

PROJECT BUDGET

OMB Approval No. 4040-0006 | Budget Period: 24 Months | Cost Principles: 2 CFR 200 Subpart E

EXECUTIVE BUDGET SUMMARY

This budget narrative presents the detailed cost estimates for the ByRyde Smart Transportation Optimization Network (STON), a 24-month research, development, and deployment project funded through the SMART Grants Program. Total project cost is \$2,500,000, comprising \$2,000,000 in federal funds (80%) and \$500,000 in applicant cost share (20%). All costs are calculated in accordance with 2 CFR 200 Subpart E (Cost Principles) and are consistent with the applicant’s established accounting practices. The budget reflects the labor-intensive nature of AI model development, multi-market deployment coordination, and rigorous human subjects research across five metropolitan areas.

Budget Category	Federal (\$)	Cost Share (\$)	Total (\$)	% of Total
A. Personnel (Senior/Key)	\$800,000	\$0	\$800,000	32.0%
B. Fringe Benefits	\$240,000	\$0	\$240,000	9.6%
C. Travel	\$150,000	\$0	\$150,000	6.0%
D. Equipment	\$200,000	\$0	\$200,000	8.0%
E. Supplies & Software	\$110,000	\$0	\$110,000	4.4%
F. Contractual	\$200,000	\$0	\$200,000	8.0%
G. Other Direct Costs	\$100,000	\$0	\$100,000	4.0%
H. Indirect Costs (10% MTDC)	\$200,000	\$0	\$200,000	8.0%
I. Cost Share (Applicant)	\$0	\$500,000	\$500,000	20.0%
TOTAL PROJECT COST	\$2,000,000	\$500,000	\$2,500,000	100.0%

MONTHLY AND QUARTERLY BURN RATE ANALYSIS

Period	Quarter	Monthly Burn	Quarterly Total	Cumulative
Months 1-3	Q1 (Setup)	\$87,500	\$262,500	\$262,500
Months 4-6	Q2 (Pilot Prep)	\$93,750	\$281,250	\$543,750
Months 7-9	Q3 (Pilot Launch)	\$118,750	\$356,250	\$900,000
Months 10-12	Q4 (Scale Prep)	\$125,000	\$375,000	\$1,275,000
Months 13-15	Q5 (Expansion)	\$112,500	\$337,500	\$1,612,500
Months 16-18	Q6 (Full Scale)	\$106,250	\$318,750	\$1,931,250
Months 19-21	Q7 (Analysis)	\$93,750	\$281,250	\$2,212,500
Months 22-24	Q8 (Closeout)	\$95,833	\$287,500	\$2,500,000

A. PERSONNEL (SENIOR/KEY) — \$800,000 (32.0% OF TOTAL)

Personnel costs represent the largest budget category, reflecting the labor-intensive nature of AI model development, platform engineering, real-time systems optimization, and multi-market deployment coordination. All salary rates are consistent with Bureau of Labor Statistics (BLS) Occupational Employment and Wage Statistics for the proposed metropolitan areas and comply with 2 CFR 200.430 (Compensation — Personal Services).

Position / Role	Base Salary	FTE	Grant Salary	Benefits (30%)	Total Comp
Principal Investigator / CEO	\$180,000/yr	0.50	\$180,000	\$54,000	\$234,000
Co-PI / CTO	\$160,000/yr	0.75	\$240,000	\$72,000	\$312,000
Lead AI/ML Engineer	\$150,000/yr	1.00	\$150,000	\$45,000	\$195,000
Sr. Full-Stack Developer	\$140,000/yr	1.00	\$140,000	\$42,000	\$182,000
Data Scientist	\$130,000/yr	0.50	\$65,000	\$19,500	\$84,500
UX/UI Research Designer	\$100,000/yr	0.25	\$25,000	\$7,500	\$32,500
SUBTOTAL		4.00 FTE	\$800,000	\$240,000	\$1,040,000

