

+ Hatch Activities on MD/HD Vehicle and Infrastructure Deployment



Matthew Post

2024 HFTO Hydrogen Infrastructure Workshop – Denver CO

January 17, 2023

Copyright © Hatch 2023. All rights reserved.

HATCH



EMPLOYEE-OWNED

partners who
think like owners

10,000

professionals
worldwide

Projects in

150

countries

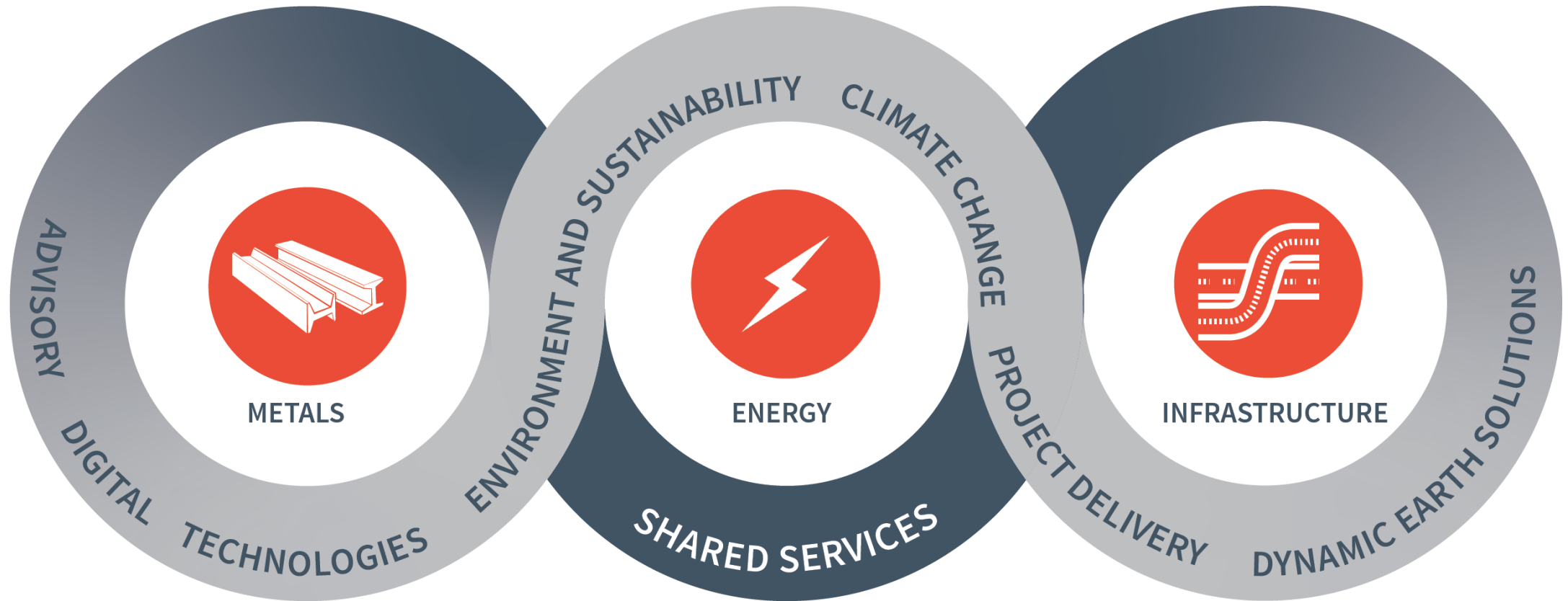
US\$75B

in projects

68 YEARS

of experience

Our business



Infrastructure

Building to meet the market challenges

Water



Water Digital
Solutions



Linear and
conveyance



Industrial
Water



Water
Resources



Water and
wastewater



Transportation



