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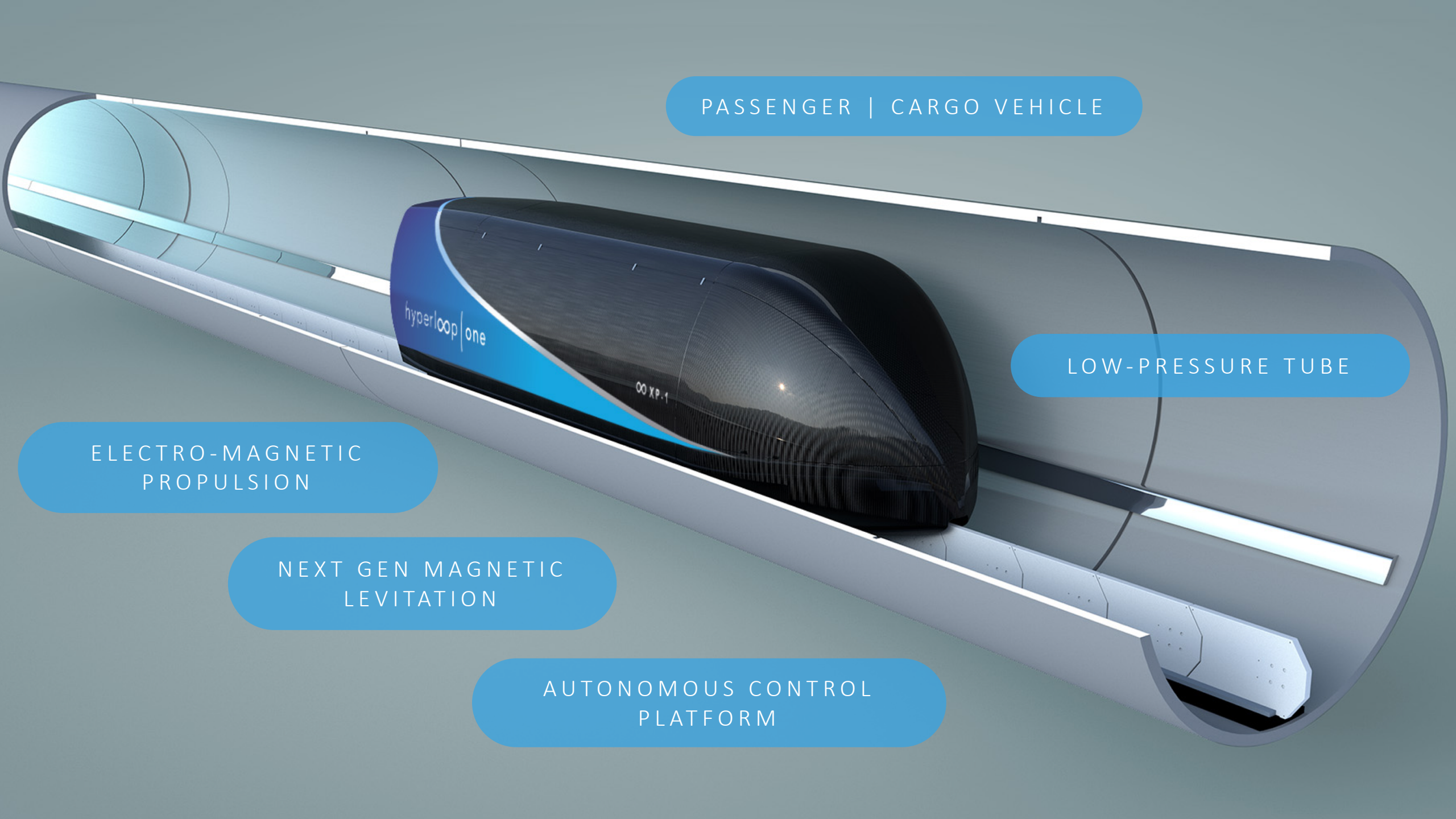
Mid-Ohio Regional Planning Commission

Rapid Speed Transportation Initiative

An update on the Midwest Connect Corridor Studies

ARTBA Central Region Meeting
November 8, 2018


PASSENGER | CARGO VEHICLE
LOW-PRESSURE TUBE
ELECTRO-MAGNETIC PROPULSION
NEXT GEN MAGNETIC LEVITATION
AUTONOMOUS CONTROL PLATFORM
hyperloop one
XP-1

