



City of Littleton

Littleton Center
2255 West Berry Avenue
Littleton, CO 80120

Meeting Agenda

Transportation and Mobility Board

Thursday, June 25, 2026

6:30 PM

Community Room

Regular Meeting

1. Call to Order

2. Public Comment

The first 15 minutes of the meeting will be reserved for Public Comment. If more members of the public wish to speak than can be accommodated during this time, the Chair, at his or her sole discretion, may allot additional time for public comment at the end of the meeting. Citizens wishing to address the Board under Public Comment will be limited to three minutes.

3. Discussion Topics

1. Prep for Joint-Study Session with City Council on 9/8 (30 min for each subject)
 - a. Multi-Use Paths (Sidewalks)
 - b. Circulator Bus (Transit)
 - c. Funding for Multi-Use Paths & Transits
2. TMP Update (5 min)
3. Staff Comments (5 minutes)
4. Agenda Lookahead (5 minutes)

4. Adjournment

The public is invited to attend all regular meetings or study sessions of the city council or any city authority, board, commission, or committee. Please call 303-795-3780 at least forty-eight (48) hours prior to the meeting if you believe you will need special assistance or any reasonable accommodation in order to be in attendance at or participate in any such meeting. For any additional information concerning city meetings, please call the above referenced phone number.

What Is a Multi-Use Path?

A multi-use path is a shared, two-way travel surface designed for non-motorized users of all ages and abilities. This includes people walking, running, cycling, using wheelchairs, riding mobility scooters, and pushing strollers. Unlike a sidewalk, which is designed primarily for pedestrians, or a bike lane, which is designed primarily for cyclists, a multi-use path is wide enough and designed intentionally to serve everyone at the same time.

In Littleton, our street-side trail network will function as multi-use paths. They are not bike lanes attached to a road. They are trail segments that happen to run alongside a street, and they will be named, signed, and mapped as part of Littleton's existing trail network.

Key distinction

A bike lane is a road feature. A multi-use path is a trail.

Bike lanes are designed for one-way travel with motor vehicles. Multi-use paths are two-way, self-contained, and designed for everyone.

Littleton's street-side trails will be built, marketed, and mapped as trails. Not as bike infrastructure.

The Core Stance

We can build this tomorrow at low cost using quick-build methods.

Permanent improvements follow as street maintenance projects arise.

The framework is: act now, improve over time.

Policy Points for Council Recommendation

The board recommends that the following principles guide all future street design decisions on Littleton's designated Neighborhood Connector streets.

Point 1: Bikes and Cars Only Interact on Low-Speed Streets

On streets with posted speeds above 20 mph, non-motorized users must have a dedicated, physically protected space that does not require them to share the travel lane with moving vehicles.

This is the foundational rule. Everything else flows from it.

Point 2: Neighborhood Connectors Must Give Equal Space to Non-Motorized Traffic

On designated Neighborhood Connector streets, parking width shall not exceed 103 inches.

Car travel lanes and the non-motorized trail lane shall be equivalent in width.

Example: a street with two 12-foot travel lanes must provide a 12-foot non-motorized lane.

If at street level, the trail must have physical protection (curbing).

If at sidewalk level, the trail must be separated by a curb from vehicle traffic.

Point 3: These Are Finishing Connections Within the Existing Network

The purpose of this trail network is to close gaps between what already exists.

They connect recreational trails to neighborhoods.

They connect neighborhoods to libraries, parks, government buildings, transit, commerce, and food.

They are not standalone infrastructure. They are the missing links.

Point 4: Street-Level Trails Can Use Hard Permeable Surfaces

Where trails are built at street level, surface materials can be hard and permeable.

This solves drainage without drainage tunnels.

It enables raised crosswalks where needed without special infrastructure.

It is more compatible with snow plowing than soft materials.

See the Permeable Surface Options section for material details and real-world examples.

Point 5: Protections Must Be Beautiful, Even When Temporary

No tall bollards.

Where parking is permitted alongside the trail: low concrete curbs.

