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Solve Climate Change Root Cause of moving 2-tons to move a person

NASA documents that highways are the primary driver of Climate Change. The Morgantown PRT provides an example of how grade-separated networks of self-driving pods can preempt Climate Change and solve urban traffic problems.

My US Patent improves on the Morgantown PRT in two important ways:

1. Robots replace the central computer control system: "A method of controlling a transportation System for moving people, freight, and any combination thereof using a distributed network of intelligent devices without requiring the aid of a human driver"
2. Networks are solar-powered: "The method" providing "Solar and wind power generators integrated into the physical Structure of Said transportation System"

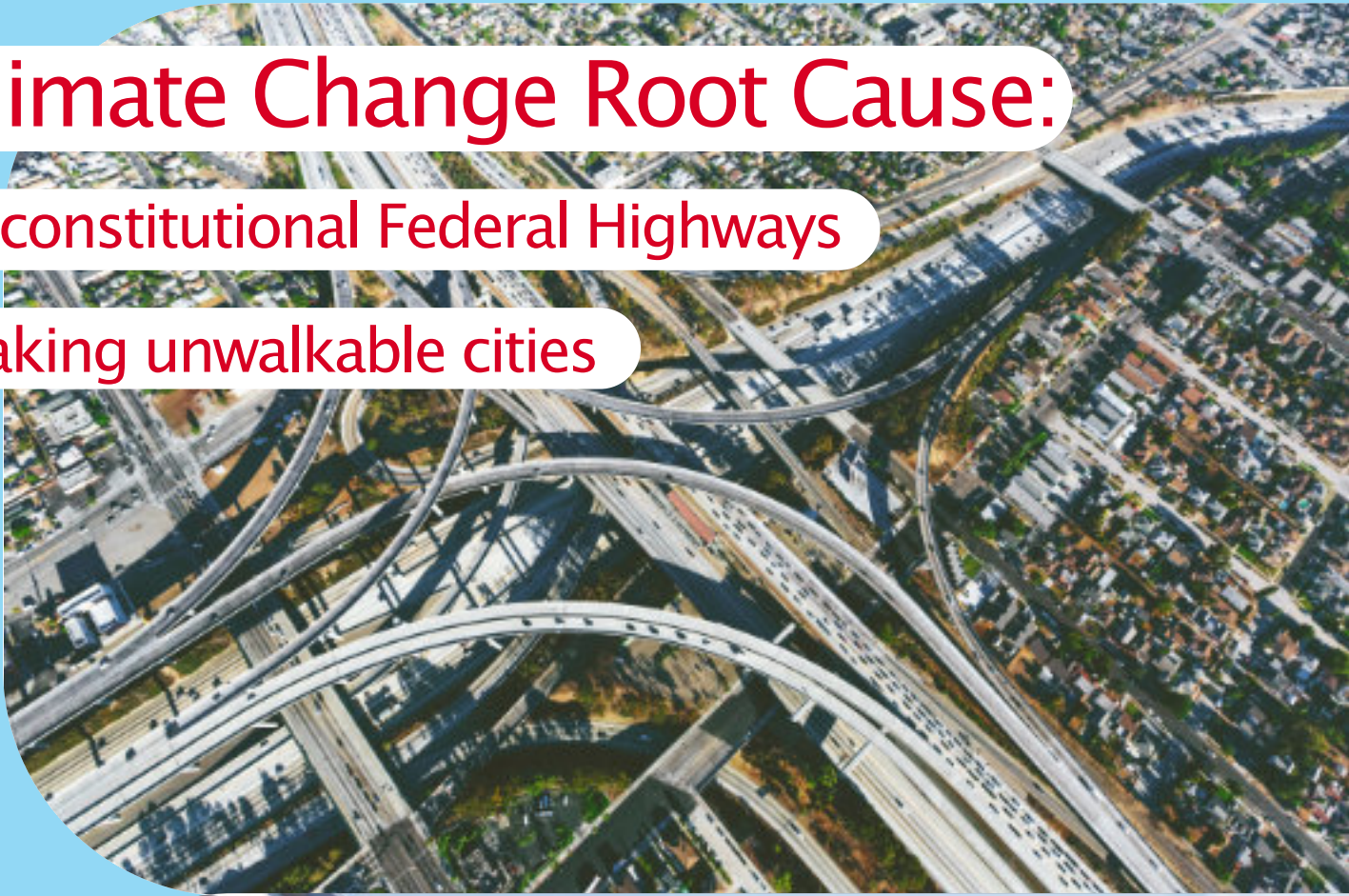
The 5x5 Standard will restore free markets to convert the pollution driving Climate Change to be recovered as jobs, customer savings, and profits. Solving Climate Change has multiple 10X savings over government highways and mass transit networks.

Additional submitted attachment is included below.

Climate Change Root Cause:

Unconstitutional Federal Highways

making unwalkable cities



Restore liberty to innovate walkable cities



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OBJECTIVE

Retool transportation to create walkable cities. In those cities, cut oil use by 60% in 6 years to mitigate the Civilization Killers created by Federal highways.

PROBLEM: FEDERAL HIGHWAY POLICIES DRAIN COMMUNITY WEALTH

- NASA: "Road Transportation Emerges as Key Driver of Warming" ([link](#)). Burning energy moving 2-tons to move a person is Climate Change Root Cause.
- Wealth generation is a pedestrian activity.
- US Highway designs kill pedestrians 400% the rate in Europe.
- US and Europe road designs diverged after 1973 with Europe focusing on walkable cities that reduce oil use and costs by 60% of US.
- Traffic costs Americans \$2.76 trillion per year. 69% of those costs are urban. 95% of urban traffic costs are waste relative to freight railroad efficiencies.
- [\\$9,282/year](#) is the average cost of a car and it is parked 95% of the time.
- 85% of car expenses leave the local economy.
- Federal highway cost American families 15% of their income to fill 5% of their time needs.
- The last 10 Presidents issued unanswered calls to action to cut US oil consumption by 1/3rd ([link](#)).
- 21 Presidential veto messages explain why Federal highways violate the Constitution ([link](#)).

JPODS MISSION

JPods was founded by veterans to cut US oil consumption by 60% to end the perpetual oil-wars, defund oil-dollar funded terrorists, and defend liberty for Posterity. Urban highway networks are unsustainable.

JPods' niche is urban transport networks providing on-demand mobility for people and cargo in payloads the same as size as cars and pickups.

WEALTH INCREASES IN WALKABLE CITIES

JPods are ultralight self-driving pods suspended from overhead guideways. Solar collectors deployed over the guideways power the networks:

- JPods are personal, non-stop origin to destination approaching the 188-times greater efficiency of freight railroads.
- JPods implement the 3,000-times better safety record of Morgantown PRT and theme park rides.
- Displacing highways traffic makes walkable cities. Walkable cities are wealthier.

URGENCY: 2008 WILL REPLAY IN LATE 2024

- 2010, President Obama, "For decades we have known that the days of cheap and easily accessible oil were numbered..."
- Dallas Fed, Sept 2022, forecasts a return to the high gas prices and crisis of 2008 in late 2024 ([link](#)).
- *Changing World Order*, Ray Dalio documents risks of a dollar collapse, loss of using dollars to import 1/3rd of the oil we use each day, and wars ([link](#)).

JPODS ARE:

- **Cleaner**
 - Solar-powered, no pollution.
- **Faster**
 - You travel non-stop from your origin to your destination.
 - Available 24X7, no waiting at stations.
- **Safer**
 - Injuries per million people.
 - 11,200 on roads.
 - 3.4 complying with ASTM. International F24 standards (JPods).
 - JPods are personal, you do not travel with strangers.
- **Affordable**
 - 20 times more efficient than roads.
 - Moves people and cargo.
 - Deploy quickly with minimum construction interference and no linear barriers to commerce.
 - Stops the 85% of car costs draining the local economy, foreign oil, etc....
 - Immune to rising gas prices.
- **Equitable**
 - On-demand mobility regardless of age, ability, or wealth.



BACKGROUND:

- TEDx Atlanta
 - https://youtu.be/PgXHMHw_r4A
- Red Bull TV Documentary (JPods starts at 9:30)
 - <https://www.redbull.com/int-en/episodes/transportation-liquid-science-s01-e06>
- 90 second summary video
 - <https://JPods.com/90secmaideo>



Civilization Killers

Since the Federal-Aid Highway Act of 1916 began violating the "post Roads" enumerate limit in the Constitution, 45% of 470 ton-mpg. railroads have been replaced by highways with the 25 mpg efficiency of the Model-T

Two Civilization Killer were created:

- Climate Change
- Peak Oil

Climate Change

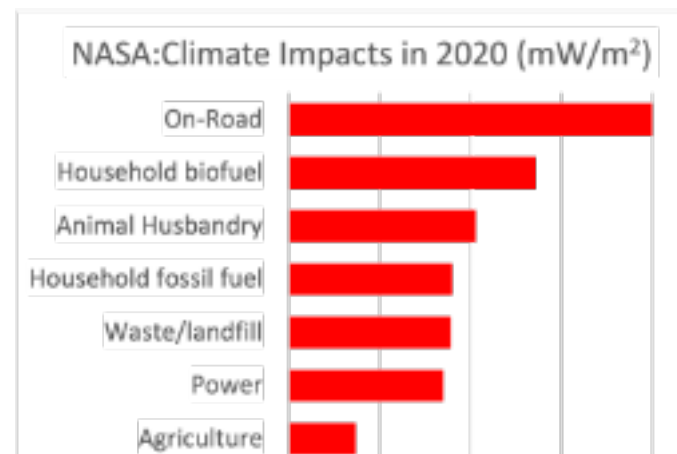
Only a fool pees in his children's only well.

If you borrow your neighbors lawnmower, would you return it empty and broken? It would be a usufruct violation to do so.

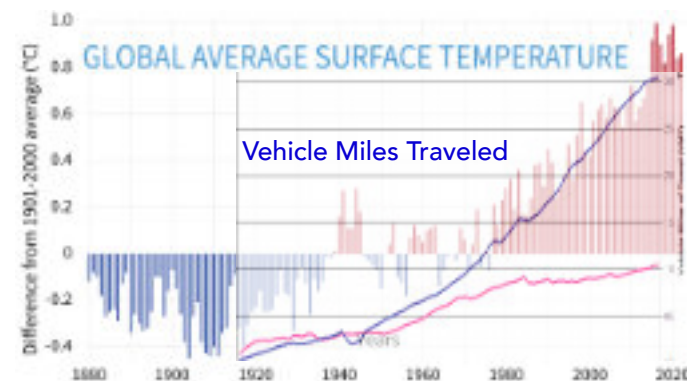
Profligate burning of oil moving 2-tons to move a person is depleting oil resources need by our children and tilting the balance of nature into unknowable consequences of Climate Change. Usufruct violations of the liberty and survival of children.

NASA

"Road Transportation Emerges as Key Driver of Warming" ([link](#), [EPA](#), [DOT](#)).



Burning energy to move 2-tons to move a person is the Climate Change Root Cause. This is 188 times more wasteful than railroads. The 140,000 miles of freight railroads in the US average about 470 ton-mpg.



Question: Why are we moving a person at 25 mpg when we clearly understand how to move a ton at 470 mpg?

Answer: Top-down decisions are based on political influence, not efficiency. Since The Federal-Aid Highway Act of 1916, 45% of 470 ton-mpg freight railroads have been replaced by roads with 25 mpg Model-T efficiency.

Climate Change Root Cause is Federal highways.

Oil-wars Root Cause is Federal highways.

Prior to 1950, Americans did not have to own a car to hold a job. With the Interstate Highways, sprawl mandates car ownership with:

- 278 million cars in the US. ([link](#))
- Each car driving 12,749 on average ([link](#)).
- At 24.9 mpg to produce 19.2 pounds of CO2/gal, or about .79 pounds of CO2 per car mile ([link](#)).
- About 2,786,955,865,060 pounds of CO2/year.

At JPods we look at urban niche networks to replace 60% of car-miles. Data per 100,000 cars:

- Save .79 pounds of CO2 per car-mile or 273,000 tons of CO2 savings per year.
- Save people \$115 million in gasoline purchases/year.
- Save people \$1.3 billion car capital costs.
- There are 278 such 100,000 car units in the US.

Children in the future are defenseless against our usufruct violations today.

Peak Oil

American soldiers have been buying time with blood in oil-wars since 1991 so America can exercise the self-discipline to be energy self-reliant.

The dollar cost of oil-wars so far is \$8 trillion.

PEAK OIL WAS UNDERSTOOD IN 1956

In 1956, Dr. Hubbert published the Peak Oil forecast for 1970. As forecast, US Peak Oil occurred in 1970 followed by unstable oil prices, debt increasing with foreign oil purchases, and oil-wars.

Admiral Rickover's 1957 Energy Slave speech: "Fossil fuels resemble capital in the bank. A prudent and responsible parent will use his capital sparingly in order to pass on to his children as much as possible of his inheritance. A selfish and irresponsible parent will squander it in riotous living and care not one whit how his offspring will fare."