GLOBAL CHALLENGE
WINNING ROUTE

US | CHICAGO-COLUMBUS-PITTSBURGH

TEAM: MIDWEST CONNECT

Total Length: 785 km Total Duration: 47 min

hyperloop one

Hyperloop Primer

Hyperloop Explained:
https://hyperloop-one.com/hyperloop-explained

Hyperloop Test Track Tour:

https://www.youtube.com/watch?v=mJk-ajPSv0M

Virgin Hyperloop One Global Challenge Winner


Virgin
hyperloop one


hyperloop one
∞ XP-1

Connecting the Midwest Megaregion

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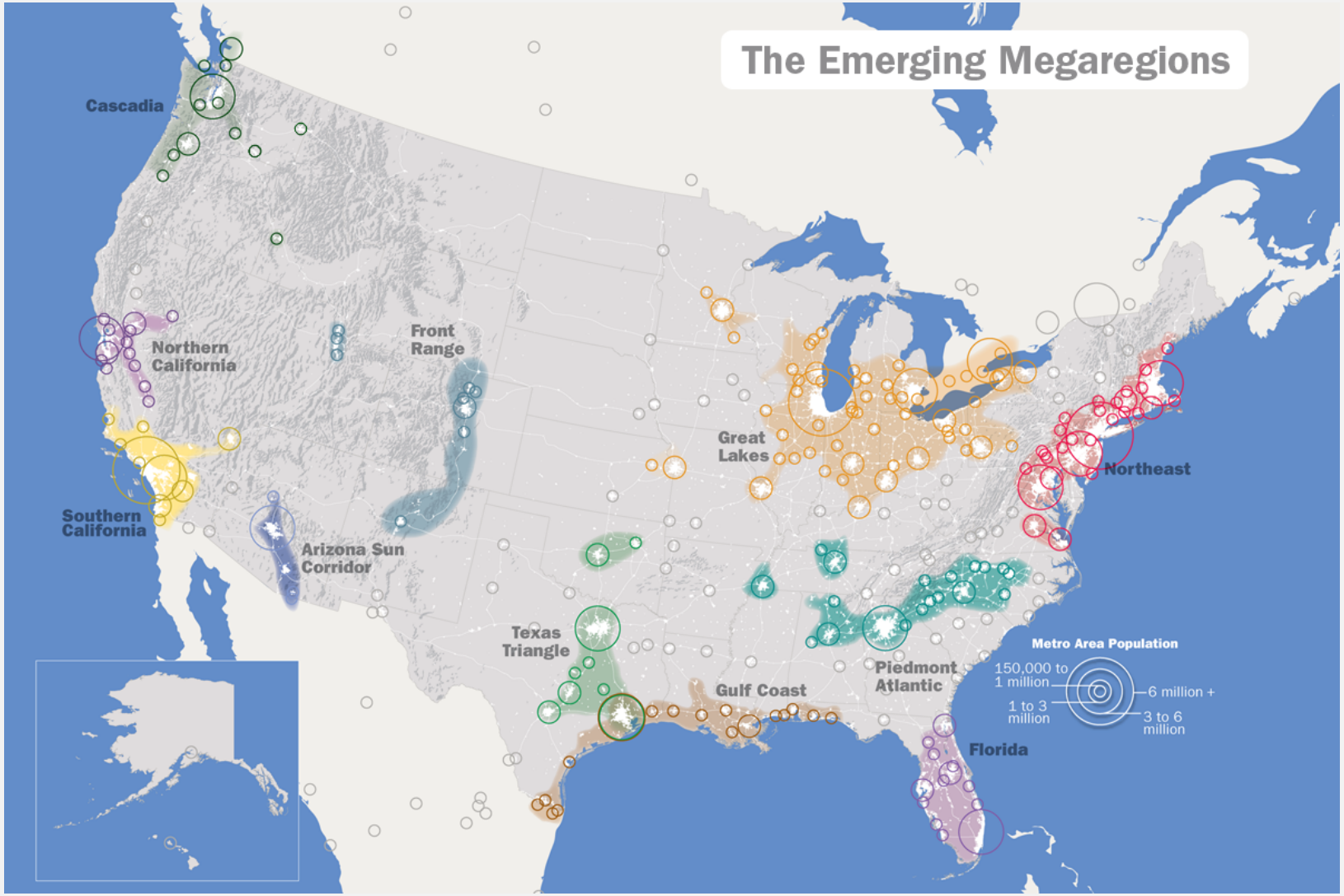