Where parking is not permitted: mid-height curbs that prevent encroachment.

The aesthetic standard applies from day one of quick-build installation.

These trails run in front of people's homes. They must be an asset, not a utility scar.

Point 6: Driveway and Home Access Must Be Accommodated

These trails will primarily run on streets with existing yards, driveways, and private access points.

Design must accommodate residents getting in and out of their homes without barriers.

The trail should function as a beautifying element to front yards, not a disruption.

Point 7: These Are Trails, Not Bike Lanes. Market Them That Way.

These facilities shall not be referred to as bike lanes in public communications.

They are street-attached trail systems. They function like recreational trails that happen to run alongside a street.

They shall be named like Littleton's other trail segments and added to Google Maps and trail mapping platforms as trails.

The marketing angle: we are extending our trail network into neighborhoods, not adding bike infrastructure to roads.

Point 8: The Wide Lane Is a Feature, Not a Compromise

A properly-sized trail lane can be plowed by a standard snowplow just like a travel lane.

It accommodates strollers, bicycles, mobility scooters, wheelchairs, and pedestrians together.

At intersections not behind parked cars, users have better sightlines than they do on a sidewalk.

Width is what makes two-way operation manageable.

Point 9: Two-Way Operation Is By Design

These are two-way, multi-use trails on one side of the street.

Cyclists are taught to ride with traffic. Pedestrians are taught to walk against it.

Drivers are therefore already expected to look for two-way non-motorized traffic at intersections.

The challenge is driver habit, not design failure. Signage and crosswalk treatments must address this.

Point 10: Quick-Build First, Permanent Second

All Neighborhood Connector streets receive a standard quick-build treatment first.

Quick-build components: paint, temporary curbing, signage, crosswalk improvements.

Purpose: train driver behavior and collect real-world data before committing to permanent design.

Permanent build follows during scheduled street maintenance cycles.

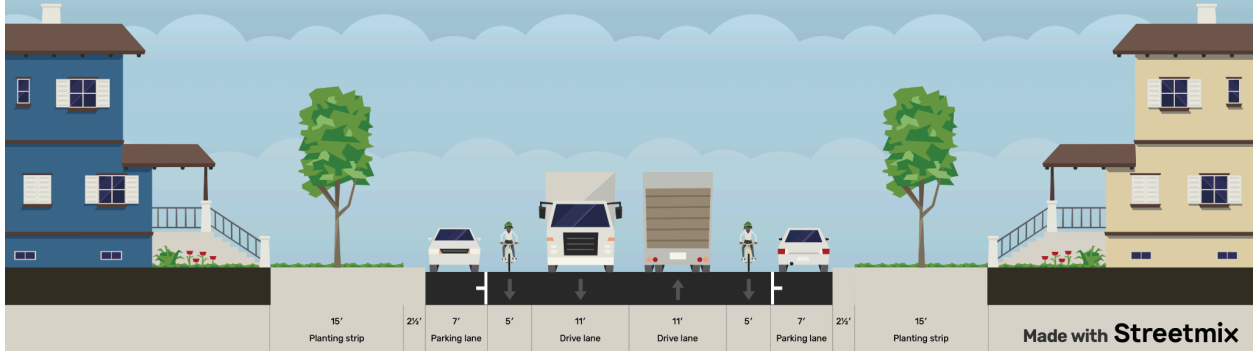
This approach makes the cost of starting low and the cost of adjusting minimal.

