

# FINANCING REGIONAL RAIL TRANSIT WITHOUT RAISING TAXES

## April 2018

### SLIDE 1: Title Slide

Let me first take this opportunity to thank you for inviting me to speak to you.

When I first introduced the idea of *financing rail transit lines without raising taxes* to Mayor Cranley 18 months ago, he of course expressed dubious skepticism, but then said “Who could be against that?”

Since then, I have launched a new website, *growsmartplanet.org*, to encourage cities like ours to plan transit-oriented, sustainable growth throughout their regions and finance the new rail and bus rapid transit lines that make it possible – *without raising taxes or waiting years for scarce federal funds*.

I hope you will find this idea compelling and will help me spread the word to everyone needed to help make this new funding approach feasible here.

Cincinnati once had *222 miles of streetcar lines* that were built much faster – *with local funds* - than the short downtown streetcar line opened in 2016. If we look closely at why voters did not support the 2002 MetroMoves regional rail and bus transit plan, you will see why I think we should try again now with an even better plan that provides fast, frequent service to all parts of the region.

### SLIDE 2: Questions that Impact Transit Plans

Public officials and transportation planners should seek consensus from diverse groups on questions like these when planning transportation systems. Their answers all impact what modes of transportation they will most likely support.

Most people easily agree on just two things: *they want someone else to pay for new highways or public transit lines, and they want lower taxes*.

Let’s find out what you think.....

*Do you think global warming is a real problem that is made worse by burning fossil fuels at home and on the road?* If you hesitated to raise your hand, you may be among the millions of people who live in suburban homes with comfortable gas-fired furnaces and enjoy driving alone in a car for **82%** of all trips. You may also think it is simply too hard to reduce your own “carbon footprint.”

In Cincinnati, we moved from an almost-new house only ten miles from work to a much older house less than two miles away. At age 53, I started commuting uphill

by bike for a decade and *cut my driving in half*. We added energy efficient windows, light bulbs, insulation, and a high-efficiency furnace and air conditioner. Our carbon footprint will be lower when we buy an electric or hybrid car.

Our carbon footprint would be even lower if we move back into our energy-efficient *all-electric* townhouse in historic Fairfax, VA. *I've lived happily there for two years without a car* because I could walk to a nice grocery store, theaters, stores, restaurants, and buses to the regional DC Metrorail system. I can cut the grass there in fifteen minutes without using gas or electricity.

*Do you think we should simply put more buses on the road?* Many people favor this because new buses cost less than new rail transit lines. Some of them think it can be done quickly without giving transit agencies more money. *Not true.*

*Do you think taxpayers should pay 70-75% of transit operating costs for bus riders?* Bus riders pay only about **28%** of bus operating costs. Riders on faster regional rail lines and some fast bus routes pay a much higher share. If you want lower taxes, you should vote for transit vehicles that go faster than the **12 mph** average for buses on city streets.

*Do you think Cincinnati will ever have rail transit lines serving the entire region?* Most people would say no. OKI began planning a modern regional rail system in 1993. Our first modern streetcar line finally opened 23 years later.

*Have you ever used transit regularly to get to work, school, or shopping?* I have been able to walk, ride a bike, or use transit *half my life* – because I made a real effort to live close to the destinations I visited most often.

*Do you think someday you might be unable to drive a car?* A neck fracture a year ago has limited my ability to look right or left, and my wife thinks I can no longer drive safely. If we both become transit-dependent riders someday, we might have to move back to a city that already has a regional rail transit system.

*Should public officials encourage private firms to come to their cities (or remain there) by offering tax breaks?* Most cities do this now, even though it greatly reduces tax revenues they need for schools and other public services. Nationwide, this costs cities \$80 billion annually – enough for 640 miles of light rail lines.

Some cities attract new businesses and residents by offering a high quality of life, good schools, and a fast regional transit system instead. Developers there know compact, higher-density growth near transit reduces costs for construction and parking and makes their projects more attractive and profitable.

### **SLIDE 3: Eastern Corridor and Regional Plans (1993-6)**

I arrived in Cincinnati in 1993 to work on capital budgets at UC and began work that fall on a Master's degree in community planning - just as our regional planning agency OKI was beginning study of several transportation corridors.