MIDWEST CONNECT
hyperloop

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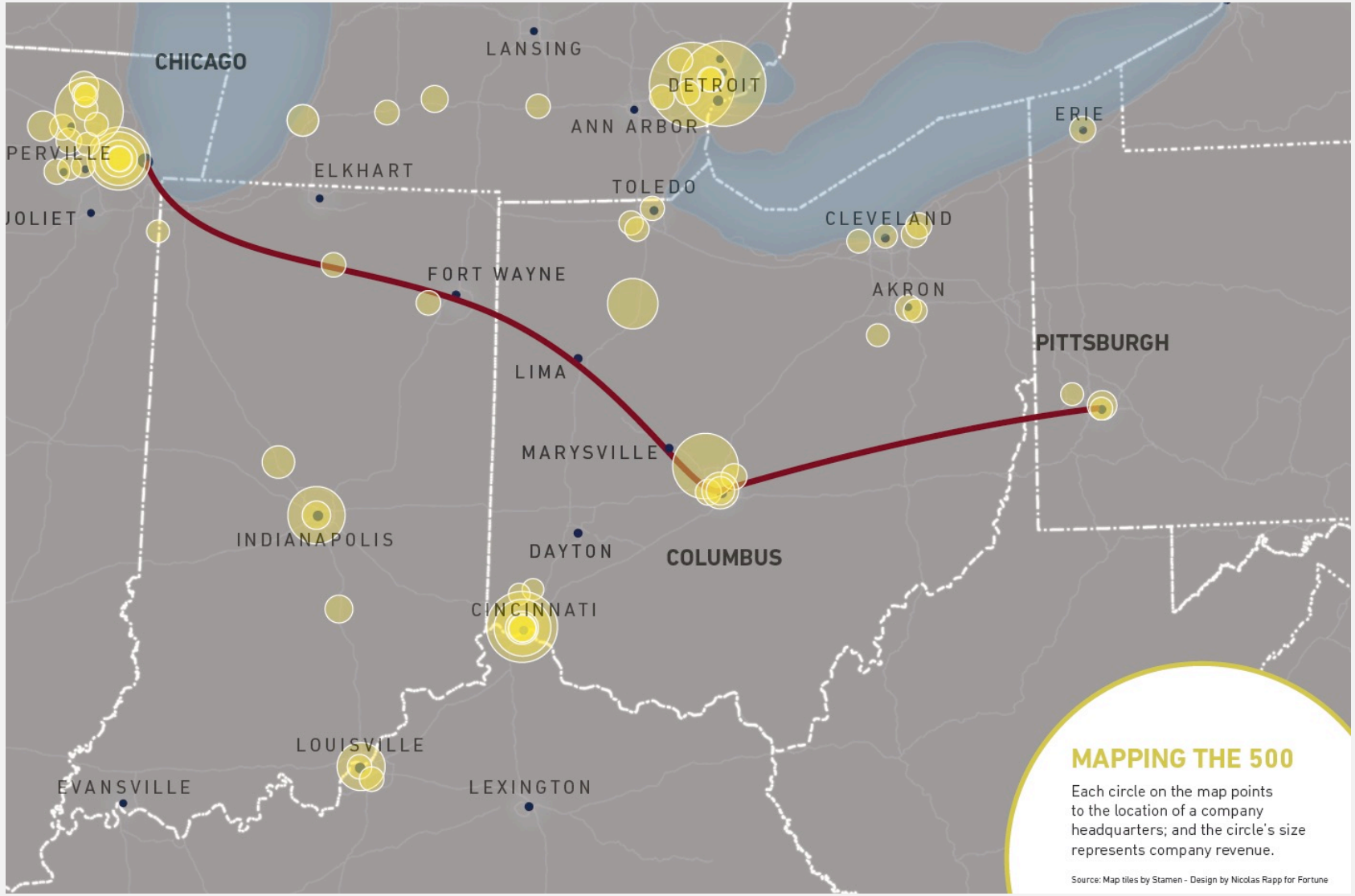
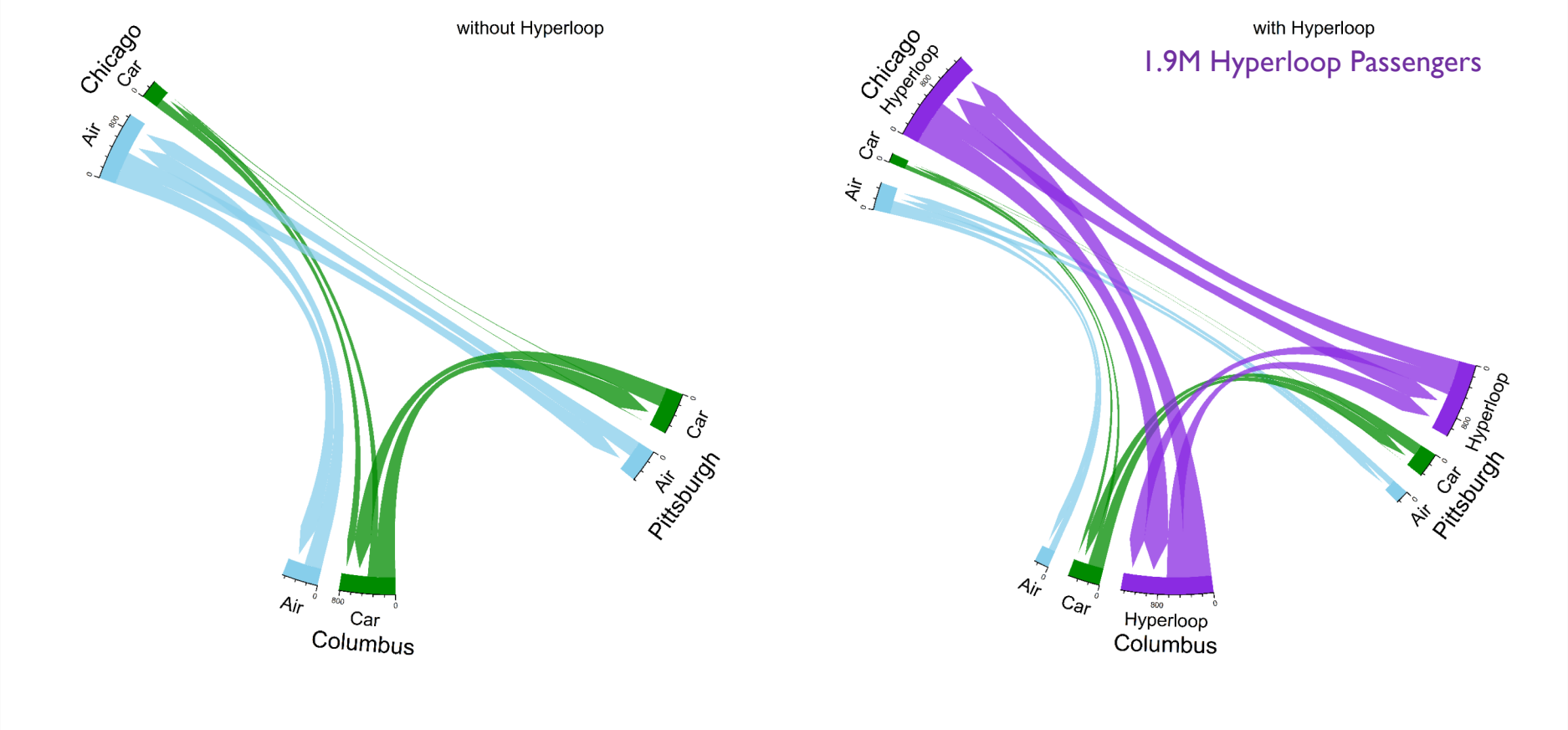


