

TRANSIT LATEST TRENDS + FUTURISM



REGIONAL HUBS: TEEMING TRANSIT CENTERS

SALESFORCE TRANSIT CENTER GRAND OPENING---PARTIALLY

Located off Mission Street, between Beale & Second Street, this architecture is classic and worth experiencing---the Grand Hall, rooftop park, art installations, pop-up shops, bus deck, programs... The challenge is to assure the Center's vibrancy and to fulfill its destiny as a regional transit hub.

CHRONICLE: Even as SF transit center opens, officials figuring out how to pay bills

<https://www.sfchronicle.com/bayarea/matier-ross/article/Even-as-SF-transit-center-opens-officials-13149810.php>

With high-speed rail a distant dream and its mall space still a shell, officials at the newly opened Transbay Transit Center are scrambling to come up with the \$27.5 million a year needed to run the three-block-long mega-bus station and rooftop park.

CHRONICLE: Salesforce Transit Center puzzle: When will the trains get to the station?

<https://www.sfchronicle.com/bayarea/article/Salesforce-Transit-Center-puzzle-When-will-the-13142498.php>

Beneath the art-bedecked terrazzo floor of San Francisco's Salesforce Transit Center is an enormous concrete box waiting to be filled. But when the center opens Sunday, that concourse will remain empty. It will likely stay that way for years.



DOWNTOWN CALTRAIN EXTENSION (DTX) NEEDS ACCELERATION

Kudos to all who helped create an architectural gem. Now, the long-promised Downtown Caltrain Extension (DTX) needs fast-tracked design and construction. DTX was the pretext for downtown upzoning and development. Without DTX, the shiny new Transit Center will lose its luster without 33,000 daily rail riders, generating commercial, operating and maintenance dollars. We can ill afford any missteps like the Central Subway boondoggle. We need 100% commitment to DTX.

REGIONAL PRIORITY: DTX is the highest regional transportation priority, authorized by S.F. voters in 1999 and by the Metropolitan Transportation Commission (MTC) for federal funding cycles. The project is environmentally-cleared. The underground station box has already been built. DTX will connect Caltrain to six Muni rail lines, four BART lines and more than 40 bus lines at a centralized transportation hub. By 2025, 300,000 cars a day will be entering San Francisco from the South---more than the combined number of cars on the Golden Gate and Bay Bridges. DTX is the top priority to cut traffic congestion on highways, the Embarcadero, streets and arterials.



DTX FAST-TRACK STRATEGY



With 5% annual inflation costs, construction cost-savings from project acceleration would offset low-interest loans. Aggressive project management should evaluate design-build, phased bid packages, fast-tracked stages, public/ private partnerships, private investments, federal/ state funding, bond measures, certificates of participation, benefactors..... More shovel-ready phases equate to more funding flexibility. For inspiration, note that the Beijing-Shanghai high-speed railway (819 miles long) was constructed in about 3 years. For the relatively tiny 1.3-mile DTX, seek best practices from around the world.



TRANSBAY TRANSIT CENTER AND DOWNTOWN CALTRAIN EXTENSION

<https://www.sfcta.org/transbay-transit-center>

The Transbay Transit Center/Caltrain Downtown Extension (TTC/DTX) project will transform downtown San Francisco and regional transportation well into the 21st Century. The project consists of three interconnected elements: replacing the outmoded terminal with a modern terminal; extending Caltrain 1.3 miles from Fourth and King streets to the new TTC at First and Mission streets, with accommodations for future high-speed rail service; and creating a new transit-friendly neighborhood with 3,000 new homes (35 percent of which will be affordable) and mixed-use commercial development.



REFOCUS: CITYWIDE TRANSIT TRANSFORMATION

Do What Other Cities Have Already Done (See transit latest trends below)

No More Central Subway Boondoggles (\$1 billion per mile cost)

Traffic congestion, air pollution, neighborhood revitalization and neglected transit needs, particularly in western/ southern San Francisco, must be addressed with sound decision-making. We need cost-effective transit projects that have big benefits, like five-car metro trains, bus rapid networks, free bus loops, trackless/ automated streetcars, innovative technology, micro-transit and DTX.