"For it is an unpleasant fact that according to our best estimates, total fossil fuel reserves recoverable at not over twice today's unit cost, are likely to run out at some time between the years 2000 and 2050. It will be wise to face up to the possibility of the ultimate disappearance of automobiles, trucks, buses, and tractors. Today the automobile is the most

uneconomical user of energy."

After a century of stable prices, oil prices destabilized following US Peak Oil in 1970.

Denying Risk and Peril, EIA reports ignore US Peak Oil in 1970 and the destabilization of oil prices.



2008

In May 2008, the Dallas Federal Reserve published, *Crude Awakening: Behind the Surge in Oil Prices* ([link](#)). This report shows the repeated failure of US DOE to warn policymakers of the growing risks of foreign oil addiction. Since US Peak Oil in 1970, the political and even weather issues can trump the slow moving geological components of oil prices. Without the self-discipline to be self-reliant, we have no idea of risks.

2024 - DALLAS FEDERAL RESERVE

In Sept 2022, the Dallas Fed surveyed 153 oil companies asking:

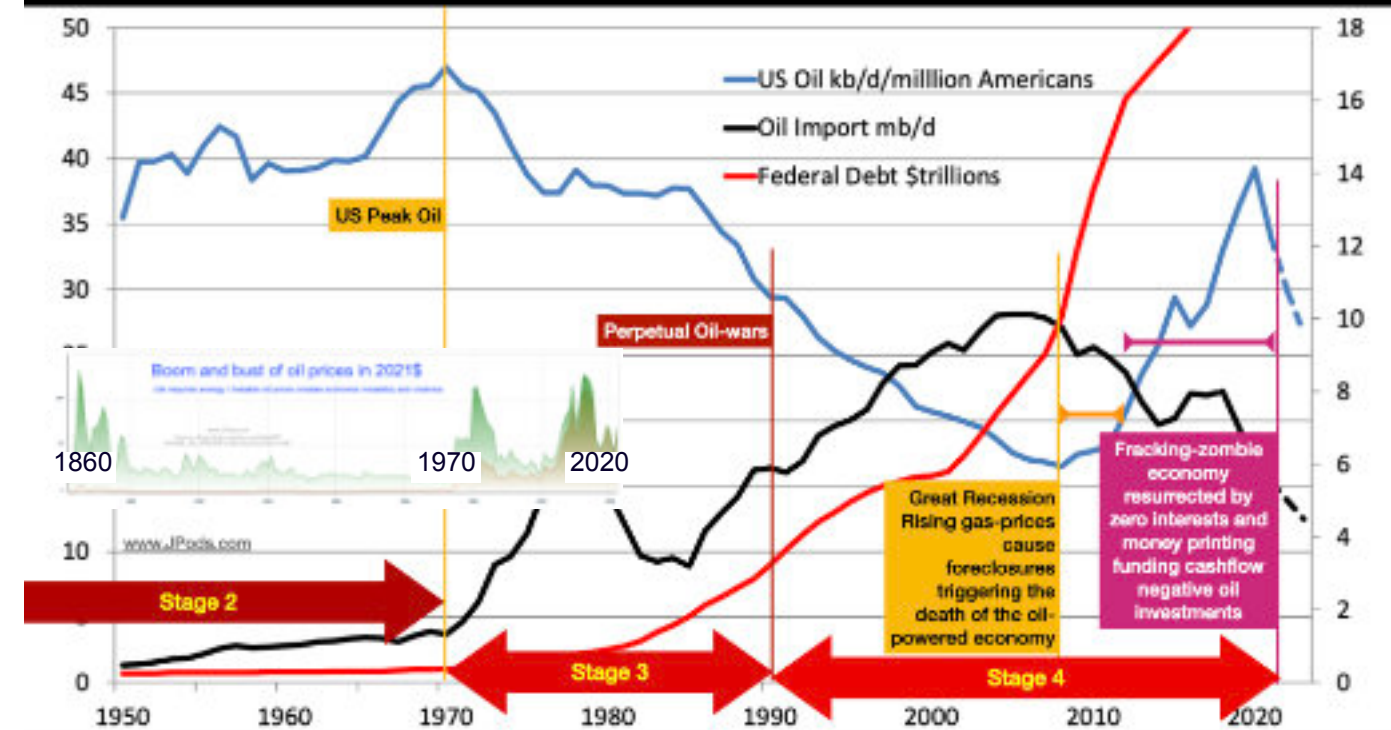
- "Do you expect a significant tightening of the oil market by the end of 2024, given the current underinvestment in exploration?"
- 85% of those responding agreed.
- Cited comment: "Shale core exhaustion and inventory concerns are mainstream and well-documented issues. Shale will likely tip over in five years, and U.S. production will be down 20 to 30 percent quickly. When it does—this feels like watching the steam roller scene in Austin Powers. Oil prices in the late 2020s will be something to behold."

RESOURCES

- [JPods data](#)
- [Changing World Order, Ray Dalio](#)
- [Crash Course, Chris Martenson](#)
- [Energy Economics](#)
- [Peak Cheap Oil](#)
- [Shale Oil](#)

Five Stages of Decline, How the Mighty Fall (Jim Collins)

1. **Hubris born of success:** 17th & 18th Amendments usurped the Constitution's Divided Sovereignty with Federal taxing to provide welfare and war on citizens (alcohol/drugs). Violating the "post Roads" restriction built an economy powered by burning oil to move two tons to move a person. Consume more, faster, to drive up GDP.
2. **Undisciplined Pursuit of More:** Foreign oil will make up for depleting US oil production; US Peak Oil in 1970.
3. **Denial of Risk and Peril:** "Oil-wars since 1991 are about democracy." "National debt is just money we owe ourselves."
4. **Grasping for Salvation:** Fracking oil and mortgaging the future labor of children for \$27 trillion to delay consequences.
5. **CAPITULATION TO IRRELEVANCE OR DEATH**





Designed, taxed, and built to comply with a Top-down plan

Federal Highways: Climate Change Root Cause

METRICS OF WASTE AND WEALTH CREATION

Following pages are metrics intend to be inclusive of the Left and Right to make our cities more sustainable.

PUSH YOUR CAR

The importance and value of oil is hard to imagine.

Consider a thought experience to put into perspective the waste of moving 2-tons to move a person mandated by Federal highways:

- Parking your car empty of gas in your driveway.
- Put a single gallon of gas in your tank.
- Have 5 of your strongest friends get in the car with you.
- Drive until you run out of gas.
- Now, you and your friends get out and push your car home.
- Assuming your team can maintain 2 mph, it will take you 12.5 hours to push your car home, or 75 man-hours of hard work. Gasoline is incredibly valuable. Highways are incredibly wasteful.

ENERGY RATIO (PER)

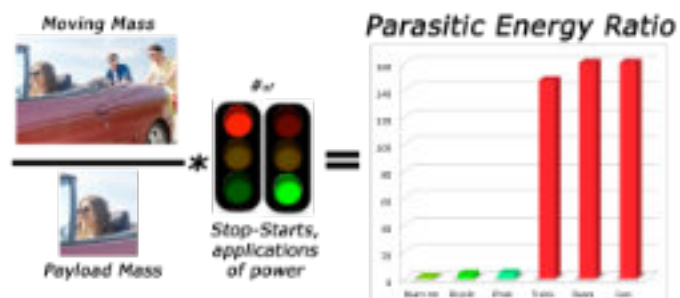
The Parasitic Energy Ratio (PER) metric developed out of the above thought experiment.

Parasitic Energy Ratio provides a simple ratio to judge the relative efficiency of transport modes.

Divide the Moving Mass (vehicle and passenger) by the Payload Mass (passenger) and then multiply by the number of times power must be applied, the number of start-stops on a typical trip. Accelerations and braking consume most of the power (repetitive stop-starts).

"Beam me up, Scotty" would be a perfect 1. No vehicle mass and only one start-stop. Riding a bike, most people avoid stopping at every stop sign. Accelerations and Parasitic Mass drive power consumption.

Electric cars, buses, and trains do not change the fundamental defect of moving 2-tons of Parasitic Mass to move a person.



	Parasitic Mass	Payload	Moving	Start-stops	Ratio
Beam Me	0	200	200	1	1
Bike	30	200	230	8	9
JPods	500	200	700	1.6	6
Train	4,500	200	4,700	6	141
Bus	3,300	200	3,500	9	158
Car	3,300	200	3,500	9	158

ECONOMIC WORK PER UNIT ENERGY

Instead of moving 2-tons to move a person, JPods networks strive to move only the person with one start-stop:

- Grade-separating the networks removes start-stops.
- Suspended vehicles remove 75% of the Parasitic Mass.
- Use the structure of the guideways to deploy the solar collectors to power the networks.

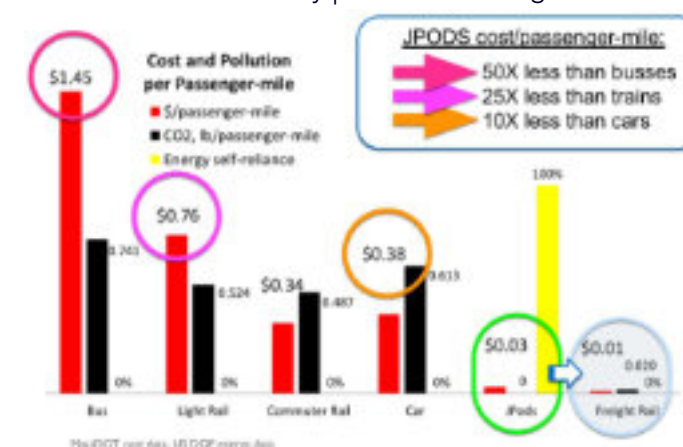


- Energy per passenger-mile Oak Ridge National Laboratory, 2019 (link). Similar 2012 date was used in the cost graph.
- Pounds of CO2 are calculated using gasoline as a fuel source.
- Commuter rail produces half the CO2 per passenger-mile as cars.
- Buses are 2X worse CO2 producers per passenger-mile than cars.
- Trains and buses are not "green." Since Mass Transit loses approximately 80 cents per operating dollar the carbon footprint of car drivers subsidizing Mass Transit should be added.

Mode with Wh/passenger-mile	Wh/mi
Cars	817
Personal trucks	941
Motorcycles	694
Demand response	4,551
Buses, Transit	1,358
Air	657
Rail, Amtrak	441
Rail, Transit	249
Rail, Commuter	464
JPods	80
Walking	30
Bikes	15

Removing Parasitic Mass and repetitive start-stops cuts cost per passenger-mile by 10 to 50 times.

Children are sacrificed by politicians making Climate



Change, Peak Oil, and debt contentious political issues. They seek power by dividing us on issues that harm our children.

All are usufruct violations against children with the same Root Cause, Federal consolidation of powers reserved to the people and states. We allowed Federal "internal improvements" to take control of 24% of our "SUBSISTENCE."

This issue goes back to Hamilton in Federalist #79: "In the general course of human nature, A POWER OVER A MAN'S SUBSISTENCE AMOUNTS TO A POWER OVER HIS WILL."

Those on the Left and those on the Right can have their separate beliefs AND work together to address

ACTIONS

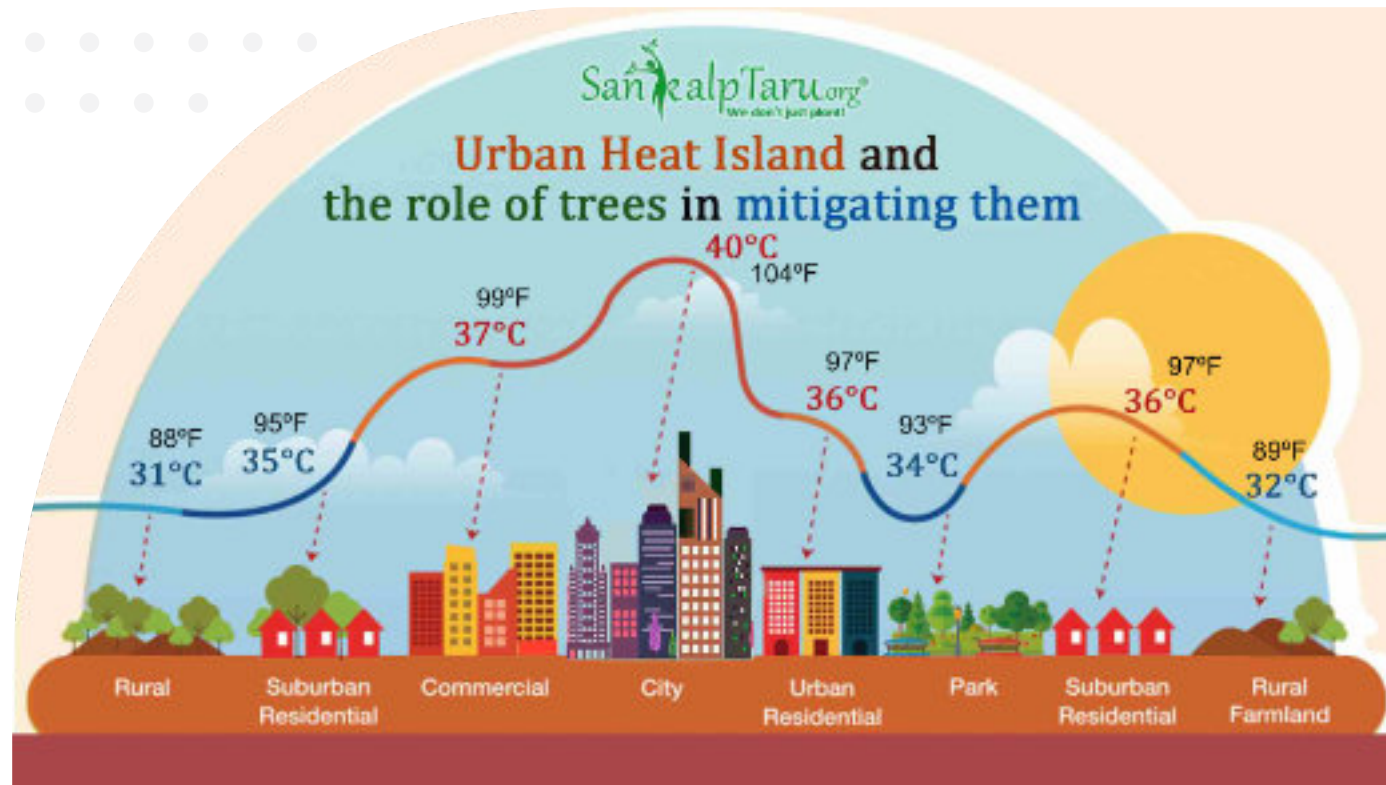
Albert Einstein, "We cannot solve our problems with the same thinking we used to create them."