What This Looks Like on the Ground

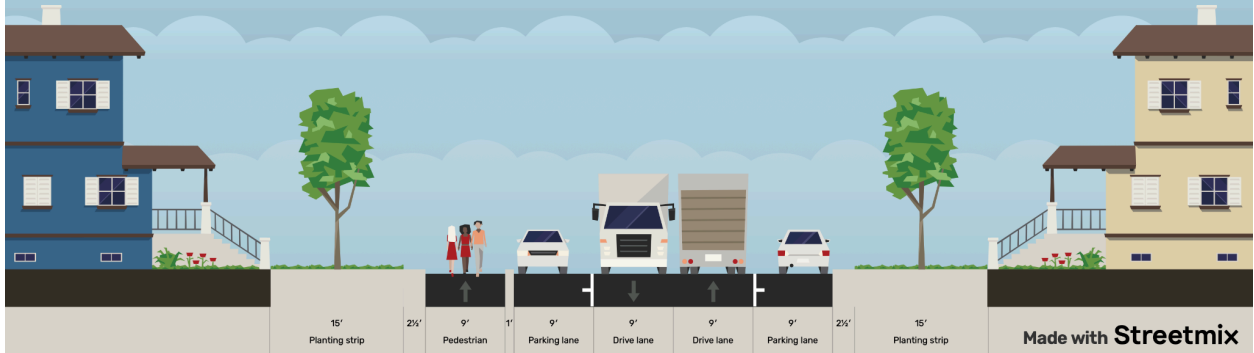
The following describes the standard cross-section for a Neighborhood Connector street using the proposed framework.

Element	Standard
Trail width	Equivalent to car travel lane width (minimum 10 feet)
Trail surface	Hard permeable material: porous asphalt, compacted crusher fines, or plastic grid pavers
Protection (parking side)	Low concrete curb between parking lane and trail
Protection (no parking)	Mid-height concrete curb preventing vehicle encroachment
Snow removal	Standard snowplow-compatible, same width as a travel lane
Two-way operation	Trail marked and signed for two-way non-motorized travel
Crosswalks	Raised where applicable; high-visibility markings at all intersections
Quick-build version	Paint, temporary curbing, signage, crosswalk paint
Permanent version	Concrete curb, permeable surface, integrated crosswalk treatment

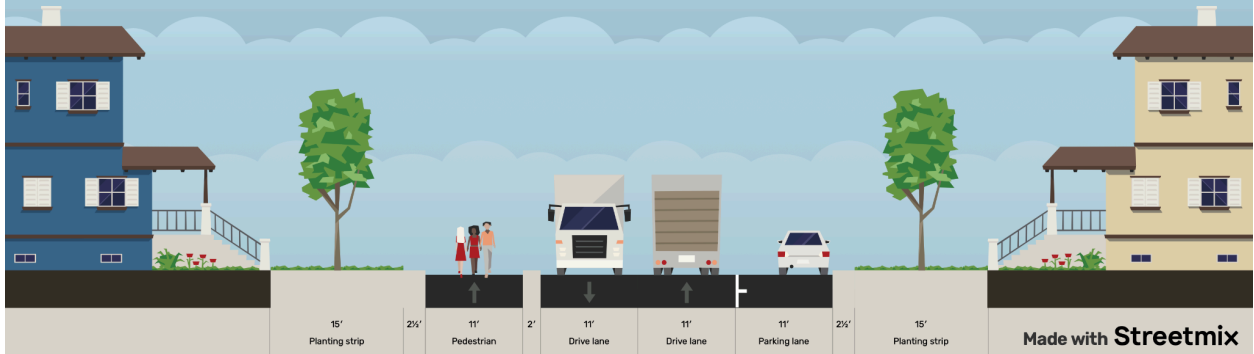
Elati Currently



Elati 46 Wide Ave



Elati 46 Wide Ave



Permeable Surface Options

Hard permeable surfaces solve three problems at once: stormwater drainage, snow plowing compatibility, and the ability to build raised crosswalks without drainage tunnels. The following options range from lowest to highest cost and durability.

