

Memorandum

DATE: January 23, 2025
TO: City of Victoria / Victoria MPO
CC:
FROM: ATG | DCCM
RE: Bus Stops Placement

Executive Summary

Starting with the route redesign established by the Golden Crescent – Directions for the Future plan prepared by KFH Group, Inc. for the Golden Crescent Regional Planning Commission (GCRPC), through the Texas Department of Transportation’s (TxDOT) Transit Technical Services Program (TTSP), a methodology was developed to identify potential bus stop locations, including walkshed considerations, destinations, and GCRPC service standards for stop spacing. A total of 74 new stop locations were identified along the new route configurations, including 24 pairs of stops at new intersections, 23 new stops near existing stops to offer bi-directional service, and 3 stops at the end of routes (Table 1, Figure 1). The total cost of the system changes may vary based on the cost of labor and the quantity of amenities at stops. Tables 2 and 3 summarize planning-level cost estimates of the proposed stops for the system changes. Itemized cost estimates provided by GCRPC were incorporated into a framework for levels of bus stop amenities developed by the project team. Each level of bus stop is accompanied by a cost estimate range as summarized below (details included in Table 4).

- Level 1 – Basic: \$250 – \$4,491
- Level 2 – Bench: \$1,598 – \$5,210
- Level 3 – Shelter: \$9,255 – \$16,319

This methodology provides high-level suggestions for the redesigned network based on available data. This study does not consider physical, architectural, or engineering site factors that will impact final stop placements as locations are reviewed. As such, local knowledge will be crucial for delivering the best rider experience possible.

Bus Stop Location Identification

Methodology

A comprehensive methodology was developed to identify potential bus stop locations, retaining the route design established by the previous transit plan. New route designs were aligned with existing street networks, with considerations for a quarter-mile walkshed around each potential stop. The proposed locations seek to provide adequate coverage to residential areas, employment centers, and key destinations. This was balanced with an evaluation of proximity to other stops, aiming to maintain an efficient stop spacing while adhering to the GCRPC service standard of no more than 0.5 miles between stops. Potential stops were also evaluated based on their proximity to major destinations such as commercial centers, healthcare facilities, and educational institutions in an effort to maximize the utility of the transit service. Finally, to ensure seamless bi-directional service, all proposed stops were established in pairs on opposite sides of the street to offer a consistent and predictable passenger experience across the entire redesigned network.

Factors considered:

- Alignment of routes
- Coverage of quarter-mile walksheds
- Proximity to destinations
- Proximity to other stops
- GCRPC service standards (no more than 0.5 miles between stops)
- All stops should exist in pairs for bi-directional service

Proposed New Bus Stop Locations

Using the methodology above, a total of 74 new stop locations were identified along the new route configurations. These stops include 24 pairs of stops at new locations, 23 new stops near existing stops to offer bi-directional service, and 3 stops at the end of routes. Figure 1 shows the distribution of these stops, which are primarily along the new North Main Street route (Purple Route). Table 1 below details the stop locations, lines each stop serves, and the primary reasoning for their placement.

Existing Bus Stop Removal

A total of 81 existing stops were identified from GCRPC data to be removed. Table 2 and Figure 1 detail these stops and their distribution. A majority of stops were removed due to the changing routes, but applying the methodology above, some stops along existing routes were proposed for removal.