Rail



Ports and
terminals



Aviation



Highways and
bridges



Transit



Data
analytics



Rail systems



Linear
infrastructure



Vehicles
and operations



Systems
assurance



Stations
and facilities



Urban solutions



Urban Economics



Land
development



Place making



Sustainable urban
development



Management and delivery



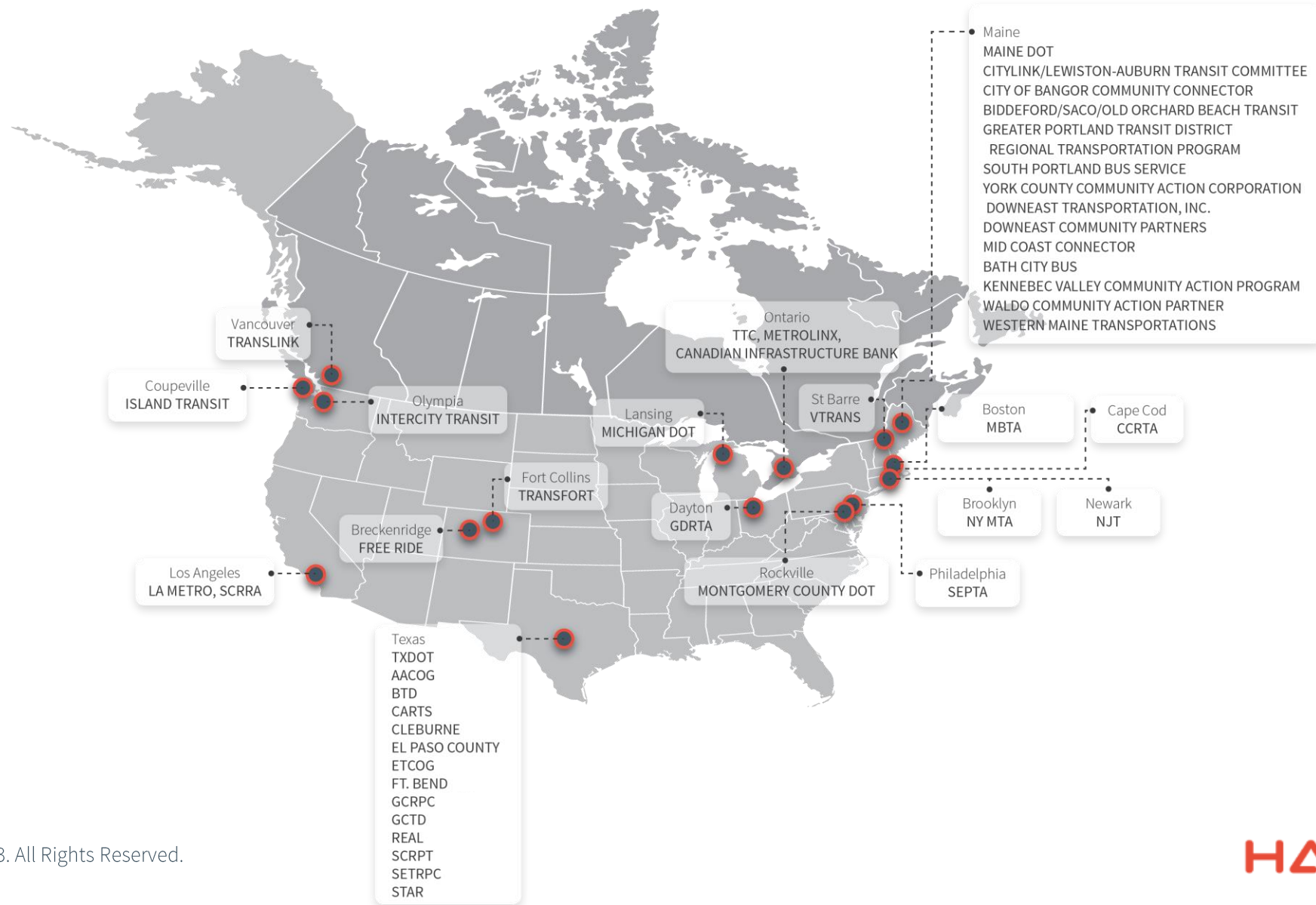
Tunnels



Integrated Structures



Our Bus and Sustainable Transportation Experience



Island Transit Zero Emission Vehicle Transition Plan

- + Transition Goal
- + Options Overview
- + Operating Model
- + Transition Timeline



