



Rural ITS Toolkit Summary Table

Tool #	Tool Name/Description	Rural Transportation Critical Needs	Strategies Achieved	Capital Costs
		Crash Countermeasures (CC) Emergency Services (ES) Operations & Maintenance (OM) Rural Transit & Mobility (RTM) Surface Transportation & Weather (STW) Tourism & Travel Information (TTI) Traffic Management (TM)	Road User (RU) Road (RD) Vehicle (V) Safety Culture (SC) Engineering (ENG) Emergency Response (ER) Enforcement (ENF) Education (ED)	Low (\$0 to \$50,000) Medium (\$50,000 to \$100,000) High (\$100,000 to \$250,000) Higher (Above \$250,000)
CC1	Animal Warning Systems	CC	RU, RD, ENG	Low to High
CC2	Automated Visibility Warning Systems	CC, OM, STW	RU, ENG	Medium to High
CC3	Bicycle Safety Systems	CC, OM, TTI, TM	RU, RD, V, SC, ENG, ENF, ED	Low
CC4	Connected Vehicles	CC, ES, OM, RTM, STW, TTI, TM	RU, RD, V, ENG	Low to Medium
CC5	Wrong Way Driver Detection & Warning System	CC, ES, OM, TM	RU, RD, SC, ENG, ER, ENF, ED	Low
CC6	Highway-Rail Crossing Safety Systems	CC, TM	RU, ENG, ER, ED	Low to Higher
CC7	Intersection Collision Warning System (ICWS)	CC	RU, V, ENG	Medium to High





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CC8	Pedestrian Safety Systems	CC, OM, TTI, TM	RU, RD, V, SC, ENG, ENF, ED	Low
CC9	Road Geometry Warning System	CC	RU, RD, V, ENG, ED	Low to Higher
CC10	Smart Trucks	CC, TM	RU, V, SC, ENG, ENF, ED	Low
CC11	Speed Warning Systems	CC, OM	RU, SC, ENG, ED	Low
CC12	Work Zone Safety Systems	CC, OM, TM	RU, RD, ENG, ER, ENF, ED	Low to Higher
TM1	Access Control Gates	CC, STW, TM	RD, ENG, ER	Low
TM2	Variable Speed Limit (VSL)	CC, OM, STW, TM	RD, SC, ENG	Low to Higher
TM3	Geographic Information Systems (GIS)	ES, OM, RTM, TM	ENG, ER, ED	Low
TM4	Interconnected Signal Systems	CC, OM, TM	RD, ENG	Low to Medium
TM5	Vehicle Detection	TM	RD, ENG	Low
TM6	Monitoring Travel Times and Speeds	CC, OM, STW, TM	RU, V, ENG	Low to Higher
TM7	Parking Management Systems	OM, TM	RU, RD, ENG	Low to Higher
TM8	Planned Special Event Management Systems	TM	RU, RD, ENG, ENF	Low to Higher
TM9	Rural Traffic Management Center (TMC)/Traffic Operations Center (TOC)	CC, ES, OM, RTM, STW, TTI, TM	RU, RD, V, ENG, ER, ENF, ED	Higher
TM10	Adaptive Signal Control Technologies (ASCT)	CC, OM, TM	RD, ENG	Low to Higher





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OM1	Weigh-in-Motion (WIM) Systems	OM, TM	RU, RD, V, ENG, ENF	Low to Higher
OM2	Site Management During Avalanches	OM	RU, RD, ENG, ED	High to Higher
OM3	Global Positioning System (GPS) Data	OM	RU, V, ENG, ED	Low to High
OM4	Fixed Automated Spray Technology (FAST)	OM	RD, ENG	Higher
ES1	Next Generation 911	ES	RU, ER, ENF, ED	Higher
ES2	Smartphone Applications for First Responders	ES	SC, ER	Higher
ES3	Crash Reporting	CC, ES	RU, V, ENG, ER, ENF	Low to Higher
ES4	Automatic Crash Notification Systems	ES	RU, V, ENG, ER, ED	Low
ES5	Emergency Vehicle Traffic Signal Preemption	ES, RTM, TM	RU, RD, V, ENG, ER	Low
ES6	Unmanned Aerial Systems (UAS)	CC, ES, OM, TM	RD, ENG, ER, ENF, ED	Low to Higher
STW1	Integrated Weather Monitoring/Prediction Systems	STW, TTI	RU, RD, ED	Low to Medium
RTM1	Coordinated Rural Transit Service	RTM	RU, ED	Higher
RTM2	Automated Stop Announcement Systems	RTM, TTI	RU, V, ENG, ED	Low
RTM3	Automatic Vehicle Location (AVL) on Agency and Public Vehicles	ES, OM, RTM, STW	V, ER	Low to Medium





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TTI1	Highway Advisory Radio (HAR)	ES, OM, RTM, STW, TTI, TM	RU, ENG, ER, ED	Low to Medium
TTI2	Crowdsourced Data	OM, RTM, STW, TTI, TM	RU, RD, ENG, ED	Low to High
TTI3	Dynamic Message Sign (DMS)	CC, ES, OM, RTM, STW, TTI, TM	RU, SC, ENG, ED	Low to Higher
TTI4	Integrated Traveler Information Systems	ES, OM, RTM, STW, TTI, TM	RU, RD, ENG, ER, ED,	Higher
TTI5	Social Media	RTM, STW, TTI, TM	RU, ED	Low
TTI6	Public Transportation Trip Planner	RTM, TTI	RU, ED	High to Higher

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