Material	Description	Est. Cost	Plowable	Real-world use
Compacted Crusher Fines	Natural crushed stone compacted to a firm, stable surface. Permeable, ADA-compatible when properly installed, all-season.	\$3-8 / sq ft	Yes	Used widely on Colorado trails. Preferred by American Trails for urban all-ages paths.
Plastic Grid Pavers	Recycled HDPE honeycomb grid filled with gravel. Highly permeable, supports maintenance vehicles.	\$3-5 / sq ft	Yes	20-year warranty. Used in parks and municipal trails nationwide. Ecoraster and GEOPAVE are leading products.
Porous Asphalt	Standard asphalt mix with voids that allow water to drain through. Firm surface, familiar feel, snow melts faster than standard asphalt.	\$4-8 / sq ft	Yes	Middleton, WI: saves \$3,500/yr vs standard asphalt on trail maintenance. St. Paul, MN used it for off-street bike trails on multiple corridors.
Pervious Concrete	Concrete with open aggregate structure allowing water infiltration. Durable, long lifespan, handles heavy loads.	\$6-10 / sq ft	Yes	Used in Shoreview, MN for multi-use paths and parking areas. Pennsylvania uses it in shared-use paths at state parks.
Permeable Interlocking Concrete Pavers (PICP)	Solid concrete pavers with aggregate-filled joints. Water flows through joints into open-graded base. Highly attractive, easily repaired.	\$8-14 / sq ft	Yes	Eliminates need for storm drain infrastructure. Can slow traffic naturally. Used in Minneapolis, St. Paul, and Indianapolis Cultural Trail corridors.

Why permeable surfaces matter for raised crosswalks

Standard asphalt and concrete shed water to the edges of the road. A raised crosswalk built on impermeable surface requires a drainage tunnel underneath to move that water, adding significant cost and complexity.

A permeable trail surface absorbs water in place. A raised crosswalk can be built directly on top without any additional drainage infrastructure.

This is not a minor detail. It is the difference between a \$3,000 crosswalk and a \$30,000 one.

Permeable Surface References

- [Porous asphalt shows advantages for trail surfacing](#) American Trails. Includes Middleton, WI case study with cost savings data.
- [Case studies for permeable pavement](#) Minnesota Stormwater Manual. St. Paul porous asphalt bike trails, Shoreview pervious concrete examples.
- [How permeable pavers make a difference](#) American Trails. GEOPAVE plastic grid paver system for trail applications.
- [The art of building crushed stone trails](#) American Trails. Crusher fines installation, ADA compliance, seasonal performance.
- [Permeable interlocking concrete pavement \(FHWA\)](#) Federal Highway Administration technical guide to PICP design and cost.

- [Ecoraster permeable paving system](#) Commercial plastic grid product. \$3 to \$5 per sq ft, 20-year warranty, municipal applications.
- [Multi-use trail material comparison](#) Full side-by-side comparison of all trail surface types.
- [Trail surfaces overview](#) Rails to Trails Conservancy. Accessibility, cost, and maintenance guidance.

How Other Cities Have Done This

These examples are proof that this approach works at scale, in cities of all sizes, including cities with winter climates similar to Littleton's.

All Ages and Abilities Networks

- **Minneapolis, MN**
 - Ranked #1 large U.S. city for biking. Built on the principle that bikes only share space with cars on quiet, low-speed streets. Goal: 141 miles of all ages and abilities bikeways by 2030.
 - [Minneapolis Transportation Action Plan](#)
 - [How Minneapolis became a top U.S. bike city](#)
 - [Bryant Avenue case study](#) All-ages protected corridor with snow removal plan and emergency vehicle access addressed.
- **Indianapolis Cultural Trail**
 - 8-mile urban multi-use trail built using excess right-of-way on wide city streets. Connects neighborhoods, cultural districts, schools, and the greenway system. Over \$300M in new development along the route. 1 million users annually. Bioswales manage stormwater throughout.
 - [FHWA case study](#)
 - [Full story and economic impact](#)
- **Bentonville, AR**
 - [Multi-use Trail and paved options in Bentonville](#)