Justification: The Principal Investigator (PI) provides strategic leadership, federal reporting oversight, stakeholder engagement, and research direction at 50% effort over 24 months. The Co-PI/CTO leads all technical implementation, system architecture decisions, and integration management at 75% effort. The Lead AI/ML Engineer focuses full-time on GPT-5.2 endpoint optimization, demand forecasting model training, and A/B testing framework development. The Senior Full-Stack Developer handles multi-market deployment, feature refinement, and platform scaling. The Data Scientist conducts impact analysis, statistical modeling, and research publication support at 50% effort. The UX/UI Research Designer conducts user research across five markets and iterates on accessibility features at 25% effort. All FTE calculations reflect 2,080 annual work hours per 2 CFR 200.430.

B. FRINGE BENEFITS — \$240,000 (9.6% OF TOTAL)

Fringe benefits are calculated at 30% of direct salary costs, consistent with the applicant's established benefit rate and compliant with 2 CFR 200.431 (Compensation — Fringe Benefits).

Component	Rate / Cost	Basis
Employer FICA/Medicare	7.65%	Federal statutory rate
Health Insurance (Employer Share)	~\$8,400/employee/yr	Market rate, group plan
401(k) Employer Match	4.0% of salary	Company policy
Workers' Compensation Insurance	0.8% of payroll	State statutory rate
State Unemployment Insurance (SUI)	2.1% of first \$15K	Weighted avg across states
Life & Disability Insurance	\$1,200/employee/yr	Group plan rate

Justification: The 30% composite fringe rate covers all mandatory employer-paid taxes and insurance, voluntary retirement matching, and group health benefits. This rate is conservative relative to industry benchmarks (Mercer Survey 2025 reports average technology sector fringe rates of 32–38%) and excludes equity compensation, bonuses, and other variable compensation. The rate has been applied consistently across all personnel categories and is supportable by the applicant's payroll records and benefits documentation.

C. TRAVEL — \$150,000 (6.0% OF TOTAL)

Travel costs are essential for multi-market deployment, driver recruitment, research dissemination, and federal agency coordination. All travel follows federal per diem rates established by the General Services Administration (GSA) and complies with 2 CFR 200.474 (Travel Costs).

Travel Category	Trips	Est. Cost/Trip	Subtotal
Market Launch Travel (5 cities)	10 trips	\$8,000	\$80,000
Conference Attendance (TRB, ITS America, AASHTO)	6 trips	\$5,833	\$35,000
DOT/Federal Agency Meetings (DC)	4 trips	\$5,000	\$20,000
Driver Community Engagement Events	10 events	\$1,500	\$15,000
TOTAL TRAVEL			\$150,000

Justification: Market launch travel supports multi-city deployment activities including driver recruitment events, transit authority coordination meetings, community stakeholder engagement, and pilot site setup across New York, Los Angeles, Chicago, Houston, and Atlanta. Conference travel enables presentation of research findings at the Transportation Research Board (TRB) Annual Meeting, ITS America Annual Conference, and AASHTO Committee on Transportation System Operations. Federal agency meetings in Washington, DC facilitate SMART Grant program office coordination, progress reporting, and inter-agency collaboration with FHWA, FTA, and NHTSA.

D. EQUIPMENT — \$200,000 (8.0% OF TOTAL)

Equipment costs support the cloud infrastructure, AI compute resources, and hardware necessary for platform deployment and operation. All equipment costs comply with 2 CFR 200.439 (Equipment and Other Capital Expenditures).