Our graduate planning class completed the first study of the Eastern Corridor (Oasis) commuter rail line along the river in 1993. My analysis of ridership concluded that *densities along this route were too low to justify frequent service*, even if new riverfront attractions like those in our plan were built. Our plan won a national award from the American Planning Association a few months later.

I also prepared my first regional multi-mode transportation plan in 1993 and sent this updated version to OKI three years later. Both plans included:

- A more direct rail line to Milford and Batavia via uptown and Hyde Park that would connect two UC campuses to each other and downtown.
- A line to Madisonville, Madeira, and Loveland that would make good use of two existing rail stations and a little-used dual track main line.
- North-South lines in the I-75 and I-71 corridors that would also link the suburbs to downtown and riverfront attractions and NKY *through uptown*.
- A rail line in the I-74 corridor serving some west side communities.
- Bus Rapid Transit lines providing fast crosstown service on main highways.
- Bus routes that would provide *one-seat rides* from Ohio to NKY.

### **SLIDE 4: OKI Corridor Plans (1993-2004)**

OKI focused primarily on the Eastern and I-71 corridors in the 1990s, even though many people thought traffic congestion on I-75 was much higher and a rail line serving that area would attract more riders if it was built first.

Current plans for the Eastern Corridor still project low ridership on diesel-powered commuter trainsets that would operate mainly at rush hours. *This line was still seeking funds in 2017 despite very low capital costs per mile.*

The light rail line proposed for the I-71 corridor in 1998 would have connected King's Island and Mason to uptown, downtown, the airport, and Florence. It would have provided fast service on a 33-mile route that included a short tunnel between downtown and Uptown with an underground station at Christ Hospital.

Portland Oregon had recently opened a light rail line with a much longer tunnel.

When the 2002 MetroMoves plan was released to the public in June, the fast light rail lines bypassed uptown - and the tunnel was deleted. Riders to uptown would have to transfer to a slower streetcar line.

OKI's study of the I-75 corridor was still in progress in November when Hamilton County voters were asked to vote on the 2002 MetroMoves Plan. Most of the focus in the I-75 corridor was on highway widening now nearing completion.

### **SLIDE 5: I-71 Corridor Light Rail Line**

This slide shows the I-71 corridor light rail line proposed by OKI in 1998 that proposed direct service to both downtown and uptown. Public officials in this corridor approved this mode choice and route about two years later.

### **SLIDE 6: MetroMoves Rail Transit Plan (2002)**

This slide shows rail lines in the 2002 MetroMoves Plan. Note that:

- The I-71 Corridor Light Rail Line shown in Green and the I-75 Corridor line shown in Red *both bypassed uptown.*
- Riders on these lines would have to transfer to slower streetcars on the line shown in yellow to reach UC and nearby hospitals.
- There were *no rail lines from uptown to west side neighborhoods.*

The uptown area with about 40,000 workers had become *a hole in the middle of a donut.* In June, UC officials showed Metro an alternative plan I developed that instead envisioned the intersection of MLK Avenue and Jefferson/Vine as the *center of the crosshairs of a regional rail transit system* that would attract commuters to uptown as well as the 80,000 jobs located downtown.

We were not surprised when Metro responded that it was simply too late to change their plan. I was not surprised when many of the 40,000 commuters to uptown decided not to support the MetroMoves plan.

### **SLIDE 7: MetroMoves Rail Transit Plan (2002)**

This slide summarizes the cost, phasing, projected riders, and capital costs per rider of the *189 miles* of rail lines in the MetroMoves Plan.

The plan also included major expansion of bus routes in suburbs.

Note That:

- Light Rail lines would open in phases between **2013 and 2031**.
- They would have a ***much lower capital cost per rider*** than the commuter rail lines that had a much lower cost per mile. Why? ***More riders!***
- The total capital cost in 2020 dollars was **\$9.9 billion**.
- ***This was more than twice the estimated cost if the entire rail transit system had been locally funded and ready to bid in 2002.***

Most voters are unlikely to support a plan that takes **30 years to complete** even if there are no funding delays - especially if they live near lines in the later phases.