Temporary to Permanent

- **Toronto**
 - Temporary protected lanes in 2014: 730 daily cyclists. By 2018: 7,509. Converted to permanent.
 - [A compelling case for protected bike lanes](#)
- **Washington D.C. and Bethesda, MD**
 - Two-day demo on Kenyon St in 2018 became a permanent cycletrack. Bethesda pop-up became one of America's best bike lanes by 2023.
 - [How demonstrational bike lanes save the dialogue](#)
- **Schools: pop-up to permanent (American Planning Association)**
 - 150-foot cone pop-up at a school. Parent support led to expansion and permanent installation. Direct parallel to Littleton's school priorities.
 - [From pop-up to permanent school bike lanes](#)

Speed and Scale

- **Five U.S. cities built 335 miles in 24 months**
 - Austin (115 mi), Denver (100 mi), Pittsburgh (50 mi), Providence (43 mi), New Orleans (27 mi).
 - [nextcity.org](#) How five U.S. cities built 335 miles in 24 months
- **Seville, Spain: 80km in 18 months**
 - Complete city network built in a single mayoral term. Daily cycling trips increased 11 times.
 - [c40knowledgehub.org](#) Walking and cycling city transformation
- **Bloomington, IN (pop. under 80,000)**
 - Proves protected infrastructure is not just for large cities.
 - [PeopleForBikes: best new U.S. bike lanes](#)

Quick-Build Implementation Resources

The following resources support the quick-build first approach and provide frameworks other cities have used.

- [CalBike Quick-Build Guide](#) The definitive playbook. San Luis Obispo: \$15K quick-build vs \$150K traditional.
- [Tactical urbanism: prototyping safer streets](#) Academic framing for short-term, low-cost, scalable interventions.
- [WRI: four ways cities design safer roads](#) Pop-up to permanent progression validated with global data.
- [Jersey City / Hoboken: plastic curbing quick-build](#) Protected lane with plastic curbing chosen for flexibility to iterate before going permanent.
- [Protected bike lanes mean business](#) Salt Lake City: 8.8% sales increase along protected lane. NYC: 40 to 50% injury reduction.
- [PeopleForBikes: policies that accelerate implementation](#) Includes Colorado examples: Boulder County and Wheat Ridge ballot measures.
- [Mod Street - Manufacturer in Littleton](#) -



- Hybrid Surface options
 - [ECORASTER and BLOXX](#) - Permeable surface option for efficient drainage. Great for snow plows.
 - Commonly used fire lanes and emergency access on the road without affecting drainage



Highest recommendation is to offer an on-demand ride service, accessible to all, with prioritization to those who might qualify as low-income, over 60, and/or have a disability. On-demand rides can be used for medical appointments, including mental health, grocery shopping, dining and/or arts and culture venues and other 'necessity' trips. (review the parameters for previous service or Vida)

We also propose offering a circulator shuttle bus to improve mobility within and across Littleton, especially in light of future initiatives such as the Front Range passenger rail station stop at Mineral Station and the planned downtown redevelopment. A circulator connects mobility with economic development.

Potential stops on a circulator route (obviously with consideration of safe places to pullover and load/unload and a fluid, efficient route)

- Mineral station
- Mineral and Broadway
- Intersection of Littleton Blvd and Elati
- Intersection of Main St and Bega St
- Intersection of S Curtice St and Alamo Ave

Other points to review/consider:

- Omnibus operations and services as were offered
- Lone Tree on-demand bus for estimating costs
- RTD Access-a-ride

When a mid-size city looks to improve local mobility, choosing between a **fixed-route rotating circulator shuttle** and an **on-demand microtransit ride pick-up service** (similar to a municipal Uber/Lyft) comes down to balancing predictability against flexibility.

Here is a breakdown of the pros and cons for each approach to help evaluate which model fits best.

1. Rotating Circulator Shuttle (Fixed-Route)

A circulator shuttle operates on a predetermined loop with set stops, running at regular intervals (e.g., every 15 minutes) through high-density areas like downtowns, university campus corridors, or commercial districts.