Transition Goal

Current
State

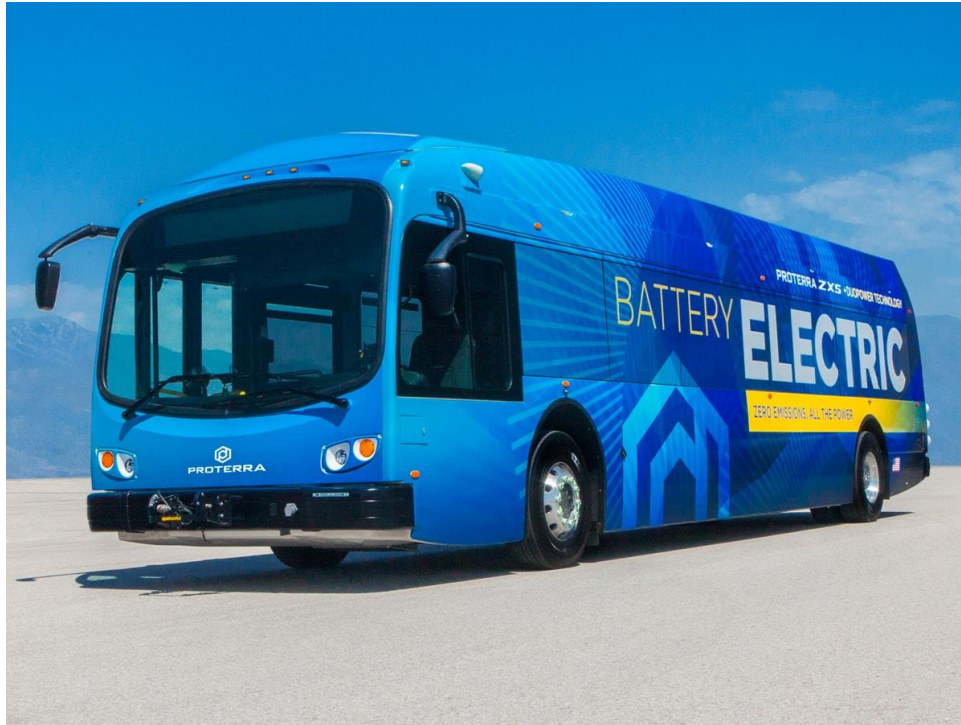
- All-fossil-fuel transit fleet (including some hybrids)

