffic diversions onto Berryville streets	Large Increase on Jack Enders Boulevard, traffic diversions onto Berryville streets
Implementation	More \$\$, Includes new connection at US 340.	More \$\$, Includes new connection at US 340.	Can be expanded after Initial phase.	Can be expanded after Initial phase
Total Cost	\$9,560	\$9,380	\$6,310	\$5,870

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Concept Analysis Conclusions

- Benefits of new connection to US 340 warrant “B” concept.
- B1 provides better backbone to new development with clean crossing of Craig’s Run.
- Phasing is practical. Initial phase is D concept.
- Starting with D concept commits to building B concept within 5-10 years because of impacts.

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Activity on Site

Roadway Improvements

- | | | |
|--|--|--|
| <ol style="list-style-type: none"> 1. Conduct Visioning and Strategic Planning; 2. Complete Planning, gain Property Access; 3. Initial Development; 4. 25% to 50% build out; 5. 50% to 75% build out; 6. Over 75% build out. | | <p>Begin preliminary roadway plans and gain permits.</p> <p>Extend partial Connector Into Smallwood Property.</p> <p>Improve Jack Enders – Main Street Intersection.</p> <p>Complete Connector to US 340. Improve US 340 Intersection.</p> <p>New Signal at US 340 / Smallwood Lane.</p> |
|--|--|--|

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Funding Sources

*Southeastern Collector
Transportation Study*

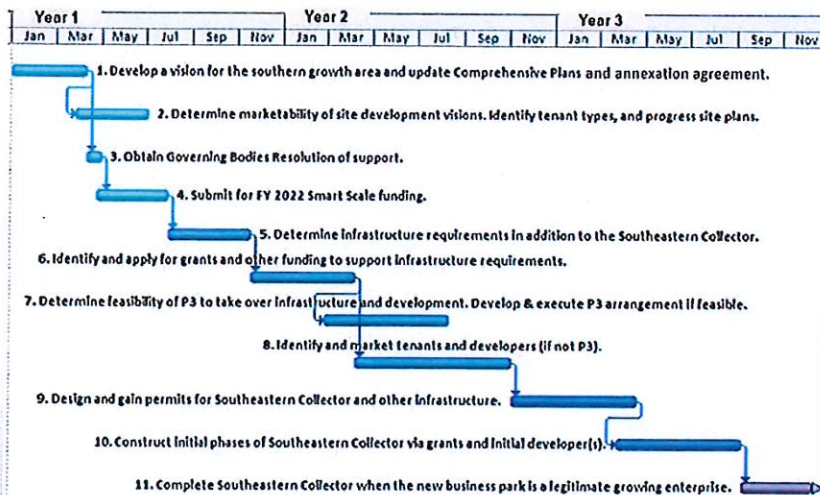
- Smartscale
- Revenue Sharing
- Public Private Partnerships
- Other Grants

State Grant Funder Programs	Brief description
Community Development Block Grant	Based upon demographics and community need
FEMA flood protection policies and regional planning	Flood education, policy enforcement, construction standard updates, ordinance review
VDOT SRTS	Safe routes to schools, walking trails, bike trails
Go Virginia, Growth and Opportunity	Tech sector partnerships to develop economy in rural areas
Federal Grant Programs	
USDA/NRCS Watershed Protection grants	For water quality, water supply protection, habitat
US Forest Service Land and Water Conservation Fund	Way to purchase land for permanent protection
TIGER/Build grants	Public transportation program 20% for urban areas
Redismart, department of Energy	For smart grid design implementation
INFRA program	Transportation that promotes economic vitality, accountability along freight highway

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Implementation – Multi year process

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