Bay Area Fare Coordination and Integration Study and Business Case

Update on User Research and Alternative Fare Policies

Metropolitan Transportation Commission

BART

Policy Advisory Council Subcommittee on Fare Coordination/Integration

January 22, 2021

Agenda Items 4 & 5

Photo: Jim Maurer

Policy Advisory Council Subcommittee Meeting Overview

This meeting is to provide a project status update, and to invite discussion on the development and subsequent evaluation of alternative fare structures:

AGENDA

1. Overall project status update

2. Feedback on approach to developing and evaluating alternative fare policies

CONTEXT

Complete
December 7, 2020

Today's Discussion

Fare Integration Task Force
February 16, 2021

Agenda Item 4

1. Overall Project Update

Photo: Jim Maurer

Project Outlook

May 2020 - Project team kick off – Staff Working Group + Consultants

July – Dec. 2020 – Initial analysis of existing travel market, review of fare policies and governance structures of peer regions, and preliminary user research activities

Dec. 2020 - Feb. 2021 – *Project team begins to define fare coordination and integration scenarios for detailed analysis*

Jan. 25, 2021 – *Project update at Blue Ribbon Transit Recovery Task Force meeting*

Spring 2021 – Project team conducts detailed analysis of financial, ridership, and user impacts and develops implementation strategies

Summer 2021– Project team presents final report and recommendations to the Fare Integration Task Force

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Overview: Bay Area Fare Coordination and Integration Study Progress

		What we have done	In progress	What is next
1	**Problem Statement + Goals**	Problem statement Key issues	Goal setting	Map of benefits
2	**Existing Conditions and Background Research**	Market research (NHTS) Previous studies Peer agencies review		
3	**Barriers to Transit Ridership**		Synthesis of user research and existing conditions	
4	**Alternatives Development**		Development and selection of alternatives	
5	**Alternatives Analysis/ Business Case**		Development of business case methodology note	Performance comparison
6	**Recommendations and Implementation Plan**			Recommendations and implementation plan
7	**Stakeholder Engagement and User Research**	Stakeholder approach plan Pilot user research workshop	1-1 interviews and “Sensemaker” survey tool	Additional interviews and surveys

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User Research Activities to Date

Completed	Populated a **database** of over 500 Bay Area transit riders interested in participating in user research.
	Conducted a **pilot narrative workshop** in October, which identified 11 issues and 8 themes that continue to be investigated.
	Conducted **1-on-1 interviews** in January to allow for a deep dive into specific topics.
On-going	A survey tool called **Sensemaker** is being deployed to facilitate storytelling and self-analysis of transit experiences at scale.
Next steps	Test and evaluate alternative fare structures with users through a range of methods including workshops, interviews, and prototype testing.

One-on-One Interviews

Project team conducted one-on-one interviews with Bay Area transit riders. Each virtual interview was about one-hour long, and covered the following topics:

Transit use and experience, pre-pandemic and since

- Modes and operators used
- Travel purposes, distance, and frequency
- Challenges

Legibility of fare and payment options

- How would you describe the transit system to a new user?
- How would you advise them on taking and paying for their first trips?

Fairness and affordability

- Impact of price on decision to use transit
- Reactions to different fare scenarios (e.g. Different fares for local bus trips on different operators; zone-based fares)

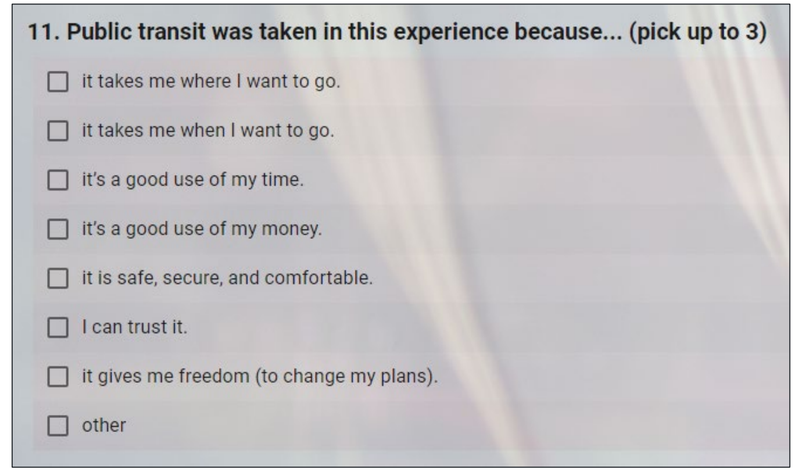
Sensemaker Survey

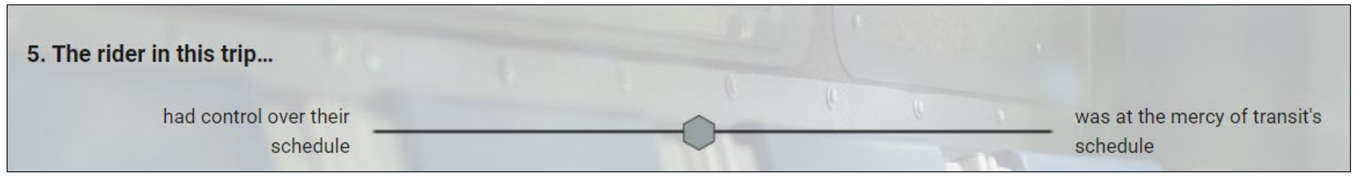
Utilizing an online survey tool called **Sensemaker**, the project team is engaging transit riders to reflect on personal experiences using and paying for transit.

- Online form which gathers qualitative and quantitative data from riders' responses.
- Asks people to share their stories and experiences, then allows them to categorize their stories.
- When deployed across a large population with many stories, decision-makers are able to read stories first-hand and see how narrative patterns group together.

The project team is working with the Subcommittee, transit operators, and MTC to distribute the survey widely across the Bay Area.

Subcommittee members are invited to share the survey with their networks.