Nationwide
United Airlines
MARATHON
Walgreens
Scotts
KraftHeinz
MOTOROLA
BOEING
McDonald's
Lbrands
Wendy's

PASSENGER FLOWS
2040, without & with Hyperloop

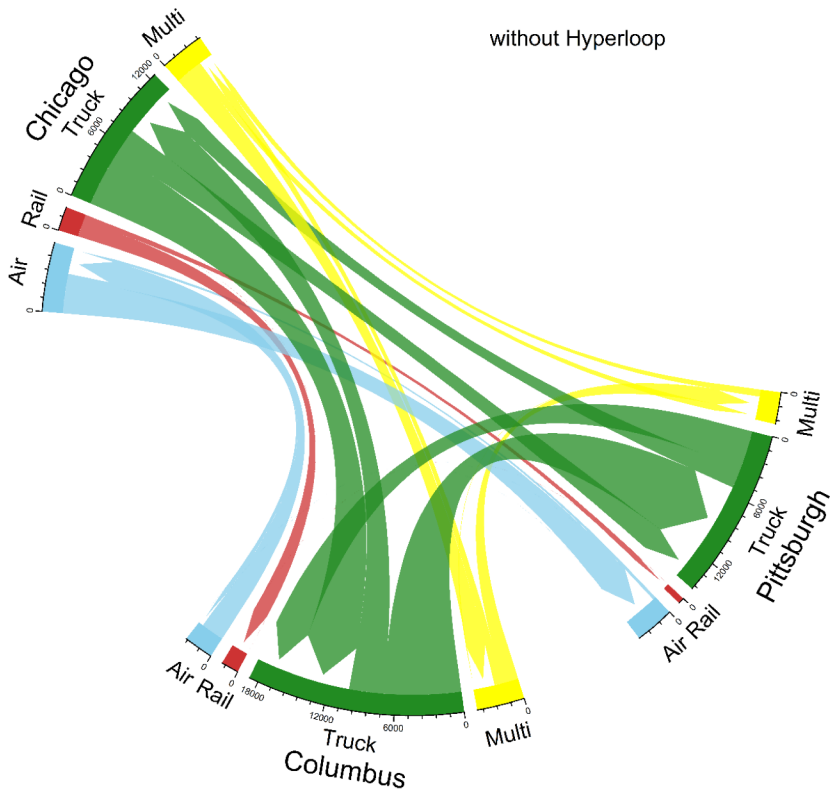
Car Air Hyperloop

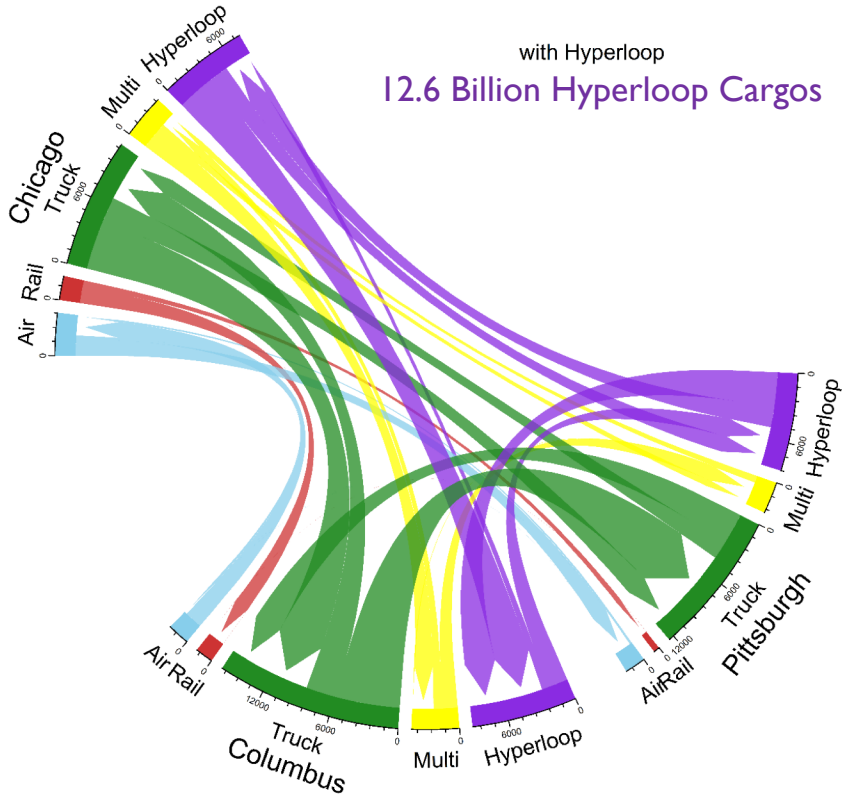


CARGO FLOWS

2040 by Value, without & with Hyperloop (million $)

Truck
Multi
Rail
Air
Hyperloop





Rapid Speed Transportation Initiative (RSTI)

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- **$2.5 million study of rapid-speed technology options (traditional passenger rail and hyperloop)**
- Chicago-Columbus-Pittsburgh corridor
- Two initial phases:
  1. Hyperloop Feasibility Study
  2. Components of Tier 1 Environmental Impact Statement *(first-of-its-kind)*
- Future phase: Two complete EIS projects
- Multiple public & private funding partners

RSTI Funding

Current Study Funders

- State of Ohio DOT
- City of Columbus
- City of Lima
- City of Dublin
- City of Marysville
- Union County
- MORPC
- ...more to come

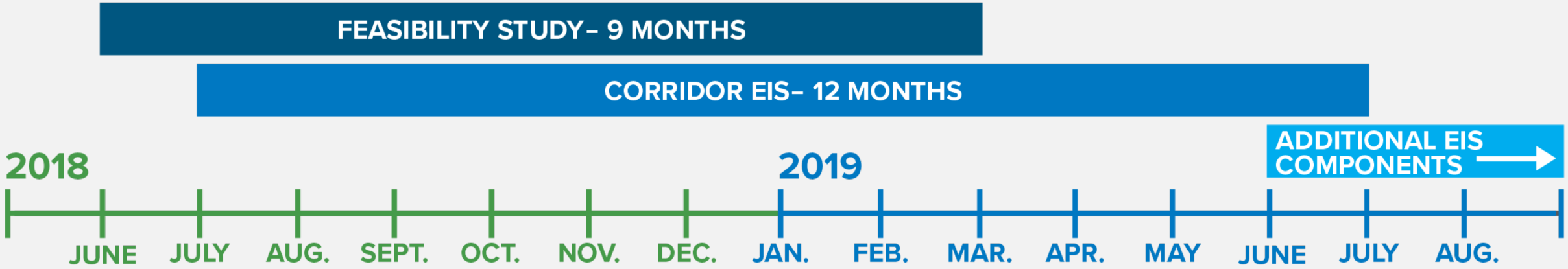
Hyperloop Feasibility Study

- Task 1 – Visioning and Technology Application
- Task 2 – Route Planning
- Task 3 – Transportation Demand and Economic Benefit Analysis
- Task 4 – Regulatory Framework and Implementation Strategy
- Project Management, Stakeholder, and Public Engagement

Components of Tier 1 EIS

- Task 1: Project Management
- Task 2: Preliminary Data Collection
- Task 3: Purpose and Need Statement
- Task 4: Route Alternatives
- Task 5: Service Alternatives
- Task 6: Infrastructure Investments
- Task 7: Public Involvement

RSTI Timeline



Fair Comparison of the Two Technologies

WHY?