***Only voters in Hamilton County were asked to vote***, even though voters in other parts of the region were the most likely to benefit from a regional rail plan.

Gas prices were still relatively low in 2002.

***The plans developed by OKI and Metro did NOT include plans for development near the new lines or estimate tax revenues from those projects.*** This potential funding source was not considered.

### **SLIDE 8: Citizens for Civic Renewal Forum (2003)**

A year after the MetroMoves referendum failed, Citizens for Civic Renewal held a forum seeking inputs on what our city should do next. My slides showing the pros and cons of all major surface transportation modes gave attendees a broader understanding of the many choices than those considered previously.

Most important, ***we asked attendees to vote their preferences*** after each group of slides and showed the results on screen immediately. The consensus was that ***modern streetcars*** like those in Europe had great potential because ***they could operate safely at slow speeds on city streets but could also go much faster on dedicated routes in the suburbs*** – almost as fast as rapid transit lines.

This flexibility is what makes light rail/streetcar lines in Portland, San Diego, Sacramento, and other cities good solutions for relatively low density corridors.

Keep in mind that ***“Light Rail”*** is simply shorthand for ***light capacity rail transit*** – with streetcars simply one type of vehicle powered by overhead wires.

Rail transit riders usually pay a ***higher share of operating costs*** than bus riders, except in cities like Portland where fares are kept low to attract more riders.

In the next ten years, I studied more than 600 transit lines from a mobility, environmental, and fiscal perspective. *I especially wanted to learn how much development each line and transit mode attracted.* I suspected the answers could help cities like ours fund new lines and encourage smart growth. My 2014 book, Sustainable Transportation and Development, summarizes the results.

Last year, I ordered 25 copies of the book and wrote a short *Smart Growth Overview* that summarizes major findings. You can read both for free on my website or order printed copies at prices that cover printing and mailing costs.

In March 2014, the Cincinnati Enquirer invited me to speak at a forum on transportation options downtown. My presentation included the next six slides, which focused on the lower-cost modes still being planned here.

### **SLIDE 9: Modern European Streetcars (Trams)**

This slide illustrates attractive modern European streetcars that run at slower speeds downtown and much faster in the suburbs. The example on the right is in Barcelona, with vehicles made by the same company that made our new low-floor streetcars. Note that *capital costs per rider are much lower than for other modes because the European streetcar lines attract many more riders per mile.*

When a line attracts more riders, it is easy to simply *add more modules or provide more frequent service.* When you do either one, drivers serve more passengers per mile and riders pay a higher share of operating costs.

It is harder to add modules to high-floor light rail vehicles designed in the 1980s for cities like Sacramento, but the trains there are also much longer now.

### **SLIDE 10: Bus Rapid Transit**

The Health Line in Cleveland and the Orange Line in Los Angeles are often cited as our most successful bus rapid transit lines, but the 12 mph speed of the Health Line with stops was about the same as conventional buses on most city streets. The Orange Line operates on dedicated lanes in the suburbs and is about 50% faster - *but not as fast as most light rail or rapid transit rail lines.*

Capital costs per rider were much higher than the modern European streetcars that attracted *five to seven times as many riders per mile* in the same time frame.

## **SLIDE 11: Diesel Commuter “Light Capacity” Rail**

Diesel powered commuter rail trainsets offer much faster service in suburban corridors than buses or streetcars on city streets *because they have fewer stops, but this adversely impacts their ability to attract riders or development.*

Capital costs per mile are lower than electric-powered light rail vehicles, but these lines operate mostly during rush hours - and do not attract as many riders per mile.

The five mile long line in Ottawa had very low capital costs because existing track was in good shape. It connects a popular bus rapid transit corridor to the large university there and attracts more riders per mile than most commuter rail lines.

## **SLIDE 12: 2014 Uptown/Regional Transit Plan**

This drawing illustrates my 2014 proposal to link downtown to uptown and the suburbs with *modern low-floor modular streetcars (light rail vehicles)* that would operate at slower speeds in urban areas and much faster on dedicated lanes in the suburbs - like those in Europe, Portland, and Sacramento.

*The intersection of MLK and Jefferson/Vine is close to the geographic center of the region* (the center of the crosshairs in the rail system). It would function much like Metro Center does in downtown Washington, D.C. Riders could transfer to other lines there or in other locations easily.