[Sensemaker Link]

Agenda Item 5

2. Alternative Fare Structures and Evaluation Framework

Photo: Paul Chinn

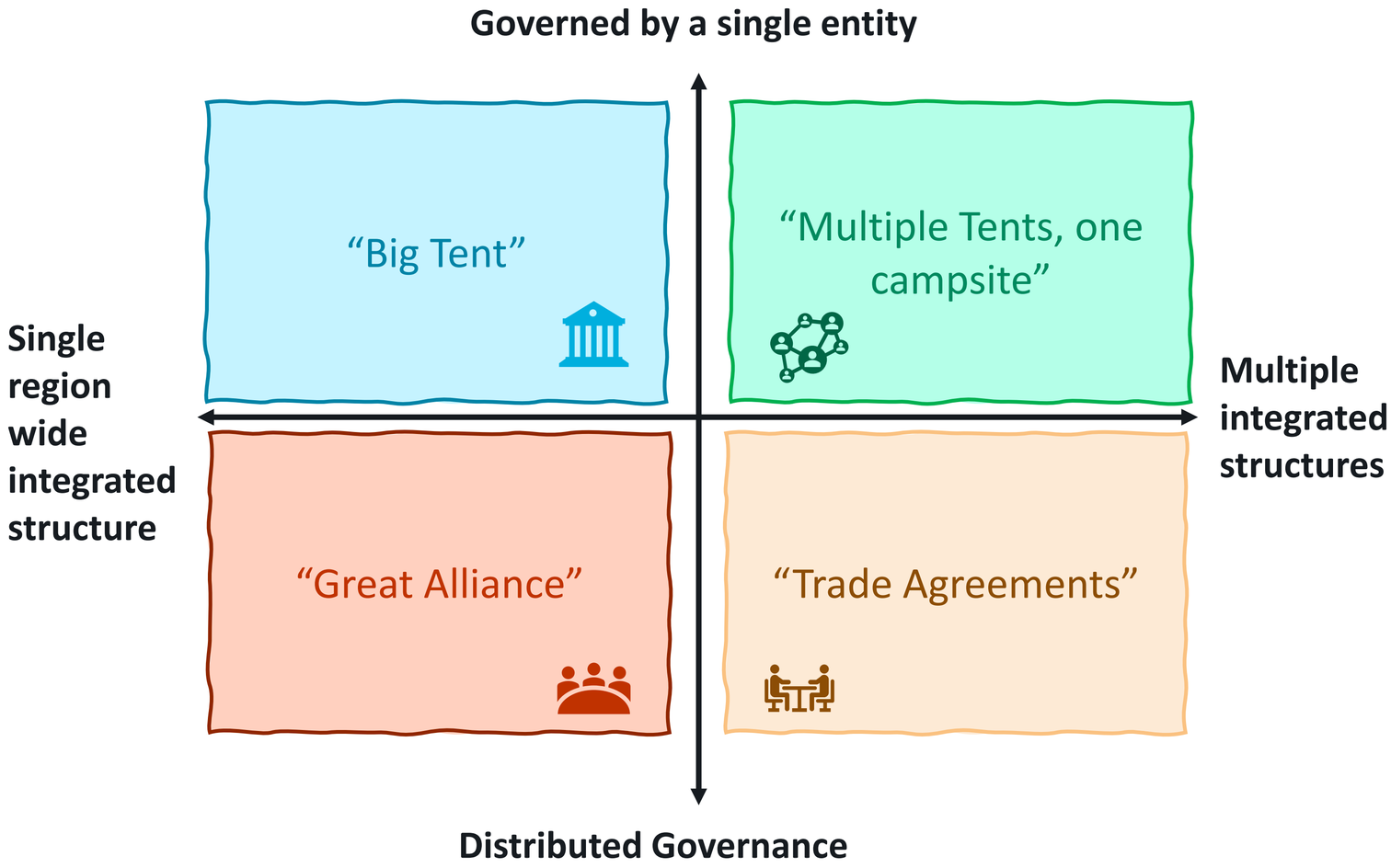
Potential Pathways to Integration

Potential pathways to integration were introduced at the December 2020 meeting of the Fare Integration Task Force.

The project team is developing a list of alternative fare structures that would be possible within each pathway quadrant.

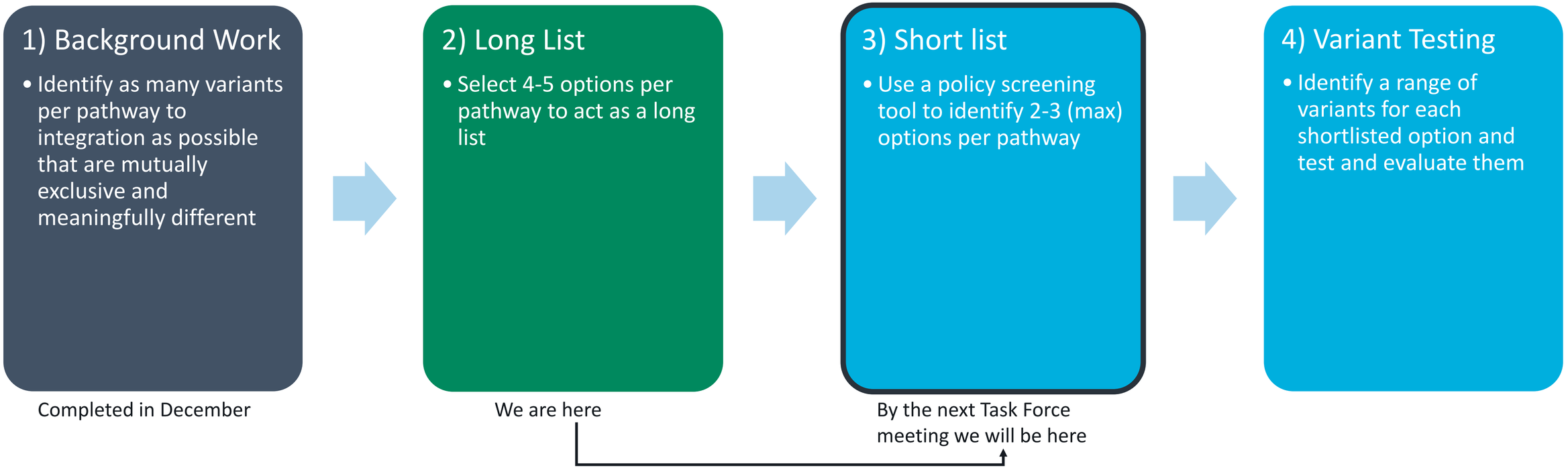
An evaluation framework is also under development to help identify a shorter list of best options for the Bay Area.