- Set up the project to move forward towards IMPLEMENTATION
- Apples-to-Apples: don't want a "Monorail Solution"

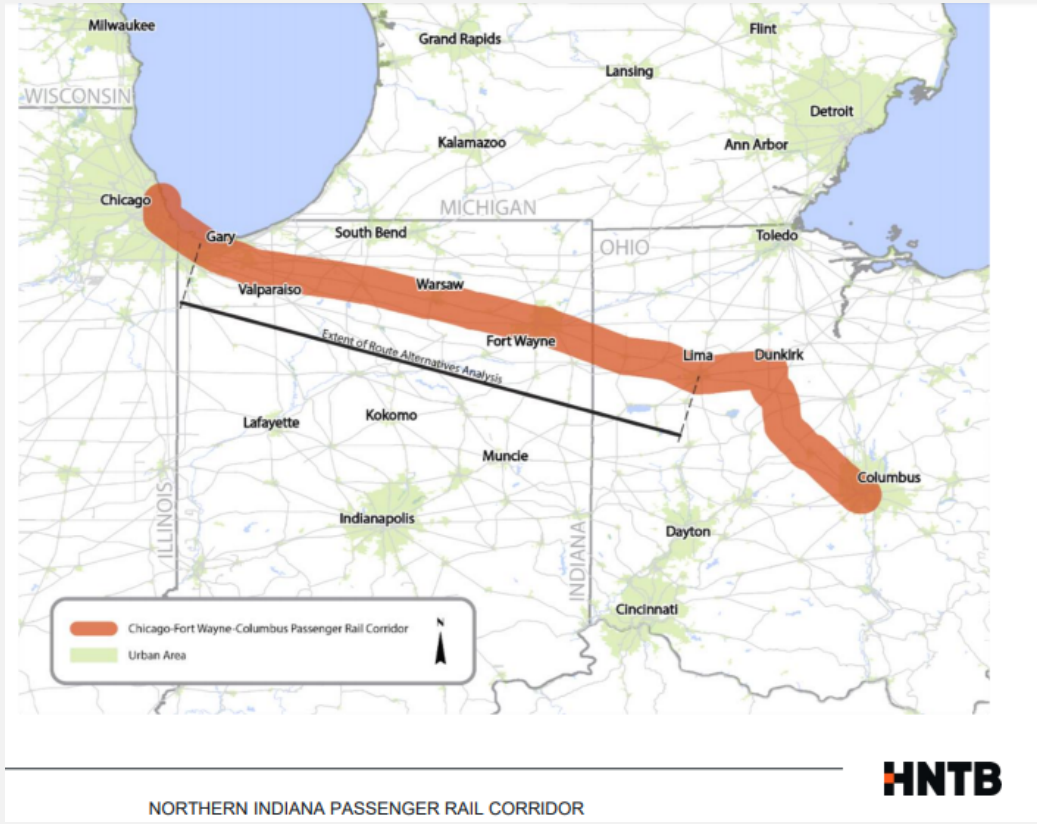
Fair Comparison of the Two Technologies

Items to be Considered:

- Right of Way Costs and Impacts
- Environmental Concerns / Impact Mitigation
- Station Costs and Impacts
- Rolling Stock Costs
- O&M Costs
- Operational equity:
  - How many trains per day? No wait times for Hyperloop?
  - How fast will the steel-wheel high-speed rail be assumed to travel?

Opportunities to Consider

- Where each type of technology makes the most sense
  - Gary – Lima pre-NEPA activities
- Differences in geography and terrain
- Progress made in other corridors – US and abroad

