

## Technical Note – Bus Case Studies

**To** Derek M Winning  
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**From** Elizabeth Owen, Anthony Bruzzone  
**Subject** Draft CVX Service Comparison Case Studies

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### Background

The Cross Valley Corridor bus service, branded as the “Cross Valley Express” (CVX), is envisioned as a significant and visible transit service in a location where transit is often not considered viable or essential. Within the Central Valley, and other areas of rural California, the service proposal can be viewed as aggressive. However, there are other examples of prophetic transit service designs that can inform the CVC discussion and provide guidance to decisionmakers.

This Note provides examples of other transit services throughout the United States similar to the proposed CVX service. It should be noted that only a few of these examples have service frequencies of better than hourly along long corridors (50 miles), although all the examples cited serve non-traditional (rural or semi-urban) locations.

### Methods

Case studies were identified based on the following criteria:

- Transit agencies within the United States
- Regional, express, or commuter bus service spanning at least 25 miles
- Service frequencies of at least 60-minutes

### Case Studies

The following services were selected that can serve as a case study comparison to the proposed CVX service:

- **Redwood Transit System** – Humboldt Transit Authority, California
- **I-405 Stride BRT Program** – Sound Transit, Washington
- **VelociRFTA BRT** – Roaring Fork Transportation Agency, Colorado
- **EcoTransit Valley Route** – Eagle County Regional Transportation Authority, Colorado
- **SMART Route 275** – Suburban Mobility Authority for Regional Transportation, Michigan
- **Coastal Link** – Norwalk Transit District in partnership with Greater Bridgeport Transit, and Milford Transit District, Connecticut
- **Suffolk County Transit Route 58** – Suffolk County Transit District, New York

## Redwood Transit System (RTS) – California

### Humboldt Transit Authority system map



RTS service shown in dark green from Trinidad to Scotia. © Humboldt Transit Authority (2024)

- Operated by Humboldt Transit Authority<sup>1</sup>.
- 50-mile route with 47 stops between Trinidad and Scotia; most service is provided within the 17 mile central segment.
- Average peak hour vehicle speeds of 20 mph.
- Operates Monday through Saturday 5:30 AM to 10:30 PM.
- Frequency varies from 30- to 60-minutes.
- Fares start at \$2.10 one way or \$5.25 for a day pass.

## I-405 Stride BRT Program – Washington

### Conceptual rendering of a Stride BRT double decker bus



© Sound Transit (2023)

- Operated by Sound Transit; currently served by three separate routes that will be combined into one bus rapid transit (BRT) route.<sup>2</sup>.
- Initial operating segment will be a 37-mile route with 11 stops between Lynnwood and Burien, with phased extensions to Bothell and Shoreline (the Eastside of the Seattle Metro area, not serving downtown Seattle)
- Proposed peak hour vehicle speeds between 25 to 30 mph.
- Proposed daily service up to 19 hours per day
- Proposed 10 to 15 minute frequencies
- Current fare structure for Sound Transit Express routes is \$3.25 one way, no fare scheme has been adopted for the Stride BRT Program.

<sup>1</sup> Redwood Transit System – Humboldt Transit ([hta.org](http://hta.org))

<sup>2</sup> Stride bus rapid transit | Project map and summary | Sound Transit

VelociRFTA Bus Rapid Transit – Colorado	
<p style="text-align: center; color: #e61e20;"><b>VelociRFTA electric bus</b></p>  <p style="text-align: center;">© RFTA (2024)</p>	<ul style="list-style-type: none"> <li>Operated by Roaring Fork Transportation Agency<sup>3</sup>.</li> <li>43-mile route with 19 stops between Glenwood Springs and Aspen.</li> <li>Average peak hour vehicle speeds of 34 mph.</li> <li>Operates daily 4:30 AM to Midnight.</li> <li>BRT frequency varies from 10 minutes on the 17 mile core route to 60 minutes off-peak along the extended route; underlying local service operates across the entire 43 mile route at 30 minute service frequencies.</li> <li>Zone-based fares starting from free to \$5.</li> </ul>
EcoTransit Valley Route - Colorado	
<p style="text-align: center; color: #e61e20;"><b>Eco Transit bus</b></p>  <p style="text-align: center;">© Eco Transit (2020)</p>	<ul style="list-style-type: none"> <li>Operated by Eagle County Regional Transportation Authority<sup>4</sup>.</li> <li>43-mile core route with 23 stops between Dotsero and Vail, with transfers at Vail for commute service to Leadville (an additional 37 miles)</li> <li>Average peak hour vehicle speeds of 35 mph.</li> <li>Operates daily 6:30 AM to 11:00 PM.</li> <li>60-minute frequency, additional overlays increase service in core area.</li> <li>Fares start at \$3 one way for the core Dotsero to Vail service.</li> </ul>
SMART Route 275 – Michigan	
<p style="text-align: center; color: #e61e20;"><b>SMART electric bus</b></p>  <p style="text-align: center;">© Brendan Losinski (2022)</p>	<ul style="list-style-type: none"> <li>Operated by Suburban Mobility Authority for Regional Transportation, serving the suburbs of Detroit<sup>5</sup>.</li> <li>26-mile route with 10 stops between Taylor and Southfield.</li> <li>Average peak hour vehicle speeds of 19 mph.</li> <li>Operates Monday through Saturday 5:45 AM to 11:30 PM.</li> <li>Frequency varies between 30- and 60-minutes.</li> <li>Fares start at \$2 one way with discounted DDOT transfers for trips to Detroit.</li> </ul>