The following slides will detail this process, explain background concepts, and introduce a preliminary "long list" of options.



Option Development Process Overview

An option is defined as a potential ‘high-level’ fare structure for the region that uses a combination of single and multiple trip pricing tools to integrate fares. Variants based on specific prices, passes, caps, or products are considered in steps 3 and 4.



Background Concepts & Definitions

The following terms are used within this presentation and across the broader project:

Fare Structure	A set of rules and policies that determine how fares are set	
Structural Options	Fare structure options that vary based on the approach used to price transit	**Example: zones**
Pricing Variants	Individual variants of different fare structures based on the types of prices set for each mode, service, and/or operator	**Example: zones with specific prices ($1.50 per zone, second zone is free)**

Approaches to Setting Fares

Fares structures can include pricing by a range of characteristics:

- Fares for Single Trips
- Fares for Multiple Trips
- Fares by Time of Travel
- Fares by Customer Type

Today's discussion will focus on these two approaches, with an emphasis on 'fares for single trips' → eventually all fare types will be considered

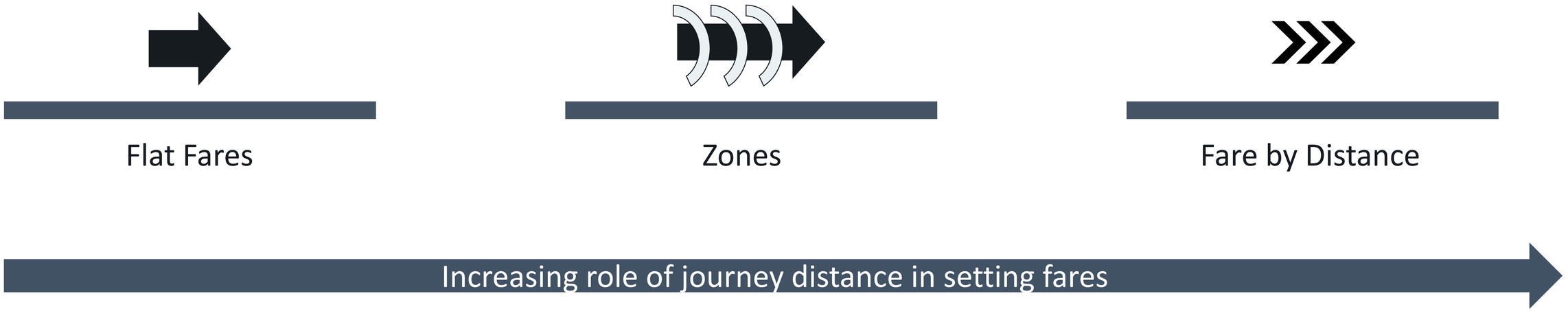
Used to 'optimize' a fare structure to meet specific needs or resolve key issues – to be discussed later but initial thoughts welcome

Fare Structures for Single Trips

Fares for single trips are the foundation of fare policy.

These fares are set by an overarching structure that defines the logic for an operator's fares.

Fare structures can be divided based on the role of distance in setting fares.



Fares Structures for Multiple Trips

This section discusses how customers can pay for multiple trips – globally there are two overall approaches:

Period Passes – Buy in bulk

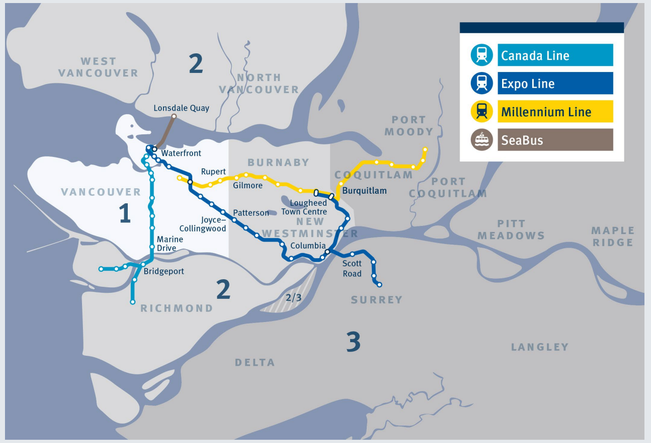
- New period passes allow customers to bulk buy an infinite number of trips of a set distance (or shorter)
- If a trip is longer than the value of the pass, customers must pay an add fare
- Passes are insurance-based – customers buy a pass understanding it will allow them service for all their trips

Caps – Pay as you go

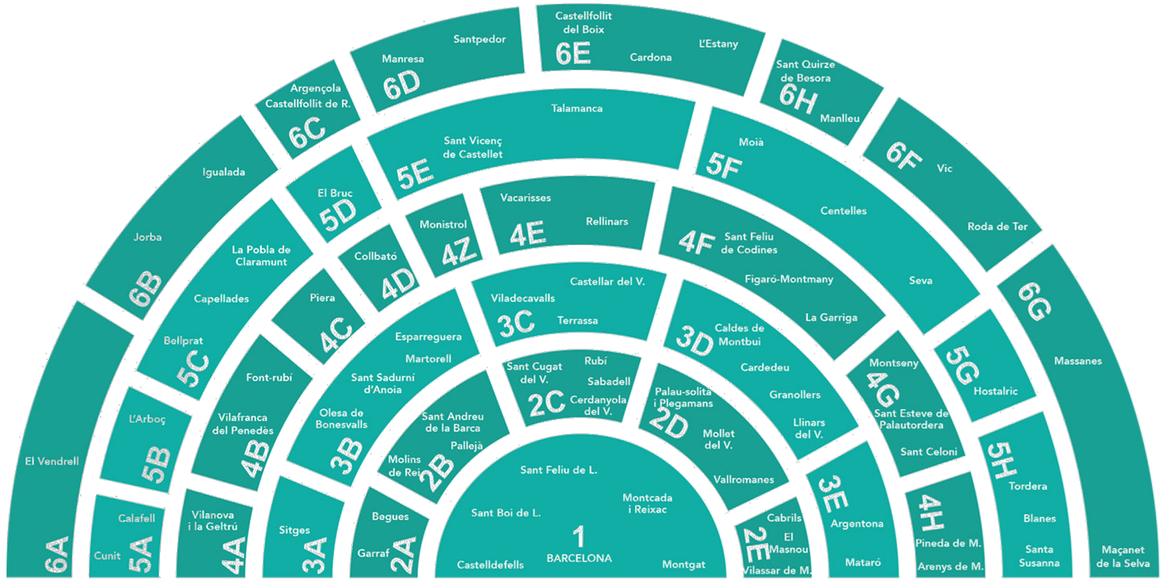
- Caps set a maximum fare by number of trips or value spent
- Customers pay as they make use of the system until they hit a cap –daily, weekly, or monthly
- Caps are trust-based – customers must trust agency to give them the best deal

Both approaches can vary by day, week, month, or even year.