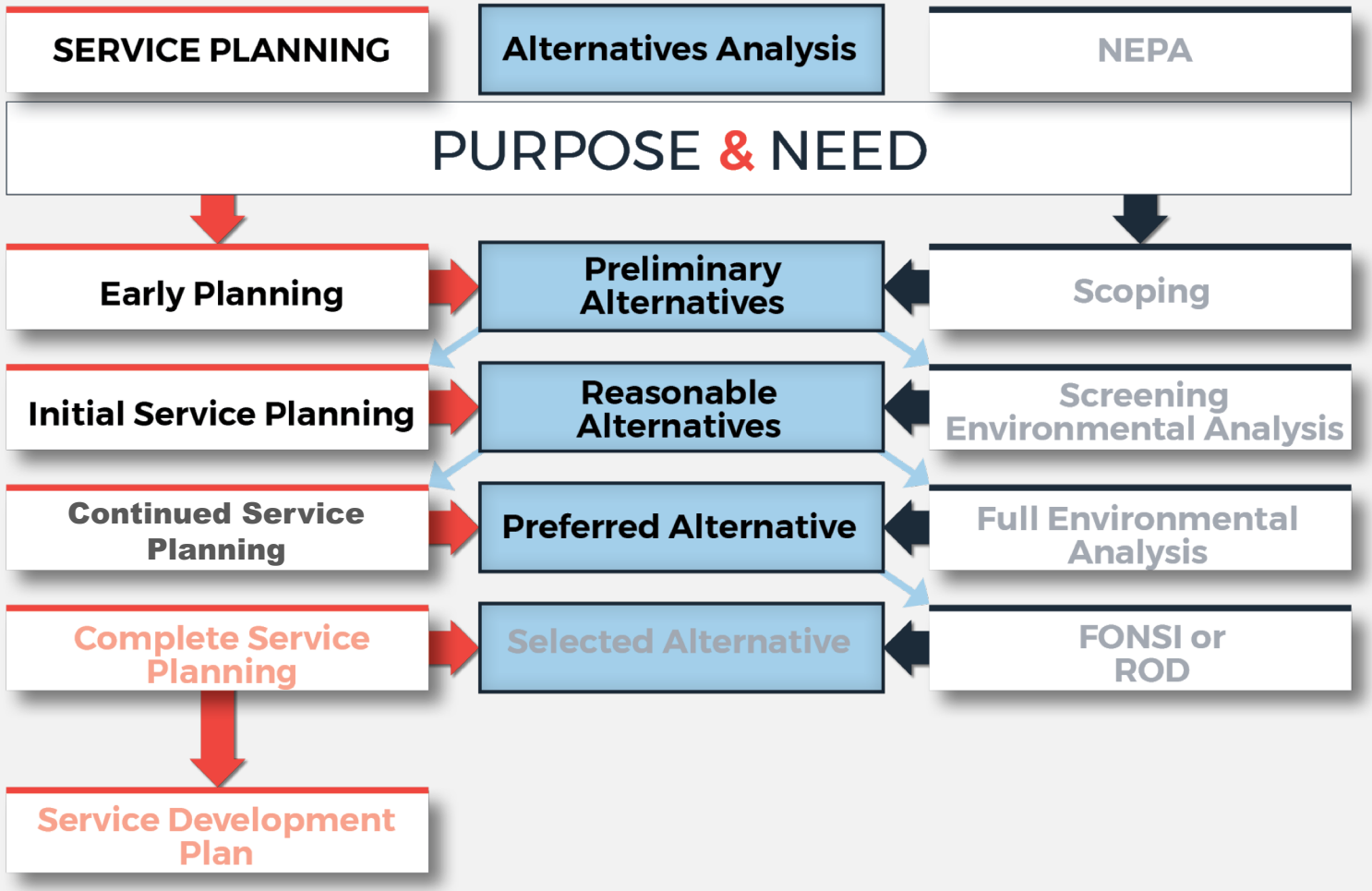


Possible Challenges

- **Safety and reliability** when dealing with factors such as very high speeds, power outages, capsule depressurization, and/or geological activity
- **Limited route flexibility** compared to other long distance travel modes; aircraft has the ability to change routes if there are geographic shifts in demand
- When considering **passenger comfort**, high travel speeds will limit curve radii and departure/arrival speeds
- **Limited capacity** compared to other long distance travel modes, which may limit potential to serve significant percentages of total intercity passenger or freight demand