BART: Recently, the BART Board rejected a proposed 5-mile, \$1.6 billion (\$290 million per mile) BART extension from East Dublin to Livermore for few riders at high cost, requiring 20-years to complete. Instead, a new regional express bus network would provide fast, frequent and reliable transportation to Livermore and other communities. Moreover, BART refocused on upgrading existing stations, security, cleanliness, maintenance, escalator canopies, elevator repairs....

ZURICH: Similarly, in 1973, voters in Zurich, Switzerland, rejected a 1.2 billion Swiss Francs bond measure for construction of an underground subway. Instead, voters approved 200 million Swiss Francs to implement transit priority projects much more quickly. Today, Zurich has a world-renowned integrated transportation system with high transit modal share.

Mineta Transportation Institute: Implementation of Zurich's Transit Priority Program

<http://www.andynash.com/nash-publications/Nash2001-Zurich-PT-MTI-01-13.pdf>

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REFOCUS \$\$\$

- Deliver high-performing projects, rather than blindly taking money from the total Muni system.
- Avoid lengthy construction that kills businesses, streets and small neighborhoods.
- Adapt to sea level rise with flexible surface transit, avoiding tunneling at the waterfront, susceptible to flooding, storm surges and hydraulic pressure. Recently, the state Ocean Protection Council increased projections of sea level rise from 66 to 122 inches by 2100.
- Create more jobs quickly with a barrage of smaller transit construction projects.
- Avoid the gentrification impacts of subways that drive up land values and speculation.

LATEST TRANSIT TRENDS: The Future Is Already Here



San Francisco has one of the smallest geographic transit footprints in the world---only 49 square miles. Meanwhile, cities covering hundreds of square miles have designed world-class transit systems. Despite billions and billions of dollars spent, San Francisco's transportation metrics have not commensurately improved. Transit ridership, per capital ridership, transit modal share and on-time performance have declined. Traffic congestion, commute times and pollution have increased. In a recent study, San Francisco has one of the highest number of underserved areas, i.e. "Transit Deserts".

SMITHSONIAN: Dozens of U.S. Cities Have 'Transit Deserts' Where People Get Stranded

<https://www.smithsonianmag.com/innovation/dozens-us-cities-have-transit-deserts-where-people-get-stranded-180968463/>

Living in these zones makes it hard to access good jobs, health care and other services. Transportation deserts were present to varying degrees in all 52 cities in our study. In transit desert block groups, on average, about 43 percent of residents were transit dependent. But surprisingly, even in block groups that have enough transit service to meet demand, 38 percent of the population was transit dependent. This tells us that there is broad need for alternatives to individual car ownership. Shrinking transit deserts does not necessarily require wholesale construction of new transit infrastructure. Some solutions can be implemented relatively cheaply and easily. [NOTE: In the article's chart of 27 cities, San Francisco ranks worst.]

MAP (choose San Francisco): http://www.transitdeserts.org/?xid=PS_smithsonian

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SAVEMUNI GOALS 2017: <http://www.savemuni.org/2017/03/save-munis-objectives-for-2017/>

SAVEMUNI GOALS 2015 <http://www.savemuni.org/2015/03/savemunis-2015-program/>

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FRISC = Fast, Frequent, Reliable, Inexpensive, Safe, Clean and “Cool”.

Public transit is a hospitality industry. People should want to ride public transit. Good design matters--- with holistic esthetics and branding. City leaders should also focus on no-cost improvements:

- A culture of courtesy.
- A culture of cleanliness.
- A culture of good decision-making.



FERRY FUTURE + MOST TRANSIT FOR LESS

FERRY STRATEGY: Mass transit needs massive increases in ridership. A high-tech ferry system can be built quicker and cheaper than subway, underwater tube, bridge or highway projects. Moreover, ferries and floating piers would adapt to sea level rise, while taking advantage of vast waterways and shorelines. Ferries have maximum resiliency for climate change and emergency response. Near the daily ridership levels of BART, Istanbul's extensive ferry system carries 300,000 daily riders. Modern ferry technology on the Bay would exceed 1936's 250,000 daily passengers at the Ferry Building. Along with an integrated regional transit system and the Downtown Caltrain Extension (DTX), a robust ferry system would be the biggest transit bang for the buck.