There are many Bottom-up things we can do:

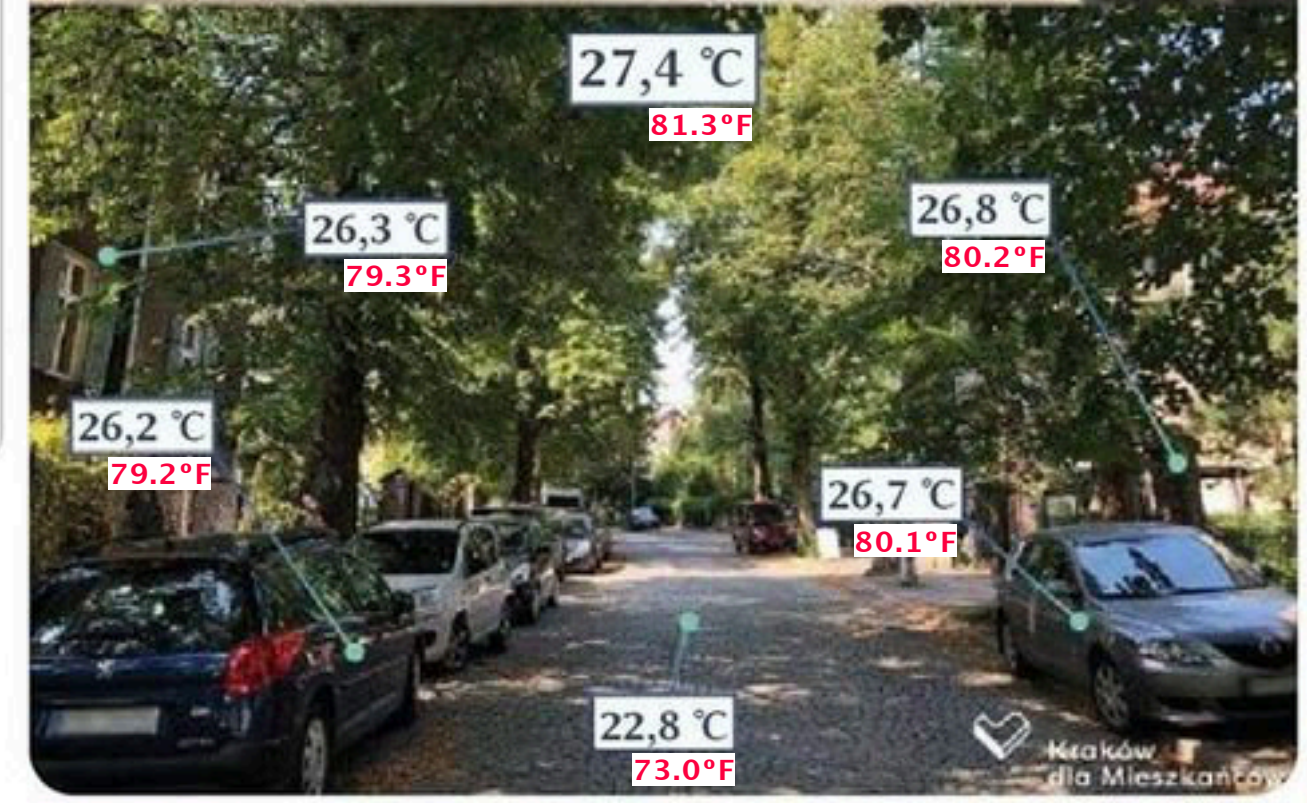
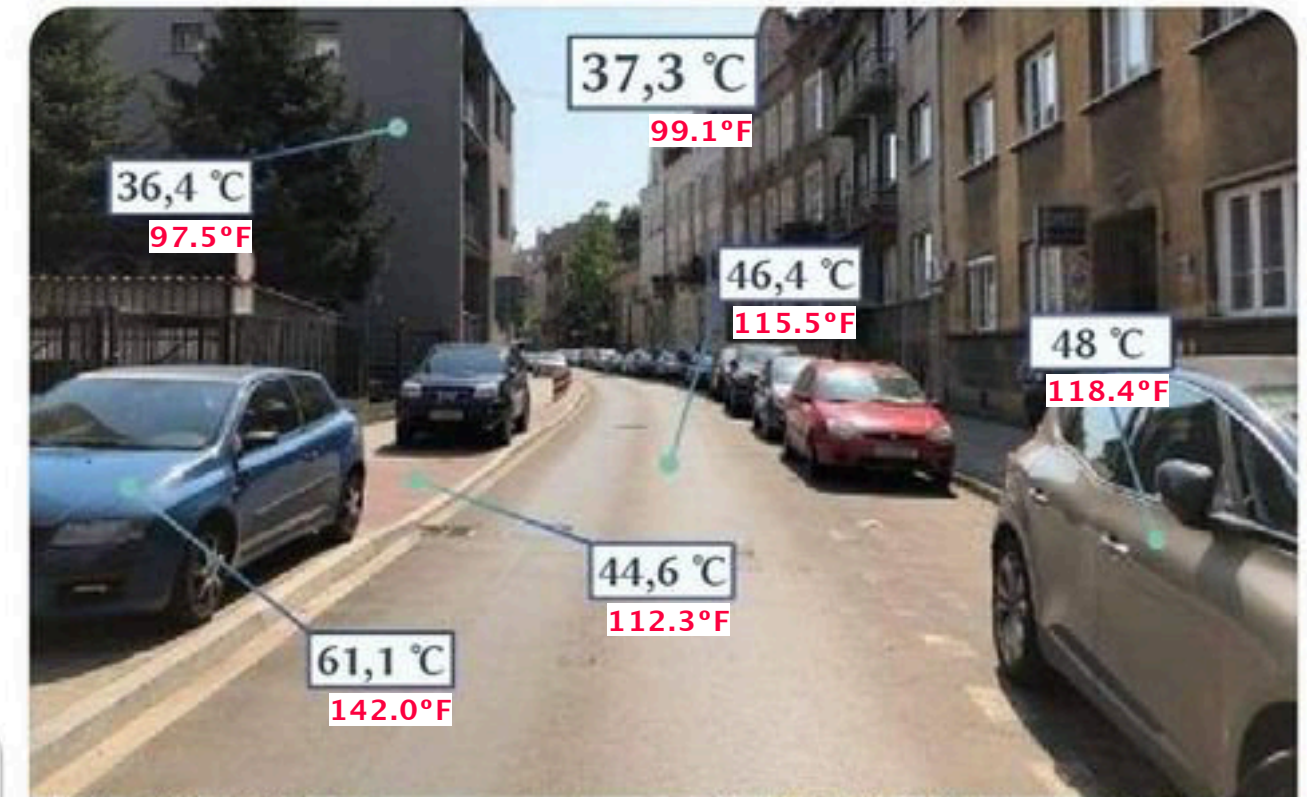
- Bikes can cut oil requirements 60% as already demonstrated by Europe since 1973.
- During the COVID-19 Pandemic US oil consumption dropped 41%. We have experienced that we can live within domestic oil production.
- Streets can be redesigned to make it safe to walk and bike.
- Set up fuel rationing before the crisis. Software to accomplish rationing is straightforward.
- Prioritize oil uses for agriculture and critical supply chains.
- Refill the Strategic Petroleum Reserve (SPR). Do not use it to affect elections.
- Adopt the 5X5 Standard so that solar-powered mobility networks can be built and the supply chains on-shored. It will take time to replace urban highways with sustainable networks. The sooner we start, the more likely we can mitigate the worst of unaffordable oil.
- Voters can replace Federal politicians who do not immediately stop all Federal highway projects.

There are Top-down things we can do:

- President Biden could order the US military to immediately cut oil use by 1/3rd, to within domestic production. The military can exercise the self-discipline to be energy self-reliant.
- Repeat the 17th Amendment to reduce Tyranny of the Majority. It was intended to prevent people buying a senate seat thru a state legislature. In reality, it decreased the cost of political corruption from buying half a state legislature to merely contributing to a senate campaign.
- It will likely require a 5-10 year transition, but states can enforce their sovereignty to collect welfare taxes. States collecting all welfare taxes and then states funding Federal programs would restore Divided Sovereignty, prevent Federal borrowing against welfare taxes to fund undeclared oil-wars.



Same city, same day, same time:
two different streets.



Heat Islands

SOLAR-POWERED AND COOLING

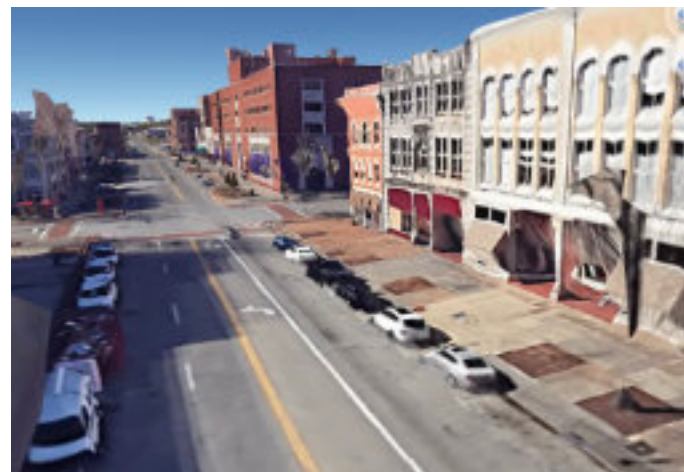
JPods networks are solar-powered. As a side benefit, we provide shade and reduce Heat Islands that decrease commerce.

JPods networks provide an alternative that turns 3.4 parking spaces per car into revenue producing street cafes, shops, and green space.

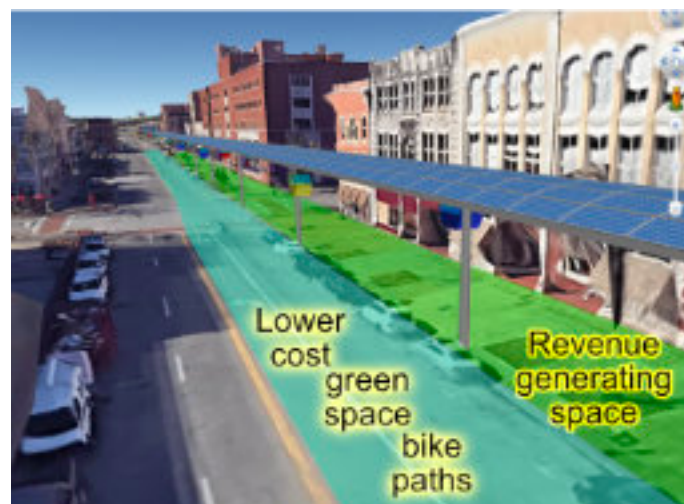
- USDA, "10% increase in tree canopy was associated with a roughly 12% decrease in crime."
"Shoppers in business districts with robust tree canopy will spend 9 to 12% more for products, travel further and spend more time there" ([link](#))

Questions:

- Would you like a choice to get around your city without having to drive and park?
- Would you like your city streets to be safe to bike on?
- Would you like more trees and less asphalt in your city?
- Would you like side-walk cafes with fewer cars rushing by?



2NS STREET, MACON, GA



Walk/Bike

START WITH WHAT WE KNOW

For the same economic outcome, the people in Sweden and Denmark pay 60% less for oil than Americans because of policy changes in 1973.

Before the 1973 Oil Embargo the US, Sweden, and Denmark were on the same path to highway dominated cities.

Following 1973 Denmark and Sweden shifted policies to design their roads to be safe to walk and bike.