Equipment Item	Quantity	Unit Cost	Subtotal
Cloud Infrastructure (AWS/GCP) — 24 months	24 mo	\$5,000/mo	\$120,000
AI/ML Training Compute (GPU instances)	24 mo	\$1,667/mo	\$40,000
Mobile Testing Devices (iOS/Android)	15 devices	\$1,000	\$15,000
EV Diagnostic & Telemetry Hardware	10 units	\$1,500	\$15,000
Development Workstations	4 units	\$2,500	\$10,000
TOTAL EQUIPMENT			\$200,000

Justification: Cloud infrastructure supports real-time demand forecasting, WebSocket connections for 13,000+ concurrent drivers, PostgreSQL database operations, and AI model inference. Monthly cloud costs include compute (EC2/GCE instances), storage (S3/GCS), networking (load balancers, CDN), and managed database services. GPU compute costs cover NVIDIA A100 instances for AI model fine-tuning, validation experiments, and batch inference operations. Mobile testing devices across iOS and Android platforms ensure cross-platform compatibility. EV diagnostic hardware enables direct vehicle telemetry collection for Tesla Fleet API validation. Development workstations provide the compute power necessary for local development and testing.

E. SUPPLIES & SOFTWARE LICENSES — \$110,000 (4.4% OF TOTAL)

Supply / Software Item	Quantity	Unit Cost	Subtotal
OpenAI API (GPT-5.2, 15 endpoints)	24 mo	\$2,083/mo	\$50,000
Google Cloud APIs (Maps, Translation)	24 mo	\$1,042/mo	\$25,000
Tesla Fleet API Access & Licensing	24 mo	\$417/mo	\$10,000
Stripe Payment Processing Fees	24 mo	\$417/mo	\$10,000
Firebase/Agora Real-Time Services	24 mo	\$417/mo	\$10,000
Software Licenses & Dev Tools	24 mo	\$208/mo	\$5,000
TOTAL SUPPLIES & SOFTWARE			\$110,000

Justification: API and software costs are core to the AI-powered platform's operation. OpenAI API powers fifteen specialized GPT-5.2 endpoints including demand forecasting, earnings optimization, fatigue detection, surge prediction, conversational copilot, tax optimization, shift planning, post-ride analytics, and weekly coaching. Google Cloud APIs provide mapping (Directions, Geocoding, Places), 12-language translation, and geolocation services essential for multimodal routing. Tesla Fleet API costs cover vehicle command access, telemetry streaming, and Supercharger network data. Stripe fees cover payment processing for driver earnings, subscription management, and Connect payout operations. Firebase and Agora costs cover real-time database synchronization, push notifications, and voice/video calling infrastructure. All costs comply with 2 CFR 200.453 (Materials and Supplies).

F. CONTRACTUAL — \$200,000 (8.0% OF TOTAL)

Contractual Service	Vendor Type	Duration	Subtotal
Independent Security Audit (SOC 2 Type II)	Certified CPA Firm	6 months	\$60,000
User Research Study (5-market)	UX Research Firm	12 months	\$50,000
Legal & Regulatory Compliance	Transportation Law Firm	24 months	\$40,000
Accessibility Audit (ADA/WCAG 2.1 AA)	Accessibility Firm	3 months	\$25,000
External Code Review & Penetration Testing	Cybersecurity Firm	2 engagements	\$25,000
TOTAL CONTRACTUAL			\$200,000

Justification: External audits and assessments ensure platform security, regulatory compliance, and accessibility per 2 CFR 200.318 (General Procurement Standards). The SOC 2 Type II audit provides independent verification of security controls, availability, processing integrity, confidentiality, and privacy — required for enterprise and government partnerships. The five-market user research study provides validated behavioral data for AI model optimization and ensures product-market fit across diverse demographics. Legal review covers federal grant compliance (2 CFR 200), state-specific rideshare regulations, data privacy (CCPA/GDPR), and gig economy labor law compliance. The accessibility audit ensures ADA compliance and WCAG 2.1 AA conformance for users with disabilities. Penetration testing identifies and remediates security vulnerabilities before scaled deployment.