Table 1. Proposed New Bus Stop Locations

Intersection	Route(s)	Justifications
Hallettsville @ Hathaway	Pink	Creating pair of stops
N Navarro @ E Nueces (2)	Pink, Gold	Hospital access
N Navarro @ E Goodwin (2)	Pink	Expanding walkshed, proximity to old stops
Hallettsville @ NE Zac Lentz	Pink	Creating a pair of stops
Detar Hospital North	Purple	End of route, access to hospital
E Water @ S William	Purple	Creating a pair of stops
Hopkins @ NE Water (2)	Purple	Expanding walkshed
N Laurent @ Port Lavaca	Purple	Creating a pair of stops
N Main @ Conti (2)	Purple	Expanding walkshed
N Main @ E Colorado (2)	Purple	Coverage
N Main @ E Hiller (2)	Purple	Coverage
N Main @ E Red River (2)	Purple	Coverage
N Main @ Kerh (2)	Purple, Blue	Coverage
N Main @ Lantana (2)	Purple	Coverage
N Main @ W Mockingbird (2)	Purple	Coverage
N Main @ W Rio Grande (2)	Purple, Pink, Gold	Transfers
N Moody @ E Commercial (2)	Purple, Pink, Gold	Coverage
NE Water @ Hopkins	Purple	Creating a pair of stops
NE Water @ S Cameron (2)	Purple	Coverage, replacing nearby stops
S Moody @ E River	Purple	Creating a pair of stops
S Moody @ E Santa Rosa (2)	Purple, Gold	Coverage
W Rio Grande @ N Moody (2)	Purple	Coverage
W Water @ S Bridge	Purple	Creating a pair of stops
E Airline @ N Ben Jordan	Blue	Creating a pair of stops
Mockingbird @ Faith Family	Blue	Creating a pair of stops
N Ben Wilson @ E Locust	Blue	Creating a pair of stops
N John Stockbauer @ Shalom Village	Blue	Creating a pair of stops
N Laurent @ E Airline	Blue	Expanding walkshed, access to businesses
N Laurent @ E Rio Grande (2)	Blue, Gold	End of route, proximity to old stops
2100 Blk S. Laurent	Gold	Creating a pair of stops
E Juan Linn @ S Liberty (2)	Gold	Expanding walkshed, proximity to old stops
E Juan Linn @ S Navarro	Gold	Creating a pair of stops
FM 404 @ Kern	Gold	Creating a pair of stops
N Main @ W Crestwood (2)	Gold	Coverage
N Williams @ E Rio Grande	Gold, Pink, Purple	Access to businesses, transfers
S Laurent @ Hopkins	Gold, Purple	Creating a pair of stops, transfers
S Laurent @ Pleasant Green (2)	Gold	Proximity to old stop
S Liberty @ E Goodwin (2)	Gold, Pink	Access to library, transfers
E Red River @ N Ben Jordan	Green	Creating a pair of stops

Intersection	Route(s)	Justifications
Houston @ Joch Stockbauer	Green	Safer access to businesses
Houston @ N Ben Wilson	Green, Red	Safer access to businesses
N Ben Jordan @ E Brazos	Green	Creating a pair of stops
Ash @ N Laurent	Red, Purple	End of route
E North @ Avenue C (2)	Red	Expanding walkshed
E North @ Community Center (2)	Red	Access to community center
E North @ N Cleaveland	Red, Purple	Creating a pair of stops
N Ben Wilson @ E Rio Grande	Red	Creating a pair of stops
N Ben Wilson @ Gayle (2)	Red	Expanding walkshed
N Ben Wilson @ Lone Tree (2)	Red	Expanding walkshed
N Ben Wilson @ Meadowlane	Red	Creating a pair of stops

