

Elements	Quantities			Units	Unit Cost	Total Cost		
	Phase 1	Phase 2	Phase 3			Phase 1	Phase 2	Phase 3
Smart Yards					Element Total	\$ 5,445,967	\$ 2,334,900	\$ 1,133,100
Logistics Transfer Yard	16 Acres (65% Paved)				Component Total	\$ 2,264,811	\$ -	\$ -
Clearing and grubbing	16	--	--	acre	\$ 2,500	\$ 40,000	--	--
Grading	16	--	--	acre	\$ 5,000	\$ 80,000	--	--
Subbase, pavement, & drainage	10.4	--	--	acre	\$ 175,000	\$ 1,820,000	--	--
Metal Buildings (50'x80')	2	--	--	each	\$ 50,000	\$ 100,000	--	--
Lighting	10.4	--	--	acre	\$ 1,000	\$ 10,400	--	--
Perimeter fence	2,693	--	--	ft	\$ 15	\$ 40,395	--	--
Power distribution	1.14	--	--	mile	\$ 90,000	\$ 102,600	--	--
Communications (Microfiber)	0.84	--	--	mile	\$ 26,400	\$ 22,176	--	--
Communication totem (5G Edge Device / WiFi / LoRa)	2	--	--	each	\$ 24,620	\$ 49,240	--	--
Automated trailer breakdown and container lifter system					Component Total	\$ 1,750,000	\$ 2,175,000	\$ 975,000
Autonomous yard jockey/Over-the-road transfer vehicle	2	3	3	each	\$ 225,000	\$ 450,000	\$ 675,000	\$ 675,000
Automated trailer freight container transfer	2	1	--	each	\$ 500,000	\$ 1,000,000	\$ 500,000	--
Pallet/non-conforming form factor freight transfer unit	--	2	--	each	\$ 500,000	--	\$ 1,000,000	--
Automated Container Loader	2	--	2	each	\$ 150,000	\$ 300,000	--	\$ 300,000
Opportunity charging for freight lifters and jockeys					Component Total	\$ 158,100	\$ 159,900	\$ 158,100
Charging stations - (480v, horizontal "pantograph")	2	2	2	each	\$ 75,000	\$ 150,000	\$ 150,000	\$ 150,000
Power distribution	0.09	0.11	0.09	mile	\$ 90,000	\$ 8,100	\$ 9,900	\$ 8,100
Electric truck charging stations					Component Total	\$ 156,300	\$ -	\$ -
Charging stations - DC Fast	1	--	--	each	\$ 150,000	\$ 150,000	--	--
Power distribution	0.07	--	--	mile	\$ 90,000	\$ 6,300	--	--
Rail Intermodal @ NS Goodman Yard	4 Acre				Component Total	\$ 1,116,756	\$ -	\$ -
Clearing and grubbing	4	--	--	acre	\$ 2,500	\$ 10,000	--	--
Grading	4	--	--	acre	\$ 5,000	\$ 20,000	--	--
Subbase, pavement, drainage	4.0	--	--	acre	\$ 175,000	\$ 700,000	--	--
Rail, ties, ballast and subballast	900	--	--	lf	\$ 300	\$ 270,000	--	--
Lighting	4	--	--	acre	\$ 1,000	\$ 4,000	--	--
Power distribution	0.77	--	--	mile	\$ 90,000	\$ 69,300	--	--
Communications (Microfiber)	1.04	--	--	mile	\$ 26,400	\$ 27,456	--	--
Cabinet Small Equipment (Furnish and Install)	2	--	--	each	\$ 8,000	\$ 16,000	--	--
Truck Parking and Long Combination Breakdown Lot					Element Total	\$ 6,286,428	\$ 10,275,500	\$ 8,023,808
Paved Truck Parking and Trailer Layover Area	16 Acres (65% Paved)				Component Total	\$ 2,334,152	\$ -	\$ -
Clearing and grubbing	16	--	--	acre	\$ 2,500	\$ 40,000	--	--
Grading	16	--	--	acre	\$ 5,000	\$ 80,000	--	--
Subbase, pavement, drainage	10.4	--	--	acre	\$ 175,000	\$ 1,820,000	--	--
Lighting	10.4	--	--	acre	\$ 1,000	\$ 10,400	--	--
Power distribution	0.70	--	--	mile	\$ 90,000	\$ 63,000	--	--
Communications (Microfiber)	0.58	--	--	mile	\$ 26,400	\$ 15,312	--	--
ITS Cabinet for OTIC Fiber connection	1	--	--	each	\$ 10,000	\$ 10,000	--	--
Communication totem (5G Edge Device / WiFi / LoRa)	12	--	--	each	\$ 24,620	\$ 295,440	--	--
Electric Truck Charging and CNG Refueling					Component Total	\$ 2,801,276	\$ 10,275,500	\$ 8,023,808
Charging stations - DC Fast	9	20	20	each	\$ 150,000	\$ 1,350,000	\$ 3,000,000	\$ 3,000,000