Introduction: Zones

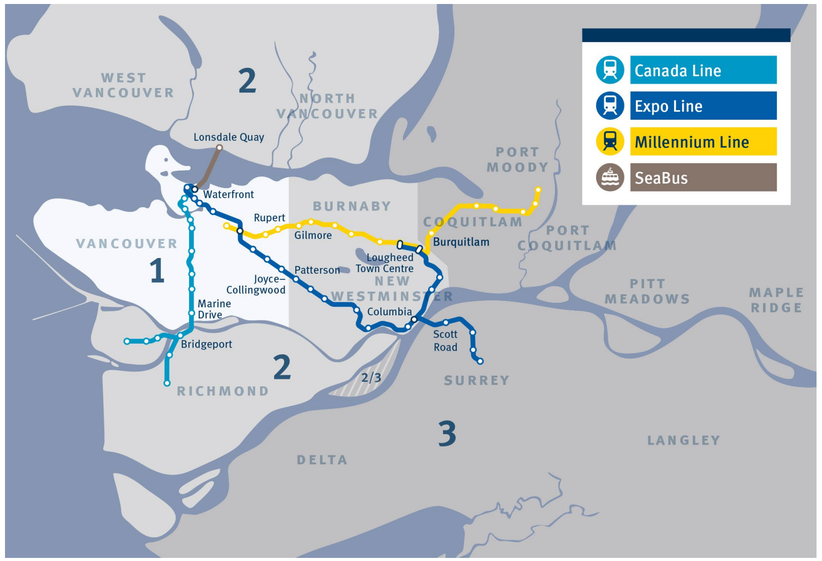
		Example: TransLink (Canada)
How is the fare Set?	**As customers travel through more zones, their fare increases.**	
What is the typical use?	Rapid transit or bus systems serving a larger urban region with an integrated fare structure. Zones were set up to approximate distance prior to advanced ticketing technology.	
Pros	• Simple and easy to understand • Fares can be set to partially reflect willingness and ability to pay and operating costs	
Cons	• May have arbitrary fare increases at zonal boundary that can lead to customers driving further for a lower price • Zone size and shape can be complex to establish in multi stakeholder environments • Too few zones means reduces ability to optimize ridership and revenue but too many zones can be too complex	**TransLink charges fares based on number of zones travelled.**

Zonal Options – Variation by shape and size



Example of Complex Zones: Barcelona

- Covers 296 towns in the Barcelona area
- Fare zone system is made up of concentric circles (forming a semi-circle) with over 30 sub zones



Example of Simple Zones: Vancouver

- Covers 20 municipalities in the Lower Mainland
- Fare zone system is made up of pseudo-circles originating in downtown Vancouver
- *Current policy direction is to replace zones with fare by distance*

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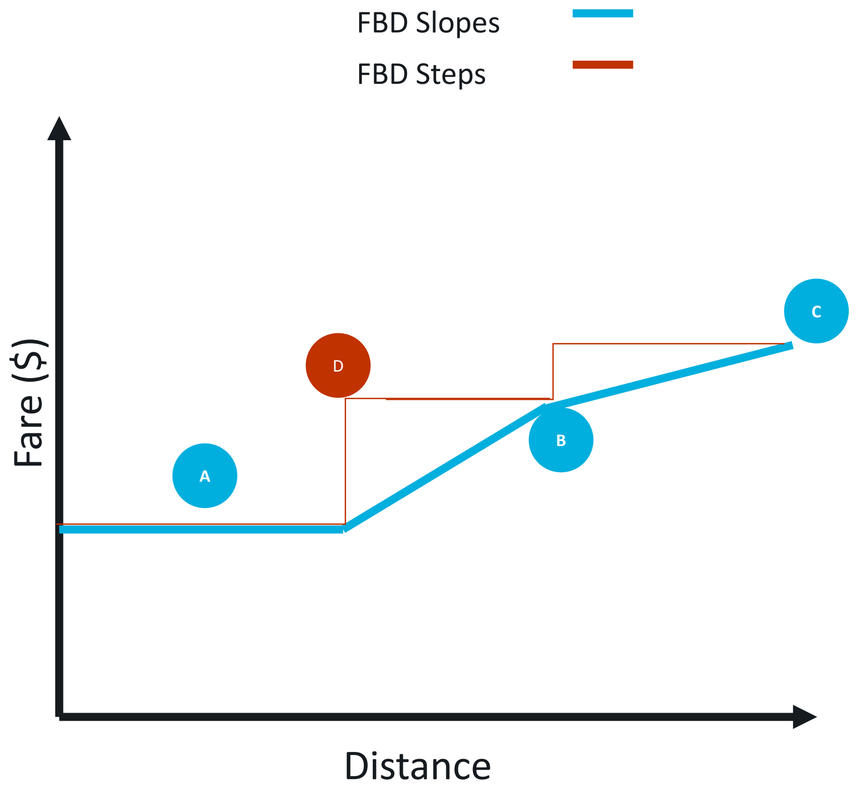
Fare by Distance

		Example: BART
How is the fare Set?	**Similar to a taxi, as customers travel further their fare increases based on distance travelled.**	
What is the typical use?	Rapid transit and regional rail or regional bus systems where customers take a range of medium to long distance trips.	
Pros	• Gives agencies greatest ability to optimize ridership and revenue simultaneously • Gives customers a ‘custom fare’ that reflects their trip	
Cons	• Long distance fares may disproportionately impact communities of concern if additional fare programs are not provided (see section on policy fares)	**BART charges fares based on distance travelled – the further a customer travels, the higher their fare.**