- Obtaining **sufficient funding and acquiring necessary property/easements** to connect potential alignments between locations

Work in Progress

- Data collection
- Freight Railroad coordination
- Purpose & need
- Existing corridor capacity
- Route alternatives



Alternatives Identification and Service Planning

First Round of Analysis
– service-related inputs to coarse route screening

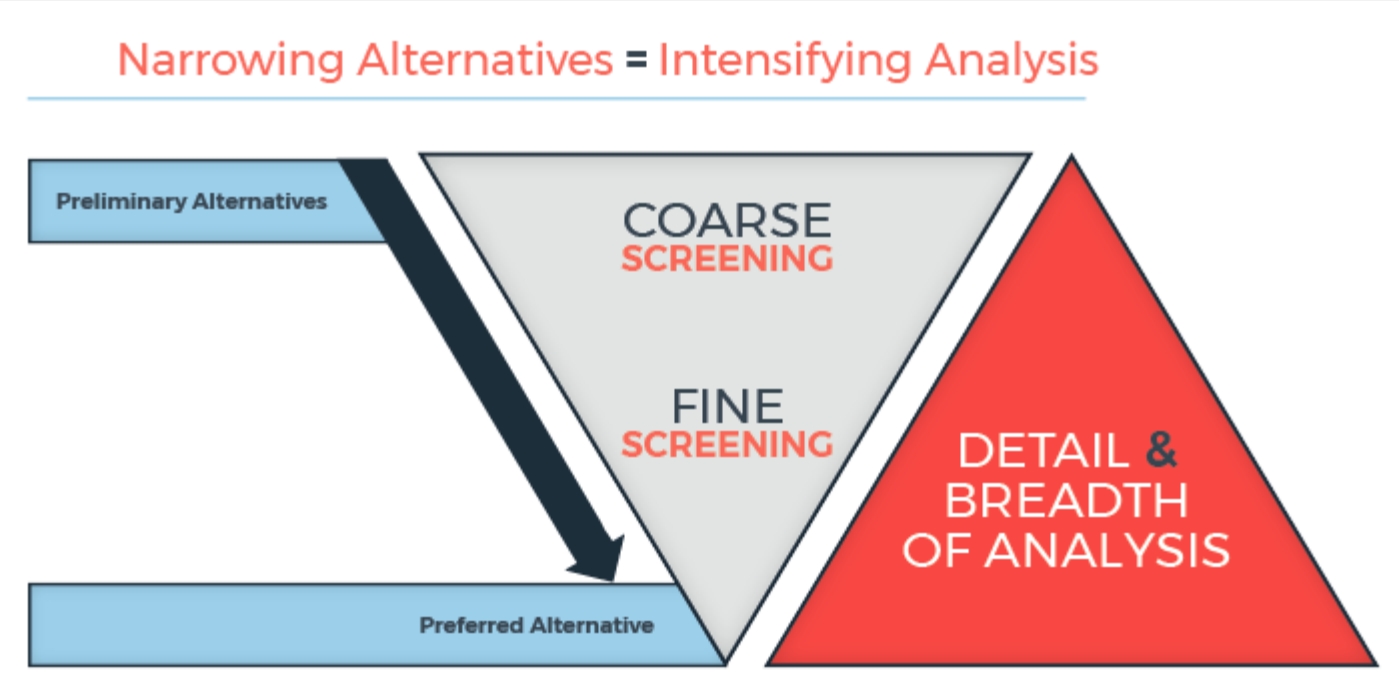
Second Round of Analysis
– define up to five rail service plans