Charging stations - 500kW	1	7	--	each	\$ 1,000,000	\$ 1,000,000	\$ 7,000,000	--
Heavy-duty charging station (hydrogen fuel cell powered)	--	--	5	each	\$ 1,000,000	--	\$ 5,000,000	--
Hydrogen fueling station	--	2	--	each	\$ 125,000	--	\$ 250,000	--
Power distribution	0.21	0.21	0.20	mile	\$ 90,000	\$ 18,900	\$ 18,900	\$ 18,000
Communications (Microfiber)	0.09	0.25	0.22	mile	\$ 26,400	\$ 2,376	\$ 6,600	\$ 5,808
CNG station (pumps)	2	--	--	each	\$ 115,000	\$ 230,000	--	--
CNG attendant building and storage	500	--	--	sf	\$ 400	\$ 200,000	--	--
Truck Parking Information System					Component Total	\$ 1,151,000	\$ -	\$ -
Truck parking information system	1	--	--	LS	\$ 391,000	\$ 391,000	--	--
Dynamic message sign (DMS)	8	--	--	each	\$ 75,000	\$ 600,000	--	--
Communications and power (DMS signs)	8	--	--	each	\$ 10,000	\$ 80,000	--	--
ITS Cabinet	8	--	--	each	\$ 10,000	\$ 80,000	--	--
Smart Corridors					Element Total	\$ 1,874,893	\$ 18,557,282	\$ 28,611,200
Automated Freight (over-the-road)					Component Total	\$ 643,101	\$ -	\$ -
Pavement marking eradication	31,284	--	--	lf	\$ 0.25	\$ 7,821	--	--
Pavement markings	250,272	--	--	lf	\$ 2.50	\$ 625,680	--	--
Signage	80	--	--	each	\$ 120	\$ 9,600	--	--
Freight Signal Priority (V2X communication)					Component Total	\$ 409,180	\$ 28,500	\$ -
RSU per intersection (C-V2X)	8	1	--	each	\$ 13,500	\$ 108,000	\$ 13,500	--
Signal controller upgrade and cabinet	8	1	--	each	\$ 15,000	\$ 120,000	\$ 15,000	--
OBU (C-V2X)	4	50	50	each	\$ 4,045	\$ 16,180	\$ 202,250	\$ 202,250
OBU application development	1	--	--	LS	\$ 15,000	\$ 15,000	--	--
OBU integration in AV system	1	--	--	each	\$ 150,000	\$ 150,000	--	--
In-road Inductive Charging					Component Total	\$ 45,000	\$ 18,221,000	\$ 28,515,200
Power distribution for P3 pilot	0.5	--	--	mile	\$ 90,000	\$ 45,000	--	--
Expand inductive charging on all main corridors	--	9.59	--	mile	\$ 1,900,000	--	\$ 18,221,000	--
Deploy on expanded deployment routes	--	--	15.008	mile	\$ 1,900,000	--	--	\$ 28,515,200
Situational Awareness Devices at Intersections					Component Total	\$ 174,900	\$ 192,150	\$ 96,000
Roadside application development	1	--	--	LS	\$ 120,000	\$ 120,000	--	--
Camera detection system	2	7	--	per int.	\$ 25,000	\$ 50,000	\$ 175,000	--
Roadside processing unit	2	7	--	each	\$ 1,250	\$ 2,500	\$ 8,750	--
Connection to RSU/LIVE Zone	2	7	--	each	\$ 1,200	\$ 2,400	\$ 8,400	--
Additional applications and smartphone integration	--	--	1	LS	\$ 96,000	--	--	\$ 96,000
Fiber Communication					Component Total	\$ 602,712	\$ 115,632	\$ -
Communications - 432-strand microfiber and microduct	15.22	2.92	--	mile	\$ 39,600	\$ 602,712	\$ 115,632	--

Elements	Quantities			Units	Unit Cost	Total Cost			
	Phase 1	Phase 2	Phase 3			Phase 1	Phase 2	Phase 3	
Power and Electrification					Element Total	\$ 5,397,868	\$ 18,221,480	\$ 20,211,400	
Solar Field/Farm and Storage					Component Total	\$ 3,991,368	\$ 17,680,280	\$ 19,757,500	
Solar array installation	9	31	35.9	acre	\$ 425,000	\$ 3,825,000	\$ 13,175,000	\$ 15,257,500	
Site power distribution system	1	--	--	LS	\$ 150,000	\$ 150,000	--	--	
Communications (Microfiber)	0.62	0.20	--	mile	\$ 26,400	\$ 16,368	\$ 5,280	--	
Vanadium Redox Flow Power Storage		2	2	per MW	\$ 2,250,000	\$ -	\$ 4,500,000	\$ 4,500,000	
Private EV Charging Stations at Businesses					Component Total	\$ 1,406,500	\$ 541,200	\$ 453,900	