Fare by Distance Technical Terms

	Term	Description
	Fare Curve	A tool used to describe the relationship between fares and distance
A	**Initial Flat Fare**	The first x-mile of a fare curve where fares do not increase
B	**Inflection Point**	The distance at which the slope ($/mile) changes for a FBD structure
C	**Max Fare**	The maximum fare charged under a FBD structure
D	**Steps Size**	Fares can be set using steps instead of slopes, steps can be uniform in size physically or can change in size as trip length increases The price of moving to a new step can also change over distance travelled



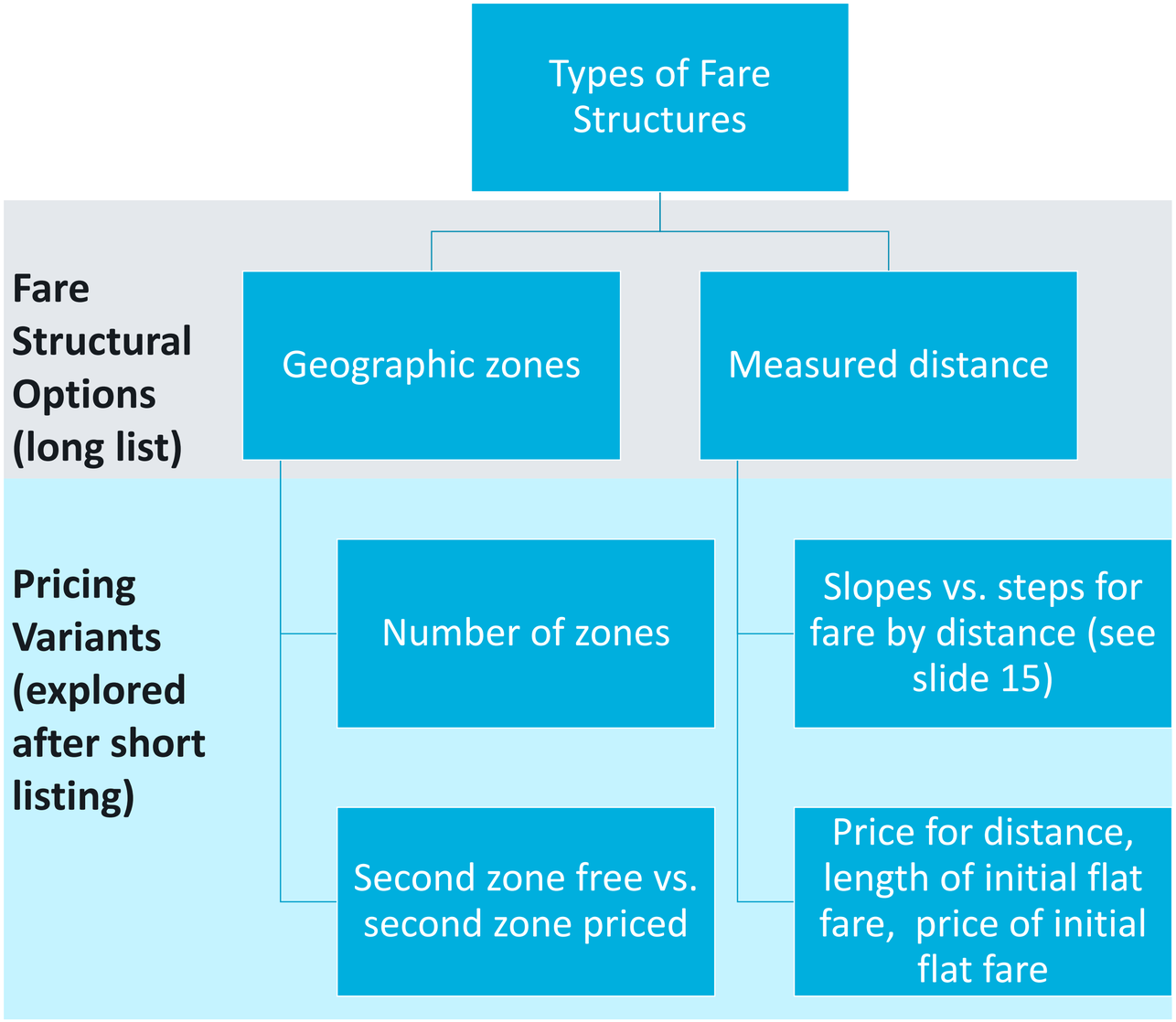
Option Development Framework

The project is developing a long list of fare options for further analysis and short listing.

The final list should include options that are fundamentally different:

- **Mutually Exclusive** – each option should be a stand alone package of fare changes that, if selected, excludes consideration of other packages
- **Meaningfully Different**– the options should not be variants of one another and should be structurally different

Example – what is the difference between fare structures and pricing variants?