*With only ONE rail transit mode serving the region, the only reason riders would have to transfer from one rail line to another would be to change directions.*

*With more “one seat” rides, the rail system would attract many more riders.*

The plan would also include bus rapid transit routes on major highways and arterial roads to link suburbs to each other and to radial rail lines. Some crosstown routes could also be served by modern streetcars.

## **SLIDE 13: Fund Regional Rail Transit System by 2020**

This slide was my first attempt to illustrate the high cost of waiting to receive federal funds that in 2014 would pay no more than *50% of capital costs*. It also summarized the amount of Transit Oriented Development (TOD) near several modern streetcar lines – including the Cincinnati line that opened two years later.

It also estimated 30 years of property and income tax revenues from TOD using median incomes of \$40,000 per household and a 2% rate. *The results are many times the capital cost of modern light rail lines* – without including sales taxes.

At the bottom of the slide, you will see my 2014 estimates of the *billions of dollars in savings* that compact smart growth near transit lines yields in a region of almost two million people like ours. The savings in school costs will surprise most people. They occur because *new housing units in TOD zones have fewer school children than single family homes in most suburbs*.

**SLIDE 14: 65 Transit Lines with High Levels of Transit-Oriented Development (TOD)**

My research found that 65 transit lines had high levels of Transit Oriented Development (TOD) – *at least \$100 million per mile*.

In 40 years, the Orange rapid transit line in Arlington VA attracted *\$5.9 billion TOD per mile* to the 2.5 miles between Ballston and the Potomac River. The county invested *\$300 million of its own funds* to help pay for an underground line and strongly encouraged higher density development above it – including a handsome new building for county offices near one Metro stop. The county increased allowable densities on only *11% of the land* in this small county. The rest of it still looks a lot like it did when we lived there in the 1950s.

The modern streetcar and light rail lines shown on this slide attracted up to **\$1.2 billion TOD per mile** in much shorter time frames. Growth near them continues.

The Bus Rapid Transit lines in Cleveland and Boston also attracted high levels of development. Some of the projects in Cleveland were for institutions like hospitals that would have been built anyway.

The Silver Line in Boston connects the airport to riverfront attractions, a new convention center, and a station with commuter trains and trains to New York. Buses are crowded – a light rail or rapid transit line would have been better.

**SLIDE 15: Alternative Building Functions and Primary Building Users - \$100 Million TOD**

This slide shows what developers could build in 2017 with *\$100 million dollars*.

Note that offices and retail space attract more taxpayers (adults) than residential projects. Projects with more than 200 SF per person would have fewer taxpayers. Higher-density apartment and townhouse projects attract more adults than single family subdivisions. To simplify calculations and be conservative, I assumed residential projects would average only *400 taxpaying adults*.

I've used these estimates to project tax revenues at *existing* Hamilton County tax rates for transit lines that attract **\$1 billion dollars TOD per mile**.



### **SLIDE 16: Projected Tax Revenues in Millions - \$1 Billion TOD Per Mile**

This slide estimates *30 years of property and income tax revenues from \$1 billion in office/retail development* near new light rail/modern streetcar lines.

The number of taxpayers is simply *ten times* the number on the previous slide for an investment of \$100 million dollars.

Tax rates and median incomes are those cited for Hamilton County on the website 2017 Tax-Rates .org.

The *\$2.2 billion* total is almost *18 times* the capital cost of *\$125 million per mile* I would budget for light rail lines built on grade in 2020. The *1.7 billion* for projects with 300 SF per person and about 12,000 taxpayers is almost *14 times* the cost of light rail lines. Most modern streetcar and bus rapid transit lines usually cost less.

If you want to be very conservative and assume that new light rail lines would only attract *\$500 million TOD per mile*, total revenues of *\$1.1 billion* would still be almost *nine times the capital cost of light rail transit lines*.

### **SLIDE 17: Projected Tax Revenues in Millions - \$1 billion TOD Per Mile**

This slide estimates *30 years of property, income, and sales tax revenues from \$1 billion in residential development*. The estimate of 4,000 taxpayers is simply ten times the number of adults in a \$100 million housing low-density housing project. *Townhouse and apartment projects would likely have more taxpayers*.