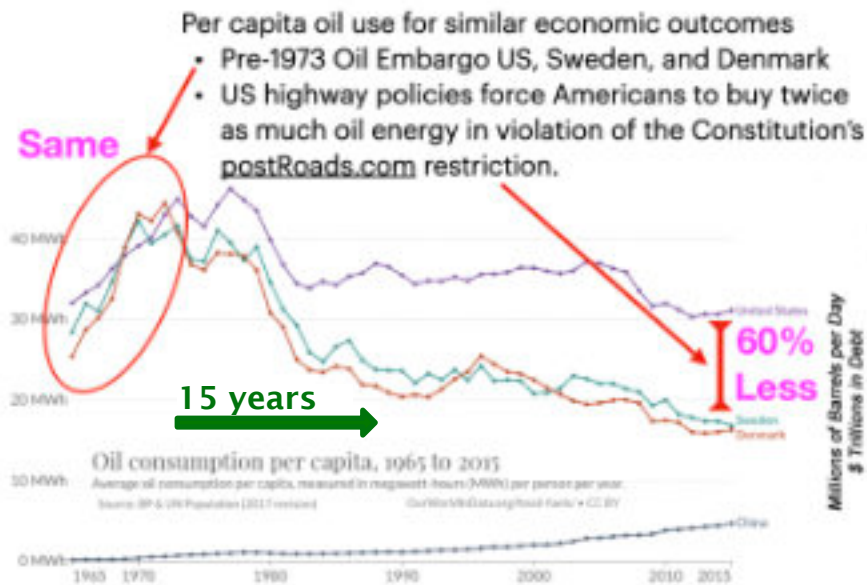
By 1990, Swedish and Danish oil consumption had dropped to 60% below that of the US.

SAME CITY, DIFFERENT POLICIES

Which of these streets would you rather live on?

Images of the street:

- 1971 was highway-centric where government prioritized cars over people.
- 2020 is human-centric where government prioritizes people and economic activity generated by people on foot over highways.

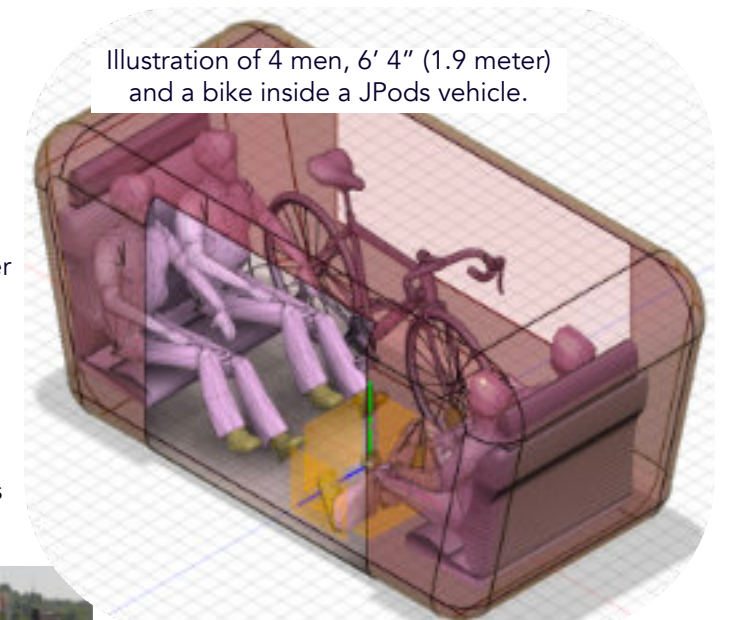


60% LESS CAR-MILES AND 4X ROAD SAFETY

We at JPods know grade-separation of solar-powered transport networks will support:

- Cities reducing oil use by 60% in 6 years, ending foreign oil addiction. We currently [import 6.7 million barrels of oil a day](#). Required is for cities to restore liberty to innovate (see 5X5 Standard) so alternative transport networks can displace highways traffic from streets.
- Making streets safe to walk and bike. We enjoy walking and biking when it is safe. We are healthier when walking is intrinsic to our daily lives.
- Making roads safer by removing density from roads and giving drunk and distracted drivers an alternative to driving a car.
- Travel safety on JPods networks is 3,000 times that current highway standards. Standards JPods comply with have 3.7 injuries per million. US roads have 11,200 serious per million.

JPods

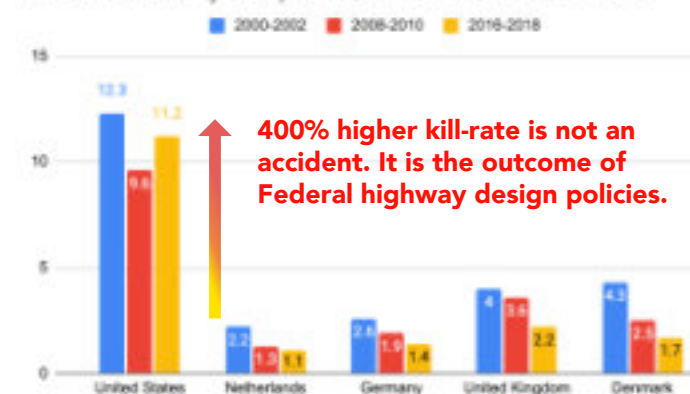


Killer Designs

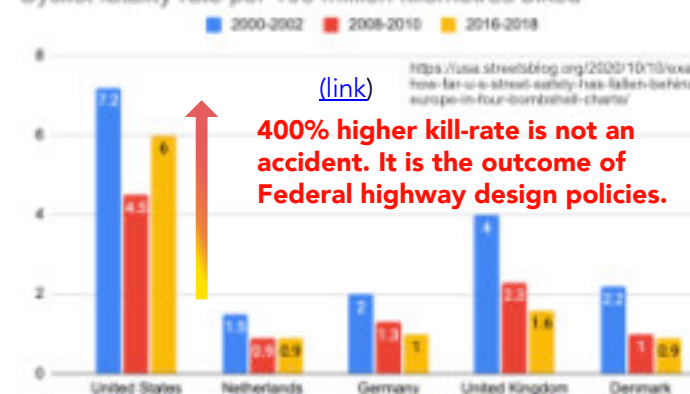
Complying with Top-down plans and specifications, US road designs knowingly and intentionally kill 400% more Americans than Danish and Swedish road designs. Since the Morgantown PRT opened it has had no serious injury. In that same period of time, US highways killed 1.8 million Americans; nearly 1/3rd of a Holocaust. Who is killed is fairly random. Designed in is that 40,000 people will be killed and 2.2 million seriously injured this year.

- Stroads are Ugly, Expensive, and Dangerous. ["Stroads" is a term coined by Chuck Marohn of Strong Towns.](#) "Stroad," US highway policies turning city street into high speed roads.
- [Introduction to the 85th Percentile Speed. The Wrong Way to Set Speed Limits](#)
- [How Forgiving Design in roads kills pedestrians](#)

Pedestrian fatality rate per 100 million kilometres walked



Cyclist fatality rate per 100 million kilometres biked

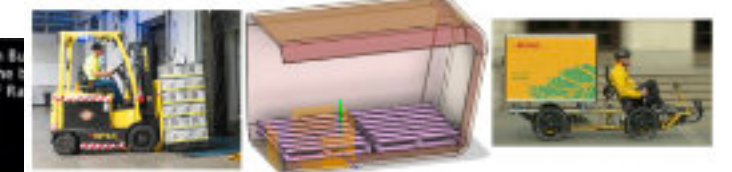


We have known grade-separation is the solution to urban traffic for half a century. In 1972, President Nixon sent his daughter Tricia to open the Morgantown PRT. It is an electrically power urban transportation networks with 3,000X better safety (link).



Illustration of pallets fitting inside a JPods vehicle. JPods provide Middle Mile™ cargo carrying from warehouses to neighborhoods. Last-mile will be provided by Local Use Vehicles (LUVs).

We have known for 2 centuries that grade-control on 140,000 miles of freight railroads is 188 times more efficient (link). Warren Buffett:



Because there is no pollution, stations will be integrated into buildings (Horizontal Elevators™).

- "It [railroad industry] moves a ton of goods 470 miles on one gallon of diesel."
- "A train replaces 280 trucks on the road."
- "It emits far less into the atmosphere that is damaging."
- "It [rail industry] moves 40% of the goods."

JPods grade-separated networks approach freight railroads efficiencies moving people and cargo in cities.



Why & How

TOP-DOWN HIGHWAYS ARE EXPENSIVE

- Oil-wars since 1991 in Iraq and Afghanistan cost **\$8 trillion**.
- Oil-dollar funded terrorists cost \$52 billion.
- 1.8 million Americans were killed on roads in the same period as Morgantown PRT had no serious injuries. Roads have ~2.2 million seriously injured per year.
- Federal debt increased to \$33 trillion in tandem with importing oil and waging oil-wars.
- Climate Change: Roads produce 1.5 billion tons CO2/year.

Traffic costs Americans \$2.76 trillion/year:

- \$756 billion per year for oil.
- \$871 billion per year in accidents.
 - 40,100 road-deaths in 2017.
 - 2.31 million injuries in 2013.
- \$305 billion per year in congestion.
- \$109 billion per year in car damage from poor road maintenance.
- \$723 billion per year in land use at \$1 per square foot per year (cost of a garden plot, apartments are normally \$2-5 square foot per month).

OBJECTIVE: ENDING OIL-WARS

Oil-wars since 1991 caused West Point graduates to look for how to end importing up to 2/3rd of our oil. We had studied Nuclear Engineering and were veterans. We worked the physics.

As a child, I cleaned a barn using a half-barrel suspended from an overhead guideway. Grade-separation enabled a child to move tons. In the Infantry helicopters with cargo nets were used to pin-point deliver logistics.



Grade-control enables freight railroads to average 470 ton-mpg. At JPods, we use grade-separation to simplify and bypass road traffic problems. We added robots to remove human error. We added solar collectors to use the distributed nature of transport networks to gather the distributed solar energy to power them.

THE MORGANTOWN PRT

Personal Rapid Transit (PRT) is well understood technology. Electrically-powered, self-driving vehicles travel on grade-separated guideways. The Morgantown PRT was so important, President Nixon sent his daughter, Tricia, to open it in 1972.

Walter Cronkite opened the news coverage with, "One of the big problems in this country is something many of us run into every day, traffic jams." Tricia Nixon said it was "more fun than Disneyland." We learned we can make cities as safe as theme parks.



The Morgantown Mayor summarized the success of the network in a 2013 letter:

- "It has proven to be a reliable system of automated transit that is relatively inexpensive to operate.
- It has offered on-time service rates far better than the bus system it replaced, boasting a 98% reliability and availability rating.
- It has eliminated much of the gridlock of traffic which existed in the hub of downtown Morgantown.
- It has proven to be safe, with no serious injuries reported since the operation began in 1975."

PATENT FOR SOLAR-POWERED TRANSPORT

Our team applied extensive manufacturing and factory automation experience to patent new unique combinations of known technologies (6,810,817):

- JPods robots replace the central computer controls: "A method of controlling a transportation System for moving people, freight, and any combination thereof using a distributed network of intelligent devices without requiring the aid of a human driver"
- Networks are solar-powered: "The method... providing... Solar and wind power generators integrated into the physical Structure of Said transportation System...."

Many more patents are coming.

TOP-DOWN BARRIER TO INNOVATION

Congress initiated Study PB-244854, "Automated Guideway Transit" to identify solutions to the 1973 Oil Embargo. Published in 1975, it identified the Morgantown PRT as the likely solution and that "institutional failures" had blocked innovation for "four to six decades (aside from some relatively minor cosmetic changes)...."

LEARNING FROM ROTARY TELEPHONES

Courts declaring the Federal communications monopoly unconstitutional in 1982 shifted the process from Top-Down to Bottom-up. The Bottom-up process restored liberty; tolerance of Disruptive Minorities offering choices and tolerance of the Wisdom of Crowds sorting choices in free markets.

We designed the 5X5 Standard so local governments can restore liberty for innovators to solve local traffic. Privately funded networks 5 times more efficient pay 5% of gross revenues to use the airspace over public roads.

WHY OF JPDS

Delayed by Top-Down barriers, we used the years of efforts to polish the Why, How, and What of JPods. Once Bottom-up is restored the cascade will demand enduring culture to keep pace.

3 circles of the JPods Hedgehog Concept:

We have a passion for liberty. Personal, on-demand mobility regardless of age, ability, or wealth is physical liberty.

We can be the best in the world at moving people and cargo in commuter-range travel with payloads less than 500kg (1,100 pounds).

Our metric is profit per customer trip. Profit is the difference between the value customers willingly pay minus the cost to compete. The more we delight our customers and the fewer resources we consume to produce value, the more profitable and sustainable JPods becomes.

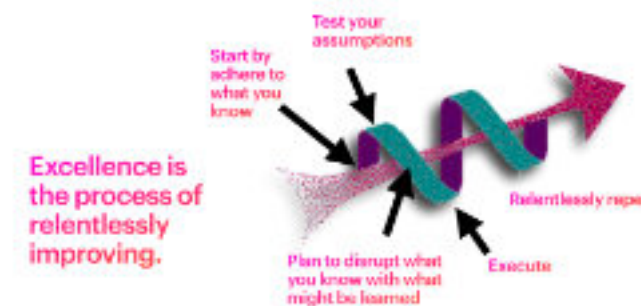


EXCELLENCE AND POWER

Start small, iterate relentlessly. Implement our definitions for Excellence and Power.