NEW YORK TIMES: New York City's Ferry Fleet Is Off to a Fast Start

<https://www.nytimes.com/2017/11/29/nyregion/new-york-ferry.html>

In a year of transit miseries, it has become an unexpected success story in New York City's commuting landscape — the city's nascent ferry fleet, whose ridership has far exceeded expectations, is rapidly becoming an alternative to the beleaguered subway system.

NEW YORK TIMES: De Blasio's \$325 Million Ferry Push: Rides to 5 Boroughs, at Subway Price

<https://www.nytimes.com/2016/06/16/nyregion/new-york-city-ferry-service.html>

With New York City's subway trains jammed to capacity and more people than ever pouring into neighborhoods outside Manhattan, Mayor Bill de Blasio is embarking on an ambitious and expensive plan to create a fleet of city-owned ferryboats that would crisscross the surrounding waterways and connect all five boroughs.



FREE SHUTTLE BUS LOOPS

One Example of Many: Quicker and Cheaper Muni Improvements

Growing car-sharing and transit network companies (TNC) can't compete with free public transit. Getting people into public transit is more than half the battle. Routine transit use increases ridership.

List of free public transport routes

https://en.wikipedia.org/wiki/List_of_free_public_transport_routes

Approximately 38 cities have free loops and routes, including most Australian cities that are among the best transit systems in the world. Free useful shuttle loops are the hottest transit trend in the United States, with big gains in new ridership---like in Baltimore, Dallas, Raleigh, Denver, Minneapolis, Houston, Bethesda, Aspen, Long Beach, Orlando, West Palm Beach, Scottsdale, Charlotte, South San Francisco, Oakland, Emeryville, San Jose, Walnut Creek, Palo Alto, East Palo Alto, Mountain View, PresidioGo, UCSF, SF State, Golden Gate Park, Mission Bay... Funding mechanisms vary---transit assessment districts, parking taxes, advertising, CBD's, sponsors, public, private, public/ private, hi-tech, grants...

TRANSPORT POLITIC: "Cities Develop Alternative Bus Networks to Combat Perceived Disadvantages of Mainline Routes."

<http://www.thetransportpolitic.com/2010/01/15/cities-develop-alternative-bus-networks-to-combat-perceived-disadvantages-of-mainline-routes/>

Baltimore's new transit network, which supplements the city's metro rail, light rail, commuter rail, and bus routes, is the most recent example of a trend that has taken American cities by storm: The creation of auxiliary routes for the inner-city that are designed for frequent, high-quality service with the goal of attracting onto buses people who aren't used to public transportation.

MOUNTAIN VIEW: Free shuttle to connect tech companies and downtown

<http://www.mv-voice.com/news/2014/12/10/free-shuttle-to-connect-tech-companies-and-downtown>

The service will be a consolidation of five separate employer shuttle systems. "Through this consolidation, approximately 12,000 shuttle vehicle miles are saved per year," said Denise Pinkston, chair of the board operating the system.

The biggest employers and office developers in the city are paying for the service, including Google and LinkedIn, thanks to a requirement placed on new office development by the Mountain View City Council.

THE LOCAL: Map: The towns in France where you can travel around for free

<https://www.thelocal.fr/20180320/the-towns-in-france-where-you-can-travel-around-for-free>

Paris might be considering making public transport free but did you know a growing number of French towns have already taken the radical step. Here's a map of where in France you can travel without coughing up the cash.

While [Paris mayor Anne Hidalgo is seriously examining whether it would be possible to make public transport free](#), but other towns across France, albeit far small than the capital have already made the move.



NORTHEAST FREE SHUTTLE BUS LOOP

The short distance of 1-1/2 miles from Downtown to Fisherman's Wharf can be connected by frequent, day/ night shuttle buses.

Possible Connections: Ferry Building, Salesforce Transit Center, Moscone Convention Center, Market Street, BART/ Metro Stations, Financial District, Chinatown, North Beach, Russian Hill, Fisherman's Wharf and Waterfront.

Example: Denver's Free 16th Street Mall Ride loops from Union Station to Civic Center. Frequent, reliable, day/ night service is funded by a transit assessment district. Heavily used, the free bus is a business mainstay, stimulating economic growth and development.