Source: ATG | DCCM

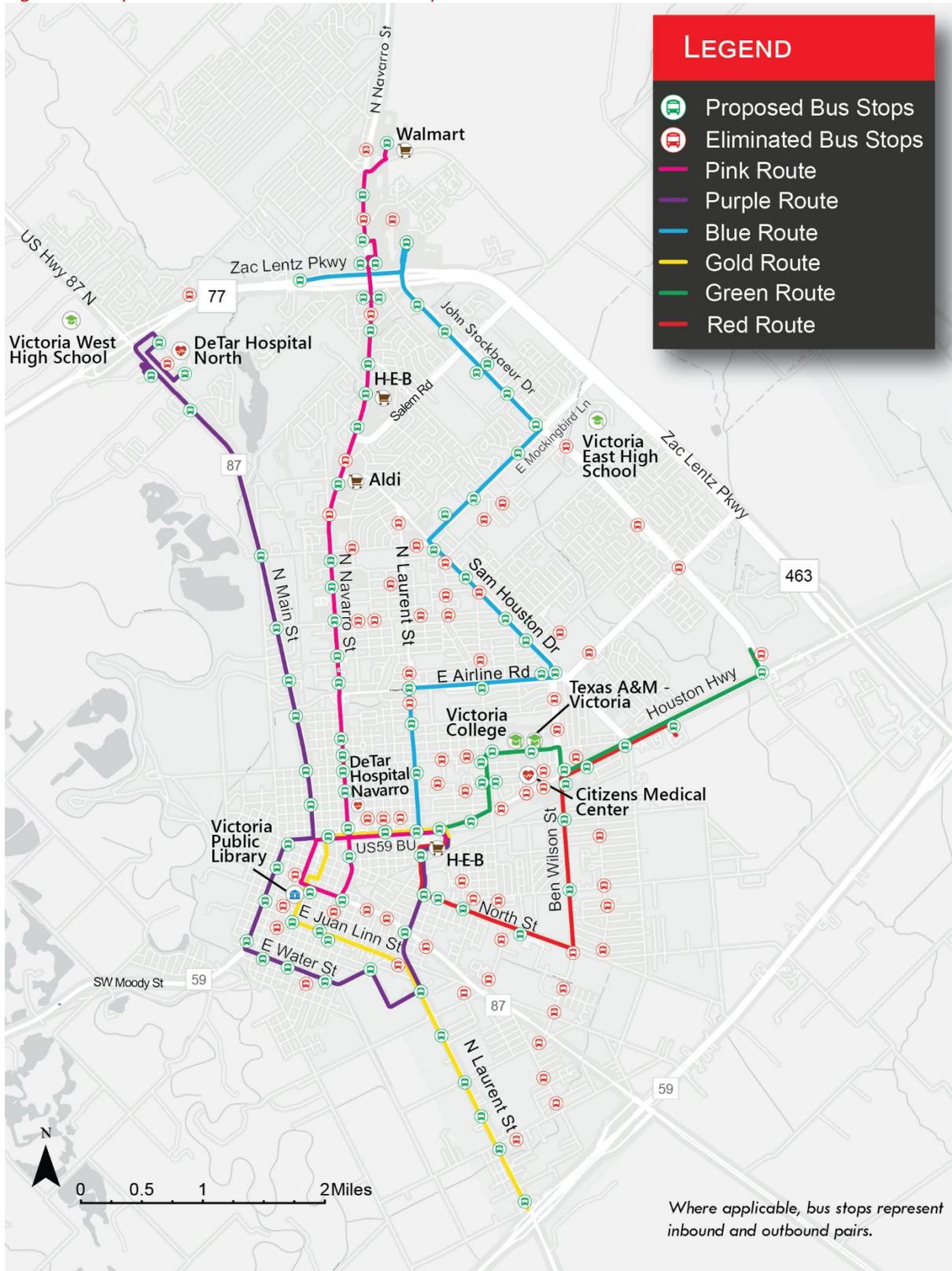
Table 2. Proposed Removed Bus Stops

Intersection	Former Route(s)	Intersection	Former Route(s)
100 Blk Larkspur	Brown	Laurent @ Family Dollar	Pink
1400 Blk John Stockbauer	Gold	Laurent @ Firestone	Green
2100 Blk Houston	Gold	Laurent @ Manor	Pink
2700 Blk Odem	Green, Teal	Laurent @ Taylor Ave	Gold
3100 Blk Ben Wilson	Pink	Leary Lane @ Dean Cook	Gold
3200 Blk Airline	Blue	Leary Lane @ HHSC	Gold
3300 Blk John Stockbauer	Gold	Lone Tree Rd. @ North St.	Gold
Ben Jordan @ Caney Run	Gold	Lova @ Bobolink	Green, Teal
Ben Jordan @ Lone Tree Rd.	Gold	Lova @ Gayle	Green, Teal
Ben Jordan @ North St.	Gold	Lova @ Glendale	Green, Teal
Ben Jordan @ Red River	Gold	Lova @ Lone Tree	Green, Teal
Ben Jordan @ Redwood	Gold	Lova @ Wildwood	Teal
Ben Jordan @ Stripes	Blue	Main @ City Hall	Green
Ben Wilson @ College Drive	Blue	Main @ Santa Rosa	Green
Ben Wilson @ Forrest	Green, Teal	Main @ Victoria Public Library	Green
Ben Wilson @ Juan Linn	Green, Teal	Medical Drive @ Warm Springs	Red
Ben Wilson @ North	Green	Miori @ Liberty Academy	Blue
Ben Wilson @ UHV	Blue	Mockingbird @ Laurent	Brown, Pink, Gold
Briggs @ Medical Drive	Red	Mockingbird @ Lilac	Brown
Callis @ Pleasant Green	Green	Navarro @ Constitution	Teal, Gold
Callis @ Robin	Green	Navarro @ Hobby Lobby	Blue
Citizens Healthplex	Red	Navarro @ Noah's Ark	Red
Citizens Medical Center	Blue, Green	Navarro @ North Star	Red

