

APPENDIX C

SERVICE MODEL EVALUATION MATRIX

OCTOBER 2020



TRANSIT FEASIBILITY STUDY



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Service Model Evaluation

April 2, 2020 FINAL

Service Types Considered, Cost Estimates, & Feasibility

Service Model	Service Description	Needs/Opportunities Addressed	Pros	Cons	Other Considerations	Cost	Feasibility
Light Rail Transit	Train service that runs on a regular schedule and connects to the regional transit network	<ul style="list-style-type: none"> Provides Regional Connections Serves Vulnerable Populations Enhances Economic Sustainability Supports Population Growth 	<ul style="list-style-type: none"> Connects to regional transit system Provides modal choice for commuters Provides an option for entry level workers to get to Castle Rock 	<ul style="list-style-type: none"> Very high cost to build (\$100M/mile) Very high cost to operate (\$300+/revenue hour) Limited geographic coverage Not a short-term solution as Castle Rock is not currently a part of RTD 	<ul style="list-style-type: none"> Potential for Castle Rock to be served by Front Range Rail Future Bustang stop will help support regional connectivity 	\$ \$ \$ \$	●
Fixed-Route Regional Buses	Buses that travel on a regular route at scheduled times, and provides access to destinations on a regional scale	<ul style="list-style-type: none"> Provides Regional Connections Serves Vulnerable Populations Enhances Economic Sustainability Supports Population Growth 	<ul style="list-style-type: none"> Connects to regional transit system Provides modal choice for commuters Provides an option for entry level workers to get to Castle Rock 	<ul style="list-style-type: none"> High cost to operate (\$200+/revenue hour) Standard diesel 40' bus - \$450,000 each, electric 40' bus - \$900,000 each Limited geographic coverage High cost limits frequency and span of service 	<ul style="list-style-type: none"> Potential for Castle Rock to be served by Front Range Rail Future Bustang stop will help support regional connectivity 	\$ \$ \$	●
Fixed-Route Local Buses	Buses that travel on a regular route at scheduled times, and provide access to destinations on a local scale	<ul style="list-style-type: none"> Serves Vulnerable Populations Enhances Economic Sustainability Supports Population Growth 	<ul style="list-style-type: none"> Provides access to local jobs/destinations Provides modal choice for residents Potential to connect major activity centers; support downtown events 	<ul style="list-style-type: none"> Cost to operate ~\$125+/revenue hour Standard diesel 40' bus - \$450,000 each, electric 40' bus - \$900,000 each Cost limits span of service Limited geographic coverage Requires two-way operations to make travel times feasible 	<ul style="list-style-type: none"> Potential to provide regional connections when Bustang begins serving Castle Rock Fixed route service limits flexibility to serve more of Castle Rock 	\$ \$ \$	●
Circulator	Runs on a fixed route between key destinations; can be a public-private partnership funded partially by large employers or retail destinations or publicly funded	<ul style="list-style-type: none"> Serves Vulnerable Populations Enhances Economic Sustainability Supports Population Growth 	<ul style="list-style-type: none"> Provides access to local jobs/destinations Provides modal choice for residents Potential to connect major activity centers; support downtown events Lower capital costs; standard body-on-chassis vehicle (similar to CATCO) ~\$80,000 each 	<ul style="list-style-type: none"> Cost to operate ~\$75-\$125/revenue hour Limited geographic coverage Requires two-way operations to make travel times feasible 	<ul style="list-style-type: none"> Potential to provide regional connections when Bustang begins serving Castle Rock Fixed route service limits flexibility to serve more of Castle Rock 	\$ \$	●
Point-to-Point On-Demand Service	On-demand transportation that connects riders between any two points within a defined service and/or geofenced area	<ul style="list-style-type: none"> Serves Vulnerable Populations Enhances Economic Sustainability Supports Population Growth 	<ul style="list-style-type: none"> On-demand service model in place through existing Taxi Voucher program and Senior Center Shuttle No or limited capital investment cost Opportunity to look at partnerships with existing ride hailing services (e.g., Uber and Lyft) 	<ul style="list-style-type: none"> Current Taxi Voucher program and Senior Center Shuttle limited to certain populations Would need to consider viability of providing service to general public 	<ul style="list-style-type: none"> Operational model in place (Taxi Voucher program and Senior Center Shuttle) Scalable based on funding, demand, and driver availability Potential to provide regional connections when Bustang begins serving Castle Rock 	\$	●