Pros

- **High Predictability & Reliability:** Riders don't need an app or a smartphone; they know exactly where the bus goes and when it will arrive. This lowers the barrier to entry for tourists, elderly residents, and tech-averse users.
- **Higher Capacity & Efficiency:** Shuttles can move large volumes of people simultaneously along high-demand corridors. During peak hours, a fixed route is far more efficient at moving mass crowds than individual point-to-point rides.
- **Strong Branding & Placemaking:** A brightly branded, visible shuttle becomes part of the city's identity. It acts as a moving billboard that promotes local business districts and encourages foot traffic.
- **Simpler Operations:** Easier to schedule driver shifts, manage vehicle maintenance, and project annual operational costs since mileage and routes are constant.

Cons

- **Inflexibility:** If a new business district pops up or ridership patterns shift, changing a fixed route takes time, public hearings, and updated signage.
- **The "Empty Bus" Problem:** During off-peak hours, shuttles still run their regular loops, leading to wasted fuel and high emissions while carrying few or no passengers.
- **Limited Coverage:** It only serves people who live and work directly along the corridor. It does little to solve the "first-mile/last-mile" problem for residents in lower-density neighborhoods.

2. On-Demand Ride Pick-Up (Microtransit)

On-demand microtransit uses a dynamic routing app. Passengers request a ride through an app or call center, and a fleet of vans or small buses dynamically routes itself to pick up multiple passengers heading in a similar direction.

Pros

- **Flexible & Expansive Coverage:** It can easily scale to serve low-density neighborhoods, suburban pockets, and areas that cannot support a full transit bus. It excels at solving the first-mile/last-mile gap to connect riders to regional transit hubs.
- **Resource Efficiency:** Vehicles only move when there is actual demand. This reduces deadhead miles (driving empty) and saves fuel/battery life during slow periods.
- **Data-Driven Insights:** The backend software collects incredibly rich data on exactly where residents want to go, allowing the city to optimize fleet sizes and plan future infrastructure based on actual travel patterns.
- **Convenience:** It mimics the modern rideshare experience, offering curb-to-curb or corner-to-corner service, which can attract choice riders who would otherwise drive personal cars.

Cons

- **Unpredictable Wait Times:** Because routing is dynamic, wait times can spike unpredictably during rush hour or bad weather. A rider can't simply look at a watch and know when the ride is coming.
- **Digital Divide Barriers:** It relies heavily on smartphones, apps, and digital literacy. While phone-in reservation systems help, the system inherently disadvantages unbanked residents or those without reliable cellular data.
- **Capacity Bottlenecks:** Microtransit vehicles (usually 8-to-12-passenger vans) can easily become overwhelmed during major community events, festival weekends, or peak morning rush hours, leading to long delays.
- **Higher Software/Licensing Costs:** The city must pay substantial ongoing SaaS (Software-as-a-Service) fees to tech providers (like Via or Spare) to run the dynamic routing algorithms.

The Verdict: Which is better for a mid-size city?

Instead of choosing one over the other, many mid-size cities find success with a **hybrid approach**:

- Use a **Fixed-Route Circulator** in the dense downtown core or main commercial strip where foot traffic is high and parking is tight.

- Deploy **On-Demand Microtransit** as a feeder system in peripheral neighborhoods to bring residents *into* the downtown core or connect them to the fixed shuttle lines.

When budgeting for public transit, cities look at financial models through two primary lenses: **Capital Expenses (CapEx)** (buying vehicles and software) and **Operating Expenses (OpEx)** (drivers, fuel, maintenance, and software licenses).

Real-world municipal budgets demonstrate exactly how mid-size cities and counties have structured, funded, and adjusted their budgets for both fixed-route circulators and on-demand microtransit.

1. Budgeting for On-Demand Microtransit (Real-World Examples)

Cities budgeting for on-demand transit typically choose between two procurement models: **SaaS** (Software-as-a-Service, where the city owns the vans but pays for the dispatch software) or **TaaS** (Turnkey/Transportation-as-a-Service, where a third party like Via or Circuit provides the software, vans, and drivers for a flat hourly fee).