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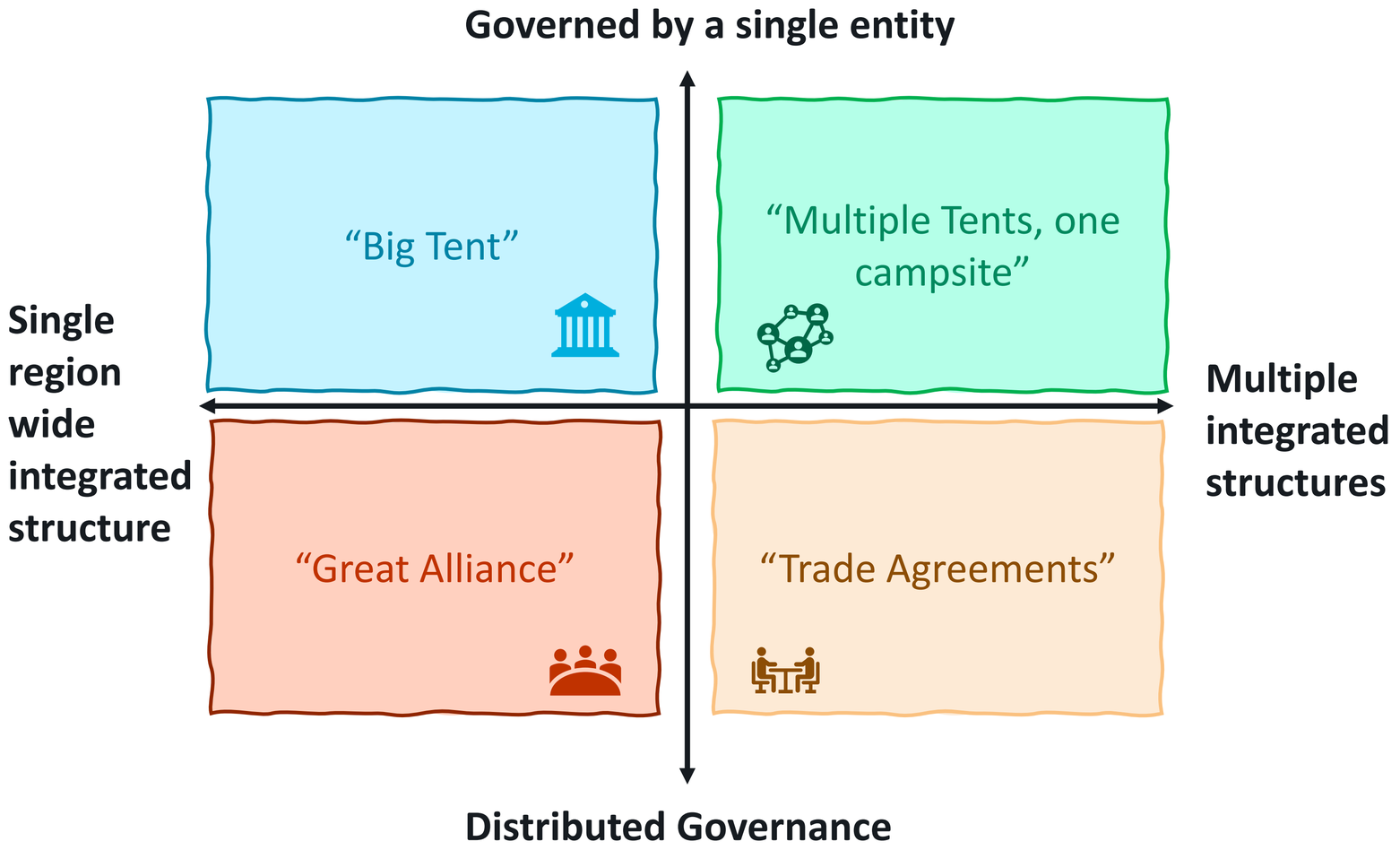
Recap: Potential Pathways to Integration

The long list of options was developed based on the four pathways to integration identified in previous stages of work.

Note – these pathways are not recommendations, they are a strategic framework used to explore organize options based on the changes they make to fares and the governance tools required for success.

The short list will include at least 1-2 options per pathway.



How can pricing model be explored under the pathways framework?

Governed by a single entity

Single region wide structure

Multiple integrated structures

Distributed governance

"Big Tent"

1. All trips within the same mode or service type must use the same fare structure and have the same pricing
2. The fare structure must span the entire region and cover all agencies

Customer Perspective: *"No matter where my trip starts and which operator I use, there is always one fare, the 'Bay Area' fare structure."*

System Management Perspective: *"Ability to set fares on a service basis allows for ongoing optimization between what a customer wants to pay and what it costs to provide service regionally."*

"Multiple Tents, one campsite"

1. Prices are set centrally but the level of change at an individual agency level is minimized
2. Options do not include a single regional structure and focus

Customer Perspective: *"Where I start my trip dictates how my fare is set, but I can rely on integration where and when I need it"*

System Management Perspective: *"Ability to manage at interfaces to optimize transit use regionally, without needing to dictate individual agency fares"*

"Great Alliance"

1. The option must apply a single structure across the region that all agencies must follow
2. Pricing decisions are made at the agency level

Customer Perspective: *"No matter where my trip starts, the fare rules are the same but there may be some variability by operator"*

System Management Perspective: *"Fares require constant consensus building to maintain uniform fares"*

"Trade Agreements"

1. Options must be realistic changes that agencies would make on a bilateral or multi lateral level
2. Operators retain authority over their pricing

Customer Perspective: *"Depending on the operators I use, my fares may be integrated or even consistent, but not for every trip on every agency"*

System Management Perspective: *"Fare integration is delivered between agencies when it is aligned with agency goals, passenger needs, and available funding"*

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Option Development Framework

Each option in each pathway will be scoped with respect to three questions:

1. What role will distance play in the fare structure?
2. Could fares vary by mode in the fare structure?
3. For each agency and service type, will transfers be free or priced in the fare structure?

Each pathway will have additional constraints.

Pathway	Distance	Modal Variation	Transfers
Big Tent	Single approach for all agencies in the region	All modes use same structure but could have different prices	Free
Great Alliance	Single approach for all agencies in the region, but agencies could have unique prices	All modes use same structure but could have different prices	Free
Multiple Tents	Multiple approaches could be used in the region by agency	All modes could use unique structures	Transfers could be priced or could be free
Trade Agreements	Same as today	Same as today	Transfers could be priced or could be free

Big Tent

Option	Description	Variants	Differentiation by Distance	Differentiation by Mode	Transfer Rules
A1. Cellular Zones (similar to Seamless Bay Area proposal)	Region is divided into 'cells' (polygonal zones)	• "second zone is free" • All modes have same zone fare (Seamless proposal) • Zone fares are mode specific • Zones only apply to rapid transit (bus to bus transfers are free)	The fare charged is based on the number of zones travelled	Each mode could have a unique fare or a shared fare	Transfers between agencies and modes are free within a zone
A.2 Cellular with local flat	Region is divided into 'cells' (polygonal zones) **but bus/local is one zone**	• "second zone is free" • All modes have same zone fare (Seamless proposal) • Zone fares are mode specific • Zones only apply to rapid transit (bus to bus transfers are free)	The fare charged is based on the number of zones travelled	Each mode could have a unique fare or a shared fare	Transfers between agencies and modes are free within a zone
A3. Circular Zones (TfL Style Zones)	Region is divided into circular zones, which originate on downtown San Francisco	• "second zone is free" • All modes have same zone fare • Zone fares are mode specific • Zones only apply to rapid transit (bus to bus transfers are free	The fare charged is based on the number of zones travelled	Each mode could have a unique fare or a shared fare	Transfers between agencies and modes are free within a zone
A4. Fare by Distance	Fares are set based on how far a customer travels on transit	• Initial flat fare (example: x miles has as fixed price) • Different distances pricing by service type • Steps or slopes	Fares are based on distance travelled	All modes use fare by distance, but the cost per mile and initial flat fare may be different based on service used	No transfer fee – fares are cumulative based on the total distance travelled on all modes
A5. Fare by Distance with local flat fare	Fares are set based on how far a customer travels on transit, but local services are flat	• Initial flat fare (example: x miles has as fixed price) • Different distances pricing by service type • Steps or slopes	Fares are based on distance travelled, except for local service, which is flat	All modes use fare by distance, but the cost per mile and initial flat fare may be different based on service used All local operators have a flat fare	When transferring between local and other services the local fare receives a 100% discount, fares are based on cumulative distance travelled on all modes using fare by distance
A6. Regional Cap or pass	No changes to fare structure, but all agencies must follow a single cap or monthly pass	• Cap solution (example – a customer only ever pays for xx trips per month/week) • Pass solution (example – a customer can buy unlimited travel for the region, or parts of the region for $yyy for a month or week) • **Employer incentive?** • **Institutional programs?**	Based on status quo	Based on status quo	Based on status quo