Excellence is the process of relentlessly improving. Start by adhering to what you know. Test your assumptions. Plan to disrupt what you know with what might be learned. Execute. Relentlessly repeat.

The difference between knowledge and wisdom is scars.



Power is the will and ability to win applied to achieving an objective. The will to win comes from people. The ability to win comes from resources and managing them well. Leadership is what gives the will and ability direction to who, does what, why, when, where.



HOW OF JPDS

How does an ant eat an elephant? Small bites, lots of friends. If you want to help build solar-powered networks in your city, let us know.

Ambrose's book *Nothing Like It in the World* documents how the transcontinental railroads were financed and built.

Building the railroads started with a 20-year effort to correctly write the regulations. The Pacific Railroad Act of 1862 authorized the railroad but had an un-fundable default clause. This was corrected in 1864. Construction began in California in 1863 and Nebraska in 1865.

As supply chains ramped up, so did the rate of construction. By 1869 rails were being completed at a rate of up to 10 miles per day per crew. In 4 years, 1,912 miles were opened.

JPods will at least match the speed of deployment of the Transcontinental Railroads by:

- Using the 5X5 Standard and private funding to remove bureaucratic delays.
- Implement networks with single-purpose companies, tech, construction, operating.
- [Link, https://JPods.com/why/](https://JPods.com/why/)

Case Study: Nothing Like It in the World



JPods Networks

PHYSICAL INTERNET®

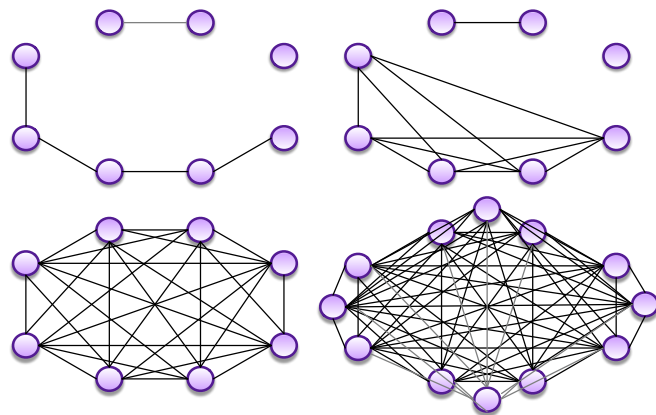
Free markets will allow transport and energy networks to digitize like communications. All were monopolized in the early 1900s. Courts restored liberty to innovate communications in 1982 ([link](#)). In 2022, the North Central Texas Coalition of Governments voted to restore liberty to innovate transport networks in free markets in the Dallas-Fort Worth 16 counties ([link](#)).

As the Internet started in niches, the digitizing of transport and energy networks into the Physical Internet® will start in niches and scale based on the quality of offerings by Disruptive Minorities and sorting by the Wisdom of Crowds.

PRIME LAW OF NETWORKS

At JPods we generalized Metcalfe's Law to include account for how congestion degrades networks and physical packets.

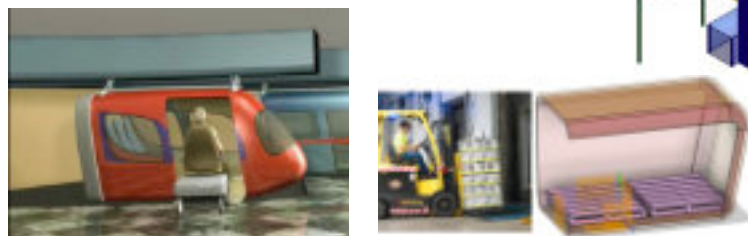
Prime Law: The value of a network increases exponentially based on the number of interconnected nodes and decreases as those nodes are saturated.



We experience this law when driving a car. Each parking space is a node. When there is little traffic and little competition for parking spaces, the value of the road network is amazing. With traffic and unavailable parking, the value of the road network decreases.

STATIONS

More small stations amplify network value. Unlike train stations, JPods stations can be dispersed and even integrated into buildings.



JPods: Cleaner, Safer, Faster, Affordable™

JPODS NICHE

JPods niche is dense urban areas where traffic is often congested, and parking is difficult. In this niche, JPods' grade-separated networks provide the on-demand service of a chauffeured car. Unlike streets, travel is non-stop from origin to destination.

NETWORK LAYERS

Consider that the Internet has roughly 4 layers:

- Fiber optics for high speed and heavy traffic.
- Wi-Fi for local area networks.
- Bluetooth for last-device.
- Satellites, SD cards, and a vast number of other devices to fill other niches.

The Physical Internet® will have similar layers:

- High speed and heavy lift: Airline, freight rail, and trucking for transport between cities.
- Commuter: JPods /PRT, Transportation as a Service (TAAS), transit, and cars/trucks provide commuter-range transport of people and cargo.
- Last-mile: Bikes, walking, scooters, Uber, drones, Local Use Vehicles, etc... provide the last device.
- Off network vehicles such as existing cars and trucks.

Bottom-up digital communications networks displaced most analog networks. Bottom-up TAAS will incrementally replace cars of roads based on the value perceived by customers.

Consider that a car costs about [\\$9,282/year](#), is [parked 95% of the time](#), with [85% of car costs draining out of the local economy](#). Oil imports are 6.7 mb/d of foreign oil at \$87, a yearly drain of \$213 billion.

[American Public Transportation Association](#) notes:

"The average household spends 16 cents of every dollar on transportation, and 93% of this goes to buying, maintaining, and operating cars, the largest expenditure after housing.

A household can save nearly \$10,000 by taking public transportation and living with one less car."

GENERAL: CONNECT WALKABLE

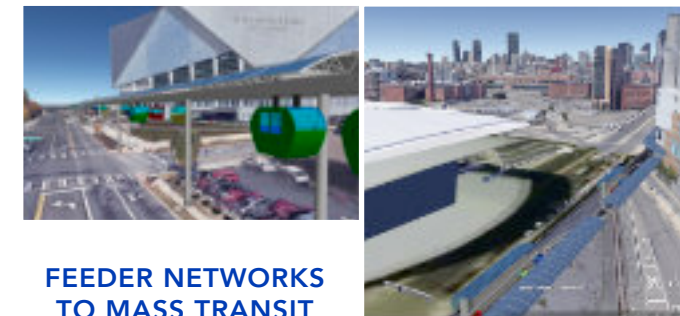
As JPods network connect walkable areas to each other. JPods networks can be built one street away from highly walkable streets. The optimum packet size for moving people is between one pedestrian and a family of them.

Design walkable networks for your community. [Link](#), <https://JPods.com/design-your-own-JPods-network/>



ENTERTAINMENT / NIGHT LIFE

DUI's are unnecessary. Social life is enhanced by on-demand transportation to and from events. Illustrated is a network connecting Six Flags to the water park and to hotels in Arlington, TX.



FEEDER NETWORKS TO MASS TRANSIT

Example JPods station connecting a DART station to hotels, the Merchandize Mart, and Love Field.

The Prime Law of Networks applies. As JPods cross-connects the spokes of existing mass transit lines to each other, the value of their network increases exponentially. People no longer have to travel to the center of the city to access stations on other spokes.



LINEAR BARRIERS

Nearly every shopping area is crisscrossed by un-walkable roads. Cross connecting these walkable areas can generally be funded.

AIRPORTS

Airports and their surrounding economic community are ideal locations for JPods network. Connecting terminals to terminals, to hotels, to car rental, to parking, to trains, to convention centers, etc... provides travelers with personal on-demand service between their walkable destinations.

Atlanta



Boston

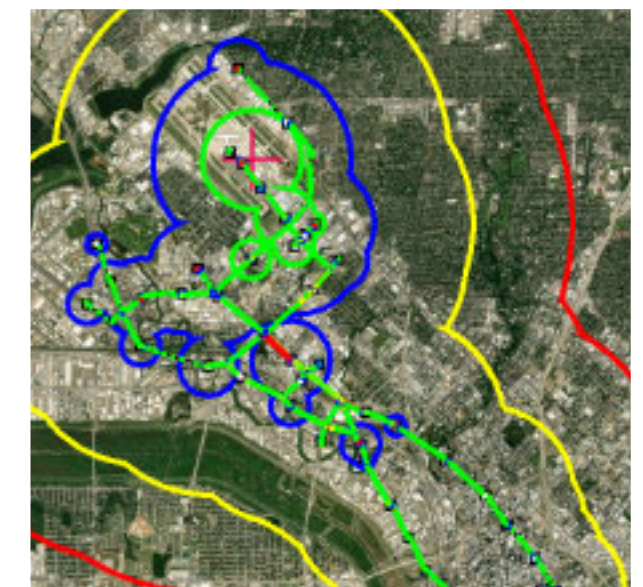


Stadium in Atlanta and convention center in Boston.

Love Field, Dallas. Walk-ride-walk
Green is 5-10 min
Blue is 10-20 min
Yellow is 20-20 min

MESH NETWORKS

With frequent stations in a mesh network, you can be to your destination in less time than the 17 minute average wait time for mass transit.





What are JPods

GRADE-SEPARATION:

Having JPods guideways elevated above the roads preempts safety risks and simplifies the complexity of mixing existing traffic with self-driving vehicles.

CLEAN ENERGY

JPods guideways provide both a means to cut travel costs and a mounting system for solar collectors. The collectors gather 40,000 vehicle-miles of oil-free power per mile of guideway per day. Your city's mobility is powered by your city's sunshine. JPods provides both clean and secure access to energy. Life requires energy. Foreign oil addiction is a threat to survival.

EQUITY

On-demand mobility regardless of age, ability, or wealth. You are not forced to ride with others, eliminating crime and contagion risks of mass transit. The family-size packet of JPods vehicles provides the same on-demand service of the family car without the capital costs of owning a car or the land consumption of cars.

CONTAGION SUPPRESSION

MIT Study, "Subways Seeded the Massive Coronavirus Epidemic in New York City," documents the contagion risks of queuing and transfers. Dr. Gosce's similar London Tube study documents queuing and transfers amplifying flu contagion by 6 times. JPods eliminate queuing with on-demand entry. Additionally, between uses, JPods vehicles can be disinfected with UV and other means before being used again. If needed, vehicles move to a cleaning center between uses.

ACCESS

Family-size pods enable stations to be as tiny as a single parking space. Small, inexpensive stations make it possible to have many more access points. In contrast, buses and trains require large stations, reducing the number of access points and quality of service.

FLEXIBILITY

Analogous to the internet packet-switching data, JPods packet-switch people, cargo, garbage, etc.

TIME AND ENERGY

JPods travel non-stop from origin to destination to eliminate the energy wasted by repetitive start-stops of cars, trains, and buses. This also reduces travel time.

PEDESTRIANS

Reducing car traffic will make walking and biking safer. As networks expand, stations will be within walking distance.

TOURISM

People will come from around the world to experience JPods. Time and money saved will be spent on more shopping, dining, and entertainment.

OPERATING COSTS

JPods are 10X less expensive to operate than cars, 25X less than trains, and 50X less than buses.

CAPITAL COSTS

JPods typically cost about \$20 million per mile versus \$50 million to \$1 billion per mile for light rail. JPods construction is privately funded.

SAFETY

JPods networks comply with the ASTM-International F24 standards. This standard provides a 3,000 times better safety record than roads.

PERSONAL

JPods are personal, you do not ride with strangers.

NOISE

Removes the engine and road noise associated with cars and trucks on roads.

NO WAITING

No waiting at bus stops. JPods wait for people.


Scorecard of alternatives.

	More Personal Cars	More Rental Cars	More Ride Services	Light Rail	Buses	Gondola	JPods
Safety (Grade-Separated)	●	●	●	●	●	●	●
Energy Efficiency	●	●	●	●	●	●	●
Solar Powered	●	●	●	●	●	●	●
Privacy /Security	●	●	●	●	●	●	●
Contagion Suppression	●	●	●	●	●	●	●
Access (Frequent Stations)	●	●	●	●	●	●	●
Travel Time (Wait +Travel)	●	●	●	●	●	●	●
Congestion	●	●	●	●	●	●	●
Boarding Ease	●	●	●	●	●	●	●
Station Cost	●	●	●	●	●	●	●
System Cost	●	●	●	●	●	●	●
Land Use	●	●	●	●	●	●	●
Overall (Scale of 10)	5.0	5.0	4.2	1.7	1.7	6.3	10.0



Your Experience

YOUR RIDE

 Your ticket is your JPods App on your phone, a prepaid card, or your finger-recognition.

The JPods App lets you know the travel and arrival times for trips.

When you walk into a station, JPods are waiting for you. As you approach a JPods your phone is chatting with the vehicle. It opens for you. As soon as you are settled in, you ride non-stop to your destination.

There is lots of headroom and foot room. You can bring your bike. If you are in a wheelchair, the vehicle will lock your wheels for you.

JPods stations are radically different from bus and train stations. Bus and train stations force people to wait for machines. JPods networks adapt to demand so machines are waiting for people. As a vehicle leaves, it is replaced by a vehicle waiting for the next person or family.