CITYLAB: How Seattle Bucked a National Trend and Got More People to Ride the Bus

<https://www.citylab.com/transportation/2017/10/how-seattle-bucked-a-national-trend-and-got-more-people-to-ride-the-bus/542958/>

That trend has cooled slightly since then, but Seattle continues to see increased overall transit ridership, bucking the national trend of decline. In 2016, Seattle saw transit ridership increase by 4.1 percent—only Houston and Milwaukee saw even half that increase in the same year.

The bus driver: When buses get priority, riders prioritize the bus. Third Avenue is one of a few transit malls in the United States that restrict private automobile use.

As great as it would be to maximize the bus's reign on the roads everywhere, that's not always possible. Scott Kubly, the director of Seattle's Department of Transportation, says making the system better mostly means spotting small fixes. "We don't just focus on the big corridor projects," Kubly says. "We are focused on making the small, surgical improvements that add up to something big."

NEW YORK TIMES: To Save Money on Building Rail, Spend Money on Marketing Buses

<http://www.nytimes.com/2015/02/10/business/to-save-on-rail-lines-market-the-bus-line.html?partner=socialflow&smid=tw-nytimes&r=1&abt=0002&abg=1%20%3Chhttp://www.nytimes.com/2015/02/10/business/to-save-on-rail-lines-market-the-bus-line.html?partner=socialflow&smid=tw-nytimes&r=0&abt=0002&abg=1>

Bus-based public transit in the United States suffers from an image problem."

That fact, laid out in a 2009 report from the Federal Transit Administration, isn't surprising, but it has led to a perverse outcome:

Transit agencies are spending millions of dollars on new rail infrastructure that is no faster than existing bus service, simply because riders perceive a train as better than a bus."

What if transit agencies spent just a fraction of what it costs to lay new rails to spruce up the buses and tell riders they're faster than they realize?

In New York, the city and the state could make a similar effort to sell the Q70 and M60 services to people who normally wouldn't be caught dead on a bus to the airport. Dedicated boarding areas and improved buses could be bought for a fraction of the price of a new train system.

BUSINESS INSIDER: 13 cities that are starting to ban cars

<http://www.businessinsider.com/cities-going-car-free-ban-2017-8#san-francisco-wants-to-ban-cars-on-one-of-its-busiest-streets-12>

Oslo plans to permanently ban all cars from its city center by 2019 — six years before Norway's country-wide ban would go into effect. Madrid plans to ban cars from 500 acres of its city center by 2020, with urban planners redesigning 24 of the city's busiest streets for walking rather than driving. Today, over half of Copenhagen's population bikes to work every day, thanks to the city's effort to introduce pedestrian-only zones starting in the 1960s. The Danish capital now boasts more than 200 miles of bike lanes and has one of the lowest percentages of car ownership in Europe. When Paris banned cars with even-numbered plates for a day in 2014, pollution dropped by 30%. Now, the city wants to discourage cars from driving in the city center at all. In April 2016, Mexico City's local government decided to prohibit a portion of cars from driving into the city center two days every work week and two Saturdays per month. It determines which cars can drive on a given day using a rotating system based on license plate numbers.



NEW TECHNOLOGY: The Future Is Already Here

CITYLAB: Can We Just Call This a Bus?

New "trackless trains" out of China suggest buses by any other name could smell sweeter.

<https://www.citylab.com/transportation/2017/11/can-we-just-call-this-a-bus/545189/>

Since late October, oblong, self-driving vehicles have been using sensor technology to follow markings painted on the streets of Zhuzhou, China. Operators are behind the wheel for now, but the idea is that they won't be needed by the time the city builds a network larger than the 3.1-kilometer test track, a dedicated lane on a heavily trafficked boulevard.

Battery-powered and capable of speeds up to 43 miles per hour, a three-carriage vehicle can hold more than 300 passengers. CRRC, the Chinese transportation company that manufactures them, estimates that building and running a network of robo-rail-buses would be about 20 percent of the cost of a subway system, according to [Dezeen](#).