Service Model	Service Description	Needs/Opportunities Addressed	Pros	Cons	Other Considerations	Cost	Feasibility
			<ul style="list-style-type: none"> Provides lifeline/quality of life support to vulnerable populations Service could be expanded to provide trips to general public Scalable based on funding availability 				
Regional Commuter Service to/from RidgeGate Station	On-demand/flex or fixed-route transportation where one end of the trip must be a transit stop/station	<ul style="list-style-type: none"> Serves Vulnerable Populations Enhances Economic Sustainability Supports Population Growth 	<ul style="list-style-type: none"> Private sector models/partnerships available Scalable based on demand If deploying service in partnership with private sector, no capital investment required Provides connections to regional transit system Provides modal choice for commuters Provides an option for entry level workers to get to Castle Rock Potential to provide more frequent service 	<ul style="list-style-type: none"> Private sector service models still being proven 	<ul style="list-style-type: none"> Town staff in conversation with Via to learn more about microtransit operations and deployment Opportunity for a regional microtransit service option in partnership with other public agencies Potential to partner with other public agencies 	\$ \$	●
Microtransit (Local)	Transit service that offers flexible routing and scheduling but generally shared and not fully door to door (requires users to walk short distances to virtual bus stops); generally mid-size vehicles; hybrid between fixed route and on-demand transportation	<ul style="list-style-type: none"> Serves Vulnerable Populations Enhances Economic Sustainability Supports Population Growth 	<ul style="list-style-type: none"> Private sector models/partnerships available Scalable based on demand If deploying service in partnership with private sector, no capital investment required Provides modal choice for residents Provides access to local jobs Opportunity to augment existing Taxi Voucher program to support travel needs of vulnerable populations Potential to provide more geographic coverage and service frequency 	<ul style="list-style-type: none"> Private sector service models still being proven 	<ul style="list-style-type: none"> Town staff in conversation with Via to learn more about microtransit operations and deployment Potential to provide regional connections for vulnerable populations when Bustang begins serving Castle Rock Potential to partner with other public agencies 	\$ \$	●
Vanpool	A formal carpool arrangement (coordinated by an employer or regional program) that pairs 4 to 15 riders with similar origins and destinations; Organizational structure varies- publicly operated, private non-profit, or public-private partnerships	<ul style="list-style-type: none"> Provides Regional Connectivity, Supports Population Growth 	N/A - See "Other Considerations"	N/A - See "Other Considerations"	<ul style="list-style-type: none"> Vanpool program in place through DRCOG's Way to Go program Opportunity to market existing program to Castle Rock residents and/or utilize future Park-n-Rides to support vanpools Opportunity for partnerships with private sector to get employees to Castle Rock 	\$	●
Carpool	The informal or formal pairing of riders with similar origins/destinations	<ul style="list-style-type: none"> Provides Regional Connections, Supports Population Growth 	N/A - See "Other Considerations"	N/A - See "Other Considerations"	<ul style="list-style-type: none"> Capitalize on DRCOG's existing program No need for further evaluation 	\$	●

Legend							
\$	Less than \$75 per revenue hour*	\$ \$	\$75-125 per revenue hour*	\$ \$ \$	\$125-225 per revenue hour*	\$ \$ \$ \$	More than \$225 per revenue hour*
●	Low Feasibility	●	Medium Feasibility	●	High Feasibility	Service models recommended for further evaluation and analysis	

*Average operating costs per revenue service hour: the average cost for one vehicle to supply transportation services for one hour.



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Next Steps

Based on the evaluation of potential transit operational models for Castle Rock, the project team recommends that three of the service types that ranked with high or medium feasibility move forward for further evaluation. By conducting further analysis and evaluation of multiple service models, the Town will have a menu of options to inform preferred service alternatives and how they align with community values. A single preferred alternative may not be appropriate for Castle Rock; the Town may consider a phased implementation strategy comprised of multiple operational models to meet community needs over time.

Recommended Operational Models for Further Analysis

1. Point-to-Point On-Demand Service
 - a. Enhanced Taxi Voucher program, ridehail service provider partnerships, partnerships with local specialized service providers
2. Microtransit
 - a. General public on-demand transportation with flexible routing and scheduling
 - b. Local service in the Town of Castle Rock
3. First/Last Mile Service
 - a. Commuter shuttle and/or microtransit service to RidgeGate