»TREDLiteVMT

Revolutionizing Transportation Impact Analysis: AI-Powered Innovations

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What Can the TREDLite VMT Tool Do

Regulate Environmental Impacts

Estimate Greenhouse Gas Emissions

Run Mitigation Scenarios

Calculate Internal Trip Capture

Explore Data Quickly and Easily

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When To Use TREDLite VMT

TREDLite VMT can be used on a variety of projects:

- Transportation Planning
- Site Selection
- Traffic Analysis and Engineering

- Travel Demand Modeling
- Land Development
- Carbon Reduction Programs

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Choose Your Location

Select parcels by choosing them on the map, searching the address, or uploading a project boundary shapefile.

Jurisdiction

Riverside

Address

Search

Parcel Selection

Zoom in on the map to the parcel level to select the parcels.

- ● Select From Map
- ○ Upload Project Shapefile

| ↖ Single | ☐ Box | ⬚ Shape |

| Undo | Clear |

→ Next

Theme Layers ⚐

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Project Information

Project Name

Bloomington Test

Analysis Year

2023

ITE Trip Gen Land Use

221 - Multifamily Housing (Mid-Rise) - Not Close to Rail Transit

Land Use Quantity

Dwelling Unit(s)

Add Land Use

ITE Trip Gen Land Use	Quantity	Units	
221 - Multifamily Housing (Mid-Rise) - Not Close to Rail Transit	200	Dwelling Unit(s)	🗑

← Back   → Next

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Analysis

Project Name: Bloomington Test

Location: Bloomington

Analysis Year: 2023

Project Land Use & Intensities:

Land Use	Quantity	Units	Per Capita/Employee VMT	VMT With Mitigation	Total VMT	Threshold	Significant Impact
221	200	Dwelling Unit(s)	21.7	21.7	12,738.8	12.0	Yes
				Totals	12,738.8		

Total Emission Estimates:

For planning level only, not for use in CEQA air quality analysis.

Pollutant	Mobile	Mitigation	With Mitigation	Non Mobile	Total
CO (lb/day)	45.39	0.00	45.39	63.47	108.87
ROG (lb/day)	4.14	0.00	4.14	9.45	13.59
NOX (lb/day)	6.10	0.00	6.10	9.77	15.88
SOX (lb/day)	0.09	0.00	0.09	0.11	0.20
PM2.5 (lb/day)	2.18	0.00	2.18	2.55	4.73
PM10 (lb/day)	7.93	0.00	7.93	8.30	16.22
CO_2 (mt/year)	1,362.99	0.00	1,362.99	2,452.74	3,815.73

Project Presumptions of Less than Significant Impact ⓘ

☐ Within a 1/2 mile of Major Transit Stop

If your project result is higher than the threshold, we recommend clicking the **Mitigate VMT** button to learn and decide on ways to mitigate your transportation impact. Otherwise, click **Print Results**.

← Back   Print Results   → Mitigate VMT

Transportation Demand Management (TDM)

VMT can only be mitigated in each group by up to the stated Group Max Reduction. The current reduction listed for each group must not exceed the max reduction for its respective group.

CAPCOA Handbook ↗

Selected Land Use: 710 - General Office Building
Total Maximum Reduction: 20%
Current Reduction: 0.00%

TDM Measure	Description	Max VMT Reduction	Input	Input Definition	Reduction
Land Use Strategies - Group Max Reduction: 20%, Current Reduction: 0.00%					⌄
Trip Reduction Programs - Group Max Reduction: 20%, Current Reduction: 0.00%					⌄

Parking or Road Pricing / Management - Group Max Reduction: 20%, Current Reduction: 0.00%

Provide Electric Vehicle Charging Infrastructure (T-14) Reminder: Does not reduce VMT	Install onsite electric vehicle chargers in an amount beyond what is required by the 2019 California Green Building Standards (CALGreen) at buildings with designated parking areas (e.g., commercial, educational, retail, multi-family).	11.90%	0 / 0 / NA	number of chargers installed (e.g. 20) / daily vehicles accessing the site (e.g. 200) / project opening year	0.00%
Limit Residential Parking Supply (T-15)	This measure will reduce the total parking supply available at a residential project or site. Limiting the amount of parking available creates scarcity and adds additional time and inconvenience to trips made by private auto, thus disincentivizing driving as a mode of travel.	13.70%	0 / 0 / 0 %	required parking (e.g. 100) / provided parking (e.g. 80) / percentage of VMT generated by residents	0.00%
Unbundle Residential Parking Costs (T-16)	This measure will unbundle, or separate, a residential project's parking costs from property costs, requiring those who wish to purchase parking spaces to do	15.70%	$ 0	average annual parking cost per space	0.00%