DEZEEN: Trackless, driverless "rail bus" takes to the roads in China

https://www.dezeen.com/2017/11/06/worlds-first-driverless-trackless-train-launches-china-zhuzhou-transport-design/?utm_medium=email&utm_campaign=Daily%20Dezeen%20Digest&utm_content=Daily%20Dezeen%20Digest+CID_f66e62de982e52392d3cf25151168423&utm_source=Dezeen%20Mail&utm_term=Trackless%20driverless

A self-driving vehicle that is like a train, but which doesn't run on tracks, has made its first journey in Chinese city Zhuzhou. The new form of public transport has been developed by Chinese transport manufacturer CRRC. Identified as a cross between a bus, train, and tram, the so-called rail bus follows markings painted on the road, instead of conventional rail tracks.

YouTube: World's first virtual train track unveiled in central China

<https://www.youtube.com/watch?v=Dd3N9CFKe9M>

DEZEEN: Germany's First Driverless Bus Takes to the Roads

<https://www.dezeen.com/2017/10/27/germany-unveils-first-driverless-bus-bavaria-technology-transport/>

Germany's first self-driving public bus has made its maiden journey on the roads of a rural town in Bavaria, taking locals from the train station to the town centre.

FORBES: 3 Technologies Transforming the Future of Your Commute

<https://www.forbes.com/sites/mitsubishiheavyindustries/2017/03/17/3-technologies-transforming-the-future-of-your-commute/#c0cb5e4589d7>

Within two years, Columbus should have autonomous shuttles driving around the commercial district, motion-sensitive streetlights and smart traffic signals that can help ease congestion. Residents should be able to pay for everything using a smartphone app that will charge them unified fees, regardless of how they have made their journey on public transport.

AGT [Automated Guideway Transit], known as the 'new transit' system in Japan, is a fully automated system that first opened on the Kobe Port Island Line in 1981. It has since expanded to carry over 400,000 people a day across six lines including the Yurikamome Line and Nippori-Toneri Liner.



CALIFORNIA POLICY CENTER:

California's Transportation Future, Part Three---Next Generation Vehicles

<https://californiapolicycenter.org/californias-transportation-future-part-three-next-generation-vehicles/>

The next generation of vehicles will transform transportation in several fundamental ways. What is coming will be as revolutionary in our time as the transition from horses to horseless carriages was over a century ago. Some increments of this dawning revolution are already here in realized products. Electric drivetrains. Collision avoidance systems. Self-driving cars. Cars on demand. Aerial drones. Nearly all of the enabling technology for this dawning revolution is already here. Artificial intelligence. Visual recognition and sensor systems that use radar, sonar and [LIDAR laser scanning](#). Mapping capabilities. GPS. Data collection. Memory chips. Communications systems. And every one of these technologies, along with investment capital, more than anywhere else, is concentrated in California.





BUS RAPID NETWORKS: Tried and True Transit

WIKIPEDIA: Bus Rapid Transit

https://en.m.wikipedia.org/wiki/Bus_rapid_transit

Sometimes described as a "surface subway", BRT aims to combine the capacity and speed of a metro with the flexibility, lower cost and simplicity of a bus system.

The first BRT system was the Rede Integrada de Transporte ('Integrated Transportation Network') in Curitiba, Brazil, which entered service in 1974. This inspired many similar systems around Brazil and the world, such as TransMilenio in Bogotá, Colombia, which opened in 2000. As of October 2014, 186 cities in six continents have implemented BRT systems, accounting for 4,757 km (2,956 mi) of BRT lanes. It is estimated that about 31.7 million passengers use BRT worldwide every day, of which about 19.7 million passengers ride daily in Latin America, which has the most cities with BRT systems, with 60, led by Brazil with 33 cities.

THIS BIG CITY: Five Cities with Bus Rapid Transit Systems

<http://thisbigcity.net/five-cities-with-bus-rapid-transit-systems/>

GUARDIAN: How Curitiba's BRT stations sparked a transport revolution – a history of cities in 50 buildings, day 43

<https://www.theguardian.com/cities/2015/may/26/curitiba-brazil-brt-transport-revolution-history-cities-50-buildings>

Though difficult to imagine, these distinctive stations that are now the symbol of the city were originally a cost-cutting measure. Implemented as a practical way for the city to create faster mass transit without breaking the bank, they would go on to revolutionise transport, not just in Curitiba but in cities around the world.