Level 2 charging	10	12	12	each	\$ 25,000	\$ 265,000	\$ 300,000	\$ 300,000	
Power distribution	12.9	2.7	1.7	mile	\$ 90,000	\$ 1,156,500	\$ 241,200	\$ 153,900	
Distribution Priority and Mission Control System					Element Total	\$ 589,000	\$ 36,000	\$ 36,000	
Central Control Cloud-Based System					Component Total	\$ 445,000	\$ -	\$ -	
Mission Control Software	1	--	--	each	\$ 265,000	\$ 265,000	--	--	
Data Ingestion Software	1	--	--	each	\$ 180,000	\$ 180,000	--	--	
Interface to External Distribution Systems					Component Total	\$ 144,000	\$ 36,000	\$ 36,000	
Enterprise service bus to other systems	8	2	2	each	\$ 18,000.00	\$ 144,000	\$ 36,000	\$ 36,000	
Data and Network Communications					Element Total	\$ 696,968	\$ 331,872	\$ 346,128	
Communication Totems at Each Business					Component Total	\$ 686,968	\$ 331,872	\$ 346,128	
Communications (Microfiber)	9.1	1.4	1.9	mile	\$ 26,400	\$ 240,768	\$ 36,432	\$ 50,688	
communication totem (5G Edge Device / WiFi / LoRa)	10	12	12	each	\$ 24,620	\$ 246,200	\$ 295,440	\$ 295,440	
network management software	1	--	--	each	\$ 200,000	\$ 200,000	--	--	
Connection to ODOT ESP and OARnet					Component Total	\$ 10,000	\$ -	\$ -	
ITS Cabinet for Fiber connection with Lumen Fiber	1	--	--	each	\$ 10,000	\$ 10,000	--	--	
Transit					Element Total	\$ 821,900	\$ 2,080,000	\$ 2,740,000	
First/Last Mile AV Transit					Component Total	\$ 800,000	\$ 180,000	\$ 400,000	
Automated transit bus (including hardware and software stack)	2	--	1	each	\$ 400,000	\$ 800,000	--	\$ 400,000	
On-demand software (10 year license)	--	1	--	each	\$ 180,000	--	\$ 180,000	--	
Long-Haul Automated Bus					Component Total	\$ -	\$ 1,890,000	\$ 2,340,000	
Pilot - Automated electric bus	--	1	--	LS	\$ 900,000	--	\$ 900,000	--	
Pilot - 2 years of operation	--	2	--	year	\$ 495,000	--	\$ 990,000	--	
Autonomous electric bus for standard operations	--	--	1	LS	\$ 2,340,000	--	--	\$ 2,340,000	
WRTA Regional Transit Hub (SE Quad I-76 & S Bailey Rd)					Component Total	\$ 21,900	\$ 10,000	\$ -	
Fiber communications splice to transit hub	1	--	--	each	\$ 3,000	\$ 3,000	--	--	
Kiosk for on-demand service	--	1	--	each	\$ 10,000	--	\$ 10,000	--	
Power distribution	0.21	--	--	mile	\$ 90,000	\$ 18,900	--	--	
Regional Transportation Network Improvements					Element Total	\$ -	\$ 575,000	\$ 8,408,000	
Modernize Turnpike Interchanges					Component Total	\$ -	\$ -	\$ 8,083,000	
Ramp widening and additional turn lanes	--	--	1	LS	\$ 8,083,000	--	--	\$ 8,083,000	
Rail Crossing Upgrades					Component Total	\$ -	\$ 325,000	\$ 325,000	
Grade crossing gates and warning system	--	1	1	each	\$ 325,000	--	\$ 325,000	\$ 325,000	
Intersection and Traffic Signal Improvements					Component Total	\$ -	\$ 250,000	\$ -	
New traffic signal	--	1	--	each	\$ 250,000	--	\$ 250,000	--	
Subtotal Phase Costs						\$ 21,113,024	\$ 52,412,034	\$ 69,509,636	
						construction year	2024	2027	2030
Inflation (per year)						2.5%	\$ 1,068,847	\$ 6,887,361	\$ 15,181,113
Contingency						5%	\$ 1,055,651	\$ 2,620,602	\$ 3,475,482
Total Capital Costs						\$ 23,237,522	\$ 61,919,996	\$ 88,166,231	
System Engineering						2%	\$ 464,750	\$ 1,238,400	\$ 1,763,325
Detailed Design						5%	\$ 1,161,876	\$ 3,096,000	\$ 4,408,312
Construction Administration						5%	\$ 1,161,876	\$ 3,096,000	\$ 4,408,312
Total Project Cost						\$ 26,026,000	\$ 69,350,000	\$ 98,746,000	