TRAVELING IN YOUR JPODS

Your time is your own while you travel:

- You select the heating and air conditioning choices.
- You select if you wish to connect to the on-board Wi-Fi.
- You select if you wish to use your phone, voice, and/or the on-board computer during your ride.
- Unlike being forced to watch advertising on buses and trains, unless you request it, there is no advertising. It is your choice with credits being applied directly to your account.

During your trip you can ask the JPods team for information about your trip, or other interests.

You can speak to JPods in your language.

If a you want to change your destination en route, want to get off, or have any emergency, you can use voice command, App, or Emergency Call Button on the computer screen to make adjustments or connect to a system operator.

In an emergency, our team will keep you company via the on-board computer screen until the issue is resolved.

You may not notice at first, but riding in a JPods vehicle is quiet. The grade-separated steel guideway and specially designed wheel minimize noise. Gone are road noises of riding in a car. Gone are potholes in the road and horns of stressed drivers.

You are alerted as you approach your destination. You might note that the trip was much quicker than a car, bus, or train.

As your JPods vehicle stops at your station, there is no loudspeaker blaring "mind the gap." There is no gap. The opening of the vehicle is aligned within 1/2 of an inch of the floor of the station. This facilitates safety and easy access by wheelchairs and baby strollers.



THE SYSTEM ELEMENTS

JPods are personal, just like your private car.

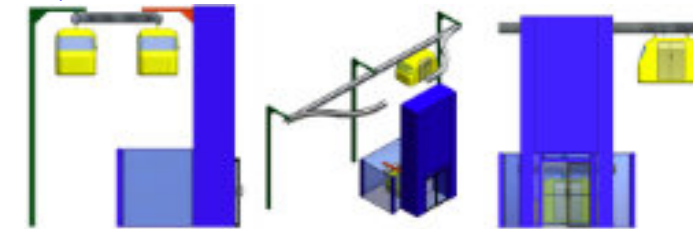
You get in JPods at a station where one is waiting for you. Once in, the JPods vehicle merges onto the traveling guideways to take you non-stop to your destination. It knows how to get there.

Approaching your destination, your JPods exits the traveling guideway to the Station guideway, just like an automobile on a freeway.

The offline Stations can be built into a building or free-standing, depending on the best fit with a business or municipal need.

Illustrated below are example stations. Some lower vehicles. Other have an elevator, stairs, guardrails and other security and support features.

<https://vimeo.com/99893372>



Stations have multiple berths so passengers can more easily load and unload without lines or queuing.

Because JPods are like a chauffeured car, stations are small. It is highly likely in the future, many businesses and living complexes will have stations built directly into their buildings.

Temporary stations can be added to increase capacity during special events. Everything is tailored to provide immediate and on-demand mobility from origin to destination.

Stations can be as small as a couple of parking spaces.



Cargo

PACKETIZED CARGO

The 140,000 miles of freight railroads in the US move 40% of the freight between cities.

To a great extent, and with great added efficiency, this transport of cargo between cities has been packetized into standardized railroad and aircraft containers (McLean).



MIDDLE MILE™ MESS

Currently the Middle Mile™ transport is a messy batch process with repeated cross-loadings.

Once cargo is delivered by containers, it gets cross loaded one or more time to be transported from ports, airports, railheads, and warehouses to other warehouses to again be cross loaded and/or to the final retail outlet to serve customers.

Delays occur as each truck is loaded with multiple deliveries. Each oversized truck then incrementally stops to make multiple deliveries.



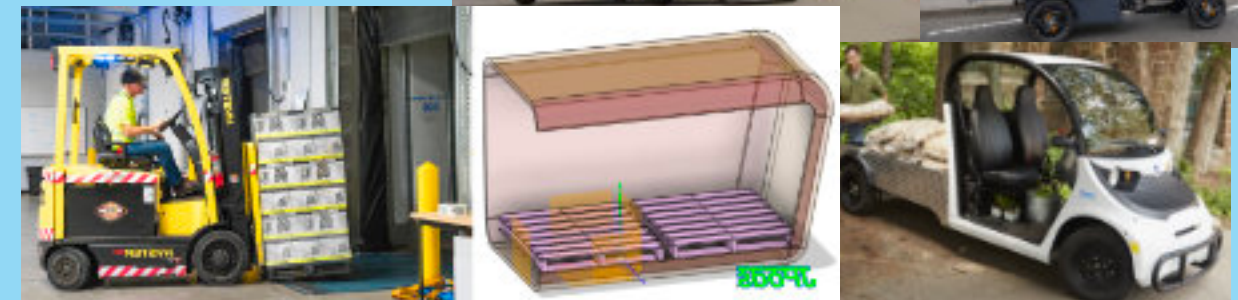
MIDDLE MILE SOLVED BY JPODS

JPods CargoPods™ reduce costs for Middle Mile™ transport by streaming cargo from railheads and airports to the neighborhood in packets.

We estimate that UPS, FedEx, Post Offices, grocery stores, and other neighborhood delivery points will pay to be connected to JPods stations.

There will similarly be local Ride-Hail supporting last-mile needs of people.

Middle Mile™
JPods stream cargo,
from railhead to neighborhood



Many options exercised Bottom-up by people



Mom and Pop stores within walking and biking will again become common. They are provided last-mile delivery by Local Use Vehicles (LUVs).
No more porch pirates; the entire internet can be pickup by you from a neighborhood store.



5X5 Standard

ACTION

States and cities are sovereign over "internal improvements." The 5X5 Standard was created to document that states and cities are correcting a Federal usurpation of their sovereignty since The Federal-Aid Highway Act of 1916. Traffic congestion is a local problem created by unconstitutional Top-down Federal plans.

BARRIER

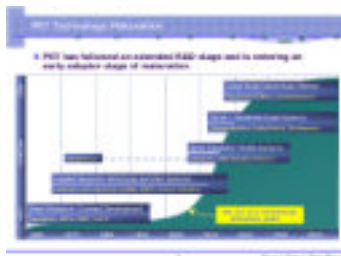
In 1975, Congressional Study PB-244854, "Automated Guideway Transit" documents innovation has been blocked for "four to six decades" because of regulations (page 41).

Once governments violate Constitutions by implementing mercantile monopolies it is very difficult to correct their Top-down plans. The problem is not the corrupt barriers of vested interests resisting changes. It is the nature and purpose of government to minimize war and crime by coercing compliance with law. Innovation is a compliance failure. Ref: *Crossing the Chasm* by Geoffrey Moore ([link](#)).

PROGRESS

Cities are leading on restoring liberty to innovate solutions to local traffic problems:

- Morgantown PRT's 2010 *Cost Benefit Analysis* documents the many benefits of the Morgantown PRT ([link](#)).
- Princeton University published a detailed plan for New Jersey ([link](#))
- The New Jersey Legislature passed a law requiring NJDOT to study PRT:
 - [Link to law.](#)
 - [Link to study.](#)
 - [Link to slide deck](#)
- Secaucus, NJ [passed the 5X5 Standard](#) but then NJDOT blocked crossing state highways, killing the funding which had been committed.
- Shaxian, China [signed the full franchise agreement](#) and is waiting for the US manufacturing base to be established.
- Macon, GA has [signed the full franchise agreement](#) but will not pass it until capital raised. Capital will not invest if the city is not committed.
- The North Central Texas Coalition of Governments [voted to allow cities of the DFW](#) area to request and build JPods, Transpod, and SwyftCities networks. Efforts are underway with cities to sign franchise agreements.
- Atoka, OK has [signed the 5X5 Standard Memorandum of Understanding \(MOU\)](#) to build a JPods network.



- Pending, [Massachusetts Legislature, S.2159](#), An Act relative to solar-powered mobility networks

STATES AND LOCAL GOVERNMENTS

State are sovereignty over "internal improvements" and approximate 34 specifically forbid the government transportation monopolies we have today.

Federalist #45 (Madison): "The powers delegated by the proposed Constitution to the federal government are few and defined. Those which are to remain in the State governments are numerous and indefinite. The former will be exercised principally on external objects, as war, peace, negotiation, and foreign commerce; with which last the power of taxation will, for the most part, be connected.

"The powers reserved to the several States will extend to all the objects which, in the ordinary course of affairs, concern the lives, liberties, and properties of the people, and the internal order, improvement, and prosperity of the State."

Arkansas: Article 2, Bill of Rights, 19. "Perpetuities and monopolies. Perpetuities and monopolies are contrary to the genius of a republic, and shall not be allowed; nor shall any hereditary emoluments, privileges or honors ever be granted or conferred in this State."

Georgia: Article I, Bill of Rights, Section VI, Paragraph V: "Shall not have the power to authorize any contract or agreement which may have the effect of or which is intended to have the effect of encouraging a monopoly, which is hereby declared to be unlawful and void."

Maryland: Article. 41. "That monopolies are odious, contrary to the spirit of a free government and the principles of commerce, and ought not to be suffered."

Massachusetts, Article 6: "No man, nor corporation, or association of men, have any other title to obtain advantages, or particular and exclusive privileges."

North Carolina: Article 1, Sec. 34. Perpetuities and monopolies. "Perpetuities and monopolies are contrary to the genius of a free state and shall not be allowed."

Oklahoma: Article II, Bill of Rights, SECTION II-32. "Perpetuities and monopolies are contrary to the genius of a free government, and shall never be allowed, nor shall the law of primogeniture or entailments ever be in force in this State."

Texas: Article 1, Bill of Rights, Sec. 26. PERPETUITIES AND MONOPOLIES; PRIMOGENITURE OR ENTAILMENTS. "Perpetuities and monopolies are contrary to the genius of a free government, and shall never be allowed, nor shall the law of primogeniture or entailments ever be in force in this State."

Wyoming: Art. 1, 30. Monopolies and perpetuities prohibited. "Perpetuities and monopolies are contrary to the genius of a free state, and shall not be allowed."

REGULATORY CERTAINTY

The 5X5 Standard does for transportation what the courts did for communications in 1982. Technically, no new regulation is required. Constitutions requires free markets. However, as with the Internet, few will invest without knowing government will honor constitutions. The 5X5 Standard is a means to affirm constitutions.

Federalist #62 (Madison): "What prudent merchant will hazard his fortunes in any new branch of commerce when he knows not but that his plans may be rendered unlawful before they can be executed? What farmer or manufacturer will lay himself out for the encouragement given to any particular cultivation or establishment, when he can have no assurance that his preparatory labors and advances will not render him a victim to an inconstant government? In a word, no great improvement or laudable enterprise can go forward which requires the auspices of a steady system of national policy."



5X5 STANDARD

WhereAs:

1. Mobility is physical liberty. Access to mobility should be equitable and sustainable.
2. Traffic congestion, pollution, and rising gasoline prices require liberty to innovate solutions.
3. The Boston Tea Party was a demonstration against a government transportation monopoly that triggered a war. To prevent Federal monopolies the US Constitution enumerates a limit of "post Roads" with "No Preference" in the facilities of commerce of one state over another; and,
4. (Example citing of state constitution) The Oklahoma Constitution forbids transportation and other monopolies: Article II, Bill of Rights, SECTION II-32. "Perpetuities and monopolies are contrary to the genius of a free government, and shall never be allowed, nor shall the law of primogeniture or entailments ever be in force in this State."

Therefore:

The FRANCHISE AGREEMENT implements a 5X5 Standard, restoring liberty to innovate transportation networks in free markets:

- Network construction must be privately funded.
- Networks operate without government subsidies.
- Networks must exceed 5 times the efficiency on existing roads (125 mpg or equivalent energy efficiency).
- Networks pay 5 percent of the gross transportation revenues to the aggregate rights-of-way holders.
- Networks exceed safety performance of transportation modes already approved for use in the Rights of Way.
- Networks (optional) gather more than 2 megawatt-hours of renewable energy per network mile per typical day.
- Governments will grant Rights of Way access using the existing Rights of Way policies for communications and energy networks.
- Governments will use existing state laws to regulate safety of grade-separated guideways. Networks must be designed, fabricated, installed, insured, and inspected in compliance with existing Oklahoma Department of Labor (generally ASTM International F24). This provides a 3,000X better safety record than roads.

JPODS SPECIFIC MOU FOR JPODS TO INVEST IN A CITY:

THIS MEMORANDUM OF UNDERSTANDING ("MOU") is entered into as of the _____, by and between the CITY OF _____, (CITY) and JPods LLC. (JPods), or assigns ("TBD"), each Party" and collectively the "Parties."

This MOU is intended to enumerate the general terms for the future FRANCHISE AGREEMENT ([link](#)) to implement JPods patent for solar-powered transportation networks. This MOU is non-binding on the Parties. Patent aspects:

- Grade-separated networks of self-driving cars: "A method of controlling a transportation System for moving people, freight, and any combination whereof using a distributed network of intelligent devices without requiring the aid of a human driver."
- Solar-powered mobility networks: "The method... providing... Solar and wind power generators integrated into the physical Structure of Said transportation System...."

(Insert the 5X5 Standard from above)

FULL FRANCHISE AGREEMENT:

This agreement is based on those currently used by cities for granting access to cell towers, communications, and energy networks ([link](#)).