Realising the importance of mass transit, planners called for the creation of subway lines, as well as widened streets for cars – but construction would be costly and could take decades to complete.

Instead, Lerner saw an opportunity in the one form of transport that many considered a lost cause: the bus. His idea was to devise a system that gave buses as many of the functional advantages of urban train systems as possible. He proposed to integrate dedicated bus lanes along the city's main arteries, with stations placed on medians along the routes. This would allow buses to run at speeds comparable to light rail, while dramatically reducing the cost.

Curitiba Brazil: BRT Case Study

http://onlinepubs.trb.org/onlinepubs/tcrp/tcrp90v1_cs/Curitiba.pdf

Curitiba's busways are viewed as a model bus rapid transit (BRT) system. They are widely recognized for their many innovative features. Trunk and feeder bus lines routed through terminals allow convenient fare-free transfer. Bi-articulated five-door buses and tube stations with off-vehicle fare collection and floor-level boarding facilitate passenger access. Finally, direct express service and tube stations are provided along parallel, one-way arterial streets.

The overall system is the result of many incremental decisions aimed at improving service quickly, pragmatically, and affordably.

The bus system includes about 60 kilometers [37 miles] of median busways and carries about 2 million people per day. The system carries up to 11,100 passengers one way on the busiest busways in the peak direction during the peak hour. Bus speeds average 20 kph [12 mph] along the busway and about 30 kph [19 mph] on the "direct" express routes. Development costs have been estimated at \$1.5 million (U.S. dollars) per kilometer [\$2.4 million per mile].

About 70% of Curitiba's commuters use the bus system even though Curitiba's automobile ownership and per capita incomes are significantly higher than the national average for Brazil.

CITY CONTEXT Curitiba is the capital city of the State of Parana in Southern Brazil. The city is located about 250 kilometers [150 miles] southwest of Sao Paulo near the coastal mountain range. Current data (mid-1990s) shows a population of some 1.6 million distributed within city limits of about 430 square kilometers [165 square miles] and a total metropolitan area population of some 2.2 million.



PUBLIC MICROTRANSIT: Adapt to Competition

LOS ANGELES TIMES: Can L.A. mimic the success of Uber and Lyft by building an on-demand minibus system?

<http://www.latimes.com/opinion/editorials/la-ed-microtransit-20171025-story.html>

Having set itself an [ambitious goal](#) to triple the number of commuters who regularly use public transit at a time when subway and bus ridership is actually moving in the [other direction](#), the [Authority may](#) finally be taking to heart Silicon Valley's old mantra: innovate or die.

Metro this month announced that it is looking for a private-sector partner to design a [micro-transit service](#) for the agency. The idea is to combine the best of [Uber](#) and [Lyft](#), which offer fast, convenient, on-demand services, with public transit, which has a mission of providing subsidized, handicap-accessible transportation to all communities, including people who do not have a smartphone or credit card.