Intersection	Former Route(s)	Intersection	Former Route(s)
Colorado @ Carriage Park	Green, Gold	Navarro @ Sam Houston	Red
Crestwood @ Cameron	Pink	Navarro @ Speedy Stop	Blue, Brown
Crestwood @ Redwood	Blue	Navarro @ Water	Teal
Crestwood @ Windsor	Green, Red	Nimitz @ Morningside	Gold
DeTar	Pink, Teal	Nuces @ Goldman	Teal, Red
DeTar Hospital	Gold, Green, Red	Nueces @ Louis	Red, Teal
Dick's Food Store	Blue, Gold, Pink, Red, Green	Pleasant Green @ Alie	Green
East @ Griffin	Green, Teal	Port Lavaca Hwy @ Brownson	Gold
Goodwin @ Cameron	Gold	Port Lavaca Hwy @ Juan Linn	Gold, Teal
Goodwin @ George	Gold	Red River @ Ben Jordan	Pink
Gulf Bend Regional Center	Red	Red River @ Halsey	Blue
Halsey @ Rosemary	Gold	Sam Houston @ Leary Lane	Pink
Houston Hwy @ Citizens	Teal	Sam Houston @ Stripes	Blue
Houston Hwy @ Del Papa	Green	Sam Houston @ Walgreens	Pink
Houston Hwy @ Jaguar Hall	Gold	South @ Depot	Green, Teal
Houston Hwy @ John Stockbauer	Gold	Victoria Mall @ JC Penny	Brown, Blue
John Stockbauer @ Miori	Gold	Water @ Hopkins	Teal
Juan Linn @ Rae	Teal		

Source: ATG | DCCM

Figure 1: Proposed New and Removed Bus Stop Locations



Source: ATG | DCCM

Cost Estimates and Prioritization

Baseline Cost Estimates

The total cost of the system changes will vary based on the cost of labor and the quantity of amenities at stops. Tables 3 and 4 provide planning-level cost estimates of the system changes. New concrete pads and labor will be the most significant drivers of cost, but the city’s relatively lower labor costs compared to larger metros may help to keep costs at the lower end of national ranges. Since the system redesign changed the names and colors of the routes, the baseline cost estimates include replacement of all bus stop signs.

Table 3. Estimated Baseline Costs

Line Item	Number of Stops	Unit Cost	Total Cost
Concrete pads for new stops	74	\$2,400	\$177,600
Pole and sign	74	\$250	\$18,500
New system signs for existing stops	94	\$17	\$1,598
TOTAL			\$197,698

Source: GCRPC cost estimates

Prioritization of Bus Stop Amenities

Stop-level ridership is the primary metric to ensure that amenities are distributed appropriately. However, other considerations may come into play as final implementation decisions are made, including nearby destinations, passenger wait-time potential, and equitable distribution of amenities across the community. Below is a basic framework for prioritizing the placement of bus stop amenities based on their usage (i.e., ridership).

This is a framework, not a rigid decision-making tool, so it should be seen as a starting point as Victoria Transit begins to implement the network redesign. First, stop-level ridership should be ranked in comparison to all other stops. For new stops without ridership data, local knowledge and experience may be used to make assumptions. To prioritize placement of amenities, target percentages are assigned to the three levels of stop amenities described below. For example, the system should aim to implement Level 3 – Shelters at the top 10-20% of stop locations based on ridership.

Level 1 – Basic - assumes only the bare minimum with a pole and sign, though optional amenities like trash cans or bike racks may be included. Level 1 may suffice for the bottom 50% (at most) of stops based on ridership.¹

Level 2 – Bench - incorporates a bench and trash can (at a minimum) for locations that experience more ridership. This could be the baseline for the top 50% (at least) of stops based on ridership.

Level 3 – Shelter - includes a shelter up to the full range of amenities available. An appropriate goal would be to implement Level 3 at the top 10-20% (at least) of stops based on ridership.

¹ [RGVMPO TDP service standards, pages 72 and 73.](#)

In the table below, each stop level displays a corresponding range of cost estimates. The low range totals the “Included” elements while the high range adds all “Optional” elements for the highest potential cost at that level. The cost estimates for Level 3 - Shelter use the standard shelter for the low range and the cantilever shelter for the high range.

Table 4: Bus Stop Amenities Framework and Cost Estimates

Line Item	Unit Cost	Level 1 - Basic	Level 2 - Bench	Level 3 - Shelter
Pole and sign	\$ 250	Included	Included	Included
Trash can	\$ 629	Optional	Included	Included
Bench	\$ 719	No	Included	Included
Standard Shelter	\$ 7,657	No	No	Included
Cantilever shelter	\$ 7,834			
Windbreak	\$ 425	No	No	Optional
Solar lighting shelter	\$ 2,850	No	No	Optional
Solar lighting pole top	\$ 2,400	Optional	Optional	Optional
Bike Rack	\$ 674	Optional	Optional	Optional
Map Holder	\$ 538	Optional	Optional	Optional
Low Range		\$ 250	\$ 1,598	\$ 9,255
High Range		\$ 4,491	\$ 5,210	\$ 16,319

Existing Bus Stop Amenities Costs and Savings

Due to the route realignment, a total of 81 unique bus stops will need to be removed along existing route segments proposed to be removed. While removing these amenities may entail an expense, it presents the opportunity to save significant funding on furnishing new stops. Table 5 shows the total amenities that may be removed from existing stops and the potential savings from repurposing them at new stop locations.