← Back   Print Results   → VMT Bank

ITE 710   **ITE 210**

HBW VMT/Employee

— City of Monterey Threshold ■ Project ■ Project with Mitigation

Regional Average (HBW VMT/Emp): 22.3   Threshold (15% below Average): 18.9

Metric	Project	Mitigation	With Mitigation
HBW VMT/Emp	20.3	0.0	20.3
Daily Trips	468	0	0

Pollutant	Mobile	Mitigation	With Mitigation	Non Mobile	Total
CO (lb/day)	19.30	0.00	19.30	19.43	38.73
ROG (lb/day)	1.80	0.00	1.80	2.96	4.76
NOX (lb/day)	2.60	0.00	2.60	2.74	5.34
SOX (lb/day)	0.04	0.00	0.04	0.04	0.07
PM2.5 (lb/day)	0.92	0.00	0.92	0.93	1.85
PM10 (lb/day)	3.35	0.00	3.35	3.36	6.70
CO_2 (mt/year)	458.64	0.00	458.64	846.74	1,305.39

Land Use Presumptions of Less than Significant Impact ⓘ
☐ Affordable Housing
☐ Local Serving Land Use

TREDLite VMT's Key Challenges and AI Driven Solutions

Challenge

Solution

User Knowledge Gap
Significant Differences in user expertise make it difficult
for all users to effectively navigate and utilize the tool

Regulatory Complexity
The complexity of laws and regulations adds to
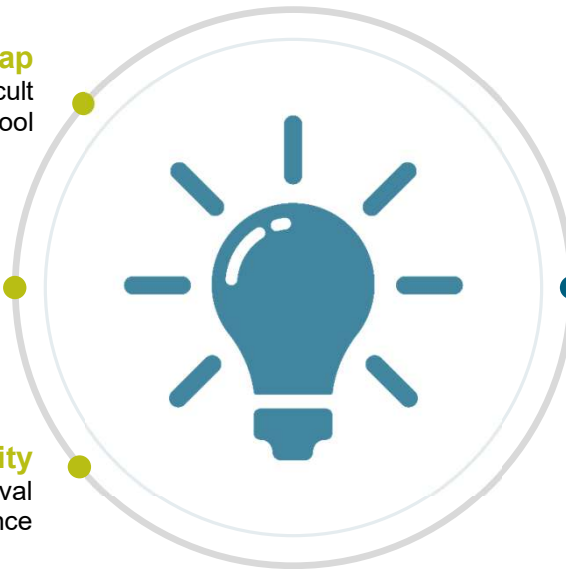the difficulty of using the application efficiently

AI Assistant Integration
Implement an AI Assistant that helps users
quickly identify relevant mitigation strategies

Reduced Productivity
Time-consuming navigation and information retrieval
hinder user productivity and overall user experience

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The New TREDLite VMT Experience

User Enters Project Info

Tool initializes baseline VMT analysis
o Site address
o Land use
o Project size
o Trip reduction strategies

AI Assistant Offers Guided Support

Instant access to definitions, thresholds, and workflow tips
o "What are your projects' transportation features?"

Smart Suggestions & Mitigation Support

AI reviews mitigation options by land use and location recommended in available documentation, and shares those insights with the user
o Reduces trial-and-error and user uncertainty

Confidence & Efficiency Gains

o Faster project setup and review/completion
o Increased user satisfaction and decision confidence

