Table S1. PRISMA 2020 checklist and location of reported items.

PRISMA 2020 Item	Checklist Item Description	Section(s) Where Addressed
1	Title identifies report as a systematic review	Title
2	Structured summary	Abstract
3	Rationale for the review	Introduction
4	Objectives or questions	Introduction
5	Eligibility criteria	Section 3.3
6	Information sources	Section 3.1
7	Search strategy	Section 3.1
8	Selection process	Sections 3.2, 3.7
9	Data collection process	Section 3.5
10	Data items	Section 3.5
11	Study risk of bias assessment	Not applicable (qualitative synthesis)
12	Effect measures	Sections 4.1–4.5 (KPIs)
13	Synthesis methods	Sections 3.5, 4
14	Reporting bias assessment	Not applicable
15	Certainty assessment	Not applicable
16	Study selection	Section 3.6; Figure 5
17	Study characteristics	Sections 3.4, 4
18	Risk of bias in studies	Qualitative discussion (Section 5)
19	Results of individual studies	Sections 4.1–4.5
20	Results of syntheses	Sections 4–5
21	Reporting biases	Limitations (Section 6.2)
22	Certainty of evidence	Limitations (Section 6.2)
23	Discussion	Section 5
24	Registration and protocol	Section 3.7

Table S2. Standardized data extraction form used for included studies

Section	Item	Description
A. Bibliographic Information	Study ID	Unique identification code
	Authors	First author et al.
	Year	Year of publication
	Title	Article title
	Source	Journal or conference
	Country/Region	Study context (if applicable)
	DOI/URL	Digital object identifier or web link
B. Study Characteristics	Study Type	Empirical / Simulation / Modeling / Review
	Research Objectives	Main aims of the study
	Study Design	Experimental / Observational / Simulation-based
	Data Source	Real-world / Synthetic / Secondary
	Analysis Method	Statistical / Optimization / ML / Simulation
C. Traffic and System Context	Environment Type	Urban / Suburban / Highway / Mixed
	Network Scale	Intersection / Corridor / Network / Regional
	Traffic Composition	AV–HDV mix (%)
	Automation Level	SAE level(s) considered
	Connectivity	V2V / V2I / V2X / None
D. Intervention / Exposure	Market Penetration Rate	AV/CAV share (%)
	Control Strategy	Platooning / ACC / Cooperative / Rule-based
	Infrastructure Measures	Dedicated lanes / Signals / RSUs
	Policy Measures	Pricing / Regulation / Incentives
E. Outcomes and Indicators	Safety Indicators	TTC, PET, conflicts, crashes
	Traffic Flow Indicators	Capacity, delay, travel time
	Stability Indicators	Speed variance, oscillations
	Environmental Indicators	Emissions, fuel consumption
	Socio-Economic Indicators	Equity, accessibility, labor
F. Key Findings	Main Results	Summary of reported effects
	Impact Direction	Positive / Negative / Mixed
	Threshold Effects	MPR thresholds (if reported)
	Contextual Factors	Moderators and assumptions
G. Methodological Quality	Validation/Calibration	Yes / No / Partial
	Sensitivity Analysis	Yes / No
	Reported Limitations	Methodological constraints
	Generalizability	High / Moderate / Low
H. Reviewer Notes	Missing Data	Not reported / Unclear
	Additional Comments	Reviewer observations
	Thematic Relevance	Safety / Flow / Policy / Mixed traffic