Key Criteria for Options in this Scenario

1. **All trips within the same mode or service type must use the same fare structure and have the same pricing**
2. **The fare structure must span the entire region and cover all agencies**

Example A1 – all operators have the same fare structure based on the cost of a zone

Note – it is assumed that passes would be built into all options, not just A5.

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The Great Alliance

Option	Description	Variants	Differentiation by Distance	Differentiation by Mode	Transfers
B1. Cellular Zones	Region is divided into 'cells' (polygonal zones)	• "second zone is free" • All modes have same zone fare • Zone fares are mode specific • Zones only apply to rapid transit (bus to bus transfers are free)	The fare charged is based on the number of zones travelled, however pricing is not uniform – this means that the price of 'x zones' could vary based on the zones travelled through	Each mode could have a unique fare or a shared fare	Transfers between agencies and modes are free within a zone
B2. Circular Zones (TfL Style Zones)	Region is divided into circular zones, which originate on downtown San Francisco	• "second zone is free" • All modes have same zone fare • Zone fares are mode specific • Zones only apply to rapid transit (bus to bus transfers are free	The fare charged is based on the number of zones travelled, however pricing is not uniform – this means that each agency could set it's own zone price	Each mode could have a unique fare or a shared fare	Transfers between agencies and modes are free within a zone
B3. Fare by Distance	Fares are set based on how far a customer travels on transit – transfers between agencies and modes are free	• Initial flat fare (example: x miles has as fixed price) • Different distances pricing by service type • Steps or slopes	Fares are based on distance travelled, each agency could set own distance rate and initial flat fare	All operators can opt in to fare by distance and the cost per mile and initial flat fare may be different based on service used	No transfer fee – fares are cumulative based on the total distance travelled on all modes
B4. Fare by Distance with local flat fare	Fares are set based on how far a customer travels on transit, but local services are flat – transfers between agencies and modes are free	• Initial flat fare (example: x miles has as fixed price) • Different distances pricing by service type • Steps or slopes	Fares are based on distance travelled, each agency could set own distance rate and initial flat fare	All modes use fare by distance, but the cost per mile and initial flat fare may be different based on service used All local operators retain their existing flat fares and can opt into fare by distance	When transferring between local and other services the local fare receives a 100% discount, fares are based on cumulative distance travelled on all modes using fare by distance
B5. Regional Cap or pass	No changes to fare structure, but all agencies must follow a single cap or monthly pass	• Cap solution (example – a customer only ever pays for xx trips per month/week) • Pass solution (example – a customer can buy unlimited travel for the region, or parts of the region for $yyy for a month or week)	Based on status quo	Based on status quo	Based on status quo

Key Criteria for Options in this Scenario

1. **The option must apply a single structure across the region that all agencies must follow**
2. **Pricing decisions are made at the agency level**

Meaning there is a general fare structure, but no region wide approach to pricing – example B1 – all agencies share a zone structure, but prices for each zone are at the discretion of the operators serving it

Note – it is assumed that passes would be built into all options, not just B5.

Multiple Tents, One Camp Site

Option	Description	Variants	Differentiation by Distance	Differentiation by Mode	Transfers
C1. Corridor Integration with Fare by Distance	Region is divided into key corridors, each with its own integration solution: • Setting fares for rapid and regional transit (called corridor services) using fare by distance • Reducing or removing 'local fares' when using a bus to connect to a corridor service	• Number of corridors • Level of discounts for transfers between agencies (example: free or discounted) transfers for select agency pairs) • Initial flat fare for corridor service (example: x miles has as fixed price) • Different distances pricing by service type • Steps or slopes	Corridor services (rapid and regional transit) used to travel longer distances would use fare by distance	• All services along a corridor have a rationalized fare structure (example: all long distance rail or ferry would use a similar structure and price) but could have unique pricing to shift demand • In the case of BART, fares would be set based on corridor and 'network'	• Discounted or free between local and regional and rapid transit along a corridor (example: a trip using SamTrans, Bart, and Muni would pay a simplified 'local+corridor service" fare)
C2. Neighboring and connecting Agency Integration	A discount is applied to trips on neighboring agencies (example: a common discount between BART and all local services)	• Level of discount (50%, 75%, 100%) between neighbors • Level of discount between connecting agencies • Connecting only vs. neighboring only vs. both	Use existing structures (BART by distance, Caltrain by zone, etc)	Use existing structures	Transfers applied between select agencies
C3. C1 and C2 Combination	Integration solutions are provided along key corridors (standardizing fares for corridor services) but also between all neighboring and connecting agencies	• Level of discount (50%, 75%, 100%) • See C1	See C1	See C1	See C2
C4. Caps and Passes only	Caps or passes would be developed on a corridor level or between neighboring agencies	• Cap solution (example – a customer only ever pays for xx trips per month/week on a corridor, need an add fare for other corridors) • Pass solution (example – a customer can buy unlimited travel for a corridor for $yyy for a month or week, would need an add fare for other corridors)	Use existing structures (BART by distance, Caltrain by zone, etc)	Use existing structures	No new transfer discounts

Key Criteria for Options in this Scenario

1. **Prices are set centrally but the level of change at an individual agency level is minimized**
2. **Options do not include a single regional structure and focus**

For example – C1 could have a corridor from San Mateo to San Francisco. Caltrain and Bart would both be deemed as 'corridor' services and would use fare by distance. There would be a set approach for trips using one or more local services with one or more 'corridor' services.