## Coastal Link - Connecticut

### Norwalk Transit system map



© Norwalk Transit (2024)

- Operated in joint partnership between the Norwalk Transit District, Greater Bridgeport Transit, and Milford Transit District.<sup>6</sup>
- 26-mile route with 11 stops between Norwalk and Milford.
- Average peak hour vehicle speeds of 14 mph.
- Operates Monday through Saturday 5:00 AM to 11:00 PM
- Frequency varies from 30- to 60-minutes.
- Time-based fares of \$1.75 for 90-minutes or \$4 for a day pass.

## Suffolk County Transit Route 58 – New York

### Suffolk Transit hybrid electric bus



© Trevor Logan, Jr. Photo (2009)

- Operated by Suffolk County Transit<sup>7</sup>.
- 35-mile route with 7 stops between Brentwood and Riverhead Long Island Railroad stations.
- Average peak hour vehicle speeds of 19 mph.
- Operates daily from 5:00 AM to Midnight.
- 60-minute frequency.
- One-way fares offered at \$2.25.

<sup>3</sup> [VelociRFTA - BRT Up Valley & Down Valley Bus Schedule](#)

<sup>4</sup> [Bus Schedules \(eaglecounty.us\)](#)

<sup>5</sup> [SMART > Schedules > Schedules by Route \(smartbus.org\)](#)

<sup>6</sup> [Coastal Link - Norwalk \(norwalktransit.com\)](#)

<sup>7</sup> [Routes and Schedules \(sctbus.org\)](#)

## **Key Takeaways**

### **Industry Leading Examples**

While the proposed CVX route is visionary in breadth and scope, it is not the first to create a fast, useful transit service in a rural or non-urban area. Humboldt, Aspen, and Vail all operate at least parts of their routes at 30 minute service frequencies. Sound Transit in Seattle is combining existing services into a freeway BRT that only serves the Eastside of the metropolitan area, and Sea-Tac Airport.

### **Service Branding and Fare Schemes**

The Coastal Link is one of the few services identified that is jointly operated across various transit agencies. Each of the agencies considered have varying fare pricing schemes from one way fixed pricing or zone-based fares. Each of the services identified differ in their branding – some such as the VelociRFTA emphasize connections to recreational activities, while others focus on regional commute trips.

### **Transit Priority Infrastructure**

Agencies such as the Roaring Fork Transportation Agency and Sound Transit have been able to achieve higher vehicle speeds due to significant capital investments towards transit-priority infrastructure.

**Summary Comparison to CVX Service**

Location	Agency	Route Name	Route Distance (miles) and # of Stops	Service Frequency	Average Speed (miles per hour)
California	Tulare County Association of Governments	<i>Cross Valley Corridor Express</i>	62 mi. with 14 stops	Daily from 5:00 AM to 11:00 PM with 30-minute frequencies.	31 mph
California	Humboldt Transit Authority	<i>Redwood Transit System</i>	50 mi. with 47 stops.	Monday through Saturday from 5:30 AM to 10:30 PM with varied 30- and 60-minute frequencies.	20 mph
Washington	Sound Transit	<i>I-405 Stride Bus Rapid Transit</i>	37 mi. with 11 stops.	Daily with varied 10- to 15-minute frequencies.	25 to 30 mph
Colorado	Roaring Fork Transportation Agency	<i>VelociRFTA Bus Rapid Transit</i>	43 mi. with 19 stops.	Daily from 4:30 AM to midnight with varied 10- to 30-minute frequencies.	34 mph
Colorado	Eagle County Regional Transportation Authority	<i>EcoTransit Valley Route</i>	43 mi. with 23 stops	Daily from 6:30 AM to 11:00 PM with 60-minute frequency.	35 mph
Michigan	Suburban Mobility Authority for Regional Transportation	<i>Route 275</i>	26 mi. with 10 stops.	Monday through Saturday from 5:45 AM to 11:30 PM with varied 30- and 60-minute frequencies.	19 mph
Connecticut	Norwalk Transit District in partnership	<i>Coastal Link</i>	26 mi. with 11 stops.	Daily from 5:30 AM to 11 PM with varied 30-	14 mph

Location	Agency	Route Name	Route Distance (miles) and # of Stops	Service Frequency	Average Speed (miles per hour)
	with Greater Bridgeport Transit and Milford Transit District			and 60-minute frequencies.	
New York	Suffolk County Transit	<i>Route 58</i>	35 mi. with 7 stops.	Daily from 5:00 AM to Midnight with 60-minute frequencies.	19 mph