Note that total revenues of *\$1.1 billion per mile* would still be almost *nine times the capital cost of new light rail transit lines*.

I hope the last two slides have convinced you we can afford to *locally finance* new light rail transit lines – *without raising taxes* - if we also encourage high-density smart growth in TOD zones near the lines.

**Tax revenues from TOD can be used to pay off bonds used to build rail lines in just a few years.**

### **SLIDE 18: How Regions Can Encourage Transit-Oriented Smart Growth**

This slide summarizes what regions should do to encourage Transit Oriented Smart Growth. Not only do they have to develop or update plans for regional rail and bus transit lines, they have to *clearly define TOD zones* where higher-density growth is encouraged and parking requirements are lower.

Regions also have to select transit modes that will attract *more riders per mile* and provide *fast, frequent service* to all parts of the region.

Riders will be more likely to pay *most or all of the operating costs* to ride them – with lower taxpayer subsidies – if they take one-seat rides or only transfer once.

Regions will need to use only *some* of the tax revenues from *new* businesses and *new* taxpayers near new transit lines to pay off the bonds used to build them in just a few years. These revenues keep flowing afterwards to help balance budgets.

Tax revenues from *existing residents and businesses* – including those within TOD zones – can still be used for other public functions like schools.

This is why my funding proposal differs from Tax-Increment-Financing districts, where everyone inside the district must pay higher taxes to fund projects.

After bonds for the new transit lines are paid off, regions can consider reducing tax rates for everyone – like Arlington and other Northern Virginia jurisdictions have done. *Our property taxes there are around 1% - less than half of the 2.5% tax rate we now pay in Cincinnati.*

Regions should finance lines *locally to get rail lines built much sooner at a much lower cost* – and not wait years for scarce federal funds.

*Do you think Cincinnati taxpayers should send tax dollars to Washington to pay for high-cost rapid transit lines in other cities?* That is what we do now.

Finally, *we need to convince developers that projects in TOD zones do not need tax breaks to be profitable.* The new transit lines bring employees and customers to their projects and reduce or eliminate the need for parking garages that now cost about \$30,000 per space.

If you have doubts about this, let me quote one developer whose firm is now building projects in underserved areas in Brooklyn and East New York: *“We put density where there’s transit.”* When he was asked if developers would help pay for subway upgrades, he said *“Oh, yeah. It’s just math. You can make money come right out of the air with a pencil.”* Cities just need to change zoning to do it.

The most obvious roadblock for cities that want to finance high-cost rail lines is that they almost always have state-imposed debt limits that prevent them from issuing millions or billions of dollars in bonds. **We need to convince states that rail lines with solid TOD plans and a clearly-defined revenue stream should be treated differently than other projects with high capital costs.**

## **SLIDE 19: Best Retirement Cities in America: #1, Arlington VA**

Most surveys naming good places to retire usually focus on low housing costs, so I was surprised that this recent one selected Arlington Virginia as *the best place in the nation to retire*. Note the focus on Arlington's walkable urban areas and easy access to the entire Washington area – thanks to no less than *four* Metro lines and frequent bus service. *Half of the residents who live near one of the Metro lines walk, bike, or take transit to work and 18% don't own cars* – saving them money that offsets higher housing costs.

Arlington had excellent public schools when we lived there in the 1950s, and they still have excellent public schools today.

Arlington has gained *77,000 jobs* since they wisely invested *\$300 million in local funds* in the 1970s to pay for the extra cost of building a subway in one corridor instead of the less-costly rapid transit line originally planned in the median of I-66. The county adopted high-density zoning for only *11% of its land* near the metro lines. The rest of the county has lower-density housing that still looks like it did in the 1950s, but home values are much higher and tax rates are about *half* the amount we pay here in Cincinnati.

*Arlington is a wonderful place to go to school, work, retire, or simply enjoy a very high quality of life.*

## **SLIDE 20: Sources/Feedback**

If you would like to learn more, please take one of my cards, check out my website, and take an hour to read the *Smart Growth Overview* posted there.

I would now like to answer any questions you may have.