A. The Underperforming Route Replacement: Hall County, Georgia

- **The Scenario:** Hall Area Transit wanted to replace an underperforming, low-ridership fixed-route bus network that had long wait times (60-minute headways).
- **The Budget Shift:** By partnering with an on-demand provider to transition to microtransit, the county slashed its absolute operational costs.
- **The Financials:** Weekly operational costs dropped from **\$9,750** (fixed-route) to **\$5,930** (on-demand), [according to case studies by Via](#). Despite the budget *decreasing* by nearly 40%, the average wait time for a resident dropped to just 12 minutes, causing ridership to spike.

B. The Pilot-to-Permanent Budget: Capital Area Transportation Authority (CATA)

Data from the [American Public Transportation Association \(APTA\)](#) reveals how a mid-size agency builds a pilot budget for a small on-demand fleet:

- **Initial 9-Month Pilot Budget: \$185,000** total (largely cushioned by a \$160,000 program subsidy/grant, leaving only a \$25,000 local match).
- **Monthly OpEx Breakdown (For a 4-to-6 vehicle fleet):**

- **Wages (Drivers/Staff):** ~60% of the monthly budget (e.g., \$18,600+).
- **Vehicle Leases:** ~26% of the budget (\$7,800+).
- **Fuel & Maintenance:** ~10% (\$3,100+).
- **Software SaaS Fees:** ~\$500 per month per vehicle (after the pilot phase).

C. Creative Funding & Braided Budgets

Because microtransit has higher variable operational costs per trip, cities rarely fund it purely through general funds. They "braid" budgets using specific grants:

- **Wilson, North Carolina (RIDE Program):** Blends Federal Transit Administration (FTA) Section 5311 rural transit funds, state operating grants, and local city funds to run a turnkey on-demand system.
- **San Diego, California:** Budgets microtransit initiatives by directly **reinvesting city parking meter and parking garage revenue [back into mobility projects](#)**, creating a self-sustaining funding cycle.

2. Budgeting for Fixed-Route Circulators (Real-World Examples)

Fixed-route circulators demand much higher upfront **CapEx** (infrastructure and heavy vehicles) but offer a highly predictable, lower **OpEx cost-per-passenger** once ridership scales up.

A. The Public-Private Partnership (P3) Model: Bellevue, Washington

- **The Scenario:** When looking to establish a localized downtown circulator, the city faced budget constraints regarding implementation and infrastructure costs.
- **The Budget Shift:** Bellevue partnered with Amazon as a corporate sponsor. [Circuit notes that this corporate partnership](#) allowed the city to offset municipal tax burdens by leveraging private capital to subsidize the service for commuters and locals.

B. The Dedicated Redevelopment Fund Model: West Palm Beach & Boynton Beach, Florida

- **The Scenario:** Rather than pulling from the general city transit fund, these cities utilized **Community Redevelopment Agency (CRA) funds**.
- **The Financial Logic:** CRAs capture property tax increases within a specific geographic zone to reinvest in that area. Because a downtown fixed circulator drives foot traffic directly to local businesses and boosts real estate value, cities

can legally and strategically budget the transit line [entirely out of redevelopment tax dollars](#), leaving the broader municipal budget untouched.

Financial Summary for a City Council Proposal

If you are drafting a budget or proposal, the trade-off usually looks like this on a balance sheet:

Budget Line Item	Fixed-Route Circulator	On-Demand Microtransit
Upfront CapEx	High (Bus stop signs, shelters, larger transit-grade vehicles).	Low (Mainly software setup fees; fleet is often leased standard vans).
Software Fees	Minimal (Basic internal scheduling/GPS tracking).	High (Continuous SaaS licensing fees per vehicle for dynamic routing).
Labor Costs	High/Rigid (Often requires Commercial Driver's Licenses [CDL], which demand higher wages).	Flexible (Smaller vans often do not require a CDL , expanding the hiring pool and lowering wage rates).
Cost per Ride	Drops with Success (If a 30-passenger bus is full, the cost-per-rider is pennies).	Static (An 8-passenger van caps out quickly; higher ridership requires buying more vans/hiring more drivers).