Train Performance Calculations using Viriato

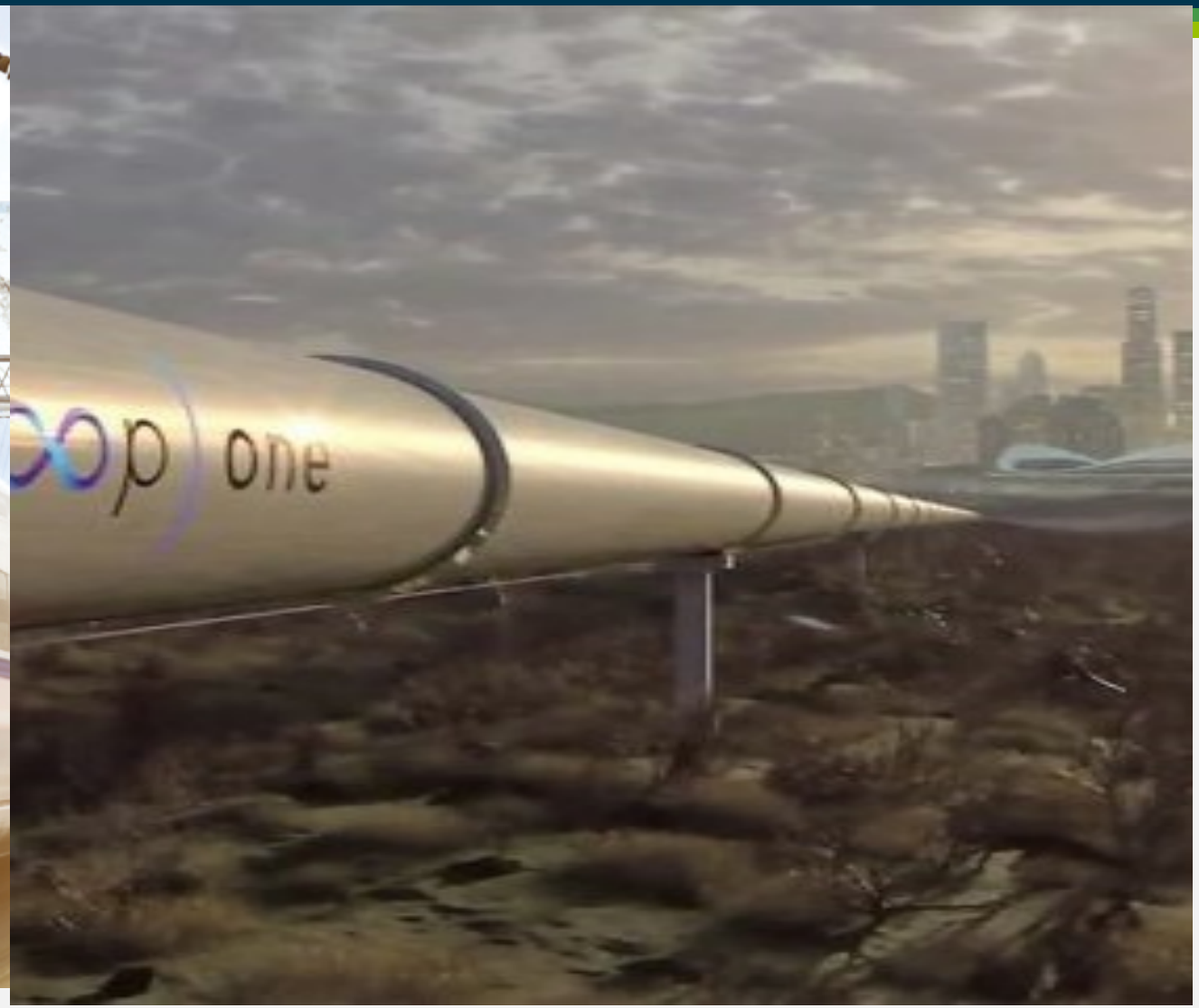
Service Plan Definition

Next Steps

- Determine federal champion
- Identify regulatory framework
- Develop screening criteria for route alignments
- Conceptual engineering
- Capital cost estimates
- Implementation and phasing plan
- Public outreach on both projects



What will the Future Hold?



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