Table 5. Estimated Amenities Costs and Potential Amenities Cost Savings

	Benches	Shelters	Wind Breaks	Trash Cans	Poles	Bike Racks	Lighting
Total available	38	30	7	39	72	8	9
Cost per	\$719	\$7,657	\$425	\$629	\$250	\$674	\$2,400
Total savings	\$27,322	\$229,710	\$2,975	\$24,531	\$18,000	\$5,392	\$21,600

* Costs are based on existing GCRPC inventory data.

Other Considerations

Service Standards

The system’s walkshed coverage is determined by the layout of routes and the stops that serve them. According to Golden Crescent Regional Planning Commission’s service standards, the provider aims to distribute transit service so that 70% of all residents in the City of Victoria are within a ¼ mile walk of a Fixed Route bus stop and 85% of residents are within a ¾ mile walk of a Fixed Route bus stop.²

The new system has less geographic coverage overall and reduces the proportion of residents within a ¼ mile walk of a bus stop while still meeting the ¾ mile walkshed service standard. The calculations below are based on 2020 Census data. It is possible the route redesign may have factored newer or projected developments not reflected in those data, but Table 6 displays the service standards and percentages of residents within the various walksheds based on the old and new route systems.

Table 6. GCRPC Walkshed Service Standards

	Service Standard	Old Routes	New Routes
0.25 miles	45,874 (70%)	45,727 (69.8%)	43,249 (66.0%)
0.5 miles	N/A	49,700 (75.8%)	52,650 (80.4%)
0.75 miles	55,704 (85%)	60,289 (92.0%)	59,255 (90.4%)

** Based on the 2020 Census block-level data. The city of Victoria’s total population was 65,534.*

Other factors aside from overall coverage are important, such as servicing groups with high transit needs (as seen the in the service impartiality analysis memo) or even the consideration of the tradeoff between service coverage and service frequency. While not a primary focus of this effort’s bus stop location identification task, this discrepancy was discovered through the process of identifying locations for proposed new bus stops. The City of Victoria and GCRPC may reconsider their priorities and service standards to better align with the transit network redesign.

² [GCRPC Service Standards](#), page 3.

Next Steps: Proposed Implementation Phasing

Prioritizing, implementing, and replacing bus stop amenities is an ongoing process. However, the network redesign implementation may benefit from a phased approach to get started. This will allow Victoria Transit to launch the new system as quickly as is reasonable while having a plan for continued improvements.

Based on the high-level analysis and information provided in this memo, the next steps require a more detailed assessment of the proposed new stops, and redeployment of existing stops will be needed. This should include a thorough evaluation of feasibility, right-of-way constraints, design considerations, refined cost estimates, and an implementation and phasing schedule. During this phase, existing bus stop inventory and mapping data should be updated to accurately reflect stop locations as well as actual and planned amenities at each stop. Any additional modifications to the proposed routes may also be evaluated as part of this assessment.

The following presents a simplified potential phasing plan for Victoria Transit.

- **Phase 0 (complete)** – This includes the public engagement activities, process, and documentation completed as part of this project, as well as the high-level planning analysis and proposals for bus stop and amenity placements.
- **Phase 1 (immediate)** – First, all proposed stop locations must be assessed. The cost and timeline needed to complete this phase may vary based on the physical conditions and architectural/engineering needs of the proposed stop locations. To launch the new system, all new stops should have sufficient concrete pads (whether existing or new), poles, and signs. All existing stops will need new signage based on the new route names/colors. The baseline cost estimate for this from Table 3 is \$197,698.
- **Phase 2 (short-term – 1 year)** – After prioritizing bus stop amenities based on ridership (and other factors deemed essential), repurpose amenities from decommissioned stops. This may be started pre-launch of the new system, but could continue after as needed.
- **Phase 3 (mid-term – 1-5 years)** – Use available and expected funding to procure new bus stop amenities and implement placement based on prioritization framework and stop level target percentages.
- **Phase 4 (long-term – 5+ years)** – Seek additional funds to continue bus stop amenity enhancements and replacements on an ongoing basis in an effort to meet or exceed goals.