Future Goal

- 100% zero-emissions transit fleet by 2040



Technology Considerations

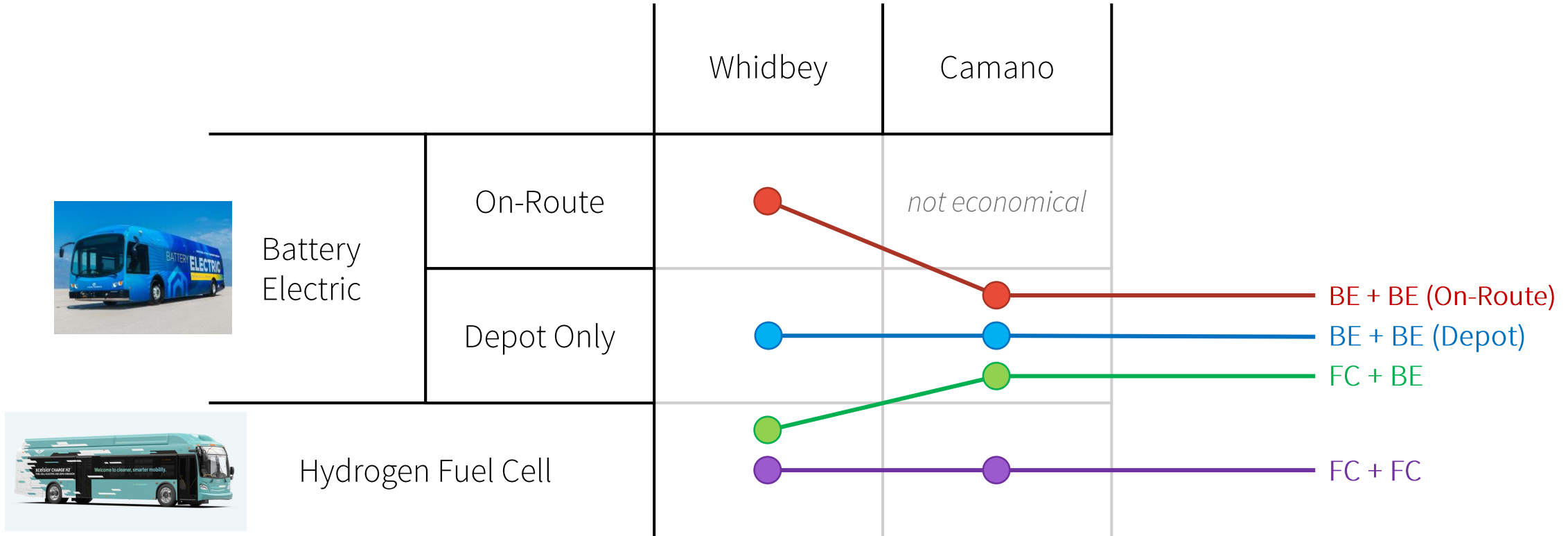


Battery Electric

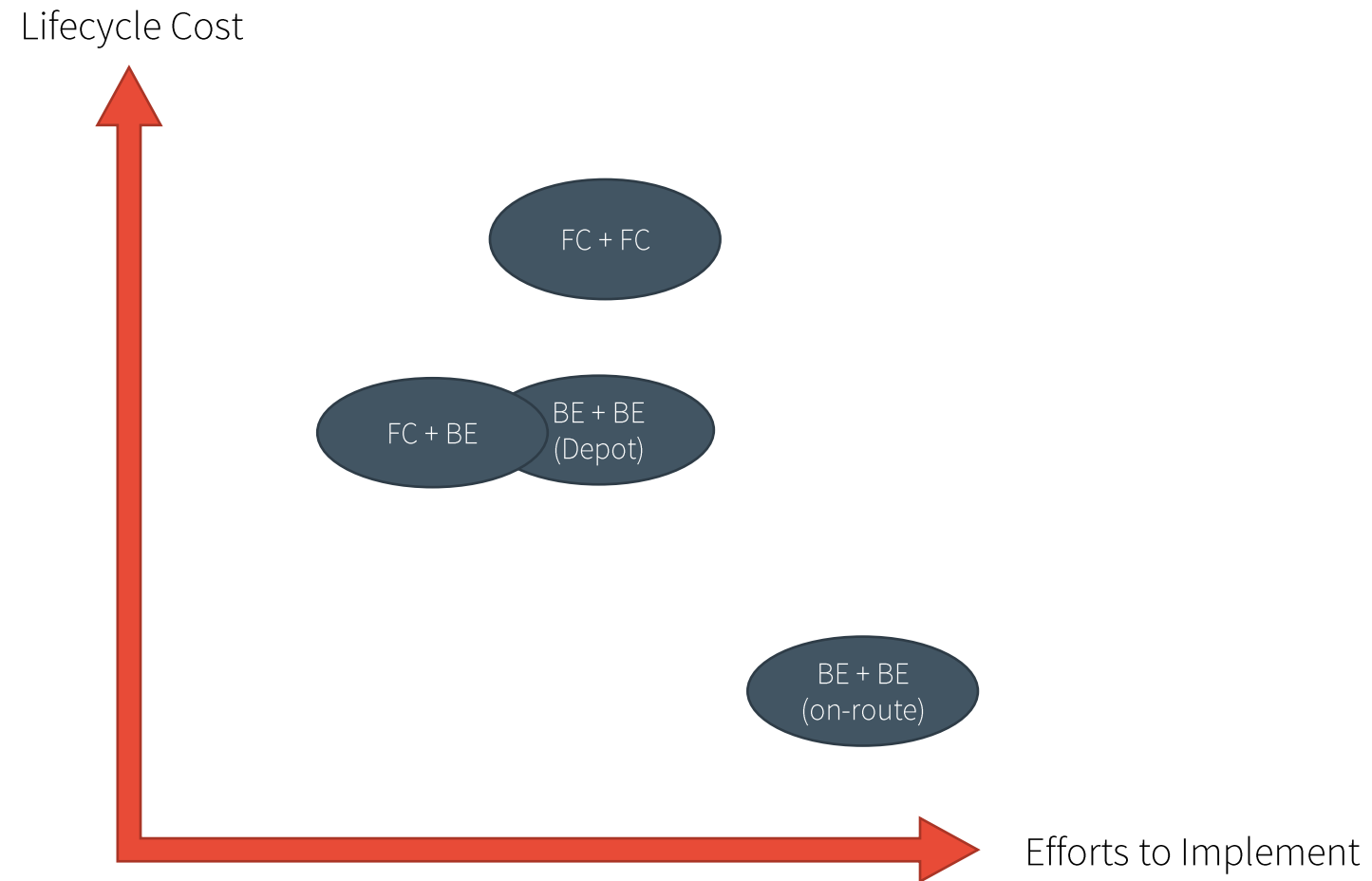
Hydrogen Fuel Cell



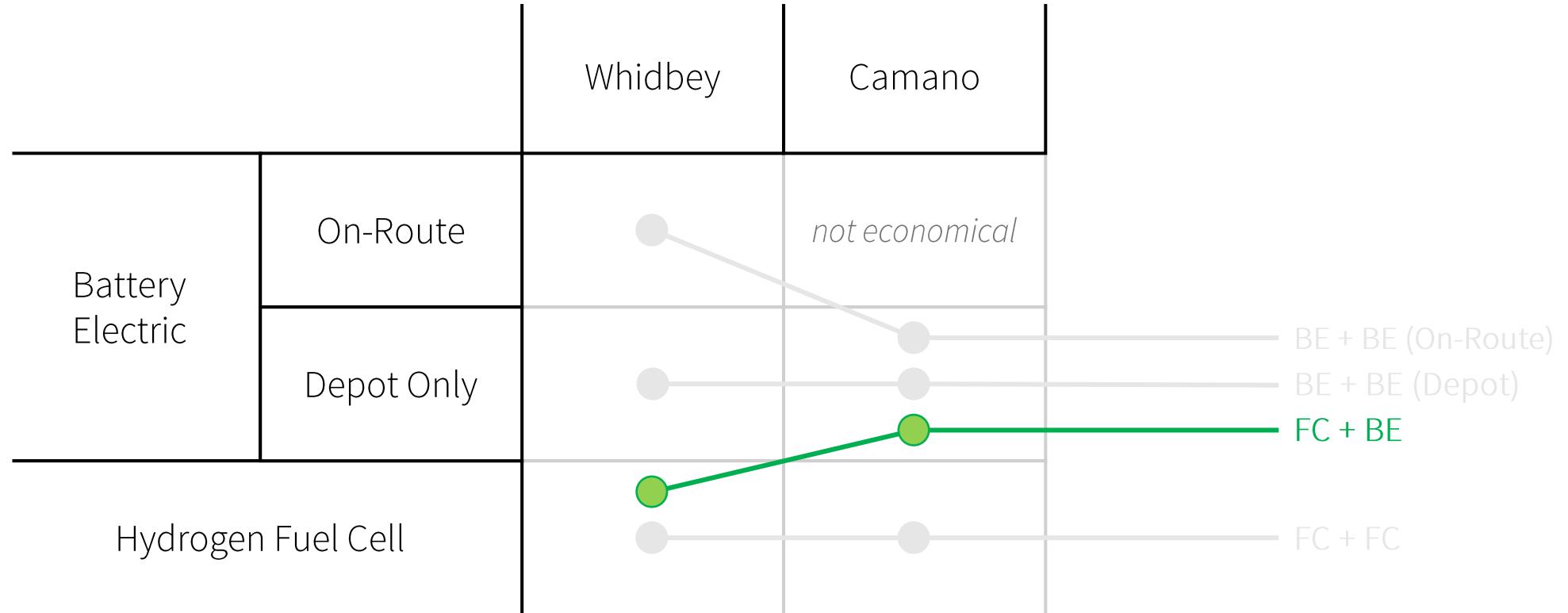
Scenarios



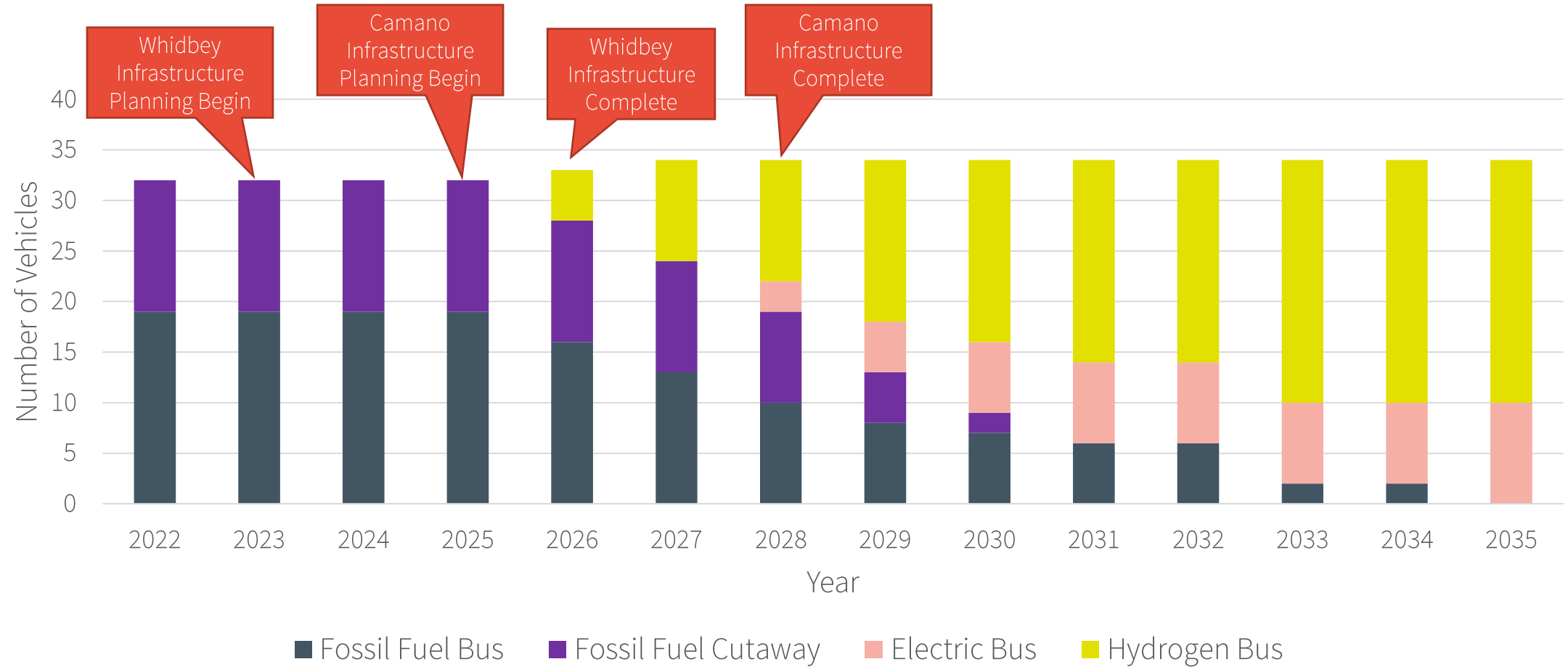
Effort Scenarios



Preferred Scenario

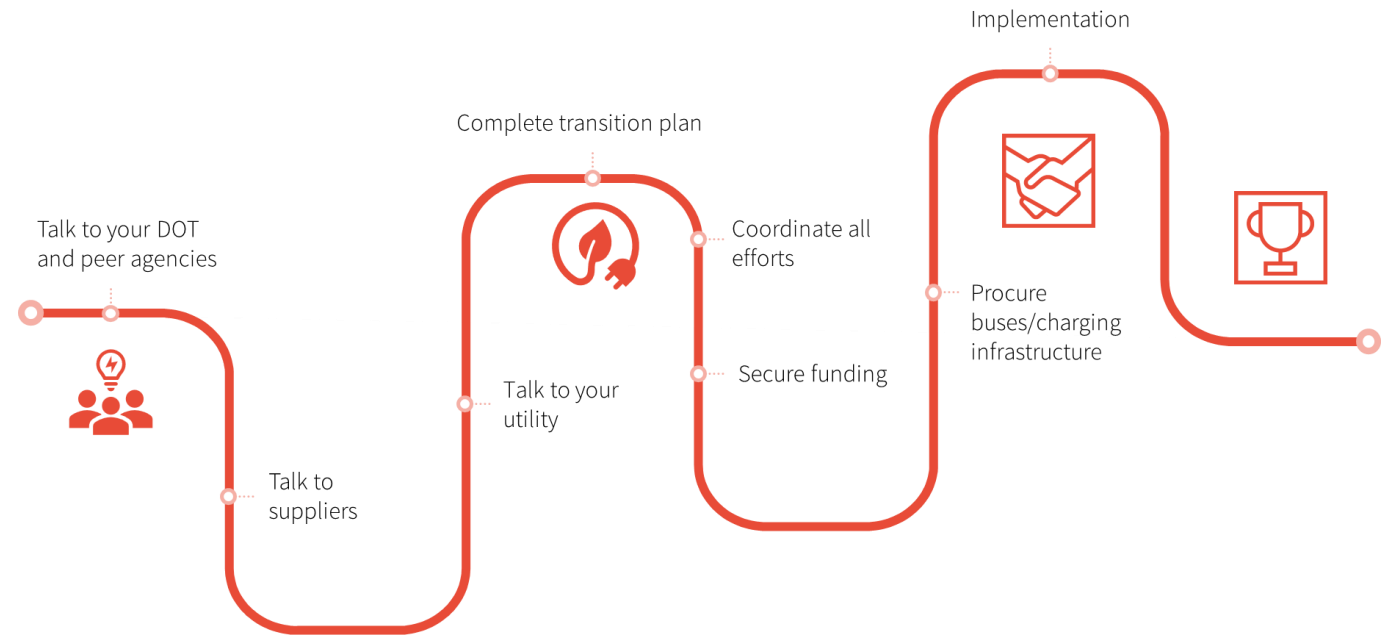


Fixed Route Fleet – Transition Timeline



My experience as a consultant after being in research

- + What I've learned
- + Gaps and Needs
- + Pathway to implementation



Takeaways



Zero Emission Mandates

- Local vs. State vs. Federal
- Applicability
- Not easily compiled or tracked



Cost of Hydrogen

- Recent steep increase
- Can be seen as not cost competitive
- Barrier to introduction



Procurement

- Often dictates what is available to be purchased
- Cooperatives and State Contracts vs. RFP



Takeaways



Portable Fuelers

- Becoming a popular option to test feasibility of FCEBs
- Low investment with little site modification
- Fueling experience optimized with permanent station



Availability

- Vehicles – Few models meet FTA requirements
- Hydrogen that meets the clean hydrogen standard
- Infrastructure – Many suppliers gaining experience



Parts Supply

- After zero emission vehicles are deployed
- Parts need to be kept on hand
- A good experience is highly dependent on keeping buses on the road



+

Thank you.

For more information,
please visit www.hatch.com
Matthew.Post@hatch.com