ROI

We at JPods are working class people. We cannot afford anything that does not have a return on investment. We must justify each project to capital funding sources.

Lucky for us, JPods networks are competing against a Top-down highway monopoly put in place in 1916 that is 188 times less efficient than railroads. JPods provide multiple 10X ROI by approaching freight railroads efficiencies and achieving theme park safety.

START WITH WHAT IS KNOWN

At JPods we start by focusing on what we know can be achieved:

- The 140,000 miles of freight railroads are 188 times more efficient than roads. They average 470 ton-mpg while we move a 200 pound person at 25 mpg on roads. Note that Top-down Federal planners replaced 45% of railroads with roads since 1916. Roads are the primary driver of Climate Change.
- 3,000 times better safety record is required to comply with ASTM-International F24 standards. This is the standard used by most state governments to enforce safety on grade-separated thrill rides. Improving safety lowers costs.
- Average car costs about [\\$9,282/year](#) and is [parked 95% of the time](#).
- 85% of car costs drain out of the local economy.
- Traffic costs Americans approximately \$2.76 trillion/year. 69% of those costs are urban. So, the US urban transport market is \$1.9 trillion/year. Bikes and walking will likely replace 80% of trips less than 2 miles. Still, the market is very large with many niches, such as around airports having very high rates of return.
- [Study from Harvard](#) estimates the per car cost to the economy at \$14,000/year. Once free markets are restored, it will be easy to compete against the current level of waste.

LAND USE [\(LINK\)](#)

JPods networks will change real estate values just as railroads and transit have done.

- Each car is allocated about 2,642 square feet of real estate (% of lane-miles and 3.4 parking spaces, [link](#))
- Highways are profligate land use.



OPERATING COSTS [\(LINK\)](#)

In a car we are repeatedly accelerating and braking while moving 2-tons to move a person; mass transit moves 2-3 tons per person.

- Grade-separating the guideway by building above roads and automating with robots simplifies the ability to move people and cargo non-stop from origin to destination.
- Grade-separation simplifies the technology and preempts most safety problems experienced on roads.
- Suspending the vehicle from the guideway removes 75% of the Parasitic Mass. Replace the 2-ton car with a 500 pound pod.

Removing repetitive start-stop and cutting the mass 75% reduces cost per passenger-mile to nearly freight railroad efficiencies in cities.

Efficiencies provide 10-50X lower operating costs.

CARGO COSTS

JPods networks cannot provide last-mile. But no other form of urban transportation can match the low operating cost of JPods' Middle Mile™ delivery between warehouses and neighborhoods. Cargo can be sorted at warehouses before being streamed to neighborhoods.



CAPITAL COSTS

Driving down the vehicle mass constrains capital costs:

- Light rail averages \$202 million/mile in the US [\(link\)](#).
- Urban roads cost \$8-10 million/mile. This does not include the capital cost of the car nor that cars are parked 95% of the time. A typical \$1 billion suburban JPods network would replace \$1.3 billion in cars and save \$120 million/year in gasoline costs (7-10 year payback). This is a mesh network of 1-2 miles between guideways.
- JPods cost \$20 million/mile and are privately funded. Example costs:
 - Stations with elevator, 1-2 each mile at \$2 million each.
 - Piers, 33.3, \$47,000.
 - Truss, 33.3, \$130,000.
 - Pods, 12, \$18,000.
 - Solar, 4 meters wide, \$1.7 million.
 - ...Construction and other costs.

HEALTH [\(LINK\)](#)

- In 1969 48% of children walked to school. This has dropped to 11% [\(link\)](#). Children who bike to school are 22 times more likely to be injured by a car.
- Obesity in children increased 500% since 1963 [\(link\)](#).
- Roads is the leading cause of death Americans between 1 and 54 years old [\(CDC link\)](#).
- These are just a few examples of vast health costs caused by Top-down highway designs.

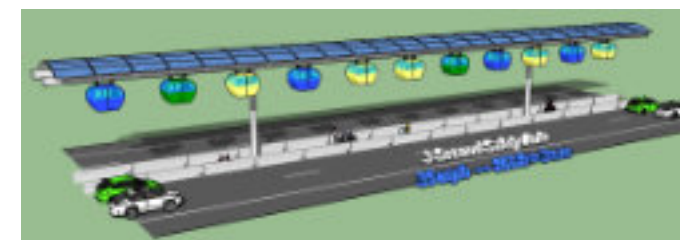
CAPACITY

What is most important to the Prime Law of Networks is the number of interconnected nodes. Number and proximity of stations and frequency of availability drive quality of service. But this is not how mass transit network capacities are usually compared.

Because passenger loads vary radically by time to time and by location, for comparison, we use seats per hour:

- Trains with 1,000 seats every 6 minutes move 10,000 seats per hour. In the middle of the night most seats are empty, or they are shut down.
- Buses with 50 seats every 5 minutes move 600 seats per hour. Buses have the same defect of having to cut service or move with empty seats.
- Cars with 4 seats and 3 seconds between cars move 4,800 seats per lane per hour.
- JPods with 4 seats and .5 second between pods (6 meters between vehicles, 20 feet) move 28,800 seats per hour.

Paybacks are generated by JPods high capacity, personal on-demand service, not moving empty seats when there is no demand, and 24x7 service.



CO2 SAVINGS

Europe cut oil use by 60% below the US between 1973-1988 using bikes, walking, and transit. A \$1 billion JPods network servicing a city with 100,000 cars, roughly, Macon, GA, can achieve the same outcome in 6 years. Following is summary of current costs and savings.

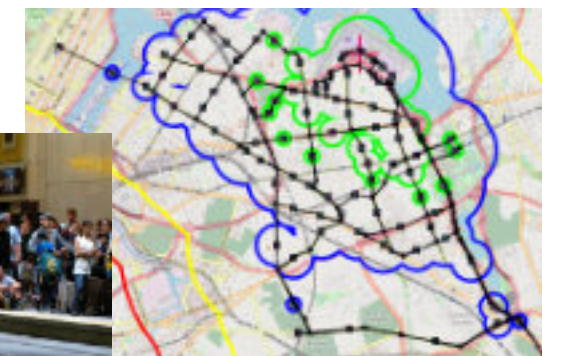
100,000	Cars in Network
\$28,000	Car Value (link)
\$2,800,000,000	Car capital value
\$648	New Car Payment per month (link)
\$503	Used Car Payment per month (link)
0.80	Capital savings factor
13,476	mile per year per car (link)
1,347,600,000	mile per year
24.9	miles per gallon (link)
54,120,482	gallons of gas
19.6	pound CO2 per gallon (link)
1,059,679,036	pounds of CO2
2,205	pounds per metric ton
480,663	metric tons of CO2 per year
0.79	pounds of CO2 per car mile
\$3.758	Gasoline \$/gal
\$2.49	2020, Carbon Credit price per ton (link)

	Change car-miles	CO2 Savings in tons	Carbon Credits	Gasoline savings	Capital savings
10%	134,760,000	48,066	\$119,685	\$20,338,477	\$224,000,000
20%	269,520,000	96,133	\$239,370	\$40,676,954	\$448,000,000
30%	404,280,000	144,199	\$359,055	\$61,015,431	\$672,000,000
40%	539,040,000	192,265	\$478,740	\$81,353,908	\$896,000,000
50%	673,800,000	240,331	\$598,425	\$101,692,386	\$1,120,000,000
60%	808,560,000	288,398	\$718,110	\$122,030,863	\$1,344,000,000
70%	943,320,000	336,464	\$837,795	\$142,369,340	\$1,568,000,000
80%	1,078,080,000	384,530	\$957,480	\$162,707,817	\$1,792,000,000

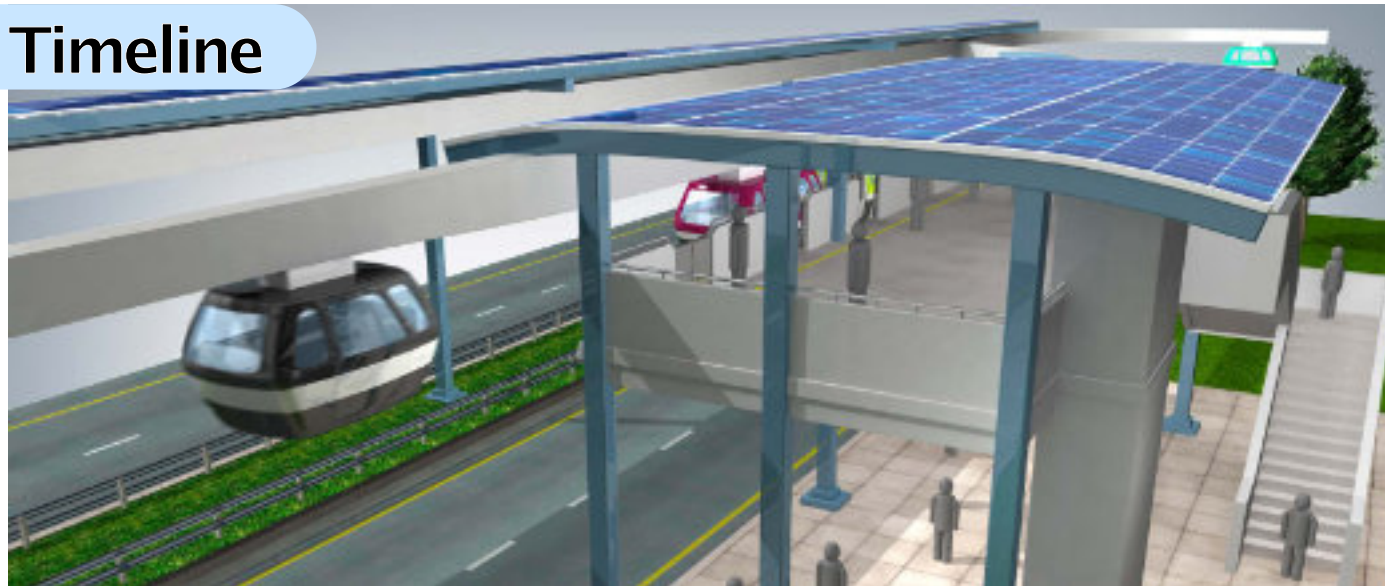
TIME

People in major U.S. cities wait approximately 40 minutes per day for public transit, costing them 150 hours per year, according to a new report by leading public transit app Moovit. This accounts for 31% of their commute time [\(link\)](#).

No waiting, JPods networks provide on-demand, personal service. The ability to carry bikes and scooters in the pod facilitates last-mile mobility. This quality of service and ability to integrate with micro-mobility reduces the miles of guideways required while still providing a high quality of service.



Timeline



INITIAL BUILD

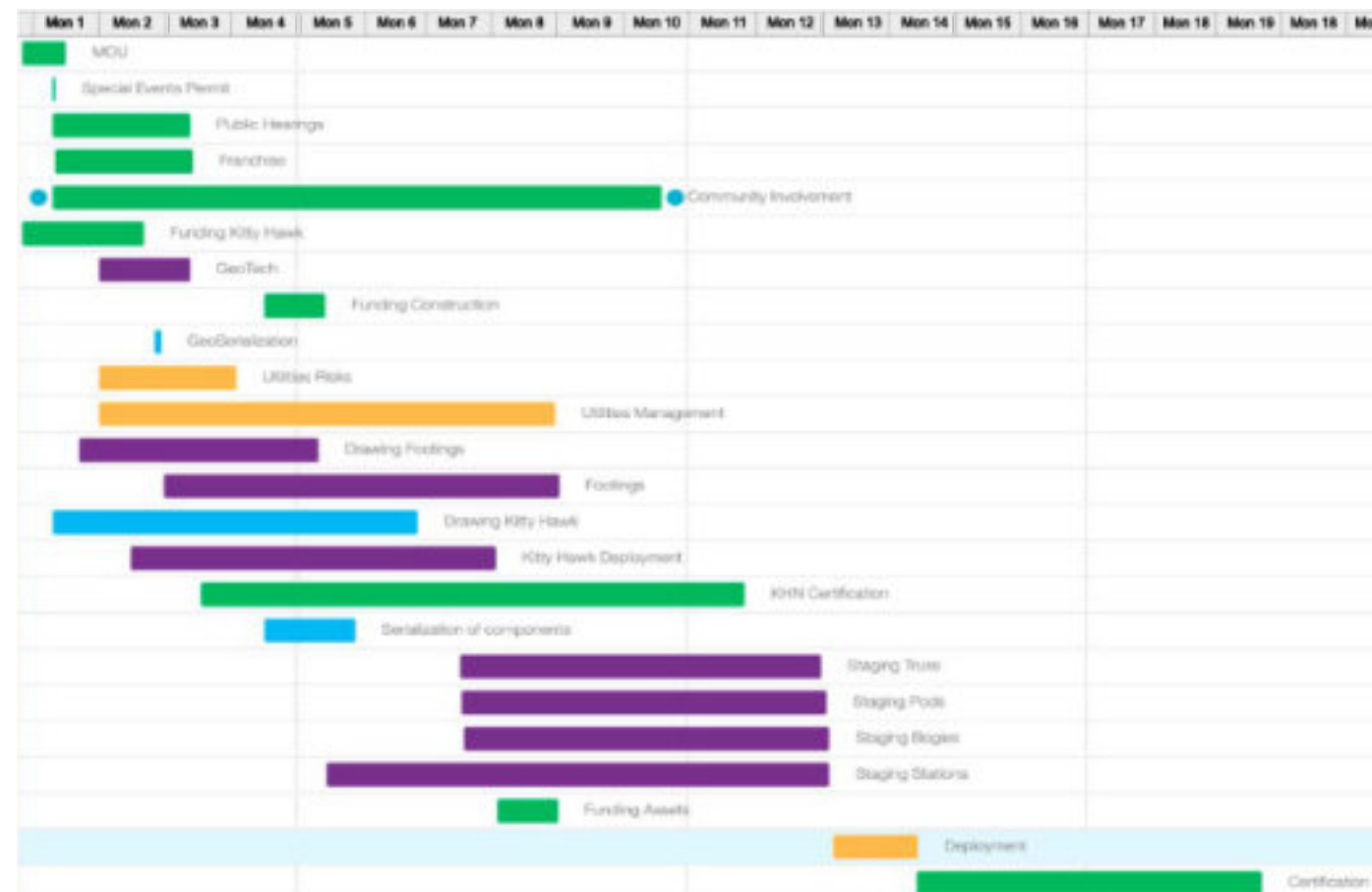
There is a need to organize and ramp up the supply chain. The initial build will take about 18 months under normal costs. This can be accelerated at additional costs.

