



PROJECT SCOPE OF WORK

Elements	Components	Description of Work
Smart Yards		
	Logistics Transfer Yard	16 acres (10.4 acres paved)
	Automated trailer breakdown and container lifter system	Automated freight container transfer from truck trailer to yard jockey trailer Automated yard jockey trailer/Over-the road transfer vehicle (2)
	Opportunity charging for freight jockeys	2 chargers, 480v, horizontal "pantograph" charging stations
	Electric truck charging stations	2 DC Fast truck charging stations
	Rail Intermodal @ Norfolk Southern Goodman Yard	4 acre intermodal yard with rail siding Freight container transfer between train, truck and automated freight movers
Truck Parking and Long Combination Breakdown Lot		
	Paved truck parking and trailer layover area	16 Acres (10.4 acres paved)
	Electric truck charging and CNG refueling	9 DC Fast charging stations 1 500kW charging station 2 CNG fueling stations
	Real-time truck parking information system with dynamic message signs (DMS) on Ohio Turnpike and I-76	Truck counting system with eight DMS signs, two on each approach (East-West) connected to OTIC Fiber on Ohio TPK
Smart Corridors		
	Automated freight (over-the-road)	Repurpose existing lanes with the ZONE (via Road Diet) to create dedicated freight/transit lanes on major roadways (Tod Ave, Hallock Young Rd, Ellsworth Bailey Rd) 11 miles of roadway
	Freight Signal Priority (V2X communication)	C-V2X roadside units at signals and outfitting automated freight movers with on-board units (OBUs)
	In-road inductive charging	Initiate P3 proof-of-concept on select roadway (major route) for in-motion, inductive charging. Install necessary power infrastructure within smart corridors to support wider deployment
	Situational awareness devices at intersections	Conduct a pilot program with vendor/solution provider at 1-2 locations for collision avoidance application for OBUs deployed with the project
	Fiber communication	Install dedicated system fiber and leased fiber within ROW (432-strand microfiber)
Power and Electrification		
	Solar field/farm and storage	9 acres solar array with energy storage and distribution infrastructure
	Private EV charging stations at businesses	Add EV charging station(s) for each business that becomes a partner in the Zone (10 stations)
Distribution Priority and Mission Control System		
	Central control cloud based system	Automated environment within the Zone
	Interface to external distribution systems	Non-automated modes within the larger distribution network (Warren, Youngstown, YNG)
Data Communications		
	Communication totems with LoRaWAN wireless, Wi-Fi, and 5G edge computing	Install communications for each business that becomes a partner in the Zone
	Connection to ODOT ESP and OARnet	Connection via OTIC/Lumen leased fiber
Transit		
	First/last mile (FMLM) AV transit	Deploy FMCSA approved small transit buses (2) in dedicated lanes on major routes. (Tod Ave, Hallock Young Rd, Ellsworth Bailey Rd).
	Long-haul automated bus	Support existing Warren/ Youngstown traditional service
	WRTA Regional Transit Hub (SE Quad I-76 & S Bailey Rd)	Support the development of the Transit Hub with integrate smart corridor backbone and informational signage