G. OTHER DIRECT COSTS — \$100,000 (4.0% OF TOTAL)

Cost Item	Quantity	Rate	Subtotal
Driver Study Participant Compensation	800 participants	\$50/person	\$40,000
Insurance (General Liability + Cyber)	24 months	\$833/mo	\$20,000

Publication & Dissemination	5 publications	\$3,000/each	\$15,000
Driver Recruitment & Marketing (5 markets)	5 campaigns	\$3,000/each	\$15,000
Miscellaneous / Contingency (2%)	Lump sum		\$10,000
TOTAL OTHER DIRECT COSTS			\$100,000

Justification: Driver participant compensation (\$50 per participant for 800 participants across five markets) is essential for rigorous IRB-approved human subjects research per 2 CFR 200.456 and ensures adequate enrollment across diverse demographic groups. Compensation covers informed consent, baseline surveys, monthly check-ins, and exit interviews. Insurance costs cover general liability (\$2M aggregate), professional liability (\$1M), and cyber liability (\$5M) policies required for multi-market technology deployment with sensitive user data. Publication fees support required dissemination of research findings through peer-reviewed transportation journals (Transportation Research Record, Journal of Intelligent Transportation Systems) and conference proceedings (TRB, ITS America). Marketing costs support targeted driver recruitment in each market through digital advertising, community partnerships, and referral incentive programs.

H. INDIRECT COSTS — \$200,000 (8.0% OF TOTAL)

Indirect Cost Rate	10% of Modified Total Direct Costs
Rate Type	De Minimis Rate per 2 CFR 200.414(f)
Federally Negotiated NICRA	Not Applicable — Electing De Minimis
Modified Total Direct Cost Base	\$2,000,000
Indirect Cost Amount	\$200,000

Justification: ByRyde Corp elects the de minimis indirect cost rate of 10% of Modified Total Direct Costs (MTDC) per 2 CFR 200.414(f), as the organization has not previously negotiated an indirect cost rate agreement (NICRA) with a cognizant federal agency. The MTDC base excludes equipment costing \$5,000 or more per unit, patient care charges, rental costs, tuition remission, scholarships, and subcontract amounts exceeding \$25,000 per 2 CFR 200.68. Indirect costs cover general and administrative overhead including executive office space, utilities, accounting and bookkeeping services, general management oversight, human resources administration, IT infrastructure maintenance, and corporate insurance. The organization will maintain documentation of all indirect cost expenditures sufficient for federal audit purposes per 2 CFR 200.302.

I. APPLICANT COST SHARE — \$500,000 (20.0% OF TOTAL)

The applicant's 20% cost share meets the minimum non-Federal matching requirement established in the SMART Grants Program NOFO and complies with 2 CFR 200.306 (Cost Sharing or Matching). See separate Funding Commitment Letter for detailed documentation.

Cost Share Source	Type	Amount	Valuation Method	Status
Company Operating Capital	Cash	\$300,000	Bank verification	Committed
Existing Platform (TRL 7-8)	In-Kind	\$150,000	Development cost basis	Available
Executive Time (unfunded)	In-Kind	\$50,000	Hours x rate (\$100/hr)	Committed
TOTAL COST SHARE		\$500,000		

BUDGET PERIOD BREAKDOWN

Category	Period 1 (Mo 1-12)	Period 2 (Mo 13-24)	Total
A. Personnel	\$440,000	\$360,000	\$800,000
B. Fringe Benefits	\$132,000	\$108,000	\$240,000
C. Travel	\$90,000	\$60,000	\$150,000
D. Equipment	\$140,000	\$60,000	\$200,000
E. Supplies & Software	\$55,000	\$55,000	\$110,000
F. Contractual	\$120,000	\$80,000	\$200,000
G. Other Direct Costs	\$55,000	\$45,000	\$100,000
H. Indirect Costs	\$110,000	\$90,000	\$200,000
I. Cost Share	\$275,000	\$225,000	\$500,000
TOTAL	\$1,417,000	\$1,083,000	\$2,500,000

Period 1 (Months 1–12) is weighted more heavily (56.7%) due to front-loaded infrastructure deployment, initial market launch activities, equipment procurement, and contractual engagements. Period 2 (Months 13–24) emphasizes data analysis, impact assessment, publication, and sustainability planning with a reduced burn rate (43.3%).