As the supply chains come up to speed, network construction will take about 9 months from survey to certification. Crews building the Transcontinental Railroads in the 1860s were thousands strong spread over a similar 9 month and moving at about 3 to 10 miles

per day. The railroads had 2 crews. JPods will have many crews.

Between building JPods networks and JPods networks making it safe to walk and bike, US oil use in cities can be cut by 60% in 6 years.

Climate Change objectives can be achieved while cutting costs by 10X. Solving Climate Change is less expensive than the unconstitutional, oil-powered Federal Highway monopoly. Pollution is lost profits.

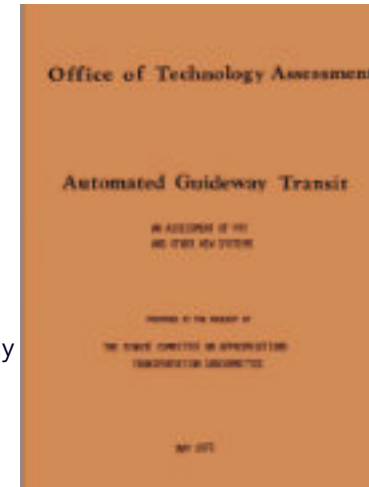


KNOWN COST OF REGULATION

Following the 1973 Oil Embargo Congress initiated a study for solutions, PB-244854, "Automated Guideway Transit."

As its name implies, it found that:

- Automated guideway transit networks such as the Morgantown PRT were the solution to both urban traffic problems and the hardships of the Oil Embargo.
- "Proponents of PRT view this concept as a reasonable supplement to the private automobile in high density urban areas and claim that PRT can provide a very much higher level of service than other modes of public transportation. Thus, it is argued that PRT systems would attract a significant percentage of the rides now being made in private automobiles and offer obvious benefits."
- "institutional failures" blocked urban transportation innovation for "four to six decades (aside from some relatively minor cosmetic changes)... Compared with many other areas of entrepreneurial endeavor, the environment for innovation in transportation should be favorable. Urban transportation needs are extensive... In retrospect, the new systems efforts have served not to stimulate interest in new technology but to discourage already reluctant local transit operators from considering it."



TRAFFIC

Traffic and energy issues cited in this 1975 study are the same traffic and energy issues we face today. Federal "institutional failures" caused a century with the 25 mpg efficiency of the Model-T.

BREAKING REGULATORY BARRIERS

State regulations for grade-separated rides (ASTM F24) provide a known cost of regulating, existing insurance industry, existing enforcement agencies, existing inspection industry, and a safety record 3,000 times better than roads.

Regulating safety using this standard is fundable. Rights of Way regulations for cell towers and other networks that serve the public good are used.

NEW TAX REVENUE SOURCE

As with communications networks, Networks pay 5% of gross revenues for non-exclusive use of Rights of Ways granted. As 50% car traffic is replaced by JPods, for every 100,000 cars a new source of local government revenues of \$12-22 million/year is expected to evolve.

Private Funding



FUNDING AND CONSTRUCTION PROCESS

Pods funding of projects is very similar to houses and hotels. Construction funds are used by construction companies to build. The certified guideways are then sold to operating companies to service customers. There are four basic steps in this funding cycle:

1. Define a project and the Franchise Agreement for Rights of Way and safety certification.
2. The construction company, JPods Mobility Company, builds the network.
3. JPods LLC certifies the operational networks complying with defined regulations.
4. The Local Mobility Company® buys and operates the certified networks (local ownership).

Praetor Capital in 2021, [estimated the PRT industry capital value at \\$31-58 billion.](#)

Goldman Sachs provided a Letter of Interest for funding JPods networks. Each project must justify itself.



This letter is for informational purposes only. It does not constitute a contract or any other financial instrument. It is not intended to be used as a basis for any investment decision. It is not intended to be used as a basis for any investment decision. It is not intended to be used as a basis for any investment decision. It is not intended to be used as a basis for any investment decision.

March 28, 2019

Mr. Bill Jones and Mr. Charles Fletcher
JPods, LLC
1470 E. 68th St.
Tulsa, OK 74128

Dear Mr. Jones and Mr. Fletcher,

In connection with JPods, LLC ("JPods") proposed development of the Georgia Mobility Project (the "Project"), this highly interest letter is intended to certify the interest of one or more funds managed by Goldman Sachs Asset Management Private Credit Group ("GSAM PCG"), in providing financing of to support the Project.

Based on our discussions to date and subject to further due diligence and negotiation of definitive documents, GSAM PCG is interested in providing the financing to support the Project.

We look forward to learning more about the Project as the process develops.

Best,

Goldman Sachs Asset Management Private Credit Group

By: _____

Name: David Yu
Title: Managing Director

10X Benefits

A paradigm shift requires a 10 times benefit, "10X."
Benefits greater than 10X are generally listed as 10X.

Costs	Cars/Mass Transit	JPods	Times	Background
Capital, light rail	\$202	\$20	10X	\$million per mile to build light rail verses JPods
Car costs	\$9,282/year	0	10X	JPods provide Mobility As a Service.
Operating, \$/mile	\$0.72	.04¢	10X	
Traffic accident costs/American/year	\$1,035	\$0.00	10X	<u>Morgantown's PRT has had no serious injuries in 50 years. Roads have 2.2 million serious injuries per year.</u>
Injuries/million people/year	11,200	3.7	10X	Injury count compares roads regulated by US DOT and grade-separated rides regulated by states (ASTM-International F24).
Drain on economy	85%	15%	5X	Source: Walkable City identified that 85% of money spent on cars leaves the local economy
Parasitic Energy Ratio (PER)	140	6	10X	Burning energy moving two tons to move a person is the Root Cause of Climate Change and oil-wars. PER is a ratio of the Moving Mass divided by Payload Mass times the applications of power (start-stops). It is not a precise metric, but an easily calculated ratio.
Capacity, Cars	4800	28,000	6X	*4 seats every 3 sec for cars and .5 sec for JPods
Capacity, Bus	600	28,000	10X	*Bus 5 minutes apart with 50 seats verses JPods
Capacity, Trains	10,000	28,000	3X	*Trains 6 min apart with 1,000 seats verses JPods
Equity				
Access	Own a car	Everyone	10X	
Environmental				
Pollution per passenger-mile	avg .5 pound	0	10X	Reduction to zero from about .5 pounds of CO2 per passenger-mile by cars, buses, and trains.
Land Use	2,642	29	10X	Square feet per vehicle.
Security				
Oil-wars	\$8 trillion	0	10X	Iraq and Afghanistan Wars
Trade Deficit	\$861 billion	Exporter	10X	2006 Trade Deficit for cars and oil
Threat to dollar	Root Cause	0	10X	Foreign oil addiction weakens the dollar
Peak Oil	Root Cause	0	10X	US Peak Oil was in 1970
Climate Change	Root Cause	0	10X	Mobility within a solar budget



Conclusion

PROBLEM: CIVILIZATION KILLERS

Life requires energy. Affordable oil is ending. Civilizations collapse exponentially when the energy powering them destabilizes the Upside-down nature of the economy.



END OF AFFORDABLE OIL

US Peak Oil was in 1970. Since Peak Oil, oil prices have destabilized. The banking collapse of 2008 is repeating. Dallas Fed's 2022 survey on the future supply of oil ([link](#)) indicates that unaffordable oil will return in 2024.

MERCANTILE MONOPOLY - CLIMATE CHANGE

Unconstitutional Top-down Federal highway policies:

- Created the sprawled road designs that make American cities unwalkable and kill pedestrians at 4 times the rate in Europe.
- Created the profligate consumption of oil, foreign oil addiction, and mandates oil-wars.
- Created \$33 trillion in Federal debt.
- NASA identified highways as the current primary driver of Climate Change ([link](#)).

CHANGING WORLD ORDER

Federal empire policies required for oil-powered highways is repeating the collapse of empire pattern as explained by Ray Dalio in his book *Changing World Order* ([link](#)).

SOLUTIONS

Restore Bottom-up liberty to innovate the general welfare.

Mobility is physical liberty, the ability to go where you want, when you want regardless of age, ability or wealth.

Mobility must be sustainable and equitable.

RESTORE BOTTOM-UP FREE MARKETS

Cities and states are sovereign over "internal improvements." Adopting 5X5 Standard allows privately funded transport networks 5 times more efficient than roads to compete with road for 5% of gross revenues.

6 YEAR OBJECTIVE

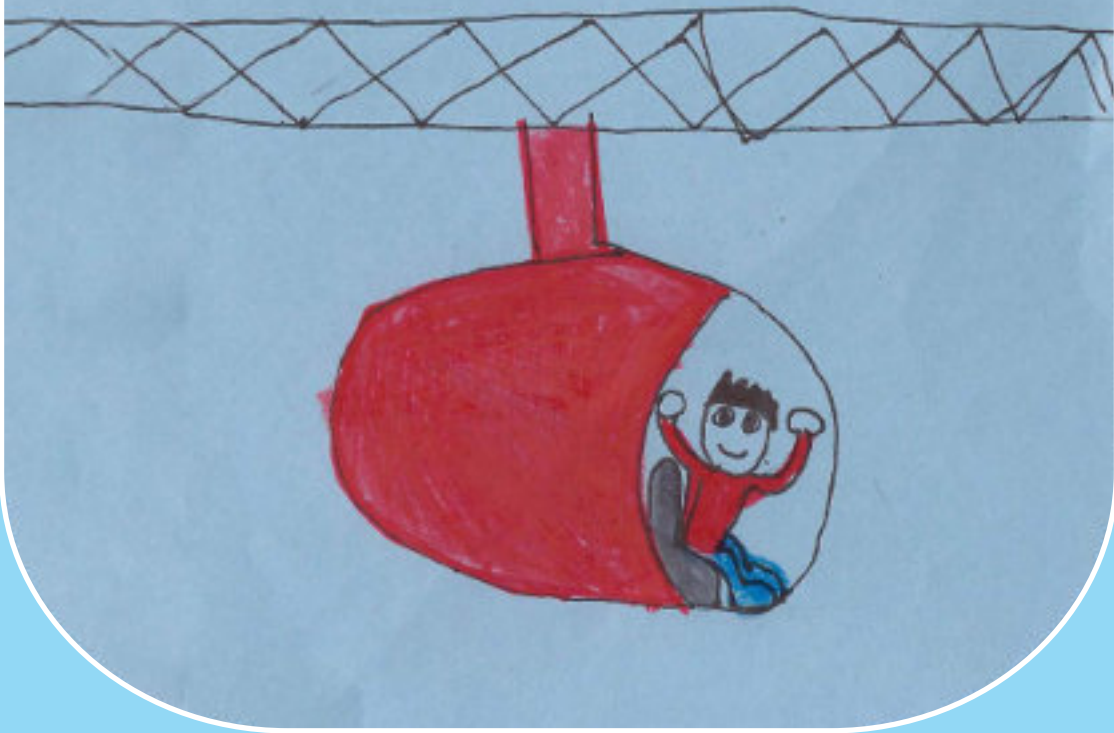
- A 60% reduction in car-miles by a combination of riding in JPods, walking and biking.
- A 60% reduction in transportation costs.
- A 400% improvement in pedestrian safety.

10X BENEFITS

- It is 10 times less expensive to solar-power urban transportation networks.
- Private funding will pay for retooling.
- Cleaner, faster, safer, affordable.
- 24x7 Service.
- Personal, on-demand.
- Energy security.
- Walkable communities.



Thank you!



WWW.JPODS.COM

JPods

Unhappy with traffic?

Look at what we are doing and provide your improvements, corrections, and/or alternatives.

Bill James

612.414.4211

Bill.james@jPods.com