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Typical Roadmap

Phase 1
Agent Build

Phase 3
Multi-Agent Orchestration

Phase 0
Platform Skeleton

Phase 2
TREDLite Retrieval MVP

Phase 4
Scale & Self Service
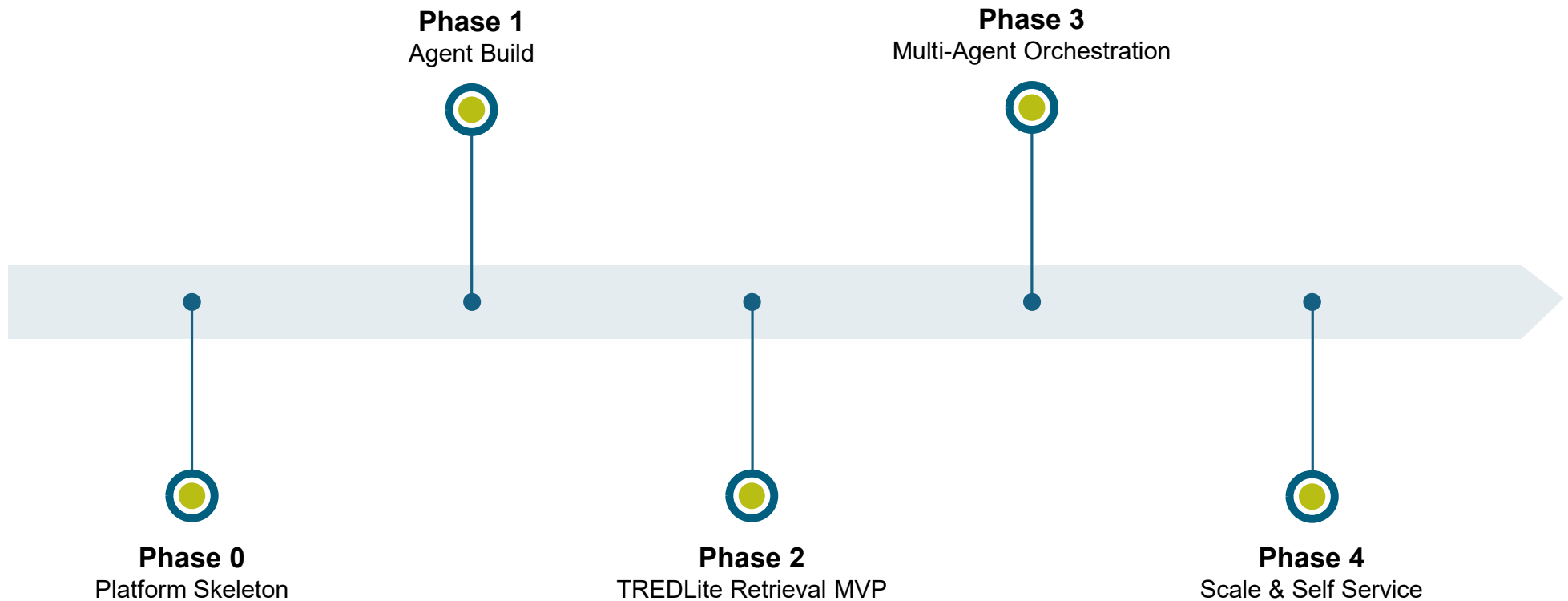
Key Learnings to Enhance AI Assistant Capabilities in TREDLite VMT

Data Foundation & Planning	Quality Assurance & Validation	Model Selection & Architecture	Prompt Engineering
Start small until indexing meets the requirements	Human validation is essential	Choose models by task requirements	Include golden responses as reference samples
PDFs vary (text vs optical character recognition/OCR needed)	AI responses can't be trusted without verification	The newest/most expensive model isn't always best	Focus on specific, measurable outcomes vs general guidance
Test most complex documents first	Always cross-check with source documents	Evaluate performance vs cost	

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How We Applied Lessons Learned

Rebranding for Better Reception

Lesson: Use the term *AI Assistant* instead of *AI Chatbot*

Why it matters:
- Helps distance the tool from negative perceptions of chatbots
- Sets a more helpful and human-like tone for user interactions

Building Trust Through References

Lesson: Include references in every AI response

Why it matters:
- Add credibility and transparency to AI-generated answers
- Helps users trace information back to source documents

Navigate Uncertainty with Care

Lesson: Avoid giving answers when none exist

Why it matters:
- Acknowledges limitations while maintaining user trust
- Focus on guiding users when definitive answers aren't given
- Reinforces transparency and thoughtful communication

More Than Just an Assistant

Lesson: Highlight the assistant's ability to search internal databases

Why it matters:
- Demonstrates the assistant's power to extract insights from resources like CEQA and legislation

First Look at the TREDLite VMT AI Assistant

• Currently, content is not shared between the platform and the AI Assistant (AI assistant is optional)

Success Factors That Enable Key Differentiators

✓ Understand your data sources thoroughly

✓ Verify AI Search and Chat response functionality with ingested PDFs

✓ Cross-validate all AI responses against original documents

✓ Design to augment human decision-making, not replace it

✓ Measure business outcomes, not just technical metrics

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