Note – it is assumed that passes would be built into all options, not just C4.

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Trade Agreements

Option	Description	Variants	Differentiation by Distance	Differentiation by Mode	Transfer Rules
D1. Discounted Double Fares	Discounted double fares are provided between key operators	• Level of discount (50%, 75%, 100%) • Number of agencies offering discounted double fares	Use existing structures (BART by distance, Caltrain by zone, etc)	Use existing structures	Transfers between local and regional or rapid transit services are discounted – however this would only apply to agencies within the agreement
D2. Caps and Passes Only	Fare structure remains unchanged, but caps are set up between select agencies	• Caps (example: a customer only pays for xx trips per week total between Muni and Bart) • Passes (example: a customer can buy a pass for two or more agencies for $yy)	Use existing structures (BART by distance, Caltrain by zone, etc)	Use existing structures	No new transfer discounts
D3. Pricing Harmonization Between Neighboring Agencies	Fare structure remains unchanged, but agencies may collaborate on having the same fares or mutual fare acceptance on a case by case basis.	• Agencies included in harmonization approach • Level of discount provided	Use existing structures (BART by distance, Caltrain by zone, etc)	Use existing structures	No new transfer discounts

Key Requirements for Options

1. **Options must be realistic changes that agencies would make on a bilateral or multi lateral level**

2. **Operators retain authority over their pricing**

For example – D1 - in a potential variant of D1 there is only an agreement between Sam Trans and Bart. A trip using SamTrans, BART, and Muni may get a discount from SamTrans but if Muni is not part of the arrangement there would be no Muni discount.

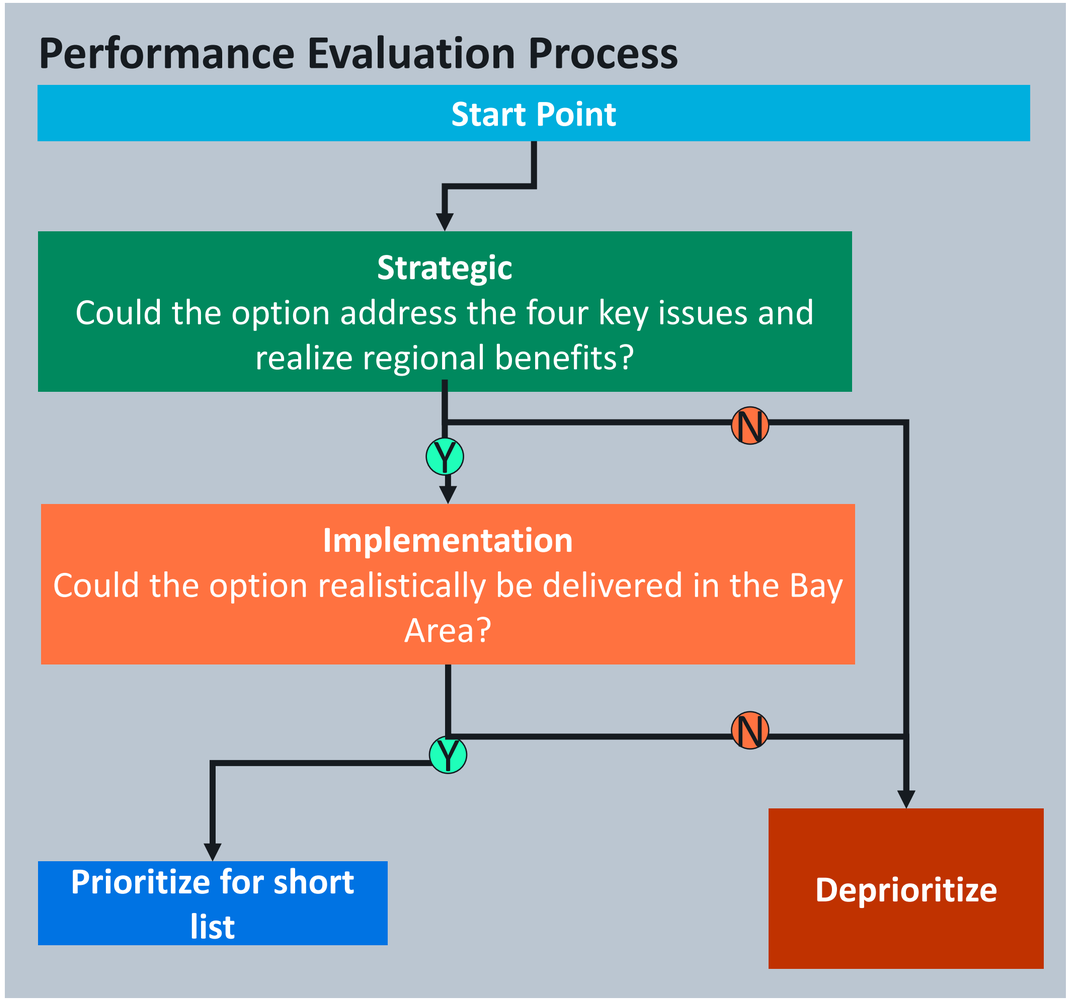
Screening Framework

The screening framework two general steps where options are rated on a scale of 1 (low potential) to 3 (high potential).

1-2 options will be selected per pathway (minimum) with up to 3 options as selected for some pathways as needed.

- **Strategic Screen (is the option fit for purpose?)**
  - How will the structure improve the alignment of fare with trip value?
  - How will the structure support an improved customer experience?
  - How will the structure address equity issues?
  - How will the structure support future transit plans?

- **Implementation Screen (does the option have any fatal flaws)?**
  - Is the option readily deliverable within the ‘pathway?’



Key Considerations for Discussion

As the study continues with the development of a long list of possible alternative fare structures, **we are interested in your feedback** on how we should approach refining the list to the best options for the Bay Area.

1. **What is missing from the long list?**

2. **What are your initial reactions to the long list options?**

3. **What do you need to know to better understand each option?**