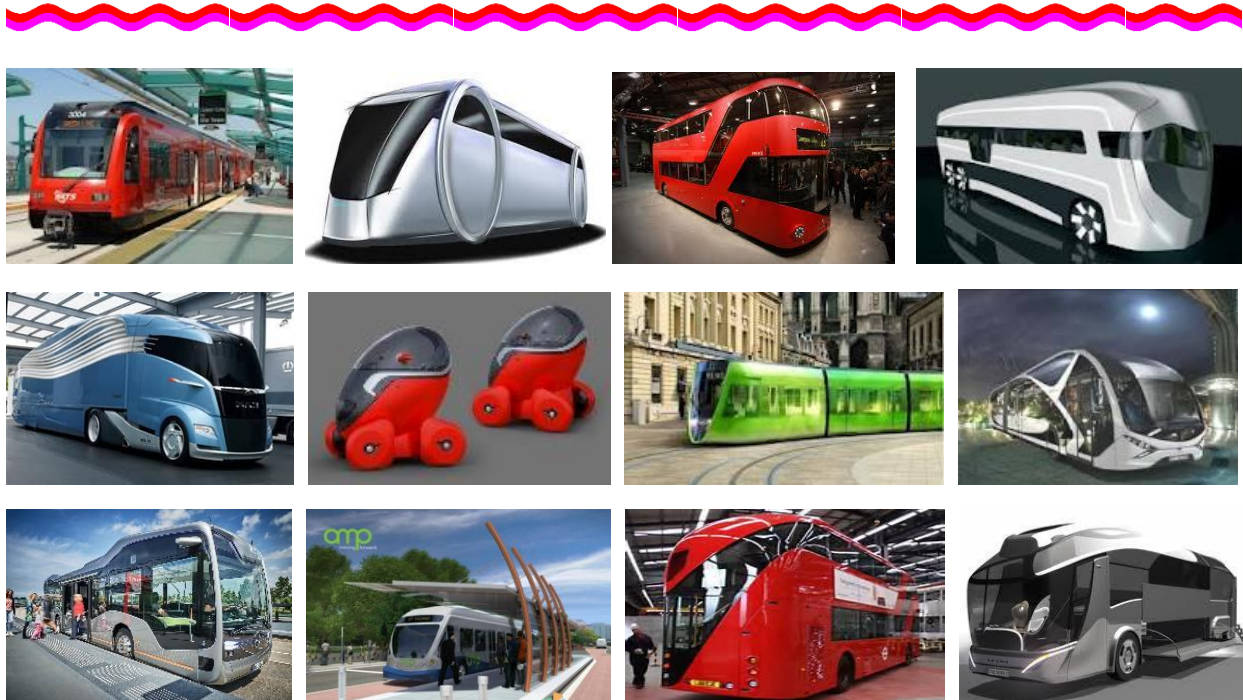
GOVERNING: Beyond the Bus: 'Microtransit' Helps Cities Expand Transportation Services

<http://www.governing.com/topics/transportation-infrastructure/gov-transit-agencies-extend-service-with-microtransit.html>

After several private companies tried -- and failed -- to deliver on-demand group transit, some cities are now building those services themselves

The microtransit vehicles won't be like standard buses going down fixed routes. Instead, smaller vehicles will travel routes -- and destinations -- that change depending on road conditions and passenger requests. The trips would last about 20 minutes and be constrained to certain areas.

One reason microtransit is so attractive is that it allows cities to innovate quickly, says Mark de la Vergne, Detroit's chief of mobility innovation. Detroit wants to experiment with different types of vehicles, different payment methods and different dispatching systems. Often, transit systems conduct one pilot program a year, but de la Vergne says that's not fast enough. "We heard from the mayor that he wants to solve this problem quicker," de la Vergne says. "So the quicker we can iterate, the better."



AND MORE INNOVATIONS SOON.....

Cities in underdeveloped countries have created great transit systems by doing simple things well. Design and innovation don't necessarily mean expensive projects. Meanwhile, transportation technology is advancing at an unprecedented pace---with high tech buses, trains, streetcars, bicycles, ferries and systems. Automated vehicles are already in operation. Imagine robotic, on-demand feeder buses that link to trunk lines, transit hubs and free bus loops. Or computer/ app coordination and spacing of transit and traffic. Even more tools to make public transit "cool".

BUSINESS INSIDER: 7 ingenious ideas for the future of urban transportation

<http://www.businessinsider.com/seven-ingenuous-ideas-for-the-future-of-urban-transportation-2016-6/#winner-columbus-ohio-7>

On June 22, the city of Columbus, Ohio won the [US Department of Transportation's Smart Cities Challenge](#), which solicited proposals about how to revolutionize cities' transportation infrastructure through tech.

With its newfound funding, the city will introduce several autonomous shuttles and a "smart corridor" in which a rapid bus system will carry workers around Easton, one of Columbus' job centers.

Columbus will also develop a number of smartphone apps — one will help truckers plan their drives through Columbus, and another will provide drivers with real-time traffic, parking, and transit options.

**SMART DECISION-MAKING
BETTER TRANSIT PRIORITIES
INNOVATE, INOVATE, INOVATE**



Howard Wong, AIA

SaveMuni = FRISC

Fast, **F**requent, **R**eliable, **I**ncexpensive, **S**afe, **C**lean and **"C**ool".

